

# ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS

## SYMBOLS AND ABBREVIATIONS

ABC	AGGREGATE BASE COURSE	—	EXISTING CURB INLET
ALUM	ALUMINUM	□	EXISTING GRATE INLET/YARD INLET
AST2	ALUMINIZED STEEL - TYPE 2	□	EXISTING FLARED END SECTION
B-B	BACK TO BACK	⊕	EXISTING FIRE HYDRANT
BOA	BLOW-OFF ASSEMBLY	⊕	EXISTING BLOW-OFF ASSEMBLY
C&G	CURB AND GUTTER	⊕	EXISTING GATE VALVE
CF	CUBIC FEET PER SECOND	⊕	EXISTING REDUCER
CI	CURB INLET	⊕	EXISTING WATER METER
CL	CENTER LINE	⊕	EXISTING SAN SEWER MANHOLE
CMP	CORRUGATED METAL PIPE	⊕	EXISTING CLEAN OUT
CO	CLEAN OUT	⊕	EXISTING POWER POLE
COM	COMMUNICATION	⊕	EXISTING TELEPHONE PEDESTAL
CONC	CONCRETE	⊕	EXISTING AREA LIGHT
DCV	DOUBLE CHECK VALVE	⊕	EXISTING SIGN
DDCV	DOUBLE DETECTOR CHECK VALVE	⊕	NEW CURB INLET
DI	DROP INLET	⊕	NEW GRATE INLET/YARD INLET
DIP	DUCTILE IRON PIPE	⊕	NEW FLARED END SECTION
EASE	EASEMENT	⊕	NEW FIRE HYDRANT
ELEC	ELECTRIC	⊕	NEW BLOW-OFF ASSEMBLY
EX	EXISTING	⊕	NEW GATE VALVE
FES	FLARED END SECTION	⊕	NEW REDUCER
FH	FIRE HYDRANT	⊕	NEW WATER METER
FM	FORCE MAIN	⊕	NEW TEE
FT	FEET	⊕	NEW PLUG
FT/SEC	FEET PER SEC	⊕	NEW MANHOLE
GALV	GALVANIZED	⊕	NEW CLEAN OUT
GV	GATE VALVE	⊕	NEW SIGN
HDPE	HIGH DENSITY POLYETHYLENE	⊕	IRON PIPE
L	LENGTH	⊕	BENCHMARK
LF	LINEAR FEET	⊕	TEMP SILT FENCE
MH	MANHOLE	⊕	TEMP TREE PROTECTION FENCE
PAVE	PAVEMENT	⊕	TEMP COMBINATION SILT/TREE PROTECTION FENCE
PE	FINISHED PAD ELEVATION	⊕	TEMP DIVERSION DITCH
PP	POWER POLE	⊕	DISTURBED LIMITS
PVC	POLYVINYL CHLORIDE	⊕	STREAM
R	RADIUS	⊕	EXISTING GAS LINE
R/W	RIGHT-OF-WAY	⊕	EXISTING COMMUNICATIONS LINE
RED	REDUCER	⊕	EXISTING UNDERGROUND TELEPHONE
RCP	REINFORCED CONCRETE PIPE	⊕	EXISTING UNDERGROUND ELECTRIC
RPZ	REDUCED PRESSURE ZONE	⊕	EXISTING OVERHEAD ELECTRIC
SS	SANITARY SEWER	⊕	EXISTING WATER LINE
STA	STATION	⊕	EXISTING SANITARY SEWER FORCE MAIN
TDD	TEMPORARY DIVERSION DITCH	⊕	EXISTING SANITARY SEWER
TELE	TELEPHONE	⊕	EXISTING STORM DRAINAGE
TSB	TEMPORARY SEDIMENT BASIN	⊕	NEW STORM DRAINAGE
UG	UNDERGROUND	⊕	NEW WATER LINE
WCR	WHEELCHAIR RAMP	⊕	NEW SANITARY SEWER
W/L	WATER LINE	⊕	NEW SANITARY SEWER FORCE MAIN
WM	WATER METER	⊕	NEW GAS MAIN
YI	YARD INLET	⊕	HANDICAPPED ACCESSIBLE ROUTE

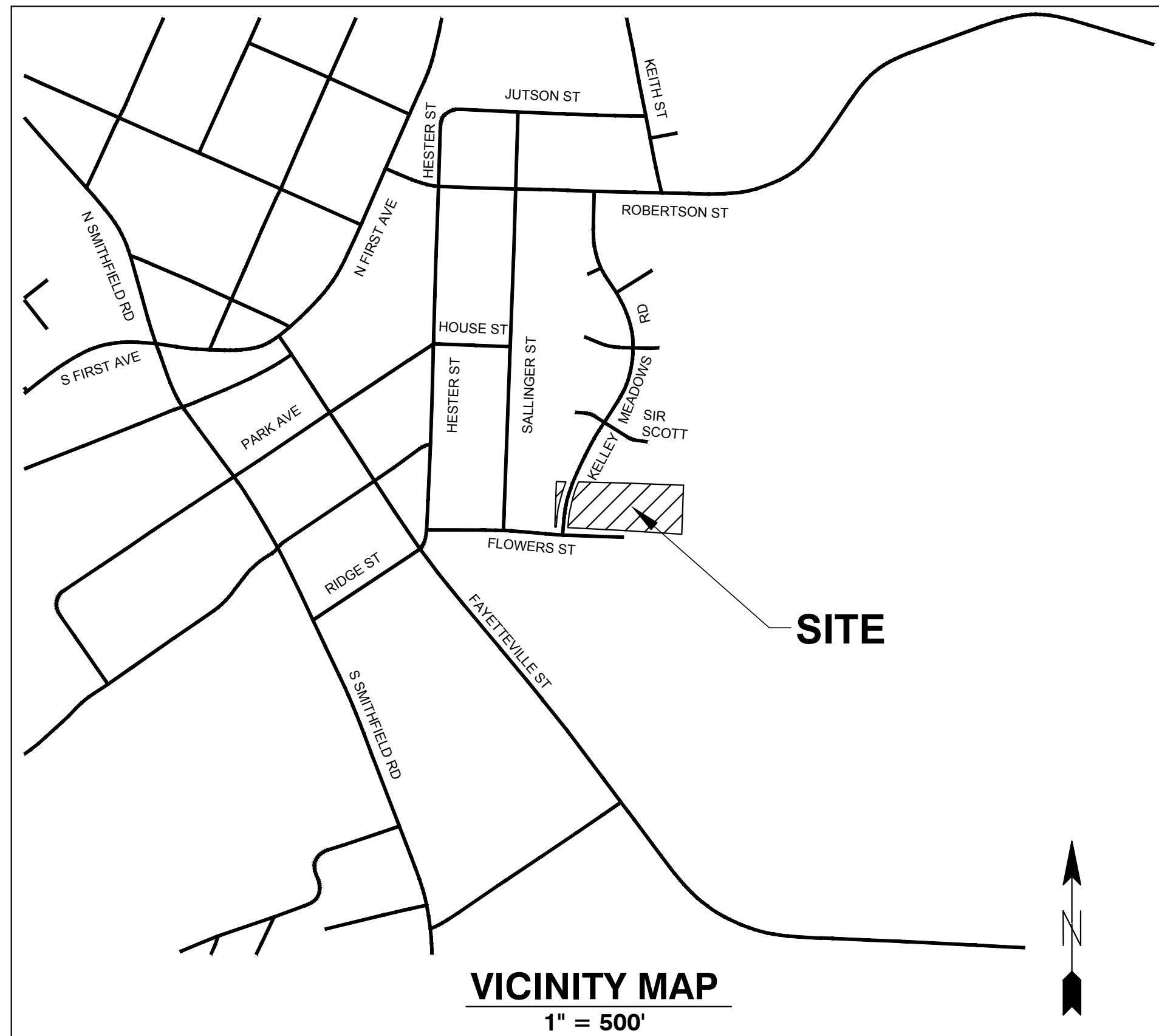
NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF KNIGHTDALE AND NCDOT

# FLOWERS PLACE SUBDIVISION

## 0 KELLEY MEADOWS ROAD

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

## TOWN OF KNIGHTDALE PROJECT NO. ZMA-9-19



## SHEET INDEX

COVER	
C0.1	EXISTING CONDITIONS & DEMOLITION PLAN
C1.1	SITE PLAN
C2.1	UTILITY AND DRAINAGE PLAN
L1.1	LANDSCAPE PLAN
SL-101	SITE LIGHTING

## SITE DATA

PROJECT NAME:	FLOWERS PLACE SUBDIVISION
PIN:	1754-51-5410
REAL ID NUMBER:	0060563
ADDRESS:	0 KELLEY MEADOWS ROAD KNIGHTDALE, NORTH CAROLINA
ZONING:	UR12
EXISTING:	UR12-PUD
PROPOSED:	
USE:	VACANT
EXISTING:	
PROPOSED:	SINGLE FAMILY RESIDENTIAL
SITE AREA (GROSS):	0.076 AC (3,296 SF)
WESTERN TRACT:	2.214 AC (96,458 SF)
EASTERN TRACT:	2.290 AC (99,754 SF)
TOTAL:	
DEDICATED R/W AREA:	0.024 AC (1,035 SF)
FLOWERS STREET:	
NET SITE AREA:	2.266 AC (98,719 SF)
NUMBER OF LOTS:	17
DENSITY (17 UNITS/2,266 AC):	7.502 UNITS/AC
MINIMUM LOT WIDTH:	30'
MIN. LOT SIZE PROPOSED:	3,210 SF
AVG. LOT SIZE PROPOSED:	3,387 SF
MAX. LOT SIZE PROPOSED:	4,096 SF
RECREATIONAL OPEN SPACE CALCULATIONS:	
(ENTIRE SITE IS WITHIN 1/4 MILE OF KNIGHTDALE ELEMENTARY PARK)	
DENSITY:	17 UNITS/2.27 AC=7.5 UNITS/AC
BEDROOM ESTIMATE:	TOTAL BEDROOMS=17 x 3.5=59.5 BEDROOMS
OPEN SPACE REQUIRED:	59 BEDROOMS x 275 SF=16,363 SF (16.9%)
50% ACTIVE:	16,363 x 0.50=8,182 SF
50% PASSIVE:	16,363 x 0.50=8,181 SF
OPEN SPACE PROVIDED:	28,283 SF (0.65 AC)
SETBACKS:	
FRONT:	10' MIN
FRONT YARD ENCROACHMENT :	8'
SIDE:	20% OF LOT WIDTH (WITH 3' MIN)
REAR:	25' OR 20' FROM CL OF ALLEY

OWNER/  
DEVELOPER:

HABITAT FOR HUMANITY OF WAKE COUNTY  
2420 NORTH RALEIGH BLVD.  
RALEIGH, NC 27604

CONTACT: JIM MIDDLETON  
PHONE: 919-833-1999  
EMAIL: Jim.Middleton@habitatwake.org

**Public**  
Water Distribution / Extension System

The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh  
Public Utilities Department Permit # \_\_\_\_\_

Authorization to Construct \_\_\_\_\_

Date \_\_\_\_\_

**Public**  
Sewer Collection / Extension System

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh  
Public Utilities Department Permit # \_\_\_\_\_

Authorization to Construct \_\_\_\_\_

Date \_\_\_\_\_

**ATTENTION CONTRACTORS**

The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the **Public Utilities Department** at (919) 996-4540 at least **twenty four hours** prior to beginning any of their construction.

**Failure** to notify both City Departments in advance of beginning construction, will result in the issuance of **monetary fines**, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

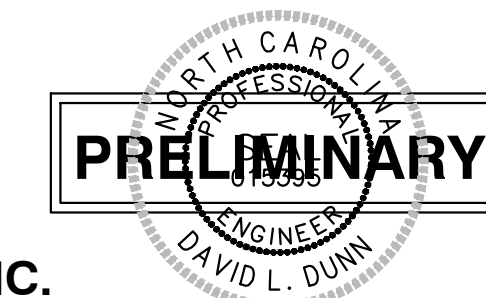
**Failure** to call for **Inspection, Install a Downstream Plug**, have **Permitted Plans** on the **Jobsite**, or any other **Violation of City of Raleigh Standards** will result in a **Fine and Possible Exclusion** from future work in the **City of Raleigh**.

## CONSTRUCTION NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE MUNICIPALITY STANDARDS, SPECIFICATIONS, AND DETAILS. WORK IN THIS PROJECT SHALL ALSO CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, THE FINAL GEOTECHNICAL REPORT, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION.
- THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA ONE-CALL UTILITIES LOCATION SERVICE (1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
- THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- TRAFFIC CONTROL ON PUBLIC STREETS SHALL BE IN CONFORMANCE WITH THE TRAFFIC CONTROL PLAN, THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND AS FURTHER DIRECTED BY CITY AND STATE INSPECTORS.
- ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH THE CITY ENGINEERING DIVISION.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS, THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND APPLICABLE MUNICIPALITY) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
- THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D998. STONE BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST AS SET OUT IN ASTM STANDARD D1557. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
- PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
- THE CONTRACTOR SHALL REVIEW, VERIFY AND COORDINATE ALL DIMENSIONS SHOWN ON PLANS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER PRIOR TO STARTING PROJECT.
- ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
- ALL HANDICAP RAMPING, STRIPPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA REQUIREMENTS AND THE NORTH CAROLINA STATE BUILDING CODE, VOL. 1-C ACCESSIBILITY CODE.
- OWNER SHALL PROVIDE FENCING AND OTHER SAFETY MEASURES NECESSARY IN AND AROUND ANY PROPOSED STORMWATER MANAGEMENT MEASURES (PONDS, WETLANDS, ETC.) OBTAINING PROPER PERMITS SHALL BE THE RESPONSIBILITY OF THE OWNER.
- RETAINING WALLS EXCEEDING 30 INCHES IN HEIGHT SHALL INCLUDE FALL PROTECTION IN THE FORM OF A HANDRAIL OR FENCING ON THE HIGH SIDE OF THE RETAINING WALL AND WILL REQUIRE A SEPARATE BUILDING PERMIT.
- PROPER COMPACTION OF ALL FILL SOILS PLACED ON SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COMPACTION SHALL BE ADEQUATE TO SUPPORT THE PROPOSED USE OF AREAS IN WHICH FILL SOILS ARE PLACED. THE CONTRACTOR SHALL HIRE A GEOTECHNICAL ENGINEER TO TEST AND VERIFY THAT COMPACTION IS ADEQUATE FOR THE PROPOSED USE OF IN THE AREA OF FILL PLACEMENT.
- ALL ASPECTS OF THIS PROJECT SHALL BE IN FULL COMPLIANCE WITH CURRENT ADA STANDARDS. IF THE CONTRACTOR NOTES ANY ASPECTS OF THE PROJECT WHICH ARE NOT IN COMPLIANCE, THE ENGINEER SHALL BE NOTIFIED PRIOR TO ANY FURTHER WORK BEING PERFORMED. ANY WORK PERFORMED AFTER THE CONTRACTOR NOTES SUCH A NON COMPLIANCE IS SUBJECT TO REMOVAL AND REPAIR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR OR OWNER SHALL EMPLOY A GEOTECHNICAL ENGINEER TO TEST ALL EMBANKMENTS AND FILL PLACEMENT FOR PROPER COMPACTION. PROPER COMPACTION SHALL BE PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS OR THESE PLANS, WHICHEVER IS MORE STRINGENT. EMBANKMENTS FOR PONDS SHALL BE PLACED IN 6 INCH LOOSE LAYERS AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D998. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS OF THE OUTLET STRUCTURE AT ALL AT ALL PHASES OF INSTALLATION AND SHALL RETAIN WITH GEOTECHNICAL TESTING DATA. THE CONTRACTOR SHALL ALSO RETAIN ALL SHIPPING RECORDS AND SPECIFICATIONS FOR THE OUTLET STRUCTURE MATERIALS AND STRUCTURES. ALL OF THE ABOVE DATA MAY BE REQUIRED AS PART OF THE MUNICIPALITY AS-BUILT PROCESS AND SHALL BE MADE AVAILABLE TO THE ENGINEER UPON REQUEST. THE CONTRACTOR AND OWNER SHALL HAVE DOCUMENTATION OF THESE TESTS AVAILABLE UPON REQUEST.
- RETAINING WALLS SHOWN HEREIN SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER WITH EXPERIENCE DESIGNING RETAINING WALLS. AT LEAST 14 DAYS PRIOR TO BEGINNING CONSTRUCTION OF RETAINING WALLS, THE CONTRACTOR SHALL CONTACT THE OWNER'S GEOTECHNICAL ENGINEER TO SCHEDULE AND COORDINATE ALL APPROPRIATE INSPECTIONS, TESTING, AND VERIFICATION NECESSARY DURING RETAINING WALL CONSTRUCTION. THE GEOTECHNICAL ENGINEER SHALL PROVIDE CONTINUOUS INSPECTION, TESTING AND VERIFICATION FOR THE DURATION OF RETAINING WALL CONSTRUCTION. PROPER SCHEDULING, EXECUTION, AND RECORD KEEPING FOR ALL REQUIRED INSPECTIONS, TESTING, AND VERIFICATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH RECORDS SHALL BE RETAINED AND SHALL BE PROVIDED TO THE OWNER AND BASS, NIXON & KENNEDY, INC. ALL MONITORING, TESTING, AND VERIFICATION SHALL CONFORM TO THE MOST RECENT VERSION OF THE NC BUILDING CODE CHAPTER 18, SECTION 1806 OR THE WALL DESIGN ENGINEER'S SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.



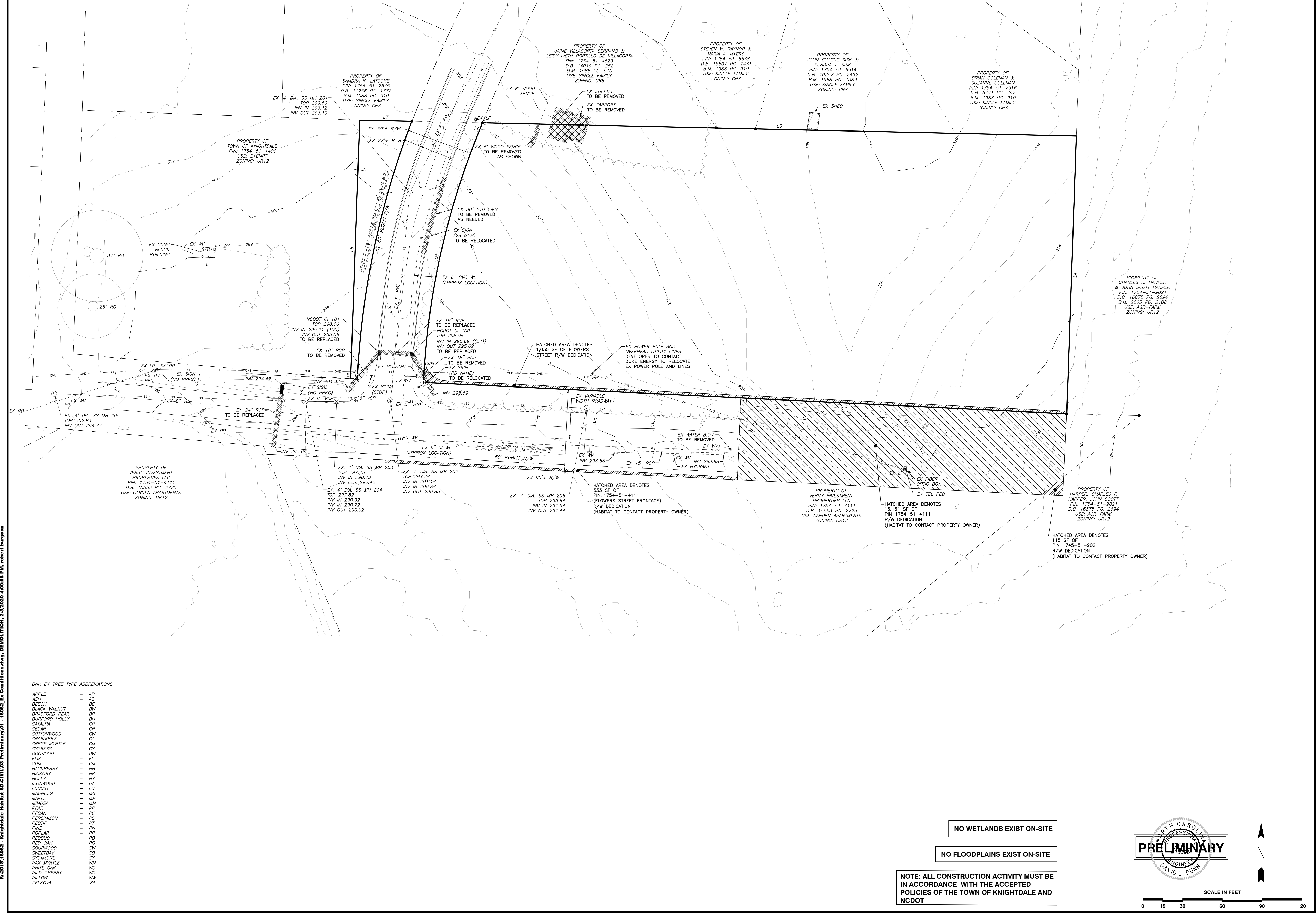
ENGINEER:



**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
6310 CHAPEL HILL ROAD, SUITE 250  
RALEIGH, NORTH CAROLINA 27607  
TELEPHONE: (919) 851-4422  
FAX: (919) 851-8968

CERTIFICATION NUMBERS: NCBELS (C-0110)  
NCBOLA (C-0267)

CONTACT: MARTY D. BIZZELL, PE  
EMAIL: Marty.Bizzell@BNKinc.com



R:\2019\19082 - Knightdale Habitat 5D\CV\103 Preliminary\01 - 19082\_Ext Conditions.dwg, DEMOLITION, 2.3.2020 4:00:55 PM, robert burgston

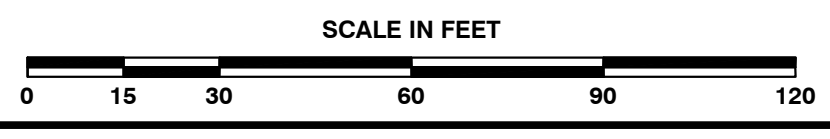
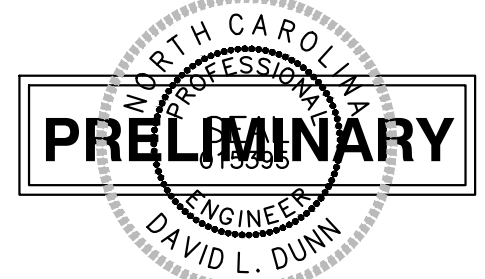
**BNK EX TREE TYPE ABBREVIATIONS**

APPLE	AP
ASH	AS
BEECH	BE
BLACK WALNUT	BW
BRADFORD PEAR	BP
BURFORD HOLLY	BH
CATALPA	CP
CEDAR	CR
COTTONWOOD	CW
CRABAPPLE	CA
CREPE MYRTLE	CM
CYPRESS	CY
DOGWOOD	DW
ELM	EL
GUM	GM
HACKBERRY	HB
HICKORY	HK
HOLLY	HY
IRONWOOD	IW
LOCUST	LC
MAGNOLIA	MG
MAPLE	MP
MIMOSA	MM
PEAR	PR
PECAN	PC
PERSIMMON	PS
REDTIP	RT
PINE	PN
POPLAR	PP
REDBUD	RB
RED OAK	RO
SOURWOOD	SW
SWEETBAY	SB
SYCAMORE	SY
WAX MYRTLE	WM
WHITE OAK	WO
WILD CHERRY	WC
WILLOW	WW
ZELKOVA	ZA

NO WETLANDS EXIST ON-SITE

NO FLOODPLAINS EXIST ON-SITE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF KNIGHTDALE AND NCDOT



BNK

BASS, NIXON & KENNEDY, INC.

CONSULTING ENGINEERS

6310 CHASE HILL ROAD, SUITE 250, RALEIGH, NC 27607

TELEPHONE: (919) 851-4422 FAX: (919) 851-8966

CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY
1	01-15-2020	TOWN OF KNIGHTDALE COMMENTS	RAB

02-19082-19 RAB

JOB NO. DATE DRAWN BY

12-08-19

DATE

CHK BY: MDB

SCALE: 1" = 30'

FLOWERS PLACE SUBDIVISION

0 KELLEY MEADOWS ROAD

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

SHEET C0.1

EXISTING CONDITIONS AND DEMOLITION PLAN

TOWN OF KNIGHTDALE PROJECT NO. ZMA-9-19



**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAREL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 851-4422 FAX: (919) 851-8866  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

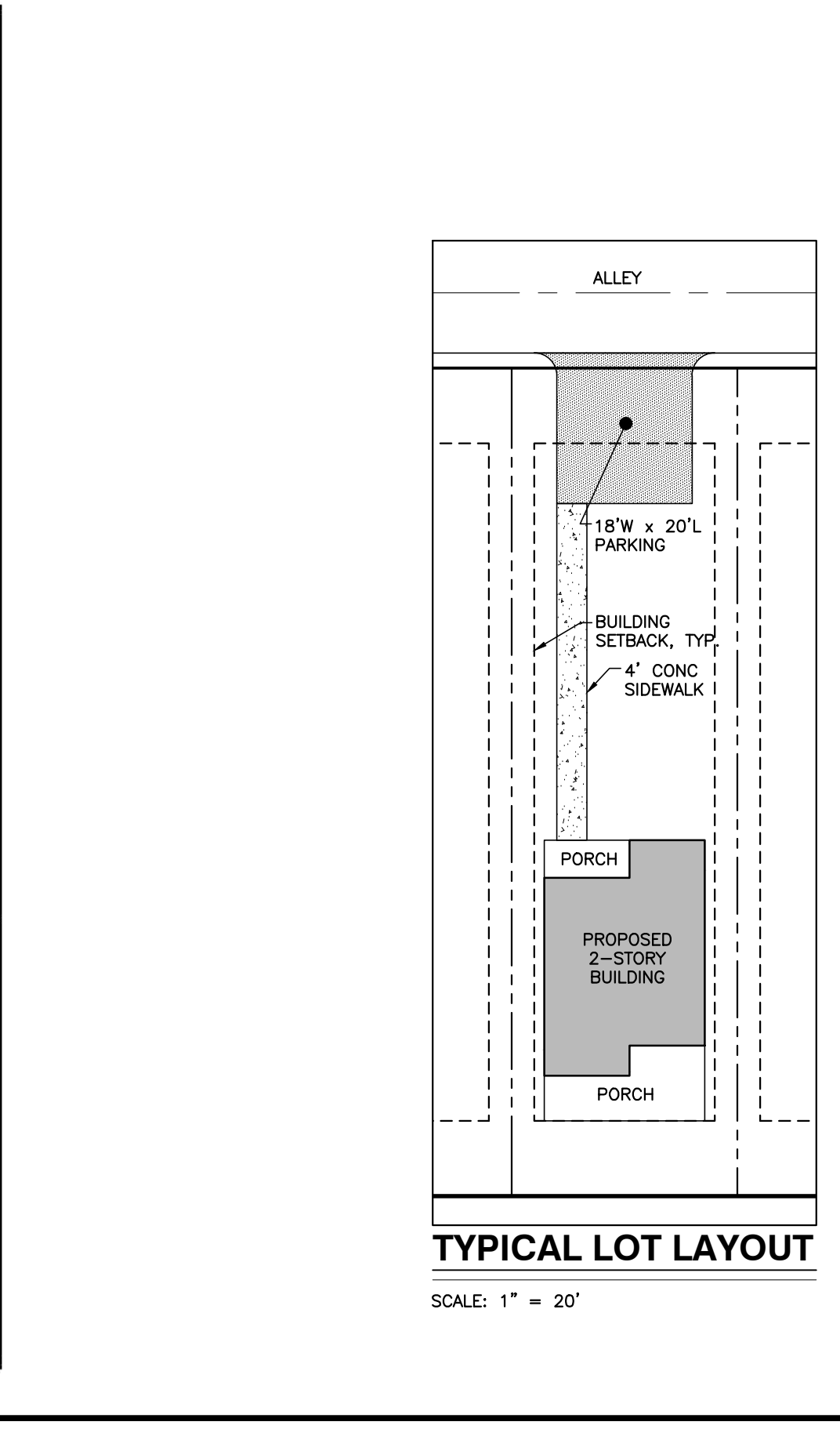
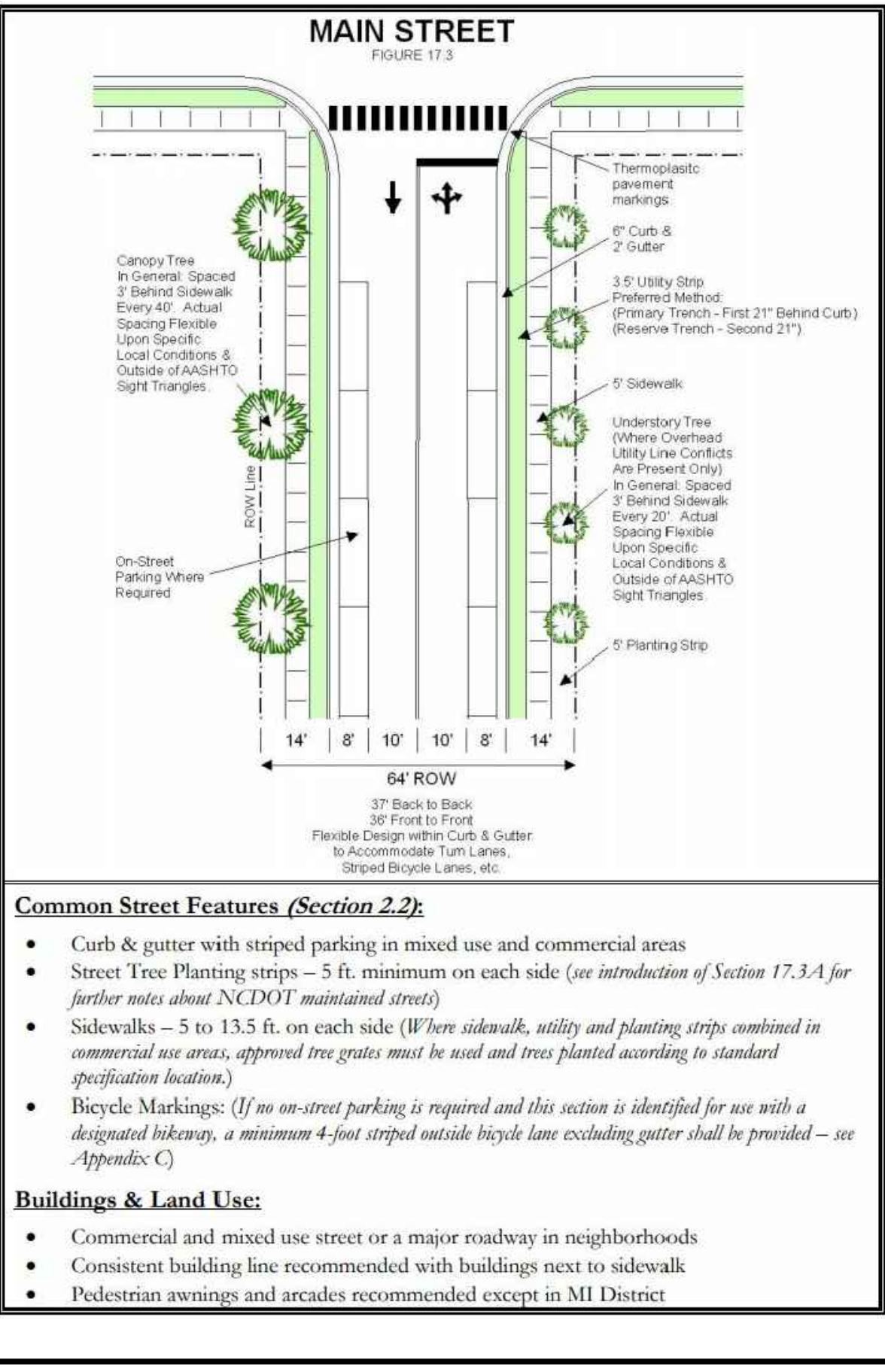
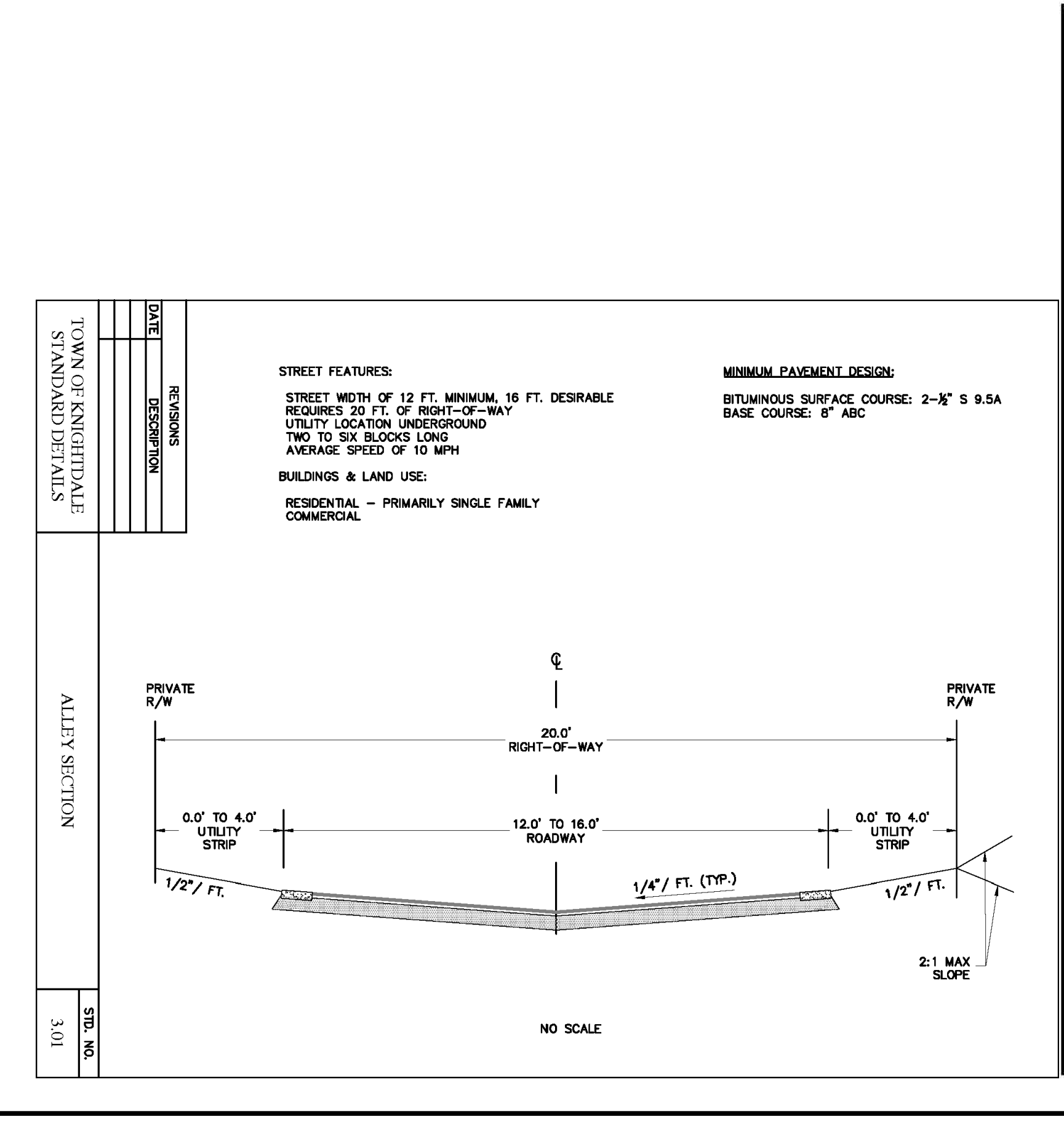
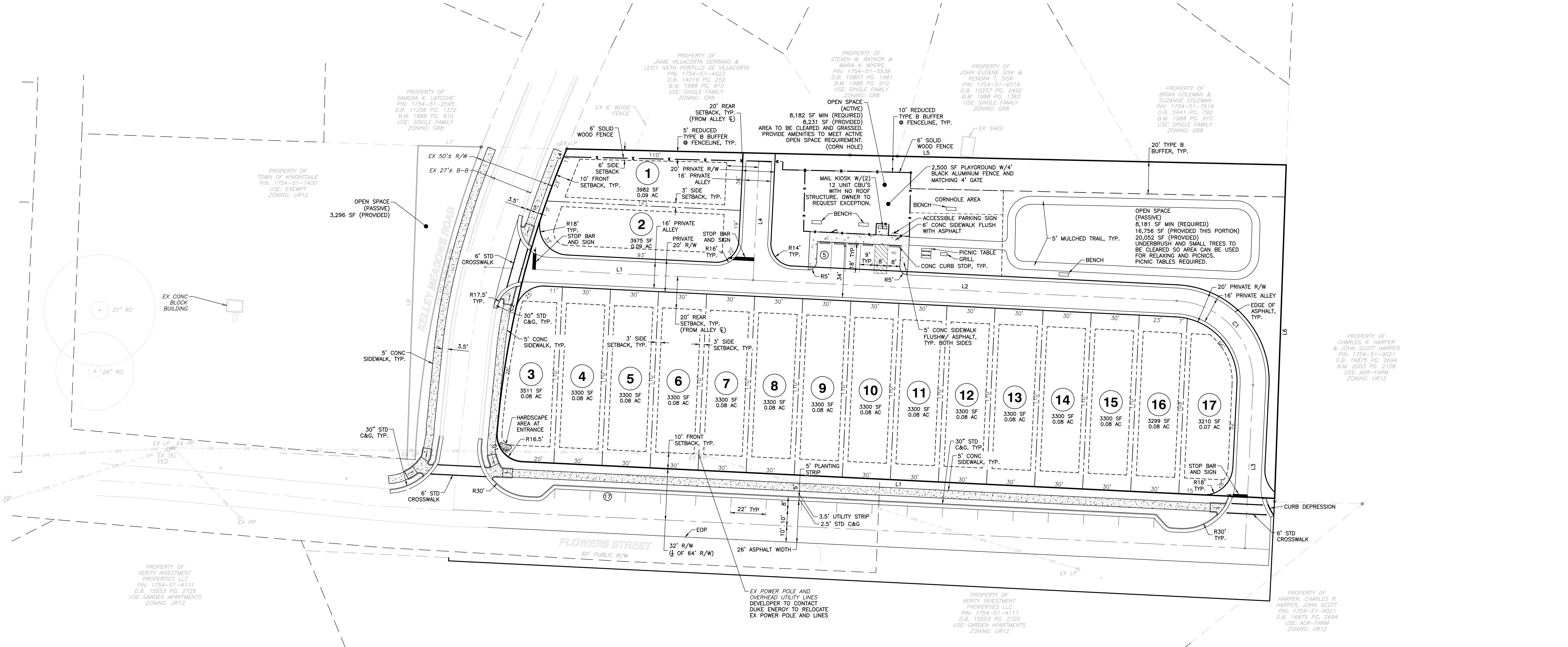
NO.	DATE	DESCRIPTION	BY
1	01-13-2020	TOWN OF KNIGHTDALE COMMENTS	RAB

RAB	DATE	DRAWN BY
03-18-2022	12-08-19	DAVID L. DUNN

**SITE PLAN**  
 SCALE: 1" = 30'

**FLOWERS PLACE SUBDIVISION**  
 0 KELLEY MEADOWS ROAD  
 TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

**SHEET C1.1**



Line #	Length	Direction
L1	469.70'	N87°12'13.41"W
L4	11.35'	N22°02'02.96"E
L5	448.66'	S88°43'22.02"E
L6	207.97'	S1°58'59.11"W

Curve #	Length	Radius
C1	26.46'	16.50'
C2	171.77'	575.10'

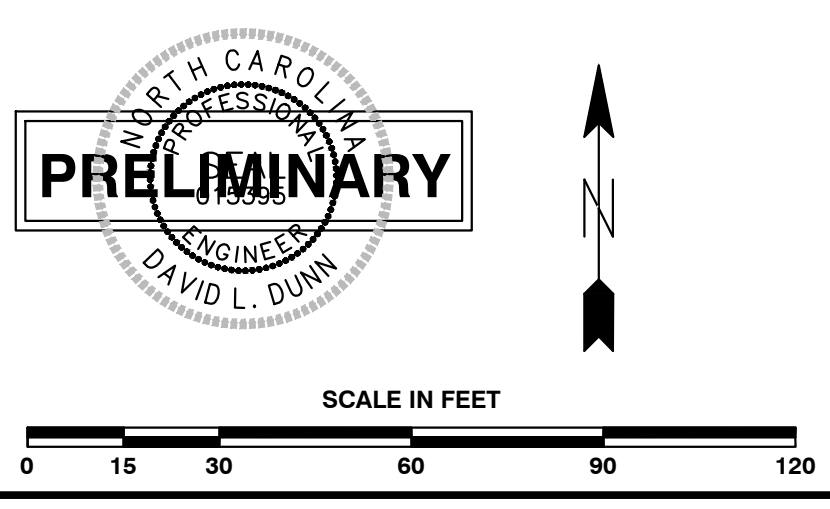
  

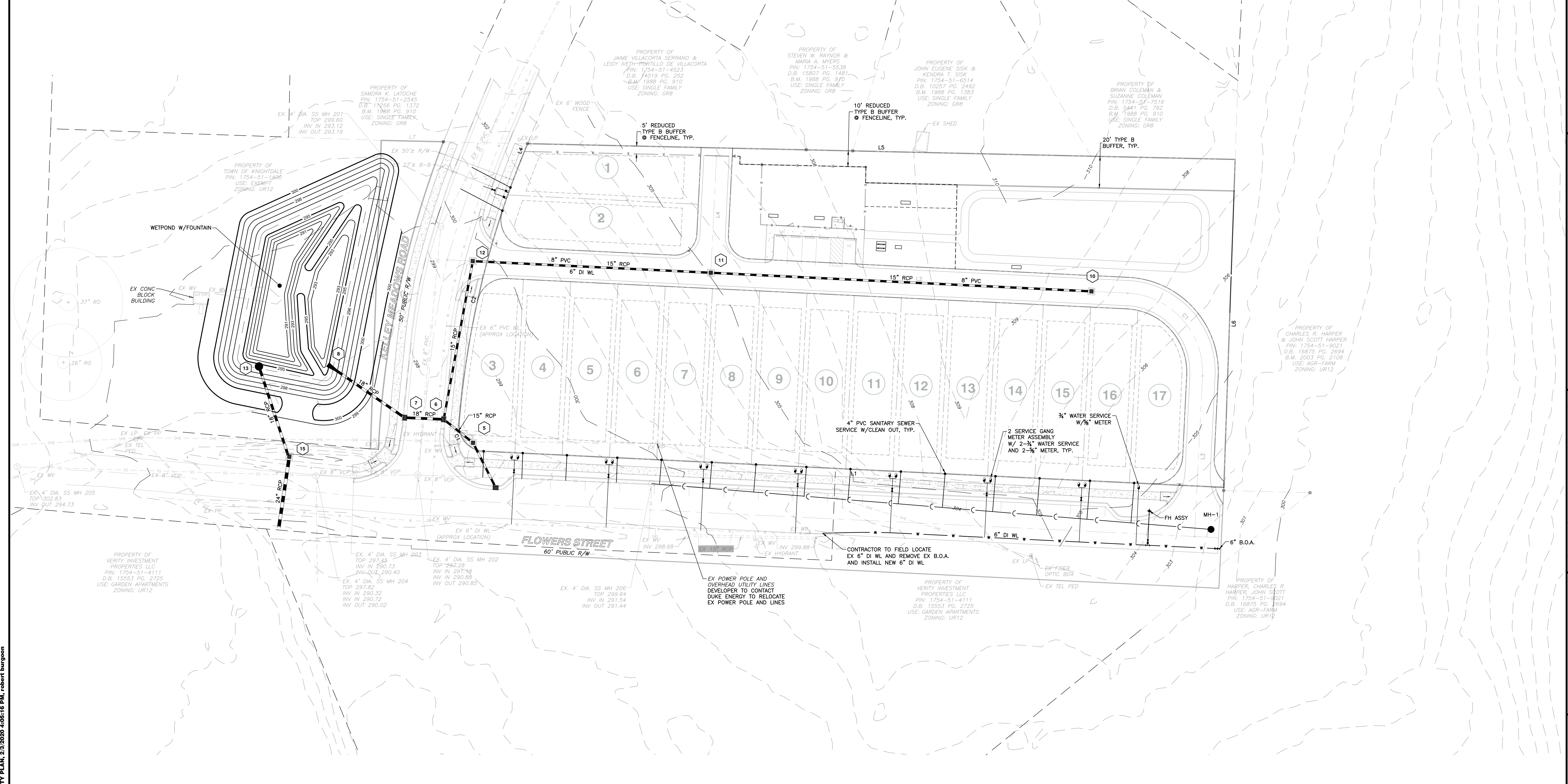
Line #	Length	Direction
L1	167.31'	S87°12'13.41"E
L2	264.46'	S87°12'13.41"E
L3	102.00'	S2°47'46.59"W
L4	74.02'	S2°47'46.59"W

Curve #	Length	Radius
C1	78.54'	50.00'

NO WETLANDS EXIST ON-SITE  
 NO FLOODPLAINS EXIST ON-SITE  
 NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF KNIGHTDALE AND NCDOT





**CITY OF RALEIGH UTILITY NOTES**

- ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
- UTILITY SEPARATION REQUIREMENTS:
  - 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.
  - 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.
  - WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
  - 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
  - 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-43).
  - ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.
- 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.
- 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.
- 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS.
- 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
- 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.
- INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
- INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
- 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.
- ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDOT, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
- NCDOT/RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
- 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) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
- 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, WHEN SUCH IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

**Public Sewer Collection / Extension System**

The City of Raleigh consents to the connection and extension of the City's public sewer system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh  
Public Utilities Department Permit # \_\_\_\_\_  
Authorization to Construct \_\_\_\_\_  
Date \_\_\_\_\_

**Public Water Distribution / Extension System**

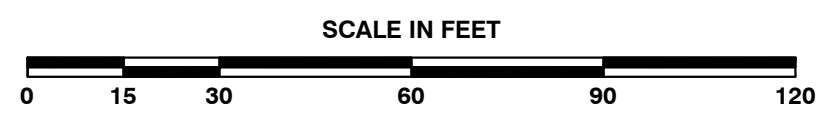
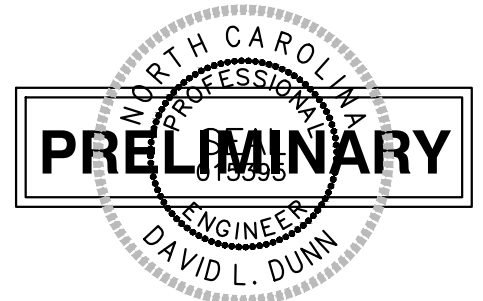
The City of Raleigh consents to the connection and extension of the City's public water system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh  
Public Utilities Department Permit # \_\_\_\_\_  
Authorization to Construct \_\_\_\_\_  
Date \_\_\_\_\_

NO WETLANDS EXIST ON-SITE

NO FLOODPLAINS EXIST ON-SITE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF KNIGHTDALE AND NCDOT



**BASS, NIXON & KENNEDY, INC.**  
CONSULTING ENGINEERS  
6310 CHAREL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
TELEPHONE: (919) 963-1442 FAX: (919) 961-8966  
CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY

12-05-19 RAB DRAWN BY  
03-18-82 JOB NO. DATE  
UTILITY AND STORM DRAINAGE PLAN  
SCALE: 1" = 30'  
CHK BY: MDB

**FLOWERS PLACE SUBDIVISION**  
0 KELLEY MEADOWS ROAD  
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

SHEET C2.1

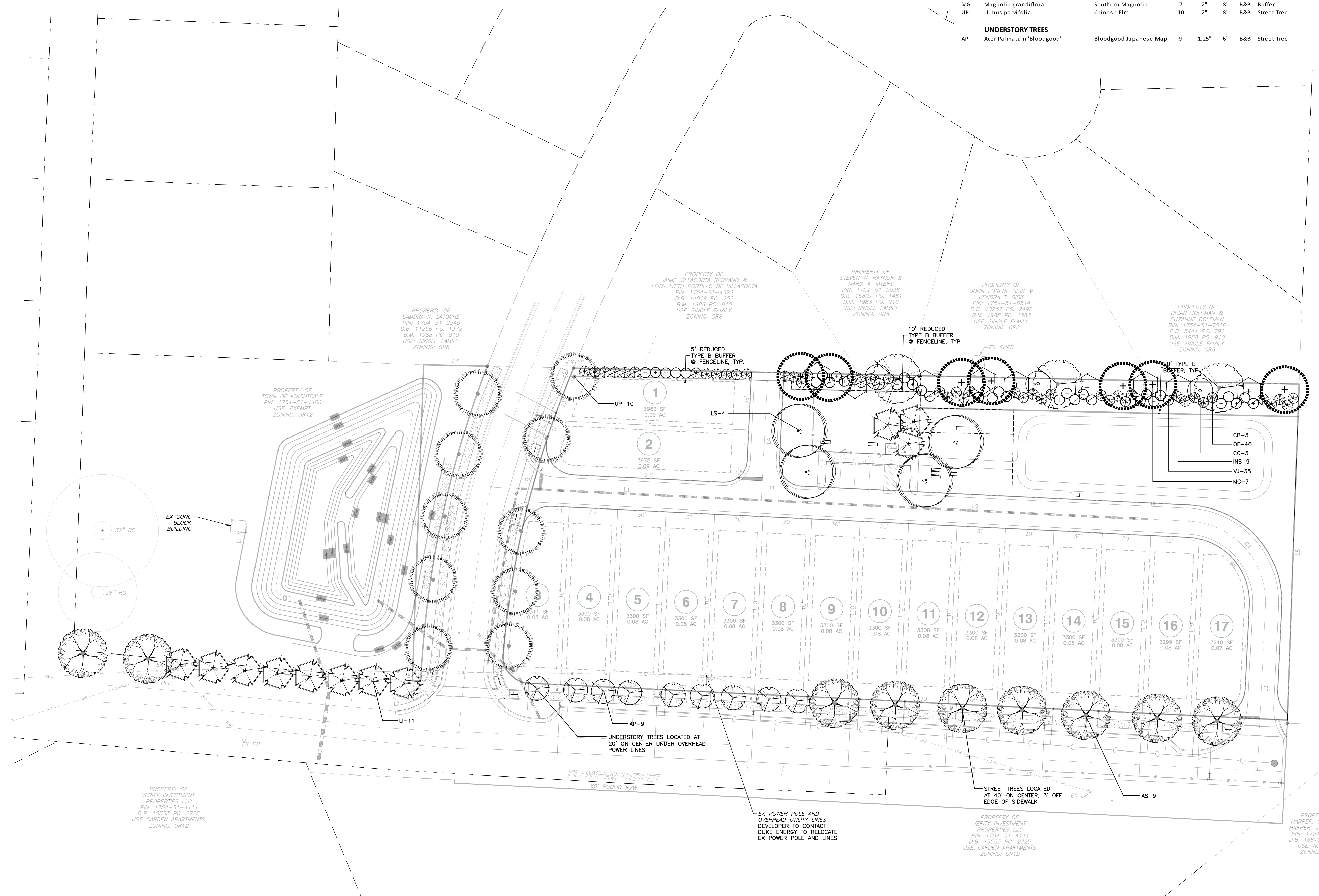
R:\2019\19082 - Knightdale Habitat 5D\01\03 Preliminary\03 - 19082\_Utility.dwg, UTILITY PLAN, 2/3/2020 4:05:16 PM, robert.burgoon

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

Proposed Boundary Line Table			Proposed Boundary Curve Table			Road CL Line Table			Road CL Curve Table		
Line #	Length	Direction	Curve #	Length	Radius	Line #	Length	Direction	Curve #	Length	Radius
L1	469.70'	N87°12'13.41"W	C1	26.46'	16.50'	L1	167.31'	S87°12'13.41"E	C1	78.54'	50.00'
L4	11.35'	N22°02'02.96"E	C2	171.77'	575.10'	L2	264.46'	S87°12'13.41"E			
L5	448.66'	S88°43'22.02"E				L3	102.00'	S2°47'46.59"W			
L6	207.97'	S1°58'59.11"W				L4	74.02'	S2°47'46.59"W			

**PLANT LIST**

KEY	SCIENTIFIC NAME	COMMON NAME	QUAN.	CAL	HT	ROOT	REMARKS
<b>SHADE TREES</b>							
AS	Acer saccharum 'Legacy'	Legacy Sugar Maple	9	2"	8'	B&B	Street Tree
CB	Carpinus betulus	European Hornbeam	3	2"	8'	B&B	Buffer
LS	Liquidambar styraciflua 'Rotundiloba'	Fruitless Sweetgum	4	2"	8'	B&B	Accent
MG	Magnolia grandiflora	Southern Magnolia	7	2"	8'	B&B	Buffer
UP	Ulmus parvifolia	Chinese Elm	10	2"	8'	B&B	Street Tree
<b>UNDERSTORY TREES</b>							
AP	Acer Palmatum 'Bloodgood'	Bloodgood Japanese Mapl	9	1.25"	6'	B&B	Street Tree



**BASS, NIXON & KENNEDY, INC.**  
**CONSULTING ENGINEERS**  
 6310 CHAREL HILL ROAD, SUITE 250, RALEIGH, NC 27607  
 TELEPHONE: (919) 851-4422 FAX: (919) 851-8866  
 CERTIFICATION NUMBERS: NCBELS (C-0110); NCBOLA (C-0267)

NO.	DATE	DESCRIPTION	BY
2	02-03-20	PER TOK COMMENTS	GW
1	01-13-20	PER TOK COMMENTS	GW

RAB	DATE	DRAWN BY
02-18-22	12-08-19	RAB

**LANDSCAPE PLAN**

SCALE: 1" = 30'

CHK BY: MDB

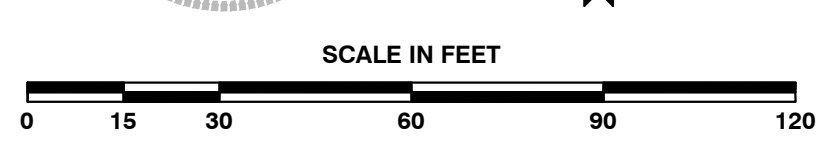
**FLOWERS PLACE SUBDIVISION**  
**0 KELLEY MEADOWS ROAD**  
 TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

**SHEET L1.1**

NO WETLANDS EXIST ON-SITE

NO FLOODPLAINS EXIST ON-SITE

NOTE: ALL CONSTRUCTION ACTIVITY MUST BE IN ACCORDANCE WITH THE ACCEPTED POLICIES OF THE TOWN OF KNIGHTDALE AND NCDOT



R:\2019\19082 - Knightdale Habitat 5D\Civil\03 Preliminary\06 - 19082\_Landscape.dwg, L1.0, 2/3/2020 4:05:53 PM, robert.kurgoon

NOT RELEASED FOR CONSTRUCTION OR BID SOLICITATION

