PROGRESS PLOT DATE: 08/8/24

MINGO CREEK SUBDIVISION

CONSTRUCTION PLANS

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

SU-2-01
SEC-000003-2023

SITE INFORMATION:

LOCATION:	0 HOWDENSHIRE RUN
COUNTY:	WAKE COUNTY
PARENT PIN:	1743487874, 1743571925
DB/PG:	16263/247, 16038/1549
CURRENT ZONING:	UR12-SUP
ACREAGE:	950,593 SF (21.82 AC)
LAND CLASS:	RESIDENTIAL
RIGHT OF WAY & OTHER AREAS:	
NATURAL WETLANDS:	15,226 SF (0.35 AC)

MINIMUM BUILDING SETBACKS:	TOWNHOME:
FRONT YARD:	0'
SIDE YARD:	0' (10' BEWEEN BUIDINGS)
REAR YARD:	N/A
CORNER YARD:	N/A

LOT TYPE BREAKDOWN:	
4-UNIT TOWNHOME 17.5' WIDTH :	28 LOTS
8-UNIT TOWNHOME 17.5' WIDTH :	70 LOTS

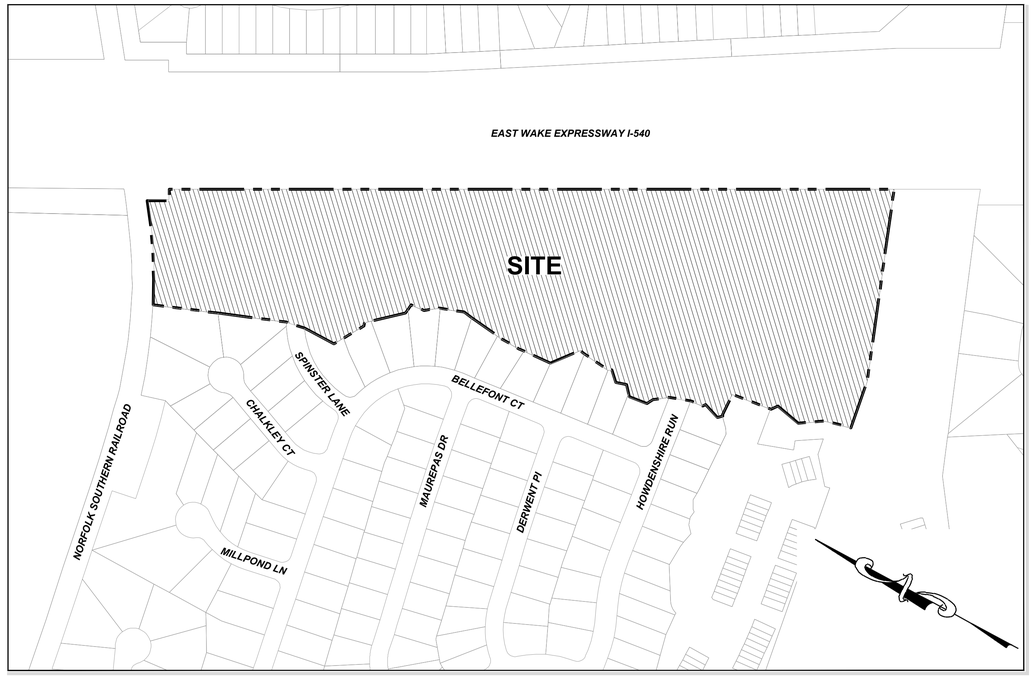
LOT ACREAGE:	
PROPOSED DENSITY:	4.49 DU/AC
TOTAL NUMBER PROPOSED LOTS:	98
MINIMUM PROPOSED LOT SIZE:	1,084 SF
MAXIMUM PROPOSED LOT SIZE:	3,366 SF (LOT 791)
AVERAGE PROPOSED LOT SIZE:	1,567 SF
MINIMUM ALLOWABLE LOT WIDTH:	17'
MINIMUM PROPOSED LOT WIDTH:	17'

OPEN SPACE BREAKDOWN:	
PROPERTY BOUNDARY:	950,593 SF (21.82 AC)
REQUIRED OPEN SPACE :	97,500 SF (2.24 AC)
PROVIDED OPEN SPACE :	394,738 SF (9.06 AC)
PROVIDED ACTIVE OPEN SPACE:	6,763 SF (0.16 AC)

IMPERVIOUS AREAS:	
ROADWAYS / PARKING:	75,407 SF (1.73 AC)
LOTS (1,200 SF/LOT):	117,600 SF (2.70 AC)
TOTAL ON-SITE IMPERVIOUS AREA:	193,007 (4.43 AC)
TOTAL ON-SITE IMPERVIOUS PERCENT:	20%

UTILITY DEMANDS:	
SEWAGE USAGE:	24,500 GPD 250 GPD / RESIDENTIAL UNIT X 98 UNITS
WATER USAGE:	24,500 GPD 250 GPD / RESIDENTIAL UNIT X 98 UNITS
DISTURBED AREA:	
TOTAL DISTURBED AREA:	462,464 SF (10.62 AC)

STREET TYPE SUMMARY:	PRIVATE	PUBLIC
54' ROW SECTION:	879 LF.	
64' ROW SECTION:	224 LF.	276 LF.
74' ROW SECTION:	701 LF.	
NUMBER OF PARKING SPACES:	129 SPACES.	
CURB AND GUTTER:	4,415 LF.	263 LF.
SIDEWALK:	3,558 LF.	258 LF.
LENGTH OF TREE PROTECTION FENCE:	5,451 LF.	



VICINITY MAP

1" = 200'

UTILITY QUANTITIES:

PHASE 7:

SANITARY SEWER SYSTEM
GRAVITY SEWER (8" DIA PVC) = 1,016 LF
NO. OF MANHOLES (4' DIA) = 10
NO. OF SEWER SERVICES = 98 TAPS + 1 MAIN CONNECTION

WATER DISTRIBUTION SYSTEM
8" DIP = 1,276 LF
NO. OF WATER SERVICES = 98 TAPS + 1 MAIN CONNECTION
NO. OF HYDRANTS = 5
NO. OF REDUCER= 1
NO. OF GATE VALVE = 3
NO. OF TEMPORARY BOA = 3

STORM DRAINAGE SYSTEM:
NO. OF CATCH BASINS = 30
NO. OF FLARED END SECTIONS = 3
NO. OF STORM DRAIN MANHOLE = 7
NO. OF YARD INLETS = 5
NO. OF OUTLET CONTROL STRUCTURES = 1
15' STORMWATER PIPE = 271 LF
18' STORMWATER PIPE = 105 LF
24' STORMWATER PIPE = 640 LF
30' STORMWATER PIPE = 193 LF
48' STORMWATER PIPE = 94 LF

PHASE 12:

SANITARY SEWER SYSTEM
GRAVITY SEWER (8" DIA PVC) = 850 LF
NO. OF MANHOLES (4' DIA) = 2
NO. OF MANHOLES (5' DIA) = 4
NO. OF SEWER SERVICES = 98 TAPS + 1 MAIN CONNECTION

WATER DISTRIBUTION SYSTEM
8" DIP = 798 LF
NO. OF WATER SERVICES = 98 TAPS
NO. OF HYDRANTS = 3
NO. OF GATE VALVE = 6
NO. OF BEN 90^0 = 1
NO. OF TEMPORARY BOA = 2

STORM DRAINAGE SYSTEM:
NO. OF CATCH BASINS = 30
NO. OF FLARED END SECTIONS = 5
NO. OF STORM DRAIN MANHOLE = 7
NO. OF YARD INLETS = 5
NO. OF OUTLET CONTROL STRUCTURES = 2
15' STORMWATER PIPE = 824 LF
18' STORMWATER PIPE = 351 LF
24' STORMWATER PIPE = 31 LF
48' STORMWATER PIPE = 259 LF

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.

A. TOWN APPROVED STANDARDS SHALL CONTROL. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THESE CONSTRUCTION DRAWINGS AND THE TOWN OF KNIGHTDALE'S APPROVED STANDARDS FOR THIS PROJECT, THE APPROVED STANDARDS SHALL CONTROL. TOWN OF KNIGHTDALE APPROVED STANDARDS SHALL MEAN ALL DEVELOPMENT DOCUMENTS NECESSARY FOR APPROVAL FOR THE PROPERTY INCLUDING, BUT NOT LIMITED TO, ANY SPECIAL USE PERMIT, SUBDIVISION PLAN, SITE PLAN, SUBDIVISION PLAT(S), PHASING SCHEDULE, DEVELOPMENT AGREEMENT, UTILITY ALLOCATION AGREEMENT, ANNEXATION AGREEMENT, THE TOWN OF KNIGHTDALE STANDARD SPECIFICATION AND DETAILS MANUAL AND APPLICABLE PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE.

B. PROFESSIONAL DESIGN ENGINEER CERTIFICATION. THESE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING DRAWINGS AND WITH THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.
I,_____ PE, CERTIFY THAT THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE HAVE BEEN THOROUGHLY CHECKED AND FOUND TO BE APPLICABLE TO THIS PROJECT. ALL EXCEPTIONS TO THE APPLICABLE TOWN STANDARDS HAVE BEEN PREVIOUSLY APPROVED BY THE TOWN OF KNIGHTDALE AND SAID EXCEPTIONS ARE SHOWN ON SHEET(S) _____ OF THESE DRAWINGS.
SEAL
BY: _____, PE
DATE: _____

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

OWNER:

MINGO CREEK INVESTMENTS III, LLC
2102 PRITCHARD RD.
CLAYTON, NC 27527

CIVIL ENGINEERING:

STRONG ROCK ENGINEERING GROUP, PLLC
PO BOX 55992
RALEIGH, NC 27624
COMPANY LICENSE #: P-2166
CONTACT: 984-200-1932 (O)
information@strongrockgroup.com

811 Know what's below. Call before you dig.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997 (3)

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 .
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898 (3)

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

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09	C-7.2	PARTIAL SITE PLAN II
10	C-8.0	OVERALL UTILITY PLAN
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12	C-8.2	PARTIAL UTILITY PLAN II
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No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036225 JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
COVER SHEEET

DRAWING SHEET
C-1.0

01 OF 55

GENERAL CONSTRUCTION NOTES:

1. ALL DIMENSIONS HAVE BEEN PROVIDED WITH THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL CONFIRM ALL FIELD DIMENSIONS PRIOR TO BEGINNING WORK. ANY DISCREPANCIES SHALL BE MADE IN WRITING TO THE ENGINEER OF RECORD FOR CONFIRMATION AND APPROVAL PRIOR TO BEGINNING WORK.
2. THE INTENT IS FOR THE MINGO CREEK SUBDIVISION TO BE CONSTRUCTED IN TWO (2) PHASES.
3. WITHIN ALL NOTES, THE TERM CONTRACTOR WILL MEAN THE GENERAL CONTRACTOR AND ANY SUBCONTRACTORS OR VENDORS PERFORMING WORK ON THE PROJECT.
4. ANY CONTRACTOR SUBMITTING A BID FOR THIS PROJECT SHALL MAKE A SITE VISIT PRIOR TO SUBMITTING BID.
5. ANY RELOCATION OF BENCHMARKS SHALL BE PERFORMED BY A NC LICENSED SURVEYOR.
6. ALL WORK, CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE, WAKE COUNTY, NCDOT AND/OR CITY OF RALEIGH STANDARDS AND SPECIFICATIONS, LATEST EDITION.
7. ALL WORK, CONSTRUCTION AND MATERIALS WITHIN NCDOT RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE 2018 NCDOT STANDARDS SPECIFICATIONS FOR ROADS AND STRUCTURES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE TRAFFIC CONTROL IN OR ADJACENT TO NCDOT RIGHT-OF-WAY. TRAFFIC CONTROL SHALL BE MAINTAINED AT ALL TIMES WITH PROPER SIGNAGE, SIGNALS, LIGHTING, FLAGMEN. ALL SIGNS, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
9. COPIES OF ALL PERMITS AND APPROVED PLANS MUST BE KEPT ON SITE IN A PERMIT BOX THAT IS CONSPICUOUSLY LOCATED AND EASILY ACCESSIBLE DURING CONSTRUCTION. THIS INCLUDES APPROVED CONSTRUCTION PLANS, APPROVED EROSION CONTROL PLANS, ENCROACHMENT AGREEMENTS, DRIVEWAY PERMITS, WATER/SEWER PERMITS, ETC.
10. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND MUST BE FIELD VERIFIED. CONTACT THE NC ONE CALL CENTER AT LEAST 72 HOURS PRIOR TO DIGGING @ 1.800.632.4949. UNDERGROUND LINES SHOWN HEREON ARE APPROXIMATE OR AS REPORTED BY VARIOUS RESPONSIBLE PARTIES. THE SURVEYOR DOES NOT GUARANTEE THAT ANY UNDERGROUND STRUCTURES SUCH AS UTILITIES, TANKS AND PIPES ARE LOCATED HEREON.
11. THE CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING OR CONNECTING TO SAID FACILITIES.
12. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY PUBLICLY MAINTAINED PROPERTY. THE CONTRACTOR SHALL REPAIR THE DAMAGED PROPERTY TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE AGENCY HOLDING JURISDICTION AT NO COST TO THE OWNER.
13. ANY DAMAGE DONE TO PRIVATE PROPERTY OWNERS SIGNS, MAILBOX, DRIVEWAY CULVERTS, LANDSCAPING OR OTHER PROPERTY SHALL BE RESTORED TO ORIGINAL CONDITION. AT NO COST TO OWNER.
14. CONTRACTOR IS RESPONSIBLE FOR FENCING AND SECURITY OF HIS LAYDOWN AND STORAGE AREA.
15. THE CONTRACTOR IS REQUIRED TO MEET ALL APPLICABLE FEDERAL, OSHA, STATE AND LOCAL REGULATIONS CONCERNING PROJECT SAFETY AND ASSUMES FULL RESPONSIBILITY FOR SAFETY ON THE PROJECT.
16. CONTRACTOR SHALL KEEP ALL ROADS FREE OF DIRT AND DEBRIS AT ALL TIMES.
17. CONTRACTOR SHALL PROTECT EXISTING PAVEMENTS AND UTILITIES FROM HEAVY EARTH MOVING EQUIPMENT. PROVIDE TRAFFIC CONTROL AND ADEQUATE PROTECTION METHODS AT ALL EQUIPMENT CROSSINGS.
18. ALL STRUCTURAL FILL MATERIAL SHALL BE FREE OF ALL STICKS, ROCKS, AND CLUMPS OF MUD. ALL ROCKS GREATER THAN 3" DURING EXCAVATION SHALL BE REMOVED.
19. CONCRETE SIDEWALKS THAT ARE TO BE REMOVED SHALL BE CUT BACK TO NEAREST EXPANSION OR CONTROL JOINT AND REPLACED WITH 4-INCH CONCRETE SIDEWALK FINISHED TO MATCH EXISTING SIDEWALKS.
20. CONTRACTOR SHALL COORDINATE WITH THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT FOR TEMPORARY WATER REQUIRED DURING CONSTRUCTION. IF PERMITTED TO CONNECT TO AN EXISTING FIRE HYDRANT, A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTER IS REQUIRED.
21. THE TRANSITION OF PROPOSED ROADWAY TO EXISTING ROADWAY SHALL BE DONE WITH A MINIMUM 8-FT TRANSITION WHERE THE EXISTING PAVEMENT IS MILLED TO A MINIMUM DEPTH OF 1-1/2" AND OVERLAID.
22. ALL PAVEMENT SAW CUTS SHALL BE NEAT, STRAIGHT AND FULL DEPTH.
23. ALL RIP-RAP IS TO BE INSTALLED WITH NON-WOVEN FILTER FABRIC BENEATH (MIRAFI 140N OR APPROVED EQUAL).
24. HDPE PIPE SHALL BE ADS N-12 WT (ASTM D3212) OR APPROVED EQUAL INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS.
25. ALL SITE CONSTRUCTION MUST BE INSPECTED BY THE GEOTECHNICAL ENGINEER AT THE FOLLOWING STAGES:
    - A. COMPLETION OF GRADING SUBGRADE PRIOR TO PLACING STONE BASE.
    - B. COMPLETION OF STONE PLACEMENT PRIOR TO PAVING.
    - C. FINAL INSPECTION WHEN ALL WORK IS COMPLETE.
26. PRIOR TO PLACING CABC STONE BASE, THE CONTRACTOR SHOULD NOTIFY THE GEOTECHNICAL ENGINEER AND TOWN OF KNIGHTDALE TO INSPECT THE PROOF ROLL OF THE SUBGRADE. ANY STONE PLACED WITHOUT PRIOR APPROVAL WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBJECT TO RE-CONSTRUCTION IF SUBGRADE DOES NOT MEET TOWN AND NCDOT STANDARDS & SPECIFICATIONS.
27. ALL UTILITY SERVICES, (POWER, TELEPHONE, CABLE, ETC.) ARE PROPOSED TO BE UNDERGROUND. THE CONTRACTOR SHALL COORDINATE WITH THE PRIVATE UTILITY SERVICE COMPANIES FOR ANY REQUIRED CONDUITS OR POINT OF CONTACT CONDITIONS.
28. ALL PUBLIC UTILITIES THAT REQUIRE AN ENGINEERING CERTIFICATION MUST BE INSPECTED BY A PROFESSIONAL ENGINEER ON A PERIODIC BASIS. THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER WHEN INSTALLING UTILITIES FOR PERIODIC INSPECTIONS. THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AT THE TIME OF PRESSURE TESTING AND WATER LINE DISINFECTION. THE CONTRACTOR SHALL SUPPLY THE PROJECT ENGINEER PRESSURE TEST RESULTS.
29. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS AND FIELD CONDITIONS WHEN POSSIBLE, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF TRENCHING. IF THE CLEARANCES ARE LESS THAN SPECIFIED ON THE PLANS OR 12 INCHES, WHICH EVER IS LESS, CONTACT THE PROJECT ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
30. THE CONTRACTOR SHALL INCLUDE IN HIS CONTRACT PRICE THE REMOVAL AND DISPOSAL, TO AN APPROVED NCDENR LOCATION, OF ANY EXCESS TOPSOIL OR UNCLASSIFIED EXCAVATION HE DETERMINES IS NOT REQUIRED TO PERFORM THE FINAL GRADING AND LANDSCAPING OPERATION.
31. THE CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE DAILY RECORD KEEPING OF THE AS-BUILT CONDITION OF ALL OF THE UNDERGROUND UTILITIES, CONSTRUCTION STAKEOUT ASSOCIATED WITH THE PROJECT. PREPARATION OF THE NECESSARY/REQUIRED AS-BUILT PLANS TO BE SUBMITTED TO TOWN OF KNIGHTDALE AND/OR CITY RALEIGH PUBLIC UTILITIES AND/OR ALL OTHER INFORMATION REQUIRED IN CONNECTION WITH RELEASE OF BONDS.
32. THE CONTRACTOR SHALL INCLUDE IN THE PRICE, ANY AND ALL COSTS ASSOCIATED WITH PROVIDING A PROFESSIONAL ENGINEER ON SITE IF REQUIRED, DURING THE CONSTRUCTION OF THE STORMWATER MANAGEMENT FACILITIES, UNDERGROUND UTILITIES, ETC. AS REQUIRED FOR AS-BUILT CERTIFICATION.
33. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL REQUIRED/NECESSARY SHEETING, SHORING, AND SPECIAL EXCAVATION MEASURES REQUIRED ON THE PROJECT TO MEET OSHA, FEDERAL, STATE AND LOCAL REGULATIONS PURSUANT TO THE INSTALLATION OF THE WORK INDICATED ON THE DRAWINGS. NCDOT, TOWN OF WENDELL, CITY OF RALEIGH, & ENGINEER OF RECORD ACCEPT NO RESPONSIBILITY FOR THE DESIGN TO INSTALL SAID ITEMS.
34. TESTING BY CONTRACTOR: CONTRACTOR SHALL EMPLOY AT HIS EXPENSE AN OUTSIDE INDEPENDENT SOIL TESTING SERVICE (APPROVED BY THE OWNER) TO PERFORM SOIL TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL TESTING DURING EARTHWORK OPERATIONS. COPIES OF RESULTS OF TESTS SHALL BE SUBMITTED BY THE TESTING SERVICE DIRECTLY TO THE CONTRACTOR, THE OWNER, AND THE APPLICABLE APPROVING AGENCY. --THE TESTING SERVICE WILL CLASSIFY PROPOSED ON-SITE AND BORROW SOILS TO VERIFY THAT SOILS COMPLY WITH SPECIFIED REQUIREMENTS AND TO PERFORM REQUIRED FIELD AND LABORATORY TESTING. (MINIMUM REQUIRED SOIL BEARING CAPACITY IS NOTED ON THE STRUCTURAL DRAWINGS). -IN PAVED AND BUILDING SLAB AREAS, THE TESTING SERVICE SHALL MAKE AT LEAST ONE FIELD DENSITY TEST FOR EACH 2000 SQUARE FEET OF FILL IN EACH COMPACTED FILL LAYER. IF A TEST SHOULD FAIL TO MEET REQUIRED DENSITY, THE CONTRACTOR SHALL RE-COMPACT THAT LAYER. THE SOIL TESTING SERVICE SHALL PERFORM ADDITIONAL TESTS AT THE CONTRACTOR'S EXPENSE TO SHOW THAT THE FAILED LAYER HAS REACHED THE REQUIRED COMPACTION. --IN FOUNDATION WALL AREAS, THE TESTING SERVICE SHALL MAKE AT LEAST ONE FIELD DENSITY TEST FOR EACH 100 FEET OR LESS OF WALL LENGTH OF FILL IN EACH COMPACTED FILL LAYER, WITH NO LESS THAN TWO TESTS ALONG A WALL FACE. IF A TEST SHOULD FAIL TO MEET REQUIRED DENSITY, THE CONTRACTOR SHALL RE-COMPACT THAT LAYER. THE SOIL TESTING SERVICE SHALL PERFORM ADDITIONAL TESTS AT THE CONTRACTOR'S EXPENSE TO SHOW THAT THE FAILED LAYER HAS REACHED THE REQUIRED COMPACTION.
35. COMPACTION: COMPACT EACH LAYER OF BACKFILL AND FILL SOIL MATERIALS AND THE TOP 12" OF SUBGRADE IN CUT AREAS TO 98% OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T99 FOR STRUCTURES, SLABS, AND PAVEMENTS AND 95% OF MAXIMUM DENSITY FOR EMBANKMENTS OR UNPAVED AREAS. MAX LIFT THICKNESS FOR FILL AREAS IS 8 INCHES.
36. DESIGN/FIELD CONDITIONS QUITE EASILY MAY VARY FROM THAT REPRESENTED IN THE INITIAL SOILS REPORT AND/OR TOPOGRAPHICAL REPORT. ISOLATED AREAS MAY SHOW UP WEAK AND ADVERSE SOILS OR GROUNDWATER CONDITIONS MAY BE DISCOVERED THAT WERE NOT REVEALED DURING THE INITIAL SOILS INVESTIGATION. THEREFORE, THE OWNER/CLIENT IS TO BE AWARE THAT ENGINEER OF RECORD WILL NOT AND CANNOT BE HELD RESPONSIBLE FOR ANY FAILURES TO EITHER A STREET OR PARKING LOT PAVEMENT DESIGN UNLESS WE CAN BE FULLY AND TOTALLY INVOLVED IN THE CONSTRUCTION PROCESS WHICH MAY INCLUDE, BUT MAY NOT NECESSARILY BE LIMITED TO, TESTING SUBGRADE AND BASE DENSITY, ENGAGING THE GEOTECHNICAL ENGINEER FOR THE EVALUATION OF THE SUBGRADE AND FOR THE OBSERVATION OF PROOF ROLLING SUBGRADE AND BASE AT VARIOUS STEPS OF CONSTRUCTION, OPPORTUNITY FOR THE DESIGN ENGINEER TO CALL IN A GEOTECHNICAL ENGINEER FOR CONSULTATION AND ADVICE, ETC. - STEPS WHICH TAKEN ALTOGETHER WITH THE INITIAL DESIGN SHOWN ON THE PLANS, CONSTITUTE THE COMPLETE DESIGN OF THE ROAD, STREET OR PARKING AREA (PRIVATE OR PUBLIC). THE DESIGN ENGINEER MUST BE GIVEN THE FULL LATITUDE AND OPPORTUNITY TO COMPLETE THE DESIGN BY FULLY PARTICIPATING IN THE CONSTRUCTION PROCESS. PLAN DESIGN IS A SMALL PORTION OF THE DESIGN AND CANNOT BE SEPARATED FROM THE CONSTRUCTION PROCESS IF THE OWNER'S/CLIENT'S DESIRE IS TO HAVE THE DESIGN ENGINEER STAND BEHIND THE COMPLETED DESIGNED PROJECT.
37. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDING PADS.
38. ALL CONSTRUCTION SHALL BE PER TOWN OF KNIGHTDALE & NCDOT STANDARDS AND SPECIFICATIONS.
39. ALL DIMENSIONS ARE IN FEET.
40. ALL SITE ELEMENTS ARE PERPENDICULAR TO EACH OTHER UNLESS OTHERWISE NOTED.
41. CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, RIGHT-OF-WAYS AND UTILITIES, PUBLIC OR PRIVATE, BEFORE WORKING IN THESE AREAS.
42. PROTECT ALL PROPERTY MONUMENTS AND PINS. MONUMENTS AND PINS THAT WILL BE DISTURBED DURING CONSTRUCTION SHALL BE REFERENCED AND REPLACED BY A LICENSED LAND SURVEYOR AT THE COST OF THE CONTRACTOR.
43. CONTRACTOR SHALL MAINTAIN THE SITE IN SUCH A MANNER THAT WORKMEN AND THE PUBLIC WILL BE PROTECTED FROM INJURY AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
44. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
45. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL DUE TO CONSTRUCTION OPERATIONS. ALL STREET SURFACES, UTILITY POLES, CULVERTS, DITCHES, CURB AND GUTTER OR OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR IN ACCORDANCE WITH THE APPROPRIATE SPECIFICATIONS.
46. IF DEPARTURES FROM THE DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE SUBMITTED IN WRITING TO THE FACILITY DESIGNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS WILL BE ALLOWED WITHOUT APPROVAL BY THE FACILITY DESIGNER.
47. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
48. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
49. ENTRY SIGNS SHALL BE LOCATED IN A DEDICATED EASEMENT. SIGN MUST REMAIN OUT OF SIGHT TRIANGLES AS SHOWN ON PLANS. ENTRY SIGNS WILL REQUIRE A SEPARATE SIGN PERMIT.
50. ALL ASPHALT EDGES SHALL BE SAW CUT TO PROVIDE A GOOD LONGITUDINAL JOINT. MILL 1.5 FEET @ 1.5 INCHES DEEP MINIMUM TO PROVIDE A LONGITUDINAL LAP JOIN FOR FINAL SURFACE LAYER. NO MILLING SHALL BE LEFT FOR A PERIOD OF TIME GREATER THAN 48 HOURS BEFORE A STREET IS TO BE PAVED OR RESURFACED.
51. COMMON OPEN SPACE SHALL BE OWNED & MAINTAINED BY HOMEOWNERS' ASSOCIATION.
52. ANY SPECIALITY STREET SIGNS INCLUDING POSTS SHALL BE SUBMITTED TO TOWN OF KNIGHTDALE AND/OR NCDOT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. MAINTENANCE AND REPLACEMENT OF SPECIALTY SIGNS WOULD ALSO BE THE RESPONSIBILITY OF THE HOA.
53. ALL PUBLIC AND PRIVATE EASEMENTS SHALL BE RECORDED AS PART OF THE FINAL PLAT OF THE SUBDIVISION. EASEMENTS BASED ON CENTER OF UTILITY OR PIPE SHALL BE PER AS-BUILT LOCATIONS.
54. AREAS OF PARENT PARCEL THAT ARE NOT SUBDIVIDED TO CREATE SINGLE FAMILY RESIDENTIAL LOTS ARE TO REMAIN AS ONE PARCEL TO BE OWNED AND MAINTAINED BY THE HOME OWNERS' ASSOCIATION OF THE NEIGHBORHOOD.
55. MAINTENANCE FOR AMENITY & OPEN SPACE SHALL BE THE RESPONSIBILITY OF THE HOA.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

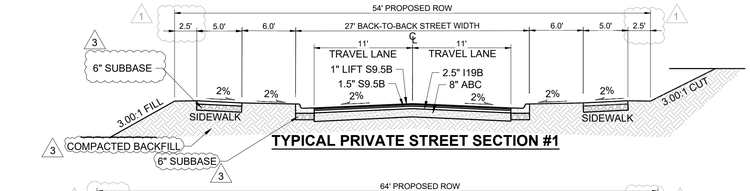
CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

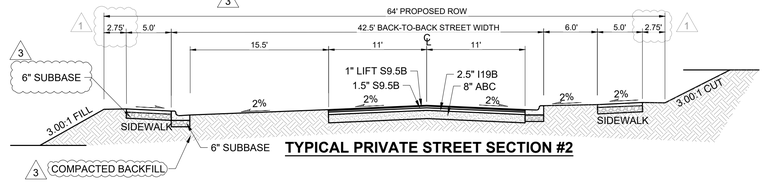
STANDARD UTILITY NOTES:

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION).
2. UTILITY SEPARATION REQUIREMENTS:
    - A. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY 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 WATER MAIN, 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 WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).
    - F. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUITED.
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 CONSTRICTION.
4. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.
5. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
6. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
7. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
8. INSTALL ¾" COPPER* WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. *NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE*.
9. INSTALL 4" PVC* SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
10. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
11. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
12. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
13. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE RW FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A UC / BLDG PERMIT. CONTACT (919) 996 - 4516 OR fog@raleighnc.gov FOR MORE INFORMATION.
14. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. A CERTIFICATE OF COMPLIANCE SHALL ALSO BE OBTAINED FROM THE RW CROSS-CONNECTION COORDINATOR FOR EACH DEVICE PRIOR TO ISSUANCE OF A UC / BLDG PERMIT. CONTACT (919) 996-5923 OR cross.connection@raleighnc.gov FOR MORE INFORMATION.

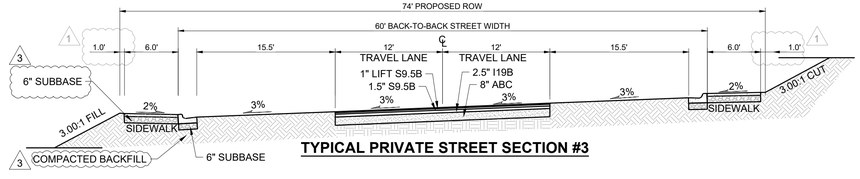
* EDIT TYPICAL SERVICE SIZE & MATERIAL AS APPROPRIATE.



TYPICAL PRIVATE STREET SECTION #1



TYPICAL PRIVATE STREET SECTION #2



TYPICAL PRIVATE STREET SECTION #3

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
CIVIL NOTES

DRAWING SHEET
C-2.0

PROGRESS PLOT DATE: 08/8/24

LINE	BEARING	DISTANCE
L1	N 09°41'14" W	26.69'
L2	N 09°41'14" W	27.07'
L3	N 00°02'57" E	92.86'
L4	N 59°19'29" W	52.62'
L5	N 59°20'07" W	65.37'
L6	N 69°38'54" E	7.36'
L7	N 70°46'01" W	4.39'
L8	N 41°12'48" W	17.15'
L9	N 41°12'48" W	97.30'
L10	N 83°21'34" W	14.25'
L11	N 83°21'34" W	13.81'
L12	N 05°31'28" W	39.27'
L13	N 36°31'03" W	43.04'
L14	N 19°14'51" W	70.23'
L15	N 07°17'24" E	115.03'
L16	N 07°17'24" E	10.41'
L17	N 02°04'49" E	58.02'
L18	N 03°46'56" W	16.55'
L19	N 03°46'56" W	81.73'
L20	N 51°19'02" W	91.59'
L21	N 67°22'15" W	1.16'
L22	N 67°57'57" E	3.54'
L23	N 08°27'46" E	11.31'
L24	N 06°27'46" E	79.07'
L25	N 27°41'28" W	11.82'
L26	N 45°04'04" E	36.96'
L27	N 18°20'26" W	31.14'
L28	N 49°03'39" E	27.06'
L29	N 49°03'39" E	7.81'
L30	N 06°24'00" W	52.57'
L31	N 61°51'40" W	20.43'
L32	N 36°04'14" W	47.25'
L33	N 18°29'13" W	51.22'
L34	N 06°21'31" W	34.79'
L35	N 52°52'17" W	9.35'
L36	N 20°24'07" E	48.63'
L37	N 43°52'19" W	16.18'
L38	N 45°21'50" E	2.40'
L39	N 87°22'20" E	64.35'
L40	N 07°22'21" W	115.26'
L41	N 52°17'49" W	21.05'
L42	N 11°08'00" E	73.88'
L43	N 32°21'53" W	77.45'
L44	N 13°33'56" W	72.63'
L45	N 54°34'31" E	112.36'
L46	N 72°49'13" E	170.38'
L47	N 57°34'18" E	26.84'
L48	N 66°52'11" W	44.07'
L49	N 78°37'32" E	52.76'
L50	N 69°24'33" E	58.38'
L51	N 40°23'26" W	41.98'
L52	N 85°52'39" W	51.59'
L53	N 14°37'25" W	21.91'
L54	N 82°28'04" E	78.84'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	291.69'	1462.39'	11°25'41.76"	N 58°34'43" E	291.21'
C2	255.13'	1462.39'	9°59'45.48"	S 69°17'26" W	254.81'

LEGEND:

- MASTER PLAN BOUNDARY
- EXISTING ADJOINER PROPERTY LINE
- 80 — 5' CONTOUR
- 1' CONTOUR
- EXISTING STREAM
- EXISTING DITCH
- EASEMENT LINE / R/W
- WTLD / WTLD — EXISTING WETLAND
- CONIFEROUS
- DECIDUOUS

SOURCES OF INFORMATION:

1. BOUNDARY, EXISTING SURVEY AND EXISTING TOPO PROVIDED BY HALL LAND SURVEYING, INC, 1899 STEVEN'S CHAPEL ROAD, SMITHFIELD, NC 27572, DATED 05/22/2015 & 01/23/2016
2. WETLANDS AND RIPARIAN BUFFERS PROVIDED BY SOIL & ENVIRONMENTAL CONSULTANTS, PA, 8412 FALLS OF THE NEUSE ROAD, SUITE 104, RALEIGH, NC 27615, DATED 06/02/2015.
3. EXISTING LIDAR CONTOURS OUTSIDE OF SITE FROM WAKE COUNTY GIS.
4. EXISTING BOUNDARY PROVIDED BY HALL LAND SURVEYING, INC. 1899 STEVEN'S CHAPEL ROAD, SMITHFIELD, NC 27577, DATED 05/20/2015.
5. EXISTING TOPO OF SITE PROVIDED BY STOKES SURVEYING & MAPPING, PLLC 1425-105 B ROCK QUARRY ROAD, RALEIGH, NC 27610, DATED 7/02/2019 AND 7/17/2019.
6. WETLAND INFORMATION FROM SOIL & ENVIRONMENTAL CONSULTANTS, PA 8412 FALLS OF THE NEUSE ROAD, SUITE 104, RALEIGH, NC 27615, DATED 06/10/2015.
7. TREE SURVEY PROVIDED BY STOKES SURVEYING & MAPPING, PLLC 1425-105 B ROCK QUARRY RD., RALEIGH NC, 27610, DATED JULY 18, 2019.

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

TRACT 1
N/F
FRED SMITH COMPANY
PIN: 1743487874
DB: 16263/247
582,663 SQUARE FEET
13.38 ACRES (BM 2000/2142)
PROJECT AREA ZONED 'UR12'

TRACT 2
N/F
JOYNER MINGO CREEK LLC.
PIN: 1743571925
DB 16038/1549
367,929 SQUARE FEET
8.45 ACRES (DB 16038/1549)
PROJECT AREA ZONED 'AR-SUD'

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

SPINSTER LANE
80' PUBLIC R/W

HOWDENSHIRE RUN
80' PUBLIC R/W

WETLAND AREA 1
WETLAND AREA 2
WETLAND AREA 3
WETLAND AREA 4
WETLAND AREA 5
STREAM A
STREAM B
STREAM C
STREAM Z
NEUSE RIPARIAN BUFFER (TYP.)
30' STREAM BUFFER ZONE
20' STREAM BUFFER ZONE 2
50' SHOD BUFFER
100' POWER LINE EASEMENT
EXISTING FENCE
EXISTING STREAM
EXISTING TREE LINE
EXIST WATER
EXIST SAN. SEWER
FH-TBM "BOLT OVER 6" FLANGE" ELEV=248.02'
24" RCP

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EXISTING CONDITIONS PLAN

DRAWING SHEET
C-3.0

03 OF 55

PROGRESS PLOT DATE: 08/8/24

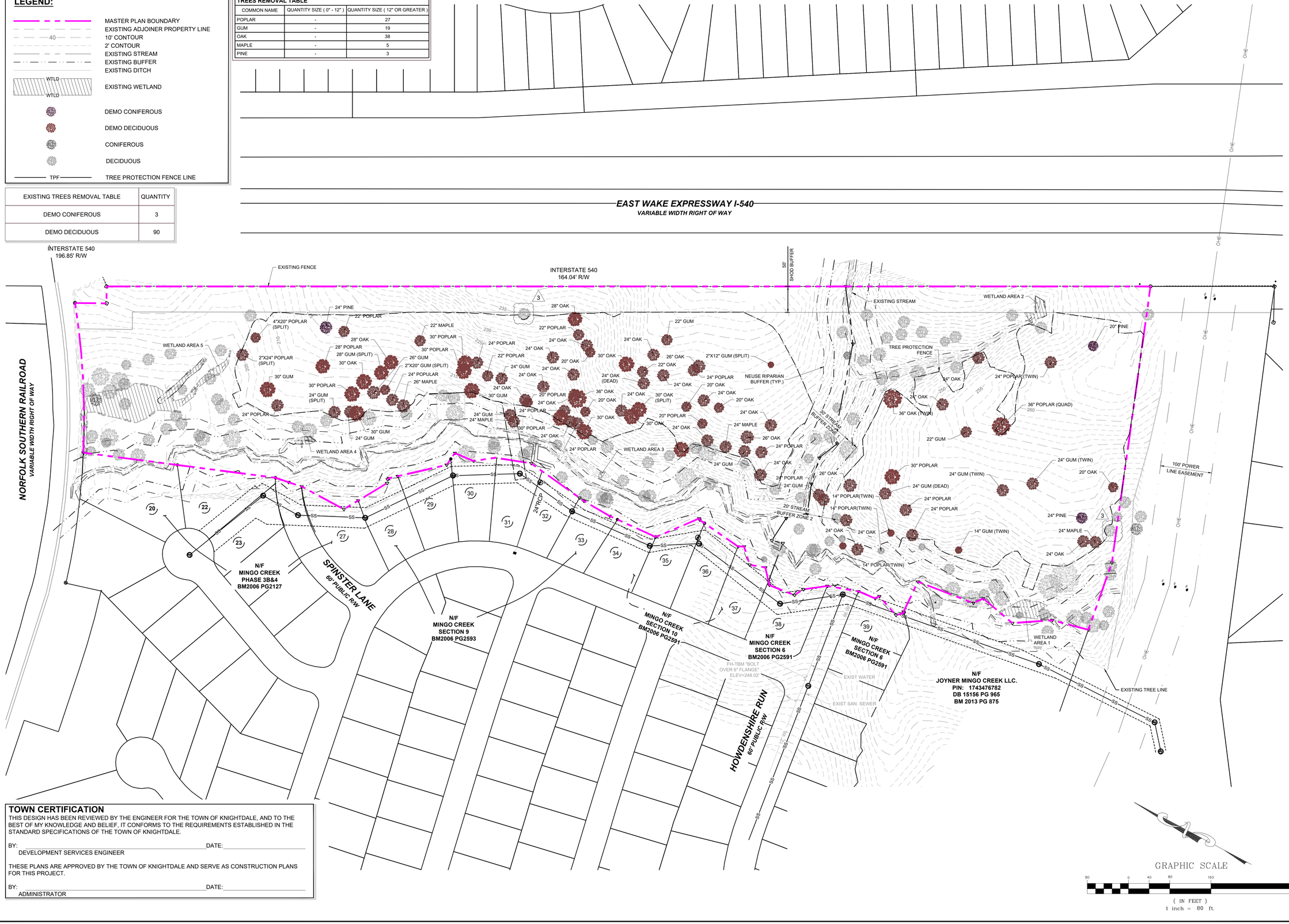
LEGEND:

- MASTER PLAN BOUNDARY
- EXISTING ADJOINER PROPERTY LINE
- 40 — 10' CONTOUR
- 2' CONTOUR
- EXISTING STREAM
- EXISTING BUFFER
- EXISTING DITCH
- WTLD / WTLD — EXISTING WETLAND
- DEMO CONIFEROUS
- DEMO DECIDUOUS
- CONIFEROUS
- DECIDUOUS
- TPF — TREE PROTECTION FENCE LINE

TREES REMOVAL TABLE

COMMON NAME	QUANTITY SIZE (0" - 12")	QUANTITY SIZE (12" OR GREATER)
POPLAR	-	27
GUM	-	19
OAK	-	38
MAPLE	-	5
PINE	-	3

EXISTING TREES REMOVAL TABLE	QUANTITY
DEMO CONIFEROUS	3
DEMO DECIDUOUS	90



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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE
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(IN FEET)
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No.	REVISIONS	DATE	BY
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NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

DEMOLITION PLAN

DRAWING SHEET
C-4.0

04 OF 55

PROGRESS PLOT DATE: 08/8/24

LINE	BEARING	DISTANCE
L1	N 09°41'14" W	26.69'
L2	N 09°41'14" W	27.07'
L3	N 00°02'57" E	92.86'
L4	N 59°19'09" E	62.62'
L5	N 59°20'07" W	65.37'
L6	N 69°38'52" E	7.36'
L7	N 70°46'01" W	3.39'
L8	N 41°12'48" W	17.15'
L9	N 41°12'48" W	97.30'
L10	N 83°21'34" W	14.25'
L11	N 83°21'34" W	13.81'
L12	N 05°31'28" W	39.27'
L13	N 36°31'05" W	43.04'
L14	N 19°14'51" W	70.29'
L15	N 07°17'24" E	115.03'
L16	N 07°17'24" E	10.41'
L17	N 02°04'49" E	58.02'
L18	N 03°46'56" W	16.55'
L19	N 03°46'56" W	81.73'
L20	N 51°19'02" W	91.59'
L21	N 67°22'15" W	1.16'
L22	N 56°57'57" E	3.54'
L23	N 08°27'46" E	11.31'
L24	N 06°27'46" E	79.07'
L25	N 27°41'28" W	11.86'
L26	N 45°04'04" E	36.96'
L27	N 18°20'26" W	31.14'
L28	N 49°03'39" E	27.06'
L29	N 49°03'39" E	7.81'
L30	N 06°24'00" W	52.57'
L31	N 61°51'40" W	20.43'
L32	N 36°04'14" W	47.25'
L33	N 18°29'13" W	51.22'
L34	N 05°21'31" W	34.79'
L35	N 52°52'17" W	9.35'
L36	N 20°24'07" E	48.63'
L37	N 43°52'19" W	16.18'
L38	N 45°21'50" E	2.40'
L39	N 87°22'20" E	64.35'
L40	N 07°22'21" W	115.26'
L41	N 52°17'49" W	21.05'
L42	N 11°08'00" E	73.86'
L43	N 32°21'50" W	77.45'
L44	N 13°33'56" W	72.63'
L45	N 54°34'31" E	112.36'
L46	N 72°49'13" E	170.38'
L47	N 57°34'18" E	26.84'
L48	N 66°52'11" W	44.07'
L49	N 78°37'32" E	52.76'
L50	N 69°24'33" E	58.38'
L51	N 40°23'26" W	41.98'
L52	N 85°52'39" W	51.69'
L53	N 14°37'25" W	21.91'
L54	N 82°28'04" E	78.84'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	291.69'	1462.39'	11°25'41.76"	N 58°34'43" E	291.21'
C2	255.13'	1462.39'	9°59'45.48"	S 69°17'26" W	254.81'

LEGEND:

- MASTER PLAN BOUNDARY
- EXISTING ADJOINER PROPERTY LINE
- EXISTING STREAM
- EXISTING DITCH
- EASEMENT LINE / R/W
- EXISTING WETLAND (WTLD)
- CONIFEROUS
- DECIDUOUS

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

540 EXPRESSWAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

NORFOLK SOUTHERN RAILROAD

SPINSTER LANE
60' PUBLIC R/W

HOWDENSHIRE RUN
60' PUBLIC R/W

PHASE 12
EXISTING TRACT 1

TRACT 1
N/F
FRED SMITH COMPANY
PIN: 1743487874
DB: 16263/247
582,663 SQUARE FEET
13.38 ACRES (BM 2000/2142)
PROJECT AREA ZONED 'UR12'

TRACT 2
N/F
JOYNER MINGO CREEK LLC.
PIN: 1743571925
DB 16038/1549
367,929 SQUARE FEET
8.45 ACRES (DB 16038/1549)
PROJECT AREA ZONED 'AR-SUD'

PHASE 7
EXISTING TRACT 2

OVERHEAD UTILITIES

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 8
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

EXISTING FENCE
EXISTING STREAM
EXISTING WATER
EXISTING SAN. SEWER
EXISTING TREE LINE
NEUSE RIPARIAN BUFFER (TYP.)
50' SHOD BUFFER
100' POWER LINE EASEMENT
FH-TBM "BOLT OVER 6" FLANGE" ELEV=248.02'

WETLAND AREA 1
WETLAND AREA 2
WETLAND AREA 3
WETLAND AREA 4
WETLAND AREA 5
STREAM A
STREAM B
STREAM C
STREAM Z

S 28°15'00" E 1434.45'
S 28°15'00" E 591.64'
S 28°15'00" E 240.49'
S 28°15'00" W 34.00'
N 20°49'00" W 183.90'
375.92' (TOTAL)
192.02'
61.17'
N 61°43'51" E 32.97'
S 27°31'39" E

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
THE OFFSITE UTILITY

DRAWING SHEET
C-5.0

05 OF 55

PROGRESS PLOT DATE: 08/8/24

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- PHASE 7
- PHASE 12
- PHASE LINE

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

EXISTING FENCE

50' SHOD BUFFER

PHASE LINE (TYP.)

STORMWATER ACCESS AND MAINTENANCE EASEMENT

10' TRAIL

CAVILLE COURT
74' PRIVATE R/W

CAVILLE COURT
74' PRIVATE R/W

OPEN SPACE

WETLAND AREA 5

PHASE 12

WETLAND AREA 4

SCM #2

STREAM A

LW1

OPEN SPACE

WETLAND AREA 3

WETLAND AREA 2

NEUSE RIPARIAN BUFFER (TYP.)

PHASE 7

STREAM Z

OPEN SPACE

DREWTON STREET
54' PRIVATE R/W

FUTURE "TOT LOT"

STREAM C

100' POWER LINE EASEMENT

CAVILLE COURT
54' PRIVATE R/W

HOWDENSHIRE RUN
54' PUBLIC R/W

HOWDENSHIRE RUN
54' PRIVATE R/W

SCM #1

STREAM A

TERMINATION OF PUBLIC R/W

STREAM B

STORMWATER ACCESS AND MAINTENANCE EASEMENT

WETLAND AREA 1

EXISTING TREE LINE

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

20' STREAM BUFFER ZONE 1 (TYP.)

20' STREAM BUFFER ZONE 2 (TYP.)

45' LENGTH x 4.0' HEIGHT AERIAL SEWER

24 RCP

SPINSTER LANE
60' PUBLIC R/W

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

HOWDENSHIRE RUN
60' PUBLIC R/W

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PHASING PLAN

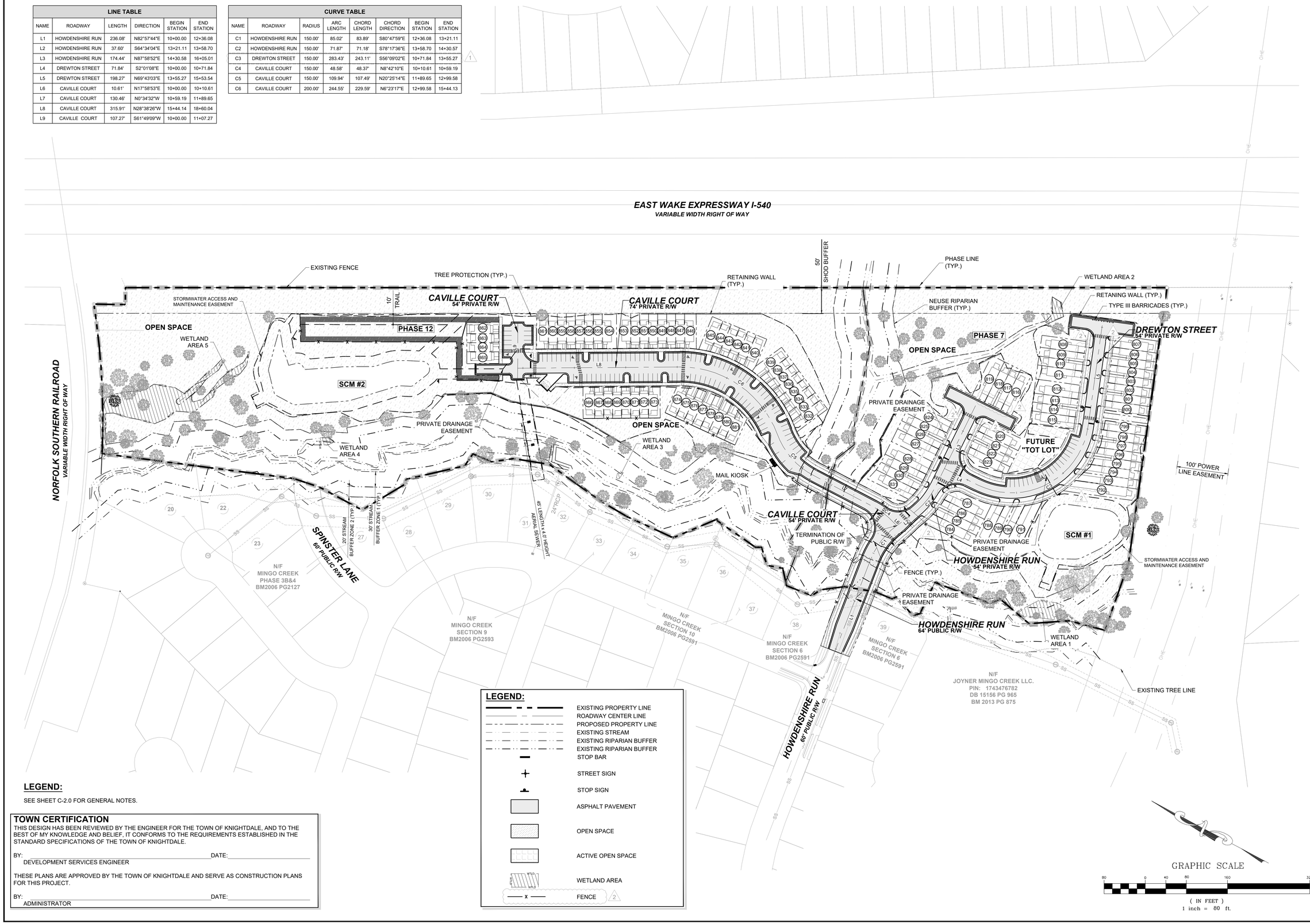
DRAWING SHEET
C-6.0

06 OF 55

PROGRESS PLOT DATE: 08/8/24

LINE TABLE					
NAME	ROADWAY	LENGTH	DIRECTION	BEGIN STATION	END STATION
L1	HOWDENSHIRE RUN	236.08'	N82°57'44"E	10+00.00	12+36.08
L2	HOWDENSHIRE RUN	37.60'	S64°34'04"E	13+21.11	13+58.70
L3	HOWDENSHIRE RUN	174.44'	N87°58'52"E	14+30.58	16+05.01
L4	DREWTON STREET	71.84'	S2°01'08"E	10+00.00	10+71.84
L5	DREWTON STREET	198.27'	N69°43'03"E	13+55.27	15+53.54
L6	CAVILLE COURT	10.61'	N17°58'53"E	10+00.00	10+10.61
L7	CAVILLE COURT	130.46'	N0°34'32"W	10+59.19	11+89.65
L8	CAVILLE COURT	315.91'	N28°38'26"W	15+44.14	18+60.04
L9	CAVILLE COURT	107.27'	S61°49'09"W	10+00.00	11+07.27

CURVE TABLE								
NAME	ROADWAY	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD DIRECTION	BEGIN STATION	END STATION
C1	HOWDENSHIRE RUN	150.00'	85.02'	83.89'	S80°47'59"E	12+36.08	13+21.11
C2	HOWDENSHIRE RUN	150.00'	71.87'	71.18'	S78°17'36"E	13+58.70	14+30.57
C3	DREWTON STREET	150.00'	283.43'	243.11'	S56°09'02"E	10+71.84	13+55.27
C4	CAVILLE COURT	150.00'	48.58'	48.37'	N8°42'10"E	10+10.61	10+59.19
C5	CAVILLE COURT	150.00'	109.94'	107.49'	N20°25'14"E	11+89.65	12+99.58
C6	CAVILLE COURT	200.00'	244.55'	229.59'	N6°23'17"E	12+99.58	15+44.13



LEGEND:

SEE SHEET C-2.0 FOR GENERAL NOTES.

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL SITE PLAN

DRAWING SHEET
C-7.0

07 OF 55

PROGRESS PLOT DATE: 08/8/24

INTERSTATE 540
196.85' R/W

EXISTING FENCE

20' ACCESS AND MAINTENANCE EASEMENT

50' SHOD BUFFER

INTERSTATE 540
164.04' R/W

PHASE LINE (TYP.)

TREE PROTECTION

10' TRAIL

20' PRIVATE DRAINAGE EASEMENT

5' PRIVATE EASEMENT FOR WALL MAINTENANCE

RETAINING WALL (TYP.)

OPEN SPACE

STORMWATER ACCESS AND MAINTENANCE EASEMENT

WETLAND AREA 5

EXISTING TREE LINE (TYP.)

PHASE 12

SCM IDENTIFICATION SIGN (TOK 1.02)

PRIVATE DRAINAGE EASEMENT

CAVILLE COURT
74' PRIVATE R/W

SCM #2

SCM IDENTIFICATION SIGN (TOK 1.02)

CAVILLE COURT
74' PRIVATE R/W

45' LENGTH x 4.0' HEIGHT AERIAL SEWER

CONCRETE PAVEMENT FOR THE TRASH ENCLOSURE

20' PUBLIC DRAINAGE EASEMENT

20' STREAM BUFFER ZONE 2

20' PRIVATE DRAINAGE EASEMENT

20' SEWER EASEMENT

FENCE (TYP.)

20' TYPE B BUFFER

OPEN SPACE

30' STREAM BUFFER ZONE 1

WETLAND AREA 4

EXISTING STREAM

WETLAND AREA 3

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

30' STREAM BUFFER ZONE 1

20' STREAM BUFFER ZONE 2

RIM: 214.10'
INV. IN: 202.09'
INV. OUT: 202.02'

RIM: 217.14'
INV. IN: 208.28'
INV. OUT: 208.19'

RIM: 214.81'
INV. IN: 209.56'
INV. OUT: 209.39'

TOC: 218.38'
IN: 214.32'
OUT: 214.28'
OUT: 214.17'
RCP 24"
OUT: 214.45'

FES 24"
OUT: 214.33'

RIM: 215.75'
INV. IN: 203.27'
INV. OUT: 203.17'

RIM: 216.66'
INV. IN: 207.04'(8")
INV. IN: 204.91'
INV. OUT: 204.69'

EXISTING TREE LINE

EXISTING SANITARY SEWER

24"RCP

RIM: 221.66'
INV. IN: 211.95'
INV. IN: 211.93'
INV. OUT: 211.90'

RIM: 221.66'
INV. IN: 211.95'
INV. IN: 211.93'
INV. OUT: 211.90'

TOC: 229.27'
INV. OUT: 222.94'

RIM: 226.93'
INV. IN: 216.98'
INV. IN: 214.93'
INV. OUT: 214.88'

RIM: 213.19'
INV IN: 195.14'
INV. IN: 194.30'
INV. OUT: 194.27'

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

SPINSTER LANE
60' PUBLIC R/W

N/F
MINGO CREEK
SECTION 9
BM2006
PG2593

MATCH LINE
FOR CONTINUATION, SEE C-7.2

20 21 22 23 27 28 29 30 31 32 33 34

C-7.1 C-7.2

SITE KEY PLAN

LEGEND:

SEE SHEET C-7.0 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 036225 ENGINEER
JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL SITE PLAN I

DRAWING SHEET
C-7.1

08 OF 55

PROGRESS PLOT DATE: 08/8/24

EXISTING FENCE
RETAINING WALL (TYP.)
EXISTING STREAM
50' SHOD BUFFER
NEUSE RIPARIAN BUFFER (TYP.)
30' ZONE 1
20' ZONE 2
PHASE 12
PHASE 7
OPEN SPACE
TREE PROTECTION
WETLAND AREA 2
TYPE III BARRICADES (TYP.)
RETAINING WALL (TYP.)
PHASE LINE (TYP.)
5' PRIVATE EASEMENT FOR WALL MAINTENANCE
100' POWER LINE EASEMENT
20' PUBLIC DRAINAGE EASEMENT
PRIVATE DRAINAGE EASEMENT
DREWTON STREET
54' PRIVATE R/W
FUTURE "TOT LOT"
OPEN SPACE
20' PUBLIC DRAINAGE EASEMENT
CAVILLE COURT
74' PRIVATE R/W
EXISTING TREE LINE (TYP.)
MAIL KIOSK
CAVILLE COURT
54' PRIVATE R/W
TERMINATION OF PUBLIC R/W
HOWDENSHIRE RUN
64' PUBLIC R/W
HOWDENSHIRE RUN
54' PRIVATE R/W
FENCE (TYP.)
SCM IDENTIFICATION SIGN (TOK 1.02)
SCM #1
STORMWATER ACCESS AND MAINTENANCE EASEMENT
20' ACCESS AND MAINTENANCE EASEMENT
WETLAND AREA 1
EXISTING SANITARY SEWER
EXISTING TREE LINE
30' STREAM BUFFER ZONE 1 (TYP.)
20' STREAM BUFFER ZONE 2 (TYP.)
RIM: 231.51'
INV. IN: 215.96'
INV. OUT: 215.86'
RIM: 226.93'
INV. IN: 216.98'
INV. IN: 214.93'
INV. OUT: 214.88'
RIM: 234.69'
INV. IN: 217.00'
INV. OUT: 216.74
RIM: 234.53'
INV. IN: 217.75'
INV. OUT: 217.61'
INV. IN: 219.53'
N/F
MINGO CREEK
SECTION 6
BM2006 PG2591
N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875
FOR CONTINUATION, SEE C-7.1
MATCH LINE

C-7.1 C-7.2

SITE KEY PLAN

LEGEND:

SEE SHEET C-7.0 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL SITE PLAN II

DRAWING SHEET
C-7.2

09 OF 55

PROGRESS PLOT DATE: 08/8/24

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- WATER LINE
- SANITARY SEWER LINE
- WATER METER / SERVICE
- SANITARY CLEANOUT / SERVICE
- GATE VALVE
- TEE
- BLOW OFF VALVE
- SANITARY MANHOLE

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

EXISTING FENCE

50' SHOD BUFFER

10' TRAIL

PHASE LINE (TYP.)

WETLAND AREA 2

RETAINING WALL (TYP.)

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

CAVILLE COURT
74' PRIVATE R/W

CAVILLE COURT
54' PRIVATE R/W

OPEN SPACE

WETLAND AREA 5

PHASE 12

SCM #2

OPEN SPACE

WETLAND AREA 3

WETLAND AREA 4

NEUSE RIPARIAN BUFFER (TYP.)

PHASE 7

DREWTON STREET
54' PRIVATE R/W

FUTURE "TOT LOT"

100' POWER LINE EASEMENT

30' STREAM BUFFER ZONE 1 (TYP.)

20' STREAM BUFFER ZONE 2 (TYP.)

45' LENGTH x 4.0' HEIGHT AERIAL SEWER

24 RCP

CAVILLE COURT
54' PRIVATE R/W
TERMINATION OF PUBLIC R/W

SCM #1

FENCE (TYP.)

HOWDENSHIRE RUN
54' PRIVATE R/W

HOWDENSHIRE RUN
64' PUBLIC R/W

SPINSTER LANE
60' PUBLIC R/W

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

WETLAND AREA 1

FH-TBM "BOLT OVER 6" FLANGE" ELEV=248.02'

EXIST WATER

EXIST SAN. SEWER

HOWDENSHIRE RUN
60' PUBLIC R/W

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

EXISTING TREE LINE

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

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997 / 3

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
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898 / 3

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

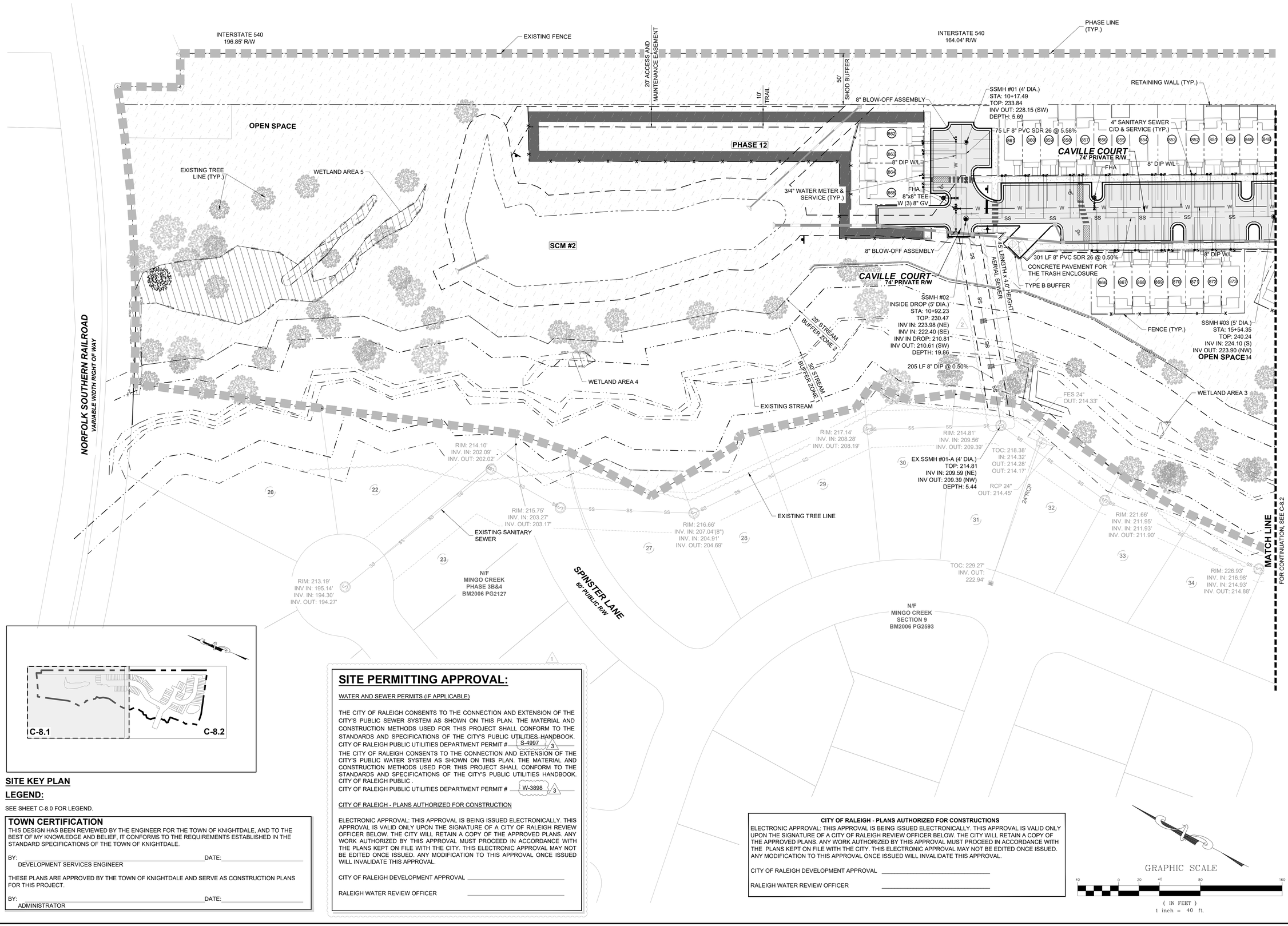
OVERALL UTILITY PLAN

DRAWING SHEET

C-8.0

10 OF 55

PROGRESS PLOT DATE: 08/8/24



SITE KEY PLAN

LEGEND:

SEE SHEET C-8.0 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997 3

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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898 3

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

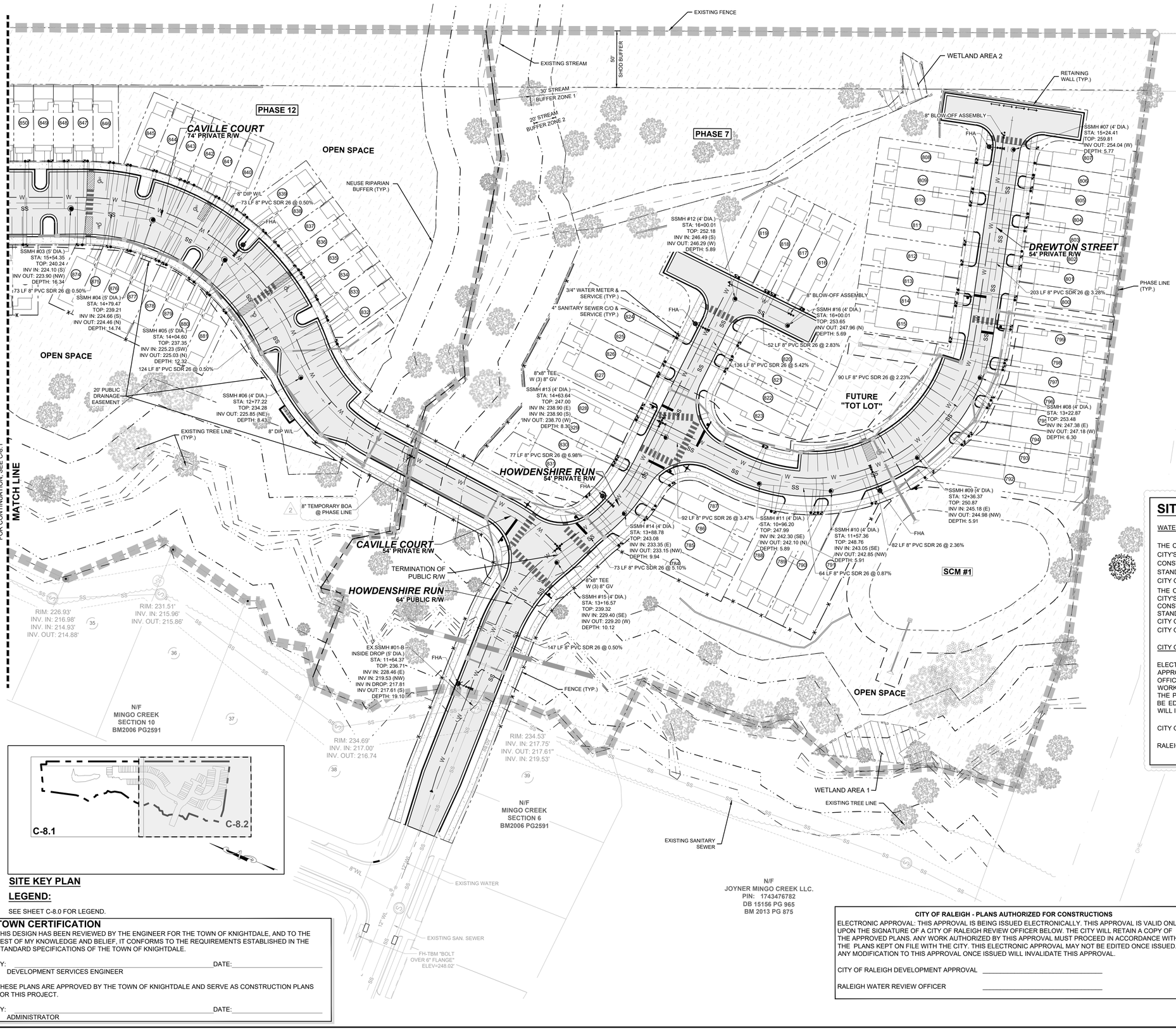
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL UTILITY PLAN I

DRAWING SHEET
C-8.1

11 OF 55

PROGRESS PLOT DATE: 08/8/24



SITE KEY PLAN

LEGEND:

SEE SHEET C-8.0 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997 3

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CITY OF RALEIGH PUBLIC .
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898 3

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARTIAL UTILITY PLAN II

DRAWING SHEET
C-8.2

12 OF 55

PROGRESS PLOT DATE: 08/8/24

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

50' SHOD BUFFER

EXISTING FENCE

TREE PROTECTION FENCING

10' TRAIL

CAVILLE COURT
74' PRIVATE R/W

CAVILLE COURT
74' PRIVATE R/W

PHASE LINE (TYP.)

WETLAND AREA 2

RETAINING WALL (TYP.)

DREWTON STREET
54' PRIVATE R/W

OPEN SPACE

STORMWATER ACCESS AND MAINTENANCE EASEMENT

PHASE 12

PHASE 7

30' STREAM BUFFER ZONE 1

20' STREAM BUFFER ZONE 2

NEUSE RIPARIAN BUFFER (TYP.)

WETLAND AREA 5

SCM #2

STREAM

FENCE (TYP.)

OPEN SPACE

WETLAND AREA 3

FUTURE "TOT LOT"

100' POWER LINE EASEMENT

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

WETLAND AREA 4

CAVILLE COURT
54' PRIVATE R/W

TERMINATION OF PUBLIC R/W

HOWDENSHIRE RUN
64' PUBLIC R/W

HOWDENSHIRE RUN
54' PRIVATE R/W

SCM #1

STORMWATER ACCESS AND MAINTENANCE EASEMENT

OPEN SPACE

WETLAND AREA 1

EXISTING TREE LINE

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

SPINSTER LANE
60' PUBLIC R/W

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 8
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

HOWDENSHIRE RUN
60' PUBLIC R/W

24" RCP

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

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

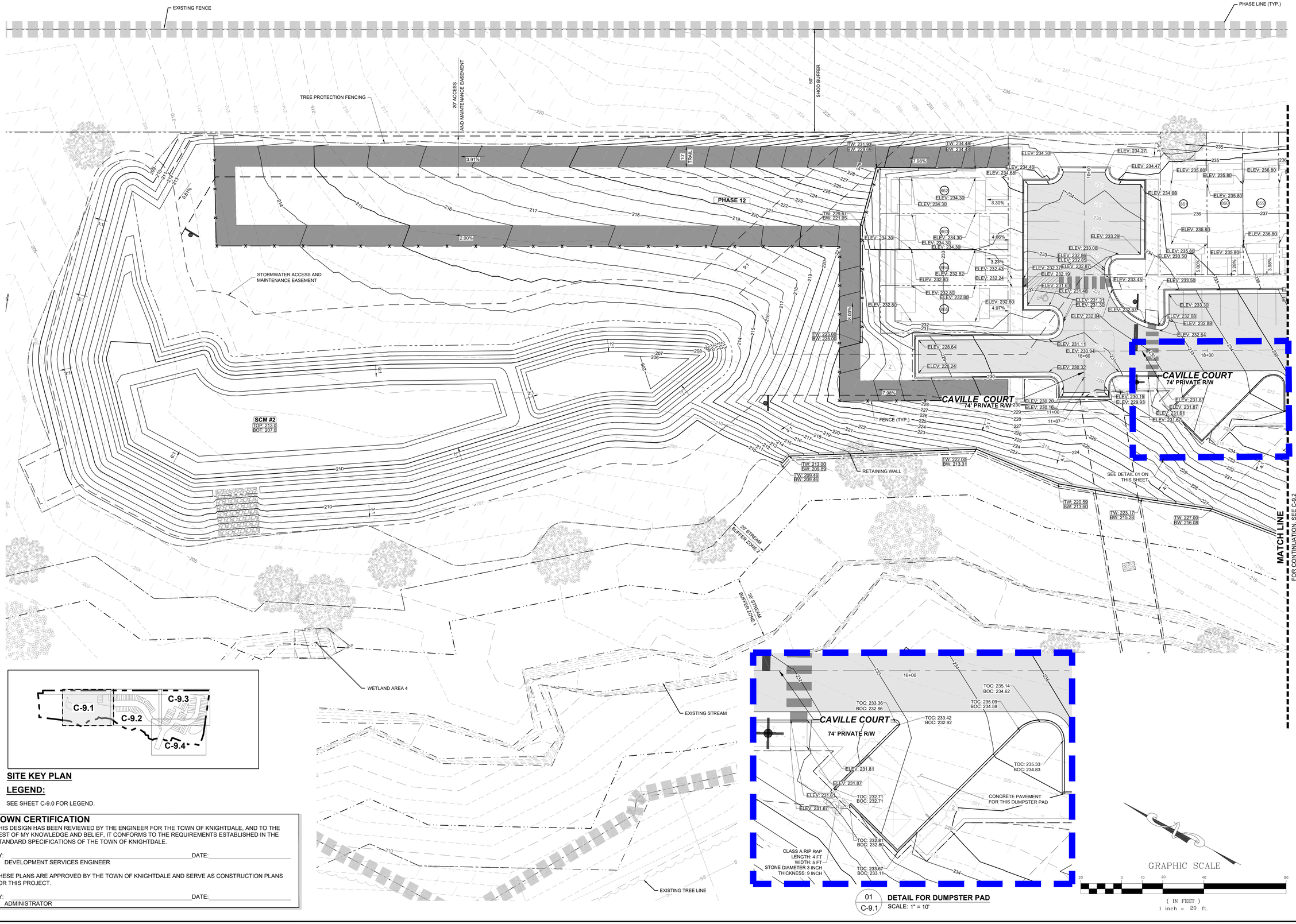
STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL GRADING PLAN

DRAWING SHEET
C-9.0

13 OF 55

PROGRESS PLOT DATE: 08/8/24



SITE KEY PLAN

LEGEND:

SEE SHEET C-9.0 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

01 C-9.1 **DETAIL FOR DUMPSTER PAD**
SCALE: 1" = 10'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT			
	NOT FOR CONSTRUCTION		
SCALE	AS SHOWN	DESIGNED BY	JWL
		DRAWN BY	SRG
		CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

GRADING PLAN I

DRAWING / SHEET
C-9.1

14 OF 55

PROGRESS PLOT DATE: 08/8/24

PHASE LINE (TYP.)

TREE PROTECTION FENCING

RETAINING WALL (TYP.)

TW: 242.98
BW: 242.98

TW: 249.93
BW: 242.87

TW: 252.62
BW: 242.83

TW: 252.78
BW: 250.09

TW: 252.94
BW: 252.89

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

CAVILLE COURT
74' PRIVATE R/W

OPEN SPACE

OPEN SPACE

FENCE (TYP.)

TW: 234.14
BW: 219.98

TW: 221.45
BW: 221.25

TW: 237.57
BW: 235.22

MATCH LINE
FOR CONTINUATION, SEE C-9.1

MATCH LINE
FOR CONTINUATION, SEE C-9.3

C-9.1
C-9.2
C-9.3
C-9.4

SITE KEY PLAN

LEGEND:

SEE SHEET C-9.0 FOR LEGEND.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

GRADING PLAN II

DRAWING SHEET

C-9.2

15 OF 55

PROGRESS PLOT DATE: 08/8/24

TOWN CERTIFICATION

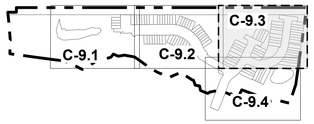
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.



SITE KEY PLAN

LEGEND:

SEE SHEET C-9.0 FOR LEGEND.

MATCH LINE
FOR CONTINUATION, SEE C-9.2

WETLAND AREA 2

TREE PROTECTION FENCING

DREWTON STREET
54' PRIVATE R/W

HOWDENSHIRE RUN
54' PRIVATE R/W

FENCE (TYP.)

TERMINATION OF PUBLIC R/W

MATCH LINE
FOR CONTINUATION, SEE C-9.4

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

GRADING PLAN III

DRAWING SHEET
C-9.3

16 OF 55

PROGRESS PLOT DATE: 08/8/24

MATCH LINE

FOR CONTINUATION, SEE C-9.3

HOWDENSHIRE RUN
54' PRIVATE R/W

CAVILLE COURT
54' PRIVATE R/W

DREWTON STREET
54' PRIVATE R/W

HOWDENSHIRE RUN
64' PUBLIC R/W

TERMINATION OF PUBLIC R/W

TERMINATION OF PUBLIC R/W

SCM #1
TOP: 242.0
BOT: 235.0

OPEN SPACE

STORMWATER ACCESS AND MAINTENANCE EASEMENT

WETLAND AREA 1

FENCE (TYP.)

RIM: 234.53'
INV. IN: 217.75'
INV. OUT: 217.61"
INV. IN: 219.53'

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

C-9.1 C-9.2 C-9.3 C-9.4

SITE KEY PLAN

LEGEND:

SEE SHEET C-9.0 FOR LEGEND.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

GRADING PLAN IV

DRAWING / SHEET

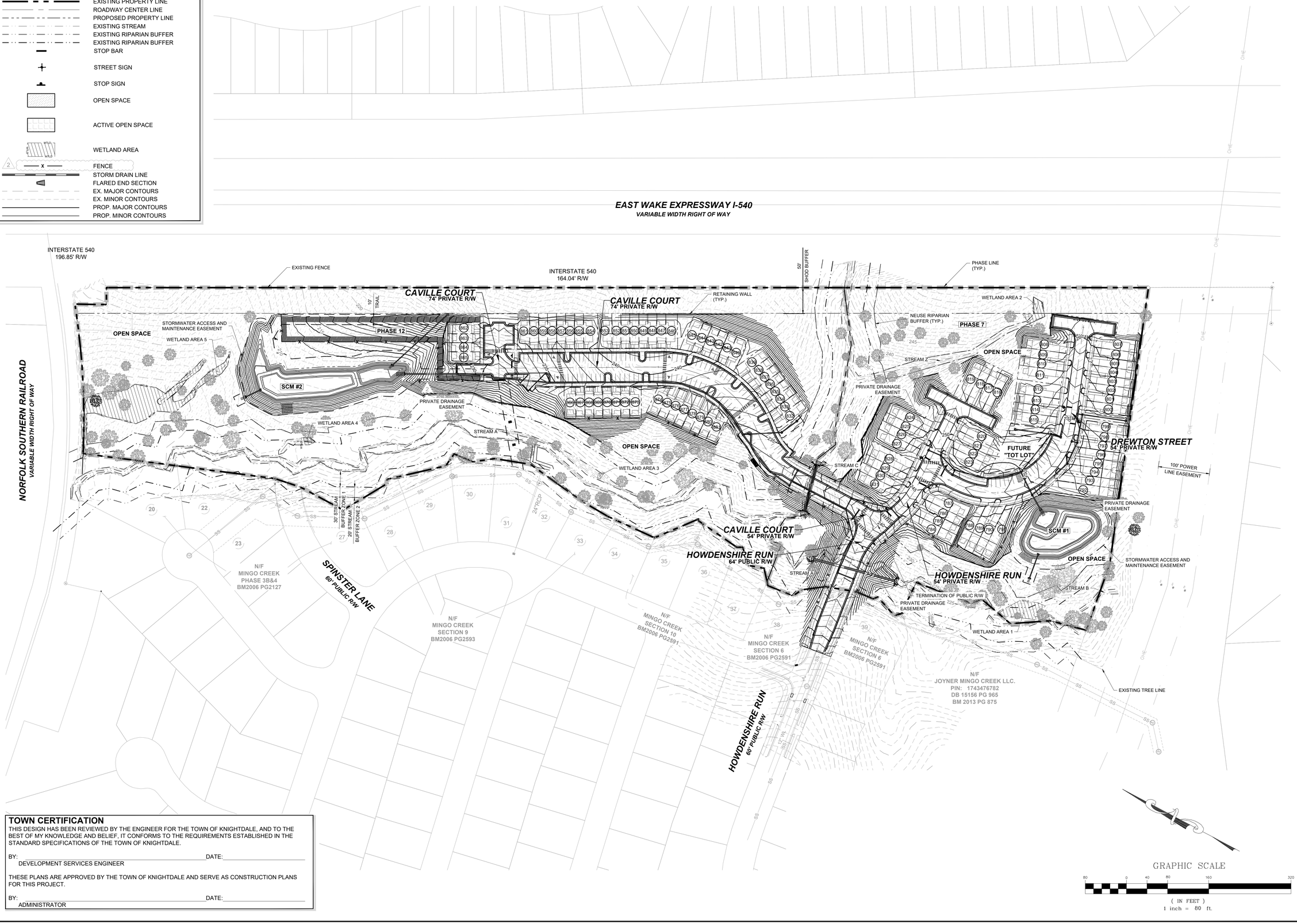
C-9.4

17 OF 55

PROGRESS PLOT DATE: 08/8/24

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- STORM DRAIN LINE
- FLARED END SECTION
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS



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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

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NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
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HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL DRAINAGE PLAN

DRAWING SHEET
C-10.0

18 OF 55

PROGRESS PLOT DATE: 08/8/24

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

EXISTING FENCE

PHASE LINE (TYP.)

YI #301
TOP: 226.49
INV OUT: 213.50 (W)

OPEN SPACE

STORMWATER ACCESS AND MAINTENANCE EASEMENT

EXISTING TREE LINE (TYP.)

WETLAND AREA 5

PHASE 12

145 LF 15" RCP @ 2.41%

FES #104
INV OUT: 210.00 (E)

101 LF 30" RCP @ 8.39%

SCM #2
TOP: 211.6
BOT: 207.0

OCS #202
TOP: 211.00
INV OUT: 206.57 (NW)

31 LF 18" RCP @ 5.11%

FES #105
INV OUT: 205.00 (SE)

FES #103
INV OUT: 210.00 (SE)

10' TRAIL

20' PRIVATE DRAINAGE EASEMENT

50' SHOD BUFFER

5' PRIVATE EASEMENT

CAVILLE COURT
74' PRIVATE R/W

PRIVATE DRAINAGE EASEMENT

RETAINING WALL (TYP.)

CB #15
TOP: 239.57
INV IN: 223.56 (SE)
INV OUT: 223.36 (NW)

89 LF 24" RCP @ 0.50%

CB #18
TOP: 234.64
INV OUT: 224.73 (SW)
119 LF 15" RCP @ 8.00%

CB #16
TOP: 238.86
INV IN: 222.99 (SE)
INV OUT: 222.79 (NW)

CB #20
TOP: 228.23
INV IN: 219.00 (SE)
INV OUT: 218.50 (NW)

91 LF 30" RCP @ 2.56%

CB #19
TOP: 229.93
INV IN: 221.54 (SE)
INV OUT: 221.34 (NW)

20' PUBLIC DRAINAGE EASEMENT

74 LF 24" RCP @ 0.50%

120 LF 24" RCP @ 0.50%

59 LF 24" RCP @ 0.50%

CB #17
TOP: 234.54
INV IN: 223.18 (NE)
INV IN: 222.19 (SE)
INV OUT: 221.99 (NW)

20' STREAM BUFFER ZONE 2

20' STREAM BUFFER ZONE 1

20.0' SEWER EASEMENT

WETLAND AREA 4

EXISTING STREAM

WETLAND AREA 3

FES 24"
OUT: 214.33'

RIM: 214.10'
INV. IN: 202.09'
INV. OUT: 202.02'

RIM: 214.81'
INV. IN: 209.56'
INV. OUT: 209.39'

RIM: 217.14'
INV. IN: 208.28'
INV. OUT: 208.19'

TOC: 218.38'
IN: 214.32'
OUT: 214.28'
OUT: 214.17'

RCP 24"
OUT: 214.45'

24"RCP

RIM: 215.75'
INV. IN: 203.27'
INV. OUT: 203.17'

RIM: 216.66'
INV. IN: 207.04'(8")
INV. IN: 204.91'
INV. OUT: 204.69'

RIM: 221.66'
INV. IN: 211.95'
INV. IN: 211.93'
INV. OUT: 211.90'

RIM: 221.66'
INV. IN: 211.95'
INV. IN: 211.93'
INV. OUT: 211.90'

RIM: 226.93'
INV. IN: 216.98'
INV. IN: 214.93'
INV. OUT: 214.88'

TOC: 229.27'
INV. OUT:
222.94'

EXISTING SANITARY SEWER

EXISTING TREE LINE

RIM: 213.19'
INV IN: 195.14'
INV. IN: 194.30'
INV. OUT: 194.27'

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

SPINSTER LANE
60' PUBLIC R/W

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

MATCH LINE
FOR CONTINUATION, SEE C-10.2

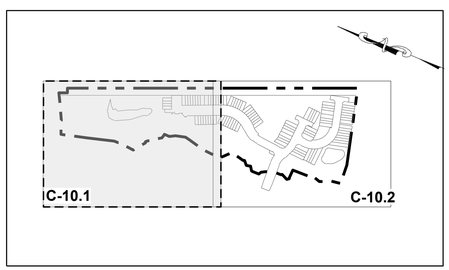
TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



SITE KEY PLAN

LEGEND:

SEE SHEET C-10.0 FOR LEGEND.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
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HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

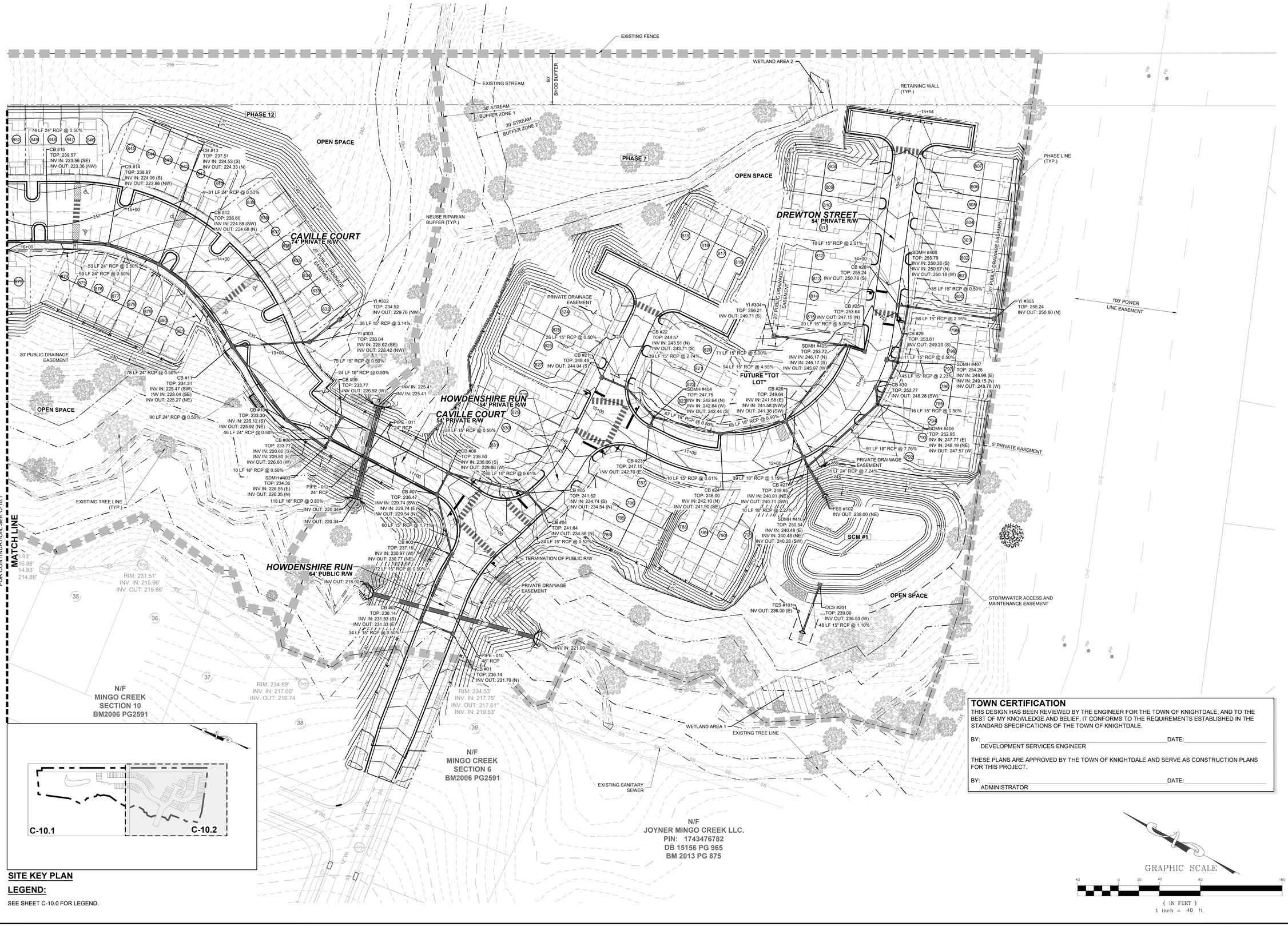
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

DRAINAGE PLAN I

DRAWING SHEET
C-10.1

PROGRESS PLOT DATE: 08/8/24



SITE KEY PLAN

LEGEND:

SEE SHEET C-10.0 FOR LEGEND.

TOWN CERTIFICATION

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HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

DRAINAGE PLAN II

DRAWING SHEET

C-10.2

20 OF 55

OFFSITE SPOIL NOTE:

1. IF AN OFFSITE SOIL SPOIL OR BORROW SITE IS UTILIZED, THEN THE DISTURBED AREA FOR THE SPOIL/BORROW SITE MUST BE INCLUDED IN THE LAND-DISTURBANCE PLAN AND PERMIT UNLESS THE SPOIL/BORROW SITE ALREADY HAS A SEPARATE LAND-DISTURBANCE PERMIT.

STAGE 1 SPECIFIC SEQUENCE:

1. SCHEDULE AN INITIAL PRE-CONSTRUCTION CONFERENCE WITH THE TOWN OF KNIGHTDALE. OBTAIN A LAND-DISTURBANCE PERMIT.
2. INSTALL ALL PERIMETER CONTROLS AS SHOWN ON THE APPROVED PLANS.
3. SCHEDULE AN ONSITE PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE TO INSPECT THE INSTALLED PERIMETER CONTROLS.
4. IF APPROVED, PROCEED WITH INSTALLING GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
5. CALL TOWN OF KNIGHTDALE EROSION CONTROL INSPECTOR TO SCHEDULE AN ON SITE INSPECTION AND OBTAIN A CERTIFICATE OF COMPLIANCE.

STAGE 2 SPECIFIC SEQUENCE:

1. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
2. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL CONTROLS, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN IN THE APPROVED PLAN. BEING CONSTRUCTION, BUILDING, ETC.
3. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
4. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL EROSION CONTROL INSPECTOR FOR AN INSPECTION.
5. IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATERS, SHOULD NOW BE INSTALLED. IF DIVERSION DITCHES ARE REMOVED PRIOR TO INFRASTRUCTURE, AND ROADS ARE PLANNED TO DIVERT FLOW ACROSS SITE, THEN THEY SHOULD BE STABILIZED AND EQUIPPED WITH CHECK DAMS, SLOPE DRAINS, AND OTHER MEASURES NEEDED TO PROPERLY RESTRAIN EROSION UNTIL CONVEYANCE IS ON LINE.
6. WHEN VEGETATION HAS BECOME ESTABLISHED (90% GERMINATION), CALL FOR A FINAL INSPECTION BE THE EROSION CONTROL INSPECTOR. OBTAIN A CERTIFICATE OF COMPLETION.

EROSION CONTROL NARRATIVE:

1. THE PURPOSE OF THIS PLAN IS TO DEVELOP A 98 LOT RESIDENTIAL SUBDIVISION. LAND DISTURBANCE WILL BE KEPT TO THE MINIMUM AMOUNT NEEDED TO INSTALL THE INFRUSTRAUTRE, STORMWATER DEVICES AND ROUGH GRADED LOTS SHOWN ON THE PLANS.
2. EROSION SHALL BE CONTROLLED BY USING A COMBINATION OF TEMPORARY AND PERMANENT STABILIZATION MEASURES THROUGHOUT THE SITE. IN GENERAL STRIPPING OF VEGETATION, REGRADING OR OTHER DEVELOPMENT IS TO BE DONE IN SUCH A WAY THAT WILL MINIMIZE EROSION. EROSION AND SEDIMENT WILL BE CONTROLLED BY SILT FENCE, DIVERSION DITCHES, DAMS, SEDIMENT/SKIMMER BASINS, INLET AND OUTLET PROTECTION, SLOPE DRAINS AND EROSION CONTROLMATTING. CONSTRUCTION ENTRANCES WILL PROVIDE ACCESS TO THE SITE. THE AMOUNT OF DISTURBED AREA AND THE DURATION OF EXPOSURE WILL BE KEPT TO A PRACTICAL MINIMUM AND PERMANENT VEGETATION AND SCM'S WILL BE INSTALLED AS SOON AS POSSIBLE TO PREVENT EROSION.

REQUIRED TOWN OF KNIGHTDALE SCM BASIN REMOVAL SEQUENCE:

1. SCHEDULE A SITE MEETING WITH THE TOWN OF KNIGHTDALE EROSION CONTROL INSPECTOR TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT NCDEQ – RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE E&SC JURISDICTION: TOWN OF KNIGHTDALE, TOK PROJECT: NAME, NUMBER, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A) REASON FOR CONVERSION, B) BASIN #, C) DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION.
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY USING NON-CLUMPING TURF GRASS (CENTIPEDE / HYBRID BERMUDA).
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
6. WHEN SITE IS FULLY STABILIZED, CALL EROSION CONTROL INSPECTOR FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION.

NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE EROSION CONTROL INSPECTOR AND STORMWATER TECHNICIAN TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. FINAL CONVERSION/CERTIFICATION CANNOT OCCUR UNTIL AT LEAST 75% OF HOMES HAVE BEEN ISSUED A CO.

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).

LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

EROSION CONTROL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST TOWN OF KNIGHTDALE STANDARDS, SPECIFICATIONS AND DETAILS.
2. GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE WAKE COUNTY SOIL AND EROSION CONTROL STANDARDS AND SPECIFICATIONS.
3. GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE NORTH CAROLINA DEPARTMENT OF NATURAL RESOURCES DIVISION OF WATER QUALITY (DWQ) STANDARDS AND SPECIFICATIONS. WHERE DIFFERENT FROM TOWN OF KNIGHTDALE STANDARDS, THE MORE STRINGENT METHOD SHALL BE APPLIED.
4. FAILURE TO FOLLOW THE APPROVED PLAN SEQUENCE AND DETAILS COULD SUBJECT THE FINANCIALLY RESPONSIBLE PARTY TO FINES AND PENALTIES ISSUED BY EITHER THE TOWN OF KNIGHTDALE EROSION CONTROL DEPARTMENT OR THE DWQ.
5. CONTRACTOR SHALL SEED AND STABILIZE ALL STEEP SLOPES (GREATER THAN 2H:1V) WITHIN 7 DAYS, 10 DAYS FOR MODERATE SLOPES (3H:1V OR GREATER) AND WITHIN 14 CALENDAR DAYS EVERYWHERE ELSE (STATE LAW 2009-486).
6. FOR ANY LAND-DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICAL, BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER COMPLETING THE WORK. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN.
7. NO DEBRIS SHALL BE TRACKED ONTO PUBLIC RIGHT OF WAY. IF THE SITUATION OCCURS WHERE MUD, ROCK AND DEBRIS IS TRACKED ONTO PAVEMENT, THE CONTRACTOR SHALL CLEAN THE PAVEMENT AND INSTALL ADDITIONAL MEASURES TO PREVENT THE FUTURE OCCURRENCE.
8. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
9. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BY NCDEQ ONCE INITIAL MEASURES ARE IN PLACE. (SEE CONSTRUCTION SEQUENCES)
10. CONTRACTOR SHALL INSPECT ALL SEDIMENT /EROSION CONTROL DEVICES AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
11. A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
12. CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
13. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE TOWN OF KNIGHTDALE EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
14. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE TOWN OF KNIGHTDALE ENGINEERING DEPARTMENT AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
15. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
16. A CONSTRUCTION SEQUENCE HAS BEEN PROVIDED. INSTALLATION OF ALL PROPOSED SEDIMENTATION & EROSION CONTROL MEASURES IN THE SEQUENCE(S) PROVIDED AND MAINTENANCE OF THOSE DEVICES IS REQUIRED. THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE SEDIMENTATION & EROSION CONTROL INSPECTOR AND THE ENGINEER.
17. PROVIDE INLET PROTECTION AROUND ALL SITE STORM INLETS. PROTECT OPEN PIPES UNDER CONSTRUCTION WITH EITHER PLYWOOD OR WITH MESH AND GRAVEL WEIRS. RUNOFF SHALL NOT BE ALLOWED IN ANY OPEN TRENCH.
18. CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS AND PONDING.
19. TEMPORARY DIVERSIONS SHALL BE MAINTAINED DAILY BY CONTRACTOR SO THAT THEY ARE FUNCTIONAL AT THE END OF EACH WORKDAY AND WHEN STOPPING WORK FOR RAIN.
20. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
21. DISTURBANCE OUTSIDE OF THE SITE PROPERTY LIMITS OR PUBLIC RIGHT-OF-WAY SHALL ONLY BE AS ALLOWED BY SIGNED GRADING AGREEMENTS AND/OR EASEMENTS BETWEEN THE DEVELOPER AND THE OFFSITE PROPERTY OWNER.
22. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE OPEN ACCESS TO ALL PROPERTIES ALONG ADJACENT PROPERTIES DURING CONSTRUCTION PERIOD FOR IMPROVEMENTS.
23. SLOPES GREATER THAN 3:1 AND/OR GREATER THAN 10' IN VERTICAL DIFFERENCE SHALL BE INSTALLED WITH ROLLED EROSION CONTROL PRODUCT IMMEDIATELY UPON INSTALLATION.

TOK SCM PLANTING NOTES

1. THE DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES, OF THE POND SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS OR SOD. (CENTIPEDE/HYBRID-BERMUDA) 90% GERMINATION OF NON-CLUMPING TURF WILL BE REQUIRED PRIOR TO FINAL CERTIFICATION FORM THE TOWN.
2. THE VEGETATED SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 FEET OF SHELF AREA.
3. CONTRACTOR TO WORK WITH SOILS SCIENTIST TO ENSURE SOILS ARE ADEQUATE TO SUPPORT PROPER ESTABLISHMENT AND GROWTH OF THE AQUATIC PLANTINGS. CONTRACTOR TO AMEND SOILS AND INSTALL SOILS IN PLANT, SHRUB, AND TREE AREAS PER DETAILS, SOIL SPECIFICATIONS. NCDENR SPECIFICATION, AND SOIL SCIENTIST RECOMMENDATIONS.
4. ALL AQUATIC PLANTINGS ARE TO BE INSTALLED DURING THE APPROPRIATE TIME OF YEAR TO ENSURE SURVIVABILITY. (LAST SPRING FROST AND THE FIRST FALL FROST).
5. ALL DISTURBED AREAS AROUND THE OUTSIDE OF THE DEVICE SHALL BE SEEDED WITH A LAWN AREA SEED MIX (PER SEEDING SPECIFICATIONS) NATIVE GRASSES, LEGUMES, CLOVERS, AND WILDFLOWERS.
6. IF THE DEVICE WAS USED DURING CONSTRUCTION AS A SEDIMENT BASIN OR TRAP, THE BASIN MUST BE CLEANED OUT, GRADED, APPROPRIATE AREAS COVERED WITH 4" OF TOPSOIL AS SPECIFIED IN NOTE #2 ABOVE, AND VEGETATED WITHIN 14 DAYS OF THE COMPLETION OF CONSTRUCTION.
7. CONTRACTOR SHALL WATER ALL VEGETATION AND GRASS ON A WEEKLY BASIS AS NEEDED TO ENSURE GRASS AND PLANT SURVIVAL UNTIL AFTER THE SCM IS CERTIFIED AND ACCEPTED BY THE TOWN.

NOTE:

IF DIVERSION DITCHES ARE REMOVED PRIOR TO INFRASTRUCTURE, AND ROADS ARE PLANNED TO DIVERT FLOW ACROSS SITE, THEN THEY SHOULD BE STABILIZED AND EQUIPPED WITH CHECK DAMS, SLOPE DRAINS, AND OTHER MEASURES NEEDED TO PROPERLY RESTRAIN EROSION UNTIL CONVEYANCE IS ON LINE

GENERAL SEQUENCE:

ENFORCEMENT NOTE 1. FAILURE TO FOLLOW THIS CONSTRUCTION SEQUENCE MAY RESULT IN LOCAL ENFORCEMENT ACTIONS, INCLUDING BUT NOT LIMITED TO CIVIL PENALTIES TO $5000 PER VIOLATION PER DAY, INJUNCTIVE RELIEF, CRIMINAL PENALTIES, AND PERMIT REVOCATION. ADDITIONALLY, OFF-SITE SEDIMENTATION MAY RESULT IN RESTORATION REQUIREMENTS.

ENFORCEMENT NOTE 2. IF THE TOWN OF KNIGHTDALE S&E STAFF DETERMINES THAT EXCESSIVE SEDIMENT IS LEAVING THE SITE, A REVISED SEDIMENTATION AND EROSION CONTROL PLAN MAY BE REQUIRED, WITH ASSOCIATED REQUIREMENTS FOR ADDITIONAL S&E MEASURES.

REQUIRED TOWN OF KNIGHTDALE CONSTRUCTION SEQUENCE

1. SCHEDULE AN INITIAL PRE-CONSTRUCTION CONFERENCE WITH THE TOWN OF KNIGHTDALE. OBTAIN A LAND-DISTURBANCE PERMIT.
2. INSTALL ALL PERIMETER CONTROLS AS SHOWN ON THE APPROVED PLANS.
3. SCHEDULE AN ONSITE PRE-CONSTRUCTION MEETING WITH THE TOWN OF KNIGHTDALE TO INSPECT THE INSTALLED PERIMETER CONTROLS.
4. IF APPROVED, PROCEED WITH INSTALLING GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS OR OTHER MEASURES AS SHOWN ON THE APPROVED PLANS. CLEAR ONLY AS NECCESARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS, AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
5. CALL TOWN OF KNIGHTDALE EROSION CONTROL INSPECTOR TO SCHEDULE AN ON SITE INSPECTION AND OBTAIN A CERTIFICATE OF COMPLIANCE.
6. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE.
7. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL CONTROLS, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN IN THE APPROVED PLAN. BEING CONSTRUCTION, BUILDING, ETC.
8. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
9. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL EROSION CONTROL INSPECTOR FOR AN INSPECTION.
10. IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATERS, SHOULD NOW BE INSTALLED.
11. WHEN VEGETATION HAS BECOME ESTABLISHED (90% GERMINATION), CALL FOR A FINAL INSPECTION BE THE EROSION CONTROL INSPECTOR. OBTAIN A CERTIFICATE OF COMPLETION.

PERMITTING AND ENVIRONMENTAL REGULATIONS NOTES:

1. ESC PERMITTING AND INSPECTIONS:
   - A. ONCE THE EROSION AND SEDIMENT CONTROL (ESC) PLAN HAS BEEN REVIEWED AND ACCEPTED BY THE TOWN OF KNIGHTDALE (TOK), A FORMAL PLAN APPROVAL LETTER WILL BE ISSUED TO THE FRP AND APPLICANTS. NOTE: AN ESC APPROVAL LETTER DOES NOT INDICATE PERMIT ISSUANCE.
   - B. AN NCG01 CERTIFICATE OF COVERAGE MUST BE OBTAINED FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ). THE PERMIT CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT DEQ.NC.GOV/NCG01. PLEASE NOTE, THE E-NOI FORM MAY ONLY BE COMPLETED ONCE ESC PLANS HAVE BEEN APPROVED (A).
   - C. THE TOWN OF KNIGHTDALE STORMWATER DEPARTMENT REQUIRES AN ON-SITE PRECONSTRUCTION (PRECON) MEETING PRIOR TO ISSUING A DEVELOPMENT PERMIT. THIS MEETING IS AN OPPORTUNITY TO GO OVER SITE MANAGEMENT EXPECTATIONS AND DISCUSS ANY PROJECT CONCERNS.
   - D. ONCE THE PRECON MEETING HAS BEEN HELD AND ALL FEES PAID, THE LAND DEVELOPMENT PERMIT (LDP) WILL BE ISSUED FOR THE PROJECT.
   - E. FOLLOWING SITE MOBILIZATION, ROUTINE "CONSTRUCTION SITE INSPECTIONS" BY TOK STAFF WILL OCCUR AS OUTLINED IN THE TOK EROSION AND SEDIMENT CONTROL ENFORCEMENT TREE. TO NOTE, "COMPLIANT/SATISFACTORY" INSPECTIONS WILL NEED TO OCCUR FOLLOWING:
     - I. INSTALLATION OF INITIAL ESC PERIMETER CONTROLS (SF, SF/TP, SFOS) ONLY CLEARING THE PERIMETER RIBBON (25' MAX) - "PERIMETER CONTROL INSPECTION".
     - II. INSTALLATION OF ALL PHASE 1 ESC MEASURES INCLUDING ENGINEERED STRUCTURES - "CERTIFICATE OF COMPLIANCE INSPECTION". IT IS THE RESPONSIBILITY OF THE SITE MANAGER TO FORMALLY REQUEST THESE TYPES OF INSPECTIONS BY CONTACTING TOK PUBLIC WORKS. CLEARING/GRUBBING OUTSIDE OF THE LIMITED AREAS REQUIRED TO COMPLETE THE ABOVE ITEMS WILL RESULT IN ENFORCEMENT ACTION BY THE TOK.
   - F. FOLLOWING THE COMPLETION OF THE ITEMS ABOVE - THE SITE CAN BE CLEARED AND DEVELOPED IN ACCORDANCE WITH THE APPROVED PLAN.
2. PERMITS BOX CONTENTS - A COPY OF THE TOK LAND DEVELOPMENT PERMIT, THE NCG01 CERTIFICATE OF COVERAGE (COC) AND REGULAR NPDES INSPECTIONS, A COPY OF THE APPROVED/REVISED ESC PLAN, AND (WHEN OBTAINED) THE TOK CERTIFICATE OF COMPLIANCE - MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION. LOCATE A RAIN GAUGE ON SITE FOR FACILITATION OF INSPECTIONS AND RECORD KEEPING.
3. 401/404 PERMITS - APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL PLAN DOES NOT AUTHORIZE IMPACTS TO WETLANDS, COASTAL MARSH, STREAMS, OR OTHER WATERS OF THE STATE OR UNITED STATES OR SUPERSEDE ANY OTHER PERMITTING REQUIREMENT OF ANY FEDERAL, STATE OR LOCAL AGENCY.
   - A. IF APPLICABLE, PROVIDE A COPY OF THE USACE 404 PERMIT AND DWR 401 CERTIFICATIONS. PROVIDE A COPY OF THE DWR BUFFER AUTHORIZATION:
     - I. SUBMIT DOCUMENTATION WITH MAPS SHOWING LOCATION AND EXTENT OF IMPACTS TO STREAMS AND WETLANDS WITH ANY SPECIAL CONDITIONS PERTAINING TO EROSION AND SEDIMENT CONTROL AND RESTORATION OF AFFECTED AREAS.
     - II. IDENTIFY THE STREAMS, WETLANDS, AND BUFFERS ON THE PLAN SHEETS. INCLUDE ANY ADDITIONAL MEASURES, CONSTRUCTION SPECIFICATIONS, MAINTENANCE REQUIREMENTS AND CONSTRUCTION SEQUENCING AS REQUIRED BY THE 404/401/BUFFER DETERMINATION AND BUFFER AUTHORIZATION ON THE PLAN SHEETS.
     - III. FOLLOW ALL CONDITIONS OUTLINED IN THE CERTIFICATIONS, SPECIFICALLY REPORTING ANY DISCHARGES OUTSIDE OF THE PERMITTED SCOPE OF WORK.
4. AREAS OF ENVIRONMENTAL CONCERN AND CULTURAL RESOURCES – BEFORE ANY SITE WORK OCCURS ADEQUATELY IDENTIFY KEY ENVIRONMENTAL AND/OR CULTURAL RESOURCES BY USING APPROPRIATE IDENTIFIERS IN THE FIELD (TREE PROTECTION FENCING, FLAGGING, ETC.).
5. FILL/BORROW - ANY OFF-SITE BORROW AND/OR FILL REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN, A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL NOTES

DRAWING SHEET
C-11.0

PROGRESS PLOT DATE: 08/8/24

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)
TREE PROTECTION FENCING (TYP.)
50' SHOD BUFFER
50.00' RIPARIAN BUFFER (TYP.)
30' STREAM BUFFER ZONE 1
20' STREAM BUFFER ZONE 2
STREAM Z
WETLAND AREA 2
WETLAND AREA 5
SILT FENCE OUTLET (TYP.)
WETLAND AREA 4
STREAM A
WETLAND AREA 3
25' MINIMUM
STREAM C
NCDOT #5 OR #57 WASHED STONE
CAPACITY OF PIPE CULVERTS TOGETHER = BANK FULL FLOW
LIMITS OF DISTURBANCE (TYP.)
STREAM B
WETLAND AREA 1
24" RCP
100' POWER LINE EASEMENT
CONSTRUCTION ENTRANCE
LIMITS OF DISTURBANCE (TYP.)

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

SPINSTER LANE
60' PUBLIC R/W

HOWDENSHIRE RUN
60' PUBLIC R/W

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).
LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

LEGEND:

- EXISTING ADJOINER PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- SF/LD — SILT FENCE/ LIMITS OF DISTURBANCE
- LD — LD — LIMITS OF DISTURBANCE
- TPF — TPF — TREE PROTECTION FENCE
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- CONSTRUCTION ENTRANCE
- SILT FENCE OUTLET

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

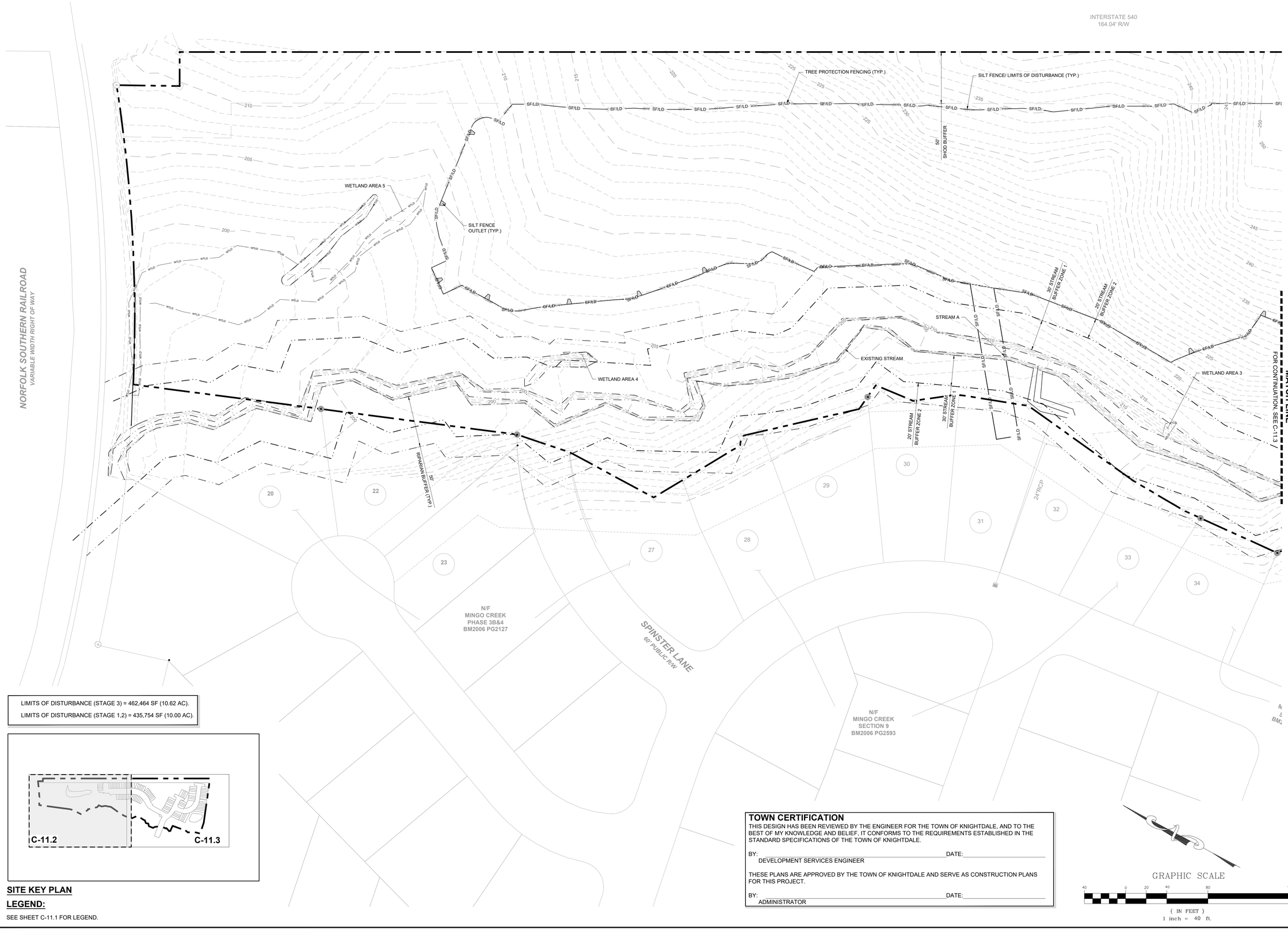
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

EROSION CONTROL PLAN - OVERALL STAGE 1

DRAWING SHEET
C-11.1

22 OF 55

PROGRESS PLOT DATE: 08/8/24



LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).
LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

SITE KEY PLAN

LEGEND:

SEE SHEET C-11.1 FOR LEGEND.

TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
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3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 1

DRAWING SHEET
C-11.2

23 OF 55

PROGRESS PLOT DATE: 08/8/24

MATCH LINE
FOR CONTINUATION, SEE C-11.2

50' SHOD BUFFER
50.00' RIPARIAN BUFFER (TYP.)
30' STREAM BUFFER ZONE 1
20' STREAM BUFFER ZONE 2
SILT FENCE OUTLET (TYP.)
SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)
TREE PROTECTION FENCING (TYP.)
WETLAND AREA 2
STREAM Z
STREAM C
STREAM A
STREAM B
WETLAND AREA 1
NCDOT #5 OR #57 WASHED STONE
CAPACITY OF PIPE CULVERTS TOGETHER = BANK FULL FLOW
LIMITS OF DISTURBANCE (TYP.)
CONSTRUCTION ENTRANCE
100' POWER LINE EASEMENT
N/F MINGO CREEK SECTION 6 BM2006 PG2591
N/F JOYNER MINGO CREEK LLC. PIN: 1743476782 DB 15156 PG 965 BM 2013 PG 875
RIM: 234.53'
INV. IN: 217.75'
INV. OUT: 217.61'
INV. IN: 219.53'
EXISTING WATER
EXISTING SAN. SEWER

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).
LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

C-11.2 C-11.3

SITE KEY PLAN

LEGEND:

SEE SHEET C-11.1 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

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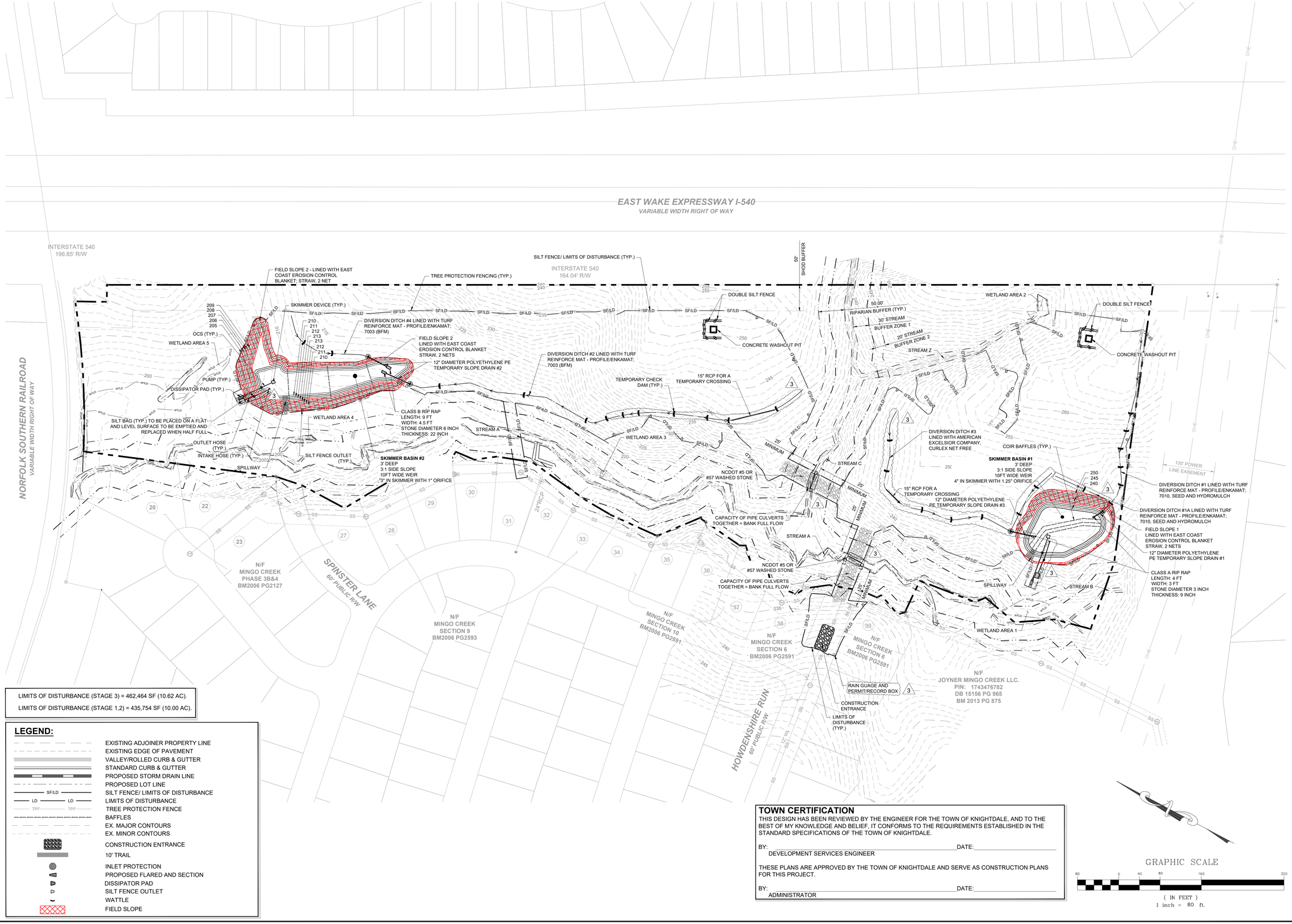
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION		
SCALE	AS SHOWN	DESIGNED BY	JWL
		DRAWN BY	SRG
		CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 1

DRAWING SHEET
C-11.3

24 OF 55

PROGRESS PLOT DATE: 08/8/24



LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).

LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

LEGEND:

- EXISTING ADJOINER PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- VALLEY/ROLLED CURB & GUTTER
- STANDARD CURB & GUTTER
- PROPOSED STORM DRAIN LINE
- PROPOSED LOT LINE
- SF/LD — SILT FENCE/ LIMITS OF DISTURBANCE
- LD — LD — LIMITS OF DISTURBANCE
- TPF — TPF — TREE PROTECTION FENCE
- BAFFLES
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- CONSTRUCTION ENTRANCE
- 10' TRAIL
- INLET PROTECTION
- PROPOSED FLARED AND SECTION
- DISSIPATOR PAD
- SILT FENCE OUTLET
- WATTLE
- FIELD SLOPE

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT			
	NOT FOR CONSTRUCTION		
SCALE	AS SHOWN	DESIGNED BY	JWL
		DRAWN BY	SRG
		CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

EROSION CONTROL PLAN - OVERALL STAGE 2

DRAWING SHEET

C-11.4

25 OF 55

PROGRESS PLOT DATE: 08/8/24

INTERSTATE 540
164.04' R/W

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

WETLAND AREA 5

SILT FENCE OUTLET (TYP.)

PUMP (TYP.)

DISSIPATOR PAD (TYP.)

SILT BAG (TYP.) "TO BE PLACED ON A FLAT AND LEVEL SURFACE" TO BE EMPTIED AND REPLACED WHEN HALF FULL

OUTLET HOSE (TYP.)

INTAKE HOSE (TYP.)

SKIMMER DEVICE (TYP.)

SPILLWAY

OCS (TYP.)

DIVERSION DITCH #4 LINED WITH TURF REINFORCE MAT - PROFILE/ENKAMAT; 7003 (BFM)

SKIMMER BASIN #2
3' DEEP
3:1 SIDE SLOPE
10FT WIDE WEIR
3" IN SKIMMER WITH 1" ORIFICE

12" DIAMETER POLYETHYLENE PE TEMPORARY SLOPE DRAIN #2

CLASS B RIP RAP
LENGTH: 9 FT
WIDTH: 4.5 FT
STONE DIAMETER 6 INCH
THICKNESS: 22 INCH

12" DIAMETER POLYETHYLENE PE TEMPORARY SLOPE DRAIN #2

HORSESHOE PROTECTION (TYP.)

CLASS B RIP RAP
LENGTH: 9 FT
WIDTH: 4.5 FT
STONE DIAMETER 6 INCH
THICKNESS: 22 INCH

COIR BAFFLES (TYP.)

WETLAND AREA 4

FIELD SLOPE 2
LINED WITH EAST COAST EROSION CONTROL BLANKET STRAW, 2 NETS

TREE PROTECTION FENCING (TYP.)

SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)

50' SHOD BUFFER

DIVERSION DITCH #2 LINED WITH TURF REINFORCE MAT - PROFILE/ENKAMAT; 7003 (BFM)

TEMPORARY CHECK DAM (TYP.)

30' STREAM BUFFER ZONE 1

20' STREAM BUFFER ZONE 2

STREAM A

EXISTING STREAM

WETLAND AREA 3

50' RIPARIAN BUFFER (TYP.)

24"RCP

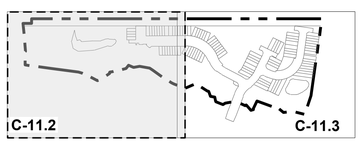
MATCH LINE
FOR CONTINUATION SEE C-11.3

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

SPINSTER LANE
60' PUBLIC R/W

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).
LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).



SITE KEY PLAN

LEGEND:

SEE SHEET C-11.1 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 2

DRAWING SHEET
C-11.5

26 OF 55

PROGRESS PLOT DATE: 08/8/24

MATCH LINE
FOR CONTINUATION, SEE C-11.2

SF/LD — SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)
50' SHOD BUFFER
50.00' RIPARIAN BUFFER (TYP.)
30' STREAM BUFFER ZONE 1
20' STREAM BUFFER ZONE 2
CONCRETE WASHOUT PIT
DOUBLE SILT FENCE
SILT FENCE OUTLET (TYP.)
DIVERSION DITCH #2 LINED WITH TURF REINFORCE MAT - PROFILE/ENKAMAT; 7003 (BFM)
15" RCP FOR A TEMPORARY CROSSING
STREAM Z
STREAM C
STREAM A
STREAM B
NCDOT #5 OR #57 WASHED STONE
25' MINIMUM
LD
CAPACITY OF PIPE CULVERTS TOGETHER = BANK FULL FLOW
TREE PROTECTION FENCING (TYP.)
WETLAND AREA 2
WETLAND AREA 1
100' POWER LINE EASEMENT
TEMPORARY CHECK DAM (TYP.)
FIELD SLOPE 1 LINED WITH EAST COAST EROSION CONTROL BLANKET STRAW, 2 NETS
COIR BAFFLES (TYP.)
SKIMMER BASIN #1
3' DEEP
3:1 SIDE SLOPE
10FT WIDE WEIR
4" IN SKIMMER WITH 1.25" ORIFICE
CLASS A RIP RAP
LENGTH: 4 FT
WIDTH: 3 FT
STONE DIAMETER 3 INCH
THICKNESS: 9 INCH
12" DIAMETER POLYETHYLENE PE TEMPORARY SLOPE DRAIN #3
HORSESHOE PROTECTION (TYP.)
DIVERSION DITCH #3 LINED WITH AMERICAN EXCELSIOR COMPANY, CURLEX NET FREE
DIVERSION DITCH #1 LINED WITH TURF REINFORCE MAT - PROFILE/ENKAMAT; 7010, SEED AND HYDROMULCH
DIVERSION DITCH #1A LINED WITH TURF REINFORCE MAT - PROFILE/ENKAMAT; 7010, SEED AND HYDROMULCH
HORSESHOE PROTECTION
12" DIAMETER POLYETHYLENE PE TEMPORARY SLOPE DRAIN #1
CLASS A RIP RAP
LENGTH: 4 FT
WIDTH: 3 FT
STONE DIAMETER 3 INCH
THICKNESS: 9 INCH
INTAKE HOSE (TYP.)
OCS (TYP.)
PUMP (TYP.)
OUTLET HOSE (TYP.)
SKIMMER DEVICE (TYP.)
SPILLWAY
DISSIPATOR PAD (TYP.)
SILT BAG (TYP.) TO BE PLACED ON A FLAT AND LEVEL SURFACE TO BE EMPTIED AND REPLACED WHEN HALF FULL
RAIN GUAGE AND PERMIT/RECORD BOX
EXISTING WATER
CONSTRUCTION ENTRANCE
LIMITS OF DISTURBANCE (TYP.)
EXISTING SAN. SEWER
OHE
Ppl
N/F MINGO CREEK SECTION 6 BM2006 PG2591
N/F JOYNER MINGO CREEK LLC. PIN: 1743476782 DB 15156 PG 965 BM 2013 PG 875

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).
LIMITS OF DISTURBANCE (STAGE 1,2) = 435,754 SF (10.00 AC).

C-11.2 C-11.3

SITE KEY PLAN

LEGEND:

SEE SHEET C-11.1 FOR LEGEND.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 2

DRAWING SHEET
C-11.6

27 OF 55

PROGRESS PLOT DATE: 08/8/24

LEGEND:

- EXISTING ADJOINER PROPERTY LINE
- EXISTING EDGE OF PAVEMENT
- VALLEY/ROLLED CURB & GUTTER
- STANDARD CURB & GUTTER
- PROPOSED STORM DRAIN LINE
- PROPOSED LOT LINE
- SILT FENCE/ LIMITS OF DISTURBANCE
- LIMITS OF DISTURBANCE
- TREE PROTECTION FENCE
- BAFFLES
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- CONSTRUCTION ENTRANCE
- 10' TRAIL
- INLET PROTECTION
- PROPOSED FLARED AND SECTION
- DISSIPATOR PAD
- SILT FENCE OUTLET
- WATTLE

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

INTERSTATE 540
164.04' R/W

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

50.00' SHOD BUFFER

EXISTING FENCE

TREE PROTECTION FENCING (TYP.)

10.00' TRAIL

SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)

NEUSE RIPARIAN BUFFER (TYP.)

PROPOSED PROPERTY LINE

PHASE LINE

CAVILLE COURT
74' PRIVATE R/W

PHASE 12

PHASE 7

WETLAND AREA 5

WETLAND

PUMP (TYP.)

VELOCITY DISSIPATOR PAD (TYP.)

SILT BAG (TYP.) TO BE PLACED ON A FLAT AND LEVEL SURFACE TO BE EMPTIED AND REPLACED WHEN HALF FULL

OUTLET HOSE (TYP.)

INTAKE HOSE (TYP.)

SCM #2

WETLAND AREA 4

CB (TYP.)

STREAM A

SILT FENCE OUTLET (TYP.)

WETLAND AREA 3

30.00' STREAM BUFFER ZONE 1 (TYP.)

20.00' STREAM BUFFER ZONE 2 (TYP.)

24"RCP

12" SLOPE DRAIN (TYP)

50.00' RIPARIAN BUFFER (TYP.)

STREAM Z

EXISTING STREAM

WETLAND AREA 2

TEMPORARY INLET PROTECTION (TYP.)

DREWTON STREET
54' PRIVATE R/W

STREAM C

100' POWER LINE EASEMENT

CAVILLE COURT
54' PRIVATE R/W
TERMINATION OF PUBLIC R/W

HOWDENSHIRE RUN
54' PRIVATE R/W

SCM #1

STREAM B

HOWDENSHIRE RUN
64' PUBLIC R/W

WETLAND AREA 1

SPINSTER LANE
60' PUBLIC R/W

HOWDENSHIRE RUN
60' PUBLIC R/W

N/F
MINGO CREEK
PHASE 3B&4
BM2006 PG2127

N/F
MINGO CREEK
SECTION 9
BM2006 PG2593

N/F
MINGO CREEK
SECTION 10
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036225 JOSHUA W. LAMBERT
SEAL

STRONGROCK ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

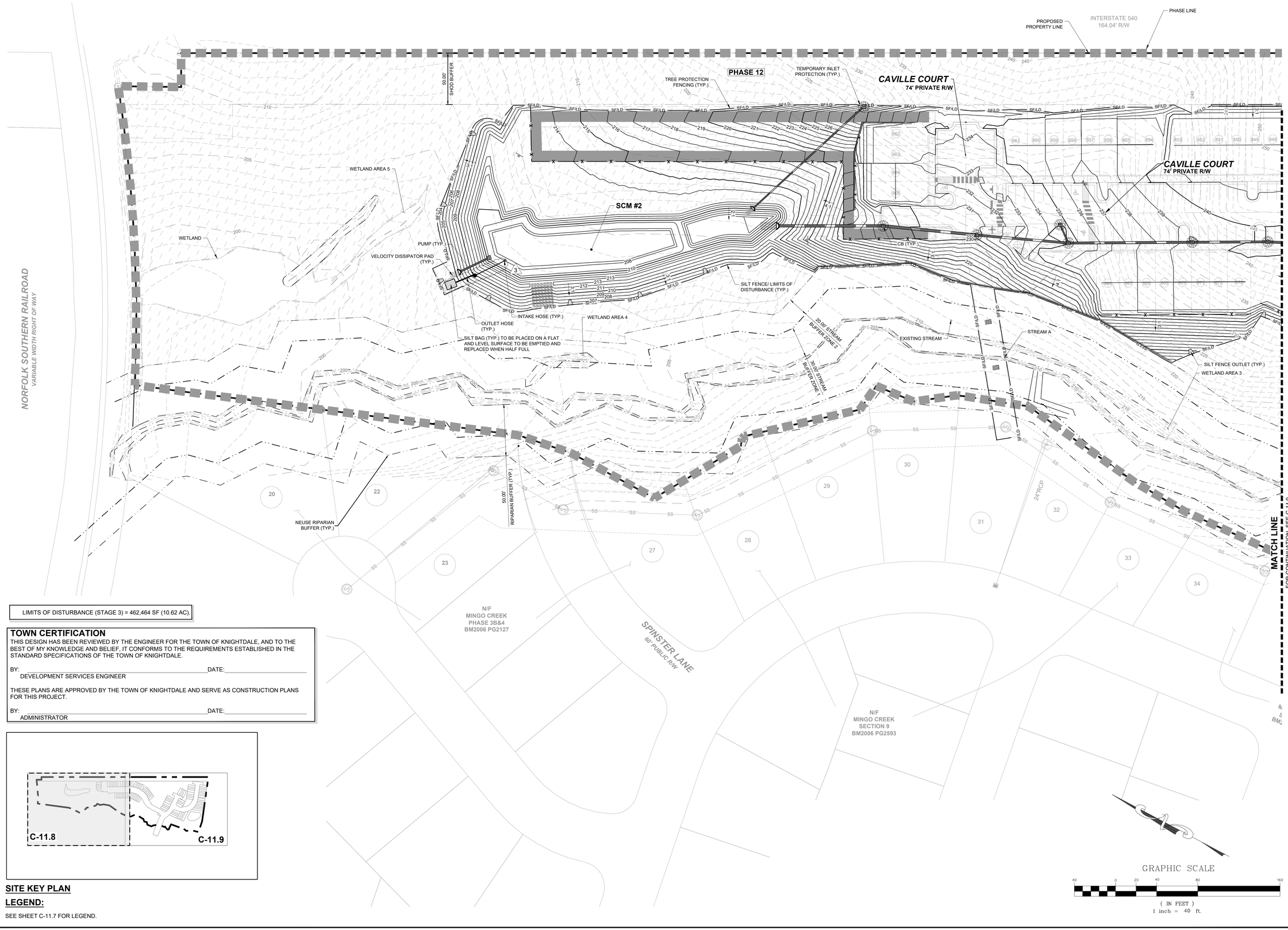
STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - OVERALL STAGE 3

DRAWING SHEET
C-11.7

28 OF 55

PROGRESS PLOT DATE: 08/8/24



LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SITE KEY PLAN

LEGEND:

SEE SHEET C-11.7 FOR LEGEND.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 3

DRAWING SHEET
C-11.8

29 OF 55

PROGRESS PLOT DATE: 08/8/24

PHASE 12

PHASE 7

CAVILLE COURT
74' PRIVATE R/W

HOWDENSHIRE RUN
54' PRIVATE R/W

DREWTON STREET
54' PRIVATE R/W

CAVILLE COURT
54' PRIVATE R/W

HOWDENSHIRE RUN
64' PUBLIC R/W

EXISTING FENCE

PROPOSED PROPERTY LINE

PHASE LINE

EXISTING STREAM

50.00' SHOD BUFFER

30.00' STREAM BUFFER ZONE 1

20.00' STREAM BUFFER ZONE 2

TREE PROTECTION FENCING (TYP.)

50.00' RIPARIAN BUFFER (TYP.)

NEUSE RIPARIAN BUFFER (TYP.)

STREAM Z

EXISTING STREAM

SILT FENCE/ LIMITS OF DISTURBANCE (TYP.)

SILT FENCE OUTLET (TYP.)

TEMPORARY INLET PROTECTION (TYP.)

WETLAND AREA 2

STREAM C

CB (TYP.)

12" SLOPE DRAIN (TYP.)

SCM #1

PUMP (TYP.)

INTAKE HOSE (TYP.)

OUTLET HOSE (TYP.)

TERMINATION OF PUBLIC R/W

STREAM A

STREAM B

VELOCITY DISSIPATOR PAD (TYP.)

SILT BAG (TYP.) TO BE PLACED ON A FLAT AND LEVEL SURFACE TO BE EMPTIED AND REPLACED WHEN HALF FULL

WETLAND AREA 1

100' POWER LINE EASEMENT

N/F
MINGO CREEK
SECTION 6
BM2006 PG2591

N/F
JOYNER MINGO CREEK LLC.
PIN: 1743476782
DB 15156 PG 965
BM 2013 PG 875

MATCH LINE

FOR CONTINUATION, SEE C-11.8

LIMITS OF DISTURBANCE (STAGE 3) = 462,464 SF (10.62 AC).

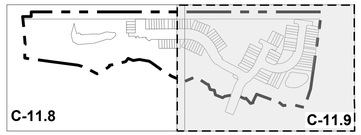
TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



SITE KEY PLAN

LEGEND:

SEE SHEET C-11.7 FOR LEGEND.

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/20/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT			
NOT FOR CONSTRUCTION	SCALE	AS SHOWN	
	DESIGNED BY	JWL	
	DRAWN BY	SRG	
	CHECKED BY	JWL	

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN - STAGE 3

DRAWING SHEET
C-11.9

30 OF 55

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997

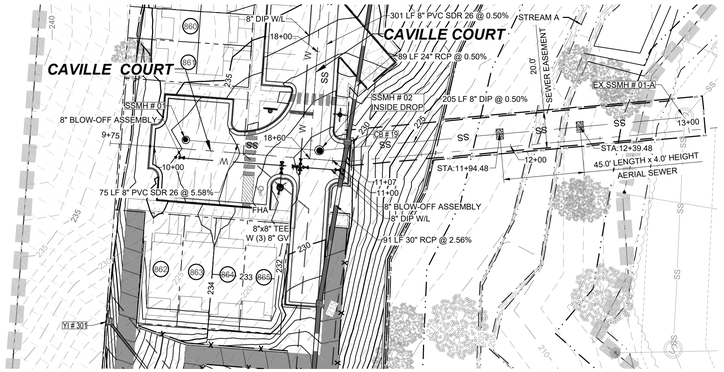
THE CITY OF RALEIGH CONSENTS TO THE CONNECTION AND EXTENSION OF THE CITY'S PUBLIC WATER SYSTEM AS SHOWN ON THIS PLAN. THE MATERIAL AND CONSTRUCTION METHODS USED FOR THIS PROJECT SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY'S PUBLIC UTILITIES HANDBOOK.
CITY OF RALEIGH PUBLIC .
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

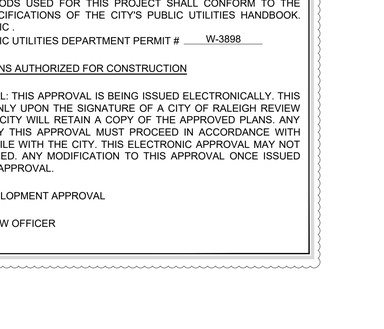
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

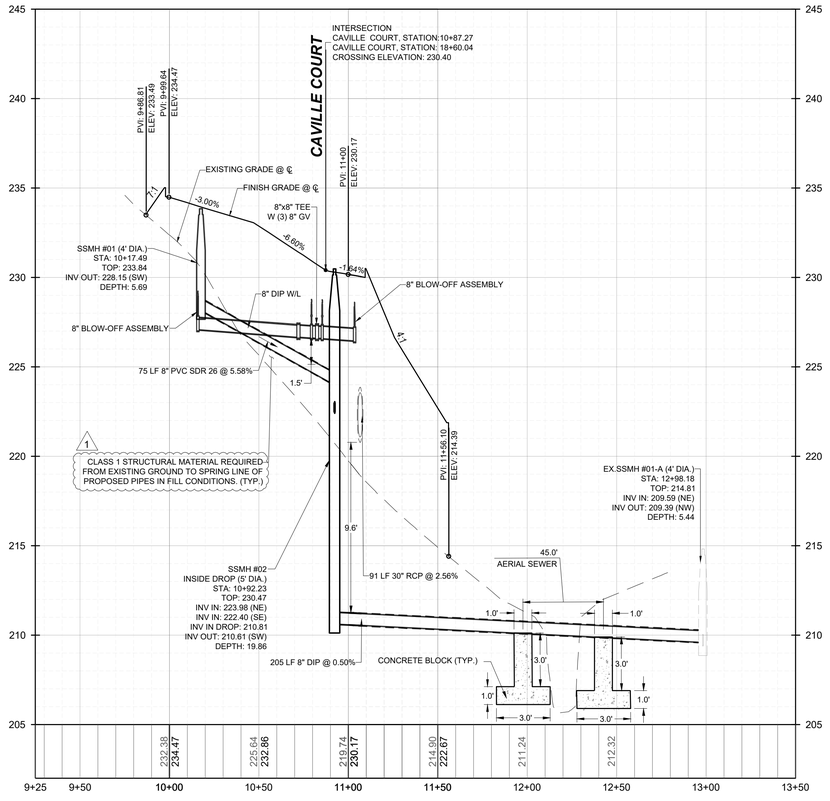
CITY OF RALEIGH DEVELOPMENT APPROVAL

RALEIGH WATER REVIEW OFFICER

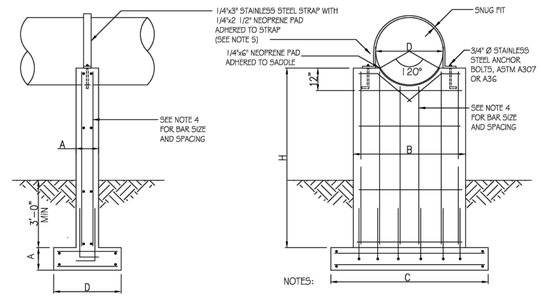


PROPOSED CAVILLE COURT- PLAN
HORIZONTAL: 1" = 40'





PROPOSED CAVILLE COURT - PROFILE
VERTICAL: 1" = 4'
HORIZONTAL: 1" = 40'



CASING PIPE DIA. "D" (IN.)	"H" (FT.)	THICKNESS "A" (IN.)	PIER WIDTH "B" (FT.)	FOOTING LENGTH "C" (FT.)	FOOTING WIDTH "D" (FT.)
6-12	≤6	12	2'-4"	5'-6"	3'-0"
	8	12	2'-4"	6'-3"	3'-0"
	10	12	2'-4"	6'-8"	3'-0"
	12	12	2'-4"	7'-2"	3'-0"
14-20	≤6	12	3'-0"	8'-0"	3'-0"
	8	12	3'-0"	9'-0"	3'-0"
	10	12	3'-0"	9'-10"	3'-0"
	12	14	3'-0"	10'-6"	3'-0"
22-28	≤6	14	3'-8"	8'-9"	4'-0"
	8	14	3'-8"	10'-0"	4'-0"
	10	14	3'-8"	11'-0"	4'-0"
	12	14	3'-8"	11'-10"	4'-0"
30-36	≤6	18	4'-4"	9'-0"	4'-0"
	8	18	4'-4"	10'-6"	4'-0"
	10	18	4'-4"	11'-6"	4'-0"
	12	18	4'-4"	12'-4"	4'-0"
38-48	≤6	18	5'-4"	9'-6"	5'-0"
	8	18	5'-4"	11'-0"	5'-0"
	10	18	5'-4"	12'-0"	5'-0"
	12	18	5'-4"	12'-10"	5'-0"
51-56	≤6	18	6'-4"	9'-10"	5'-0"
	8	18	6'-4"	11'-4"	5'-0"
	10	18	6'-4"	12'-4"	5'-0"
	12	18	6'-4"	13'-2"	5'-0"

NOTES:
1. SHALLOW FOUNDATION DESIGN SHOWN ON THIS DETAIL IS BASED ON THE FOLLOWING PARAMETERS:
   ALLOWABLE SOIL BEARING CAPACITY = 2000 PSF
   CONCRETE COMPRESSIVE STRENGTH = 4000 PSI
   GRADE 60 REINFORCING STEEL
   MAXIMUM STREAM VELOCITY = 10 FT/SEC
   MAXIMUM SUPPORT HEIGHT (H) = 12'-0"
   IF FIELD CONDITIONS REQUIRE ANY DEVIATION FROM THESE PARAMETERS, THE FOUNDATION DESIGN SHALL BE REVIEWED BY THE ENGINEER.
2. IF SUBGRADE AT LOCATION OF SUPPORTS IS DEEMED UNABLE TO WITHSTAND 2000 PSF BEARING PRESSURE, A PILE SUPPORTED FOUNDATION SHALL BE UTILIZED AS PER DRAWING S-15.
3. IF BEDROCK IS ENCOUNTERED WHICH WILL PREVENT 3-FEET MINIMUM COVER OVER FOOTING, DOWELS SHALL BE DRILLED INTO BEDROCK PRIOR TO PLACING FOUNDATION. SEE DRAWING S-17.
4. TWELVE-INCH AND FOURTEEN-INCH THICK PIERS AND FOOTINGS SHALL BE REINFORCED WITH #5 BARS AT 12 INCHES OC IN EACH DIRECTION ON EACH FACE. EIGHTEEN-INCH WIDE PIERS AND FOOTINGS SHALL BE REINFORCED WITH #7 BARS AT 12 INCHES OC IN EACH DIRECTION ON EACH FACE.
5. EIGHTEEN-INCH THICK PIERS SHALL REQUIRE TWO STRAPS OVER THE PIPE INSTEAD OF ONE (AS SHOWN).
6. WHEN CONCRETE SUPPORTS ARE REQUIRED TO BE LOCATED WITHIN A STREAM AND ARE NOT COVERED WITH BACKFILL, SEE DRAWING S-19 FOR MODIFICATIONS TO UPSTREAM FACE OF SUPPORT.

AERIAL PIPE CROSSING CONCRETE PIER DETAIL
N.T.S

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

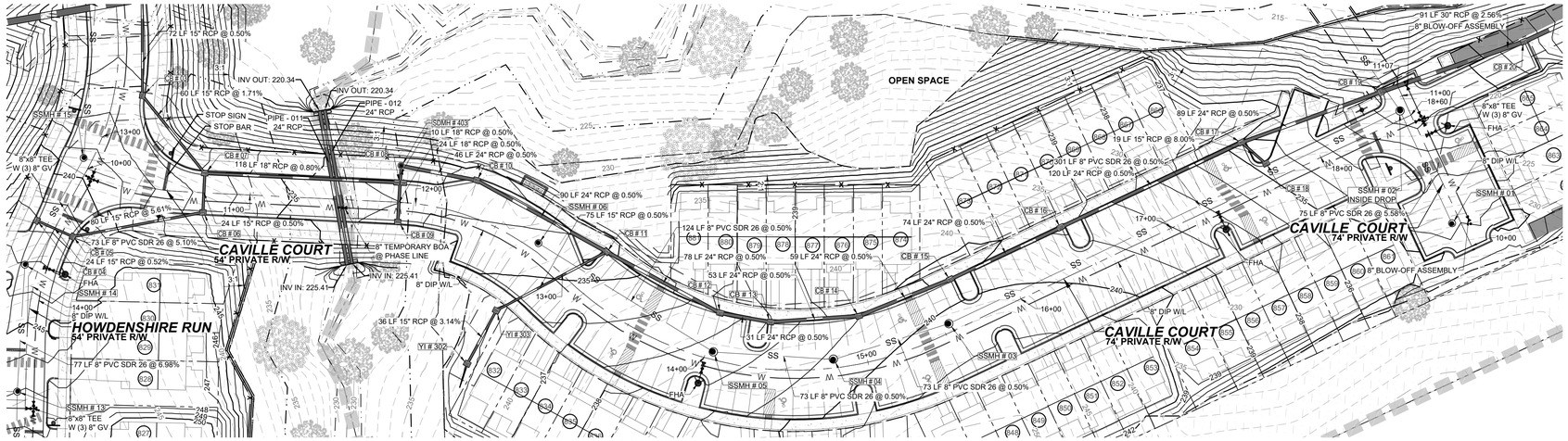
STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED 'CAVILLE COURT' - PLAN & PROFILE

DRAWING SHEET
C-12.0

31 OF 55

PROGRESS PLOT DATE: 08/8/24



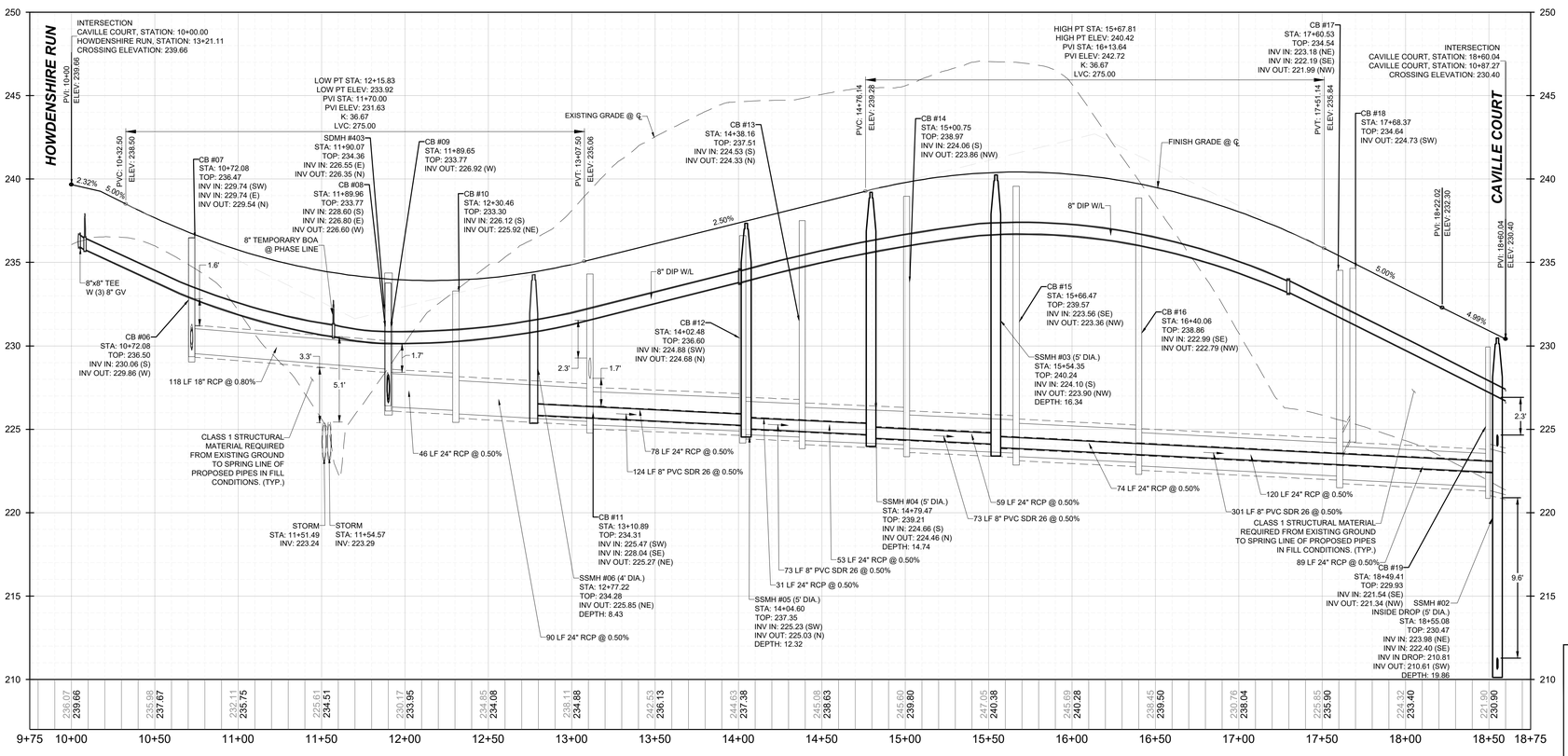
PROPOSED CAVILLE COURT - PLAN

HORIZONTAL: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.



PROPOSED CAVILLE COURT - PROFILE

VERTICAL: 1" = 4'
HORIZONTAL: 1" = 40'

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997

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CITY OF RALEIGH PUBLIC .
CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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CITY OF RALEIGH DEVELOPMENT APPROVAL

RALEIGH WATER REVIEW OFFICER

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

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CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

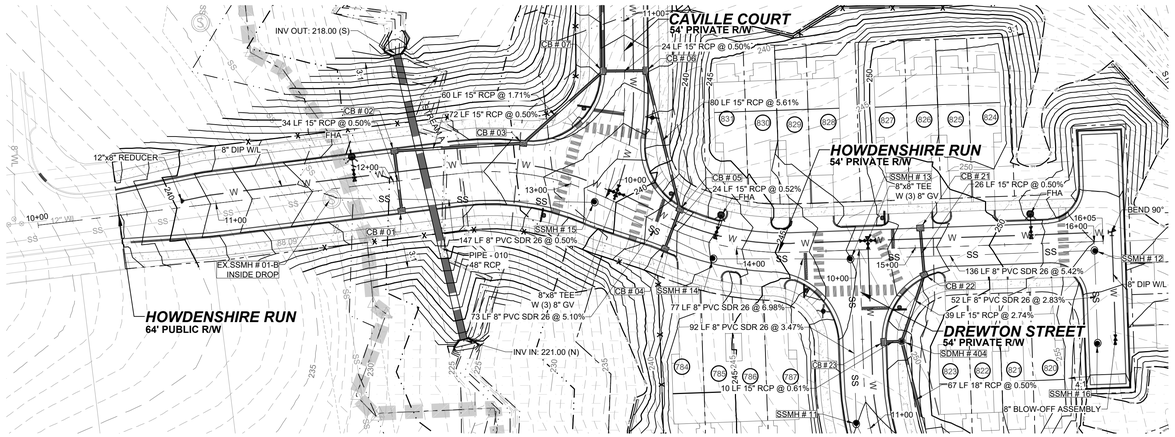
SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 036225 ENGINEER
JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED CAVILLE COURT - PLAN & PROFILE

DRAWING SHEET
C-12.1

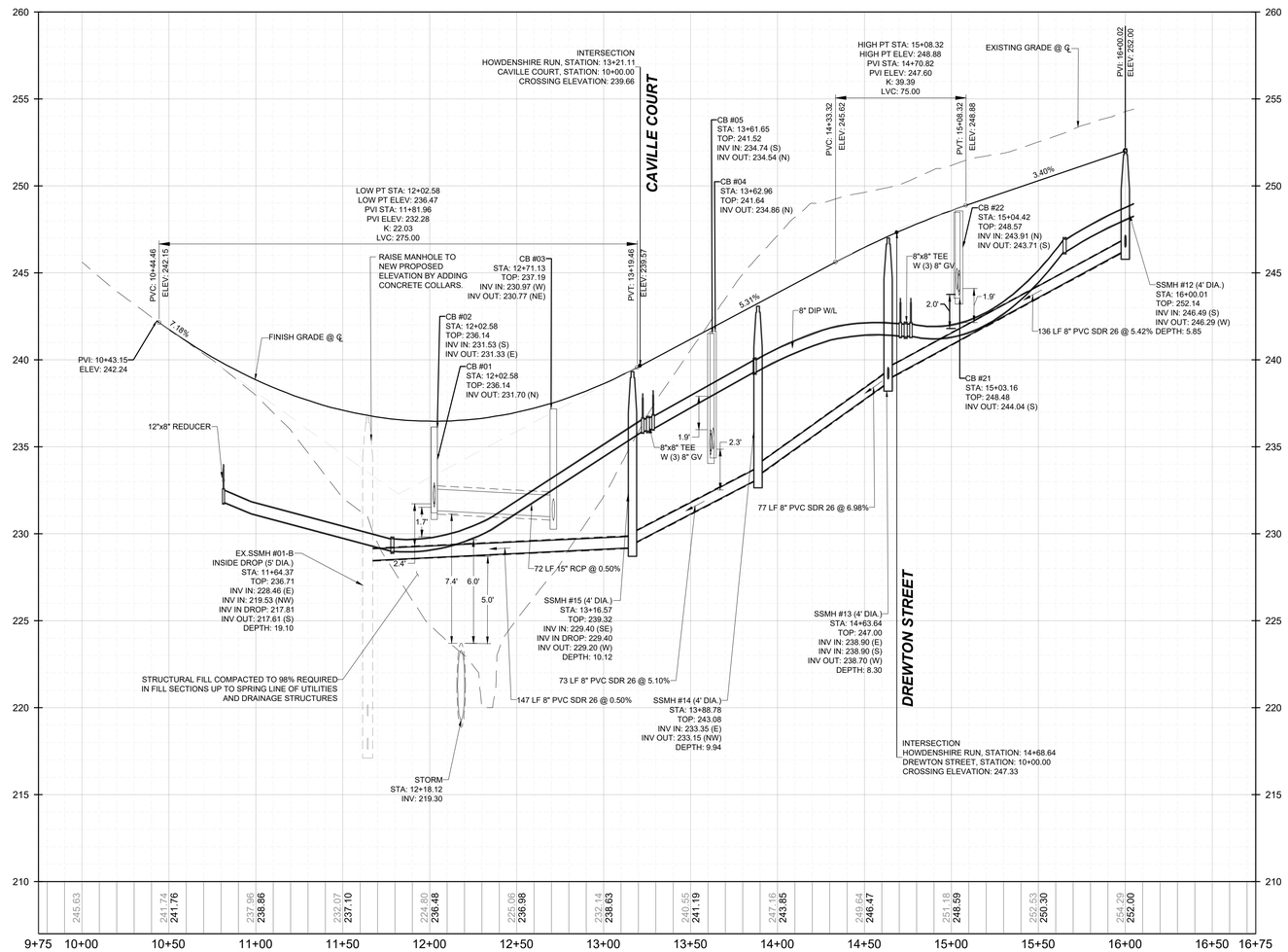


PROPOSED STREET HOWDENSHIRE RUN - PLAN
HORIZONTAL: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.



PROPOSED STREET HOWDENSHIRE RUN- PROFILE
VERTICAL: 1" = 4'
HORIZONTAL: 1" = 40'

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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 # S-4997

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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898

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CITY OF RALEIGH DEVELOPMENT APPROVAL

RALEIGH WATER REVIEW OFFICER

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1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK ENGINEERING GROUP

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED HOWDENSHIRE RUN - PLAN & PROFILE

DRAWING / SHEET
C-12.2

33 OF 55

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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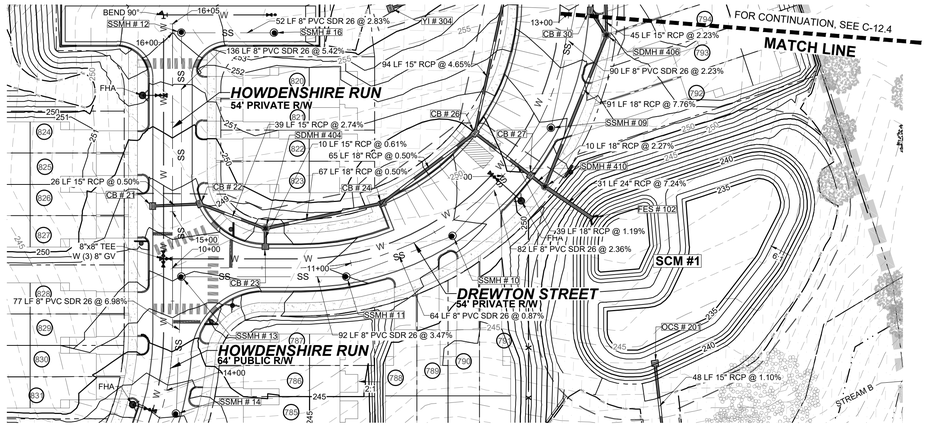
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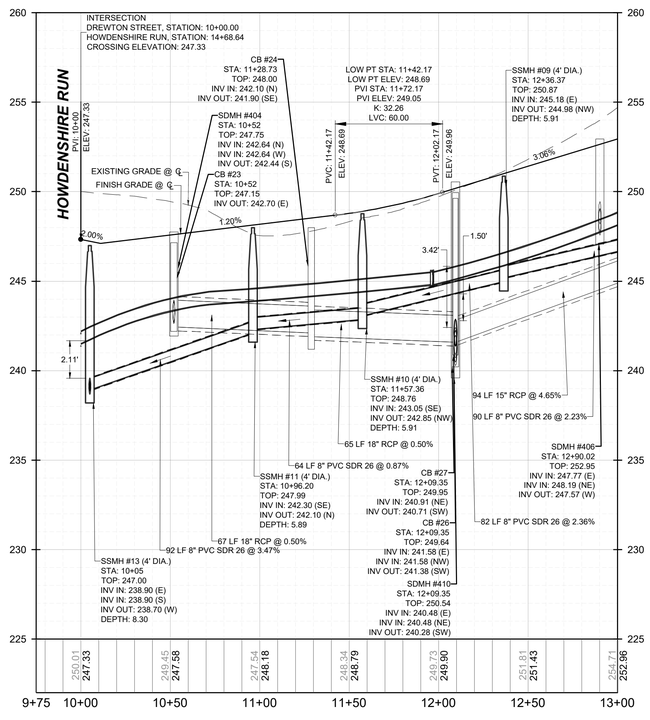
CITY OF RALEIGH DEVELOPMENT APPROVAL

RALEIGH WATER REVIEW OFFICER



PROPOSED DREWTON STREET - PLAN
HORIZONTAL: 1" = 40'

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



PROPOSED DREWTON STREET - PROFILE
VERTICAL: 1" = 4'
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SCALE	AS SHOWN
DESIGNED BY	JWL
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HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED DREWTON - PLAN & PROFILE

DRAWING SHEET
C-12.3

34 OF 55

SITE PERMITTING APPROVAL:

WATER AND SEWER PERMITS (IF APPLICABLE)

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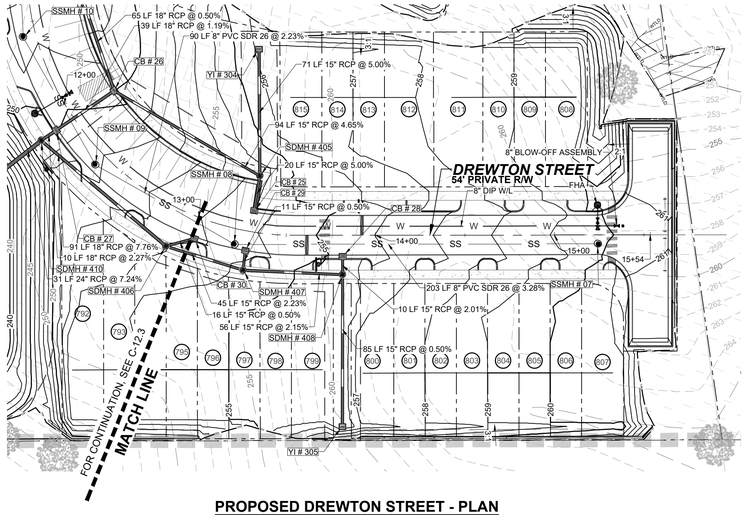
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CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PERMIT # W-3898

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

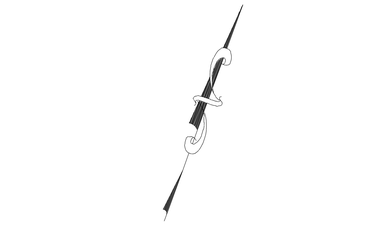
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CITY OF RALEIGH DEVELOPMENT APPROVAL

RALEIGH WATER REVIEW OFFICER



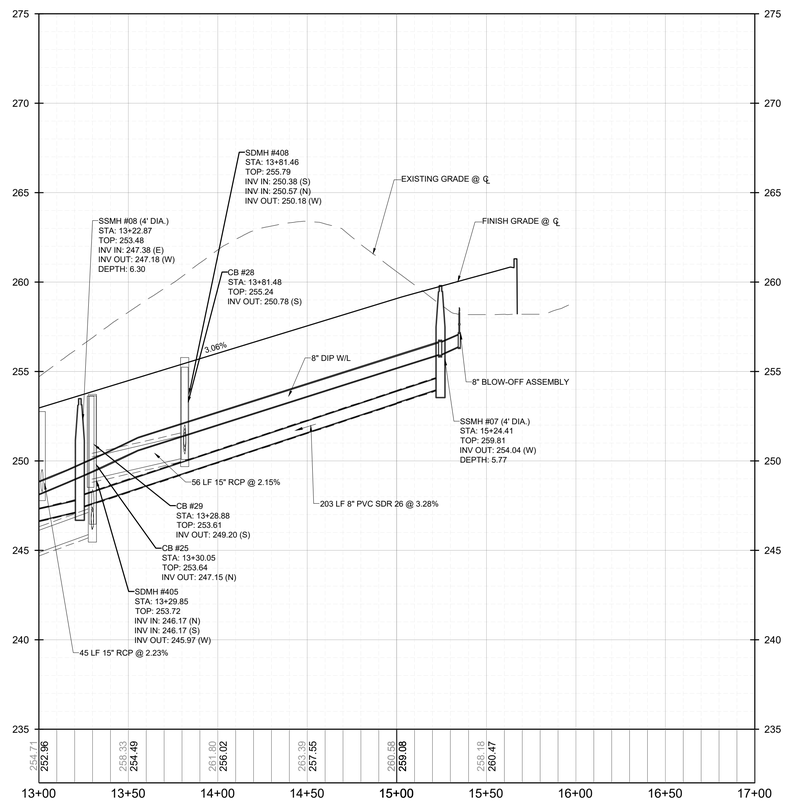
PROPOSED DREWTON STREET - PLAN
HORIZONTAL: 1" = 40'



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.



PROPOSED DREWTON STREET - PROFILE
VERTICAL: 1" = 4'
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2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED DREWTON - PLAN & PROFILE

DRAWING SHEET
C-12.4

35 OF 55

GENERAL PLANTING NOTES:

1. STREET TREES SHALL BE LOCATED WITHIN THE RIGHT OF WAY.
2. STREET TREES SHALL BE PLANTED BY EACH BUILDER PRIOR TO RECEIVING C.O. FOR HOUSE.
3. ALL LANDSCAPING SHOULD BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE'S UDO.
4. ALL PLANT MATERIALS TO COMPLY WITH AMERICAN STANDARD FOR NURSERY STOCK ANSI.Z60.
5. CONTRACTOR ENGAGED IN LANDSCAPE IMPLEMENTATION SHALL BE A LANDSCAPE CONTRACTOR REGISTERED IN THE STATE OF NORTH CAROLINA.
6. SUBSTITUTIONS OF PLANT MATERIALS SPECIFIED CAN ONLY OCCUR WITH PRIOR APPROVAL BY LANDSCAPE ARCHITECT.
7. ALL NEW TREES TO HAVE A 5' DIAMETER SHREDDED HARDWOOD MULCH RING AT 4" DEEP UNLESS OTHERWISE NOTED OR LOCATED IN A PLANT BED PER SITE PLAN.
8. LANDSCAPE CONTRACTOR TO GUARANTEE PLANT MATERIALS FOR A ONE YEAR PERIOD FOLLOWING SUBSTANTIAL COMPLETION.
9. AREAS DAMAGED BY LANDSCAPE CONTRACTOR TO BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER.
10. ALL LANDSCAPE ISLANDS SHALL BE GRADED FOR POSITIVE DRAINAGE WITH NO LOW SPOTS ALLOWING WATER TO BE TRAPPED.
11. ALL ABOVE GROUND UTILITIES MUST BE SCREENED.

NOTE:
CANOPY TREES SHALL BE A MINIMUM OF 8' IN HEIGHT AND HAVE A 2" CALIPER AT TIME OF INSTALLATION UNDERSTORY TREES SHALL BE A MINIMUM OF 6' IN HEIGHT AND HAVE A 1.25" CALIPER AT TIME OF INSTALLATION SHRUBS BE AT LEAST 3 GALLONS IN CONTAINER SIZE, HAVE A MINIMUM HEIGHT OF 18" AND HAVE A MINIMUM SPREAD OF 12-15".

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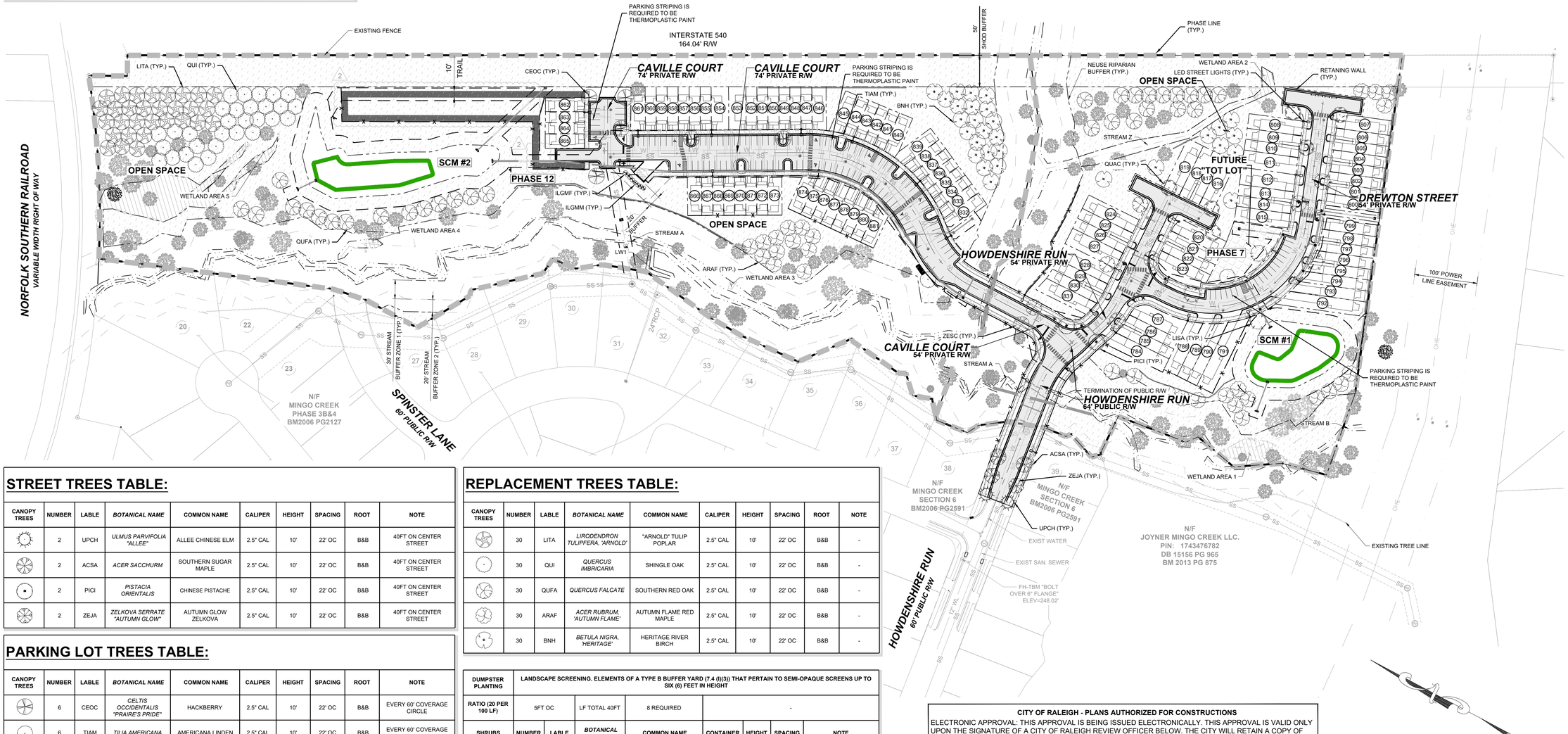
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BY: _____ DATE: _____
ADMINISTRATOR

PARKING LOT TREES SECTION 8.8.C. (P.8-17) 2005 UDO
NO PARKING SPACE SHALL BE MORE THAN 60FT FROM A SHADE CANOPY TREE

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- LED STREET LIGHTS (7,000 LUMENS LED 75 ROADWAY LIGHT) ALUMINUM POLE - HEIGHT 30.



STREET TREES TABLE:

CANOPY TREES	NUMBER	LABLE	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	SPACING	ROOT	NOTE
	2	UPCH	*ULMUS PARVIFOLIA "ALLEE"*	ALLEE CHINESE ELM	2.5" CAL	10'	22' OC	B&B	40FT ON CENTER STREET
	2	ACSA	*ACER SACCHURM*	SOUTHERN SUGAR MAPLE	2.5" CAL	10'	22' OC	B&B	40FT ON CENTER STREET
	2	PICI	*PISTACIA ORIENTALIS*	CHINESE PISTACHE	2.5" CAL	10'	22' OC	B&B	40FT ON CENTER STREET
	2	ZEJA	*ZELKOVA SERRATE "AUTUMN GLOW"*	AUTUMN GLOW ZELKOVA	2.5" CAL	10'	22' OC	B&B	40FT ON CENTER STREET

PARKING LOT TREES TABLE:

CANOPY TREES	NUMBER	LABLE	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	SPACING	ROOT	NOTE
	6	CEOC	*CELTIS OCCIDENTALIS "PRAIRE'S PRIDE"*	HACKBERRY	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	TIAM	*TILIA AMERICANA*	AMERICANA LINDEN	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	QUAC	*QUERCUS ACUTISSIMA*	SAWTOOTH OAK	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	ZESC	*ZELKOVA SCHEIDERIANA*	SCHNEIDER ZELKOVA	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	LISA	*LIQUIDAMBAR STYRACIFLUA "ROTUNDILOBA"*	FRUITLESS SWEET GUM	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE

REPLACEMENT TREES TABLE:

CANOPY TREES	NUMBER	LABLE	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	SPACING	ROOT	NOTE
	30	LITA	*LIRODENDRON TULIPFERA, 'ARNOLD'*	"ARNOLD" TULIP POPLAR	2.5" CAL	10'	22' OC	B&B	-
	30	QUI	*QUERCUS IMBRICARIA*	SHINGLE OAK	2.5" CAL	10'	22' OC	B&B	-
	30	QUFA	*QUERCUS FALCATE*	SOUTHERN RED OAK	2.5" CAL	10'	22' OC	B&B	-
	30	ARAF	*ACER RUBRUM, 'AUTUMN FLAME'*	AUTUMN FLAME RED MAPLE	2.5" CAL	10'	22' OC	B&B	-
	30	BNH	*BETULA NIGRA, 'HERITAGE'*	HERITAGE RIVER BIRCH	2.5" CAL	10'	22' OC	B&B	-

DUMPSTER PLANTING	LANDSCAPE SCREENING. ELEMENTS OF A TYPE B BUFFER YARD (7.4 (I)(3)) THAT PERTAIN TO SEMI-OPAQUE SCREENS UP TO SIX (6) FEET IN HEIGHT							
RATIO (20 PER 100 LF)	5FT OC		LF TOTAL 40FT	8 REQUIRED	-			
SHRUBS	NUMBER	LABLE	BOTANICAL NAME	COMMON NAME	CONTAINER	HEIGHT	SPACING	NOTE
	7	ILGMF	*ILEX GRABRA 'GREEN MAGIC'*	GREEN MAGIC INKBERRY HOLLY (FEMALE)	5 GAL	4 FT	5FT OC	FEMALE VARIETY FOR BERRIES
	1	ILGMM	*ILEX GRABRA 'GREEN MAGIC'*	GREEN MAGIC INKBERRY HOLLY (MALE)	6 GAL	4 FT	6FT OC	MALE VARIETY TO BERRY PRODUCTION
TOTAL	8							

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS
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RALEIGH WATER REVIEW OFFICER _____

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 60 ft.

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ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	DESIGNED BY	JWL	DRAWN BY	SRG	CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
LANDSCAPE PLAN

DRAWING SHEET
C-13.0

GENERAL PLANTING NOTES:

1. STREET TREES SHALL BE LOCATED WITHIN THE RIGHT OF WAY.
2. STREET TREES SHALL BE PLANTED BY EACH BUILDER PRIOR TO RECEIVING C.O. FOR HOUSE.
3. ALL LANDSCAPING SHOULD BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE'S UDO.
4. ALL PLANT MATERIALS TO COMPLY WITH AMERICAN STANDARD FOR NURSERY STOCK ANSI.Z60.
5. CONTRACTOR ENGAGED IN LANDSCAPE IMPLEMENTATION SHALL BE A LANDSCAPE CONTRACTOR REGISTERED IN THE STATE OF NORTH CAROLINA.
6. SUBSTITUTIONS OF PLANT MATERIALS SPECIFIED CAN ONLY OCCUR WITH PRIOR APPROVAL BY LANDSCAPE ARCHITECT.
7. ALL NEW TREES TO HAVE A 5' DIAMETER SHREDDED HARDWOOD MULCH RING AT 4" DEEP UNLESS OTHERWISE NOTED OR LOCATED IN A PLANT BED PER SITE PLAN.
8. LANDSCAPE CONTRACTOR TO GUARANTEE PLANT MATERIALS FOR A ONE YEAR PERIOD FOLLOWING SUBSTANTIAL COMPLETION.
9. AREAS DAMAGED BY LANDSCAPE CONTRACTOR TO BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER.
10. ALL LANDSCAPE ISLANDS SHALL BE GRADED FOR POSITIVE DRAINAGE WITH NO LOW SPOTS ALLOWING WATER TO BE TRAPPED.
11. ALL ABOVE GROUND UTILITIES MUST BE SCREENED.

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- LED STREET LIGHTS (7,000 LUMENS LED 75 ROADWAY LIGHT) ALUMINUM POLE - HEIGHT 30.

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.

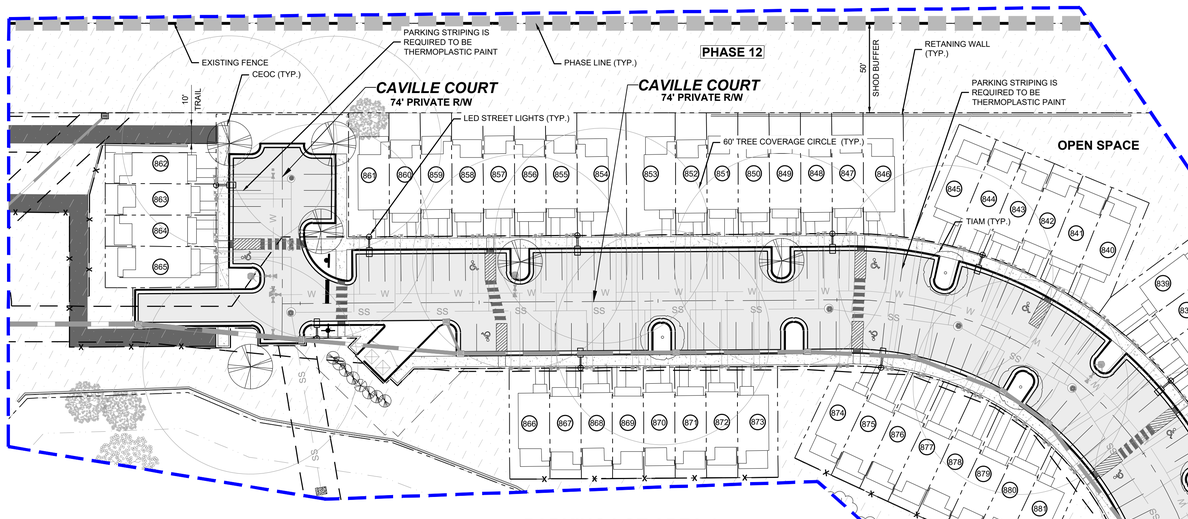
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

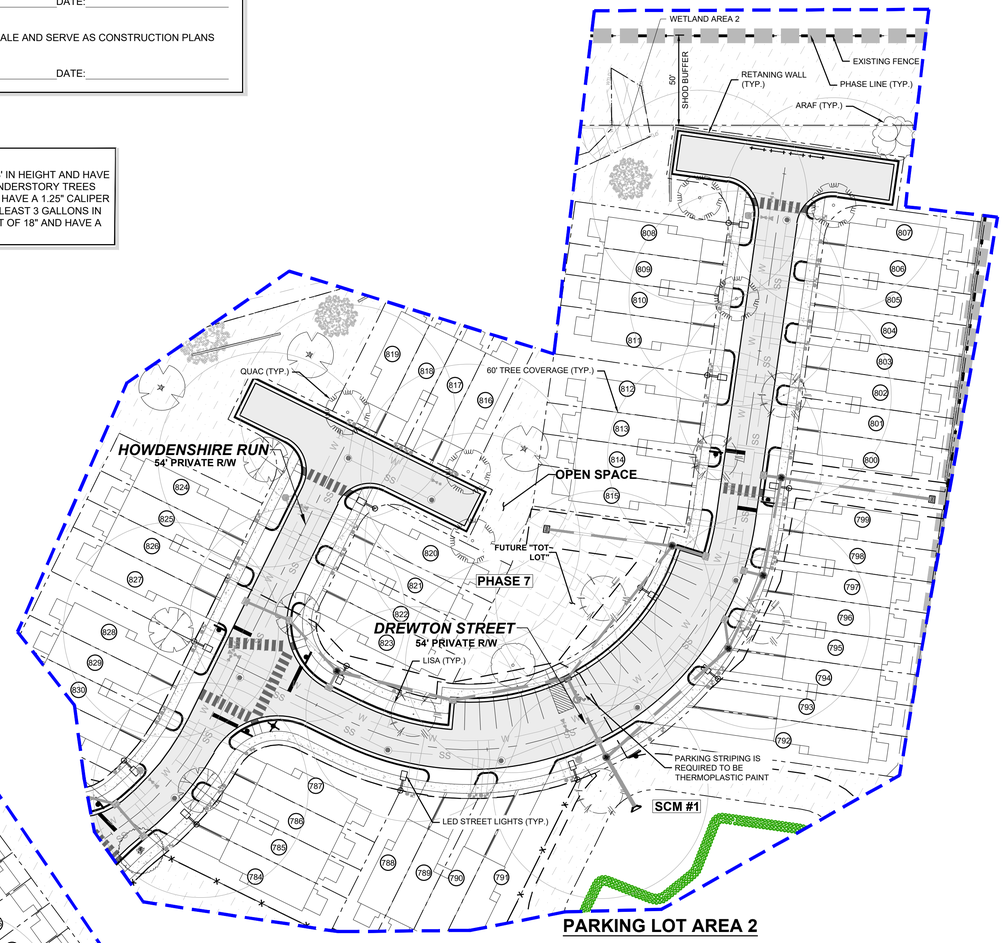
BY: _____ DATE: _____
ADMINISTRATOR

NOTE:
CANOPY TREES SHALL BE A MINIMUM OF 8' IN HEIGHT AND HAVE A 2" CALIPER AT TIME OF INSTALLATION UNDERSTORY TREES SHALL BE A MINIMUM OF 6' IN HEIGHT AND HAVE A 1.25" CALIPER AT TIME OF INSTALLATION SHRUBS BE AT LEAST 3 GALLONS IN CONTAINER SIZE, HAVE A MINIMUM HEIGHT OF 18" AND HAVE A MINIMUM SPREAD OF 12-15".

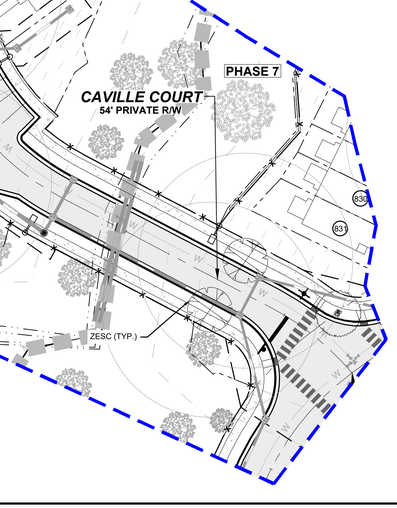
PARKING LOT TREES SECTION 8.8.C. (P.8-17) 2005 UDO
NO PARKING SPACE SHALL BE MORE THAN 60FT FROM A SHADE CANOPY TREE



PARKING LOT AREA 1



PARKING LOT AREA 2



OPEN SPACE

PARKING LOT TREES TABLE:

CANOPY TREES	NUMBER	LABLE	*BOTANICAL NAME*	COMMON NAME	CALIPER	HEIGHT	SPACING	ROOT	NOTE
	6	CEOC	*CELTIS OCCIDENTALIS "PRAIRE'S PRIDE"*	HACKBERRY	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	TIAM	*TILIA AMERICANA*	AMERICANA LINDEN	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	QUAC	*QUERCUS ACUTISSIMA*	SAWTOOTH OAK	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	ZESC	*ZELKOVA SCHEIDERIANA*	SCHNEIDER ZELKOVA	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE
	6	LISA	*LIQUIDAMBAR STYRACIFLUA "ROTUNDILOBA"*	FRUITLESS SWEET GUM	2.5" CAL	10'	22' OC	B&B	EVERY 60' COVERAGE CIRCLE

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

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST PROCEED IN ACCORDANCE WITH THE PLANS KEPT ON FILE WITH THE CITY. THIS ELECTRONIC APPROVAL MAY NOT BE EDITED ONCE ISSUED. ANY MODIFICATION TO THIS APPROVAL ONCE ISSUED WILL INVALIDATE THIS APPROVAL.

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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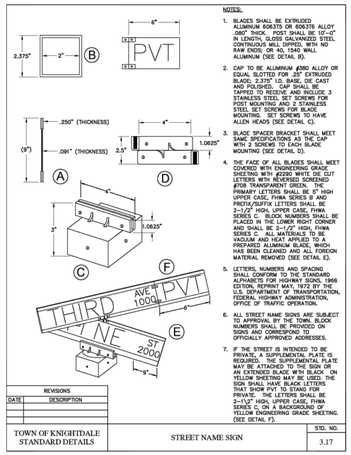
STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

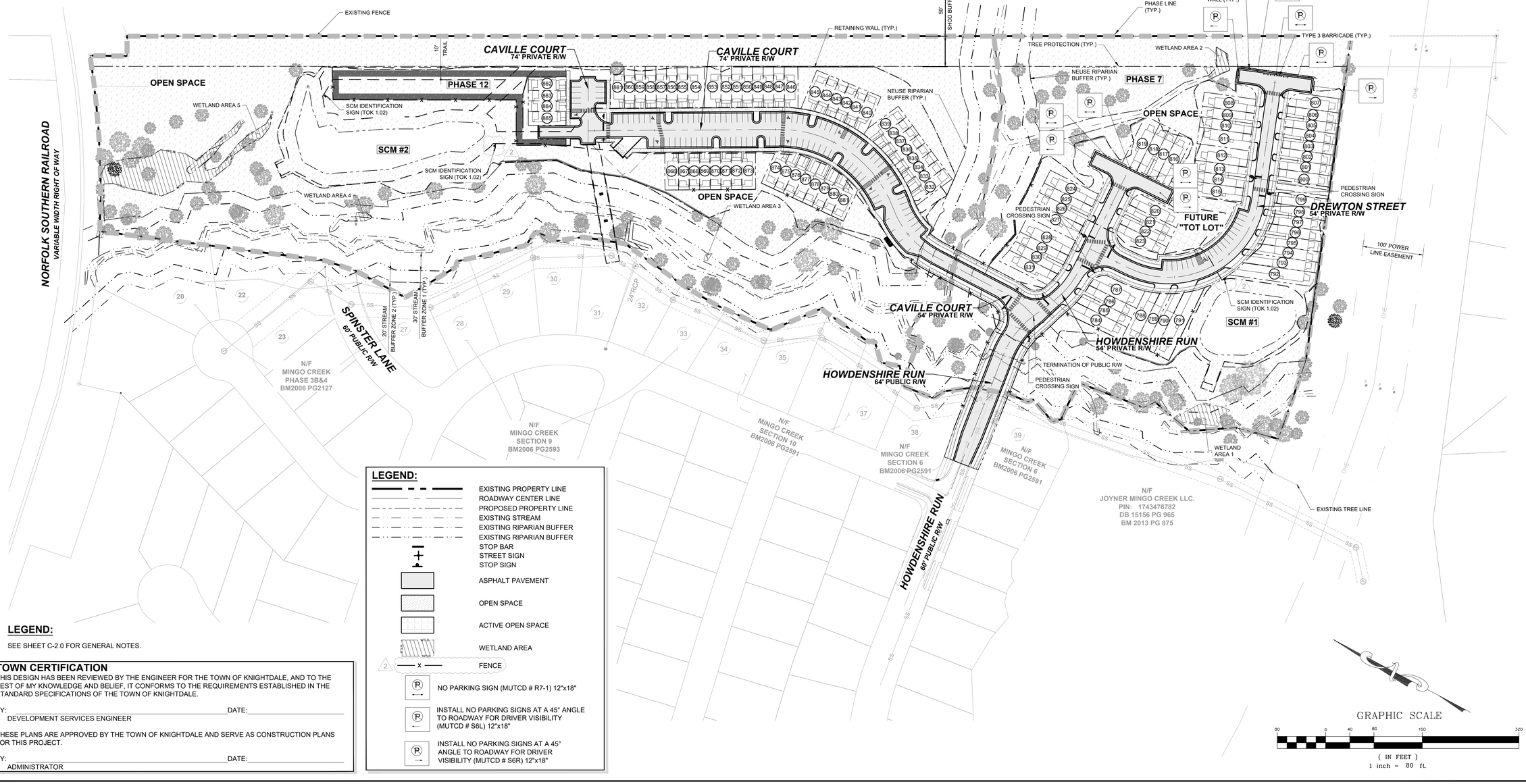
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PARKING LOT LANDSCAPE

DRAWING SHEET
C-13.1

37 OF 55

PROGRESS PLOT DATE: 08/8/24





LEGEND:

SEE SHEET C-2.0 FOR GENERAL NOTES.

LEGEND:

- EXISTING PROPERTY LINE
- ROADWAY CENTER LINE
- PROPOSED PROPERTY LINE
- EXISTING STREAM
- EXISTING RIPARIAN BUFFER
- EXISTING RIPARIAN BUFFER
- STOP BAR
- STREET SIGN
- STOP SIGN
- ASPHALT PAVEMENT
- OPEN SPACE
- ACTIVE OPEN SPACE
- WETLAND AREA
- FENCE
- NO PARKING SIGN (MUTCD # R7-1) 12"x18"
- INSTALL NO PARKING SIGNS AT A 45° ANGLE TO ROADWAY FOR DRIVER VISIBILITY (MUTCD # S6L) 12"x18"
- INSTALL NO PARKING SIGNS AT A 45° ANGLE TO ROADWAY FOR DRIVER VISIBILITY (MUTCD # S6R) 12"x18"

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

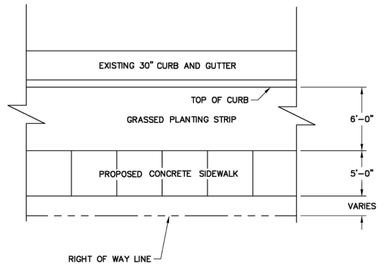
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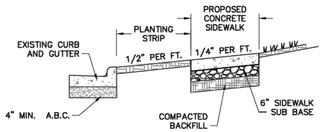
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SIGNAGE PLAN

DRAWING SHEET
C-14.0

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PLAN VIEW



TYPICAL SECTION

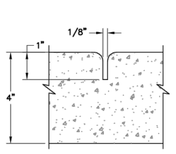
NOTES:

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

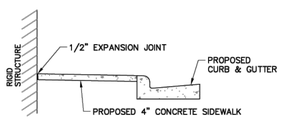
REVISIONS	
DATE	DESCRIPTION

1 of 2

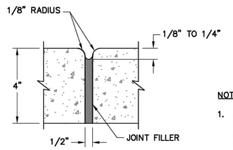
TOWN OF KNIGHTDALE STANDARD DETAILS	CONCRETE SIDEWALKS	STD. NO. 4.04



GROOVE JOINT IN SIDEWALK



DETAILS SHOWING EXPANSION JOINTS IN CONCRETE SIDEWALK



TRANSVERSE EXPANSION JOINT IN SIDEWALK

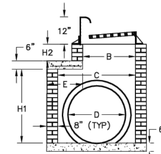
NOTES:

1. A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS NOT TO EXCEED 50' AND MATCHING EXPANSION/CONSTRUCTION JOINT IN ADJACENT CURB. A SEALED 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.
2. SIDEWALK AT DRIVEWAY ENTRANCES TO BE 6" THICK.
3. WIDTH OF SIDEWALK ON THOROUGHFARE STREETS SHALL BE A MINIMUM OF 5'. WIDTH OF SIDEWALKS IN THE CENTRAL BUSINESS DISTRICT WILL BE DETERMINED BY THE TOWN ENGINEER.
4. WIDTH OF SIDEWALKS ON NON-THOROUGHFARE STREETS SHALL BE A MINIMUM OF 5' UNLESS OTHERWISE SPECIFIED BY THE TOWN'S UNIFIED DEVELOPMENT ORDINANCE.
5. SIDEWALK TO BE POURED TO END OF RADIUS AT INTERSECTING STREETS.
6. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3600 PSI IN 28 DAYS.

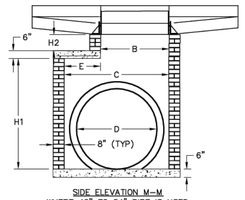
REVISIONS	
DATE	DESCRIPTION

2 of 2

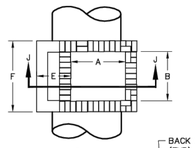
TOWN OF KNIGHTDALE STANDARD DETAILS	CONCRETE SIDEWALKS	STD. NO. 4.04



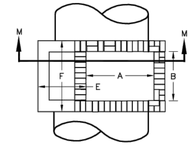
END ELEVATION J-J WHERE 30" TO 36" PIPE IS USED



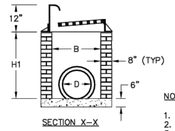
SIDE ELEVATION M-M WHERE 42" TO 54" PIPE IS USED



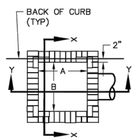
PLAN



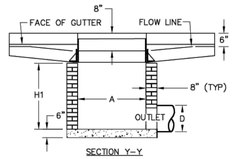
PLAN



SECTION X-X



PLAN VIEW



SECTION Y-Y

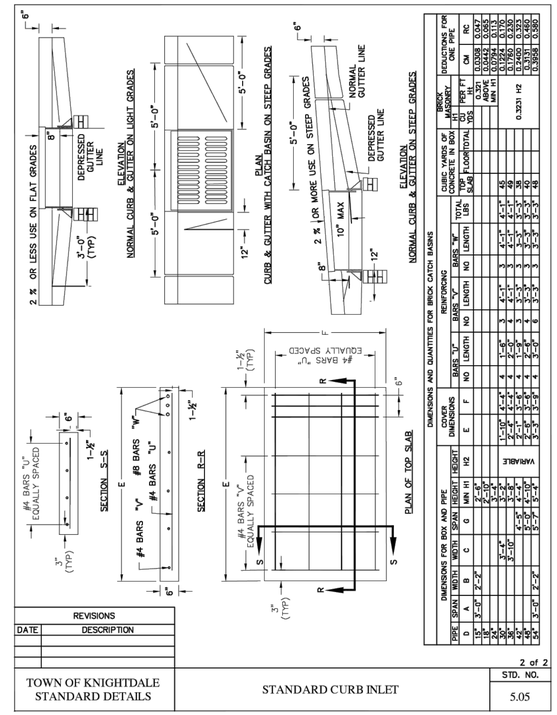
NOTES:

1. MORTAR JOINTS SHALL BE 1/2" THICK.
2. ALL CONCRETE SHALL BE 3000 P.S.I.
3. BASE SLABS SHALL BE FORMED PRIOR TO PLACING OF CONCRETE.
4. USETYPE "A" GRATE AT SAG POINTS, OTHERWISE USE TYPE "B" OR "C" FOR THE APPROPRIATE FLOW DIRECTION.
5. MASONRY UNITS MAY BE JUMBO BRICK, CONCRETE BRICK OR SOLID CONCRETE BLOCK.
6. ALL WALLS GREATER THAN 6' IN DEPTH SHALL BE CONSTRUCTED 12" THICK

REVISIONS	
DATE	DESCRIPTION

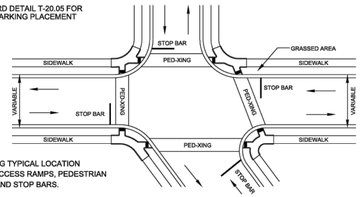
1 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD CURB INLET	STD. NO. 5.05

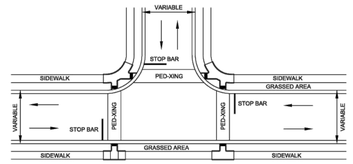


| DIMENSIONS FOR BOX AND PIPE | | |

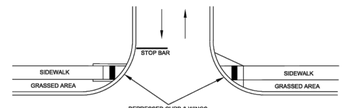
NOTE: SEE STANDARD DETAIL T-20.05 FOR PAVEMENT MARKING PLACEMENT



DETAIL SHOWING TYPICAL LOCATION OF SIDEWALK ACCESS RAMPS, PEDESTRIAN CROSSWALKS AND STOP BARS.



DETAIL SHOWING TYPICAL LOCATION OF SIDEWALK ACCESS RAMPS PEDESTRIAN CROSSWALKS AND STOP BARS FOR TEE INTERSECTION.



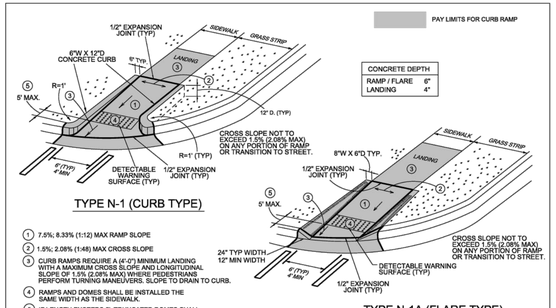
FOR RAMPS AT ASPHALT TO ASPHALT STREET TYPE DRIVEWAYS OR PRIVATE STREET TIE IN.

SHEET 1 OF 8

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/03/20	NOT TO SCALE
	CURB RAMPS	
	T-20.01.1	

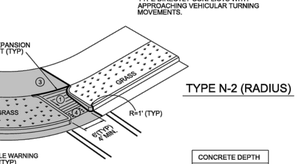
PAY LIMITS FOR CURB RAMP



CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"

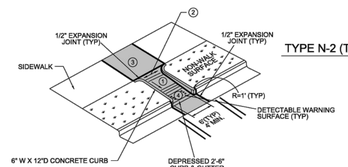
TYPE N-1 (CURB TYPE)

1. 7.5%; 8.33% (1:12) MAX RAMP SLOPE
2. 1.5%; 2.08% (1:48) MAX CROSS SLOPE
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 1.5% (2.08% MAX) WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
5. IF LENGTH EXCEEDS 5', TRUNCATED DOMES SHALL BE INSTALLED ALONG THE BACK OF THE CURB COVERING THE FULL WIDTH OF THE RAMP.



TYPE N-2 (RADIUS)

CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"



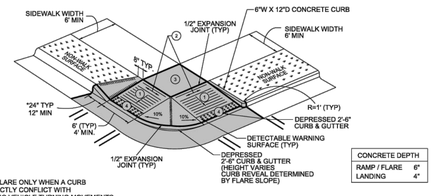
TYPE N-2 (TEE INTERSECTION)

SHEET 2 OF 9

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/03/20	NOT TO SCALE
DATE: 12/20/22	CURB RAMPS (NEW DEVELOPMENT)	
	T-20.01.2	

PAY LIMITS FOR CURB RAMP

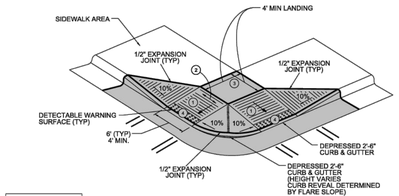


NOTE: * USE SMALL FLARE ONLY WHEN A CURB WOULD DIRECTLY CONFLICT WITH APPROACHING VEHICLE TURNING MOVEMENTS.

CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"

TYPE N-3

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.



CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"

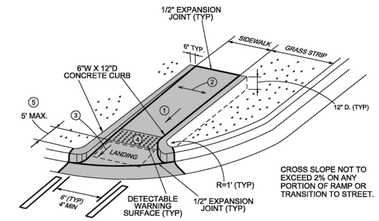
TYPE N-3A
(COMMERCIAL/RETAIL USE)

SHEET 3 OF 8

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/03/20	NOT TO SCALE
	CURB RAMPS (NEW DEVELOPMENT)	
	T-20.01.3	

PAY LIMITS FOR CURB RAMP

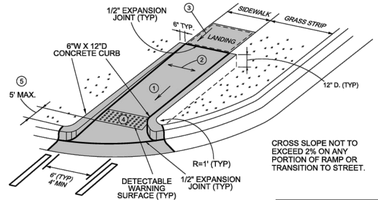


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP OR TRANSITION TO STREET.

TYPE N-4

1. SLOPE TO MEET GRADE, 15' MAXIMUM.
2. CROSS SLOPE: 2.00%
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
5. IF LENGTH EXCEEDS 5', TRUNCATED DOMES SHALL BE INSTALLED ALONG THE BACK OF THE CURB COVERING THE FULL WIDTH OF THE RAMP.

CONCRETE DEPTH	
RAMP	6"
LANDING	4"



CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP OR TRANSITION TO STREET.

TYPE N-4A

SHEET 4 OF 8

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/03/20	NOT TO SCALE
	CURB RAMPS (NEW DEVELOPMENT)	
	T-20.01.4	

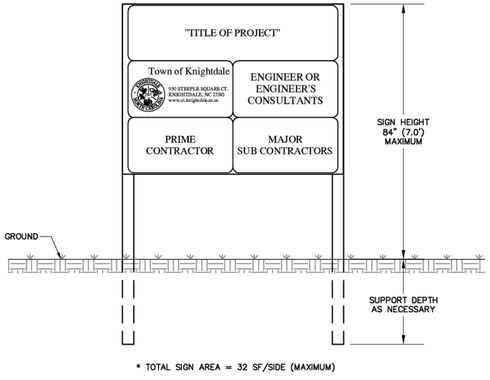
TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

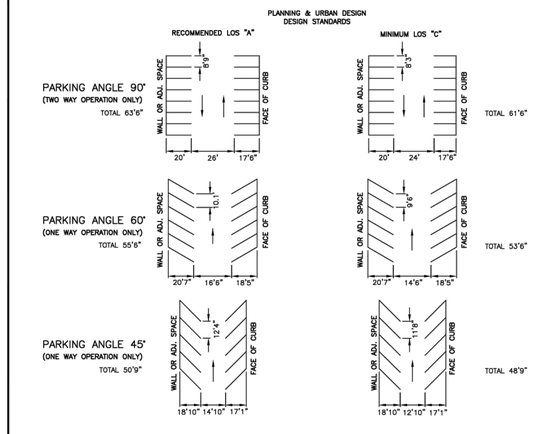
BY: _____ DATE: _____
ADMINISTRATOR



* TOTAL SIGN AREA = 32 SF/SIDE (MAXIMUM)

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	PROJECT IDENTIFICATION SIGN	STD. NO. 1.01

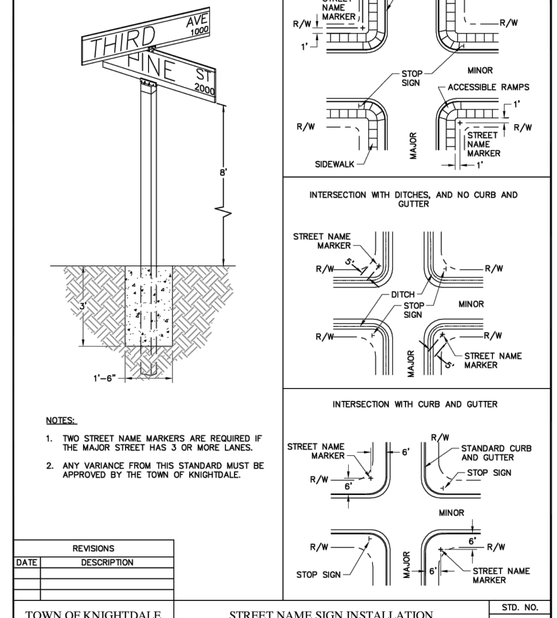


NOTE:

1. FOR ACCESSIBLE PARKING STANDARDS SEE TOWN UNIFIED DEVELOPMENT ORDINANCE.
2. PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT TO TOWN STANDARDS.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	PARKING STANDARDS	STD. NO. 3.20



NOTES:

1. TWO STREET NAME MARKERS ARE REQUIRED IF THE MAJOR STREET HAS 3 OR MORE LANES.
2. ANY VARIANCE FROM THIS STANDARD MUST BE APPROVED BY THE TOWN OF KNIGHTDALE.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STREET NAME SIGN INSTALLATION LOCATIONS	STD. NO. 3.16

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

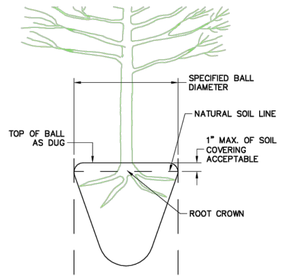
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SITE DETAILS

DRAWING SHEET
D-1.1

40 OF 55



NOTE:

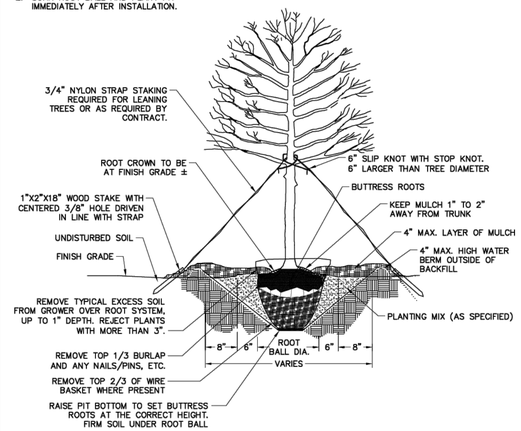
A ROOT COLLAR EXCAVATION FOR ALL TREES SPECIFIED WILL BE DONE BY THE TOWN TO ENSURE THAT TREES WERE NOT PLANTED/GROWN TOO DEEPLY AT SOURCE (NURSERY). LANDSCAPE CONTRACTOR SHALL HAVE SUPPLIER MARK GROUND LEVEL LINE ABOVE ROOT BALL IF TOWN DETERMINES THAT THERE IS EXCESSIVE SOIL OVER THE ROOT CROWN, THESE TREES WILL BE REJECTED.

REVISIONS	
DATE	DESCRIPTION

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

NOTES:

1. REMOVE WIRE OR NYLON TWINE FROM BALL.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.

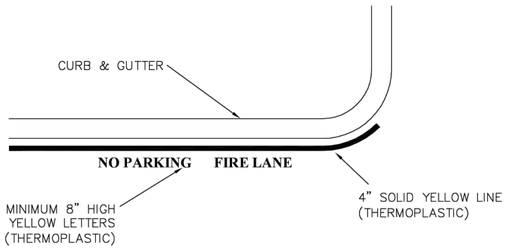


ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK
(AMSI, 1990, PART 1, "SHADE AND FLOWERING TREES")

FOR EXAMPLE: CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
2"	12–14'	16'	24"	16"
3"	14–16'	18'	32"	21"

REVISIONS	
DATE	DESCRIPTION

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



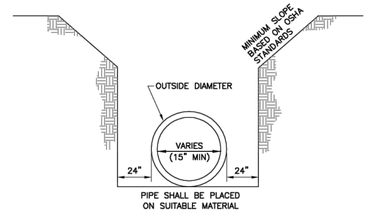
TYPICAL FIRE LANE PAVEMENT MARKING DETAIL

REVISIONS	
DATE	DESCRIPTION

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

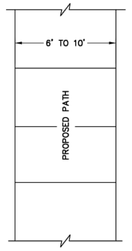
NOTES:

1. A MINIMUM OF 24" FROM OUTSIDE DIAMETER OF PIPE TO SIDE OF TRENCH MUST BE ALLOWED FOR COMPACTION OF FILL MATERIAL. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE AND THOROUGHLY COMPACTED INTO PLACE.
2. ALL BACKFILL MATERIAL SHALL HAVE AN IN PLACE COMPACTED DENSITY OF AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY.
3. THE FINAL 24" OF BACKFILL MATERIAL SHALL BE COMPACTED TO 100% OF THE STANDARD PROCTOR MAXIMUM DENSITY.
4. ALL TRENCHING OPERATIONS SHALL MEET OSHA STANDARDS.
5. BACKFILL MATERIAL BENEATH ROADWAY SHALL BE SELECT BACKFILL MATERIAL.

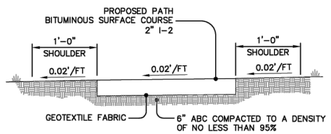


REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	TRENCH FOR STORM DRAIN PIPES	STD. NO. 5.02



PLAN VIEW



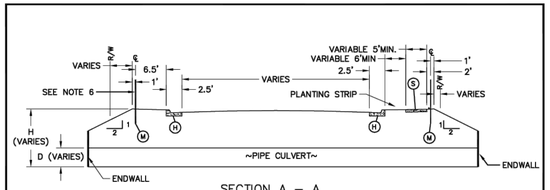
TYPICAL SECTION

NOTES:

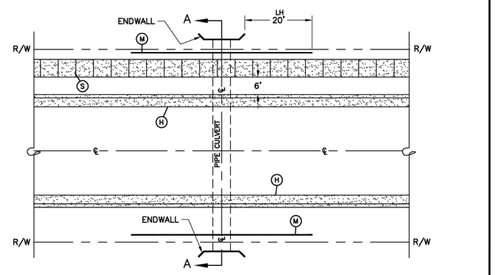
1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.

REVISIONS	
DATE	DESCRIPTION

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



SECTION A – A



PLAN VIEW

LH = DISTANCE FROM END OF WINGWALL TO END OF HANDRAIL.

(H) 2'-6" CURB AND GUTTER, STANDARD DETAIL 4.01
(M) HANDRAIL, STANDARD DETAIL 4.13
(S) 5'-0" SIDEWALK, MINIMUM STANDARD DETAIL 4.04

REVISIONS	
DATE	DESCRIPTION

1 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	CULVERT CROSSING ON RESIDENTIAL AND COMMERCIAL STREETS	STD. NO. 5.01

NOTES:

1. UNLESS OTHERWISE DETERMINED BY THE TOWN ENGINEER, THE MEASURES ILLUSTRATED SHALL BE USED WHEN CULVERT DIAMETER, D, IS GREATER THAN OR EQUAL TO 24 INCHES AND WHEN THE DIFFERENCE IN ELEVATION BETWEEN THE CULVERT INVERT AND THE TOP OF SLOPE, H, IS GREATER THAN OR EQUAL TO 5 FEET.
2. INSTALLATION OF 2'-6" CURB AND GUTTER MAY NOT BE REQUIRED WHEN AN ADEQUATE CLEAR ZONE IS PROVIDED FOR VEHICLES WITH A MAXIMUM OF 6:1 SLOPE (SEE TABLE 1).
3. INSTALLATION OF HANDRAIL MAY NOT BE REQUIRED WHEN A 10-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE SIDEWALK WITH A MAXIMUM OF 6:1 SLOPE. WHERE NO SIDEWALK IS REQUIRED, INSTALLATION OF HANDRAIL MAY NOT BE REQUIRED WHEN A 15-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE CURB WITH A MAXIMUM OF 6:1 SLOPE.
4. FOR CULVERT CROSSINGS WITHOUT ENDWALLS, LH SHALL BE MEASURED FROM THE OUTSIDE OF THE NEAREST WALL OF THE CULVERT BARREL.
5. WHEN NECESSARY, AS DETERMINED BY THE TOWN ENGINEER, ADDITIONAL MEASURES MAY BE REQUIRED.
6. INSTALLATION OF HANDRAIL IS REQUIRED ON BOTH SIDES OF STREET IF SIDEWALK IS REQUIRED ON BOTH SIDES.
7. INSTALLATION OF HANDRAIL IS REQUIRED ON BOTH SIDES OF STREET IF NO SIDEWALK IS REQUIRED EXCEPT WHEN A 15-FOOT PEDESTRIAN CLEAR ZONE IS PROVIDED BEHIND THE CURB WITH A MAXIMUM OF 6:1 SLOPE.
8. INSTALLATION OF HANDRAIL IS REQUIRED ON THE SIDEWALK SIDE OF STREET IF SIDEWALK IS ONLY REQUIRED ON ONE SIDE OF STREET.
9. DESIGN ADT IS CALCULATED ASSUMING A TRIP GENERATION OF 13 DAILY TRIPS PER SINGLE FAMILY DWELLING UNIT.

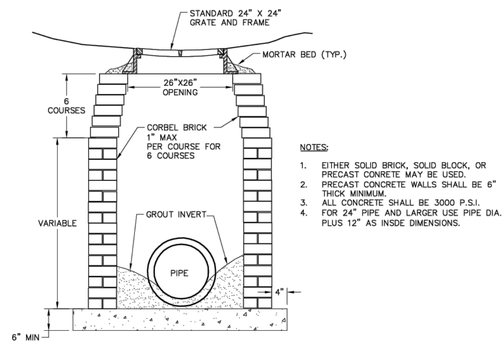
TABLE 1.
CLEAR ZONE DISTANCES
LOCAL, COLLECTOR, AND COMMERCIAL STREETS

DESIGN ADT	CLEAR ZONE FROM EDGE OF PAVEMENT	
	TANGENT SECTION	CURVE (WITHIN 125' OF CULVERT)
UNDER 750	10'	15'
750 – 1500	12'	18'
1501 – 6000	14'	21'
OVER 6000	16'	24'

REVISIONS	
DATE	DESCRIPTION

2 of 2

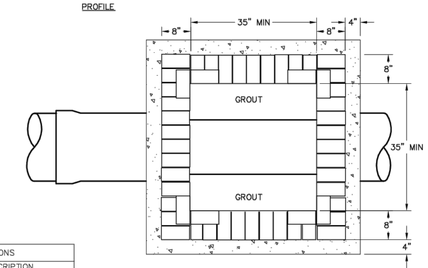
TOWN OF KNIGHTDALE STANDARD DETAILS	CULVERT CROSSING ON RESIDENTIAL AND COMMERCIAL STREETS	STD. NO. 5.01



NOTES:

1. EITHER SOLID BRICK, SOLID BLOCK, OR PRECAST CONRETE MAY BE USED.
2. PRECAST CONCRETE WALLS SHALL BE 6" THICK MINIMUM.
3. ALL CONCRETE SHALL BE 3000 P.S.I.
4. FOR 24" PIPE AND LARGER USE PIPE DIA. PLUS 12" AS INSDE DIMENSIONS.

PROFILE



PLAN VIEW

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD DROP INLET WITH GRATE AND FRAME	STD. NO. 5.04

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

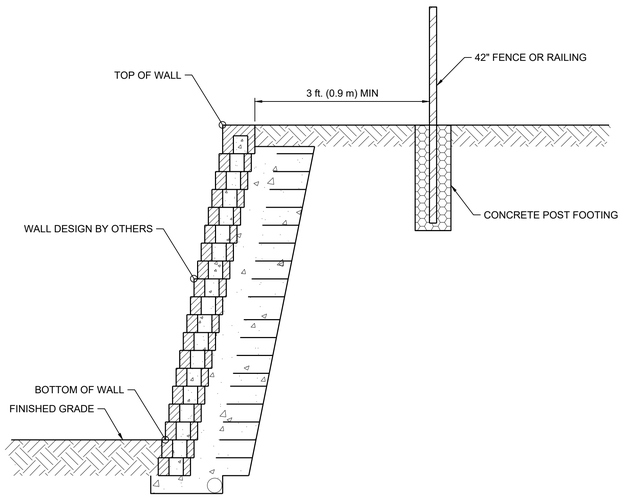
STRONGROCK
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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

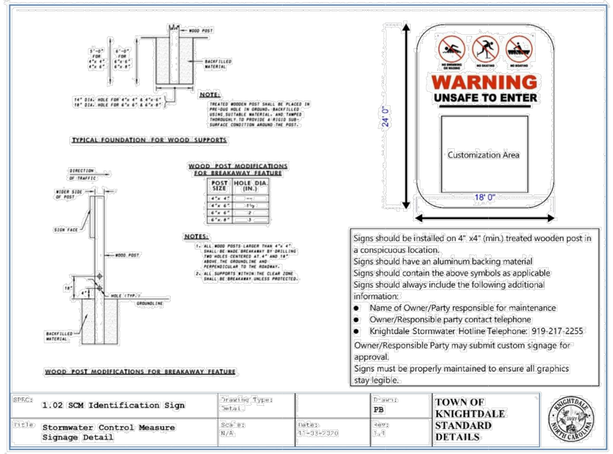
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SITE DETAILS

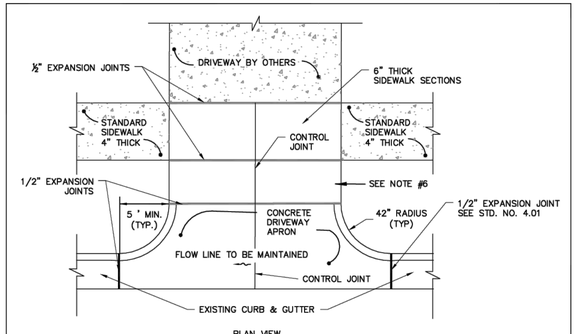
DRAWING SHEET
D-1.2

41 OF 55



2 D-1.3 **TYPICAL RETAINING WALL DETAIL**
SCALE: N.T.S





NOTES:

1. RESIDENTIAL DRIVEWAYS TO BE 12' TO 18'.
2. COMMERCIAL DRIVEWAYS TO BE A MAXIMUM OF 36' WIDE.
3. CONCRETE SHALL BE 3000 P.S.I.
4. CONTROL JOINTS NOT TO EXCEED 10' ON CENTER.
5. CURB RADIUS SHALL NOT RISE MORE THAN 1 (ONE) INCH.
6. IF THE DRIVEWAY SECTION BETWEEN THE SIDEWALK AND THE DRIVEWAY APRON IS 18" OR LESS THE SIDEWALK WILL BE WIDENED TO THE APRON AND AN EXPANSION JOINT ELIMINATED.
7. DRIVEWAY SHALL BE A MINIMUM OF 5 FEET FROM PROPERTY LINE.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD DRIVEWAY APRON	STD. NO. 4.03

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

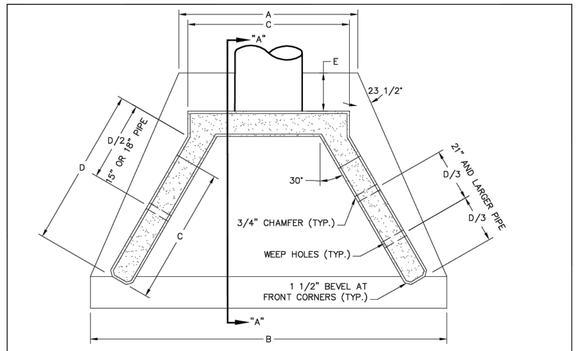
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ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

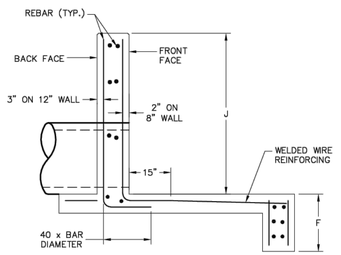
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SITE DETAILS

DRAWING SHEET
D-1.3

42 OF 55



TOP VIEW

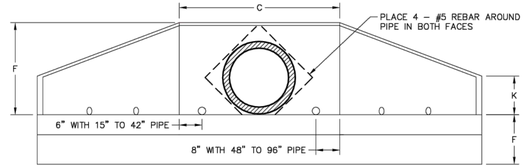


SECTION "A–A"

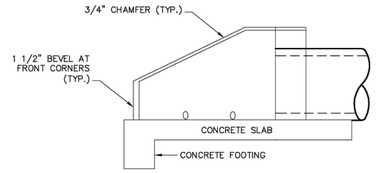
REVISIONS	
DATE	DESCRIPTION

1 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD REINFORCED CONCRETE HEADWALL WITH WINGWALLS	STD. NO. 5.06



FRONT ELEVATION



LEFT SIDE ELEVATION

NOTES:

1. SEE STANDARD DETAIL. 5.09 FOR DIMENSIONS.
2. PLACE 1 CUBIC FOOT OF WASHED STONE BEHIND EACH WEEP HOLE.

REVISIONS	
DATE	DESCRIPTION

2 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD REINFORCED CONCRETE HEADWALL WITH WINGWALLS	STD. NO. 5.06

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

DIMENSIONS FOR SINGLE PIPE HEADWALLS

PIPE SIZE	SHELL THICKNESS	WALL THICKNESS	SLAB THICKNESS	A	B	C	D	E	F	G	H	I	J	K
15"	2 1/2"	8"	6"	4'-10"	9'-4"	3'-7"	4'-2"	1'-0"	1'-6"	3'-8"	8"	5'-8"	2'-7"	1'-0"
18"	2 1/2"	8"	6"	5'-5"	10'-5"	3'-11"	4'-11"	1'-0"	1'-6"	4'-5"	6"	6'-3"	2'-11"	1'-0"
24"	3"	8"	6"	6'-4"	12'-4"	4'-6"	5'-3"	1'-0"	1'-6"	5'-3"	6"	7'-5"	3'-6"	1'-0"
30"	3 1/2"	8"	6"	7'-3"	15'-1"	5'-8"	7'-10"	1'-6"	2'-0"	6'-4"	6"	9'-4"	4'-8"	1'-6"
36"	4"	8"	6"	8'-4"	17'-0"	6'-3"	9'-2"	1'-6"	2'-0"	7'-4"	6"	10'-6"	5'-3"	1'-6"
42"	4 1/2"	8"	6"	9'-4"	18'-11"	6'-10"	10'-6"	1'-6"	2'-0"	8'-3"	6"	11'-7"	5'-10"	1'-6"
48"	5"	8"	6"	10'-4"	20'-7"	7'-5"	11'-7"	2'-0"	2'-0"	9'-2"	8"	12'-7"	6'-5"	2'-0"
54"	5 1/2"	8"	6"	10'-10"	22'-5"	8'-0"	12'-7"	2'-0"	2'-0"	11'-7"	8"	14'-10"	7'-0"	2'-0"
60"	6"	12"	8"	11'-9"	24'-4"	8'-7"	13'-5"	2'-0"	2'-6"	12'-11"	8"	15'-2"	7'-7"	2'-0"
66"	6 1/2"	12"	8"	12'-5"	25'-1"	9'-2"	13'-7"	2'-0"	2'-6"	13'-1"	8"	15'-3"	8'-2"	2'-6"
72"	7"	12"	8"	13'-4"	26'-10"	9'-8"	14'-11"	2'-0"	2'-6"	14'-1"	8"	16'-7"	8'-4"	3'-0"
84"	8"	12"	8"	13'-11"	27'-9"	10'-4"	15'-1"	2'-0"	2'-6"	14'-7"	8"	16'-7"	9'-4"	3'-0"
90"	8 1/2"	12"	8"	14'-10"	29'-9"	10'-11"	16'-6"	2'-0"	2'-6"	15'-2"	12"	17'-11"	10'-6"	3'-6"
96"	9"	12"	10"	15'-10"	30'-6"	11'-6"	16'-8"	2'-0"	2'-6"	16'-2"	12"	17'-11"	10'-6"	3'-6"
102"	9 1/2"	12"	10"	15'-11"	32'-5"	12'-0"	17'-6"	2'-0"	2'-6"	16'-8"	12"	18'-11"	11'-6"	4'-0"
108"	10"	12"	10"	17'-6"	33'-8"	12'-8"	18'-3"	2'-0"	2'-6"	17'-9"	12"	19'-7"	11'-6"	4'-0"
114"	10 1/2"	12"	10"	18'-5"	35'-10"	13'-3"	19'-7"	2'-0"	2'-6"	19'-1"	12"	21'-0"	12'-3"	4'-0"
120"	11"	12"	10"	19'-5"	37'-10"	13'-10"	20'-11"	2'-0"	2'-6"	20'-0"	12"	22'-2"	12'-10"	4'-0"

REVISIONS	
DATE	DESCRIPTION

1 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	DIMENSIONS FOR HEADWALL WITH WINGWALLS	STD. NO. 5.09

NOTE:

1. ALL DIMENSIONS FOR WING WALLS NOT LISTED ABOVE SHALL BE AS SHOWN FOR SINGLE PIPE HEADWALLS.
2. THE MINIMUM DISTANCE BETWEEN PIPES IN A DOUBLE PIPE HEADWALL IS 2'-0".

DIMENSIONS FOR SINGLE PIPE HEADWALLS

PIPE SIZE	BACK FACE WALL REINFORCEMENT HORIZONTAL	BACK FACE WALL REINFORCEMENT VERTICAL	SLAB REINFORCEMENT	FRONT FACE HORIZONTAL AND VERTICAL	CUBIC YARDS OF CONC.
15"	No.3 @ 12" O.C.	No.3 @ 12" O.C.	6–6 X10–10 WW	No.4 @ 18" O.C.	1.61
18"	"	"	"	"	1.86
24"	"	"	"	"	2.67
30"	"	"	"	"	3.49
36"	"	"	"	"	4.21
42"	"	"	"	"	5.03
48"	"	"	"	"	6.33
54"	"	No.4 @ 12" O.C.	"	"	7.23
60"	"	"	"	"	11.25
66"	No.4 @ 12" O.C.	"	6–6 X 26–6 WW	"	14.67
72"	"	"	"	"	15.75
78"	"	"	"	No.4 @ 12" O.C.	18.04
84"	"	No.5 @ 12" O.C.	"	"	19.32
90"	"	"	"	"	19.00
96"	No.5 @ 12" O.C.	No.6 @ 12" O.C.	"	"	26.36
102"	"	"	"	"	32.26
108"	"	"	"	"	34.21
114"	"	No.8 @ 12" O.C.	"	"	44.78
120"	"	"	"	"	44.97

DIMENSIONS FOR DOUBLE PIPE HEADWALLS

PIPE SIZE	H	I	J	K	CUBIC YARDS OF CONC.
8"–6"	13'–0"	7'–3"	8'–9"		2.24
8"–8"	14'–4"	7'–3"	8'–9"		2.71
10"–10"	16'–10"	9'–0"	10'–7"		3.64
12"–4"	19'–4"	9'–2"	11'–9"		4.72
13"–1"	20'–3"	11'–4"	12'–11"		5.75
15"–3"	22'–3"	12'–8"	14'–5"		7.05
16"–2"	23'–3"	13'–8"	15'–3"		8.52
17"–6"	27'–2"	14'–10"	16'–5"		9.74
18"–10"	30'–5"	16'–9"	18'–4"		14.74
20"–7"	32'–11"	17'–2"	19'–4"		15.44
21"–7"	34'–3"	18'–4"	20'–8"		20.96
23"–1"	36'–9"	19'–6"	21'–10"		22.89
24"–3"	38'–1"	20'–8"	23'–0"		24.59
25"–4"	40'–8"	21'–10"	24'–3"		28.50
27"–4"	42'–6"	23'–0"	25'–4"		33.30
29"–0"	44'–11"	24'–2"	26'–11"		42.53
30"–2"	46'–4"	25'–4"	28'–1"		45.15
31"–8"	49'–2"	26'–6"	29'–6"		53.28
33"–3"	51'–8"	27'–8"	30'–9"		58.59

REVISIONS	
DATE	DESCRIPTION

2 of 2

TOWN OF KNIGHTDALE STANDARD DETAILS	DIMENSIONS FOR HEADWALL WITH WINGWALLS	STD. NO. 5.09

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

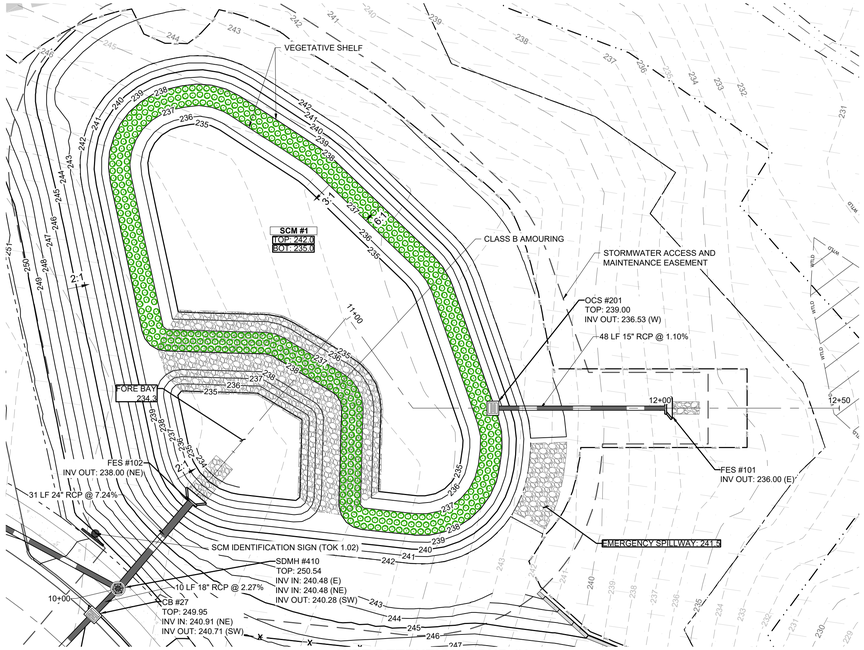
DESIGNED BY JWL

DRAWN BY SRG

CHECKED BY JWL

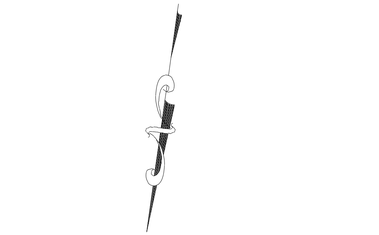
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORM DETAILS

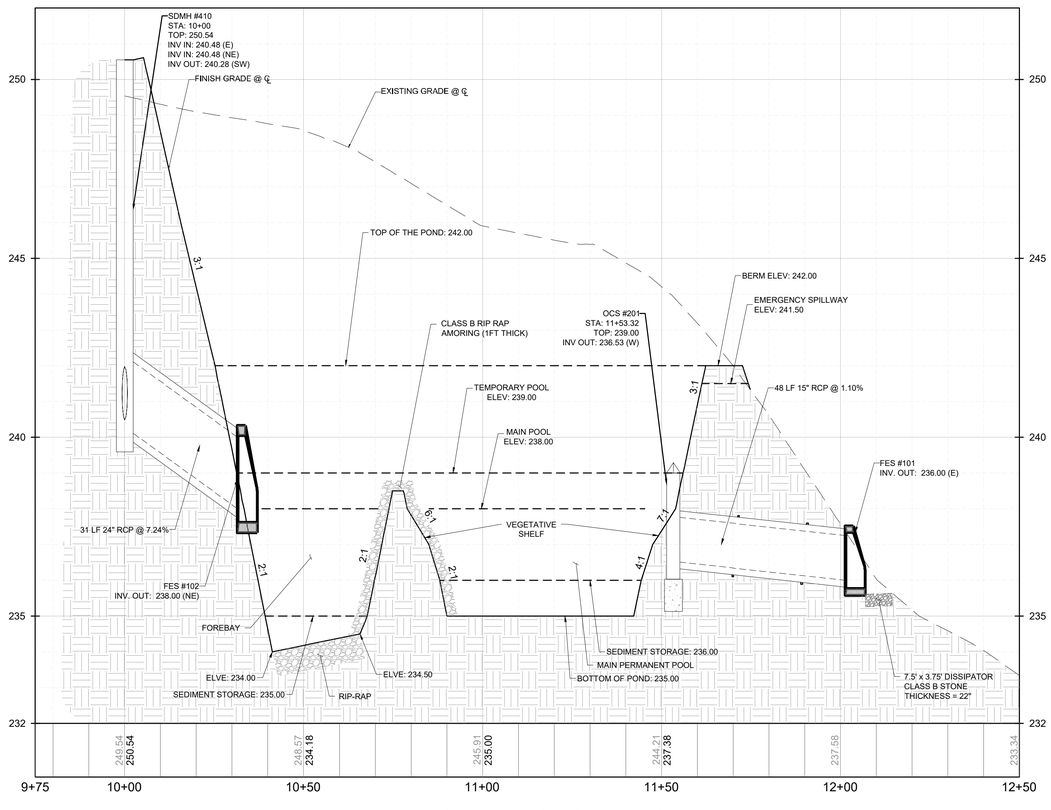
DRAWING SHEET
D-2.0



WET DETENTION POND #1

HORIZONTAL: 1" = 20'





SDMH #410 TO FES #101 - PROFILE

VERTICAL: 1" = 2'
HORIZONTAL: 1" = 20'

TOK SCM PLANTING NOTES

1. THE DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES, OF THE POND SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS OR SOD. (CENTIPEDE/HYBRID-BERMUDA) 90% GERMINATION OF NON-CLUMPING TURF WILL BE REQUIRED PRIOR TO FINAL CERTIFICATION FORM THE TOWN.
2. THE VEGETATED SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 FEET OF SHELF AREA.
3. CONTRACTOR TO WORK WITH SOILS SCIENTIST TO ENSURE SOILS ARE ADEQUATE TO SUPPORT PROPER ESTABLISHMENT AND GROWTH OF THE AQUATIC PLANTINGS. CONTRACTOR TO AMEND SOILS AND INSTALL SOILS IN PLANT, SHRUB, AND TREE AREAS PER DETAILS, SOIL SPECIFICATIONS. NCDENR SPECIFICATION, AND SOIL SCIENTIST RECOMMENDATIONS.
4. ALL AQUATIC PLANTINGS ARE TO BE INSTALLED DURING THE APPROPRIATE TIME OF YEAR TO ENSURE SURVIVABILITY. (LAST SPRING FROST AND THE FIRST FALL FROST).
5. ALL DISTURBED AREAS AROUND THE OUTSIDE OF THE DEVICE SHALL BE SEEDED WITH A LAWN AREA SEED MIX (PER SEEDING SPECIFICATIONS) NATIVE GRASSES, LEGUMES, CLOVERS, AND WILDFLOWERS.
6. IF THE DEVICE WAS USED DURING CONSTRUCTION AS A SEDIMENT BASIN OR TRAP, THE BASIN MUST BE CLEANED OUT, GRADED, APPROPRIATE AREAS COVERED WITH 4" OF TOPSOIL AS SPECIFIED IN NOTE #2 ABOVE, AND VEGETATED WITHIN 14 DAYS OF THE COMPLETION OF CONSTRUCTION.
7. CONTRACTOR SHALL WATER ALL VEGETATION AND GRASS ON A WEEKLY BASIS AS NEEDED TO ENSURE GRASS AND PLANT SURVIVAL UNTIL AFTER THE SCM IS CERTIFIED AND ACCEPTED BY THE TOWN.

BASIN REMOVAL SEQUENCE:

1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT NCDEQ - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE: E&SC JURISDICTION, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A)REASON FOR CONVERSION, B)BASIN #, C)DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION).
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN..
6. WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

REQUIRED SCM INSPECTIONS SEQUENCE - SCM INSTILLATION:

WHEN SCHEDULING INSPECTIONS, PLEASE CALL THE PUBLIC WORKS ADMINISTRATIVE ASSISTANT AT (919) 217-2250.
PLEASE NOTE: THE FOLLOWING PERSONNEL MUST BE PRESENT AT ALL INSPECTIONS:
1. SITE SUPERVISOR.
2. GEOTECH.
3. AS-BUILT CERTIFYING ENGINEER OR SOMEONE UNDER THEIR SUPERVISION.

THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SCM WITH DAM:
1. KEY TRENCH EXCAVATION.
2. PRINCIPAL SPILLWAY PIPE AND ASSOCIATED COMPONENTS:
   a. CONCRETE CRADLE.
   b. ANTI-SEEP COLLAR.
   c. SEEPAGE DIAPHRAGM.
3. OUTLET STRUCTURE.
4. ANTI-FLOTATION BALLAST.
5. ANY SITE-CONSTRUCTED REINFORCED CONCRETE STRUCTURES.

THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SAND FILTERS OR BIORETENTION DEVICES:
   a. SUBGRADE OR CONSTRUCTED FOUNDATION.
   b. OUTLET OR RISER IN COMBINATION WITH CONNECTING UNDERDRAINS.
   c. FILTER MEDIA.
   d. DAM ITEMS ON PREVIOUS LIST IF APPLICABLE.

GEOTECHNICAL TESTING AND CERTIFICAITON.
ALL REPORTS ARE TO BE SUBMITTED WITHIN 30-DAYS OF DAM COMPLETION REQUIRED GEOTECHNICAL RECORDS INCLUDE:
1. DAM EMBANKMENT MATERIAL COMPOSITION AND DENSITY TESTING.
2. MAP THAT LABELS ALL POINTS WHERE THE DAM AND DAM FOUNDATION AREAS WERE TESTED.
3. DIGITAL PHOTOS SHOWING THE DAM FOUNDATION AREAS, THE RISER, THE PRINCLIPLE SPILLWAY PIPE, THE CONCRETE CRADLE, THE SEEPAGE DIAPHRAM, RELIEF DRAINS, ETC., BEING INSTALLED.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SCM 1 - WET POND	AREA (SF)	QUANTITY	BOTANICAL NAME	COMMON NAME	SPACING	PLANTING	SIZE	NOTES
VEGETATIVE SHELF	723	179	CAREX TENERA	QUILL	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
(TOTAL = 2,168 SF)	723	179	CHELONE GLABRA	WHITE TURTLEHEAD	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
	723	179	HIBISCUS COCCINEUS	SCARLET ROSE MALLOW	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
GROUND COVER			CYNODON TRANSVAALENSIS BURTT DAVY X CYNODON DACTLON (L.) PERS.	"TIFTUF" BERMUDAGRASS	FULL COVERAGE	SOD ONLY		PLANT AFTER FROST

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

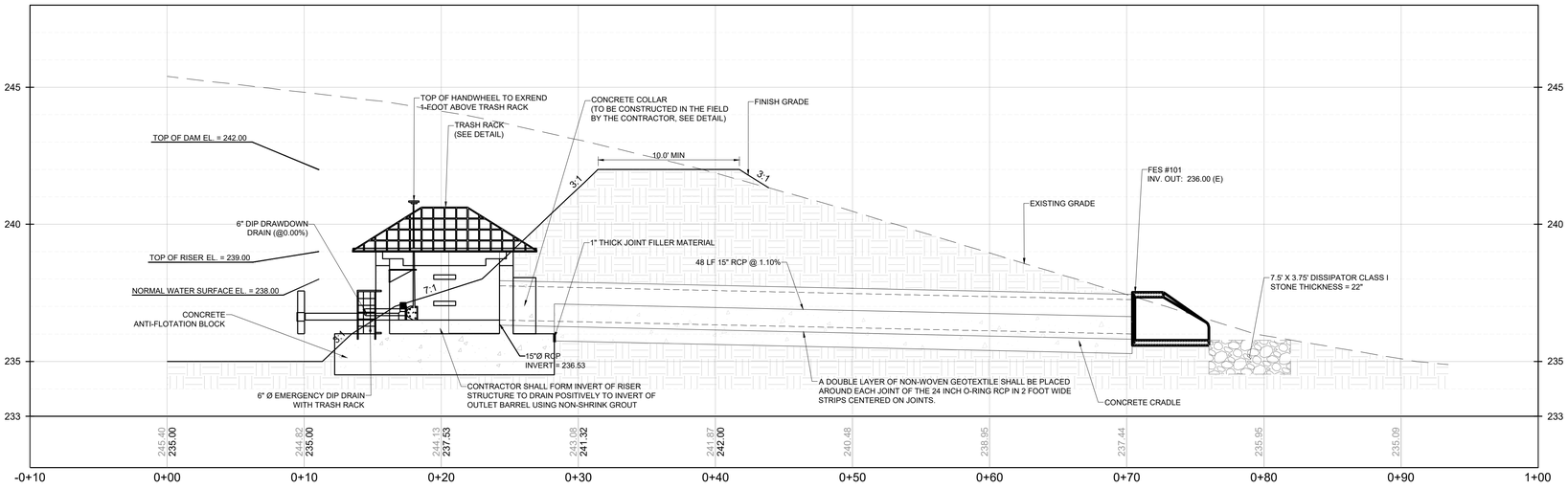
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER DRAINAGE DETAILS SCM #1

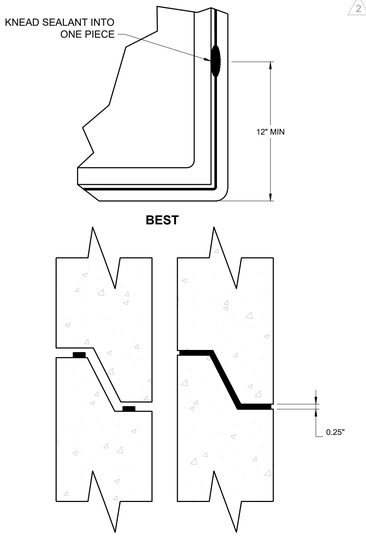
DRAWING SHEET
D-2.1

PROGRESS PLOT DATE: 08/8/24



SCM #1 (WET POND) - PROFILE

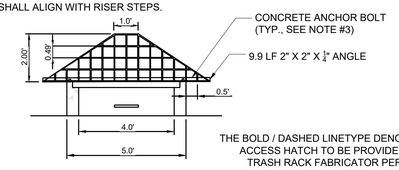
VERTICAL: 1" = 2.5'
HORIZONTAL: 1" = 5'

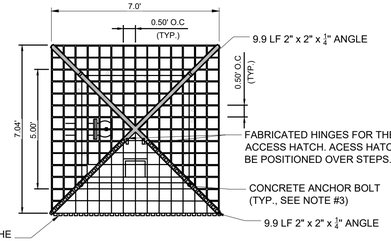


TWO ROWS NEXT TO ANNULAR SPACE

NOTES:

1. ALL MATERIAL TO BE A MINIMUM OF ⅜"Ø ALUMINUM ROD.
2. MAXIMUM OPENING SHALL BE NO GREATER THAT 5.5".
3. CONTRACTOR SHALL ANCHOR THE TRASH RACK TO MANHOLE WALL WITH FOUR 4"x1/4" CONCRETE ANCHOR BOLTS THROUGH ANGLES.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ALUMINUM TRASH RACK PRIOR TO CONSTRUCTION/FABRICATION.
5. ACCESS HATCH SHALL ALIGN WITH RISER STEPS.

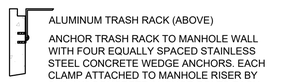




THE BOLD / DASHED LINETYPE DENOTES THE ACCESS HATCH TO BE PROVIDED BY THE TRASH RACK FABRICATOR PER OUTLET STRUCTURE MATERIAL SPECIFICATIONS

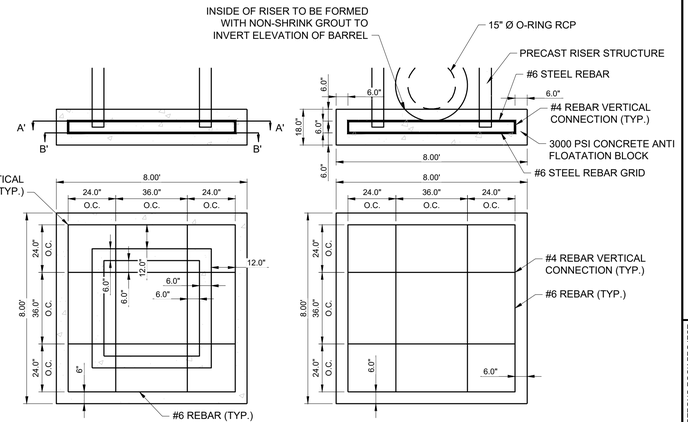
4' x 4' RISER TRASH RACK DETAIL

N.T.S.



NOTES:

1. ALL REINFORCING STEEL IN RISER ANTI-FLOATATION BLOCK TO BE GRADE 60 #4 BARS OR GRADE 60 #6 BARS AS SHOWN.
2. INSIDE OF RISER BOTTOM TO BE FORMED WITH NON-SHRINK GROUT TO INVERT ELEVATION OF BARREL.
3. PRE-CAST RISER SECTIONS WITHIN ANTI-FLOAT BLOCK DOES NOT HAVE A JOINT.
4. ALL PIPE PENETRATIONS THROUGH THE CONCRETE RISER STRUCTURE SHALL BE MADE WATERTIGHT.



CROSS SECTION A'-A'

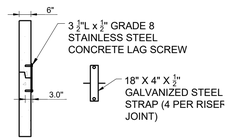
N.T.S.

CROSS SECTION B'-B'

N.T.S.

RISER / ANTI-FLOTATION BLOCK CONNECTION

N.T.S.

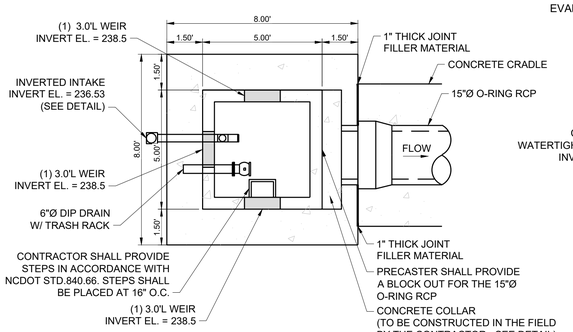


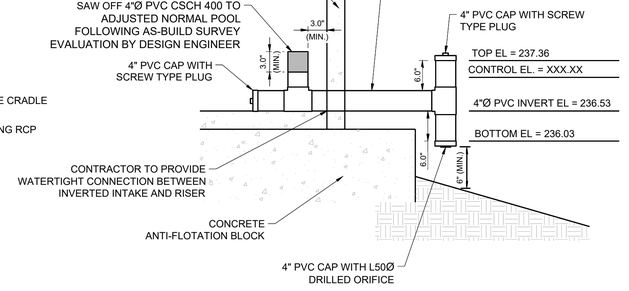
RISER JOINT CONNECTION DETAIL

N.T.S.

NOTES:

1. CONCRETE ANTI-FLOTATION BLOCK TO BE PROVIDED WITH MINIMUM TEMPERATURE AND SHRINKAGE STEEL REINFORCEMENT.
2. TRASH RACKS NOT SHOWN FOR CLARITY.
3. THE NUMBER OF GUIDES FOR THE VALVE STEM SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. THE VALVE STEM MUST BE OPERABLE FROM THE TOP OF THE RISER VIA THE HANDWHEEL WITH AN INSIGNIFICANT AMOUNT OF PLAY IN THE VALVE STEM.
4. CONTRACTOR SHALL PROVIDE A JOINT IN THE OUTLET BARREL NO MORE THAN 5-FT FROM THE RISER.



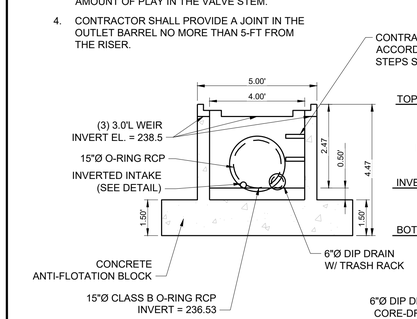


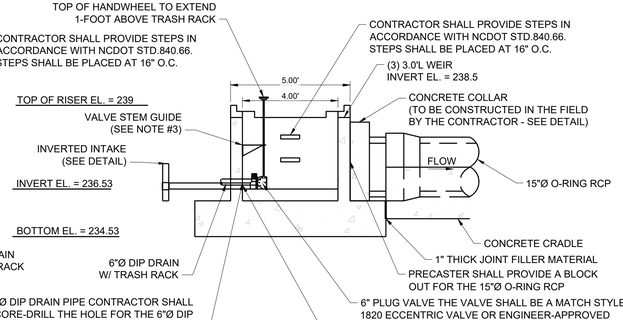
INVERTED INTAKE DETAIL (RISER)

N.T.S.

NOTES:

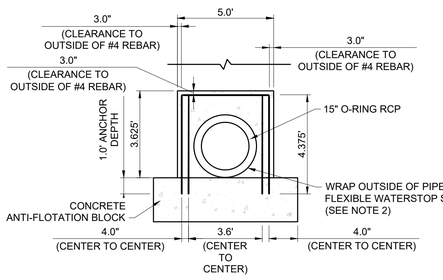
1. ALL REBAR TO BE #4 REBAR.
2. WRAP OUTSIDE OF PIPE WITH VOLCLAY WATERSTOP-RX®101 (OR PRE-APPROVED EQUIVALENT) AT THE FACE OF THE PRECAST STRUCTURE WALL. PROVIDE 6" OVER LAP ON THE BOTTOM OF THE PIPE.



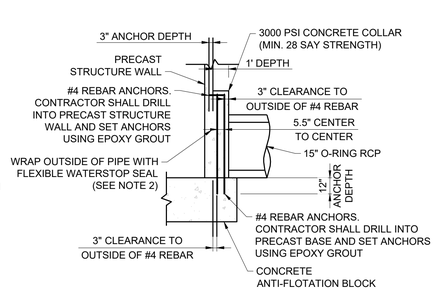


PERMANENT OUTLET STRUCTURE #1 DETAILS

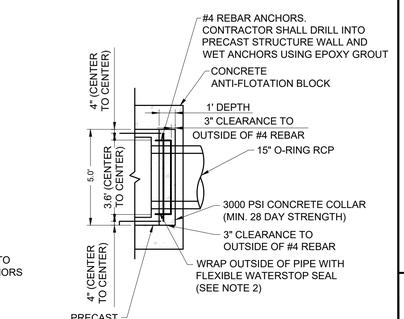
N.T.S.



FRONT VIEW



SIDE VIEW



TOP VIEW

24" CONCRETE COLLAR DETAIL

N.T.S.

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
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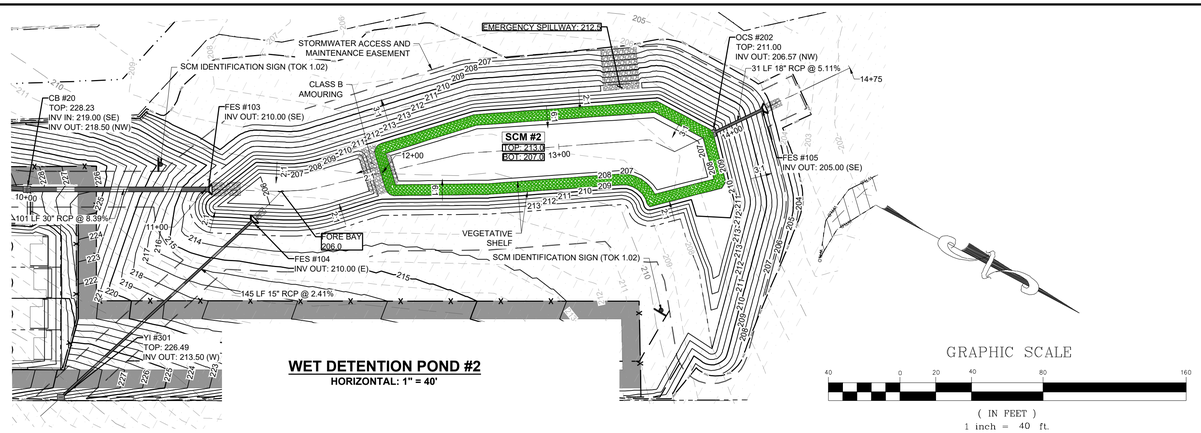
STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE DETAILS SCM #1

DRAWING SHEET
D-2.2

45 OF 55

PROGRESS PLOT DATE: 08/8/24



WET DETENTION POND #2
HORIZONTAL: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REQUIRED SCM INSPECTIONS SEQUENCE - SCM INSTILLATION:

WHEN SCHEDULING INSPECTIONS, PLEASE CALL THE PUBLIC WORKS ADMINISTRATIVE ASSISTANT AT (919) 217-2250.
PLEASE NOTE: THE FOLLOWING PERSONNEL MUST BE PRESENT AT ALL INSPECTIONS:

1. SITE SUPERVISOR.
2. GEOTECH.
3. AS-BUILT CERTIFYING ENGINEER OR SOMEONE UNDER THEIR SUPERVISION.

THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SCM WITH DAM:

1. KEY TRENCH EXCAVATION.
2. PRINCIPAL SPILLWAY PIPE AND ASSOCIATED COMPONENTS:
   a. CONCRETE CRADLE.
   b. ANTI-SEEP COLLAR.
   c. SEEPAGE DIAPHRAGM.
3. OUTLET STRUCTURE.
4. ANTI-FLOTATION BALLAST.
5. ANY SITE-CONSTRUCTED REINFORCED CONCRETE STRUCTURES.

THE FOLLOWING ITEMS MUST BE INSPECTED BY TOK STAFF DURING THE INSTALLATION OF ANY SAND FILTERS OR BIORETENTION DEVICES:

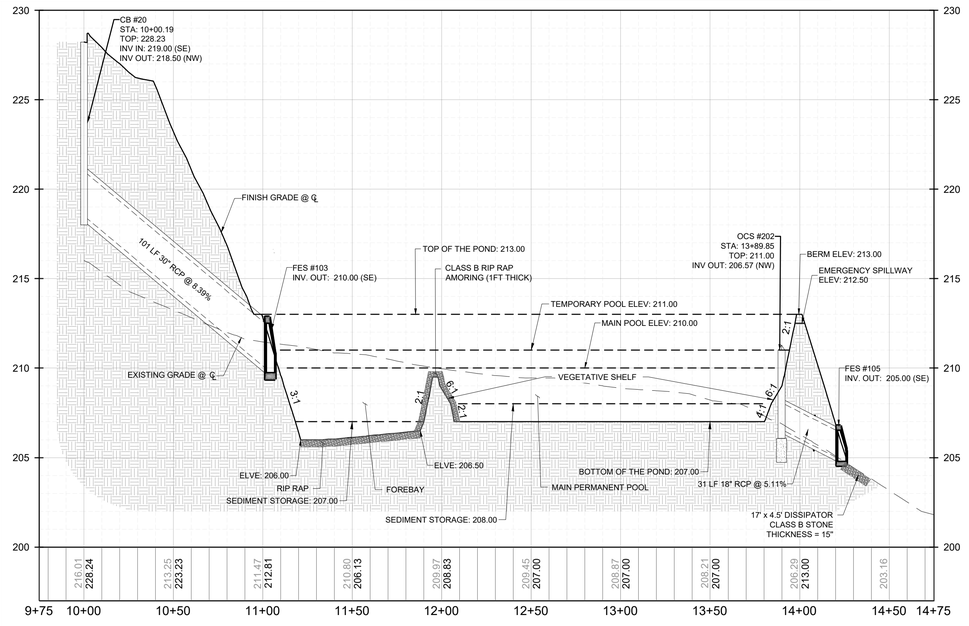
   a. SUBGRADE OR CONSTRUCTED FOUNDATION.
   b. OUTLET OR RISER IN COMBINATION WITH CONNECTING UNDERDRAINS.
   c. FILTER MEDIA.
   d. DAM ITEMS ON PREVIOUS LIST IF APPLICABLE.

GEOTECHNICAL TESTING AND CERTIFICAITON.
ALL REPORTS ARE TO BE SUBMITTED WITHIN 30-DAYS OF DAM COMPLETION REQUIRED GEOTECHNICAL RECORDS INCLUDE:

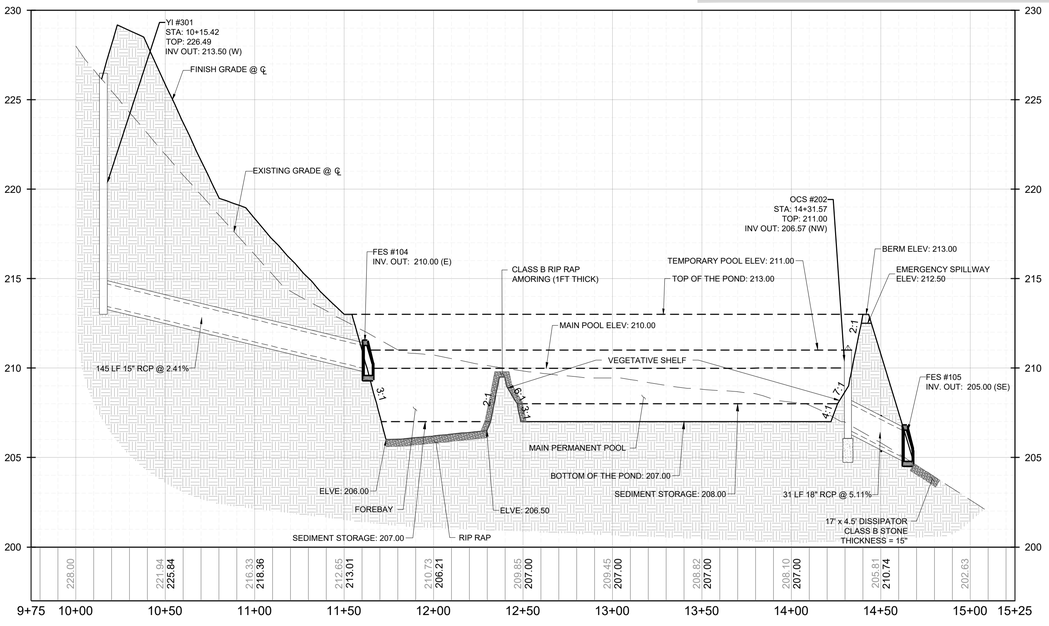
1. DAM EMBANKMENT MATERIAL COMPOSITION AND DENSITY TESTING.
2. MAP THAT LABELS ALL POINTS WHERE THE DAM AND DAM FOUNDATION AREAS WERE TESTED.
3. DIGITAL PHOTOS SHOWING THE DAM FOUNDATION AREAS, THE RISER, THE PRINCLIPLE SPILLWAY PIPE, THE CONCRETE CRADLE, THE SEEPAGE DIAPHRAM, RELIEF DRAINS, ETC., BEING INSTALLED.

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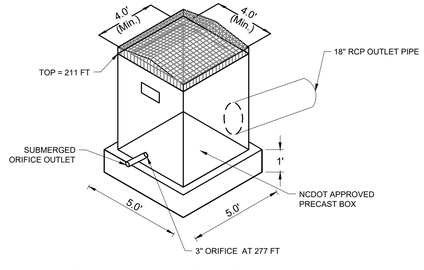
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT



CB #20 TO FES #105 - PROFILE
VERTICAL: 1" = 4'
HORIZONTAL: 1" = 40'



YI #301 TO FES #105 - PROFILE
VERTICAL: 1" = 4'
HORIZONTAL: 1" = 40'



OUTLET CONTROL STRUCTURE DETAIL
N.T.S

TOK SCM PLANTING NOTES

2

1. THE DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES, OF THE POND SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS OR SOD. (CENTIPEDE/HYBRID-BERMUDA) 90% GERMINATION OF NON-CLUMPING TURF WILL BE REQUIRED PRIOR TO FINAL CERTIFICATION FORM THE TOWN.
2. THE VEGETATED SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 FEET OF SHELF AREA.
3. CONTRACTOR TO WORK WITH SOILS SCIENTIST TO ENSURE SOILS ARE ADEQUATE TO SUPPORT PROPER ESTABLISHMENT AND GROWTH OF THE AQUATIC PLANTINGS. CONTRACTOR TO AMEND SOILS AND INSTALL SOILS IN PLANT, SHRUB, AND TREE AREAS PER DETAILS, SOIL SPECIFICATIONS. NCDENR SPECIFICATION, AND SOIL SCIENTIST RECOMMENDATIONS.
4. ALL AQUATIC PLANTINGS ARE TO BE INSTALLED DURING THE APPROPRIATE TIME OF YEAR TO ENSURE SURVIVABILITY. (LAST SPRING FROST AND THE FIRST FALL FROST).
5. ALL DISTURBED AREAS AROUND THE OUTSIDE OF THE DEVICE SHALL BE SEEDED WITH A LAWN AREA SEED MIX (PER SEEDING SPECIFICATIONS) NATIVE GRASSES, LEGUMES, CLOVERS, AND WILDFLOWERS.
6. IF THE DEVICE WAS USED DURING CONSTRUCTION AS A SEDIMENT BASIN OR TRAP, THE BASIN MUST BE CLEANED OUT, GRADED, APPROPRIATE AREAS COVERED WITH 4" OF TOPSOIL AS SPECIFIED IN NOTE #2 ABOVE, AND VEGETATED WITHIN 14 DAYS OF THE COMPLETION OF CONSTRUCTION.
7. CONTRACTOR SHALL WATER ALL VEGETATION AND GRASS ON A WEEKLY BASIS AS NEEDED TO ENSURE GRASS AND PLANT SURVIVAL UNTIL AFTER THE SCM IS CERTIFIED AND ACCEPTED BY THE TOWN.

BASIN REMOVAL SEQUENCE:

3

1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
2. CONTACT NCDEQ - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE: E&SC JURISDICTION, AND LOCATION (CITY/TOWN), ENVIRONMENTAL CONSULTANT NAME, AND ADDRESS THE FOLLOWING: A)REASON FOR CONVERSION, B)BASIN #, C)DEWATERING METHOD, AND D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01. (KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION).
3. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
4. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
5. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN..
6. WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION. NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

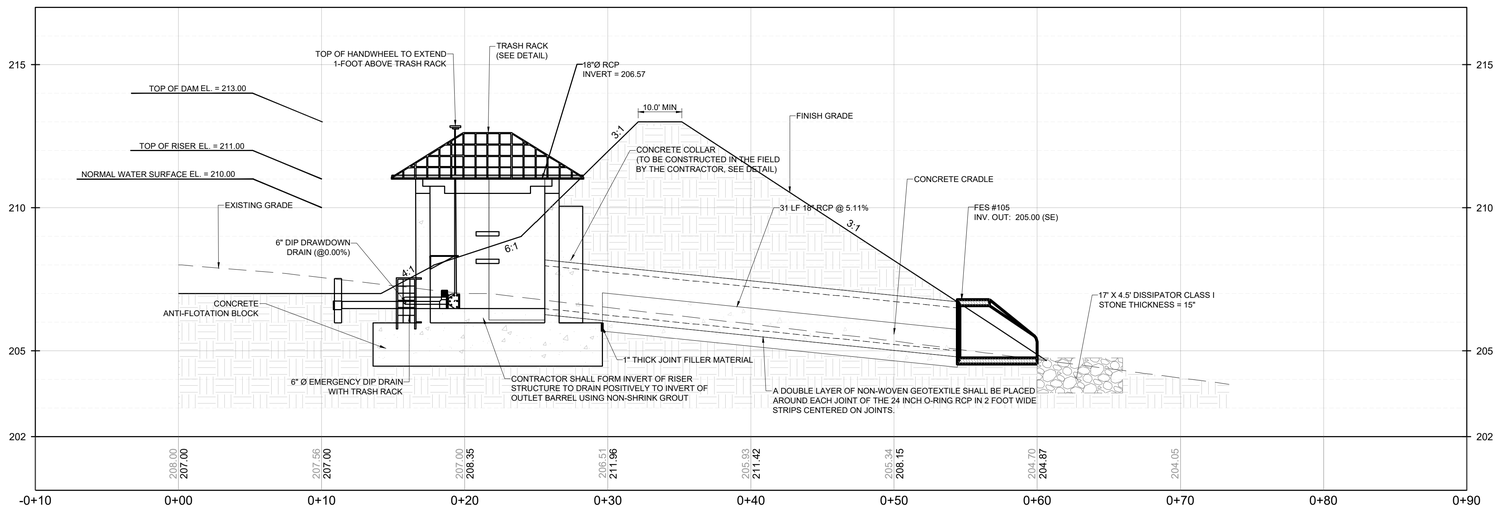
SCM 1 - WET POND	AREA (SF)	QUANTITY	BOTANICAL NAME	COMMON NAME	SPACING	PLANTING	SIZE	NOTES
VEGETATIVE SHELF	860	219	CAREX TENERA	QUILL	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
(TOTAL = 2,580 SF)	860	219	CHELONE GLABRA	WHITE TURTLEHEAD	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
	860	218	HIBISCUS COCCINEUS	SCARLET ROSE MALLOW	2' OC	0-2 INCHES	2.25" PLUG (32S) CONTAINER ONLY	
GROUND COVER			CYNODON TRANSVAALENSIS BURTT DAVY X CYNODON DACTLON (L.) PERS.	"TIFTUF" BERMUDAGRASS	FULL COVERAGE	SOD ONLY		PLANT AFTER FROST

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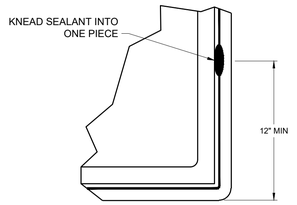
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER DRAINAGE DETAILS SCM #2

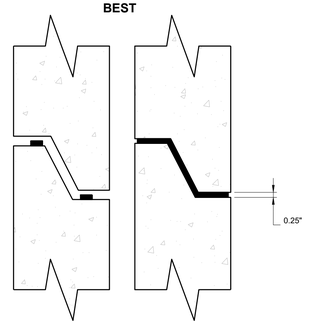
DRAWING SHEET
D-2.3



SCM #2 (WET POND) - PROFILE

VERTICAL: 1" = 2.5'
HORIZONTAL: 1" = 5'





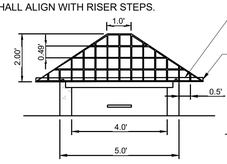
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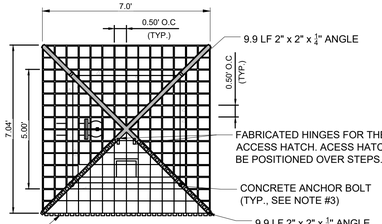
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

NOTES:

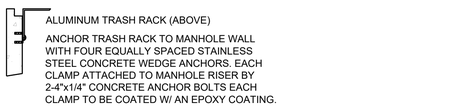
1. ALL MATERIAL TO BE A MINIMUM OF $\frac{3}{8}$"Ø ALUMINUM ROD.
2. MAXIMUM OPENING SHALL BE NO GREATER THAT 5.5".
3. CONTRACTOR SHALL ANCHOR THE TRASH RACK TO MANHOLE WALL WITH FOUR 4"x1/4" CONCRETE ANCHOR BOLTS THROUGH ANGLES.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ALUMINUM TRASH RACK PRIOR TO CONSTRUCTION/FABRICATION.
5. ACCESS HATCH SHALL ALIGN WITH RISER STEPS.





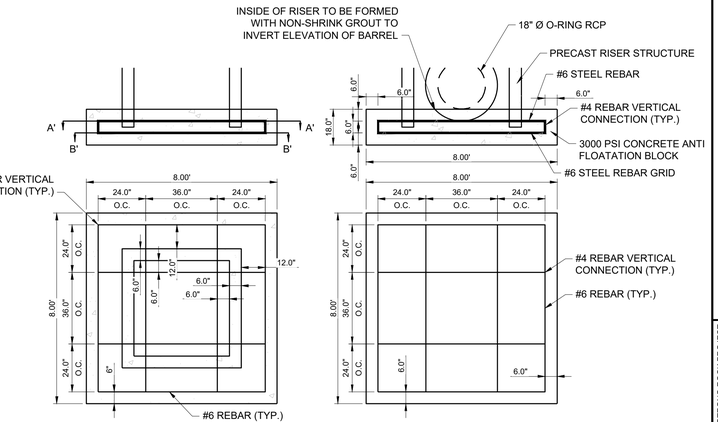
4' x 4' RISER TRASH RACK DETAIL

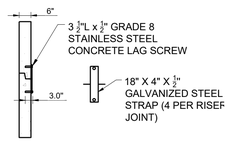
N.T.S.



NOTES:

1. ALL REINFORCING STEEL IN RISER ANTI-FLOATATION BLOCK TO BE GRADE 60 #4 BARS OR GRADE 60 #6 BARS AS SHOWN.
2. INSIDE OF RISER BOTTOM TO BE FORMED WITH NON-SHRINK GROUT TO INVERT ELEVATION OF BARREL.
3. PRE-CAST RISER SECTIONS WITHIN ANTI-FLOAT BLOCK DOES NOT HAVE A JOINT.
4. ALL PIPE PENETRATIONS THROUGH THE CONCRETE RISER STRUCTURE SHALL BE MADE WATERTIGHT.



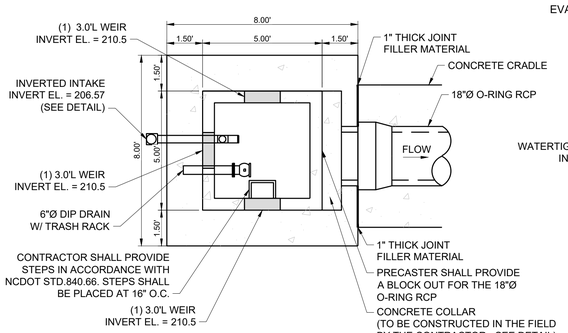


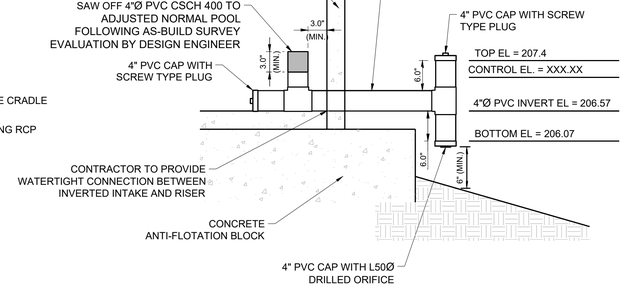
RISER JOINT CONNECTION DETAIL

N.T.S.

NOTES:

1. CONCRETE ANTI-FLOTATION BLOCK TO BE PROVIDED WITH MINIMUM TEMPERATURE AND SHRINKAGE STEEL REINFORCEMENT.
2. TRASH RACKS NOT SHOWN FOR CLARITY.
3. THE NUMBER OF GUIDES FOR THE VALVE STEM SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. THE VALVE STEM MUST BE OPERABLE FROM THE TOP OF THE RISER VIA THE HANDWHEEL WITH AN INSIGNIFICANT AMOUNT OF PLAY IN THE VALVE STEM.
4. CONTRACTOR SHALL PROVIDE A JOINT IN THE OUTLET BARREL NO MORE THAN 5-FT FROM THE RISER.



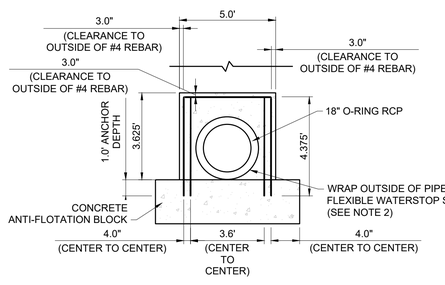


INVERTED INTAKE DETAIL (RISER)

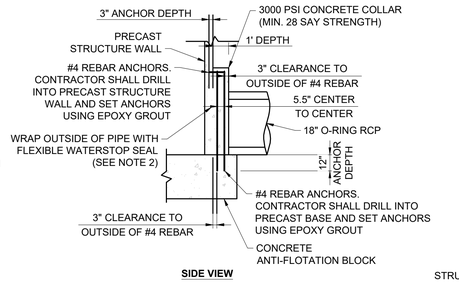
N.T.S.

NOTES:

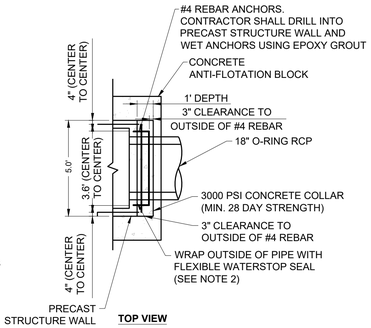
1. ALL REBAR TO BE #4 REBAR.
2. WRAP OUTSIDE OF PIPE WITH VOLCLAY WATERSTOP-RX®101 (OR PRE-APPROVED EQUIVALENT) AT THE FACE OF THE PRECAST STRUCTURE WALL. PROVIDE 6" OVER LAP ON THE BOTTOM OF THE PIPE.



FRONT VIEW



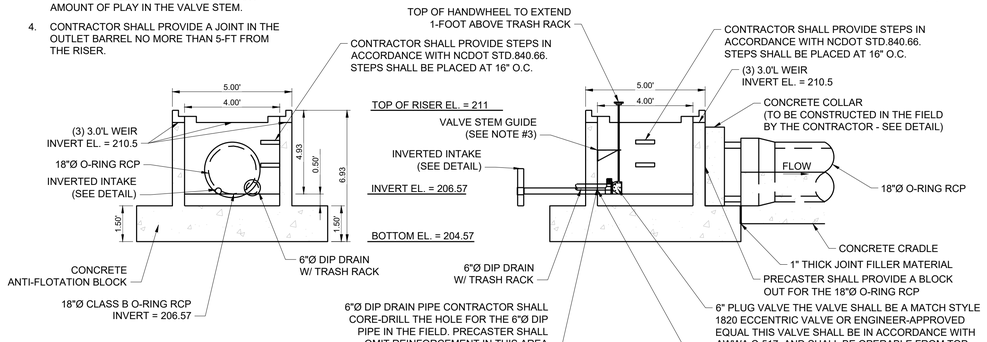
SIDE VIEW



TOP VIEW

24" CONCRETE COLLAR DETAIL

N.T.S.



PERMANENT OUTLET STRUCTURE #1 DETAILS

N.T.S.

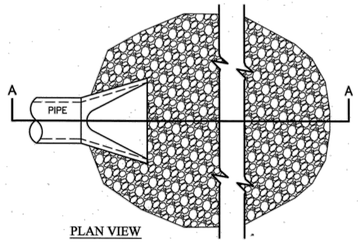
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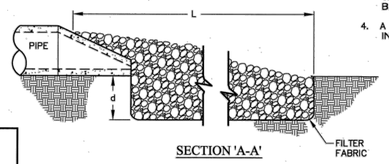
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
STORMWATER CONTROL MEASURE DETAILS SCM #2

DRAWING SHEET
D-2.4

47 OF 55



PLAN VIEW



SECTION 'A-A'

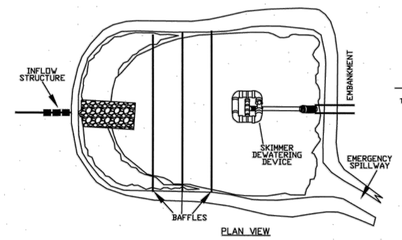
NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

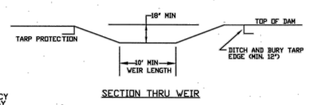
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

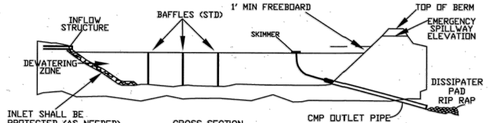
STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL



PLAN VIEW



SECTION THRU WEIR



CROSS SECTION

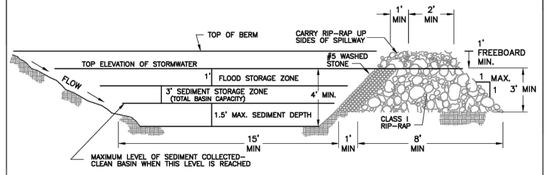
NOTES:

1) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
2) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
3) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
4) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
5) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
6) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
7) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

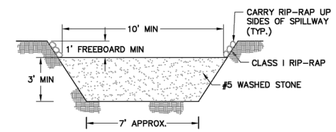
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

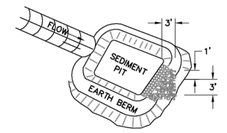
STANDARD SKIMMER BASIN



SECTION THROUGH BASIN & FILTER



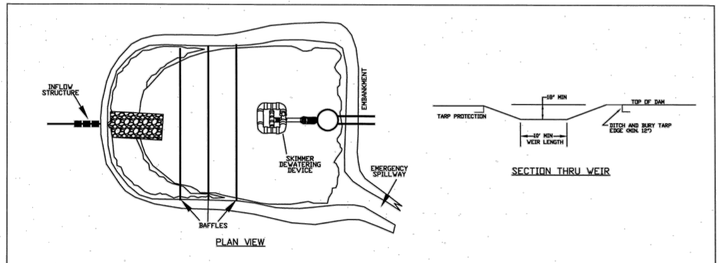
SECTION THROUGH BERM & FILTER



PERSPECTIVE VIEW

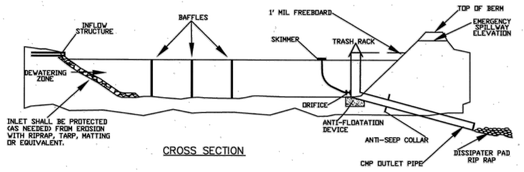
REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD SEDIMENT BASIN	STD. NO. 2.07



PLAN VIEW

SECTION THRU WEIR



CROSS SECTION

NOTES:

1) BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
2) THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPAULINS OR EQUIVALENT FOR U.V. RESISTANCE.
3) PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
4) BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
5) MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
6) DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
7) POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER ATTACHED TO PERMANENT RISER

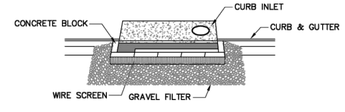
TOWN CERTIFICATION

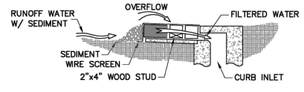
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR





BLOCK & GRAVEL CURB INLET SEDIMENT FILTER

SPECIFIC APPLICATION:

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

MAINTENANCE:

1. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
2. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
3. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
4. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	CURB INLET SEDIMENT FILTER	STD. NO. 2.08

SEEDING SCHEDULE		
MAXIMUM SLOPE 3:1		
SEEDING PERIOD	SEEDING TYPE	APPLICATION RATE (LBS/ACRE)
AUGUST 15 – NOVEMBER 01	TALL FESCUE	300
NOVEMBER 01 – MARCH 01	TALL FESCUE AND	300
	ABRUZZI RYE	25
MARCH 01 – APRIL 15	TALL FESCUE	300
APRIL 15 – JUNE 30	HULLED COMMON BERMUDAGRASS	25
JULY 01 – AUGUST 15	TALL FESCUE AND	120
	*BROWNTOP MILLET OR	35
	*SORGHUM-SUDAN HYBRIDS	30
SLOPES 2:1 TO 3:1		
MARCH 01 – JUNE 01	SERICEA LESPEDEZA (SCARIFIED) AND	50
MARCH 01 – APRIL 15	TALL FESCUE OR	120
MARCH 01 – JUNE 30	WEEPING LOVEGRASS OR	10
	HULLED COMMON BERMUDAGRASS	25
JUNE 01 – SEPTEMBER 01	*TALL FESCUE AND	120
	*BROWNTOP MILLET OR	35
	*SORGHUM-SUDAN HYBRIDS	30
SEPTEMBER 01 – MARCH 01	SERICEA LESPEDEZA (UNHULLED, USCARIFIED) AND	70
	TALL FESCUE OR	120
NOVEMBER 01 – MARCH 01	ABRUZZI RYE	25

*TEMPORARY – RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12" IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT. CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

GROUND COVER – WHEREVER LAND DISTURBING ACTIVITY IS UNDERTAKEN ON A TRACT COMPRISING MORE THAN ONE (1) ACRE, A GROUND COVER SUFFICIENT TO RESTRAIN EROSION MUST BE PLANTED OR PROVIDED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS.

GRADED SLOPES AND FILLS – WITHIN 15 WORKING DAYS OR 30 CALENDAR DAYS, OR COMPLETION OF ANY PHASE OF GRADING, WHICHEVER PERIOD IS SHORTER, SLOPES SHALL BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	SEEDING SCHEDULE	STD. NO. 2.01

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

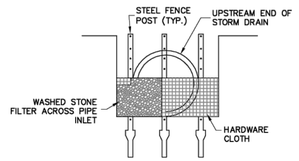
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL DETAILS

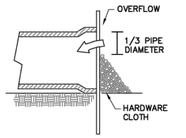
DRAWING SHEET
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48 OF 55

NOTE:

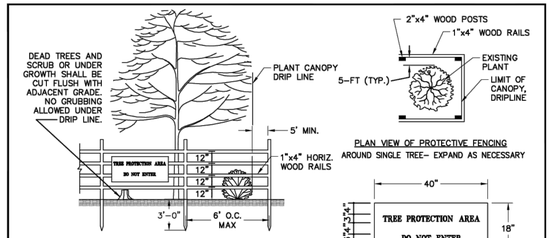
ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THESE DRAWINGS.





REVISIONS	
DATE	DESCRIPTION

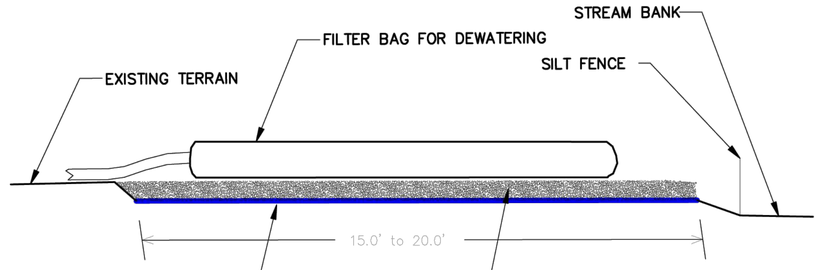
TOWN OF KNIGHTDALE STANDARD DETAILS	PIPE INLET PROTECTION	STD. NO. 2.09



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

REVISIONS	
DATE	DESCRIPTION

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



NOTES

PROVIDE STABILIZED OUTLET TO STREAM BANK. WOOD PALLETS MAY BE USED IN LIEU OF STONE AND GEOTEXTILE AS DIRECTED. A SUFFICIENT NUMBER OF PALLETS MUST BE PROVIDED TO ELEVATE THE ENTIRE FILTER BAG FOR DEWATERING ABOVE NATURAL GROUND.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD FILTER BAG FOR DEWATERING ACTIVITIES

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

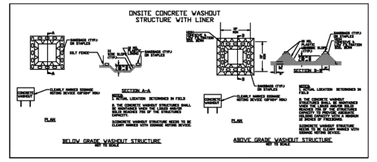
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the streams or wetlnd has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframes or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all Inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)[7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).
	• Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/20/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

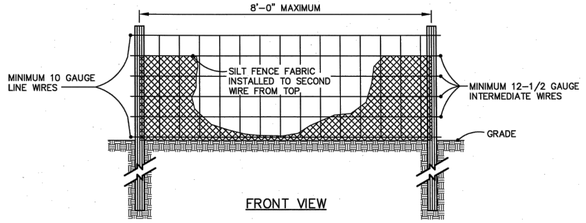
SEAL: NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL DETAILS

DRAWING / SHEET
D-3.1



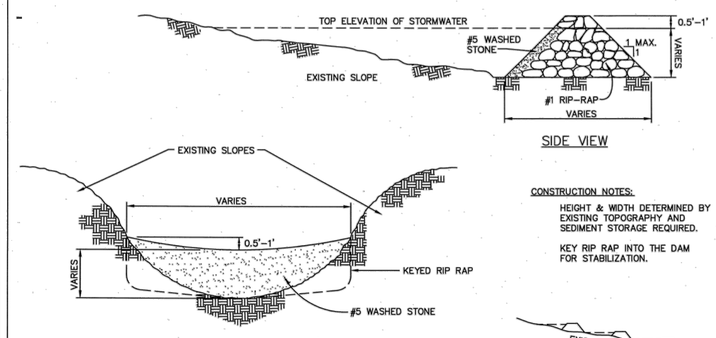
NOTE;

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SILT FENCE

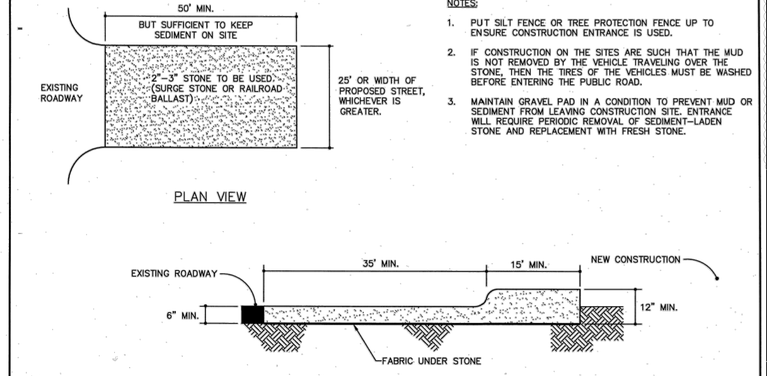


NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD CHECK DAM



NOTES:

1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. MAINTAIN GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING CONSTRUCTION SITE. ENTRANCE WILL REQUIRE PERIODIC REMOVAL OF SEDIMENT-LADEN STONE AND REPLACEMENT WITH FRESH STONE.

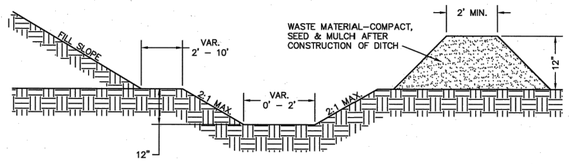
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD CONSTRUCTION ENTRANCE

NOTES:

1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

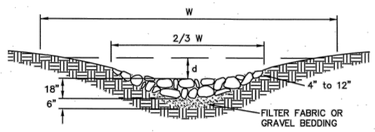


CROSS SECTIONAL VIEW

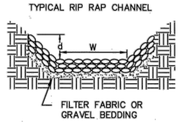
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

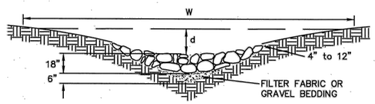
STANDARD TEMPORARY DIVERSION DITCH



PARABOLIC-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY BULLDOZER)



TRAPEZOIDAL



V-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY MOTOR GRADER)

NOTES:

-TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS.

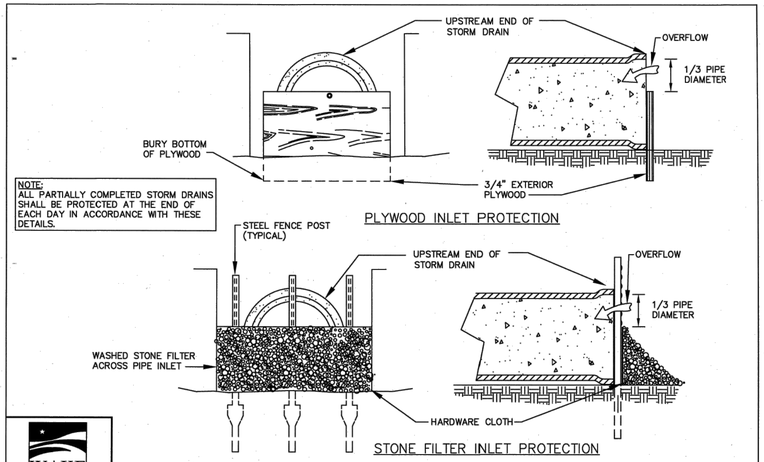
-SIZE OF STONE MUST BE DETERMINED BY APPROPRIATE DESIGN PROCEDURE.

-DIMENSIONS FOR d & W VARIES ACCORDING TO DESIGN.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD RIP-RAP LINED CHANNELS



NOTE:
ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THESE DETAILS.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD PIPE INLET PROTECTION (PLYWOOD & STONE)

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/20/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

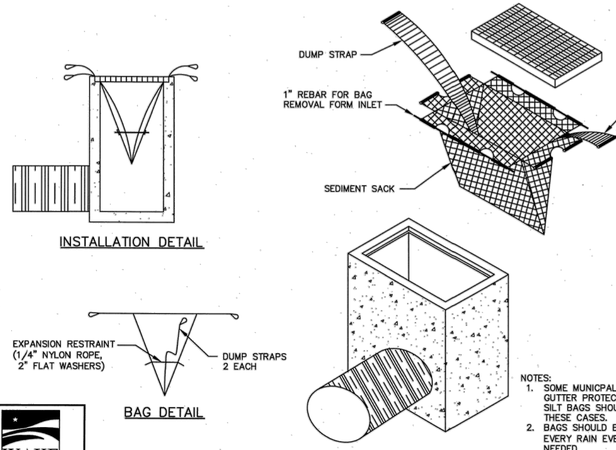
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL DETAILS

DRAWING SHEET

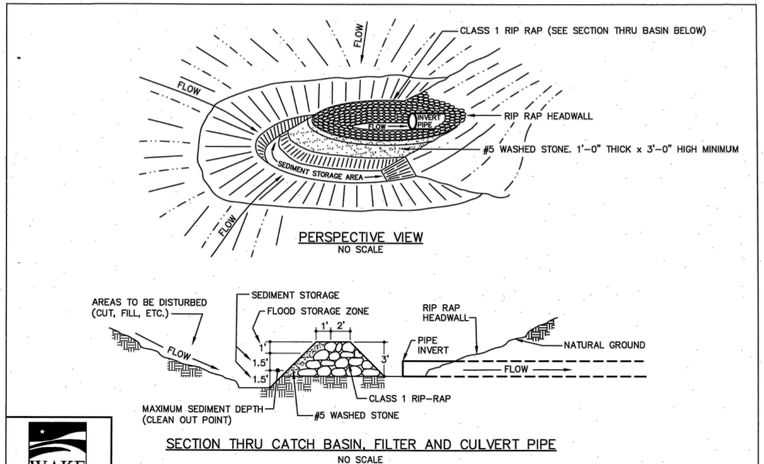
D-3.2



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

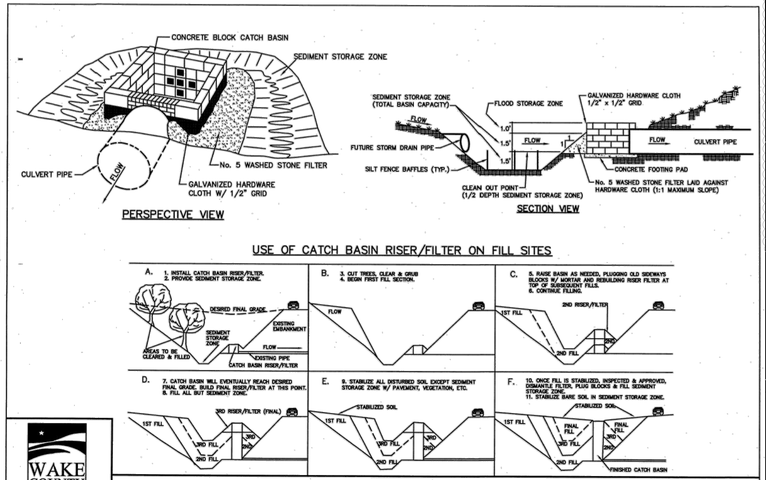
STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

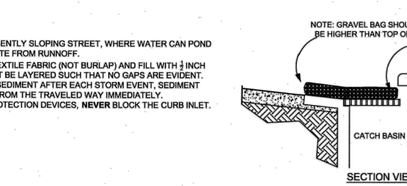
STANDARD HORSESHOE INLET PROTECTION



WAKE COUNTY NORTH CAROLINA

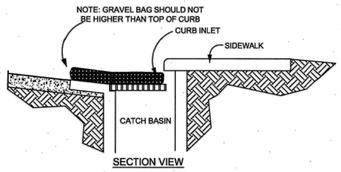
EFFECTIVE: 01/31/08

STANDARD CATCH BASIN RISER/FILTER



NOTES:

1. PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.
2. USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH ¾ INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.
4. WHEN INSTALLING CURB INLET PROTECTION DEVICES, **NEVER** BLOCK THE CURB INLET.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

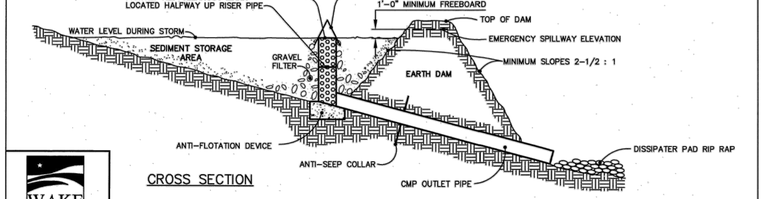
STANDARD GRAVEL BAG CURB INLET PROTECTION



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SKIMMER DETAIL



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD RISER-BARREL SEDIMENT BASIN

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

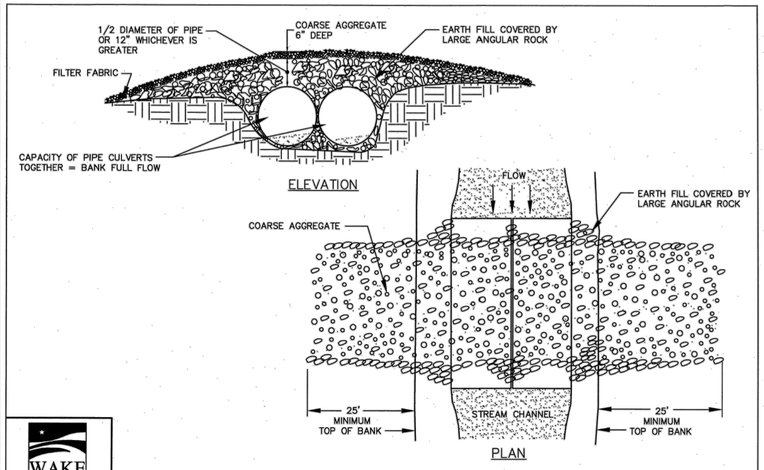
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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL DETAILS

DRAWING SHEET
D-3.3

51 OF 55



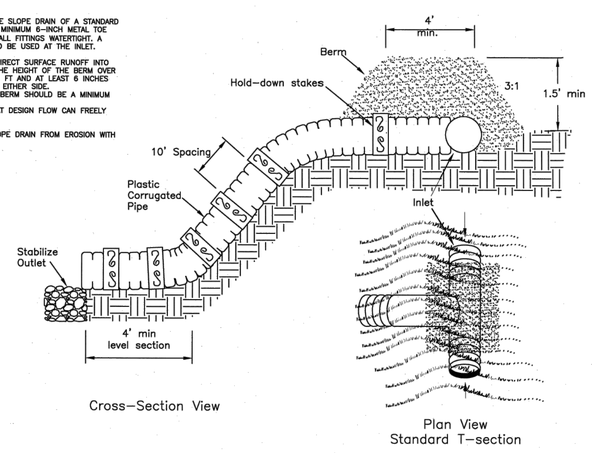
WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY STREAM CROSSING

NOTES:

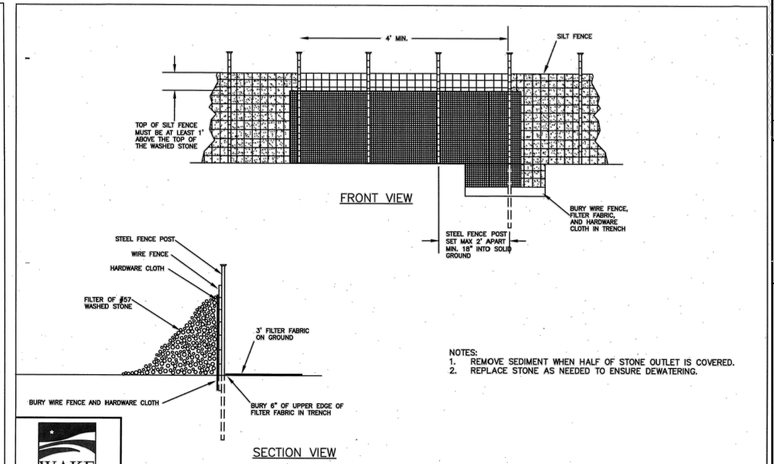
1. CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. USE AN EARTHEN DIVERSION TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE BERM OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING BERM ON EITHER SIDE. THE LOWEST POINT OF THE DIVERSION BERM SHOULD BE A MINIMUM OF 1 FT ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
3. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION WITH RIPRAP DISSIPATOR.



WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD TEMPORARY SLOPE DRAIN

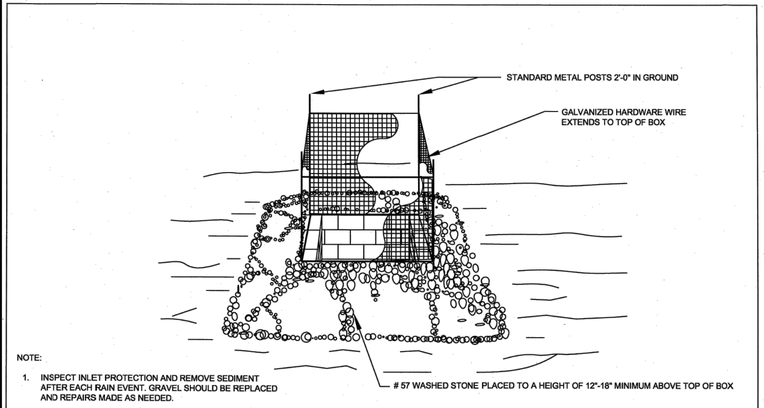


NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET



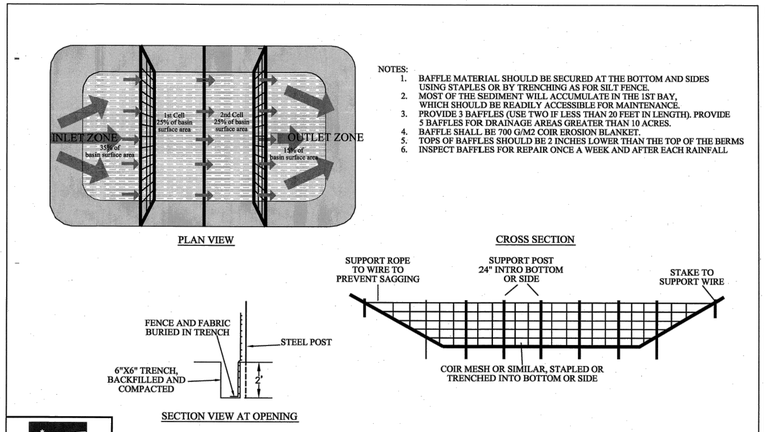
NOTE:

1. INSPECT INLET PROTECTION AND REMOVE SEDIMENT AFTER EACH RAIN EVENT. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD GRAVEL YARD INLET PROTECTION

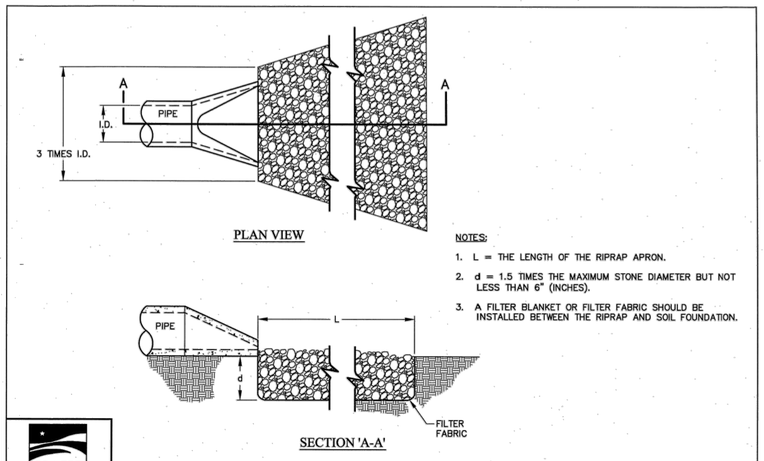


NOTES:
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 5 BAFFLES FOR DRAINAGE AREAS GREATER THAN 10 ACRES.
4. BAFFLE SHALL BE 700 G/M2 COIR EROSION BLANKET.
5. TOPS OF BAFFLES SHOULD BE 2 INCHES LOWER THAN THE TOP OF THE BERMS
6. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH RAINFALL

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD BAFFLES DETAIL



NOTES:
1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

WAKE COUNTY NORTH CAROLINA

EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO FLAT AREA
NO WELL-DEFINED CHANNEL

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

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1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
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3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

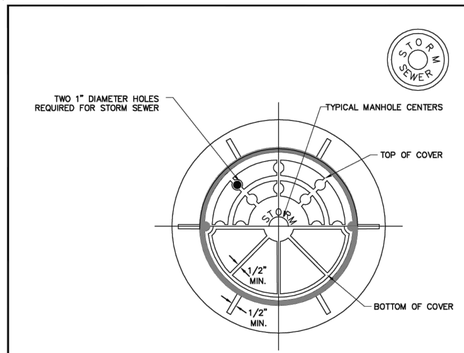
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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL DETAILS

DRAWING SHEET
D-3.4

52 OF 55

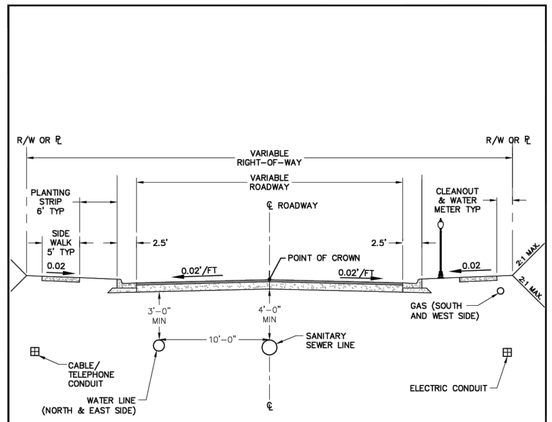


SECTION

MINIMUM AVERAGE WEIGHT	
RING	190
COVER	120
TOTAL	310

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD MANHOLE RING & COVER	STD. NO. 5.10



CROSS SECTION

NOTES:

1. THERE SHALL BE AN 18-INCH VERTICAL SEPARATION BETWEEN WATER AND SEWER LINES.
2. WATER AND/OR SANITARY SEWER LINES SHALL BE A MINIMUM OF TWO (2) FEET FROM THE EDGE OF THE CURB AND GUTTER.
3. ENCROACHMENT ONTO TOWN MAINTAINED RIGHT OF WAY SHALL FOLLOW CONDITIONS OF THE APPLICABLE ENCROACHMENT AGREEMENT OR FRANCHISE AGREEMENT.
4. STREET LAMPS SHALL BE PLACED SUCH THAT THERE ARE NO CONFLICTS WITH STREET TREES.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD UTILITY LOCATION IN STREET	STD. NO. 3.13

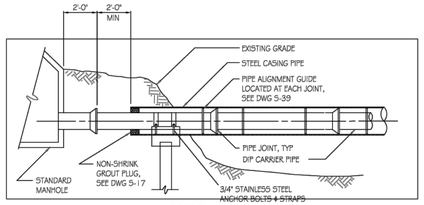
TOWN CERTIFICATION

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.

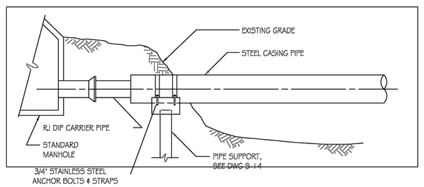
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

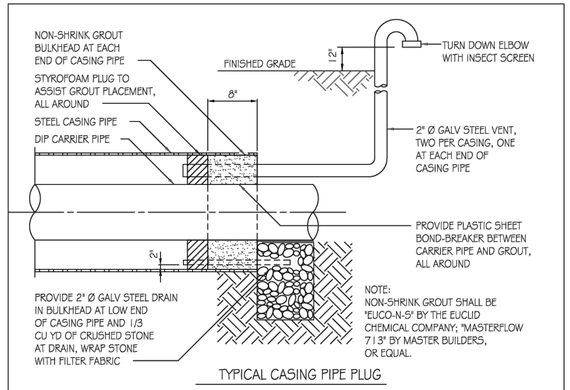


SECTION

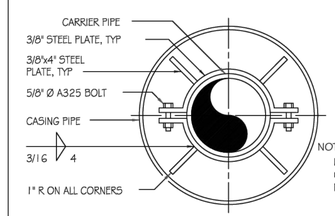


ELEVATION

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
AERIAL PIPE CROSSING TYPICAL PIPE SECTION & ELEVATION			
DWG. NO. 5-13	REVISIONS: D.H.L.	DATE: 6/1/08	REVISIONS / DATE



TYPICAL CASING PIPE PLUG



NOTE:
USE A MINIMUM OF 2 SPIDERS PER JOINT PLACED ONE FOURTH OF THE PIPE JOINT LENGTH IN FROM BOTH THE BELL AND SPIGOT.

PIPE ALIGNMENT GUIDE

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
AERIAL PIPE CROSSING CASING PIPE DETAILS			
DWG. NO. 5-18	REVISIONS: A.B.B. D.H.L.	DATE: 4-16-04 6-12-08	REVISIONS / DATE

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	03/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONGROCK ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN
DESIGNED BY	JWL	DRAWN BY	SRG
CHECKED BY	JWL		

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

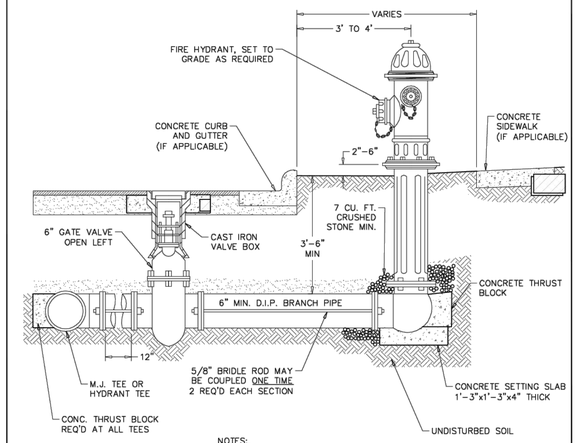
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

SANITARY SEWER DETAILS

DRAWING SHEET

D-4.0



NOTES:

HYDRANTS SHALL BE EQUIPPED WITH ONE 5" STORZ NOZZLE AND TWO 2-1/2" NOZZLES WITH NATIONAL STANDARD THREADS.

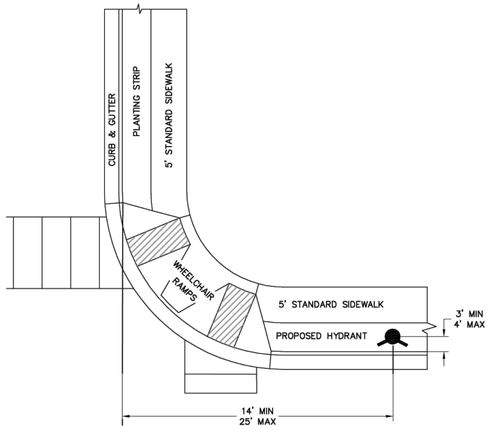
CONCRETE BLOCKING SHALL BE POURED SO AS TO LEAVE ALL FITTING BOLTS AND FLANGES EXPOSED.

IF HYDRANT IS LOCATED IN RURAL AREA, HYDRANT SHALL BE LOCATED APPROX. 1' INSIDE R/W.

IF HYDRANT IS LOACTED IN DOT R/W, USE DOT STANDARDS FOR LOCATION OF HYDRANT.

REVISIONS	
DATE	DESCRIPTION
7/08	CORRECTED NOZZLE SIZE & TYPE

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD HYDRANT INSTALLATION - URBAN	STD. NO. 6.02



REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS	STANDARD HYDRANT LOCATION	STD. NO. 6.03

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
2.	TOWN OF KNIGHTDALE COMMENTS	04/26/2023	SRG
3.	TOWN OF KNIGHTDALE COMMENTS	08/08/2024	SRG

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
WATER DETAILS

DRAWING SHEET
D-5.0

54 OF 55

PROGRESS PLOT DATE: 08/8/24

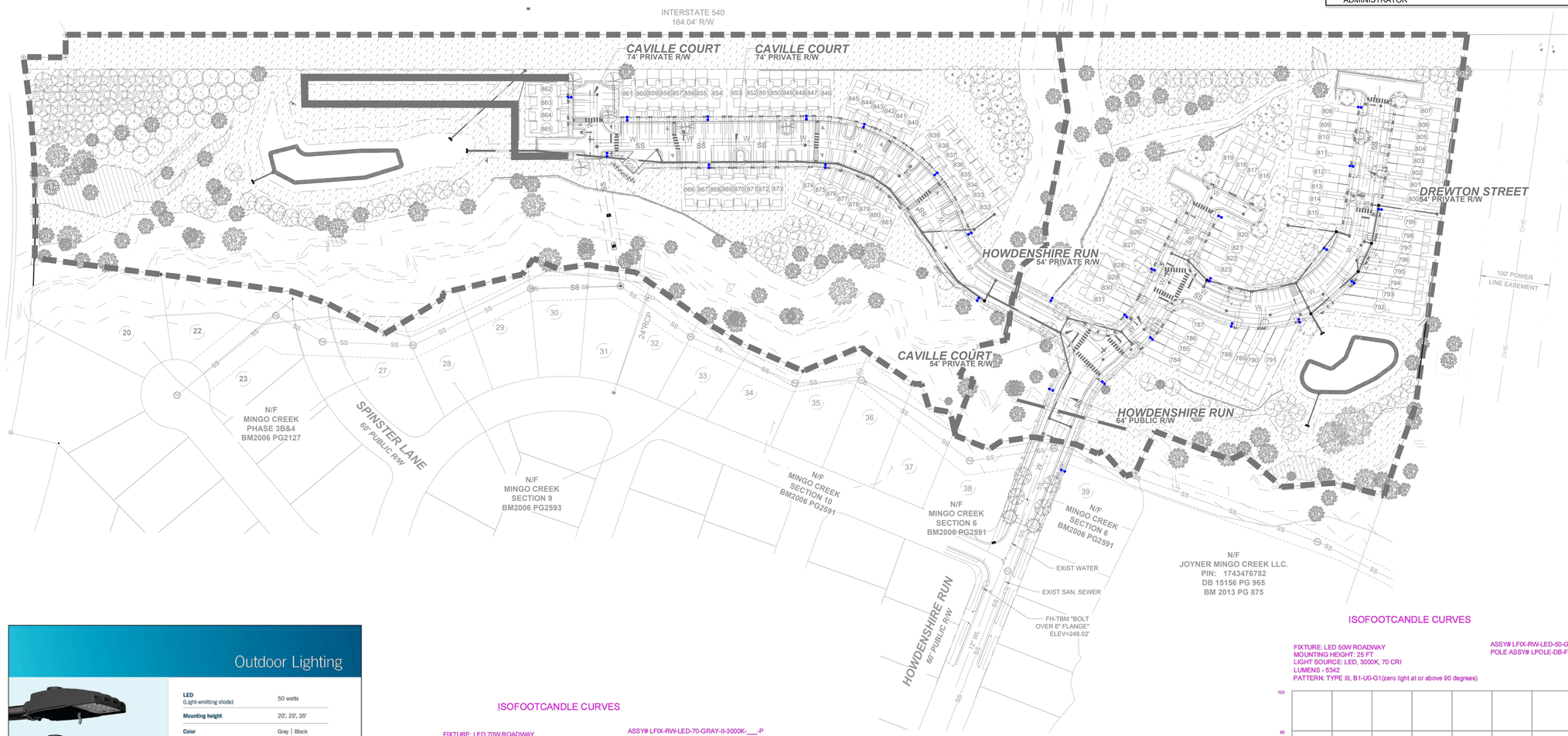
TOWN CERTIFICATION

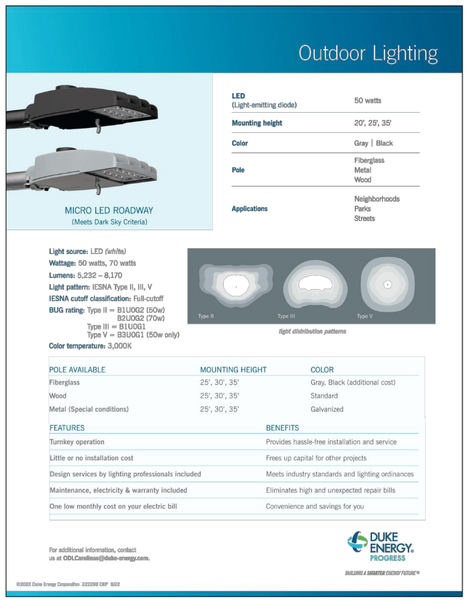
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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ADMINISTRATOR

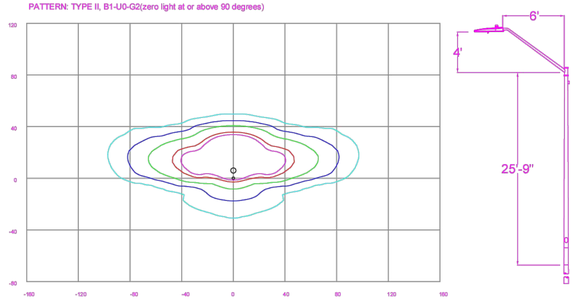




ISOFOOTCANDLE CURVES

FIXTURE: LED 70W ROADWAY
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: LED, 3000K, 70 CRI
LUMENS - 7820
PATTERN: TYPE II, B1-U0-G2(zero light at or above 90 degrees)

ASSY# LFIX-RW-LED-70-GRAY-II-3000K-___-P
POLE ASSY# LPOLE-DB-FG-25FT-GRAY-___-P (GRAY)

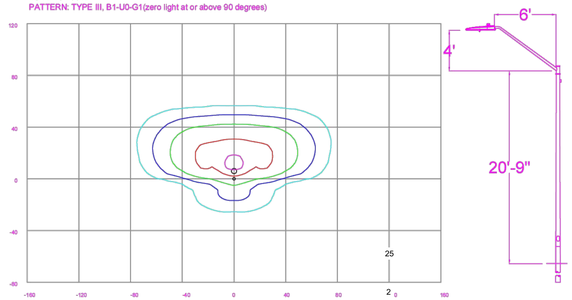


LEGEND (OUTER to INNER): 0.10 , 0.25 , 0.50 , 1.00 , 1.25

ISOFOOTCANDLE CURVES

FIXTURE: LED 50W ROADWAY
MOUNTING HEIGHT: 25 FT
LIGHT SOURCE: LED, 3000K, 70 CRI
LUMENS - 5342
PATTERN: TYPE III, B1-U0-G1(zero light at or above 90 degrees)

ASSY# LFIX-RW-LED-50-GRAY-III-3000K-___-P
POLE ASSY# LPOLE-DB-FG-25FT-GRAY-___-P (GRAY)



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

Schedule					
Symbol	Label	Quantity	Description	Lumens Per Lamp	Light Loss Factor
	A	38	LED 70w Roadway - Type II - 3000K - Street	7776	0.85
	B	2	LED 50w Roadway - Type III - 3000K	5312	0.85

No.	REVISIONS	DATE	BY
1.	TOWN OF KNIGHTDALE COMMENTS	02/21/2023	SRG
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				DRAWN BY	SRG
				CHECKED BY	JWL

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

LIGHTING PLAN

DRAWING SHEET

L-1.0

55 OF 55