CONSTRUCTION DRAWINGS FOR

HARRIS CREEK FARMS

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

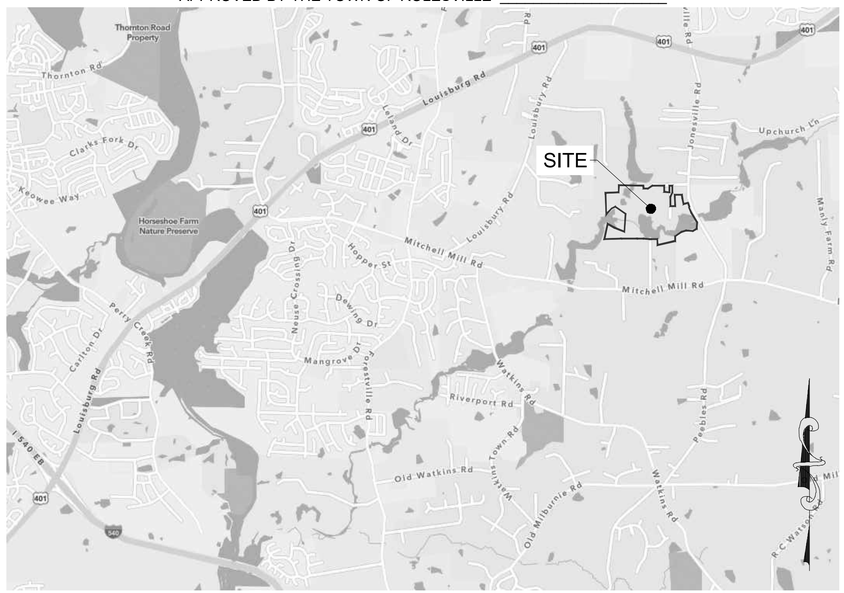
CASE NUMBER: CID-25-03

APPROVED BY THE TOWN OF ROLESVILLE _____

SITE DATA TABLE	
OWNER	KENNETH INVESTMENTS, LLC Contact: STEPHAN GEORGE 10030 GREEN LEVEL CHURCH RD, STE 802 CARY, NC 27519
ENGINEER:	QUANTECH ENGINEERING BRYAN A. HARRIS, PE 15000 WESTON PARKWAY, STE. 174 CARY, NC 27513 PHONE: (919) 815-9987 EMAIL: BRYAN@QUANTECHENG.COM
DEVELOPER:	THE CSC GROUP, LLC STEVE GEORGE 600 PARK OFFICES DRIVE, STE 372 RESEARCH TRIANGLE, NC 27709 PHONE: (919) 815-9987
ENVIRONMENTAL CONSULTANT	MORRIS & RITCHIE ASSOCIATES 530 HINTON POND ROAD, SUITE 104 KNIGHTDALE, NC 27545
SURVEYOR:	BATEMAN CIVIL SURVEY COMPANY JOSH DAVIDSON 2524 RELIANCE AVE APEX, NC 27539 PHONE: 919 557-1080 Ext 109 josh@batemancivilsurvey.com
SITE ADDRESS	4928 UNIVERSAL DR WAKE FOREST, NC 27587-6356
PIN:	1757277811, 1757471559, 1757383572, 1757384572, 1757385064, 1757375975, 1757375865, 1757375765, 1757375665, 1757375575, 1757375464, 1757375365, 1757375276, 1757378303, 1757378109, 1757378013, 1757368816
DEED BOOK / PAGE	019248 / 01884 (all parcels)
PLAT BOOK / PAGE	BM2007 / 01224
TOTAL SITE AREA:	94.99 AC
EXISTING ZONING:	RM-CZ
CURRENT USE:	RESIDENTIAL
PROPOSED USE	RESIDENTIAL-CLUSTER (MEDIUM DENSITY)
RIVER BASIN	NEUSE RIVER BASIN
SUB WATERSHED	NEUSE (UPPER) - 03020201
FEMA FIRM PANEL #:	3720175700K
RESIDENTIAL DENSITY CALCULATIONS (CLUSTER SUBDIVISION)	
MAXIMUM DENSITY ALLOWED:	5.0 UNITS / AC
PROPOSED DENSITY:	120 UNITS / 94.99 AC = 1.26 UNITS / AC
LOTS (CLUSTER)	
MINIMUM LOT WIDTH	42.0 FT
MINIMUM LOT AREA	6,000 SF
MINIMUM BUILDING SETBACKS:	FRONT: 20' REAR: 20' CORNER: 10' SIDE: 5'
OPENSPACE (MEDIUM DENSITY, CLUSTER)	
OPEN SPACE (REQUIRED 12%)	11.40 AC
OPEN SPACE (PROPOSED)	63.60 AC
PASSIVE (REQUIRED)	5.70 AC
PASSIVE (PROPOSED)	56.04 AC
PASSIVE (NOT IN SCM OR ENVIRONMENTAL AREAS)	7.11 AC
ACTIVE (REQUIRED)	5.70 AC
ACTIVE (PROPOSED)	7.56 AC
ACTIVE SPACES (REQUIRED)	2 MEDIUM AREA (1.0 - 2.5 AC) 1 LARGE AREA (> 2.5 AC.)
ACTIVE SPACES (PROVIDED)	(2) MEDIUM AREAS Area 1 = (44,640 SF, 1.02 AC) Area 2 = (78,467 SF, 1.80 AC) (1) LARGE AREA Area 3 = (206,621 SF, 4.74 AC)
TREE SAVE SUMMARY (CLUSTER)	
EXISTING QUALIFIED TREES:	514 Total
REQUIRED TREES SAVE:	52 (10% of Total)
PROPOSED TREES SAVE:	267 (52% of Total)
STREET DATA	
STREET A	1,125 LF 50' R/W 35' BC - BC
STREET B	1,245 LF VARIABLE R/W 35' BC - BC
STREET C	2,360 LF 50' R/W 35' BC - BC
STREET D	705 LF 50' R/W 27' BC - BC
STREET E	370 LF 50' R/W 27' BC - BC
DEDICATED ROAD R.O.W.	7.64 ACRES

IMPERVIOUS AREA	
EXISTING GRAVEL ROADS	69,021 SF (1.58 AC)
PROPOSED ROADS	186,157 SF (4.27 AC)
PROPOSED PARKING LOTS	11,176 SF (0.26 AC)
PROPOSED SIDEWALKS	56,138 SF (1.29 AC)
PROPOSED GREENWAYS	65,664 SF (1.51 AC)
ALLOWABLE / LOTS	20% = 827,553 SF (19.00 AC) -319,890 SF (7.34 AC) = 507,663 SF (11.65 AC) 507,663 SF / 120 Lots = 4,230 SF / Lot

PARKING CALCULATIONS			
PRINCIPAL USES	MINIMUM REQ'D	MAX ALLOWED	PROPOSED SPACES
PARKS/PUBLIC RECREATION FACILITIES	3 PER GROSS ACRE PLUS 1 PER 1000 SF OF GROSS FLOOR AREA OF BUILDINGS 5.09 Ac * 3 = 15.26 0 SF of FLOOR = 0 SPACES ADA CALC'S 26-50 PARKING SPACES REQUIRE ONE VAN ACCESSIBLE AND ONE STANDARD	NO MAXIMUM	28 SPACES (INCLUDES 4 VAN ACCESIBLE ADA SPACES)



VICINITY MAP

0 2,500 5,000 10,000

1 inch = 2,500 ft

RALEIGH INFRASTRUCTURE INSPECTIONS QUANTITIES		
PHASES	HARRIS CREEK FARMS	WATERLINE MAIN EXTENSION
NUMBER OF LOTS	120	0
NUMBER OF UNITS	0	0
PUBLIC WATER LINE (LF)	6,128	11,286
PUBLIC SEWER LINE (LF)	5,841	0
PUBLIC FORCEMAIN (LF)	0	0
WATER SERVICE STUBS	120	0
SEWER SERVICE STUBS	120	0
AVERAGE DAILY FLOW	36,000	0

PROJECT REZONING WAS SUBMITTED AUGUST 2022. THE PROPERTY'S RM-CZ ZONING DISTRICT IS THEREFORE SUBJECT TO LDO SECTION 3.1.B/3.1.2.B/TABLE 3.1.2. CLUSTER DEVELOPMENT STANDARDS FOR MINIMUM LOT AREA (SIZE), WIDTH, AND BUILDING SETBACKS IN EFFECT AS OF AUGUST 2022. SPECIFICALLY, THIS IS PRIOR TO THE APRIL 4, 2023 ADOPTION OF TEXT AMENDMENT TA-23-02 WHICH MODIFIED THESE CLUSTER DEVELOPMENT STANDARDS.

ATTENTION CONTRACTORS

The Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the Public Utilities Inspector at 919-996-3245 or https://cityworks.raleighnc.gov/pucontractors/new and schedule a Pre-construction meeting prior to beginning any construction. Raleigh Water must be contacted at (919) 996-4540 at least twenty-four hours prior to beginning any work activity around critical water and sewer infrastructure.

Failure to notify the Divisions 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.

Public

WATER DISTRIBUTION / EXTENSION SYSTEM

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

City of Raleigh
Public Utilities DepartmentPermit # _____

Public

SEWER COLLECTION / EXTENSION SYSTEM

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

City of Raleigh
Public Utilities DepartmentPermit # _____

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AGENCY CONTACTS
Town of Rolesville Planning Department 502 Southtown Circle Rolesville, NC 27511
Wake County Watershed Management Waverly F. Atkins Building 337 S. Salisbury St Raleigh, NC 27601 Contact: Karen Pageeau Phone: (919) 796-8769 Email: karyn.pageau@wakegov.com
City of Raleigh Public Utilities Dept. One Exchange Plaza Suite 620 Raleigh, NC 27602 Phone: (919) 996-3245 Email: publicutilityinfo@raleighnc.gov
NCDOT Division 5, District 1 Office 4009 District Drive Raleigh, NC 27607

EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT

APPROVED

EROSION CONTROL ☐ SEC-_____

STORMWATER MGMT.☐SWF-_____

FLOOD STUDY ☐ SWF-_____

DATE_____

WAKE COUNTY NORTH CAROLINA PROTECT WATER

ENVIRONMENTAL CONSULTANT SIGNATURE

N.C. UNDERGROUND UTILITIES

811

3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

Developer

THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY

10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE

Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor

BCSC BATEMAN CIVIL SURVEY COMPANY

Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

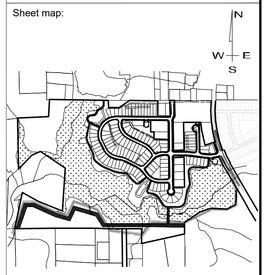
Rolesville
Genuine Community • Capital Connection
Est. 1837

Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Issued / Print Date: 2025-September-02 (16:36)
File Name: 1 Cover.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

Issued for:

PROGRESS DRAWINGS
DO NOT USE FOR CONSTRUCTION

REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

COVER

Sheet #:

1

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\1 Cover.dwg

GENERAL NOTES:

1. THE CONTRACTOR SHALL MARK THE LIMITS OF THE STREAM BUFFER AND WETLANDS WITH ORANGE TREE PROTECTION FENCE WITH APPROPRIATE SIGNAGE. TREE PROTECTION FENCE SHALL BE INSTALLED ALONG THE OUTER ZONE OF ANY NEUSE RIVER BUFFER OR CAPE FEAR BUFFER OR IF THERE IS ANY CONSTRUCTION WITHIN 50 FEET OF THE BUFFER EDGE. THIS MUST BE DONE PRIOR TO STARTING ANY CLEARING AND MUST BE DONE TO OBTAIN A CERTIFICATE OF COMPLIANCE.
2. IF THE DEVELOPER HAS RECEIVED APPROVAL TO WORK IN THE FIRST 20-FEET OF A STREAM BUFFER, THEN THE LAST 30-FOOT BOUNDARY SHALL BE MARKED IN THE AREA ADJACENT TO THIS WORK. OTHERWISE THE ENTIRE 50-FEET SHALL BE MARKED. THIS MARKING SHALL REMAIN IN PLACE UNTIL ALL ADJACENT DISTURBED AREAS HAVE BEEN COMPLETED AND STABILIZED.
3. CONTRACTOR WILL INSTALL TEMPORARY DIVERSION DITCHES WHEN SETTING UP EROSION CONTROL MEASURES IN THE SAME LOCATION AS THE PERMANENT DITCHES (7 DAY GROUND COVER REQUIRED).
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL LOCAL, COUNTY, OR STATE REQUIRED PERMITS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK ON THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE APPROPRIATE UTILITY COMPANY'S (ELECTRIC, GAS, TELEPHONE, ETC.)
7. THE CONTRACTOR SHALL BE AWARE OF ANY OVERHEAD POWER LINES AND SHALL TAKE ALL NECESSARY PRECAUTION TO ENSURE THAT PERSONNEL AND TRAFFIC ARE SAFE AT ALL TIMES.
8. THE UTILITY CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES, CHARTED OR UNCHARTED, LOCATED OR UNLOCATED. ANY AND ALL WORK PERFORMED TO REPAIR UTILITIES DAMAGED BY THE UTILITY CONTRACTOR MUST MEET THE APPROVAL OF THE ASSOCIATED UTILITY COMPANY AND THE UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY SUCH REPAIRS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF A SUITABLE BACKFILL MATERIAL AND SHALL PLACE MATERIAL IN 12" LAYERS AND COMPACT SAID FILL TO A 95% STANDARD PROCTOR.
10. THE CONTRACTOR SHALL BE COGNIZANT OF THE EROSION CONTROL DEVICES FOR THIS PROJECT AND SHALL MAKE EVERY EFFORT TO ASSURE THAT ALL SUCH DEVICES ARE KEPT CLEAN AND IN APPROPRIATE WORKING ORDER. AFTER EACH STORM OR RAINFALL EVENT, ALL COLLECTED SEDIMENT SHALL BE REMOVED AND THE DEVICES RETURNED TO THEIR ORIGINAL CONDITION. THE CONTRACTOR SHALL REIMBURSE ANY FINES, DUE TO EROSION CONTROL FAILURES, TO THE OWNER/DEVELOPER.
11. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL DURING ALL PHASES OF THIS CONSTRUCTION IN ACCORDANCE WITH NCDOT AND ALL MUNICIPALITY STANDARDS.
12. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MOST CURRENT EDITION OF THE ORDINANCE.
14. THE CONTRACTOR SHALL OBTAIN A LANE CLOSURE PERMIT (IF APPLICABLE) FOR ANY WORK WHICH REQUIRES THE CLOSURE OF A TRAFFIC LANE FROM THE PUBLIC WORKS DEPARTMENT-TRANSPORTATION OPERATION DIVISION AT LEAST 48 HOURS IN ADVANCE AND FOR STREET CLOSURES, AT LEAST 2 WEEKS IN ADVANCE. PROVIDE EXACT LOCATION, CROSS STREET, DATES FOR LANE CLOSURE, CONTACT PERSON AND FAX NUMBER.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE INSPECTIONS DEPARTMENT A STREET CUT PERMIT (IF APPLICABLE)
16. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
17. THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREET TO EXISTING CONDITION OR BETTER.
18. ANY CHANGES OR DEVIATIONS FROM THESE PLANS NO MATTER HOW MINOR SHALL BE DONE ONLY WITH THE EXPRESS "PRE-APPROVAL" OF THE PROJECT ENGINEER.
19. IT IS REQUIRED BY THE STATE, THAT THE ENGINEER CERTIFY THE AS-BUILT CONDITIONS OF THE UTILITIES AFTER THEY HAVE BEEN CONSTRUCTED. IT IS THEREFORE NECESSARY THAT THE ENGINEER WITNESS AND MONITOR THE CONSTRUCTION PROCESS. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER, WITH AT LEAST 48 HOURS OF ADVANCE NOTICE OF WHEN THE CONSTRUCTION WILL TAKE PLACE SO THAT PROPER INSPECTIONS CAN BE MADE
20. ALL EROSION CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE LOCAL MUNICIPALITY.
21. TO PREVENT SHORT CIRCUITING OF SEDIMENT TRAPS, ALL TRAPS CALL FOR SILT FENCE FLOW DIVERSIONS PER TRAPS DETAIL.
22. TEMPORARY DIVERSION DITCHES SHALL BE INSTALLED ALONG THE SIDES OF THE CLEARING AREA UNTIL SUCH TIME AS THE TYPICAL ROADWAY SECTION CAN BE ESTABLISHED.
23. NO EROSION CONTROL MEASURES MAY BE REMOVED WITHOUT THE PRIOR APPROVAL OF BOTH THE PROJECT ENGINEER AND LOCAL INSPECTOR.
24. THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 14 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY GROUND COVER, DEVICES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION. PERMANENT GROUNDCOVER WILL BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS. (PER GENERAL STATUTE 113A-57 PARAGRAPH 2 & 3).
25. NO DISTURBED AREA SHALL BE ALLOWED TO REMAIN UNPROTECTED AND MUST BE MULCHED AND SEEDED WITHIN 14 DAYS OF WHEN WORK WAS CONDUCTED.
26. SEEDING OF THE SHOULDERS SHALL BE IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET WITH THESE PLANS.
27. THE WATER LINES SHALL BE BURIED A MINIMUM OF 3' DEEP, FROM THE TOP OF THE FINISHED GROUND ELEVATION TO THE TOP OF THE PIPE THROUGH THE ENTIRE LENGTH OF THE PIPE.
28. THE METER SETTERS SHALL BE PLACED AT LEAST SIX (6) FEET FROM THE PROPERTY LINE BETWEEN THE LOTS AND NO MORE THAN TEN (10) FEET FROM THE PROPERTY LINE BETWEEN THE LOTS. THE METER SETTERS SHALL BE LOCATED ONE (1) FOOT WITHIN THE RIGHT-OF-WAY NEAR THE LOT CORNER OF EACH LOT (UNLESS RESTRICTED BY SIDEWALK IN WHICH CASE WILL BE PLACED A REASONABLE DISTANCE FROM THE SIDEWALK BUT NO FURTHER THAN 6 FEET).
29. EACH WATER LINE TAP SHALL BE INDIVIDUAL AND MADE A MINIMUM OF 12" APART.
30. THE MINIMUM CORNER CLEARANCE FROM THE CURB LINE OR EDGE OF PAVEMENT OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY OF THE RADIUS CURVATURE, OR TWENTY (20) FEET FROM THE INTERSECTION OF RIGHT-OF-WAY LINES, WHICHEVER IS GREATER. THE RADIUS OF THE DRIVEWAY SHALL NOT ENCROACH ON THE MINIMUM CORNER CLEARANCE.
31. WC ACCESS RAMPS WILL BE PROVIDED IN ACCORDANCE WITH THE ADA AND LOCAL STANDARD. WHERE SIDEWALK IS NOT REQUIRED ALONG THE PUBLIC ROW, CURB IS TO BE DEPRESSED AT ALL RAMP LOCATIONS.
32. WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN, NO OBSTRUCTION BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION SHALL BE LOCATED IN WHOLE OR PART. OBSTRUCTIONS INCLUDE BUT ARE NOT LIMITED TO ANY BERM, FOLIAGE, FENCE, WALL, SIGN, PARKED VEHICLE OR OTHER OBJECT.
33. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH ALL STANDARDS AND SPECIFICATIONS.
34. EXISTING UNUSED UTILITY SERVICES SHALL BE ABANDONED AT MAIN AND REMOVED FROM THE ROW OR EASEMENT.
35. ALL STRUCTURAL STORM WATER SCM'S SHALL BE LOCATED OUTSIDE OF NCDOT RIGHT OF WAYS. A PERMANENT PUBLIC DRAINAGE EASEMENT SHALL BE LOCATED OUTSIDE OF THE NCDOT RIGHT OF WAY(S) FOR ACCESS. NCDOT ASSUMES NO RESPONSIBLITY FOR THE OPERATION & MAINTENANCE OR LIABILITY OF THE STRUCTURAL STORMWATER SCM'S.
36. ALL ROADWAY DITCHES MUST BE STABLE BEFORE THEY WILL BE TAKEN INTO THE STATE SYSTEM.
37. LOTS DENOTED WITH AN ASTERISK (*) NEXT TO THE LOT NUMBER MEANS THERE IS A 100 YR FLOOD EASEMENT WHICH CONSISTS OF THE 100 YR FLOOD PLAIN (BACK WATER) PLUS 1' (OBTAINED FROM GIS ELEVATIONS) OR THE LOT HAS FLOOD HAZARD SOILS ON IT.
38. BEFORE ACQUIRING A BUILDING PERMIT FOR LOTS MARKED BY AN * (ASTERISK) THE BUILDER MAY NEED TO OBTAIN A FLOOD HAZARD AREA INFORMATION. THE BUILDER'S ENGINEER, ARCHITECT AND/OR SURVEYOR (AS APPROPRIATE) MUST CERTIFY ON ANY PERMIT THAT ALL FLOOD HAZARD REQUIREMENTS ARE MET.
39. THERE SHALL BE NO FILLING OR ERECTION OF PERMANENT STRUCTURES IN THE AREAS OF FLOOD HAZARD SOILS OR FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) 100 YEAR FLOOD ZONES UNTIL A FLOOD STUDY IS APPROVED.

SITE SPECIFIC NOTES:

1. OVERALL TOPOGRAPHIC INFORMATION WAS TAKEN FROM WAKE COUNTY GIS. STREET SECTIONS AND LOCATION OF EXISTING PAVEMENT AND STRUCTURES PROVIDED BY THE SURVEYOR.
2. BOUNDARY INFORMATION WAS TAKEN FROM INFORMATION PROVIDED BY THE SURVEYOR.
3. ALL LOTS WILL BE SINGLE FAMILY RESIDENTIAL.
4. LOCAL RESIDENTIAL STREET RIGHT-OF-WAY WIDTHS SHALL BE 50' AND HAVE 24' WIDE ASPHALT PAVEMENT SECTION WITH 30 INCH VALLEY CURB & GUTTER. COLLECTOR RESIDENTIAL STREETS SHALL HAVE 60' RIGHT-OF-WAY WIDTHS AND HAVE 30' ASPHALT PAVEMENT SECTION WITH 30" STANDARD CURB $ GUTTER.
5. CUL-DE-SACS SHALL HAVE A 50' RADIUS; ASPHALT PAVEMENT RADII WITHIN CUL-DE-SAC SHALL BE 35'.
6. THERE ARE NO FEMA FLOOD BOUNDARIES ON THIS SITE ACCORDING TO CURRENT FIRM PANEL.
7. 404/401 PERMITS WILL NOT BE NEEDED.

MA 22-08 REZONING CONDITIONS:

1. THE SUBJECT PROPERTY SHALL BE DEVELOPED IN GENERAL COMPLIANCE WITH THE MAP AMENDMENT (CONDITIONAL REZONING) CONCEPT PLAN DATED 01-01-24.
2. THE DEVELOPMENT SHALL CONSIST OF MAXIMUMS OF 120 SINGLE FAMILY DETACHED DWELLING UNITS/LOTS AS DETAILED IN THE MAP AMENDMENT (CONDITIONAL REZONING) CONCEPT PLAN DATED 01-01-24.
3. SINGLE FAMILY DETACHED DWELLING UNIT FACADE ANTI-MONOTONY: IN ORDER TO PROMOTE VARIATION IN HOME APPEARANCE, NO SINGLE FAMILY FRONT FACADE SHALL BE DUPLICATED FOR THREE LOTS IN A ROW, OR DIRECTLY ACROSS THE STREET. FOR THE CORNER LOTS, THIS SHALL APPLY TO THE LOTS DIAGONALLY ACROSS THE INTERSECTION.
4. ALL GARAGE DOORS SHALL EITHER CONTAIN WINDOWS OR CARRIAGE STYLE ADORNMENTS.
5. SINGLE FAMILY DETACHED DWELLING UNITS SHALL:
   A. BE A MINIMUM OF 1,500 HEATED SQUARE FEET.
   B. HAVE CEMENTITIOUS SIDING THAT SHALL VARY IN TYPE AND COLOR WITH BRICK, SHAKES, BOARD AND BATTEN, OR STONE ACCENTS PROVIDED AS DECORATIVE FEATURES.
   C. HAVE AT LEAST TWO TYPES OF FINISHES ON THE FRONT: LAP SIDING, MASONRY, SHAKES, AND BOARD BATTEN.
6. A HOME OWNERS ASSOCIATION (HOA) SHALL BE CREATED AND ALL OPEN SPACES OBSERVED IN MAP AMENDMENT (CONDITIONAL REZONING) CONCEPT PLAN DATED 01-01-24, SHALL BE OWNED AND MAINTAINED BY THE HOA.
7. FOUNDATIONS: ALL FOUNDATIONS ARE TO BE MONOLITHIC POURED SLAB FOUNDATIONS. TOP OF SLABS SHALL BE ELEVATED A MINIMUM OF 18" ABOVE FINISHED GRADE FOR ALL DWELLING UNITS. ALL FOUNDATIONS SHALL BE TREATED WITH MASONRY ON THE FRONT AND STREET-FACING SIDES FOR A MINIMUM OF 10".
8. RECREATIONAL AMENITIES: THE FOLLOWING RECREATIONAL AMENITIES SHALL BE CONSTRUCTED AS OBSERVED IN MAP AMENDMENT (CONDITIONAL REZONING) CONCEPT PLAN DATED 01-01-24. PUBLIC GREENWAY (APPROXIMATELY 5,600 LINEAR FEET), PRIVATE MULTI-USE PATHS (APPROXIMATELY 410 LINEAR FEET), GAZEBOS, PLAYGROUNDS, AND A DOG PARK, AMENITIES SHALL BE BUILT PRIOR TO ISSUANCE OF THE BUILDING PERMIT FOR THE 70TH LOT.
9. LANDSCAPING: AT LEAST 20 PERCENT (20%) OF ALL LANDSCAPING REQUIRED BY THE LDO, THAT DOES NOT ALREADY QUALIFY UNDER LDO 6.2, SHALL UTILIZE PLANT MATERIALS LISTED AS NATIVE POLLINATOR PLANTS BY THE NORTH CAROLINA WILDLIFE FEDERATION, WHERE EVERGREEN PLANTINGS OR STREET TREES ARE REQUIRED BY THE LDO, NATIVE POLLINATOR PLANTINGS SHALL NOT BE REQUIRED. SUCH PLANTINGS SHALL NOT BE REQUIRED. SUCH PLANTINGS SHALL BE CLEARLY SHOWN IN CONSTRUCTION DRAWINGS AND INSTALLED AS PART OF SUBDIVISION INFRASTRUCTURE. NOTHING HEREIN SHALL BE CONSTRUCTED TO LIMIT THE PLANT MATERIALS PERMITTED ON THE INDIVIDUAL RESIDENTIAL LOTS.
10. SIDEWALK EASEMENT: THE DEVELOPMENT SHALL ATTEMPT TO PROCURE AN EASEMENT FROM THE OWNERS OF THOSE PROPERTIES WITH PINS: 1757-48-1376 AND 1757-38-8408 IN ORDER TO PROVIDE A 5' WIDE SIDEWALK RUNNING FROM THE DEVELOPMENT'S PROPOSED ACCESS TO JONESVILLE ROAD TO THE INTERSECTION WITH UNIVERSAL DRIVE. IF THE DEVELOPMENT PROCURES EASEMENTS FROM BOTH PROPERTY OWNERS, THE SIDEWALK SHALL BE LOCATED WITHIN SAID EASEMENTS AND CONSTRUCTED CONSISTENT WITH THE TOWN OF ROLESVILLE TRANSPORTATION PLAN, AND SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF THE ONE HUNDREDTH (100TH) BUILDING PERMIT. IF THE DEVELOPMENT IS UNABLE TO PROCURE AN EASEMENT FROM EITHER OF THE PROPERTY OWNER PRIOR TO THE ISSUANCE OF THE FIRST (1ST) BUILDING PERMIT, THEN THE DEVELOPMENT SHALL PAY A FEE-IN-LIEU FOR THE SIDEWALK CONSTRUCTION TO THE TOWN OF ROLESVILLE. THE FEE-IN-LIEU SHALL BE PAID PRIOR TO THE ISSUANCE OF THE ONE HUNDREDTH (100TH) BUILDING PERMIT.
11. UNIVERSAL DRIVE: THE DEVELOPMENT SHALL ATTEMPT TO PROCURE A MINIMUM 20' WIDE ACCESS EASEMENT FROM THE OWNER OF THAT PROPERTY WITH PIN: 1757-38-8408 FOR VEHICULAR INGRESS AND EGRESS TO AND FROM GIDEON DRIVE AND JONESVILLE ROAD. THIS EASEMENT SHALL BE RECORDED WITH THE WAKE COUNTY REGISTRY. IF THE EASEMENT IS OBTAINED AND RECORDED, THE DEVELOPMENT SHALL PAVE THE EASEMENT AREA WITH A 20' WIDE ASPHALT SURFACE COAT OVER TOP OF THE EXISTING PRIVATE GRAVEL ACCESS DRIVE. THE PAVING SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF THE ONE HUNDREDTH (100TH) BUILDING PERMIT.
12. PRIOR TO THE ISSUANCE OF THE FIRST BUILDING PERMIT FOR A DWELLING UNIT, THE DEVELOPMENT SHALL DONATE THIRTY FIVE THOUSAND DOLLARS AND NO CENTS ($35,000.00) TO HOMES FOR HEROES.
13. HISTORICAL MONUMENT: THE DEVELOPMENT SHALL DEDICATE A 10-FOOT BY 10-FOOT AREA LOCATED NEXT TO THE GAZEBO AND GREENWAY PARKING AREA ALONG JONESVILLE ROAD TO ALLOW THE TOWN OF ROLESVILLE TO PLACE A HISTORICAL MONUMENT RELATED TO THE JONESVILLE AREA.
14. NAMING OF ROADS: PRIOR TO THE NAMING OF ANY PUBLIC ROADS WITHIN THE DEVELOPMENT, THE PROPERTY OWNER SHALL FORMALLY REQUEST SUGGESTED ROAD NAMES FROM JONESVILLE COMMUNITY CONNECT AND WILL SUBMIT THOSE SUGGESTED NAMES TO THE POST OFFICE FOR APPROVAL. IF THE NUMBER OF THOSE APPROVED NAMES ARE EQUAL OR GREATER THAN THE NUMBER OF PUBLIC STREETS WITHIN THE DEVELOPMENT, THE DEVELOPMENT SHALL EXCLUSIVELY USE THOSE APPROVED ROAD NAMES WITHIN THE DEVELOPMENT. IF THE NUMBER OF THOSE APPROVED NAMES IS LESS THAN THE NUMBER OF PUBLIC ROADS WITHIN THE DEVELOPMENT, THE DEVELOPMENT SHALL USE ALL OF THOSE APPROVED NAMES AND THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR NAMING THE REMAINING PUBLIC ROADS.
15. BLASTING: THE PROPERTY OWNER SHALL COMPLY WITH ALL WAKE COUNTY AND NORTH CAROLINA REGULATIONS RELATED TO BLASTING. SEE 29 CFR 1926.900-909 & 13 NCAC 07F .0703-.0712. ANY PERSON DETONATING EXPLOSIVES ON THE PROPERTY SHALL FIRST NOTIFY THE TOWN OF ROLESVILLE THAT A BLAST IS PLANNED. SUCH NOTIFICATION SHALL BE RECEIVED AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE PLANNED DETONATION AND SHALL GIVE THE TIME (WITHIN 30 MINUTES) OF THE PLANNED DETONATION AND THE LOCATION WHERE THE BLASTING IS TO BE DONE. THE PERSON DETONATING THE EXPLOSIVES SHALL GIVE AN EQUIVALENT NOTICE TO EACH PROPERTY OWNER THAT IS LOCATED WITHIN 1000 FEET OF THE PROPOSED BLASTING LOCATION. AT LEAST 60 DAYS PRIOR TO ANY BLASTING WITH EXPLOSIVE MATERIALS ON THE PROPERTY, THE PROPERTY OWNER WILL NOTIFY THE HOMEOWNERS WITHIN 1000 FEET OF THE PROPERTY OF THE EXPECTED BLASTING AND SHALL PROVIDE AN OPPORTUNITY FOR A PRE-BLASTING INSPECTION ("PBI") OF THE HOMEOWNER'S PROPERTY (INCLUDING STRUCTURES AND WELLS) TO ESTABLISH A BASELINE CONDITION OF THE HOMEOWNER'S PROPERTY. IF A NOTICED HOMEOWNER PROVIDES A WRITTEN ELECTION FOR A PBI AND PROVIDES REASONABLE ACCESS TO ITS PROPERTY AT REASONABLE TIMES, PROPERTY OWNER THROUGH ITS CONSULTANT ("BLASTING CONSULTANT") WILL CAUSE A PBI WITH REGARD TO SUCH HOMEOWNER'S PROPERTY TO BE PERFORMED PRIOR TO BLASTING ACTIVITIES. CONTACT INFORMATION FOR THE PURPOSE OF REPORTING DAMAGE CAUSED BY BLASTING SHALL BE PROVIDED. IF A PBI WAS PERFORMED AND THE HOMEOWNER PROVIDES NOTICE OF DAMAGE CAUSED BY BLASTING WITHIN 30 DAYS FOLLOWING BLASTING, THE PROPERTY OWNER SHALL CAUSE AN AFTER BLASTING INSPECTION ("ABI") TO BE PERFORMED AND IF A COMPARISON OF THE PBI TO THE ABI INDICATES THAT DAMAGE WAS CAUSED BY PROPERTY OWNER'S BASTING, IN THE REASONABLE OPINION OF THE BLASTING CONSULTANT, THE PROPERTY OWNER SHALL MAKE COMMERCIALLY REASONABLE EFFORTS TO REPAIR SUCH DAMAGE WITHIN 180 DAYS OF FOLLOWING COMPLETION OF BLASTING ACTIVITIES ON THE PROPERTY. ALL BLASTING OPERATIONS SHALL BE COVERED IN SUCH MANNER AS TO PREVENT FRAGMENTS OF ROCK, GRAVEL, EARTH, TREES, OR OTHER SUBSTANCES OR MATERIALS FROM BEING THROWN AGAINST OR UPON LOTS, BUILDINGS, UTILITY LINES, OR ANY STREET OR HIGHWAY. WHENEVER BLASTING IS BEING CONDUCTED IN THE VICINITY OF GAS, ELECTRIC, WATER, FIRE ALARM, TELEPHONE, TELEGRAPH, OR STEAM UTILITIES, THE BLASTER SHALL NOTIFY THE APPROPRIATE REPRESENTATIVE OF SUCH UTILITIES AT LEAST 24 HOURS IN ADVANCE OF BLASTING SPECIFYING THE LOCATION AND INTENDED TIME OF SUCH BLASTING. HOURS OF DETONATION SHALL BE LIMITED AS PROVIDED BY THE ROLESVILLE TOWN CODE. PERSONS RESPONSIBLE FOR BLASTING OPERATIONS SHALL MAINTAIN A RECORD OF EACH BLAST. ALL ORIGINAL BLASTING RECORDS SHALL BE RETAINED BY THE PERSONS RESPONSIBLE FOR THE BLASTING OPERATIONS FOR AT LEAST FIVE YEARS FOLLOWING THE CESSATION OF THE BLASTING OPERATIONS AND SHALL BE AVAILABLE FOR INSPECTION BY THE FIRE MARSHAL UPON REQUEST.

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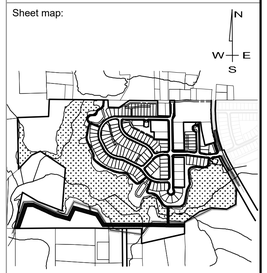
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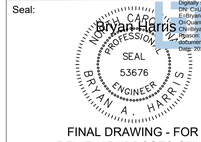
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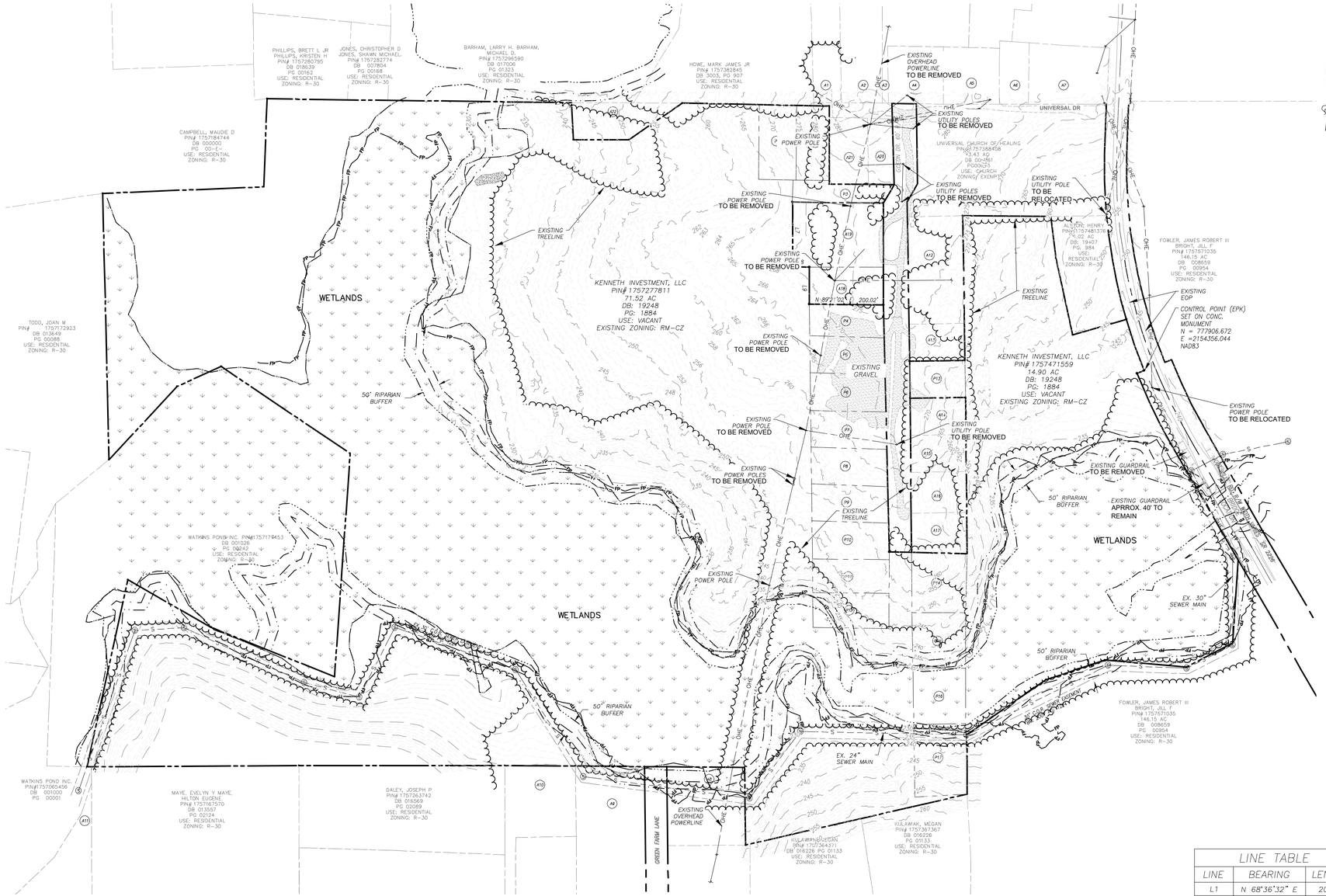
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NOTES

Sheet #:

2

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\1 Cover.dwg



EXISTING CONDITION NOTES:

1. BOUNDARY TAKEN FROM SURVEY BY GIL CLARK SURVEYING, 2329 HODGE RD, KNIGHTDALE, NC 27545 , (919) 266-9732. DATED 07-28-2022
2. TOPOGRAPHIC INFORMATION TAKEN FROM BATEMAN CIVIL SURVEY COMPANY, 2524 RELIANCE AVENUE, APEX NC 27539.
3. THE SUBJECT PROPERTY HAS FEMA 100 YR-FLOODWAY PER FEMA MAP #3720175700K WITH AN EFFECTIVE DATE OF JULY 19, 2022.
4. SITE IS LOCATED WITHIN THE NEUSE RIVER BASIN.
5. THIS SITE HAS ACCESS TO WATER, SEWER AND ELECTRICAL UTILITY SERVICES.

ADJACENT PROPERTIES

PLAN ID	PIN #	OWNER	DB/PG	USE	ZONING
A1	1757-38-4791	ROSARIO, MODESTO ESCARFULLER	19545 / 517	Residential	R-30
A2	1757-38-5884	CURTIS, HENDALL HEIRS	20-E / 3830	Residential	R-30
A3	1757-38-7858	GARCIA, SALVADOR	18610 / 2740	Residential	R-30
A4	1757-38-5884	FERRELL, CHARLES E & FERRELL, SHARON R	7662 / 727	Residential	R-30
A5	1757-38-8780	POWER ELEVEN CONSTRUCTION, LLC	19349 / 1245	Residential	R-30
A6	1757-48-0701	HARTSFIELD, ROZELIA J HEIRS HATTIE SMITH	10-E / 1220	Residential	R-30
A7	1757-48-1740	HARTSFIELD, ROZELIA J HEIRS HATTIE SMITH	10-E / 1220	Residential	R-30
A8	1757-36-1783	BIRMINGHAM, JOHN DAVIS	3642 / 732	Residential	R-30
A9	1757-26-9620	CARPENTER, BOBBY RAY CARPENTER, ALBERTA L	19601 / 2199	Residential	R-30
A10	1757-26-6697	RIVERS, SUSAN MARSHALL	3406 / 539	Residential	R-30
A11	1757-16-4026	SOUTTER, SUSAN R SOUTTER, ROBERT QUENTIN	17592 / 381	Residential	R-30
A12	1757-38-7189	DUNN, JAMES WILLIAM HEIRS MONTAGUE, BUNNIE DUNN	N/A	Vacant	R-30
A13	1757-38-7090	WW OVERTIME LLC	19202 / 2051	Vacant	R-30
A14	1757-37-7799	WHITLEY, CLEVELAND G HEIRS	N/A	Residential	R-30
A15	1757-37-7699	JARVIS, MARIE D CURTIS, HURLEY MAE	11946 / 1968	Vacant	R-30
A16	1757-37-8610	JARVIS, MYRON JARVIS, MARIE	9106 / 1133	Residential	R-30
A17	1757-37-7497	JARVIS, MARIE D CURTIS, HURLEY MAE	11946 / 1968	Residential	R-30
A18	1757-38-5155	HARRIS, OLLIE VIRGIN HEIRS HARRIS, LORINE B	98-E / 2613	Vacant	R-30
A19	1757-38-5249	CHEN, PING LI, FANXING	8518 / 367	Residential	R-30
A20	1757-27-7811	ROUSE, ELLEN CURTIS	19170 / 1070	Vacant	R-30
A21	1757-38-5562	QUIRINO, MARIA ESTELA	17501 / 945	Residential	R-30
A22	1757-28-9559	WILDER, THOMAS H III WILDER, MAGGIE	12-E / 3295	Residential	R-30

DEVELOPMENT OWNED PROPERTIES

PLAN ID	PIN #	OWNER	DB/PG	USE	ZONING
P1	1757-38-3572	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P2	1757-38-4572	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P3	1757-38-5349	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P4	1757-38-5064	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P5	1757-37-5975	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P6	1757-37-5865	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P7	1757-37-5765	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P8	1757-37-5665	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P9	1757-37-5575	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P10	1757-37-5464	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P11	1757-37-5365	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P12	1757-37-5276	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P13	1757-37-7990	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P14	1757-37-8303	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P15	1757-37-8109	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P16	1757-37-8073	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ
P17	1757-36-8816	KENNETH INVESTMENT, LLC	19248 / 1884	Vacant	RM-CZ

LINE TABLE

LINE	BEARING	LENGTH
L1	N 68°36'32" E	20.00'
L2	N 89°33'15" W	60.01'
L3	S 02°47'46" E	100.00'
L4	S 89°47'46" E	150.00'
L5	N 55°18'54" E	174.59'
L6	S 31°00'37" W	57.95'
L7	S 00°09'07" E	175.02'
L8	N 89°21'02" E	45.00'
L9	S 00°09'07" E	100.01'
L10	S 88°57'37" W	150.00'
L11	N 00°53'13" W	100.00'
L12	N 88°57'37" E	150.00'
L13	S 06°57'52"	113.70'
L14	N 73°55'50" E	149.95'

CURVE TABLE

CURVE	CHORD BEARING	CHORD DISTANCE	ARC LENGTH	RADIUS
C1	S 19°15'36" E	146.36'	146.42'	1462.39'
C2	S 25°28'26" E	211.09'	211.27'	1482.39'

EXISTING CONDITIONS LEGEND

- EXISTING BOUNDARY / R.O.W.
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING SEWER LINE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATERLINE
- EXISTING EASEMENT
- EXISTING TREELINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING 100 YEAR FLOOD PLAIN
- EXISTING WETLANDS
- EXISTING EDGE OF WATER
- STREAM BUFFER ZONE 1
- STREAM BUFFER ZONE 2

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft

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Other Consultants

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Bryan Harris
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OVERALL EXISTING CONDITIONS & DEMOLITION PLAN

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3

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NOTE:
- Where appropriate identified trees were approximately located by S&EC using a Trimble Geo XT and/or Geo X7 hand-held GPS unit. As these GPS units do not provide survey grade accuracy this data should be considered approximate and used for planning purposes only. If an accurate location is required a North Carolina Professional Land Surveyor should be engaged. Engineers, designers and/or local ordinance(s) may require trees to be surveyed located by a NC Registered Professional Land Surveyor.

- The term "tree survey" as used herein is generic in nature and intended to describe the identification, measurement, and evaluation of trees under the direction of a registered forester/certified arborist as described and/or required by local development ordinance(s).

- At the current scale, not all tree location labels may be legible or show. Please refer to the CAD drawing of the locations provided to the site engineer.



Legend

- Evaluation Area
- ∘ Deciduous Trees > 18" DBH; Evergreen Trees > 20" DBH

Project No. 16217.W1	
Project Mgr.: SB	
Scale: 1" = 150'	
09/30/2024	

N W E S

0 150 300 600

Feet

Town of Rolesville Tree Survey Sketch Map

Harris Tract

Source: Aerials from NC One Maps

S&EC
Soil & Environmental Consultants, Inc.
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 ● Phone (919) 846-5900 ● Fax (919) 846-9467
sandec.com

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EXISTING TREE SURVEY

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WETLANDS

WETLANDS

WETLANDS

WETLANDS

THIS AREA WILL BE CLEANED UP BUT NOT ALL TREES WILL BE CUT DOWN. ONLY TREE IN THE WAY OF THE MAKING THE FRISBEE GOLF COURSE WILL BE CUT, OTHERS WILL REMAIN, MORE DETAIL WILL BE SHOWN IN CD's.

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TREE PLAN LEGEND

EXISTING TREE

AREAS TO BE REMOVED OF TREES

GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)

1 inch = 120 ft

N.C. UNDERGROUND UTILITIES

811

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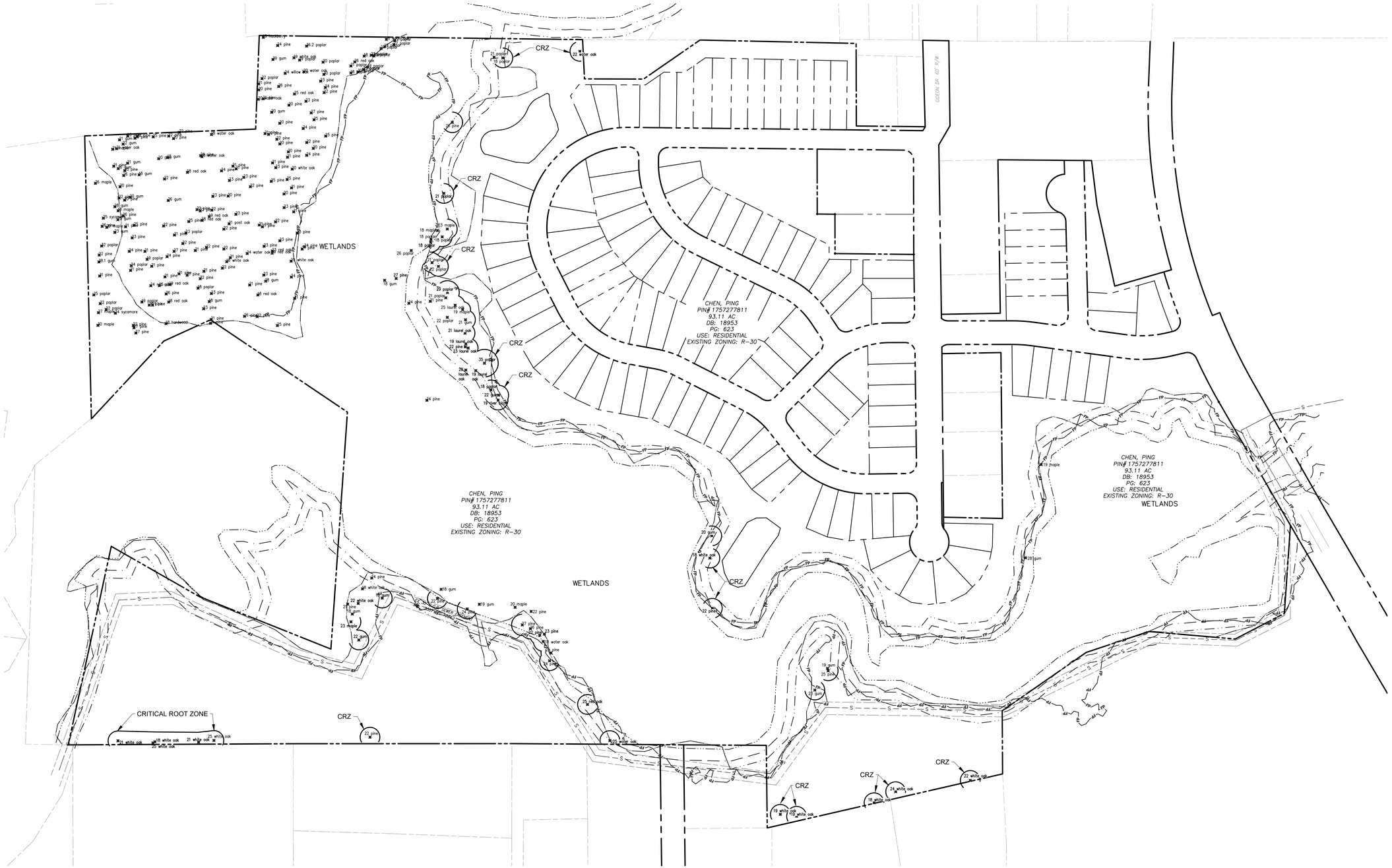
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TREE REMOVAL PLAN

Sheet #:

5



TREE SAVE NOTES:

1. QUALIFYING TREES TO BE SAVED ARE SHOWN WITH CRITICAL ROOT ZONES (CRZ) AND LABELED AS "CRZ".
2. THE AREA IN THE NORTH WEST PART OF THE TRACT TO THE WEST OF THE WETLANDS WILL NOT BE DISTURBED AND ALL TREES IN THIS AREA SHALL BE SAVED.
3. ADDITIONAL QUALIFYING TREES IN WETLANDS WILL BE SAVED IN THE WETLANDS.
4. ADDITIONAL QUALIFYING TREES MAY BE SAVED IN THE ACTIVE AREAS AT THE DISCRETION OF THE CONTRACTOR.

TREE SAVE SUMMARY	
EXISTING QUALIFIED TREES:	514 Total
REQUIRED TREE SAVE:	52 (10% of Total)
PROPOSED TREE SAVE:	267 (52% of Total)

GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)
1 inch = 120 ft

N.C. UNDERGROUND UTILITIES
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Other Consultants

Sheet map:

N W E S

Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS
Bryan Harris
Digitally signed by Bryan Harris
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Project:

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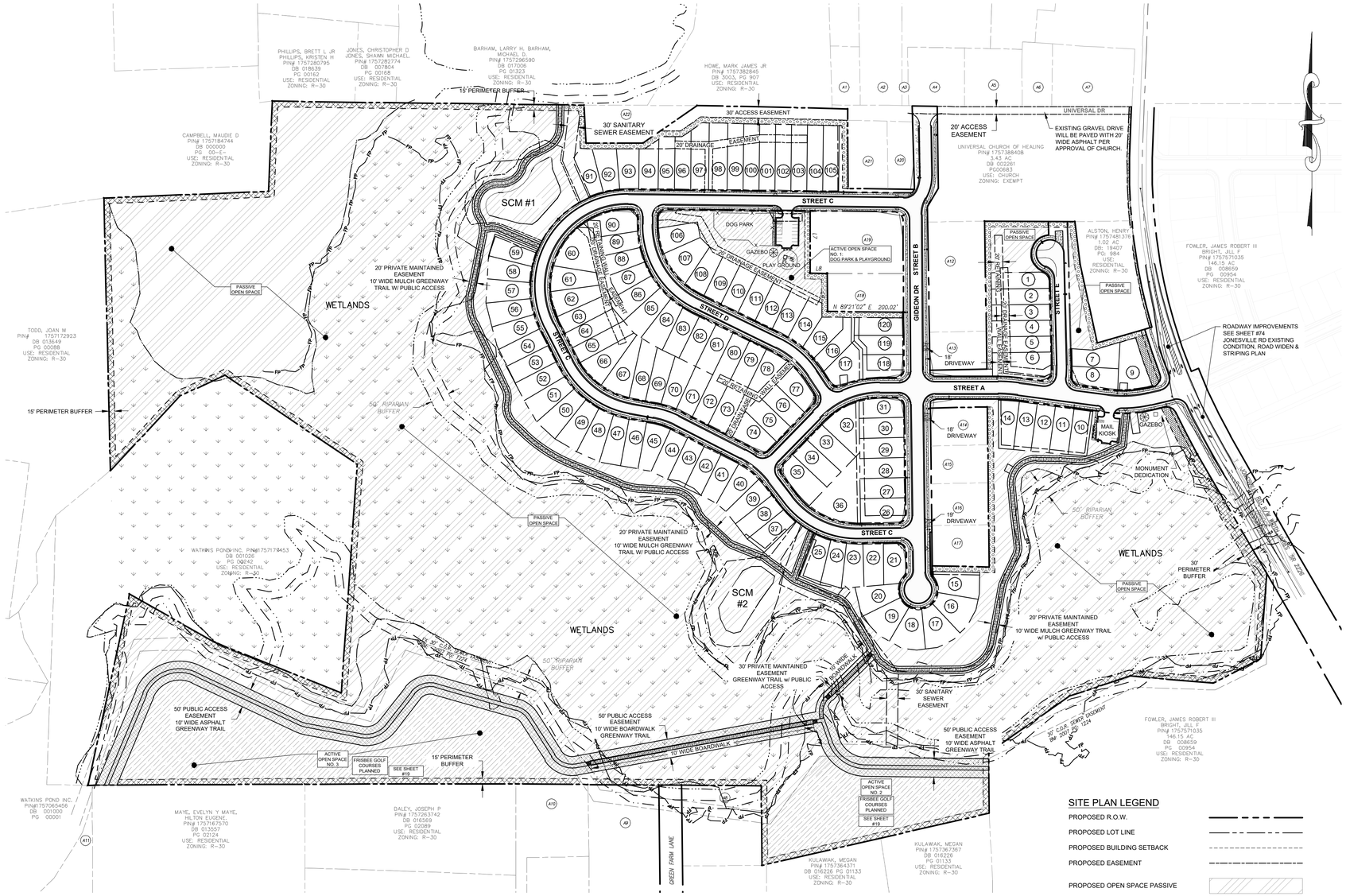
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Sheet Title:

TREE SAVE PLAN

Sheet #:

6



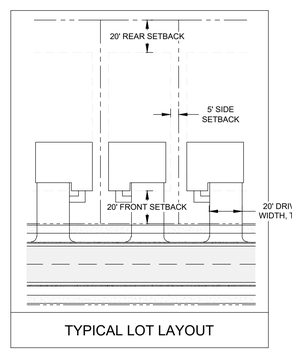
GENERAL SITE NOTES:

1. SEE SHEET 15 FOR ROADWAY SECTIONS AND LINE & CURVE TABLES.

SITE DATA TABLE	
OWNER	KENNETH INVESTMENTS, LLC Contact: STEPHAN GEORGE 10030 GREEN LEVEL CHURCH RD, STE 802 CARY, NC 27519
ENGINEER:	QUANTECH ENGINEERING BRYAN A. HARRIS, PE 15000 WESTON PARKWAY, STE. 174 CARY, NC 27513 PHONE: (919) 815-9987 EMAIL: BRYAN@QUANTECHENG.COM
DEVELOPER:	THE CSC GROUP, LLC STEVE GEORGE 600 PARK OFFICES DRIVE, STE 372 RESEARCH TRIANGLE, NC 27709 PHONE: (919) 815-9987
ENVIRONMENTAL CONSULTANT	MORRIS & RITCHIE ASSOCIATES 530 HINTON POND ROAD, SUITE 104 KNIGHTDALE, NC 27545
SURVEYOR:	BATEMAN CIVIL SURVEY COMPANY JOSH DAVIDSON 2524 RELIANCE AVE APEX, NC 27539 PHONE: 919 557-1080 Ext 109 josh@batemancivilsurvey.com
SITE ADDRESS	4928 UNIVERSAL DR WAKE FOREST, NC 27587-6356
PIN:	1757277811, 1757471559 , 1757383572 , 1757384572 , 1757385064 , 1757375975 , 1757375865 , 1757375765 , 1757375665 , 1757375575 , 1757375464 , 1757375365 , 1757375276 , 1757378303 , 1757378109 , 1757378013 , 1757368816
DEED BOOK / PAGE	019248 / 01884 (all parcels)
PLAT BOOK / PAGE	BM2007 / 01224
TOTAL SITE AREA:	94.99 AC
EXISTING ZONING:	RM-CZ
CURRENT USE:	RESIDENTIAL
PROPOSED USE	RESIDENTIAL-CLUSTER (MEDIUM DENSITY)
RIVER BASIN	NEUSE RIVER BASIN
SUB WATERSHED	NEUSE (UPPER) - 03020201
FEMA FIRM PANEL #:	3720175700K
RESIDENTIAL DENSITY CALCULATIONS (CLUSTER SUBDIVISION)	
MAXIMUM DENSITY ALLOWED:	5.0 UNITS / AC
PROPOSED DENSITY:	120 UNITS / 94.99 AC = 1.26 UNITS / AC
LOTS (CLUSTER)	
MINIMUM LOT WIDTH	42.0 FT
MINIMUM LOT AREA	6,000 SF
MINIMUM BUILDING SETBACKS:	FRONT: 20' REAR: 20' CORNER: 10' SIDE: 5'
OPENSPACE (MEDIUM DENSITY, CLUSTER)	
OPEN SPACE (REQUIRED 12%)	11.40 AC
OPEN SPACE (PROPOSED)	63.31 AC
PASSIVE (REQUIRED)	5.70 AC
PASSIVE (PROPOSED)	55.75 AC
PASSIVE (NOT IN SCM OR ENVIRONMENTAL AREAS)	7.11 AC
ACTIVE (REQUIRED)	5.70 AC
ACTIVE (PROPOSED)	7.56 AC
ACTIVE SPACES (REQUIRED)	2 MEDIUM AREA (1.0 - 2.5 AC) 1 LARGE AREA (> 2.5 AC.)
ACTIVE SPACES (PROVIDED)	(2) MEDIUM AREAS Area 1 = (44,640 SF, 1.02 AC) Area 2 = (78,467 SF, 1.80 AC) (1) LARGE AREA Area 3 = (206,621 SF, 4.74 AC)
TREE SAVE SUMMARY (CLUSTER)	
EXISTING QUALIFIED TREES:	514 Total
REQUIRED TREES SAVE:	52 (10% of Total)
PROPOSED TREES SAVE:	267 (52% of Total)
STREET DATA	
STREET A	1,125 LF 50' R/W 35' BC - BC
STREET B	1,245 LF VARIABLE R/W 35' BC - BC
STREET C	2,360 LF 50' R/W 35' BC - BC
STREET D	705 LF 50' R/W 27' BC - BC
STREET E	370 LF 50' R/W 27' BC - BC
DEDICATED ROAD R.O.W.	7.64 ACRES

SITE PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- PROPOSED BUILDING SETBACK
- PROPOSED EASEMENT
- PROPOSED OPEN SPACE PASSIVE
- PROPOSED OPEN SPACE ACTIVE
- PROPOSED GREENWAY ACCESS EASEMENT
- PROPOSED MULCH GREENWAY
- PROPOSED ASPHALT GREENWAY
- PROPOSED BOARDWALK GREENWAY
- PROPOSED 30' JONESVILLE RD STREETSCAPE
- PROPOSED 15' BOUNDARY BUFFER CONSERVATION
- PROPOSED 15' BOUNDARY LANDSCAPE BUFFER
- PROPOSED 5' SIDEWALK
- EXISTING BOUNDARY / R.O.W.
- EXISTING EASEMENT
- EXISTING 100 YEAR FLOOD PLAIN (FP)
- EXISTING WETLANDS
- EXISTING DELINEATED STREAM
- STREAM BUFFER ZONE 1
- STREAM BUFFER ZONE 2



TYPICAL LOT LAYOUT

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft

N.C. UNDERGROUND UTILITIES

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A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

ADJACENT PROPERTIES

PLAN ID	PIN #	OWNER	DB/PG	USE	ZONING
A1	1757-38-4791	ROSARIO, MODESTO ESCARFULLER	19545 / 517	Residential	R-30
A2	1757-38-5884	CURTIS, HENDALL HEIRS	20-E / 3830	Residential	R-30
A3	1757-38-7858	GARCIA, SALVADOR	18610 / 2740	Residential	R-30
A4	1757-38-5884	FERRELL, CHARLES E & FERRELL, SHARON R	7662 / 727	Residential	R-30
A5	1757-38-8780	POWER ELEVEN CONSTRUCTION, LLC	19349 / 1245	Residential	R-30
A6	1757-48-0701	HARTSFIELD, ROZELIA J HEIRS HATTIE SMITH	10-E / 1220	Residential	R-30
A7	1757-48-1740	HARTSFIELD, ROZELIA J HEIRS HATTIE SMITH	10-E / 1220	Residential	R-30
A8	1757-36-1783	BIRMINGHAM, JOHN DAVIS	3642 / 732	Residential	R-30
A9	1757-26-9620	CARPENTER, BOBBY RAY CARPENTER, ALBERTA L	19601 / 2199	Residential	R-30
A10	1757-26-6697	RIVERS, SUSAN MARSHALL	3406 / 539	Residential	R-30
A11	1757-16-4026	SOUTTER, SUSAN R SOUTTER, ROBERT QUENTIN	17592 / 381	Residential	R-30
A12	1757-38-7189	DUNN, JAMES WILLIAM HEIRS MONTAGUE, BUNNIE DUNN	N/A	Vacant	R-30
A13	1757-38-7090	WW OVERTIME LLC	19202 / 2051	Vacant	R-30
A14	1757-37-7799	WHITLEY, CLEVELAND G HEIRS	N/A	Residential	R-30
A15	1757-37-7699	JARVIS, MARIE D CURTIS, HURLEY MAE	11946 / 1968	Vacant	R-30
A16	1757-37-8610	JARVIS, MYRON JARVIS, MARIE	9106 / 1133	Residential	R-30
A17	1757-37-7497	JARVIS, MARIE D CURTIS, HURLEY MAE	11946 / 1968	Residential	R-30
A18	1757-38-5155	HARRIS, OLLIE VIRGIN HEIRS HARRIS, LORINE B	98-E / 2613	Vacant	R-30
A19	1757-38-5249	CHEN, PING LI FANXING	19823 / 2163	Residential	R-30
A20	1757-27-7811	ROUSE, ELLEN CURTIS	19170 / 1070	Vacant	R-30
A21	1757-38-5562	QUIRINO, MARIA ESTELA	17501 / 945	Residential	R-30
A22	1757-28-9559	WILDER, THOMAS H III WILDER, MAGGIE	12-E / 3295	Residential	R-30

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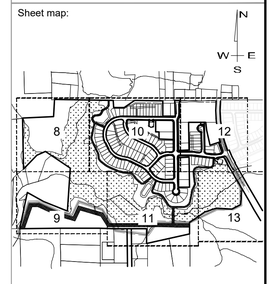
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Other Consultants

Sheet map:



Seal:

BRYAN A. HARRIS PROFESSIONAL ENGINEER SEAL 53676

Digitally signed by Bryan Harris
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Project:

HARRIS CREEK FARMS

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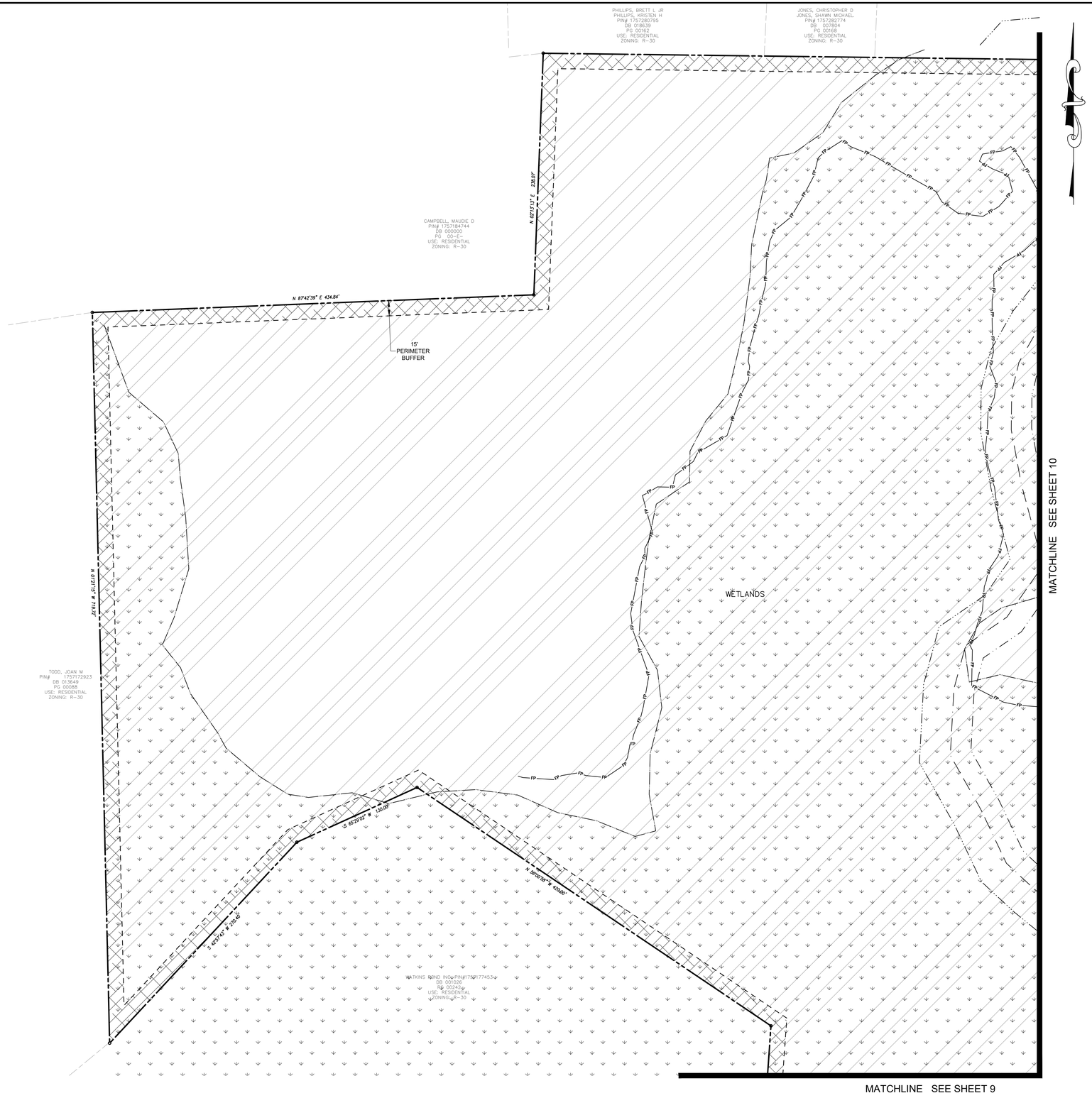
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OVERALL SITE PLAN

Sheet #:

7

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SITE PLAN LEGEND

- PROPOSED R.O.W.
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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft

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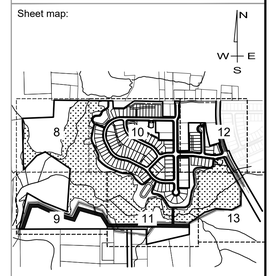
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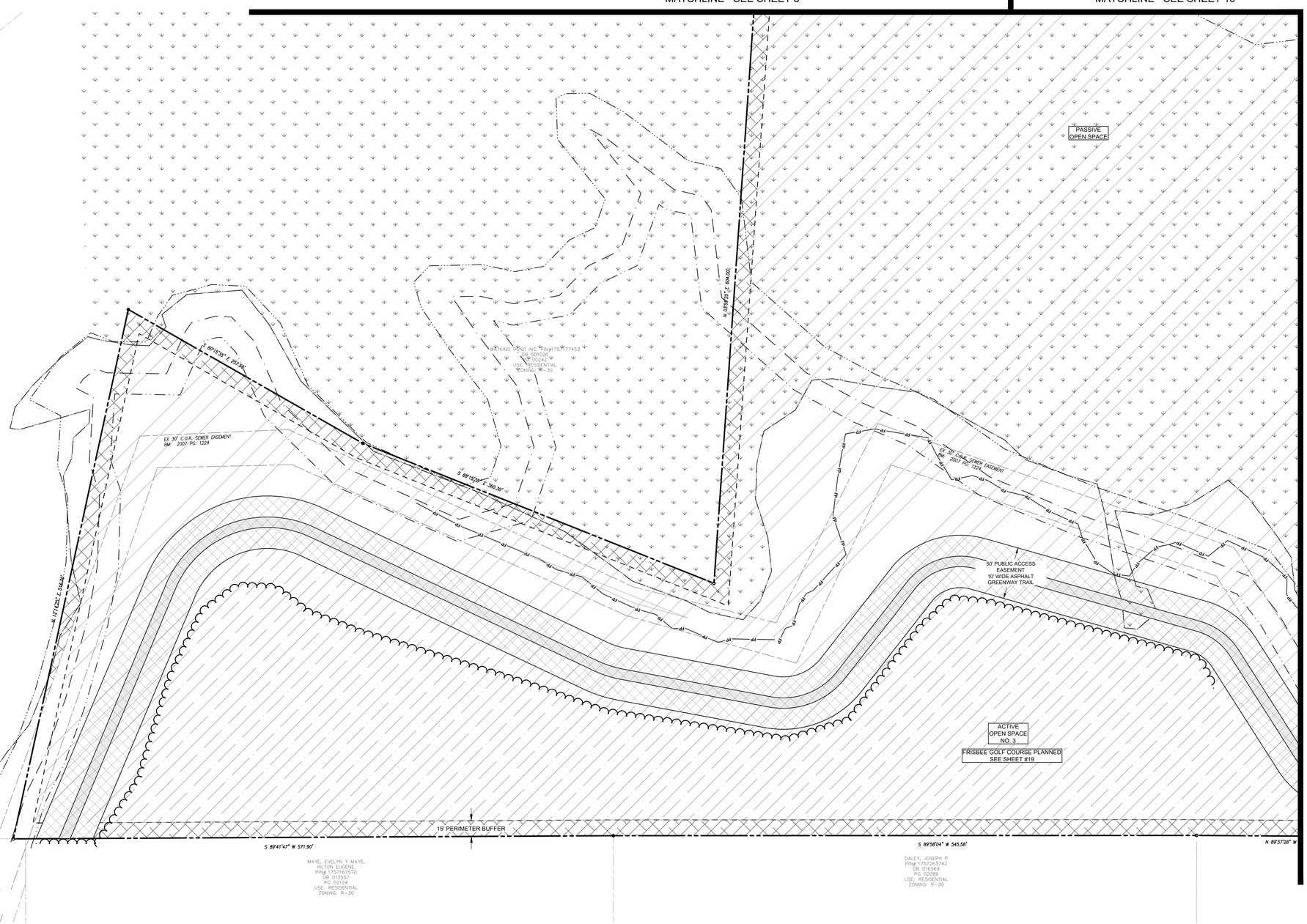
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Sheet Title:

SITE PLAN
SHEET 1 OF 6

Sheet #:

8



SITE PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- PROPOSED LOT SETBACK
- PROPOSED EASEMENT
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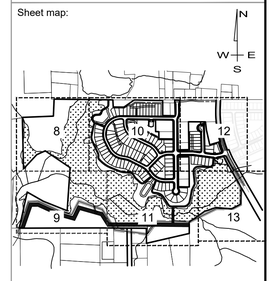
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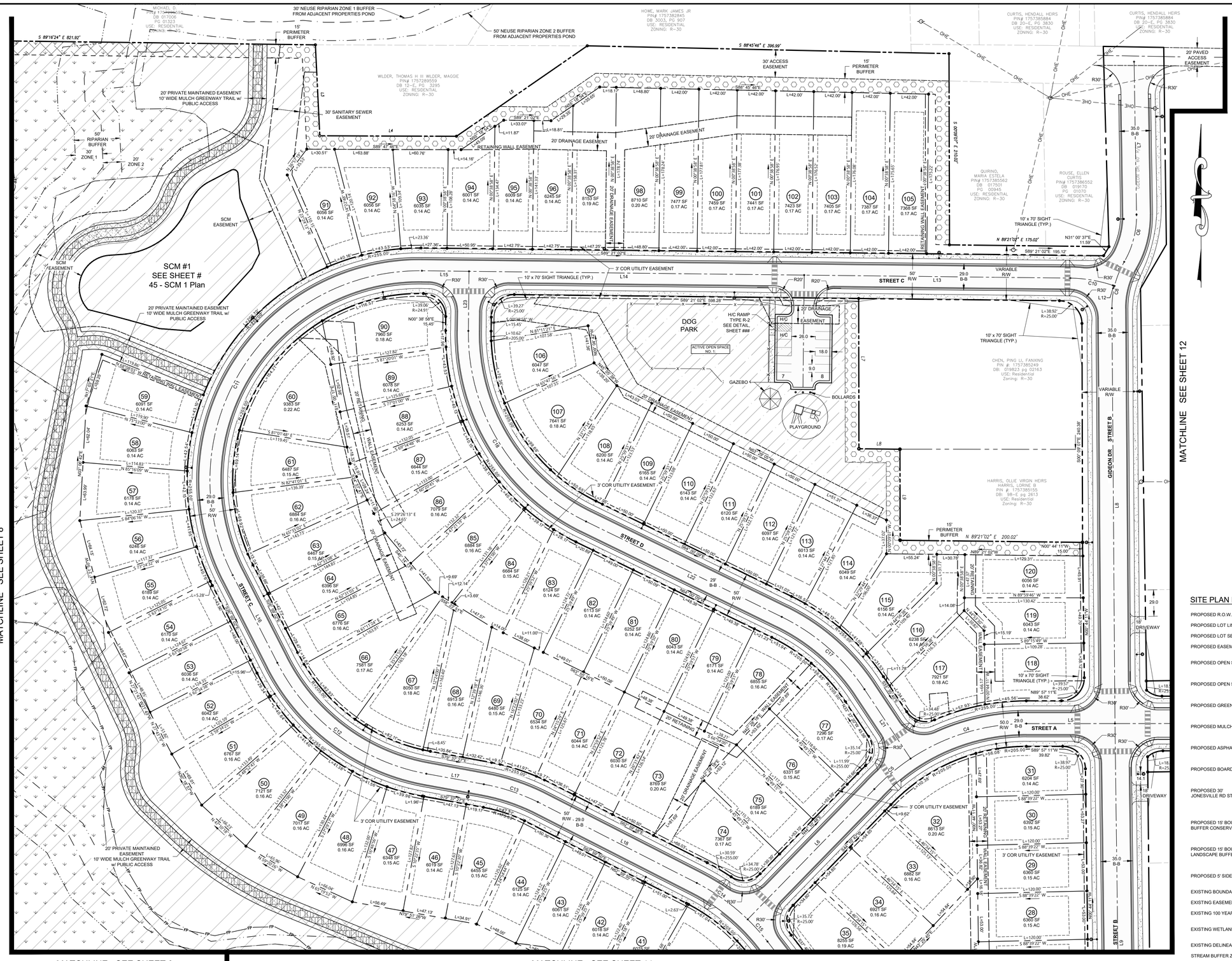
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Sheet Title:

SITE PLAN
SHEET 2 OF 6

Sheet #:

9



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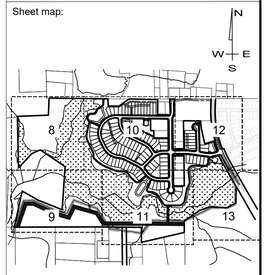
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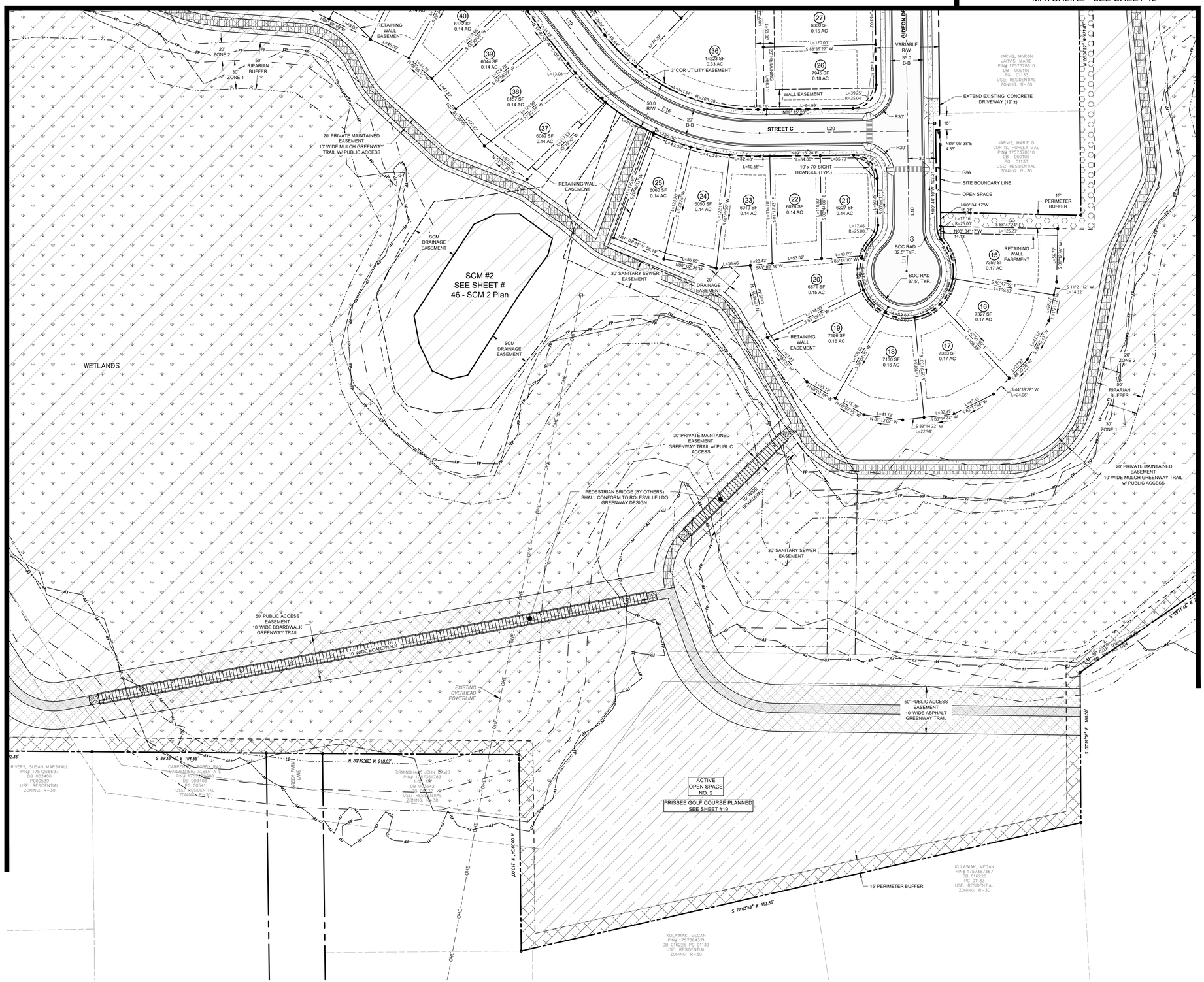
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SHEET 3 OF 6

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10

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- PROPOSED 15' BOUNDARY BUFFER CONSERVATION
- PROPOSED 15' BOUNDARY LANDSCAPE BUFFER
- PROPOSED 5' SIDEWALK
- EXISTING BOUNDARY / R.O.W.
- EXISTING EASEMENT
- EXISTING 100 YEAR FLOOD PLAIN
- EXISTING WETLANDS
- EXISTING DELINEATED STREAM
- STREAM BUFFER ZONE 1
- STREAM BUFFER ZONE 2

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\7 Overall Site Plan.dwg

Developer

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10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
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Jurisdiction / Municipality

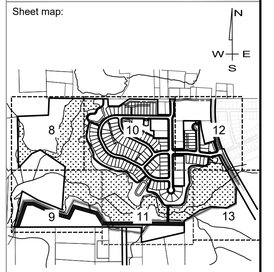
Rolesville
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Est. 1837

Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



Bryan Harris
Digitally signed by Bryan Harris
DN: CN=BH, E=BryanH@QuantechEng.com, O=Quantech Engineering LLP, C=US
Reason: I have reviewed this document
Date: 2025.09.03 16:51:58-04'00'

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Issued / Print Date: 2025-September-02 (16:40)
File Name: 7 Overall Site Plan.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

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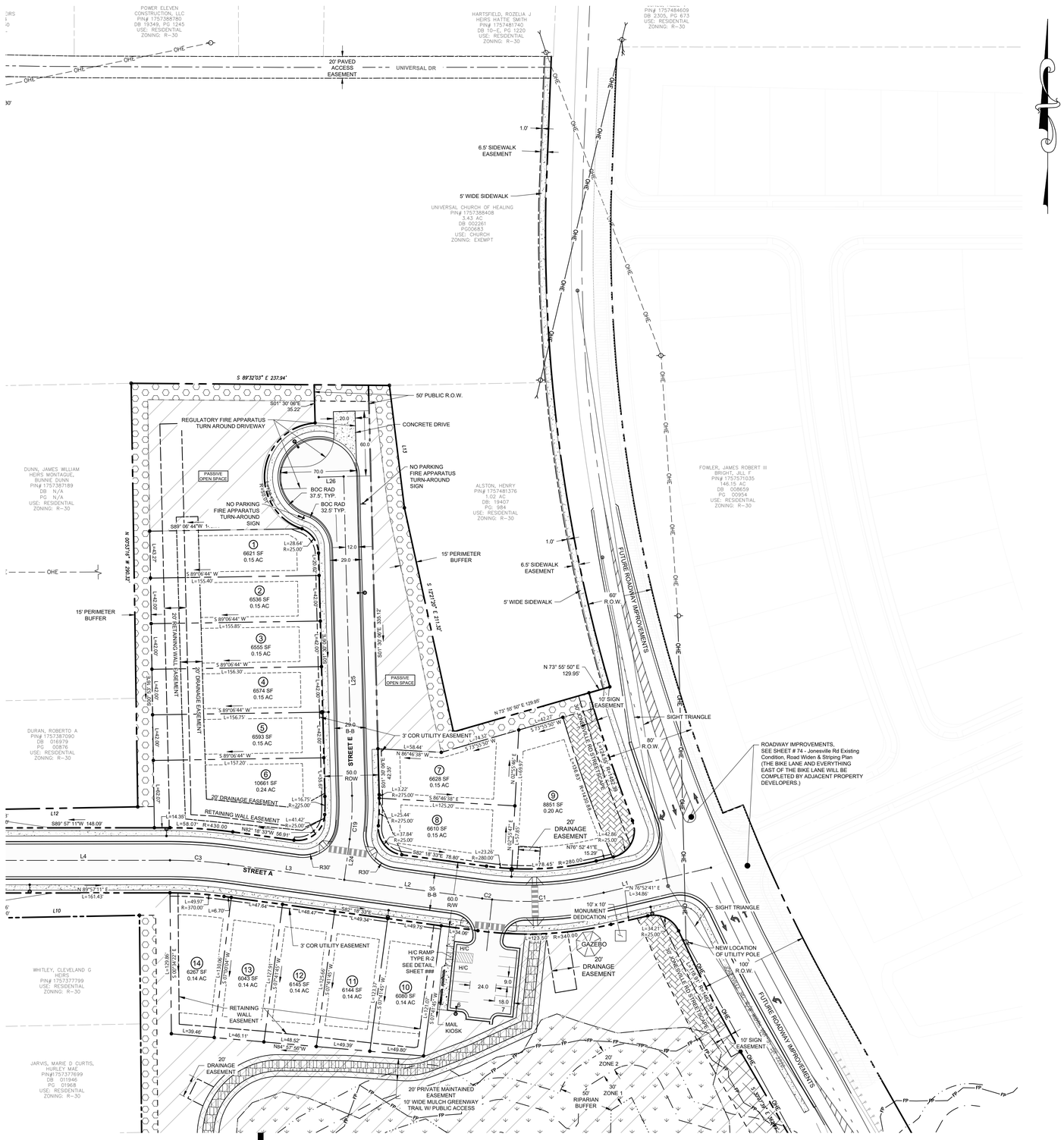
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1	02Sep2025	Town of Rolesville Planning Dept. comments

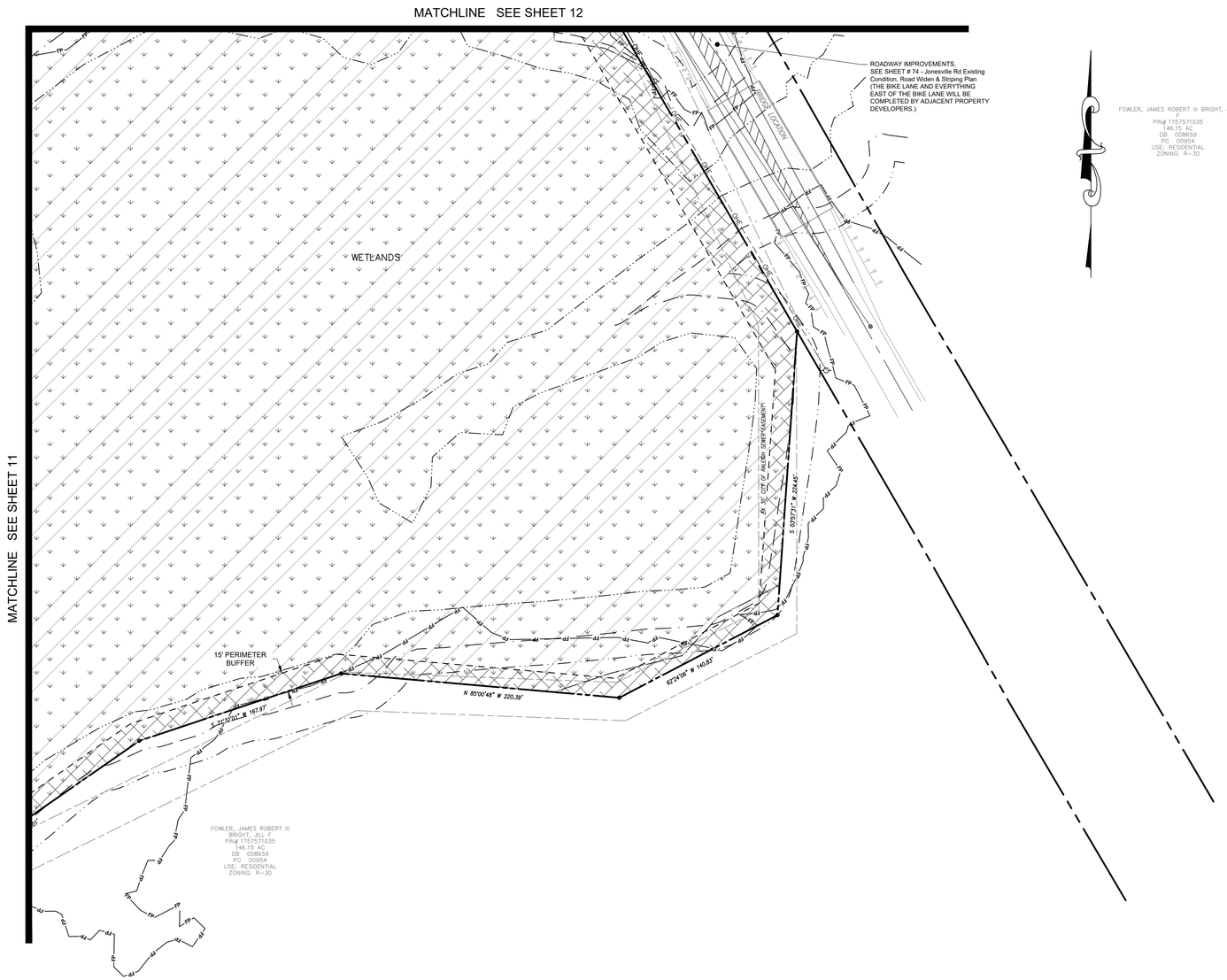
Sheet Title:

SITE PLAN
SHEET 4 OF 6

Sheet #:

11


POWER ELEVEN CONSTRUCTION, LLC
PIN# 1757388780
DB 19349, PG 1245
USE: RESIDENTIAL
ZONING: R-30
HARTSFIELD, ROZELIA J
HEIRS HATTIE SMITH
PIN# 1757481740
DB 10-E, PG 1220
USE: RESIDENTIAL
ZONING: R-30
PIN# 1757484609
DB 2305, PG 673
USE: RESIDENTIAL
ZONING: R-30
20' PAVED ACCESS EASEMENT
UNIVERSAL DR
OHE
1.0'
6.5' SIDEWALK EASEMENT
5' WIDE SIDEWALK
UNIVERSAL CHURCH OF HEALING
PIN# 1757388408
3.43 AC
DB 002261
PG00683
USE: CHURCH
ZONING: EXEMPT
S 89°32'03" E 237.94'
S01° 30' 06"E
35.22'
50' PUBLIC R.O.W.
REGULATORY FIRE APPARATUS TURN AROUND DRIVEWAY
CONCRETE DRIVE
20.0
60.0
L21
70.0
NO PARKING FIRE APPARATUS TURN-AROUND SIGN
PASSIVE OPEN SPACE
R=55.00'
L26
BOC RAD 37.5' TYP
BOC RAD 32.5' TYP
DUNN, JAMES WILLIAM
HEIRS MONTAGUE, BUNNIE DUNN
PIN# 1757387189
DB N/A
PG N/A
USE: RESIDENTIAL
ZONING: R-30
ALSTON, HENRY
PIN# 1757481376
1.09 AC
DB: 19407
PG: 984
USE: RESIDENTIAL
ZONING: R-30
FOWLER, JAMES ROBERT III
BRIGHT, JILL F
PIN# 1757571035
146.15 AC
DB 008659
PG 00954
USE: RESIDENTIAL
ZONING: R-30
S89° 06' 44"W 1...
L=28.64'
R=25.00'
12.0
29.0
15' PERIMETER BUFFER
1 6621 SF 0.15 AC
2 6536 SF 0.15 AC
3 6555 SF 0.15 AC
4 6574 SF 0.15 AC
5 6593 SF 0.15 AC
6 10661 SF 0.24 AC
7 6628 SF 0.15 AC
8 6610 SF 0.15 AC
9 8891 SF 0.20 AC
10 6080 SF 0.14 AC
11 6144 SF 0.14 AC
12 6145 SF 0.14 AC
13 6043 SF 0.14 AC
14 6287 SF 0.14 AC
S 89°06'44" W
L=155.40'
L=155.85'
L=156.30'
L=156.75'
L=157.20'
L=158.10'
L=39.46'
L=46.11'
L=48.62'
N84° 57' 56"W
L=49.39'
L=49.80'
L=39.46'
L=46.11'
L=48.62'
L=49.39'
L=49.80'
L=49.97'
R=370.00'
L=6.70'
L=47.84'
L=48.47'
L=49.34'
L=49.70'
L=34.06'
L=123.55'
R=340.00'
L=34.21'
R=25.00'
N 70°52'41" E
L=34.86'
N 73° 55' 50" E
129.95'
S 73°55'50" W
L=42.27'
L=14.32'
L=58.44'
N 86°46'38" W
L=3.22'
R=275.00'
L=25.44'
L=37.84'
R=25.00'
S 86°46'38" E
L=125.20'
L=23.26'
R=280.00'
L=78.45'
R=280.00'
N76° 52' 41"E
15.29'
L=42.86'
R=25.00'
N 02°25'36" E
L=169.82'
R=425.00'
L=104.93'
R=425.00'
L=42.86'
R=25.00'
S 89°32'03" E 237.94'
S 12°27'57" E 211.34'
S01° 30' 06"E 335.12'
N 89°52'11" E
L=161.43'
S89° 57' 11"W 148.09'
N82° 18' 33"W 56.91'
L=58.07'
R=430.00'
L=14.36'
L=41.42'
R=25.00'
L=16.75'
R=225.00'
L=39.27'
R=25.00'
L=42.86'
R=25.00'
L=34.21'
R=25.00'
L=34.86'
L=49.97'
R=370.00'
L=6.70'
L=47.84'
L=48.47'
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R=25.00'
L=169.82'
R=425.00'
L=104.93'
R=425.00'
L=42.86'
R=25.00'
L=39.46'
L=46.11'
L=48.62'
L=49.39'
L=49.80'
L=39.46'
L=46.11'
L=48.62'
L=49.39'
L=49.80



SITE PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- PROPOSED LOT SETBACK
- PROPOSED EASEMENT
- PROPOSED OPEN SPACE PASSIVE
- PROPOSED OPEN SPACE ACTIVE
- PROPOSED GREENWAY EASEMENT
- PROPOSED MULCH GREENWAY
- PROPOSED ASPHALT GREENWAY
- PROPOSED BOARDWALK GREENWAY
- PROPOSED 30' JONESVILLE RD STREETSCAPE
- PROPOSED 15' BOUNDARY BUFFER CONSERVATION
- PROPOSED 15' BOUNDARY LANDSCAPE BUFFER
- PROPOSED 5' SIDEWALK
- EXISTING BOUNDARY / R.O.W.
- EXISTING EASEMENT
- EXISTING 100 YEAR FLOOD PLAIN (FP)
- EXISTING WETLANDS
- EXISTING DELINEATED STREAM
- STREAM BUFFER ZONE 1
- STREAM BUFFER ZONE 2

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

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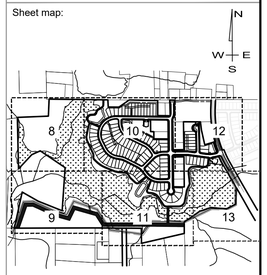
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Est. 1837

Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 **(PSP-24-05)**

Other Consultants

Sheet map:



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

Bryan Harris
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HARRIS CREEK FARMS

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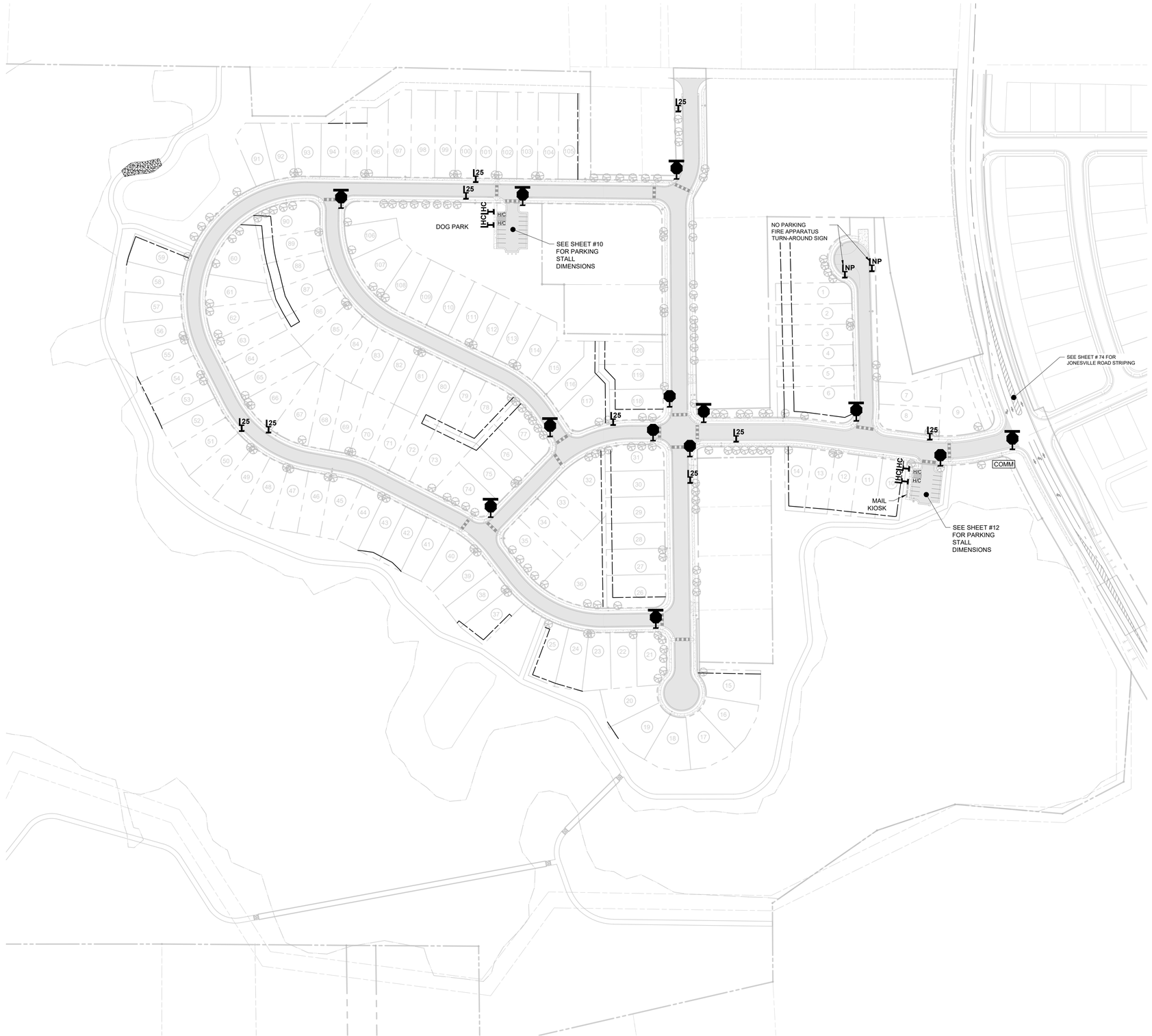
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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

SITE PLAN
SHEET 6 OF 6

Sheet #:

13



LEGEND

	STOP SIGN W/ STREET NAME SIGN STACKED ABOVE
	STOP SIGN
25	25MPH LIMIT SIGN
HC	HANDICAP SIGN
H/C	HANDICAP PARKING STALL
	PEDESTRIAN CROSSWALK
NP	NO PARKING FIRE APPARATUS TURN-AROUND
COMM	FREE STANDING NEIGHBORHOOD SIGN

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft

N.C. UNDERGROUND UTILITIES

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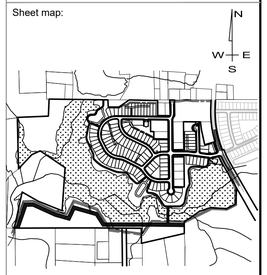
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Project:

HARRIS CREEK FARMS

CID-25-??

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No.	Date	Description

Sheet Title:

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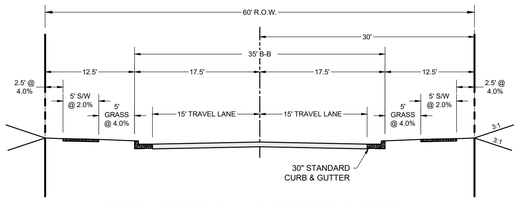
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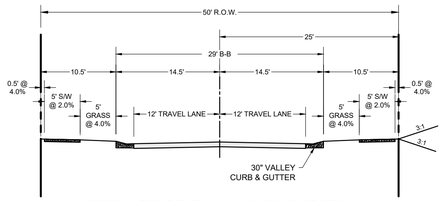
Street Centerline Line Table		
Line #	Length (ft)	BEARING
L1	101.59	N76° 52' 41"E
L2	235.96	S82° 18' 33"E
L3	235.96	S82° 18' 33"E
L4	217.09	N89° 57' 11"E
L5	94.23	N89° 57' 11"E
L6	199.48	N44° 10' 45"E
L7	167.95	N00° 55' 12"W
L8	456.14	N00° 25' 00"W
L9	382.47	N00° 44' 11"W
L10	102.62	N00° 44' 11"W
L11	21.31	N04° 15' 55"E
L12	1.97	N73° 49' 16"W
L13	292.04	N89° 21' 02"W
L14	367.89	N89° 21' 02"W
L15	51.75	N89° 21' 02"W
L16	107.86	S26° 59' 02"E
L17	64.12	S79° 37' 27"E
L18	195.83	S62° 58' 47"E
L19	70.35	S37° 40' 48"E
L20	158.26	N89° 15' 29"E
L21	91.42	N33° 35' 40"W
L22	238.98	N64° 00' 09"W
L23	65.45	N00° 38' 58"E
L24	37.82	S07° 41' 27"W
L25	294.26	S01° 30' 06"E
L26	23.00	S88° 29' 54"W

Street Centerline Curve Table		
Curve #	Length (ft)	Radius
C1	103.51	305.28
C2	9.09	95.90
C3	54.02	400.00
C4	135.16	230.00
C5	51.60	230.00
* C7	53.30	100.00
* C8	53.30	100.00
* C9	26.19	300.00
* C10	47.52	150.00
C11	472.21	230.00
C12	211.31	230.00
C13	62.61	230.00
C14	68.88	230.00
C15	32.68	230.00
C16	213.00	230.00
C17	122.07	230.00
C18	259.53	230.00
C19	40.11	250.00

* CURVE C6, C7, C8, & C9 ARE LOCATED AT THE SHIFT IN R/W ON GIDEON BEHIND THE CHURCH.

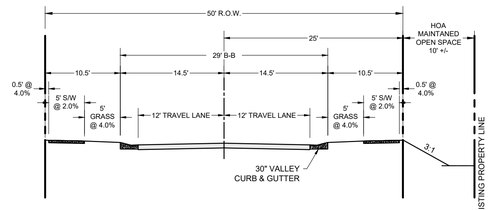


TYPICAL RESIDENTIAL COLLECTOR ROAD SECTION
1" = 10'

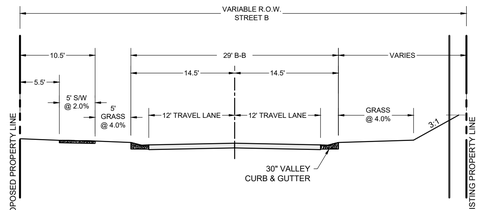


TYPICAL RESIDENTIAL LOCAL ROAD SECTION
1" = 10'

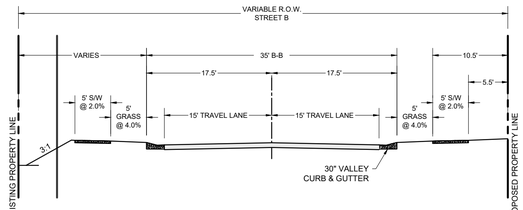
NOTE:
STREET A FROM JONESVILLE RD TO GIDEON RD IS A COLLECTOR ROAD
THE REMAINDER OF STREET "A" IS A LOCAL ROAD



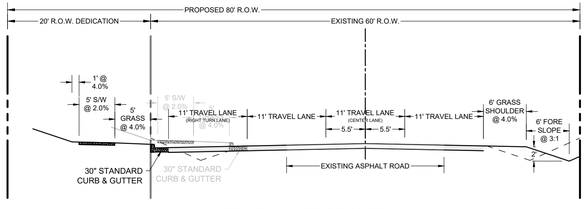
STREET C STA: 0+00 - 2+12
(VARIABLE R.O.W. WIDTH) ROAD SECTION
1" = 10'



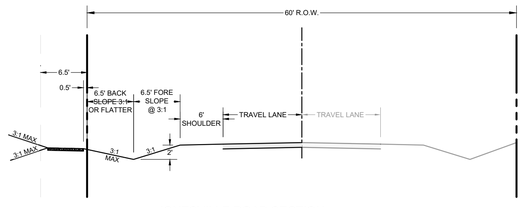
STREET B STA: 0+00 - 2+30
(Gidion Dr. north of street C north intersection) ROAD SECTION
1" = 10'



STREET B STA: 2+80 - 12+10
Gidion Dr. south of street C north intersection) ROAD SECTION
1" = 10'



JONESVILLE ROAD SECTION
(PROPERTY FRONTAGE)
1" = 10'



JONESVILLE ROAD SECTION
(FRONTAGE OF ADJACENT PROPERTY)
1" = 10'

SIDEWALK NOTES

1. WHERE IT IS NECESSARY TO REMOVE A PORTION OF EXISTING SIDEWALKS OR DRIVEWAYS, SAW A NEAT EDGE ALONG THE PAVEMENT TO BE RETAINED APPROXIMATELY 2 INCHES DEEP WITH A CONCRETE SAW BEFORE BREAKING THE ADJACENT PAVEMENT AWAY.
2. CONSTRUCT CONCRETE IN ACCORDANCE WITH TOWN STANDARDS AND NCDOT STANDARDS & SPECIFICATIONS SECTION 825 AND AND GIVE SIDEWALK FINISH, EXCEPT AS OTHERWISE PROVIDED HEREIN.
3. BROOM THE CONCRETE SURFACE IN A TRANSVERSE DIRECTION TO TRAFFIC MAKE JOINT SPACING NO LESS THAN 5 FEET. WHERE EXISTING SIDEWALKS ARE BEING WIDENED, LINE UP NEW TRANSVERSE JOINTS WITH EXISTING JOINTS IN THE ADJACENT SIDEWALK. SEAL EXPANSION JOINTS WHERE SIDEWALK AND CURB RAMPS ARE PLACED ADJACENT TO CONCRETE CURB AND/OR GUTTER. DO NOT SEAL GROOVE JOINTS.
4. DO NOT PLACE BACKFILL ADJACENT TO THE SIDEWALK, DRIVEWAY OR CURB RAMP UNTIL AT LEAST 3 CURING DAYS, AS DEFINED IN ARTICLE 825-9, HAVE ELAPSED UNLESS OTHERWISE APPROVED. COMPACT BACKFILL TO A DEGREE COMPARABLE TO THE ADJACENT UNDISTURBED MATERIAL.
5. DO NOT PLACE VEHICLES ON THE COMPLETED WORK UNTIL 7 CURING DAYS, AS DEFINED IN ARTICLE 825-9, HAVE ELAPSED. WHEN HIGH EARLY STRENGTH CONCRETE IS USED, VEHICLES WILL BE PERMITTED ON THE COMPLETED WORK AFTER 3 CURING DAYS HAVE ELAPSED.
6. INSTALL DETECTABLE WARNINGS FOR PROPOSED CURB RAMPS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. PRIOR TO PLACING DETECTABLE WARNINGS IN EXISTING CONCRETE CURB RAMPS, SAW CUT TO THE FULL DEPTH OF THE CONCRETE, FOR OTHER MATERIAL REMOVE AS NECESSARY, AND ADJUST THE EXISTING SUBGRADE TO THE PROPER GRADE.
8. PLACE ALL DETECTABLE WARNINGS IN ACCORDANCE TO MANUFACTURE'S RECOMMENDATIONS.

E-ONE

SAE Turning Radius Calculations for Quote No. 81188

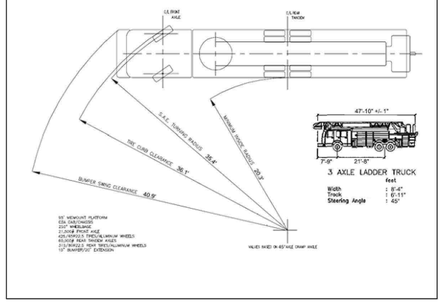
Wheelbase:	260"	Front Bumper Size:	10"
Body Width:	100"	Front Bumper Extension:	20"
Front Axle Kingpin Center:	65.06"	Front Wheel Type:	ALUMINUM
Front Axle Track:	83"	Rear Wheel Type:	ALUMINUM
Front Axle Tire Width:	16.7"	Tire Brand:	MICHELIN
Dimension Over Rear Tires:	98.59"		
Body Front Overhang:	92"		

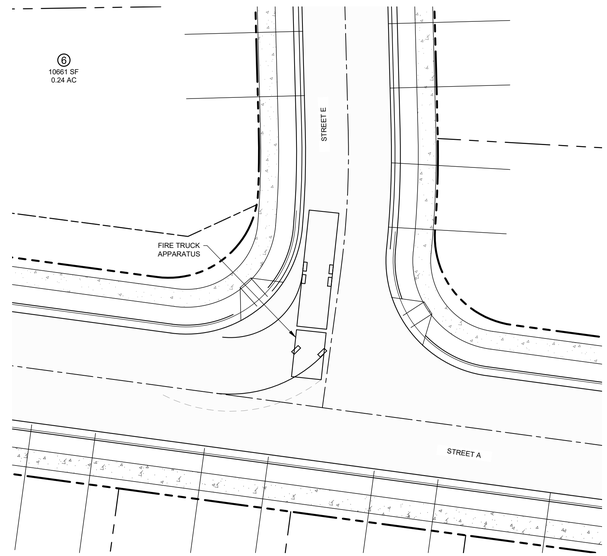
Inside Cramp Angle	S. A. E. Turning Radius	Tire Curb Clearance	Bumper Swing Clearance	Minimum Inside Radius
35	43.1'	42.8'	47.9'	29.5'
36	42.5'	42.3'	47'	28.4'
37	41.2'	41.9'	46.2'	27.4'
38	40.6'	41'	45.4'	26.3'
39	39.5'	40.2'	44.6'	25.4'
40	38.8'	39.4'	43.9'	24.4'
41	38'	38.7'	43.3'	23.5'
42	37.3'	38'	42.6'	22.7'
43	36.7'	37.3'	42'	21.8'
44	36'	36.7'	41.5'	21'
45	35.4'	36.3'	40.5'	20.3'
46	34.9'	35.5'	40.4'	19.5'
47	34.3'	35'	39.9'	18.8'
48	33.8'	34.5'	39.5'	18.1'
49	33.3'	33.9'	39'	17.4'
50	32.8'	33.5'	38.6'	16.8'

Nominal Cramp Angles:

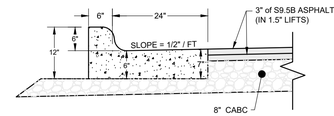
Leaf spring suspension: up to and including 425/65R22.5 tires	45 degrees
Leaf spring suspension: 445/65R22.5 tires	38 degrees
Reyco IFS: up to and including 385/65R22.5 tires	48 degrees
Reyco IFS: 425/65R22.5 tires	45 degrees
Reyco IFS: 445/65R22.5 tires without front intake	42 degrees
Timoney Independent Front Suspension (IFS): up to and including 425/65R22.5 tires	44 degrees
Timoney Independent Front Suspension (IFS): 445/65R22.5 tires	42 degrees
Front Drive Axle: up to and including 425/65R22.5 tires	35 degrees

This Turning Radius report reflects how the quote was configured. Any succeeding changes may slightly alter the turning radius of the vehicle and the data in this report.

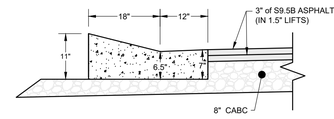




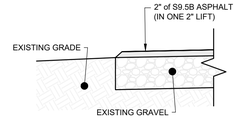
FIRE TRUCK APPARATUS RADII DETAIL
1" = 20'



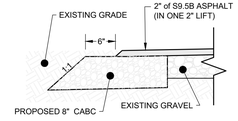
30" CONCRETE STANDARD CURB & GUTTER
& PAVEMENT DESIGN



30" CONCRETE VALLEY CURB & GUTTER
& PAVEMENT DESIGN



20' PAVED ACCESS
(UNIVERSAL DRIVE)



20' PAVED ACCESS
(UNIVERSAL DRIVE)

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15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor
BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality
Rolesville
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

Seal:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS
Bryan Harris
Digitally signed by Bryan Harris
DN: CN=Bryan Harris, E=Bryan@QuantechEng.com, O=Quantech Engineering LLP, C=US
Reason: I have reviewed this document
Date: 2025.09.03 16:52:00-04'00'
FINAL DRAWING - FOR REVIEW PURPOSES ONLY

Issued / Print Date: 2025-September-02 (16:41)
File Name: 7 Overall Site Plan.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:
HARRIS CREEK FARMS
CID-25-03

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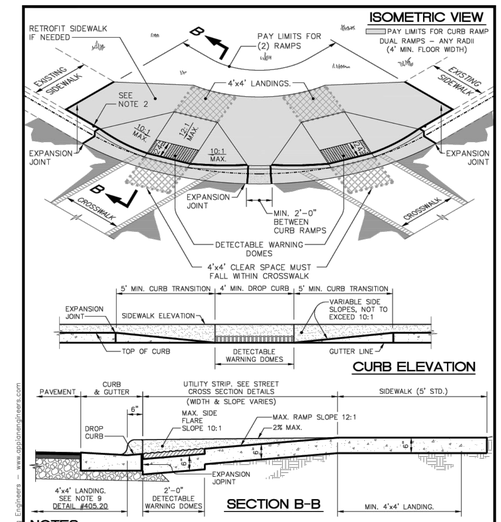
REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:
SITE PLAN DATA & DETAILS

Sheet #:
15

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\7 Overall Site Plan.dwg

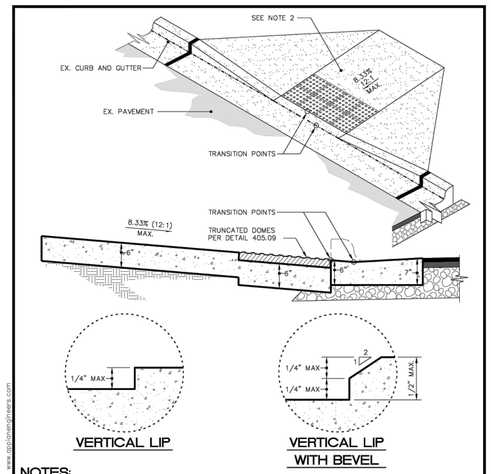


NOTES:

1. Detectable warning domes will cover 2'–0" length and full width of the ramp where it is flush with the pavement.
2. A portion of one or both ramps may extend outside the return.

Details Provided by ARMAN Consulting Engineers — www.ogsionerngineers.com

CITY OF DURHAM	Dept. of Public Works 101 City Hall Plaza Durham, NC 27701	CITY OF DURHAM, NC USE WITH THE STANDARD SPECIFICATIONS ONLY	Voice (919) 560-4326 www.durhamnc.gov
	CURB RAMPS & EXISTING SIDEWALK ADJACENT TO CURB	SCALE: Not to Scale	DETAIL#: 405.02
		REVISION DATE: 06/2017	SHEET# 1 of 1

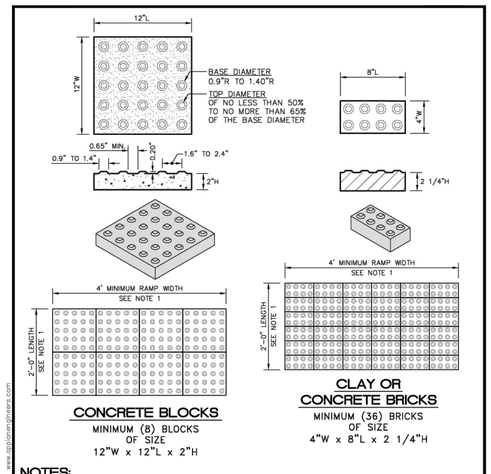


NOTES:

1. The transition between the truncated dome tray and the curb should be made to be flush. The transition between the curb and the gutter should be smooth or rounded. If neither a flush or smooth transition can be constructed, and the transitions change in level, up to ¼", then the lip may be vertical and without edge treatment. If the transitions change in level, between ¼" and ½", then the lip shall be beveled with a slope no greater than 1:2.
2. This detail is for transition points only, refer to curb cut details for proper curb layout / design. (City Std. Details 405.01 thru 405.07)

Details Provided by ARMAN Consulting Engineers — www.ogsionerngineers.com

CITY OF DURHAM	Dept. of Public Works 101 City Hall Plaza Durham, NC 27701	CITY OF DURHAM, NC USE WITH THE STANDARD SPECIFICATIONS ONLY	Voice (919) 560-4326 www.durhamnc.gov
	CURB CUT RAMP TRANSITION POINTS	SCALE: Not to Scale	DETAIL#: 405.08
		REVISION DATE: 06/2017	SHEET# 1 of 1

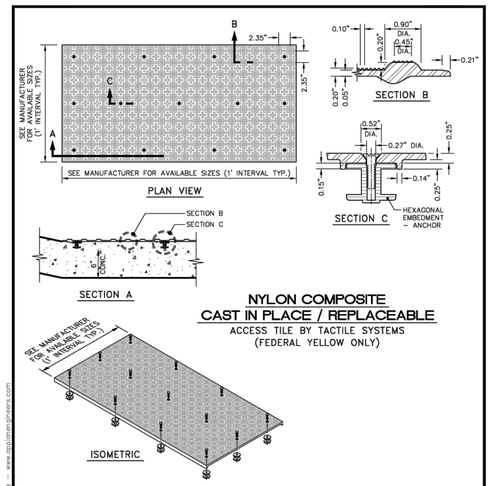


NOTES:

1. Detectable warning domes will cover 2'–0" length and full width of the ramp floor as shown on the details.
2. Detectable warning domes shall be federal yellow in color.
3. Portland cement / sand mix 50% by weight sand. Install as dry mix. Hand tamp for compaction and level before setting bricks.
4. Bricks should be butted as close together as allows. Sweep portland cement / sand mix into remaining cracks.

Details Provided by ARMAN Consulting Engineers — www.ogsionerngineers.com

CITY OF DURHAM	Dept. of Public Works 101 City Hall Plaza Durham, NC 27701	CITY OF DURHAM, NC USE WITH THE STANDARD SPECIFICATIONS ONLY	Voice (919) 560-4326 www.durhamnc.gov
	DETECTABLE WARNING DOMES	SCALE: Not to Scale	DETAIL#: 405.09
		REVISION DATE: 3/2021	SHEET# 1 of 2

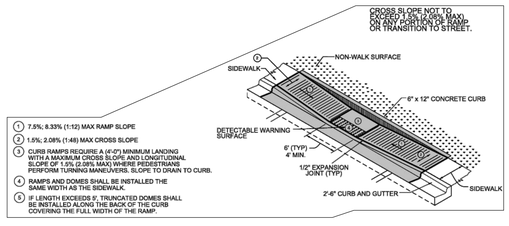


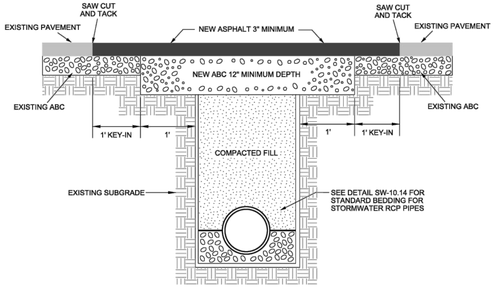
NOTES:

1. Contact manufacturer for sizes and shapes available in addition to detailed installation instructions.

Details Provided by ARMAN Consulting Engineers — www.ogsionerngineers.com

CITY OF DURHAM	Dept. of Public Works 101 City Hall Plaza Durham, NC 27701	CITY OF DURHAM, NC USE WITH THE STANDARD SPECIFICATIONS ONLY	Voice (919) 560-4326 www.durhamnc.gov
	DETECTABLE WARNING DOMES	SCALE: Not to Scale	DETAIL#: 405.09
		REVISION DATE: 3/2021	SHEET# 2 of 2



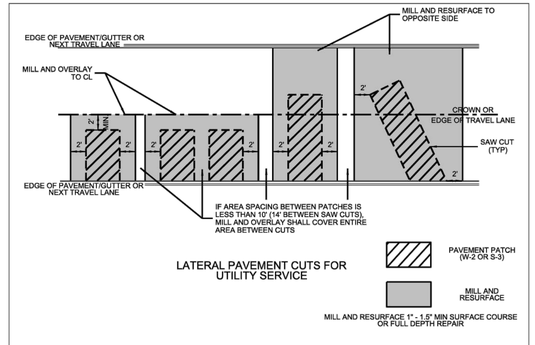


NOTES:

1. THE PAVEMENT EDGE SHALL BE DEFINED BY A STRAIGHT EDGE FORMED BY A MACHINED SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
3. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT. BITUMINOUS BASE OR BINDER MAY BE SUBSTITUTED IF APPROVED BY TRANSPORTATION DIRECTOR OR DESIGNEE.
4. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY AND ROLLED WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH, LEVEL PATCH.

SHEET 1 OF 2

CITY OF RALEIGH STANDARD DETAIL		
REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 08/2023	ASPHALT PAVEMENT PATCH AND RCP PIPE BACKFILL	
	T-10.05.1	

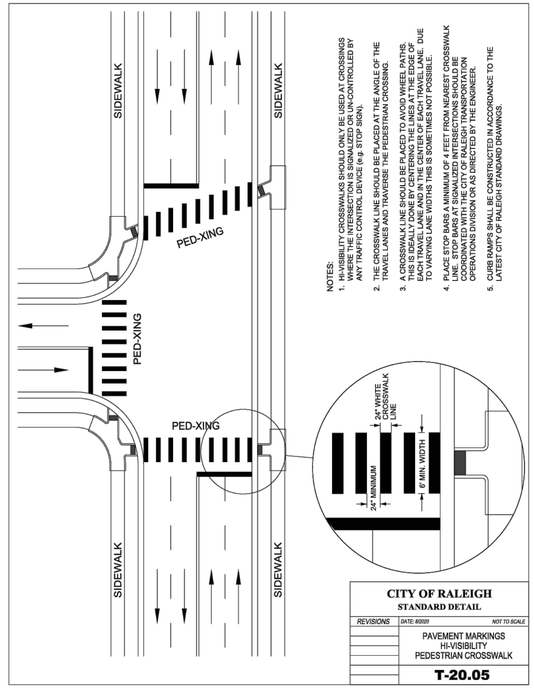


NOTES:

1. THE PAVEMENT EDGES SHALL BE DEFINED BY A STRAIGHT EDGE FORMED BY A MACHINED SAW CUT OR MILLING MACHINE
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT
3. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT
4. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED, COMPACTED THOROUGHLY AND ROLLED WITH A SMOOTH DRUM ROLLER TO LEVEL PATCH

SHEET 2 OF 2

CITY OF RALEIGH STANDARD DETAIL		
REVISIONS	DATE: 8/2023	NOT TO SCALE
	ASPHALT PAVEMENT PATCH AND RCP PIPE BACKFILL	
	T-10.05.2	



CITY OF RALEIGH STANDARD DETAIL		
REVISIONS	DATE: 8/2020	NOT TO SCALE
	PAVEMENT MARKINGS HI-VISIBILITY PEDESTRIAN CROSSWALK	
	T-20.05	

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Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

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Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS
Bryan Harris
Digitally signed by Bryan Harris
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1	02Sep2025	Town of Rolesville Planning Dept. comments

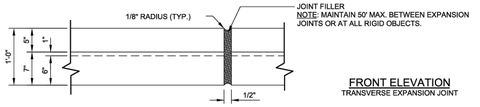
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SITE DETAILS

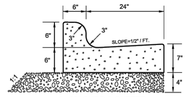
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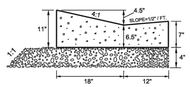
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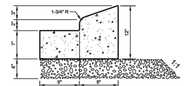
FRONT ELEVATION
TRANSVERSE EXPANSION JOINT



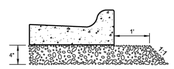
1. 30" CURB & GUTTER



2. 30" VALLEY TYPE GUTTER

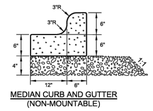


MEDIAN CURB AND GUTTER
SIDE ELEVATION

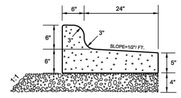


4" COMPACTED A.B.C. UNDER STANDARD CURB & GUTTER (MIN)

NO VALLEY CURB SHALL BE USED AT INTERSECTIONS, HYDRANTS, ETC.



MEDIAN CURB AND GUTTER
(NON-MOUNTABLE)



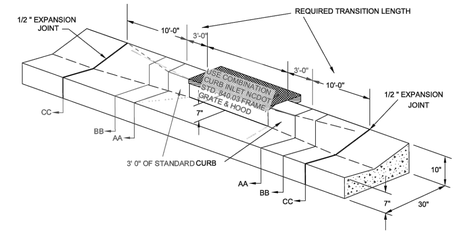
SPILL CURB DETAIL

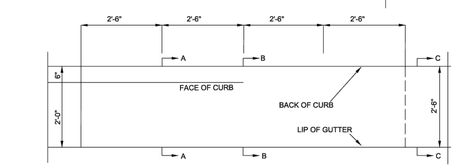
NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01 THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF NCDOT STANDARD & SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

SHEET 1 OF 2

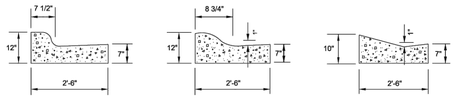
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
	CURB AND GUTTER	
	T-10.26.1	





PLAN VEIW



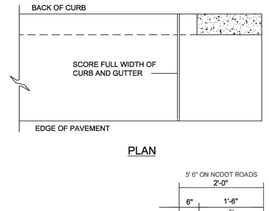
SECTION A-A SECTION B-B SECTION C-C

NOTES:
TRANSITION NOT TO BE LOCATED WITHIN THE CURB RADIUS.

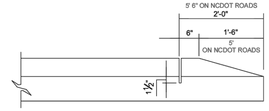
SHEET 2 OF 2

CITY OF RALEIGH
STANDARD DETAIL

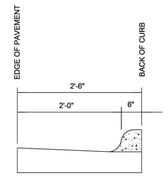
REVISIONS	DATE: 8/2020	NOT TO SCALE
Modify by Quantech Engineering LLC 14 Aug 2025	CURB TRANSITION TO 2'- 6" VALLEY GUTTER	
	T-10.26.2	



PLAN



FRONT



END

SHEET 2 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
Modify by Quantech Engineering LLC 14 Aug 2025	STANDARD METHOD OF ENDING CURB AND GUTTER	
	T-10.25	

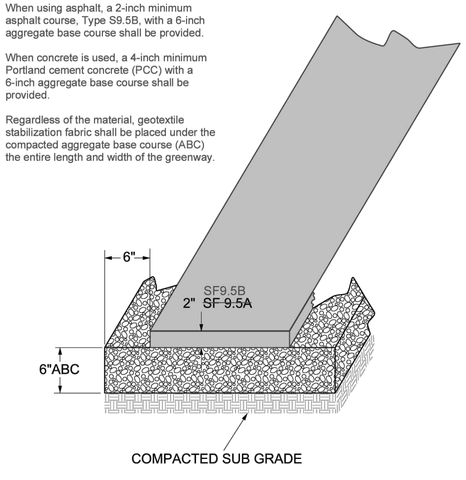
NOTE:

Greenways shall be Constructed with either asphalt or concrete pavement.

When using asphalt, a 2-inch minimum asphalt course, Type S9.5B, with a 6-inch aggregate base course shall be provided.

When concrete is used, a 4-inch minimum Portland cement concrete (PCC) with a 6-inch aggregate base course shall be provided.

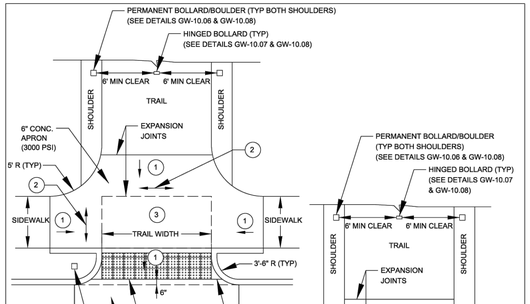
Regardless of the material, geotextile stabilization fabric shall be placed under the compacted aggregate base course (ABC) the entire length and width of the greenway.



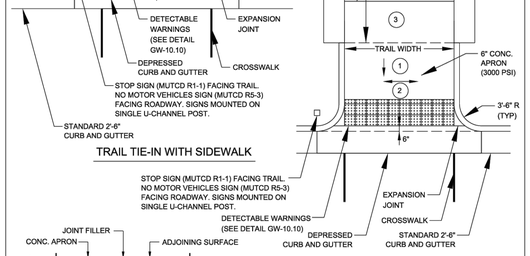
SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

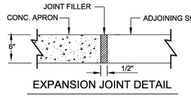
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Modify by Quantech Engineering LLC 14 Aug 2025	ASPHALT MULTI-PURPOSE PATH	
	T-30.02.1	



TRAIL TIE-IN WITH SIDEWALK



TRAIL TIE-IN WITHOUT SIDEWALK



EXPANSION JOINT DETAIL

DRIVEWAY, SIDEWALK, AND TRAIL TIE-IN

SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	DRIVEWAY, SIDEWALK, AND TRAIL TIE-IN	
	GW-10.04.1	

DRIVEWAY, SIDEWALK, AND TRAIL TIE-IN - NOTES:

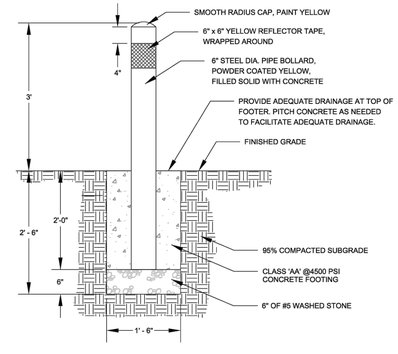
1. THE DRIVEWAY, SIDEWALK, TRAIL TIE-IN SHALL BE BUILT IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).
2. THE DRIVEWAY, SIDEWALK, TRAIL TIE-IN SHALL BE PLACED PARALLEL TO THE TRAIL DIRECTION OF TRAVEL.
3. DETECTABLE WARNINGS SHALL BE INSTALLED ALONG THE BACK OF CURB COVERING THE FULL WIDTH OF THE RAMP.
4. FOR THE TRAIL APRON, USE CLASS A (3000 PSI) CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH, NONSKID SURFACE.
5. A 1/2" EXPANSION JOINT INSTALLED FULL DEPTH WILL BE REQUIRED WHERE THE CONCRETE RAMP JOINS THE CURB AND ALSO WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.
6. REMOVE AND REPLACE CURB AND GUTTER TO NEAREST JOINT.
7. BOLLARDS/BOULDERS SHOULD BE SET BACK FROM THE ROADWAY EDGE A MINIMUM OF 7 FEET AND A MAXIMUM OF 30 FEET AND WILL VARY DEPENDING ON LOCATION. OWNER SHALL INDICATE WHICH OPTION IS BEST FOR THE SITE LOCATION. BOLLARD SHALL NOT BE PLACED WITHIN THE ROADWAY RIGHT-OF-WAY UNLESS AN APPROVED RIGHT-OF-WAY OBSTRUCTION PERMIT IS SECURED WITH THE CITY OF RALEIGH RIGHT OF WAY SERVICES. SEE DETAILS GW-10.06, GW-10.07, AND GW-10.08 FOR BOLLARD/BOULDER DETAILS.
8. STOP SIGN (MUTCD R1-1) AND NO MOTOR VEHICLES SIGN (MUTCD R5-3) SHALL BE 0.063 GAUGE, 3105 ALLOY ALUMINUM AND SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL GUIDELINES.

1. 8.33% (12:1) MAX RAMP SLOPE (DRAIN TO ROADWAY)
2. CROSS SLOPE: MAXIMUM 2.00%
3. RAMP REQUIRES A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN CURB.

SHEET 2 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	DRIVEWAY, SIDEWALK, AND TRAIL TIE-IN	
	GW-10.04.2	



PERMANENT BOLLARD

NOTES:
1. A PERMANENT BOLLARD IS TYPICALLY USED ON THE OUTSIDE OF TRAILS TO PREVENT UNAUTHORIZED MOTOR VEHICLE ENTRY. PERMANENT BOLLARDS MAY BE USED IN COMBINATION WITH HINGED BOLLARDS. IN SOME CASES, A PERMANENT BOLLARD CAN BE USED IN THE CENTER OF THE TRAIL IN LIEU OF A HINGED BOLLARD WHEN REQUESTED BY THE OWNER. SEE DETAIL GW-10.08 FOR THE VARIOUS BOLLARD COMBINATIONS. PERMANENT BOLLARDS SHOULD BE UTILIZED AT ALL MAJOR ACCESS POINTS AND TRAIL HEADS. "NO MOTOR VEHICLES" SIGNAGE (MUTCD R5-3) MAY BE USED TO REINFORCE ACCESS RULES.
2. BOLLARDS SHOULD BE SET BACK FROM THE ROADWAY EDGE A MINIMUM OF 7 FEET AND A MAXIMUM OF 30 FEET AND WILL VARY DEPENDING ON LOCATION. OWNER SHALL INDICATE WHICH OPTION IS BEST FOR THE SITE LOCATION. BOLLARD SHALL NOT BE PLACED WITHIN THE ROADWAY RIGHT-OF-WAY UNLESS AN APPROVED RIGHT-OF-WAY OBSTRUCTION PERMIT IS SECURED WITH THE CITY OF RALEIGH RIGHT OF WAY SERVICES.
3. STRIPING AN ENVELOPE AROUND THE POST IS RECOMMENDED IF THE BOLLARD IS LOCATED WITHIN THE PAVED LIMITS OF THE TRAIL (SEE DETAIL GW-10.05).
4. SEE MIDDLE BOLLARD WITH TRAIL SIDE BOLLARDS DETAIL, GW-10.08, FOR TYPICAL BOLLARD PLACEMENT.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 12/2022	NOT TO SCALE
	PERMANENT BOLLARD	
	GW-10.06	

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CID-25-03 **(PSP-24-05)**

Other Consultants

Sheet map:

Seal:
NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS
Bryan Harris
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1	02Sep2025	Town of Rolesville Planning Dept. comments

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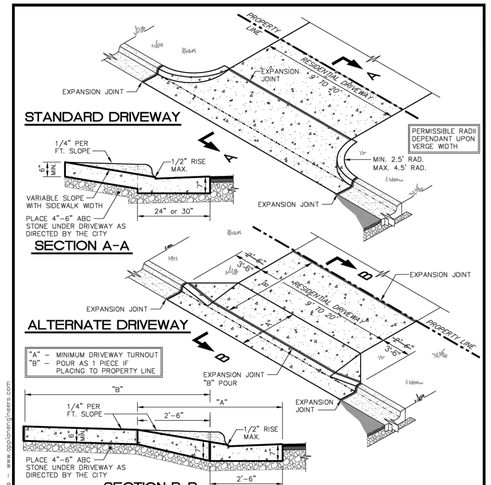
SITE DETAILS

Sheet #:

17

N.C. UNDERGROUND UTILITIES
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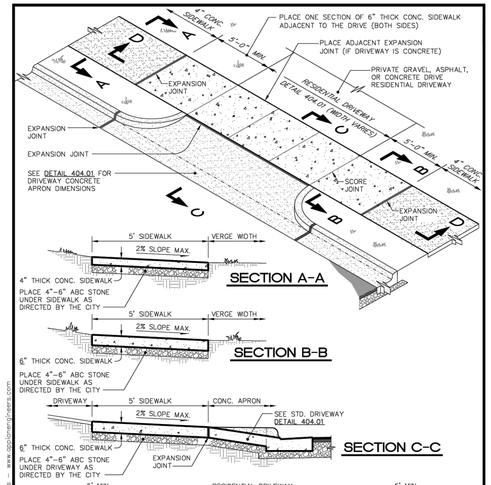


NOTES:

1. Curb and gutter section will be poured continuous through the standard and alternate driveway with the face of curb dropped down as shown.
2. Driveway will be constructed after the curb forms have been removed.
3. Driveway within R/W shall be concrete.
4. Concrete shall be non-reinforced, air-entrained with a minimum strength of 3000 lbs.

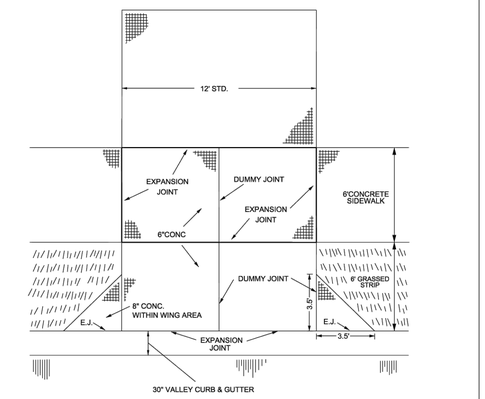
Details Provided by ASPHALL Consulting Engineers – www.asphaltengineers.com

Dept. of Public Works 101 City Hall Plaza Durham, NC 27701	CITY OF DURHAM, NC USE WITH THE STANDARD SPECIFICATIONS ONLY	Voice (919) 560-4326 www.durhamnc.gov
CITY OF DURHAM	DRIVEWAY FOR CURB & GUTTER STREET SECTION (RESIDENTIAL)	SCALE: Not to Scale DETAIL#: 404.01 REVISION DATE: 06/2020 SHEET#: 1 of 1



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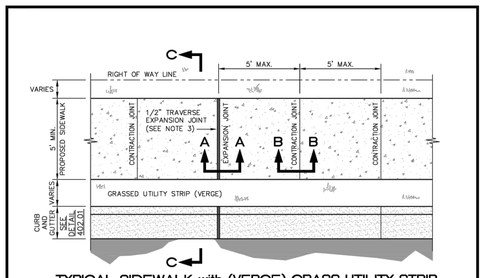
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CITY OF DURHAM	SIDEWALK ACROSS RESIDENTIAL DRIVEWAY APRON	SCALE: Not to Scale DETAIL#: 404.02 REVISION DATE: 06/2017 SHEET#: 1 of 1



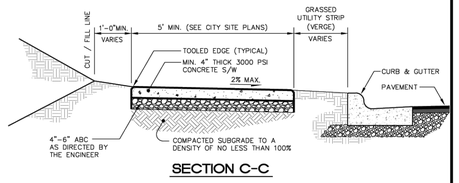
NOTES:

1. SEE STANDARD DETAIL T-10.26.1 FOR CURB AND GUTTER DETAILS.
2. EXPANSION MATERIAL SHALL EXTEND THE FULL DEPTH OF THE CONCRETE.
3. ALL CONCRETE SHALL BE 3000 PSI (MIN.).

CITY OF RALEIGH STANDARD DETAIL		
REVISIONS	DATE: 8/2020	NOT TO SCALE
	DRIVEWAY FOR VALLEY TYPE CURB & GUTTER	
	T-10.02	



TYPICAL SIDEWALK with (VERGE) GRASS UTILITY STRIP

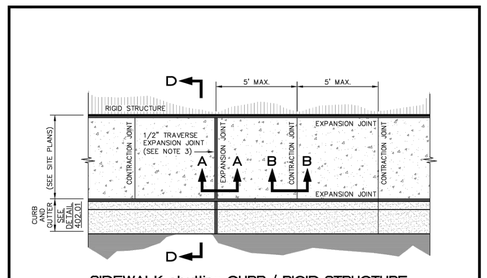


SECTION C-C

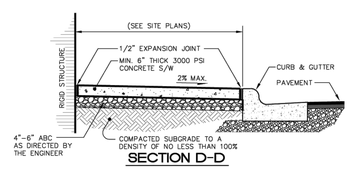
SEE SHEET 3 (THIS DETAIL) FOR SECTION A-A, B-B AND NOTES

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CITY OF DURHAM	CONCRETE SIDEWALKS	SCALE: Not to Scale DETAIL#: 402.02 REVISION DATE: 06/2017 SHEET#: 1 of 3



SIDEWALK abutting CURB / RIGID STRUCTURE

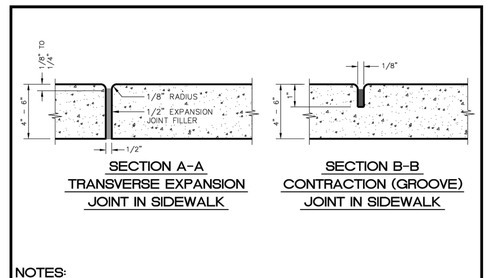


SECTION D-D

SEE SHEET 3 (THIS DETAIL) FOR SECTION A-A, B-B AND NOTES

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CITY OF DURHAM	CONCRETE SIDEWALKS	SCALE: Not to Scale DETAIL#: 402.02 REVISION DATE: 06/2023 SHEET#: 2 of 3



SECTION A-A
TRANSVERSE EXPANSION JOINT IN SIDEWALK

SECTION B-B
CONTRACTION (GROOVE) JOINT IN SIDEWALK

NOTES:

1. in addition to complying with Durham standards sidewalks shall conform to NCDOT standards and specifications. In cases where clarifications are needed, the City shall make the determination.
2. Contraction (Groove) joints with 1/8" radius shall be placed at 5 foot intervals and be one inch deep with joint filler.
3. One half inch (1/2") transverse expansion joints shall be placed at intervals no more than 50 feet and shall match expansion/construction joints in adjacent curb.
4. A sealed ½" expansion joint is required where the sidewalk abuts buildings or any rigid structure.
5. Joint materials shall limit shrink/swell so post construction installation results in a maximum of 1/4" from flush.
6. Concrete compressive strength shall be 3,000 psi in 28 days.
7. Top 6" of subgrade beneath the sidewalk shall be compacted to 100% Standard Proctor density. The City may require testing at its discretion.
8. Six inch depth is required at all driveways, intersections (PC to PT), at Handicap ramps, and commercially developed or zoned areas.
9. Undercutting of unsuitable subgrade material and/or placement of up to 6 inches of incidental ABC stone may be required to obtain proper bedding.
10. The minimum width of the verge is one foot; otherwise the sidewalk shall abut the back of the curb and be six feet wide and six inches thick.
11. Lids for junction boxes, structures, or utility vaults shall be non-skid, meet NCDOT standards, and be submitted to the City for review and approval prior to installation.
12. Provide a minimum one foot wide flat area at the back of sidewalks before starting any cut or fill slope.

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Town of Rolesville
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Other Consultants

Sheet map:

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NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS

Bryan Harris

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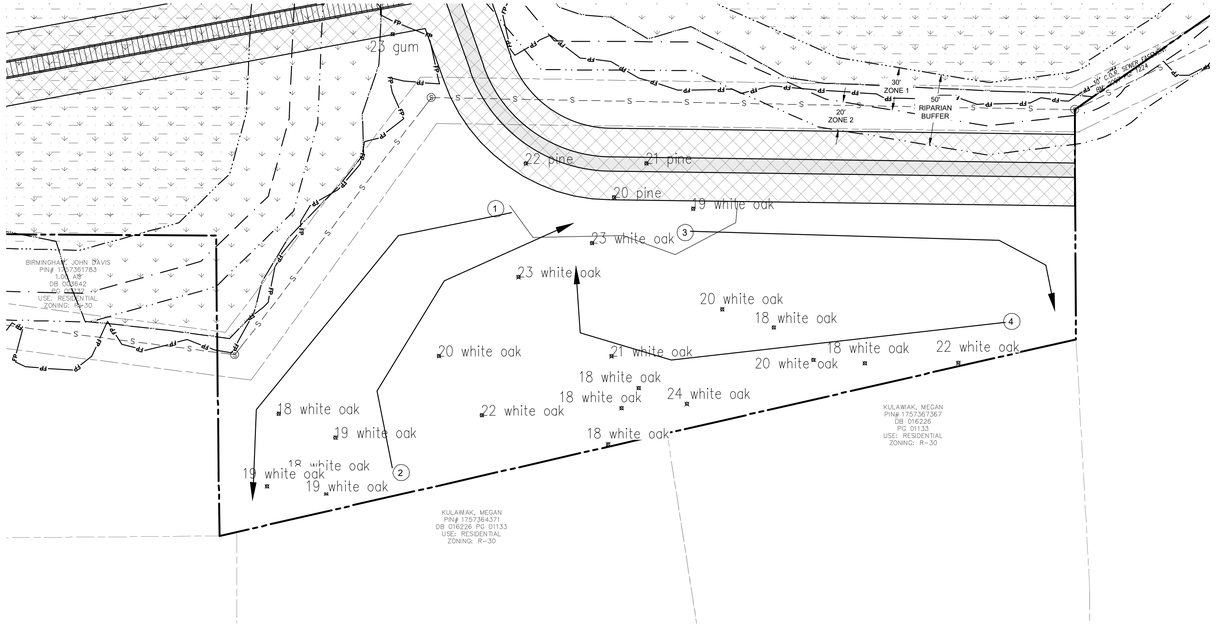
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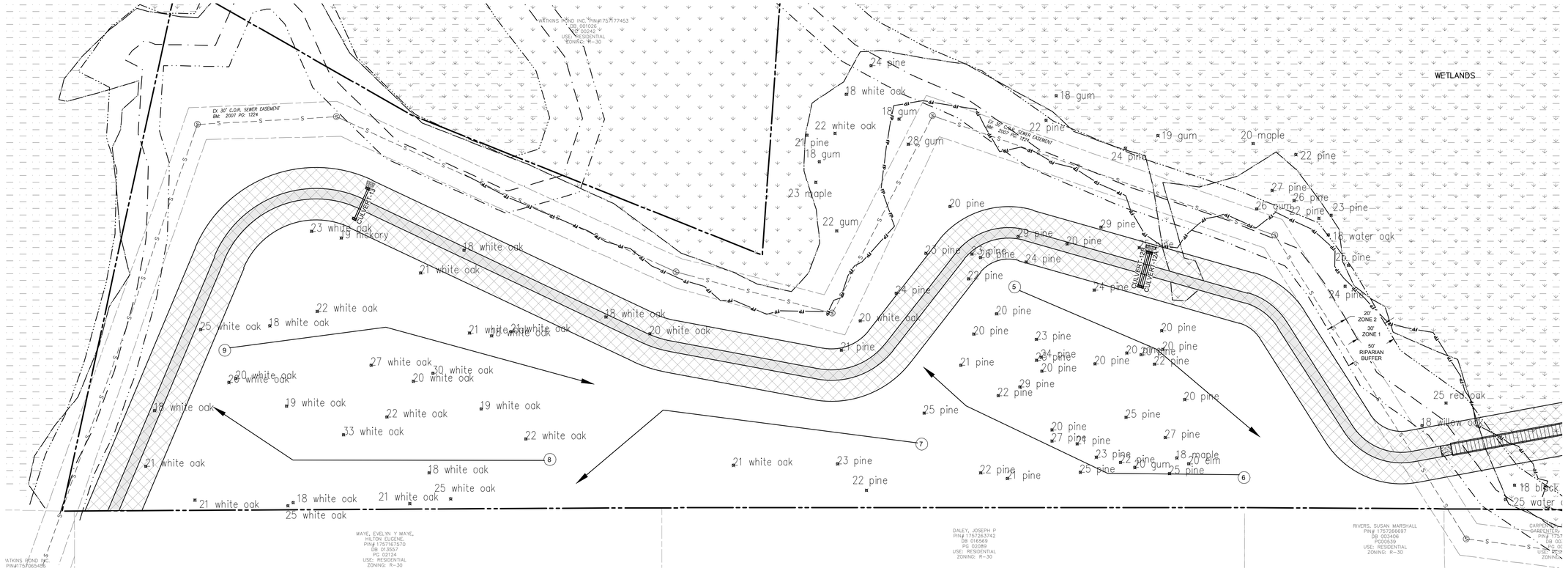
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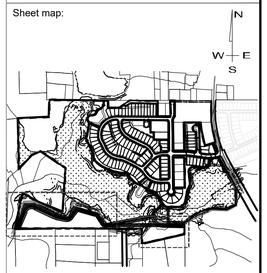
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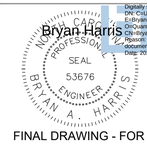
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Other Consultants

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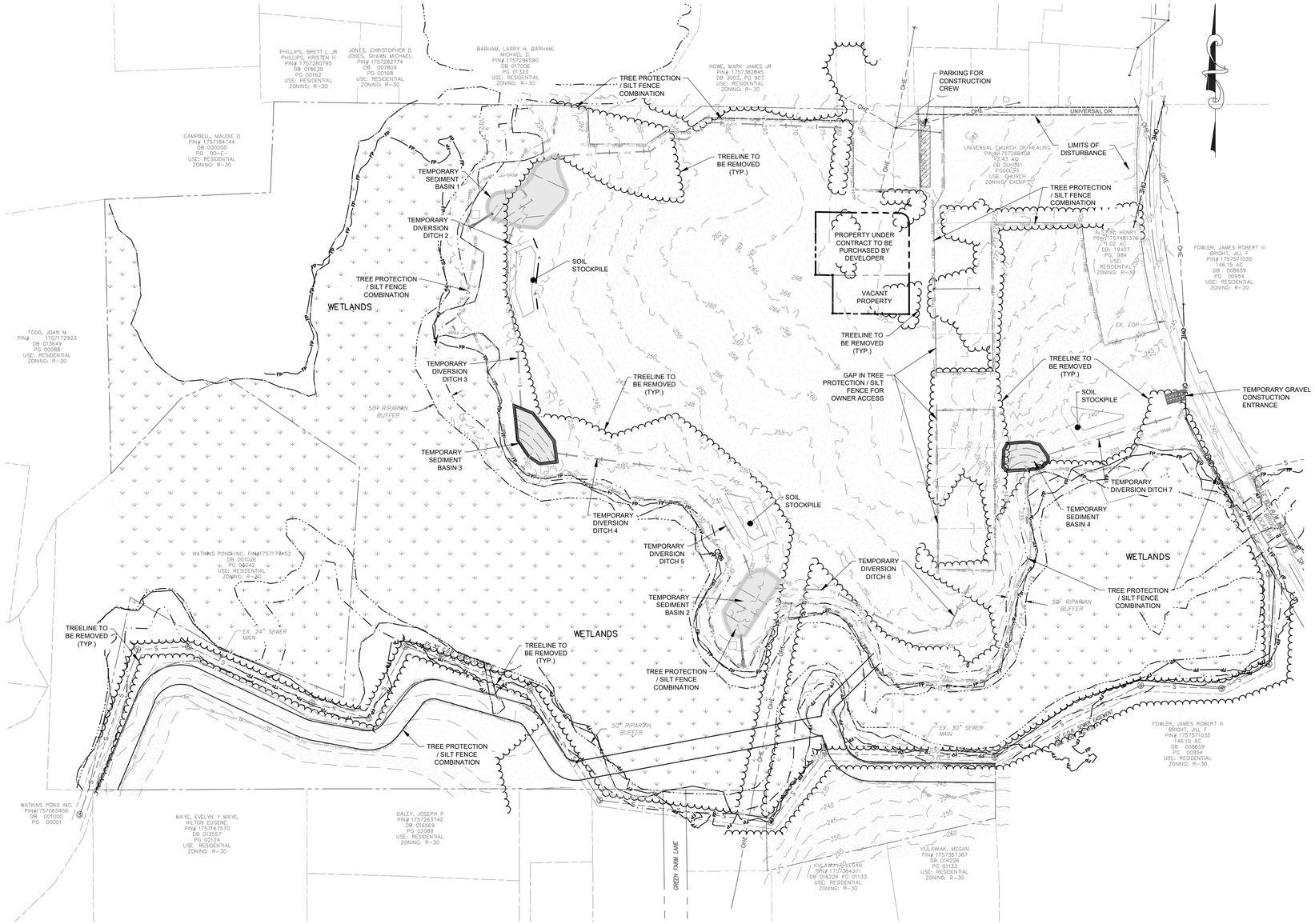
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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

SITE PLAN DISC GOLF

Sheet #:

19



HARRIS CREEK

SKIMMER BASIN TABLE

Skimmer Basin #	Width (ft)	Length (ft)	Depth (ft)	Top Elevation	Outlet Elevation	Weir (ft)	Skimmer (in)	Orifice (in)	Dewatering Time (days)
BASIN 1	112	224	3	237	234	55	2.5	2.5	4
BASIN 2	90	180	3	237.5	234.5	55	2.5	2	5
BASIN 3	77	153	2	230	228	55	2.5	2	4
BASIN 4	80	159	2	235	233	55	2.5	2	4

HARRIS CREEK

Location	MATERIAL	
	TEMPORARY	PERMANENT
TEMPORARY DITCH 1	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 2	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 3	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 4	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 5	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 6	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 7	STRAW AND NETTING	STRAW AND NETTING

WAKE COUNTY EROSION CONTROL SEQUENCE

1. Schedule a preconstruction conference with the Environmental Consultant. Obtain a land disturbing permit.
2. Install gravel construction pad, temporary diversions, silt fence, sediment basins or other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.
3. Call Environmental Consultant for an onsite inspection by the Environmental Consultant to obtain a Certificate of Compliance.
4. Begin clearing and grubbing. Maintain devices as needed. Rough grade site.
5. Install storm sewer, if shown, and protect inlets with block and gravel inlet controls, sediment traps or other approved measures as shown on the plan. Begin construction, building, etc.
6. 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.
7. When construction is complete and all areas are stabilized completely, call Environmental Consultant for an inspection.
8. 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 dissipators, should now be installed.
9. When vegetation has become established, call for a final site inspection by the Environmental Consultant. Obtain a Certificate of Completion.

NPDES SELF INSPECTION PROGRAM

1. EFFECTIVE OCTOBER 1, 2010, PERSONS CONDUCTING LAND-DISTURBING ACTIVITY LARGER THAN ONE ACRE MUST INSPECT THEIR PROJECT AFTER EACH PHASE OF THE PROJECT, AND DOCUMENT THE INSPECTION IN WRITING. EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO, SEDIMENTATION CONTROL BASINS, SEDIMENTATION TRAPS, ROCK DAMS, TEMPORARY DIVERSIONS, TEMPORARY SLOPE DRAINS, SEDIMENT FENCE OR BARRIERS, ALL FORMS OF INLET PROTECTION, STORM DRAINAGE FACILITIES, ENERGY DISSIPATERS, AND STABILIZATION METHODS OF OPEN CHANNELS MUST BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY, LANDOWNER, OR THEIR AGENT. THE SELF-INSPECTION REPORTING FORM IS AVAILABLE AS PDF FROM THE LAND QUALITY WEB SITE: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms
2. IN ADDITION TO THE INSPECTIONS BY THE CONTRACTOR, THE OWNER, THE FINANCIALLY RESPONSIBLE PARTY, OR THEIR AGENT MUST CONDUCT INSPECTIONS IN ACCORDANCE WITH THE STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION GENERAL PERMIT NCG 010000 SELF-INSPECTION PROGRAM AND REPORTING REQUIREMENTS TO MONITOR AND MAINTAIN A RAIN GAUGE, RECORDS, PERMIT, AND S&E PLAN ON SITE.

EROSION CONTROL NOTES

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- SKIMMER
- INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- DITCH WATTLE
- CONSTRUCTION PARKING
- EXISTING TREELINE
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GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

1 inch = 150 ft

N.C. UNDERGROUND UTILITIES

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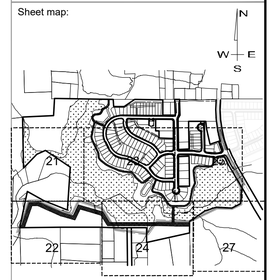
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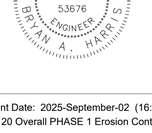
Rolesville Genuine Community • Capital Connection Est. 1837
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502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



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File Name: 20 Overall PHASE 1 Erosion Control Plan.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

Issued for:

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REVISIONS

No.	Date	Description
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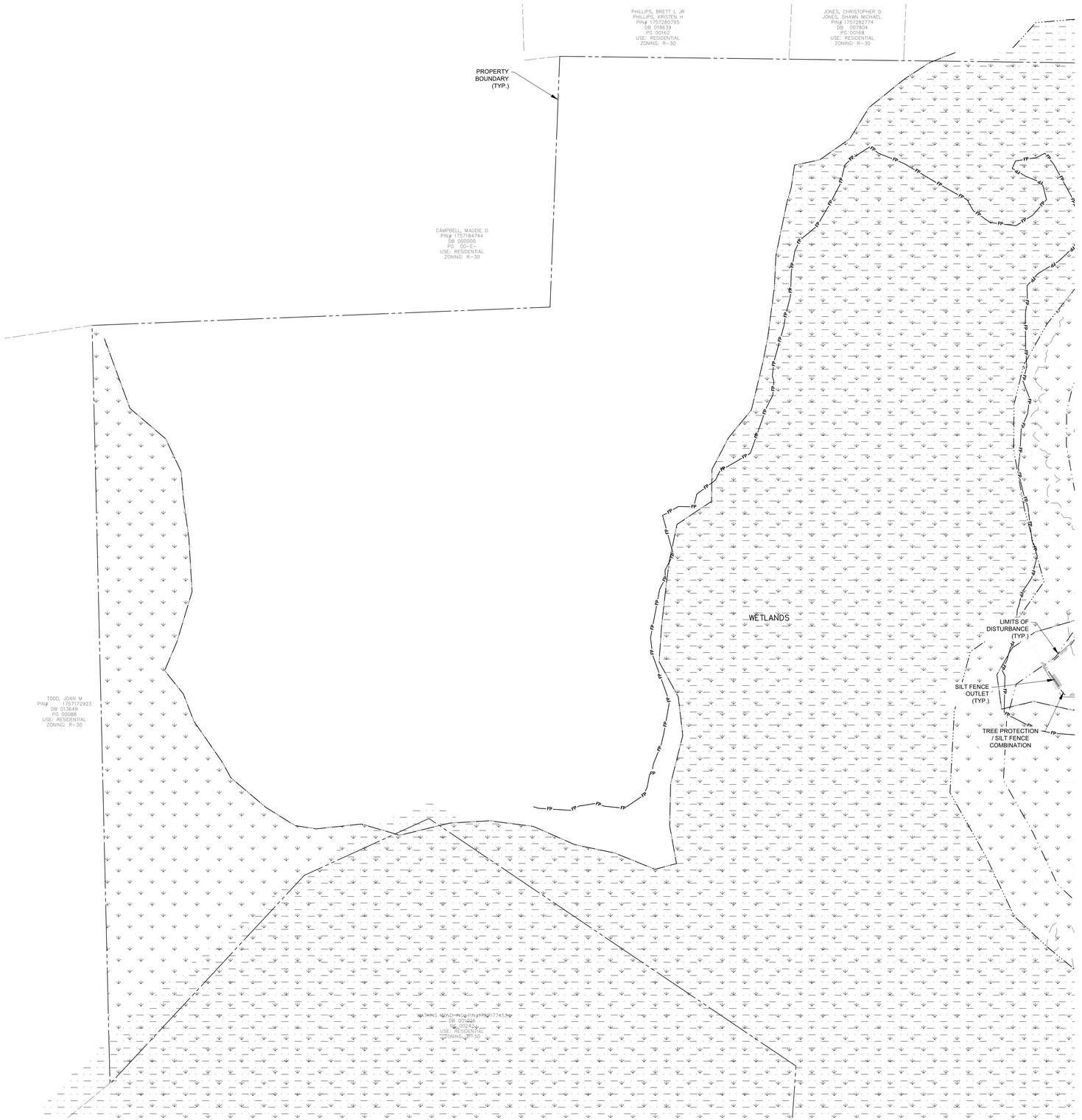
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OVERALL PHASE 1 EROSION CONTROL PLAN

Sheet #:

20

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg



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TREE PROTECTION	TP
SILT FENCE	
SILT FENCE OUTLET	
TEMPORARY DIVERSION DITCH	>>
TEMPORARY CONSTRUCTION ENTRANCE	
TEMPORARY SEDIMENT BASIN	
SKIMMER	
INLET PROTECTION	
HORSE SHOE INLET PROTECTION	
DITCH WATTLE	
CONSTRUCTION PARKING	
EXISTING TREELINE	
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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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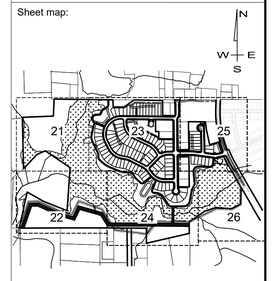
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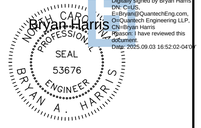
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Sheet map:



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Sheet Title:

EC PLAN STAGE 1
SHEET 1 OF 6

Sheet #:

21

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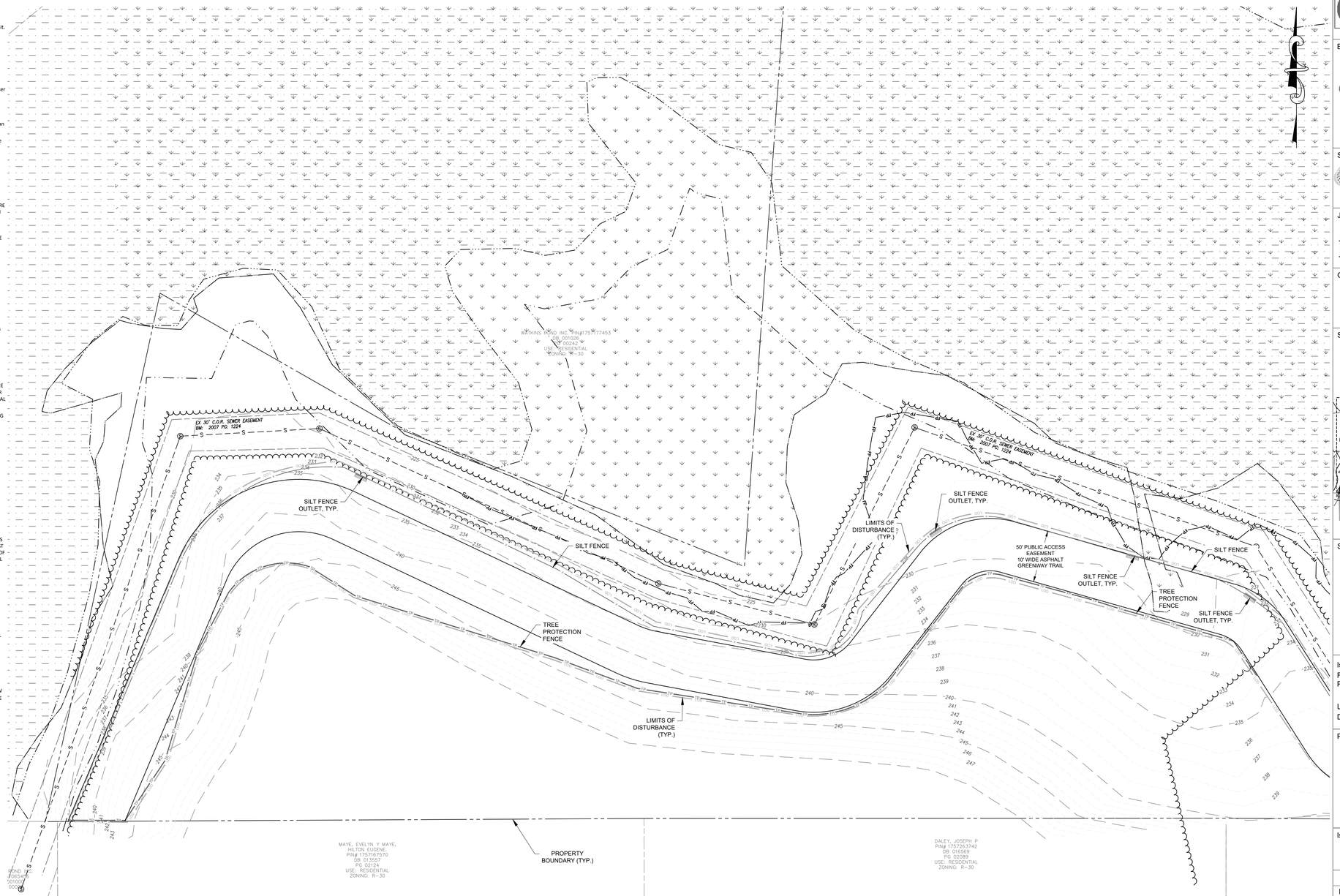
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A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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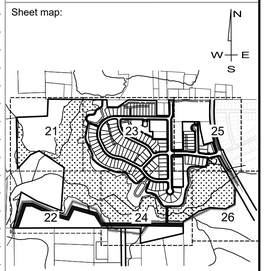
Developer
THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer
QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
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15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor
BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

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Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:


Seal:


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DN: CN=US, E=Bryan@QuantechEng.com, O=Quantech Engineering LLP, CN=Bryan Harris
I attest I have reviewed this document
Date: 2025.09.03 16:52:03-04'00'

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Project:
HARRIS CREEK FARMS
CID-25-03

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REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:
EC PLAN STAGE 1
SHEET 2 OF 6

Sheet #:
22



DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 1 & 2)

- LIMITS OF DISTURBANCE
- TREE PROTECTION/SILT FENCE COMBINATION
- TREE PROTECTION
- SILT FENCE
- SILT FENCE OUTLET
- TEMPORARY DIVERSION DITCH
- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY SEDIMENT BASIN
- SKIMMER
- INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- DITCH WATTLE
- CONSTRUCTION PARKING
- EXISTING TREELINE
- PROPOSED TREELINE

WAKE COUNTY EROSION CONTROL SEQUENCE

1. Schedule a preconstruction conference with the Environmental Consultant. Obtain a land disturbing permit.
2. Install gravel construction pad, temporary diversions, silt fence, sediment basins or other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.
3. Call Environmental Consultant for an onsite inspection by the Environmental Consultant to obtain a Certificate of Compliance.
4. Begin clearing and grubbing. Maintain devices as needed. Rough grade site.
5. Install storm sewer, if shown, and protect inlets with block and gravel inlet controls, sediment traps or other approved measures as shown on the plan. Begin construction, building, etc.
6. 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.
7. When construction is complete and all areas are stabilized completely, call Environmental Consultant for an inspection.
8. 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 dissipators, should now be installed.
9. When vegetation has become established, call for a final site inspection by the Environmental Consultant. Obtain a Certificate of Completion.

NPDES SELF INSPECTION PROGRAM

1. EFFECTIVE OCTOBER 1, 2010, PERSONS CONDUCTING LAND-DISTURBING ACTIVITY LARGER THAN ONE ACRE MUST INSPECT THEIR PROJECT AFTER EACH PHASE OF THE PROJECT, AND DOCUMENT THE INSPECTION IN WRITING. EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO, SEDIMENTATION CONTROL BASINS, SEDIMENTATION TRAPS, ROCK DAMS, TEMPORARY DIVERSIONS, TEMPORARY SLOPE DRAINS, SEDIMENT FENCE OR BARRIERS, ALL FORMS OF INLET PROTECTION, STORM DRAINAGE FACILITIES, ENERGY DISSIPATERS, AND STABILIZATION METHODS OF OPEN CHANNELS MUST BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY, LANDOWNER, OR THEIR AGENT. THE SELF-INSPECTION REPORTING FORM IS AVAILABLE AS PDF FROM THE LAND QUALITY WEB SITE: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms
2. IN ADDITION TO THE INSPECTIONS BY THE CONTRACTOR, THE OWNER, THE FINANCIALLY RESPONSIBLE PARTY, OR THEIR AGENT MUST CONDUCT INSPECTIONS IN ACCORDANCE WITH THE STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION GENERAL PERMIT NCG 010000 SELF-INSPECTION PROGRAM AND REPORTING REQUIREMENTS TO MONITOR AND MAINTAIN A RAIN GAUGE, RECORDS, PERMIT, AND S&E PLAN ON SITE.

EROSION CONTROL NOTES

1. TREE PROTECTION FENCE LINE ALSO INCLUDE THE LIMITS OF DISTURBANCE FOR THAT SECTION.
2. A COPY OF THE APPROVED EROSION CONTROL PLAN AND PERMIT PLACARD MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
3. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND WAKE COUNTY STANDARDS, SPECIFICATIONS AND DETAILS.
4. THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
5. FAILURE TO FOLLOW THE APPROVED PLAN, CONSTRUCTION SEQUENCE, AND DETAILS COULD SUBJECT THE CONTRACTOR AND/OR THE FINANCIALLY RESPONSIBLE PARTY TO FINES AND PENALTIES ISSUED BY EITHER THE WAKE COUNTY EROSION CONTROL DIVISION OR NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY.
6. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BY WAKE COUNTY EROSION CONTROL ONCE INITIAL MEASURES ARE IN PLACE. (SEE CONSTRUCTION SEQUENCES)
7. CONTRACTOR SHALL INSPECT ALL SEDIMENT/EROSION CONTROL DEVICES WEEKLY AND AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF OF THE CAPACITY OF THE DEVICE. SEE NPDES SELF INSPECTION PROGRAM NOTES.
8. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
9. 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.
10. 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.
11. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND TREES, 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 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.
12. 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.
13. CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS AND PONDING. APPROXIMATE LOCATIONS ARE SHOWN ON EROSION CONTROL PLANS.
14. 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.
15. 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).

OFFSITE SPOIL NOTE:

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

HARRIS CREEK

SKIMMER BASIN TABLE

Skimmer Basin #	Width (ft)	Length (ft)	Depth (ft)	Top Elevation	Outlet Elevation	Weir (ft)	Skimmer (in)	Orifice (in)	Dewatering Time (days)
BASIN 1	112	224	3	237	234	55	2.5	2.5	4
BASIN 2	90	180	3	237.5	234.5	55	2.5	2	5
BASIN 3	77	153	2	230	228	55	2.5	2	4
BASIN 4	80	159	2	235	233	55	2.5	2	4

BASINS 3 & 4 ARE REMOVED BETWEEN STAGE 2 AND 3. SEE SHEET #36 FOR BASIN REMOVAL SEQUENCE

HARRIS CREEK

Location	MATERIAL	
	TEMPORARY	PERMANENT
TEMPORARY DITCH 1	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 2	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 3	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 4	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 5	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 6	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 7	STRAW AND NETTING	STRAW AND NETTING

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES
811
3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
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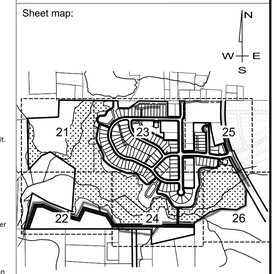
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HARRIS CREEK FARMS

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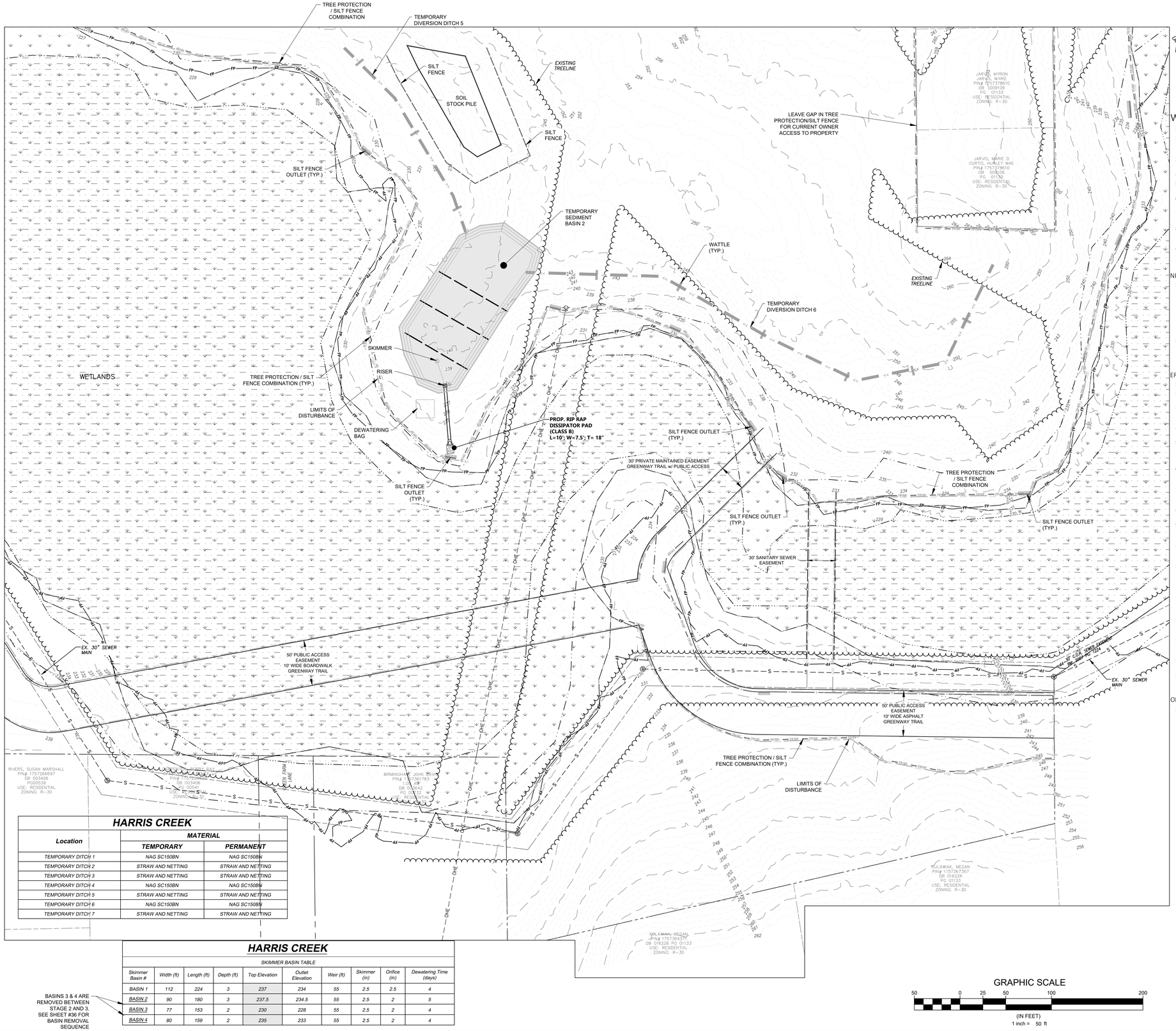
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EC PLAN STAGE 1 SHEET 3 OF 6

Sheet #:

23

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HARRIS CREEK

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HARRIS CREEK

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DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 1 & 2)

- LIMITS OF DISTURBANCE — LOD —
- TREE PROTECTION/SILT FENCE COMBINATION — TP/SF —
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- SILT FENCE — x —
- SILT FENCE OUTLET
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- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY SEDIMENT BASIN
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- INLET PROTECTION
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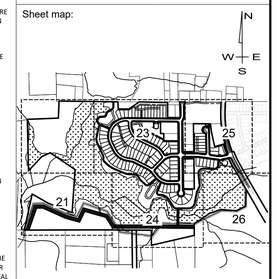
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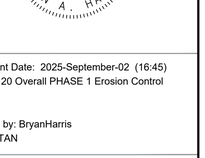
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EC PLAN STAGE 1 SHEET 4 OF 6

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DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 1 & 2)

- LIMITS OF DISTURBANCE
- TREE PROTECTION/SILT FENCE COMBINATION
- TREE PROTECTION
- SILT FENCE
- SILT FENCE OUTLET
- TEMPORARY DIVERSION DITCH
- TEMPORARY CONSTRUCTION ENTRANCE
- TEMPORARY SEDIMENT BASIN
- SKIMMER
- INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- DITCH WATTLE
- CONSTRUCTION PARKING
- EXISTING TREELINE
- PROPOSED TREELNE

HARRIS CREEK

SKIMMER BASIN TABLE

Skimmer Basin #	Width (ft)	Length (ft)	Depth (ft)	Top Elevation	Outlet Elevation	Weir (ft)	Skimmer (in)	Orifice (in)	Dewatering Time (days)
BASIN 1	112	224	3	237	234	55	2.5	2.5	4
BASIN 2	90	180	3	237.5	234.5	55	2.5	2	5
BASIN 3	77	153	2	230	228	55	2.5	2	4
BASIN 4	80	159	2	235	233	55	2.5	2	4

BASINS 3 & 4 ARE REMOVED BETWEEN STAGE 2 AND 3. SEE SHEET #36 FOR BASIN REMOVAL SEQUENCE

HARRIS CREEK

Location	MATERIAL	
	TEMPORARY	PERMANENT
TEMPORARY DITCH 1	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 2	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 3	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 4	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 5	STRAW AND NETTING	STRAW AND NETTING
TEMPORARY DITCH 6	NAG SC150BN	NAG SC150BN
TEMPORARY DITCH 7	STRAW AND NETTING	STRAW AND NETTING

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

Developer

THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

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BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

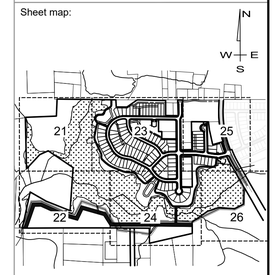
Jurisdiction / Municipality

Rolesville
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



Digitally signed by Bryan Harris
DN: CN=BryanH@QuantechEng.com, O=Quantech Engineering LLP, C=US
Reason: I have reviewed this document
Date: 2025.09.03 16:52:04-04'00'

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Last Saved by: BryanHarris
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Project:

HARRIS CREEK FARMS

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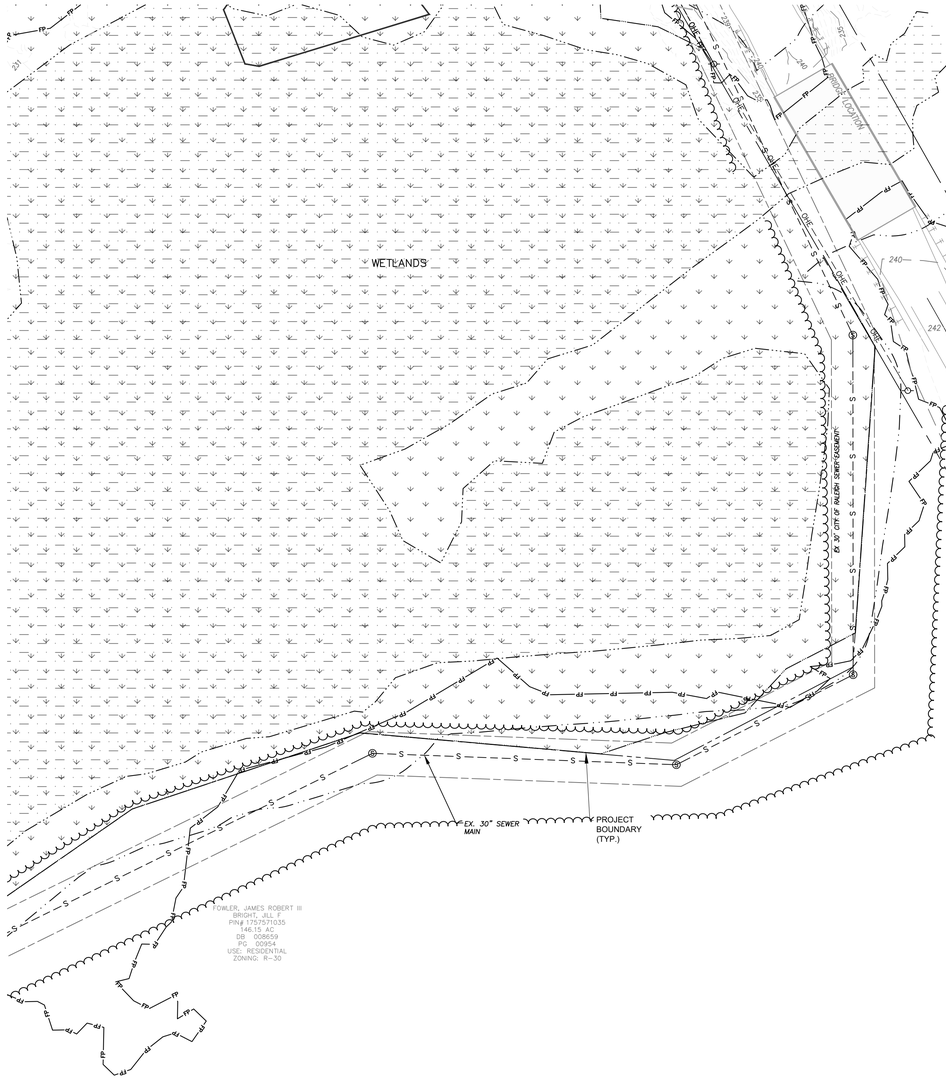
Sheet Title:

EC PLAN STAGE 1 SHEET 5 OF 6

Sheet #:

25

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TREE PROTECTION	TP TP TP
SILT FENCE	x x
SILT FENCE OUTLET	
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TEMPORARY CONSTRUCTION ENTRANCE	
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SKIMMER	
INLET PROTECTION	
HORSE SHOE INLET PROTECTION	
DITCH WATTLE	
CONSTRUCTION PARKING	
EXISTING TREELINE	
PROPOSED TREELNE	

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

Developer

THE CSC GROUP
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10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
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Cary, N.C. 27513
(919) 996-9455

Surveyor

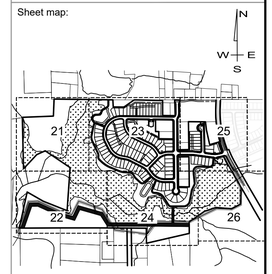
BCSC BATEMAN CIVIL SURVEY COMPANY
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Apex, NC 27539
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Seal:



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Project:

HARRIS CREEK FARMS

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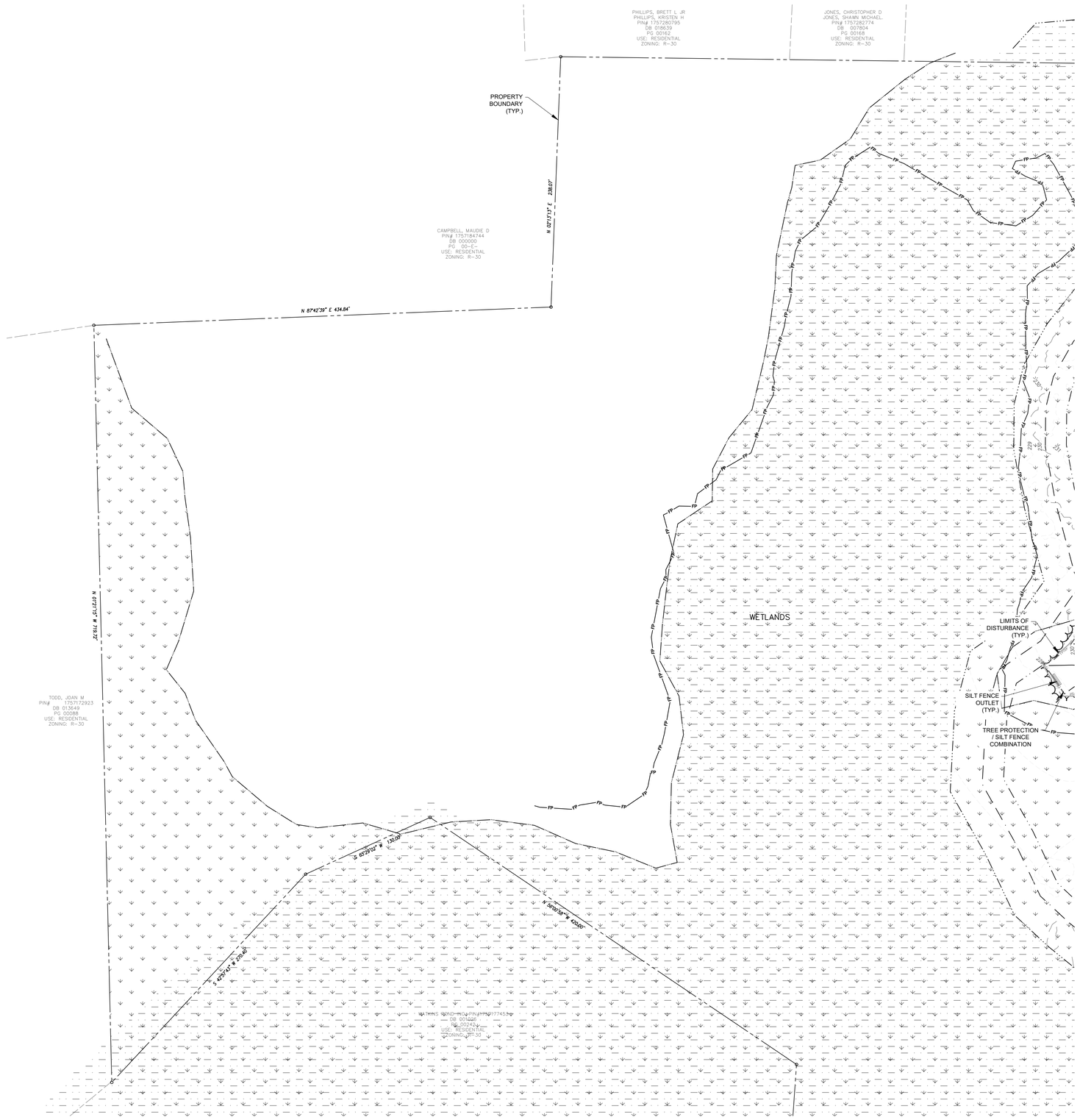
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EC PLAN STAGE 1 SHEET 6 OF 6

Sheet #:

26

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EROSION CONTROL LEGEND (PHASE 3)

LIMITS OF DISTURBANCE	LOD
TREE PROTECTION/SILT FENCE COMBINATION	TPSF
SILT FENCE	
SILT FENCE OUTLET	
SKIMMER	
INLET PROTECTION	
HORSE SHOE INLET PROTECTION	
DITCH WATTLE	
EXISTING TREELINE	
PROPOSED TREELINE	
PERMANENT DIVERSION DITCH	>>

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

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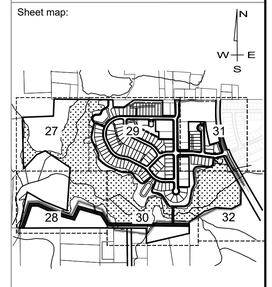
Rolesville
Granville Community • Capital Connection
Est. 1837

Town of Rolesville
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Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



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Project:

HARRIS CREEK FARMS

CID-25-03

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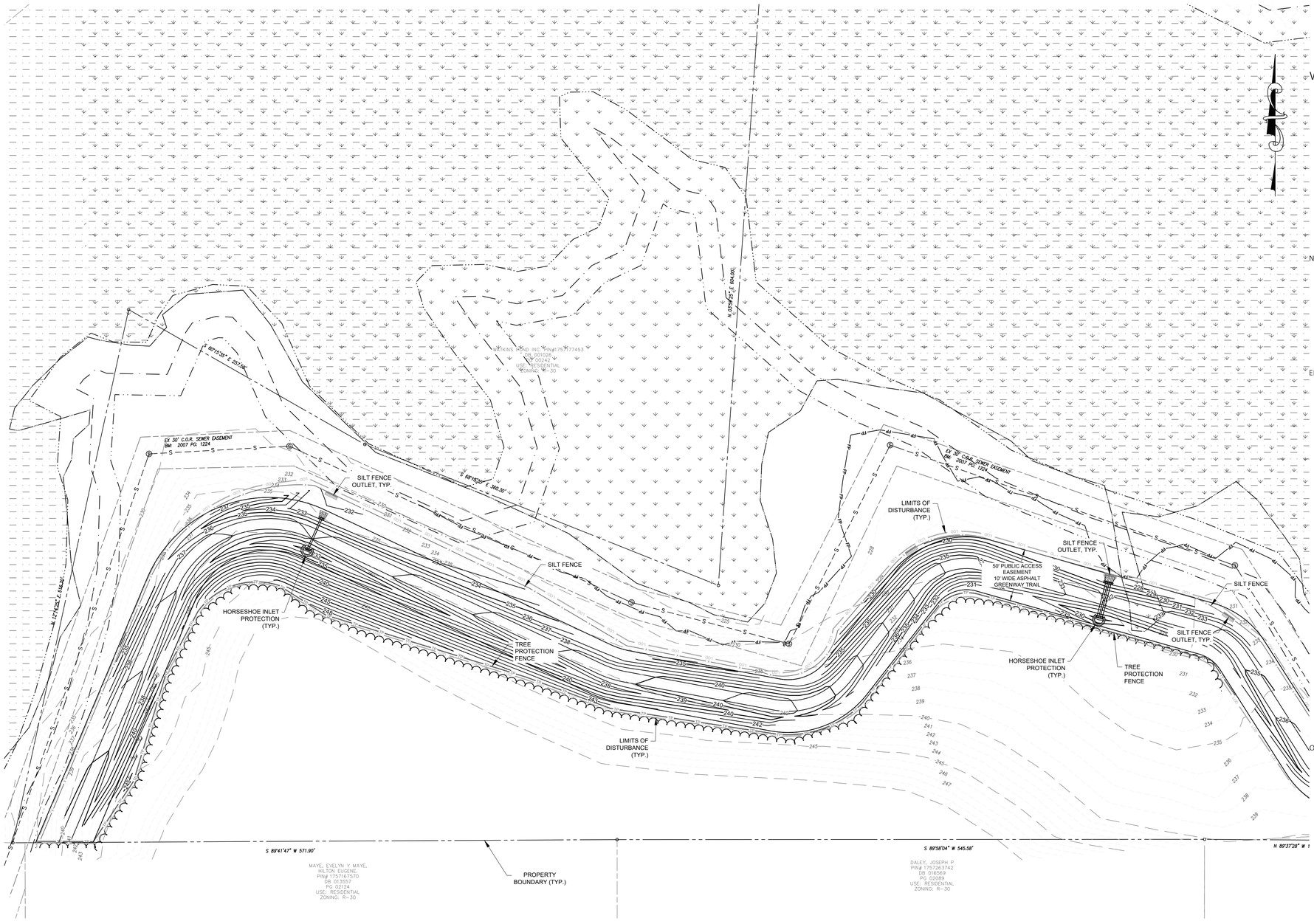
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EC PLAN STAGE 3
SHEET 1 OF 6

Sheet #:

27



WAKE COUNTY EROSION CONTROL SEQUENCE

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HARRIS CREEK		
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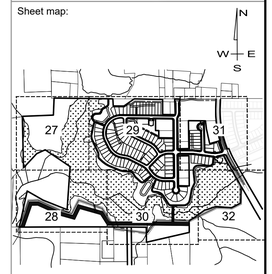
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Sheet map:



Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

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EC PLAN STAGE 3
SHEET 2 OF 6

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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

HARRIS CREEK

SKIMMER BASIN TABLE

Skimmer Basin #	Width (ft)	Length (ft)	Depth (ft)	Top Elevation	Outlet Elevation	Weir (ft)	Skimmer (in)	Orifice (in)	Dewatering Time (days)
BASIN 1	112	224	3	237	234	55	2.5	2.5	4
BASIN 2	90	180	3	237.5	234.5	55	2.5	2	5
BASIN 3	77	153	2	230	228	55	2.5	2	4
BASIN 4	80	159	2	235	233	55	2.5	2	4

HARRIS CREEK

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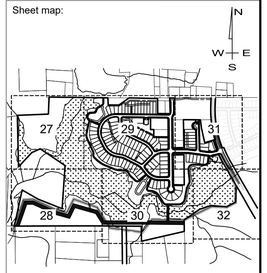
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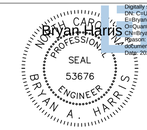
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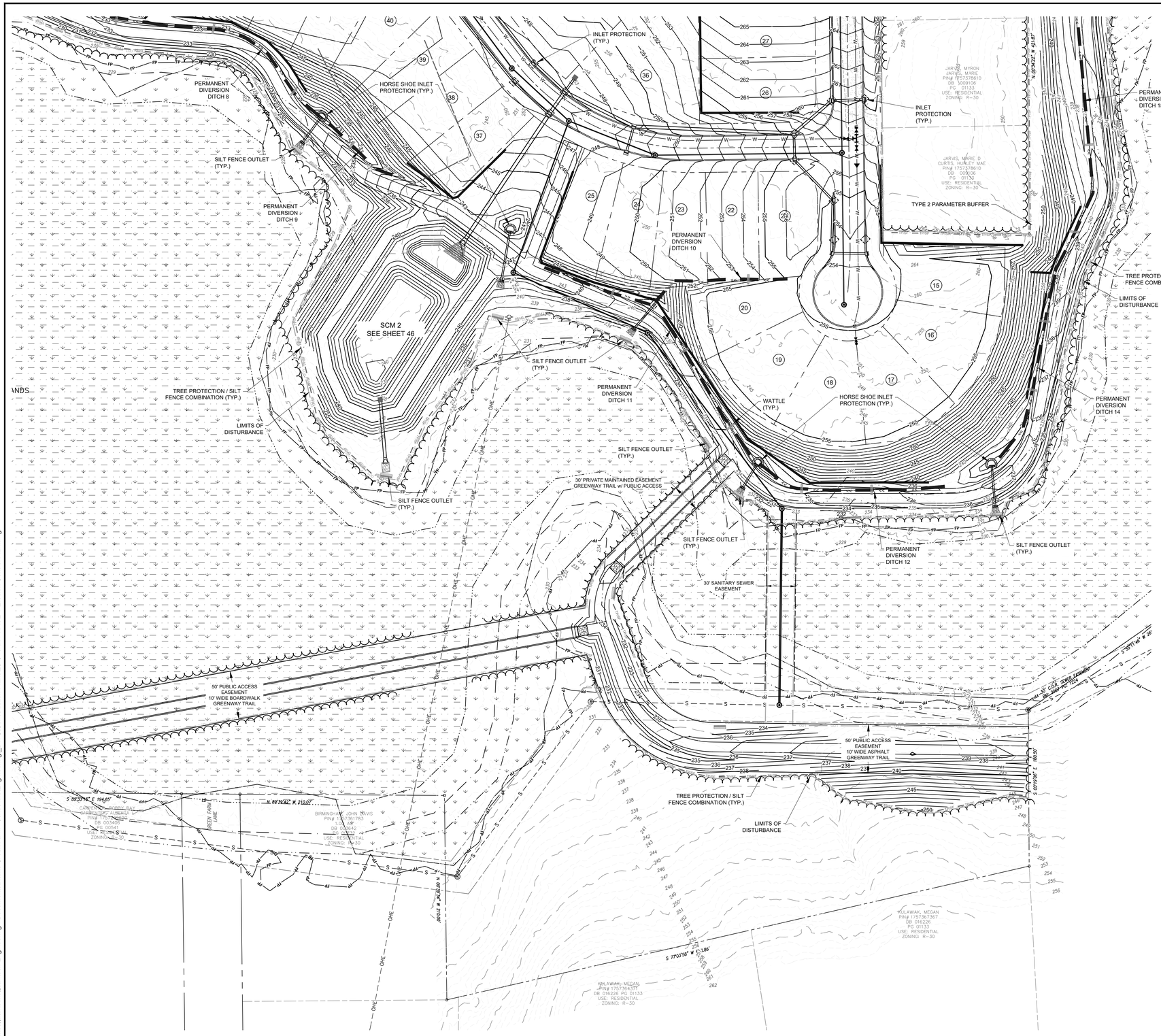
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DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 3)

LIMITS OF DISTURBANCE	LOD LOD
TREE PROTECTION/SILT FENCE COMBINATION	TPSF TPSF TPSF
SILT FENCE	
SILT FENCE OUTLET	
SKIMMER	
INLET PROTECTION	
HORSE SHOE INLET PROTECTION	
DITCH WATTLE	
EXISTING TREELINE	
PROPOSED TREELNE	
PERMANENT DIVERSION DITCH	>>

HARRIS CREEK

SKIMMER BASIN TABLE

Skimmer Basin #	Width (ft)	Length (ft)	Depth (ft)	Top Elevation	Outlet Elevation	Weir (ft)	Skimmer (in)	Orifice (in)	Dewatering Time (days)
BASIN 1	112	224	3	237	234	55	2.5	2.5	4
BASIN 2	90	180	3	237.5	234.5	55	2.5	2	5
BASIN 3	77	153	2	230	228	55	2.5	2	4
BASIN 4	80	159	2	235	233	55	2.5	2	4

HARRIS CREEK

Location	MATERIAL	
	TEMPORARY	PERMANENT
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PERMANENT DITCH 16	STRAW AND NETTING	STRAW AND NETTING
PERMANENT DITCH 17	NAG SC150BN	NAG SC150BN
PERMANENT DITCH 18	STRAW AND NETTING	STRAW AND NETTING

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg

Developer

THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor

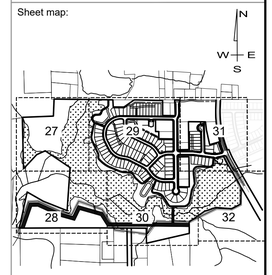
BCSC EATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

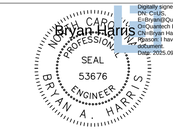
Rolesville
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



Bryan Harris
Digitally signed by Bryan Harris
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I attest I have reviewed this document
Date: 2025.09.03 16:52:07-04'00'

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Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

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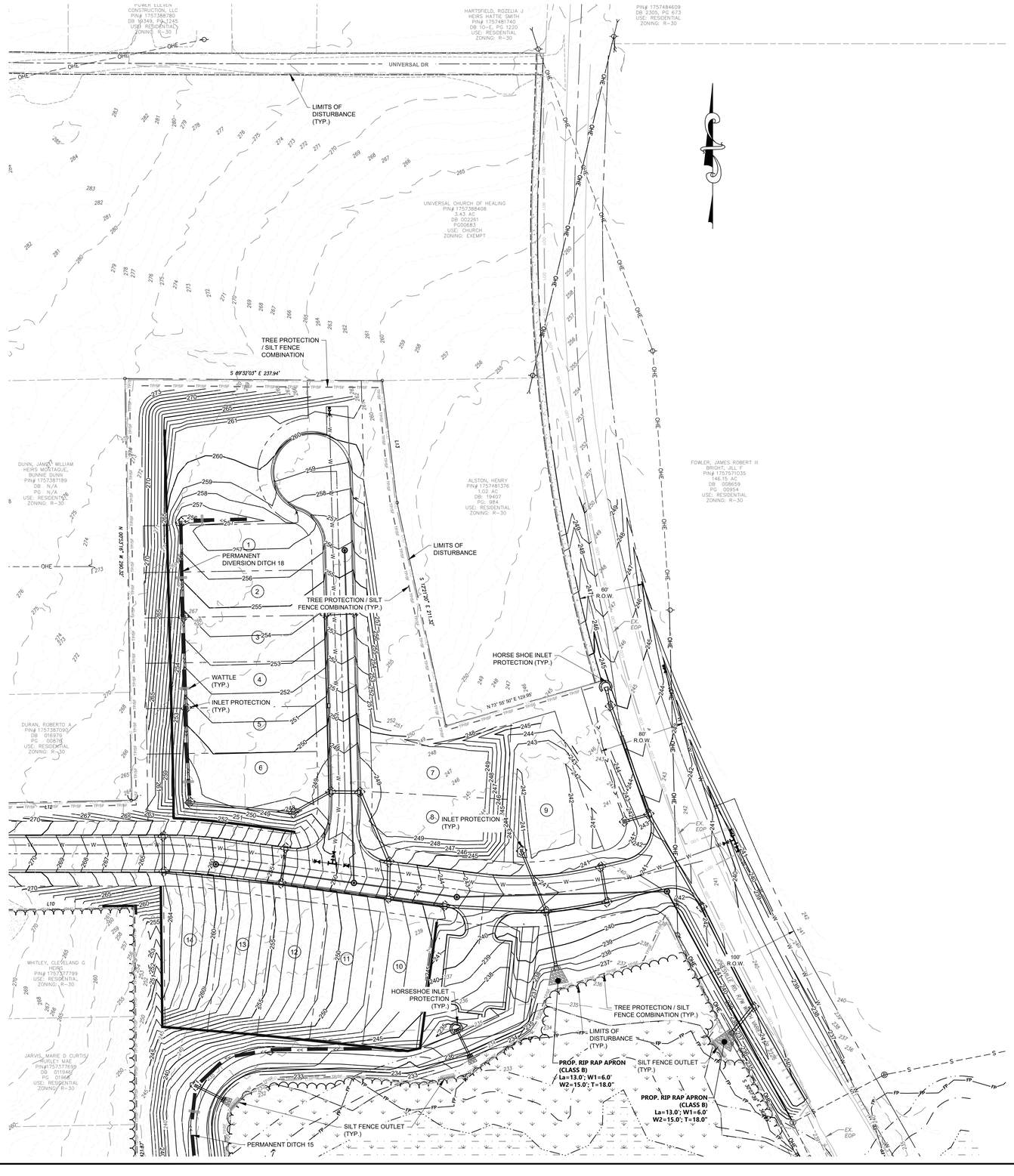
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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

EC PLAN STAGE 3
SHEET 4 OF 6

Sheet #:

30



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- SKIMMER
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- HORSE SHOE INLET PROTECTION
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(IN FEET)
1 inch = 50 ft

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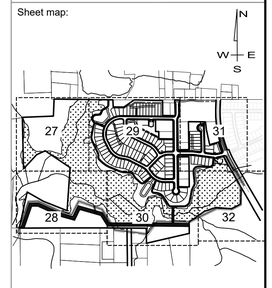
BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

Rolesville
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 **(PSP-24-05)**

Other Consultants

Sheet map:



Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

Bryan Harris
Digitally signed by Bryan Harris
DN: C=US, E=BryanH@QuantechEng.com, O=Quantech Engineering LLP, CN=Bryan Harris
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Date: 2025.09.03 16:52:07-04'00'

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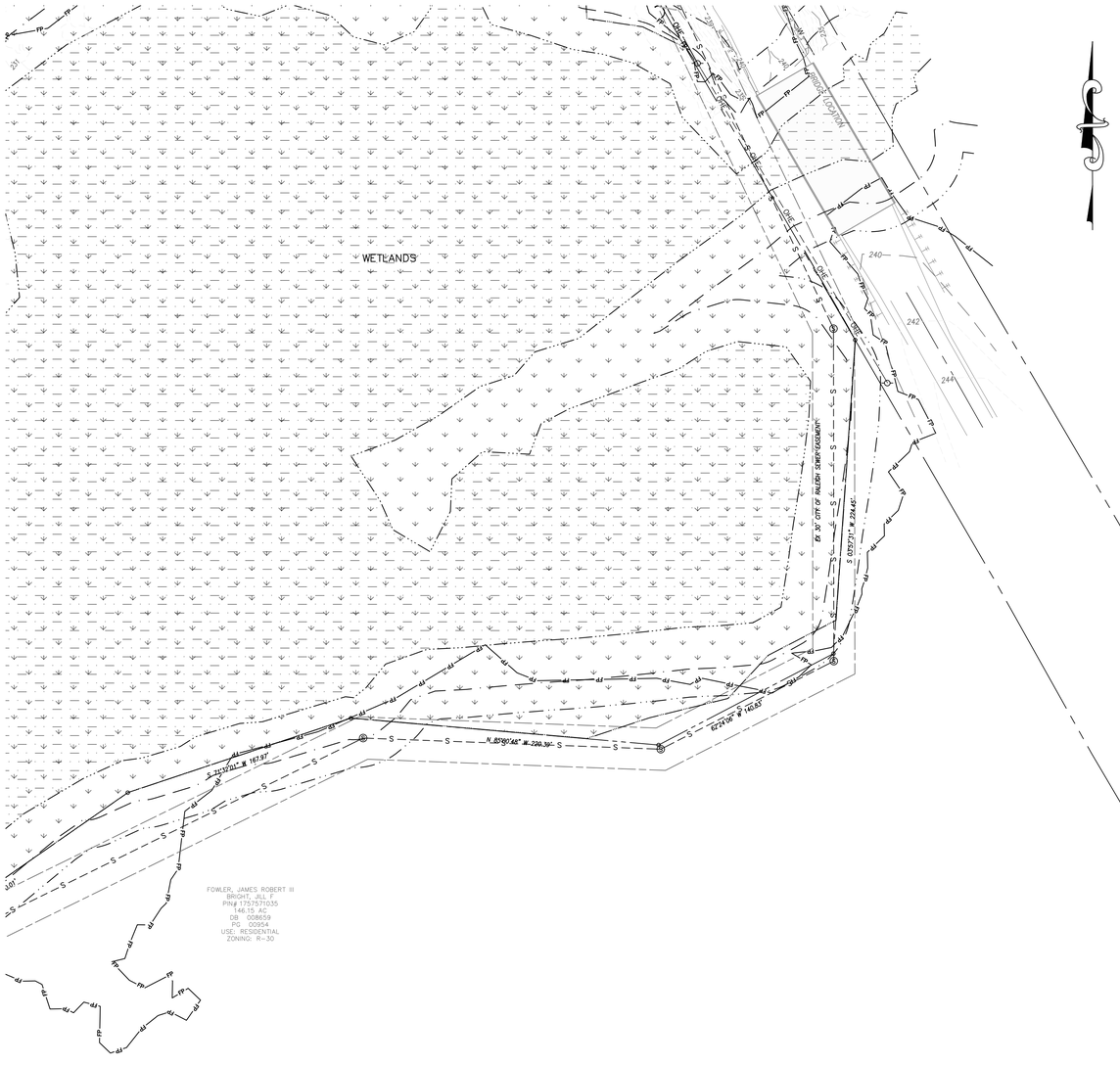
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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

EC PLAN STAGE 3 SHEET 5 OF 6

Sheet #:

31



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PG 00954
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DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 3)

LIMITS OF DISTURBANCE	LOD LOD
TREE PROTECTION/SILT FENCE COMBINATION	TP/SF TP/SF TP/SF
SILT FENCE	x x
SILT FENCE OUTLET	
SKIMMER	
INLET PROTECTION	
HORSE SHOE INLET PROTECTION	
DITCH WATTLE	
EXISTING TREELINE	
PROPOSED TREELNE	
PERMANENT DIVERSION DITCH	>>

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg

Developer

THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor

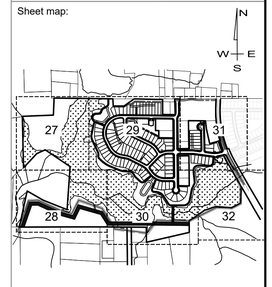
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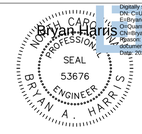
Rolesville
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:



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File Name: 20 Overall PHASE 1 Erosion Control Plan.dwg

Last Saved by: BryanHarris
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Project:

HARRIS CREEK FARMS

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PROGRESS DRAWINGS
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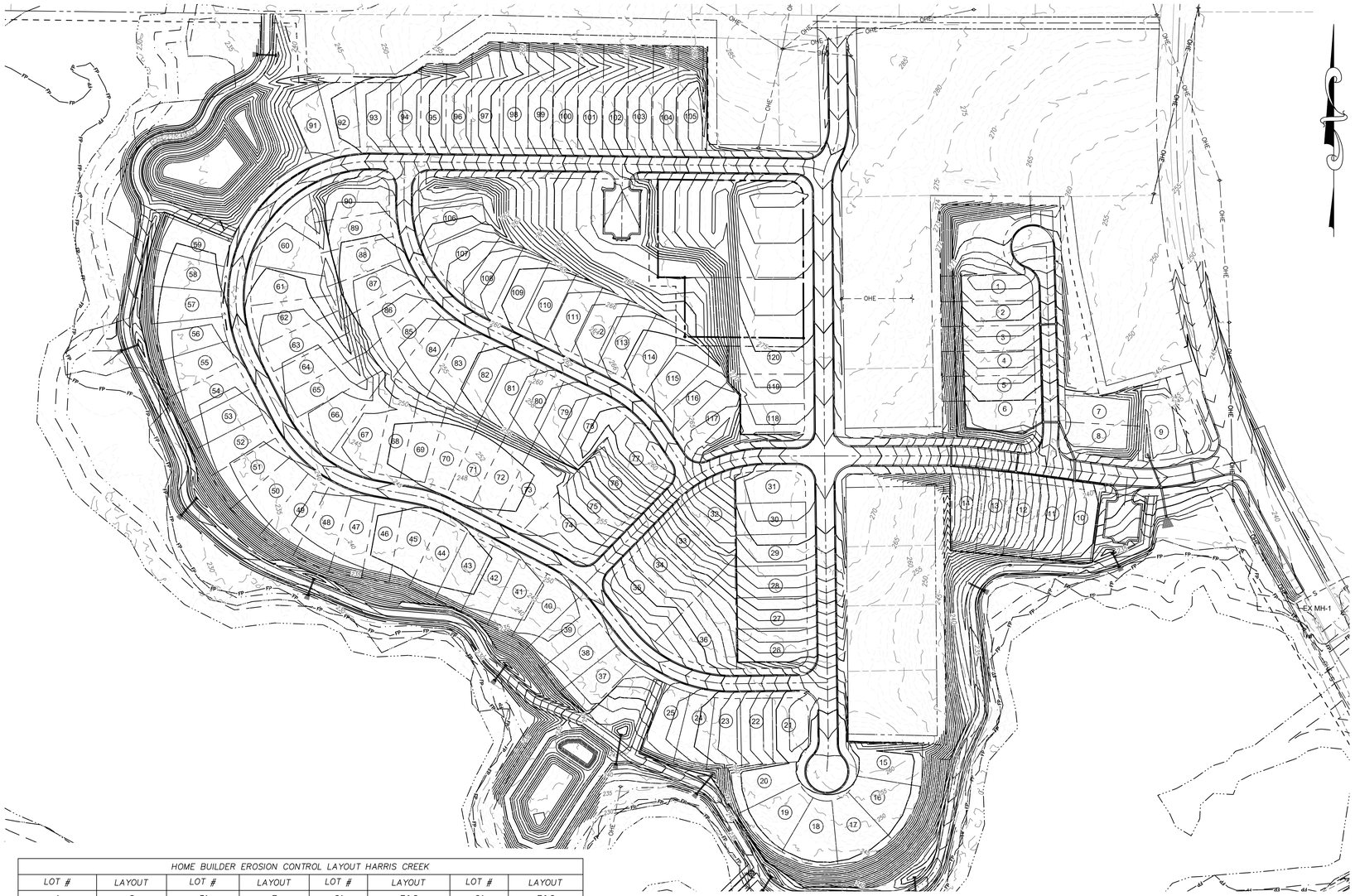
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Sheet Title:

EC PLAN STAGE 3
SHEET 6 OF 6

Sheet #:

32



WAKE COUNTY EROSION CONTROL SEQUENCE

1. Schedule a preconstruction conference with the Environmental Consultant. Obtain a land disturbing permit.
2. Install gravel construction pad, temporary diversions, silt fence, sediment basins or other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.
3. Call Environmental Consultant for an onsite inspection by the Environmental Consultant to obtain a Certificate of Compliance.
4. Begin clearing and grubbing. Maintain devices as needed. Rough grade site.
5. Install storm sewer, if shown, and protect inlets with block and gravel inlet controls, sediment traps or other approved measures as shown on the plan. Begin construction, building, etc.
6. 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.
7. When construction is complete and all areas are stabilized completely, call Environmental Consultant for an inspection.
8. 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 dissipators, should now be installed.
9. When vegetation has become established, call for a final site inspection by the Environmental Consultant. Obtain a Certificate of Completion.

NPDES SELF INSPECTION PROGRAM

1. EFFECTIVE OCTOBER 1, 2010, PERSONS CONDUCTING LAND-DISTURBING ACTIVITY LARGER THAN ONE ACRE MUST INSPECT THEIR PROJECT AFTER EACH PHASE OF THE PROJECT, AND DOCUMENT THE INSPECTION IN WRITING. EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO, SEDIMENTATION CONTROL BASINS, SEDIMENTATION TRAPS, ROCK DAMS, TEMPORARY DIVERSIONS, TEMPORARY SLOPE DRAINS, SEDIMENT FENCE OR BARRIERS, ALL FORMS OF INLET PROTECTION, STORM DRAINAGE FACILITIES, ENERGY DISSIPATERS, AND STABILIZATION METHODS OF OPEN CHANNELS MUST BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY, LANDOWNER, OR THEIR AGENT. THE SELF-INSPECTION REPORTING FORM IS AVAILABLE AS PDF FROM THE LAND QUALITY WEB SITE: https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms
2. IN ADDITION TO THE INSPECTIONS BY THE CONTRACTOR, THE OWNER, THE FINANCIALLY RESPONSIBLE PARTY, OR THEIR AGENT MUST CONDUCT INSPECTIONS IN ACCORDANCE WITH THE STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY CONSTRUCTION GENERAL PERMIT NCG 010000 SELF-INSPECTION PROGRAM AND REPORTING REQUIREMENTS TO MONITOR AND MAINTAIN A RAIN GAUGE, RECORDS, PERMIT, AND S&E PLAN ON SITE.

EROSION CONTROL NOTES

1. TREE PROTECTION FENCE LINE ALSO INCLUDE THE LIMITS OF DISTURBANCE FOR THAT SECTION.
2. A COPY OF THE APPROVED EROSION CONTROL PLAN AND PERMIT PLACARD MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
3. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND WAKE COUNTY STANDARDS, SPECIFICATIONS AND DETAILS.
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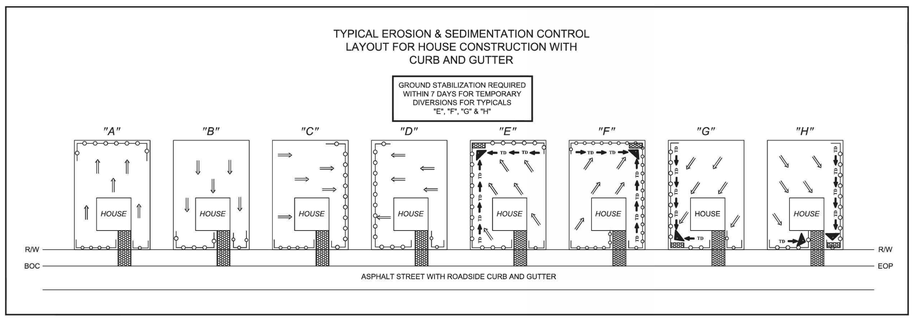
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HOME BUILDER EROSION CONTROL LAYOUT HARRIS CREEK							
LOT #	LAYOUT	LOT #	LAYOUT	LOT #	LAYOUT	LOT #	LAYOUT
1	G	31	E	61	E&G	91	E&G
2	G	32	E	62	E&G	92	E&G
3	G	33	C	63	E&G	93	E&G
4	G	34	C	64	E&G	94	E&G
5	G	35	C	65	E&G	95	E&G
6	G	36	C	66	E&G	96	E&G
7	E	37	C	67	E&G	97	E&G
8	F	38	E&G	68	E&G	98	E&G
9	G	39	E&G	69	E&G	99	E&G
10	E&G	40	E&G	70	A&B	100	E&G
11	E&G	41	E&G	71	A&B	101	E&G
12	E&G	42	E&G	72	F&H	102	E&G
13	E&G	43	E&G	73	F&H	103	E&G
14	E&G	44	E&G	74	D	104	E&G
15	E&G	45	H&F	75	E	105	E&G
16	E	46	H&F	76	E	106	E&G
17	A	47	H&F	77	E	107	E&G
18	A	48	H&F	78	F&H	108	E&G
19	A	49	H&F	79	F&H	109	E&G
20	A	50	H&F	80	F&H	110	E&G
21	F	51	H&F	81	F&H	111	E&G
22	F&H	52	H&F	82	F&H	112	E&G
23	F&H	53	H&F	83	F&H	113	E&G
24	F&H	54	H&F	84	F&H	114	E&G
25	F&H	55	H&F	85	F&H	115	E&G
26	F&H	56	H&F	86	F&H	116	E&G
27	E	57	H&F	87	F&H	117	D
28	E	58	H&F	88	F&H	118	D
29	E	59	H&F	89	F&H	119	E&G
30	E	60	H	90	F&H	120	E&G

TYPICAL EROSION & SEDIMENTATION CONTROL
LAYOUT FOR HOUSE CONSTRUCTION WITH
CURB AND GUTTER

GROUND STABILIZATION REQUIRED WITHIN 7 DAYS FOR TEMPORARY DIVERSIONS FOR TYPICALS "E", "F", "G" & "H"



DISTURBED AREA = 45.28 ACRES

EROSION CONTROL LEGEND (PHASE 3)

- LIMITS OF DISTURBANCE
- TREE PROTECTION/SILT FENCE COMBINATION
- SILT FENCE
- SILT FENCE OUTLET
- SKIMMER
- INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- DITCH WATTLE
- EXISTING TREELINE
- PROPOSED TREELNE
- PERMANENT DIVERSION DITCH

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft

N.C. UNDERGROUND UTILITIES
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3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
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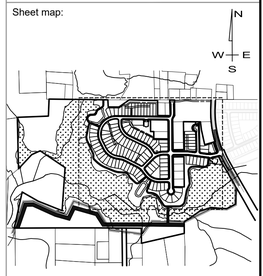
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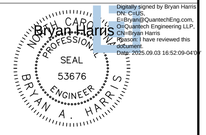
Rolesville
Granville County • Capital Connection
Est. 1837
Town of Rolesville
502 Southtown Cir
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Phone: 919-554-6517
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Other Consultants

Sheet map:



Seal:



Issued / Print Date: 2025-September-02 (16:51)
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Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

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PROGRESS DRAWINGS
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REVISIONS

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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

EC HOMEBUILDER PLAN

Sheet #:

33

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg

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 (SDOs)	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 stream or wetlnad 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)(e) 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 timeframe 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

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

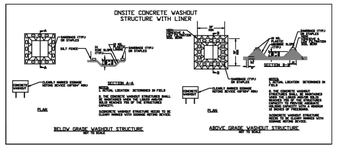
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, 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.



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.

NORTH CAROLINA *Environmental Quality*

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

DATE: PAGE:

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
CONSTRUCTION ACCESS: Construction entrance, construction routes, equipment parking areas.	First land-disturbing activity- Stabilize bare areas immediately with gravel and temporary vegetation as construction takes place.
SEDIMENT TRAPS AND BARRIERS: Basin traps, sediment fences, and outlet protection.	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
RUNOFF CONTROL: Diversions, perimeter dikes, water bars, and outlet protection.	Install key practices after principal sediment traps and before land grading. Install additional runoff-control measures during grading.
RUNOFF CONVEYANCE SYSTEM: Stabilize streambanks, storm drains, channels, inlet and outlet protection, and slope drains.	Where necessary, stabilize streambanks as early as possible. Install principal runoff conveyance system with runoff-control measures. Install remainder of system after grading.
LANDING CLEARING AND GRADING: Site preparation- cutting, filling and grading, sediment traps, barriers, diversions, drains, and surface roughening.	Begin major clearing and grading **AFTER** principal sediment and key runoff-control measures are installed. Clear borrow and disposal areas only as needed. Install additional control measures as grading progresses. Mark trees and buffer areas for preservation.
SURFACE STABILIZATION: Temporary and permanent seeding, mulching, sodding and riprap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
BUILDING CONSTRUCTION: Buildings, utilities, and paving.	Install necessary additional erosion and sedimentation control practices as work takes place.
LANDSCAPE AND FINAL STABILIZATION: Topsoiling, trees and shrubs, permanent seeding, mulching, sodding, and riprap.	Last construction phase: Stabilize all open areas, including borrow and spoil areas. Remove and stabilize all temporary control areas.

NOTE: The above are the main aspects of a typical construction sequence in general terms. A detailed Construction Sequence should be site specific based on your project and site needs. As a minimum, the construction sequence schedule should show the following:

- The erosion and sedimentation control practices to be installed,
- Principal development activities,
- What measures should be in place before other activities are begun, and
- Compatibility with the general construction schedule of the contract.

Many timely construction techniques can reduce the erosion potential of a site, such as (1) shaping earthen fills daily to prevent overflows and (2) constructing temporary diversions ahead of anticipated storms. These types of activities cannot be put on the construction sequence schedule, but should be used whenever possible.

DEQ

CONSTRUCTION SEQUENCING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

SPACING GUIDE FOR SLOPE BREAKS		
	SLOPE	SPACING (FT)
Steep Slopes	2:1	20
	3:1	35
	4:1	45
Long Slopes	15-25%	50
	10-15%	80
	6-10%	125
	3-6%	200
	<3%	300

Use slope breaks, such as diversions, wattles, or benches, as appropriate, to reduce the length of cut-and-fill slope to limit sheet and rill erosion and prevent gullying.

MAINTENANCE:

1. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls.
2. Promptly remove all sediment from diversions and other water-disposal practices.
3. If washouts or breaks occur, repair immediately.
4. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

NOTES:

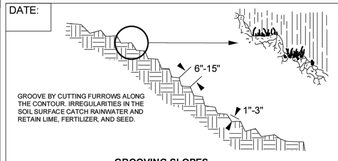
1. Construct and maintain all erosion and sediment control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (subsurface drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 days or longer.
12. Show topsoil, stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

DEQ

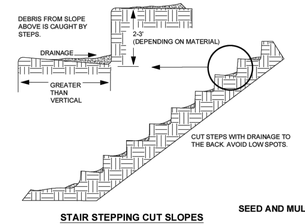
LAND GRADING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:



GROOVING SLOPES



STAIR STEPPING CUT SLOPES

CUT SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Stair-step grade or groove cut slopes with a gradient steeper than 3:1.
2. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-stepping.
3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.
5. Grooving uses machinery to create a series of ridges and depressions that run across the slope (on the contour).
6. Groove using any appropriate implement that can be safely operated on the slope. Such as disks, tillers, spring harrows, or the teeth on a front-end loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.

FILL SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED:

1. Make mowed slopes **no steeper than 3:1**
2. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of a cultpacker-seeder. Make the final pass of any such tillage implement on the contour.
3. Make grooves, formed by such implements, close together (less than 10 inches) and not less than 1 inch deep.
4. Excessive roughness is undesirable where mowing is planned.

ROUGHENING WITH TRACKED MACHINERY:

1. Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

SEED AND MULCH ROUGHENED AREAS IMMEDIATELY TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

DEQ

SURFACE ROUGHENING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

Developer

THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor

BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

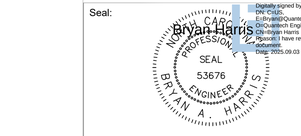
Jurisdiction / Municipality

Rolesville
Genuine Community • Capital Connection
Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

Seal:



Issued / Print Date: 2025-September-02 (16:51)
File Name: 20 Overall PHASE 1 Erosion Control Plan.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

Issued for:

PROGRESS DRAWINGS
DO NOT USE FOR CONSTRUCTION

REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

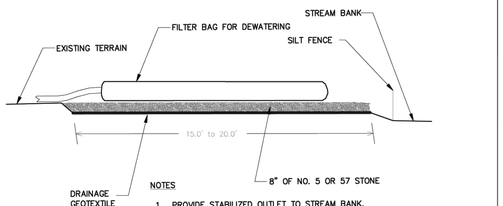
EROSION CONTROL DETAILS

Sheet #:

34

N.C. UNDERGROUND UTILITIES
811
3 DAYS BEFORE DIGGING CALL
TOLL FREE 811 or (800)632-4949
A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg



NOTES

1. PROVIDE STABILIZED OUTLET TO STREAM BANK.
2. 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.

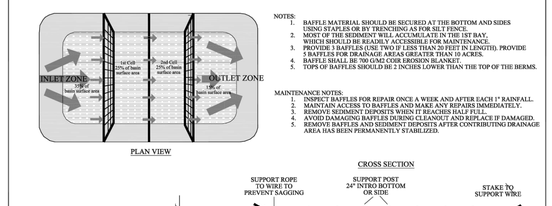
MAINTENANCE NOTES

1. REPLACE AND DISPOSE OF FILTER BAG(S) WHEN IT IS ½ FULL OF SEDIMENT OR WHEN IT IS IMPRCTICAL FOR BAG TO FILTER SEDIMENT.
2. PROVIDE A SUFFICEINT QUANTITY OF FILTER BAGS TO CONTAIN SILT FROM PUMPED EFFLUENT.

NOT TO SCALE

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD FILTER BAG FOR DEWATERING ACTIVITIES



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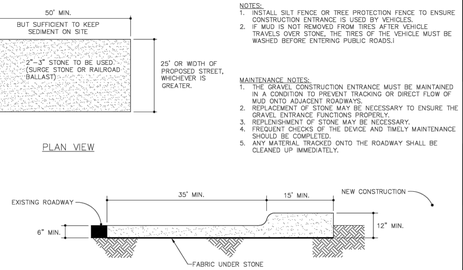
1. BAFFLE MATERIAL SHOULD BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE INSTALLATION.
2. MOST OF THE SEDIMENT WILL ACCUMULATE IN THE 1ST BAY, WHICH SHOULD BE READILY ACCESSIBLE FOR MAINTENANCE.
3. PROVIDE 3 BAFFLES (USE TWO IF LESS THAN 20 FEET IN LENGTH). PROVIDE 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.

MAINTENANCE NOTES:

1. INSPECT BAFFLES FOR REPAIR ONCE A WEEK AND AFTER EACH 1" RAINFALL.
2. MAINTAIN ACCESS TO BAFFLES AND MAKE ANY REPAIRS IMMEDIATELY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL.
4. AVOID DAMAGING BAFFLES DURING CLEANOUT AND REPLACE IF DAMAGED.
5. REMOVE BAFFLES AND SEDIMENT DEPOSITS AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD BAFFLES DETAIL



NOTES:

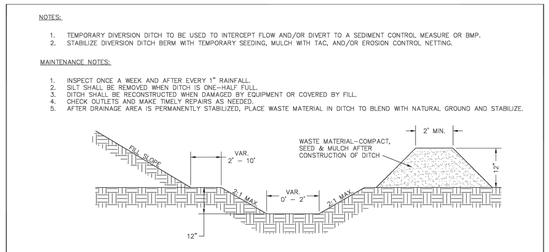
1. INSTALL SILT FENCE OR TREE PROTECTION FENCE TO ENSURE CONSTRUCTION ENTRANCE IS USED BY VEHICLES.
2. IF MUD IS NOT REMOVED FROM TIRES AFTER VEHICLE TRAVELS OVER STONE, THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING PUBLIC ROADS.

MAINTENANCE NOTES:

1. THE GRAVEL CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO ADJACENT ROADWAYS.
2. REPLACEMENT OF STONE MAY BE NECESSARY TO ENSURE THE GRAVEL ENTRANCE FUNCTIONS PROPERLY.
3. REPLENISHMENT OF STONE MAY BE NECESSARY.
4. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE SHOULD BE COMPLETED.
5. ANY MATERIAL TRACKED ONTO THE ROADWAY SHALL BE CLEANED UP IMMEDIATELY.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD CONSTRUCTION ENTRANCE



NOTES:

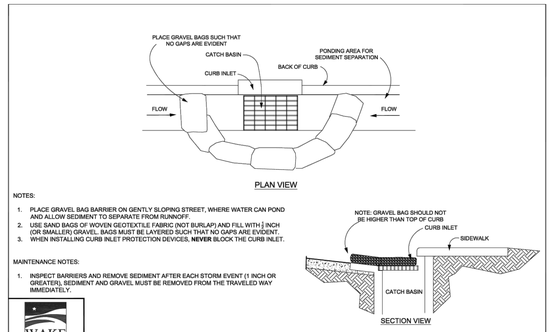
1. TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
2. STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

MAINTENANCE NOTES:

1. INSPECT ONCE A WEEK AND AFTER EVERY 1" RAINFALL.
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. CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
5. AFTER DRAINAGE AREA IS PERMANENTLY STABILIZED, PLACE WASTE MATERIAL IN DITCH TO BLEND WITH NATURAL GROUND AND STABILIZE.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD TEMPORARY DIVERSION DITCH



NOTES:

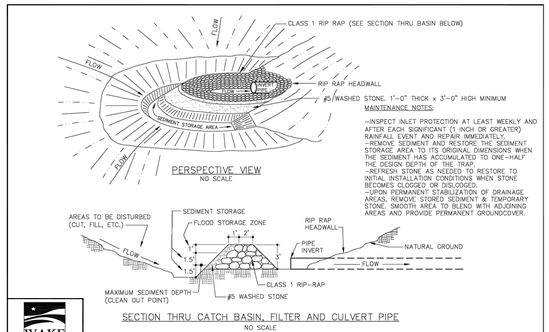
1. PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.
2. USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH [INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. WHEN INSTALLING CURB INLET PROTECTION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

MAINTENANCE NOTES:

1. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT (1 INCH OR GREATER). SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD GRAVEL BAG CURB INLET PROTECTION

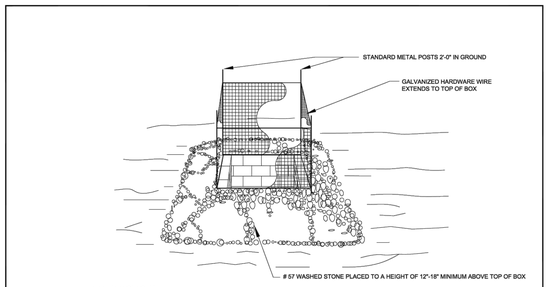


MAINTENANCE NOTES:

–INSPECT INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
–REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE–HALF THE DESIGN DEPTH OF THE TRAP.
–REFRESH STONE AS NEEDED TO RESTORE TO INITIAL INSTALLATION CONDITIONS WHEN STONE BECOMES CLOGGED OR DISLODGED.
–UPON PERMANENT STABILIZATION OF DRAINAGE AREAS, REMOVE STORED SEDIMENT & TEMPORARY STONE, SMOOTH AREA TO BLEND WITH ADJOINING AREAS AND PROVIDE PERMANENT GROUNDCOVER.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD HORSESHOE INLET PROTECTION

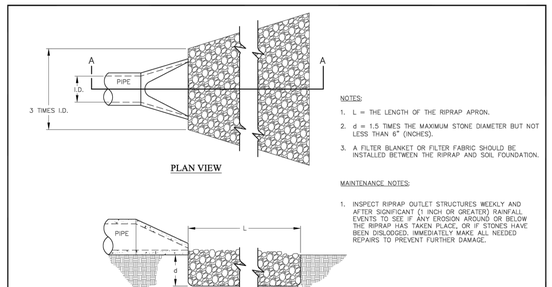


MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN HALF HEIGHT OF STONE AND CLEAR HARDWARE OF DEBRIS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS, TAKING CARE NOT TO DAMAGE OR UNDERCUT HARDWARE DURING SEDIMENT REMOVAL.
2. REPLACE STONE AS NEEDED.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD GRAVEL YARD INLET PROTECTION



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.

MAINTENANCE NOTES:

1. INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL

Seedbed Preparation:

1. Chisel compacted areas and spread topsoil three inches deep over adverse soil conditions, if available.
2. Rip the entire area to six inches deep.
3. Remove all loose rock, roots and other obstructions, leaving surface reasonably smooth and uniform.
4. Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see mixture below).
5. Continue tillage until a well-pulverized, firm, reasonably uniform seedbed is prepared four to six inches deep.
6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
7. Mulch immediately after seeding and anchor mulch.
8. Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be more than 60% damaged, reestablish following the original lime, fertilizer and seeding rates.
9. Consult Wake County Soil & Water or NC State Cooperative Extension on maintenance treatment and fertilization after permanent cover is established.

Mixture:

Agricultural Limestone	2 tons/acre (3 tons/acre in clay soils)
Fertilizer	1,000 lbs/acre – 10-10-10
Superphosphate	500 lbs/acre – 20% analysis
Mulch	2 tons/acre – small grain straw
Anchor	Asphalt emulsion at 400 gals/acre

Seeding Schedule:

For Shoulders, Side Ditches, Slopes (Max 3:1):

Date	Type	Planting Rate
Aug 15–Nov 1	Tall Fescue	300 lbs/acre
Nov 1–Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre
Mar 1–Apr 15	Tall Fescue	300 lbs/acre
Apr 15–Jun 30	Hulled Common Bermudagrass	25 lbs/acre
Jul 1–Aug 15	Tall Fescue AND Browntop Millet or Sorghum-Sudan Hybrids***	125 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum-Sudan Hybrids)

For Shoulders, Side Ditches, Slopes (3:1 to 2:1):

Date	Type	Planting Rate
Mar 1–Jun 1	Sericea Lespedeza (scarified) and use the following combinations:	50 lbs/acre (Sericea Lespedeza);
Mar 1–Apr 15	Add Tall Fescue	120 lbs/acre
Mar 1–Jun 30	Or add Weeping Love grass	10 lbs/acre
Mar 1–Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
Jun 1–Sept 1	Tall Fescue AND Browntop Millet or Sorghum-Sudan Hybrids***	120 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Mullet); 30 lbs/acre (Sorghum-Sudan Hybrids)
Sept 1–Mar 1	Sericea Lespedeza (unhulled unscarified) AND Tall Fescue	70 lbs/acre (Sericea Lespedeza); 120 lbs/acre (Tall Fescue)
Nov 1–Mar 1	AND Abruzzi Rye	25 lbs/acre

Consult Wake County Soil & Water Conservation District or NC State Cooperative Extension for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those that do well under local conditions; other seeding rate combinations are possible.

*** TEMPORARY: Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow more than 12" in height before mowing; otherwise, fescue may be shaded out.

Required Wake County Construction Sequence*

1. **Schedule a preconstruction conference with the Environmental Consultant. Obtain a land disturbing permit.**
2. **Install gravel construction pad, temporary diversions, silt fence, sediment basins, and other measures as shown on the approved plan. Clear only as necessary to install these devices. Seed temporary diversions, berms and basins immediately after construction.**
3. **Call Environmental Consultant for an onsite inspection by the Environmental Consultant to obtain a Certificate of Compliance.**
4. **Begin clearing and grubbing. Maintain devices as needed. Rough grade site and seed all slopes.**
5. **Install storm sewer with inlet protection devices as per plans or other approved measures as shown on the plan. Build retaining walls as per plans except for areas where the sediment basins are. Ensure area for sediment #3 & #4 drainage area is well stabilized.**
6. **Call Wake County Environmental Consultant for an inspection to get approval to remove sediment basins #3 & #4.**
7. **Upon authorization from Wake County, remove sediment basins #3 & #4.**
8. **Complete rest of wall construction and install infrastructures (sewer & water)**
9. **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.**
10. **When construction is complete and all areas are stabilized completely, call Environmental Consultant for an inspection.**
11. **If site is approved, convert sediment basin #1 & #2 into SCM's as per the plans. You can remove temporary diversions, silt fence, etc. for areas not adjacent to the SCM, and seed out or stabilize any resulting bare areas. All remaining permanent erosion control devices, such as velocity dissipators, should now be installed.**
12. **When SCM's are established and before any wetpond plantings, call engineer to inspect SCM.**
13. **After engineer approves SCM, plant wet pond plants and ensure rest of site is stabilized.**
14. **When vegetation has become established, call for a final site inspection by the Environmental Consultant. Obtain a Certificate of Completion.**

Soil stockpiles shall be located on the approved plan and shall adhere to the following requirements:

Criteria's

a. A 25-foot temporary maintenance and access easement shall be shown around all proposed stockpiles (erosion control measures surrounding the stockpile shall be shown at the outer limit of this easement).
b. Stockpile footprints shall be setback a minimum of 25' from adjacent property lines.
c. Stockpile height shall not exceed 35 feet.
d. Stockpile slopes shall be 2:1 or flatter.
e. Approved BMPs shall be shown on a plan to control any potential sediment loss from a stockpile.
f. Stockpiling materials adjacent to a ditch, drainageway, watercourse, wetland, stream buffer, or other body of water shall be avoided unless an alternative location is demonstrated to be unavailable.
g. Any concentrated flow likely to affect the stockpile shall be diverted to an approved BMP.
h. Off-site spoil or borrow areas must be in compliance with Wake County UDO and State Regulations. All spoil areas over an acre are required to have an approved sediment control plan. Developer/Contractor shall notify Wake County of any offsite disposal of soil, prior to disposal. Fill of FEMA Floodways and Non-encroachment Areas are prohibited except as otherwise provided by subsection 14-19-2 of the Wake County Unified Development Ordinance (certifications and permits required).

Maintenance Requirements

i. Seeding or covering stockpiles with tarps or mulch is required and will reduce erosion problems. Tarps should be keyed in at the top of the slope to keep water from running underneath the plastic.
j. If a stockpile is to remain for future use after the project is complete (builders, etc.), the financial responsible party must notify Wake County of a new responsible party for that stockpile.
k. The approved plan shall provide for the use of staged seeding and mulching on a continual basis while the stockpile is in use.
l. Establish and maintain a vegetative buffer at the toe of the slope (where practical).

N.C. UNDERGROUND UTILITIES
811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

Developer

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CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer

QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor

BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

Rolesville Est. 1837 Genuine Community • Capital Connection
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

Seal:

NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS
Bryan Harris
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Issued / Print Date: 2025-September-02 (16:51)
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Project:

HARRIS CREEK FARMS

CID-25-03

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REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

EROSION CONTROL DETAILS

Sheet #:

35

File Location: C:\Users\BryanHarris\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg

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Design Criteria

Drainage Area:		5 acres or less	
Dike Design		**Channel Design**	
Side Slope:	2:1 or flatter	Shape:	Parabolic, Trapezoidal, or V-Shaped
	3:1 of flatter where vehicles must cross	Side Slope:	2:1 or flatter
Width:	2.0 ft minimum		3:1 or flatter where vehicles must cross
Height:	1.5 ft minimum	Stabilization:	Based on velocity of reaches
Freeboard:	0.5 ft minimum		
Settlement:	10% of total fill height minimum		

NOTES:
1. Remove and properly dispose of all trees, brush, stumps, and other objectionable material. Fill and compact all ditches and gullies that will be crossed by machinery to natural ground level or above.
2. Disk the base of the dike before placing fill.
3. Ensure that the constructed cross section meets all design requirements.
4. Compact the dike by tracking with construction equipment.
5. Divert all sediment laden water into a temporary sediment trap or sediment basin. Runoff from undisturbed areas should empty into an outlet protection device such as a level spreader or riprap outlet structure unless well stabilized natural outlets exist.
6. Ensure that the top of the dike is not lower at any point than the design elevation plus the specified settlement after it has been compacted.
7. Leave sufficient area along the dike to permit machine re-grading and cleanout.
8. Immediately seed and mulch the dike after its construction, and stabilize the flow portion in accordance with design requirements.

Maintenance:
1. Inspect diversion dikes at least weekly and after each rainfall of 1.0 inch or greater.
2. Immediately remove sediment from the flow area and repair the dike.
3. Check outlets, and make timely repairs as needed to avoid gully formation.
4. when area above the temporary diversion dike is permanently stabilized, remove the dike, and fill and stabilized the channel to blend with the natural surface.

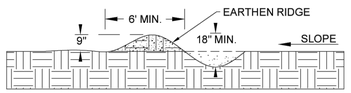
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DIVERSION DIKE (PERIMETER PROTECTION)

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

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NOTES:
1. Side slopes should be 2:1 or flatter in all cases and 3:1 or flatter where vehicles cross.
2. Diversions should have stable outlets, either natural or constructed. Site spacing may need to be adjusted for field conditions to use the most suitable areas for water disposal.
3. Install the diversion as soon as the right-of-way has been cleared and graded.
4. Disk the base for the constructed ridge before placing fill.
5. Track the ridge to compact it to the design cross section.
6. Locate the outlet on an undisturbed area. Adjust field spacing on the diversion to use the most stable outlet areas. When natural areas are not deemed satisfactory, provide outlet protection.
7. Immediately seed and mulch the portions of the diversions not subject to construction traffic. Areas to be crossed by vehicles should be stabilized with gravel.

Spacing of Water Bars on Right-of-Way Less than 100 ft Wide

Slope (%)	Spacing (ft)
<5	125
5 to 10	100
10 to 20	75
20 to 35	50
>35	25

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Inspect diversions for wear and repair immediately.
2. Immediately remove sediment from the flow area, and repair the dike.
3. Check outlet areas, and make timely repairs as needed.
4. Once permanent road drainage is established and the area above the temporary right-of-way diversions are permanently stabilized, removed the dike, fill the channel to blend with the natural ground and appropriately stabilize all disturbed areas.

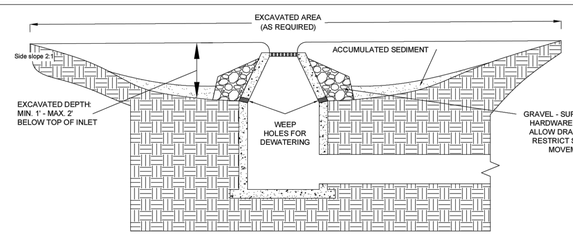
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RIGHT-OF-WAY DIVERSIONS (WATER BARS)

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

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Notes:
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Grade the approach to the inlet uniformly.
3. Protect weep holes by gravel.
4. When the contributing drainage area has been permanently stabilized, seal weep holes, fill the basin with stable soil to final grading elevations, compact it properly and stabilize.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater.
2. Clean, and properly maintain the excavated basin after every storm until the contributing drainage area has been permanently stabilized.
3. remove sediment when the volume of the basin has been reduced by one-half.
4. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize appropriately.

DEQ

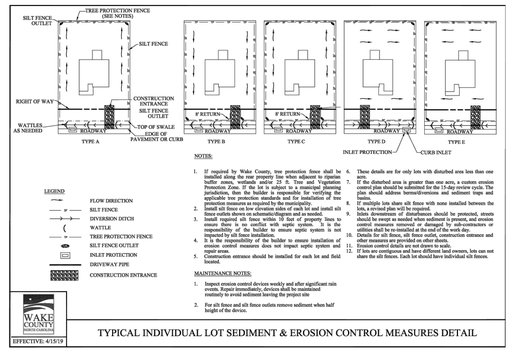
EXCAVATED DROP INLET PROTECTION (TEMPORARY)

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

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811
3 DAYS BEFORE DIGGING CALL
TOLL FREE 811 or (800)632-4949
A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

Required Wake County 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: Wake County, Wake County 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.**
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.**

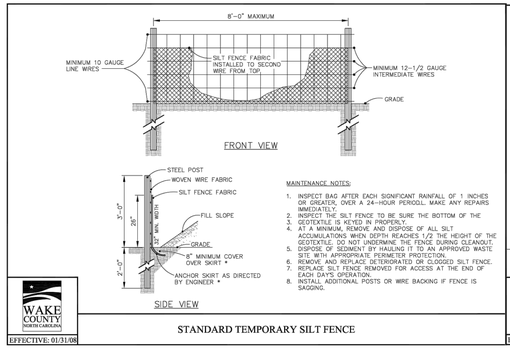


WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 4/15/19

TYPICAL INDIVIDUAL LOT SEDIMENT & EROSION CONTROL MEASURES DETAIL

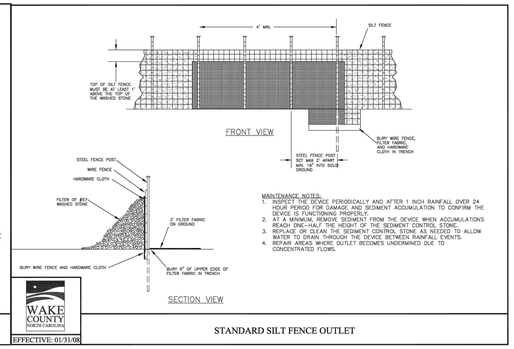
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Creek Farm - Jonesville\Engineering_DWG\Details\EC\COR - Tree Protection Fence - TPP-01.pdf



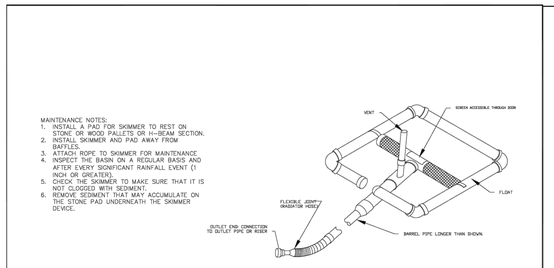
WAKE COUNTY NORTH CAROLINA
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STANDARD TEMPORARY SILT FENCE



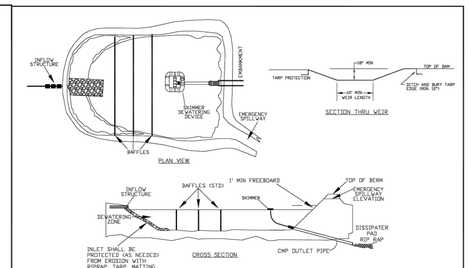
WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD SILT FENCE OUTLET



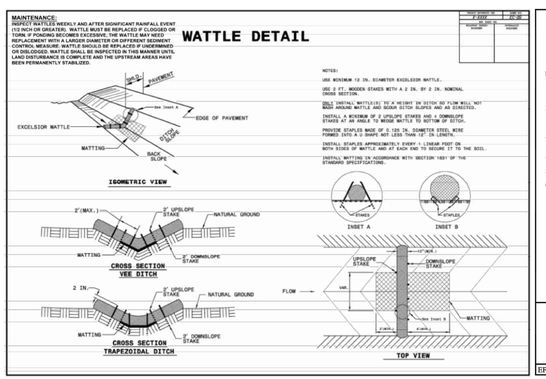
WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD SKIMMER DETAIL



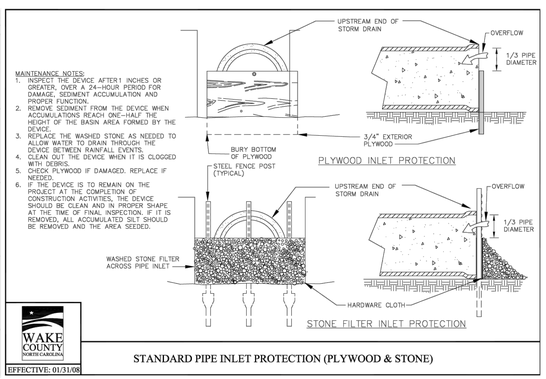
WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD SKIMMER BASIN



WAKE COUNTY NORTH CAROLINA
EFFECTIVE: 01/31/08

STANDARD PIPE INLET PROTECTION (PLYWOOD & STONE)



Developer
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10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer
QUANTECH ENGINEERING
INNOVATIVE SOLUTIONS | ENGINEERING THE FUTURE
Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor
BCSC
BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality
Rolesville
Growing Community • Capital Connection
Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

Bryan Harris
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Project:

HARRIS CREEK FARMS

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No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

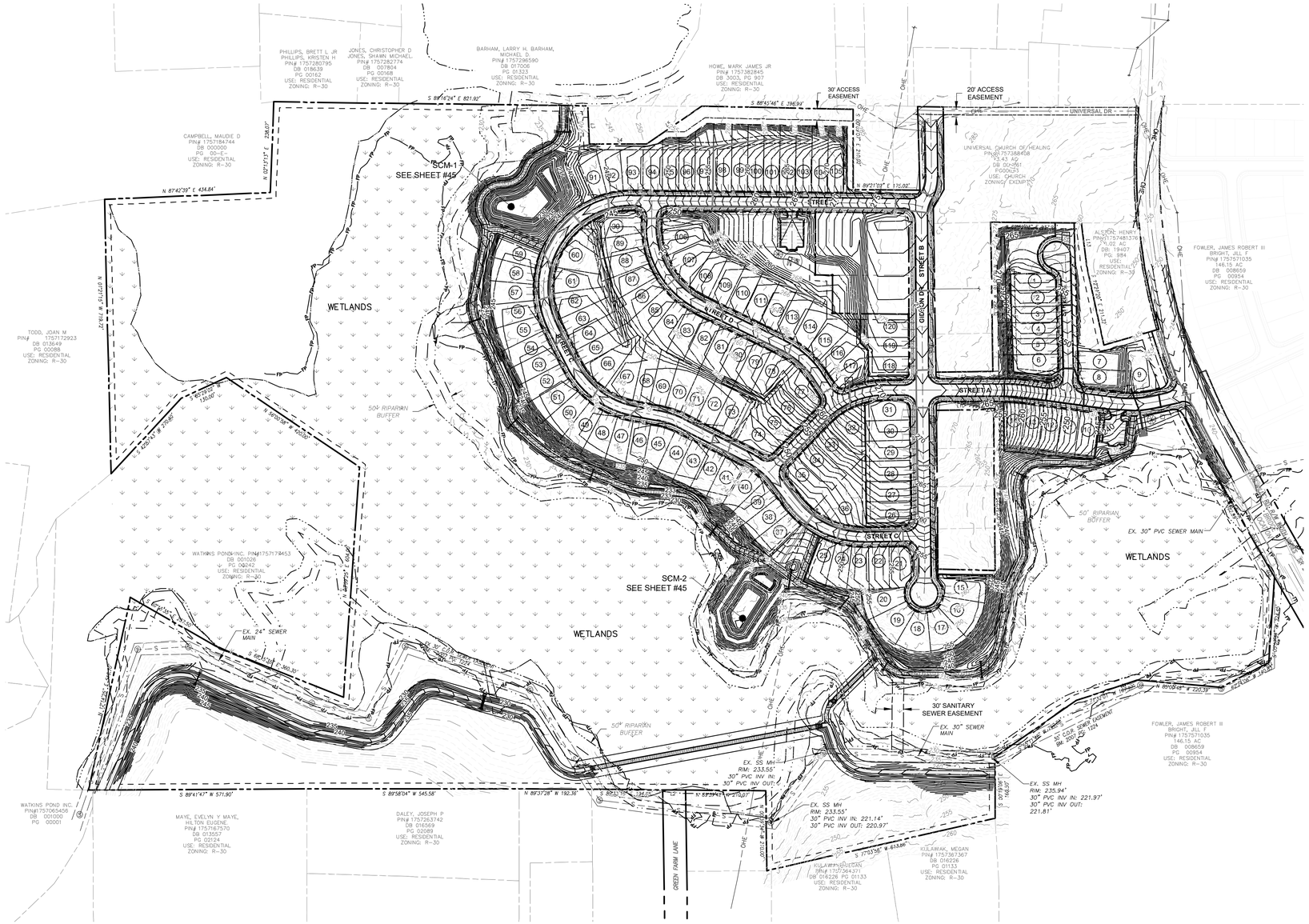
Sheet Title:

EROSION CONTROL DETAILS

Sheet #:

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File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\20 Overall PHASE 1 Erosion Control Plan.dwg



GRADING PLAN LEGEND

EXISTING MAJOR CONTOUR	
EXISTING MINOR CONTOUR	
PROPOSED MINOR CONTOUR	
PROPOSED MAJOR CONTOUR	
PROPOSED BOUNDARY	
PROPOSED R.O.W.	
EXISTING SEWER LINE	S
EXISTING SEWER MANHOLE	Ⓢ
PROPOSED SEWER LINE	
PROPOSED SEWER MANHOLE	
EXISTING WATER LINE	W
PROPOSED WATERLINE	W
EXISTING EASEMENT	
PROPOSED EASEMENT	
PROPOSED STORM WATER INLET	*
PROPOSED STORM PIPE	
PROPOSED RETAINING WALL	

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

1 inch = 150 ft

STORM PIPE NETWORK NOTES:

1. SEE SHEET #44 "STORM PIPE NETWORK TABLES" FOR PIPE AND STRUCTURE DATA.
2. SEE GREENWAY PLAN & PROFILE SHEET #S 67 - 73 FOR STORM CULVERT PIPE DATA, DETAILS, AND DISSIPATOR PADS.

GRADING AND STORMWATER PLAN NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROLESVILLE STANDARDS AND SPECIFICATIONS.
2. ALL PERMITS SHALL BE OBTAINED FROM THE CITY OF ROLESVILLE, WAKE COUNTY, NCDOT, NCDEQ-DWR, AND USACE AS APPLICABLE PRIOR TO BEGINNING CONSTRUCTION. A COPY OF ALL PERMITS SHALL BE SUBMITTED TO THE TOWN OF ROLESVILLE FOR THEIR RECORDS.
3. SCMS SHALL BE DESIGNED TO CONTROL AND TREAT THE DIFFERENCE IN STORMWATER RUNOFF VOLUME LEAVING THE PROJECT SITE BETWEEN THE PRE- AND POST-DEVELOPMENT CONDITIONS FOR, AT A MINIMUM, THE 1-YEAR, 24-HOUR STORM.
4. SCMS SHALL BE DESIGNED TO HAVE A MINIMUM OF 85% AVERAGE ANNUAL REMOVAL FOR TOTAL SUSPENDED SOLIDS.
5. ALL SCMS ASSOCIATED WITH THIS PROJECT WILL REQUIRE MAINTENANCE EASEMENTS AND AN OPERATION AND MAINTENANCE AGREEMENT TO BE NOTED ON THE FINAL PLAT. ALL OF THESE ITEMS WILL NEED TO BE RECORDED WITH THE COUNTY REGISTER OF DEEDS.
6. AT THE START OF GRADING INVOLVING THE LOWERING OF THE EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, 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. TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THIS CUT FARTHEST AWAY FROM THE TREE TRUNK.
7. NO STORAGE OF MATERIALS, DUMPING OF WASTE MATERIALS, FILL, OR PARKING OF EQUIPMENT SHALL BE ALLOWED WITHIN THE ROOT PROTECTION ZONE, AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE ROOT PROTECTION ZONE.
8. PRIOR TO BEGINNING CONSTRUCTION OF THE SCM(S), A PRECONSTRUCTION MEETING SHALL BE SCHEDULED WITH CITY STORMWATER IN ACCORDANCE WITH THE STANDARD PUBLIC WORKS' STORMWATER NOTE ON THE PLANS. THIS MEETING SHOULD BE SEPARATE FROM THE ENGINEERING INSPECTIONS' PRECONSTRUCTION MEETING AND SCHEDULING IT IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER/ENGINEER. THE MEETING MUST BE ATTENDED BY THE PROJECT CONTRACTOR RESPONSIBLE FOR SCM CONSTRUCTION, THE BMP CERTIFYING ENGINEER (BCE) WHO HAS BEEN SECURED TO PROVIDE THE AS-BUILT CERTIFICATION, AND THE GEOTECHNICAL ENGINEER (REQUIRED WHEN EARTHEN DAMS INVOLVED). WATER/SEWER PERMITS WILL NOT BE ISSUED OR WHEN SUCH PERMITS ARE NOT REQUIRED, FINAL CONSTRUCTION DRAWING APPROVAL WILL NOT BE GRANTED UNTIL THIS MEETING HAS BEEN SCHEDULED.
9. THE ACCESS SHALL HAVE A MAXIMUM CENTERLINE GRADE AND CROSS-SLOPE OF FIFTEEN PERCENT (15%) AND TEN PERCENT (10%) RESPECTIVELY.
10. THE SLOPES MAY BE 2:1 BELOW THE PERMANENT PONDING ELEVATION INSIDE THE SCM ONLY. EVERYWHERE ELSE THE SLOPES MUST BE 3:1 OR FLATTER.
11. RETAINING WALLS AND ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS. CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN FOR REVIEW AND APPROVAL BY THE TOWN INSPECTIONS DEPARTMENT.

N.C. UNDERGROUND UTILITIES

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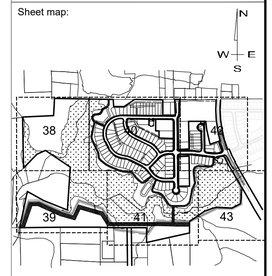
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Other Consultants

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Bryan Harris
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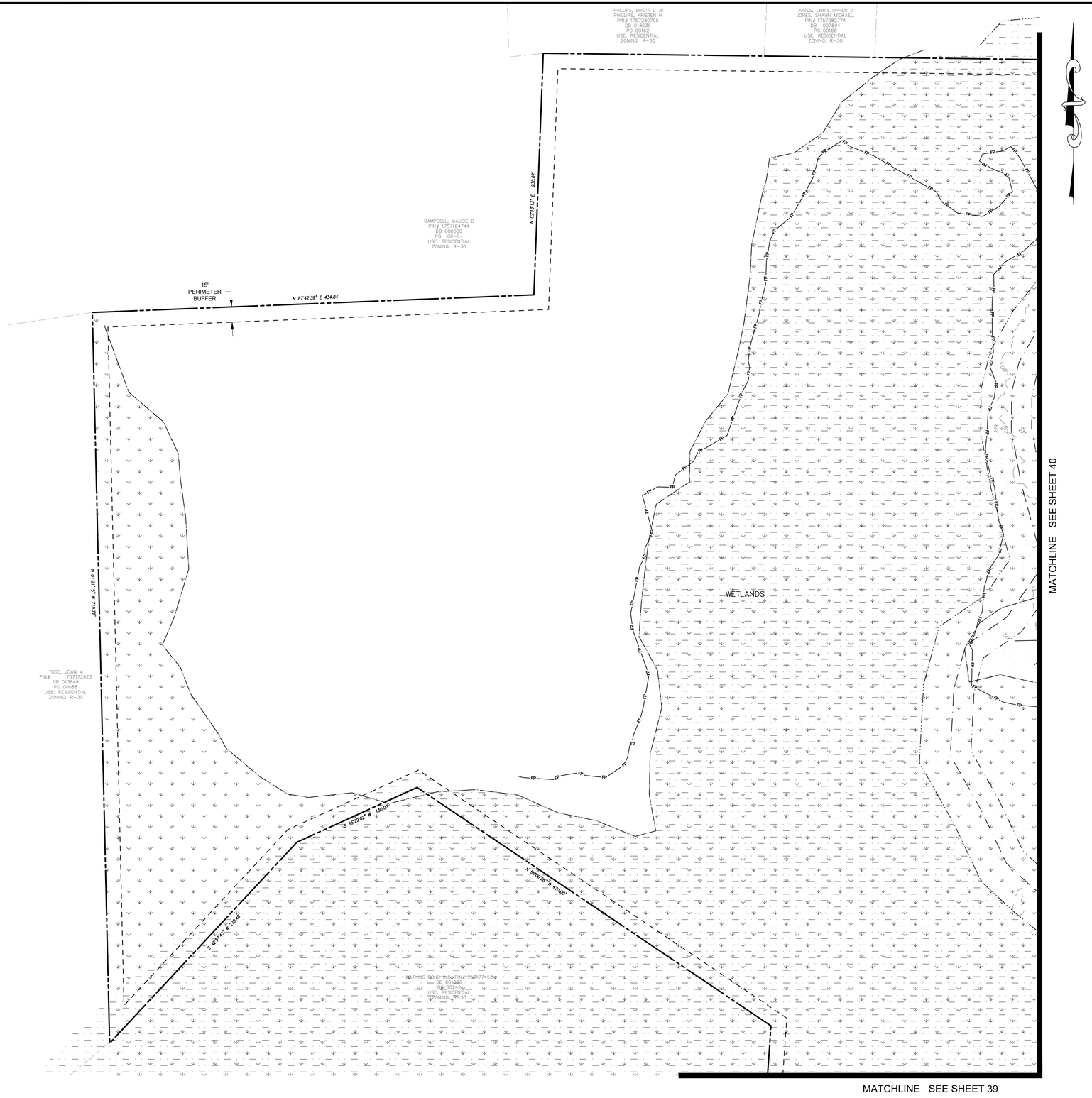
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GRADING PLAN LEGEND

- EXISTING MAJOR CONTOUR
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- PROPOSED MAJOR CONTOUR
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- PROPOSED EASEMENT
- PROPOSED STORM WATER INLET
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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

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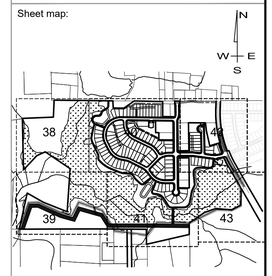
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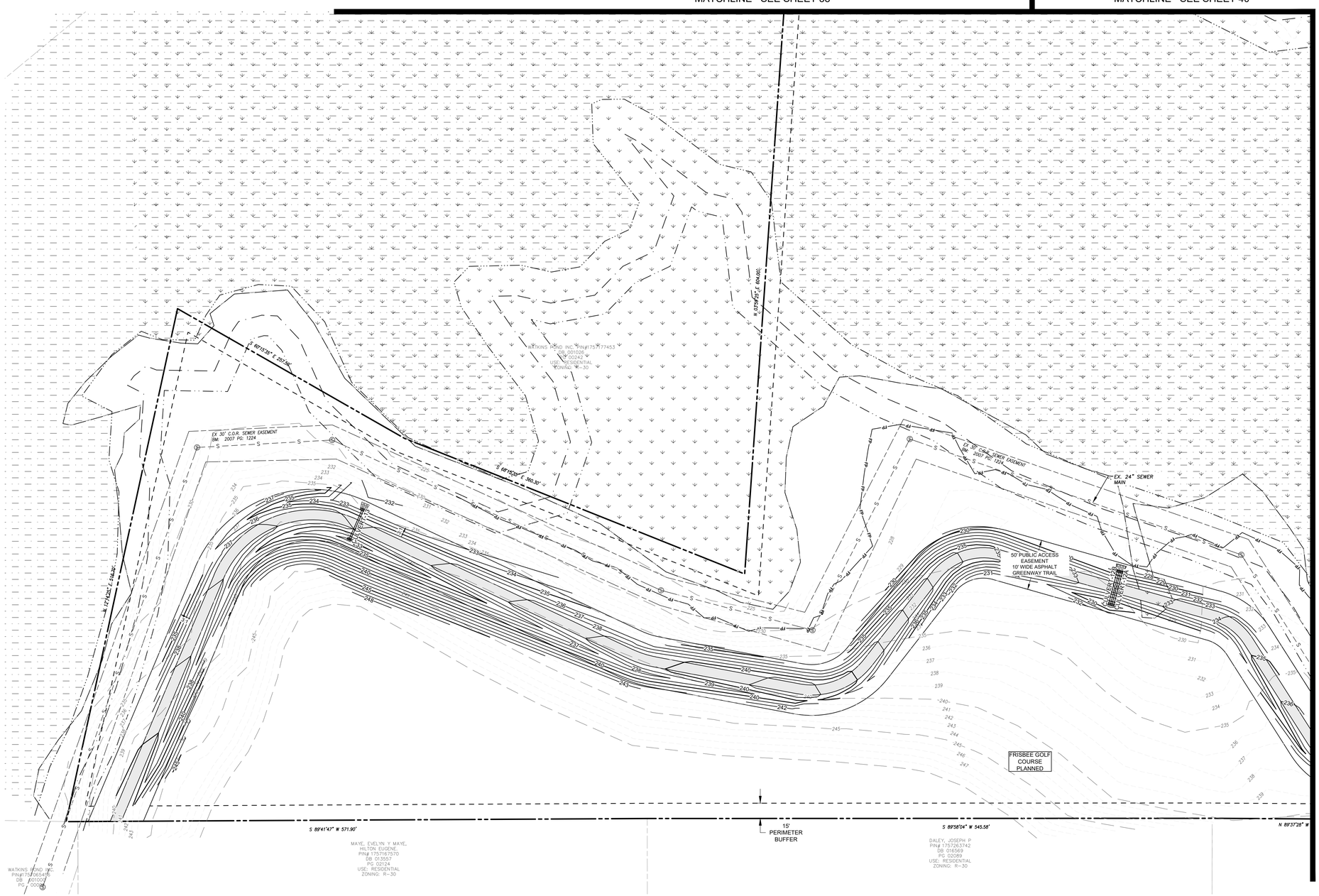
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GRADING & DRAINAGE PLAN SHEET 1 OF 6

Sheet #:

38



GRADING PLAN LEGEND

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- EXISTING MINOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED R.O.W.
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2. SEE GREENWAY PLAN & PROFILE SHEET #S 67 - 73 FOR STORM CULVERT PIPE DATA, DETAILS, AND DISSIPATOR PADS.

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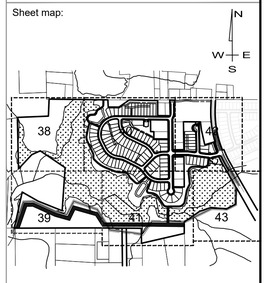
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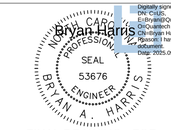
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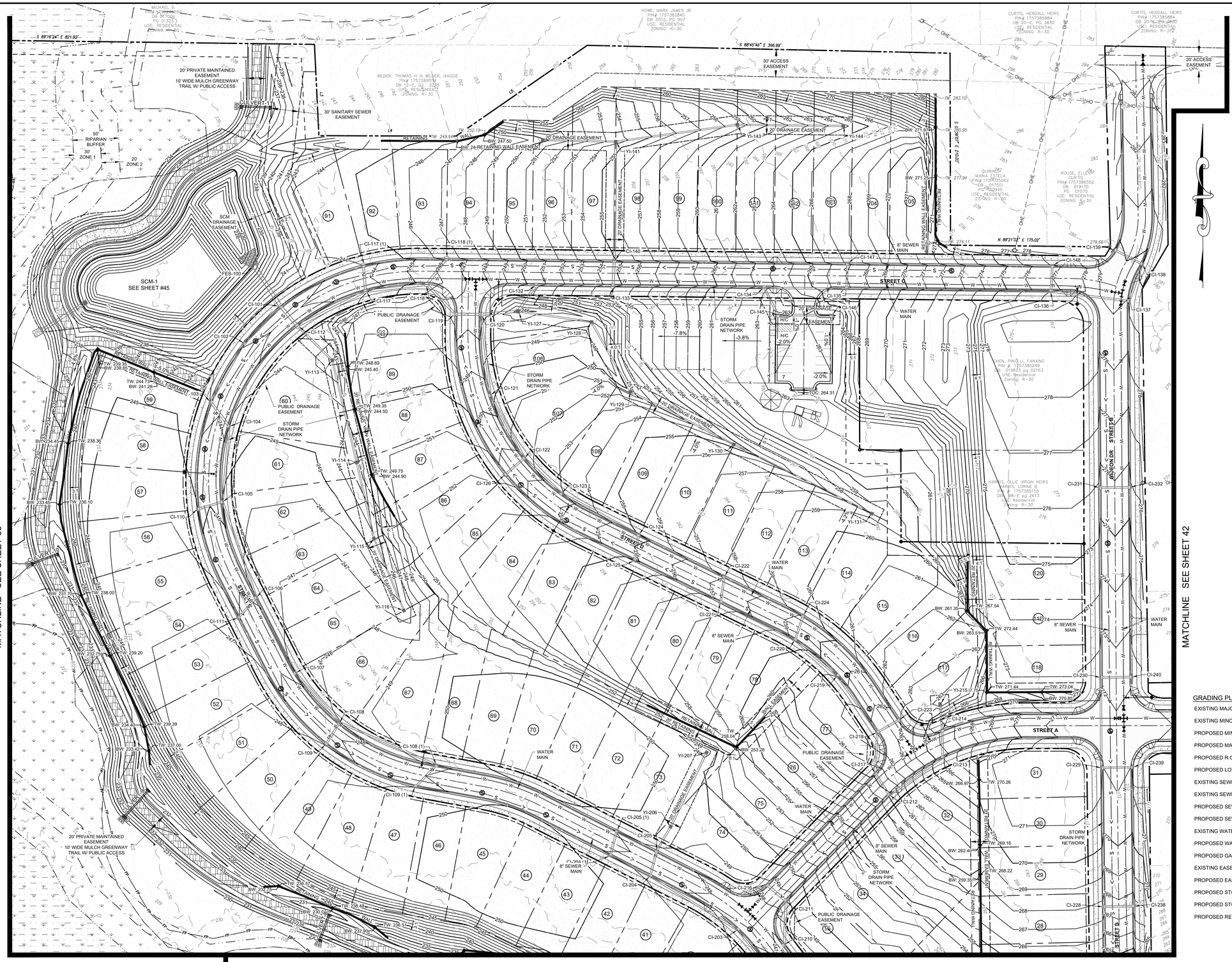
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GRADING & DRAINAGE PLAN SHEET 2 OF 6

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39



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(IN FEET)

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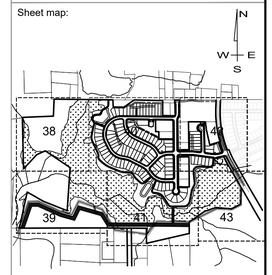
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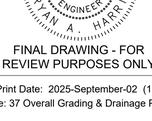
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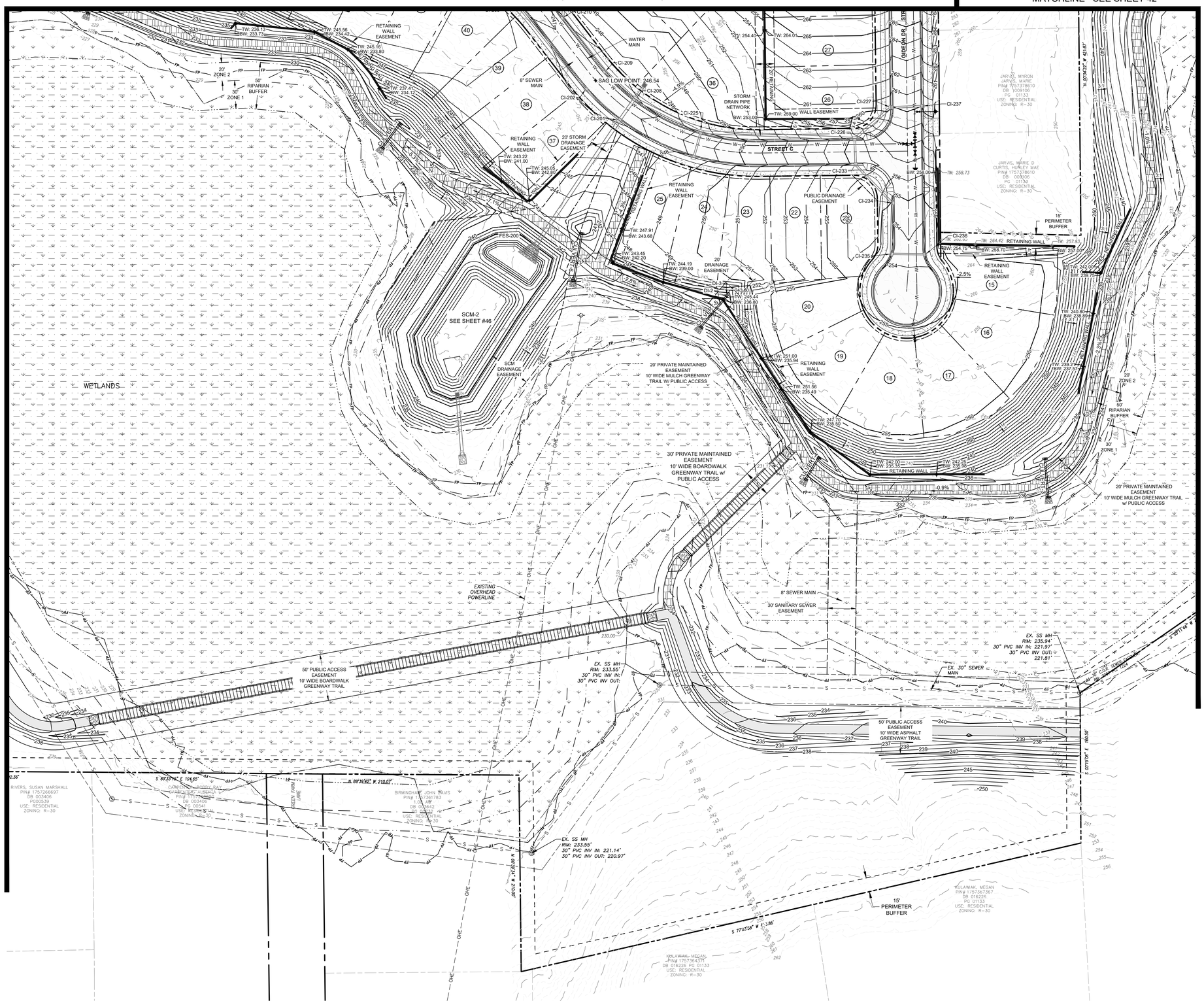
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GRADING & DRAINAGE PLAN SHEET 3 OF 6

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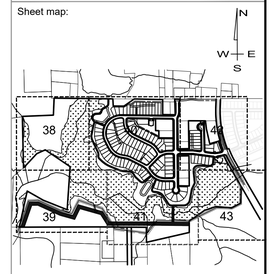
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

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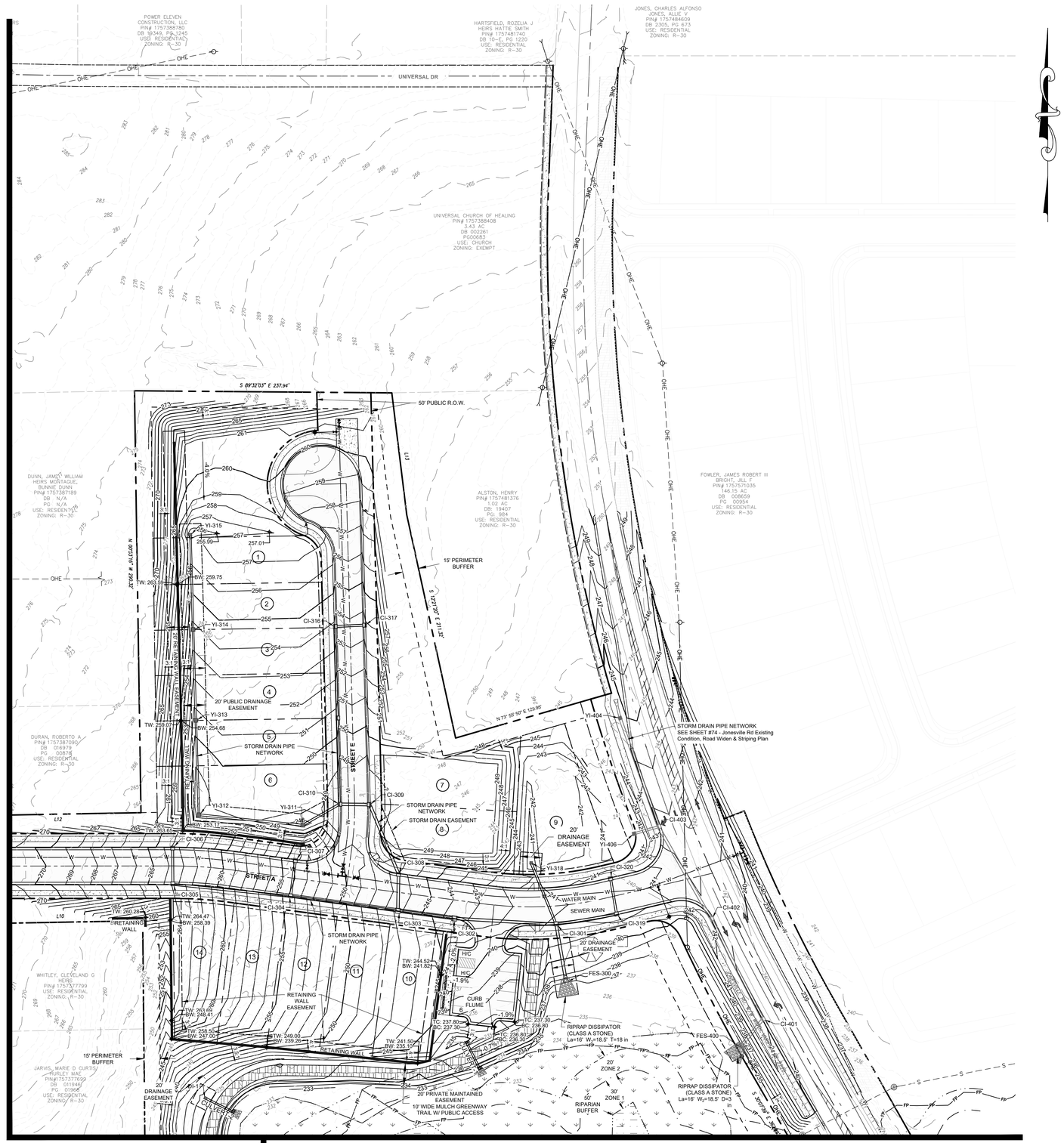
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GRADING & DRAINAGE PLAN SHEET 4 OF 6

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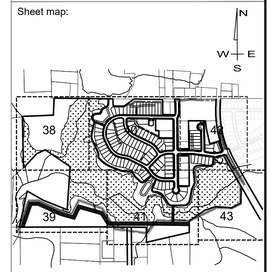
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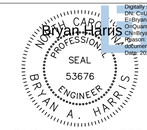
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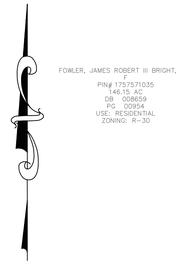
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GRADING PLAN LEGEND

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PROPOSED R.O.W.	
PROPOSED LOT LINE	
EXISTING SEWER LINE	— S —
EXISTING SEWER MANHOLE	S
PROPOSED SEWER LINE	
PROPOSED SEWER MANHOLE	
EXISTING WATER LINE	— W —
PROPOSED WATERLINE	W
PROPOSED GATE VALVE	
EXISTING EASEMENT	
PROPOSED EASEMENT	
PROPOSED STORM WATER INLET	
PROPOSED STORM PIPE	
PROPOSED RETAINING WALL	

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

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BCSC BATEMAN CIVIL SURVEY COMPANY

Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

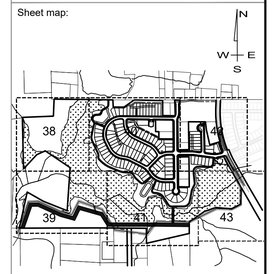
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Est. 1837

Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517

CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

Bryan Harris
Digitally signed by Bryan Harris
DN: CN=BH, E=BH@QuantechEng.com, O=QuanTech Engineering LLP, C=US
Reason: I have reviewed this document
Date: 2025.09.03 16:52:14-04'00'

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Drawn by: TAN

Project:

HARRIS CREEK FARMS

CID-25-03

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REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

GRADING & DRAINAGE PLAN SHEET 6 OF 6

Sheet #:

43

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\37 Overall Grading & Drainage Plan.dwg

STORM PIPE NETWORK (SCM-1)

PIPE TABLE			
PIPE NAME	Start Structure	Length-Size-Material-Slope	End Structure
SW Pipe-108 (1)		119 LF of 18" RCP @ 0.67%	108 (1)
SW Pipe-101	100	54 LF of 36" RCP @ 5.89%	101
SW Pipe-112	101	29 LF of 30" RCP @ 1.24%	112
SW Pipe-102	101	57 LF of 30" RCP @ 1.23%	102
SW Pipe-103	102	74 LF of 24" RCP @ 1.22%	103
SW Pipe-104	104	34 LF of 24" RCP @ 1.47%	103
SW Pipe-105	104	83 LF of 18" RCP @ 1.45%	105
SW Pipe-110	105	29 LF of 18" RCP @ 3.85%	110
SW Pipe-106	105	112 LF of 18" RCP @ 1.08%	106
SW Pipe-111	106	31 LF of 18" RCP @ 2.99%	111
SW Pipe-107	106	93 LF of 18" RCP @ 1.08%	107
SW Pipe-108	107	73 LF of 18" RCP @ 1.10%	108
SW Pipe-109 (1)	108 (1)	34 LF of 18" RCP @ 1.80%	109 (1)
SW Pipe-109	108	29 LF of 18" RCP @ 2.12%	109
SW Pipe-113	112	54 LF of 18" RCP @ 1.03%	113
HDPE Pipe114	113	115 LF of 16" RCP @ 1.00%	114
HDPE Pipe115	114	86 LF of 16" RCP @ 1.05%	115
HDPE Pipe116	115	86 LF of 14" RCP @ 1.05%	116
SW Pipe-117 (1)	117 (1)	29 LF of 24" RCP @ 1.05%	117
SW Pipe-118	117	68 LF of 24" RCP @ 1.04%	118
SW Pipe-117	117	84 LF of 24" RCP @ 1.02%	112
SW Pipe-118 (1)	118	36 LF of 24" RCP @ 1.12%	118 (1)
SW Pipe-119	118	46 LF of 24" RCP @ 1.08%	119
SW Pipe-120	119	29 LF of 24" RCP @ 1.07%	120
SW Pipe-127	120	41 LF of 24" RCP @ 1.11%	127
SW Pipe-121	120	89 LF of 18" RCP @ 2.70%	121
SW Pipe-122	121	79 LF of 18" RCP @ 1.92%	122
SW Pipe-126	122	29 LF of 18" RCP @ 2.44%	126
SW Pipe-123	122	56 LF of 18" RCP @ 1.61%	123
SW Pipe-124	123	96 LF of 18" RCP @ 2.61%	124
SW Pipe-125	124	30 LF of 18" RCP @ 4.79%	125
HDPE Pipe128	127	82 LF of 18" RCP @ 1.97%	128
SW Pipe-132	127	35 LF of 24" RCP @ 1.01%	132
HDPE Pipe129	128	88 LF of 18" RCP @ 2.64%	129
HDPE Pipe130	129	127 LF of 16" RCP @ 3.07%	130
HDPE Pipe131	130	169 LF of 16" RCP @ 2.31%	131
SW Pipe-133	132	85 LF of 24" RCP @ 1.07%	133
SW Pipe-134	133	166 LF of 24" RCP @ 5.62%	134
SW Pipe-140	133	29 LF of 24" RCP @ 1.07%	140
SW Pipe-145	134	34 LF of 18" RCP @ 1.50%	145
SW Pipe-135	134	91 LF of 18" RCP @ 7.33%	135
SW Pipe-136	135	224 LF of 18" RCP @ 4.43%	136
SW Pipe-147	135	29 LF of 18" RCP @ 1.07%	147
SW Pipe-148	136	29 LF of 18" RCP @ 1.40%	148
SW Pipe-137	136	87 LF of 18" RCP @ 2.66%	137
SW Pipe-138	137	43 LF of 18" RCP @ 1.41%	138
SW Pipe-139	138	35 LF of 18" RCP @ 1.46%	139
SW Pipe-141	140	131 LF of 24" RCP @ 2.15%	141
HDPE Pipe142	141	80 LF of 14" RCP @ 1.25%	142
HDPE Pipe143	141	135 LF of 16" RCP @ 3.35%	143
HDPE Pipe144	143	116 LF of 16" RCP @ 4.74%	144
SW Pipe-146	145	59 LF of 18" RCP @ 1.20%	146

STRUCTURE TABLE				
STRUCTURE #	TYPE	RIM ELEV	INV IN	INV OUT
100	FES	INV : 236.47	233.05' From Strc #: 101	
101	CI	RIM: 242.81	236.30' From Strc #: 102 237.65' From Strc #: 112	236.20'
102	CI	RIM: 243.19	237.20' From Strc #: 103	237.00'
103	CI	RIM: 243.88	238.20' From Strc #: 104	238.10'
104	CI	RIM: 243.79	238.80' From Strc #: 105	238.70'
105	CI	RIM: 244.96	240.10' From Strc #: 106 240.10' From Strc #: 110	240.00'
106	CI	RIM: 246.12	241.40' From Strc #: 107 241.40' From Strc #: 111	241.30'
107	CI	RIM: 247.07	242.50' From Strc #: 108	242.40'
108 (1)	CI	RIM: 246.94	243.40' From Strc #: 109 (1)	243.30'
108	CI	RIM: 247.58	243.40' From Strc #: 109	243.30'
109 (1)	CI	RIM: 247.61		244.00'
109	CI	RIM: 247.61		244.00'
110	CI	RIM: 245.02		241.20'
111	CI	RIM: 245.96		242.30'
112	CI	RIM: 242.95	238.10' From Strc #: 117 238.10' From Strc #: 113	238.00'
113	YI	RIM: 242.05	238.75' From Strc #: 114	238.65'
114	YI	RIM: 243.02	240.00' From Strc #: 115	239.90'
115	YI	RIM: 244.12	241.00' From Strc #: 116	240.90'
116	YI	RIM: 246.25		241.90'
117 (1)	CI	RIM: 243.78		239.40'
117	CI	RIM: 243.91	239.35' From Strc #: 118 239.10' From Strc #: 117 (1)	238.95'
118	CI	RIM: 245.46	240.02' From Strc #: 119 240.20' From Strc #: 118 (1)	240.05'
118 (1)	CI	RIM: 246.19		240.60'
119	CI	RIM: 247.71	240.60' From Strc #: 120	240.50'
120	CI	RIM: 247.71	241.00' From Strc #: 127 241.00' From Strc #: 121	240.90'
121	CI	RIM: 249.66	243.50' From Strc #: 122	243.40'
122	CI	RIM: 251.49	245.10' From Strc #: 123 246.80' From Strc #: 126	245.00'
123	CI	RIM: 252.79	247.00' From Strc #: 124	246.00'
124	CI	RIM: 254.69	249.60' From Strc #: 125	249.50'
125	CI	RIM: 254.86		251.00'
126	CI	RIM: 251.25		247.50'
127	YI	RIM: 245.60	241.55' From Strc #: 132 242.00' From Strc #: 128	241.45'
128	YI	RIM: 248.03	243.70' From Strc #: 129	243.60'
129	YI	RIM: 250.41	246.10' From Strc #: 130	246.00'
130	YI	RIM: 254.36	250.10' From Strc #: 131	250.00'
131	YI	RIM: 258.04		254.00'
132	CI	RIM: 250.68	242.00' From Strc #: 133	241.90'
133	CI	RIM: 254.50	243.00' From Strc #: 140 245.70' From Strc #: 134	242.90'
134	CI	RIM: 262.40	255.50' From Strc #: 135 257.20' From Strc #: 145	255.00'
135	CI	RIM: 266.78	262.50' From Strc #: 147 262.20' From Strc #: 136	262.10'
136	CI	RIM: 277.16	272.20' From Strc #: 137 272.70' From Strc #: 148	272.10'
137	CI	RIM: 279.34	274.60' From Strc #: 138	274.50'
138	CI	RIM: 280.15	275.30' From Strc #: 139	275.20'
139	CI	RIM: 280.15		275.80'
140	CI	RIM: 254.55	243.50' From Strc #: 141	243.30'
141	YI	RIM: 253.51	250.00' From Strc #: 143 246.50' From Strc #: 142	246.30'
142	YI	RIM: 249.75		247.50'
143	YI	RIM: 258.50	255.00' From Strc #: 144	254.50'
144	YI	RIM: 263.54		260.50'
145	CI	RIM: 262.88	257.80' From Strc #: 146	257.70'
146	CI	RIM: 262.96		258.50'
147	CI	RIM: 266.42		262.80'
148	CI	RIM: 277.17		273.10'

STORM PIPE NETWORK (SCM-2)

PIPE TABLE			
PIPE NAME	Start Structure	Length-Size-Material-Slope	End Structure
SW Pipe-201	200	162 LF of 36" RCP @ 1.76%	201
SW Pipe-202	201	49 LF of 18" RCP @ 1.23%	202
SW Pipe-208	201	29 LF of 30" RCP @ 1.07%	208
SW Pipe-203	202	120 LF of 18" RCP @ 1.17%	203
SW Pipe-204	203	113 LF of 18" RCP @ 1.07%	204
SW Pipe-204 (1)	204	50 LF of 18" RCP @ 1.02%	204 (1)
SW Pipe-205 (1)	204 (1)	29 LF of 18" RCP @ 1.04%	205 (1)
SW Pipe-205	204	29 LF of 18" RCP @ 1.04%	205
SW Pipe-206	205	31 LF of 18" RCP @ 1.16%	206
SW Pipe-207	206	91 LF of 18" RCP @ 1.05%	207
SW Pipe-208 (1)	208	18 LF of 18" RCP @ 1.11%	208 (1)
Concrete Pipe209	208	44 LF of 24" RCP @ 1.16%	209
SW Pipe-225	208	80 LF of 30" RCP @ 2.77%	225
Concrete Pipe210	209	74 LF of 24" RCP @ 1.09%	210
SW Pipe-211	210	48 LF of 24" RCP @ 1.05%	211
SW Pipe-212	211 (1)	73 LF of 24" RCP @ 2.64%	212
SW Pipe-216	211	29 LF of 24" RCP @ 1.07%	216
SW Pipe-211 (1)	211	90 LF of 24" RCP @ 2.78%	211 (1)
SW Pipe-217	212	29 LF of 18" RCP @ 1.05%	217
SW Pipe-213	212	72 LF of 18" RCP @ 1.96%	213
SW Pipe-214	213	31 LF of 18" RCP @ 0.98%	214
SW Pipe-215	214	29 LF of 15" RCP @ 1.05%	215
SW Pipe-216 (1)	216	32 LF of 18" RCP @ 1.28%	216 (1)
SW Pipe-218	217	45 LF of 18" RCP @ 1.12%	218
SW Pipe-223	218	29 LF of 18" RCP @ 1.06%	223
SW Pipe-219	218	76 LF of 18" RCP @ 1.06%	219
SW Pipe-220	219	61 LF of 18" RCP @ 1.16%	220
SW Pipe-224	220	29 LF of 18" RCP @ 1.04%	224
SW Pipe-221	220	92 LF of 18" RCP @ 1.04%	221
SW Pipe-222	221	30 LF of 18" RCP @ 1.19%	222
SW Pipe-225 (2)	225	29 LF of 18" RCP @ 1.07%	225 (1)
SW Pipe-226	225	165 LF of 30" RCP @ 2.61%	226
SW Pipe-233	226	29 LF of 18" RCP @ 1.43%	233
SW Pipe-227	226	52 LF of 24" RCP @ 7.22%	227
SW Pipe-237	227	35 LF of 18" RCP @ 1.76%	237
SW Pipe-228	227	138 LF of 24" RCP @ 3.49%	228
SW Pipe-229	228	153 LF of 24" RCP @ 1.12%	229
SW Pipe-238	228	35 LF of 18" RCP @ 1.17%	238
SW Pipe-239	229	35 LF of 15" RCP @ 1.17%	239
SW Pipe-230	229	99 LF of 18" RCP @ 1.11%	230
SW Pipe-240	230	35 LF of 18" RCP @ 1.17%	240
SW Pipe-231	230	208 LF of 18" RCP @ 1.54%	231
SW Pipe-232	231	35 LF of 18" RCP @ 1.18%	232
SW Pipe-234	233	57 LF of 18" RCP @ 1.24%	234
SW Pipe-235	234	55 LF of 18" RCP @ 1.00%	235
SW Pipe-236	235	37 LF of 15" RCP @ 1.00%	236

STRUCTURE TABLE				
STRUCTURE #	TYPE	RIM ELEV	INV IN	INV OUT
200	FES	INV #: 240.92	237.55' From Strc #: 201	
201	CI	RIM: 246.99	240.50' From Strc #: 202 240.60' From Strc #: 208	240.40'
202	CI	RIM: 246.66	241.20' From Strc #: 203	241.10'
203	CI	RIM: 247.67	242.70' From Strc #: 204	242.60'
204	CI	RIM: 248.82	244.00' From Strc #: 205 244.00' From Strc #: 204 (1)	243.90'
204 (1)	CI	RIM: 249.31	244.70' From Strc #: 205 (1)	244.50'
205	CI	RIM: 248.88	244.40' From Strc #: 206	244.30'
205 (1)	CI	RIM: 249.37		245.00'
206	YI	RIM: 249.49	244.85' From Strc #: 207	244.75'
207	YI	RIM: 248.77		245.80'
208	CI	RIM: 246.96	243.00' From Strc #: 208 (1) 241.10' From Strc #: 209	240.90'
208 (1)	CI	RIM: 24303.72		243.20'
209	CI	RIM: 246.70	241.70' From Strc #: 210	241.60'
210	CI	RIM: 247.22	242.60' From Strc #: 211	242.50'
211	CI	RIM: 248.98	244.70' From Strc #: 211 (1) 243.20' From Strc #: 216	243.10'
211 (1)	CI	RIM: 254.00	247.29' From Strc #: 212	247.19'
212	CI	RIM: 260.15	256.50' From Strc #: 213 249.40' From Strc #: 217	249.20'
213	CI	RIM: 265.98	258.00' From Strc #: 214	257.90'
214	CI	RIM: 266.70	258.60' From Strc #: 215	258.30'
215	YI	RIM: 262.22		258.90'
216	CI	RIM: 249.02	243.60' From Strc #: 216 (1)	243.50'
216 (1)	CI	RIM: 247.90		244.00'
217	CI	RIM: 260.20	249.80' From Strc #: 218	249.70'
218	CI	RIM: 262.54	258.70' From Strc #: 223 250.40' From Strc #: 219	250.30'
219	CI	RIM: 261.12	251.30' From Strc #: 220	251.20'
220	CI	RIM: 259.61	252.10' From Strc #: 221 255.20' From Strc #: 224	252.00'
221	CI	RIM: 257.90	253.15' From Strc #: 222	253.05'
222	CI	RIM: 257.71		253.50'
223	CI	RIM: 262.82		259.00'
224	CI	RIM: 259.48		255.50'
225	CI	RIM: 248.63	243.60' From Strc #: 226 243.60' From Strc #: 225 (2)	
225 (1)	CI	RIM: 248.63		243.90'
226	CI	RIM: 255.76	251.20' From Strc #: 227 248.00' From Strc #: 233	247.90'
227	CI	RIM: 260.61	256.00' From Strc #: 228 256.00' From Strc #: 237	254.90'
228	CI	RIM: 267.80	263.40' From Strc #: 238 261.50' From Strc #: 229	260.80'
229	CI	RIM: 271.38	267.20' From Strc #: 239 263.50' From Strc #: 230	263.20'
230	CI	RIM: 272.53	268.10' From Strc #: 240 268.10' From Strc #: 231	264.60'
231	CI	RIM: 276.05	271.40' From Strc #: 232	271.30'
232	CI	RIM: 276.04		271.80'
233	CI	RIM: 255.76	248.50' From Strc #: 234	248.40'
234	CI	RIM: 255.00	249.30' From Strc #: 235	249.20'
235	CI	RIM: 254.01	249.94' From Strc #: 236	249.84'
236	CI	RIM: 254.01		250.31'
237	CI	RIM: 260.61		256.60'
238	CI	RIM: 267.82		263.80'
239	CI	RIM: 271.38		267.60'
240	CI	RIM: 272.53		268.50'

STORM PIPE NETWORK (EAST)

PIPE TABLE			
PIPE NAME	Start Structure	Length-Size-Material-Slope	End Structure
Concrete Pipe301	300	55 LF of 24" RCP @ 1.10%	301
SW Pipe-319	301	57 LF of 18" RCP @ 1.06%	319
SW Pipe-318	301	62 LF of 18" RCP @ 1.30%	318
SW Pipe-302	301	95 LF of 24" RCP @ 2.12%	302
SW Pipe-303	302	53 LF of 24" RCP @ 4.75%	303
SW Pipe-304	303	101 LF of 18" RCP @ 6.89%	304
SW Pipe-308	303	35 LF of 24" RCP @ 1.75%	308
SW Pipe-307	304	35 LF of 18" RCP @ 1.17%	307
SW Pipe-305	304	110 LF of 18" RCP @ 7.68%	305
SW Pipe-306	305	35 LF of 18" RCP @ 1.17%	306
SW Pipe-309	308	70 LF of 24" RCP @ 1.59%	309
SW Pipe-310	309	29 LF of 24" RCP @ 1.07%	310
SW Pipe-310 (2) (1)	310	80 LF of 18" RCP @ 3.13%	310 (1)
SW Pipe-316	310 (1)	85 LF of 18" RCP @ 2.60%	316
SW Pipe-311	310	40 LF of 18" RCP @ 1.03%	311
HDPE Pipe312	311	97 LF of 18" RCP @ 1.04%	312
HDPE Pipe313	312	88 LF of 16" RCP @ 2.40%	313
HDPE Pipe314	313	85 LF of 16" RCP @ 3.81%	314
HDPE Pipe315	314	88 LF of 16" RCP @ 2.28%	315
SW Pipe-317	316	29 LF of 18" RCP @ 2.84%	317
SW Pipe-320	319	35 LF of 18" RCP @ 1.02%	320

STRUCTURE TABLE				
STRUCTURE #	TYPE	RIM ELEV	INV IN	INV OUT
300	FES	INV : 238.53	236.20' From Strc #: 301	
301	CI	RIM: 241.38	236.90' From Strc #: 302 236.90' From Strc #: 319 237.00' From Strc #: 318	236.80'
302	CI	RIM: 244.06	239.00' From Strc #: 303	238.90'
303	CI	RIM: 246.77	241.60' From Strc #: 308 243.00' From Strc #: 304	241.50'
304	CI	RIM: 254.30	249.90' From Strc #: 307 250.60' From Strc #: 305	249.90'
305	CI	RIM: 263.94	259.50' From Strc #: 306	259.00'
306	CI	RIM: 263.94		259.90'
307	CI	RIM: 254.30		250.30'
308	CI	RIM: 246.97	242.30' From Strc #: 309	242.20'
309	CI	RIM: 248.53	243.50' From Strc #: 310	243.40'
310	CI	RIM: 248.58	244.00' From Strc #: 310 (2) (1) 243.90' From Strc #: 311	243.80'
310 (1)	CI	RIM: 250.58	246.70' From Strc #: 316	246.50'
311	YI	RIM: 247.50	244.40' From Strc #: 312	244.30'
312	YI	RIM: 248.17	245.50' From Strc #: 313	245.40'
313	YI	RIM: 250.45	247.70' From Strc #: 314	247.60'
314	YI	RIM: 253.57	251.00' From Strc #: 315	250.90'
315	YI	RIM: 255.46		253.00'
316	CI	RIM: 253.54	249.10' From Strc #: 317	248.90'
317	CI	RIM: 253.56		249.90'
318	YI	RIM: 240.10		237.80'
319	CI	RIM: 240.82	237.60' From Strc #: 320	237.50'
320	CI	RIM: 240.82		237.95'

STORM PIPE NETWORK (JONESVILLE RD)

PIPE TABLE			
PIPE NAME	Start Structure	Length-Size-Material-Slope	End Structure
SW Pipe-401	400	34 LF of 24" RCP @ 1.06%	401
SW Pipe-402	401	105 LF of 24" RCP @ 1.01%	402
SW Pipe-403	402	99 LF of 24" RCP @ 1.02%	403
SW Pipe-404	403	107 LF of 24" RCP @ 2.73%	404
SW Pipe-406	403	24 LF of 18" RCP @ 1.07%	406
SW Pipe-405	404	18 LF of 18" RCP @ 4.09%	405

STRUCTURE TABLE				
STRUCTURE #	TYPE	RIM ELEV	INV IN	INV OUT
400	FES	INV : 237.13	234.80' From Strc #: 401	
401	CI	RIM: 241.07	235.25' From Strc #: 402	235.15'
402	CI	RIM: 241.84	236.40' From Strc #: 403	236.30'
403	CI	RIM: 242.98	237.50' From Strc #: 406 237.85' From Strc #: 404	237.40'
404	YI	RIM: 244.76	242.00' From Strc #: 405	240.76'
405	FES	INV : 244.51		242.72'
406	YI	RIM: 240.42		237.75'

STORM PIPE NETWORK (GREENWAY CULVERTS)

PIPE TABLE	
PIPE NAME	Length-Size-Material-Slope
CULVERT-1	29 LF of 15" RCP @ 1.31%
CULVERT-2	30 LF of 15" RCP @ 1.10%
CULVERT-3	44 LF of 15" RCP @ 1.58%
CULVERT-4	30 LF of 15" RCP @ 1.10%
CULVERT-5	34 LF of 15" RCP @ 1.50%
CULVERT-5A	12 LF of 15" RCP @ 1.71%
CULVERT-6	54 LF of 15" RCP @ 1.02%
CULVERT-7	34 LF of 15" RCP @ 1.27%
CULVERT-8	32 LF of 15" RCP @ 2.09%
CULVERT-9	41 LF of 15" RCP @ 2.42%
CULVERT-10	32 LF of 15" RCP @ 1.11%
CULVERT-11	34 LF of 15" RCP @ 1.03%
CULVERT-12A	36 LF of 18" Reinforced Concrete Pipe @ 1.13%
CULVERT-12B	36 LF of 18" Reinforced Concrete Pipe @ 1.13%
CULVERT-13	34 LF of 15" RCP @ 1.12%

STRUCTURE TABLE				
STRUCTURE #	TYPE	RIM ELEV	INV IN	INV OUT
1	DI	RIM = 235.20		233.25'
2	DI	RIM = 236.10	234.10'	234.10'
3	DI	RIM = 243.60		234.30'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\37 Overall Grading & Drainage Plan.dwg

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Cary, N.C. 27513
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Surveyor

BCSC BATEMAN CIVIL SURVEY COMPANY

Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality

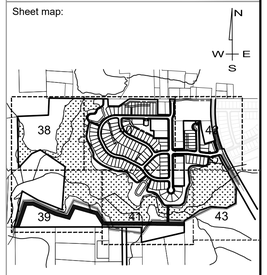
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Rolesville, NC 27571
Phone: 919-554-6517

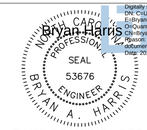
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Other Consultants

Sheet map:



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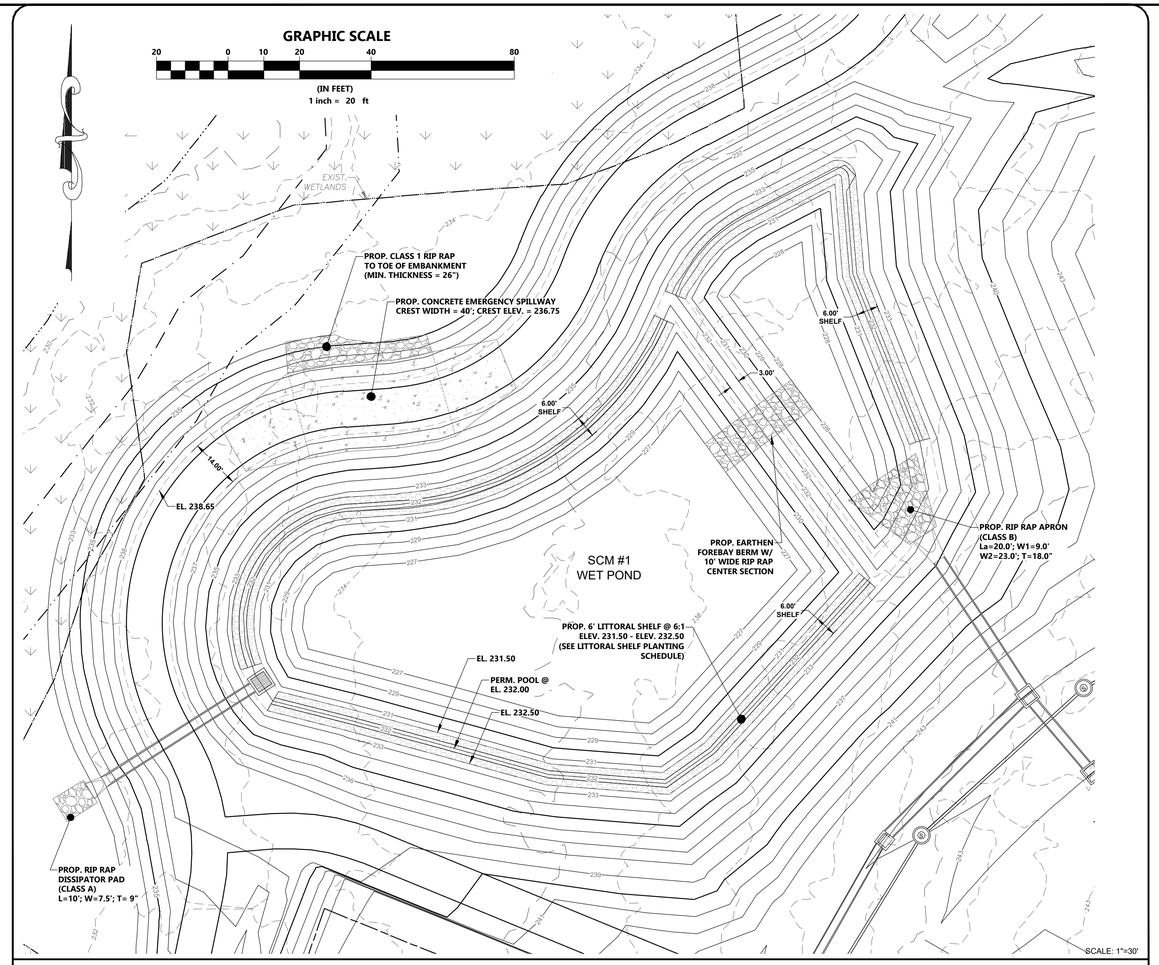
No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

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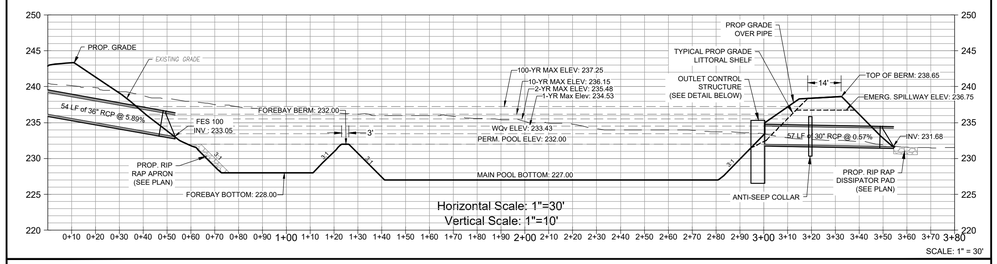
STORM PIPE NETWORK TABLES

Sheet #:

44



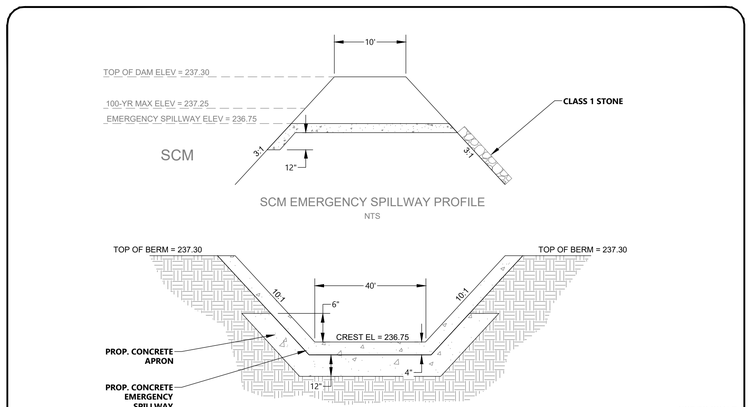
SCM 1 - WET POND PLAN VIEW



SCM 1 - WET POND SECTION

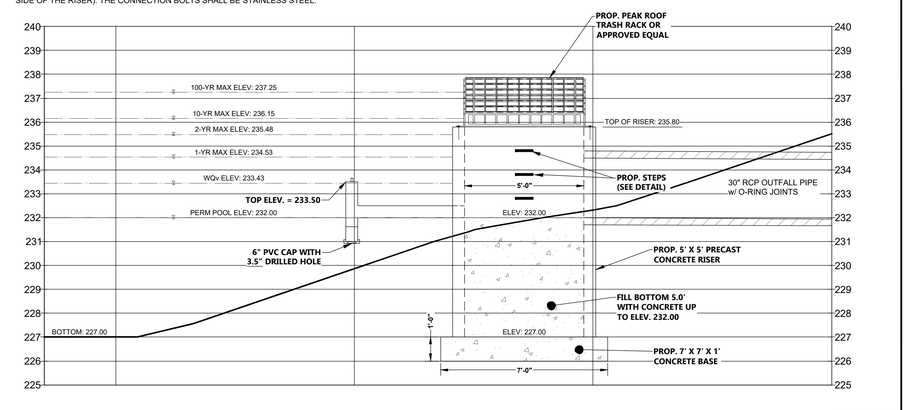
LITTORAL SHELF PLANTING SCHEDULE

ELEV. RANGE	SHELF AREA	SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SPACING
231.50 - 231.83	1,020 sf		ASCLEPIAS INCARNATA	SWAMP MILKWEED	255	24"-36" O.C.
231.83 - 232.17	1,042 sf		CAREX TENERA	QUILL SEDGE	265	24"-36" O.C.
232.17 - 232.50	1,063 sf		CHELONE GLABRA	WHITE TURTLEHEAD	270	24"-36" O.C.



SCM 1 - EMERGENCY SPILLWAY

NOTE:
RISER SHALL BE CONSTRUCTED FROM REINFORCED CONCRETE, BRICK OR "KNOCKOUT" BOXES WILL NOT BE ALLOWED. INDIVIDUAL PRECAST SEGMENTS OF THE RISER SHALL BE CONNECTED USING METAL STRAPPING (1 PER EACH INTERNAL SIDE OF THE RISER). THE CONNECTION BOLTS SHALL BE STAINLESS STEEL.



SCM 1 - OUTLET CONTROL STRUCTURE

N.C. UNDERGROUND UTILITIES
811
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A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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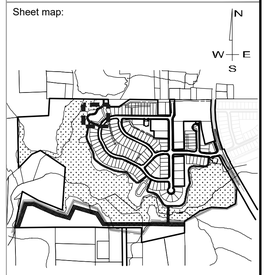
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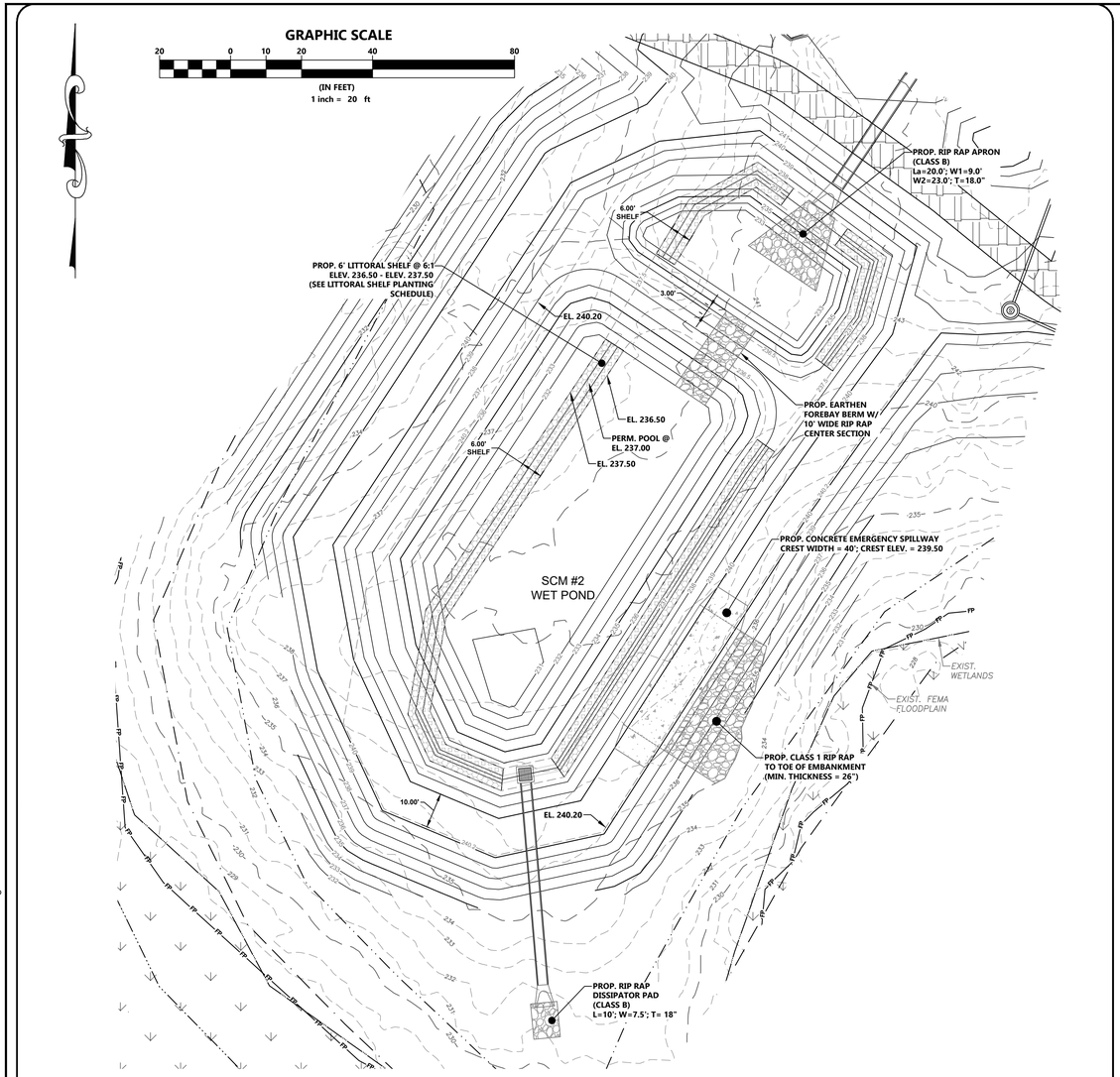
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SCM 1 PLAN

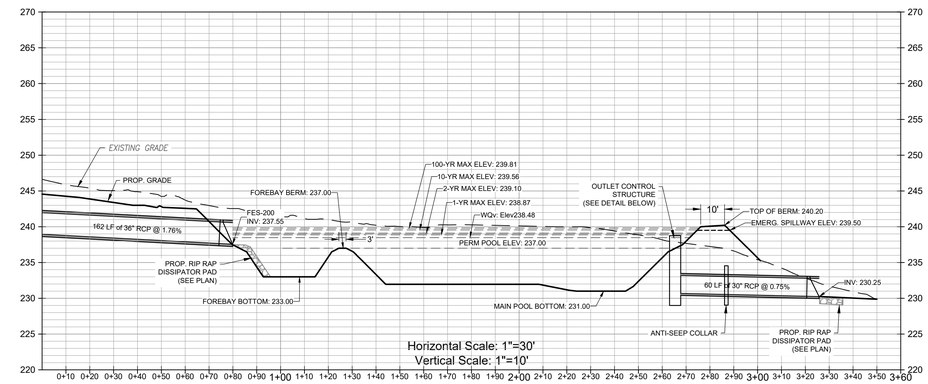
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SCALE: 1"=30'

SCM 2 - WET POND PLAN VIEW

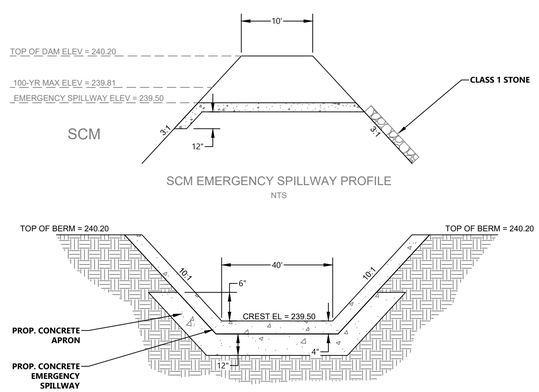


SCALE: 1" = 30'

SCM 2 - WET POND SECTION

LITTORAL SHELF PLANTING SCHEDULE

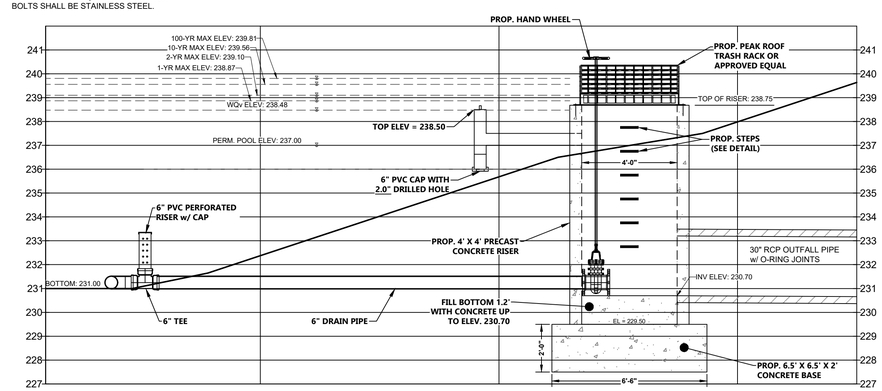
ELEV. RANGE	SHELF AREA	SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SPACING
236.50 - 236.83	696 sf		ASCLEPIAS INCARNATA	SWAMP MILKWEED	175	24"-36" O.C.
236.83 - 237.17	723 sf		CAREX TENERA	QUILL SEDGE	185	24"-36" O.C.
237.17 - 237.50	750 sf		CHELONE GLABRA	WHITE TURTLEHEAD	190	24"-36" O.C.



NOT TO SCALE

SCM 2 - EMERGENCY SPILLWAY

NOTE:
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SCALE: 1" = 3'

SCM 2 - OUTLET CONTROL STRUCTURE

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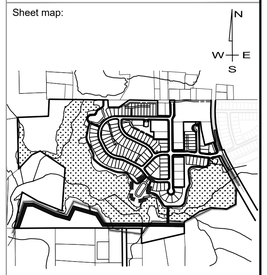
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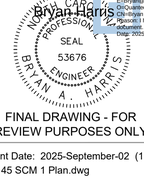
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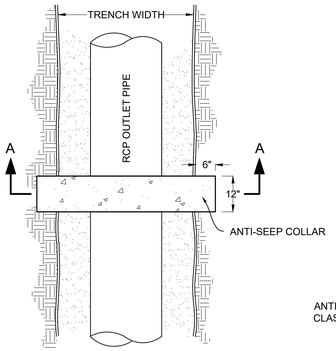
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SCM 2 PLAN

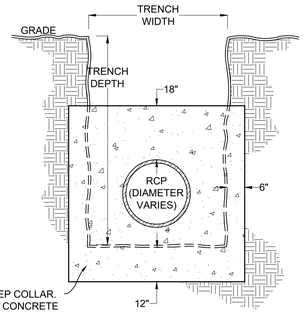
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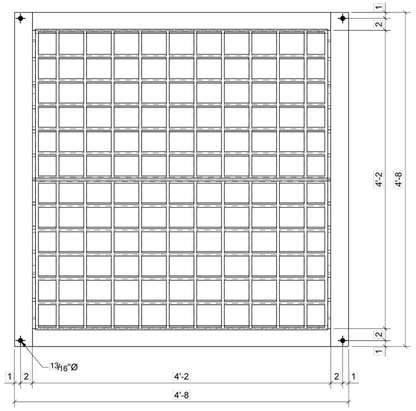
PLAN VIEW

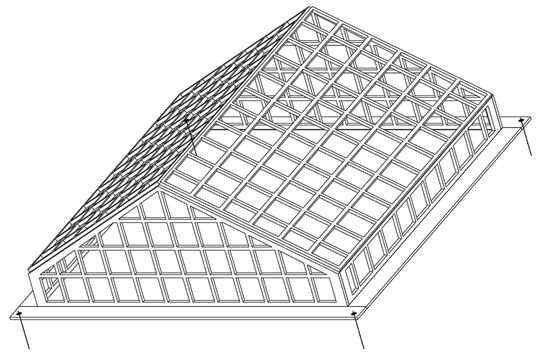


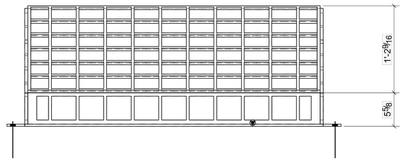
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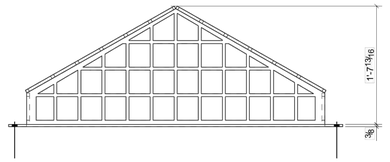
NOT TO SCALE

ANTI-SEEP COLLAR









MADE IN THE U.S.A.

AVAILABLE MATERIALS:
~~MILD STEEL (NO FINISH) - WGT: 243.8 lbs.~~
~~MILD STEEL (GALVANIZED) - WGT: 240.0 lbs.~~
STAINLESS STEEL - WGT: 243.8 lbs.
ALUMINUM - WGT: 82.3 lbs.

CUSTOM SIZES AVAILABLE

AVAILABLE UPON REQUEST WITH:
ACCESS PORT
ANTI-VORTEX PLATES

TRASHRACKS.com
A DIVISION OF J.R. HOE, INC.
101 IRONWOOD ROAD
MIDDLESBORO, KY 40965
PH: (606) 248-5560
FAX: (606) 248-6308
JRHOE.COM

TITLE:
LPK-4848
48"x48" PEAKED ROOF TRASH RACK

SIZE B | DWG. NO. 369231 | REV. 0 | SHEET 1 / 1

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TRASH RACK

SCM NOTES:

EMBANKMENTS

1. ALL EARTHEN FILLS SHALL BE CLEARED, GRUBBED AND STRIPPED OF ALL VEGETATIVE MATERIAL, TOPSOIL, AND ORGANIC MATTER PRIOR TO CONSTRUCTION.
2. A CUTOFF TRENCH (KEY TRENCH) OF A MINIMUM WIDTH OF FIVE FEET (5'), CENTERED ON THE CENTERLINE OF THE DAM, SHALL BE INCORPORATED. THE CUTOFF TRENCH SHALL EXTEND TO A MINIMUM DEPTH OF TWO FEET (2'), HOWEVER IN ALL CASES IT SHALL EXTEND INTO SOILS SUITABLE FOR THE EMBANKMENT FOUNDATION.
3. SOIL MATERIALS USED FOR EARTH FILL WHICH ARE CONSIDERED PERMEABLE OR WHICH EXHIBIT SIGNIFICANT SHRINK/SWELL, SHALL NOT BE USED IN THE EMBANKMENT UNLESS A SPECIFIC DETAILED DESIGN REPORT FROM A GEOTECHNICAL ENGINEER IS SUBMITTED AND ACCEPTED AS PART OF THE PLAN APPROVAL.
4. ALL EMBANKMENTS SHALL BE METHODICALLY BACK-FILLED WITH HIGHLY IMPERMEABLE MATERIAL AND COMPACTED TO AT LEAST NINETY-FIVE PERCENT (95%) OF STANDARD PROCTOR DENSITY.
5. THE MINIMUM TOP WIDTH OF THE DAM SHALL BE TEN FEET (10') SO UNIMPEDED ACCESS AROUND THE FACILITY CAN BE OBTAINED.
6. AN ADDITIONAL FIVE PERCENT (5%) OF THE DESIGN HEIGHT OF AN EARTHEN EMBANKMENT DAM SHALL BE ADDED TO THE TOP OF DAM ELEVATION DURING FILL PLACEMENT TO NEGATE FUTURE SETTLEMENT OF THE EMBANKMENT AND UNDERLYING SOILS.
7. ALL DISTURBED GROUND AREAS AND EMBANKMENTS SURROUNDING THE POND SHALL HAVE PERMANENT GROUND COVER ESTABLISHED IN ACCORDANCE WITH DURHAM GUIDELINES PRIOR TO FINAL ACCEPTANCE. SERICEA LESPEDEZA, WEEPING LOVEGRASS AND CROWN VETCH SHALL NOT BE INCORPORATED INTO THE GROUND COVER FOR THE DAM EMBANKMENT, AS THESE TYPES OF VEGETATION ARE DIFFICULT TO MAINTAIN, ENCOURAGE BURROWING ANIMAL HABITATS, AND PREVENT A THOROUGH INSPECTION OF THE DAM EMBANKMENT.
8. CONCRETE DAMS AND CONCRETE SPILLWAY STRUCTURES SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE'S (ACI) LATEST GUIDELINES. PARTICULAR ATTENTION SHALL BE PAID TO DESIGN AND ANALYSIS, WATER TIGHTNESS, CONCRETE QUALITY, AND CONSTRUCTION PRACTICES. STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO MAINTAIN WATER-TIGHTNESS BY CONTROLLING AND LIMITING CRACKING WITH PROPER JOINT DESIGN AND SPACING.
9. THE DAM SAFETY LAW OF 1967 (15A NCAC 02K .0201) REQUIRES ANY PERSON WHO PROPOSES TO CONSTRUCT, ALTER OR REMOVE A DAM TO FILE A STATEMENT WITH THE STATE DAM SAFETY ENGINEER CONCERNING THE LOCATION OF THE DAM, INCLUDING THE NAME OF THE STREAM AND COUNTY, HEIGHT, PURPOSE, AND IMPOUNDMENT CAPACITY, AT LEAST 10 DAYS BEFORE THE START OF CONSTRUCTION. IF THE STATE DETERMINES THAT THE DAM IS NOT EXEMPT FROM THE LAW, ADDITIONAL REQUIREMENTS IN ACCORDANCE WITH THE DAM SAFETY LAW OF 1967 AS AMENDED WILL BE IMPOSED.

OUTLETS

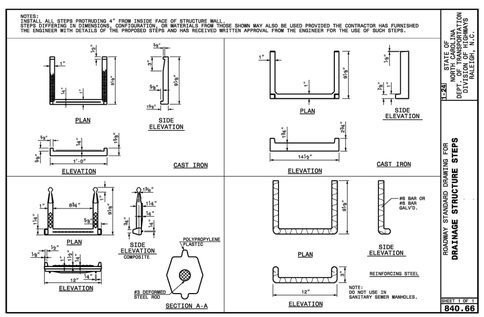
10. ALL RISER STRUCTURES, INCLUDING WEIR WALL TYPE STRUCTURES AND FLASHBOARD RISERS, SHALL BE CONSTRUCTED PRINCIPALLY OF REINFORCED CONCRETE. BRICK/CONCRETE BLOCK AND MORTAR TYPE STRUCTURES WILL NOT BE ACCEPTED. THE USE OF BRICK/CONCRETE BLOCK IN SOME ELEMENTS OF A RISER STRUCTURE MAY BE ACCEPTABLE. SUCH PROPOSALS WILL BE CONSIDERED ON A CASE-BY-CASE BASIS.
11. ALL RISER STRUCTURES SHALL BE LOCATED SUCH THAT DIRECT ACCESS FROM THE DAM EMBANKMENT CAN BE ACHIEVED. RISER STRUCTURES SITED COMPLETELY WITHIN THE LIMITS OF THE PERMANENT POOL WILL NOT BE ACCEPTABLE; AT LEAST ONE SIDE OF THE RISER SHALL BE ACCESSIBLE BY FOOT DURING PERMANENT POOL CONDITIONS.
12. ACCESS SHALL ALWAYS BE PROVIDED TO THE INSIDE AND INVERT OF THE RISER STRUCTURE. THIS CAN BE ACCOMPLISHED BEST WITH THE PROVISION OF A TRASH RACK ACCESS HATCH OR A MANHOLE LID AND THE PROVISION OF STEPS DOWN THE INSIDE FACE OF THE RISER. WHEN THE TOP OF THE RISER IS GREATER THAN FOUR FEET ABOVE THE ADJACENT GROUND SURFACE, STEPS UP THE OUTSIDE FACE OF THE RISER SHALL BE PROVIDED AS WELL.

TRASH RACKS

13. TOP-MOUNTED (OVERFLOW) TRASH RACKS SHALL BE BOLTED TO THE TOP OF THE STRUCTURE WITH STAINLESS STEEL HARDWARE. MOUNTING THE TRASH RACK TO THE RISER IN SHEAR SHALL BE PROHIBITED.
14. ALL RISER TRASH RACKS SHALL HAVE A LOCKING ACCESS HATCH WITH A MINIMUM CLEAR SPACE OPENING OF 2' BY 3' AND AN ACCEPTED DESIGN LIFE OF 75 YEARS.
15. INSTALL A DEVICE TO HOLD THE TRASH RACK ACCESS HATCH IN THE OPEN POSITION SUCH THAT IT DOES NOT CAUSE BREAKAGE OR OTHER DAMAGE.

RISER

16. STEPS IN THE RISER SHALL LINE UP WITH THE REQUIRED TRASH RACK ACCESS HATCH. THE ACCESS HATCH SHALL BE A MINIMUM OF 2' BY 3' IN SIZE. NO OTHER INTERNAL STRAPS OR PARTS OF THE RISER AND/OR TRASH RACK WILL INHIBIT ACCESS TO THE RISER WHEN USING THE TRASH RACK ACCESS HATCH.
17. PROVIDE STEPS OUTSIDE THE RISER AS NEEDED TO PROVIDE ACCESS.



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Other Consultants

Sheet map:

Seal:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS
Digitally signed by Bryan Harris
DN: CN=BryanA@QuantechEng.com, O=QuanTech Engineering LLP, OU=Bryan Harris
Reason: I have reviewed this document
Date: 2025.09.03 16:52:16-04'00'

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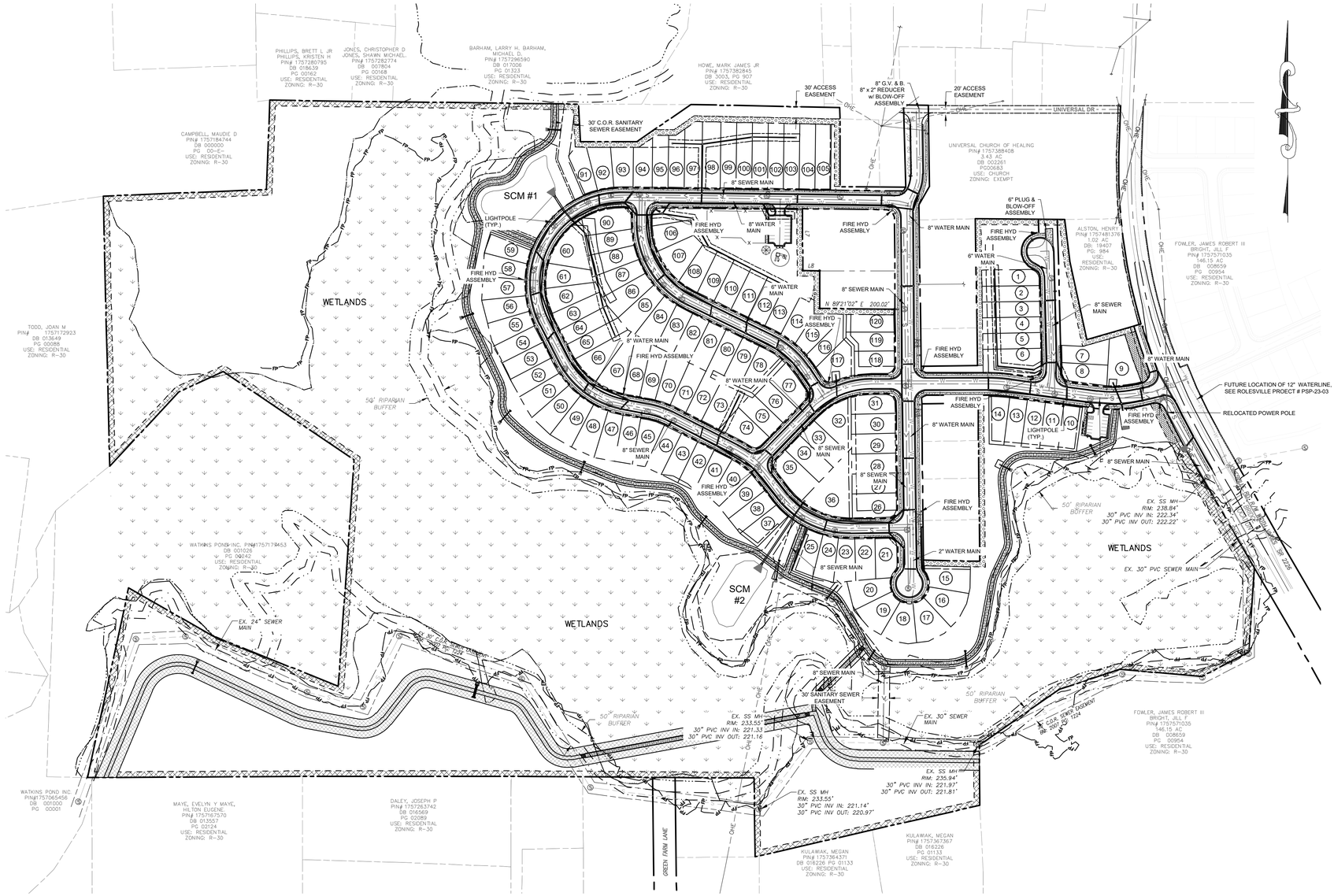
SCM DETAILS

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CONDITION OF APPROVAL NOTE:

1. All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
2. Utility separation requirements:
   a) A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to waterline specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well.
   b) When installing water &/or sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter.
   c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to waterline specifications.
   d) 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
   e) Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18" min. vertical separation at all sanitary sewer & RCP stormdrain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (per CORPUD details W- 41 & S-49).
   f) All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required.
3. Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction.
4. 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. SEWER BYPASS PUMPING – A bypass plan sealed by an NC Professional Engineer shall be provided to Raleigh Water prior to pumping operations for approval. The operations and equipment shall comply with the Public Utilities Handbook.
7. 3.0' minimum cover is required on all water mains & sewer force mains. 4.0' minimum cover is required on all reuse mains.
8. 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.
9. Install 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.
10. Inspections of 4" and larger water mains of the private distribution system will be inspected as part of the infrastructure permit.
11. Private sewer mains as part of a collection system are permitted and inspected under the private Infrastructure permit for sewer.
12. Any water or sewer services on private property that will be installed under Construction Drawings may require a Plumbing Utility Permit in the City of Raleigh. Consult with the Engineering Inspection Coordinator during the pre-construction meeting on the necessary permits.
13. Install sewer services with cleanouts located at ROW or easement line & spaced per the current NC Plumbing code.
14. 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 upstreammanhole.
15. 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.
16. NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction.
17. Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the RW FOG Program Coordinator prior to issuance of a UC and/or Building Permit. Contact (919) 996-4516 or fog@raleighnc.gov for more information.
18. Cross-connection control protection devices are required based on the degree of health hazard involved as listed in Appendix B of the Rules Governing Public Water Systems in North Carolina.
19. The devices shall meet the American Society of Sanitary Engineering (ASSE) standards and be on the University of Southern California approval list.
20. The device and installation shall meet the guidelines of Appendix A – Guidelines and Requirements for the Cross Connection Program in Raleigh's Service Area.
21. The devices shall be installed and tested (both, initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross connection control program, whichever is more stringent. Contact Cross.connection@raleighnc.gov for more information.
22. NOTICE for projects that involve an oversized main or urban main replacement. Any City reimbursement greater than $250,000.00 must undergo the public bidding process.
23. Private sub-metering - No resale of water shall occur without approval of the North Carolina Utility Commission. Sub-metering shall be in accordance with Section 1400 of the "SAFE DRINKING WATER ACT".

UTILITY PLAN LEGEND

PROPOSED R.O.W.	
PROPOSED LOT LINE	
EXISTING SEWER LINE	S
EXISTING SEWER MANHOLE	S
PROPOSED SEWER LINE	S
PROPOSED SEWER MANHOLE	S
EXISTING WATER LINE	W
PROPOSED WATERLINE	W
PROPOSED FIRE HYDRANT	
EXISTING EASEMENT	
PROPOSED EASEMENT	
LIGHT POLE	

CONDITION OF APPROVAL NOTE:

1. A WATER MODEL IS REQUIRED TO BE COMPLETED BY THE PROJECT ENGINEER TO DEMONSTRATE THAT THE PROPOSED WATERLINE EXTENSION WILL PROVIDE ADEQUATE FIRE FLOW AND PRESSURE FOR THE PROPOSED DEVELOPMENT.

Public
WATER DISTRIBUTION / EXTENSION SYSTEM
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City of Raleigh
Public Utilities DepartmentPermit # _____

Public
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City of Raleigh
Public Utilities DepartmentPermit # _____

GRAPHIC SCALE
150 0 75 150 300 600
(IN FEET)
1 inch = 150 ft

N.C. UNDERGROUND UTILITIES
811
3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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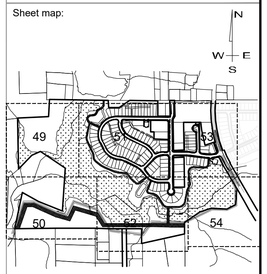
Developer
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10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

Engineer
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919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality
Rolesville
Growing Community + Capital Connection
Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:


Seal:
BRYAN A. HARRIS PROFESSIONAL SEAL 53676 ENGINEER
Bryan Harris
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Project:
HARRIS CREEK FARMS
CID-25-03

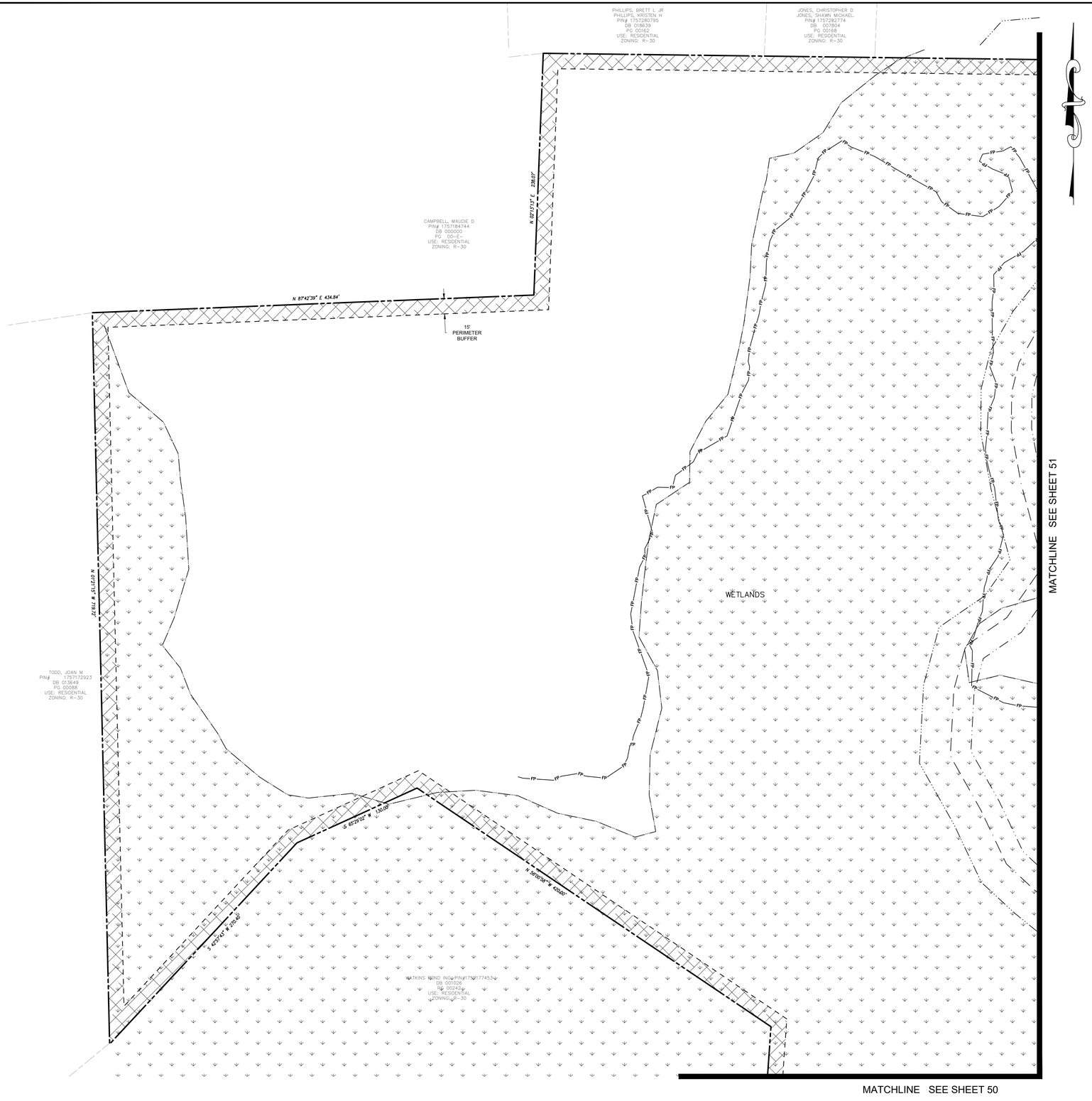
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OVERALL UTILITY PLAN

Sheet #:
48



Public
WATER DISTRIBUTION / EXTENSION SYSTEM

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City of Raleigh
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City of Raleigh
Public Utilities DepartmentPermit # _____

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES
811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
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Surveyor

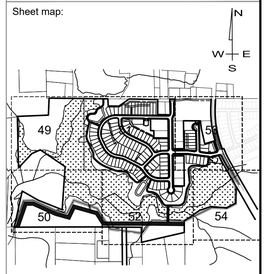
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Jurisdiction / Municipality

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502 Southtown Cir
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Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS

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Project:

HARRIS CREEK FARMS

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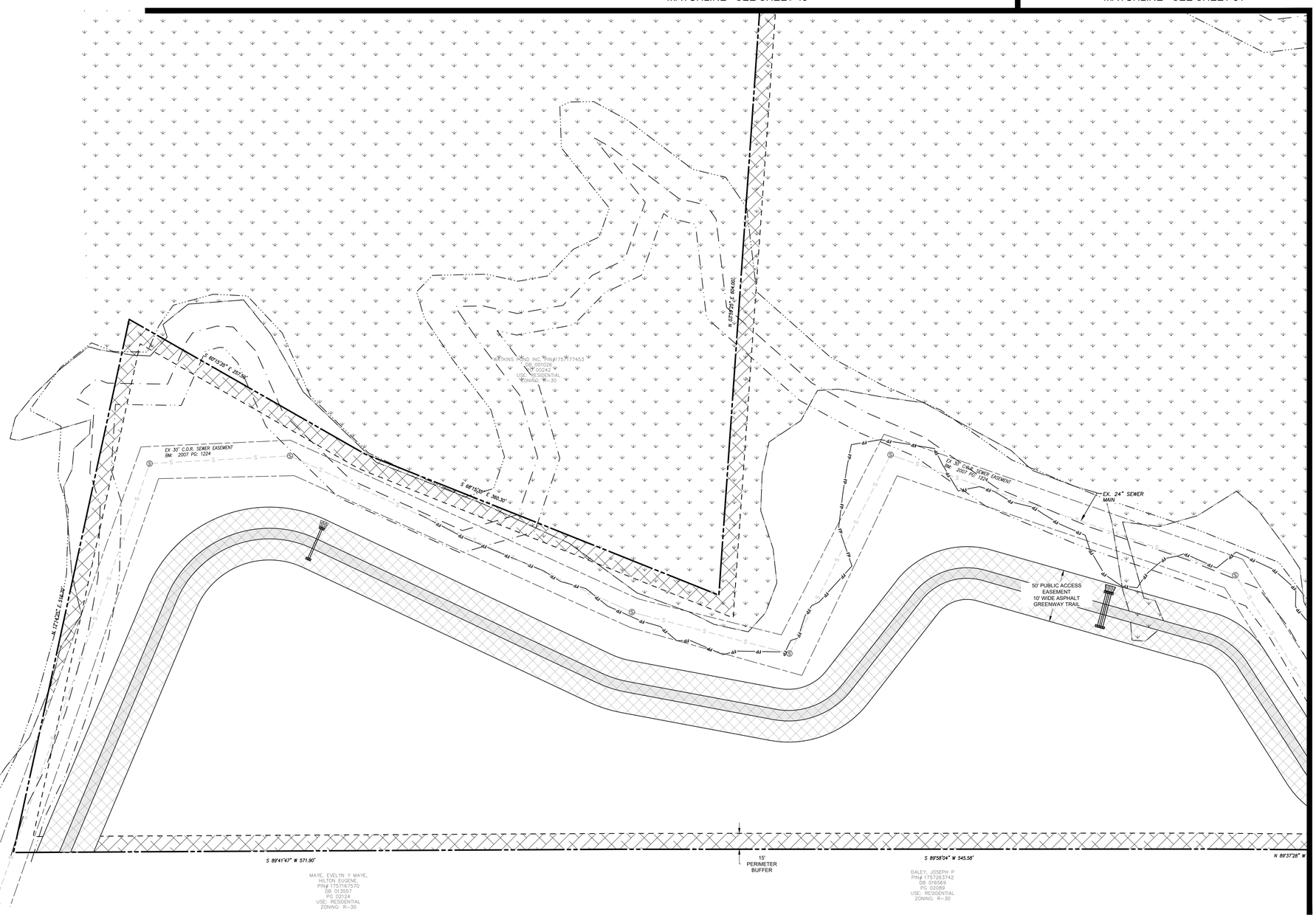
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UTILITY PLAN SHEET 1 OF 6

Sheet #:

49

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UTILITY PLAN LEGEND

PROPOSED R.O.W.	
PROPOSED LOT LINE	
EXISTING SEWER LINE	S
EXISTING SEWER MANHOLE	S
PROPOSED SEWER LINE	S
PROPOSED SEWER MANHOLE	S
PROPOSED SEWER CLEANOUT	
EXISTING WATER LINE	W
PROPOSED WATERLINE	W
PROPOSED WATER SERVICE	
PROPOSED GATE VALVE	
PROPOSED FIRE HYDRANT	
EXISTING EASEMENT	
PROPOSED EASEMENT	
LIGHT POLE	

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City of Raleigh
Public Utilities DepartmentPermit # _____

GRAPHIC SCALE

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(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

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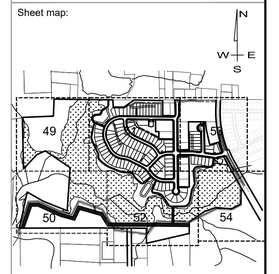
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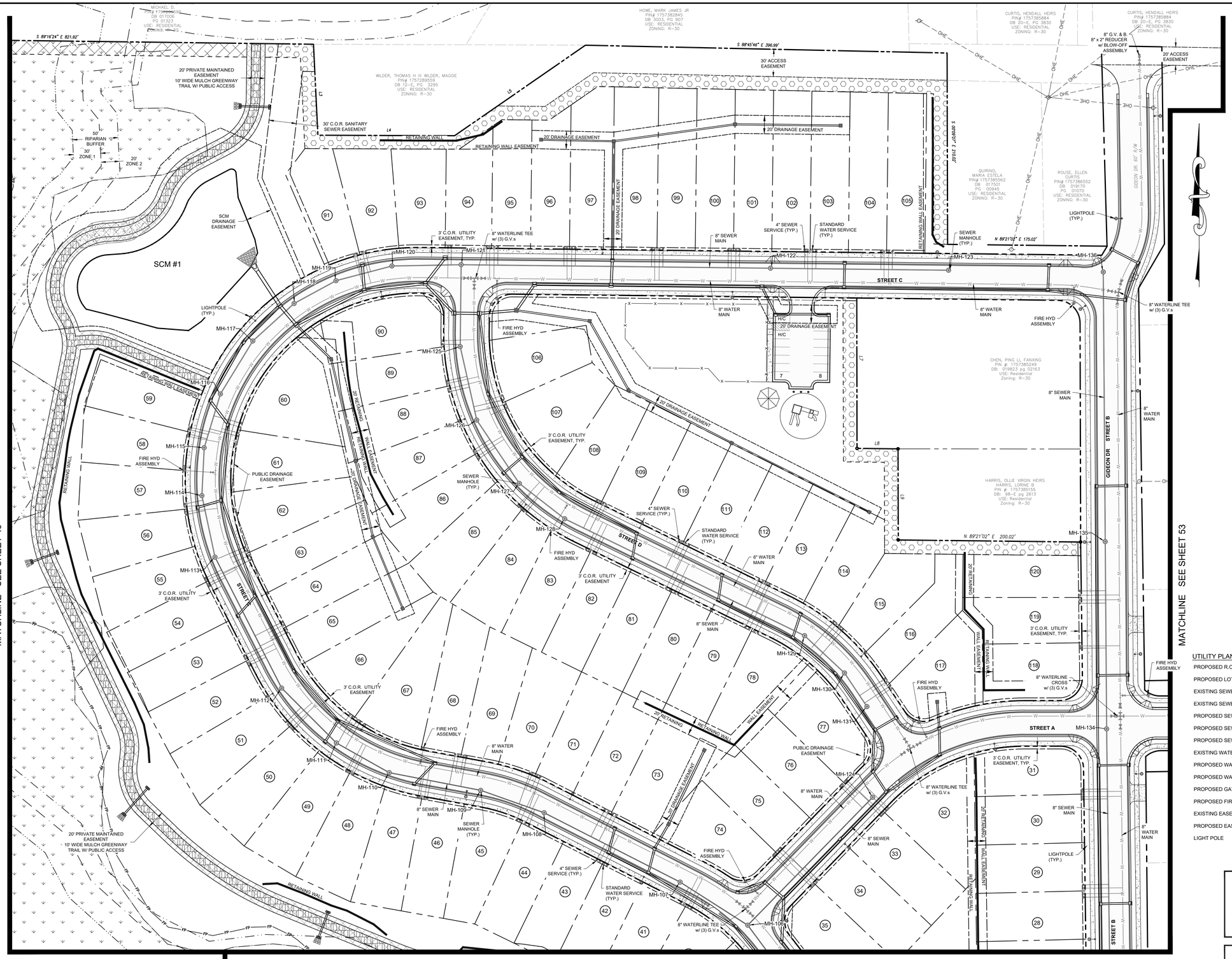
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UTILITY PLAN SHEET 2 OF 6

Sheet #:

50

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UTILITY PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEANOUT
- EXISTING WATER LINE
- PROPOSED WATERLINE
- PROPOSED WATER SERVICE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT
- EXISTING EASEMENT
- PROPOSED EASEMENT
- LIGHT POLE

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GRAPHIC SCALE

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(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

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Developer

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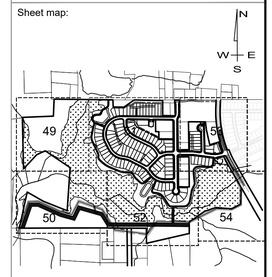
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Jurisdiction / Municipality

Rolesville Growing Community • Capital Connection Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
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CID-25-03 (PSP-24-05)

Other Consultants

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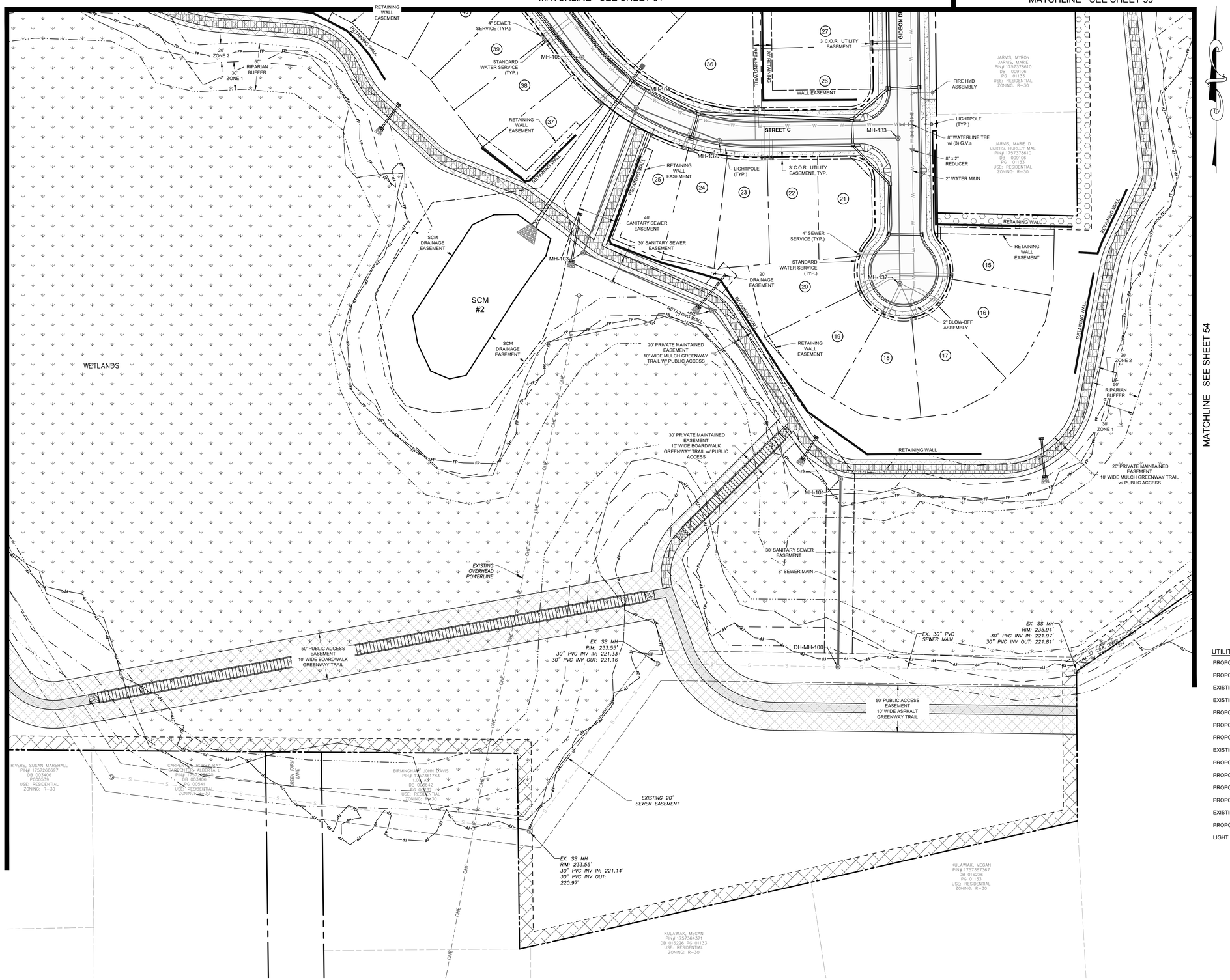
No.	Date	Description
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Sheet Title:

UTILITY PLAN SHEET 3 OF 6

Sheet #:

51



UTILITY PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEANOUT
- EXISTING WATER LINE
- PROPOSED WATERLINE
- PROPOSED WATER SERVICE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT
- EXISTING EASEMENT
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1 inch = 50 ft

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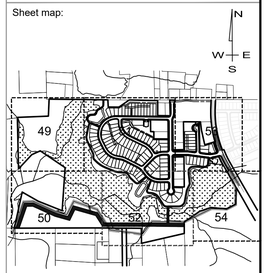
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS

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Project:

HARRIS CREEK FARMS

CID-25-03

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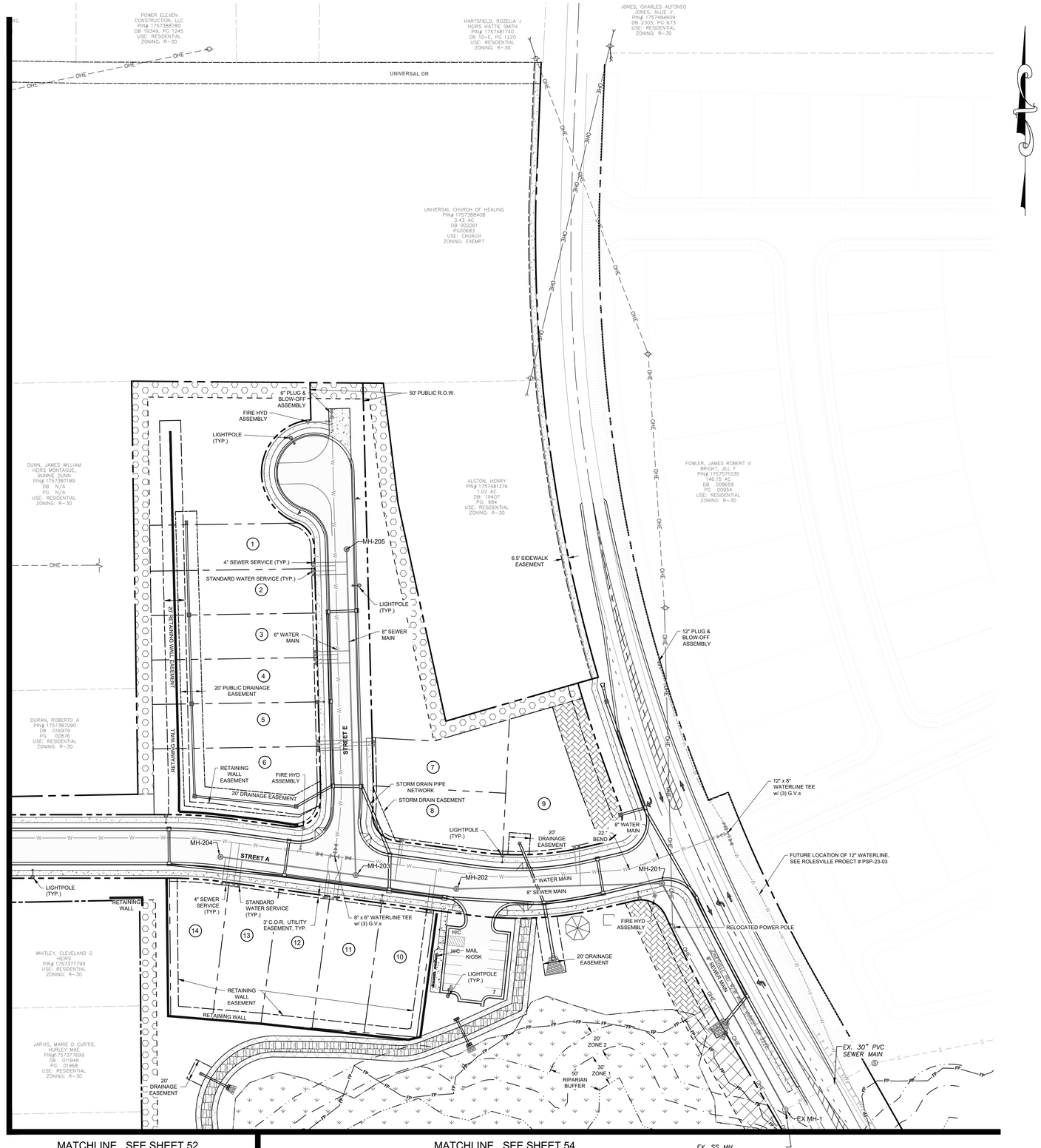
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Sheet Title:

UTILITY PLAN SHEET 4 OF 6

Sheet #:

52



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UTILITY PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- EXISTING SEWER LINE
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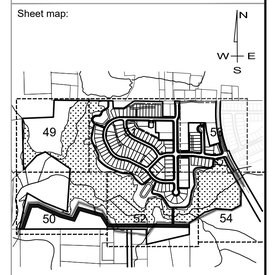
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(919) 996-9455

Surveyor
BCSC BATEMAN CIVIL SURVEY COMPANY
Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

Jurisdiction / Municipality
Rolesville Genuine Community • Capital Connection Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:


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NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS
Bryan Harris
Digitally signed by Bryan Harris
DN: C=US, E=BryanH@QuantechEng.com, O=Quantech Engineering LLP, CN=Bryan Harris
Reason: I have reviewed this document
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Project:
HARRIS CREEK FARMS
CID-25-03

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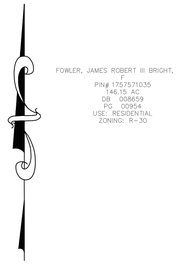
Sheet Title:
UTILITY PLAN
SHEET 5 OF 6

Sheet #:
53

MATCHLINE SEE SHEET 53

MATCHLINE SEE SHEET 52





UTILITY PLAN LEGEND

- PROPOSED R.O.W.
- PROPOSED LOT LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEANOUT
- EXISTING WATER LINE
- PROPOSED WATERLINE
- PROPOSED WATER SERVICE
- PROPOSED GATE VALVE
- PROPOSED FIRE HYDRANT
- EXISTING EASEMENT
- PROPOSED EASEMENT
- LIGHT POLE

Public

WATER DISTRIBUTION / EXTENSION SYSTEM

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

City of Raleigh
Public Utilities DepartmentPermit # _____

Public

SEWER COLLECTION / EXTENSION SYSTEM

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

City of Raleigh
Public Utilities DepartmentPermit # _____

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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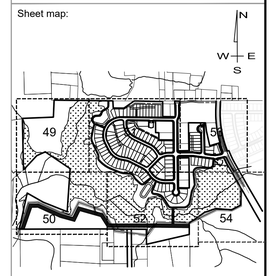
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SHEET 6 OF 6

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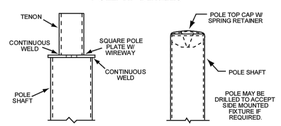
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CATALOG NUMBER:	
JOB NAME:	
CUSTOMER NAME:	
NOTES:	TYPE:
	DATE:

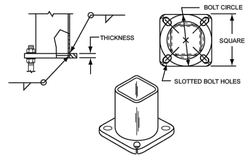
FEATURES AND SPECIFICATIONS

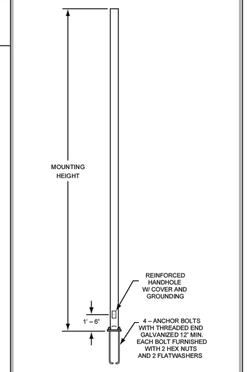
AREA LIGHTING
POLES
SQUARE STRAIGHT STEEL POLES

POLE TIP DETAILS



POLE BASE DETAILS





ORDERING INFORMATION

Nominal Mounting Height (ft)	Catalog Number	Shaft			Pole Base			Maximum Loading			
		Base O.D. (in)	Wall Thk. (ga)	Gross Weight (lbs)	Bolt Circle Range*	Plate Width (in)	Plate Thk. (in)	90MPH EPA (ft²)	100MPH EPA (ft²)	110MPH EPA (ft²)	120MPH EPA (ft²)
12	SSS12411BZ	4.00	11	90	8 to 11	8.0	0.75	23.0	18.2	14.6	11.7
14	SSS14411BZ	4.00	11	105	8 to 11	8.0	0.75	18.7	14.5	11.5	9.1
16	SSS16411BZ	4.00	11	120	8 to 11	8.0	0.75	15.1	11.5	8.9	6.9
18	SSS18411BZ	4.00	11	135	8 to 11	8.0	0.75	12.2	9.1	6.8	5.1
20	SSS20411BZ	4.00	11	150	8 to 11	8.0	0.75	9.5	6.9	4.9	3.4
20	SSS20507BZ	5.00	7	250	9 to 11	11.0	1.00	30.5	23.7	18.6	14.7
20	SSS20511BZ	5.00	11	180	9 to 11	11.0	0.75	20.0	14.9	11.5	8.8

*-Consult Factory for Specific Bolt Circle Measurements. Continued

Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.

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AREA LIGHTING
POLES
SQUARE STRAIGHT STEEL POLES

ORDERING INFORMATION CONTINUED

Nominal Mounting Height (ft)	Catalog Number	Shaft			Pole Base			Maximum Loading			
		Base O.D. (in)	Wall Thk. (ga)	Gross Weight (lbs)	Bolt Circle Range*	Plate Width (in)	Plate Thk. (in)	90MPH EPA (ft²)	100MPH EPA (ft²)	110MPH EPA (ft²)	120MPH EPA (ft²)
25	SSS25411BZ	4.00	11	188	8 to 11	8.0	0.75	9.3	6.4	4.3	2.6
25	SSS25407BZ	4.00	7	250	8 to 11	8.0	0.75	11.2	8.0	5.5	3.7
25	SSS25511BZ	5.00	11	225	9 to 11	11.0	0.75	16.0	11.4	8.0	5.6
25	SSS25507BZ	5.00	7	313	9 to 11	11.0	1.00	34.0	26.2	20.0	15.9
30	SSS30407BZ	4.00	7	300	8 to 11	8.25	0.75	6.5	3.7	1.8	0.3
30	SSS30507BZ	5.00	7	375	9 to 11	11.0	1.00	24.1	17.5	13.0	9.4
30	SSS30607BZ	6.00	7	462	12	12.5	1.00	34.3	25.8	19.4	14.6
35	SSS35607BZ	6.00	7	539	12	12.5	1.00	24.8	17.7	12.2	8.4

*-Consult Factory for Specific Bolt Circle Measurements.

ORDERING INFORMATION

S	S	S	20	–	4	–	11	–	T		–	BZ	3

- SHAPE: S = Square; R = Round
- SHAFT: S = Straight; T = Tapered
- STRUCTURE: S = Steel; A = Aluminum; C = Concrete; F = Fiberglass
- HEIGHT (FT)*: 18 = 18 ft; 20 = 20 ft; 25 = 25 ft; 30 = 30 ft; *Other sizes available
- DIAMETER/ WIDTH (IN)*: 4 = 4 in; 5 = 5 in; 6 = 6 in; *Other sizes available
- GAUGE (IN): 11 = 11 in; 07 = 07 in
- TENON DETAIL: T = Welded; Blank = None
- BASE DETAIL: E = Embedded; Blank = Anchor
- COLOR*: BZ = Bronze; W = White; S = Anodized Silver; B = Black
- DRILL PATTERN: 1 = 1; 2 = 2 @ 90°; 3 = 2 @ 180°; 4 = 3 @ 90°; 5 = 4 @ 90°; 6 = Drop Mount

Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.

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L

500-SPTABZ
Square Pole Tenon Adapter - Up to 4 @ 90°

Project Information	
Job Name	
Type	Square Pole Tenon Adapter - Up to 4 @ 90°
Catalog Number	500-SPTABZ
Approved by	

SPECIFICATIONS:

Construction:
Die Cast Aluminum
Removable Top Bracket Cover Included
(3) Sides have Removable Hole Plugs installed

Mounting:
Mounting Cleat(s) Included w/ SLP Fixture(s)
Bracket is Pre-drilled for Mounting up to (4) Fixtures

Weight:
4.19 lbs. / 1.9 kg.

Overall Height:
10.25" (26.035 cm)

Overall Width:
4" (10.16 cm)

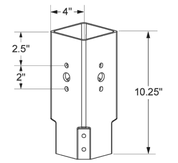
Overall Depth:
4" (10.16 cm)



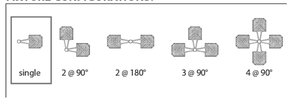
ORDERING INFORMATION:

CATALOG #	DESCRIPTION	FINISH
500-SPTABZ	For Square Poles w/ Tenon	Bronze

DIMENSIONS:



FIXTURE CONFIGURATIONS:



Made in the USA of US and imported parts. Meets Buy American requirements within the ARRA.

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Eagle Series
2nd Generation LED Site Lighter

Project Information	
Job Name	
Fixture Type	Eagle Series
Catalog Number	SLPM
Approved by	

3000K or warmer CCTs only

SPECIFICATIONS:

Construction:
Designed for commercial and industrial applications, providing cooler operating temperatures, brighter light and longer LED life. The die cast aluminum housing utilizes external airflow fins allow for greater heat dissipation. The easy access driver compartment is a thermally independent compartment, separate from LED generated heat, for cooler operation and longer driver life.



Optics:
Atlas Site Lighter Pro fixtures utilize precision engineered individual lenses for maximum light intensity. The lens is made of optical grade polycarbonate. Advanced one piece optic board engineered for maximum light intensity. Types II, III, V and Forward Throw distributions are available. Types II, III and Forward Throw optics are rotatable allowing for optimal placement of the fixtures on the perimeter of any layout.

Mounting:
The easy mount bracket makes installation to any style pole quick and easy. Tenon and other mounting accessories also available.
For round poles **500-SLPMRPA** is required.

Thermal Management:
Atlas Site Lighter Pro fixtures are designed as a complete system to optimize LED life and light output. The thermal stacking heat removal technology extracts heat from within the housing moving it away from LEDs and components. The lower temperatures result in long LED life (200,000+ hrs[1]) and component life and also allows for higher light output.

Listings:
Luminaire is certified to UL/cUL Standards for Wet Locations
*The following qualify for DesignLights Consortium Premium:
SLPM6L (All colors/options), SLPM9L (All colors/options), SLPM12L (All colors/options), SLPM18L (All colors/options), SLPM24L (All colors/options), all other luminaires are DesignLights Consortium qualified. All are eligible for rebates from DLC member utilities.

AC Input:
120/208/240/277/347/480 V

Driver:
Constant current, 120-277 VAC, 50-60 Hz
High Efficiency – min. 88%
Off-State Power: 0 Watts
0-10 V Dimming

LEDs:
Available in 3000K, 4000K, 4500K and 5000K, CCT
Epoxy Guard™ protective conformal coated boards

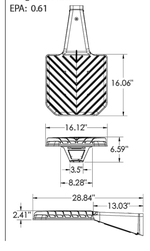
Reduced Glare:
Positioning of the LED modules within the housing result in light directed to desired locations and reduces offensive light.

Testing:
Atlas LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 & LM-80.

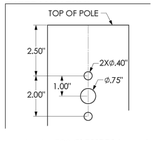
Warranty: Five-year limited warranty

DIMENSIONS:

Weight: 21 lbs.
EPA: 0.61



DRILL PATTERN:



For round poles **500-SLPMRPA** is required.

Rebates and Incentives are available in many areas.
Contact an Atlas Representative for more information.

[1]*LED Life Span Based Upon LM-80 Test Results*

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*The majority of Atlas Lighting Products are assembled in USA facilities by an American Workforce utilizing both Domestic and Foreign components. Meets Buy American requirements within the ARRA.

Eagle Series
2nd Generation LED Site Lighter

ORDERING INFORMATION

SLPM	9L	T3	4K					

- PRODUCT SERIES: SLPM = 2nd Generation Site Lighter Pro
- LUMEN PACKAGE: 6L = 6,000 Lumens; 9L = 9,000 Lumens; 12L = 12,000 Lumens; 18L = 18,000 Lumens; 24L = 24,000 Lumens; 30L = 30,000 Lumens; 36L = 36,000 Lumens; 43L = 43,000 Lumens
- DISTRIBUTION: T2 = Type 2; T3 = Type 3; T5 = Type 5; FT = Forward Throw; T2L = Type 2 Rotated Left; T3L = Type 3 Rotated Left; FTL = Forward Throw Rotated Left; T2R = Type 2 Rotated Right; T3R = Type 3 Rotated Right; FTR = Forward Throw Rotated Right
- COLOR TEMP.: 3K = 3000K; 4K = 4000K; 45K = 4500K; 5K = 5000K
- VOLTAGE: Blank = 120-277; 4 = 347/480
- DIMMING: Blank = 0-10vdc
- COLOR RENDERING: Blank = 70CRI
- FIXTURE COLOR: Blank = Bronze; BK = Black; SL = Silver; WT = White
- OPTIONS: PR = 7 Pin Photocell Receptacle; SP = Surge Protection; IC = Integrated Motion Control; BTM = Bluetooth Microwave Motion Control *includes photocontrol*

Lumen Package	Distribution	CRI	3000K CCT Delivered Lumens	3000K CCT Efficacy (LPW)	4000K CCT Delivered Lumens	4000K CCT Efficacy (LPW)	4500K CCT Delivered Lumens	4500K CCT Efficacy (LPW)	5000K CCT Delivered Lumens	5000K CCT Efficacy (LPW)	Wattage
6L	T2	70	5908	153	6067	158	6093	159	6152	160	39
	T3	70	5824	151	5981	155	6006	155	6065	157	
	FT	70	5712	148	5866	152	5891	153	5948	154	
	T5	70	5848	152	6005	156	6031	156	6090	158	
9L	T2	70	9155	159	9401	163	9442	164	9533	166	58
	T3	70	9082	158	9326	162	9366	163	9457	164	
	FT	70	8866	154	9104	158	9144	159	9232	160	
	T5	70	9086	158	9330	162	9370	163	9461	164	
12L	T2	70	12030	160	12354	164	12407	165	12527	167	75
	T3	70	11900	159	12220	163	12272	164	12391	165	
	FT	70	11670	156	11984	160	12035	160	12152	162	
	T5	70	11950	159	12271	164	12324	164	12444	166	
18L	T2	70	17840	155	18320	159	18398	160	18577	162	115
	T3	70	17810	155	18289	159	18367	160	18546	161	
	FT	70	17340	151	17806	155	17883	156	18056	157	
	T5	70	17820	155	18299	159	18378	160	18556	161	
24L	T2	70	23640	148	24276	152	24380	153	24616	154	160
	T3	70	23620	148	24255	152	24359	153	24596	154	
	FT	70	23030	144	23650	148	23751	149	23981	150	
	T5	70	23660	148	24296	152	24401	153	24637	154	
30L	T2	70	29450	140	30242	144	30372	145	30666	146	210
	T3	70	29440	140	30232	144	30361	145	30656	146	
	FT	70	28750	137	29523	141	29650	141	29937	143	
	T5	70	29470	141	30263	144	30392	145	30687	146	
36L	T2	70	35260	133	36208	137	36364	137	36716	139	265
	T3	70	35220	133	36167	137	36322	137	36675	139	
	FT	70	34490	131	35418	134	35570	135	35914	136	
	T5	70	35200	133	36147	137	36302	137	36654	139	
43L	T2	70	42200	121	43335	124	43521	125	43943	126	348
	T3	70	41940	120	43068	124	43253	124	43672	125	
	FT	70	41300	118	42411	122	42593	122	43006	123	
	T5	70	41970	120	43099	124	43284	124	43703	125	

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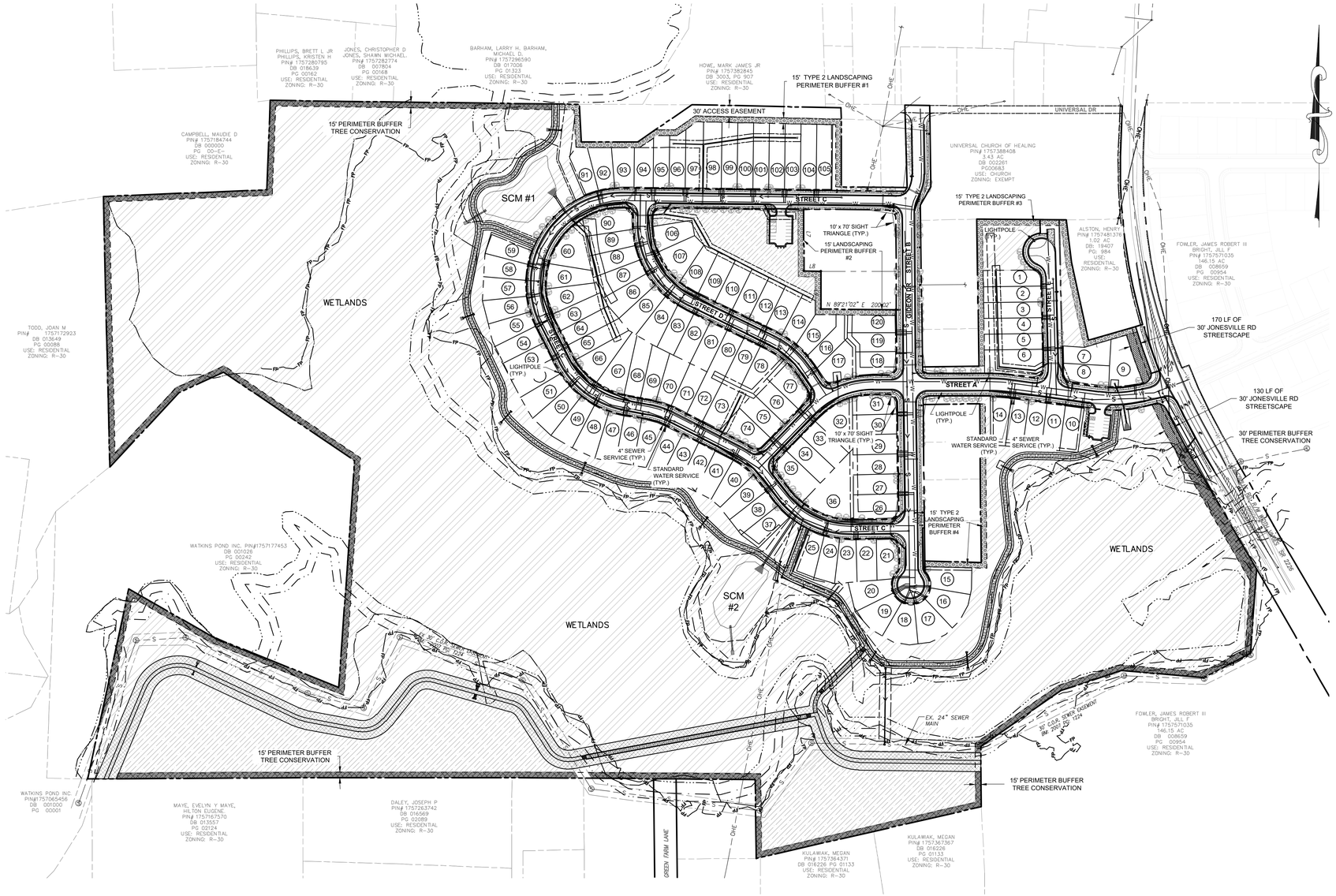
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Sheet Title:
UTILITY DETAILS

Sheet #:
55



LANDSCAPING NOTES:

1. TREES SHALL NOT BE PLANTED BETWEEN THE CURB AND SIDEWALK (A GRASS STRIP IS REQUIRED). STREET TREES MAY BE INSTALLED IN A LINEAR FASHION OR IN CLUSTERS OR GROUPINGS OF LARGER AND/OR SMALL TREES IN COMBINATION WITH ASSOCIATED PLANTINGS TO ENHANCE THE VISUAL APPEARANCE OF THE STREETSCAPE AND VIEWS FROM THE ADJACENT PROPERTIES.
2. EACH LARGE CANOPY TREE IN THE STREETSCAPE SHALL BE PROVIDED WITH AT LEAST THREE HUNDRED-AND-FIFTY (350) SQUARE FEET OF PERVIOUS GROUND AREA FOR ROOT GROWTH. ANY PLANTING AREA BOUNDED BY AN IMPERVIOUS SURFACE SHALL BE AT LEAST 10 FEET WIDE.
3. ALL SLOPES STEEPER THAN (2) TO ONE (1) SHALL BE STABILIZED WITH PERMANENT SLOPE RETENTION DEVICES OR A SUITABLE COMBINATION OF PLANTINGS AND RETENTION DEVICES.
4. JONESVILLE LANDSCAPE TYPE 2 BUFFER WILL COUNT TOWARDS THE STREETSCAPE REQUIREMENTS.

PLANTING REQUIREMENTS:

THE PERIMETER BUFFER SHALL HAVE
- (3) CANOPY TREES / 100 LF
- (1) UNDERSTORY TREE / 100 LF
- (50) SHRUBS / 100 LF

THE STREETSCAPE FOR JONESVILLE ROAD SHALL HAVE
- (2) UNDERSTORY TREES / 40 LF

THE STREETSCAPE FOR ALL INTERNAL SUBDIVISION ROADS SHALL HAVE
- (1) TREE / 60 LF EACH SIDE OF ROAD

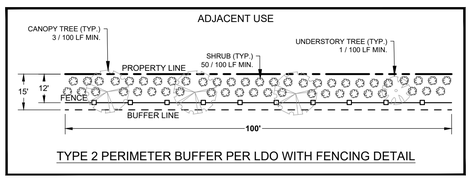
PLANTING CALCULATIONS

JONESVILLE STREETSCAPE	300 LF / 40 = 7.5 x (2) = 15 UNDERSTORY TREES
PERIMETER BUFFER (REQUIRED / AREA)	
#1	1,170 LF / 100 = 11.7 x (3) = 36 CANOPY TREES 1,170 LF / 100 = 11.7 x (1) = 12 UNDERSTORY TREES 1,170 LF / 100 = 11.7 x (50) = 585 SHRUBS
#2	560 LF / 100 = 5.6 x (3) = 17 CANOPY TREES 560 LF / 100 = 5.6 x (1) = 6 UNDERSTORY TREES 560 LF / 100 = 5.6 x (50) = 280 SHRUBS
#3	1,220 LF / 100 = 12.2 x (3) = 37 CANOPY TREES 1,220 LF / 100 = 12.2 x (1) = 13 UNDERSTORY TREES 1,220 LF / 100 = 12.2 x (50) = 610 SHRUBS
#4	830 LF / 100 = 8.3 x (3) = 25 CANOPY TREES 830 LF / 100 = 8.3 x (1) = 9 UNDERSTORY TREES 830 LF / 100 = 8.3 x (50) = 415 SHRUBS
PERIMETER BUFFER TOTALS (REQUIRED)	115 CANOPY TREES 40 UNDERSTORY TREES 1,890 SHRUBS
PERIMETER BUFFER TOTALS (PROPOSED)	115 CANOPY TREES 40 UNDERSTORY TREES 1,890 SHRUBS
INTERNAL ROAD STREETSCAPE (REQUIRED / STREET)	
* STREET A	1,125 LF / 60 = 18.75 x (1) = 19 19 / SIDE = 38 CANOPY TREES (OR 76 UNDERSTORY TREES)
STREET B	1,245 LF / 60 = 20.75 x (1) = 21 21 / SIDE = 42 CANOPY TREES (OR 84 UNDERSTORY TREES)
STREET C	2,360 LF / 60 = 39.33 x (1) = 40 40 / SIDE = 80 CANOPY TREES (OR 160 UNDERSTORY TREES)
STREET D	705 LF / 60 = 11.75 x (1) = 12 12 / SIDE = 24 CANOPY TREES (OR 48 UNDERSTORY TREES)
STREET E	370 LF / 60 = 6.17 x (1) = 7 7 / SIDE = 14 CANOPY TREES (OR 28 UNDERSTORY TREES)
INTERNAL ROAD TOTALS (REQUIRED)	198 TREES
INTERNAL ROAD TOTALS (PROPOSED)	198 TREES

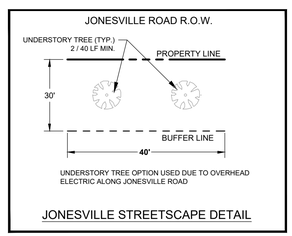
* STREET "A" FROM JONESVILLE ROAD TO THE INTERSECTION OF STREET "B" (GIDEON DR.) IS A COLLECTOR ROAD AND WILL HAVE A 15' WIDE STREETSCAPE. THE REMAINDER OF STREET "A" AND ALL OTHER INTERNAL ROADS ARE LOCAL ROADS AND WILL HAVE A 10' WIDE STREETSCAPE.

TREE / SHRUB LIST

Common Name	Scientific Name	Type	Height	Width	Light	Comments
Trident Maple	Acer buergerianum	Decid - Canopy	30' - 40'	25' - 35'	full-sun / part-sun / Shade	Green, turns red in Fall / Heat-tolerant / pH 5.6 - 6.5
Yellow Buckeye	Aesculus flava	Decid - Canopy	45'	50'	full-sun / part-sun / Shade	Green, turns yellow in Fall / Heat-tolerant / pH 5.6 - 6.5
Yellowwood	Cladrastis kentukea	Decid - Canopy	35'	40'	part-sun	white flowers, fragrant, pendulous, blooms in late spring or early summer and often blooms only every 2-3 years
'Jane' Saucer Magnolia	Magnolia 'Jane'	Decid - Understory	8' - 15'	15'	full-sun / part-sun / Shade	Flowers purple
Devilwood	Osmanthus americanus	Decid - Understory	12' - 20'	8' - 12'	full-sun / part-sun / Shade	
Persian Parrotia	Parrotia persica	Decid - Understory	30'	30'	full-sun / part-sun / Shade	Flowers Orange
Arizona Cypress	Cupressus arizonica	Evergreen	30' - 40'	15' - 20'	full-sun	Will thin with competition; subject to canker and not long-lived; can become more open with age
'James Swan' Holly	Ilex 'James Swan'	Evergreen	20' - 30'	10' - 18'	full-sun / part-sun / Shade	A dense form with large, dark green, evergreen leaves
Hearts-aBurstin	Euonymus americanus	Shrub	4' - 6'	3' - 4'	full-sun / part-sun / Shade	green w/ red flowering; Prefers well-drained soils; very pH- and soil-adaptable
Leaf Butterfly Bush	Buddleia alternifolia	Shrub	10' - 20'	10' - 20'	full-sun	green w/ purple flowering; preferring loose, loamy soil;
Clethra, Pepperbush	Clethra alnifolia	Shrub	4' - 8'	4' - 6'	full-sun / part-sun / Shade	green w/ white flowering; very adaptable; salt tolerant; easy to grow; forms suckering colonies
	Shade trees shall be a minimum of 3" caliper and 10' tall at time of planting					
	Understory trees shall be a minimum of 1.5" caliper for single stem and 6' tall for both single and multi-stemmed trees at time of planting					
	Evergreen shall be a minimum of 1.5" caliper for single stem and 6' tall for both single and multi-stemmed trees at time of planting					
	Shrubs shall be a minimum of 18" tall at time of planting					



TYPE 2 PERIMETER BUFFER PER LDO WITH FENCING DETAIL



JONESVILLE STREETSCAPE DETAIL

PERIMETER BUFFER DETAILS

NTS

LANDSCAPING PLAN LEGEND

EXISTING BOUNDARY
PROPOSED R.O.W.
PERIMETER BUFFER LINE
PERIMETER BUFFER TREE CONSERVATION
PERIMETER BUFFER LANDSCAPING PER LDO
CANOPY TREE
UNDERSTORY TREE
SHRUB
LIGHT POLE
PASSIVE OPEN SPACE
ACTIVE OPEN SPACE

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft

N.C. UNDERGROUND UTILITIES
811
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Jurisdiction / Municipality
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Est. 1837
Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
Phone: 919-554-6517
CID-25-03 (PSP-24-05)

Other Consultants

Sheet map:

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 53676 BRYAN A. HARRIS
Bryan Harris
Digitally signed by Bryan Harris
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I have reviewed this document
Date: 2025.09.03 16:52:20-04'00'

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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File Name: 56 Overall Landscaping Plan.dwg

Last Saved by: BryanHarris
Drawn by: TAN

Project:
HARRIS CREEK FARMS
CID-25-03

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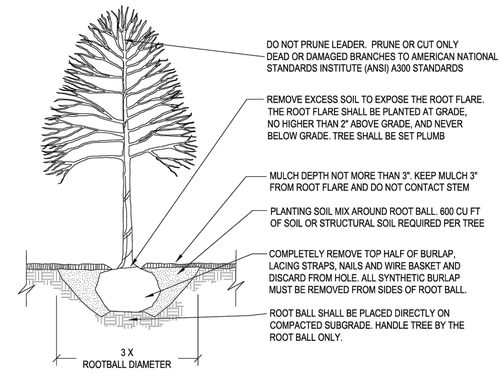
REVISIONS

No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:
OVERALL LANDSCAPING PLAN

Sheet #:
56

File Location: C:\Users\BryanHarris\Quantech\Quantech Engineering - Documents\Harris Creek Farm - Jonesville\Engineering_DWG\Construction Plans\56 Overall Landscaping Plan.dwg



CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

NOTES:

1. TREES MUST MEET THE TREE QUALITY STANDARDS IN CH. 2 OF THE CITY TREE MANUAL.
2. CONTRACTOR IS RESPONSIBLE FOR ADEQUATE DRAINAGE OF ALL PLANTING PITS. (POSITIVE DRAINAGE AWAY FROM PIT)
3. TREES SHALL BE PLANTED BETWEEN OCTOBER 1ST AND APRIL 30TH.
4. A TREE IMPACT PERMIT IS REQUIRED.
5. ELECTRICAL OUTLETS AND OTHER UTILITIES ARE PROHIBITED IN THE PLANTING AREA IMMEDIATELY SURROUNDING THE TREE.
6. IF STAKING IN ACCORDANCE WITH THE CITY TREE MANUAL, THE STAKING MUST BE REMOVED WITHIN ONE YEAR.
7. TREES WILL HAVE A MINIMUM 1 YEAR WARRANTY AFTER THE INITIAL PLANTING IS APPROVED BY THE CITY.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
10/2019		TREE PLANTING DETAIL
		TPP-03

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft

N.C. UNDERGROUND UTILITIES
811
3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949
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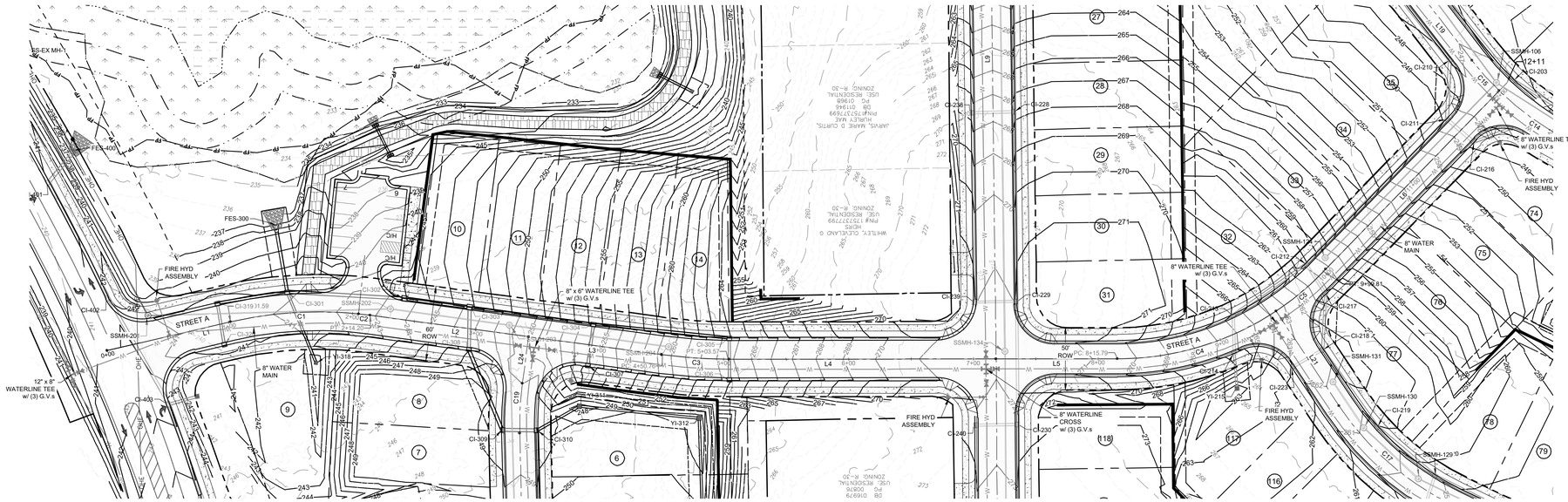
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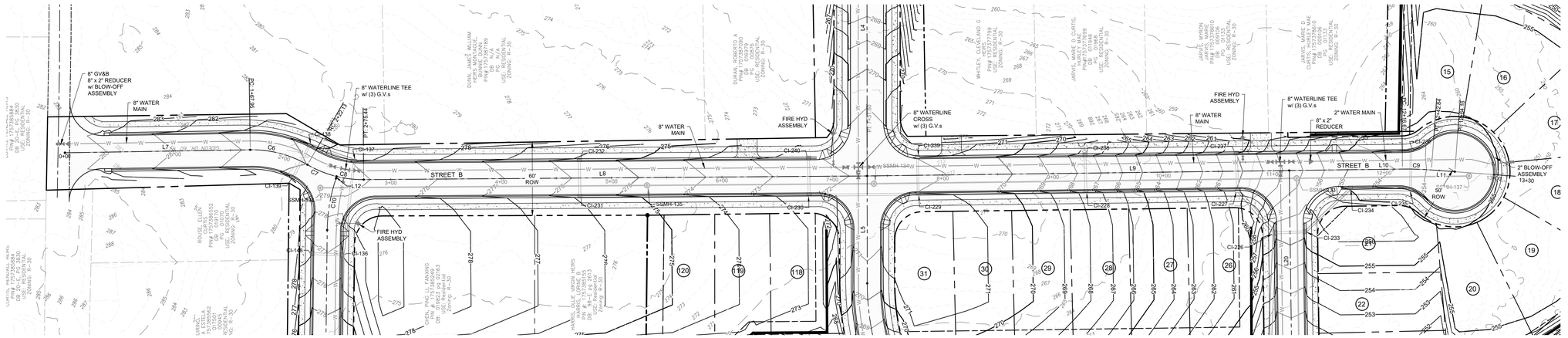
LANDSCAPING DETAILS

Sheet #:

57

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SS-EX MH-1
FES-400
FES-300
FIRE HYD ASSEMBLY
STREET A
8" x 6" WATERLINE TEE w/ (3) G.V.s
12" x 8" WATERLINE TEE w/ (3) G.V.s
8" WATER MAIN
60' ROW
50' ROW
8" WATERLINE CROSS w/ (3) G.V.s
8" WATERLINE TEE w/ (3) G.V.s
SSMH-106
SSMH-107
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STREET "B" PLAN VIEW

60' R.O.W., 50' CUL De Sac R.O.W.

NOTES:

1. SEE SHEET 15 - SITE PLAN Data & Details FOR STREET CENTERLINE LINE AND CURVE DATA.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

Public

WATER DISTRIBUTION / EXTENSION SYSTEM

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

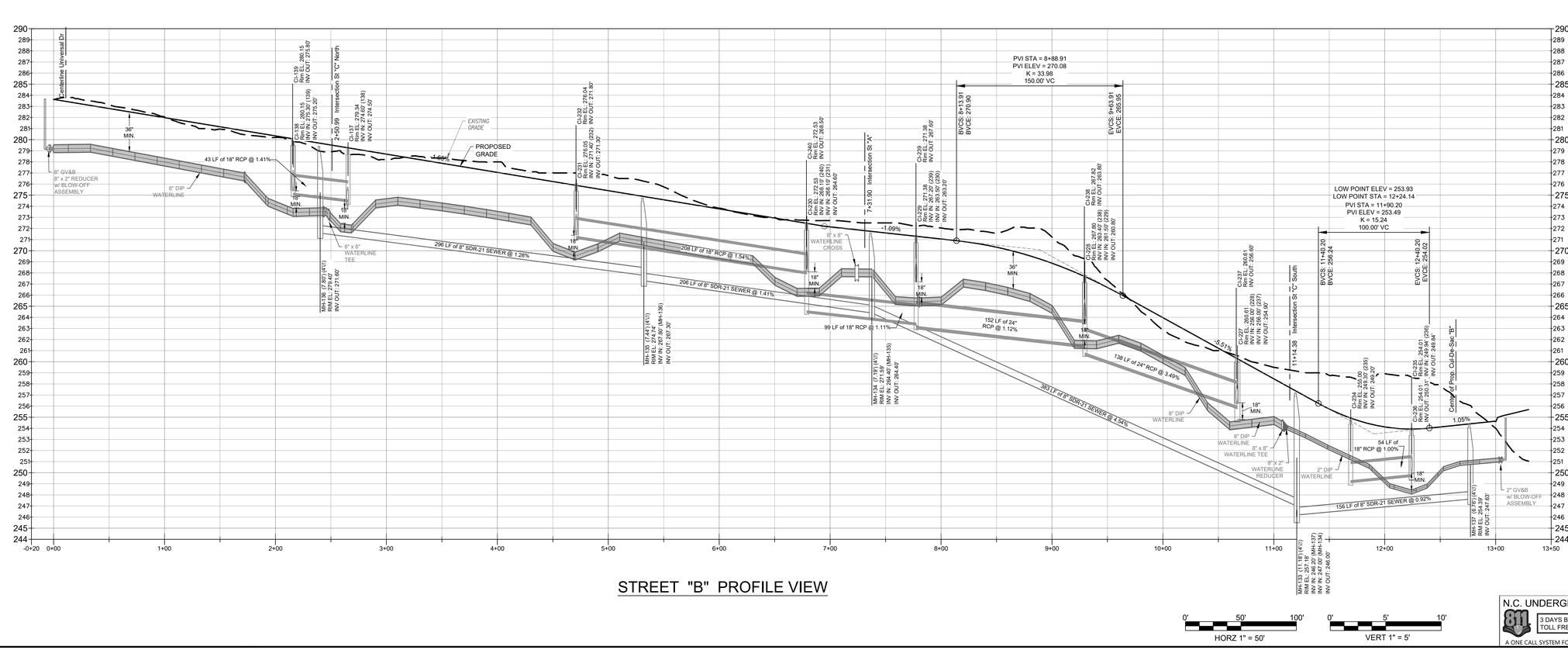
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Public Utilities DepartmentPermit # _____



STREET "B" PROFILE VIEW

HORZ 1" = 50'

VERT 1" = 5'

N.C. UNDERGROUND UTILITIES

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Other Consultants

Sheet map:

Seal:

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Bryan Harris
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Date: 2025.09.03 16:52:21-04'00'

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Project:

HARRIS CREEK FARMS

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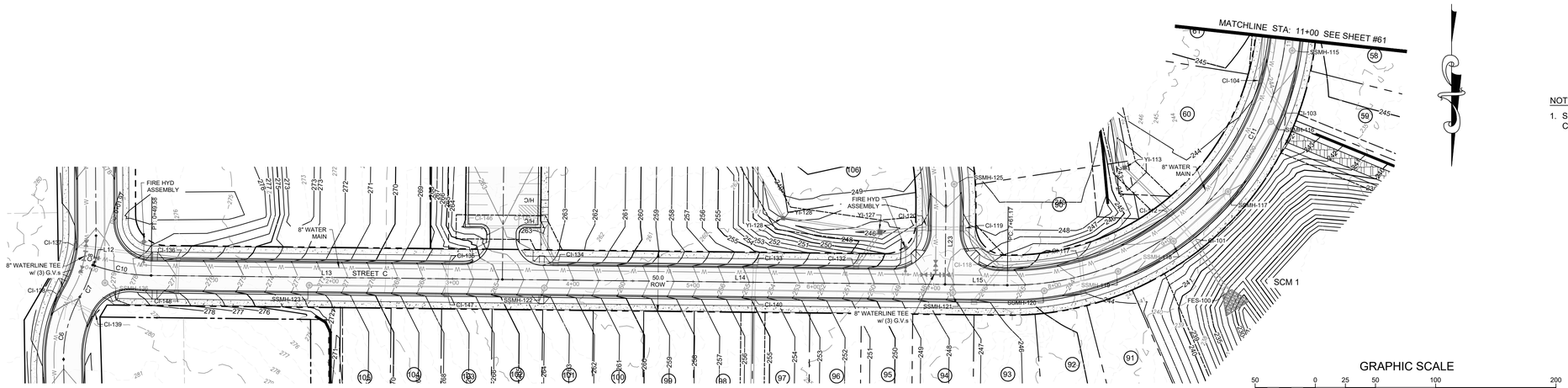
Sheet Title:

STREET B PLAN & PROFILE

Sheet #:

59

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STREET "C" PLAN VIEW STA: 0+00 - 11+00

50' R.O.W.

GRAPHIC SCALE

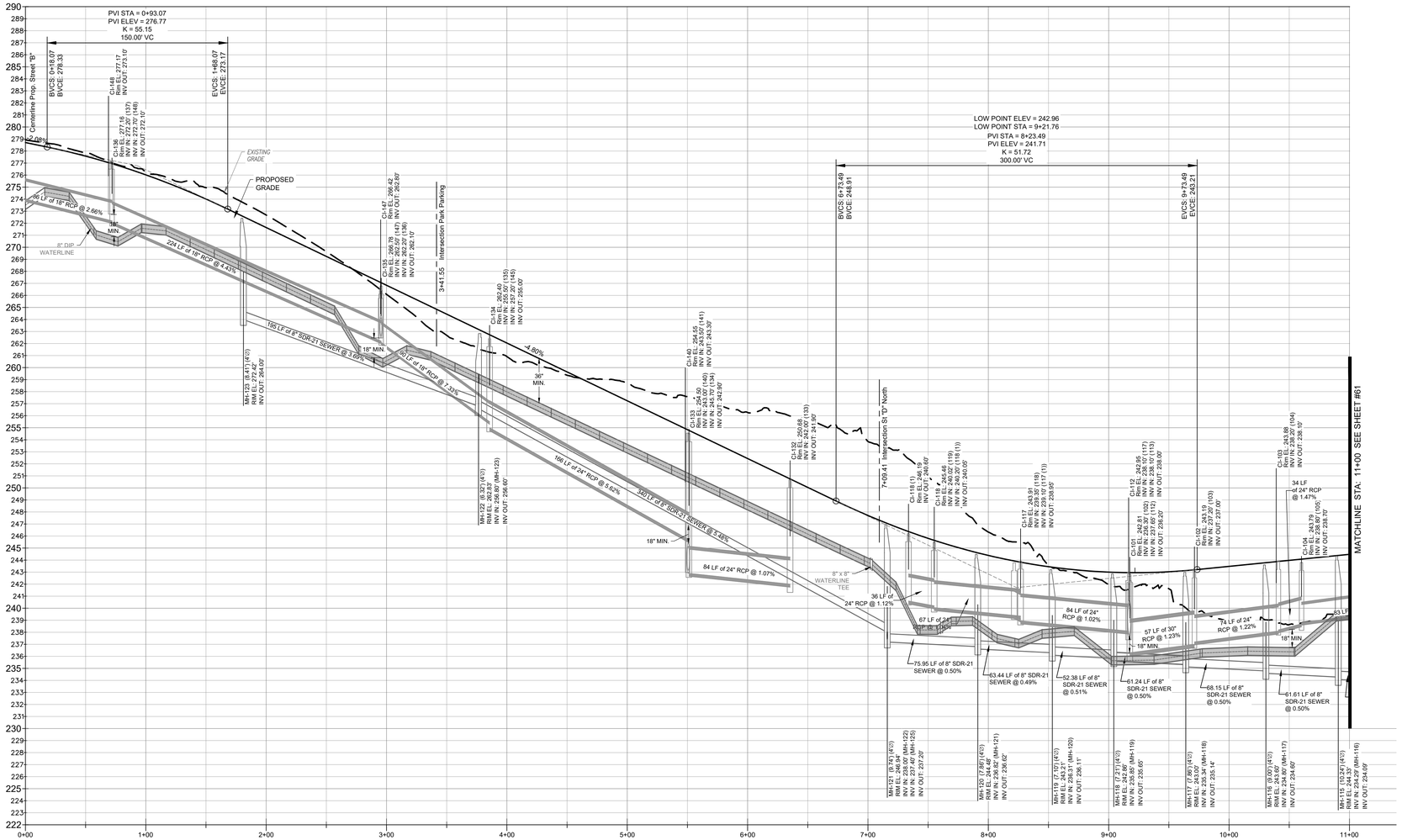
50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft

NOTES:

1. SEE SHEET 15 - SITE PLAN Data & Details FOR STREET CENTERLINE LINE AND CURVE DATA.



STREET "C" PROFILE VIEW STA: 0+00 - 11+00

0' 50' 100'

HORZ 1" = 50'

0' 5' 10'

VERT 1" = 5'

Public

WATER DISTRIBUTION / EXTENSION SYSTEM

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City of Raleigh
Public Utilities DepartmentPermit # _____

Public

SEWER COLLECTION / EXTENSION SYSTEM

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City of Raleigh
Public Utilities DepartmentPermit # _____

N.C. UNDERGROUND UTILITIES

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A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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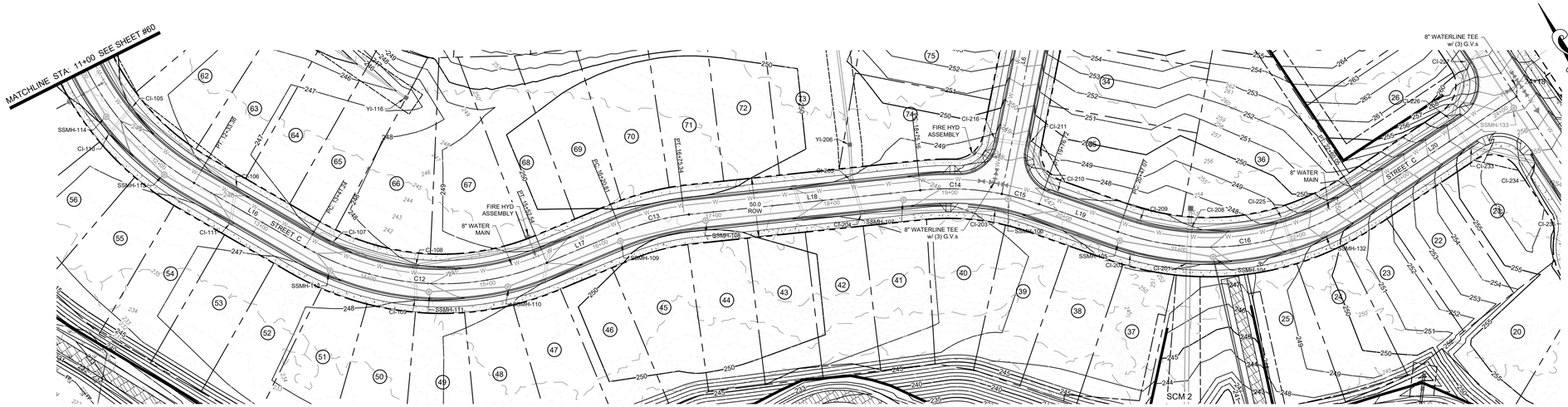
No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

STREET C PLAN & PROFILE 0+00 - 11+00

Sheet #:

60



STREET "C" PLAN VIEW STA: 11+00 - 24+50

60' R.O.W.

NOTES:

1. SEE SHEET 15 - SITE PLAN Data & Details FOR STREET CENTERLINE LINE AND CURVE DATA.

Public

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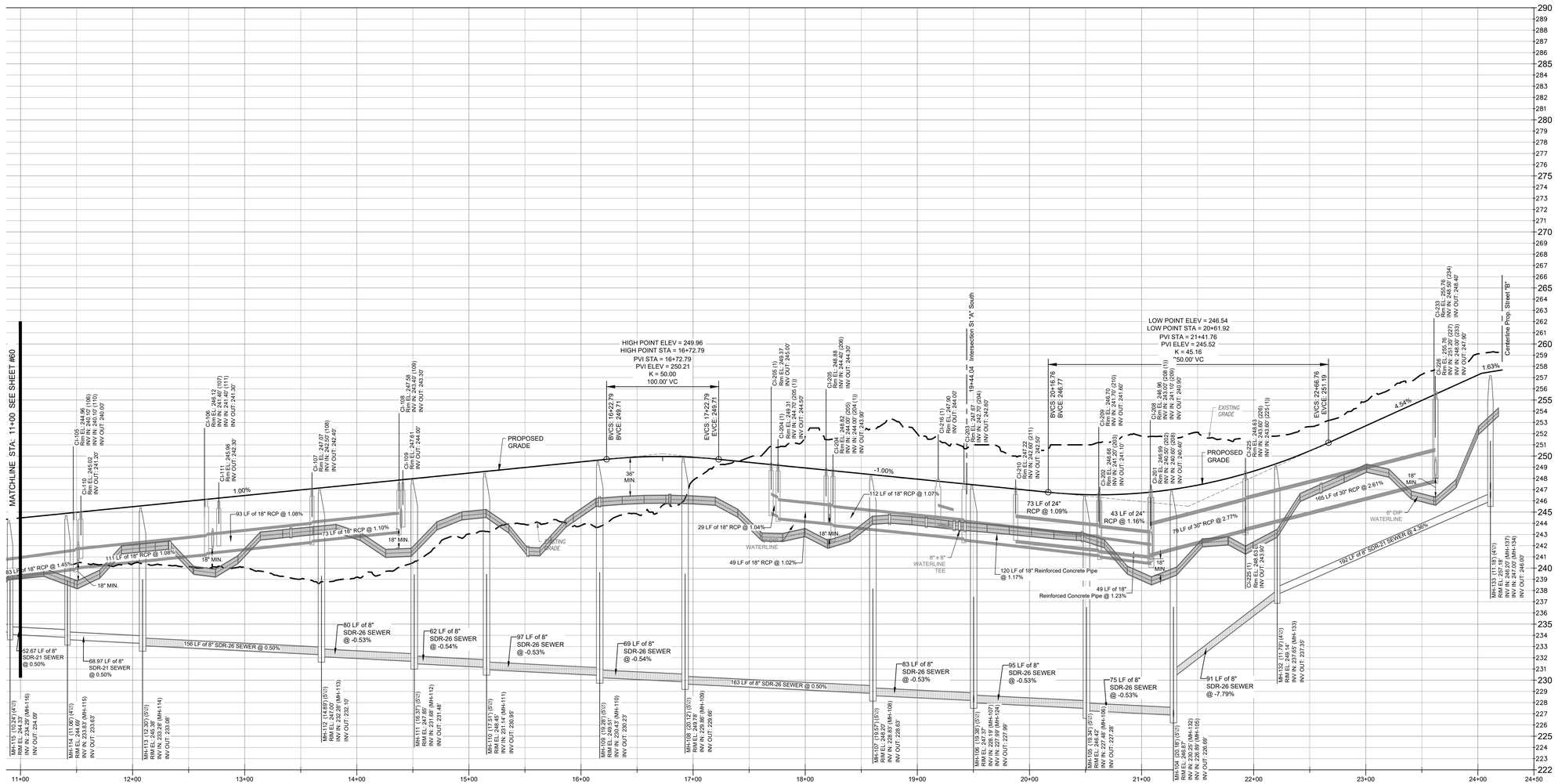
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GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft



STREET "C" PROFILE VIEW STA: 11+00 - 24+50

HORZ 1" = 50'

VERT 1" = 5'

N.C. UNDERGROUND UTILITIES

811 3 DAYS BEFORE DIGGING CALL TOLL FREE 811 or (800)632-4949

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY

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Est. 1837

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Other Consultants

Sheet map:

Seal:

BRYAN A HARRIS NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER

Bryan Harris

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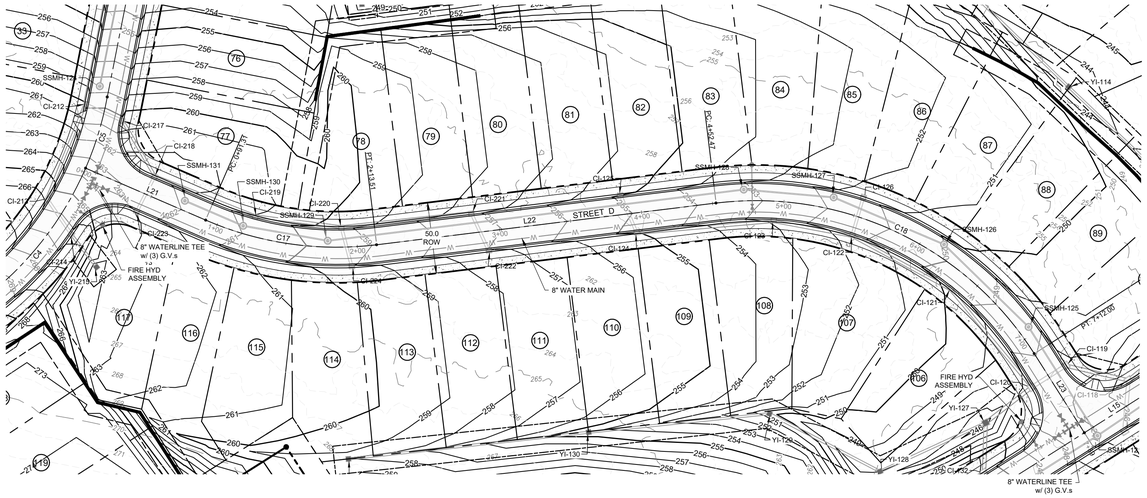
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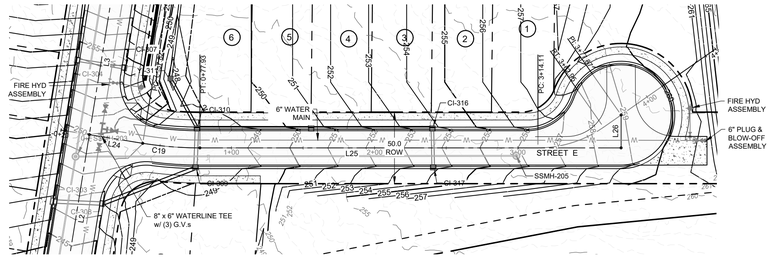
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61



STREET "D" PLAN VIEW

50' R.O.W.



STREET "E" PLAN VIEW

50' R.O.W.

NOTES:

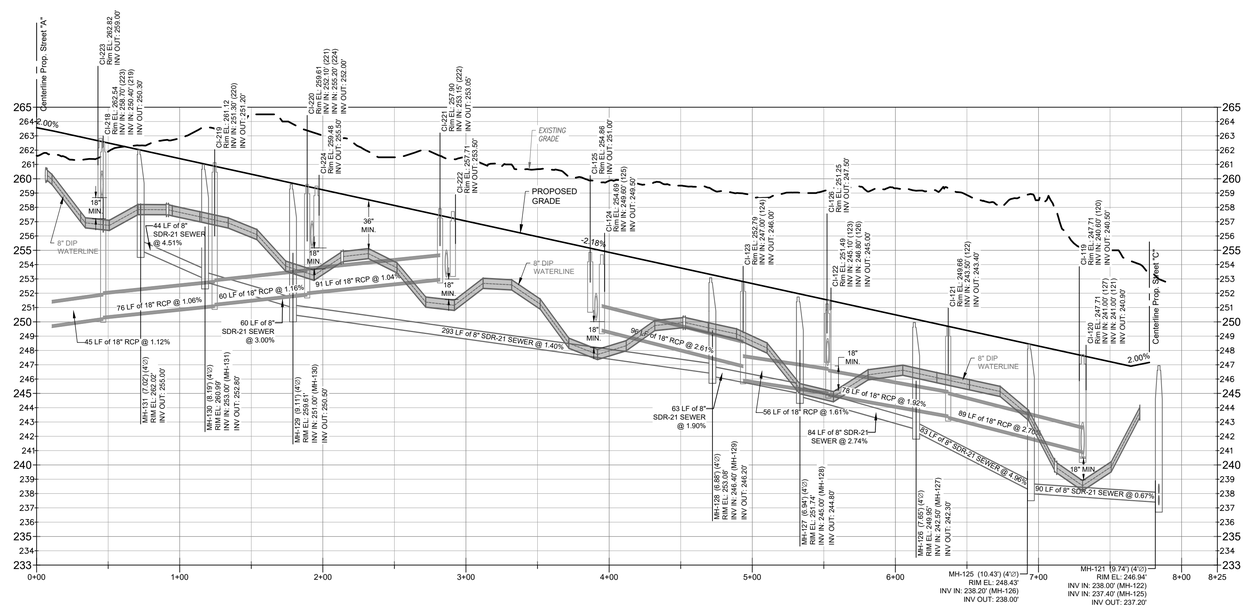
1. SEE SHEET 15 - SITE PLAN Data & Details FOR STREET CENTERLINE LINE AND CURVE DATA.

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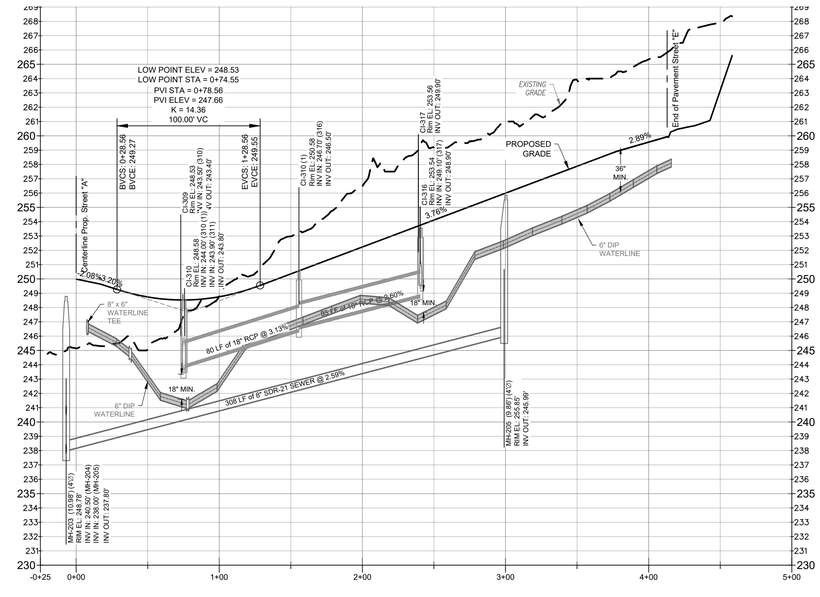
50 0 25 50 100 200

(IN FEET)

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STREET "D" PROFILE VIEW



STREET "E" PROFILE VIEW

0' 50' 100'

HORZ 1" = 50'

0' 5' 10'

VERT 1" = 5'

Public

WATER DISTRIBUTION / EXTENSION SYSTEM

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

City of Raleigh
Public Utilities DepartmentPermit # _____

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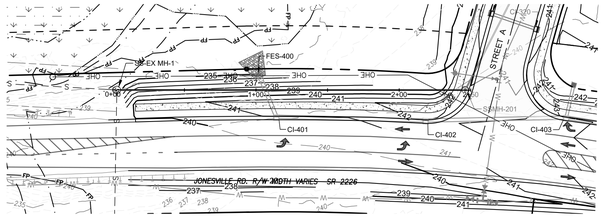
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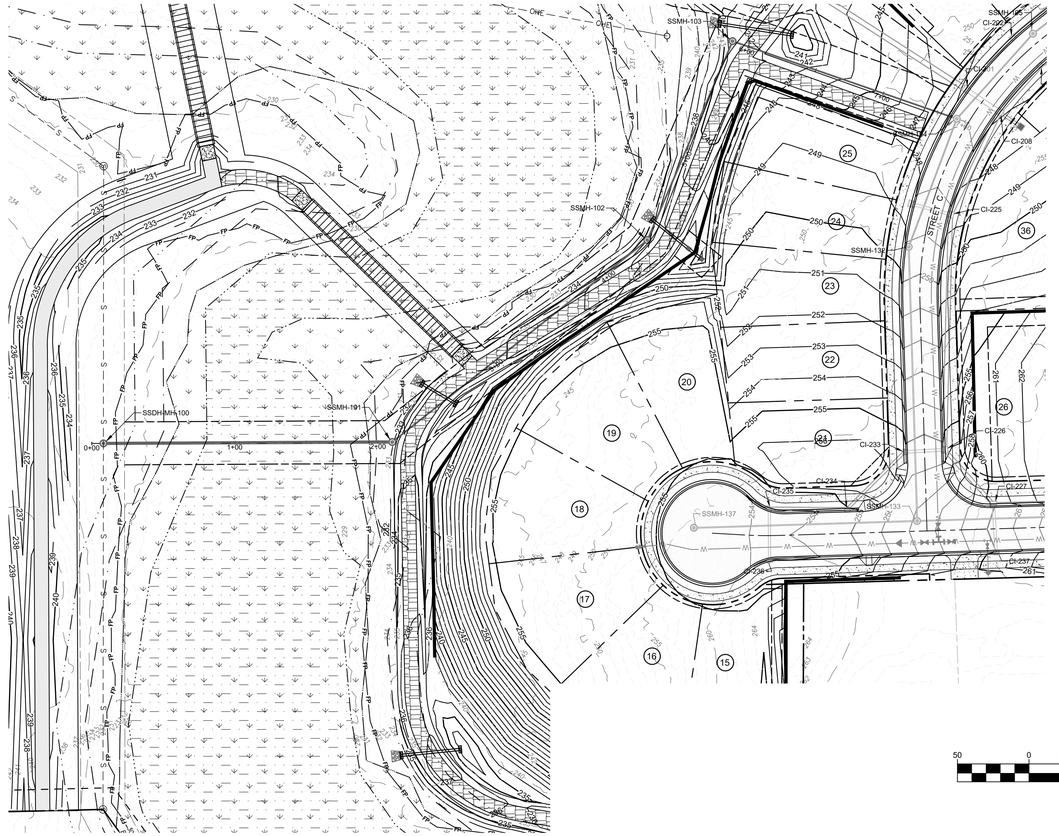
STREET D AND E PLAN & PROFILES

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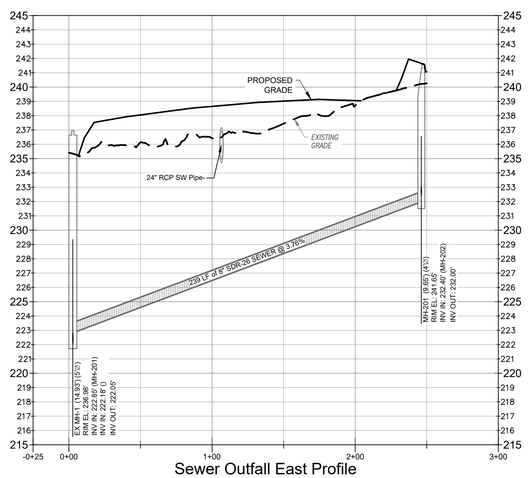
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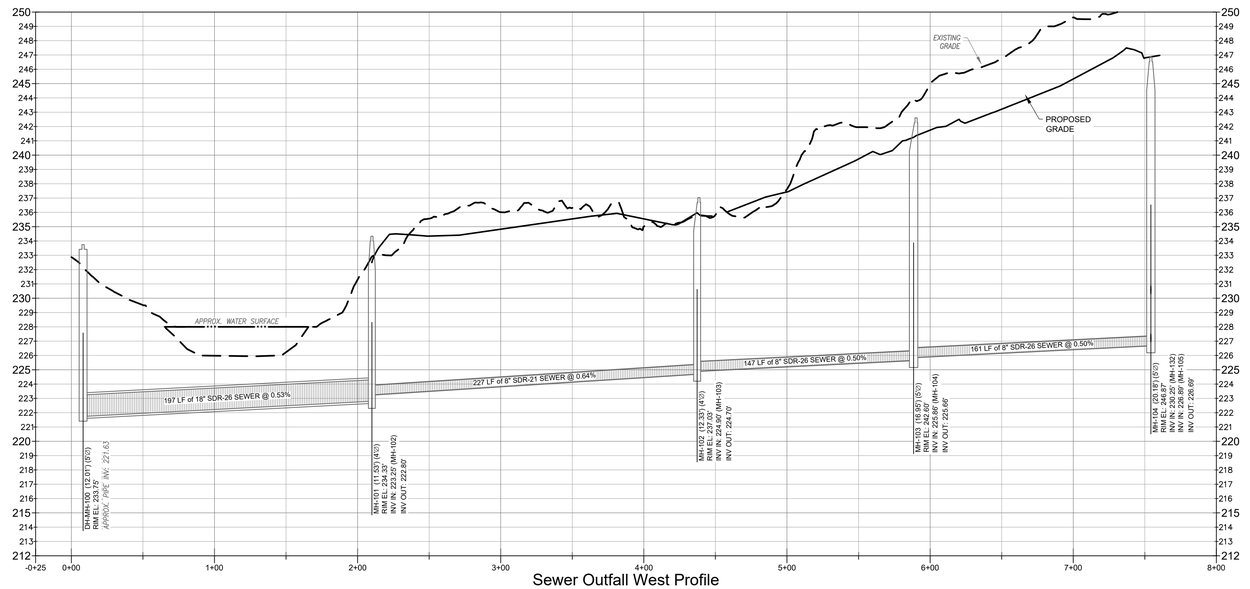
Sewer Outfall East Plan



Sewer Outfall West Plan



Sewer Outfall East Profile



Sewer Outfall West Profile

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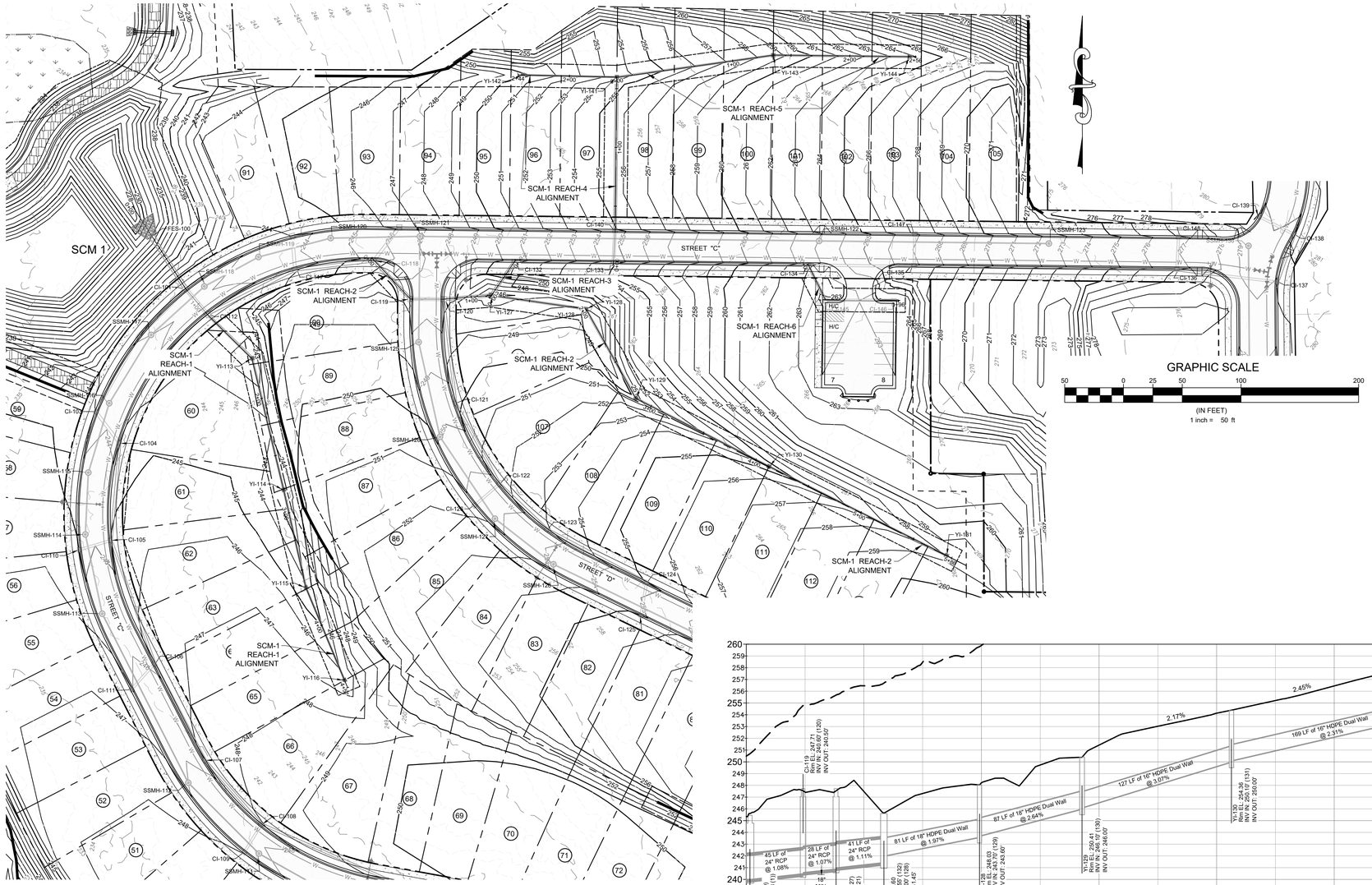
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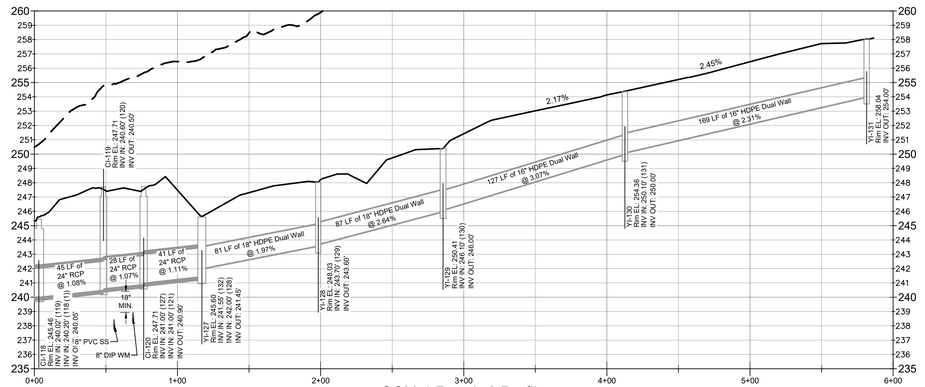
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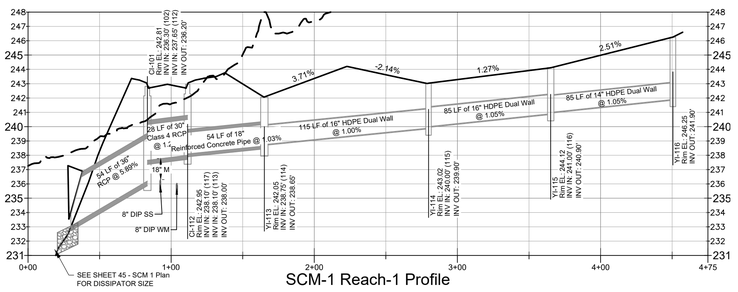
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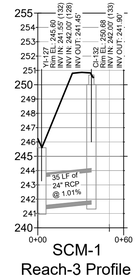
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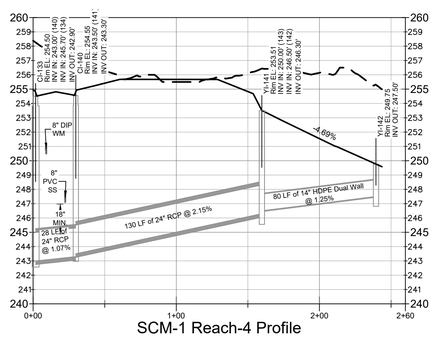
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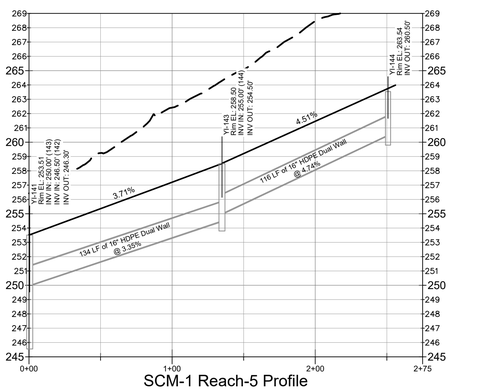


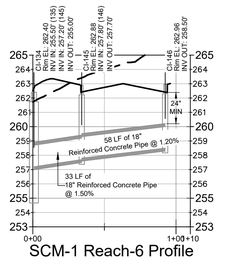












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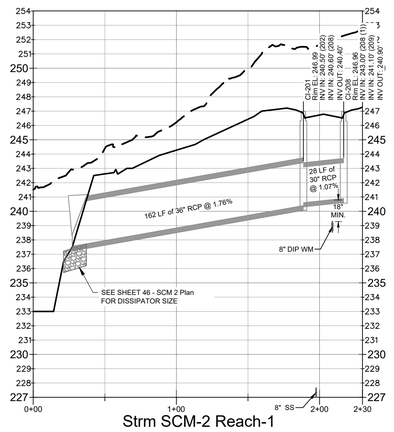
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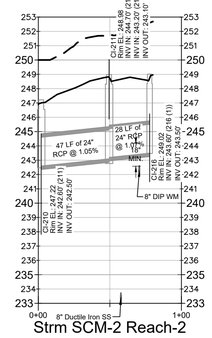
SCM 1 STORM ALIGNMENTS & PROFILES

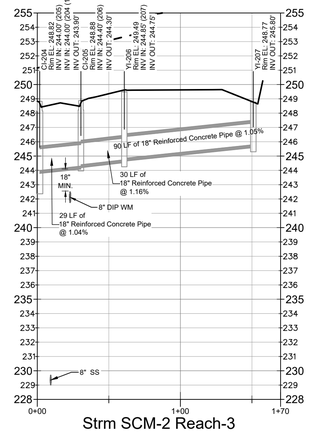
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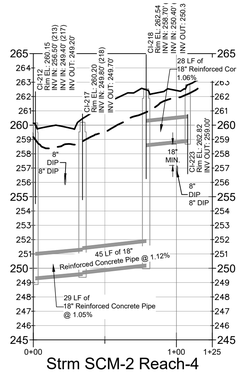
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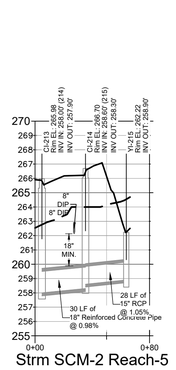


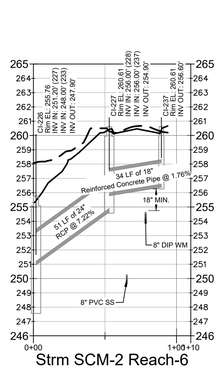


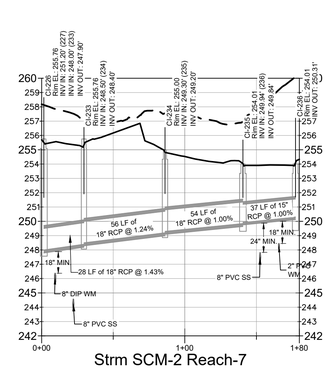












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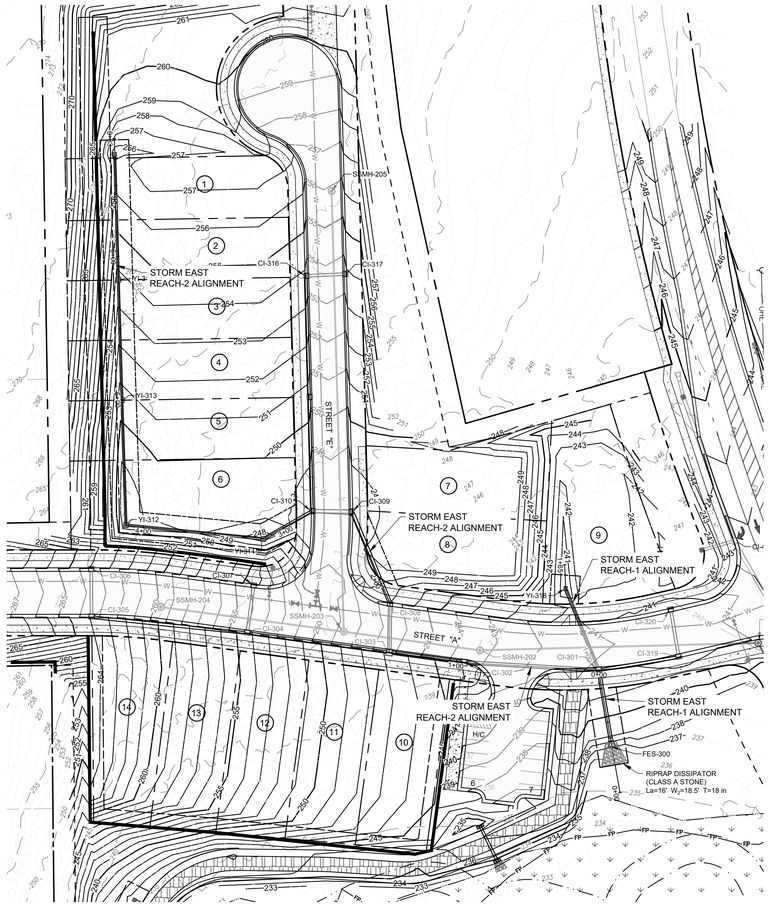
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Sheet #:

65

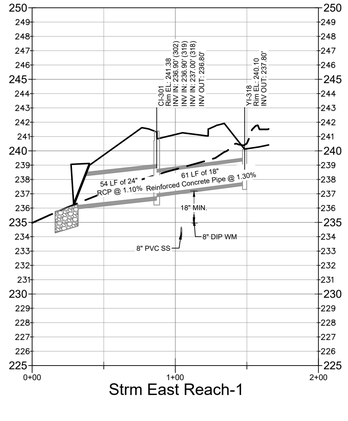
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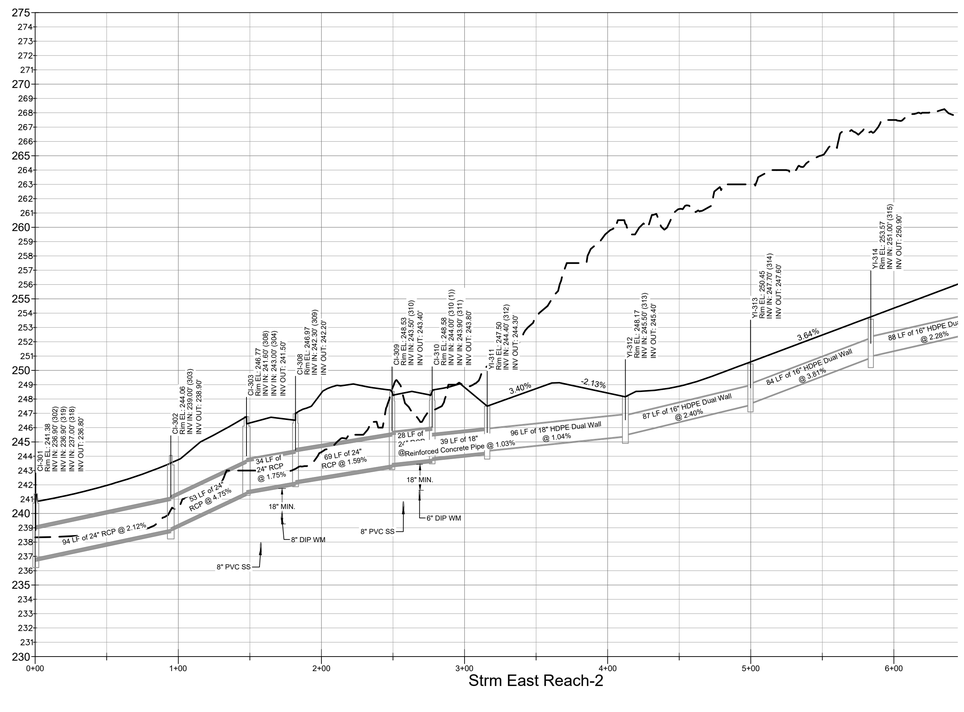


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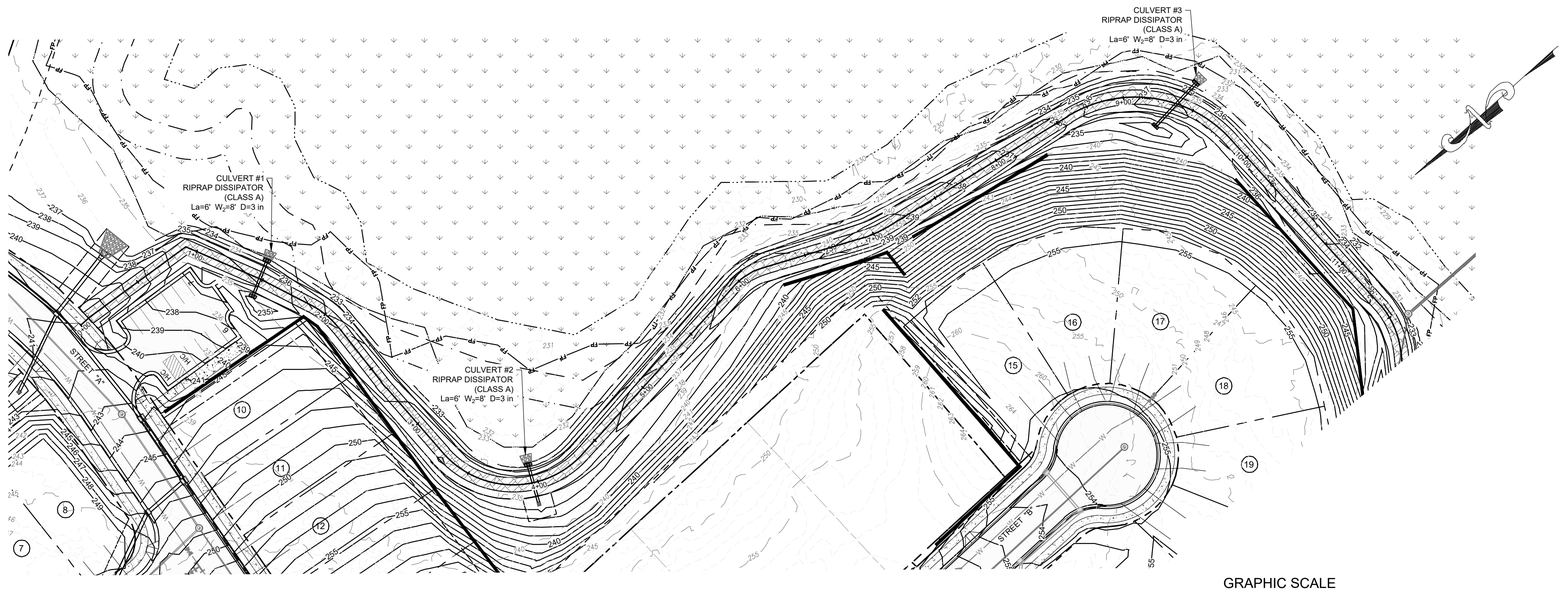
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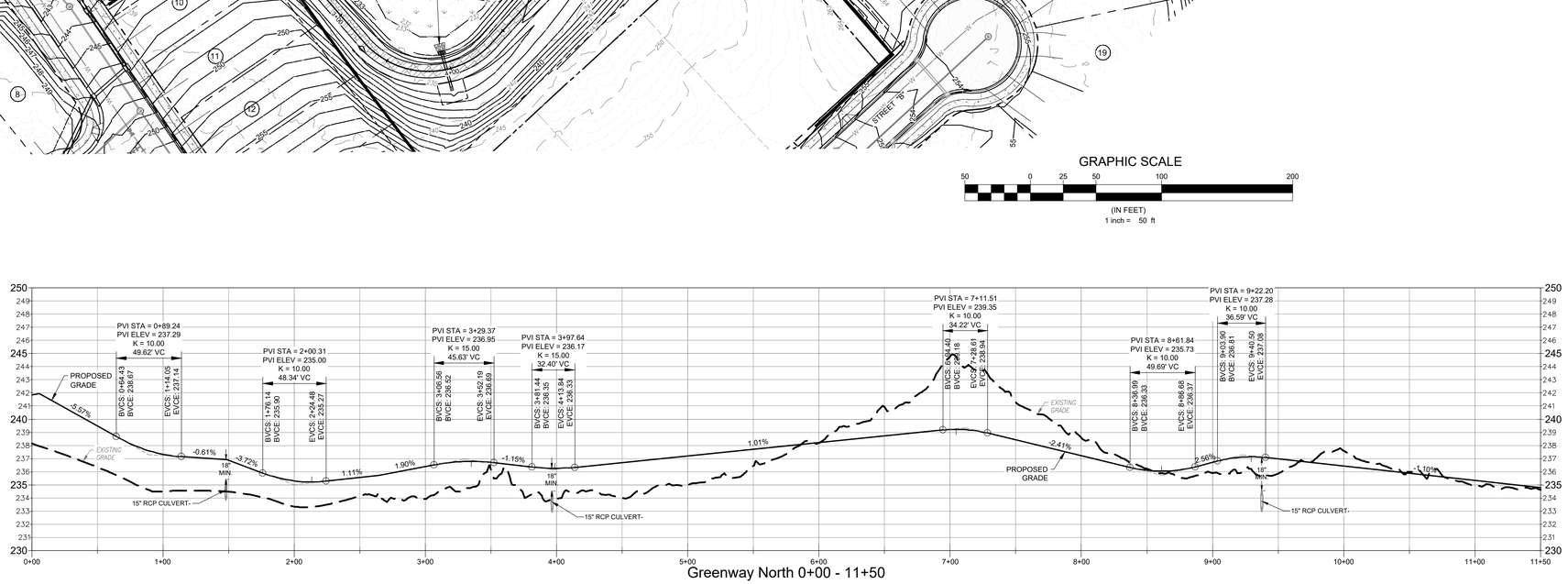
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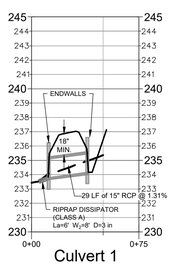
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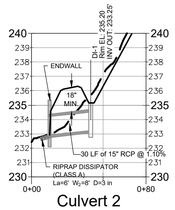
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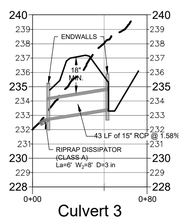
66











0' 50' 100'
HORZ 1" = 50'

0' 5' 10'
VERT 1" = 5'

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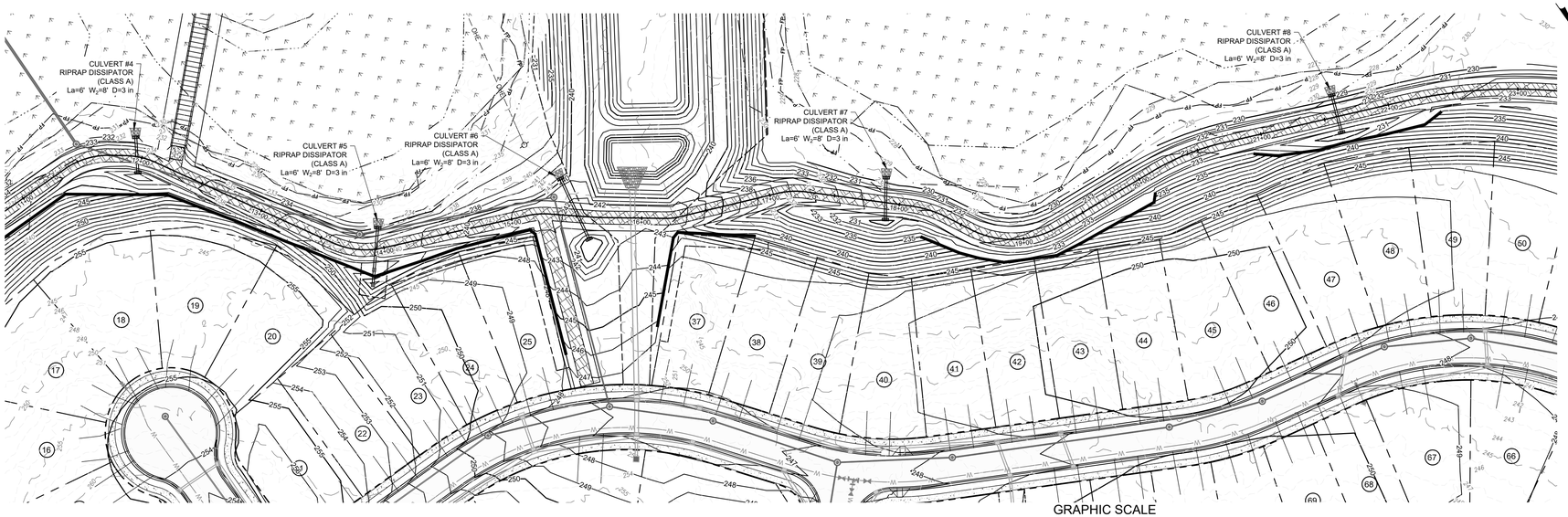
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GREENWAY NORTH
PLAN & PROFILE
0+00 - 11+50

Sheet #:

67

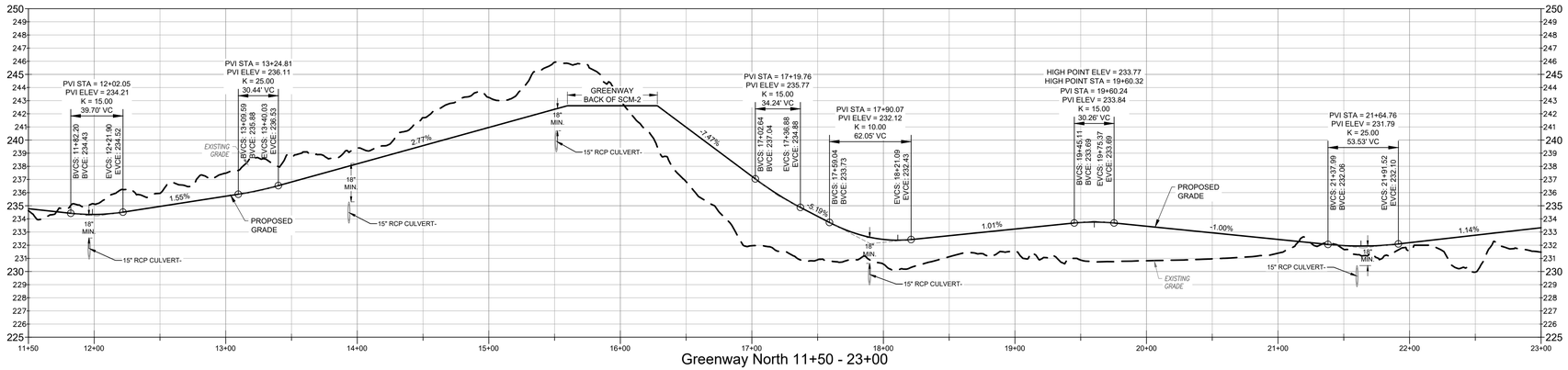
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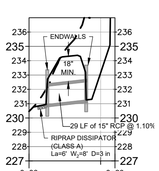
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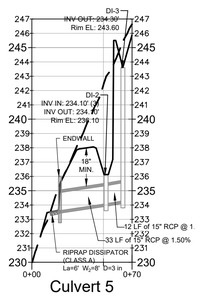
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1 inch = 50 ft



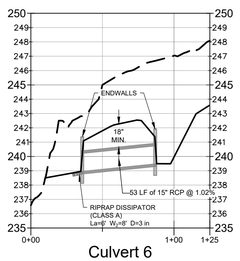
Greenway North 11+50 - 23+00



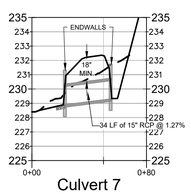
Culvert 4



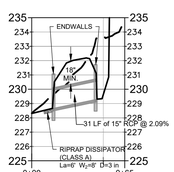
Culvert 5



Culvert 6



Culvert 7



Culvert 8

HORZ 1" = 50'

VERT 1" = 5'

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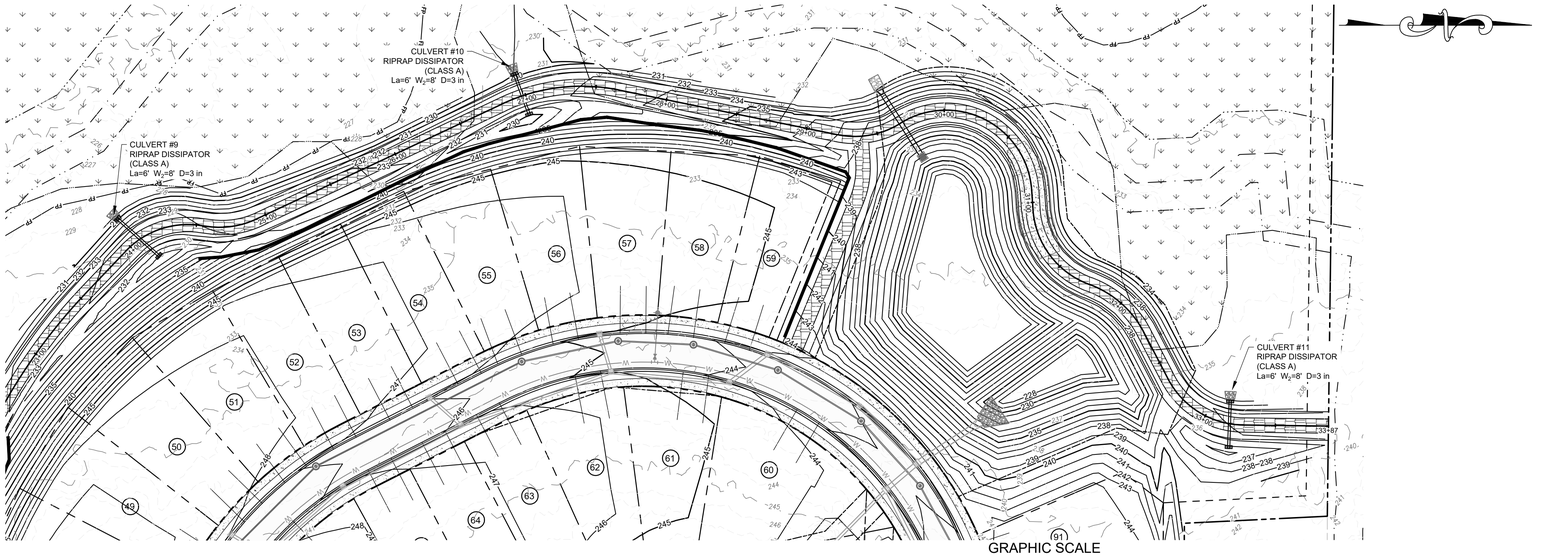
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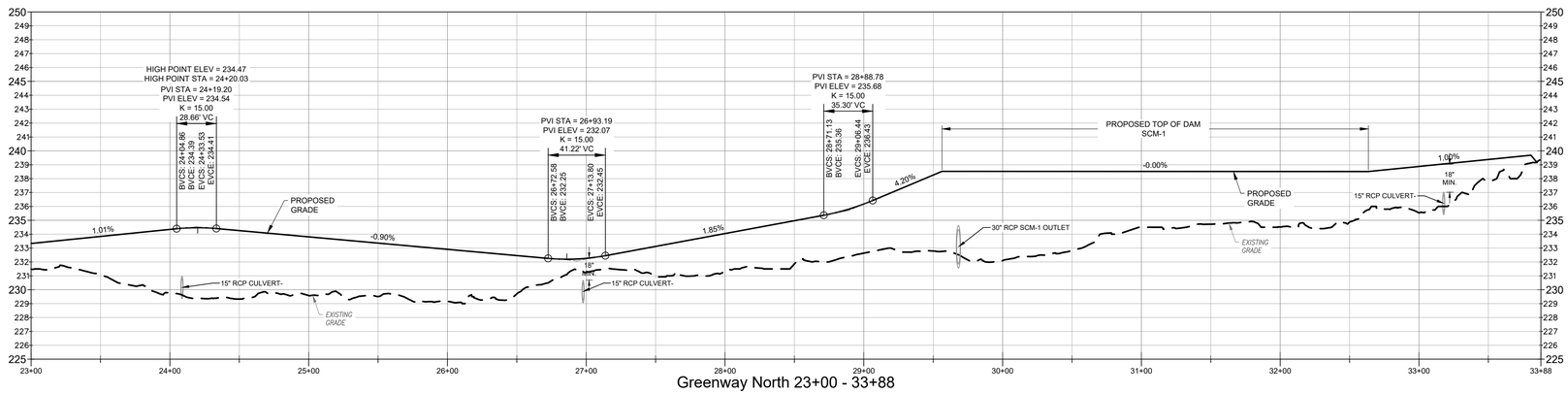
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PLAN & PROFILE
11+50 - 23+00

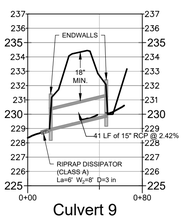
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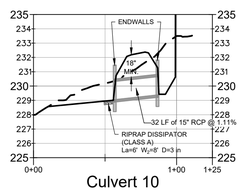




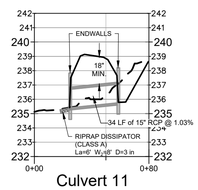
Greenway North 23+00 - 33+88



Culvert 9



Culvert 10



Culvert 11

0' 50' 100'
HORZ 1" = 50'

0' 5' 10'
VERT 1" = 5'

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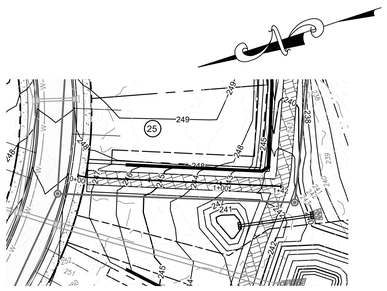
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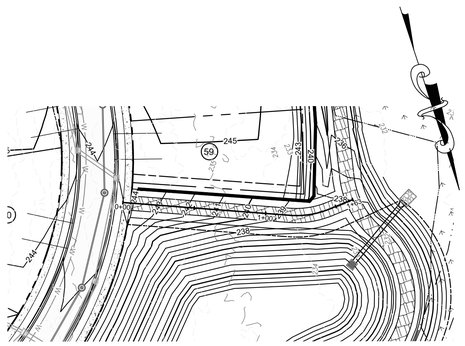
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PLAN & PROFILE
23+00 - 33+88

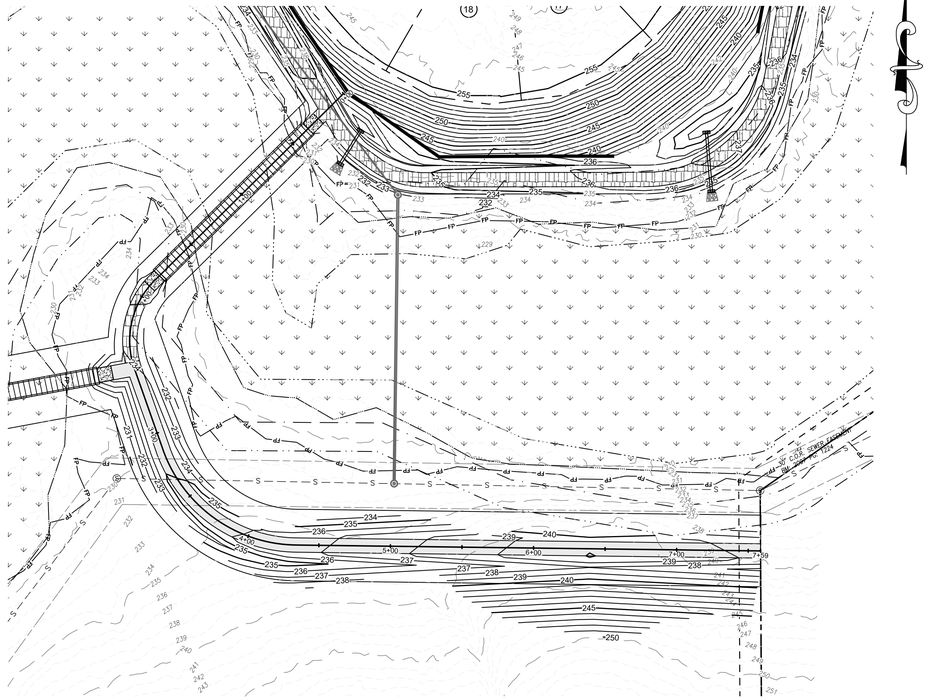
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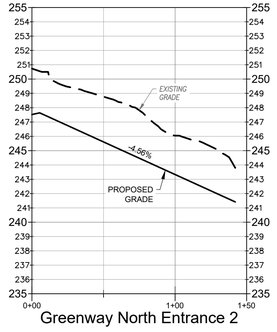


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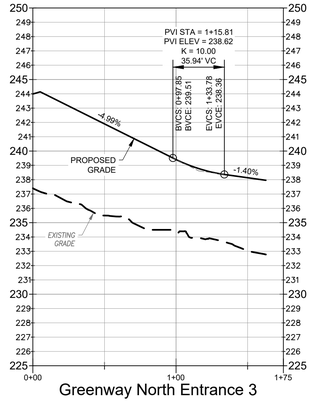
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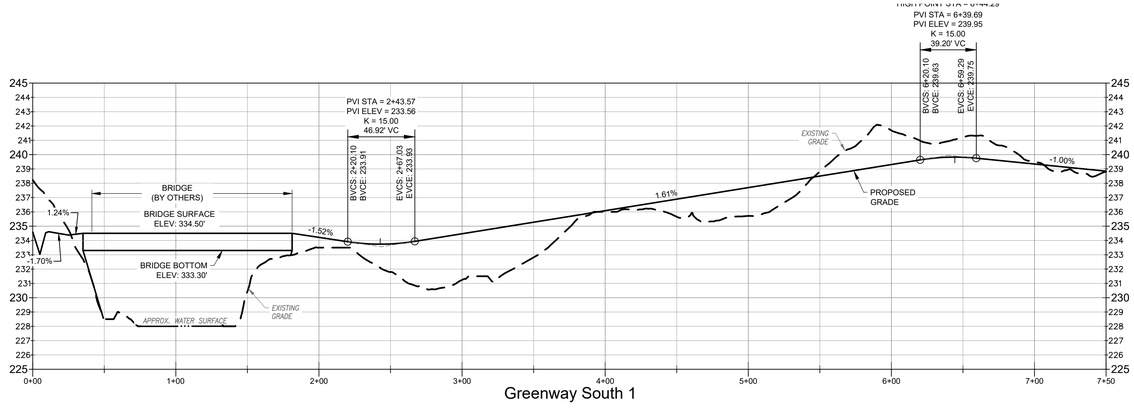
1 inch = 50 ft



Greenway North Entrance 2



Greenway North Entrance 3



Greenway South 1

0' 50' 100'

HORZ 1" = 50'

0' 5' 10'

VERT 1" = 5'

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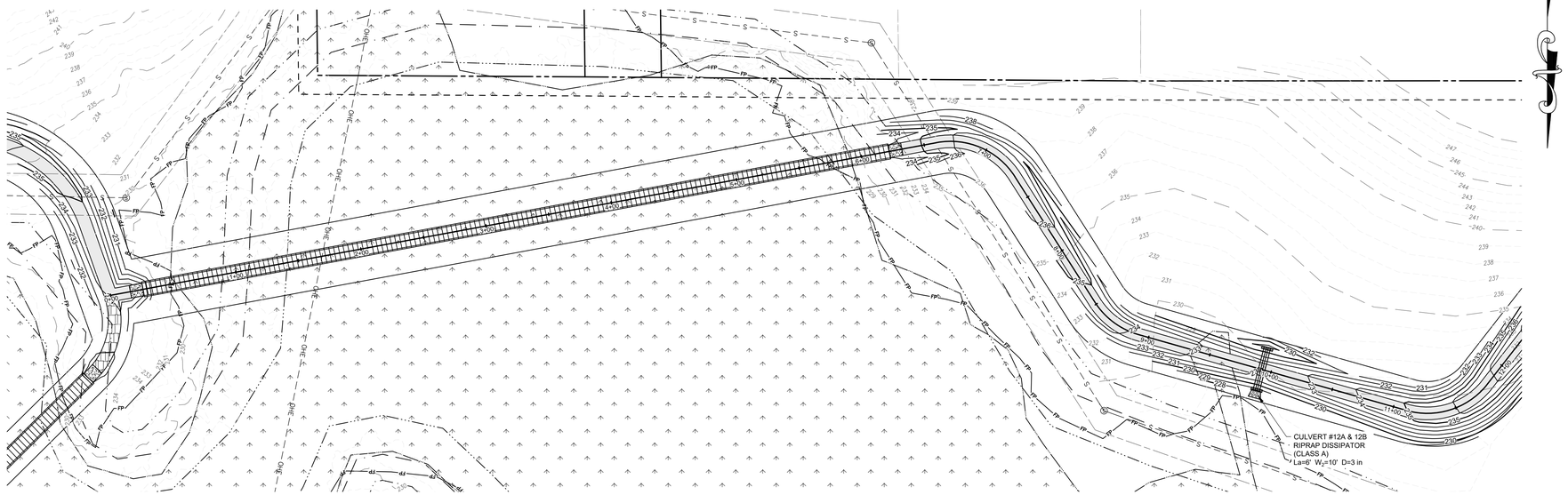
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GREENWAY NORTH ENTRANCES AND SOUTH-1

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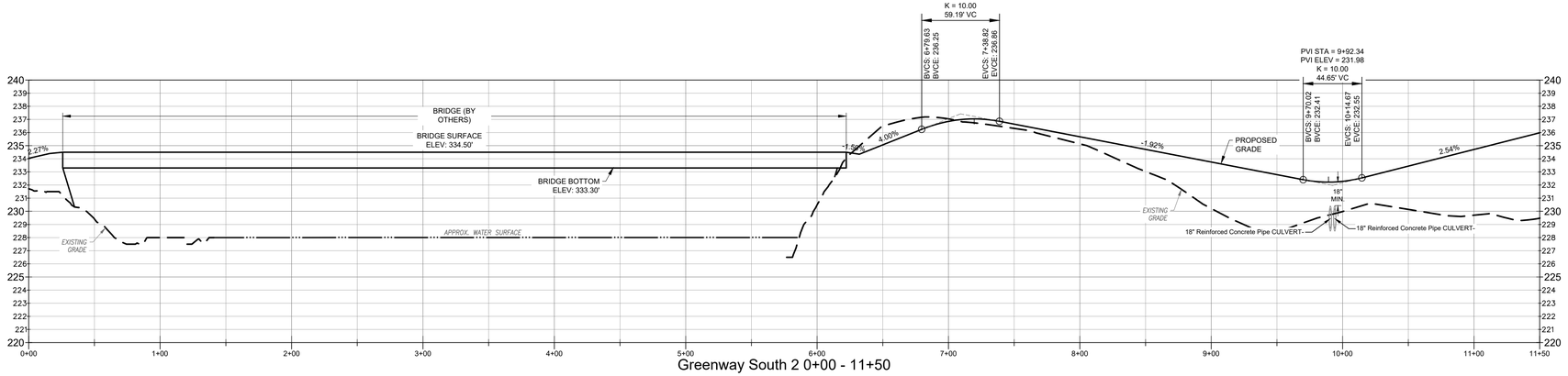
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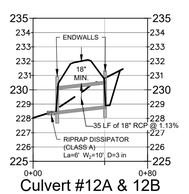
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft



Greenway South 2 0+00 - 11+50



Culvert #12A & 12B

0' 50' 100'
HORZ 1" = 50'

0' 5' 10'
VERT 1" = 5'

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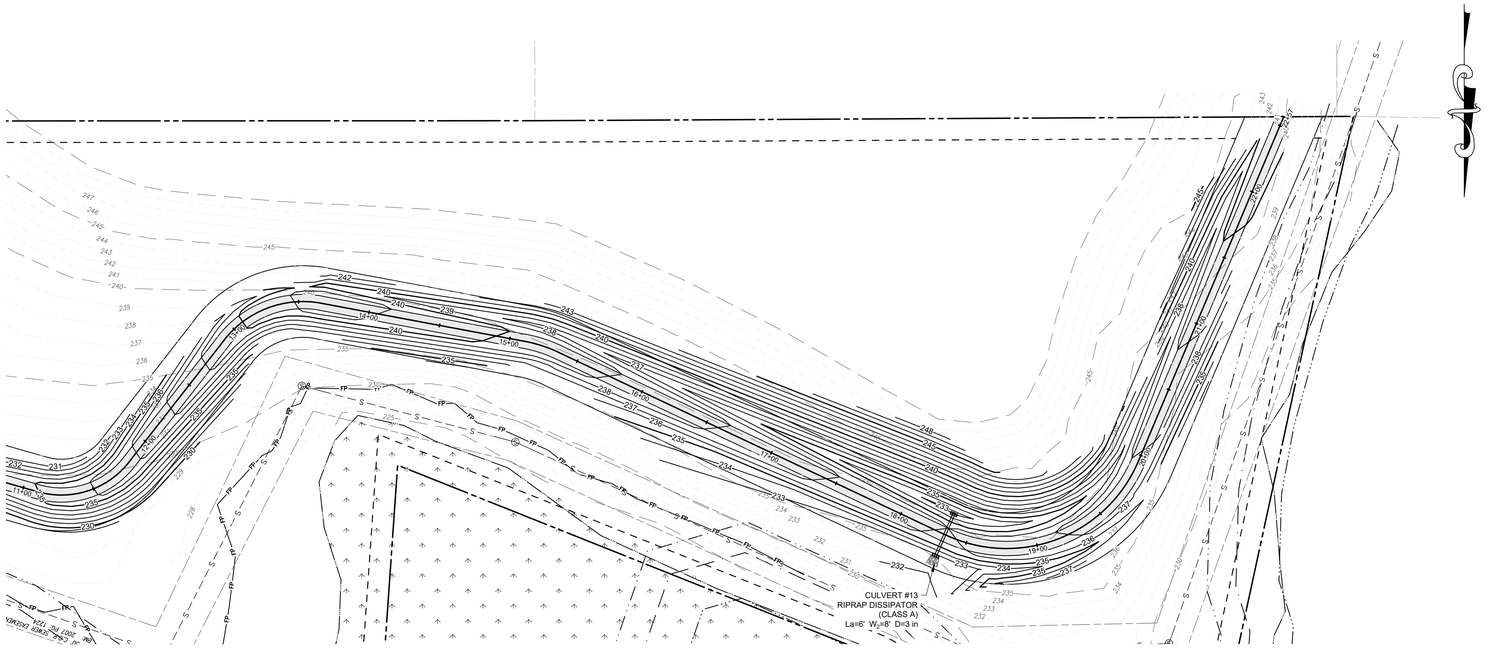
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GREENWAY SOUTH-2
0+00 - 11+50

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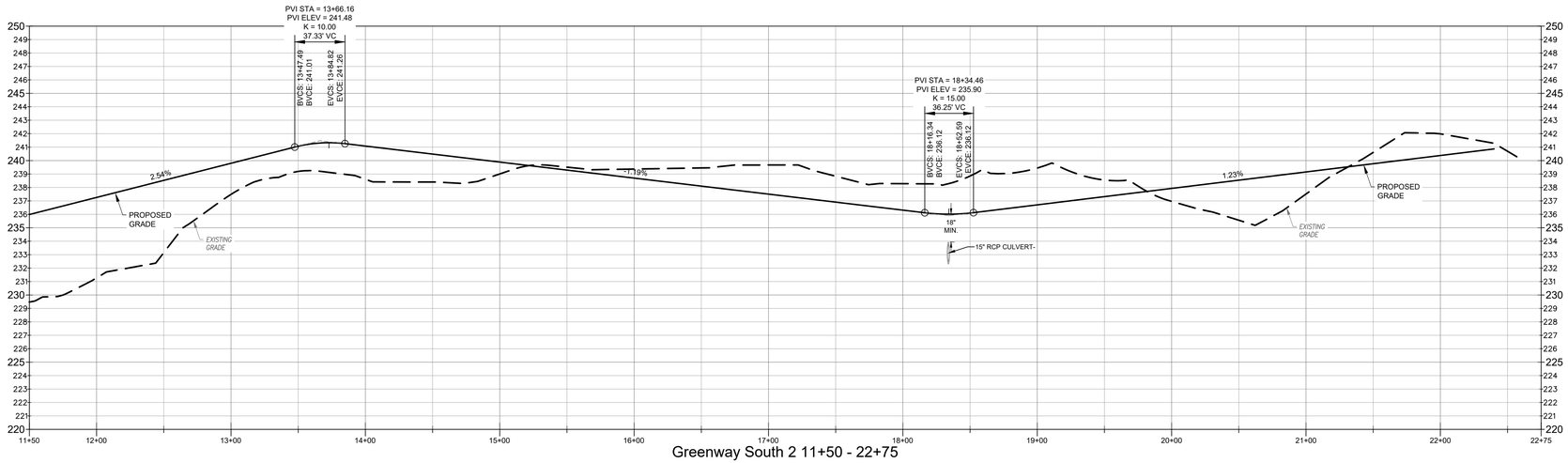
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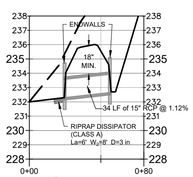
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft



Greenway South 2 11+50 - 22+75



Culvert 13

HORZ 1" = 50'

VERT 1" = 5'

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Project:

HARRIS CREEK FARMS

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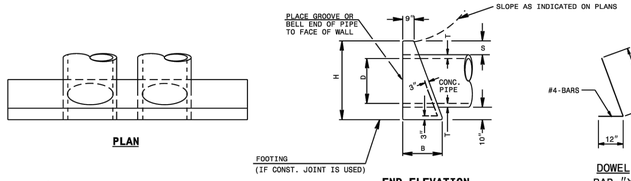
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1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

GREENWAY SOUTH-2
11+50 - 22+57

Sheet #:

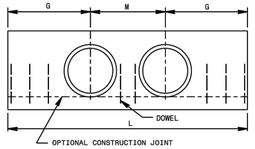
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PLAN

END ELEVATION

DOWEL
BAR-"X"



ELEVATION

DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE																				
LOC.	PIPE	SINGLE PIPE									DOUBLE PIPE									
	DIA.	15"	18"	24"	30"	36"	42"		48"		15"	18"	24"	30"	36"	42"		48"		
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5		
M	QTY.	-	-	-	-	-	-	2	-	2	1	1	2	2	2	2	2	3	2	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5		
TOTAL LBS.		9	9	14	14	19	55		65		12	12	19	19	23	77		92		

DIMENSIONS AND CONCRETE QUANTITIES									
USING CONCRETE PIPE									
	COMMON DIMENSIONS					SINGLE PIPE		DOUBLE PIPE	
D	H	B	G	T	S	L	YD³	M	L	YD³
15"	3'-3"	1'-8"	2'-9"	2¼"	9½"	5'-6"	0.7	2'-2"	7'-8"	1.0
18"	3'-7"	1'-10"	3'-2"	2½"	10"	6'-4"	1.0	2'-7"	8'-11"	1.3
24"	4'-2"	2'-1"	4'-0"	3"	10"	8'-0"	1.5	3'-5"	11'-5"	2.0
30"	5'-0"	2'-6"	4'-7"	4¼"	11½"	9'-2"	2.3	4'-3"	13'-5"	3.1
36"	5'-8"	2'-8"	5'-6"	4¾"	11½"	11'-0"	3.4	5'-0"	16'-0"	4.5
42"	6'-2"	3'-1"	6'-4"	5¼"	11½"	12'-8"	4.5	5'-10"	18'-6"	6.0
48"	6'-9"	3'-5"	7'-2"	5¾"	11½"	14'-4"	6.0	6'-8"	21'-0"	8.0

*SEE SHEET 3

STATE OF NORTH CAROLINA
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1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
15" THRU 48" PIPE - 90° SKEW

SHEET 1 OF 3
838.01

GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

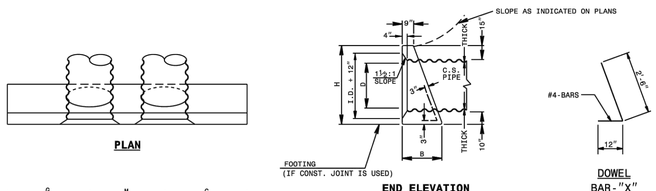
WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.

STATE OF NORTH CAROLINA
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15" THRU 48" PIPE - 90° SKEW

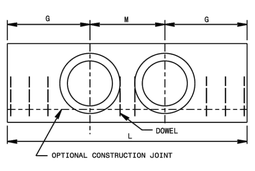
SHEET 3 OF 3
838.01



PLAN

END ELEVATION

DOWEL
BAR-"X"



ELEVATION

DOWELS IN ENDWALL WITH C. S. PIPE																				
LOC.	PIPE	SINGLE PIPE									DOUBLE PIPE									
	DIA.	15"	18"	24"	30"	36"	42"		48"		15"	18"	24"	30"	36"	42"		48"		
	BARS	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	"X"	"X"	"X"	"X"	"X"	"X"	Y*	"X"	Y*	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5		
M	QTY.	-	-	-	-	-	-	2	-	2	1	1	1	2	2	2	2	2	2	
G	QTY.	2	2	3	3	4	4		5		2	2	3	3	4	4		5		
TOTAL LBS.		9	9	14	14	19	53		62		12	12	16	19	23	73		85		

DIMENSIONS AND CONCRETE QUANTITIES									
USING CORRUGATED STEEL PIPE									
	COMMON			SINGLE PIPE		DOUBLE PIPE			
D	H	B	G	L	YD³	M	L	YD³	
15"	3'-4"	1'-8"	2'-6"	5'-0"	0.7	1'-11"	6'-11"	1.0	
18"	3'-7"	1'-10"	2'-11"	5'-10"	1.0	2'-3"	8'-1"	1.2	
24"	4'-1"	2'-1"	3'-8"	7'-4"	1.4	3'-0"	10'-4"	1.9	
30"	4'-7"	2'-4"	4'-5"	8'-10"	2.0	3'-9"	12'-7"	2.7	
36"	5'-1"	2'-7"	5'-2"	10'-4"	2.8	4'-6"	14'-10"	3.8	
42"	5'-7"	2'-10"	5'-11"	11'-10"	3.8	5'-3"	17'-1"	5.0	
48"	6'-1"	3'-1"	6'-8"	13'-4"	4.9	6'-0"	19'-4"	7.5	

*SEE SHEET 3

STATE OF NORTH CAROLINA
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RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
15" THRU 48" PIPE - 90° SKEW

SHEET 2 OF 3
838.01

Developer
THE CSC GROUP
CONTRIBUTE TO THE SUCCESS OF LOCAL COMMUNITY
10030 Green Level Church Rd, Suite 802 #149: Cary, NC 27519

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QUANTECH ENGINEERING
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Firm # F-1517
15000 Weston Parkway
Cary, N.C. 27513
(919) 996-9455

Surveyor
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Bateman Civil Survey Company
2524 Reliance Avenue
Apex, NC 27539
919-557-1080 ext 109
www.batemancivilsurvey.com

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Genuine Community • Capital Connection
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Town of Rolesville
502 Southtown Cir
Rolesville, NC 27571
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CID-25-03 **(PSP-24-05)**

Other Consultants

Sheet map:

Seal:

NORTH CAROLINA PROFESSIONAL SEAL 53676 ENGINEER BRYAN A. HARRIS
Bryan Harris

Digitally signed by Bryan Harris
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No.	Date	Description
1	02Sep2025	Town of Rolesville Planning Dept. comments

Sheet Title:

GREENWAY CULVERT DETAILS

Sheet #:

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