

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

01 OF 46

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 REPAIR OF ANY TOWN, CITY OF RALEIGH OR NCDOT DAMAGED 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.

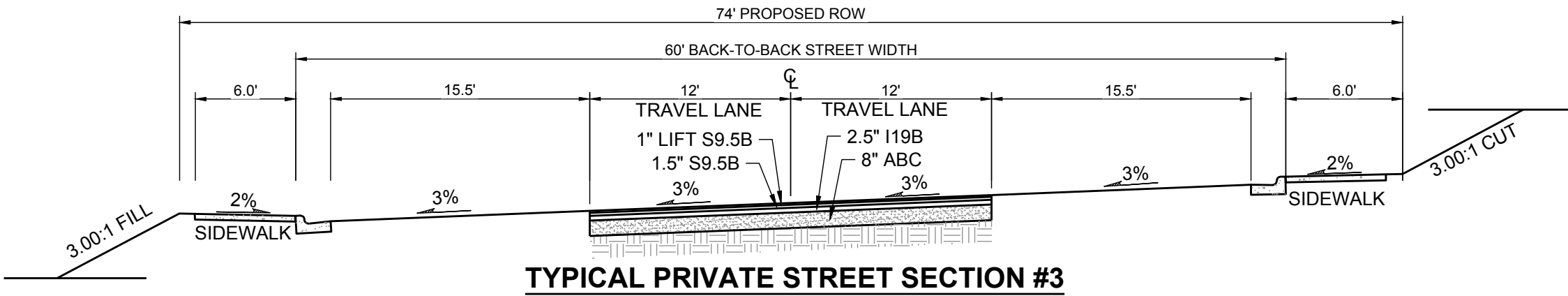
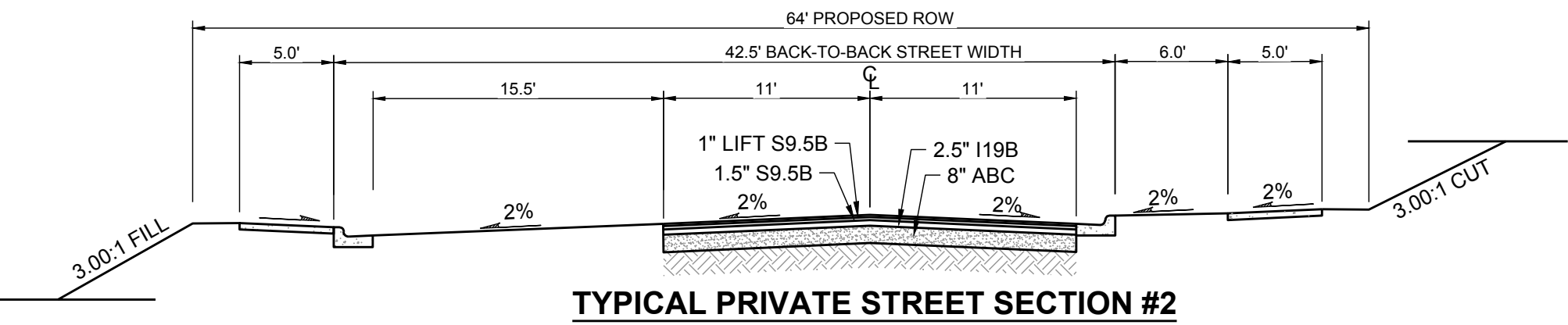
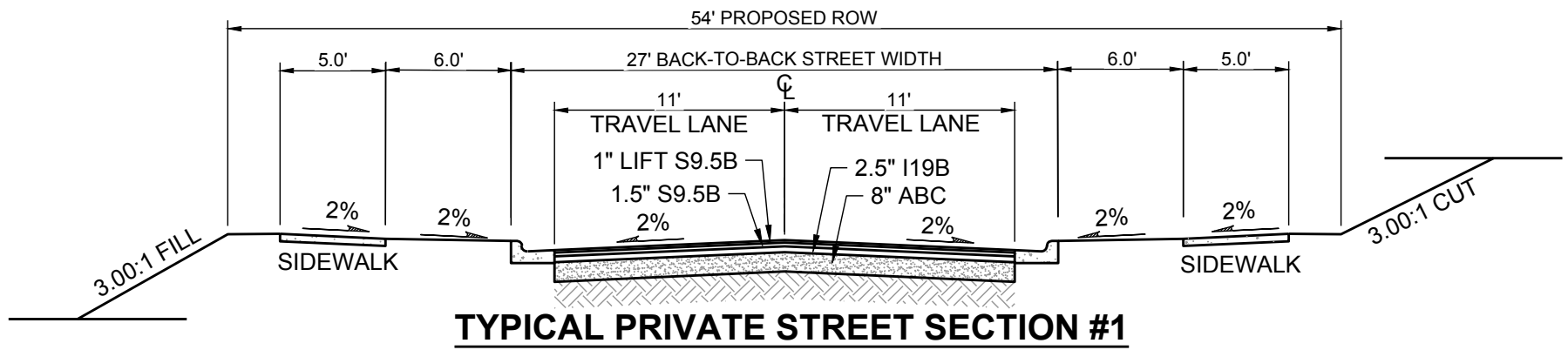
GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE PER TOWN OF KNIGHTDALE & NCDOT STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN FEET.
3. ALL SITE ELEMENTS ARE PERPENDICULAR TO EACH OTHER UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, RIGHT-OF-WAYS AND UTILITIES, PUBLIC OR PRIVATE, BEFORE WORKING IN THESE AREAS.
5. 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.
6. 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
7. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
8. 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.
9. 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.
10. ANY AND ALL QUANTITIES SHOWN OR IMPLIED ON THE PLANS ARE FOR ESTIMATION PURPOSES ONLY.
11. 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.
12. 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.
13. 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.
14. COMMON OPEN SPACE SHALL BE OWNED & MAINTAINED BY HOMEOWNERS' ASSOCIATION.
15. ANY SPECIALITY STREET SIGNS INCLUDING POSTS SHALL BE SUBMITTED TO TOWN OF KNIGHTDALE AND/OR NCDOT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
16. 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.
17. 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.
18. MAINTENANCE FOR AMENITY & OPEN SPACE SHALL BE THE RESPONSIBILITY OF THE HOA.

24. PRIOR TO PLACING CABG 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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 OF 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.
35. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDING PADS.

STANDARD UTILITY NOTES:

1. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM .
2. 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 .
3. 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.
4. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION .
5. OMITTED
6. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.



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 _____

STONGROCK

ENGINEERING GROUP

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

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

CIVIL NOTES

DRAWING SHEET

C-2.0

02 OF 46

BY

DATE

REVISIONS

No.

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 030046 ENGINEER JOSHUA THEW PAUL

LINE	BEARING	DISTANCE
L1	N 09°41'14" W	26.69
L2	N 09°41'14" W	27.07
L3	N 09°41'14" W	27.07
L4	N 59°19'20" W	32.82
L5	N 59°19'20" W	45.37
L6	N 69°38'52" E	7.96
L7	N 70°40'01" E	6.99
L8	N 41°12'48" W	17.75
L9	N 41°12'48" W	37.30
L10	N 39°21'52" W	15.92
L11	N 39°21'52" W	13.81
L12	N 39°21'52" W	39.72
L13	N 36°41'03" W	43.04
L14	N 10°17'22" E	10.41
L15	N 07°17'22" E	10.41
L16	N 07°17'22" E	10.41
L17	N 07°17'22" E	10.41
L18	N 03°46'56" W	16.55
L19	N 03°46'56" W	16.55
L20	N 51°19'02" W	91.59
L21	N 49°22'27" W	1.54
L22	N 49°22'27" W	1.54
L23	N 06°27'26" E	11.31
L24	N 06°27'26" E	11.31
L25	N 06°27'26" E	11.31
L26	N 22°21'28" W	11.82
L27	N 43°03'01" E	36.95
L28	N 18°20'26" W	31.14
L29	N 07°22'21" E	11.52
L30	N 06°27'26" E	11.31
L31	N 06°27'26" E	11.31
L32	N 36°04'14" W	47.25
L33	N 10°29'11" E	10.41
L34	N 05°21'31" W	34.29
L35	N 50°52'17" W	8.48
L36	N 23°24'07" E	48.83
L37	N 43°57'19" W	16.18
L38	N 43°21'50" E	2.40
L39	N 87°22'20" E	64.36
L40	N 07°22'21" E	11.52
L41	N 56°17'49" W	21.05
L42	N 11°58'00" E	73.88
L43	N 39°21'52" W	15.92
L44	N 13°33'56" W	72.63
L45	N 64°32'31" E	172.38
L46	N 72°40'13" E	170.38
L47	N 57°55'15" E	26.84
L48	N 65°45'11" W	44.07
L49	N 78°47'32" E	52.76
L50	N 69°24'33" E	58.38
L51	N 40°23'28" W	41.88
L52	N 80°22'30" W	51.62
L53	N 18°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°29'41.76"	N 58°34'43" E	291.21
C2	255.13	1462.39	9°59'45.48"	S 69°17'26" W	254.81

LEGEND:

80

5' CONTOUR

1' CONTOUR

EXISTING STREAM

EXISTING DITCH

EASEMENT LINE / R/W

WTLD

WTLD

CONIFEROUS

DECIDUOUS

MASTER PLAN BOUNDARY

EXISTING ADJOINER PROPERTY LINE

5' CONTOUR

1' CONTOUR

EXISTING STREAM

EXISTING DITCH

EASEMENT LINE / R/W

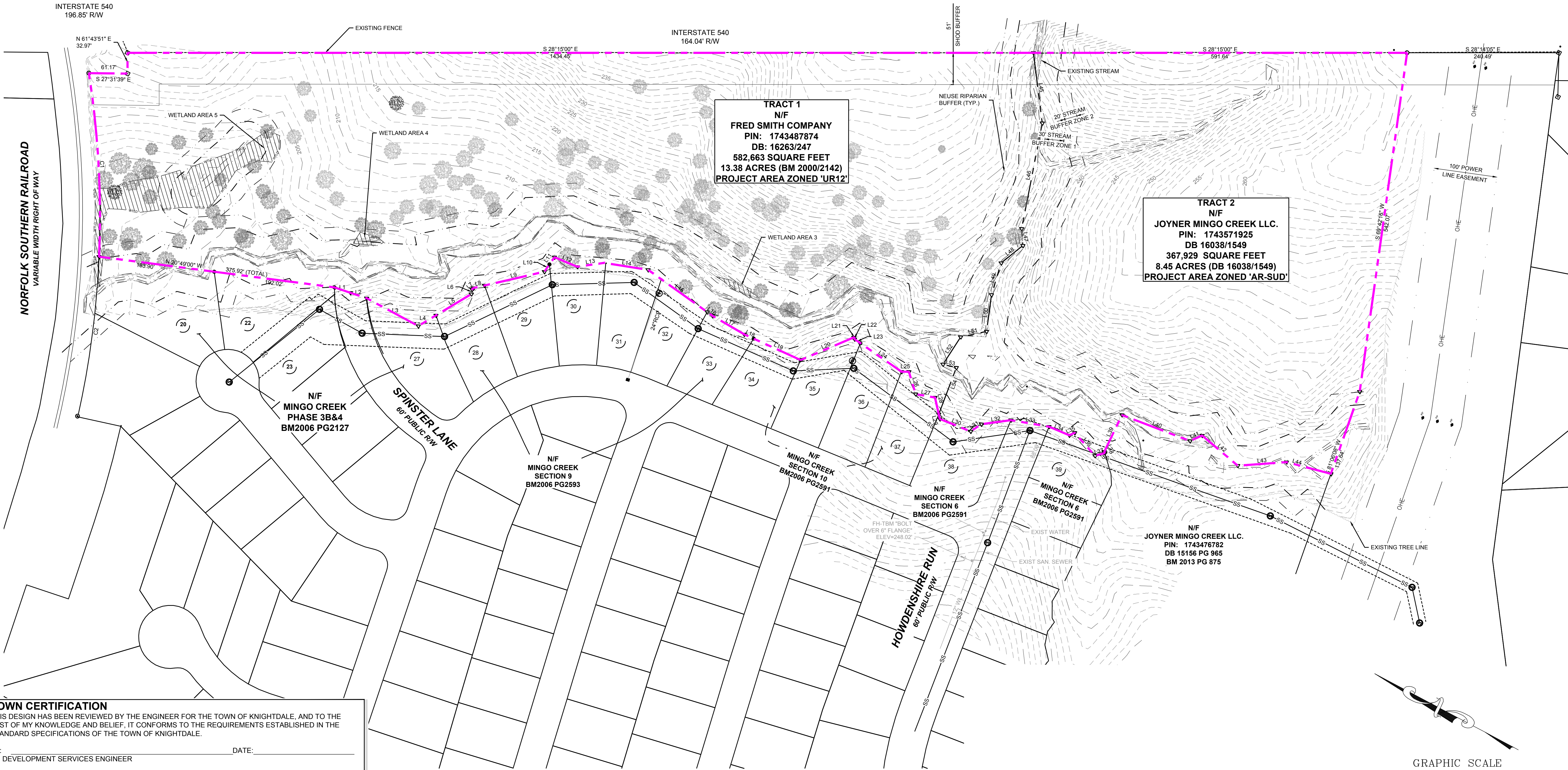
EXISTING WETLAND

CONIFEROUS

DECIDUOUS

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

- SOURCES OF INFORMATION:
- 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
 - 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.
 - EXISTING LIDAR CONTOURS OUTSIDE OF SITE FROM WAKE COUNTY GIS
 - EXISTING BOUNDARY PROVIDED BY HALL LAND SURVEYING, INC. 1899 STEVEN'S CHAPEL ROAD, SMITHFIELD, NC 27577, DATED 05/20/2015.
 - 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.
 - WETLAND INFORMATION FROM SOIL & ENVIRONMENTAL CONSULTANTS, PA 8412 FALLS OF THE NEUSE ROAD, SUITE 104, RALEIGH, NC 27615, DATED 06/10/2015.
 - TREE SURVEY PROVIDED BY STOKES SURVEYING & MAPPING, PLLC 1425-105 B ROCK QUARRY RD., RALEIGH NC, 27610, DATED JULY 18, 2019.



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

BY

DATE

REVISIONS

NO.

SEAL:

NORTH CAROLINA

PROFESSIONAL

SEAL

030046

ENGINEER

JOSHUA W. PAUL

STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166

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STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

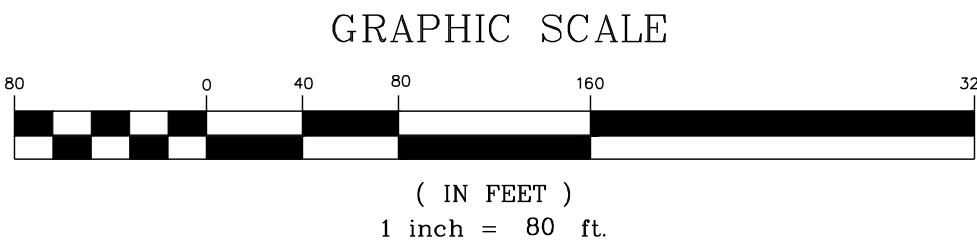
CONSTRUCTION PLANS

EXISTING CONDITIONS PLAN

DRAWING SHEET

C-3.0

03 OF 46



[illegible]

STRONGROCK
E N G I N E E R I N G G R O U P
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
68801 FALLS OF NEUSE RD, SUITE 108 RALEIGH, NC 27615 | JOSH@STRONGROCKENGINEERING.COM

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

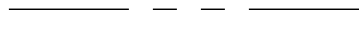
**HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
DEMOLITION PLAN**

DRAWING
SHEET

C-4.0

04 OF 46

LEGEND:

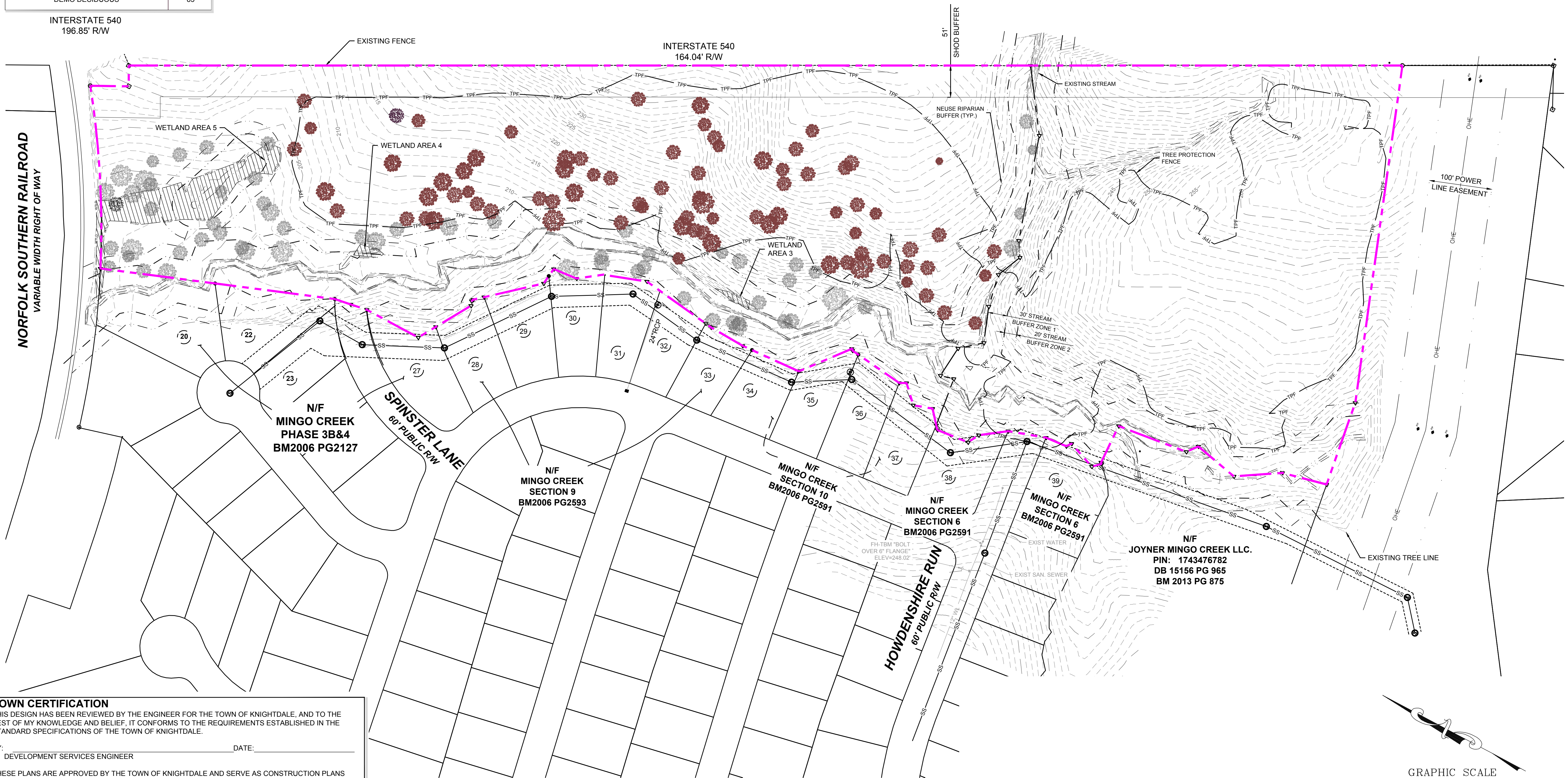
- | | |
|---|---------------------------------|
|  | MASTER PLAN BOUNDARY |
|  | EXISTING ADJOINER PROPERTY LINE |
|  | 10' CONTOUR |
|  | 2' CONTOUR |
|  | EXISTING STREAM |
|  | EXISTING BUFFER |
|  | EXISTING DITCH |
|  | EXISTING WETLAND |
|  | DEMO CONIFEROUS |
|  | DEMO DECIDUOUS |
|  | CONIFEROUS |
|  | DECIDUOUS |
|  | TREE PROTECTION FENCE LINE |

EXISTING TREES TO BE REMOVED	QUANTITY
DEMO CONIFEROUS	1
DEMO DECIDUOUS	85

INTERSTATE 540
196.85' R/W

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY



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



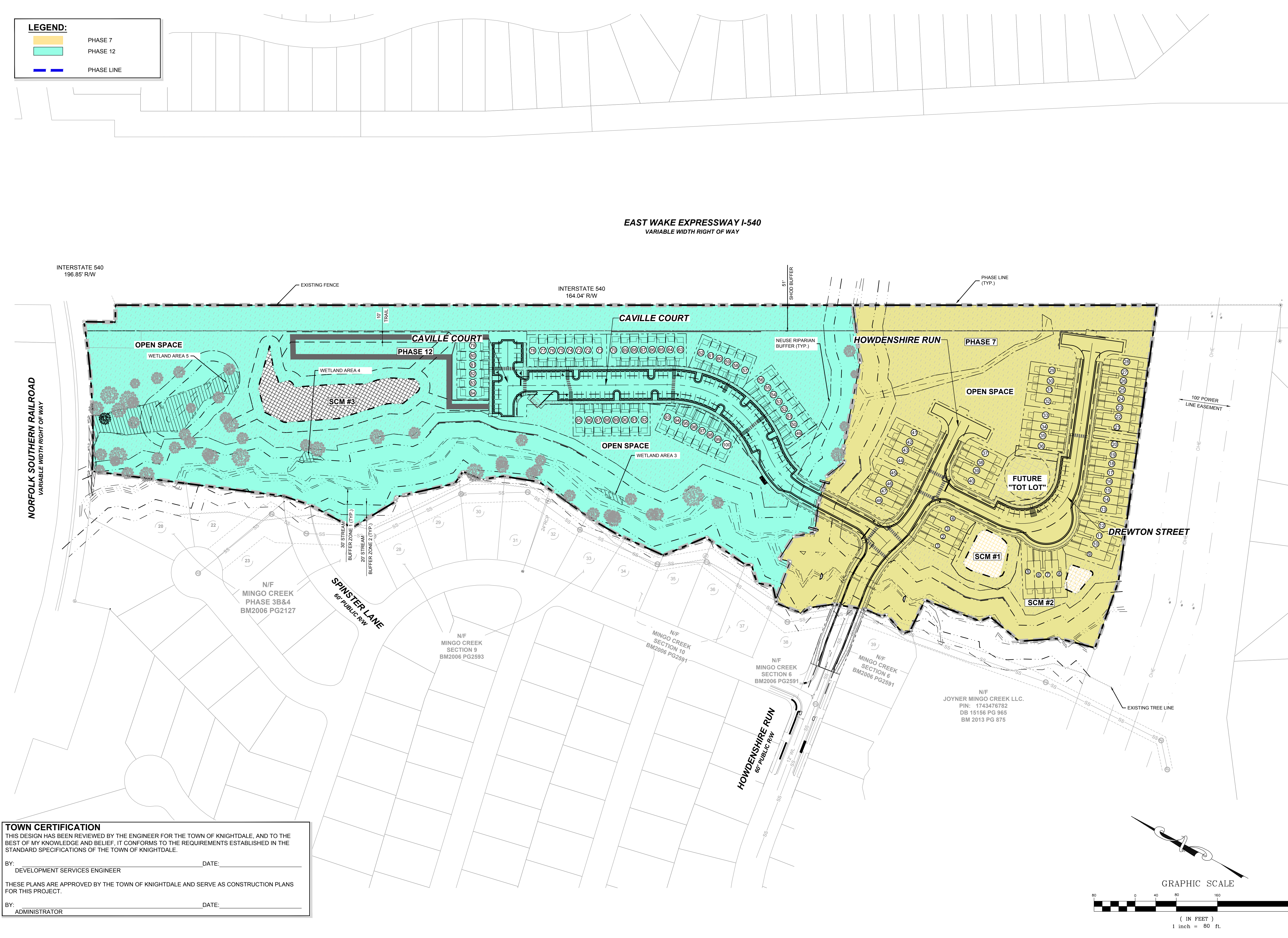
(IN FEET)
1 inch = 80 ft.

LEGEND:

PHASE 7

PHASE 12

PHASE LINE



SEAL:
NORTH CAROLINA
PROFESSIONAL
ENGINEER
0330046
JOSHUA THEW PA
JOSHUA THEW PA

STRONGROCK

ENGINEERING GROUP

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

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PHASING PLAN

DRAWING SHEET

C-5.0

05 OF 46

REVISIONS

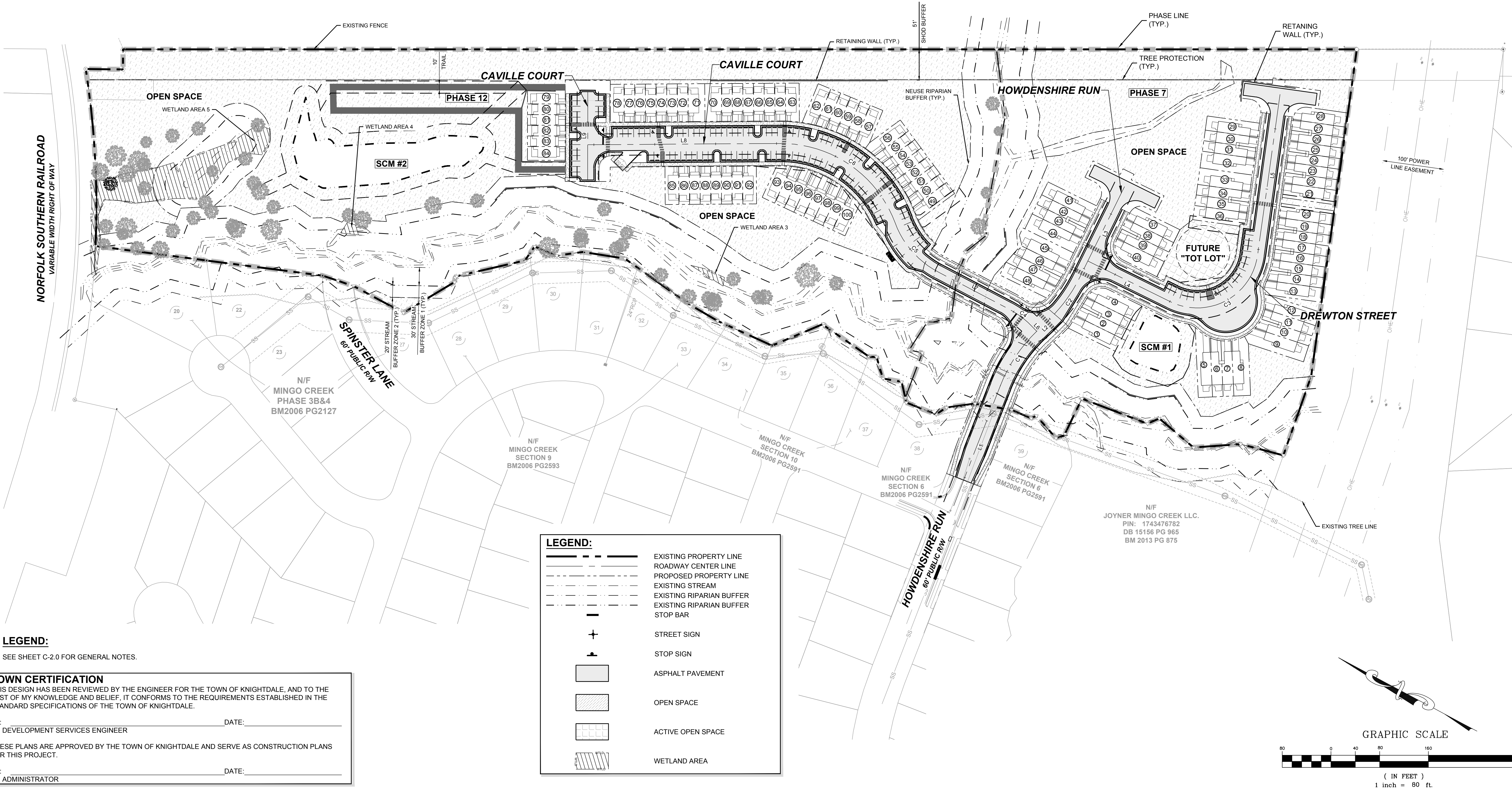
DATE

BY

LINE TABLE					
NAME	ROADWAY	LENGTH	DIRECTION	BEGIN STATION	END STATION
L1	HOWDENSHERE RUN	210.90'	N82°57'44"E	10+00.00	12+10.90
L2	HOWDENSHERE RUN	26.74'	S72°01'08"E	13+20.07	13+46.80
L3	HOWDENSHERE RUN	166.32'	N87°58'52"E	14+34.07	16+00.39
L4	DREWTON STREET	150.99'	S2°01'08"E	10+00.00	11+50.99
L5	DREWTON STREET	267.42'	N69°43'03"E	13+39.95	16+07.37
L6	CAVILLE COURT	10.61'	N17°58'52"E	10+00.00	10+10.61
L7	CAVILLE COURT	130.46'	N0°34'32"W	10+59.20	11+89.65
L8	CAVILLE COURT	315.91'	N28°38'26"W	15+44.14	18+60.04
L9	STREET 'A'	145.00'	S61°49'09"W	10+00.00	11+45.00

CURVE TABLE						
NAME	ROADWAY	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD DIRECTION	BEGIN STATION
C1	HOWDENSHERE RUN	250.00'	109.17'	108.30'	S84°31'42"E	12+10.90
C2	HOWDENSHERE RUN	250.00'	87.27'	86.82'	S82°01'08"E	13+46.80
C3	DREWTON STREET	100.00'	188.96'	162.07'	S56°09'02"E	11+50.99
C4	CAVILLE COURT	150.00'	48.58'	48.37'	N8°42'10"E	10+10.61
C5	CAVILLE COURT	150.00'	109.94'	107.49'	N20°25'14"E	11+89.65
C6	CAVILLE COURT	200.00'	244.55'	229.59'	N6°23'17"E	12+99.59

EAST WAKE EXPRESSWAY I-540
VARIABLE WIDTH RIGHT OF WAY



LEGEND:
SEE SHEET C-2.0 FOR GENERAL NOTES.

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

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

SEAL:

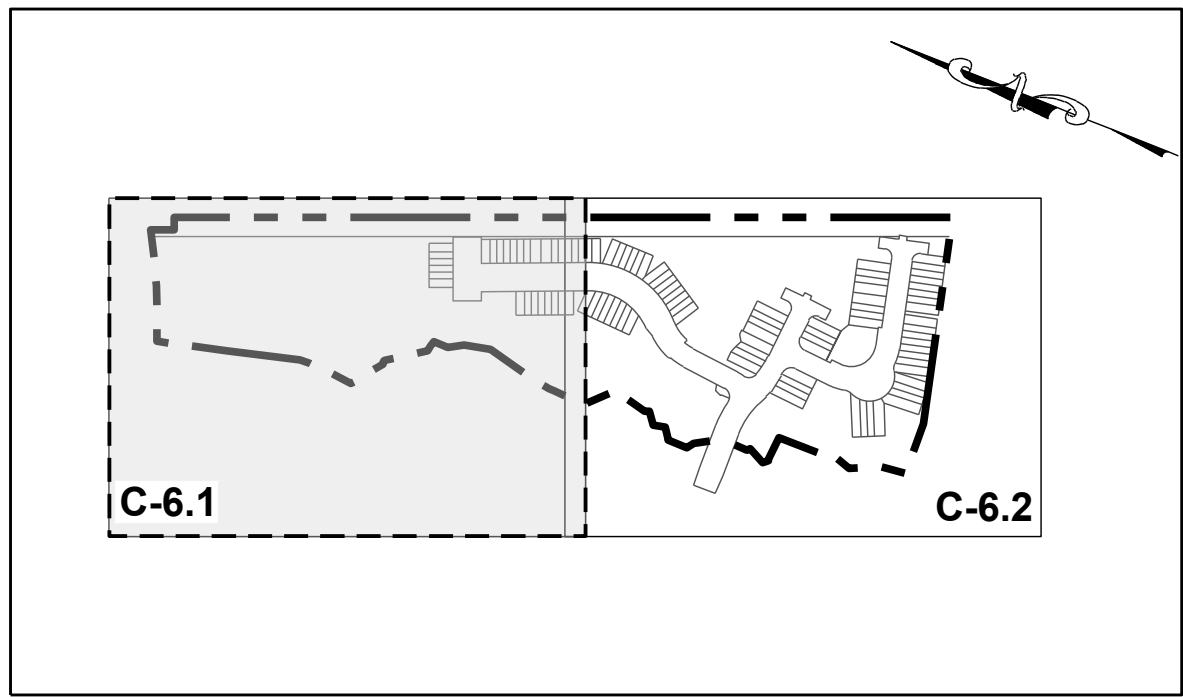
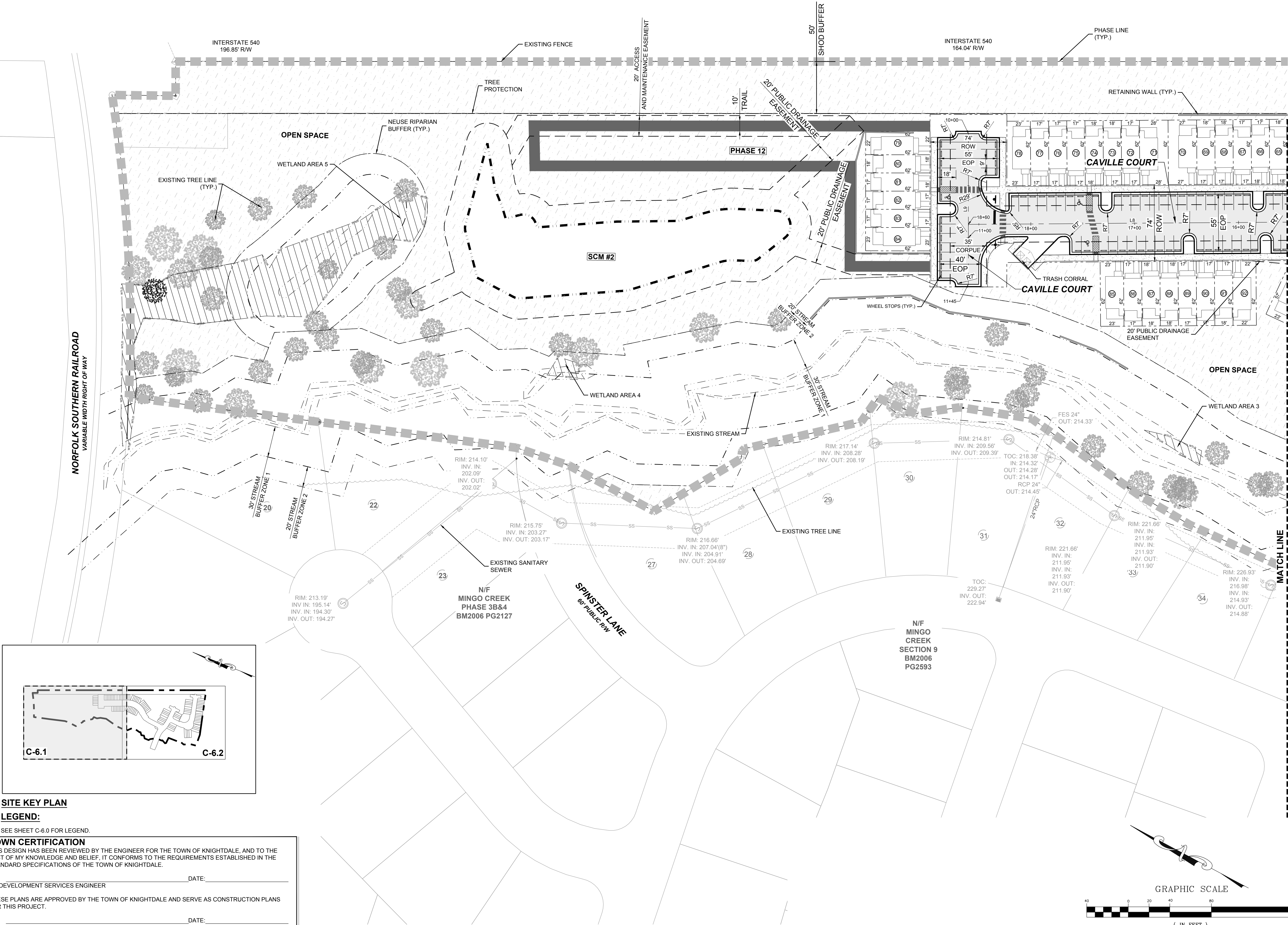
STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | JOSH@STRONGROCKENGINEERING.COM

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

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

DRAWING SHEET
C-6.0

06 OF 46



SITE KEY PLAN

LEGEND:

SEE SHEET C-6.0 FOR LEGEND.

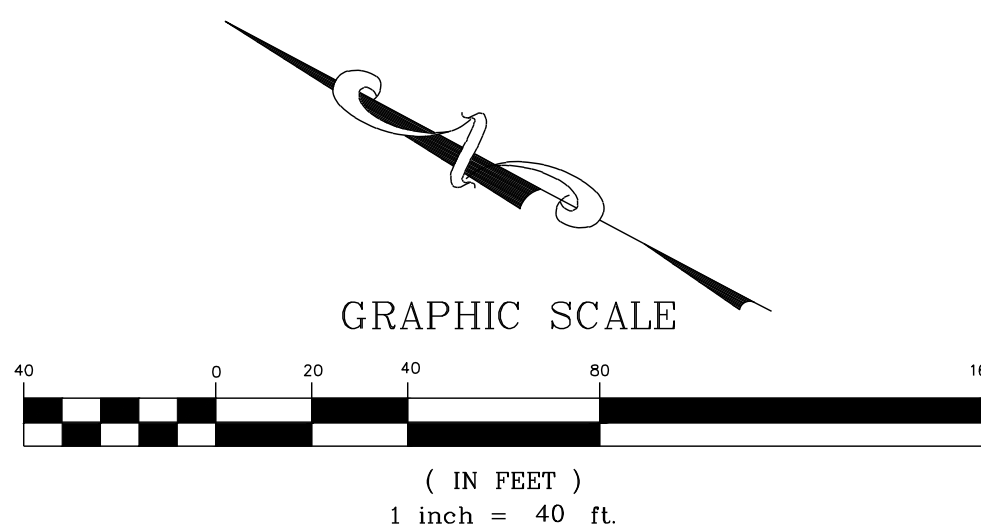
TOWN CERTIFICATION

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.

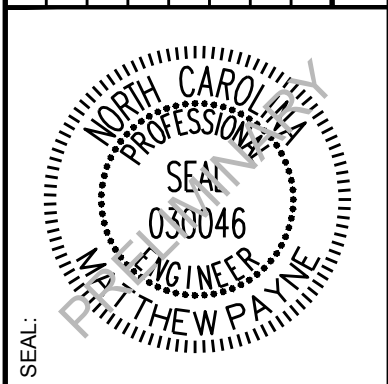
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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

BY: _____ DATE: _____
ADMINISTRATOR



NO.	REVISIONS	DATE	BY



STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC / COMPANY LICENSE # P-2166

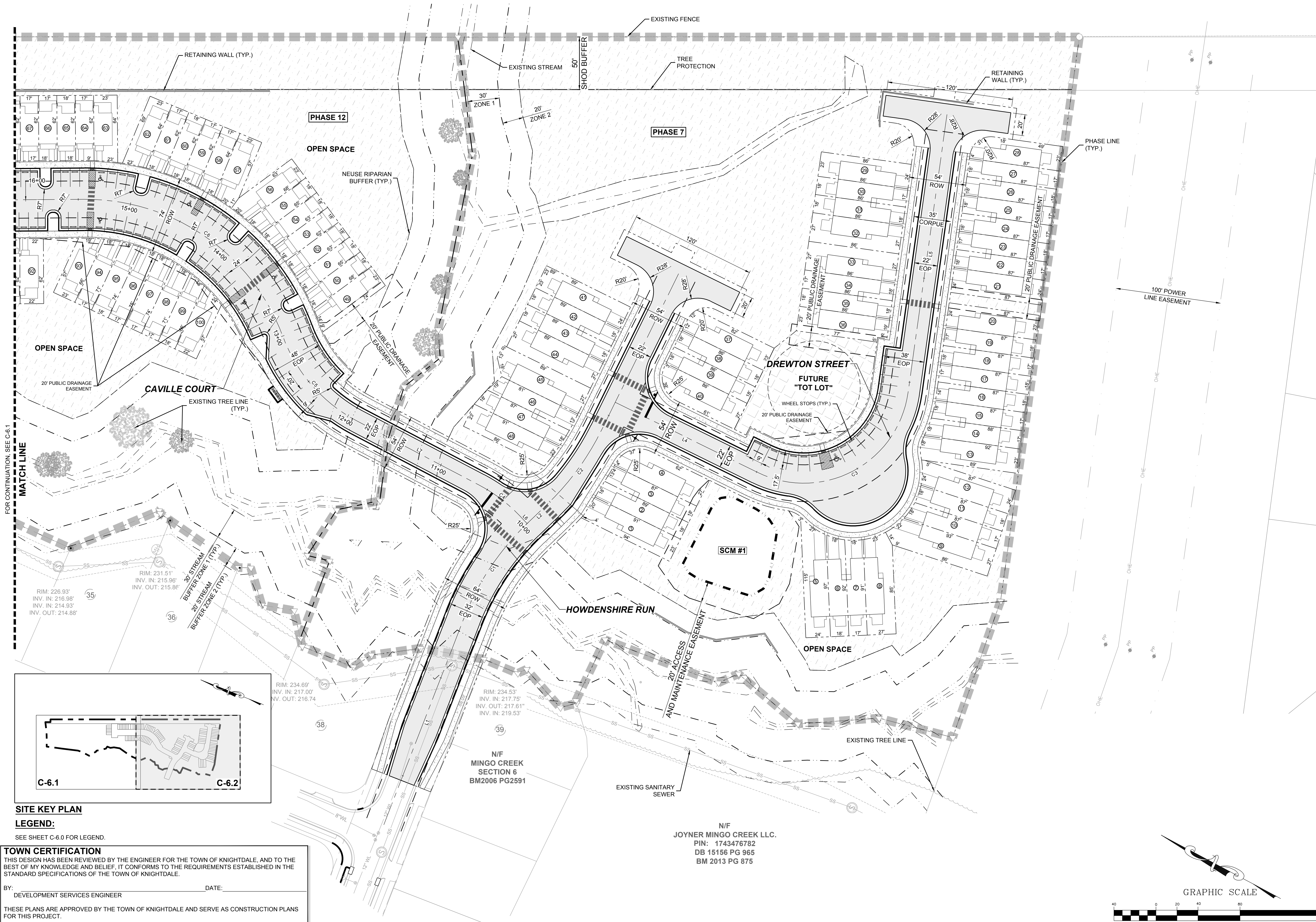
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 / JOSH@STRONGROCKENGINEERING.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	MTP	SRG	MTP

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

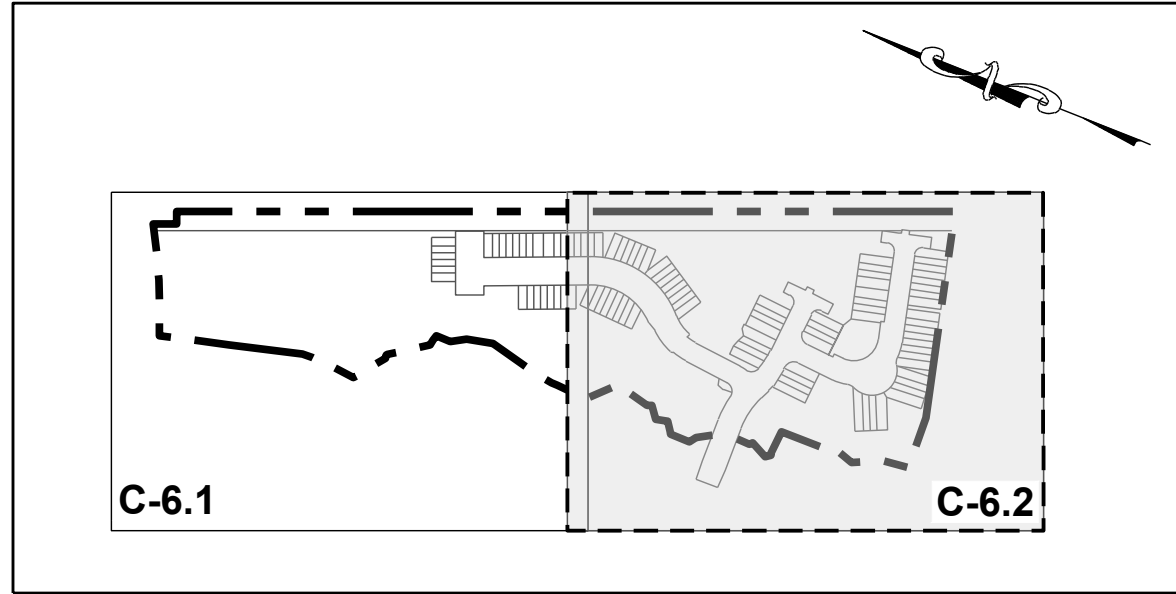
DRAWING SHEET

C-6.1



FOR CONTINUATION, SEE C-6.1

MATCH LINE



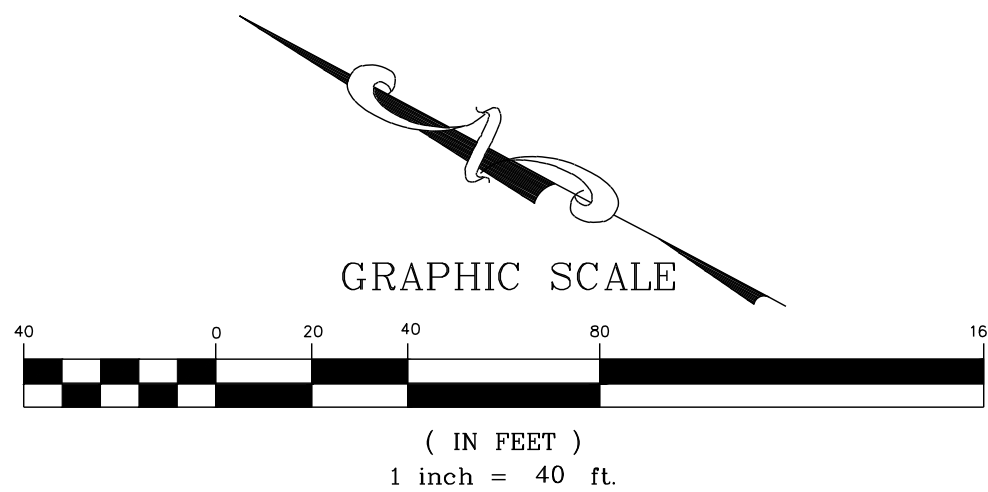
SITE KEY PLAN

LEGEND:

SEE SHEET C-6.0 FOR LEGEND.

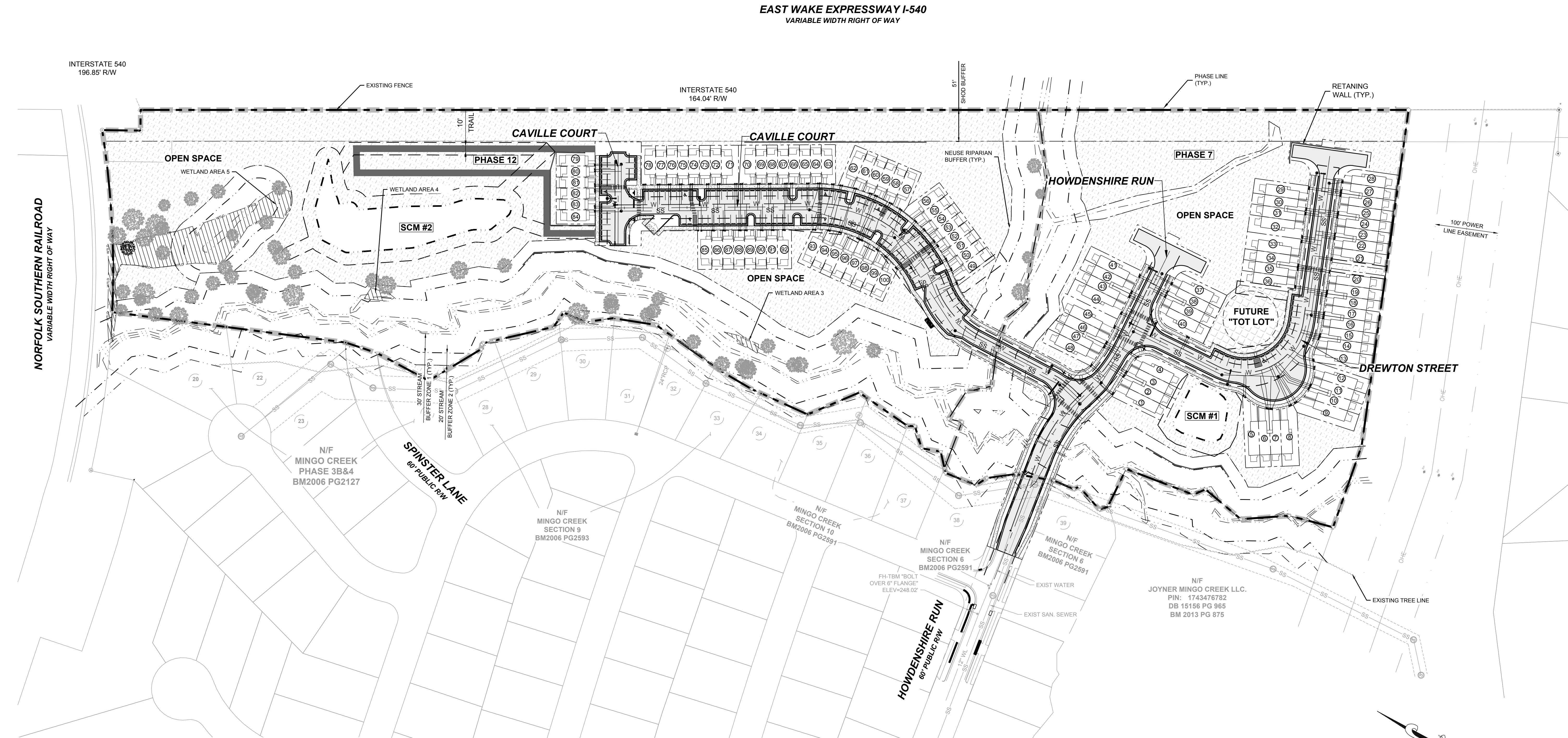
TOWN CERTIFICATION THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.	
BY:	DATE:
DEVELOPMENT SERVICES ENGINEER	
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.	
BY:	DATE:
ADMINISTRATOR	

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



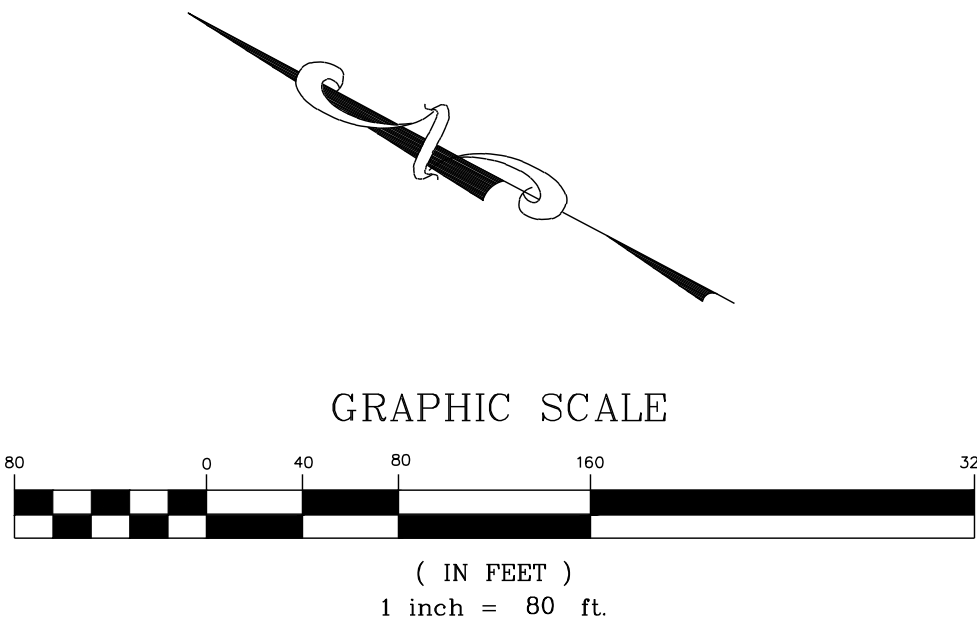
SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER 030046 JOSHUA THEW PA, III		REVISIONS No.		DATE	BY
STRONGROCK ENGINEERING GROUP STRONG ROCK ENGINEERING GROUP, PLLC / COMPANY LICENSE # P-2166 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM					
STRONG ROCK PROJECT NOT FOR CONSTRUCTION SCALE AS SHOWN		DESIGNED BY MTP		SRG DRAWN BY MTP	
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS PARTIAL SITE PLAN II					
DRAWING SHEET C-6.2					
08 OF 46					

LEGEND:	
W	WATER LINE
SS	SANITARY SEWER LINE
WATER METER / SERVICE	
SANITARY CLEANOUT / SERVICE	
GATE VALVE	
TEE	
BLOW OFF VALVE	
SANITARY MANHOLE	

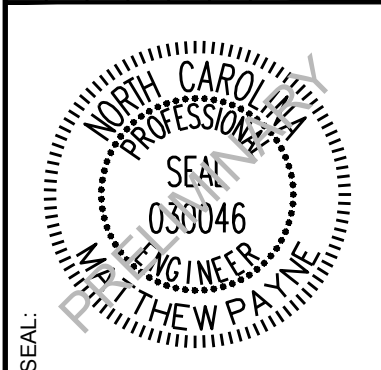


TOWN CERTIFICATION	
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.	
BY:	DATE:
DEVELOPMENT SERVICES ENGINEER	
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.	
BY:	DATE:
ADMINISTRATOR	

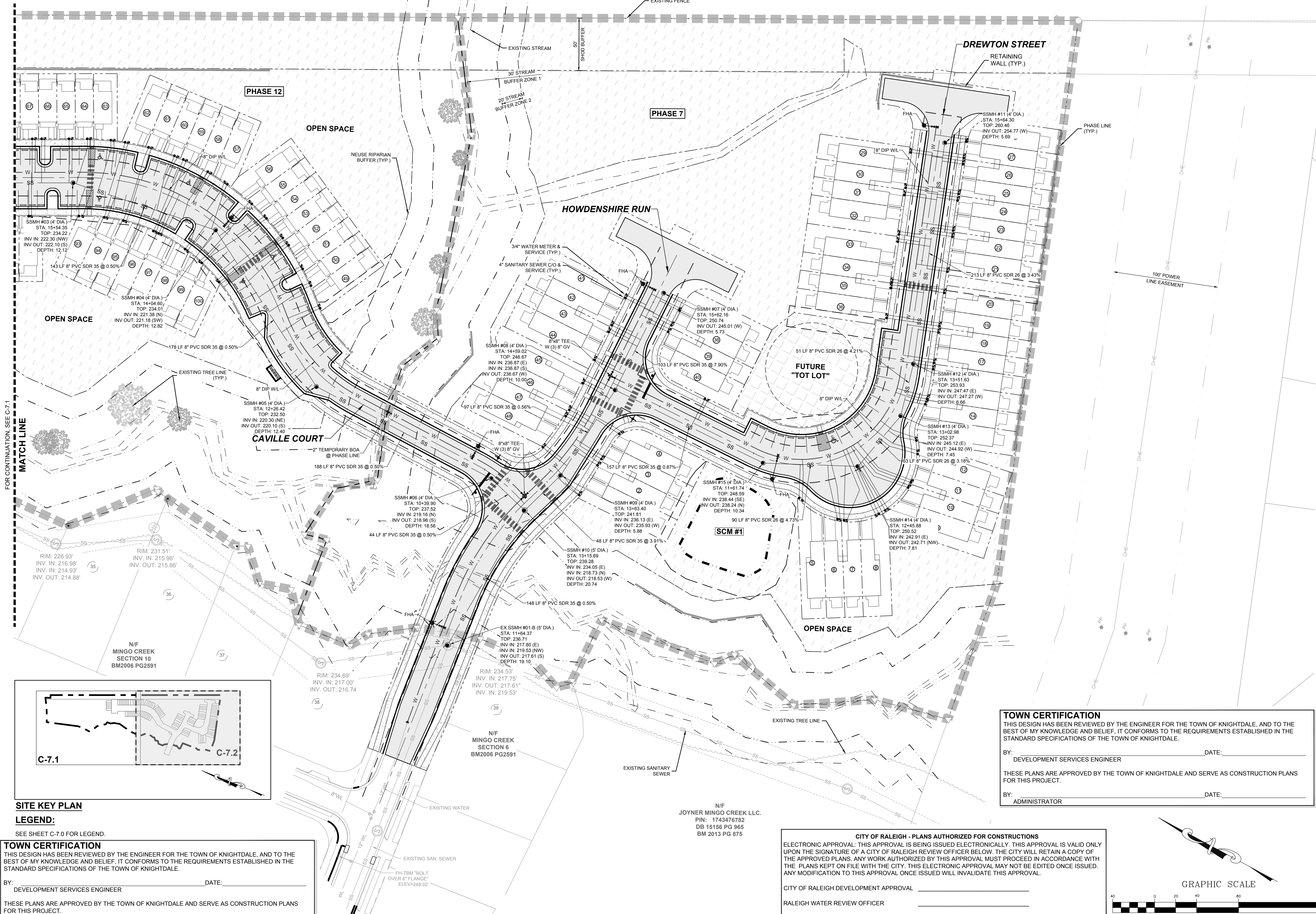
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS	
ELECTRONIC APPROVAL: THIS APPROVAL IS BEING ISSUED ELECTRONICALLY. THIS APPROVAL IS VALID ONLY UPON THE SIGNATURE OF A CITY OF RALEIGH REVIEW OFFICER BELOW. THE CITY WILL RETAIN A COPY OF THE APPROVED PLANS. ANY WORK AUTHORIZED BY THIS APPROVAL MUST 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	_____



SEAL:		NORTH CAROLINA PROFESSIONAL SEAL 0330046 ENGINEER JAMES PAUL		REVISIONS		BY DATE	
STRONG ROCK		ENGINEERING GROUP		STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166		8801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM	
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK		TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA		CONSTRUCTION PLANS		OVERALL UTILITY PLAN	
DRAWING SHEET		C-7.0		09 OF 46			

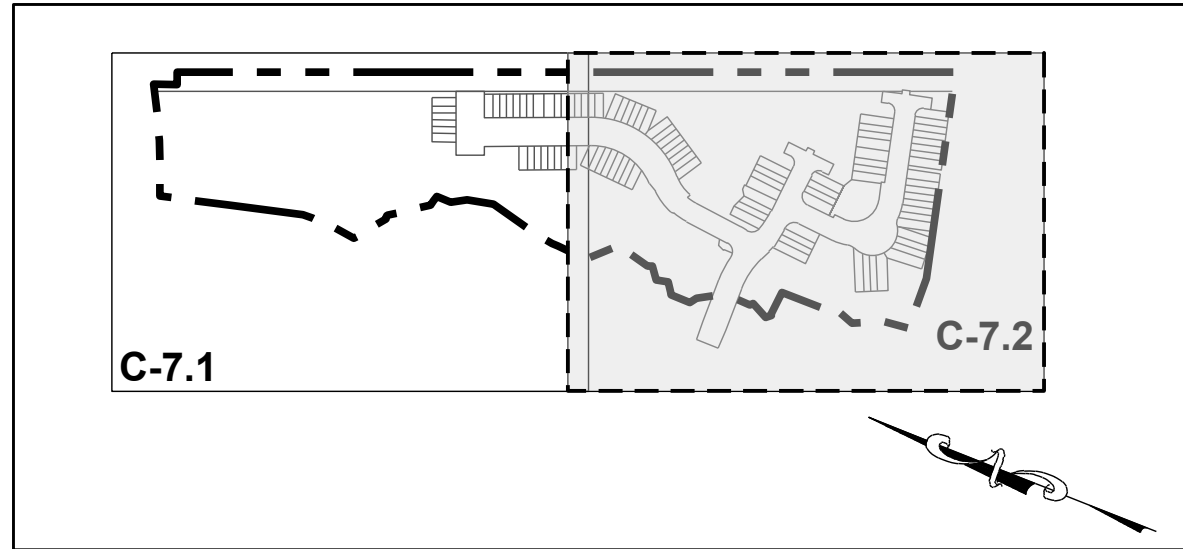


STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	MTP
DRAWN BY	SRG
CHECKED BY	MTP



FOR CONTINUATION SEE C-7.1

MATCH LINE



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

N/F
JOYNER MINGO CREEK LLC.
PIN: 174347872
DB 15156 PG 965
BM 2013 PG 875

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.

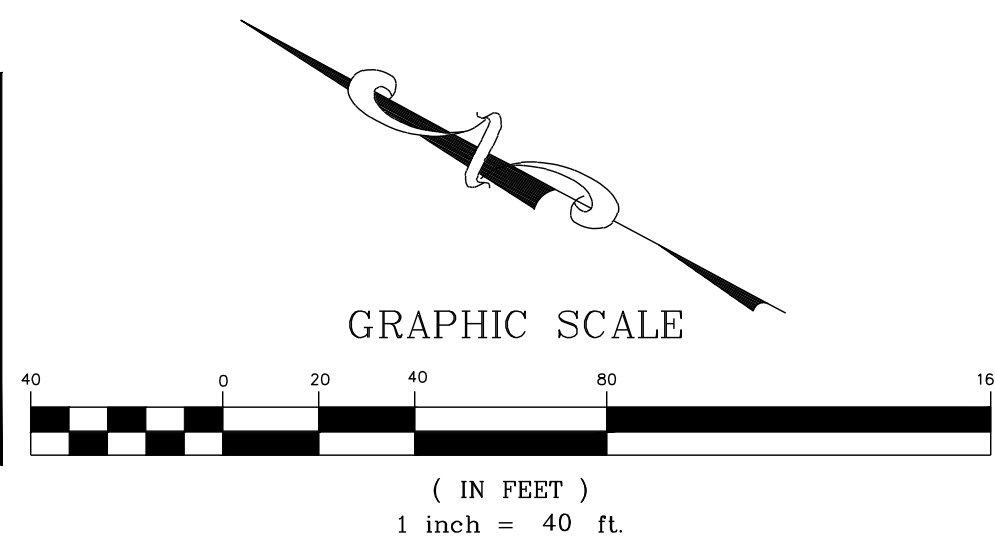
CITY OF RALEIGH DEVELOPMENT APPROVAL _____
RALEIGH WATER REVIEW OFFICER _____

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



STRONGROCK

ENGINEERING GROUP

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

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

PARTIAL UTILITY PLAN II

DRAWING SHEET

C-7.2

11 OF 46

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 030046 JOSHUA THEW PAUL

REVISIONS

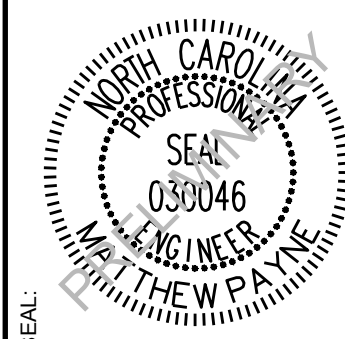
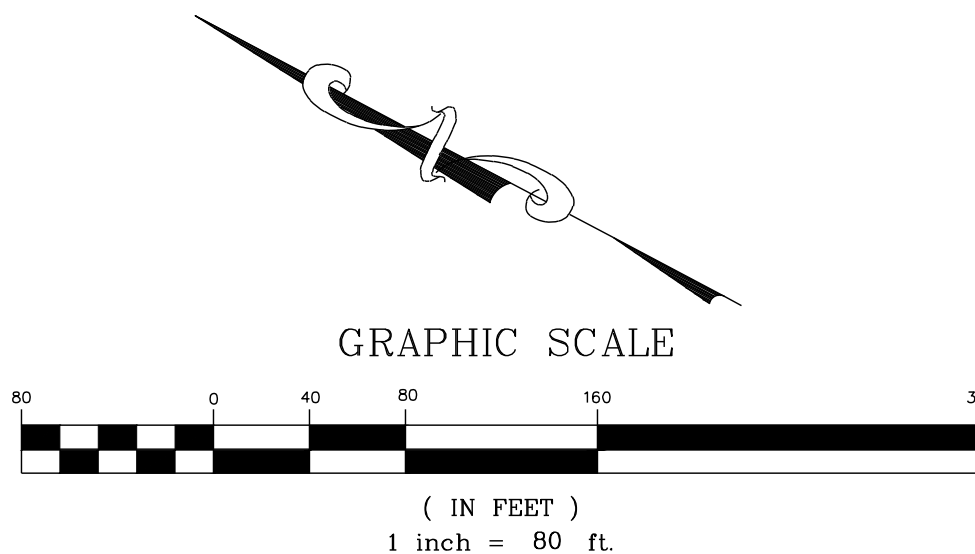
DATE

BY

LEGEND:

— — — — —	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	



STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE #P-2166
10000 W. 10TH AVE., SUITE 1000, DENVER, CO 80233

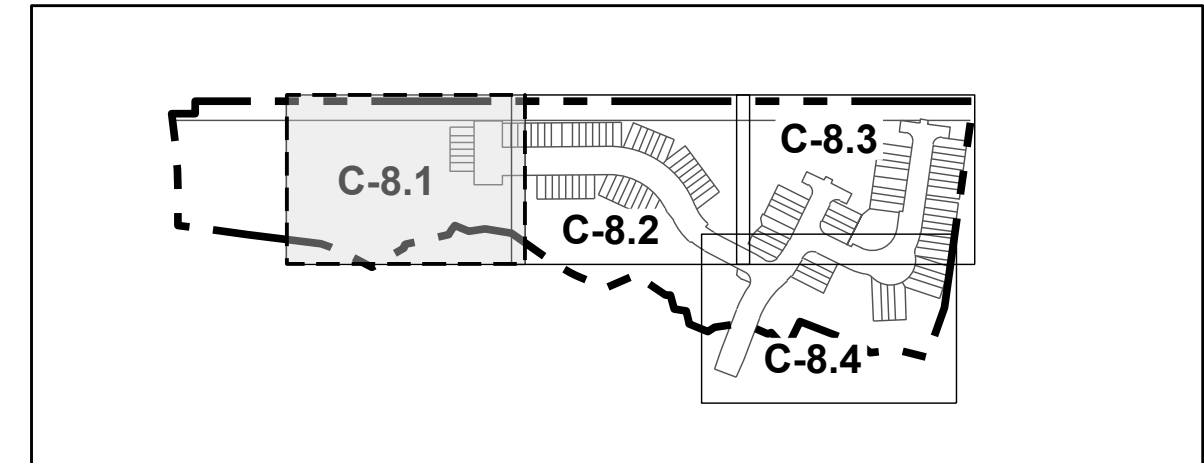
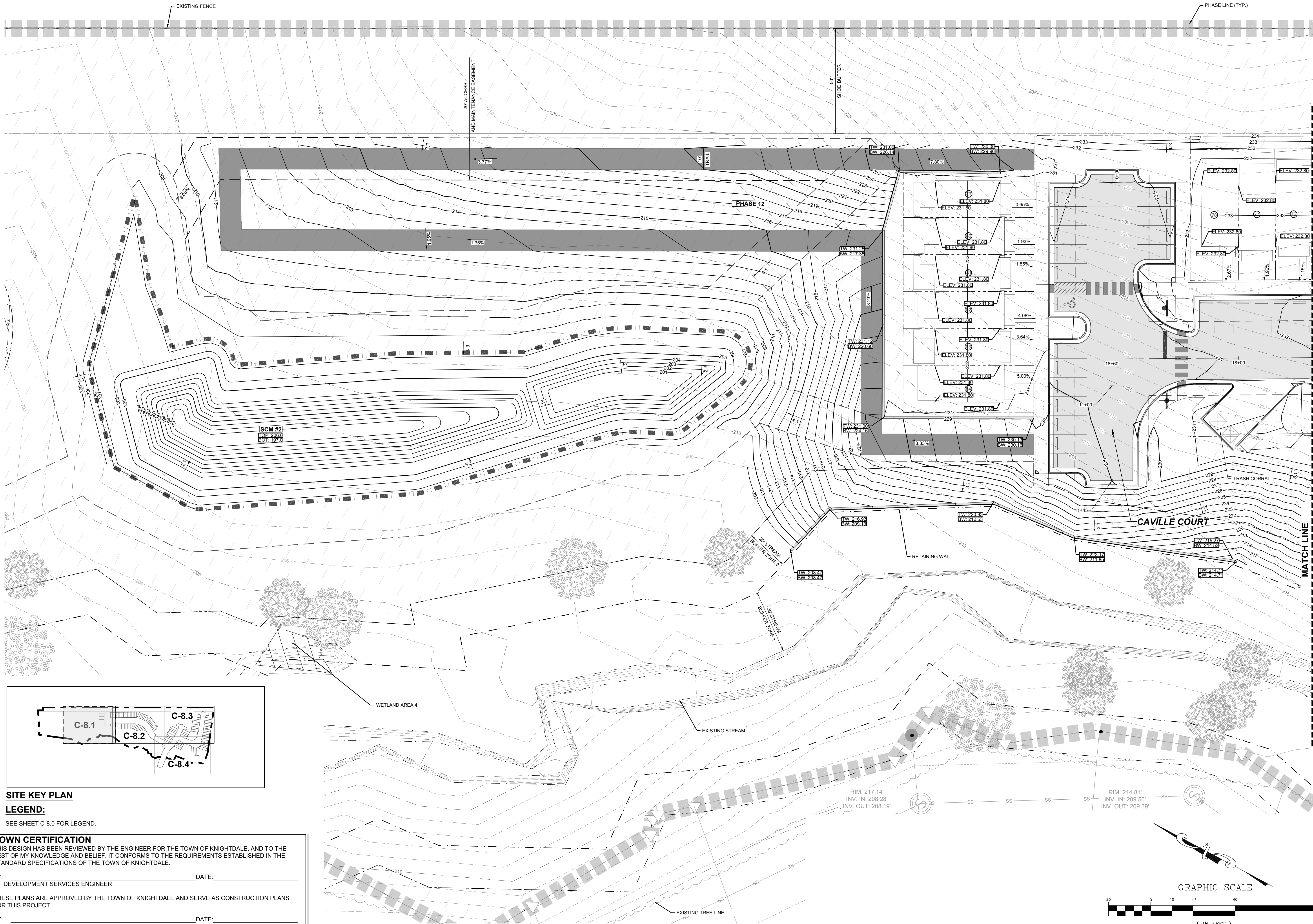
STRONG ROCK PROJECT			
	NOT FOR CONSTRUCTION		
	SCALE	AS SHOWN	
	DESIGNED BY	MTP	
	DRAWN BY	SRG	

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

DRAWING SHEET

C-8.0

[illegible]



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.

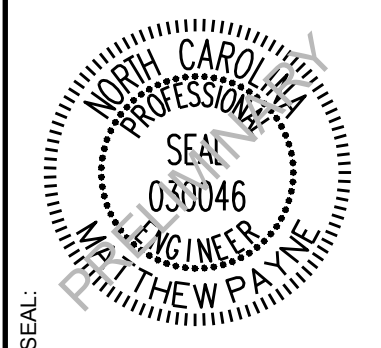
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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

BY: _____ DATE: _____
ADMINISTRATOR

FOR CONTINUATION, SEE C-8.2

NO.	REVISIONS	DATE	BY



STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166

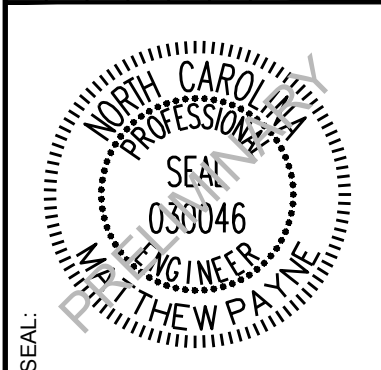
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | JOSH@STRONGROCKENGINEERING.COM

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

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

DRAWING SHEET

C-8.1



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

DRAWING
SHEET

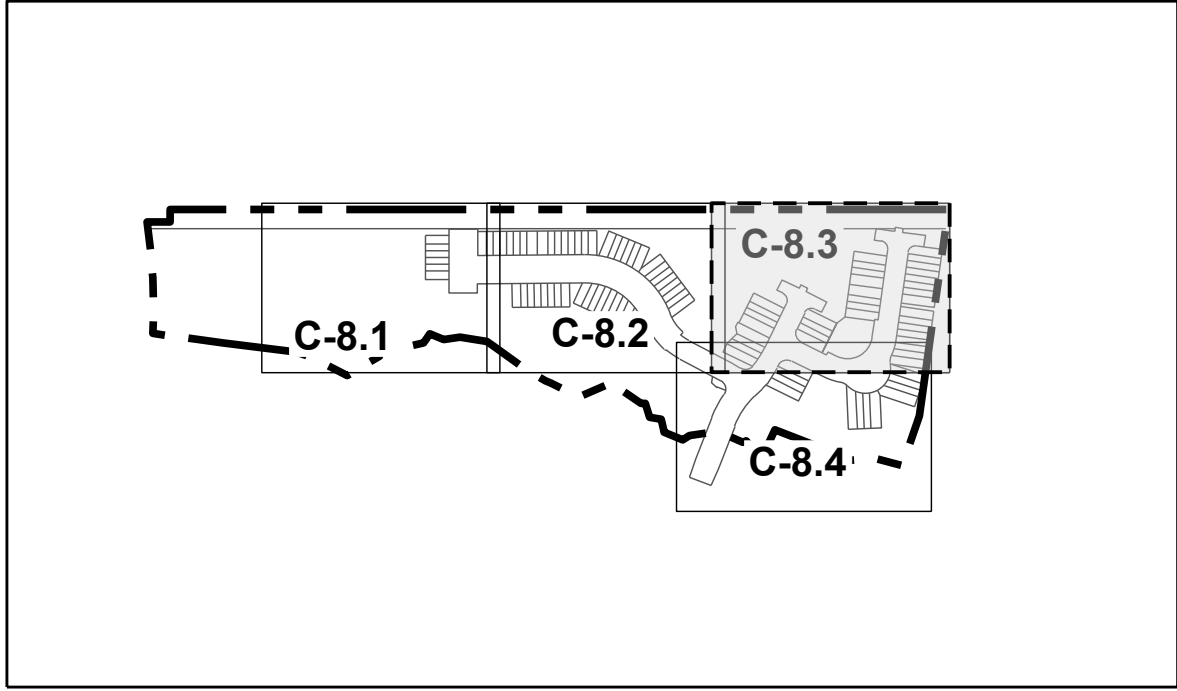
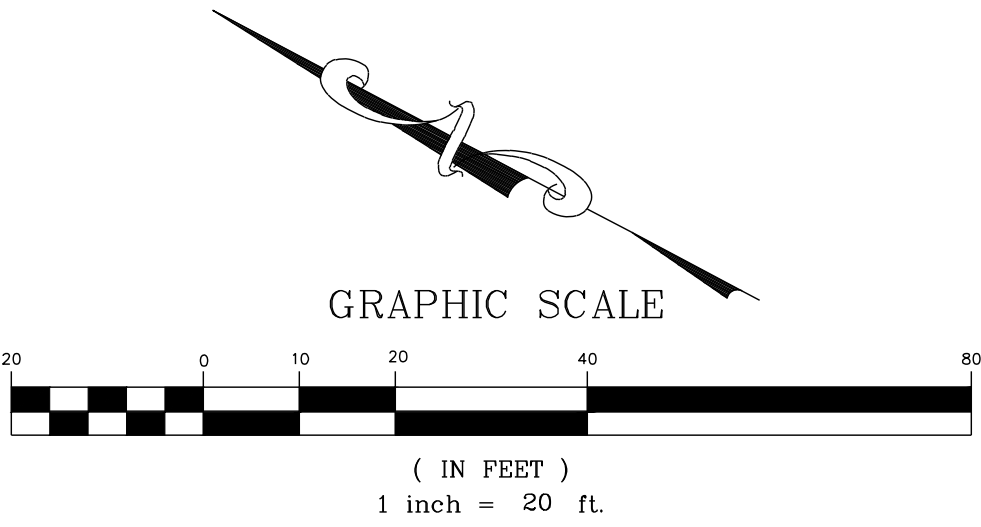
14 OF 46

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-8.0 FOR LEGEND.



SEAL:

JOSH P. ALLEN
ENGINEER
NORTH CAROLINA

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

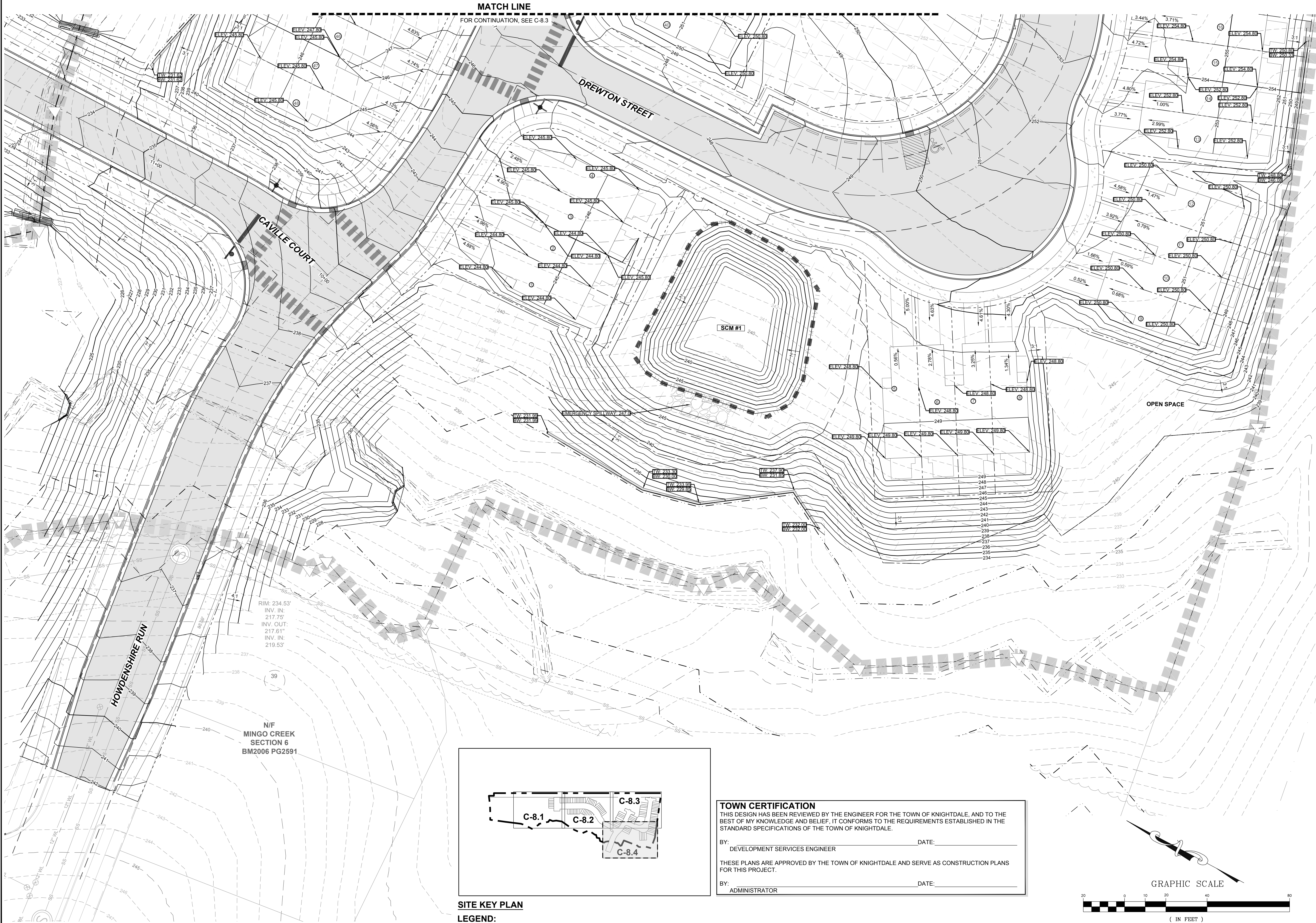
STRONG ROCK PROJECT
NOT FOR CONSTRUCTION
SCALE AS SHOWN
DESIGNED BY MTP
DRAWN BY SRG
CHECKED BY MTP

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

DRAWING SHEET
C-8.3

15 OF 46

BY	DATE
REVISIONS	
No.	



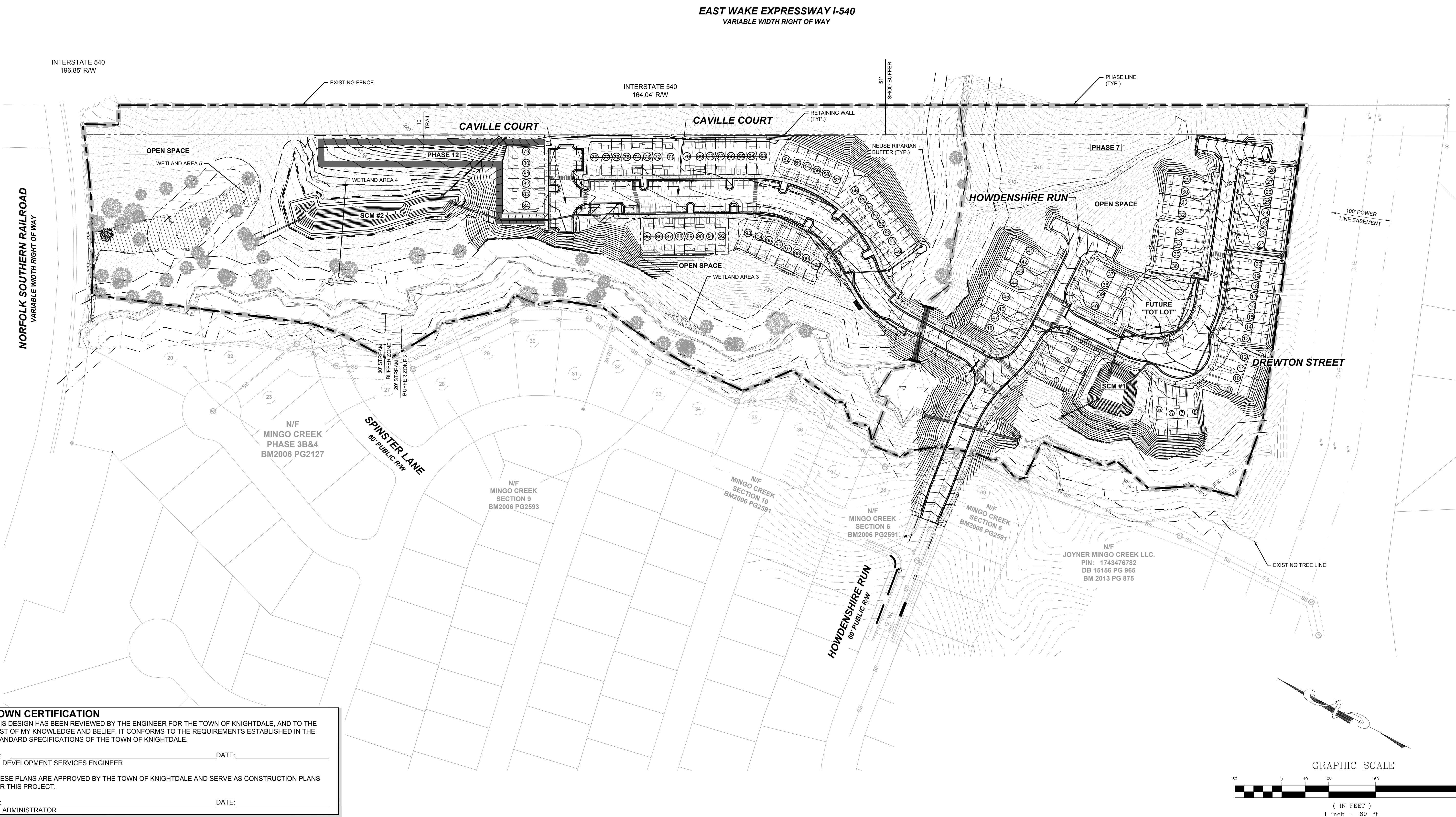
STRONG ROCK ENGINEERING GROUP		NORTH CAROLINA PROFESSIONAL SEAL 030046 ENGINEER JOSH THEW PA		REVISIONS		DATE		BY	
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS GRADING PLAN IV		STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM		STRONG ROCK PROJECT		NOT FOR CONSTRUCTION		SCALE	
DRAWING SHEET C-8.4		16 OF 46		DESIGNED BY		MTP		SRG	
				DRAWN BY		MTP		CHECKED BY	

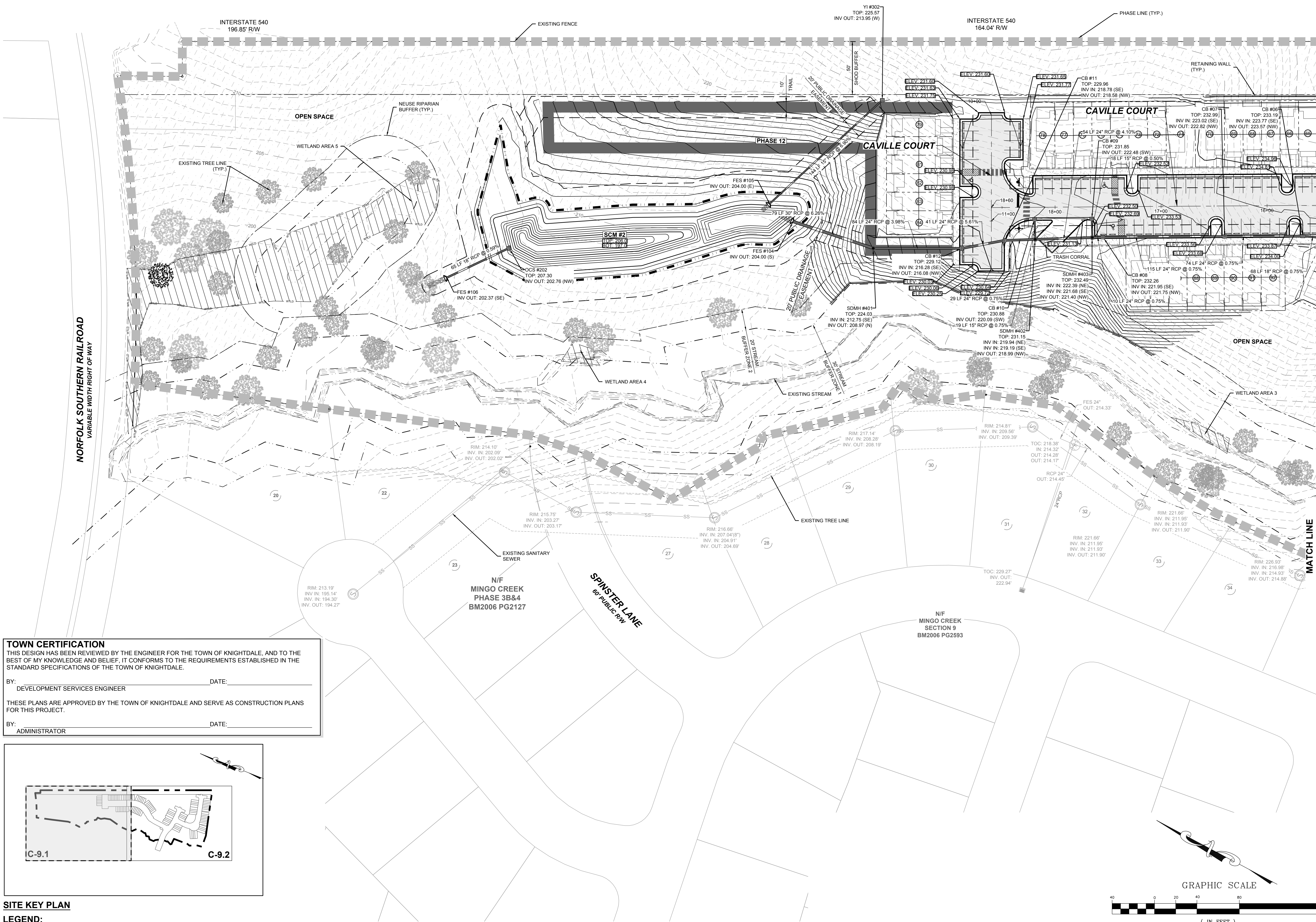


**HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
OVERALL DRAINAGE PLAN**

17 OF 46

STORM DRAIN LINE
FLARED END SECTION
EX. MAJOR CONTOURS
EX. MINOR CONTOURS
PROP. MAJOR CONTOURS
PROP. MINOR CONTOURS



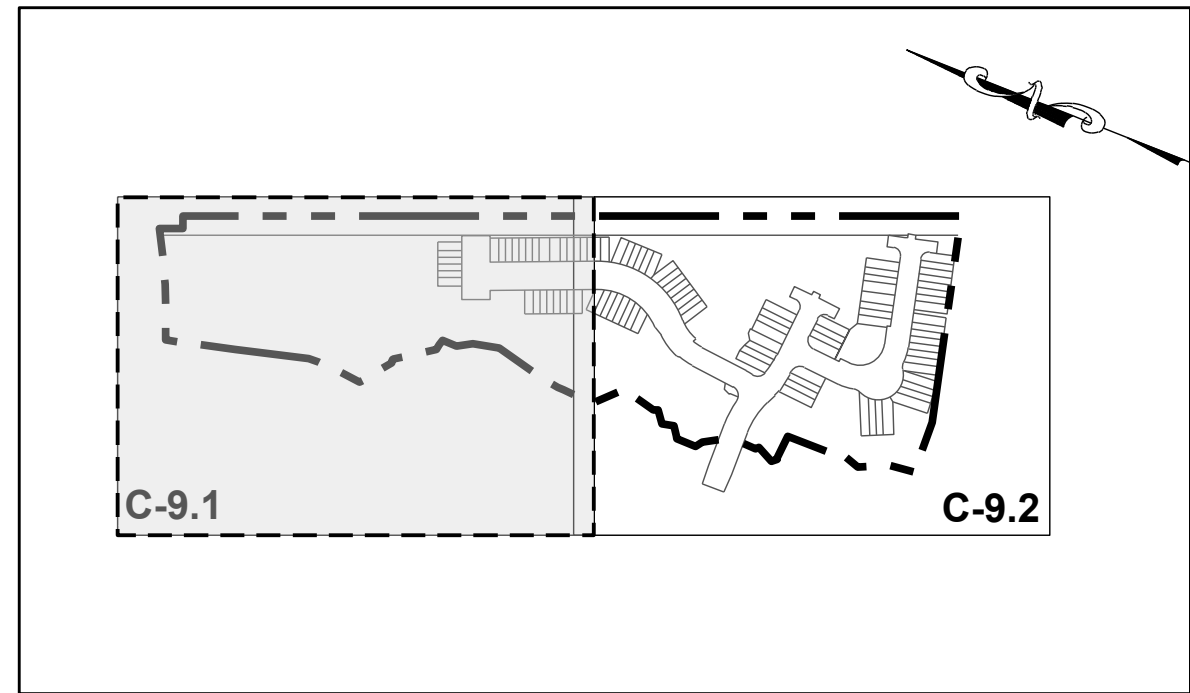


TOWN CERTIFICATION
 THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

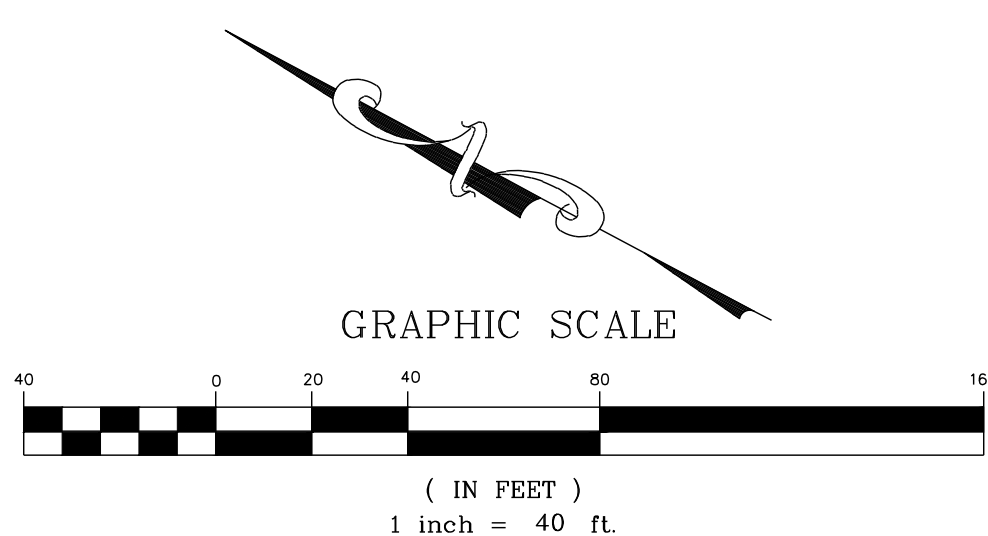
BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

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

BY: _____ DATE: _____
 ADMINISTRATOR



SITE KEY PLAN
LEGEND:
 SEE SHEET C-9.0 FOR LEGEND.



MATCH LINE
 FOR CONTINUATION, SEE C-9.2

					BY DATE
STRONGROCK ENGINEERING GROUP STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM					REVISIONS NO.
STRONG ROCK PROJECT NOT FOR CONSTRUCTION SCALE AS SHOWN DESIGNED BY MTP DRAWN BY SRG CHECKED BY MTP	HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS DRAINAGE PLAN I				DRAINAGE SHEET C-9.1
18 OF 46					

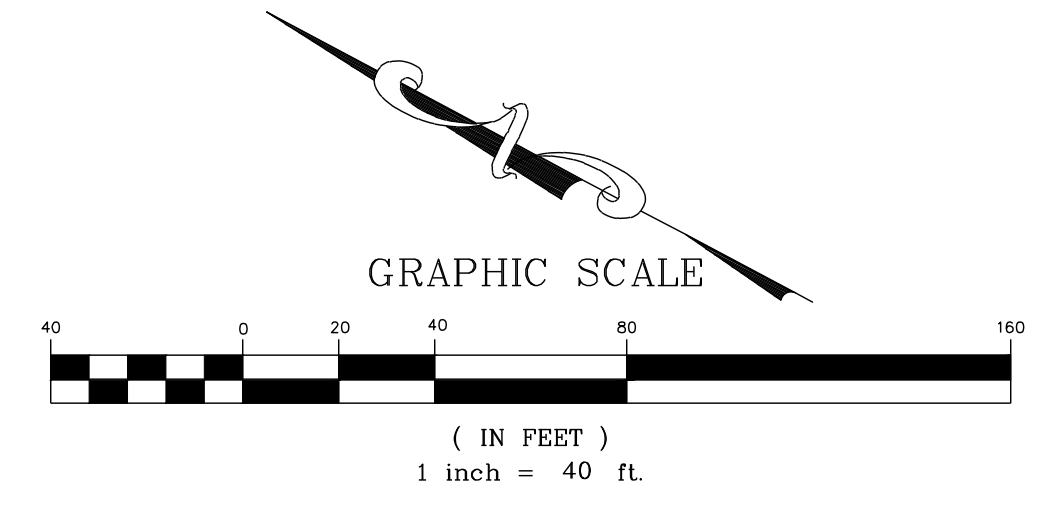
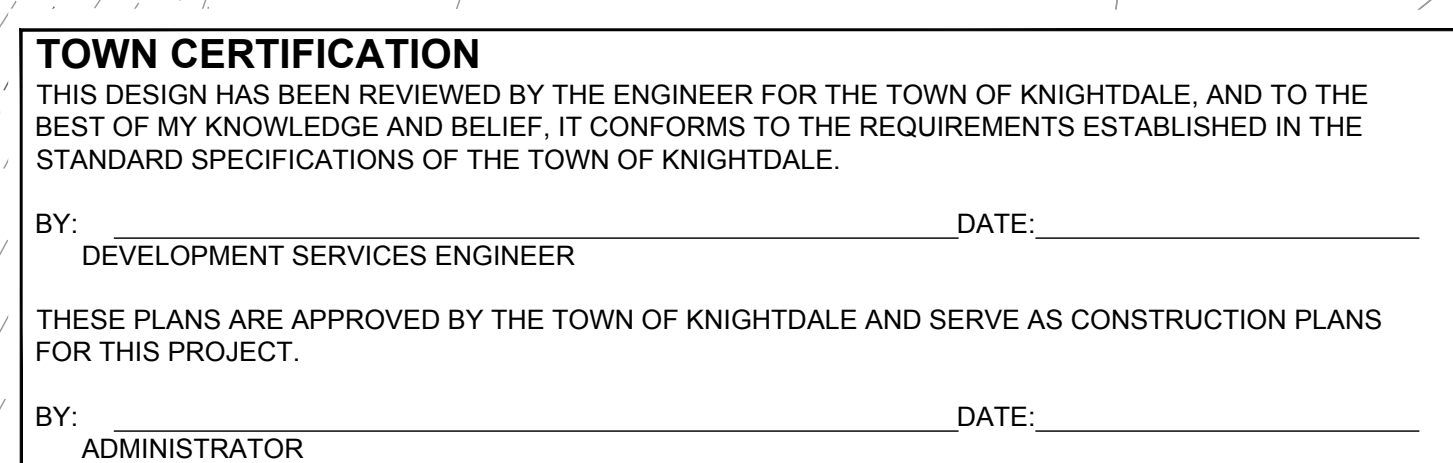


HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS DRAINAGE PLAN II

DRAWING
SHEET

C-9.2

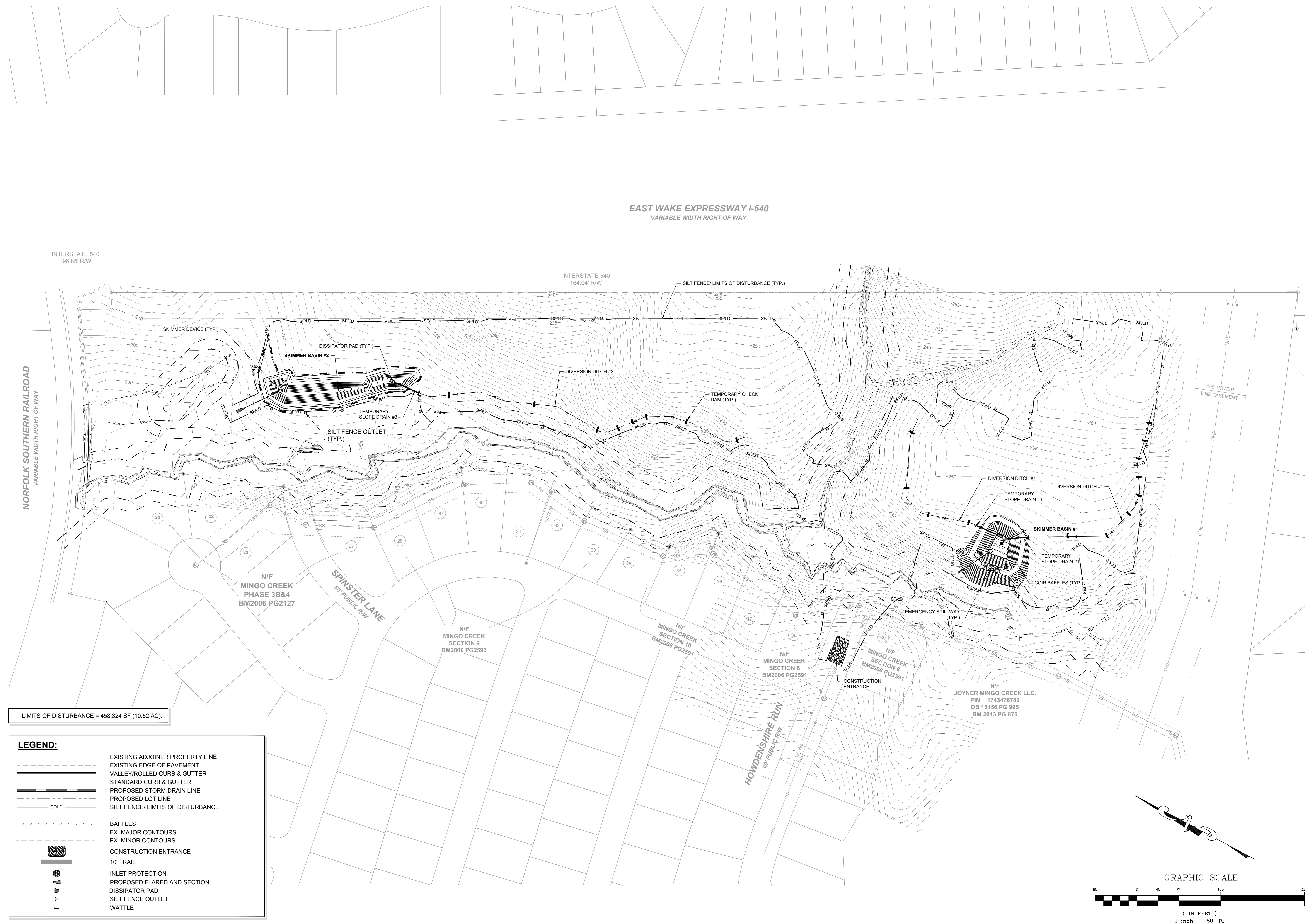
19 OF 46

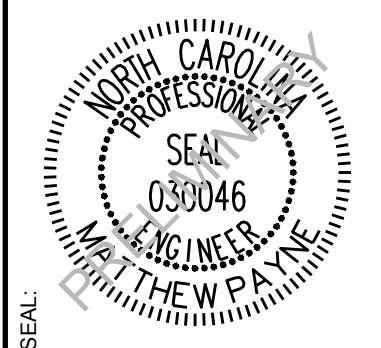




HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN -
OVERALL STAGE 1

DRAWING
SHEET
C-10.1
21 OF 46





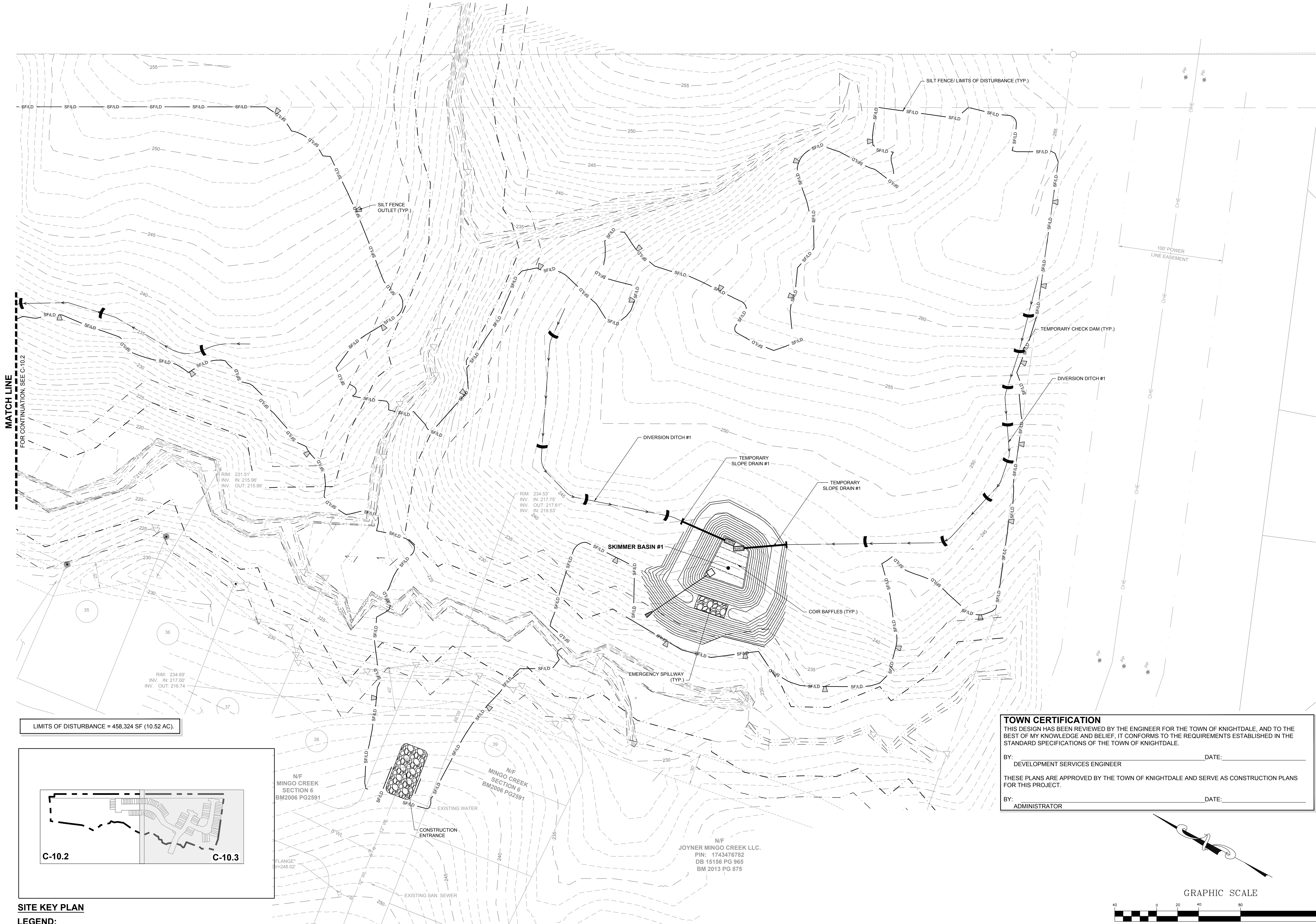
STRONGROCK
E N G I N E E R I N G G R O U P
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | JOSH@STRONGROCKENGINEERING.COM

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

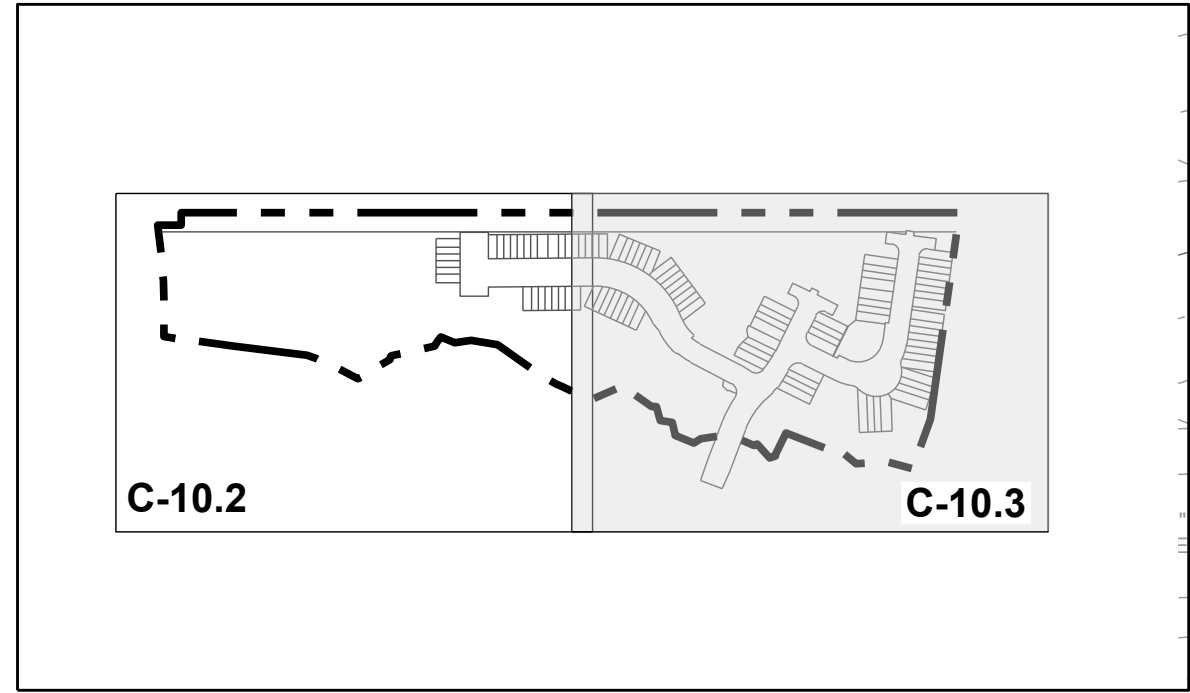
HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN -
STAGE 1

DRAWING
SHEET

C-10.2



LIMITS OF DISTURBANCE = 458,324 SF (10.52 AC).



SITE KEY PLAN

LEGEND:

SEE SHEET C-10.1 FOR LEGEND.

TOWN CERTIFICATION

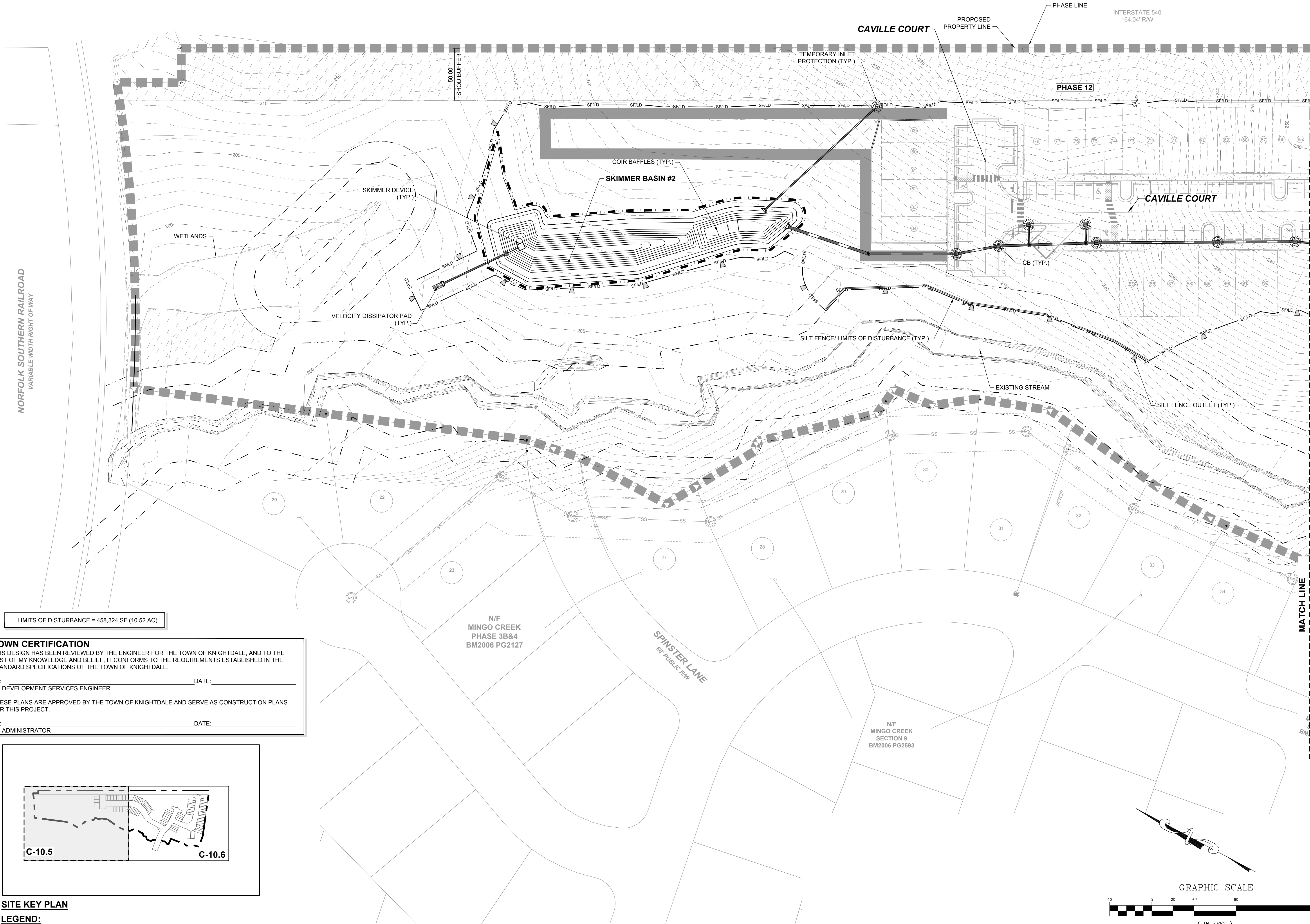
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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

BY: _____ DATE: _____
ADMINISTRATOR

STRONG ROCK ENGINEERING GROUP STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM		SEAL: JOSHUA CARROLL PROFESSIONAL ENGINEER 0330046 STATE OF NORTH CAROLINA		REVISIONS No. DATE BY	
STRONG ROCK PROJECT NOT FOR CONSTRUCTION SCALE AS SHOWN DESIGNED BY MTP DRAWN BY SRG CHECKED BY MTP		HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS EROSION CONTROL PLAN - STAGE 1		DRAWING SHEET C-10.3 23 OF 46	



LIMITS OF DISTURBANCE = 458,324 SF (10.52 AC).

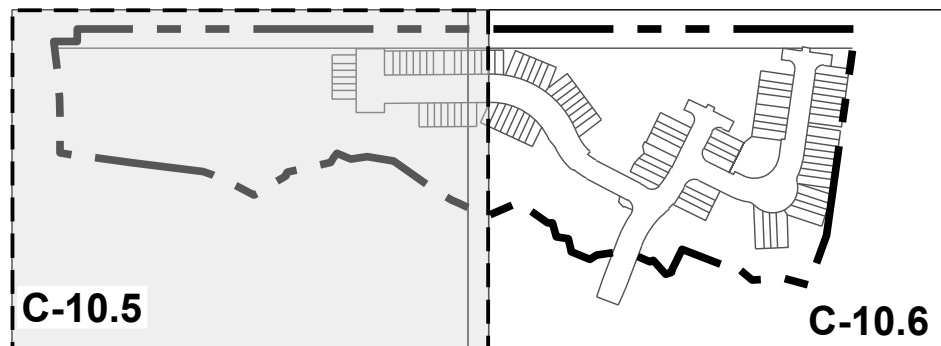
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ADMINISTRATOR



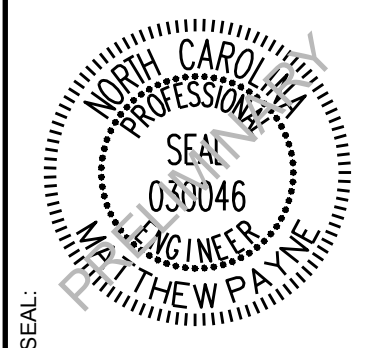
SITE KEY PLAN

LEGEND:

SEE SHEET C-10.4 FOR LEGEND.

MATCH LINE
FOR CONTINUATION, SEE C-10.6

NO.	REVISIONS	DATE	BY



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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 | JOSH@STRONGROCKENGINEERING.COM

STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	DESIGNED BY	MTP	DRAWN BY	SRG	CHECKED BY	MTP
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HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN -
STAGE 2

DRAWING
SHEET

C-10.5



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

DRAWING
SHEET

C-10.6

26 OF 46



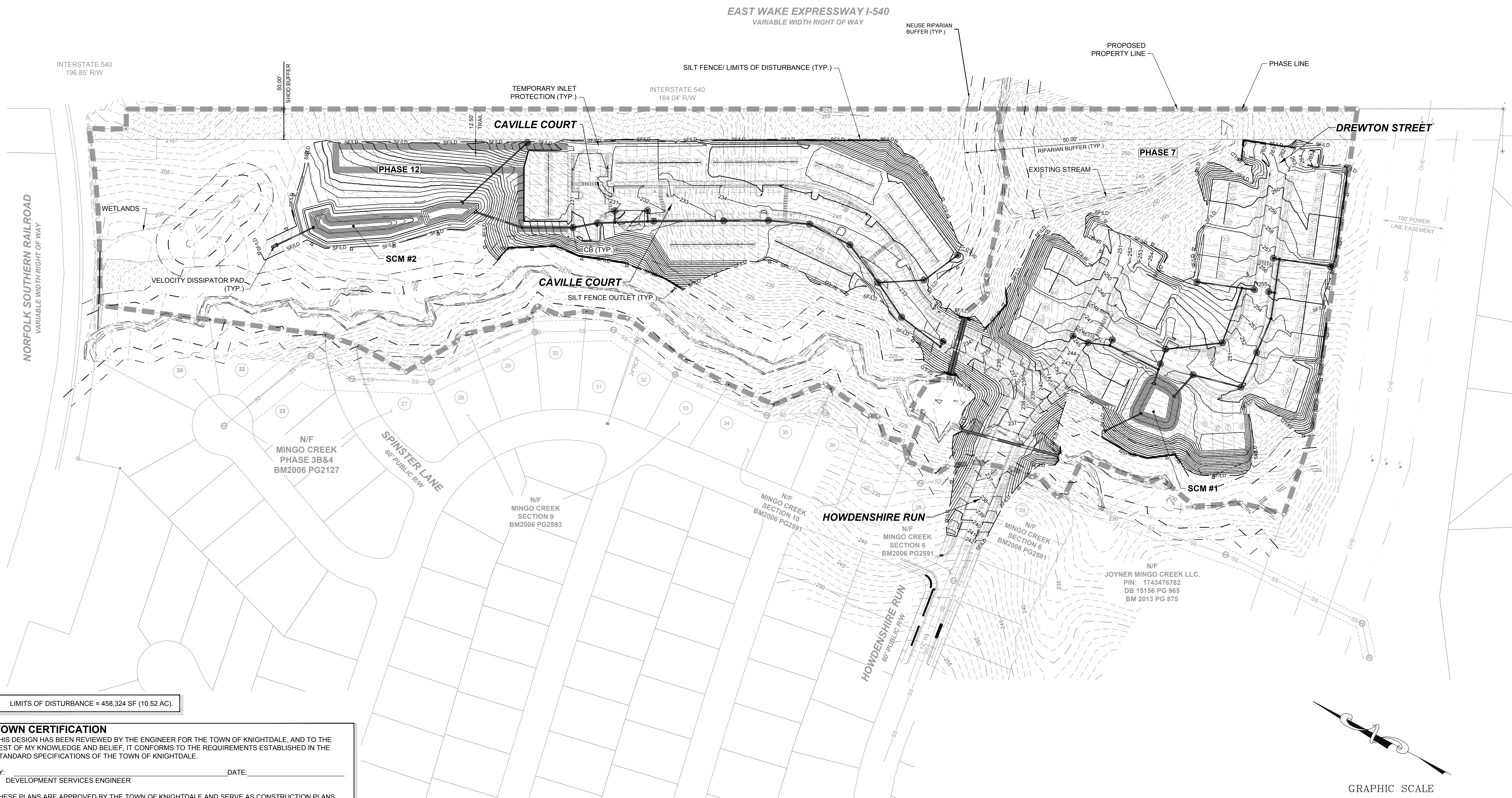


**HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN -
OVERALL STAGE 3**

DRAWING
SHEET
C-10.7

Diagram illustrating the components of a water control structure, including:

- BAFFLES
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- CONSTRUCTION ENTRANCE
- 10' TRAIL
- INLET PROTECTION
- PROPOSED FLARED AND SECTION
- DISSIPATOR PAD
- SILT FENCE OUTLET



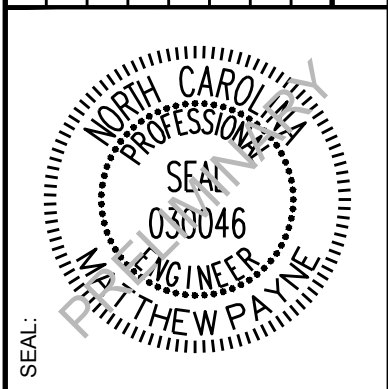
LIMITS OF DISTURBANCE = 458,324 SF (10.52 AC)

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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



STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	DESIGNED BY	MTP	DRAWN BY	SRG	CHECKED BY	MTP
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DRAWING SHEET

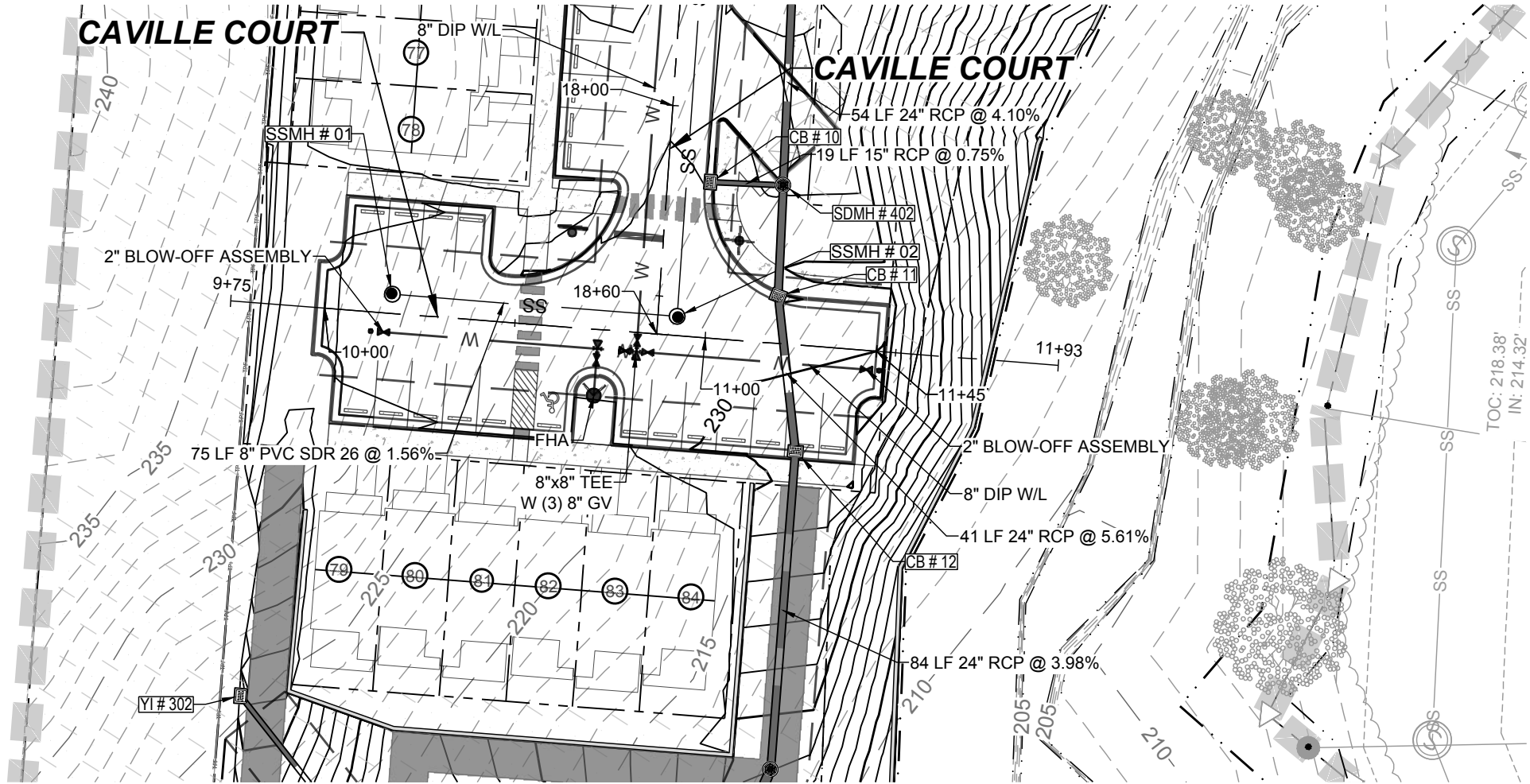
28 OF 46



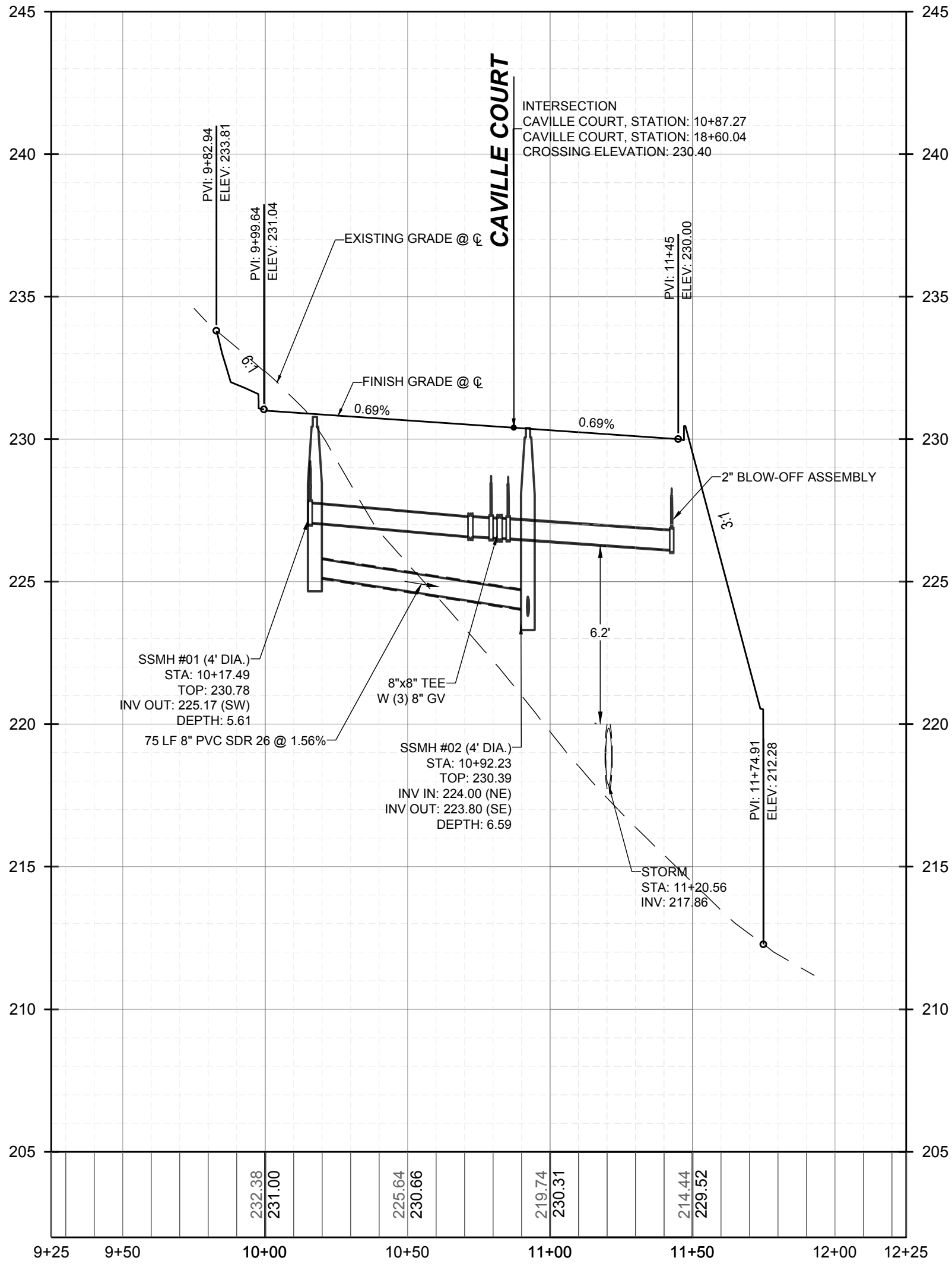
HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
EROSION CONTROL PLAN -
STAGE 3

DRAWING
SHEET
C-10.9
29 OF 46





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



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

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.

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DEVELOPMENT SERVICES ENGINEER

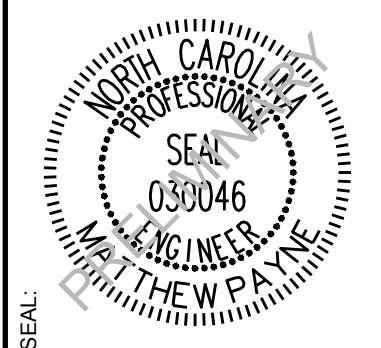
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BY: _____ DATE: _____
ADMINISTRATOR

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 _____

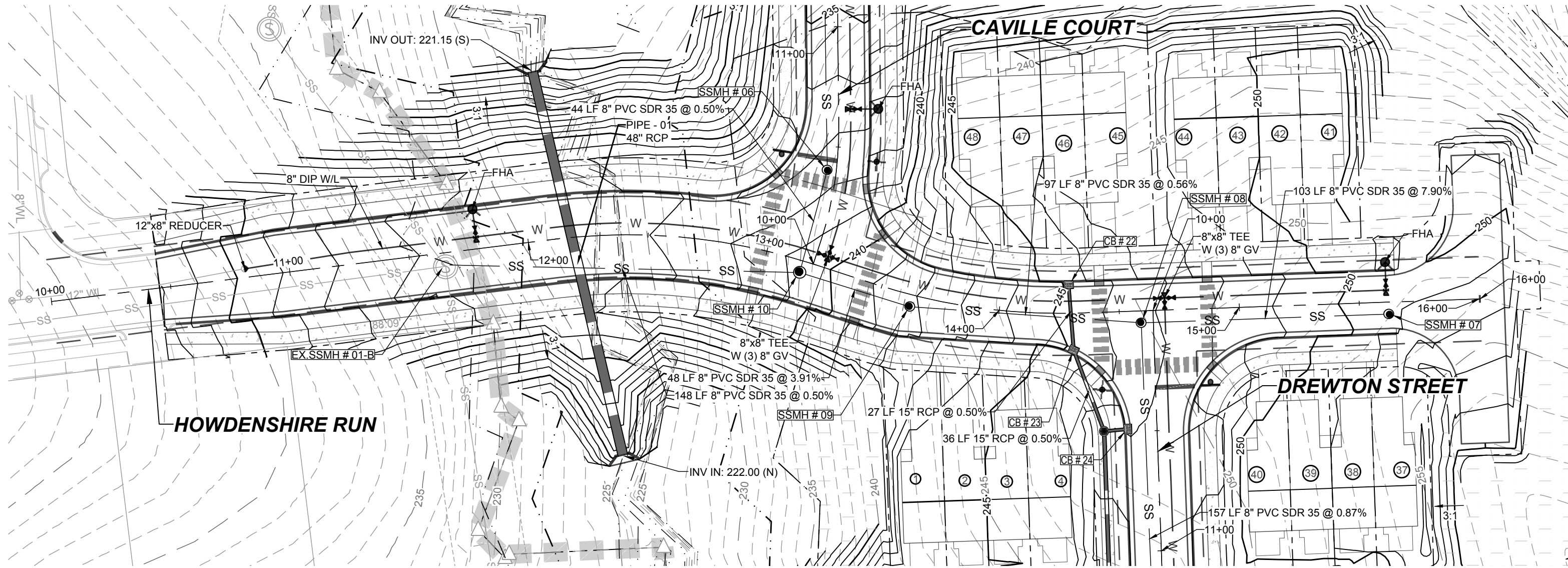
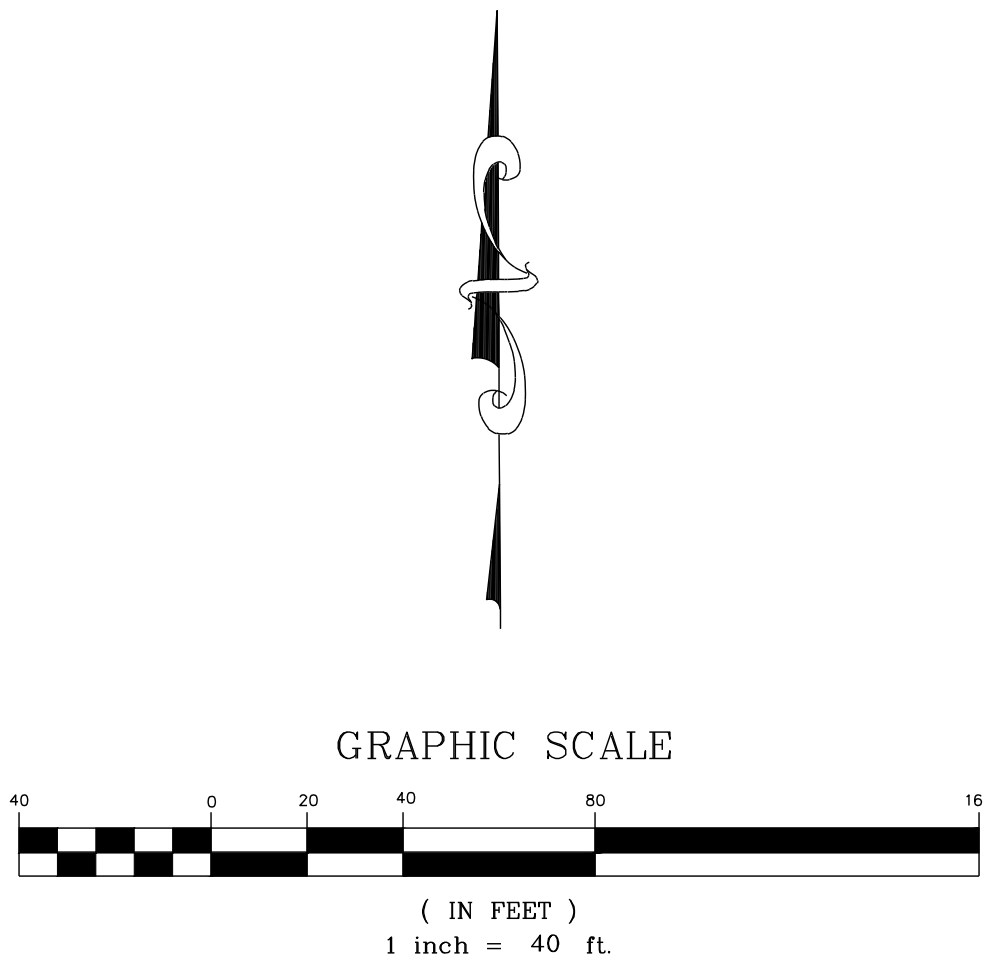
STRONGROCK ENGINEERING GROUP STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166 6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM		SEAL: JOSH CAROLINA PROFESSIONAL ENGINEER 0330046 JOSH CAROLINA		REVISIONS		DATE		BY	
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS PROPOSED 'CAVILLE COURT' - PLAN & PROFILE		DRAWING SHEET		C-11.0		30 OF 46			



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

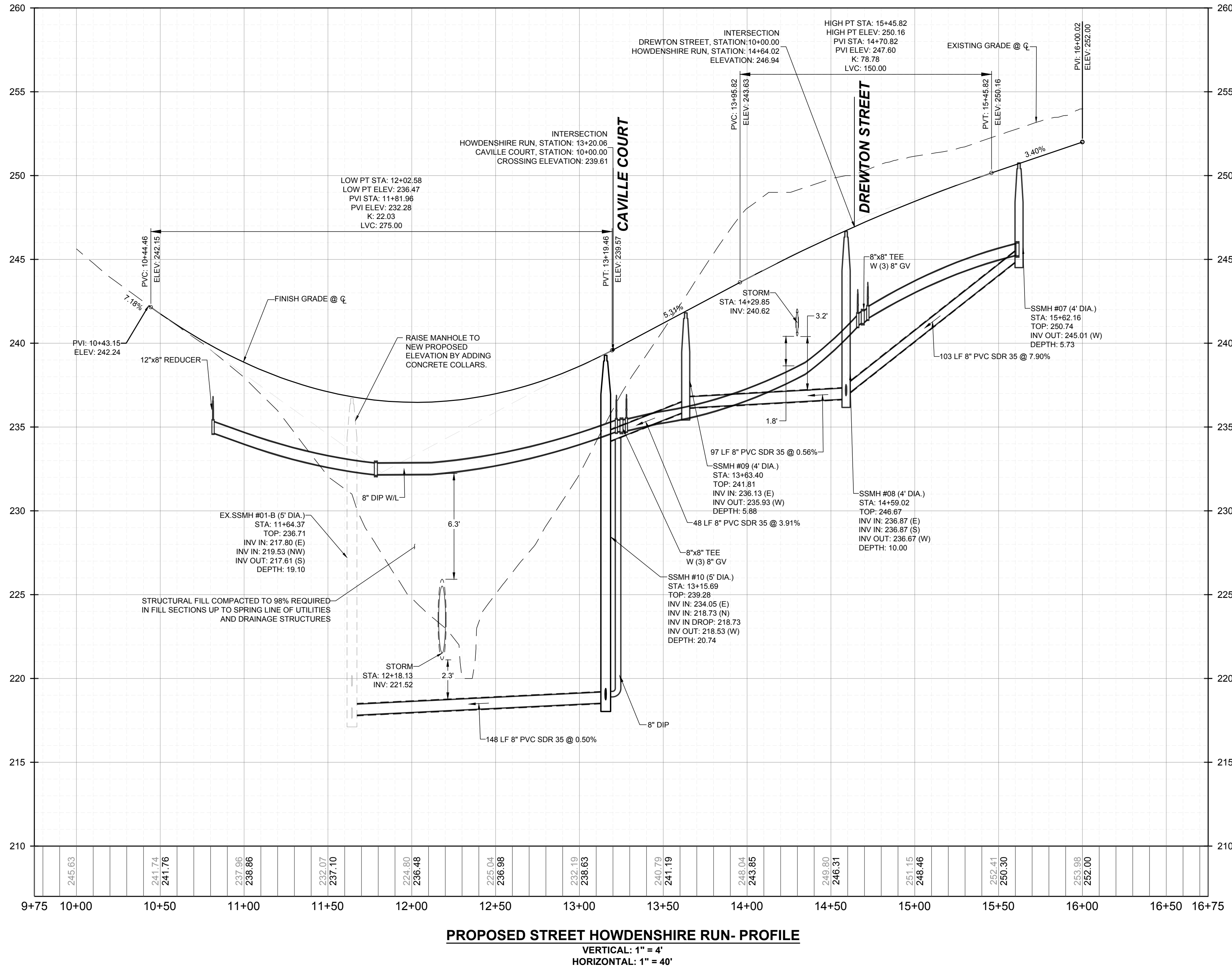
**HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
PROPOSED CAVILLE COURT -
PLAN & PROFILE**

DRAWING
SHEET
C-11.1
31 OF 46



PROPOSED STREET HOWDENSHIRE RUN - PLAN

HORIZONTAL: 1" = 40'



PROPOSED STREET HOWDENSHIRE RUN- PROFILE

VERTICAL: 1" = 4'

HORIZONTAL: 1" = 40'

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

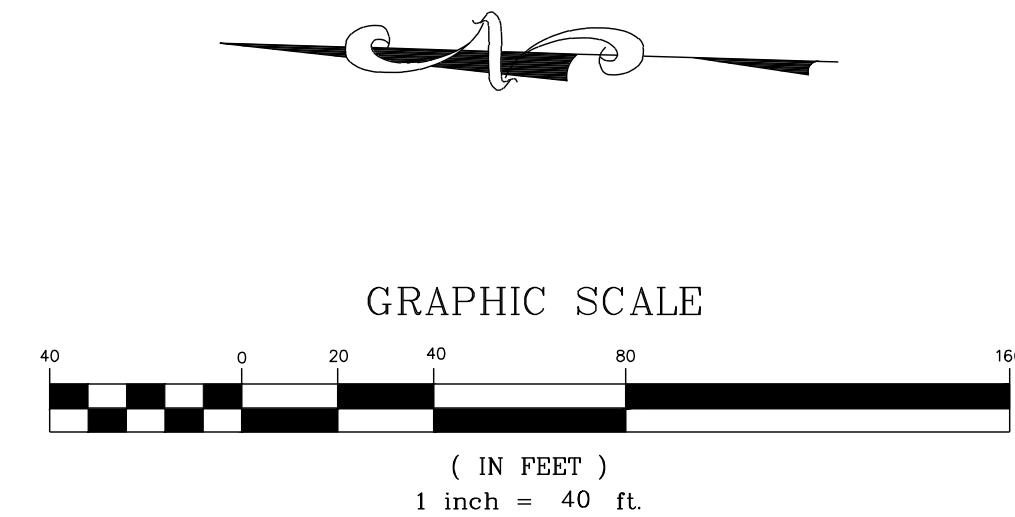
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

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CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

SEAL:		NORTH CAROLINA PROFESSIONAL SEAL 030046 ENGINEER JOSHUA P. PATTERSON		No.		REVISIONS		DATE		BY	
STRONGROCK		ENGINEERING GROUP		STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166		6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM					
HEARTH - POINTE - KNIGHTDALE - MINGO CREEK		TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA		CONSTRUCTION PLANS		PROPOSED HOWDENSHIRE RUN - PLAN & PROFILE					
DRAWING SHEET		C-11.2		32 OF 46							

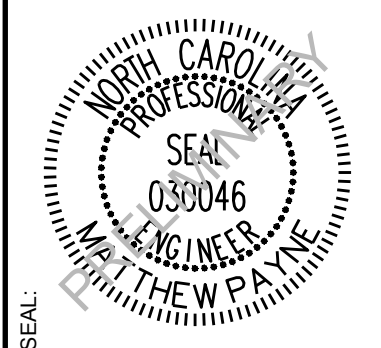


PROPOSED DREWTON STREET - PLAN
HORIZONTAL: 1" = 40'



BY: _____ DATE: _____
ADMINISTRATOR

RALEIGH WATER REVIEW OFFICER _____

[illegible]

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STRONG ROCK PROJECT	
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SCALE	AS SHOWN
DESIGNED BY	MTP
DRAWN BY	SRG
CHECKED BY	MTP

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

C-11.3

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.

 LED STREET LIGHTS (7,000 LUMENS LED 75 ROADWAY LIGHT) ALUMINUM POLE - HEIGHT 30.

KEY	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE	REMARKS
UP	55	ULMUS PARVIFOLIA	LACEBARK ELM	2.5" CAL, 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER, FULL & HEAVY.
AS	51	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL, 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER, FULL & HEAVY.

NORFOLK SOUTHERN RAILROAD
VARIABLE WIDTH RIGHT OF WAY

INTERSTATE 540
196.85' R/W

EXISTING FENCE

10' TRAIL

WETLAND AREA 5

OPEN SPACE

PHASE 12

WETLAND AREA 4

SCM #2

CAVILLE COURT

CAVILLE COURT

NEUSE RIPARIAN BUFFER (TYP.)

51' SHOD BUFFER

LED STREET LIGHTS (TYP.)

PHASE LINE (TYP.)

RETAINING WALL (TYP.)

HOWDENSHERE RUN

OPEN SPACE

FUTURE "TOT LOT"

SCM #1

DREWTON STREET

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

EXIST WATER

EXIST SAN SEWER

HOWDENSHERE RUN
60' PUBLIC R/W

EXISTING TREE LINE

100' POWER LINE EASEMENT

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTIONS

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GRAPHIC SCALE

CITY OF RALEIGH DEVELOPMENT APPROVAL _____

RALEIGH WATER REVIEW OFFICER _____

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "MATTHEW PAYNE" at the bottom. Inside this ring, the words "PROFESSIONAL" and "ENGINEER" are written in a semi-circle. In the center of the seal, the word "SEAL" is positioned above the number "030046". The seal is surrounded by a decorative border of small dots.

STRONGROCK
E N G I N E E R I N G G R O U P
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
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STRONG ROCK PROJECT	NOT FOR CONSTRUCTION	SCALE	AS SHOWN	DESIGNED BY	MTP	DRAWN BY	SRG	CHECKED BY	MTP
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**HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
LANDSCAPE AND LIGHTING PLAN**

DRAWING SHEET

C-12.0

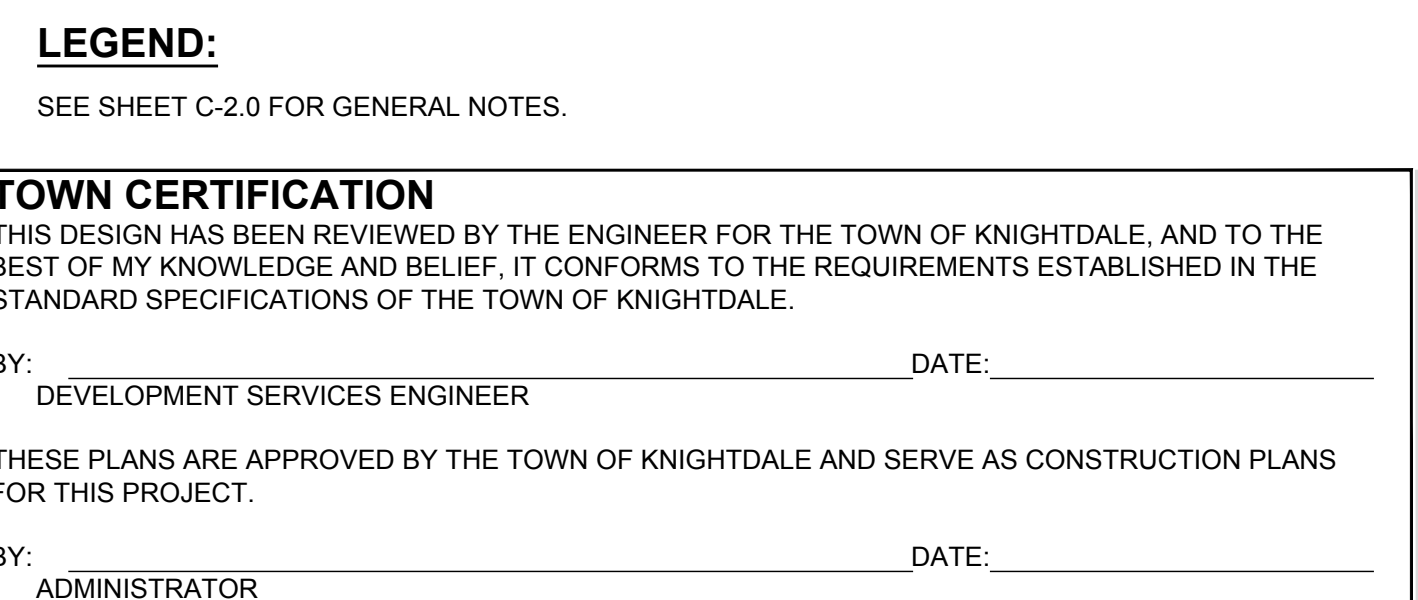


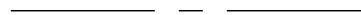
STRONG ROCK PROJECT	
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	MTP
DRAWN BY	SRG
CHECKED BY	MTP

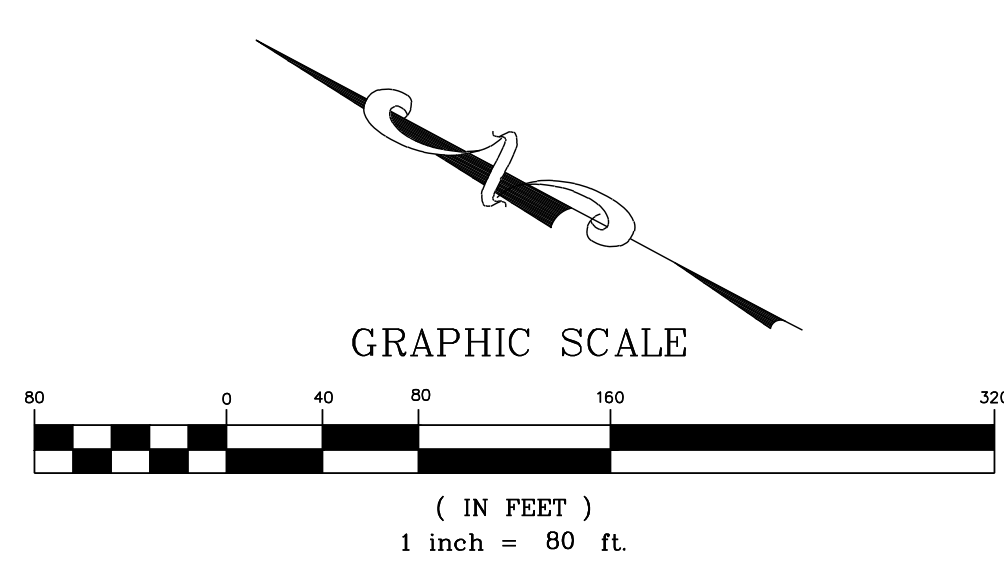
HEARTH - POINTE - KNIGHTDALE -
MINGO CREEK
TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
SIGNAGE PLAN

C-13.0

36 OF 46

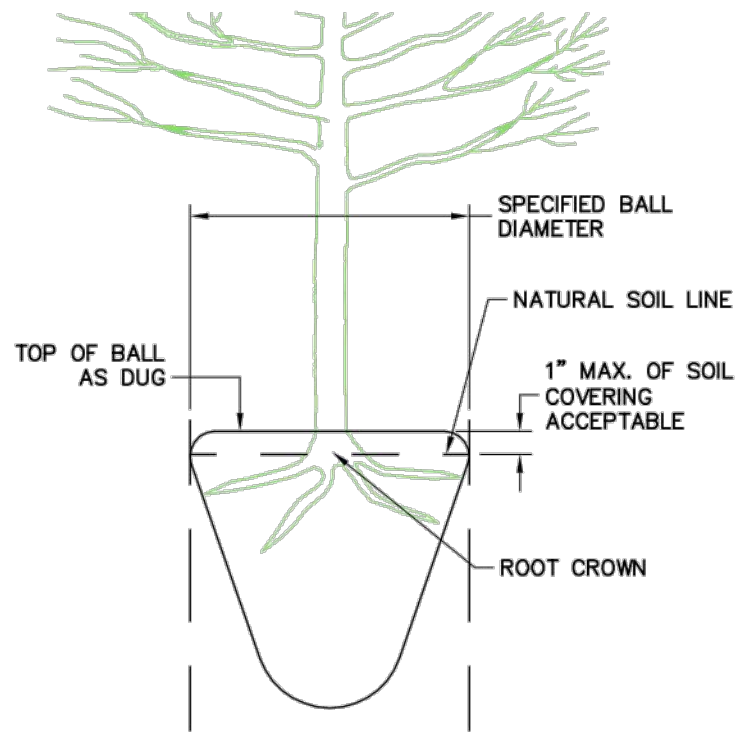


LEGEND:	
	EXISTING PROPERTY LINE
	ROADWAY CENTER LINE
	PROPOSED PROPERTY LINE
	EXISTING STREAM
	EXISTING RIPARIAN BUFFER
	EXISTING RIPARIAN BUFFER
	STOP BAR
	STREET SIGN
	STOP SIGN
	ASPHALT PAVEMENT
	NO PARKING SIGN (MUTCD # R7-1) 12"x18"
	INSTALL NO PARKING SIGNS AT A 45° ANGLE TO ROADWAY FOR DRIVER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

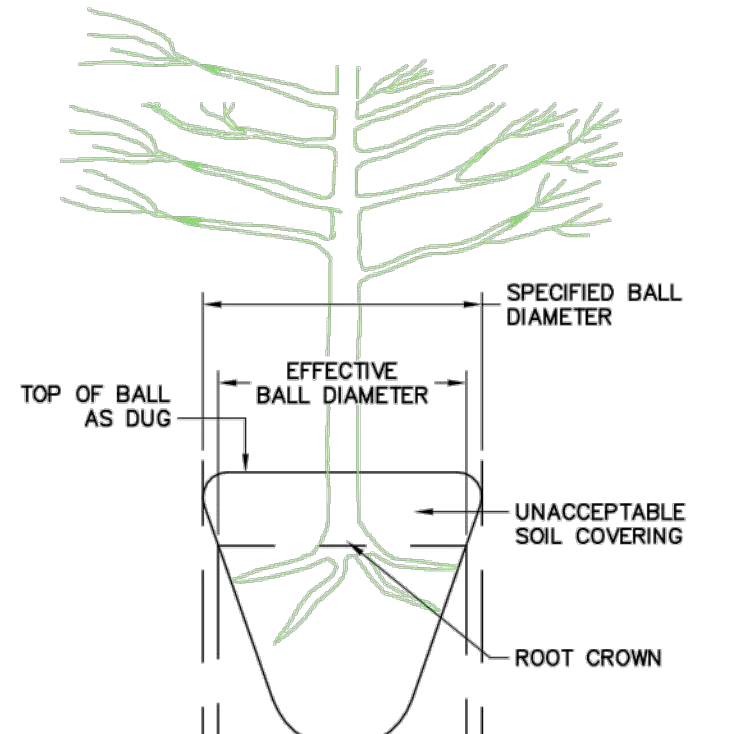


NOTE: MODEL S-72 OR APPROVED EQUAL





ACCEPTABLE CONDITION



UNACCEPTABLE CONDITION

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

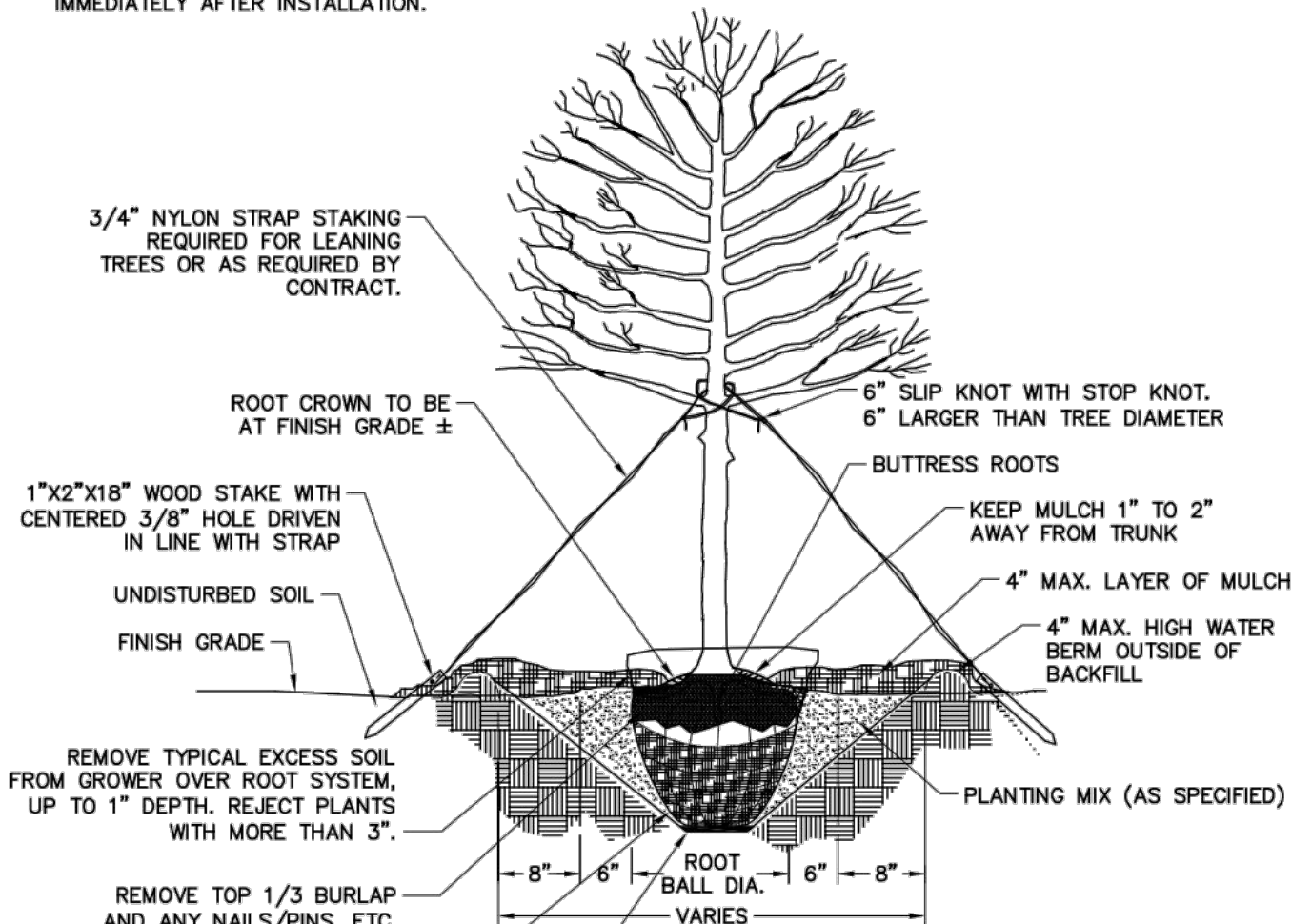
TOWN OF KNIGHTDALE
STANDARD DETAILS

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.



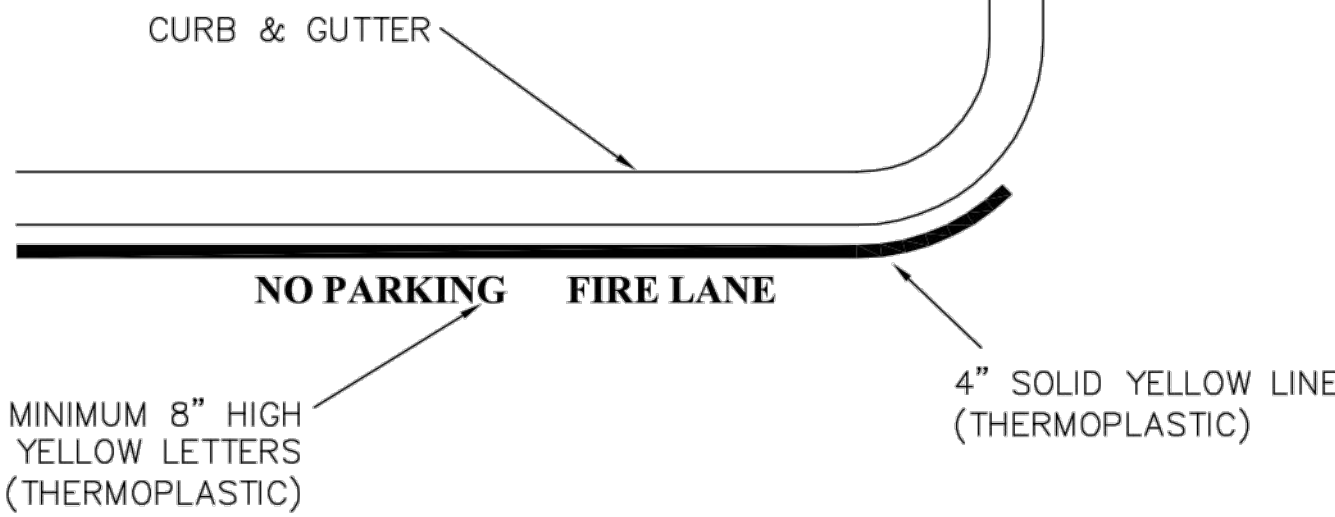
ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (AMSI, 1990, PART 1, "SHADE AND FLOWERING TREES")
FOR EXAMPLE: CALIPER HEIGHT (RANGE) MAX. HEIGHT MIN. ROOT BALL DIA. MIN. ROOT BALL DEPTH

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

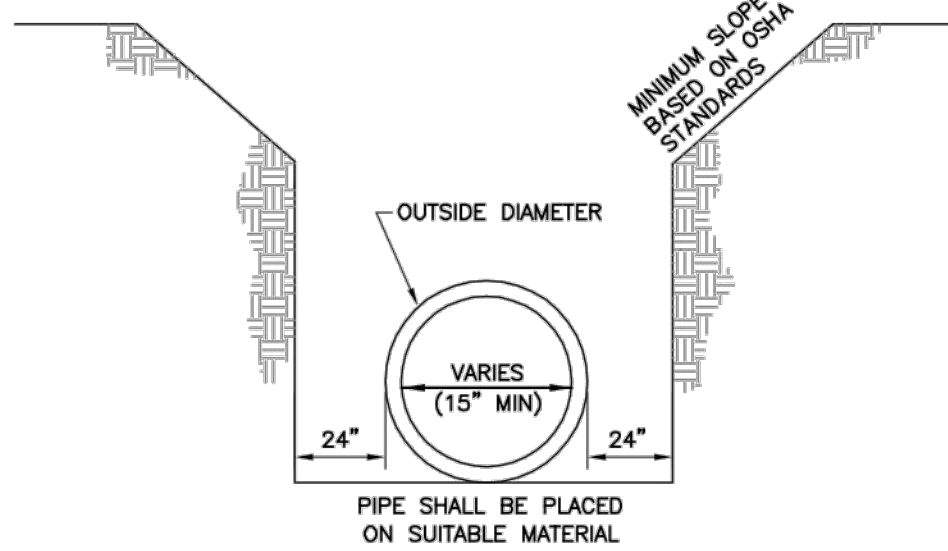
TOWN OF KNIGHTDALE
STANDARD DETAILS

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 LAD. 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.

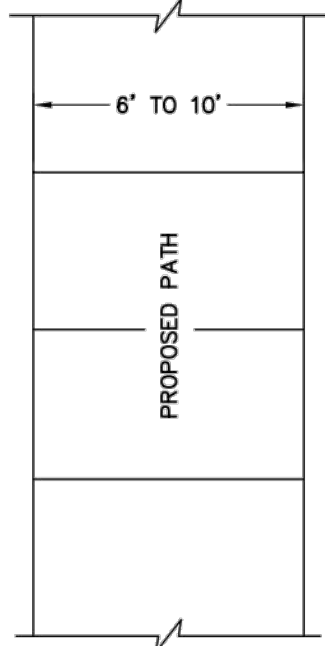


REVISIONS	
DATE	DESCRIPTION

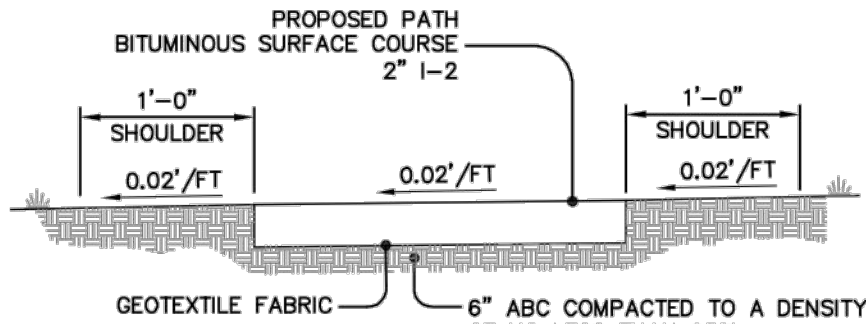
TOWN OF KNIGHTDALE
STANDARD DETAILS

TRENCH FOR
STORM DRAIN PIPES

STD. NO.
5.02



PLAN VIEW



TYPICAL SECTION

NOTES:

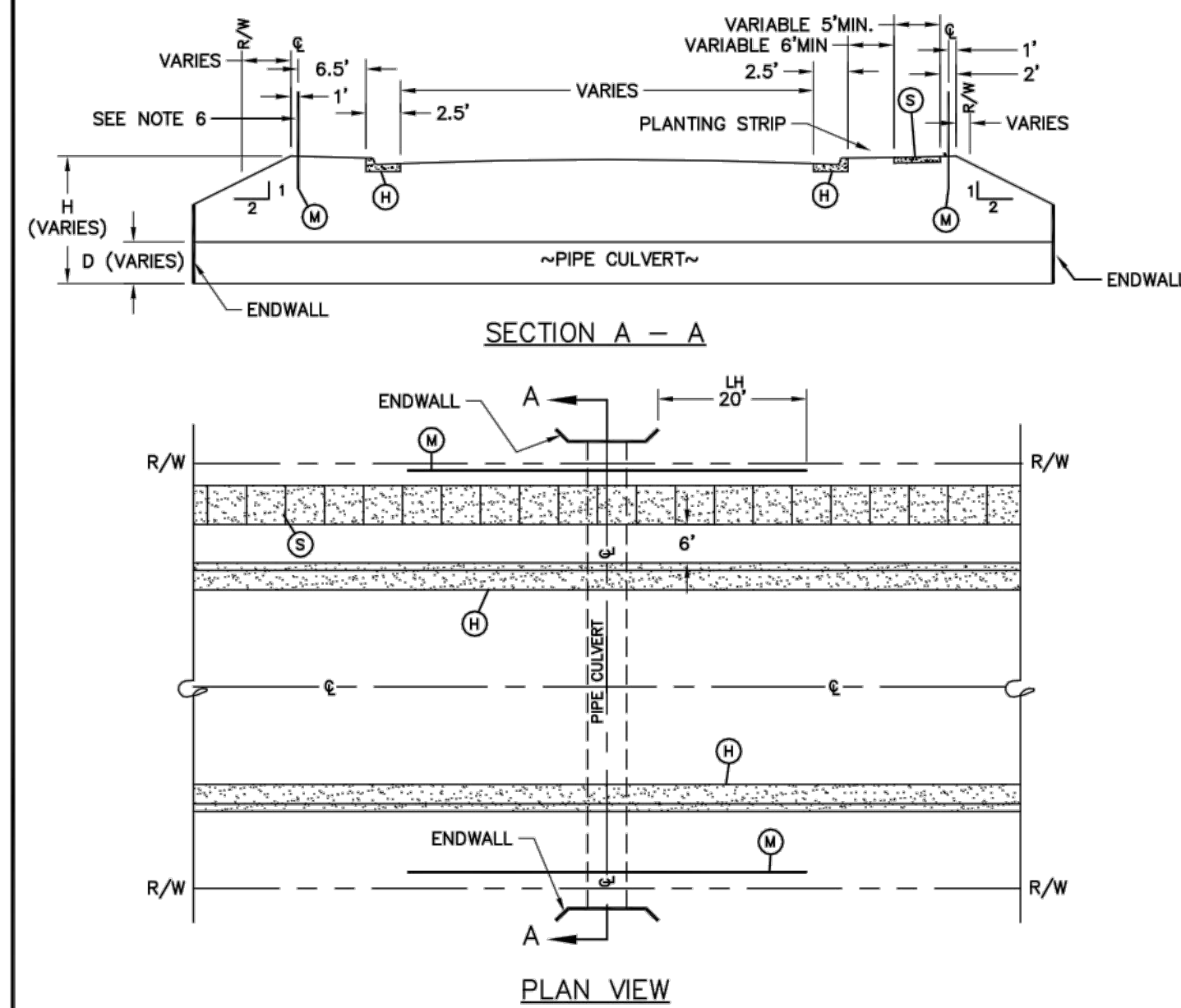
1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE
STANDARD DETAILS

STANDARD MULTI-USE PATH
GREENWAY

STD. NO.
4.09



- 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

TOWN OF KNIGHTDALE
STANDARD DETAILS

CULVERT CROSSING ON RESIDENTIAL
AND COMMERCIAL STREETS

1 of 2
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

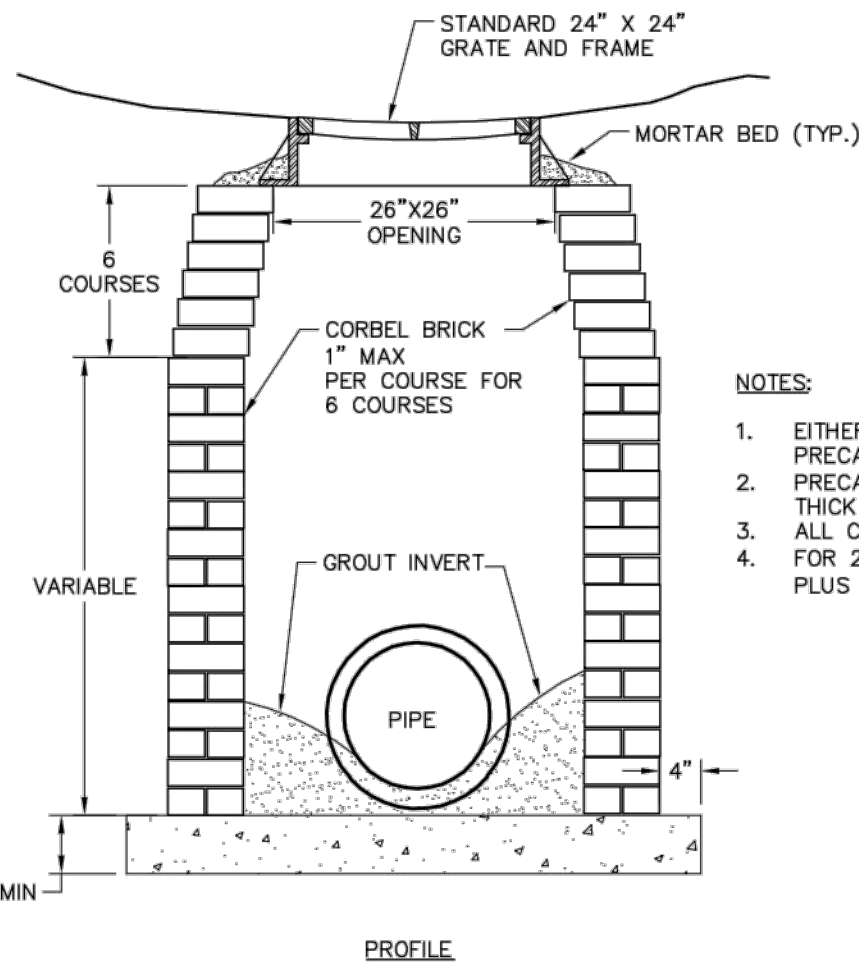
DESIGN ADT	CLEAR ZONE FROM EDGE OF PAVEMENT	
	TANGENT SECTION	CURVE (WITHIN 125' OF CULVERT)
UNDER 750	10'	15'
750 - 1500	12'	18'
1501 - 6000	14'	21'
OVER 6000	16'	24'

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE
STANDARD DETAILS

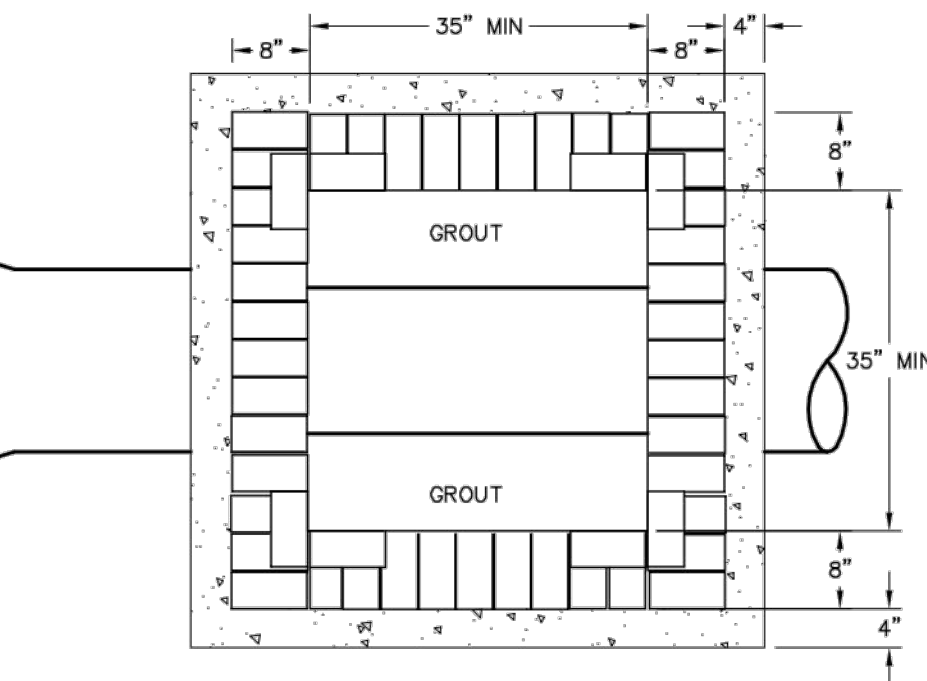
CULVERT CROSSING ON RESIDENTIAL
AND COMMERCIAL STREETS

2 of 2
STD. NO.
5.01



NOTES:

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



PLAN VIEW

REVISIONS	
DATE	DESCRIPTION

TOWN OF KNIGHTDALE
STANDARD DETAILS

STANDARD DROP INLET
WITH GRATE AND FRAME

STD. NO.
5.04

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6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 | JOSH@STRONGROCKENGINEERING.COM

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

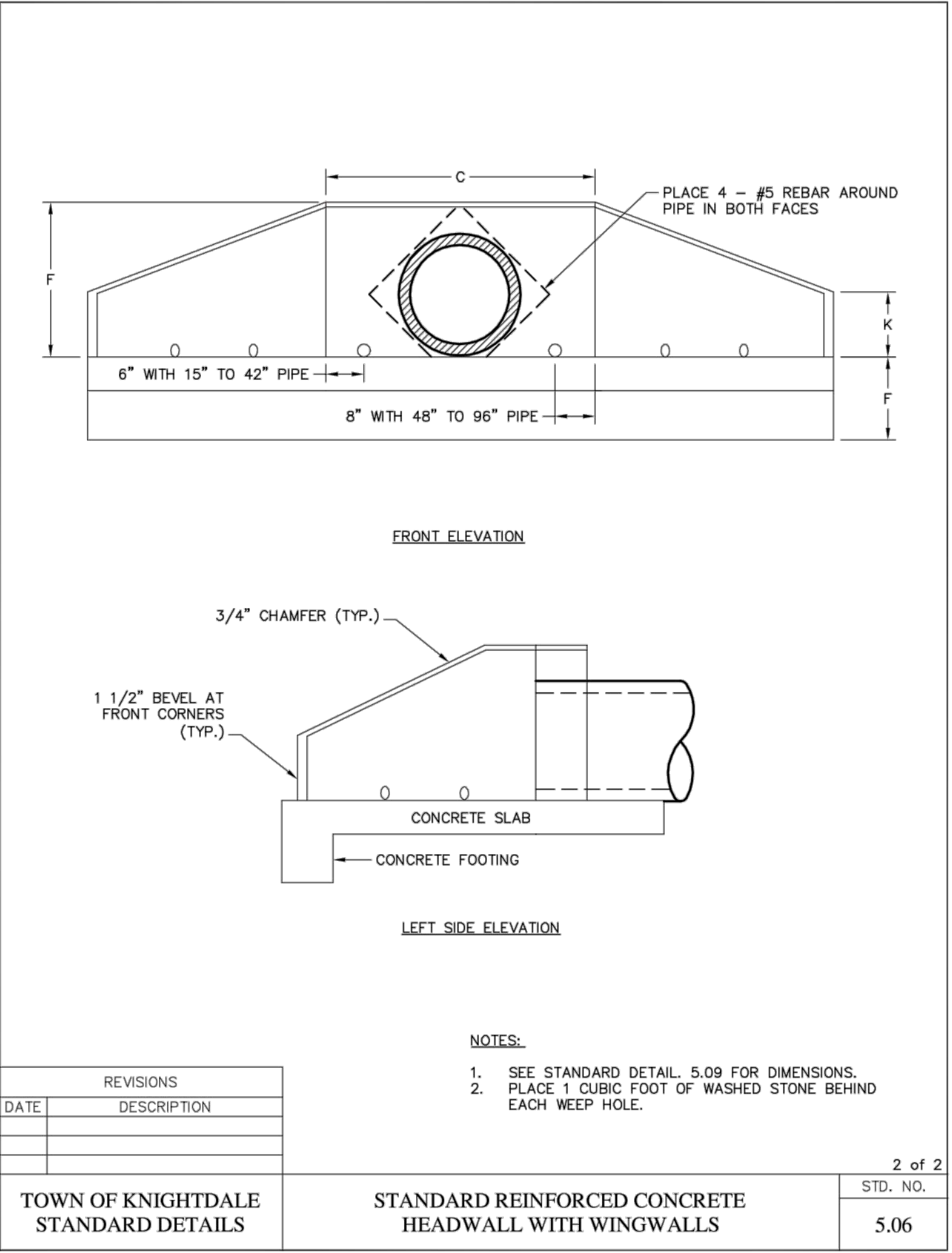
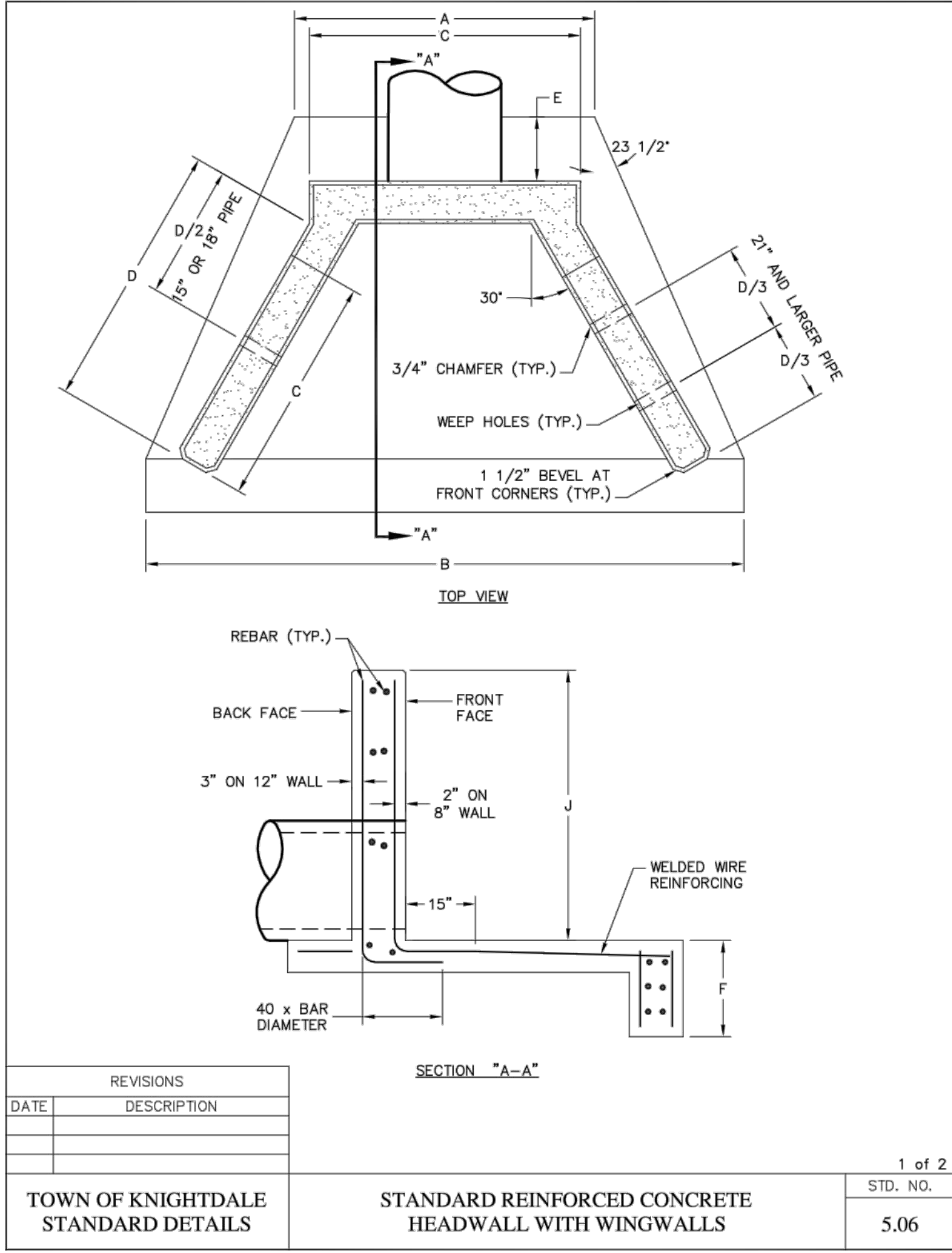
CONSTRUCTION PLANS

SITE DETAILS

DRAWING SHEET

D-1.2

39 OF 46



REVISIONS		TOWN OF KNIGHTDALE STANDARD DETAILS	DIMENSIONS FOR HEADWALL WITH WINGWALLS	1 of 2 STD. NO. 5.09
DATE	DESCRIPTION			

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'-0"	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"	8"	6'-3"	2'-11"	1'-0"
24"	3"	8"	6"	6'-4"	12'-4"	4'-6"	6'-3"	1'-0"	1'-6"	5'-3"	8"	7'-0"	3'-6"	1'-0"
36"	3 1/2"	8"	6"	7'-5"	15'-1"	5'-8"	7'-10"	1'-6"	2'-0"	7'-4"	8"	9'-4"	4'-8"	1'-6"
42"	4 1/2"	8"	6"	8'-4"	17'-0"	6'-3"	9'-2"	1'-6"	2'-0"	8'-9"	6"	10'-6"	5'-3"	1'-6"
48"	5 1/2"	8"	6"	9'-4"	18'-11"	6'-10"	10'-6"	1'-6"	2'-0"	10'-0"	6"	11'-7"	5'-10"	1'-6"
54"	5 1/2"	9"	6"	10'-10"	22'-5"	8'-0"	12'-9"	2'-0"	2'-6"	11'-2"	8"	14'-0"	7'-0"	2'-0"
60"	6 1/2"	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'-11"	9'-2"	13'-7"	2'-0"	2'-6"	13'-1"	8"	15'-3"	8'-2"	2'-6"
72"	7 1/2"	12"	8"	13'-4"	27'-0"	9'-9"	14'-11"	2'-0"	2'-6"	14'-5"	8"	16'-2"	9'-4"	2'-6"
78"	7 1/2"	12"	8"	14'-10"	29'-9"	10'-11"	16'-8"	2'-0"	2'-6"	16'-0"	8"	17'-10"	9'-11"	3'-0"
84"	8 1/2"	12"	8"	15'-10"	30'-6"	11'-6"	16'-8"	2'-0"	2'-6"	16'-2"	12"	17'-11"	10'-6"	3'-6"
96"	9 1/2"	12"	10"	16'-11"	32'-10"	12'-1"	18'-0"	2'-0"	2'-6"	17'-6"	12"	19'-4"	11'-3"	3'-6"
102"	9 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"
108"	10 1/2"	12"	10"	19'-5"	37'-10"	13'-10"	20'-11"	2'-0"	2'-6"	20'-0"	12"	22'-2"	12'-10"	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		TOWN OF KNIGHTDALE STANDARD DETAILS	DIMENSIONS FOR HEADWALL WITH WINGWALLS	2 of 2 STD. NO. 5.09
DATE	DESCRIPTION			
REVISIONS		TOWN OF KNIGHTDALE STANDARD DETAILS	DIMENSIONS FOR SINGLE PIPE HEADWALLS	2 of 2 STD. NO. 5.06
DATE	DESCRIPTION			
PIPE SIZE	BACK FACE WALL REINFORCEMENT HORIZONTAL	SLAB REINFORCEMENT VERTICAL	FRONT FACE HORIZONTAL AND VERTICAL	CUBIC YARDS OF CONC.
15"	No.3 @ 12" O.C.	No.3 @ 12" O.C.	6'-6" X 10'-10" WW No.4 @ 18" O.C.	1.61
18"	"	"	"	1.96
24"	"	"	"	2.67
36"	"	"	"	4.21
42"	"	"	"	1.9
48"	"	"	"	6.33
54"	No.4 @ 12" O.C.	"	"	1.733
60"	"	"	"	14.67
72"	"	"	6'-6" X 6'-6" WW	15.75
78"	"	"	"	16.04
84"	No.5 @ 12" O.C.	"	"	21.92
96"	"	"	"	26.38
102"	"	"	"	32.26
108"	"	"	"	44.78
120"	"	"	"	44.97

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

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION
SCALE AS SHOWN
DESIGNED BY MTP
DRAWN BY SRG
CHECKED BY MTP

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

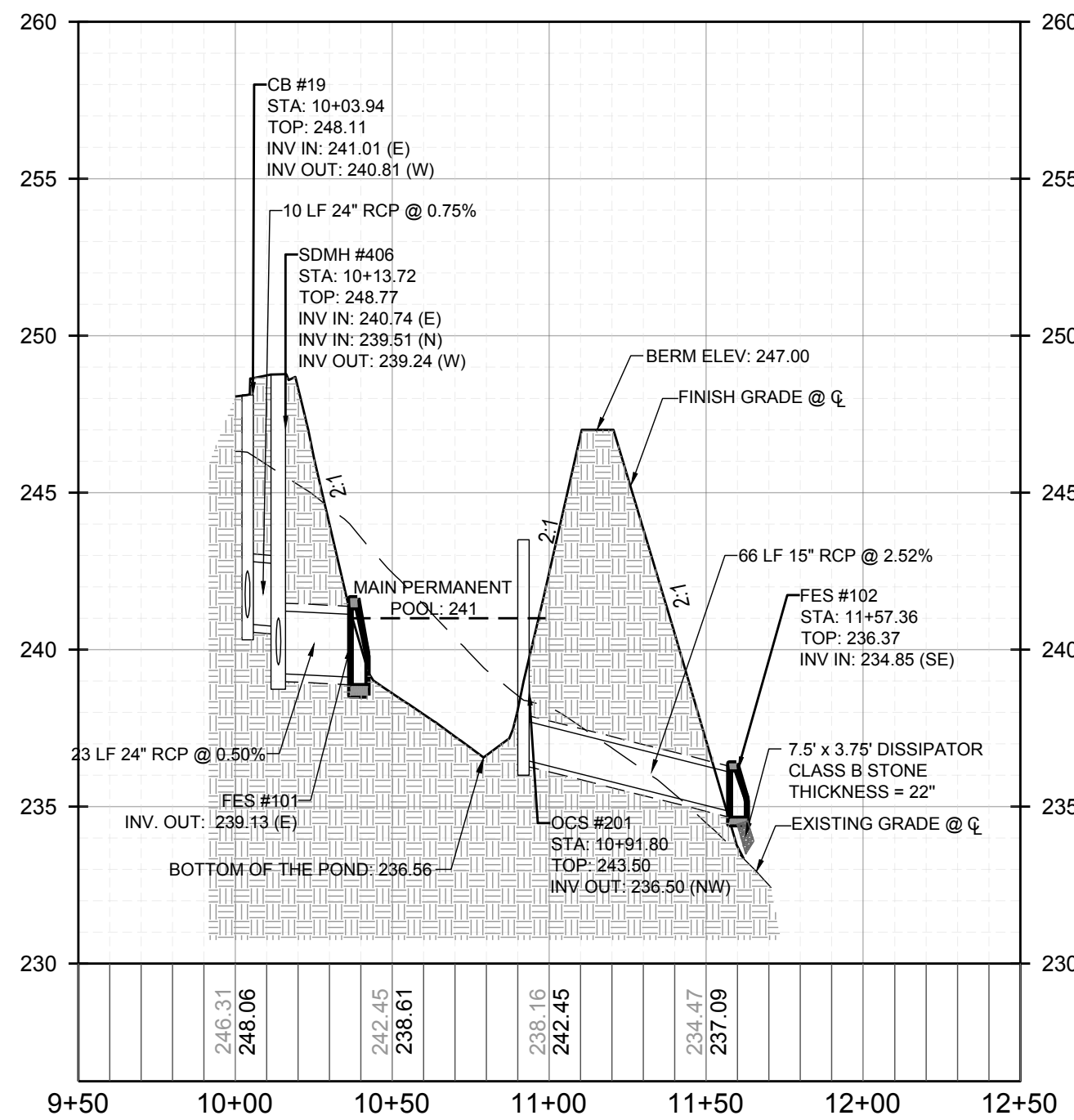
DRAWING SHEET
D-2.0

40 OF 46

REVISIONS

DATE

BY

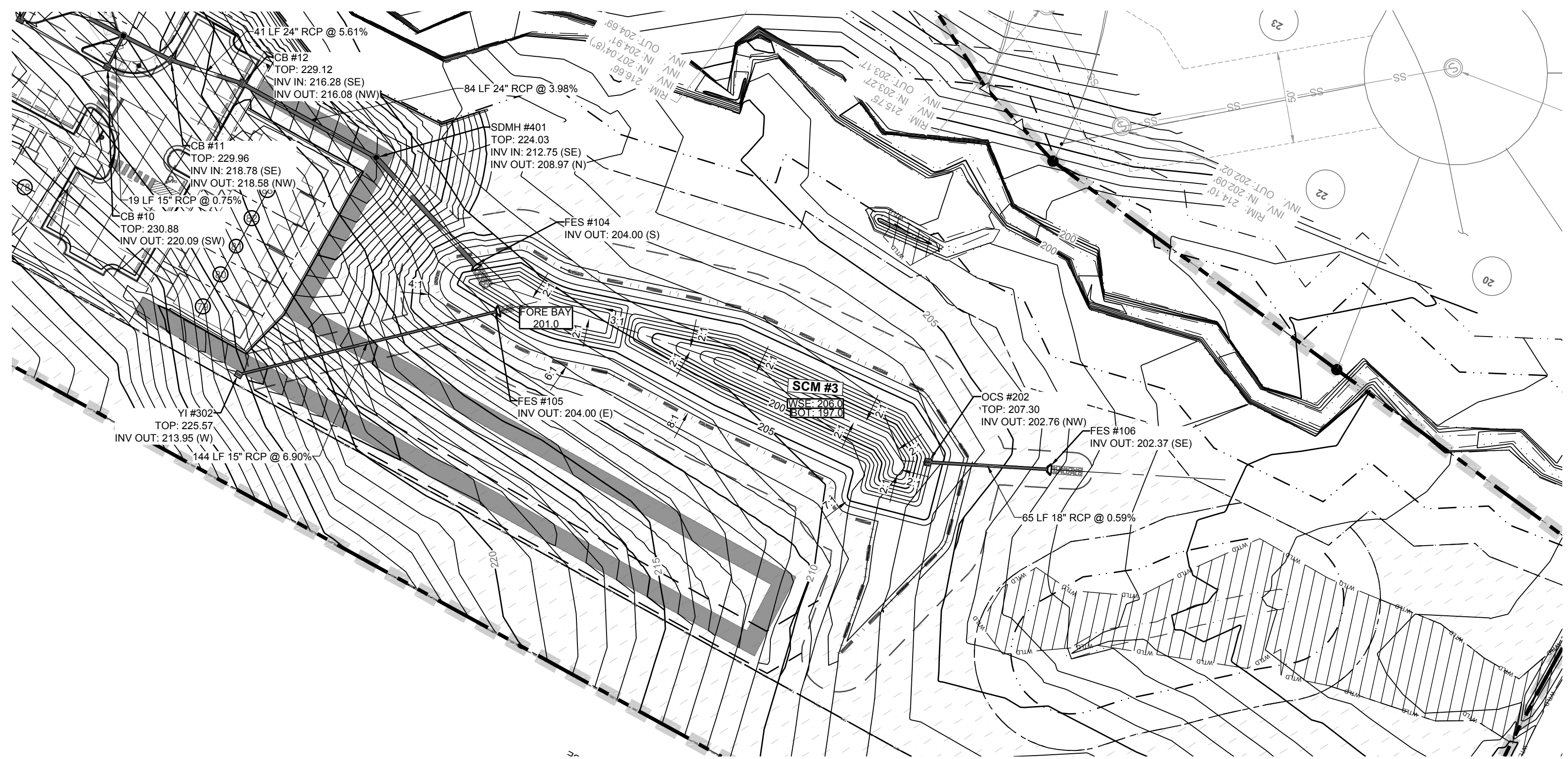


TOWN CERTIFICATION	
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.	
BY: _____	DATE: _____
DEVELOPMENT SERVICES ENGINEER	
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.	
BY: _____	DATE: _____
ADMINISTRATOR	

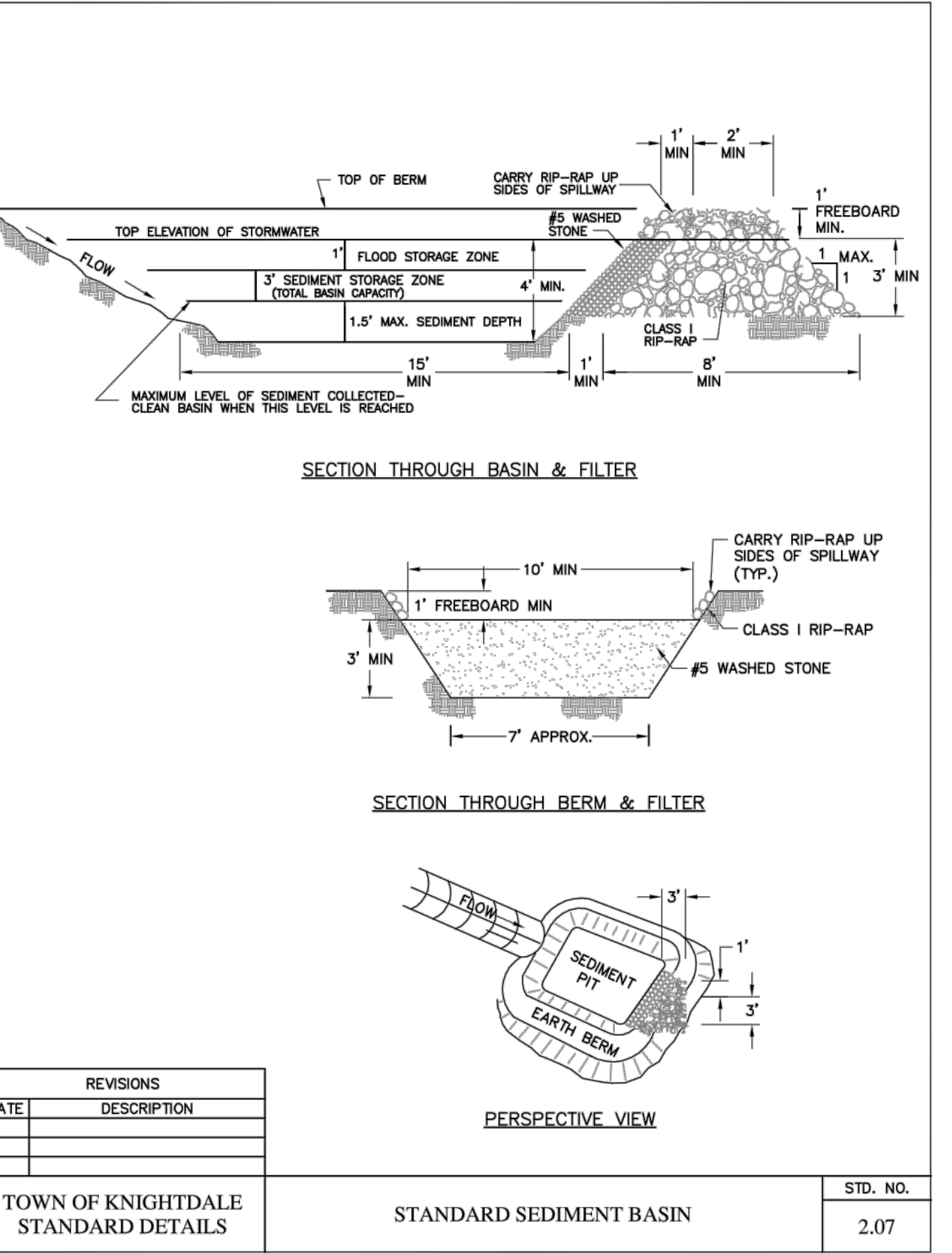
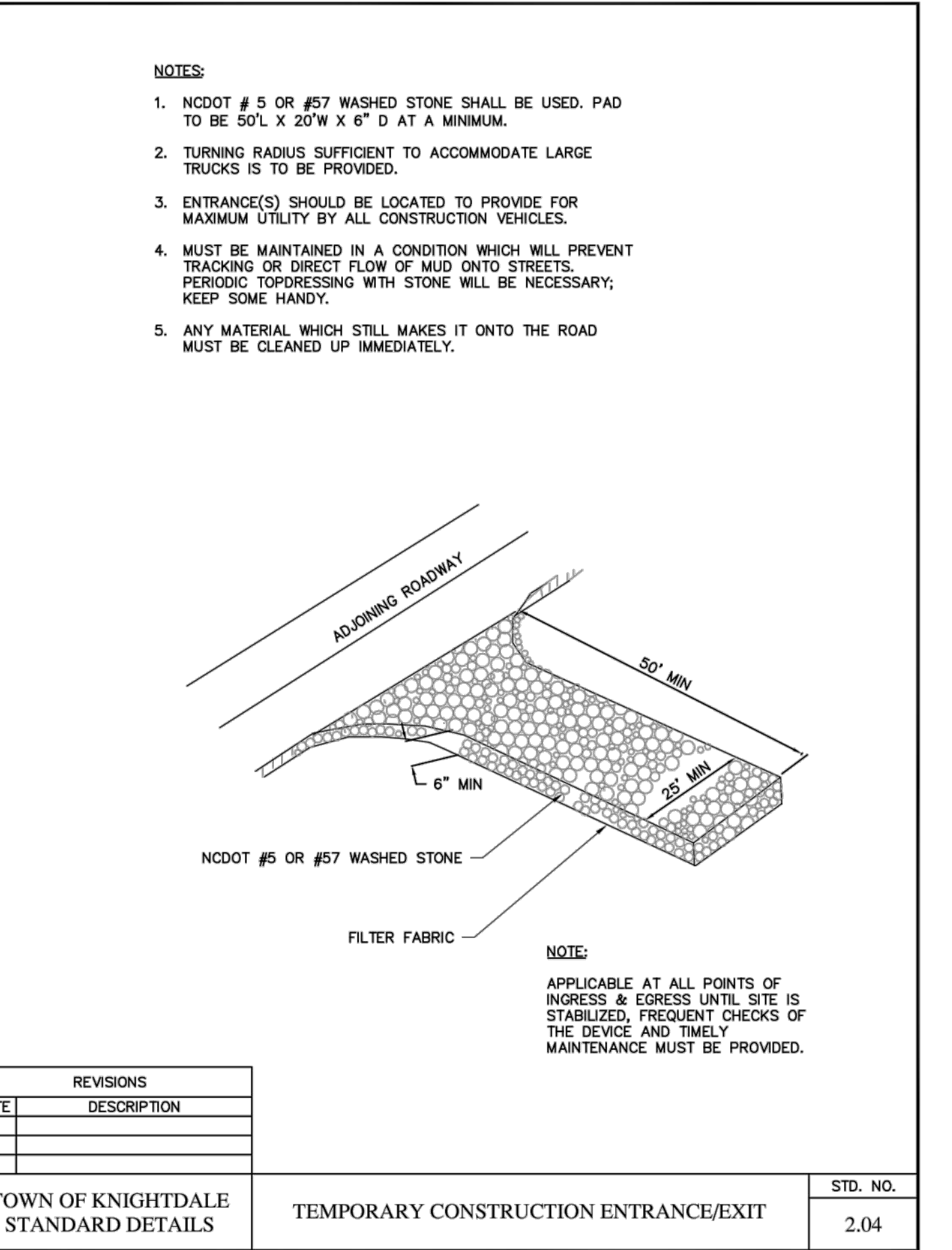
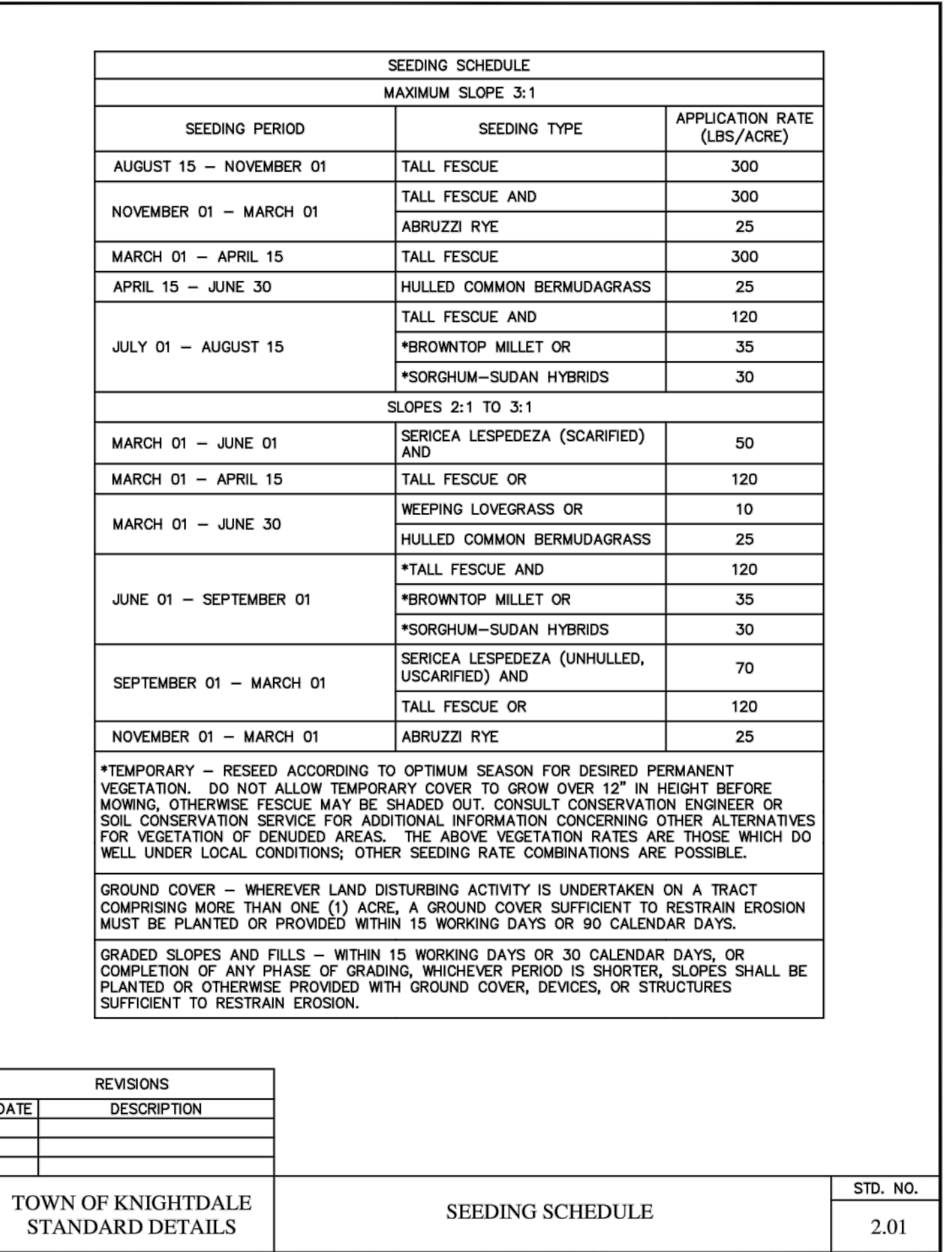
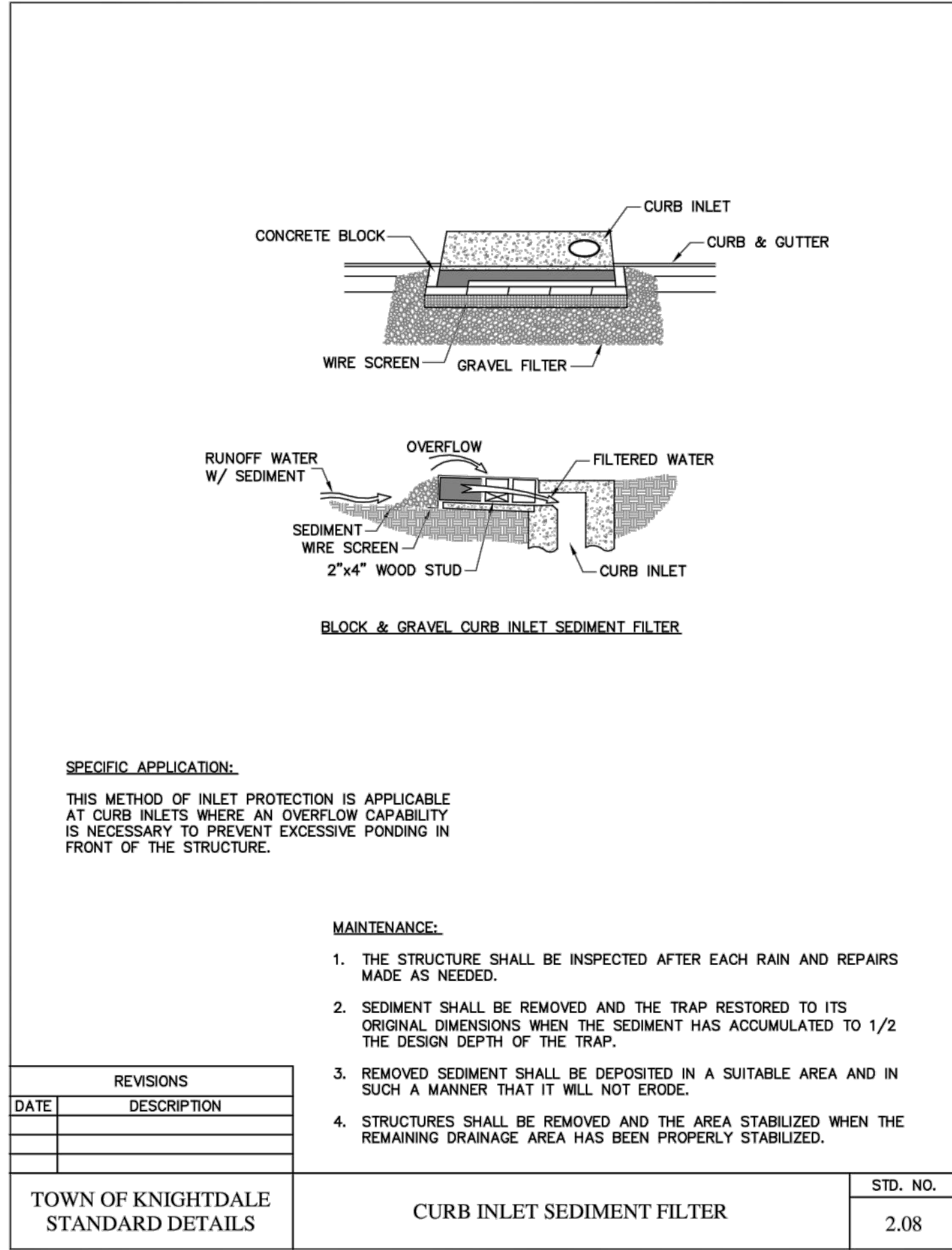
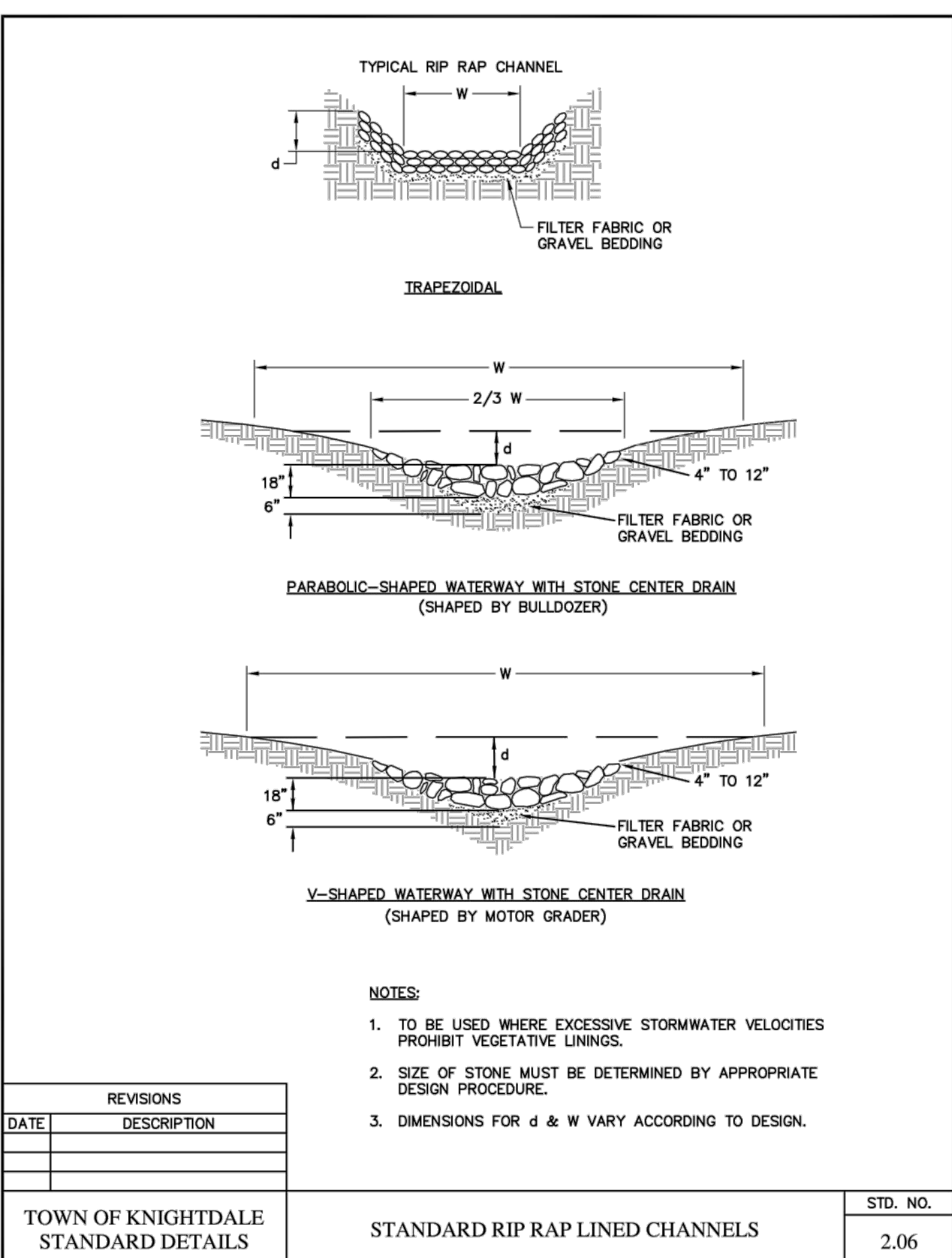
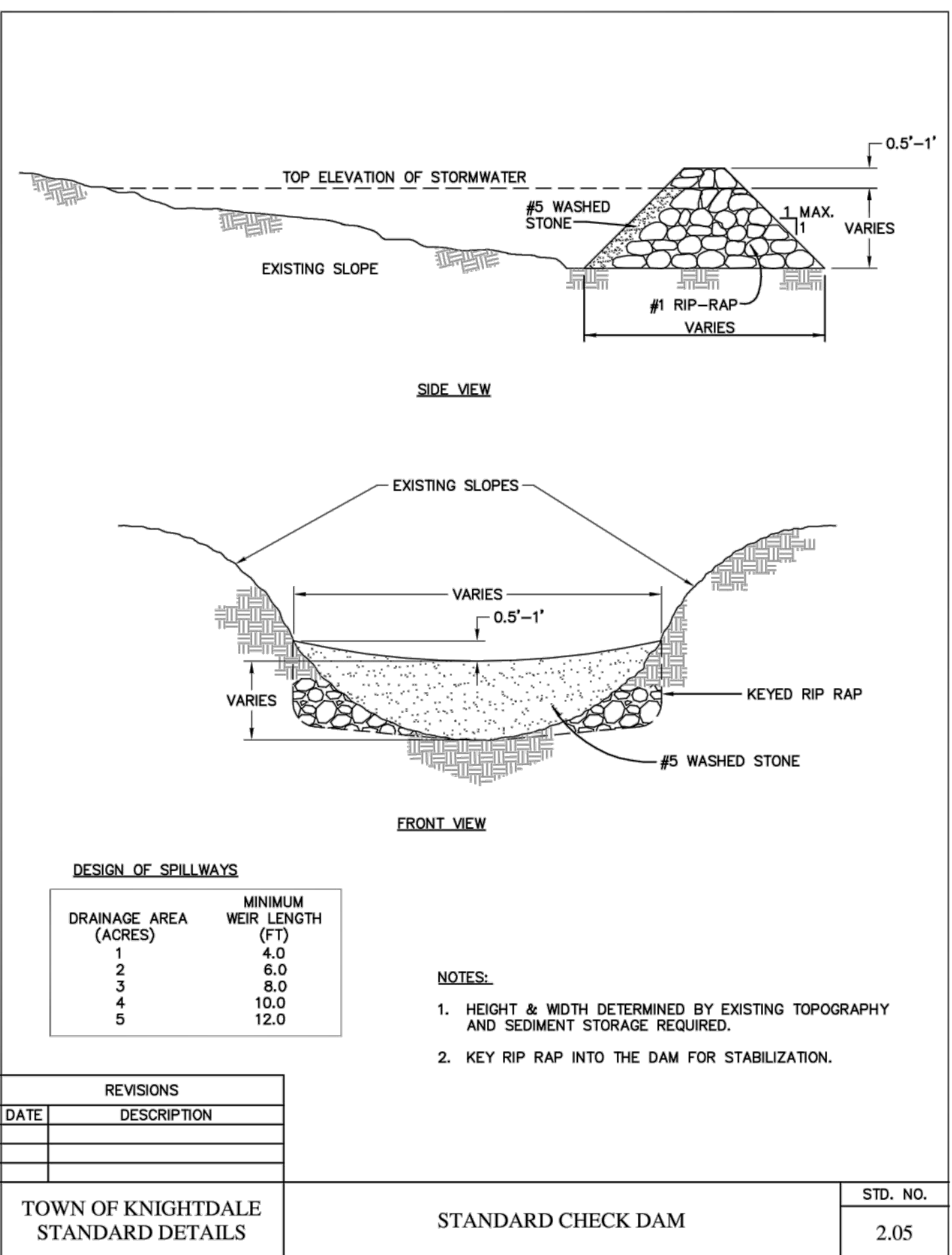
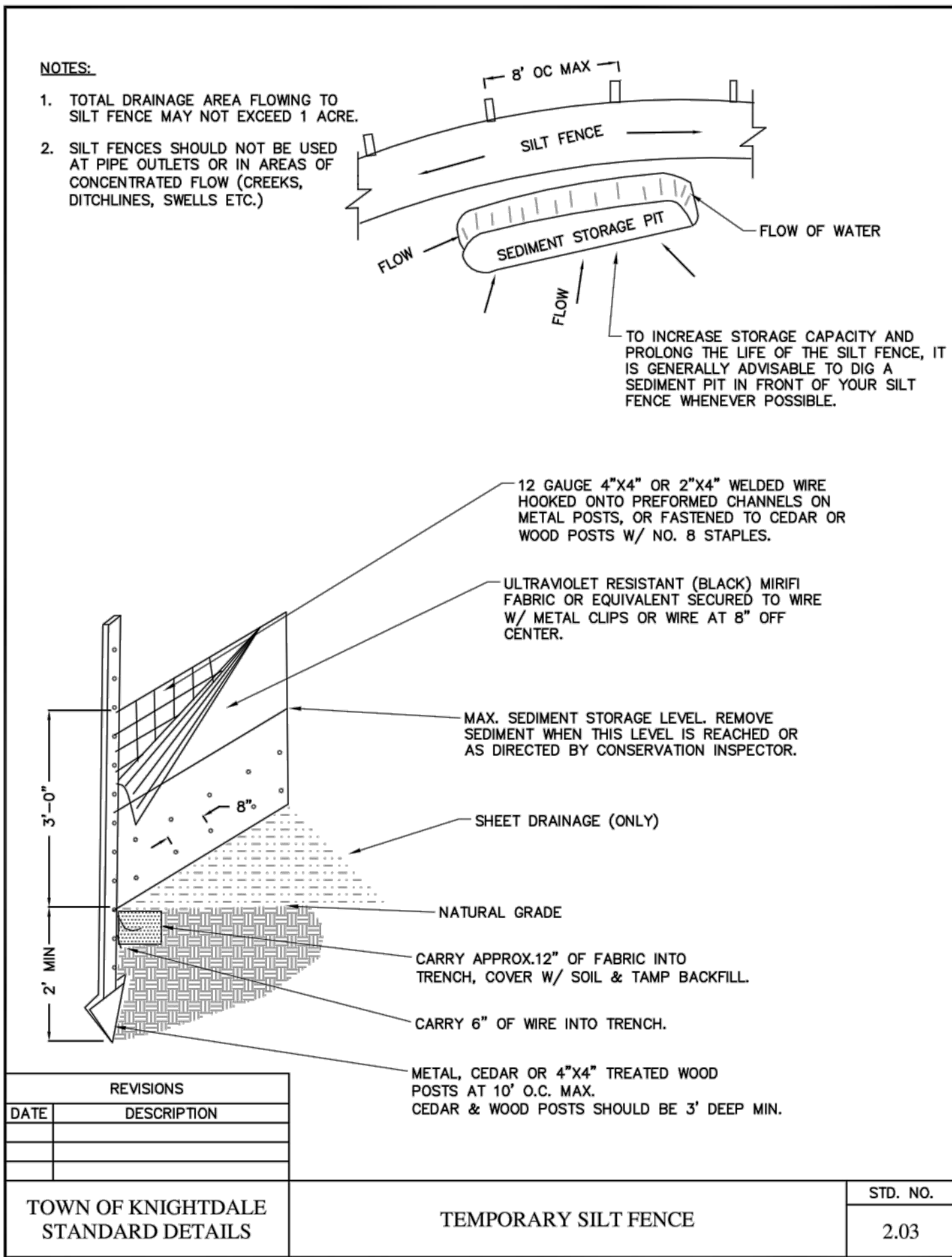
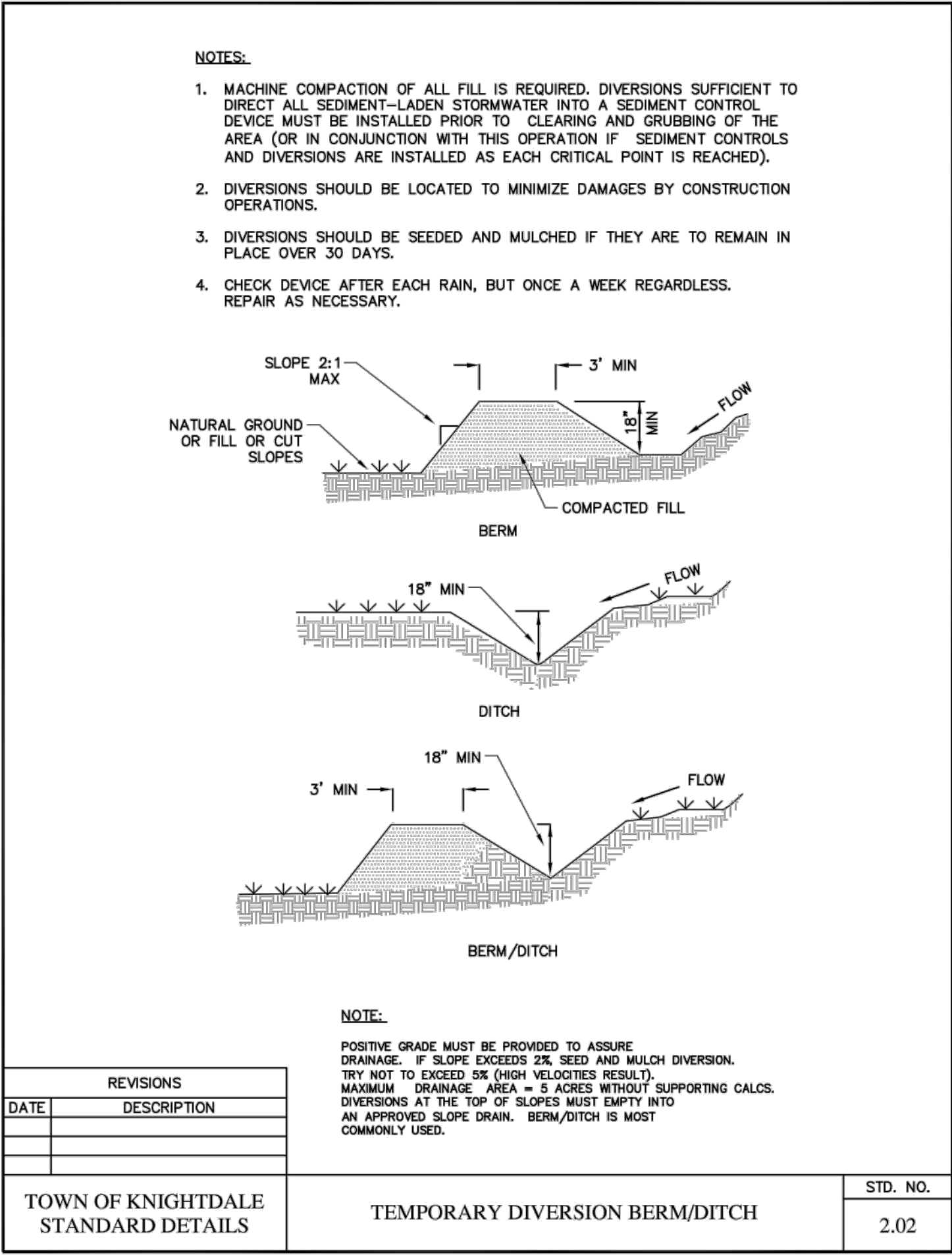


HEARTH - POINTE - KNIGHTDALE - MINGO CREEK TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA CONSTRUCTION PLANS STORMWATER DRAINAGE DETAILS

DRAWING
SHEET
D-2.2
42 OF 46



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	



REVISIONS

DATE

BY

NO. 1

NO. 2

NO. 3

NO. 4

NO. 5

NO. 6

NO. 7

NO. 8

NO. 9

NO. 10

SEAL

030046

ENGINEER

THEW PA

STRONGROCK

ENGINEERING GROUP

STRONG ROCK ENGINEERING GROUP, PLLC COMPANY LICENSE # P-2166

6801 FALLS OF NEUSE RD. SUITE 108 RALEIGH, NC 27615 JOSH@STRONGROCKENGINEERING.COM

STRONG ROCK PROJECT

NOT FOR CONSTRUCTION

SCALE AS SHOWN

DESIGNED BY MTP

DRAWN BY SRG

CHECKED BY MTP

HEARTH - POINTE - KNIGHTDALE - MINGO CREEK

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

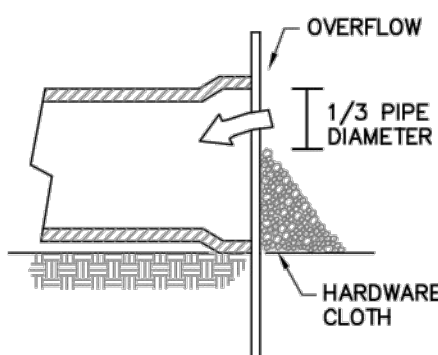
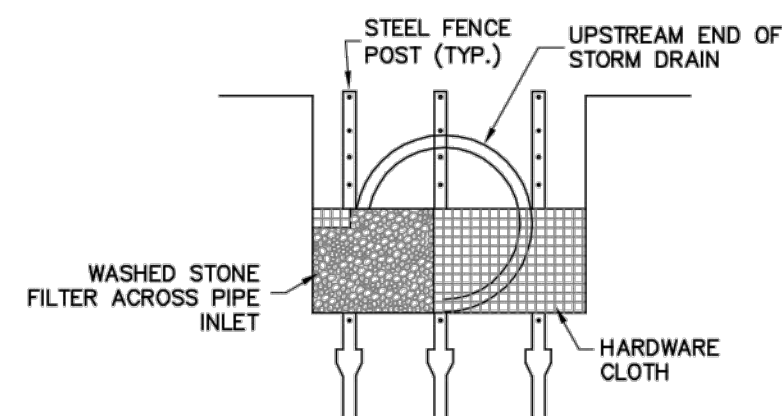
EROSION CONTROL DETAILS

DRAWING SHEET

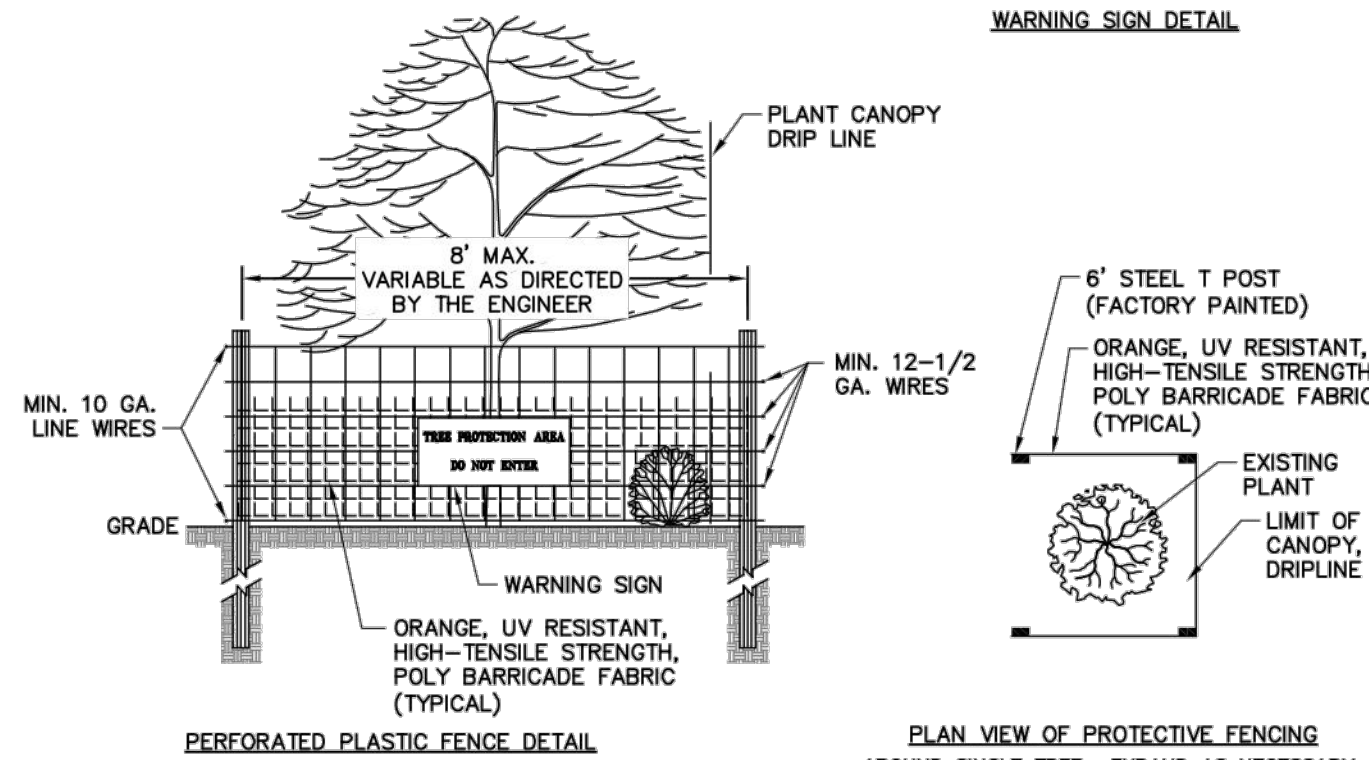
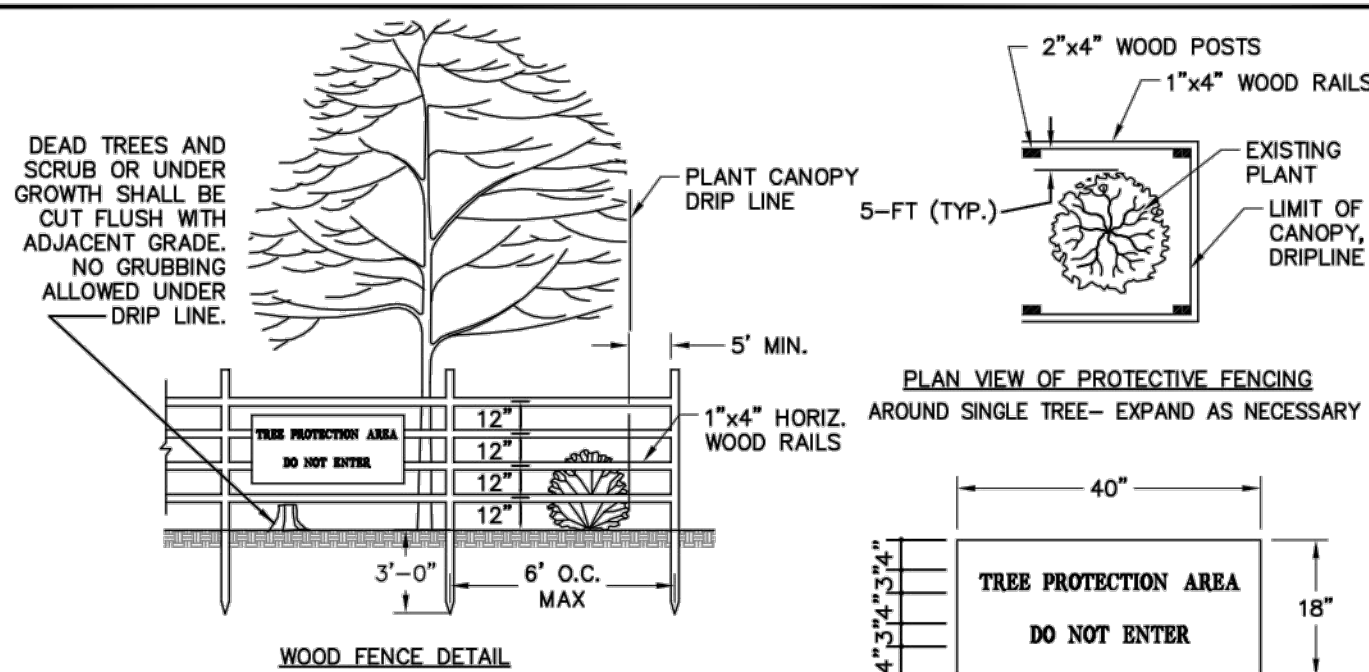
D-3.0

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



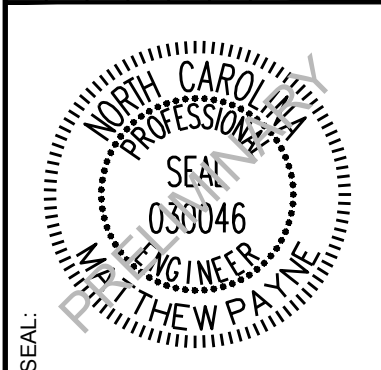
REVISIONS		PIPE INLET PROTECTION	STD. NO. 2.09
DATE	DESCRIPTION		
TOWN OF KNIGHTDALE STANDARD DETAILS			



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		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 DRILLPIE OF TREES AND 1' MINIMUM OUTSIDE SHRUBS OR OTHER PLANTS.
DATE	DESCRIPTION	
TOWN OF KNIGHTSDALE STANDARD DETAILS		PLANT PROTECTIVE FENCING
		STD. NO. 2.10

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

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

DRAWING
SHEET

D-4.0

