MASTER PLAN

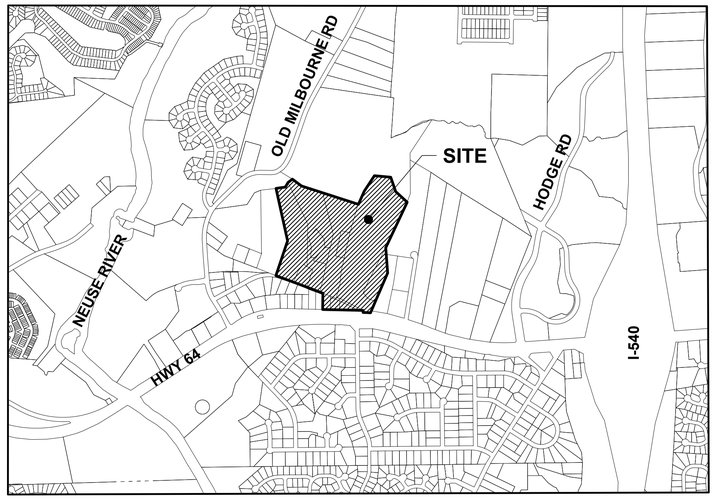
KNIGHTDALE GATEWAY

5901 FARMWELL ROAD

ST. MATTHEW'S TOWNSHIP, KNIGHTDALE, NORTH CAROLINA

ZMA 16-21

WAKE COUNTY



VICINITY MAP

SCALE: 1"=1,000'

GRAPHIC SCALE

1000 0 500 1000 2000 4000

(IN FEET)
1 inch = 1000 ft.

DEVELOPER

BEACON PARTNERS
500 EAST MOREHEAD ST
SUITE 200
CHARLOTTE, NC 28202
PHONE (704) 597-7757

ENGINEER

ADVANCED CIVIL DESIGN, INC.
51 KILMAYNE DRIVE, SUITE 102
CARY, NC 27511
PHONE (919) 481-6290
FAX (919) 336-5127

OWNER

PATRICIA W. SIMMONS
5909 COFFEY ST
RALEIGH, NC 27604

OWNER

JMAK PLANT FARM LLC
PO BOX 453
FAIRVIEW, NC 28730-0453

OWNER

BEVERLY C. MORRIS TRUSTEE &
JULIA HERNANDEZ TRUSTEE
PO BOX 453
FAIRVIEW, NC 28730-0453

OWNER

MARIANNE JEFFREYS PAIR
5845 COFFEY ST
RALEIGH, NC 27604

OWNER

MOTAPARTHY PROPERTIES, LLC
105 CASHWELL DR
GOLDSBORO, NC 27534

USE STANDARDS

UDO SECTION 5.7.B LIGHT MANUFACTURING:
1. ALL MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN AN ENCLOSED BUILDING OR STORED WITHIN AN OUTDOOR STORAGE AREA THAT COMPLIES WITH ALL REGULATIONS SET FORTH IN SECTION 5.10 AND IS RESTRICTED TO THE REAR YARD.
2. ANY OPERATION WHICH RESULTS IN THE CREATION OF NOXIOUS VIBRATIONS, ODORS, DUST, GLARE, OR SOUND IS PROHIBITED.

UDO SECTION 5.7E RESEARCH AND DEVELOPMENT:
1. ALL MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN AN ENCLOSED BUILDING OR STORED WITHIN AN OUTDOOR STORAGE AREA THAT COMPLIES WITH ALL REGULATIONS SET FORTH IN SECTION 5.10 AND IS RESTRICTED TO THE REAR YARD.
2. ANY OPERATION WHICH RESULTS IN THE CREATION OF NOXIOUS VIBRATIONS, ODORS, DUST, GLARE OR SOUND IS PROHIBITED.

UDO SECTION 5.7G STORAGE – WAREHOUSE, INDOOR STORAGE:
1. AN INDOOR STORAGE WAREHOUSE BUILDING IS LIMITED TO FIVE THOUSAND (5,000) SQUARE FEET PER FLOOR IN THE TC AND RR DISTRICTS.
2. OUTDOOR STORAGE IS NOT PERMITTED.
3. IN THE RR DISTRICT, ALL AREAS SHALL BE SCREENED FROM ANY PRE-EXISTING ADJACENT RESIDENCE (OTHER THAN THE OWNER'S) BY A TYPE-A BUFFER YARD (SECTION 7.4 (I)(2)).

UDO SECTION 5.7H WHOLESALING AND DISTRIBUTION:
1. ALL VEHICLE STORAGE AREAS SHALL BE ENCLOSED BY AN OPAQUE FENCE OR WALL, RESTRICTED TO THE REAR YARD, AND SCREENED FROM OFF-SITE VIEW OF A PUBLIC RIGHT-OF-WAY BY A TYPE-A BUFFER YARD (SECTION 7.4 (I)(2)).
2. NO OUTDOOR PUBLIC ADDRESS SYSTEM SHALL BE PERMITTED WHICH CAN BE HEARD BEYOND THE BOUNDARIES OF THE PROPERTY.

INDEX OF DRAWINGS

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WALL SECTIONS	A302
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SITE DATA TABLE

SITE ACREAGE:	54.13 ACRES
EXISTING ZONING:	RT (RURAL TRANSITION)
PROPOSED ZONING:	MI-PUD (MANUFACTURING & INDUSTRIAL – PLANNED UNIT DEVELOPMENT)
OVERLAY DISTRICT:	NONE
EXISTING LAND USE:	SINGLE FAMILY
PROPOSED LAND USE:	MANUFACTURING, LIGHT (UDO 5.7.B) RESEARCH AND DEVELOPMENT (UDO 5.7E) STORAGE – WAREHOUSE, INDOOR STORAGE (UDO 5.7G) WHOLESALING AND DISTRIBUTION (UDO 5.7H) BREWERY/WINERY/DISTILLERY (UDO 3.1.C.6) LABORATORY – MEDICAL, ANALYTICAL, RESEARCH & DEVELOPMENT (UDO 3.1.C.6)
WATERSHED:	LOWER NEUSE
PROPOSED NO. BUILDINGS:	2
BUILDING #1 AREA:	221,000 SF
BUILDING #2 AREA:	286,000 SF
TOTAL BUILDING AREA:	507,000 SF
PHASING:	NONE
FRONT SETBACK (MIN.) **:	50 FT
SIDE SETBACK (MIN.) **:	50 FT
REAR SETBACK (MIN.) **:	50 FT

** IF ADJACENT TO RESIDENTIAL DISTRICT, 100 FEET.

REQUIRED RECREATION OPEN SPACE:	0 SF
PROVIDED RECREATION OPEN SPACE:	0 SF

PARKING CALCULATIONS

USE TYPE: MANUFACTURING, LIGHT

MAXIMUM NO. OF PARKING SPACES: 1.5 PER KSF GFA

MINIMUM NO. OF PARKING SPACES: 0.5 X MAXIMUM

**KSF = 1,000 SF; GFA = GROSS FLOOR AREA

BUILDING NO.	GFA (SF)	MAX. SPACES	MIN. SPACES	AUTO SPACES PROVIDED
1	221,000	331	166	200
2	286,000	429	215	248

ELECTRIC VEHICLE REQUIREMENTS:	1 PER 40 SPACES = 11 SPACES
# OF CHARGING STATIONS/DEDICATED SPACES PROVIDED:	11 SPACES
BICYCLE PARKING REQUIRED:	1 PER 10 PARKING SPACES = 45 SPACES
BICYCLE PARKING PROVIDED:	46 SPACES

TREE COVER AREA CALCULATIONS

PERIMETER OF SITE:	6,950 FEET
REQUIRED TREE COVER AREA:	6,950 FT X 20 FT = 139,000 SF
REQUIRED AREA % OF TOTAL LOT AREA:	139,000 SF / 2,358,143 SF = 5.89% 5.89% OF TOTAL LOT AREA (< 10% MAX)
EXISTING TREE COVER AREA TO BE UTILIZED:	521,245 SF
ADDITIONAL SPACE REQUIRED:	0 SF
RE-PLANTED AREA REQUIRED:	0 SF
RE-PLANTED AREA PROVIDED:	25,086 SF

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
fax 919.336.5127

PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
tel. 704.597.7757
fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN
FOR
BEACON PARTNERS

COVER SHEET

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038180 JAMES D. WHITACRE
PRELIMINARY
NOT FOR CONSTRUCTION

08/01/2022

Issue Dates:
- 05/23/2021 – Master Plan Submittal #1
- 06/23/2022 – Master Plan Submittal #2
- 08/01/2022 – Master Plan Submittal #3

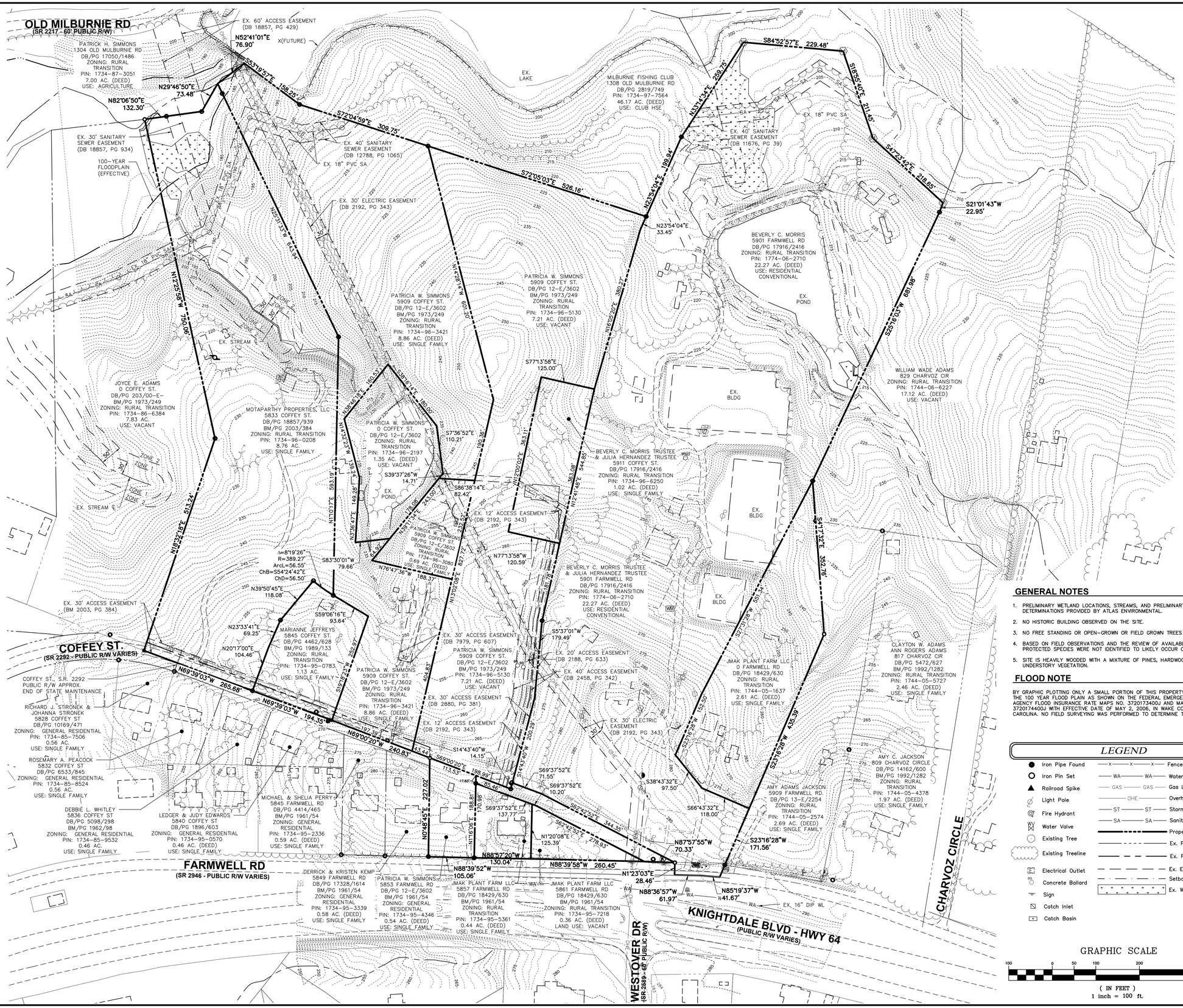
Date: 08/01/2022
Scale: 1" = 1,000'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.1.0

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GENERAL NOTES

1. PRELIMINARY WETLAND LOCATIONS, STREAMS, AND PRELIMINARY BUFFER DETERMINATIONS PROVIDED BY ATLAS ENVIRONMENTAL.
2. NO HISTORIC BUILDING OBSERVED ON THE SITE.
3. NO FREE STANDING OR OPEN-GROWN OR FIELD GROWN TREES OBSERVED.
4. BASED ON FIELD OBSERVATIONS AND THE REVIEW OF AVAILABLE DATA, PROTECTED SPECIES WERE NOT IDENTIFIED TO LIKELY OCCUR ON THE SITE.
5. SITE IS HEAVILY WOODED WITH A MIXTURE OF PINES, HARDWOODS, AND UNDERSTORY VEGETATION.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY A SMALL PORTION OF THIS PROPERTY IS LOCATED IN THE 100 YEAR FLOOD PLAIN AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS NO. 3720173400J AND MAP NO. 3720174400J WITH EFFECTIVE DATE OF MAY 2, 2006, IN WAKE COUNTY NORTH CAROLINA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

LEGEND

- Iron Pipe Found
- Iron Pin Set
- Railroad Spike
- Light Pole
- Fire Hydrant
- Water Valve
- Existing Tree
- Existing Treeline
- Electrical Outlet
- Concrete Bollard
- Sign
- Catch Inlet
- Catch Basin
- Fence Line
- Water Line
- Gas Line
- Overhead Electric Line
- Storm Sewer Line
- Sanitary Sewer Line
- Property Line
- Ex. Property Line
- Ex. Right-of-Way
- Ex. Easement Line
- Setback
- Ex. Wetlands

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmoyne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
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fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

OVERALL EXISTING CONDITIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041180 JOHN D. WHITACRE
PRELIMINARY
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 100'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.2.0

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MATCHLINE - SEE SHEET C.2.2

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

MOTAPARTHY PROPERTIES, LLC
5833 COFFEY ST.
DB/PG 18857/939
BM/PG 2003/384
ZONING: RURAL TRANSITION
PIN: 1734-96-0208
8.76 AC.
USE: SINGLE FAMILY

PATRICIA W. SIMMONS
0 COFFEY ST.
DB/PG 12-E/3602
ZONING: RURAL TRANSITION
PIN: 1734-96-2197
1.35 AC. (DEED)
USE: VACANT

BEVERLY C. MORRIS TRUSTEE & JULIA HERNANDEZ TRUSTEE
5911 COFFEY ST.
DB/PG 17916/2416
ZONING: RURAL TRANSITION
PIN: 1734-96-6250
1.02 AC. (DEED)
ZONING: SINGLE FAMILY

PATRICIA W. SIMMONS
5909 COFFEY ST.
DB/PG 12-E/3602
ZONING: RURAL TRANSITION
PIN: 1734-96-3080
0.69 AC. (DEED)
USE: SINGLE FAMILY

BEVERLY C. MORRIS TRUSTEE & JULIA HERNANDEZ TRUSTEE
5901 FARMWELL RD
DB/PG 17916/2416
ZONING: RURAL TRANSITION
PIN: 1774-06-2710
22.27 AC. (DEED)
USE: RESIDENTIAL CONVENTIONAL

RICHARD J. STIRONEK & JOHANNA STIRONEK
5828 COFFEY ST
DB/PG 10169/471
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-7506
0.56 AC.
USE: SINGLE FAMILY

PATRICIA W. SIMMONS
5909 COFFEY ST.
DB/PG 12-E/3602
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-96-3421
8.86 AC. (DEED)
USE: SINGLE FAMILY

PATRICIA W. SIMMONS
5909 COFFEY ST.
DB/PG 12-E/3602
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-96-5130
7.21 AC. (DEED)
USE: VACANT

MARIANNE JEFFREYS PAIR
5845 COFFEY ST.
DB/PG 4462/628
BM/PG 1989/133
ZONING: RURAL TRANSITION
PIN: 1734-95-0783
1.13 AC.
USE: SINGLE FAMILY

ROSEMARY A. PEACOCK
5832 COFFEY ST
DB/PG 6533/845
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-8524
0.56 AC.
USE: SINGLE FAMILY

DEBBIE L. WHITLEY
5836 COFFEY ST
DB/PG 5098/298
BM/PG 1962/98
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-9532
0.46 AC.
USE: SINGLE FAMILY

LEDGER & JUDY EDWARDS
5840 COFFEY ST
DB/PG 1896/603
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0570
0.46 AC. (DEED)
USE: SINGLE FAMILY

MICHAEL & SHELIA PERRY
5845 FARMWELL RD
DB/PG 4414/465
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-2336
0.59 AC. (DEED)
USE: SINGLE FAMILY

DERRICK & KRISTEN KEMP
5849 FARMWELL RD
DB/PG 17328/1614
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-3339
0.58 AC. (DEED)
USE: SINGLE FAMILY

PATRICIA W. SIMMONS
5853 FARMWELL RD
DB/PG 12-E/3602
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-4346
0.54 AC. (DEED)
USE: SINGLE FAMILY

JMAK PLANT FARM LLC
5857 FARMWELL RD
DB/PG 18429/630
BM/PG 1961/54
ZONING: RURAL TRANSITION
PIN: 1734-95-5361
0.44 AC. (DEED)
USE: SINGLE FAMILY

JMAK PLANT FARM LLC
5861 FARMWELL RD
DB/PG 18429/630
BM/PG 1961/54
ZONING: RURAL TRANSITION
PIN: 1734-95-7218
0.36 AC. (DEED)
LAND USE: VACANT

JMAK PLANT FARM LLC
0 FARMWELL RD
DB/PG 18429/630
ZONING: RURAL TRANSITION
PIN: 1744-05-1637
2.61 AC. (DEED)
USE: SINGLE FAMILY

CLAYTON W. ADAMS
ANN ROGERS ADAMS
817 CHARVOZ CIR
DB/PG 5472/627
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-5727
2.46 AC. (DEED)
USE: SINGLE FAMILY

AMY C. JACKSON
809 CHARVOZ CIRCLE
DB/PG 14162/600
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-4378
1.97 AC. (DEED)
USE: SINGLE FAMILY

AMY ADAMS JACKSON
5909 FARMWELL RD.
DB/PG 13-E/2254
ZONING: RURAL TRANSITION
PIN: 1744-05-2574
2.69 AC. (DEED)
USE: SINGLE FAMILY

COFFEY ST.
(SR 2292 - PUBLIC R/W VARIES)

FARMWELL RD
(SR 2946 - PUBLIC R/W VARIES)

KNIGHTDALE BLVD - HWY 64
(PUBLIC R/W VARIES)

WESTOVER DR
(SR 2599 - 60' PUBLIC R/W)

EX. 30' ACCESS EASEMENT (BM 2003, PG 384)
EX. 30' ACCESS EASEMENT (DB 7979, PG 607)
EX. 20' ACCESS EASEMENT (DB 2188, PG 633)
EX. 40' ACCESS EASEMENT (DB 2458, PG 342)
EX. 30' ACCESS EASEMENT (DB 2880, PG 381)
EX. 12' ACCESS EASEMENT (DB 2192, PG 343)
EX. 30' ELECTRIC EASEMENT (DB 2192, PG 343)

EX. BUILDINGS
EX. GRAVEL DRIVE
EX. CONCRETE DRIVE
EX. ASPHALT DRIVE
EX. GRAVEL PARKING LOT
EX. WALLS
EX. FENCE
EX. SIDEWALK
EX. SIGN
EX. POND
EX. STREAM & TYP.
EX. WATER TANK
EX. FH
EX. 16" DIP WL
EX. EDGE OF PAVEMENT

LEGEND

- Iron Pipe Found
- Iron Pin Set
- Railroad Spike
- Light Pole
- Power Pole
- Fire Hydrant
- Water Valve
- Existing Tree
- Existing Treeline
- Electrical Outlet
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- Fence Line
- Water Line
- Gas Line
- Overhead Electric Line
- Storm Sewer Line
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- Ex. Right-of-Way
- Ex. Easement Line
- Setback
- Ex. Wetlands
- Mailbox
- Guy Pole
- Guy Wire
- Monument
- Water Meter

GENERAL NOTES

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GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

PLAN PREPARED BY:
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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN
FOR
BEACON PARTNERS

EXISTING CONDITIONS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030180 JOHN D. WHITACRE
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDATION
08/01/2022

Issue Dates:
- 05/23/2021 – Master Plan Submittal #1
- 06/23/2022 – Master Plan Submittal #2
- 08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.2.1

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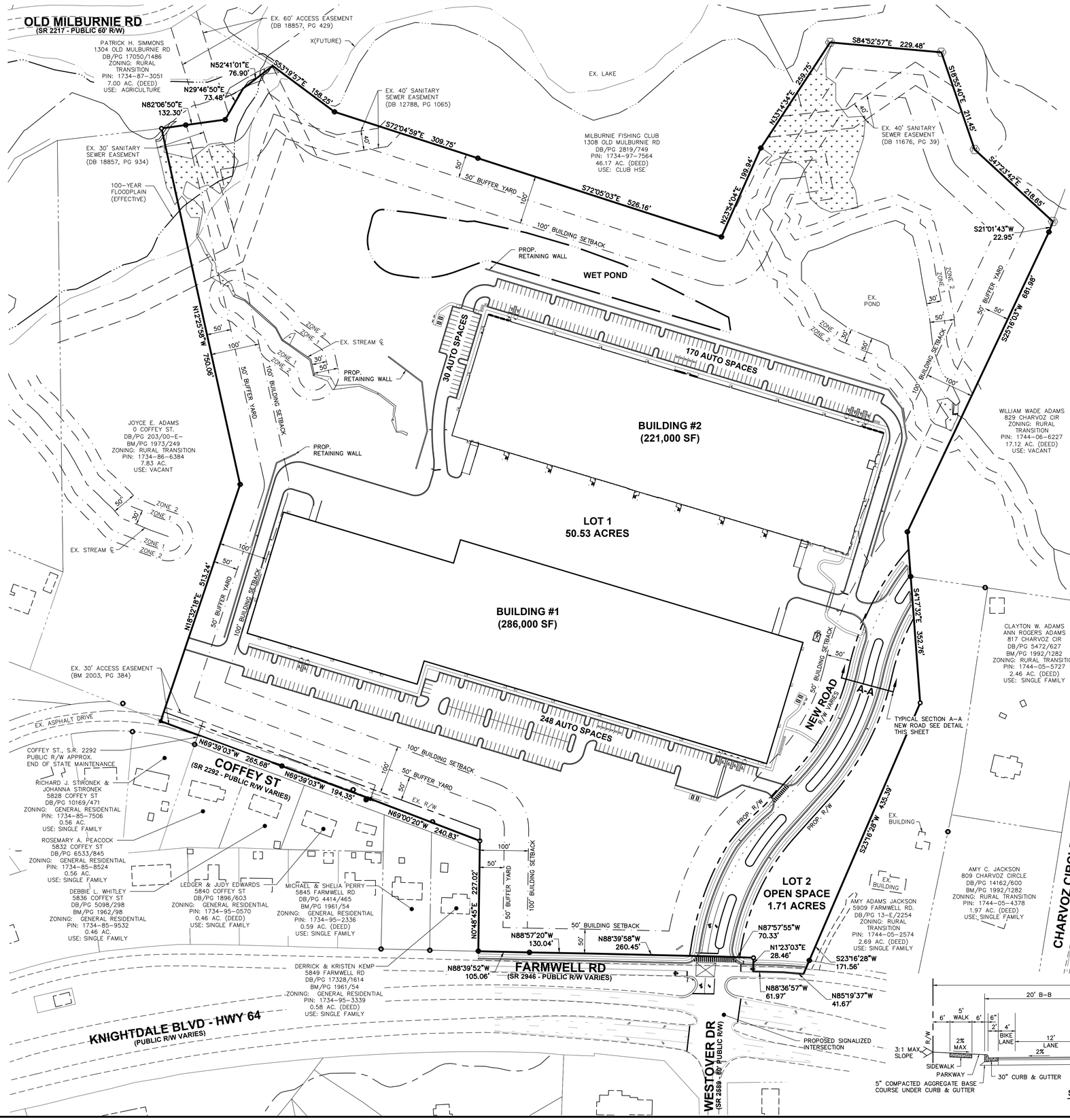
60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

LEGEND

- Iron Pipe Found
- Iron Pin Set
- Railroad Spike
- Light Pole
- Power Pole
- Fire Hydrant
- Water Valve
- Existing Tree
- Existing Treeline
- Electrical Outlet
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- Property Line
- Ex. Property Line
- Ex. Right-of-Way
- Ex. Easement Line
- Setback
- Ex. Wetlands
- Mailbox
- Guy Pole
- Guy Wire
- Monument
- Water Meter

X(FUTURE)
EX. 60' ACCESS EASEMENT (DB 18857, PG 429)
EX. PERENNIAL STREAM SEE NOTE 1
EX. LAKE
N52°41'01"E 76.90'
EX. WETLAND LIMITS SEE NOTE 1
PATRICK H. SIMMONS 1304 OLD MULBURNIE RD DB/PG 17050/1486 ZONING: RURAL TRANSITION PIN: 1734-87-3051 7.00 AC. (DEED) USE: AGRICULTURE
S33°19'57"E 158.25'
N29°45'50"E 73.48'
N82°06'50"E 132.30'
EX. WETLAND LIMITS SEE NOTE 1
EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)
100-YEAR FLOODPLAIN (EFFECTIVE)
S72°04'59"E 309.75'
EX. 18" PVC SA
EX. 40' SANITARY SEWER EASEMENT (DB 12788, PG 1065)
S72°05'03"E 526.16'
EX. 30' ELECTRIC EASEMENT (DB 2192, PG 343)
N23°51'57"W 604.94'
EX. PERENNIAL STREAM SEE NOTE 1
EX. OVERHEAD ELECTRIC
EX. WETLAND LIMITS SEE NOTE 1
N12°25'56"W 750.06'
EX. STREAM C
EX. BUILDINGS
EX. BUILDING
EX. WETLAND LIMITS SEE NOTE 1
JOYCE E. ADAMS 0 COFFEY ST. DB/PG 203/00-E- BM/PG 1973/249 ZONING: RURAL TRANSITION PIN: 1734-86-6384 7.83 AC. USE: VACANT
MOTAPARTHY PROPERTIES, LLC 5833 COFFEY ST. DB/PG 18857/939 BM/PG 2003/384 ZONING: RURAL TRANSITION PIN: 1734-96-0208 8.76 AC. USE: SINGLE FAMILY
N10°32'18"E 513.24'
N1°01'17"E 593.19'
Δ=8°19'26" R=389.27' ARC=56.55' ChB=S54°24'42"E Ch=56.50'
PATRICIA W. SIMMONS 0 COFFEY ST.
N76°
EX. PERENNIAL STREAM SEE NOTE 1
MILBURNIE FISHING CLUB 1308 OLD MULBURNIE RD DB/PG 2819/749 PIN: 1734-97-7564 46.17 AC. (DEED) USE: CLUB HSE
N23°54'04"E 199.94'
EX. STREAM E, TYP.
N23°54'04"E 33.45'
EX. CULVERT
BEVERLY C. MORRIS 5901 FARMWELL RD DB/PG 17916/2416 ZONING: RURAL TRANSITION PIN: 1774-06-2710 22.27 AC. (DEED) USE: RESIDENTIAL CONVENTIONAL
EX. POND
EX. BUILDINGS
PATRICIA W. SIMMONS 5909 COFFEY ST. DB/PG 12-E/3602 BM/PG 1973/249 ZONING: RURAL TRANSITION PIN: 1734-96-3421 8.86 AC. (DEED) USE: SINGLE FAMILY
N14°28'14"W 607.20'
PATRICIA W. SIMMONS 5909 COFFEY ST. DB/PG 12-E/3602 BM/PG 1973/249 ZONING: RURAL TRANSITION PIN: 1734-96-5130 7.21 AC. (DEED) USE: VACANT
N16°05'20"E 350.27'
EX. GRAVEL DRIVE
S77°13'58"E 125.00'
EX. BUILDINGS
EX. BUILDING
BEVERLY C. MORRIS TRUSTEE & JULIA HERNANDEZ TRUSTEE 5911 COFFEY ST. DB/PG 17916/2416 ZONING: RURAL TRANSITION PIN: 1734-96-6250 1.02 AC. (DEED) ZONING: SINGLE FAMILY
N12°41'48"E 544.85'
N12°00'42"E 361.11'
S3°36'52"E 110.21'
S86°38'14"E 82.42'
S39°37'26"W 14.71'
PATRICIA W. SIMMONS 0 COFFEY ST. DB/PG 12-E/3602 ZONING: RURAL TRANSITION PIN: 1734-96-2197 1.35 AC. (DEED) USE: VACANT
EX. POND
EX. BUILDINGS
EX. GRAVEL DRIVE
EX. BUILDING
EX. BUILDING
EX. 12' ACCESS EASEMENT (DB 2192, PG 343)
EX. WALLS
EX. WALL
EX. GRAVEL DRIVE
N77°13'58"W 120.59'
EX. CONCRETE DRIVE
EX. BUILDING
S3°36'47"E 149.28'
S83°30'01"W 79.66'
N39°11'54"E 126.98'
243.00'
N39°45'16"E 190.55'
S49°16'44"E 180.00'
N14°23'47"W 74.85'
232.52'
N87°27'12"E
EX. BUILDINGS
EX. GRAVEL DRIVE
EX. BUILDINGS
EX. BUILDINGS
EX. BUILDINGS



SITE DATA TABLE

SITE ACREAGE:	54.13 ACRES
EXISTING ZONING:	RT (RURAL TRANSITION)
PROPOSED ZONING:	MI-PUD (MANUFACTURING & INDUSTRIAL - PLANNED UNIT DEVELOPMENT)
OVERLAY DISTRICT:	NONE
EXISTING LAND USE:	SINGLE FAMILY
PROPOSED LAND USE:	MANUFACTURING, LIGHT (UDO 5.7.B) RESEARCH AND DEVELOPMENT (UDO 5.7E) STORAGE - WAREHOUSE, INDOOR STORAGE (UDO 5.7G) WHOLESALING AND DISTRIBUTION (UDO 5.7H) BREWERY/WINERY/DISTILLERY (UDO 3.1.C.6) LABORATORY - MEDICAL, ANALYTICAL, RESEARCH & DEVELOPMENT (UDO 3.1.C.6)
WATERSHED:	LOWER NEUSE
PROPOSED NO. BUILDINGS:	2
BUILDING #1 AREA:	221,000 SF
BUILDING #2 AREA:	286,000 SF
TOTAL BUILDING AREA:	507,000 SF
PHASING:	NONE
FRONT SETBACK (MIN.) **:	50 FT
SIDE SETBACK (MIN.) **:	50 FT
REAR SETBACK (MIN.) **:	50 FT

** IF ADJACENT TO RESIDENTIAL DISTRICT, 100 FEET.

REQUIRED RECREATION OPEN SPACE: 0 SF
PROVIDED RECREATION OPEN SPACE: 0 SF

PARKING CALCULATIONS

USE TYPE: MANUFACTURING, LIGHT

MAXIMUM NO. OF PARKING SPACES: 1.5 PER KSF GFA

MINIMUM NO. OF PARKING SPACES: 0.5 X MAXIMUM

**KSF = 1,000 SF; GFA = GROSS FLOOR AREA

BUILDING NO.	GFA (SF)	MAX. SPACES	MIN. SPACES	AUTO SPACES PROVIDED
1	221,000	331	166	200
2	286,000	429	215	248

ELECTRIC VEHICLE REQUIREMENTS: 1 PER 40 SPACES = 11 SPACES
OF CHARGING STATIONS/DEDICATED SPACES PROVIDED: 11 SPACES

BICYCLE PARKING REQUIRED: 1 PER 10 PARKING SPACES = 45 SPACES
BICYCLE PARKING PROVIDED: 46 SPACES

TOWN OF KNIGHTDALE WATER ALLOCATION POLICY

TOWN OF KNIGHTDALE WATER ALLOCATION POLICY CALCULATIONS ARE SHOWN BELOW:

PROPOSED MANUFACTURING/INDUSTRIAL EMPLOYMENT CENTER - 507,000 SF

MANUFACTURING/INDUSTRIAL EMPLOYMENT CENTER
POINTS EARNED: 70 BASE POINTS

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmoyne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
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PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
tel. 704.597.7757
fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 - Wake County

KNIGHTDALE GATEWAY
MASTER PLAN
FOR
BEACON PARTNERS
OVERALL SITE PLAN

PRELIMINARY
NOT FOR CONSTRUCTION
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 DAVID S. WHITACRE
08/01/2022

Issue Dates:
05/23/2021 - Master Plan Submittal #1
06/23/2022 - Master Plan Submittal #2
08/01/2022 - Master Plan Submittal #3

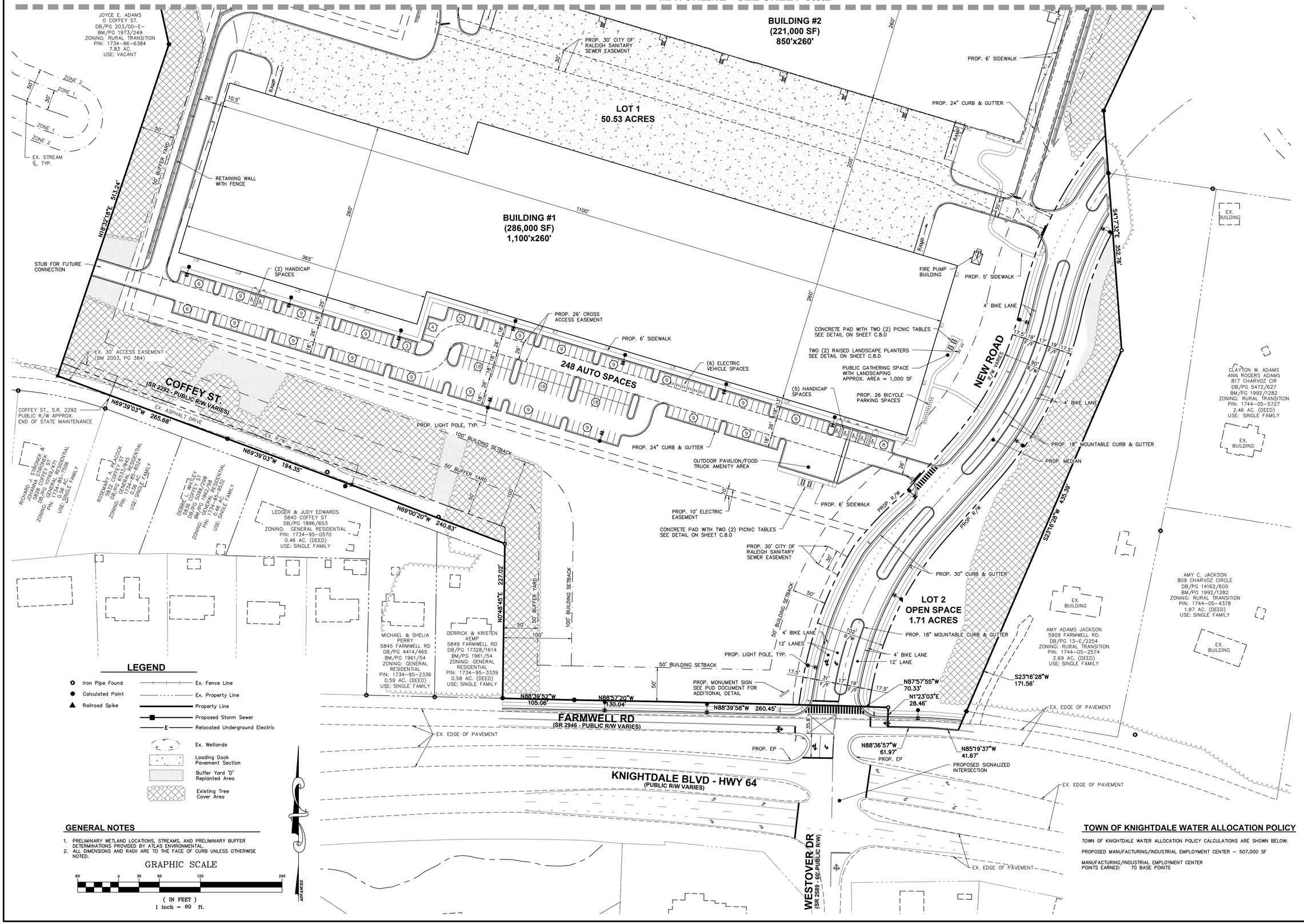
Date: 08/01/2022
Scale: 1" = 100'

Drawn By: JRR
Checked By: JDW

Project Number: 21-0011-504

Drawing Number: C.3.0

O:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC OVERALL SITE PLAN.dwg OVERALL SITE Jul 29, 2022 - 9:08:26am froyal



PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

SITE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 DAVID W. WHITACRE
PRELIMINARY NOT FOR CONSTRUCTION
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By: JRR
Checked By: JDW

Project Number: 21-0011-504

Drawing Number: C.3.1

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GENERAL NOTES

1. PRELIMINARY WETLAND LOCATIONS, STREAMS, AND PRELIMINARY BUFFER DETERMINATIONS PROVIDED BY ATLAS ENVIRONMENTAL.
2. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

LEGEND

- Iron Pipe Found
- Calculated Point
- Railroad Spike
- Ex. Fence Line
- Ex. Property Line
- Property Line
- Proposed Storm Sewer
- E — Relocated Underground Electric
- Ex. Wetlands
- Loading Dock Pavement Section
- Buffer Yard 'D' Replanted Area
- Existing Tree Cover Area

EX. 60' ACCESS EASEMENT (DB 18857, PG 429)

X(FUTURE)

EX. WETLAND LIMITS SEE NOTE 1

PATRICK H. SIMMONS
1304 OLD MULBURNIE RD
DB/PG 17050/1486
ZONING: RURAL TRANSITION
PIN: 1734-87-3051
7.00 AC. (DEED)
USE: AGRICULTURE

N52°41'01"E 76.90'

S53°19'57"E 158.25'

N29°46'50"E 73.48'

N82°06'50"E 132.30'

EX. 30' ELECTRIC EASEMENT (DB 2192, PG 343)

EX. OVERHEAD ELECTRIC

EX. 40' SANITARY SEWER EASEMENT (DB 12788, PG 1065)

S72°04'59"E 309.75'

EX. WETLAND LIMITS SEE NOTE 1

EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)

100-YEAR FLOODPLAIN (EFFECTIVE)

PROP. 10' ELECTRIC EASEMENT

S72°05'03"E 526.16'

100' BUILDING SETBACK

50' BUFFER YARD

PROP. SCM ACCESS AND MAINTENANCE EASEMENT

PROP. 12 BICYCLE PARKING SPACES

WET POND

PROP. 30' CITY OF RALEIGH SANITARY SEWER EASEMENT

PUBLIC GATHERING SPACE WITH LANDSCAPING APPROX. AREA = 1,000 SF

TWO (2) RAISED LANDSCAPE PLANTERS SEE DETAIL ON SHEET C.8.0

5' SIDEWALK

CONCRETE PAD WITH TWO (2) PICNIC TABLES SEE DETAIL ON SHEET C.8.0

EX. WETLAND LIMITS SEE NOTE 1

EX. PERENNIAL STREAM SEE NOTE 1

EX. STREAM ℄

RETAINING WALL WITH FENCE

N12°25'58"W 750.06'

50' BUFFER YARD

100' BUILDING SETBACK

ZONE 1

ZONE 2

EAM

EX. WETLAND LIMITS SEE NOTE 1

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

N19°52'18"E 513.24'

RETAINING WALL WITH FENCE

MILBURNIE FISHING CLUB
1308 OLD MULBURNIE RD
DB/PG 2819/749
PIN: 1734-97-7564
46.17 AC. (DEED)
USE: CLUB HSE

EX. WETLAND LIMITS SEE NOTE 1

EX. PERENNIAL STREAM SEE NOTE 1

N23°54'04"E 109.94'

N33°14'34"E 259.75'

S84°52'57"E 229.48'

EX. WETLAND LIMITS SEE NOTE 1

EX. 40' SANITARY SEWER EASEMENT (DB 11676, PG 39)

S18°55'40"E 211.45'

S47°23'42"E 218.85'

S21°01'43"W 22.95'

EX. POND TO REMAIN

S25°16'03"W 691.88'

EX. PERENNIAL STREAM SEE NOTE 1

EX. WETLAND LIMITS SEE NOTE 1

WILLIAM WADE ADAMS
829 CHARVOZ CIR
ZONING: RURAL TRANSITION
PIN: 1744-06-6227
17.12 AC. (DEED)
USE: VACANT

EX. BUILDING

S41°32'E

30 AUTO SPACES

170 AUTO SPACES

850'

(2) HANDICAP SPACES

PROP. 6' SIDEWALK

PROP. 24" CURB & GUTTER

PROP. 20' SCM ACCESS & MAINTENANCE EASEMENT

(5) ELECTRIC VEHICLE SPACES

LIGHT POLE, TYP.

(4) HANDICAP SPACES

PROP. 8 BICYCLE PARKING SPACES

PROP. 6' SIDEWALK

PROP. 24" CURB & GUTTER

PROP. 30' CITY OF RALEIGH SANITARY SEWER EASEMENT

RAMP

BUILDING #2
(221,000 SF)
850'x260'

LOT 1
50.53 ACRES

BUILDING #1
(286,000 SF)
1,100'x260'

1100'

260'

200'

MATCHLINE - SEE SHEET C.3.1

PLAN PREPARED BY:
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PLAN PREPARED FOR:

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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

SITE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030 JAMES D. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:	
05/23/2021	Master Plan Submittal #1
06/23/2022	Master Plan Submittal #2
08/01/2022	Master Plan Submittal #3

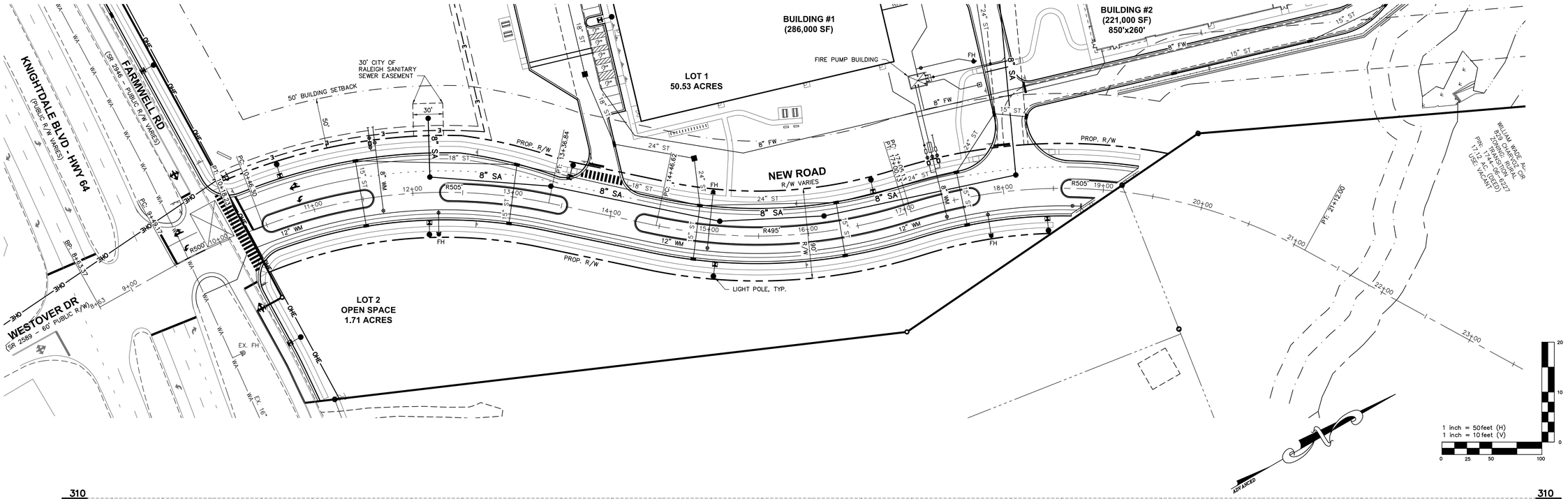
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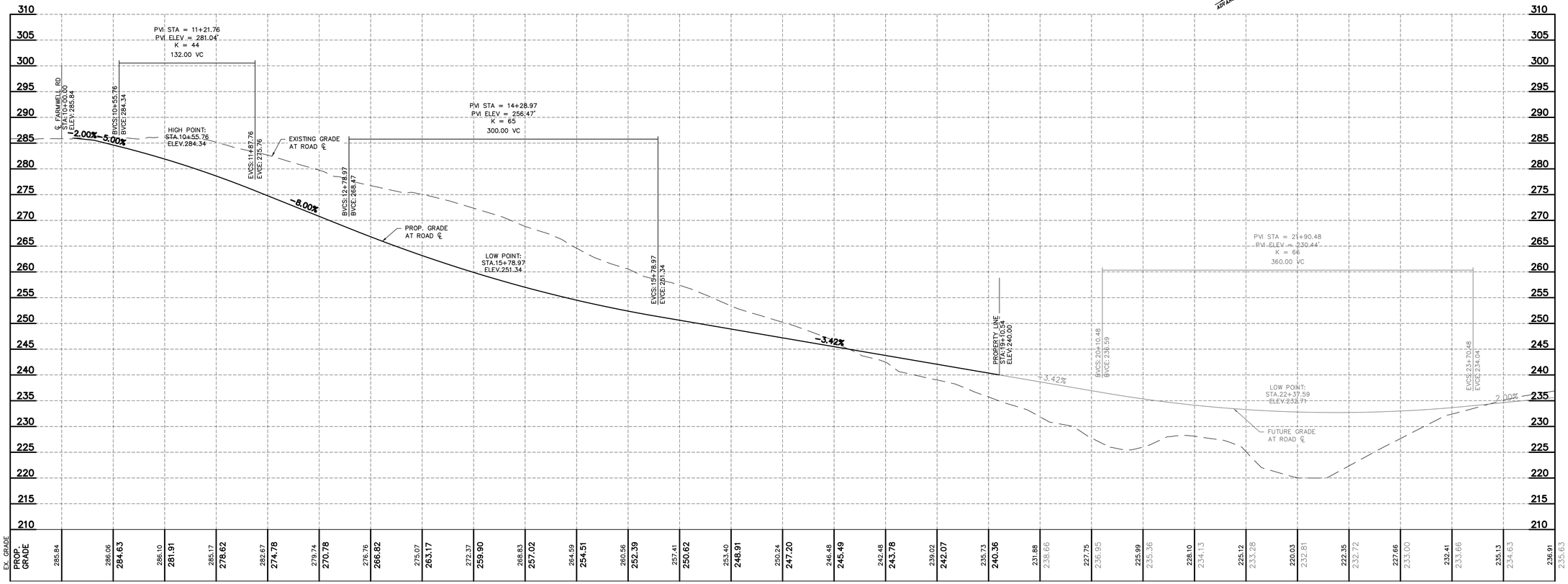
Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.3.2

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PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

NEW ROAD PLAN & PROFILE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047780 DAVID W. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: H: 1"=50'; V: 1"=10'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21–0011–504

Drawing Number:
C.3.3

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MATCHLINE - SEE SHEET C.3.5

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

ZONE 2
ZONE 1
50'
30'
ZONE 1
ZONE 2
EX. STREAM
℄, TYP.

BUILDING #2
(221,000 SF)
850'x260'

LOT 1
50.53 ACRES

BUILDING #1
(286,000 SF)
1,100'x260'

N18°32'18"E 513.24'
100'
50'
50' BUFFER YARD
RETAINING WALL
100' BUILDING SETBACK

TYPE 3 END OF ROAD BARRICADES
EX. BUILDING
S41°37'37"E 352.76'

NEW ROAD
R/W VARIES

CLAYTON W. ADAMS
ANN ROGERS ADAMS
817 CHARVOZ CIR
DB/PG 5472/627
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-5727
2.46 AC. (DEED)
USE: SINGLE FAMILY

EX. 30' ACCESS EASEMENT
(BM 2003, PG 384)

COFFEY ST.
(SR 2292 - PUBLIC R/W VARIES)

COFFEY ST., S.R. 2292
PUBLIC R/W APPROX.
END OF STATE MAINTENANCE

EX. ASPHALT DRIVE
EX. R/W
N69°39'03"W 265.68'
N69°39'03"W 194.35'
N69°00'20"W 240.83'
100' BUILDING SETBACK
50' BUFFER YARD
50'
100'

RICHARD J. STRONKS &
SABRINA COFFEY STRONKS
5836 COFFEY ST
DB/PG 01687/0473
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-7506
0.46 AC.
USE: SINGLE FAMILY

ROSEMARY A. PEACOCK
5833 COFFEY ST
DB/PG 05533/1845
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-8524
0.46 AC.
USE: SINGLE FAMILY

DEBBIE L. WHITLEY
5838 COFFEY ST
DB/PG 03889/0298
BM/PG 1981/0798
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-9512
0.46 AC.
USE: SINGLE FAMILY

LEDGER & JUDY EDWARDS
5840 COFFEY ST
DB/PG 1896/603
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0570
0.46 AC. (DEED)
USE: SINGLE FAMILY

MICHAEL & SHELIA PERRY
5845 FARMWELL RD
DB/PG 4414/465
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-2336
0.59 AC. (DEED)
USE: SINGLE FAMILY

DERRICK & KRISTEN KEMP
5849 FARMWELL RD
DB/PG 17328/1614
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-3339
0.58 AC. (DEED)
USE: SINGLE FAMILY

N0°48'45"E 227.02'
50'
100'
50' BUFFER YARD
100' BUILDING SETBACK

PROP. R/W
PROP. R/W
S23°16'28"W 435.39'
50' BUILDING SETBACK

LOT 2
OPEN SPACE
1.71 ACRES

EX. BUILDING
AMY C. JACKSON
809 CHARVOZ CIRCLE
DB/PG 14162/600
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-4378
1.97 AC. (DEED)
USE: SINGLE FAMILY

EX. BUILDING
AMY ADAMS JACKSON
5909 FARMWELL RD.
DB/PG 13-E/2254
ZONING: RURAL TRANSITION
PIN: 1744-05-2574
2.69 AC. (DEED)
USE: SINGLE FAMILY

EX. BUILDING

50' BUILDING SETBACK
50'
PROP. MONUMENT SIGN
SEE PUD DOCUMENT FOR
ADDITIONAL DETAIL
RELOCATE EXISTING SIGN

N88°39'52"W 105.06'
N88°57'20"W 130.04'
N88°39'58"W 260.45'
N87°57'55"W 70.33'
S23°16'28"W 171.56'
N1°23'03"E 28.46'

FARMWELL RD
(SR 2946 - PUBLIC R/W VARIES)

4" WHITE LINE DO NOT BLOCK
INTERSECTION STRIPING
N88°36'57"W 61.97'
N85°19'37"W 41.67'
35.4'
EX. STRIPING
EX. STRIPING
PROPOSED SIGNALIZED
INTERSECTION

KNIGHTDALE BLVD - HWY 64
(PUBLIC R/W VARIES)

WESTOVER DR
(SR 2589 - 60' PUBLIC R/W)

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

SIGNAGE & STRIPING LEGEND

1. 24" STOP BAR LINE
2. 24" WHITE HIGH VISIBILITY CROSSWALK LINE
3. 8" WHITE CROSSWALK LINE
4. 4" WHITE PARKING STALL LINE
5. 96" STRAIGHT & RIGHT TURN ARROW
6. 96" LEFT TURN ARROW
7. 4" WHITE EDGE LINE
8. 4" WHITE DOTTED LINE
9. 4" DOUBLE YELLOW LINE
10. 96" STRAIGHT, RIGHT, AND LEFT TURN ARROW

A — STOP — R1-1 (30" X 30")

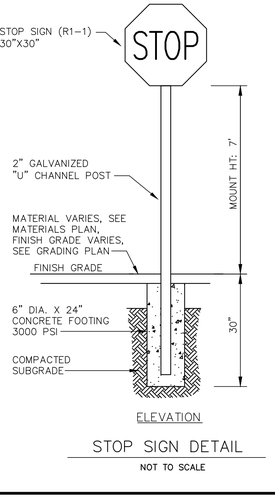
B — RESERVED PARKING / MAXIMUM PENALTY $250 / VAN ACCESSIBLE — R7-8A (12" X 26")

C — NO PARKING FIRE LANE — R7-H10 (12" X 18")

D — DO NOT BLOCK INTERSECTION — R10-7 (24" X 30")

NOTES:

1. SIGN SHOULD BE LABELED PER PART 2 OF THE 2009 MUTCD MANUAL. SIGN POSTS AND MOUNTING HEIGHTS SHALL BE PER PART 2 OF THE 2009 MUTCD MANUAL.
2. ALL SIGNS SHALL HAVE REFLECTIVE SHEETING IN ACCORDANCE WITH ASTM D4956-09 WHICH MEETS MUTCD'S NEW SIGN RETROREFLECTIVITY REQUIREMENTS



ELEVATION

STOP SIGN DETAIL

NOT TO SCALE

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
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KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

SIGNAGE AND MARKING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038180 JAMES D WHITACRE
PRELIMINARY NOT FOR CONSTRUCTION
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By: JRR
Checked By: JDW

Project Number: 21-0011-504

Drawing Number: C.3.4

O:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC SIGNAGE AND MARKING PLAN.dwg SIGNAGE 1 Jul 29, 2022 - 9:09:22am jroyal

SIGNAGE & STRIPING LEGEND

1. 24" STOP BAR LINE
2. 24" WHITE HIGH VISIBILITY CROSSWALK LINE
3. 8" WHITE CROSSWALK LINE
4. 4" WHITE PARKING STALL LINE
5. 96" STRAIGHT & RIGHT TURN ARROW
6. 96" LEFT TURN ARROW
7. 4" WHITE EDGE LINE
8. 4" WHITE DOTTED LINE
9. 4" DOUBLE YELLOW LINE
10. 96" STRAIGHT, RIGHT, AND LEFT TURN ARROW

A — STOP — R1-1 (30" X 30")

B — RESERVED PARKING / MAXIMUM PENALTY $250 / VAN ACCESSIBLE — R7-8A (12" X 26")

C — NO PARKING FIRE LANE — R7-H10 (12" X 18")

D — DO NOT BLOCK INTERSECTION — R10-7 (24" X 30")

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

EX. 60' ACCESS EASEMENT (DB 18857, PG 429)

EX. WETLAND LIMITS SEE NOTE 1

X(FUTURE)

PATRICK H. SIMMONS
1304 OLD MULBURNIE RD
DB/PG 17050/1486
ZONING: RURAL TRANSITION
PIN: 1734-87-3051
7.00 AC. (DEED)
USE: AGRICULTURE

N52°41'01"E 76.90'

S53°19'57"E 158.25'

N29°46'50"E 73.48'

N82°06'50"E 132.30'

EX. 30' ELECTRIC EASEMENT (DB 2192, PG 343)

EX. 40' SANITARY SEWER EASEMENT (DB 12788, PG 1065)

EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)

100-YEAR FLOODPLAIN (EFFECTIVE)

S72°04'59"E 309.75'

S72°05'03"E 526.16'

MILBURNIE FISHING CLUB
1308 OLD MULBURNIE RD
DB/PG 2819/749
PIN: 1734-97-7564
46.17 AC. (DEED)
USE: CLUB HSE

N23°54'04"E 169.94'

N33°14'34"E 259.75'

S84°52'57"E 229.48'

S18°55'40"E 211.45'

S47°23'42"E 218.65'

S21°01'43"W 22.95'

EX. 40' SANITARY SEWER EASEMENT (DB 11676, PG 39)

WET POND

RETAINING WALL

EX. POND TO REMAIN

EX. STREAM ℄

50' BUFFER YARD

100' BUILDING SETBACK

ZONE 1

ZONE 2

S23°16'03"W 687.98'

N12°25'56"W 750.06'

N18°32'18"E 513.24'

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

WILLIAM WADE ADAMS
829 CHARVOZ CIR
ZONING: RURAL TRANSITION
PIN: 1744-06-6227
17.12 AC. (DEED)
USE: VACANT

BUILDING #2
(221,000 SF)
850'x260'

LOT 1
50.53 ACRES

BUILDING #1
(286,000 SF)
1,100'x260'

TYPE 3 END OF ROAD BARRICADES

EX. BUILDING

S41°17'32"E 35

MATCHLINE - SEE SHEET C.3.4

PLAN PREPARED BY:

ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS

51 Kilmayne Drive, Suite 102
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PLAN PREPARED FOR:

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500 East Morehead St.
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fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN
FOR
BEACON PARTNERS

SIGNAGE AND MARKING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER JAMES D. WHITACRE 037180

PRELIMINARY

08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

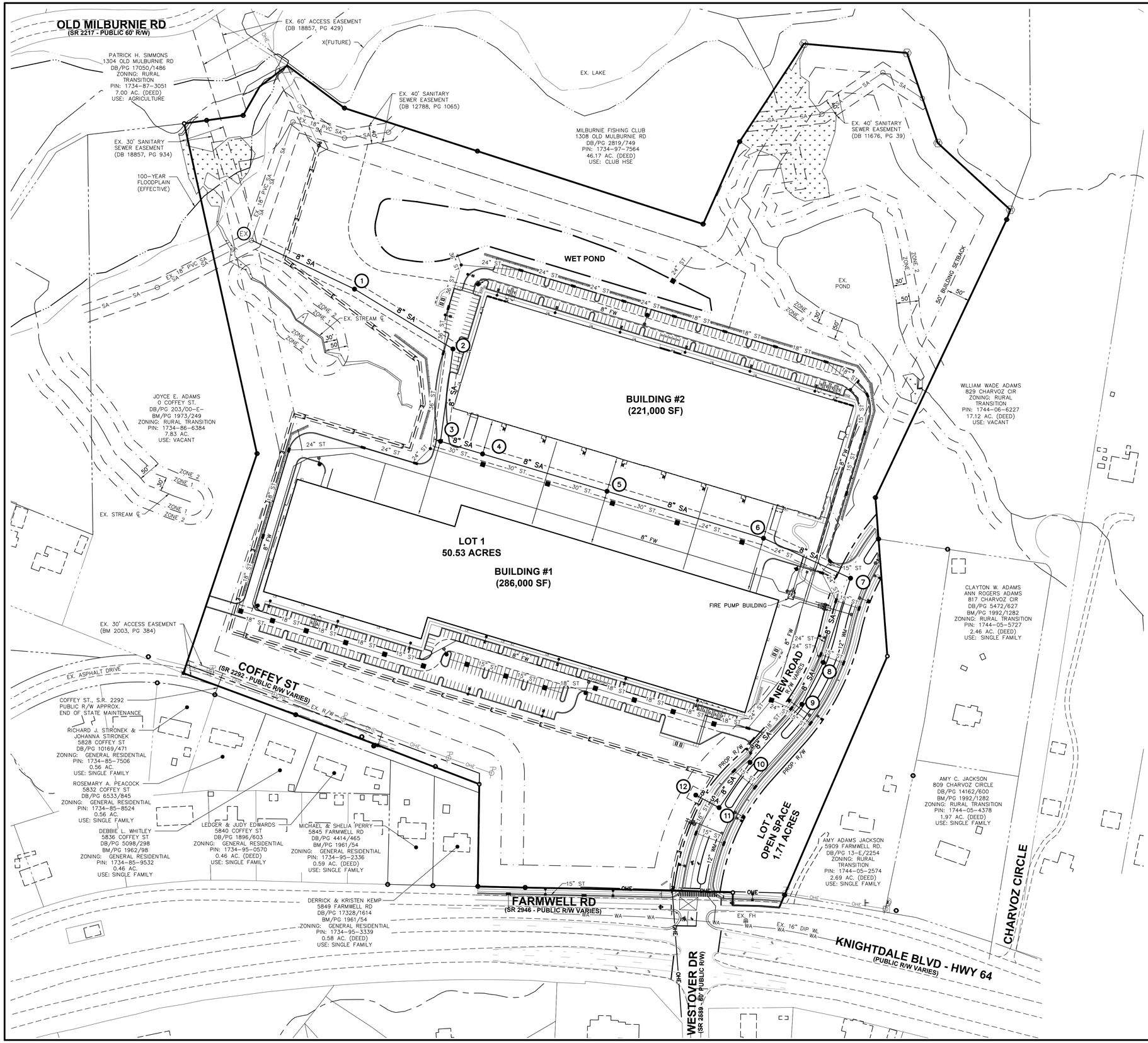
Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.3.5

C:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC SIGNAGE AND MARKING PLAN.dwg SIGNAGE 2 Jul 29, 2022 - 9:09:33am jroyal



TOWN OF KNIGHTDALE WATER ALLOCATION POLICY

TOWN OF KNIGHTDALE WATER ALLOCATION POLICY CALCULATIONS ARE SHOWN BELOW:

PROPOSED MANUFACTURING/INDUSTRIAL EMPLOYMENT CENTER – 507,000 SF

MANUFACTURING/INDUSTRIAL EMPLOYMENT CENTER
POINTS EARNED: 70 BASE POINTS

WATER & SEWER

1. CONTRACTOR SHALL VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF EXISTING PUBLIC UTILITIES PRIOR TO ANY EXCAVATIONS, GRADING, OR INSTALLATION OF UNDERGROUND UTILITIES ON OR ADJACENT TO THE PROJECT.
2. BUILDING WILL BE CONNECTED TO THE CITY OF RALEIGH WATER AND SANITARY SEWER SYSTEMS.
3. ALL SANITARY SEWER AND WATER LOCATED OUTSIDE THE PROPOSED STREET RIGHT-OF-WAY SHALL PROVIDED WITH STANDARD EASEMENT WIDTHS AS PER CITY OF RALEIGH REQUIREMENTS AND SHALL DEDICATED TO THE CITY OF RALEIGH ON THE FINAL PLAT.
4. NO SERVICES SHALL BE BENT OR INSTALLED IN SUCH A WAY THAT DOES NOT COMPLY WITH CITY STANDARDS.

STANDARD UTILITY NOTES (AS APPLICABLE)

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION).
2. UTILITY SEPARATION REQUIREMENTS:
   a) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS, HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
   b) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18' ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER
   c) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS
   d) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER
   e) MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49)
   f) ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED
3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
7. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2' X 2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
8. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. 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 TIM BEASLEY AT (919) 250-7825 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HELVEY AT (919) 212-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

LEGEND

- PROPOSED STORM SEWER (MH, CB, CGI)
- PROPOSED SANITARY SEWER (8" SAN, MH)
- PROPOSED WATER MAIN (8" WM, WV, FH)
- EXISTING STORM SEWER (MH, EX. 15" STM, CB, CGI)
- EXISTING SANITARY SEWER (EX. 8" SAN, SA, MH)
- EXISTING WATER MAIN (EX. 8" WM, WV, WA, FH)

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
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PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
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fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

OVERALL UTILITY PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047180 JAMES D WHITACRE
PRELIMINARY
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 100'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.4.0

O:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC OVERALL UTILITY PLAN.dwg OVERALL UTILITY PLAN Jul 29, 2022 - 9:09:47am jroyal

MATCHLINE - SEE SHEET C.4.2

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

BUILDING #2
(221,000 SF)
850'x260'

BUILDING #1
(286,000 SF)
1,100'x260'

LOT 1
50.53 ACRES

LOT 2
OPEN SPACE
1.71 ACRES

30' CITY OF RALEIGH SANITARY SEWER EASEMENT

PROP. RELOCATED UNDERGROUND ELECTRIC

RETAINING WALL

FIRE HYDRANT & VALVE

EX. 30' ACCESS EASEMENT (BM 2003, PG 384)

26' CROSS ACCESS EASEMENT

PROP. 10' ELECTRIC EASEMENT

COFFEY ST.
(SR 2292 - PUBLIC R/W VARIES)

COFFEY ST., S.R. 2292
PUBLIC R/W APPROX.
END OF STATE MAINTENANCE

EX. ASPHALT DRIVE

EX. R/W

100' BUILDING SETBACK

50' BUFFER YARD

NEW ROAD
R/W VARIES

PROP. R/W

3" DOMESTIC SERVICE

TEMPORARY BLOW OFF ASSEMBLY

1.5" IRRIGATION SERVICE

1.5" BACKFLOW PREVENTER

8" BACKFLOW PREVENTER

1.5" METER

FDC

8"X8" TEE

FIRE PUMP BUILDING

3"X3" TEE

3" INCREASER

2" BACKFLOW PREVENTER

2" METER

12"X8" TEE

8" WM

2" WATER METER

12"X8" TEE

16"X12" TAPPING SLEEVE & VALVE

PROP. RELOCATED UNDERGROUND ELECTRIC

50' BUILDING SETBACK

FARMWELL RD
(SR 2946 - PUBLIC R/W VARIES)

KNIGHTDALE BLVD - HWY 64
(PUBLIC R/W VARIES)

WESTOVER DR
(SR 2559 - 60' PUBLIC R/W)

RICHARD J. STRIBANCE & JOHANNA STRIBANCE
5828 COFFEY ST
DB/PG 016869/1457
ZONING: RURAL TRANSITION
PIN: 1734-85-7506
0.34 AC.
USE: SINGLE FAMILY

ROSEMARY A. PEACOCK
5838 COFFEY ST
DB/PG 6533/1
ZONING: RURAL TRANSITION
PIN: 1734-85-8524
0.14 AC.
USE: SINGLE FAMILY

DEBBIE L. WHITLEY
5836 COFFEY ST
BM/PG 2002/238
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-9532
0.46 AC.
USE: SINGLE FAMILY

LEDGER & JUDY EDWARDS
5840 COFFEY ST
DB/PG 1896/603
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0570
0.46 AC. (DEED)
USE: SINGLE FAMILY

MICHAEL & SHEILA PERRY
5845 FARMWELL RD
DB/PG 4414/465
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-2336
0.58 AC. (DEED)
USE: SINGLE FAMILY

DERRICK & KRISTEN KEMP
5849 FARMWELL RD
DB/PG 17328/1614
BM/PG 2016/164
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-1339
0.58 AC. (DEED)
USE: SINGLE FAMILY

CLAYTON W. ADAMS
ANN ROGERS ADAMS
817 CHARVOZ CIR
DB/PG 5472/627
BM/PG 1992/0
ZONING: RUR.BUILDING TRANSITION
PIN: 1744-05-5727
2.46 AC. (DEED)
USE: SINGLE FAMILY

AMY C. JACKSON
809 CHARVOZ CIRCLE
DB/PG 14162/600
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-4378
1.97 AC. (DEED)
USE: SINGLE FAMILY

AMY ADAMS JACKSON
5909 FARMWELL RD.
DB/PG 13-E/2254
ZONING: RURAL TRANSITION
PIN: 1744-05-2574
2.69 AC. (DEED)
USE: SINGLE FAMILY

LEGEND

- PROPOSED STORM SEWER (MH, CB, CO)
- PROPOSED SANITARY SEWER (8" SAN, MH)
- PROPOSED WATER MAIN (8" WM, WV, FH)
- EXISTING STORM SEWER (EX. 15" STM, MH, ST, CB, CO)
- EXISTING SANITARY SEWER (EX. 8" SAN, MH, SA)
- EXISTING WATER MAIN (EX. 8" WM, WV, WA, FH)

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

ADVANCED

O:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC UTILITY PLAN.dwg UTILITY 1 Jul 29, 2022 - 9:10:02am royal

PLAN PREPARED BY:

ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
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PLAN PREPARED FOR:

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5901 Farmwell Road, Knightdale, NC 27610 - Wake County

KNIGHTDALE GATEWAY

MASTER PLAN
FOR
BEACON PARTNERS

UTILITY PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038180 DAVID WHITACRE

PRELIMINARY NOT FOR CONSTRUCTION

08/01/2022

Issue Dates:
- 05/23/2021 - Master Plan Submittal #1
- 06/23/2022 - Master Plan Submittal #2
- 08/01/2022 - Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.4.1

LEGEND

- PROPOSED STORM SEWER (MH, CB, CGI)
- PROPOSED SANITARY SEWER (8" SAN, MH)
- PROPOSED WATER MAIN (8" WM, WV, FH)
- EXISTING STORM SEWER (MH, EX. 15" STM, ST, CB, CGI)
- EXISTING SANITARY SEWER (EX. 8" SAN, MH, SA)
- EXISTING WATER MAIN (EX. 8" WM, WV, WA, FH)

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

EX. 60' ACCESS EASEMENT (DB 18857, PG 429)

X(FUTURE)

EX. 30' ELECTRIC EASEMENT (DB 2192, PG 343)

PATRICK H. SIMMONS
1304 OLD MULBURNIE RD
DB/PG 17050/1486
ZONING: RURAL TRANSITION
PIN: 1734-87-3051
7.00 AC. (DEED)
USE: AGRICULTURE

EX. OVERHEAD ELECTRIC

EX. 40' SANITARY SEWER EASEMENT (DB 12788, PG 1065)

EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)

100-YEAR FLOODPLAIN (EFFECTIVE)

50' BUFFER YARD

100' BUILDING SETBACK

PROP. 10' ELECTRIC EASEMENT

PROP. RELOCATED UNDERGROUND ELECTRIC

MILBURNIE FISHING CLUB
1308 OLD MULBURNIE RD
DB/PG 2819/749
PIN: 1734-97-7564
46.17 AC. (DEED)
USE: CLUB HSE

SCM ACCESS & MAINTENANCE EASEMENT

WET POND

RETAINING WALL

FIRE HYDRANT & VALVE

8"X6" REDUCER

8" FW

20' SCM ACCESS & MAINTENANCE EASEMENT

EX. 40' SANITARY SEWER EASEMENT (DB 11676, PG 39)

EX. POND TO REMAIN

30' CITY OF RALEIGH SANITARY SEWER EASEMENT

EX. STREAM

ZONE 1 (50')
ZONE 2 (30')

LOT 1
50.53 ACRES

BUILDING #2
(221,000 SF)
850'x260'

BUILDING #1
(286,000 SF)
1,100'x260'

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

WILLIAM WADE ADAMS
829 CHARVOZ CIR
ZONING: RURAL TRANSITION
PIN: 1744-06-6227
17.12 AC. (DEED)
USE: VACANT

PROP. R/W

3" DOMESTIC SERVICE

TEMPORARY BLOW OFF ASSEMBLY

1.5" IRRIGATION SERVICE
1.5" BACKFLOW PREVENTER
8" BACKFLOW PREVENTER

FDC

MATCHLINE - SEE SHEET C.4.1

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KNIGHTDALE GATEWAY

MASTER PLAN FOR BEACON PARTNERS

UTILITY PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 JAMES D. WHITTACRE
PRELIMINARY
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

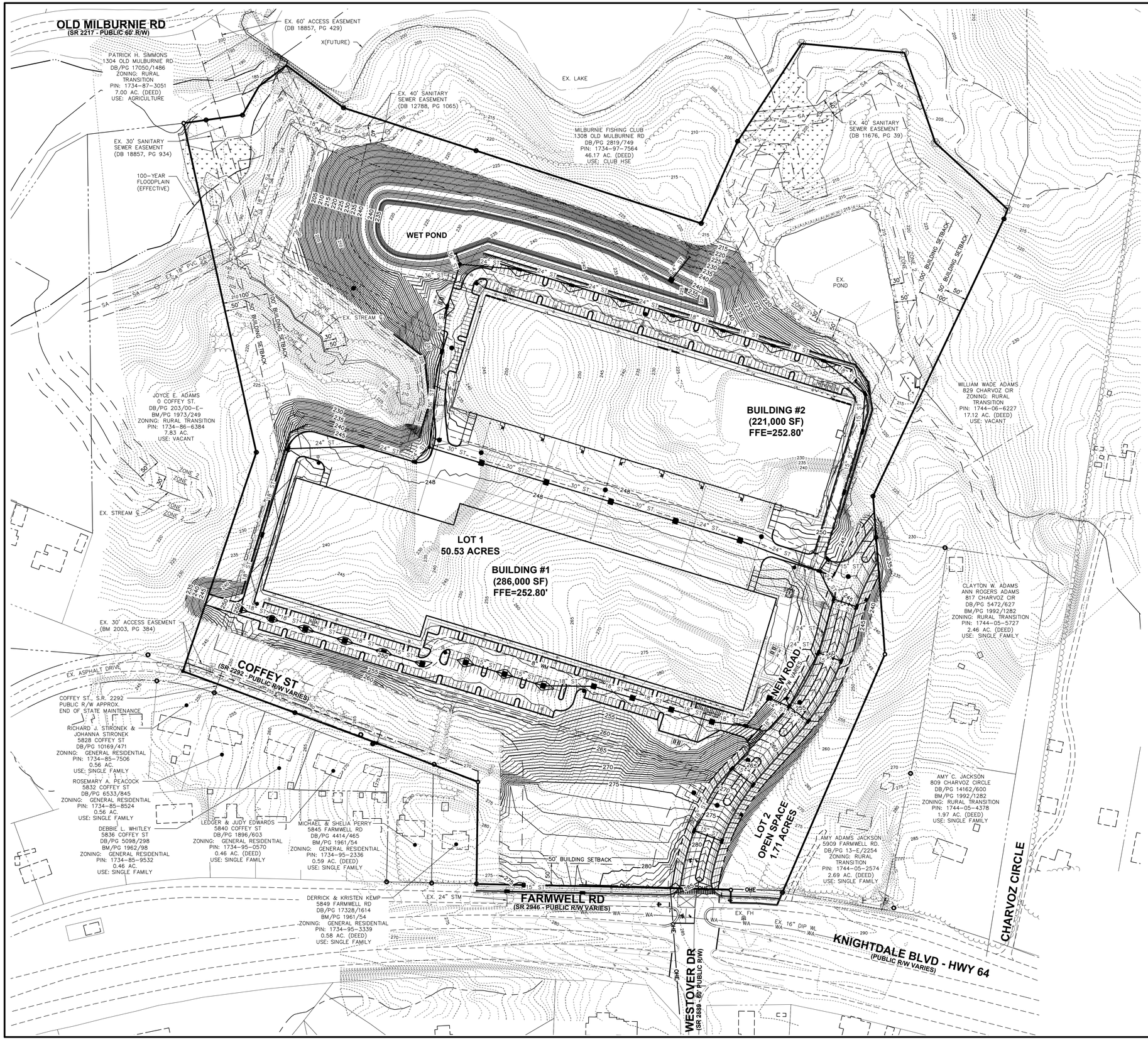
Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.4.2

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GENERAL NOTES

1. PRELIMINARY WETLAND LOCATIONS, STREAMS, AND PRELIMINARY BUFFER DETERMINATIONS PROVIDED BY ATLAS ENVIRONMENTAL.
2. NO HISTORIC BUILDING OBSERVED ON THE SITE.
3. NO FREE STANDING OR OPEN-GROWN OR FIELD GROWN TREES OBSERVED.
4. BASED ON FIELD OBSERVATIONS AND THE REVIEW OF AVAILABLE DATA, PROTECTED SPECIES WERE NOT IDENTIFIED TO LIKELY OCCUR ON THE SITE.
5. SITE IS HEAVILY WOODED WITH A MIXTURE OF PINES, HARDWOODS, AND UNDERSTORY VEGETATION.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY A SMALL PORTION OF THIS PROPERTY IS LOCATED IN THE 100 YEAR FLOOD PLAIN AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS NO. 3720173400J AND MAP NO. 3720174400J WITH EFFECTIVE DATE OF MAY 2, 2006, IN WAKE COUNTY NORTH CAROLINA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

LEGEND

- Iron Pipe Found
- Calculated Point
- Railroad Spike
- Electric Power Pole
- Fire Hydrant
- Ex. Wetlands
- Dense Vegetation
- WA — WA — Ex. Water Line
- ST — ST — Ex. Storm Sewer
- SA — SA — Ex. Sanitary Sewer
- Ex. Fence Line
- OHE — Ex. Overhead Electric Line
- Ex. Property Line
- Right of Way
- Property Line
- LOD — Limits of Disturbance

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
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KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

OVERALL GRADING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049180 JAMES D. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:	
05/23/2021 – Master Plan Submittal #1	
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08/01/2022 – Master Plan Submittal #3	

Date: 08/01/2022
Scale: 1" = 100'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.5.0

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MATCHLINE - SEE SHEET C.5.2

BUILDING #1
(286,000 SF)
1,100'x260'
FFE=252.80'

LOT 1
50.53 ACRES

LOT 2
OPEN SPACE
1.71 ACRES

COFFEY ST.
(SR 2292 - PUBLIC R/W VARIES)

FARMWELL RD
(SR 2946 - PUBLIC R/W VARIES)

KNIGHTDALE BLVD - HWY 64
(PUBLIC R/W VARIES)

NEW ROAD
R/W VARIES

30' CITY OF RALEIGH SANITARY SEWER EASEMENT

EX. 30' ACCESS EASEMENT (BM 2003, PG 384)

26' CROSS ACCESS EASEMENT

LIMITS OF DISTURBANCE

100' BUILDING SETBACK

50' BUFFER YARD

50' BUILDING SETBACK

PROP. 10' ELECTRIC EASEMENT

COFFEY ST., S.R. 2292
PUBLIC R/W APPROX.
END OF STATE MAINTENANCE

ROSEMARY A. PEACOCK
5833 COFFEY ST.
DB/PG 6513/845
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-8524
0.58 AC.
USE: SINGLE FAMILY

DEBBIE L. WHITLEY
5836 COFFEY ST
DB/PG 5098/198
BM/PG 1987/1988
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-9312
0.44 AC.
USE: SINGLE FAMILY

LEDGER & JUDY EDWARDS
5840 COFFEY ST
DB/PG 1896/603
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0570
0.46 AC. (DEED)
USE: SINGLE FAMILY

MICHAEL & SHELIA PERRY
5845 FARMWELL RD
DB/PG 14445/455
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-2336
0.59 AC. (DEED)
USE: SINGLE FAMILY

DERRICK & KRISTEN KEMP
5849 FARMWELL RD
DB/PG 17328/1614
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0339
0.58 AC. (DEED)
USE: SINGLE FAMILY

AMY ADAMS JACKSON
5909 FARMWELL RD.
DB/PG 13-E/2254
ZONING: RURAL TRANSITION
PIN: 1744-05-2574
2.69 AC. (DEED)
USE: SINGLE FAMILY

LEGEND

ST	Ex. Storm Line	8" WA	Prop. Water Line
SA	Ex. Sanitary Line	12" ST	Prop. Storm Sewer
WA	Ex. Water Line	8" SA	Prop. Sanitary Sewer
G	Ex. Gas Line	261	Ex. Minor Contour
OHE	Ex. Overhead Electric Line	260	Ex. Major Contour
	Ex. Property Line	261	Prop. Minor Contour
	Right of Way	260	Prop. Major Contour
	Property Line	TC 0.00	Top of Casting/Top of Curb Elevation
LOD	Limits of Disturbance	0.00	Pavement or Ground Elevation
	Ex. Wetlands	EX. 0.00	Existing Pavement or Ground Elevation
	Surface Flow Arrow		
DS	Down Spout		

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

O:\21-0011-504NC\DWG\Production Drawings\MASTER PLAN\0011-504NC GRADING AND DRAINAGE PLAN.dwg GRADING 1 Jul 29, 2022 - 9:19:14am jroyal

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
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PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
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Charlotte, North Carolina 28269
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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY
MASTER PLAN
FOR
BEACON PARTNERS
GRADING AND DRAINAGE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049780 JOSHUA D. WHITACRE
PRELIMINARY
08/01/2022

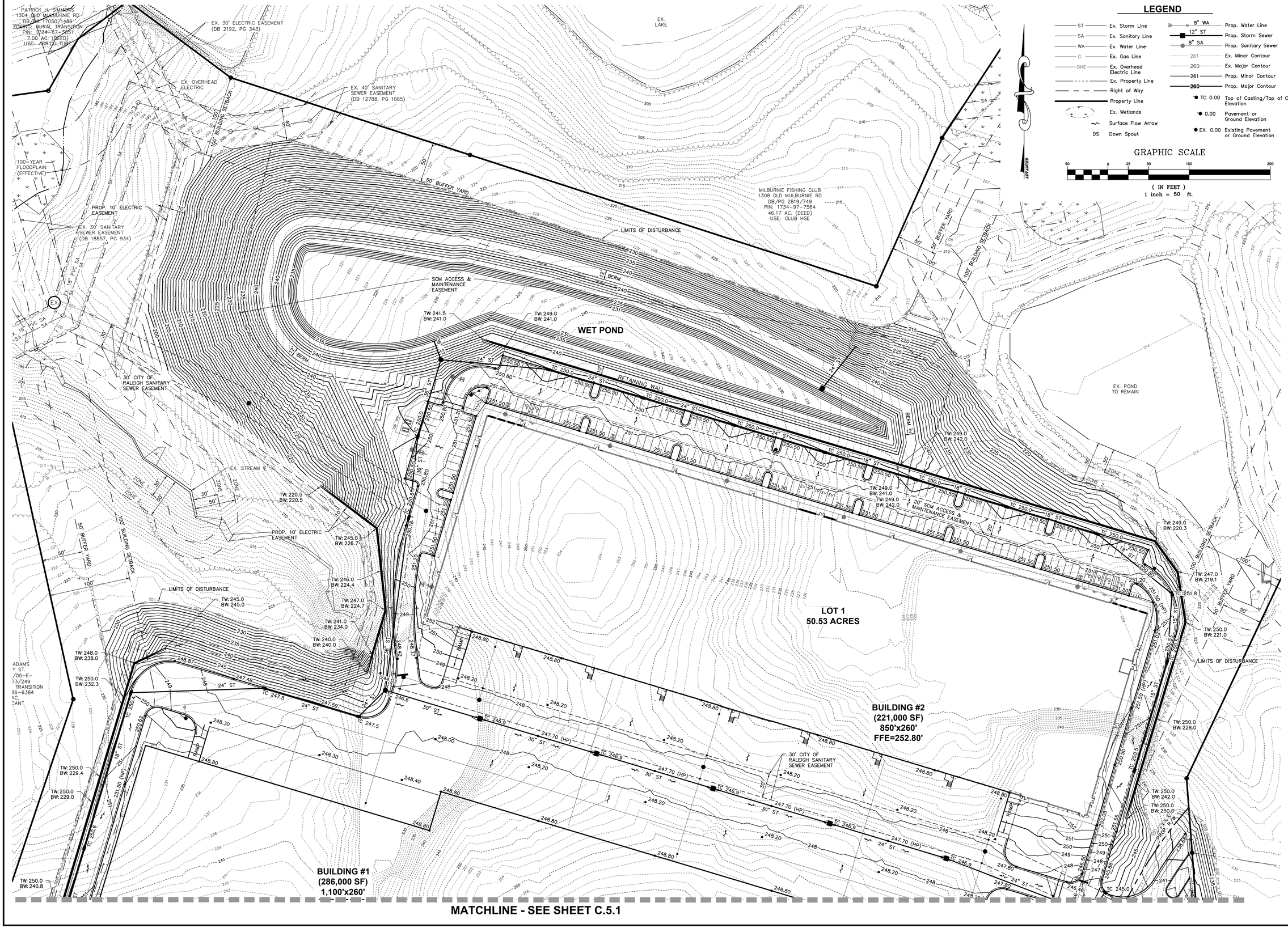
Issue	Dates:
Master Plan Submittal #1	05/23/2021
Master Plan Submittal #2	06/23/2022
Master Plan Submittal #3	08/01/2022

Date: 08/01/2022
Scale: 1" = 50'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.5.1



LEGEND

ST — Ex. Storm Line	8" WA — Prop. Water Line
SA — Ex. Sanitary Line	12" ST — Prop. Storm Sewer
WA — Ex. Water Line	8" SA — Prop. Sanitary Sewer
G — Ex. Gas Line	261 — Ex. Minor Contour
OHE — Ex. Overhead Electric Line	260 — Ex. Major Contour
Ex. Property Line	261 — Prop. Minor Contour
Right of Way	260 — Prop. Major Contour
Property Line	TC 0.00 — Top of Casting/Top of Curb Elevation
Ex. Wetlands	0.00 — Pavement or Ground Elevation
Surface Flow Arrow	EX. 0.00 — Existing Pavement or Ground Elevation
DS — Down Spout	

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

GRADING AND DRAINAGE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047780 JAMES D. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:
05/25/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

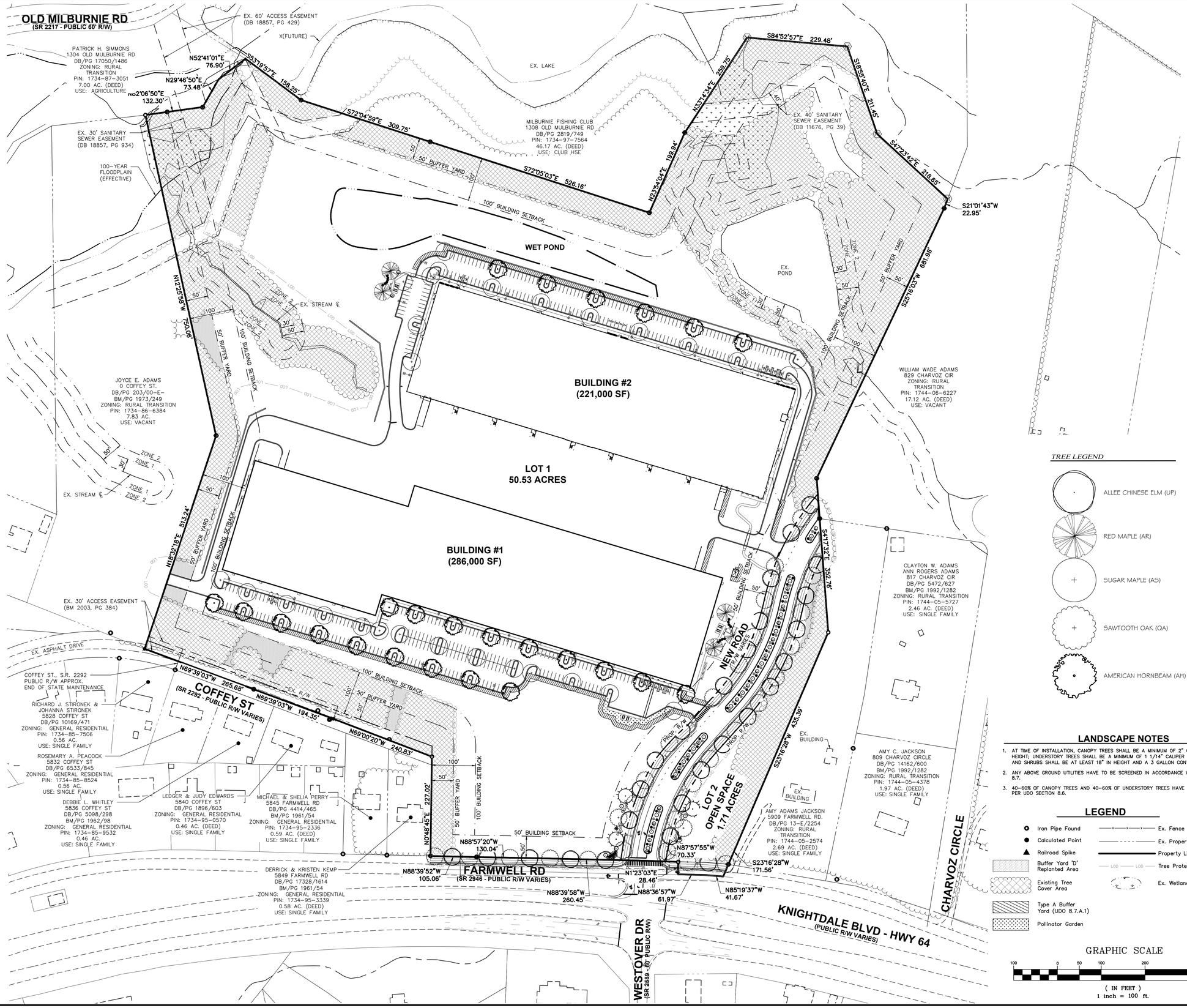
Date: 08/01/2022
Scale: 1" = 50'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21–0011–504

Drawing Number:
C.5.2

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TREE LEGEND

- ALLEE CHINESE ELM (UP)
- RED MAPLE (AR)
- SUGAR MAPLE (AS)
- SAWTOOTH OAK (QA)
- AMERICAN HORNBEAM (AH)

LANDSCAPE NOTES

1. AT TIME OF INSTALLATION, CANOPY TREES SHALL BE A MINIMUM OF 2" CALIPER AND 8' IN HEIGHT; UNDERSTORY TREES SHALL BE A MINIMUM OF 1 1/14" CALIPER AND 6' IN HEIGHT; AND SHRUBS SHALL BE AT LEAST 18" IN HEIGHT AND A 3 GALLON CONTAINER SIZE.
2. ANY ABOVE GROUND UTILITIES HAVE TO BE SCREENED IN ACCORDANCE WITH UDO SECTION 8.7.
3. 40-60% OF CANOPY TREES AND 40-60% OF UNDERSTORY TREES HAVE TO BE EVERGREEN PER UDO SECTION 8.6.

LEGEND

- Iron Pipe Found
- Calculated Point
- Railroad Spike
- Buffer Yard 'D' Replanted Area
- Existing Tree Cover Area
- Type A Buffer Yard (UDO 8.7.A.1)
- Pollinator Garden
- Ex. Fence Line
- Ex. Property Line
- Property Line
- Tree Protection Fence
- Ex. Wetlands

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PLAN PREPARED BY:
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KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

OVERALL LANDSCAPE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047180 DAVID J. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:	
05/23/2021 – Master Plan Submittal #1	
06/23/2022 – Master Plan Submittal #2	
08/01/2022 – Master Plan Submittal #3	

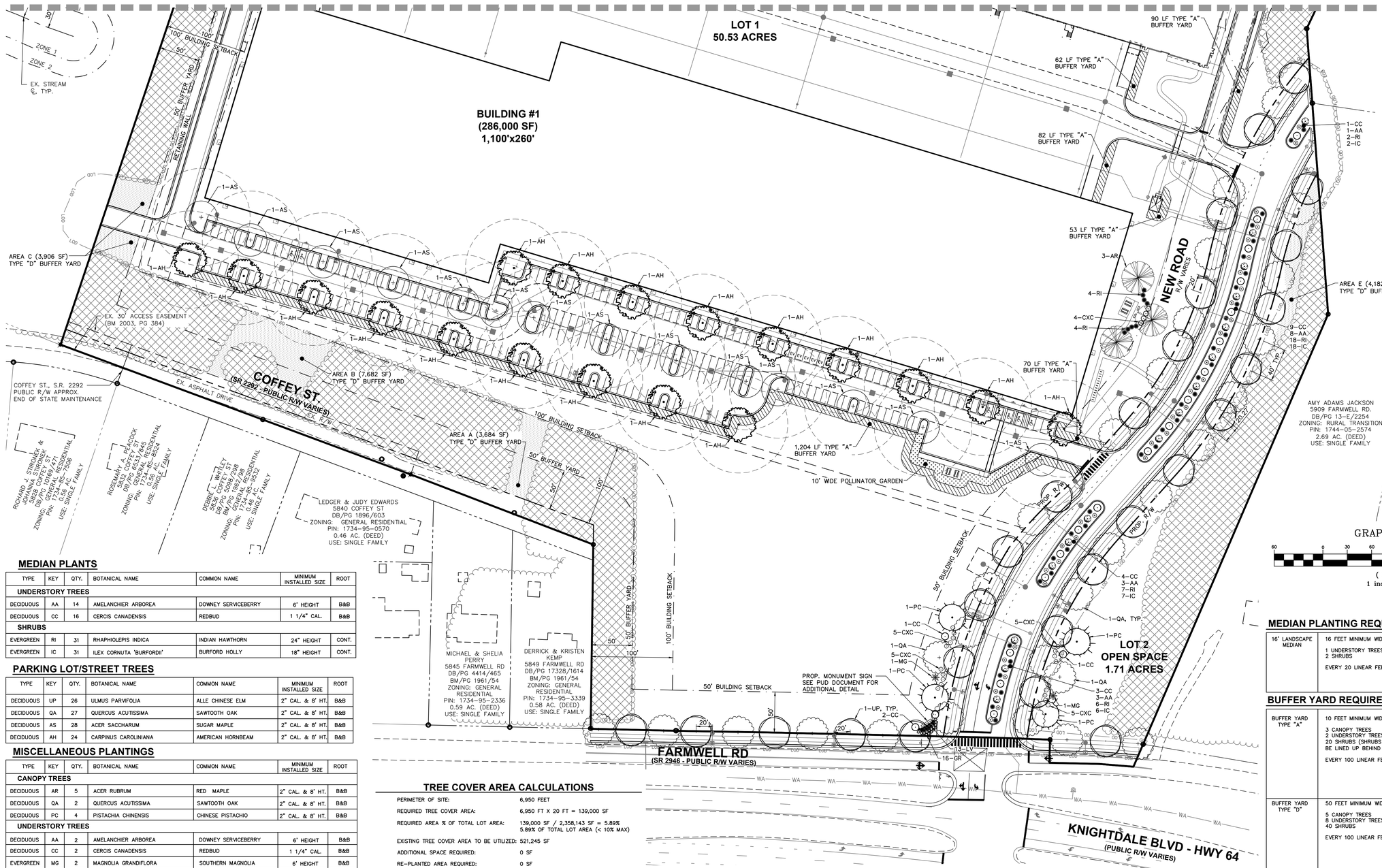
Date: 08/01/2022
Scale: 1" = 100'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.6.0

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MEDIAN PLANTS

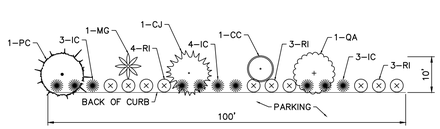
TYPE	KEY	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM INSTALLED SIZE	ROOT
UNDERSTORY TREES						
DECIDUOUS	AA	14	AMELANCHIER ARBOREA	DOWNEY SERVICEBERRY	6' HEIGHT	B&B
DECIDUOUS	CC	16	CERCIS CANADENSIS	REDBUD	1 1/4" CAL.	B&B
SHRUBS						
EVERGREEN	RI	31	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	24" HEIGHT	CONT.
EVERGREEN	IC	31	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	18" HEIGHT	CONT.

PARKING LOT/STREET TREES

TYPE	KEY	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM INSTALLED SIZE	ROOT
DECIDUOUS	UP	26	ULMUS PARVIFOLIA	ALLE CHINESE ELM	2" CAL. & 8' HT.	B&B
DECIDUOUS	QA	27	QUERCUS ACUTISSIMA	SAWTOOTH OAK	2" CAL. & 8' HT.	B&B
DECIDUOUS	AS	28	ACER SACCHARUM	SUGAR MAPLE	2" CAL. & 8' HT.	B&B
DECIDUOUS	AH	24	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2" CAL. & 8' HT.	B&B

MISCELLANEOUS PLANTINGS

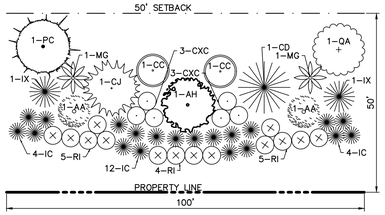
TYPE	KEY	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM INSTALLED SIZE	ROOT
CANOPY TREES						
DECIDUOUS	AR	5	ACER RUBRUM	RED MAPLE	2" CAL. & 8' HT.	B&B
DECIDUOUS	QA	2	QUERCUS ACUTISSIMA	SAWTOOTH OAK	2" CAL. & 8' HT.	B&B
DECIDUOUS	PC	4	PISTACHIA CHINENSIS	CHINESE PISTACHIO	2" CAL. & 8' HT.	B&B
UNDERSTORY TREES						
DECIDUOUS	AA	2	AMELANCHIER ARBOREA	DOWNEY SERVICEBERRY	6' HEIGHT	B&B
DECIDUOUS	CC	2	CERCIS CANADENSIS	REDBUD	1 1/4" CAL.	B&B
EVERGREEN	MG	2	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	6' HEIGHT	B&B
SHRUBS						
DECIDUOUS	CXC	29	CARYOPTERIS X CLANDONENSIS	BLUE MIST SHRUB	36" HEIGHT	CONT.
EVERGREEN	RI	14	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	24" HEIGHT	CONT.
EVERGREEN	LV	13	LIRIOPE MUSCARI 'VARIEGATA'	VARIEGATED LIRIOPE	3 GAL.	CONT.
EVERGREEN	GR	16	GARDENIA JASMINOIDES 'RADICANS'	RADICANS DWARF GARDENIA	3 GAL.	CONT.



10' TYPE "A" BUFFER TYPICAL DETAIL
SCALE: 1" = 20'

TREE COVER AREA CALCULATIONS

PERIMETER OF SITE:	6,950 FEET
REQUIRED TREE COVER AREA:	6,950 FT X 20 FT = 139,000 SF
REQUIRED AREA % OF TOTAL LOT AREA:	139,000 SF / 2,358,143 SF = 5.89% 5.89% OF TOTAL LOT AREA (< 10% MAX)
EXISTING TREE COVER AREA TO BE UTILIZED:	521,245 SF
ADDITIONAL SPACE REQUIRED:	0 SF
RE-PLANTED AREA REQUIRED:	0 SF
RE-PLANTED AREA PROVIDED:	25,086 SF



TYPE "D" BUFFERYARD TYPICAL DETAIL
SCALE: 1" = 20'

BUFFER YARD PLANTS

TYPE	KEY	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM INSTALLED SIZE	ROOT
CANOPY TREES						
DECIDUOUS	AH	4	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2" CAL. & 8' HT.	B&B
DECIDUOUS	QA	25	QUERCUS ACUTISSIMA	SAWTOOTH OAK	2" CAL. & 8' HT.	B&B
DECIDUOUS	PC	26	PISTACHIA CHINENSIS	CHINESE PISTACHIO	2" CAL. & 8' HT.	B&B
EVERGREEN	CD	8	CEDRUS DEODARA	DEODAR CEDAR	2" CAL. & 8' HT.	B&B
EVERGREEN	CJ	30	CRYPTOMERIA JAPONICA	JAPANESE CRYPTOMERIA	2" CAL. & 8' HT.	B&B
UNDERSTORY TREES						
DECIDUOUS	AA	10	AMELANCHIER ARBOREA	DOWNEY SERVICEBERRY	6' HEIGHT	B&B
DECIDUOUS	CC	33	CERCIS CANADENSIS	REDBUD	1 1/4" CAL.	B&B
EVERGREEN	MG	33	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	6' HEIGHT	B&B
EVERGREEN	IX	10	ILEX X NELLIE R STEVENS	NELLIE R STEVENS HOLLY	6' HEIGHT	B&B
SHRUBS						
DECIDUOUS	CXC	30	CARYOPTERIS X CLANDONENSIS	BLUE MIST SHRUB	36" HEIGHT	CONT.
EVERGREEN	RI	296	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	24" HEIGHT	CONT.
EVERGREEN	IC	322	ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	18" HEIGHT	CONT.

LANDSCAPE NOTES

1. AT TIME OF INSTALLATION, CANOPY TREES SHALL BE A MINIMUM OF 2" CALIPER AND 8' IN HEIGHT; UNDERSTORY TREES SHALL BE A MINIMUM OF 1 1/14" CALIPER AND 6' IN HEIGHT; AND SHRUBS SHALL BE AT LEAST 18" IN HEIGHT AND A 3 GALLON CONTAINER SIZE.
2. ANY ABOVE GROUND UTILITIES HAVE TO BE SCREENED IN ACCORDANCE WITH UDO SECTION 8.7.
3. 40-60% OF CANOPY TREES AND 40-60% OF UNDERSTORY TREES HAVE TO BE EVERGREEN PER UDO SECTION 8.6.

MEDIAN PLANTING REQUIREMENTS

16' LANDSCAPE MEDIAN	16 FEET MINIMUM WIDTH 1 UNDERSTORY TREES 2 SHRUBS EVERY 20 LINEAR FEET	588 TOTAL LF IN MEDIAN LANDSCAPE AREA 1 UNDERSTORY TREES PER 20 FT = 1*(588/20) = 30 TREES REQUIRED 30 TREES PROVIDED 2 SHRUBS PER 20 FT 2*(588/20) = 59 SHRUBS REQUIRED 62 SHRUBS PROVIDED

BUFFER YARD REQUIREMENTS

BUFFER YARD TYPE "A"	10 FEET MINIMUM WIDTH 3 CANOPY TREES 2 UNDERSTORY TREES 20 SHRUBS (SHRUBS MUST BE LINED UP BEHIND CURB) EVERY 100 LINEAR FEET	1,204 LF + 70 LF + 53 LF + 82 LF + 90 LF + 62 LF + 692 LF = 2,253 TOTAL LF 3 CANOPY TREES PER 100 FT = 3*(2,253/100) = 68 TREES REQUIRED 68 TREES PROVIDED 2 UNDERSTORY TREES PER 100 FT 2*(2,253/100) = 46 TREES REQUIRED 46 TREES PROVIDED 20 SHRUBS PER 100 FT 20*(2,253/100) = 451 SHRUBS REQUIRED 451 SHRUBS PROVIDED
BUFFER YARD TYPE "D"	50 FEET MINIMUM WIDTH 5 CANOPY TREES 8 UNDERSTORY TREES 40 SHRUBS EVERY 100 LINEAR FEET	3,684 SF (AREA A) + 7,682 SF (AREA B) + 3,906 SF (AREA C) + 5,127 SF (AREA D) + 4,182 SF (AREA E) = 24,581 TOTAL SF IN BUFFER YARD TYPE "D" TOTAL LF BUFFER YARD TYPE "D" = 24,581 SF / 50 FOOT WIDTH = 492 LF 5 CANOPY TREES PER 100 FT = 5*(492/100) = 25 TREES REQUIRED 25 TREES PROVIDED 8 UNDERSTORY TREES PER 100 FT 8*(492/100) = 40 TREES REQUIRED 40 TREES PROVIDED 40 SHRUBS PER 100 FT 40*(492/100) = 197 SHRUBS REQUIRED 197 SHRUBS PROVIDED

NOTE: THE ABOVE TYPE 'D' BUFFER CALCULATIONS ASSUME EXISTING TREE SAVE AREAS MEET THE MINIMUM PLANTING REQUIREMENTS. IF EXISTING TREE SAVE AREAS SIGNIFICANTLY EXCEED MINIMUM PLANTING REQUIREMENTS IT IS POSSIBLE THE ADDITIONAL PLANTINGS WOULD NOT BE REQUIRED. PLEASE SCHEDULE AN INSPECTION WITH THE TOWN PLANNER TO CONFIRM PRIOR TO PLANTING.

LEGEND

- Iron Pipe Found
- Calculated Point
- Railroad Spike
- Buffer Yard 'D' Replanted Area
- Existing Tree Cover Area
- Type A Buffer Yard (UDO 8.7.A.1)
- Ex. Fence Line
- Ex. Property Line
- Property Line
- Proposed Storm Sewer
- Limits of Disturbance (LOD)
- Ex. Wetlands

PLAN PREPARED BY:
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5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

LANDSCAPE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041830 JOSEPH D. WHITACRE
PRELIMINARY NOT FOR CONSTRUCTION
08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By: JRR
Checked By: JDW

Project Number:
21-0011-504

Drawing Number:
C.6.1

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LANDSCAPE NOTES

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LEGEND

- Iron Pipe Found
- Calculated Point
- Railroad Spike
- Buffer Yard 'D' Replanted Area
- Existing Tree Cover Area
- Type A Buffer Yard (UDO 8.7.A.1)
- Ex. Fence Line
- Ex. Property Line
- Property Line
- Proposed Storm Sewer
- LOD — LOD — Limits of Disturbance
- Ex. Wetlands

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

PATRICK H. SIMMONS
1304 OLD MULBURNIE RD
DB/PG 17050/1486
ZONING: RURAL TRANSITION
PIN: 1734-87-3051
7.00 AC. (DEED)
USE: AGRICULTURE

EX. 60' ACCESS EASEMENT (DB 18857, PG 429)

X(FUTURE)

N52°41'01"E 76.90'
N29°46'50"E 73.48'
N82°06'50"E 132.30'
S53°19'57"E 158.25'
S72°04'59"E 309.75'
S72°05'03"E 526.16'
N23°54'04"E 199.94'
N13°14'34"E 259.75'
S84°52'57"E 229.48'
S15°55'40"E 211.45'
S47°23'42"E 218.65'
S21°01'43"W 22.95'
S25°16'03"W 691.98'
S47°17'21"E 352.76'
N18°32'18"E 513.24'
N12°25'56"W 750.06'

EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)

100-YEAR FLOODPLAIN (EFFECTIVE)

MILBURNIE FISHING CLUB
1308 OLD MULBURNIE RD
DB/PG 2819/749
PIN: 1734-97-7564
46.17 AC. (DEED)
USE: CLUB HSE

WILLIAM WADE ADAMS
829 CHARVOZ CIR
ZONING: RURAL TRANSITION
PIN: 1744-06-6227
17.12 AC. (DEED)
USE: VACANT

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

EX. POND TO REMAIN

WET POND

ENHANCED LANDSCAPING FOR PUBLIC GATHERING AREA

1-AA
2-AR
6-RI
5-CXC
1-AS
1-AH

692 LF TYPE "A" BUFFER YARD
90 LF TYPE "A" BUFFER YARD
62 LF TYPE "A" BUFFER YARD
82 LF TYPE "A" BUFFER YARD
53 LF TYPE "A" BUFFER YARD

1-CC
1-AA
2-RI
2-IC

RETAINING WALL

EX. STREAM ℄

AREA E (5,127 SF)
TYPE "D" BUFFER YARD

50' BUFFER YARD
100' BUILDING SETBACK
ZONE 1
ZONE 2
30'
50'
100'

BUILDING #1
(286,000 SF)
1,100'x260'

BUILDING #2
(221,000 SF)
850'x260'

LOT 1
50.53 ACRES

EAM

MATCHLINE - SEE SHEET C.3.1

TREE LEGEND

- ALLEE CHINESE ELM (UP)
- RED MAPLE (AR)
- SUGAR MAPLE (AS)
- SAWTOOTH OAK (QA)
- AMERICAN HORNBEAM (AH)

PLAN PREPARED BY:
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KNIGHTDALE GATEWAY
MASTER PLAN
FOR
BEACON PARTNERS
LANDSCAPE PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039780 JAMES D. WHITTAKER
PRELIMINARY NOT FOR CONSTRUCTION

08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number: 21-0011-504

Drawing Number: C.6.2

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MATCHLINE - SEE SHEET C.7.1

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-
BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

ZONE 2
ZONE 1
ZONE 1
ZONE 2
50'
30'
EX. STREAM
℄, TYP.

PROP. SCONCE LIGHTING, TYP.

PROP. SCONCE LIGHTING, TYP.

RETAINING WALL

100' BUFFER YARD
100' BUILDING SETBACK

BUILDING #1
(286,000 SF)
1,100'x260'

LOT 1
50.53 ACRES

PROP. PARKING LOT LIGHTING, TYP.

PROP. STREET LIGHT POLE, TYP.

EX. BUILDING

EX. 30' ACCESS EASEMENT
(BM 2003, PG 384)

COFFEY ST.
(SR 2292 - PUBLIC R/W VARIES)
EX. ASPHALT DRIVE
EX. R/W

NEW ROAD
R/W VARIES

CLAYTON W. ADAMS
ANN ROGERS ADAMS
817 CHARVOZ CIR
DB/PG 5472/627
BM/PG 1992/1282
ZONING: RURAL TRANSITION
PIN: 1744-05-5727
2.46 AC. (DEED)
USE: SINGLE FAMILY

EX. BUILDING

RICHARD J. STRONER & JOHANNA STRONER
5828 COFFEY ST
DB/PG 10169/471
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-1506
0.56 AC.
USE: SINGLE FAMILY

ROSEMARY A. PEACOCK
5833 COFFEY ST
DB/PG 6533/845
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-3524
0.46 AC.
USE: SINGLE FAMILY

DEBBIE L. WHITLEY
5836 COFFEY ST
BM/PG 1997/298
ZONING: GENERAL RESIDENTIAL
PIN: 1734-85-3532
0.46 AC.
USE: SINGLE FAMILY

LEDGER & JUDY EDWARDS
5840 COFFEY ST
DB/PG 1896/603
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-0570
0.46 AC. (DEED)
USE: SINGLE FAMILY

50' BUFFER YARD
100' BUILDING SETBACK

50' BUFFER YARD
100' BUILDING SETBACK

50' BUILDING SETBACK

PROP. R/W

PROP. R/W

PROP. STREET LIGHT POLE, TYP.

EX. BUILDING

LOT 2
OPEN SPACE
1.71 ACRES

AMY ADAMS JACKSON
5909 FARMWELL RD.
DB/PG 13-E/2254
ZONING: RURAL TRANSITION
PIN: 1744-05-2574
2.69 AC. (DEED)
USE: SINGLE FAMILY

MICHAEL & SHELIA PERRY
5845 FARMWELL RD
DB/PG 4414/465
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-2336
0.59 AC. (DEED)
USE: SINGLE FAMILY

DERRICK & KRISTEN KEMP
5849 FARMWELL RD
DB/PG 17328/1614
BM/PG 1961/54
ZONING: GENERAL RESIDENTIAL
PIN: 1734-95-3339
0.58 AC. (DEED)
USE: SINGLE FAMILY

FARMWELL RD
(SR 2946 - PUBLIC R/W VARIES)

PROP. STREET LIGHT POLE, TYP.

KNIGHTDALE BLVD - HWY 64
(PUBLIC R/W VARIES)

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

STREET LIGHTING STANDARDS

1. NUMERICAL POINT-BYPOINT FC GRID MAXIMUM 25 FOOT BY 25 FOOT THAT INDICATES THE MINIMUM, MAXIMUM, AND AVERAGE FC LEVELS WITHIN THE LIGHTED AREA OF THE SITE AND THE AVERAGE TO MINIMUM RATIO FOR THE DETERMINATION OF UNIFORMITY.
2. PUBLIC STREET LIGHTING IS EXEMPT OF MAXIMUM ALLOWABLE LIGHT LEVELS AT THE PROPERTY LINE.
3. FIXTURE TO BE FULL CUTOFF.
4. FIXTURE SHALL BE LED WITH A MINIMUM COLOR RENDERING INDEX (CRI) VALUE OF 70 OR BETTER.
5. FIXTURE SHALL HAVE A "WHITE LIGHT" CORRELATED COLOR TEMPERATURE NOT EXCEEDING 4,000K (DEGREES KELVIN).
6. POLE/FIXTURE SHALL BE LOCATED OUTSIDE LANDSCAPE ISLANDS.
7. FIXTURE MOUNTING HEIGHT NO GREATER THAN 37 FEET ABOVE GRADE.
8. AVERAGE MAXIMUM SPACING BETWEEN STREET LIGHTS SHALL BE 300 FT.
9. MINIMUM INITIAL DELIVERED LUMEN LEVELS SHALL BE 28,500 LUMENS.
10. BUG RATING SHALL NOT EXCEED B3, U3, AND G3.
11. LIGHTS SHALL BE ALTERNATELY STAGGERED ON EACH SIDE OF THE STREET.
12. LIGHTING SHALL BE PLACED AT ALL STREET INTERSECTIONS, IN STREET CURVES, AND AT THE END OF ANY STREET.

GENERAL PARKING LOT LIGHTING STANDARDS

1. FIXTURE TO BE FULL CUTOFF.
2. FIXTURE SHALL BE LED WITH A MINIMUM COLOR RENDERING INDEX (CRI) VALUE OF 70 OR BETTER. THE FIXTURE MAY ALSO NOT EXCEED A COLOR TEMPERATURE OF 4,000K.
3. POLE/FIXTURE SHALL BE LOCATED OUTSIDE LANDSCAPE ISLANDS.
4. FIXTURE MOUNTING HEIGHT NO GREATER THAN 37 FEET ABOVE GRADE.
5. ALL OUTDOOR LIGHTING FIXTURES SHALL BE DESIGNED AND LOCATED SUCH THAT THE MAXIMUM LIGHT LEVEL SHALL BE 0.5 MAINTAINED FC AT ANY PROPERTY LINE UNLESS OTHERWISE PERMITTED BY THIS CHAPTER OR WHERE THE REQUIRED BY THE NC BUILDING CODE AS A COMPONENT OF THE MINIMUM REQUIREMENTS FOR A MEANS OF EGRESS SYSTEM.
6. OUTDOOR PARKING FACILITIES MINIMUM LIGHT LEVEL SHALL BE NO LESS THAN 0.6 FOOT CANDLES.
7. LED OR OTHER BUG-RATED FIXTURES EXCEEDING 7,250 INITIAL DELIVERED LUMENS OR 9,000 SOURCE LUMENS AS MAY APPLY, SHALL NOT EXCEED A RATING OF B3, U0, AND G2 FOR PARKING LOTS AND GENERAL SITE LIGHTING.
8. PARKING AREA LIGHTING FIXTURES WITHIN 25 FEET OF ANY PUBLIC STREET RIGHT-OF-WAY OR ADJACENT TO RESIDENTIAL PROPERTY LINE MUST BE A FORWARD THROW FIXTURE (TYPE IV LIGHT DISTRIBUTION AS DEFINED BY IESNA).
9. ADDITIONAL SHIELDING MAY BE NECESSARY IN ACCORDANCE WITH SECTION 7.6 ONCE LIGHTS ARE INSTALLED IN SPILLAGE OR GLARE IS AN ISSUE.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
New Road	✕	1.0 fc	2.5 fc	0.4 fc	6.3:1	2.5:1
North Parking	✕	1.2 fc	3.2 fc	0.5 fc	8.0:1	3.0:1
South Parking	✕	1.4 fc	3.5 fc	0.5 fc	7.0:1	2.8:1

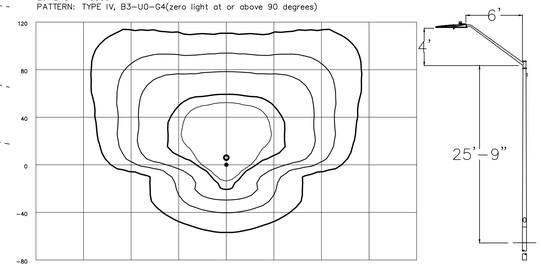
Schedule

Symbol	Label	Quantity	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor
	A	18	LED 150w Roadway - Type IV - 4000K - Parking	1	19809	0.85
	B	9	LED 150w Roadway - Type IV - 4000K - Street	1	19809	0.85

ISOFOOTCANDLE CURVES

FIXTURE: LED 150W ROADWAY
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: LED, 4000K, 70 CRI
LUMENS = 19808
PATTERN: TYPE IV, B3-U0-G4(zero light at or above 90 degrees)

ASSY# LFIX-RW-LED-150-GRAY-IV-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-GRAY-____-P (GRAY)



LEGEND (OUTER to INNER): **0.10** , 0.25 , 0.50 , **1.00** , 1.25

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
fax 919.336.5127

PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
tel. 704.597.7757
fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 - Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

LIGHTING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038180 JAMES D. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:
05/23/2021 - Master Plan Submittal #1
06/23/2022 - Master Plan Submittal #2
08/01/2022 - Master Plan Submittal #3

Date: 08/01/2022
Scale: 1" = 60'

Drawn By: JRR
Checked By: JDW

Project Number: 21-0011-504

Drawing Number: C.7.0

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Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
New Road	✳	1.0 fc	2.5 fc	0.4 fc	6.3:1	2.5:1
North Parking	✳	1.2 fc	3.2 fc	0.5 fc	8.0:1	3.0:1
South Parking	✳	1.4 fc	3.5 fc	0.5 fc	7.0:1	2.8:1

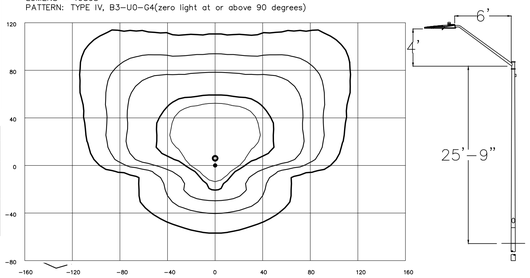
Schedule

Symbol	Label	Quantity	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor
●	A	18	LED 150w Roadway - Type IV - 4000K - Parking	1	19809	0.85
●	B	9	LED 150w Roadway - Type IV - 4000K - Street	1	19809	0.85

ISOFOOTCANDLE CURVES

FIXTURE: LED 150W ROADWAY
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: LED, 4000K, 70 CRI
LUMENS = 19808
PATTERN: TYPE IV, B3-U0-G4(zero light at or above 90 degrees)

ASSY# LFIX-RW-LED-150-GRAY-IV-MULTIV-____-P
POLE ASSY# LPOLE-DB-FG-30FT-GRAY-____-P (GRAY)



LEGEND (OUTER to INNER): **0.10** , 0.25 , 0.50 , **1.00** , 1.25



PLT-20224
LED SLIM CUTOFF WALL SCONCE

OUTDOOR FULL-CUTOFF WALL-MOUNTED AREA LUMINAIRES

TECHNICAL DATA SHEET

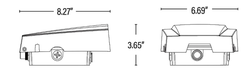
FEATURES
- High pressure die casting housing, anti-static powder painting.
- High thermal conductive material and high efficiency cooling system.
- Fixture angle can be easily adjusted 0-90°.
- Wall mount only.

APPLICATION:
Replaces traditional 70-100W HID lamps. Wall washing, perimeter lighting and parking lots.

PRODUCT DETAILS

ELECTRICAL	
Wattage	30W
Voltage	120-277V
Power Factor	0.9
Total Harmonic Distortion (THD)	11.4
LIGHTING PERFORMANCE	
Lumens	3450
Lumens Per Watt (Lm/W)	115
Color Temperature (CCT)	5000K
Color Rendering (CRI)	70
Beam Angle	100° x 80°
Light Distribution	Type II, Very Short
Dimmable Lighting Control	
ENVIRONMENT	
Operating Temperature	-40°C ~ 40°C
Suitable Location	WET
Ingress Protection Rating	IP65
LIFESPAN	
Average Life (Hours)	50,000
Warranty (Years)	5
CERTIFICATIONS	

COMPONENTS	
LED Light Source	Luxeon 3030 2D
Driver	PFU285-40-700mA
CONSTRUCTION	
Housing	Aluminum
Base / Power Supply	Hard Wired
Finish	Bronze
PACKAGING	
Master Carton	8pc / 10811768025955
Individual Box	811768025958
Country of Origin	China
HS Tariff	9405.40.6000
DIMENSIONS	
Dimensions (Inches)	8.3"(L) x 6.7"(W) x 3.7" (H)



ORDERING

ITEM#	DESCRIPTION	CASE
PLT-20224	LED SLIM CUTOFF WALL SCONCE 30W/50K/120-277V	8

EX. 60' ACCESS EASEMENT (DB 18857, PG 429)

PATRICK H. SIMMONS
1304 OLD MULBURNIE RD
DB/PG 17050/1486
ZONING: RURAL TRANSITION
PIN: 1734-87-3051
7.00 AC. (DEED)
USE: AGRICULTURE

EX. 30' SANITARY SEWER EASEMENT (DB 18857, PG 934)

MILBURNIE FISHING CLUB
1308 OLD MULBURNIE RD
DB/PG 2819/749
PIN: 1734-97-7564
46.17 AC. (DEED)
USE: CLUB HSE

WET POND

RETAINING WALL

EX. POND TO REMAIN

EX. STREAM ℄

PROP. PARKING LOT LIGHTING, TYP.

LOT 1
50.53 ACRES

BUILDING #2
(221,000 SF)
850'x260'

PROP. SCONCE LIGHTING, TYP.

BUILDING #1
(286,000 SF)
1,100'x260'

PROP. STREET LIGHT POLE, TYP.

EX. BUILDING

WILLIAM WADE ADAMS
829 CHARVOZ CIR
ZONING: RURAL TRANSITION
PIN: 1744-06-6227
17.12 AC. (DEED)
USE: VACANT

JOYCE E. ADAMS
0 COFFEY ST.
DB/PG 203/00-E-BM/PG 1973/249
ZONING: RURAL TRANSITION
PIN: 1734-86-6384
7.83 AC.
USE: VACANT

ZONE 1 (100')
ZONE 2 (50')
50' BUFFER YARD
100' BUILDING SETBACK

MATCHLINE - SEE SHEET C.7.0

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

ADVANCED

PLAN PREPARED BY:
ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS
51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
fax 919.336.5127

PLAN PREPARED FOR:
BEACON PARTNERS
500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
tel. 704.597.7757
fax 704.598.6335

5901 Farmwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

LIGHTING PLAN

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030 JAMES D. WHITACRE

PRELIMINARY

08/01/2022

Issue Dates:	
05/23/2021	Master Plan Submittal #1
06/23/2022	Master Plan Submittal #2
08/01/2022	Master Plan Submittal #3

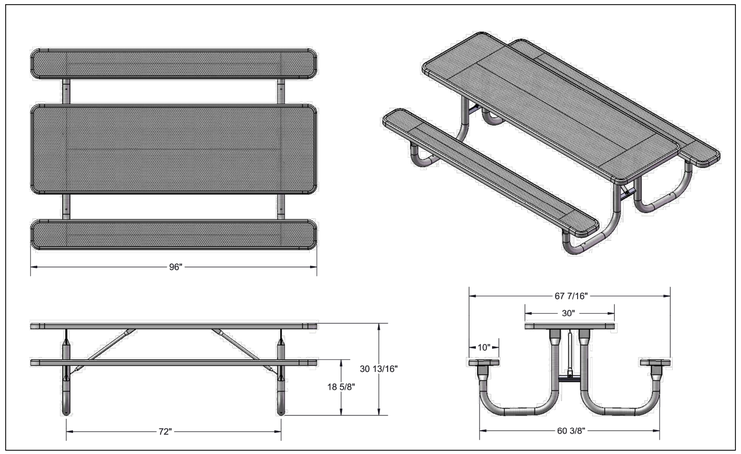
Date: 08/01/2022
Scale: 1" = 60'

Drawn By:	Checked By:
JRR	JDW

Project Number:
21-0011-504

Drawing Number:
C.7.1

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Top & Seats: 12 gauge die formed angle frame 1"x1-7/8" with 3" radius corners. 3/4" #9 steel expanded metal. 10 gauge x 1-1/2" flat bar center support and mounting bracket understructure. Electrically MIG welded.

Coating: Oven fused functionalized polyethylene copolymer-based thermoplastic. Fluidized bed coating application with superior mechanical performance, impact resistance and UV-stability.

Frame: 2-3/8" O.D. x 12 gauge pre-galvanized structural steel tubing. Cross braces 1" O.D. x 16 gauge pre-galvanized structural steel tubing. Brace attachment points 1-1/2"x1-1/2"x3/16" steel angle. Seat and top mounting points 7 gauge x 1-1/2" die stamped steel flat bar. Legs are bent over a mandrel through the bend radius producing a wrinkle free bend. Holes are predrilled in legs for optional surface mounting. All electrically MIG welded.

Frame Coating: Electrostatic powder coated application oven cured.

Hardware: All stainless steel hardware fasteners.

Dimensions: 8' portable picnic table walk-through design. Top is 30" wide x 96" long and is 30-1/4" high. Seats are 10" wide x 96" long and 18-1/2" high. Outside to outside dimension is 66-1/2" x 96".

PICNIC TABLE DETAIL

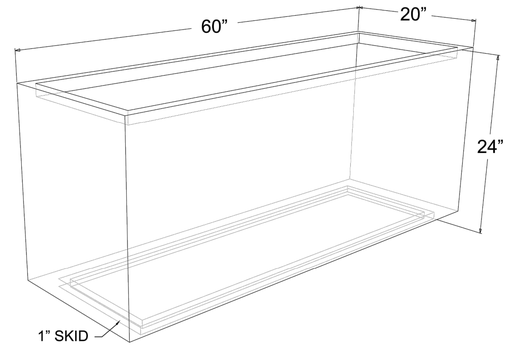
NOT TO SCALE

Tall Rectangular Planter - Large

60"L X 20"W X 24"H

Weight - Steel : 128 lbs. Aluminum : 56 lbs.

Capacity : 15.5 cubic feet



YARDART

uniquegardendecor.com

(866) 382-8600

LANDSCAPE PLANTER DETAIL

NOT TO SCALE

PLAN PREPARED BY:

ADVANCED CIVIL DESIGN ENGINEERS SURVEYORS

51 Kilmayne Drive, Suite 102
Cary, North Carolina 27511
ph 919.481.6290
fax 919.336.5127

PLAN PREPARED FOR:

BEACON PARTNERS

500 East Morehead St.
Suite 200
Charlotte, North Carolina 28269
tel. 704.597.7757
fax 704.598.6335

5901 Farnwell Road, Knightdale, NC 27610 – Wake County

KNIGHTDALE GATEWAY

MASTER PLAN

FOR

BEACON PARTNERS

SITE DETAILS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047180 JAMES D. WHITTACRE

PRELIMINARY

08/01/2022

Issue Dates:
05/23/2021 – Master Plan Submittal #1
06/23/2022 – Master Plan Submittal #2
08/01/2022 – Master Plan Submittal #3

Date: 08/01/2022

Scale: NOT TO SCALE

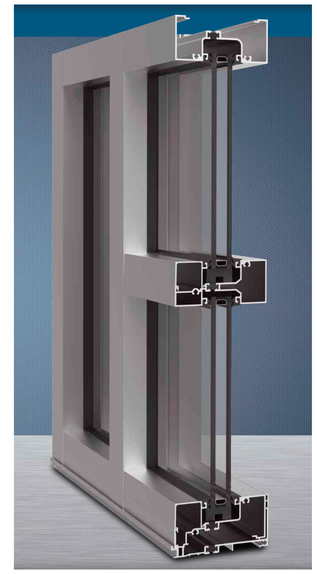
Drawn By:	Checked By:
JRR	JDW

Project Number: 21–0011–504

Drawing Number: C.8.0

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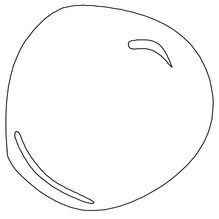
Bronze

WINDOW FRAMES AND DOORS TO BE BRONZE ALUMINUM FINISH

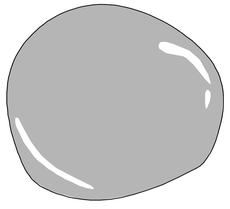


CERAMIC TILE ACCENTS TO BE GIO TILE METALLO IN RUST COLOR

PAINT COLOR KEY



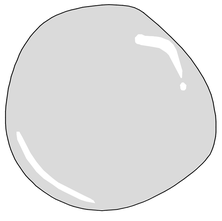
PB - PAINT BASEWALL COLOR - EIDER WHITE SW7014



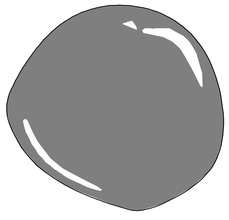
PA2 - PAINT ACCENT 02 - DOVETAIL SW7018



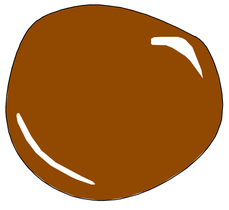
PA4 - PAINT ACCENT 04 - IRON ORE SW7069



PA1 - PAINT ACCENT 01 - LIGHT FRENCH GRAY SW0055



PA3 - PAINT ACCENT 03 - GRIZZLE GRAY SW7068



PA5 - PAINT ACCENT 05 - SMOKEHOUSE SW7040

FOR SITE APPROVAL ONLY

Town Certification: This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: _____
Development Services Engineer

Date: _____

These plans are approved by the Town of Knightdale and serve as construction plans for the project.

By: _____
Administrator

Date: _____

KNIGHTDALE GATEWAY

BUILDING 1 & 2
Material Board

Knightdale, NC

MAY 17 , 2022

BEACON PARTNERS

architects msa merriman schmitt



1 FRONT ELEVATION - PLAN SOUTH

SCALE: 1" = 20'



2 SIDE ELEVATION - PLAN EAST

SCALE: 1" = 20'



3 REAR ELEVATION - TRUCK COURT - PLAN NORTH

SCALE: 1" = 20'



4 SIDE ELEVATION - PLAN WEST

SCALE: 1" = 20'

FOR SITE APPROVAL ONLY

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Date: _____

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By: _____
Administrator

Date: _____

KNIGHTDALE, NC

KNIGHTDALE GATEWAY BUILDING ONE

architects msa merriman schmit
architecture · planning
interior design
605 LEXINGTON AVENUE
SUITE 300
CHARLOTTE, NC 28203
704.377.1177
704.377.3060 (fax)

BEACON PARTNERS
500 E MOREHEAD ST
SUITE 200
CHARLOTTE, NC 28202
704.597.7757

GENERAL CONTRACTOR:

CLIENT:

KNIGHTDALE GATEWAY
BUILDING ONE
WAKE COUNTY

5901 FARMWELL ROAD KNIGHTDALE, NC 27610

SEALS:

PRELIMINARY
07/29/2022

NOTE:

PROJECT NUMBER: C21161

PERMIT TRACKING:

DRAWING STATUS:
- (●) NOT FOR CONSTRUCTION
- ( ) ISSUED FOR BIDDING
- ( ) ISSUED FOR CONSTRUCTION

SHEET TITLE:
COLOR ELEVATIONS

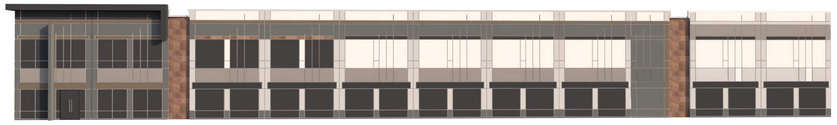
SHEET NUMBER:
A200

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1 FRONT ELEVATION - PLAN SOUTH

SCALE: 1" = 20'



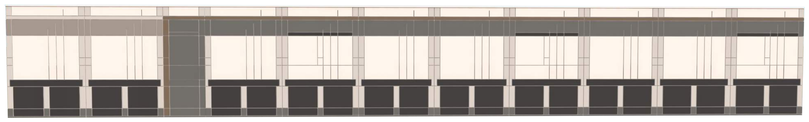
2 SIDE ELEVATION - PLAN EAST

SCALE: 1" = 20'



3 REAR ELEVATION - PLAN NORTH

SCALE: 1" = 20'



4 SIDE ELEVATION - PLAN WEST

SCALE: 1" = 20'

FOR SITE APPROVAL ONLY

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By: _____
Development Services Engineer

Date: _____

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By: _____
Administrator

Date: _____

KNIGHTDALE, NC

KNIGHTDALE GATEWAY BUILDING TWO

architects msa merriman schmit
architecture · planning
interior design
605 LEXINGTON AVENUE
SUITE 300
CHARLOTTE, NC 28203
704.377.1177
704.377.3060 (fax)

BEACON PARTNERS
500 E MOREHEAD ST
SUITE 200
CHARLOTTE, NC 28202
704.597.7757

GENERAL CONTRACTOR:

CLIENT:

KNIGHTDALE GATEWAY
BUILDING TWO
WAKE COUNTY

5901 FARMWELL ROAD KNIGHTDALE, NC 27610

SEALS:

PRELIMINARY
05/17/2022

NOTE:

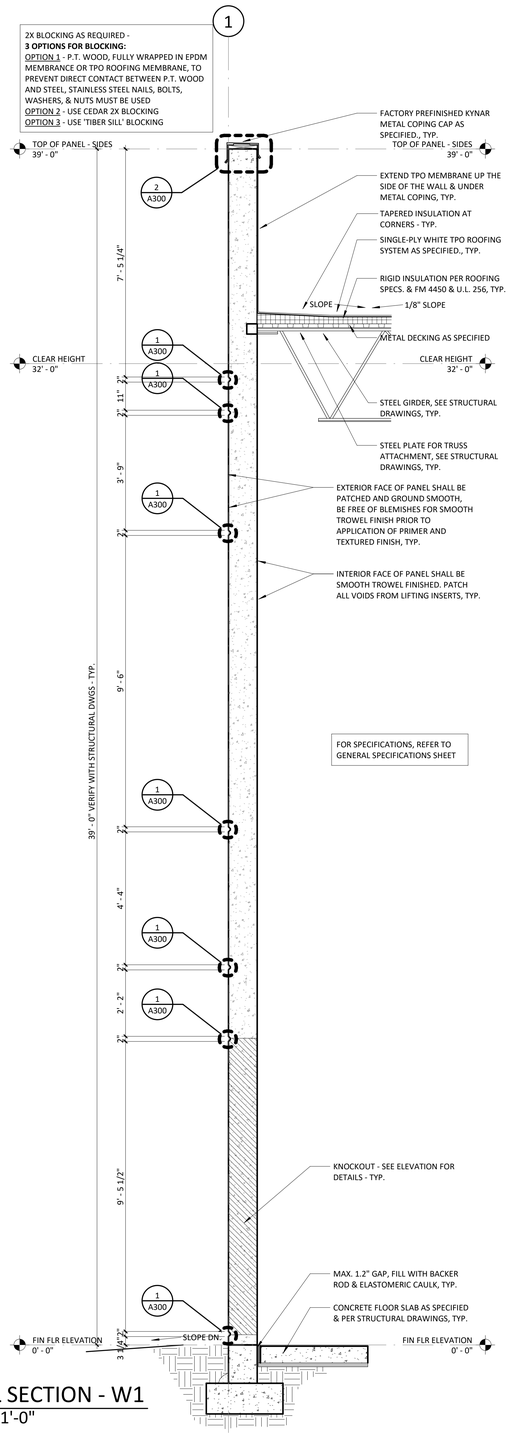
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DRAWING STATUS:
- (●) NOT FOR CONSTRUCTION
- ( ) ISSUED FOR BIDDING
- ( ) ISSUED FOR CONSTRUCTION

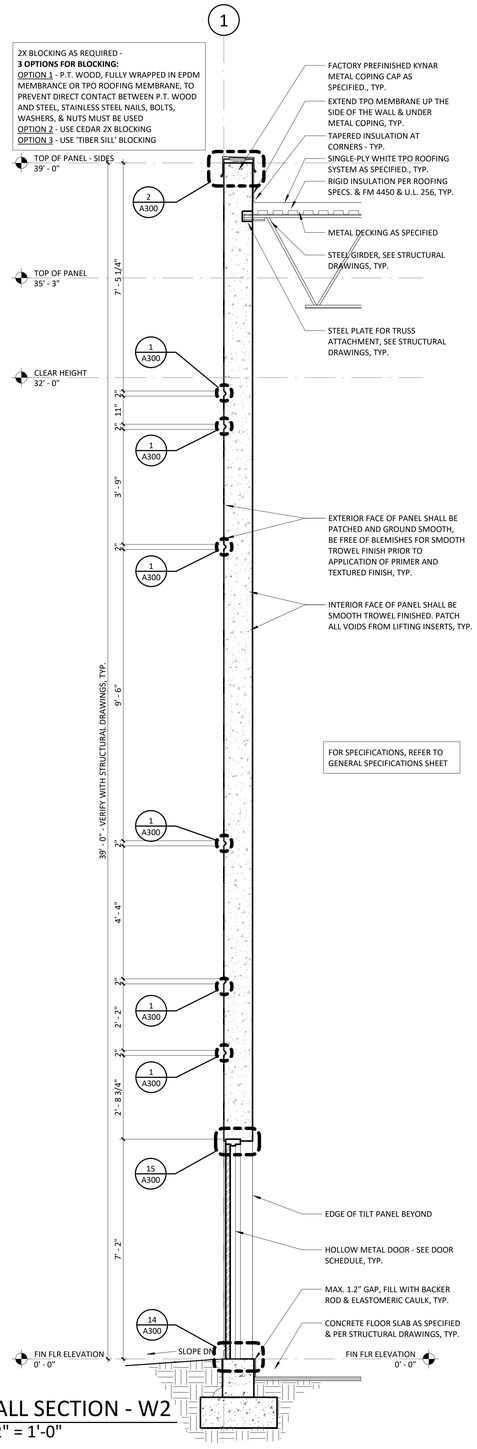
SHEET TITLE: COLOR ELEVATIONS

SHEET NUMBER: A200

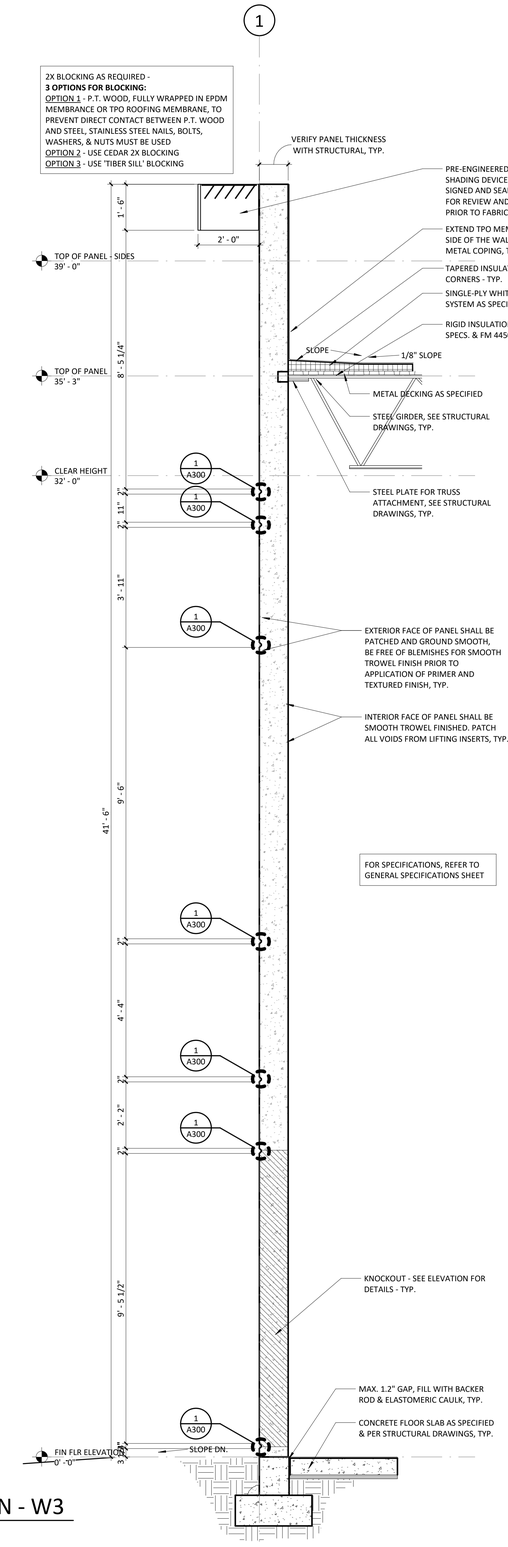
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1 WALL SECTION - W1
1/2" = 1'-0"



2 WALL SECTION - W2
1/2" = 1'-0"



3 WALL SECTION - W3
1/2" = 1'-0"

FOR SITE APPROVAL ONLY

Town Certification: This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: Development Services Engineer

Date:

These plans are approved by the Town of Knightdale and serve as construction plans for the project.

By: Administrator

Date:

KNIGHTDALE GATEWAY BUILDING ONE & TWO

architects msa merriman schmitt
architecture · planning
interior design
605 LEXINGTON AVENUE
SUITE 300
CHARLOTTE, NC 28203
704.377.1177
704.377.3060 (fax)

BEACON PARTNERS
500 E MOREHEAD ST
SUITE 200
CHARLOTTE, NC 28202
704.597.7757

GENERAL CONTRACTOR:

CLIENT:

KNIGHTDALE GATEWAY
BUILDING ONE & TWO
WAKE COUNTY

5901 FARMWELL ROAD KNIGHTDALE, NC 27610

SEALS:

PRELIMINARY
05/17/2022

NOTE:

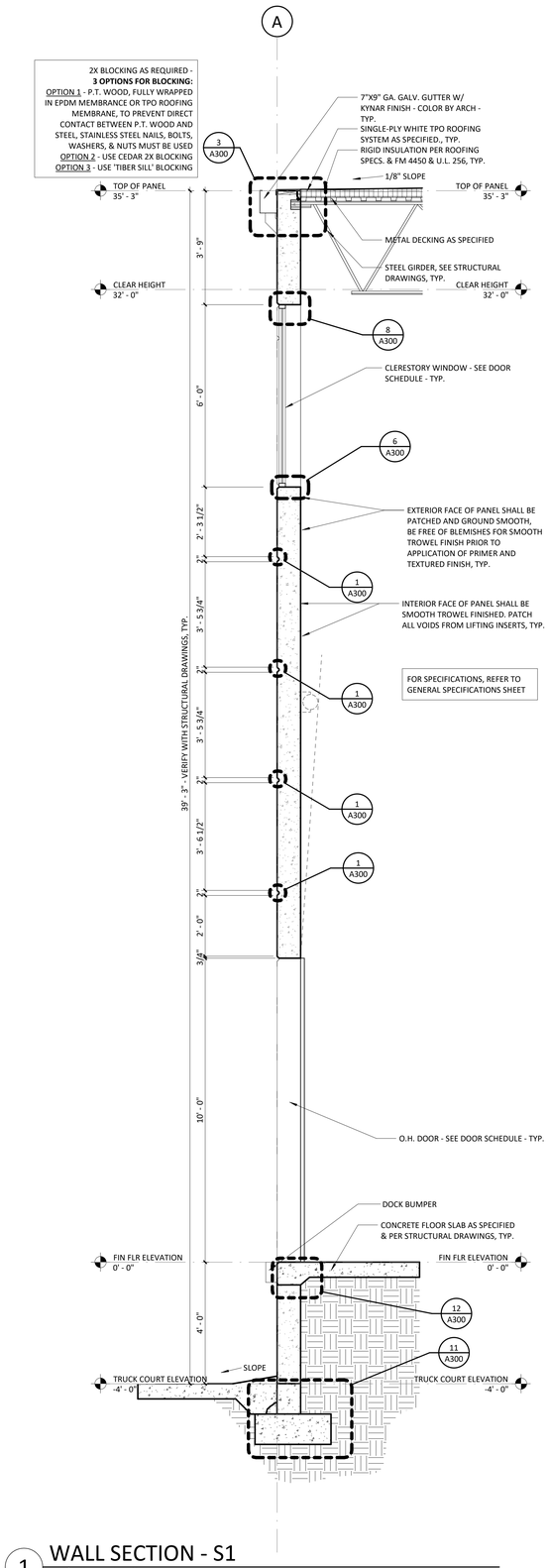
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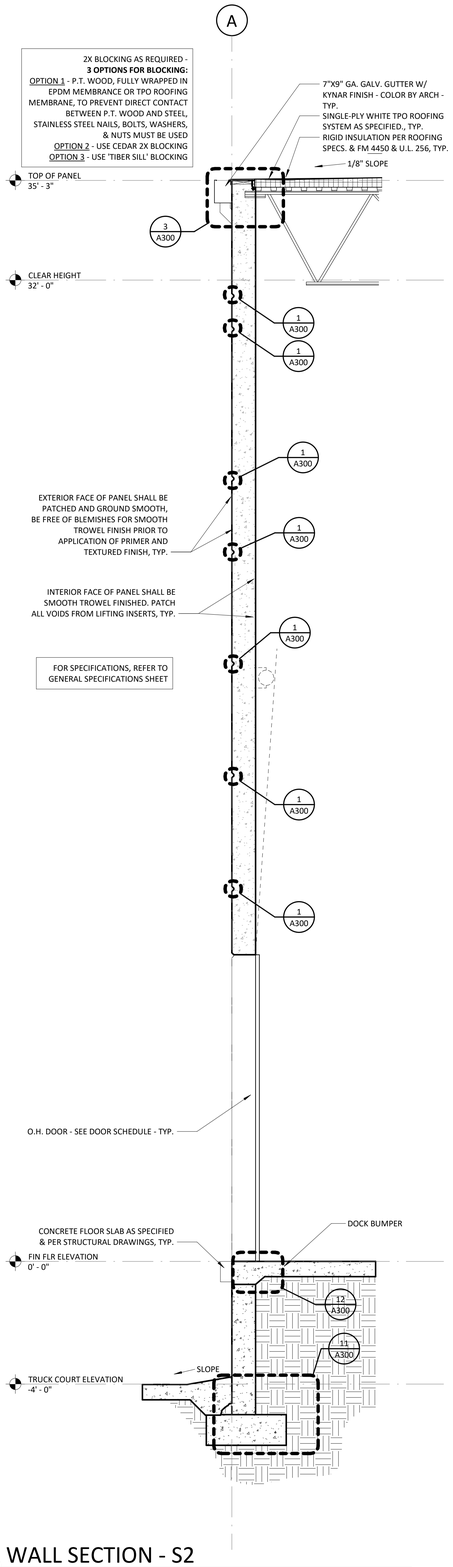
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WALL SECTIONS

SHEET NUMBER:
A301

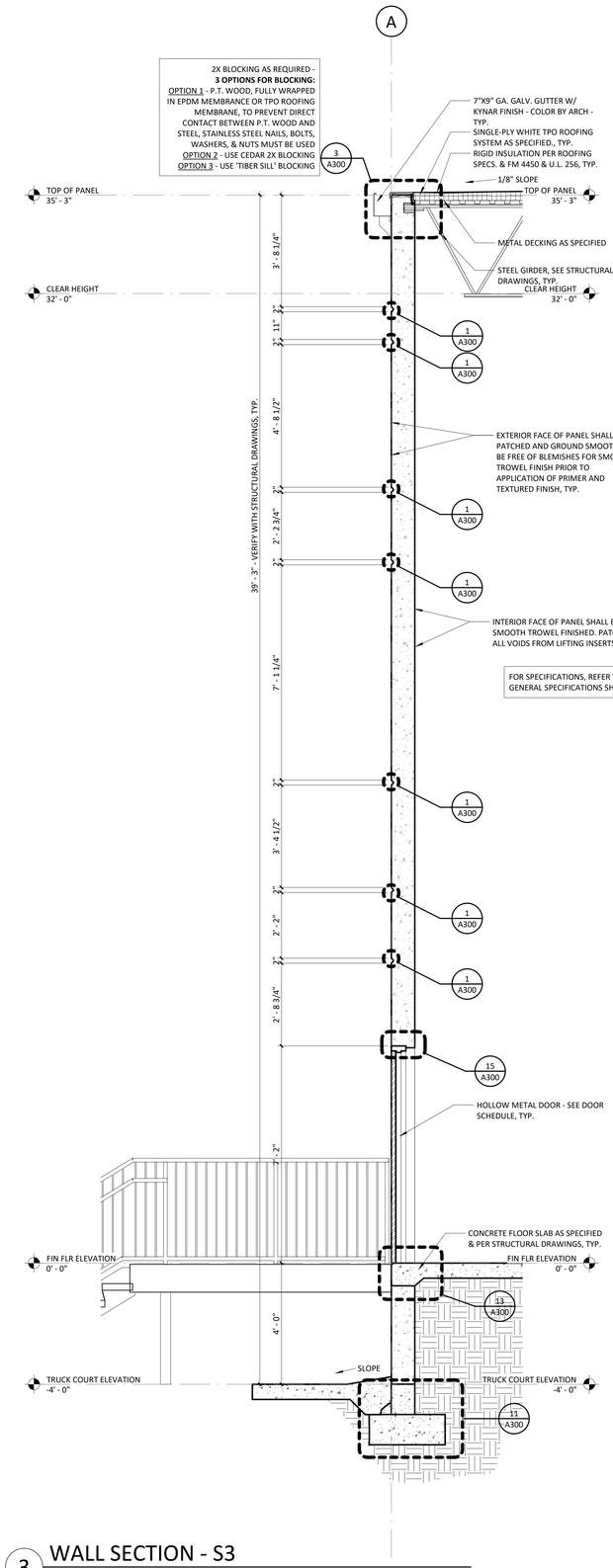
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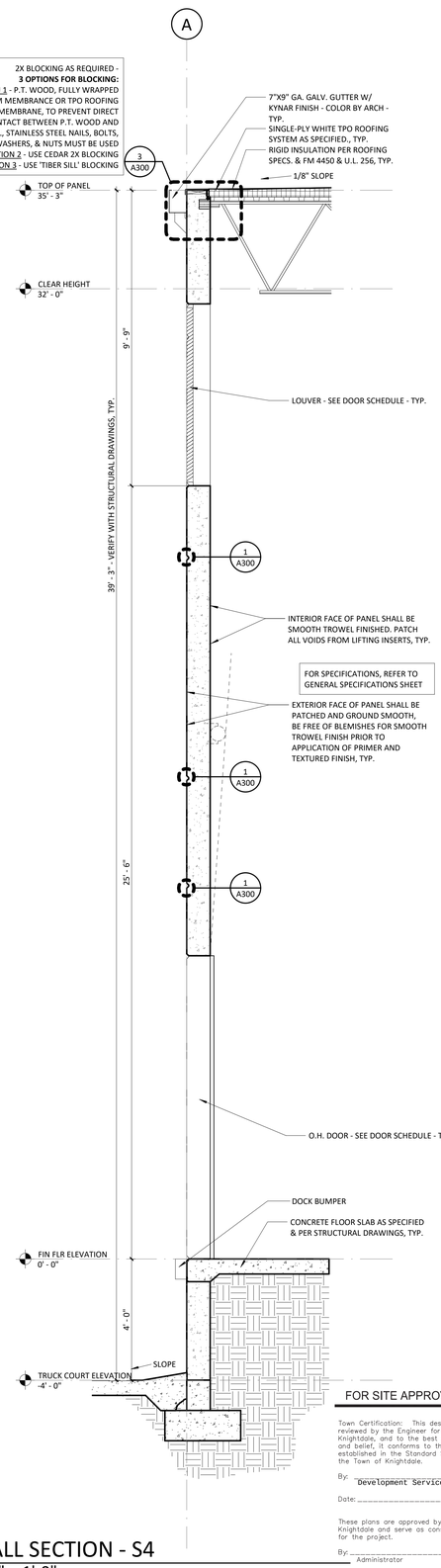
1 WALL SECTION - S1
1/2" = 1'-0"



2 WALL SECTION - S2
1/2" = 1'-0"



3 WALL SECTION - S3
1/2" = 1'-0"



4 WALL SECTION - S4
1/2" = 1'-0"

FOR SITE APPROVAL ONLY

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By: Development Services Engineer

Date:

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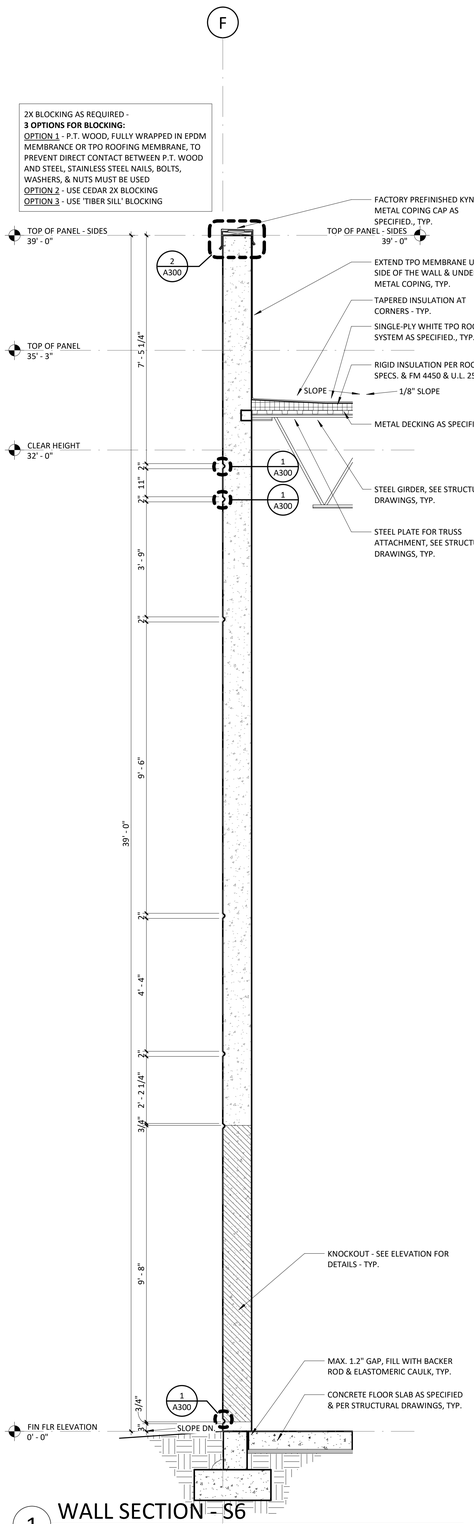
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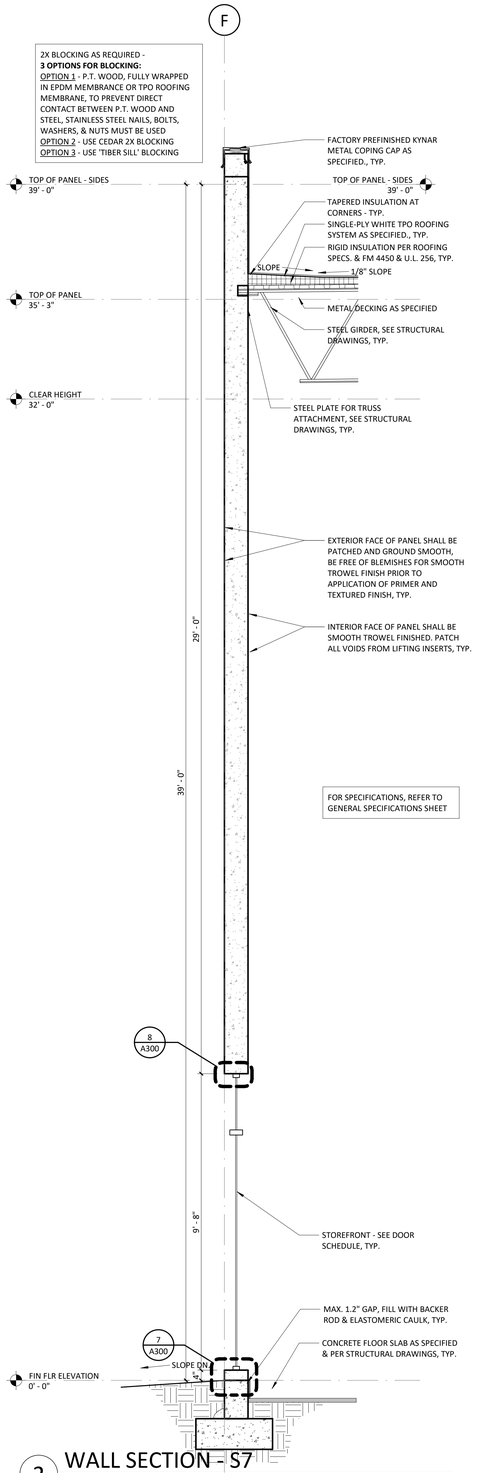
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SHEET NUMBER: A302

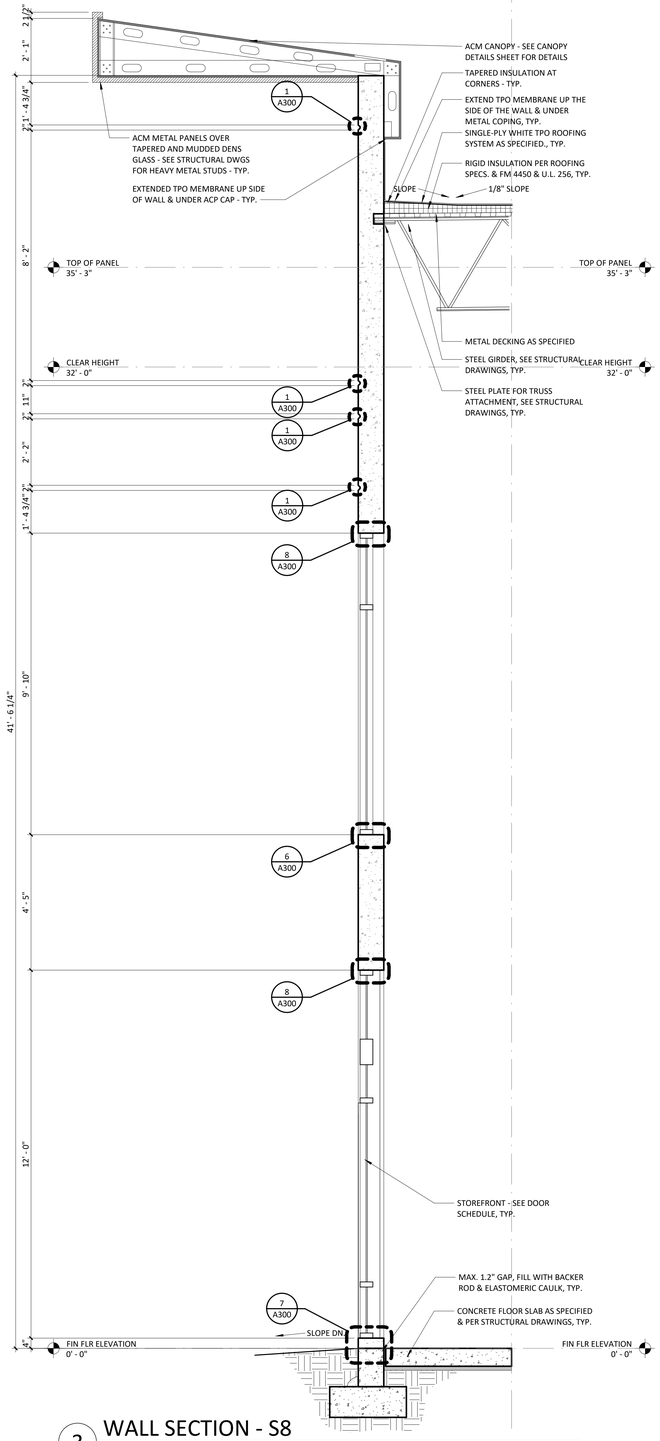
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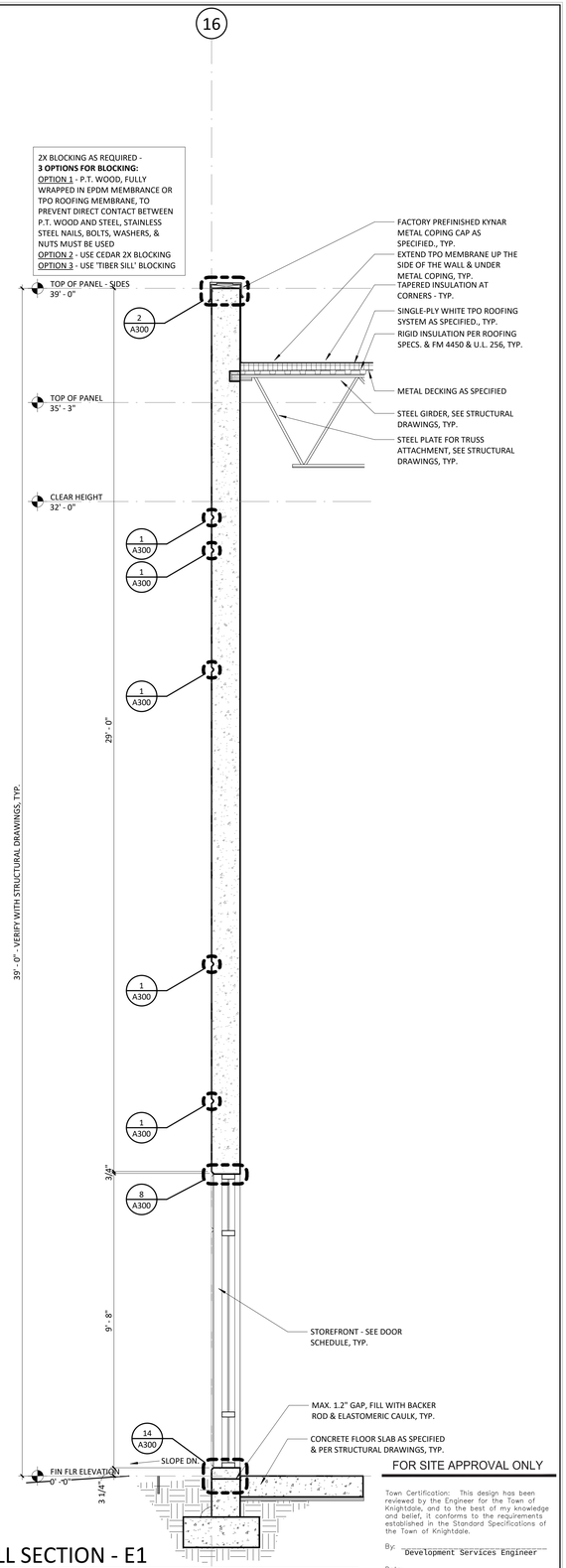
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1/2" = 1'-0"



2 WALL SECTION - S7
1/2" = 1'-0"



3 WALL SECTION - S8
1/2" = 1'-0"



4 WALL SECTION - E1
1/2" = 1'-0"

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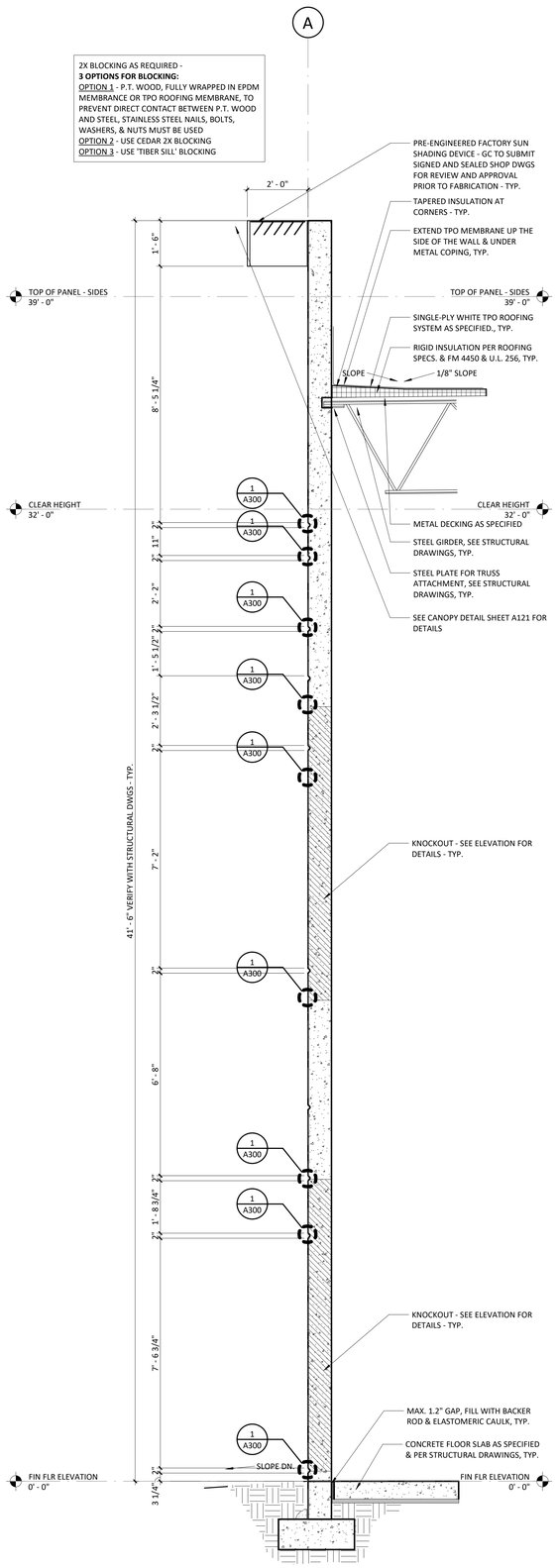
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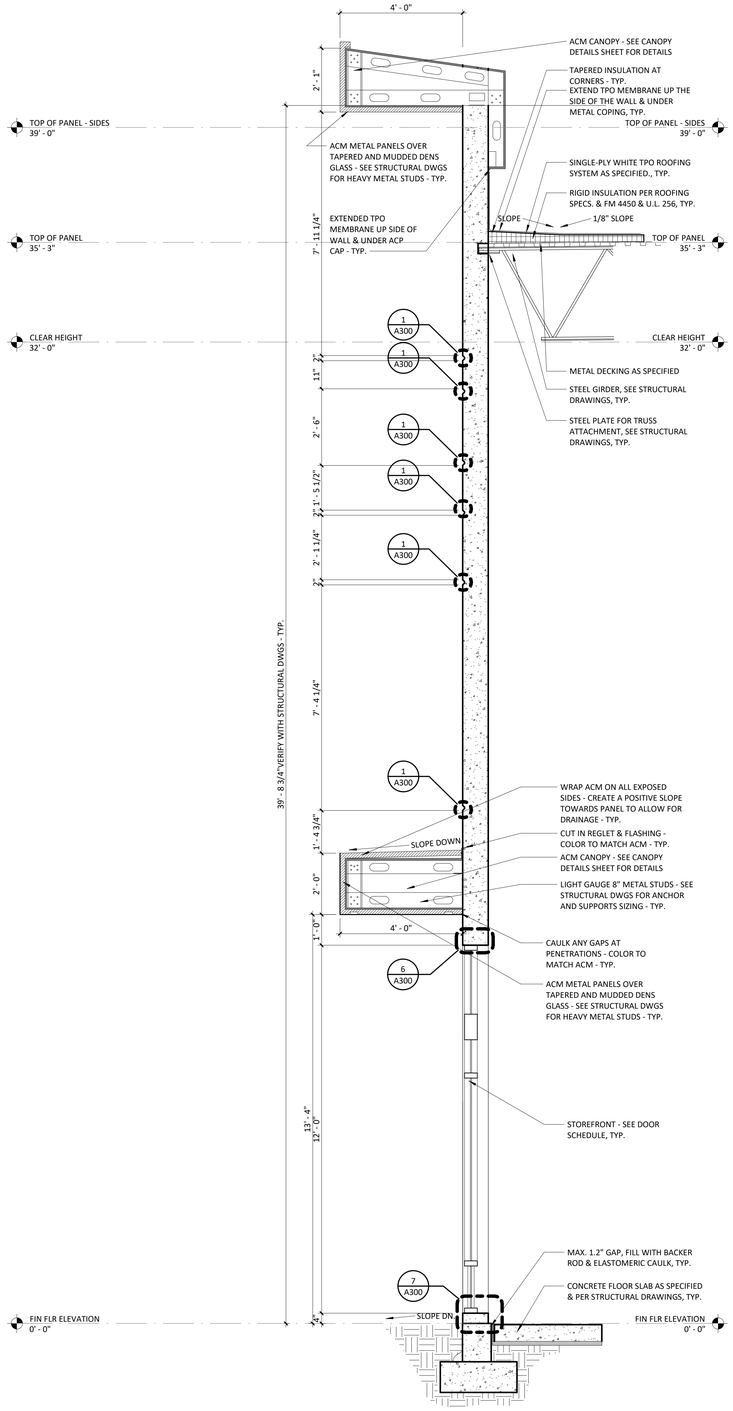
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SHEET NUMBER: A303

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1 WALL SECTION N5
1/2" = 1'-0"



2 WALL SECTION SW1
1/2" = 1'-0"

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SHEET TITLE: WALL SECTIONS

SHEET NUMBER: A304

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Knightdale Gateway

Planned Unit Development

Knightdale, North Carolina

Submittal Dates
First Submittal: May 23, 2022
Second Submittal: June 23, 2022
Third Submittal: August 1, 2022

Developer
Beacon Partners
500 East Morehead St, Suite 200
Charlotte, NC 28202

BEACON PARTNERS

Civil Engineer
Advanced Civil Design, Inc.
51 Kilmayne Drive, Suite 102
Cary, NC 27511

ADVANCED CIVIL DESIGN

Land Use Attorney
Parker Poe Adams & Bernstein LLP
301 Fayetteville Street, Suite 1400
Raleigh, NC 27602

Parker Poe
Attorneys & Counselors at Law

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1. VICINITY MAP



Knightdale Gateway

N

0 400 800 1600 ft

1 inch equals 800 feet

Disclaimer

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2. PROJECT DATA

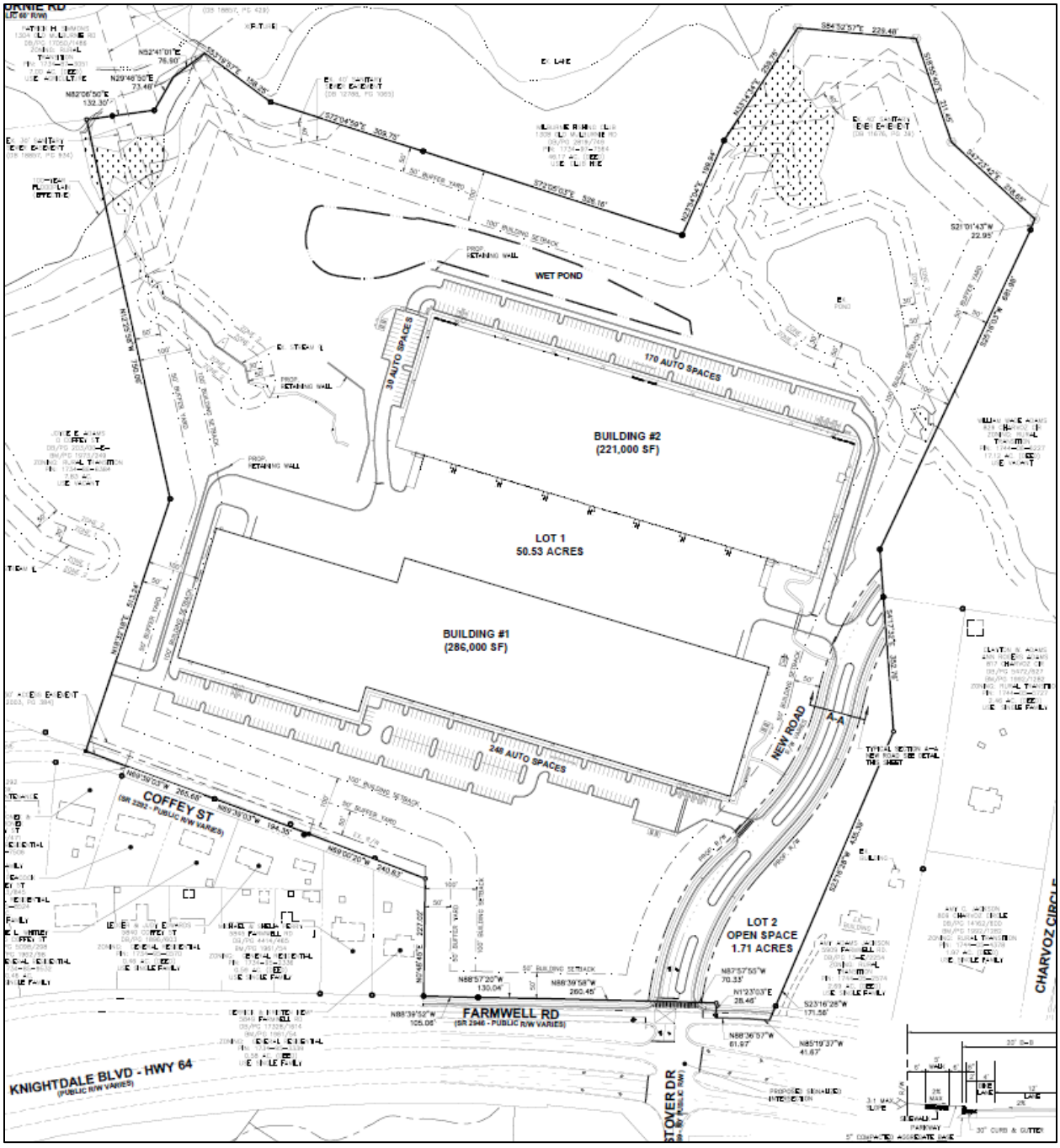
Name of Project:	Knightdale Gateway
Property Owners:	Patricia Simmons 5909 Coffey Street, Raleigh, NC 27604 JMAK Plant Farm LLC c/o Beverly C. Morris P.O. Box 453, Fairview, NC 28730 Beverly C. Morris, Trustee and Julia Hernandez, Trustee of the Julia Hernandez Trust c/o Beverly C. Morris P.O. Box 453, Fairview, NC 28730 Marianne Jeffreys Pair 5845 Coffey Street, Raleigh, NC 27604 Motaparthy Properties, LLC 105 Cashwell Drive, Goldsboro, NC 27534
Developer:	**Beacon Partners** 500 East Morehead St, Suite 200 Charlotte, NC 28202
Prepared by:	**Parker Poe Adams & Bernstein LLP** 301 Fayetteville Street, Suite 1400 Raleigh, NC 27601 **Advanced Civil Design, Inc.** 51 Kilmayne Dr., Suite 102 Cary, NC 27511
Current Zoning:	Rural Residential (RR) General Residential Low Density (GR3)
Proposed Zoning:	Manufacturing and Industrial - Planned Unit Development (MI-PUD)
Knightdale Next Growth and Conservation Map Designation:	Retail and Mixed Density Neighborhood
Site Primary Address:	5901 Farmwell Road, Knightdale, NC 27610

Property Identification Numbers:	1744062710, 1734957218, 1734955361, 1734954346, 1744051637, 1734966250, 1734963080, 1734965130, 1734962197, 1734963421, 1734950783, 1734960208
Total Acreage:	54.14 acres
Current Land Use:	Single Family
Proposed Land Use:	Mixed Use Business Park

3. EXISTING CONDITIONS



4. MASTER PLAN

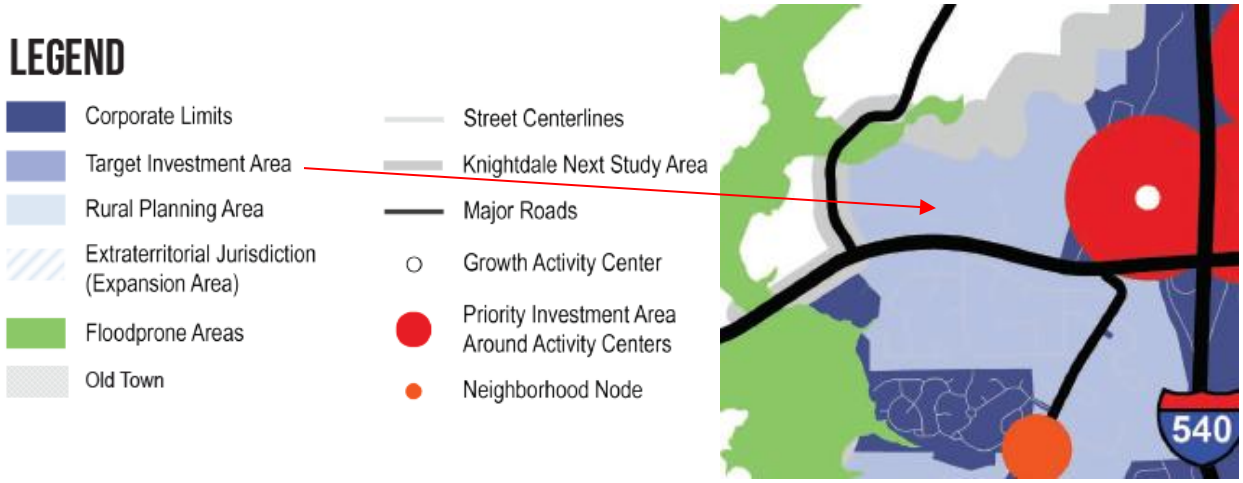


5. VISION STATEMENT

Knightdale Gateway is a proposed class A business park that incorporates high-quality design to offer a unique employment center in a campus setting. Comprised of twelve parcels, the development incorporates the recommendations of the Knightdale Next 2035 Comprehensive Plan and Street Network Plan to create a unique gateway into Knightdale. Ideally situated near the Knightdale Boulevard and 540 interchange, Knightdale Gateway is designed to accommodate a variety of high end users, including life science, research and development, office, and traditional wholesaling and distribution users. As the name suggests and with frontage along Knightdale Boulevard, Knightdale Gateway is designed to create a distinctive entrance to the Town of Knightdale. The master plan places an emphasis on architectural features and landscaping focused on the pedestrian scale. The buildings are designed for the long term in terms of the quality of materials and the ability of the buildings to be easily adapted for future tenant needs and tenant mixes.

6. STATEMENT OF CONSISTENCY: COMPREHENSIVE PLAN

The KnightdaleNext Comprehensive Plan establishes a vision and guiding principles, analyzes existing conditions and emerging trends, describes and illustrates a plan for future development and supporting infrastructure, and outlines steps for implementation. The Comprehensive Plan features the Growth Framework Map, a high-level tool for assisting in the decision making process for development proposals with the intent to prioritize development proposals based on how well each fits within the surrounding area. Knightdale Gateway is within the Target Investment Area, which recommends that future growth should be guided into more compact and efficient development patterns that will help manage the timing, location, and magnitude (length and size) of expensive infrastructure investment.



Knightdale Gateway is consistent with the Target Investment Area recommendations of the Growth Framework Map. The proposed uses and master plan will facilitate a more compact and efficient development pattern along a major transportation corridor into the Town. The site is also near the intersection of Knightdale Boulevard and 540, where future growth is anticipated.

The KnightdaleNext Comprehensive Plan also features the Growth and Conservation Map, which refines the intent and focus of the Growth Framework Map and organizes the community into different place types. The place types are prioritized for varying degrees of land conservation and growth that supports a series of existing and proposed mixed-use, walkable neighborhoods and centers that vary in scale and character. The Map is intended to show, in a general sense, the desired types, locations, patterns, and intensities of future development.

Knightdale Gateway is within the Retail and Mixed-Density Neighborhood place types. Retail place types are intended to serve the daily shopping needs of the region, the community, and surrounding residential neighborhoods, typically located near high-volume roads and key intersections and designed with public spaces throughout. Mixed-Density Neighborhoods are formed as subdivisions or communities with a mix of housing types and densities designed to support a cohesive, well-connected community with a network of open space and gathering places.



The KnightdaleNext Playbook Approach gives guidance to when a parcel may be considered for revisions to the Growth & Conservation Map. The approach describes new realities that may support an amendment. Per KnightdaleNext, "Any changes considered to the Map should be evaluated against the community vision, guiding principles, and the Growth Framework Map to determine if they are in the best long-term interests of the Town and its residents, businesses, and property owners."

Knightdale Gateway is consistent with several aspects of the Retail place type, but inconsistent with the Mixed-Density Neighborhoods place type. However, Knightdale Gateway directly conforms to the definition of the Business Office place type. The Business Office place type provides opportunities to concentrate employment in the Town on normal workdays, and includes both largescale buildings with employees for one business and areas with one or more buildings for multiple businesses that support and serve one another. They are buffered from surrounding development by transitional uses or landscaped areas and are often located in close proximity to major highways or thoroughfares.

In addition, Knightdale Gateway will support and advance the Community Design and Economic Vitality guiding principles of the KnightdaleNext 2035 Comprehensive Plan.

- Knightdale Gateway is consistent with the Community Design guiding principle by providing a quality, distinctive business park. By incorporating street improvements, distinct architectural features, public spaces, and landscaping, Knightdale Gateway will support the Town's identity and reputation as a place for business owners to invest in.

- Knightdale Gateway is consistent with the Economic Vitality guiding principle by promoting a healthy and sustainable business environment by investing in infrastructure and building a campus like setting that is attractive to employers and their workers. Knightdale Gateway will promote Knightdale as a vibrant place with a competitive advantage to attract knowledge-based businesses to the area. Further, Knightdale Gateway will promote economic vitality for businesses and increase access to employment opportunities in the Town.

The KnightdaleNext Street Network Map identifies a proposed Town-Maintained Collector within the project boundary. The Knightdale Gateway master plan is consistent with the Street Network Map by incorporating the segment of the proposed collector that is within the project boundary.



Therefore, a revision of the Growth & Conservation Map to change the rezoning site to the Business Office place type is reasonable and in the public interest because Knightdale Gateway is consistent with the community vision, guiding principles, and Growth Framework Map, and is in the best long-term interests of the Town and its residents, businesses, and property owners.

7. STATEMENT OF CONSISTENCY: UNIFIED DEVELOPMENT ORDINANCE

Knightdale Gateway is proposed to be developed as a Planned Unit Development Overlay District (PUD), according to the base Manufacturing and Industrial zoning district (MI). The Knightdale Gateway master plan is designed to comply with the development standards outlined in the Town of Knightdale's Unified Development Ordinance (UDO), as well as the Town's standards and specifications for the design and construction of the project.

8. DEVELOPMENT STANDARDS

Knightdale Gateway is a master planned class A business park designed to the development standards of the MI zoning district.

8.1 PERMITTED USES

The Knightdale Gateway property may be used for, and only for, the uses listed immediately below. The permitted uses are subject to the limitations and regulations stated in the UDO and any additional limitations or regulations stated below. For convenience, some relevant sections of the UDO may be referenced; such references do not imply that other sections of the UDO do not apply.

Manufacturing/Wholesale/Storage Uses

- Brewery / Winery / Distillery
- Laboratory – medical, analytical, research & development
- Manufacturing, Light
- Research and Development
- Storage – Warehouse, indoor storage
- Wholesaling and Distribution

8.2 OPEN SPACE AND TREE SAVE AREAS

There is no residential component proposed with this development, therefore recreational open space is not required per UDO 11.2.C.

Knightdale Gateway is designed to meet the minimum public gathering space required as described in UDO Section 6.12.

In accordance with UDO Section 7.4(M), Knightdale Gateway provides the following Tree Cover Area:

Perimeter of Site:	6,950 ft
Required Tree Cover Area:	**6,950 ft x 20 = 139,000 sf**
Required Area % of Total Lot Area:	139,000 sf / 2,358,143 sf = 5.89%
	5.89% of total lot area (<10% maximum)
Existing Tree Cover Area to be Utilized:	**521,245 sf**
Additional Tree Cover Area Required:	0 sf
Re-planted Tree Cover Area Required:	0 sf
Re-planted Tree Cover Area Provided:	25,086 sf

8.3 PERIMETER BUFFERS AND ENHANCED LANDSCAPING

In accordance with UDO Section 7.4.I, Knightdale Gateway is designed with 50 ft Type D buffer yards with landscaping to provide an opaque screen.

Knightdale Gateway is providing an additional 10 ft Type A buffer along the northern parking Lot of Building #2. This will add an extra layer of screening between Milburnie Lake and the northern parking lot.

Knightdale Gateway is providing an additional 50 ft of Type D buffer along along Coffey Street, resulting in a 100 ft buffer to preserve the viewshed of existing uses on Coffey Street. The majority of this 100 ft buffer will utilize existing vegetation and tree cover, and approximately 11,200 sf will be re-planted to Type D buffer standards.

8.4 SIGN STANDARDS

Knightdale Gateway, designed as a class A business park that incorporates high-quality design to offer a unique employment center in a campus setting, shall incorporate a monument sign at its main entrance off of the proposed new road (the "Monument Sign"). For purposes of place-making, the Monument Sign shall include a mixture of materials and colors that are consistent with the architecture of buildings. In order to allow additional creative flexibility in the design of the Monument Sign, the Monument Sign shall be exempt from the dimensional standards of UDO Section 8.6(C)(5). The maximum height of the Monument Sign shall be limited to 10 ft, and have a maximum area of no greater than 100 square ft. The exhibits below are examples of monument signs that are intended to create a campus setting. The design of the Knightdale Gateway Monument Sign shall be determined at the site plan stage.



Metrolina Park (Charlotte, NC)



Carolina Logistics Park (Pineville, NC)

9. INFRASTRUCTURE

9.1 STREETS AND SIDEWALKS

Streets and sidewalks within Knightdale Gateway are designed to meet the standards of the Town of Knightdale, including roadway improvements along Farmwell Road.

Consistent with the KnightdaleNext Street Network Map's proposed Town-Maintained Collector street located within the Knightdale Gateway project boundary, the master plan incorporates a segment of the proposed Collector St. The street is proposed as a 2-lane, median divided cross section with bike lanes and sidewalks on both sides, according to UDO Section 10.4.B.2.c.

9.2 PARKING

Knightdale Gateway is designed to meet the parking and loading standards as described in UDO Section 7.1.

Maximum No. of Parking Spaces: 1.5 per ksf GFA
Minimum No. of Parking Spaces: 0.5 x maximum

Building No.	GFA (sf)	Max Spaces	Min Spaces	Auto Spaces Provided
1	221,000	331	166	200
2	286,000	429	215	248

Electric Vehicle Parking Requirements: 1 per 40 spaces = 11 spaces
EV Charging Stations/Dedicated Spaces Provided: 11 spaces

Bicycle Parking Required: 1 per 10 parking spaces = 45 spaces
Bicycle Parking Provided: 46 spaces

9.3 STORMWATER MANAGEMENT

Knightdale Gateway will meet all applicable requirements and standards as described in UDO Chapter 9. The Stormwater Control Measures are designed to meet the stormwater reduction requirements, including limiting the post-development stormwater flows to not exceed the pre-development stormwater runoff for the 1-year, 2-year, and 10-year storm events. The project will use approved devices to control the stormwater sediment runoff. These devices may include wet detention basins, constructed wetlands, bioretention areas, sand filters or any other approved stormwater control measure.

10. ARCHITECTURAL STANDARDS

1. In order to divide and create vertical orientation on building facades and add visual interest, expanses of blank wall shall not exceed seventy (70) feet in width without being interrupted with an architectural feature such as, but not limited to:

    a. columns,
    b. recesses in or projections from the building façade,
    c. piers,
    d. rooflines,
    e. brick patterns, or
    f. reveals in concrete tilt construction with contrasting paint colors.

2. Each building façade shall have architectural features that are repeated through the pattern of walls and openings. Each building façade shall have an identifiable base, body, and cap with horizontal elements separating these components. The body of the building shall constitute a minimum of 50% of the total building height.

3. Buildings shall be architecturally compatible by way of colors and use of materials.

    a. Each building exterior shall have a minimum of two different colors.
    b. Each building exterior shall have a minimum of two different materials.
    c. The primary façade of each building shall include one of the following materials:

        i. Concrete tilt or precast concrete wall panels, with a base wall paint color in conjunction with varying complimentary accent paint colors,
        ii. Brick masonry,
        iii. Stone or Ceramic Tile accents, or
        iv. Aluminum storefronts with anodized or pre-finished colors.

    d. The following exterior building materials shall be prohibited:

        i. Vinyl siding,
        ii. Painted, smooth faced concrete block (decorative blocks are acceptable).

4. EIFS or synthetic stucco shall not be used in the first four feet above grade and shall be limited to only 25% of each building façade.

5. Soffit and fascia materials shall be EIFS, architectural metal panels (ACM), or tongue and groove wood.

6. Windows and storefront glazing shall have mullions that provide rhythm and visual interest.

7. Each building's primary entrance shall emphasize street level, pedestrian focused visual interest through the use of features such as, but not limited to:

    a. columns,
    b. piers,
    c. windows,
    d. recessed entries,
    e. sheltering elements,
    f. rooflines,
    g. trim,
    h. color change,
    i. material change, or
    j. and masonry patterns.

8. Each building's secondary entrances shall emphasize street level, pedestrian focused visual interest through the use of features such as, but not limited to:

    a. recessed entries,
    b. sheltering elements, or
    c. adjacent storefront windows.

9. Building facades facing public streets shall incorporate enhanced architectural features to create visual interest

10. The façade of building corners shall maintain a relation to each other, but are not required to be identical.

11. Each building shall have a minimum of two parapet heights.

12. Simple parapet roof edges with coping shall be used.

13. Roof features may include architectural standing seam metal or canopies using architectural prefinished metal panels (Aluminum Composite Material).

11. NEIGHBORHOOD MEETING REPORT

A virtual neighborhood meeting was held at 6:00 pm on May 3rd, 2022, according to the requirements described in UDO Section 12.2(C)(3) and the Town's Electronic Neighborhood Meeting Guidelines. First-class mail notice was provided to property owners within 200 feet of the property proposed to be rezoned on April 22nd, 2022. Approximately 10 neighbors attended the meeting. Following a presentation by the development team, the following issues were discussed:

- Discussion of the perimeter buffers and the screening along the northern side of Coffey Street. The development team committed to providing enhance landscaping within the perimeter buffer adjacent to Coffey Street.
- Discussion of roadway improvements, traffic, and vehicular access to the site.
- Discussion regarding impacts to property values in the area.
- Discussion of whether blasting will occur during construction.
- Discussion of how large the proposed buildings are.

Neighborhood Meeting Attendance Roster:

- Nelson Edwards
- Chip Bridges
- Clayton Adams
- Debbie Whitley
- Hart Huffines
- James Joyner
- Richard Stironek
- Will McCachren
- Merry Sealy

Existing Tree Buffer at Coffey Street



View from 5836 Coffey St



View from 5840 Coffey St



View from 5845 Farmwell Rd



View from 5849 Farmwell Rd





Traffic Impact Analysis

Knightdale Gateway
Knightdale, NC

Prepared for:

Beacon Partners

Kimley»Horn

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Traffic Impact Analysis for

Knightdale Gateway

Knightdale, North Carolina

Prepared for:
Beacon Partners
Charlotte, NC

Prepared by:
Kimley-Horn and Associates, Inc.
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000

May 2022
017360007



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Executive Summary

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the Knightdale Gateway development, which is proposed to be located on the northwest quadrant of the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road in Knightdale, NC. The site is currently occupied by the May-Mak Plant Farm, and as currently envisioned, the site will include approximately 450,000 square feet of warehousing space, 60,000 square feet of general office space, and 25,000 square feet of strip retail plaza space. The site is proposed to be accessed by two full-movement driveways onto a new roadway that forms the north leg of Farmwell Road at US 64 (Knightdale Boulevard). Build-out of the development is anticipated in 2024.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2021) traffic condition, the projected background and build-out +1 (2025) traffic conditions, and the projected background and build-out +10 (2034) traffic conditions per the Town of Knightdale's UDO. The weekday AM and PM peak hours were studied.

As shown in Table ES-1, the proposed development has the potential to generate 2,156 new daily trips, 229 new trips during the AM peak hour, and 274 trips during the PM peak hour on a typical weekday.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
150	Warehousing	450,000	s.f.	375	375	60	18	22	58
710	General Office Building	60,000	s.f.	372	372	95	13	19	90
822	Strip Retail Plaza (<40k SF)	25,000	s.f.	681	681	35	24	83	82
Internal Capture Reduction				97	97	8	8	9	9
Pass-By Reduction				253	253	0	0	31	31
Total Net New Trips		535,000	s.f.	**1,078**	**1,078**	**182**	**47**	**84**	**190**

Capacity analyses were performed using Synchro Version 11 software. Table ES-2 summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions.

Table ES-2 - Level of Service Summary

Intersection and Approach/Movement	Traffic Control	Existing (2021) Traffic		Background (2025) Traffic		Build-out (2025) Traffic		Build-out (2025) Traffic - Improved		Background (2034) Traffic		Build-out (2034) Traffic	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US 64 Bus (Knightdale Blvd) at Old Milburnie Rd	Signalized	C (21.7)	C (25.1)	C (27.3)	C (33.6)	C (27.3)	C (34.3)	C (25.9)	C (30.5)	C (33.8)	D (51.7)	C (34.3)	D (49.8)
US 64 Bus (Knightdale Blvd) at Westover Dr/Farmwell Rd	Unsignalized/ Signalized	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	B (10.0)	B (18.0)	A (6.3)	A (9.8)	B (11.6)	C (21.1)
Eastbound*		B (13.2)	C (16.8)	C (15.4)	C (20.9)	C (19.0)	B (10.2)	A (6.3)	B (14.3)	A (4.4)	A (6.6)	A (6.4)	B (12.4)
Westbound*		A (9.9)	C (15.9)	B (10.7)	C (19.9)	B (10.7)	C (19.6)	A (9.1)	B (16.6)	A (5.5)	B (12.8)	B (11.9)	C (21.3)
Northbound		F (99.6)	F (622.0)	F (372.1)	F (3488.7)	F (969.2)	F (80.1)	D (45.0)	D (36.5)	D (45.8)	D (51.1)	D (43.9)	D (37.6)
Southbound		F (193.5)	F (445.9)	F (625.0)	F (2695.2)	F (+)	F (421.4)	E (56.3)	E (58.2)	D (49.0)	D (47.8)	E (59.8)	F (104.6)
US 64 Bus (Knightdale Blvd) at Hodge Rd	Signalized	B (19.0)	C (26.9)	C (23.7)	D (37.7)	C (23.3)	D (38.1)	C (23.7)	D (35.8)	C (26.2)	D (40.0)	C (25.9)	D (40.6)
US 64 Bus (Knightdale Blvd) at I-540 EB Ramps	Signalized	A (1.6)	A (4.0)	A (3.9)	A (6.2)	A (4.0)	A (6.3)	A (4.0)	A (6.3)	A (5.4)	A (8.0)	A (5.4)	A (8.1)
US 64 Bus (Knightdale Blvd) at I-540 WB Ramps	Signalized	B (13.6)	B (18.0)	B (18.7)	C (20.0)	B (19.2)	C (20.1)	B (19.1)	C (20.1)	C (22.7)	C (22.0)	C (23.1)	C (22.3)
Old Milburnie Rd at Farmwell Rd	Unsignalized	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Westbound		B (11.7)	B (11.9)	B (12.3)	B (12.5)	B (11.4)	B (12.9)	B (11.4)	B (12.9)	B (13.8)	C (15.7)	B (12.5)	C (16.5)
Southbound*		A (7.6)	A (8.3)	A (7.7)	A (8.5)	A (7.7)	A (8.5)	A (7.7)	A (8.5)	A (7.8)	A (9.2)	A (7.9)	A (9.2)
Farmwell Rd at Site Access[1]	Unsignalized	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Eastbound		A (8.6)	A (9.0)	A (8.6)	A (8.9)	F (141.4)	F (616.5)	C (21.1)	D (25.7)	A (8.6)	A (8.9)	C (15.4)	E (36.5)
Westbound		A (9.1)	A (9.1)	A (9.1)	A (9.1)	F (79.4)	F (858.7)	B (13.8)	E (46.4)	A (9.1)	A (9.2)	A (8.6)	E (39.2)
Northbound*		A (3.6)	A (2.7)	A (3.6)	A (2.8)	N/A		N/A		A (3.6)	A (2.9)	N/A	

*LOS and Delay reported for the left-turn movement for unsignalized scenarios

[1]SimTraffic delays are reported for the build-out traffic conditions at this intersection due to HCM delays not reported for this intersection configuration. Additionally, the southbound approach delays at this intersection are shown within the intersection of US 64 Bus (Knightdale Blvd) at Westover Dr/Farmwell Rd

As part of an area development identified in the Allen Park Development TIA (Timmons Group, 2021), the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road is expected to undergo the following improvements by the projected (2034) background and build-out +10 traffic conditions:

- Construct an exclusive eastbound right-turn lane with a minimum of 375 feet of storage and appropriate taper
- Extend the exclusive westbound left-turn lane to provide a minimum of 500 feet of storage and appropriate taper

Based on discussions with the Town of Knightdale, the following additional improvements were identified to be included in this analysis for the projected background and build-out +10 (2034) traffic conditions at the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road:

- Extend the exclusive westbound right-turn lane to provide a minimum of 100 feet of storage and appropriate taper
- Construct an exclusive northbound left-turn lane

It should be noted that with these listed improvements in place at the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road, the signal was optimized in the analysis of the projected (2034) background and build-out +10 traffic conditions and signal operations were adjusted to match the 2020 signal plan.

It should also be noted that, per the KnightdaleNext 2035 Comprehensive Plan, Old Milburnie Road is planned to be realigned to connect with Hodge Road north of the proposed Knightdale Gateway location. Ultimately, the new roadway that is to be constructed as the proposed site access is planned to be extended by others and connect to the new realigned Old Milburnie Road.

The following improvements are recommended to be performed to accommodate projected Knightdale Gateway site traffic based on the capacity analysis presented herein:

<u>US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive</u>:

- Install a traffic signal
- Restripe the southbound approach to provide an exclusive left-turn lane and a shared through/right-turn lane

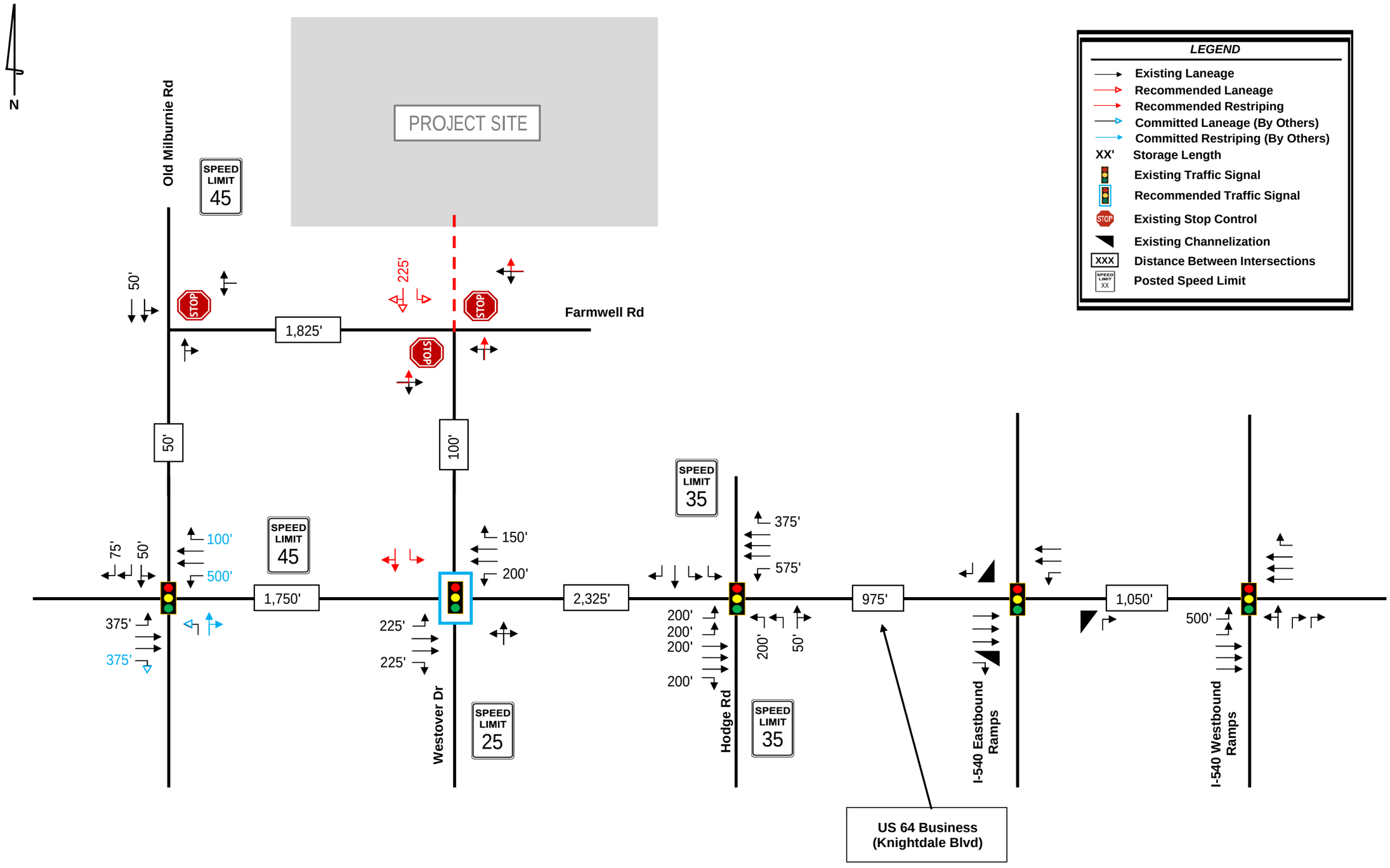
<u>Farmwell Road at Site Access</u>

- Construct the proposed site access as the north leg of the intersection of Farmwell Road at US 64 Business (Knightdale Boulevard). The north leg shall contain one ingress lane and two egress lanes striped as an exclusive left-turn lane and a shared through/right-turn lane. The shared through/right-turn lane should provide a minimum of 225 feet of storage.

- Configure the intersection to be stop-controlled on the eastbound and westbound approaches, with a stop bar, as well as a signage, on the southbound approach instructing southbound traffic to not block the intersection. The northbound approach from US 64 Business (Knightdale Boulevard) will be free-flow.

All of the signalized study intersections are expected to operate at an acceptable LOS in the projected (2025) build-out +1 and projected (2034) build-out +10 traffic conditions.

The committed and recommended laneage is shown on **Figure ES-1**.



Recommended Roadway Laneage (2025)

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure ES-1

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1.0 Introduction

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the Knightdale Gateway development, which is proposed to be located on the northwest quadrant of the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road in Knightdale, NC. The site is currently occupied by the May-Mak Plant Farm, and as currently envisioned, the site will include approximately 450,000 square feet of warehousing space, 60,000 square feet of general office space, and 25,000 square feet of strip retail plaza space. The site is proposed to be accessed by two full-movement driveways onto a new roadway that forms the north leg of Farmwell Road at Farmwell Road. Build-out of the development is anticipated in 2024.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2021) traffic condition, the projected background and build-out +1 (2025) traffic conditions, and the projected background and build-out +10 (2034) traffic conditions per the Town of Knightdale's UDO. The weekday AM and PM peak hours were studied.

North Carolina Department of Transportation (NCDOT) and Town of Knightdale staff provided background data and were consulted regarding the elements to be covered in this analysis. The approved Memorandum of Understanding is included in **Appendix A**.

2.0 Inventory

2.1 *Study Area*

The study area for this development includes the following intersections:

- US 64 Business (Knightdale Boulevard) at Old Milburnie Road
- US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive
- US 64 Business (Knightdale Boulevard) at Hodge Road
- US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps
- US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps
- Old Milburnie Road at Farmwell Road
- Farmwell Road at Site Access

Figure 2.1 shows the site location. The preliminary site plan is shown on **Figure 2.2**.

2.2 *Existing Conditions*

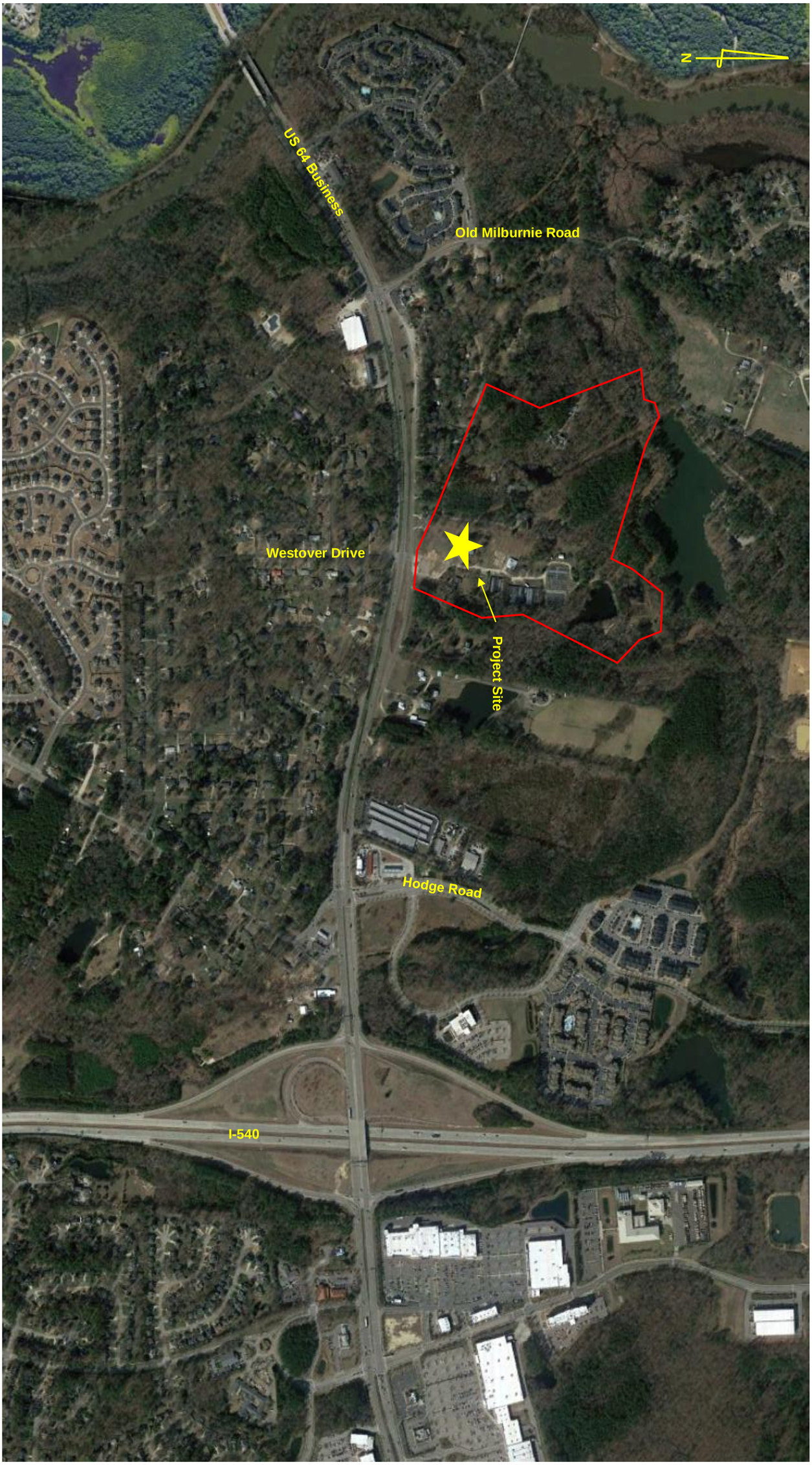
The proposed Knightdale Gateway project is located on the northwest quadrant of the intersection of Farmwell Road at US 64 Business (Knightdale Boulevard) in Knightdale, NC. Roadways in the study area include I-540, US 64 Business (Knightdale Boulevard), Hodge Road, and Old Milburnie Road. The existing roadway laneage is shown in **Figure 2.3**.

I-540 is a six-lane divided freeway with a posted speed limit of 70 miles per hour (mph). Per the Town of Knightdale 2035 Comprehensive Plan, this roadway is classified as a limited access facility. The reported 2019 annual average daily traffic (AADT) volume was approximately 62,500 vehicles per day (vpd) north of US 64 Business (Knightdale Boulevard) and 55,000 vpd south of US 64 Business (Knightdale Boulevard).

US 64 Business (Knightdale Boulevard) is a six-lane divided roadway with a posted speed limit of 45 mph. Per the Town of Knightdale 2035 Comprehensive Plan, this roadway is classified as a state-maintained arterial. The reported 2019 AADT volume was approximately 29,500 vpd east of Old Milburnie Road and 31,500 vpd west of I-540.

Hodge Road has a variable section but is generally a two-lane divided roadway north of US 64 Business (Knightdale Boulevard) and a two-lane undivided roadway south of US 64 Business (Knightdale Boulevard). Hodge Road has a posted speed limit of 35 mph. Per the Town of Knightdale 2035 Comprehensive Plan, this roadway is classified as a town-maintained arterial north of US 64 Business (Knightdale Boulevard) and a state-maintained arterial south of US 64 Business (Knightdale Boulevard).

Old Milburnie Road is a two-lane undivided roadway with a posted speed limit of 45 mph. The Town of Knightdale 2035 Comprehensive Plan classifies this roadway as a state-maintained collector north of US 64 Business (Knightdale Boulevard).



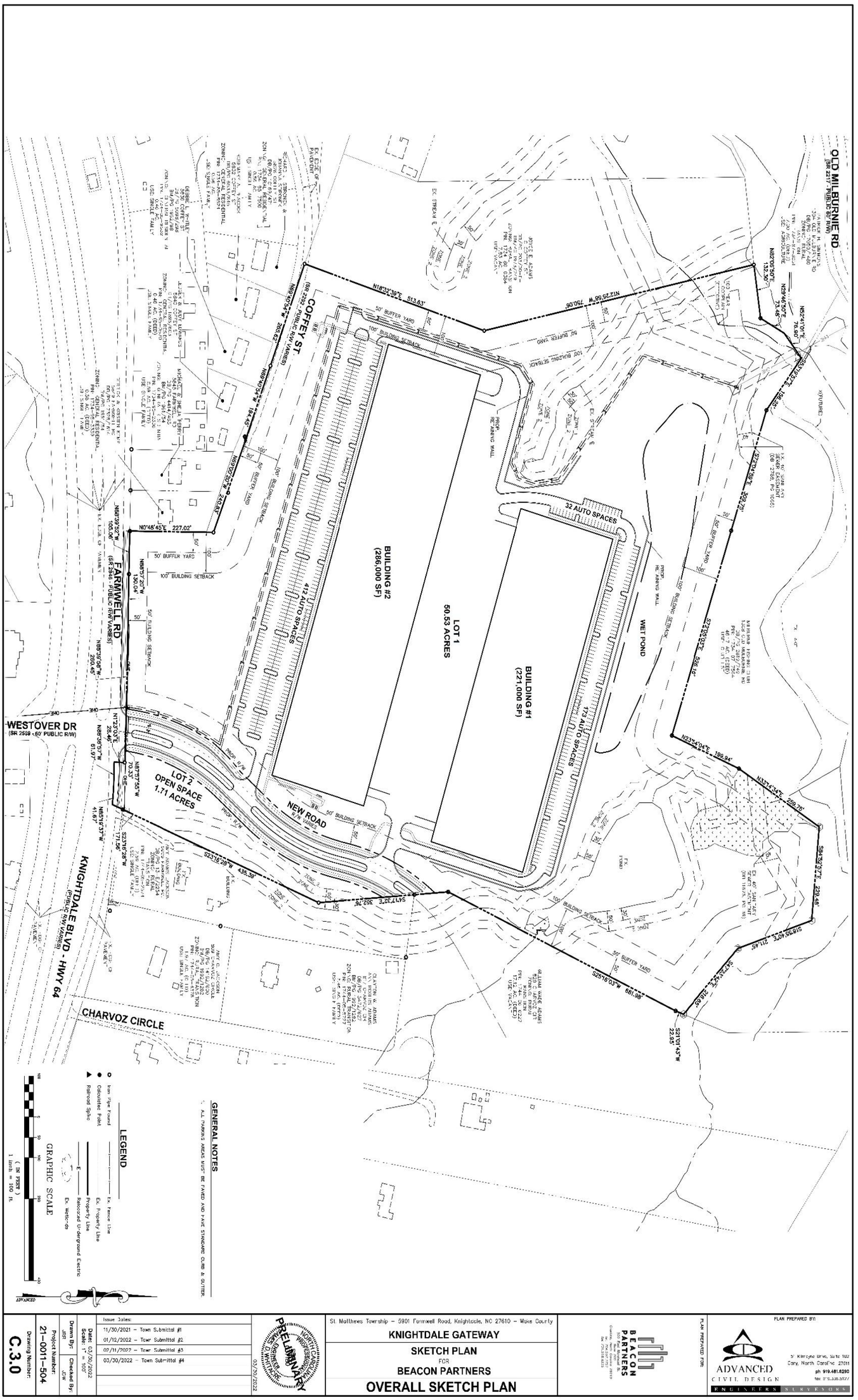
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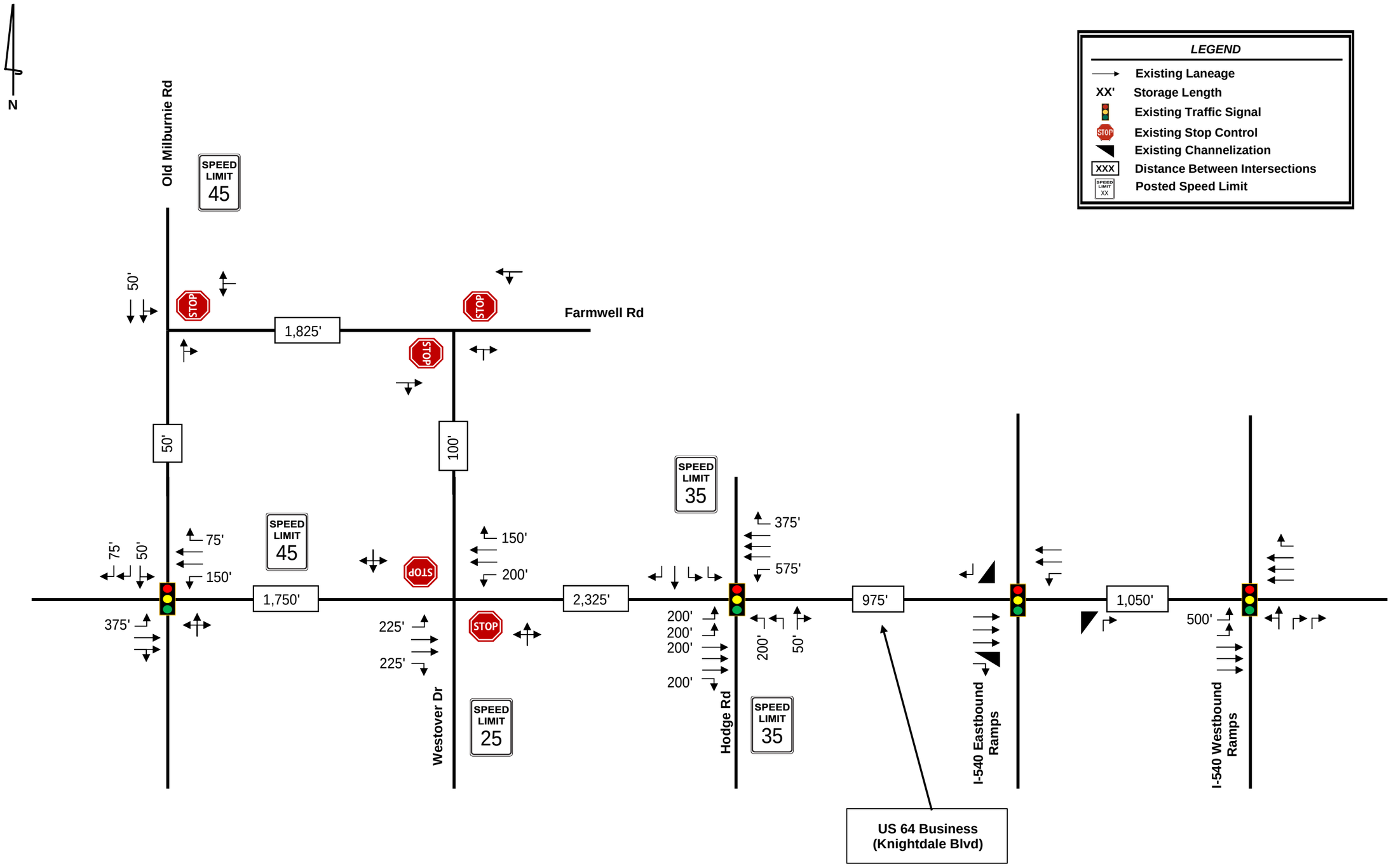
Figure 2.1

Kimley»Horn

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Site Location


OLD MILBURNIE RD
(SR 2317 - PUBLIC R/W VARIES)
COFFEY ST
(SR 2322 - PUBLIC R/W VARIES)
FARMWELL RD
(SR 2349 - PUBLIC R/W VARIES)
WESTOVER DR
(SR 2559 - 60' PUBLIC R/W)
KNIGHTDALE BLVD - PUBLIC R/W VARIES) - HWY 64
CHARVOZ CIRCLE
NEW ROAD
BUILDING #1
(221,000 SF)
BUILDING #2
(286,000 SF)
LOT 1
50.53 ACRES
LOT 2
OPEN SPACE
1.71 ACRES
WET POND
432 AUTO SPACES
32 AUTO SPACES
50' BUFFER YARD
100' BUILDING SETBACK
50' BUILDING SETBACK
LEGEND
GENERAL NOTES
GRAPHIC SCALE
KNIGHTDALE GATEWAY
SKETCH PLAN
FOR
BEACON PARTNERS
OVERALL SKETCH PLAN
St. Matthews Township – 5901 Formwell Road, Knightdale, NC 27610 – Wake County
BEACON PARTNERS
ADVANCED CIVIL DESIGN
ENGINEERS SURVEYORS
PLAN PREPARED BY:
PLAN PREPARED FOR:
Issue Dates:
11/30/2021 – Town Submittal #1
01/12/2022 – Town Submittal #2
02/11/2022 – Town Submittal #3
03/30/2022 – Town Submittal #4
Date: 03/30/2022
Scale: 1" = 100'
Drawn By: JRR
Checked By: JCM
Project Number: 21-0011-504
Drawing Number: C.3.0



Existing Roadway Laneage

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 2.3

3.0 Traffic Generation

The traffic generation potential of the proposed development was determined using the traffic generation rates published in *Trip Generation* (Institute of Transportation Engineers, 11th Edition, 2021). As currently envisioned, the site will include approximately 450,000 square feet of warehousing space, 60,000 square feet of general office space, and 25,000 square feet of strip retail plaza space.

Table 3.0
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
150	Warehousing	450,000	s.f.	375	375	60	18	22	58
710	General Office Building	60,000	s.f.	372	372	95	13	19	90
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Internal Capture Reduction				97	97	8	8	9	9
Pass-By Reduction				253	253	0	0	31	31
Total Net New Trips		535,000	s.f.	**1,078**	**1,078**	**182**	**47**	**84**	**190**

Table 3.0 shows that the proposed development has the potential to generate 2,156 new trips during a typical weekday with 229 new trips during the AM peak hour and 274 new trips during the PM peak hour. Note that the trip generation in the approved Memorandum of Understanding reflected higher trip totals, however while the project expanded, the revised land use mix resulted in lower trip generation for the TIA.

Detailed trip generation calculations are included in **Appendix B**.

4.0 Site Traffic Distribution

The proposed generated trips for the build-out scenarios were assigned to the surrounding roadway network. The directional distribution and assignment are based on existing travel patterns.

The following distribution will be used for site passenger vehicle trips:

- 40% to/from the east on US 64 Business (Knightdale Boulevard)
- 25% to/from the west on US 64 Business (Knightdale Boulevard)
- 15% to/from the south on I-540
- 10% to/from the north on I-540
- 5% to/from the north on Old Milburnie Road
- 5% to/from the south on Westover Drive

The following distribution will be used for the site truck trips:

- 35% to/from the north on I-540
- 35% to/from the south on I-540
- 20% to/from the east on US 64 Business (Knightdale Boulevard)
- 10% to/from the west on US 64 Business (Knightdale Boulevard)

The site traffic distribution and percent assignment for the net new site trips for passenger vehicles and trucks are shown on **Figures 4.1 and 4.2**, respectively.

N

PROJECT SITE

LEGEND

- Turning Movement
- XX% % Entering Traffic
- (XX%) % Exiting Traffic
- x% Overall Distribtuion

5%

5%

(5%)
(5%)

(10%)
(90%)

Farmwell Rd

10%

5%

90%

Old Milburnie Rd

(5%)

(20%)

(20%)
(5%)
(65%)

65%

65%

10%

55%

40%

10%

25%

5%
20%

20%

5%

(65%)

(50%)
(15%)

(10%)
(40%)

15%

40%

Westover Dr

Hodge Rd

US 64 Business
(Knightdale Blvd)

I-540 Eastbound Ramps

I-540 Westbound Ramps

5%

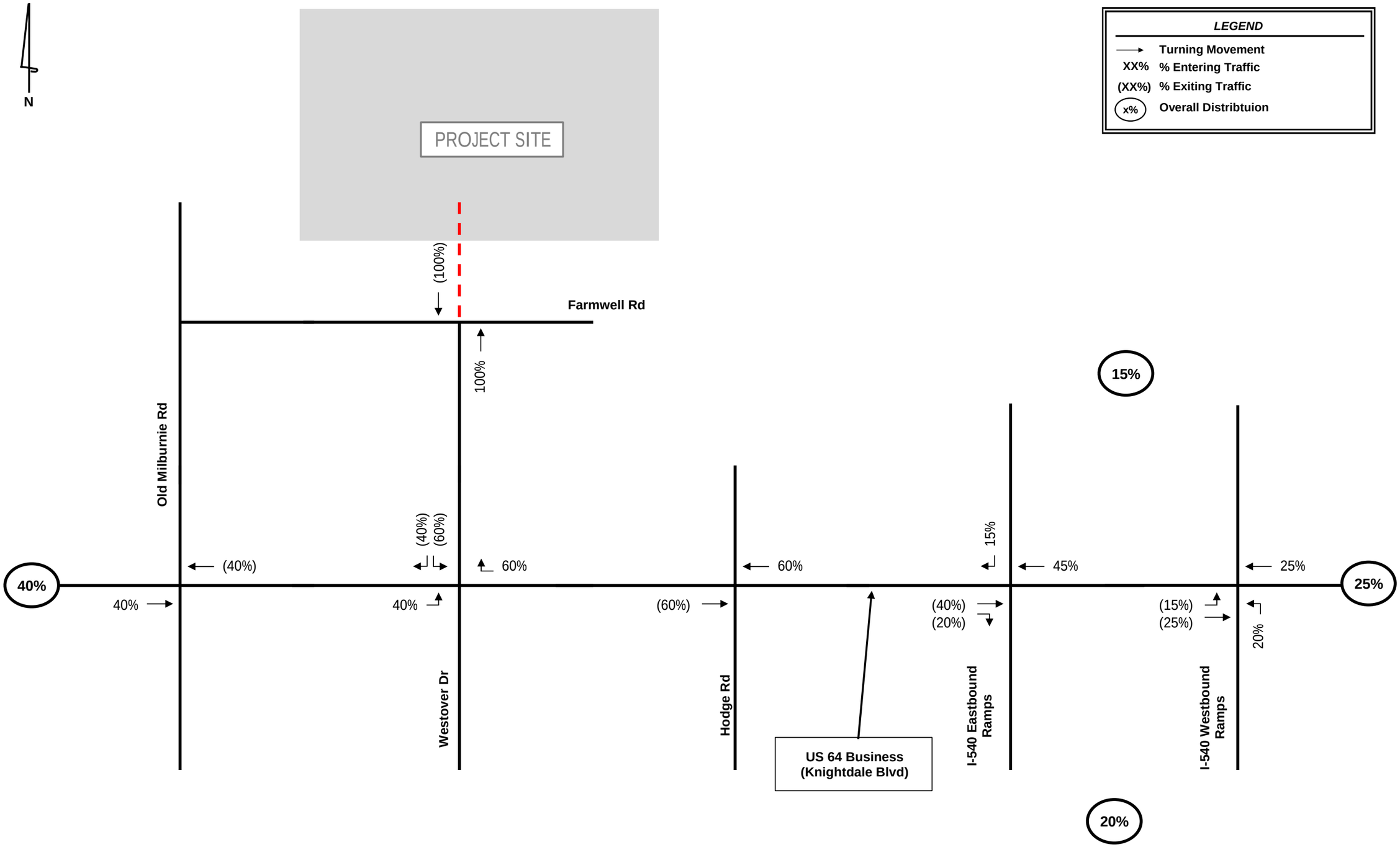
15%

Trip Distribution & Assignment - Passenger Vehicles

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 4.1



Trip Distribution & Assignment - Trucks

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

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Figure 4.2

5.0 Projected Traffic Volumes

5.1 *Existing Traffic*

AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were performed at the following intersections:

- US 64 Business (Knightdale Boulevard) at Old Milburnie Road — December 1, 2021
- US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive — December 1, 2021
- US 64 Business (Knightdale Boulevard) at Hodge Road — December 1, 2021
- US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps — December 1, 2021
- US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps — December 1, 2021
- Old Milburnie Road at Farmwell Road — December 1, 2021
- Farmwell Road at Farmwell Road / Site Access — December 1, 2021

The existing AM and PM peak hour traffic volumes are shown on **Figure 5.1**. The traffic count data are included in **Appendix C**.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to usage increases and non-specific growth throughout the area. To be conservative, an annual growth rate of 3% was applied to the existing volumes up to the proposed build-out year + 1 (2025) and a 1% annual growth rate was applied to the proposed build-out year +1 (2025) volumes up to the proposed build-out year +10 (2034). Background growth calculations are detailed on intersection spreadsheets in the Appendix of this report.

5.3 *Approved Development Traffic*

Approved development traffic is generated by approved but not yet constructed projects in the vicinity of the proposed project. There are three approved developments in the study area identified for inclusion as background traffic. Those are the Legacy Oaks, Allen Park, and River's Edge developments. Based on discussions with the Town of Knightdale, site traffic associated with Legacy Oaks was included in the projected background and build-out +1 (2025) and +10 (2034) traffic conditions whereas site traffic associated with Allen Park and River's Edge was only included in the projected background and build-out +10 (2034) traffic conditions.

- Legacy Oaks (NW Quadrant of US 64 Business at I-540)
  - Proposed: Approximately 217 single family dwelling units, 165 multifamily dwelling units, a 130-room hotel, and 16,000 square feet of retail space

  - Existing: 4,069 square foot Sam's Xpress with 10 fuel pumps, 544 mid-rise apartments, and a 40,560 square foot urgent care (Kimley-Horn & Associates, 2020)

- Allen Park
  - Location: Southwest quadrant of Old Milburnie Road at Forestville Road, adjacent to I-540
  - Proposed: Approximately 447 single family dwelling units and 173 multifamily dwelling units (Timmons Group, 2021)

- River's Edge
  - Location: Southwest quadrant of US 64 Business (Knightdale Boulevard) at Old Milburnie Road
  - Proposed: Approximately 306 multifamily dwelling units and a 5,000 square foot fast food restaurant with a drive-thru window (WSP, 2014).

Approved development traffic and background traffic volumes for the analysis year 2025 are shown on **Figures 5.2 and 5.3**, respectively, for the AM and PM peak hours.

Approved development traffic and background traffic volumes for the analysis year 2034 are shown on **Figures 5.4 and 5.5**, respectively, for the AM and PM peak hours.

Approved development data used in this analysis can be found in **Appendix D**.

5.4 *Site Traffic*

The proposed site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in Section 4.0. The site traffic volumes for the AM and PM peak hours are shown for passenger vehicles and trucks on **Figures 5.6 and 5.7**, respectively.

5.5 *Build-Out Traffic*

To obtain the projected (2025) build-out +1 traffic volumes, the projected site traffic volumes were added to the projected (2025) background traffic. To obtain the projected (2034) build-out +10 traffic volumes, the projected site traffic volumes were added the projected (2034) background traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. **Figure 5.8** shows the projected (2025) build-out +1 AM and PM peak hour traffic volumes. **Figure 5.9** shows the projected (2034) build-out +10 AM and PM peak hour traffic volumes.

Volume development spreadsheets can be found in **Appendix E**.

N

LEGEND

- Turning Movement
- XX — AM Peak Hour Traffic Volume
- (XX) — PM Peak Hour Traffic Volume

Old Milburnie Rd

391 (219)
5 (3)

0 (6)
1 (1)

1 (5)
3 (11)

Farmwell Rd

(429) 176
(2) 1

(1) 1
(8) 9

(7) 1
(11) 1

305 (132)
1 (1)
86 (87)

52 (101)
1,292 (1,114)
5 (2)
1 (5)

2 (10)
0 (0)
10 (9)

2 (13)
1,333 (1,187)
13 (32)
1 (1)

67 (63)
18 (94)
108 (122)

111 (229)
1,112 (1,084)
116 (327)
21 (28)

273 (553)

1,101 (1,139)
230 (205)
1 (2)

633 (526)
1,259 (1,272)

(22) 5
(328) 125
(1,490) 658
(0) 5

(2) 1
(2) 0
(3) 2

(5) 0
(5) 0
(1,598) 753
(31) 8

Westover Dr

(0) 1
(7) 23
(0) 0
(5) 28

(7) 6
(70) 34
(1,372) 665
(232) 86

Hodge Rd

(109) 165
(30) 26
(185) 178

US 64 Business
(Knightdale Blvd)

(1,597) 914
(53) 112

I-540 Eastbound
Ramps

(896) 378

(3) 1
(289) 335
(2,170) 912

I-540 Westbound
Ramps

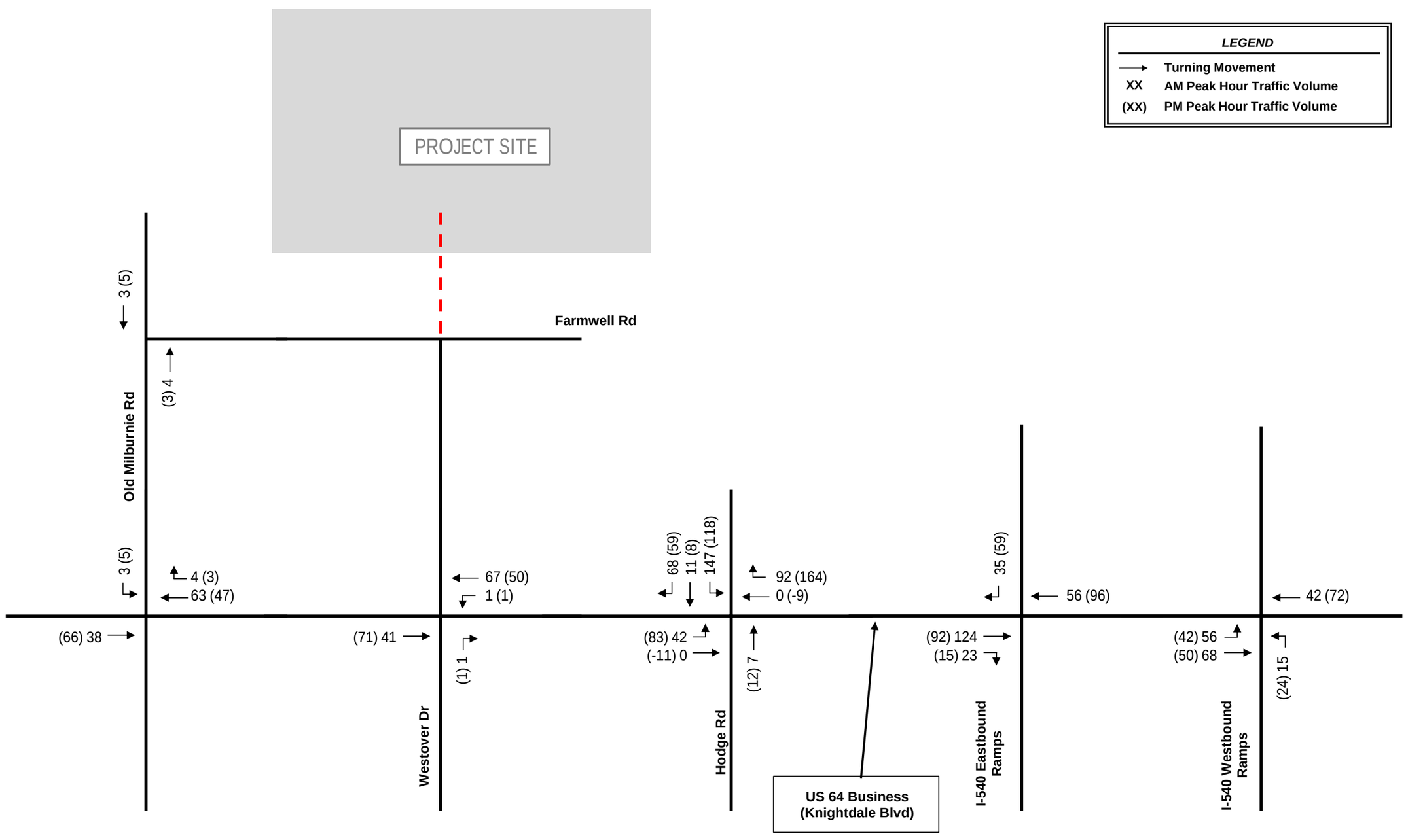
(75) 60
(1) 0
(515) 363

Existing (2021) Traffic Volumes

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 5.1



Approved Development Traffic Volumes (2025)

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 5.2

N

LEGEND

- → Turning Movement
- XX AM Peak Hour Traffic Volume
- (XX) PM Peak Hour Traffic Volume

Old Milburnie Rd

443 (251)
6 (3)

0 (7)
1 (1)

(486) 202
(2) 1

(1) 1
(9) 10

1 (6)
3 (12)

(8) 1
(12) 1

Farmwell Rd

343 (149)
1 (1)
100 (103)

63 (117)
1,517 (1,301)
6 (2)
1 (6)

2 (11)
0 (0)
11 (10)

2 (15)
1,567 (1,386)
16 (37)
1 (1)

143 (130)
31 (114)
269 (255)

217 (422)
1,252 (1,211)
131 (368)
24 (32)

342 (681)

1,295 (1,378)
259 (231)
1 (2)

712 (592)
1,459 (1,504)

(25) 6
(369) 141
(1,743) 779
(0) 6

(2) 1
(2) 0
(3) 2

(6) 0
(6) 0
(1,870) 889
(35) 9

Westover Dr

(0) 1
(8) 26
(0) 0
(7) 33

(8) 7
(162) 80
(1,533) 748
(261) 97

Hodge Rd

(123) 186
(46) 36
(208) 200

US 64 Business (Knightdale Blvd)

(1,889) 1,153
(75) 149

I-540 Eastbound Ramps

(1,008) 425

(3) 1
(367) 433
(2,492) 1,094

I-540 Westbound Ramps

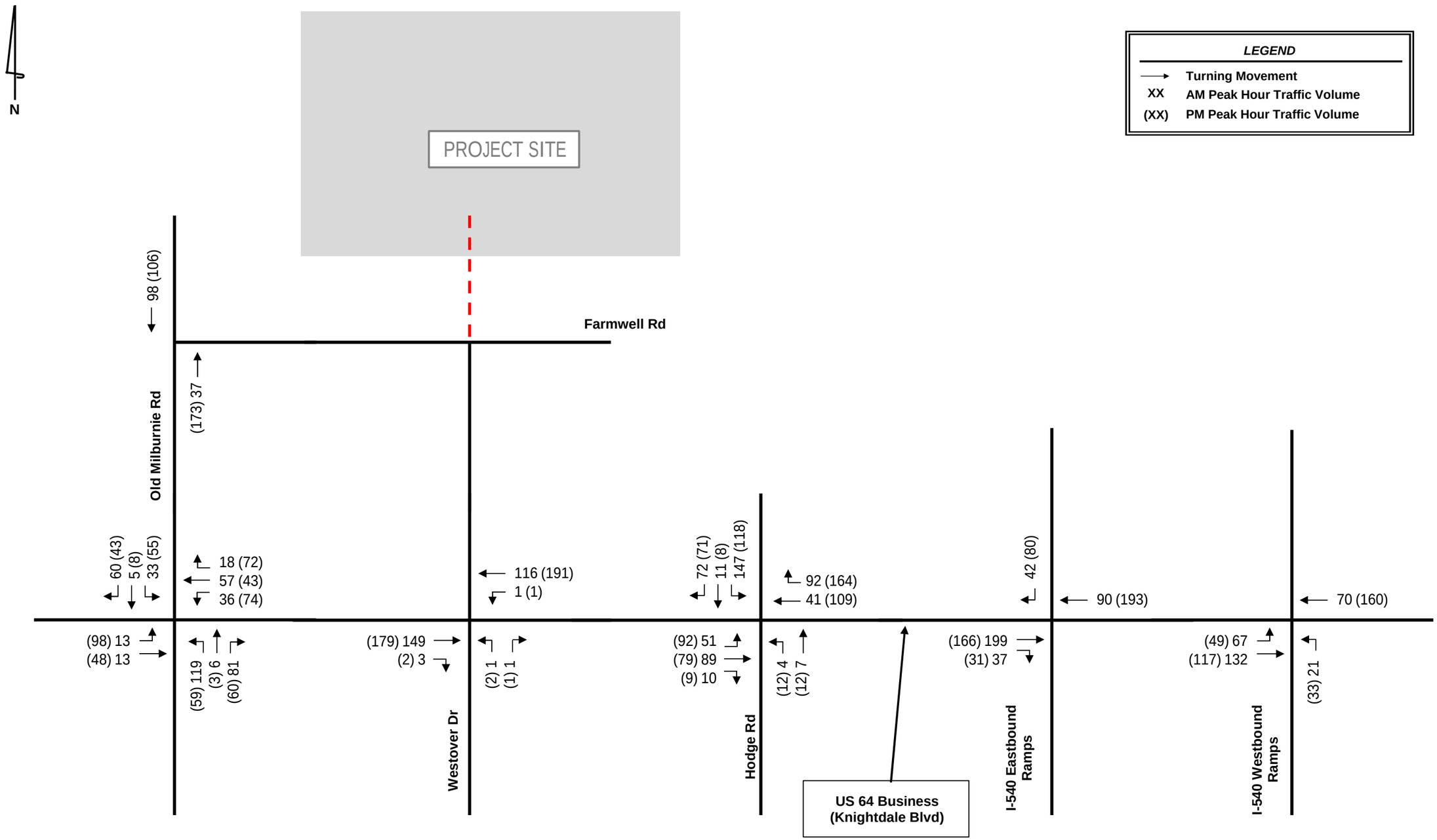
(108) 83
(1) 0
(580) 409

Projected (2025) Background Traffic Volumes

Knightdale Gateway Traffic Impact Analysis Knightdale, NC

Kimley»Horn

Figure 5.3



Approved Development Traffic Volumes (2034)

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 5.4

N

LEGEND

- Turning Movement
- XX — AM Peak Hour Traffic Volume
- (XX) — PM Peak Hour Traffic Volume

Old Milburnie Rd

579 (375)
7 (3)

0 (8)
1 (1)

1 (7)
3 (13)

Farmwell Rd

(701) 254
(2) 1

(1) 1
(10) 11

(9) 1
(13) 1

435 (206)
6 (9)
139 (162)

83 (197)
1,647 (1,414)
43 (76)
1 (7)

2 (12)
0 (0)
12 (11)

2 (16)
1,757 (1,652)
17 (40)
1 (1)

154 (149)
33 (124)
280 (268)

229 (446)
1,410 (1,443)
143 (402)
26 (35)

378 (760)

1,445 (1,595)
283 (253)
1 (2)

779 (647)
1,620 (1,726)

(27) 7
(502) 167
(1,882) 823
(0) 7

(61) 120
(5) 6
(63) 83

Westover Dr

(7) 0
(7) 0
(2,147) 1,076
(40) 13

(0) 1
(11) 29
(0) 0
(8) 36

Hodge Rd

(9) 8
(178) 93
(1,768) 907
(294) 116

(147) 207
(49) 39
(227) 219

US 64 Business (Knightdale Blvd)

(2,131) 1,324
(97) 175

I-540 Eastbound Ramps

(1,102) 465

(3) 1
(404) 479
(2,788) 1,254

I-540 Westbound Ramps

(125) 95
(1) 0
(634) 447

Projected (2034) Background Traffic Volumes

Knightdale Gateway Traffic Impact Analysis Knightdale, NC

Kimley»Horn

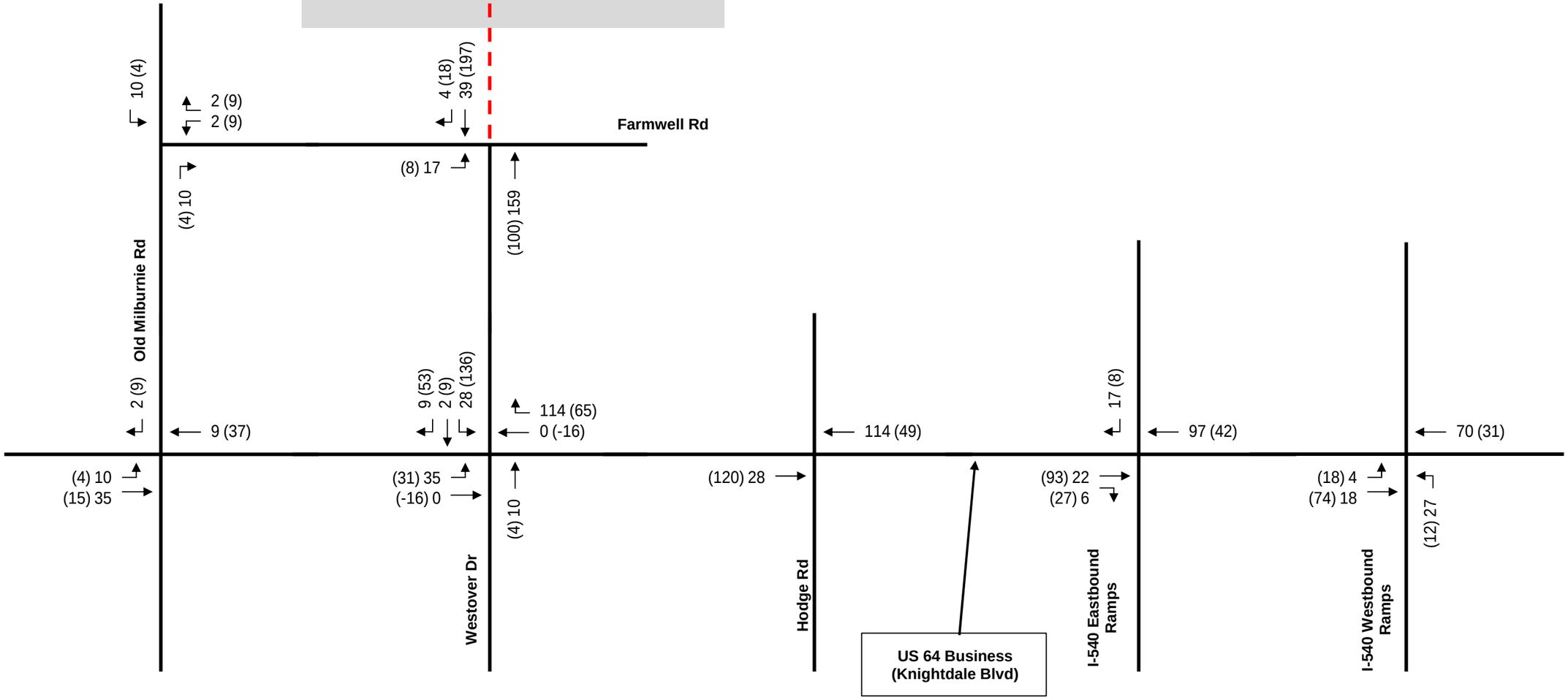
Figure 5.5

N

PROJECT SITE

LEGEND

→	Turning Movement
XX	AM Peak Hour Project Trips
(XX)	PM Peak Hour Project Trips



Site Traffic Volumes - Passenger Vehicles

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

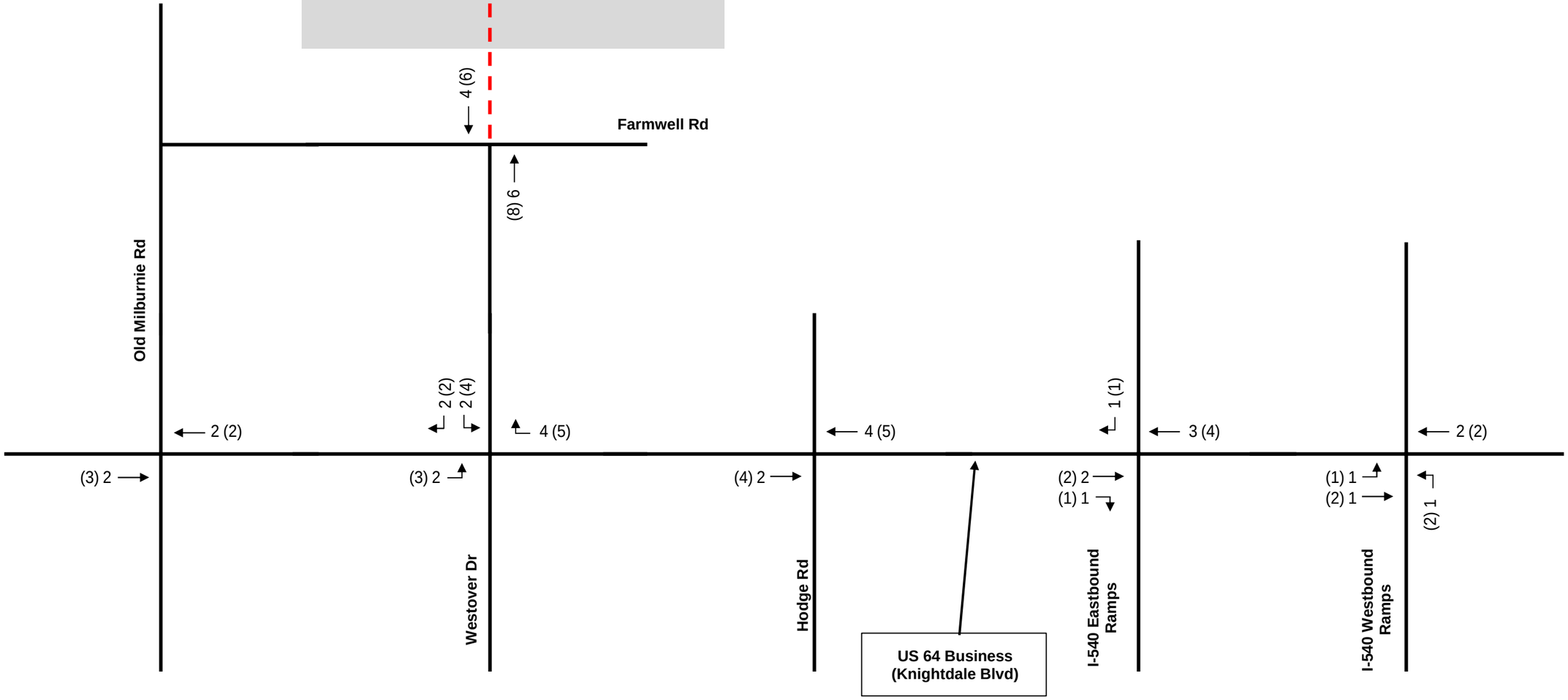
Figure 5.6

N

PROJECT SITE

LEGEND

→	Turning Movement
XX	AM Peak Hour Project Trips
(XX)	PM Peak Hour Project Trips



Site Traffic Volumes - Trucks

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 5.7

N

PROJECT SITE

LEGEND

- → Turning Movement
- XX AM Peak Hour Traffic Volume
- (XX) PM Peak Hour Traffic Volume

Old Milburnie Rd

443 (251)
14 (7)
2 (16)
3 (10)
(486) 202
(6) 10
345 (158)
1 (1)
100 (103)
(25) 6
(373) 150
(1,762) 816
(0) 6

Farmwell Rd

4 (18)
43 (203)
0 (0)
0 (0)
1 (6)
3 (12)
(8) 17
(1) 1
(9) 10
(8) 1
(107) 165
(12) 1
63 (117)
1,528 (1,340)
6 (2)
1 (6)
(2) 1
(2) 0
(3) 2

Westover Dr

13 (66)
2 (8)
41 (150)
(6) 0
(40) 37
(1,855) 889
(35) 9
120 (84)
1,567 (1,370)
16 (37)
1 (1)
(0) 1
(8) 26
(4) 10
(7) 33

Hodge Rd

143 (130)
31 (114)
269 (255)
(8) 7
(162) 80
(1,658) 778
(261) 97
217 (422)
1,370 (1,264)
131 (368)
24 (32)
(123) 186
(46) 36
(208) 200

US 64 Business (Knightdale Blvd)

I-540 Eastbound Ramps

360 (689)
(1,985) 1,177
(104) 155

I-540 Westbound Ramps

1,395 (1,423)
259 (231)
1 (2)
(1,008) 425
(3) 1
(386) 438
(2,569) 1,113

712 (592)
1,531 (1,536)
(121) 111
(1) 0
(580) 409

Projected (2025) Build-out +1 Traffic Volumes

Knightdale Gateway Traffic Impact Analysis Knightdale, NC

Kimley»Horn

Figure 5.8

N

PROJECT SITE

LEGEND

- → Turning Movement
- XX AM Peak Hour Traffic Volume
- (XX) PM Peak Hour Traffic Volume

Farmwell Rd

579 (375)
15 (7)
2 (17)
3 (10)
4 (18)
43 (203)
0 (0)
0 (0)
1 (7)
3 (13)

(701) 254
(6) 10
(8) 17
(1) 1
(10) 11
(9) 1
(107) 165
(13) 1

Old Milburnie Rd

437 (215)
6 (9)
139 (162)
83 (197)
1,658 (1,453)
43 (76)
1 (7)
13 (67)
2 (8)
42 (151)
120 (85)
1,757 (1,636)
17 (40)
1 (1)
154 (149)
33 (124)
280 (268)
229 (446)
1,528 (1,496)
143 (402)
26 (35)
396 (768)
1,545 (1,640)
283 (253)
1 (2)
779 (647)
1,692 (1,758)

(27) 7
(506) 176
(1,901) 860
(0) 7
(61) 120
(5) 6
(63) 83
(7) 0
(41) 37
(2,132) 1,076
(40) 13
(0) 1
(11) 29
(4) 10
(8) 36
(9) 8
(178) 93
(1,893) 937
(294) 116
(147) 207
(49) 39
(227) 219
(2,227) 1,348
(126) 181
(1,102) 465
(3) 1
(423) 484
(2,865) 1,273
(138) 123
(1) 0
(634) 447

Westover Dr

Hodge Rd

US 64 Business
(Knightdale Blvd)

I-540 Eastbound Ramps

I-540 Westbound Ramps

Projected (2034) Build-out +10 Traffic Volumes

Knightdale Gateway Traffic Impact Analysis Knightdale, NC

Kimley»Horn

Figure 5.9

6.0 Signal Warrant Analysis

A traffic signal warrant analysis was performed at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road/Westover Drive based on the criteria contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) 2009 Edition published by the Federal Highway Administration (FHWA).

This traffic signal warrant analysis evaluated projected traffic conditions to determine if minimum vehicular volume warrants established by the MUTCD are expected to be satisfied in the 2025 analysis year for this intersection. Warrants 1, 2, and 3 are the vehicular volume warrants and are based on mainline traffic volumes, side street traffic volumes, and the number of travel lanes. To determine the projected volumes, the newly-collected (December 1, 2021) 13-hour counts at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road/Westover Drive were grown to 2025 at 3% per year. The approved development traffic volumes were distributed for 13 hours by using the hourly distributions published by ITE and added to the estimated 2025 traffic counts. The site trips were also distributed for 13 hours based on the ITE hourly distribution data and added to the estimated 2025 traffic counts and approved development traffic to determine the build-out traffic volumes.

The results of the traffic signal warrant analysis under future year 2025 conditions at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road/Westover Drive are shown below in Table 6.0. The posted speed limit along US 64 Business (Knightdale Boulevard) is 45 mph, so the volume reduction factors were applied for this analysis. The 8-hour (Warrants 1A, 1B, and 1C), 4-hour (Warrant 2), and peak hour (Warrant 3) were evaluated as a part of this analysis.

Table 6.0
Traffic Signal Warrants Summary

US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive				
Warrant	**Background (2025)**		**Build-out (2025)**	
	Hours Met / Required	Criteria Satisfied?	Hours Met / Required	Criteria Satisfied?
1A	0 / 8	NO	6 / 8	NO
1B	0 / 8	NO	10 / 8	YES
1C	0 / 8	NO	8 / 8	YES
2	0 / 4	NO	10 / 4	YES
3	0 / 1	NO	8 / 1	YES

The MUTCD states that engineering judgement and rationale should be applied to a minor street approach with one lane plus a right-turn lane. The right-turn traffic should not be included in the

minor-street volumes if the movement enters the major street with minimal conflict. At the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road/Westover Drive, the northbound and southbound approaches share the right-turn movement with the left-turn and/or the through movement. However, given the relatively low side street volumes that exist today and the planned laneage in the Build (2025) traffic condition, the right-turns are mostly able to enter the major roadway with minimal conflict and were therefore not included in the analysis. Even with all of the side street right-turn volumes removed, this intersection is anticipated to meet all three MUTCD vehicular volume warrants. Therefore, a traffic signal at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road/Westover Drive is recommended in the Build (2025) traffic condition.

A summary of the signal warrant analysis can be found in **Appendix F**.

7.0 Capacity Analysis

Capacity analyses (see **Appendix G – L**) were performed for the AM and PM peak hours for the existing traffic condition (2021), the projected (2025) background and build-out +1 traffic conditions, and the projected (2034) background and build-out +10 traffic conditions using Synchro/SimTraffic Version 11 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro/SimTraffic Version 11 or computable using methodology published in the *Highway Capacity Manual.* It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Table 7.0 lists the LOS control delay thresholds published in the *Highway Capacity Manual* for signalized and unsignalized intersections.

Table 7.0
Level-of-Service Control Delay Thresholds

Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh] & Qualitative Operational Description	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

Existing signal timings were obtained from the field and were not modified unless noted. Existing peak hour factors (PHF's) were used for all conditions except at any new intersections, where a PHF of 0.90 is used instead.

Capacity analyses were performed for the existing (2021) traffic condition, projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions for the following intersections:

- US 64 Business (Knightdale Boulevard) at Old Milburnie Road
- US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive
- US 64 Business (Knightdale Boulevard) at Hodge Road
- US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps
- US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps
- Old Milburnie Road at Farmwell Road
- Farmwell Road at Site Access

A queuing summary can be found in **Appendix M** and the signal plans and timings used in this analysis can be found in **Appendix N**.

7.1 *US 64 Business (Knightdale Boulevard) at Old Milburnie Road*

Analyses indicate that the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road currently operates at LOS C in both the AM and PM peak hours and is expected to continue to operate at LOS C in both peak hours in the projected (2025) background traffic condition.

As noted previously, this intersection is expected to undergo the following improvements by the projected background and build-out +10 (2034) traffic conditions:

- Construct an exclusive eastbound right-turn lane with a minimum of 375 feet of storage and appropriate taper
- Extend the exclusive westbound left-turn lane to provide a minimum of 500 feet of storage and appropriate taper
- Extend the exclusive westbound right-turn lane to provide a minimum of 100 feet of storage and appropriate taper
- Construct an exclusive northbound left-turn lane

With the above improvements in place, the intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour for the projected (2034) background traffic condition. It should be noted that the signal timings at this intersection were optimized for the projected (2034) background and build-out +10 traffic conditions due to the extensive intersection modifications.

For the projected (2025) build-out +1 traffic condition, the intersection is expected to operate at LOS C in both the AM and PM peak hours with or without the improvements at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive in place. Therefore, no roadway improvements are recommended at this intersection.

For the projected (2034) build-out +10 traffic condition, the intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour.

Table 7.1 summarizes the operation of the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.1 Level-of-Service US 64 Business (Knightdale Boulevard) at Old Milburnie Road (Signalized)				
	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	C (21.7)	C (25.1)	-	-
+1 (2025) Traffic	C (27.3)	C (33.6)	C (27.3)	C (34.3)
+1 (2025) Traffic – *Improved*	-	-	C (25.9)	C (30.5)
+10 (2034) Traffic	C (33.8)	D (51.7)	C (34.3)	D (49.8)

7.2 *US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive*

Analyses indicate that the minor street approaches (Farmwell Road and Westover Drive) at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive are currently operating with long delays in the AM and PM peak hours.

In the projected (2025) background traffic condition, the minor street approaches (Farmwell Road and Westover Drive) at this intersection are expected to continue operating with long delays in the AM and PM peak hours. With the addition of site traffic, the minor street approaches are expected to continue operating with long delays in the AM and PM peak hours for the projected (2025) build-out +1 traffic condition. To accommodate site traffic, the following improvements are recommended:

- Install a traffic signal
- Restripe the southbound approach to provide an exclusive left-turn lane and a shared through/right-turn lane

With these improvements in place, the intersection is expected to operate at LOS B in the AM and PM peak hours for the projected (2025) build-out +1 traffic condition. It was assumed that this signal would be in place for both the projected (2034) background and build-out +10 traffic conditions. For the projected (2034) background traffic condition this intersection is expected to operate at LOS A in both the AM and PM peak hours. For the projected (2034) build-out +10 traffic condition this intersection is expected to operate at LOS B in the AM peak hour and LOS C in the PM peak hour.

It should be noted that this proposed signal did not meet the thresholds or requirements for protected left-turn phasing set forth by Congestion Management. However, to present a conservative analysis, the left-turns were analyzed with a protected phase. During signal design in the future, four-section signal heads with a protected plus permitted flashing yellow arrow (FYA) should be considered for safety purposes due to heavy mainline traffic volumes.

Table 7.2 summarizes the operation of the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.2 Level-of-Service US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive				
	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	NB – F (99.6) SB – F (>100) EBL – B (13.2) WBL – A (9.9)	NB – F (>100) SB – F (>100) EBL – C (16.8) WBL – C (15.9)	-	-
+1 (2025) Traffic	NB – F (>100) SB – F (>100) EBL – C (15.4) WBL – B (10.7)	NB – F (>100) SB – F (>100) EBL – C (20.9) WBL – C (19.9)	NB – F (>100) SB – F (Err) EBL – C (19.0) WBL – B (10.7)	NB – F (80.1) SB – F (>100) EBL – B (10.2) WBL – C (19.6)
+1 (2025) Traffic – *Improved, Signalized*	-	-	Overall – B (10.0) NB – D (45.0) SB – E (56.3) EB – A (6.3) WB – A (9.1)	Overall – B (18.0) NB – D (36.5) SB – E (58.2) EB – B (14.3) WB – B (16.6)
+10 (2034) Traffic	Overall – A (6.3) NB – D (45.8) SB – D (49.0) EB – A (4.4) WB – A (5.5)	Overall – A (9.8) NB – D (51.1) SB – D (47.8) EB – A (6.6) WB – B (12.8)	Overall – B (11.6) NB – D (43.9) SB – E (59.8) EB – A (6.4) WB – B (11.9)	Overall – C (21.1) NB – D (37.6) SB – F (>100) EB – B (12.4) WB – C (21.3)

7.3 *US 64 Business (Knightdale Boulevard) at Hodge Road*

Analyses indicate that the intersection of US 64 Business (Knightdale Boulevard) at Hodge Road is currently operating at LOS B in the AM peak hour and LOS C in the PM peak hour.

In the projected (2025) background and (2034) background traffic conditions, the intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour.

For the projected (2025) build-out +1 and (2034) build-out +10 traffic conditions the intersection is expected to operate at LOS C in the AM peak hour and LOS D in the PM peak hour with or without the improvements at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive in place. Therefore, no roadway improvements are recommended at this intersection.

Table 7.3 summarizes the operation of the intersection of US 64 Business (Knightdale Boulevard) at Hodge Road for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.3
Level-of-Service
US 64 Business (Knightdale Boulevard) at Hodge Road (Signalized)

	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	B (19.0)	C (26.9)	-	-
+1 (2025) Traffic	C (23.7)	D (37.7)	C (23.3)	D (38.1)
+1 (2025) Traffic – *Improved*	-	-	C (23.7)	D (35.8)
+10 (2034) Traffic	C (26.2)	D (40.0)	C (25.9)	D (40.6)

7.4 *US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps*

Analyses indicate that the intersection of US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps is currently operating at LOS A in both the AM and PM peak hours.

In the projected (2025) background and (2034) background traffic conditions, the intersection is expected to continue to operate at LOS A in both the AM and PM peak hours.

For the projected (2025) build-out +1 and (2034) build-out +10 traffic conditions the intersection is expected to operate at LOS A in both the AM and PM peak hours. Therefore, no roadway improvements are recommended at this intersection.

Table 7.4 summarizes the operation of the intersection of US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.4
Level-of-Service
US 64 Business (Knightdale Boulevard) at I-540 Eastbound Ramps (Signalized)

	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	A (1.6)	A (4.0)	-	-
+1 (2025) Traffic	A (3.9)	A (6.2)	A (4.0)	A (6.3)
+10 (2034) Traffic	A (5.4)	A (8.0)	A (5.4)	A (8.1)

7.5 *US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps*

Analyses indicate that the intersection of US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps is currently operating at LOS B in both the AM and PM peak hours.

In the projected (2025) background traffic condition, the intersection is expected to continue to operate at LOS B in the AM peak hour and at LOS C in the PM peak hour. In the projected (2034) background traffic condition, the intersection is expected to operate at LOS C in both the AM and PM peak hours.

For the projected (2025) build-out +1 traffic condition, the intersection is expected to operate at LOS B in the AM peak hour and LOS C in the PM peak hour with or without the proposed traffic signal in place at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive. Additionally, the intersection is expected to operate at LOS C in both the AM and PM peak hours for the projected (2034) build-out +10 traffic condition therefore no roadway improvements are recommended at this intersection.

Table 7.5 summarizes the operation of the intersection of US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.5
Level-of-Service
US 64 Business (Knightdale Boulevard) at I-540 Westbound Ramps (Signalized)

	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	B (13.6)	B (18.0)	-	-
+1 (2025) Traffic	B (18.7)	C (20.0)	B (19.2)	C (20.1)
+1 (2025) Traffic – *Improved*	-	-	B (19.1)	C (20.1)
+10 (2034) Traffic	C (22.7)	C (22.0)	C (23.1)	C (22.3)

7.6 *Old Milburnie Road at Farmwell Road*

Analyses indicate that the intersection of Old Milburnie Road at Farmwell Road currently operates with short delays in both the AM and PM peak hours for the minor street approach (Farmwell Road).

The intersection is projected to continue to operate with short delays in the AM and PM peak hours in the projected (2025) background and projected (2034) background traffic conditions for the minor street approach (Farmwell Road). With the addition of site traffic, the delays on the minor street approach are expected to remain short for both the AM and PM peak hours in the projected (2025) build-out +1 and (2034) build-out +10 traffic conditions. Therefore, no roadway improvements are recommended at this intersection.

Table 7.6 summarizes the operation of the intersection of Old Milburnie Road at Farmwell Road for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.6
Level-of-Service
Old Milburnie Road at Farmwell Road (Unsignalized)

	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	WB – B (11.7) SBL – A (7.6)	WB – B (11.9) SBL – A (8.3)	-	-
+1 (2025) Traffic	WB – B (12.3) SBL – A (7.7)	WB – B (12.5) SBL – A (8.5)	WB – B (11.4) SBL – A (7.7)	WB – B (12.9) SBL – A (8.5)
+10 (2034) Traffic	WB – B (13.8) SBL – A (7.8)	WB – C (15.7) SBL – A (9.2)	WB – B (12.5) SBL – A (7.9)	WB – C (16.5) SBL – A (9.2)

7.7 *Farmwell Road at Site Access*

Analyses indicate that the intersection of Farmwell Road at Site Access currently operates with short delays in both the AM and PM peak hours for the minor street approaches (EB Farmwell Road and WB Farmwell Road).

The intersection is projected to continue to operate with short delays in the AM and PM peak hours in the projected (2025) background and projected (2034) background traffic conditions for the minor street approaches (EB Farmwell Road and WB Farmwell Road). It should be noted that the proposed traffic signal at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road was assumed to be in place for the projected (2034) background traffic condition.

The site is proposed to be accessed via a connection to Farmwell Road as the north leg that provides one ingress and two egress lanes which will change the configuration of the intersection to a three-way stop control with the northbound approach being free-flow. With this change in intersection configuration and the addition of site traffic, the intersection is projected to operate with long delays on the minor street approaches (EB Farmwell Road, WB Farmwell Road, and Site Access) in the AM and PM peak hours for the projected (2025) build-out +1 traffic condition.

However, with the improvements at the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive in place, for the projected (2025) build-out +1 improved and (2034) build-out +10 traffic conditions the intersection is expected to operate with short delays on the Farmwell Road minor street approaches and moderate delays on the Site Access minor street approach in the AM peak hour. In the PM peak hour, the Farmwell Road minor street approaches are expected to experience moderate delays while the Site Access minor street approach experiences long delays.

Despite still experiencing long delays in the projected (2025) build-out +1 improved and (2034) build-out +10 traffic conditions, simulations show no major queuing issues for the southbound direction at this intersection and any queues that do occur will not impact the external roadway network. Given the short distance between this intersection and the intersection of US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive, it is recommended that proper signage be put in place to inform southbound traffic from the site access to not block the intersection.

Table 7.7 summarizes the operation of the intersection of Farmwell Road at Farmwell Road / Site Access for the existing (2021), projected (2025) background and build-out +1 traffic conditions, and projected (2034) background and build-out +10 traffic conditions.

Table 7.7 Level-of-Service Farmwell Road at Farmwell Road / Site Access (Unsignalized)				
	Background		Build-Out	
Condition	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Existing (2021) Traffic	EB – A (8.6) WB – A (9.1) NBL – A (3.6)	EB – A (9.0) WB – A (9.1) NBL – A (2.7)	-	-
+1 (2025) Traffic	EB – A (8.6) WB – A (9.1) NBL – A (3.6)	EB – A (8.9) WB – A (9.1) NBL – A (2.8)	EB – F (>100) WB – F (79.4)	EB – F (>100) WB – F (>100)
+1 (2025) Traffic – *Improved*	-	-	EB – C (21.1) WB – B (13.8)	EB – D (25.7) WB – E (46.4)
+10 (2034) Traffic	EB – A (8.6) WB – A (9.1) NBL – A (3.6)	EB – A (8.9) WB – A (9.2) NBL – A (2.9)	EB – C (15.4) WB – A (8.6)	EB – E (36.5) WB – E (39.2)

8.0 Recommendations

As part of an area development identified in the Allen Park Development TIA (Timmons Group, 2021), the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road is expected to undergo the following improvements by the projected background and build-out +10 (2034) traffic conditions:

- Construct an exclusive eastbound right-turn lane with a minimum of 375 feet of storage and appropriate taper
- Extend the exclusive westbound left-turn lane to provide a minimum of 500 feet of storage and appropriate taper

Based on discussions with the Town of Knightdale, the following additional improvements were identified to be included in this analysis for the projected background and build-out +10 (2034) traffic conditions at the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road:

- Extend the exclusive westbound right-turn lane to provide a minimum of 100 feet of storage and appropriate taper
- Construct an exclusive northbound left-turn lane

It should be noted that with these listed improvements in place at the intersection of US 64 Business (Knightdale Boulevard) at Old Milburnie Road, the signal was optimized in the analysis of the projected background and build-out +10 traffic conditions and signal operations were adjusted to match the 2020 signal plan.

It should also be noted that, per the KnightdaleNext 2035 Comprehensive Plan, Old Milburnie Road is planned to be realigned to connect with Hodge Road north of the proposed Knightdale Gateway location. Ultimately, the new roadway that is to be constructed as the proposed site access is planned to be extended by others and connect to the new realigned Old Milburnie Road.

The following improvements are recommended to be performed to accommodate projected Knightdale Gateway site traffic based on the capacity analysis presented herein:

<u>US 64 Business (Knightdale Boulevard) at Farmwell Road / Westover Drive</u>:

- Install a traffic signal
- Restripe the southbound approach to provide an exclusive left-turn lane and a shared through/right-turn lane

<u>Farmwell Road at Site Access</u>

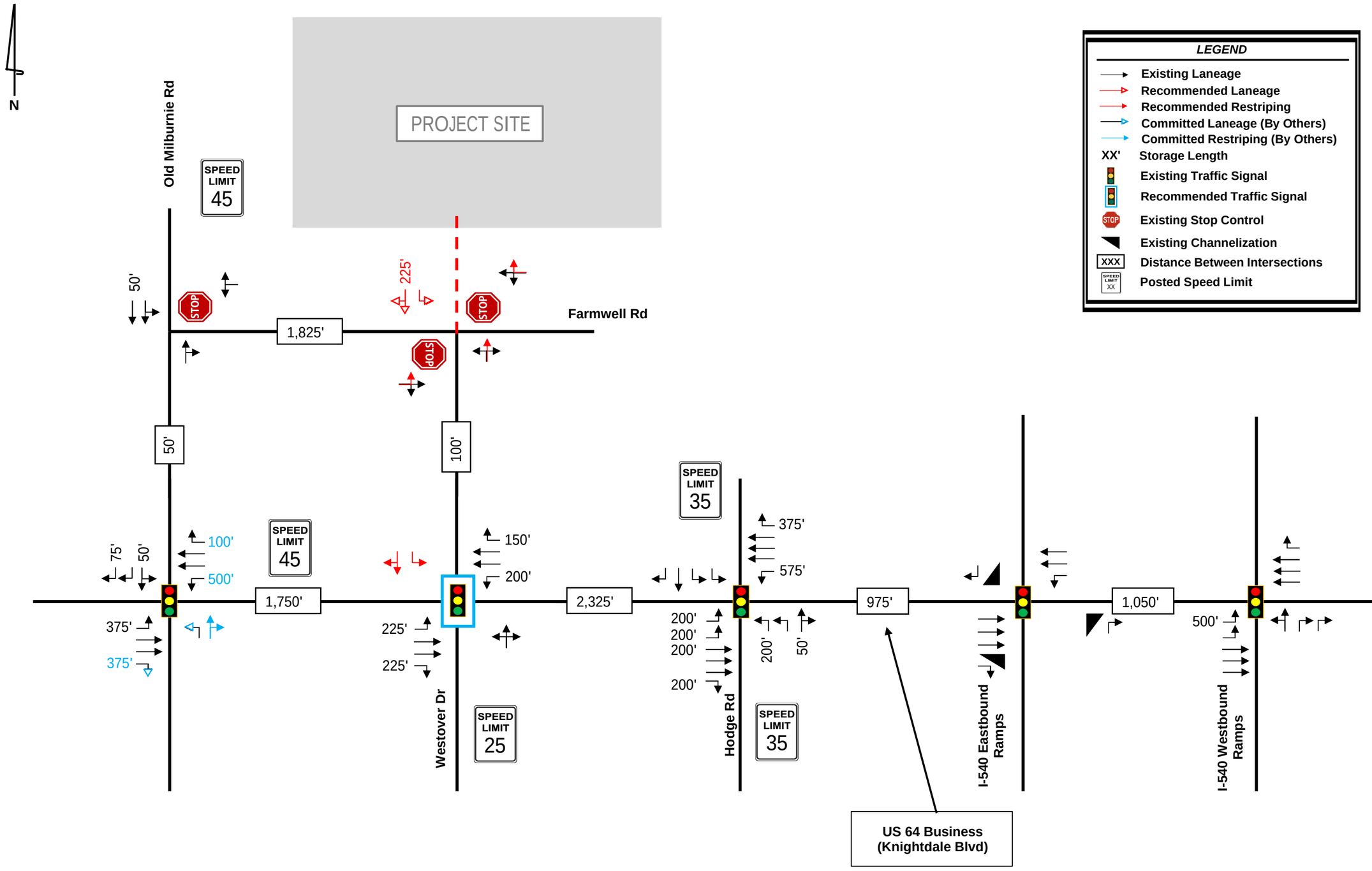
- Construct the proposed site access as the north leg of the intersection of Farmwell Road at US 64 Business (Knightdale Boulevard). The north leg shall contain one ingress lane and two egress lanes striped as an exclusive left-turn lane and a shared through/right-turn

lane. The shared through/right-turn lane should provide a minimum of 225 feet of storage.

- Configure the intersection to be stop-controlled on the eastbound and westbound approaches, with a stop bar, as well as a signage, on the southbound approach instructing southbound traffic to not block the intersection. The northbound approach from US 64 Business (Knightdale Boulevard) will be free-flow.

All of the signalized study intersections are expected to operate at an acceptable LOS in the projected (2025) build-out +1 and projected (2034) build-out +10 traffic conditions.

The committed and recommended laneage is shown on **Figure 8.1**.



Recommended Roadway Laneage (2025)

Knightdale Gateway
Traffic Impact Analysis
Knightdale, NC

Kimley»Horn

Figure 8.1