Pender County
Planning and Community Development

Planning Division
805 S. Walker Street
PO Box 1519
Burgaw, NC 28425

Phone: 910-259-1202
Fax: 910-259-1295
www.pendercountync.gov

Brookfield Branch Phase 1 Development Information
Major Subdivision – Preliminary Plat

Case Number: SUBMAJ 2023-100

Application Type: Preliminary Plat

Applicant: Hoover Road Investments, LLC

Owners: Hoover Road Investments, LLC

Location: Located approximately 1.1 miles north of the intersection of US Hwy 17 and Hoover Road across from Tim Moore Drive

Property ID #(s): 3283-94-6297-0000, 3293-04-6120-0000, 3293-03-2340-0000

Description: Preliminary Plat application for Phase 1 consisting of 99 single-family detached units and 60 single-family attached units

Current Zoning: RP, Residential Performance

Technical Review Committee Meeting
Thursday, October 5, 2023

Board of County Commissioners/Planning Board Meeting
N/A

Application Materials
Application Package
Site Plan

APPLICATION FOR SUBDIVISION

THIS SECTION FOR OFFICE USE			
Application No.	**SUB** SUBMAJ 2023-100	**Date**	9.1.23
Application Fee	**$** 2400.00	**Invoice Number:**	00035603
Master Plan Hearing Date	9.6.23	**Preliminary Plat Hearing Date**	

SECTION 1: APPLICANT INFORMATION

Applicant's Name:	Hoover Road Investments, LLC	**Owner's Name:**	Hoover Road Investments, LLC
Applicant's Address:	60 Gregory Road, Suite 1	**Owner's Address:**	60 Gregory Road, Suite 1
City, State, & Zip	Belville, NC 28451	**City, State, & Zip**	Belville, NC 28451
Phone Number:	(910) 452-7175	**Phone Number:**	(910) 452-7175
Email Address:	Tlong@logandevelopers.com	**Email Address:**	TLong@logandevelopers.com

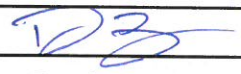
Legal relationship of applicant to landowner: Same entity

SECTION 2: PROJECT INFORMATION

Preliminary Plat	☑ **Residential** *RP, PD, RM, MH District*	☐ **Mixed Use** *PD*	
Subdivision Type	☑ Major (11 lots or more)	☐ Minor (10 lots or less)	
Property Identification Number (PIN):	3283-83-9765-0000; 3283-93-1673-000; 3283-94-9377-0000		
Zoning Classification:	RM - Residential Mixed	**Total property acreage:**	72.08
Number of Lots:	280 Lots	**Acreage to be disturbed:**	40.6
Water Provider:	Pender County Utilities	**Wastewater Provider:**	Pluris

Additional Information:

SECTION 3: SIGNATURES

Applicant's Signature		**Date:**	8/31/23
Applicant's Printed Name:	D Logan	**Date:**	8/31/23
Owner's Signature		**Date:**	8/31/23
Owner's Printed Name:	D Logan	**Date:**	8/31/23

NOTICE TO APPLICANT

1. Applicant or agent authorized in writing must attend the public hearing.
2. Once the public hearing has been advertised, the case will be heard unless the applicant withdraws the application or unless the Planning Board or other authorized person agrees to table or delay the hearing.
3. All fees are non-refundable
4. A complete application packet must be submitted prior to the deadline in order to be placed on the next Planning Board Agenda

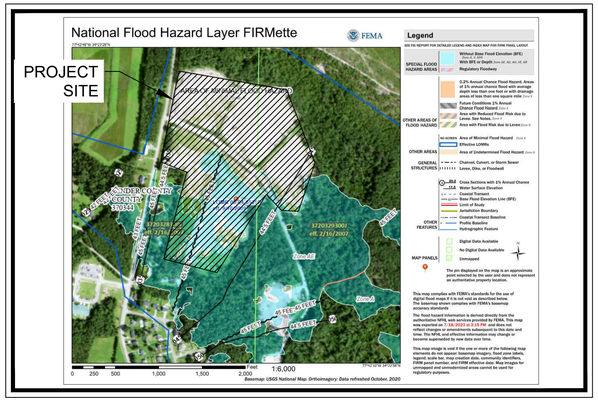
Office Use Only

☐	**Subdivision Fees:** *$500 + $10/lot-unit for the first 100 lots/units; $5/lot-unit thereafter (Major Subdivision) $150 + $10 per lot (Minor Subdivision)*	**Total Fee Calculation: $** 2,400.00

Attachments Included with Application: (Please include # of copies)

CD /other digital version	☐ Y ☐ N	Plan Sets	# of large	# of 11X17	Other documents/Reports	☐ Y ☐ N
Payment Method: Card	**Cash :** ☐ $_____		**Credit Card:** ☒ Master Card ☒ Visa		**Check:** ☐ Check # _____	
Application received by:	Taylor Davis				Date: 9.1.23	
Application completeness approved by:	Taylor Davis				Date: 9.1.23	
Date scheduled for public hearing:						

PRELIMINARY PLAT
FOR
BROOKFIELD BRANCH - PHASE 1
HAMPSTEAD, TOPSAIL TOWNSHIP, NORTH CAROLINA
LOTS 1-153, 206, & 276-280



FEMA MAP

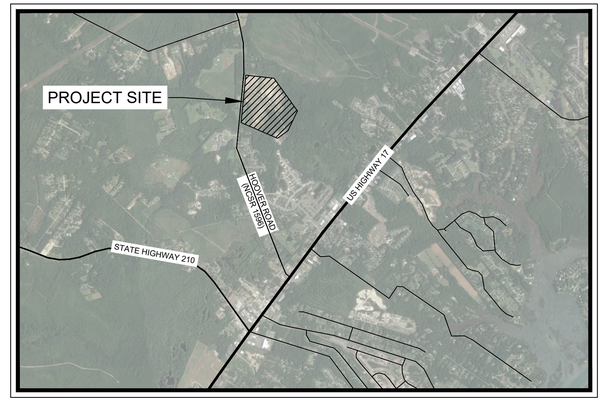
THE PROJECT SITE DOES LIE WITHIN A FLOOD HAZARD AREA PER FIRM PANEL 3720329300J DATED 2/16/2007.

PARCEL NO.: 3283-94-6297-0000, 3293-04-6120-0000, 3293-03-2340-0000
ZONING: RM (RESIDENTIAL MIXED)
CITY OF HAMPSTEAD, PENDER COUNTY, NORTH CAROLINA
APPROVED MASTER DEVELOPMENT PLAN MDP 2023-41
OLD PINS: 3283-94-9377-0000, 3283-93-1673-0000, 3283-83-9765-0000

PROPERTY AREA = 79 ACRES
TOTAL DISTURBED AREA = 46.9 ACRES
IMPERVIOUS AREA = 28.7 ACRES (36.3%)
PERVIOUS AREA = 50.30 ACRES (63.7%)

PENDER COUNTY CASE #: SUBMAJ 23-100
NCDOT PERMIT #: D031-071-4-00018

USACE NATIONWIDE PERMITS 39: SAW-2022-02559



VICINITY MAP

PROJECT CONTACTS

OWNER:	HOOVER ROAD INVESTMENTS, LLC. 60 GREGORY ROAD, SUITE 1 BELVILLE, NORTH CAROLINA 28451 PHONE: 910.507.2115 CONTACT: TIM LONG
CIVIL ENGINEER:	KIMLEY-HORN AND ASSOCIATES, INC. 25 BULL STREET, SUITE 400 SAVANNAH, GEORGIA 31401 PHONE: 912.231.4384 CONTACT: RUSTY WINDSOR, P.E.
SURVEYOR:	MCKIM & CREED INC. 122 CINEMA DRIVE WILMINGTON, NORTH CAROLINA 28403 PHONE: 910.791.6707 CONTACT: RYAN LOCKHART, PLS
24-HR CONTACT:	TIM LONG LOGAN DEVELOPERS INC. 910-742-6472
PLANNING CONTACT:	DANIEL ADAMS 805 SOUTH WALKER STREET BURGAW, NC 28425 PHONE: 910-259-0231 CONTACT: DADAMS@PENDERCOUNTYNC.GOV
FIRE MARSHALL CONTACT:	AMY BURTON 805 RIDGEWOOD AVENUE P.O. BOX 28 BURGAW, NC 28425 PHONE: 910.791.6707 CONTACT: ABURTON@PENDERCOUNTYNC.GOV

PROJECT NARRATIVE:

BROOKFIELD BRANCH IS A PROPOSED TOWN HOMES AND SINGLE FAMILY DEVELOPMENT. IT WILL CONTAIN 151 DETACHED SINGLE FAMILY UNITS, AND 129 TOWNHOME UNITS. PHASE 1 INCLUDES 99 DETACHED SINGLE FAMILY UNITS AND 60 TOWNHOME UNITS

THE PROJECT ALSO INCLUDES THE CONSTRUCTION OF SURFACE ROADS, STORMWATER CONVEYANCE AND DETENTION, AND ALL ASSOCIATED UTILITIES. THE TOTAL AREA OF THE PROJECT SITE IS 79 ACRES, AND THE TOTAL DISTURBED AREA IS 46.9 INCLUDING PUBLIC ROW.

NOTES:

1. ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING THE REPRODUCTION PROCESS. THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.
2. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE **CONTRACTOR** MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
3. THE APPROVAL OF THESE PLANS AND THE ISSUANCE OF THIS LAND DISTURBANCE PERMIT DOES NOT IN ANY WAY SUGGEST THAT ALL OTHER REQUIREMENTS FOR THE LEGAL OR APPROPRIATE OPERATIONS FOR THIS ACTIVITY, WHICH MAY REQUIRE ADDITIONAL PERMITTING HAVE BEEN MET. THE ONUS IS ON THE OWNER/DEVELOPER/ BUILDER TO DISCOVER WHAT ADDITIONAL PERMITTING OR APPROVALS MAY BE NECESSARY TO OPERATE FROM THIS POINT IN AN APPROPRIATE AND LEGAL MANNER. PLAN APPROVAL OR PERMIT ISSUANCE DOES NOT ABSOLVE THE APPLICANT FROM COMPLYING WITH ALL APPLICABLE LAWS, STANDARDS, OR OTHER PERMITS WHICH MAY BE REQUIRED FOR THIS PROJECT.

Certification of Submission
A copy of this plat has been submitted. Approval is subject to review; this does not constitute an approval.

Pender County Utilities: Katayne Leubner Date: 01/31/2025
Pender County Environmental Health: Vincent Dodge, REHS Date: 02/05/2025
Pender County Addressing Coordinator: Michael Dickson Date: 1/31/2025
Pender County Fire Marshal: Amy H Burton Date: 2/04/2025

Certificate of Preliminary Plat Approval
Preliminary Plat Approved by Pender County for a period of two (2) years subject to the Pender County Unified Development Ordinance requirements and conditions of approval.

Planning Staff: Taylor Lewis Date: 02/11/2025

CIVIL SHEET LIST

REV. NO.	SHEET NO.	SHEET TITLE
	C0-00	COVER SHEET
	C0-01	GENERAL NOTES
	C0-02	GENERAL NOTES
	C0-10	ZONING CONDITIONS
	C0-11	ZONING CONDITIONS
	C0-81	EXISTING CONDITIONS PLAN
	C0-80	EXISTING CONDITIONS PLAN
	C0-82	EXISTING CONDITIONS PLAN
	MAP-BK 74_PG 028	EXEMPT SUBDIVISION PLAT
	C1-00	DEMOLITION PLAN
	C2-00	SITE PLAN
	C2-10	PHASING PLAN PHASE 1A
	C2-11	PHASING PLAN PHASE 1B
	C2-12	PHASING PLAN PHASE 2
	C2-30	FIRE PROTECTION PLAN
	C2-40	SIGNING AND STRIPING PLAN
	C3-00	OVERALL GRADING PLAN
	C3-01	GRADING PLAN
	C3-02	GRADING PLAN
	C3-03	GRADING PLAN
	C3-04	GRADING PLAN
	C3-10	DRAINAGE PLAN
	C3-11	DRAINAGE PLAN
	C3-12	DRAINAGE PLAN
	C3-50	STORM SEWER PROFILES
	C3-51	STORM SEWER PROFILES
	C3-52	STORM SEWER PROFILES
	C3-53	STORM SEWER PROFILES
	C3-54	STORM SEWER PROFILES
	C3-55	STORM SEWER PROFILES
	C3-56	STORM SEWER PROFILES
	C3-57	STORM SEWER PROFILES
	C3-80	STORMWATER MANAGEMENT PLAN
	C3-81	STORMWATER MANAGEMENT PLAN
	C4-00	OVERALL UTILITY PLAN
	C4-50	UTILITY PLANS AND PROFILES
	C4-51	UTILITY PLANS AND PROFILES
	C4-52	UTILITY PLANS AND PROFILES
	C4-53	UTILITY PLANS AND PROFILES
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	C4-59	UTILITY PLANS AND PROFILES
	C4-60	UTILITY PLANS AND PROFILES
	C4-61	UTILITY PLANS AND PROFILES
	C4-62	UTILITY PLANS AND PROFILES
	C4-63	UTILITY PLANS AND PROFILES
	C4-64	UTILITY PLANS AND PROFILES
	C5-00	EROSION CONTROL NOTES
	C5-10	EROSION CONTROL PLAN PHASE 1

CIVIL SHEET LIST

REV. NO.	SHEET NO.	SHEET TITLE
	C5-11	EROSION CONTROL PLAN PHASE 1
	C5-20	EROSION CONTROL PLAN PHASE 2
	C5-21	EROSION CONTROL PLAN PHASE 2
	C5-30	EROSION CONTROL PLAN PHASE 3
	C5-31	EROSION CONTROL PLAN PHASE 3
	C5-80	EROSION CONTROL DETAILS
	C5-81	EROSION CONTROL DETAILS
	C5-82	EROSION CONTROL DETAILS
	C5-83	EROSION CONTROL DETAILS
	C5-84	EROSION CONTROL DETAILS
	C5-85	EROSION CONTROL DETAILS
	C6-00	CONSTRUCTION DETAILS
	C6-01	CONSTRUCTION DETAILS
	C6-02	CONSTRUCTION DETAILS
	C6-03	CONSTRUCTION DETAILS
	C6-04	CONSTRUCTION DETAILS
	C6-05	CONSTRUCTION DETAILS
	C6-30	STORM STRUCTURE DETAILS
	C6-31	STORM STRUCTURE DETAILS
	C6-32	STORM STRUCTURE DETAILS
	C6-33	STORM STRUCTURE DETAILS
	C6-40	SANITARY SEWER DETAILS
	C6-41	SANITARY SEWER DETAILS
	C6-42	LIFT STATION MECHANICAL PLAN
	C6-43	LIFT STATION SITE DETAILS
	C6-44	LIFT STATION ELECTRICAL NOTES
	C6-45	LIFT STATION ELECTRICAL SITE PLAN
	C6-46	LIFT STATION ELECTRICAL DETAILS
	C6-47	LIFT STATION ELECTRICAL DETAILS
	C6-48	LIFT STATION ELECTRICAL DETAILS
	C6-49	LIFT STATION ELECTRICAL DETAILS
	C6-50	WATER DETAILS
	C6-51	WATER DETAILS
	C6-52	WATER DETAILS
	C6-53	WATER DETAILS
	L1-00	LANDSCAPE PLAN
	L1-01	LANDSCAPE PLAN
	L1-02	LANDSCAPE PLAN
	L1-03	LANDSCAPE PLAN
	L1-04	LANDSCAPE PLAN
	L1-05	LANDSCAPE PLAN
	L1-06	LANDSCAPE PLAN
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	L1-08	LANDSCAPE PLAN
	L1-09	LANDSCAPE PLAN
	L1-10	LANDSCAPE PLAN
	L1-11	LANDSCAPE PLAN
	L1-12	LANDSCAPE PLAN
	L1-13	LANDSCAPE PLAN
	L1-14	LANDSCAPE PLAN
	L1-15	LANDSCAPE PLAN
	L2-00	LANDSCAPE DETAILS

PREPARED BY
Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
25 BULL ST. SUITE 400
SAVANNAH, GA 31401
PHONE: (912) 231-4384
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: (910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JANE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
COVER SHEET

SHEET NUMBER
C0-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C0-00 - CIVIL COVER SHEET.dwg C0-00 COVER SHEET Feb 07, 2025 1:45pm by zach.lacaria

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

GENERAL NOTES:

1. WORK IN THIS PROJECT SHALL CONFORM TO THESE PLANS, THE LATEST EDITIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) ROAD AND BRIDGE SPECIFICATIONS, THE NCDOT ROAD AND BRIDGE STANDARDS, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, PENDER COUNTY UTILITIES AND PLURIS MANAGEMENT GROUP DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT, AND GENERAL DESIGN STANDARDS. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS, OR PLANS, THE MOST STRINGENT SHALL GOVERN. ALL UTILITIES TO BE DEDICATED TO THE PENDER COUNTY UTILITIES AND PLURIS MANAGEMENT GROUP MUNICIPAL WATER AND/OR SANITARY SEWER SYSTEM SHALL BE CONSTRUCTED AND TESTED TO CONFORM TO STATE OF NORTH CAROLINA/STATE BOARD OF HEALTH WATERWORKS AND/OR SEWAGE REGULATIONS AND THE PENDER COUNTY UTILITIES AND PLURIS MANAGEMENT GROUP DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS.
2. THE TERM "CONTRACTOR" AS REFERENCED HERE-IN SHALL ALSO INCLUDE THE SUBCONTRACTOR OR PRINCIPAL TRADE CONTRACTOR, UNDER CONTRACT TO THE GENERAL CONTRACTOR TO PROVIDE LABOR, MATERIALS, AND/OR SERVICES TO THE PROJECT.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY, INCLUDING BUT NOT LIMITED TO TRENCH SAFETY, DURING ALL PHASES OF CONSTRUCTION.
4. THE LOCATION AND SIZE OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC OR PRIVATE UTILITIES (SHOWN OR NOT SHOWN) WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE NORTH CAROLINA 811 UTILITIES LOCATION SERVICE (NC811) AT 1-800-632-4949 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE SITE.
5. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
6. TRAFFIC CONTROL WITHIN ALL VEHICULAR AREAS IS THE RESPONSIBILITY OF THE CONTRACTOR, SHALL BE IN CONFORMANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND AS FURTHER DIRECTED BY CITY AND STATE INSPECTORS.
7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
8. CONSTRUCTION STAKEOUT FOR THIS PROJECT SHALL BE PER A DIGITAL (CAD) FILE PROVIDED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE LEAD ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON THIS PLAN. ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE THE MEETING WITH THE PENDER COUNTY ENGINEERING DIVISION AND THE OWNER.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
11. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS, AND WIRE UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES.
12. ROADWAYS AND BUILDINGS MUST BE CAPABLE OF SUPPORTING FIRE APPARATUS DURING CONSTRUCTION.
13. EXISTING INFORMATION SHOWN TAKEN FROM SURVEY TITLED:
"TOPOGRAPHIC SURVEY & PLATTING FOR HOOVER ROAD PROPERTIES LLC" IN HAMPSTEAD,TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA AND DATED OCTOBER 10, 2023 PROVIDED BY MCKIM&CREED
"EXISTING CONDITIONS" IN TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA AND DATED NOVEMBER 16, 2022 PROVIDED BY PARAMOUNTE ENGENGINEERING, INC.
14. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NC DOT AND PENDER COUNTY STANDARDS, SPECIFICATIONS, & DETAILS IF APPLICABLE.

GRADING

1. OBTAIN AND POST THE PENDER COUNTY LAND DISTURBANCE PERMIT ONSITE PRIOR TO COMMENCING WORK ON SITE.
2. REFER TO FINAL CONSTRUCTION PLANS FOR CLEARING LIMITS AND TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
3. CONTRACTOR SHALL ADHERE TO THE LIMITS OF TREE PROTECTION FENCE.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
5. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER, PENDER COUNTY, AND NCDENR). AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
6. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS AND REPORT. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE CERTIFIED MATERIAL TESTING AGENCY PRIOR TO PLACEMENT.
7. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.
8. ALL MATERIALS USED FOR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS, OR ANY OTHER NON-COMPATIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
9. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
10. ALL DEMOLITION, DEBRIS, AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AND LEGALLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
11. NO TREE WITHIN THE TREE PROTECTION AREA SHALL BE REMOVED OR DAMAGED.
12. THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION PRIOR TO THE PROJECT ACCEPTANCE IS SCHEDULED. FENCING SHALL BE REMOVED PRIOR TO FINAL SITE INSPECTION FOR THE CO.
13. REFERENCE GEOTECHNICAL REPORT FOR PAVING SUB GRADE INFORMATION.
14. ALL SPOT GRADE ELEVATIONS IN CURB AND GUTTER REPRESENT GUTTER FLOWLINE ELEVATION AT EDGE OF PAVEMENT UNLESS OTHERWISE NOTED (ADD 3" FOR TOP OF CURB).
15. PROPOSED CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND ROADWAY PROFILES/SUPERELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
16. REFER TO SITE PLAN AND FINAL PLAT FOR HORIZONTAL DIMENSIONS.
17. WHERE FILL IS TO BE PLACED ON EXISTING SLOPES STEEPER THAN 4:1, CONTRACTOR SHALL EXCAVATE BENCHES WITH A MAXIMUM DEPTH OF 3'.
18. THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER FOR APPROPRIATE SLOPE STABILIZATION ON ALL SLOPES STEEPER THAN 3:1.
19. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR BLASTING ROCK IF BLAST ROCK IS ENCOUNTERED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL BLASTING AND SAFETY REQUIREMENTS.
20. SILT FENCE SHALL BE PLACED AROUND ALL TEMPORARY SOIL STOCKPILES A MINIMUM OF 3' FROM TOE OF SLOPE. TEMPORARY STOCK PILES AND STAGING AREAS OUTSIDE OF LIMITS OF DISTURBANCE SHALL BE PERMITTED THROUGH NCDEQ.
21. VERTICAL DATUM IS BASED ON NAVD 88.

SANITARY SEWER

1. GRAVITY SANITARY SEWER MAINS SHALL BE SDR-35 PVC PIPE AS SPECIFIED IN THESE PLANS AND PLURIS MANAGEMENT GROUP STANDARDS AND SPECIFICATIONS. SANITARY SEWER SERVICES SHALL BE SCHEDULE 40 PVC.
2. CLEANOUT SYMBOLS SHOWN ON THESE PLANS REPRESENT LOCATION OF SURFACE ACCESS POINT. CONTRACTOR SHALL LOCATE WYE APPROPRIATELY BASED ON PIPE DEPTH.
3. ALL MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLURIS MANAGEMENT GROUP STANDARDS. MANHOLE DIAMETER SHALL VARY DEPENDING ON PIPE DIAMETER AND DEPTH, PER PLURIS MANAGEMENT GROUP STANDARDS.
4. SANITARY SEWER CLEAN-OUTS LOCATED IN PAVEMENT AREAS SHALL BE HEAVY-DUTY TRAFFIC BEARING CASTINGS.
5. ALL SEWER MAINS IN TRAFFIC AREAS SHALL HAVE MINIMUM COVER OF 5' MEASURED FROM FINISHED GRADE TO PIPE CROWN UNLESS DUCTILE IRON PIPE IS PROVIDED IN CLASS 1 BEDDING WHERE A MINIMUM COVER SHALL BE 3'.
6. SEWER MANHOLES LOCATED IN NON-PAVED AREAS SHALL HAVE RIM ELEVATION A MINIMUM OF 1' ABOVE FINISHED GRADE.
7. PRIVATE GRAVITY SEWER MAINS AND MANHOLES TESTED IN ACCORDANCE WITH PLURIS MANAGEMENT GROUP GUIDELINES.

STANDARD UTILITY NOTES

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP DESIGN STANDARDS & SPECIFICATIONS
2. UTILITY SEPARATION REQUIREMENTS:
   A) A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.
   B) WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.
   C) WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATER MAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS.
   D) 10' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES.
   E) MAINTAIN 18"MIN. VERTICAL SEPARATION AT ALL WATER MAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 24"MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6"MIN. CLEARANCE.
   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 PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.
6. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT.
7. INSTALL 2" WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 5' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
8. INSTALL 4" PVC SEWER SERVICES @ 2.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. 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.
10. NCDOT ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE ROW PRIOR TO CONSTRUCTION.
11. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.
12. THE STATE OF NORTH CAROLINA AND PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP SHALL BE NOTIFIED IN WRITING PRIOR TO UTILITY INSTALLATION AND FOR SCHEDULING INSPECTIONS.
13. TRAFFIC CONTROLS FOR ANY UTILITY WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN COMPLIANCE WITH STANDARDS OF THE NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
14. IN THE EVENT AN ITEM IS NOT COVERED BY THESE PLANS, THEN THE STANDARDS AND SPECIFICATIONS CONTAINED IN PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP HANDBOOK COVERING SUCH ITEMS SHALL APPLY.
15. IF PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP WATER AND SANITARY SEWER PERMITS ARE REQUIRED, CONTRACTOR IS RESPONSIBLE FOR ALL PERMIT FEES.
16. LOCATIONS AND SIZES OF EXISTING WATER AND SEWER LINES SHOWN ON THESE PLANS WITHIN THE PROPERTY LIMITS OF THE SITE ARE ASSUMED BASED ON SURVEY OF SURFACE FEATURES (MANHOLES, VALVES, VAULTS, METERS, ETC.) TITLED "TOPOGRAPHIC SURVEY & PLATTING FOR HOOVER ROAD PROPERTIES LLC" PREPARED BY MCKIM&CREED, DATED OCTOBER 10, 2023. IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE SIZE, MATERIAL, AND HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING UTILITIES PRIOR TO COMMENCING WORK. ANY DEVIATIONS FROM WHAT IS INDICATED ON THESE PLANS SHALL BE REPORTED TO THE THE DEVELOPER AND ENGINEER, IN WRITING, IMMEDIATELY.
17. CONTRACTOR SHALL PROVIDE A MEANS TO KEEP ALL NEW PIPING ISOLATED FROM EXISTING PIPING UNTIL ALL NEW PIPING HAS BEEN TESTED, AND ACCEPTED FOR SERVICE.
18. EXISTING UTILITIES SHALL BE PROTECTED DURING ALL CONSTRUCTION.
19. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE UTILITIES. ALL PUBLIC PIPE, STRUCTURES, AND FITTINGS SHALL BE INSPECTED BY PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING DISINFECTION AND PRESSURE TESTING OF ALL MAINS. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
20. UTILITY WORK SHALL BE INSPECTED AND ACCEPTED BY PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP PRIOR TO PLACING INTO SERVICE.
21. THERE SHALL BE A MINIMUM 3' CLEAR DISTANCE AROUND ALL FIRE HYDRANTS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "AS-BUILT" PLANS, PER PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP REQUIREMENTS, TO THE ENGINEER SHOWING THE LOCATION OF WATER AND SEWER SERVICES AND ANY DEVIATIONS FROM PLANS MADE DURING CONSTRUCTION. THE ENGINEER WILL PROVIDE THESE RECORD PLANS TO PENDER COUNTY UTILITIES, AND PLURIS MANAGEMENT GROUP.

WATER

1. WATERLINES, LARGER THAN 2" SHALL BE C-900 PVC OR DIP MEETING THE REQUIREMENTS OF ANSI-AWWA C151. WATERLINES 2" SHALL BE SDR 21. WATERLINES 1" SHALL BE POLYTUBE.
2. ALL UNDERGROUND UTILITIES AND FIRE HYDRANTS MUST BE FUNCTIONALLY APPROVED PRIOR TO STRUCTURAL CONSTRUCTION.
3. NATIONAL STANDARD THREADS SHALL BE INSTALLED ON FIRE HYDRANTS.
4. ALL FIRE HYDRANTS AND FDC CONNECTIONS TO HAVE STORZ TYPE CONNECTION PER PENDER COUNTY FIRE DEPARTMENT STANDARDS.

BACKFLOW PREVENTION:

1. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPARTMENT CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
2. EACH BACKFLOW PREVENTER ASSEMBLY IS REQUIRED TO BE TESTED BY AN APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM INTO SERVICE. CONTRACTOR SHALL PERFORM TESTING IN ACCORDANCE WITH THE PENDER COUNTY ENGINEERING DEPARTMENT.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER AND WITH A MINIMUM AMOUNT OF INCONVENIENCE TO TRAFFIC.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SHALL ADHERE TO THE PROVISIONS OF THE MUTCD (MOST CURRENT EDITION).
3. PRIOR TO CONSTRUCTION BEGINNING, ALL SIGNAGE AND TRAFFIC CONTROL SHALL BE IN PLACE.
4. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL APPROVALS AND EASEMENTS ON THE JOB SITE AT ALL TIMES.
5. THE CONTRACTOR SHALL REPAIR ALL DRIVEWAYS, DRIVEWAY PIPES, CURB AND GUTTER, SIDEWALKS AND STREET TO EXISTING CONDITION OR BETTER.

STANDARD NOTES

1. NO PERSON MAY INITIATE A LAND-DISTURBING ACTIVITY BEFORE NOTIFYING THE PENDER COUNTY OF THE DATE THAT THE LAND-DISTURBING ACTIVITY WILL BEGIN.
2. NO LAND DISTURBING ACTIVITY BEYOND THAT REQUIRED TO INSTALL APPROPRIATE EROSION CONTROL MEASURES MAY NOT PROCEED UNTIL EROSION CONTROL MEASURES ARE INSPECTED AND APPROVED BY THE CITY.
3. SCHEDULING OF A PRE-CONSTRUCTION CONFERENCE WITH THE EROSION CONTROL INSPECTOR IS REQUIRED PRIOR TO INITIATING LAND DISTURBING ACTIVITIES. FOR INSPECTION PLEASE CALL 329-4467. 24-HOUR NOTICE IS REQUIRED.
4. SEED OR OTHERWISE PROVIDE GROUND COVER DEVICES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION FOR ALL EXPOSED SLOPES WITHIN 15 WORKING DAYS OF COMPLETION ANY PHASE OF GRADING.
5. CONTRACTOR SHALL INSPECT AND MAINTAIN AS NEEDED ALL EROSION CONTROL DEVICES ON A WEEKLY BASIS AND AFTER EACH MAJOR STORM EVENT. FAILURE TO KEEP EROSION CONTROL DEVICES IN GOOD WORKING ORDER MAY RESULT IN ISSUANCE OF A STOP WORK ORDER OR CIVIL PENALTIES UP TO $5000 PER DAY OF VIOLATION. SITES UTILIZING SEDIMENT TRAPS MUST ALSO SPECIFY A MAXIMUM DEPTH OF SEDIMENT PRIOR TO CLEAN OUT.
6. THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES SHALL THE PLAN OR ITS IMPLEMENTATION PROVE TO BE INADEQUATE.
7. ACCEPTANCE AND APPROVAL OF THIS PLAN IS CONDITIONED UPON YOUR COMPLIANCE WITH FEDERAL AND STATE WATER QUALITY LAWS, REGULATIONS, AND RULES. IN ADDITION, LOCAL CITY AND COUNTY ORDINANCES OR RULES MAY ALSO APPLY TO THIS LAND-DISTURBING ACTIVITY. APPROVAL BY THE CITY DOES NOT SUPERSEDE ANY OTHER PERMIT OR APPROVAL.

PAVING/CURBING

1. IF NOT SPECIFIED ON THE PLAN, WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES.
2. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF PAVEMENT AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
3. ALL PAVEMENT SUB GRADES (EVEN WHEN ROCK IS ENCOUNTERED) SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 98 PERCENT OF ASTM D-698 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN IN THE CONSTRUCTION DOCUMENTS OR AS DIRECTED BY THE CERTIFIED MATERIALS TESTING AGENT. FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM 8" LIFTS.
4. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AND MISCELLANEOUS STRIPING AS SHOWN ON THE PLANS. UNLESS SPECIFIED ON THE PLAN, ALL ROADWAY PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND ADHERE TO NCDOT STANDARDS.
5. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND MOISTURE CONDITION ALL FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
6. ALL CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5 FEET. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
7. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY THAT THE CERTIFIED MATERIAL TESTING AGENT HAS PERFORMED THE WORK AND THAT THE WORK CONSTRUCTED DOES MEET THE REQUIREMENTS OF THE CITY'S SPECIFICATIONS AND/OR THE PROJECT SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
8. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES ON PUBLIC STREETS SHALL CONFORM TO MUTCD, NCDOT, AND PENDER COUNTY STANDARDS.

STORM DRAINAGE

1. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND GRATE INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
2. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER.
3. THE PENDER COUNTY INSPECTOR SHALL INSPECT ALL "PUBLIC" CONSTRUCTION. THE CONTRACTOR'S PRICE SHALL INCLUDE ALL INSPECTION FEES.
4. ALL RCP STORM SEWER MAINS AND LATERALS SHALL BE MINIMUM CLASS III REINFORCED CONCRETE PIPE.
5. ALL PVC PIPE USED IN DRAINAGE SYSTEM SHALL BE MINIMUM SDR-35 OR APPROVED EQUAL.
6. ALL PVC TO RCP CONNECTIONS SHALL BE CONSTRUCTED WITH CONCRETE COLLARS.
7. THE LOCATIONS OF STORM SEWER STRUCTURES SHOWN ON THESE PLANS (AND PROVIDED IN ASSOCIATED CAD FILES) ARE APPROXIMATE. THE CONTRACTOR SHALL STAKE ALL CURB INLET STRUCTURES SUCH THAT INLET TOPS ALIGN HORIZONTALLY WITH PROPOSED CURB LOCATIONS (PER DETAIL, IF PROVIDED). WHERE PROPOSED STORM SEWERS TIE TO EXISTING STRUCTURES, PIPES, ETC., THE CONTRACTOR SHALL FIELD ADJUST PROPOSED STORM SEWERS TO MATCH THE LOCATIONS OF THESE EXISTING FEATURES.
8. RIM ELEVATIONS FOR STORM CATCH BASINS ARE MEASURED TO THE GUTTER FLOW LINE.

TRAFFIC CONTROL NOTES

1. WITHIN THE SIGHT TRIANGLES AND SIGHT EASEMENTS SHOWN ON THESE PLANS, NO OBSTRUCTION SHALL BE LOCATED IN WHOLE OR PART BETWEEN (2) FEET AND (8) FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION OR THE NEAREST TRAVELED WAY, IF NO CURBING EXISTS. OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO, ANY BERM, FOLIAGE, FENCE, WALL, SIGN, PARKED VEHICLE OR OTHER OBJECT.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL PENDER COUNTY AND/OR N.C.D.O.T. STANDARDS AND SPECIFICATIONS.
3. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION) FOR DETAILS OF STANDARD TRAFFIC CONTROL SIGNS AND STANDARDS.

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, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT S&EC ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
10. *AGRICULTURAL LIMESTONE – 2 TONS/ ACRES (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 ANOTHER – ASPHALT EMULSION @ 300 GALS./ ACRE

SEEDING SCHEDULE

DATE	TYPE	PLANTING RATE
	SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1)	
AUG 15 – NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 – MAR 1	TALL FESCUE	300 LBS/ACRE
	& ABRUZZI RYE	25 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	120 LBS/ACRE
	***BROWNTOP MILLET	35 LBS/ACRE
	***OR SORGHUM-SUDAN HYBRIDS	30 LBS/ACRE
	SLOPES (3:1 TO 2:1)	
MAR 1 – JUN 1	SERICEA LESPEDEZA (SCARIFIED)	50 LBS/ACRE
(MAR 1 – APR 15)	AND ADD TALL FESCUE	120 LBS/ACRE
(MAR 1 – JUN 30)	OR ADD WEEPING LOVEGRASS	10 LBS/ACRE
(MAR 1 – JUN 30)	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUN 1 – SEP 1	***TALL FESCUE AND	120 LBS/ACRE
	***BROWNTOP MILLET	35 LBS/ACRE
	***OR SORGHUM-SUDAN HYBRIDS	30 LBS/ACRE
SEP 1 – MAR 1	SERICEA LESPEDEZA (UNHULLED-	70 LBS/ACRE
	UNSCARIFED) AND TALL FESCUE	120 LBS/ACRE
(NOV 1 – MAR 1)	ADD ABRUZZI RYE	25 LBS/ACRE

CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

***TEMPORARY – RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12" IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

*NOTE: THIS SEEDING SCHEDULE IS FOR EROSION AND SEDIMENT CONTROL ONLY. SEE LANDSCAPE PLAN FOR FINAL SEEDING.

THE CONTRACTOR SHALL PROVIDE GROUND COVER ON DESIGNATED AREAS AND SLOPES GREATER THAN 3:1 WITHIN 7 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. CONTRACTOR SHALL PROVIDE GROUND COVER IN 14 DAYS ON ALL OTHER AREAS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUND COVER FOR ALL DISTURBED AREAS SHALL BE PROVIDED WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION.

NURSE CROP: WHEN SEEDING BERMUDA GRASS SEED CONTRACTOR SHALL ADD 25 LB/AC OF ANNUAL RYE GRASS AS NURSE CROP UNTIL PERMANENT ESTABLISHMENT OF BERMUDA GRASS

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITHIN THESE PLANS IN ACCORDANCE WITH APPLICABLE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR) AND PENDER COUNTY EROSION AND SEDIMENT CONTROL REGULATIONS.
3. ALL CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER GENERAL PERMIT.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCDENR EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.
7. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS. CONTACT PROJECT ENGINEER AND PROJECT EROSION CONTROL INSPECTOR TO ENSURE ADDITIONAL EROSION CONTROL MEASURES ARE INSTALLED PRIOR TO OFF-SITE GRADING.
8. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS, STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO THE PENDER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
9. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
10. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT IS REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.
11. CONTRACTOR TO ENSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE SITE LIMITS OR ENTER PROTECTED AREAS. ANY SEDIMENT DEPOSITED BEYOND DISTURBED AREA WITHIN SITE LIMITS SHALL BE REMOVED.
12. ROLLED EROSION CONTROL PRODUCTS (RECP'S) SHOULD BE USED TO AID PERMANENT VEGETATED STABILIZATION OF SLOPES 2:1 OR GREATER AND WITH MORE THAN 10' OF VERTICAL RELIEF. RECP'S SHOULD ALSO BE USED WHEN MULCH CANNOT BE ADEQUATELY TACKED AND WHERE IMMEDIATE GROUND COVER IS REQUIRED TO PREVENT EROSION DAMAGE.
13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 21 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
14. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
15. WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.
16. TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREAS. TWO TO THREE INCH STONE SHALL BE USED FOR THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE.
17. ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
18. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
19. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
20. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
21. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
22. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
23. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. PENDER COUNTY INSPECTOR'S FINAL APPROVAL IS REQUIRED.
24. STABILIZATION MEASURES SHALL BE APPLIED TO STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
25. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING UPON FIELD CONDITIONS.
26. LIMITS OF GRADING SHOWN ON THE PLAN ARE MAXIMUM LIMITS FOR EROSION CONTROL PURPOSES ONLY. SURVEYOR TO DETERMINE ACTUAL LIMIT.
27. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE PENDER COUNTY EROSION CONTROL ORDINANCE, AND IS SUBJECT TO A FINE.
28. GRADING MORE THAN 12,000 SF WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE PENDER COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.

PCU STANDARD NOTES:

1. A PRE-CONSTRUCTION MEETING IS REQUIRED BEFORE BEGINNING WORK. THE MEETING MUST BE SCHEDULED WITH PENDER COUNTY UTILITIES (PCU) AT LEAST ONE WEEK IN ADVANCE. ATTENDEES MUST INCLUDE PCU, THE UTILITY CONTRACTOR'S SUPERINTENDENT, THE SUPPLIER, AND THE CONSULTING ENGINEER.
2. ALL MATERIALS USED SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
3. ALL PIPE SHALL BE C900 DR18 PVC, UNLESS OTHERWISE NOTED (SEE PCU STANDARD DETAIL). PVC PIPE TO BE SDR 21 WHERE C900 IS UNAVAILABLE. THE USE OF DUCTILE IRON PIPE (DIP) IS REQUIRED UNDER PAVED AREAS. PCU MUST APPROVE THE USE OF DIP IN THE FIELD BEFORE INSTALLATION IN OTHER LOCATIONS.
4. PCU STANDARD WATERLINE PIPE RESTRAINING METHOD IS MJ GRIP RINGS. AT A MINIMUM ALL FITTINGS, VALVES, ETC. MUST BE RESTRAINED (SEE PCU STANDARD DETAIL).
5. PCU MUST INSPECT CASING INSTALLATIONS PRIOR TO BACKFILL. PCU MUST WITNESS PRESSURE TESTS, AND WITHDRAWAL OF BACTERIOLOGICAL SAMPLES. CONTACT PCU UTILITIES INSPECTOR TO SCHEDULE.
6. CLOSE-OUT DOCUMENTS WHICH MUST BE RECEIVED PRIOR TO PCU SIGNING THE NCDEQ PWSS APPLICANT CERTIFICATION INCLUDE: BACTERIOLOGICAL TESTS, PRESSURE TESTS, DEED OF DEDICATION, AFFIDAVIT/RELEASE OF LIENS, WARRANTY, AND RECORD DRAWINGS (PDF & CAD).
7. AN 18-MONTH WARRANTY PERIOD APPLIES TO ALL WATERLINE CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED FROM NCDEQ PWSS.

ADA

1. CURB RAMPS ALONG PUBLIC STREETS AND IN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BASED ON THE COUNTY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
2. PRIVATE CURB RAMPS ON THE SITE (I.E. OUTSIDE PUBLIC STREET RIGHT-OF-WAY) SHALL CONFORM TO ADA STANDARDS.
3. ALL ACCESSIBLE ROUTES, GENERAL SITE AND BUILDING ELEMENTS, RAMPS, CURB RAMPS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO ADA STANDARDS FOR ACCESSIBLE DESIGN, LATEST EDITION.
4. ANY COMPONENTS OF THE PROJECT SERVING MULTIFAMILY DWELLINGS IN BUILDINGS THAT HAVE 4 OR MORE UNITS PER DWELLING SHALL ALSO CONFORM TO THE FAIR HOUSING ACT (FHA), AND COMPLY WITH THE FAIR HOUSING ACT DESIGN MANUAL BY THE US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
5. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY THAT SUITABLE ACCESSIBLE PEDESTRIAN ROUTES (PER ADA AND FHA) EXIST TO AND FROM EVERY DOOR AND ALONG SIDEWALKS, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ACCESSIBLE ROUTES. IN NO CASE SHALL AN ACCESSIBLE RAMP SLOPE EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPE EXCEED 2.0 PERCENT. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPE EXCEED 5.0 PERCENT. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 2.0 PERCENT SLOPE IN ANY DIRECTION.
6. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA SLOPE COMPLIANCE ISSUES.

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	09/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY 6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
GENERAL NOTES

SHEET NUMBER
C0-01

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C0-00 - CIVIL COVER SHEET.dwg C0-01 GENERAL NOTES Jan 29, 2025 10:36am by: mike.fritz

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EROSION CONTROL NOTES:

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK.
2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITHIN THESE PLANS IN ACCORDANCE WITH APPLICABLE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND PENDER COUNTY EROSION AND SEDIMENT CONTROL REGULATIONS.
3. ALL CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER GENERAL PERMIT.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCDEQ EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.
7. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS. CONTACT PROJECT ENGINEER AND PROJECT EROSION CONTROL INSPECTOR TO ENSURE ADDITIONAL EROSION CONTROL MEASURES ARE INSTALLED PRIOR TO OFF-SITE GRADING.
8. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS, STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NCDEQ FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
9. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
10. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT IS REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.
11. CONTRACTOR TO ENSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE SITE LIMITS OR ENTER PROTECTED AREAS. ANY SEDIMENT DEPOSITED BEYOND DISTURBED AREA WITHIN SITE LIMITS SHALL BE REMOVED.
12. ROLLED EROSION CONTROL PRODUCTS (RECP'S) SHOULD BE USED TO AID PERMANENT VEGETATED STABILIZATION OF SLOPES 2:1 OR GREATER AND WITH MORE THAN 10' OF VERTICAL RELIEF. RECP'S SHOULD ALSO BE USED WHEN MULCH CANNOT BE ADEQUATELY TACKED AND WHERE IMMEDIATE GROUND COVER IS REQUIRED TO PREVENT EROSION DAMAGE.
13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 21 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
14. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
15. WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.
16. TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREAS. TWO TO THREE INCH STONE SHALL BE USED FOR THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE.
17. ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
18. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
19. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
20. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
21. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
22. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
23. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. NCDEQ INSPECTOR'S FINAL APPROVAL IS REQUIRED.
24. STABILIZATION MEASURES SHALL BE APPLIED TO STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
25. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING UPON FIELD CONDITIONS.
26. LIMITS OF GRADING SHOWN ON THE PLAN ARE MAXIMUM LIMITS FOR EROSION CONTROL PURPOSES ONLY. SURVEYOR TO DETERMINE ACTUAL LIMIT.
27. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF NCDEQ EROSION CONTROL ORDINANCE, AND IS SUBJECT TO A FINE.
28. DISTURBANCE OF MORE THAN 1 ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE NCDEQ EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.

DEMOLITION LEGEND:

- REMOVE EXISTING OBJECT
- REMOVE EXISTING STRUCTURE
- REMOVE EXISTING ASPHALT PAVEMENT
- REMOVE EXISTING CONCRETE PAVEMENT
- REMOVE EXISTING GRAVEL
- REMOVE EXISTING UTILITIES, FENCING, CURB & GUTTER, & WALLS
- X — REMOVE EXISTING TREES / BUSHES

EXISTING CONDITIONS NOTES:

1. EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY MCKIM & CREED INC. DATED 10/10/2023.
2. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
3. WHERE EXISTING RUNOFF LEAVES THE SITE IN A SHEET FLOW CONDITION, RUNOFF SHALL LEAVE THE SITE IN A SHEET FLOW CONDITION AFTER DEVELOPMENT.

DEMOLITION NOTES:

1. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
2. RECEIPT OF ALL PERMITS AND APPROVALS IS REQUIRED BEFORE ANY CONSTRUCTION ACTIVITY.
3. EXISTING SOIL SERIES IS Fo, Mu, Wo FOR ENTIRE DISTURBED AREA.
4. TREES TO REMAIN MUST BE PROTECTED DURING DEMOLITION AND CONSTRUCTION PHASE. REFERENCE TREE PROTECTION AND REPLACEMENT PLANS FOR TREE REMOVAL AND PROTECTION.
5. CONSTRUCTION FENCING OR SILT FENCE SHALL NOT OBSTRUCT TRAFFIC FLOW ON EXISTING STREETS UNLESS CLOSURE PERMIT IS OBTAINED.
6. CONTRACTOR SHALL CONTROL DUST LEAVING THE SITE DURING DEMOLITION AND CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION AND RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
8. CONTRACTOR SHALL PROTECT SURROUNDING BUILDING UTILITY SERVICES DURING CONSTRUCTION AND COORDINATE ALL SERVICE IMPACTS WITH OWNER.
9. NO GRADED SLOPE SHALL EXCEED 3H:1V.
10. THE PROJECT SITE DOES LIE WITHIN A FLOOD HAZARD AREA PER FIRM PANEL 3720329300J DATED 2/16/2007.
11. CONTRACTOR SHALL MAINTAIN AN ADA COMPLIANT PEDESTRIAN PATH ALONG THE ADJACENT STREET FRONTAGE THROUGHOUT CONSTRUCTION.
12. CONTRACTOR SHALL FOLLOW ALL PROCEDURES AND RECOMMENDATIONS FROM ENVIRONMENTAL ASSESSMENTS PROVIDED BY THE OWNER.

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- WETLAND
- OPEN SPACE (ACTIVE)
- OPEN SPACE (PASSIVE)
- (10) — LOT NUMBER

SITE NOTES:

1. THE PROPOSED BUILDING INFORMATION SHOWN HEREON IS FROM AN ELECTRONIC FILE PROVIDED BY ARCHITECT, DATED 12/05/2023 AND IS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT BUILDING INFORMATION.
2. EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY MCKIM & CREED INC., DATED 10/10/2023.
3. ALL DIMENSIONS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
4. SIDEWALK INSTALLED AGAINST BACK OF CURB SHALL BE INSTALLED PER THE PLAN AS MEASURED FROM THE BACK OF CURB.
5. ALL SIGNAGE AND STRIPING MUST MEET THE LATEST REQUIREMENTS SET FORTH BY MUTCD, NCDOT, AND NORTH CAROLINA STATE CODE.
6. REFERENCE LANDSCAPE PLANS FOR ALL HARDSCAPE AND LANDSCAPE DETAILS AND SPECIFICATIONS.
7. APPLICANTS FOR SUBDIVISION APPROVAL SHALL OBTAIN APPROVAL FOR STREET NAMES FROM THE PENDER COUNTY ADDRESSING COORDINATOR. A COPY OF THE APPROVED PRELIMINARY PLAT WITH APPROVED STREET NAMES MUST BE SUBMITTED TO THE ADMINISTRATOR WITHIN 30 DAYS OF APPROVAL OF THE PRELIMINARY PLAT AND PRIOR TO FINAL PLAT SUBMISSION.
8. PENDER COUNTY EMERGENCY PERSONNEL HAS ACCESS TO ALL PRIVATE STREET.
9. TRAFFIC IMPACT ANALYSIS ON HOOVER ROAD RESIDENTIAL DEVELOPMENT IS CONDUCTED AND SUBMITTED IN OCTOBER 2023 TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.

GRADING LEGEND:

- 950 — EXISTING MAJOR CONTOUR
- 948 — EXISTING MINOR CONTOUR
- 945 — PROPOSED MAJOR CONTOUR
- 944 — PROPOSED MINOR CONTOUR
- ×945.00 — PROPOSED SPOT GRADE
- ×TG:945.00 — PROPOSED TOP GRADE AT WALL
- ×BG:945.00 — PROPOSED BOTTOM GRADE AT WALL
- ×TS:945.00 — PROPOSED TOP OF STAIR GRADE
- ×BS:945.00 — PROPOSED BOTTOM OF STAIR GRADE
- ×HP:945.00 — PROPOSED HIGH POINT GRADE
- ×LP:945.00 — PROPOSED LOW POINT GRADE
- ×TC:945.00 — PROPOSED TOP OF CURB GRADE
- ×BC:945.00 — PROPOSED BOTTOM OF CURB GRADE
- DRAINAGE FLOW ARROW

STORM DRAINAGE LEGEND:

- JB — JUNCTION BOX (NCDOT DETAIL 840.31)
- CI — ROLLED CURB INLET (NCDOT DETAIL 840.02)
- YD — YARD DRAIN (NDS CATCH BASIN OR COMPARABLE)
- OCS — OUTLET CONTROL STRUCTURE (CAST-IN-PLACE)
- PROPOSED STORM PIPE

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

GRADING & DRAINAGE NOTES:

1. SITE AREA: 79 ACRES
   DISTURBED AREA: 46.9 ACRES
2. CONTRACTOR SHALL CONSTRUCT ALL SIDEWALKS AND CROSSWALKS WITH A 2.0% MAXIMUM CROSS SLOPE AND A 5.0% MAXIMUM RUNNING SLOPE, UNLESS NOTED AS A RAMP. GRADES WITHIN ADA HANDICAP PARKING AREAS NOT TO EXCEED A 2% MAXIMUM SLOPE IN ANY DIRECTION.
3. THIS PROJECT DOES LIE WITHIN A 100 YEAR FLOOD HAZARD ZONE AS DEFINED BY THE F.E.M.A. "FLOOD HAZARD BOUNDARY MAP" COMMUNITY PANEL NUMBER 3720329300J, DATED 2/16/2007.
4. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
5. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR SANITARY SEWER AND STORM DRAINAGE SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
6. NO GRADED SLOPE SHALL EXCEED 3H:1V
7. ALL WALLS GREATER THAN 30" IN HEIGHT SHALL BE DESIGNED AND PERMITTED BY AN ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA.
8. ALL WALLS GREATER THAN 30" IN HEIGHT SHALL HAVE FALL PROTECTION THROUGH FENCING OR HANDRAIL AT A MINIMUM OF 42" TALL. REFERENCE LANDSCAPE PLANS FOR DETAILS.

UTILITY LEGEND:

- W — PROPOSED WATER LINE
- SS — PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

- (A) 8" C-900 (DR-18) PVC WATER MAIN
- (B) 11.25° BEND
- (C) 22.5° BEND
- (D) 45° BEND
- (E) 8" X 8" X 8" MJ TEE
- (F) 8" MJ GATE VALVE
- (G) FIRE HYDRANT ASSEMBLY
- (H) 8" X 6" REDUCER
- (I) 8" PLUG

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR SANITARY SEWER AND WATER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
3. ALL SANITARY SEWER PIPE SHALL BE INSTALLED PER PLURIS, LLC STANDARDS AND SPECIFICATIONS.
4. ALL WATER PIPE SHALL BE INSTALLED PER PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
5. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.

- TCE
- CL
- SF
- TPF
- SF/TPF
- TD → TD
- TD(CW)
- X
- 805
- 805
- CE

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW	DATED 03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS	DATED 01/22/2024	MRF
3	REVISED PER COUNTY COMMENTS	DATED 12/11/2023	MRF
2	REVISED PER COUNTY COMMENTS	DATED 11/07/2023	MRF
1	REVISED PER COUNTY COMMENTS	DATED 12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER ANNE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
GENERAL NOTES

SHEET NUMBER
C0-02

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C0-00 - CIVIL COVER SHEET.dwg C0-02 GENERAL NOTES Jan 29, 2025 10:36am by: mike.fritz

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PLURIS

April 4, 2023

Logan Developers, Inc
Bernadette Dickson
Land Development Administrator
60 Gregory Rd, Suite 1
Belville, NC 28451

RE: Hoover Road Investments, LLC
Parcel ID#3283-94-9377-0000

Dear Ms. Dickson,

Pluris Hampstead, LLC (Pluris) is providing this letter as formal notice regarding sewer service availability for the Hoover Road project, Parcel ID indicated above. Pluris is authorized by the County of Pender in its Special Use Permit to provide wastewater service within the Hampstead Service area.

Per the preliminary project narrative, the development will consist of approximately 260 – 300 combined single family and townhome residences plus a pool and clubhouse and will require approximately 54,000 gallons per day of sanitary sewer capacity.

Capacity is available on a first come first serve basis and is contingent upon the following items:

- developer entering into a developer agreement
- payment of capacity reservation fees

We look forward to working with you on this project. Please do not hesitate to contact me directly with any questions. My email address is kwilliams@plurisusa.com or via phone at (910) 218-7653.

Regards,

Kearin M Williams
Development Coordinator

Pender County
Planning and Community Development

Planning Division
805 S. Walker Street
PO Box 1519
Burgaw, NC 28425

Phone: 910-259-1202
Fax: 910-259-1295
www.pendercountync.gov

May 2, 2023

Wade Pudwill
WithersRavenel
137 S. Wilmington – Suite 200
Raleigh, NC 27601

Re: REZONE 2022-41 Zoning Map Amendment (PINs: 3283-94-9377-0000; 3283-93-1673-0000; 3283-83-9765-0000)

To whom it may concern,

The Pender County Board of Commissioners, at their April 17, 2023, meeting, passed a motion to approve the Zoning Map Amendment Application (REZONE 2022-41) for three parcels located on the east side of Hoover Road, across from Tim Moore Drive in the Topsail Township and may be further identified by Pender County PINs 3283-94-9377-0000, 3283-93-1673-0000, and 3283-83-9765-0000).

The approved Zoning Map Amendment changes the current zoning of the properties from the RP, Residential Performance zoning district to the RM, Residential Mixed zoning district. The approval is effective immediately.

Please do not hesitate to contact me at (910) 259-1529 if you have any further questions regarding this approval or the next steps in the permitting process.

Respectfully,

Justin Brantley
Senior Planner
Pender County Planning & Community Development
(910) 259-1529
jbrantley@pendercountync.gov

CC: Tim Long, Logan Homes
Samuel Franck, Ward and Smith, P.A.

Pender County
Planning and Community Development

Planning Division
805 S. Walker Street
PO Box 1519
Burgaw, NC 28425

Phone: 910-259-1202
Fax: 910-259-1295
www.pendercountync.gov

September 19, 2023

Hoover Road Investments LLC
60 Gregory Road Suite 1
Belville, NC 28451

Re: Master Development Plan MDP 2023-41 Approval (PIN: 3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000)

To whom it may concern,

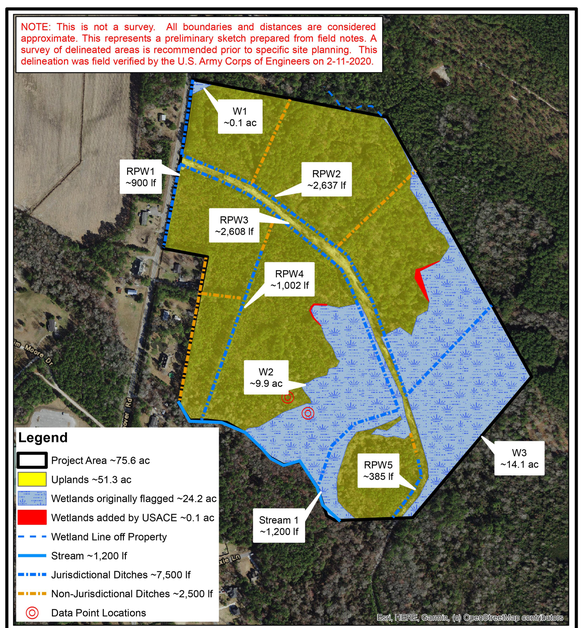
Please find this letter as written confirmation that Pender County Planning & Community Development has approved the Master Development Plan (MDP 2023-51) for the residential development project known as Hoover Road. The subject property is approximately 72.08 acres and is located about 1.1 miles north of the intersection of US Hwy 17 and Hoover Road across from Tim Moore Dr. in the Topsail Township and may be further identified by Pender County PIN(s) 3283-93-1673-0000, 3283-94-9377-0000, 3283-83-9765-0000.

This approval is valid for a period of two (2) years. Please proceed with the preliminary plat application.

Respectfully,

Taylor Davis
Current Planner
Pender County Planning and Community Development

CC:
Tim Long, Logan Developers INC
Rusty Windsor, Kimley-Horn
Jamal Alexander, Kimley-Horn



L:\WETLANDS\2019 WETLANDS FILES\LMG19.178 --- Hoover Rd. Tract, D. Logan\MAPS\Hoover Rd Tract_Approved Delineation Sketch
Boundaries are approximate and not meant to be absolute.
Map Source: 2016 NC OneMap Aerial Photography

N 0 200 400 800 Feet

Hoover Rd Tract Pender County, NC Map Date: 2-17-20 LMG19.178	LMG LAND MANAGEMENT GROUP a DAVEY company 3805 Wrightsville Avenue Wilmington, NC 28403 (910) 452-0001	**Section 404/401 Delineation - Approved Sketch**

PREPARED BY
Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
25 BULL ST. SUITE 400
SAVANNAH, GA 31401
PHONE: 912-417-5454
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
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No.	SSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
ZONING CONDITIONS

SHEET NUMBER
C0-10

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C0-00 - CIVIL COVER SHEET.dwg C0-10 ZONING CONDITIONS Jan 29, 2025 10:36am by: mike.fritz

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Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	Pender County, North Carolina (Unincorporated Areas) COMMUNITY NO.: 370344	NO PROJECT	HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS NEW TOPOGRAPHIC DATA
IDENTIFIER	NC-08-122 – Kingsport LDS at Hoover Road and Kingsport Drive	APPROXIMATE LATITUDE & LONGITUDE: 34.383, -77.708 SOURCE: FIRM Panel DATUM: NAD 83	

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 3720328300J DATE: February 16, 2007 TYPE: FIRM* NO.: 3720329300J DATE: February 16, 2007	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: June 18, 2007 LIMITED DETAILED FLOOD HAZARD DATA: TABLE 14

Enclosures reflect changes to flooding sources affected by this revision.
* FIRM - Flood Insurance Rate Map; ** FBFM - Flood Boundary and Floodway Map; *** FHBM - Flood Hazard Boundary Map

FLOODING SOURCE(S) & REVISED REACH(ES)

Godfrey Creek Tributary - from approximately 500 feet downstream of Hoover Road to Kingsport Drive

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Godfrey Creek Tributary	Zone A	Zone AE	YES	YES
	Zone A	Zone X (unshaded)	NONE	YES
	Zone X (unshaded)	Zone A	YES	NONE
	Zone X (unshaded)	Zone AE	YES	NONE
	No BFEs	BFEs	YES	NONE

* BFEs - Base Flood Elevations

DETERMINATION

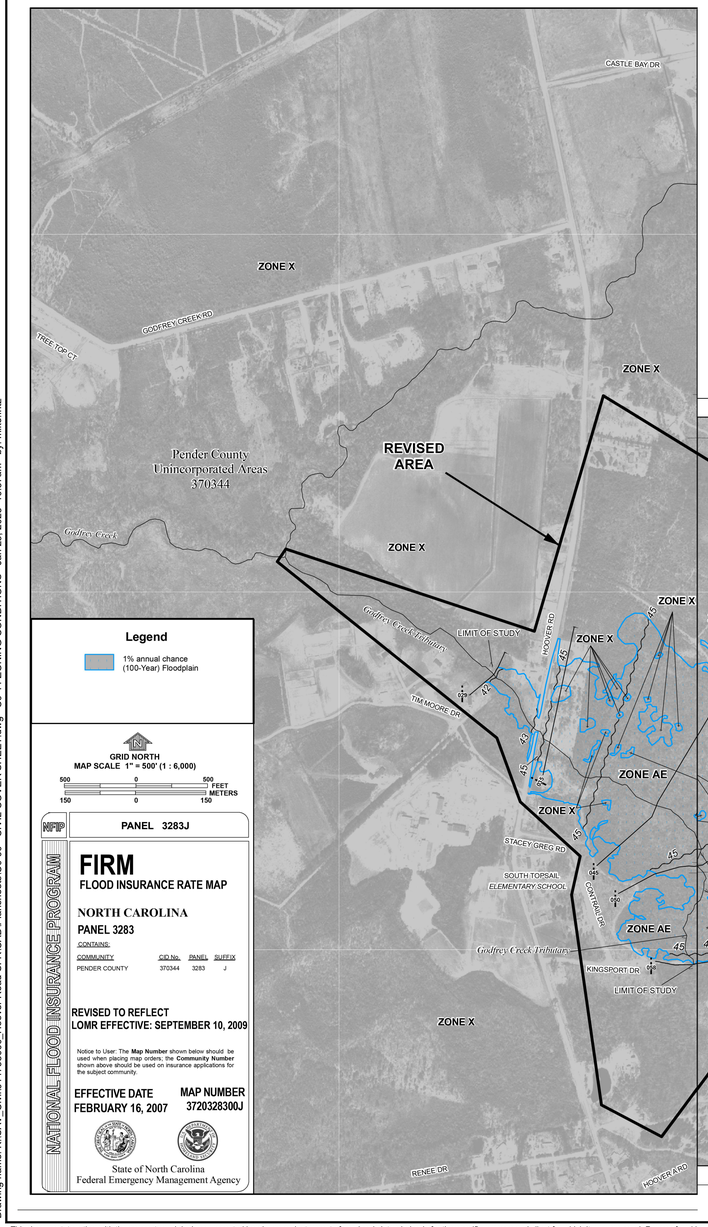
This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at http://www.fema.gov/nfip.

Beth A Norton

Beth A. Norton, CFM, Program Specialist
Engineering Management Branch
Mitigation Directorate

08-04-6525P 102-I-A-C



Legend

1% annual chance (100-Year) Floodplain

GRID NORTH
MAP SCALE 1" = 500' (1 : 6,000)
500 0 500 FEET
150 0 150 METERS

NFIP

PANEL 3283J

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
NORTH CAROLINA
PANEL 3283

CONTAINS:

COMMUNITY	CID No.	PANEL	SUFFIX
PENDER COUNTY	370344	3283	J

REVISED TO REFLECT LOMR EFFECTIVE: SEPTEMBER 10, 2009

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

EFFECTIVE DATE FEBRUARY 16, 2007

MAP NUMBER 3720328300J

State of North Carolina
Federal Emergency Management Agency

Legend

1% annual chance (100-Year) Floodplain

GRID NORTH
MAP SCALE 1" = 500' (1 : 6,000)
500 0 500 FEET
150 0 150 METERS

NFIP

PANEL 3293J

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
NORTH CAROLINA
PANEL 3293
(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	CID No.	PANEL	SUFFIX
PENDER COUNTY	370334	3293	J

REVISED TO REFLECT LOMR EFFECTIVE: SEPTEMBER 10, 2009

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

EFFECTIVE DATE FEBRUARY 16, 2007

MAP NUMBER 3720329300J

State of North Carolina
Federal Emergency Management Agency

PREPARED BY

Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
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PHONE: (912) 373-4454
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PREPARED FOR

LOGAN DEVELOPERS INC.
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PROJECT

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1038 HOOVER ROAD,
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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 JAMIE N. CWALINA

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
ZONING CONDITIONS

SHEET NUMBER
C0-11

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C0-00 - CIVIL COVER SHEET.dwg C0-11 ZONING CONDITIONS Jan 29, 2025 10:37am by: mike.fritz

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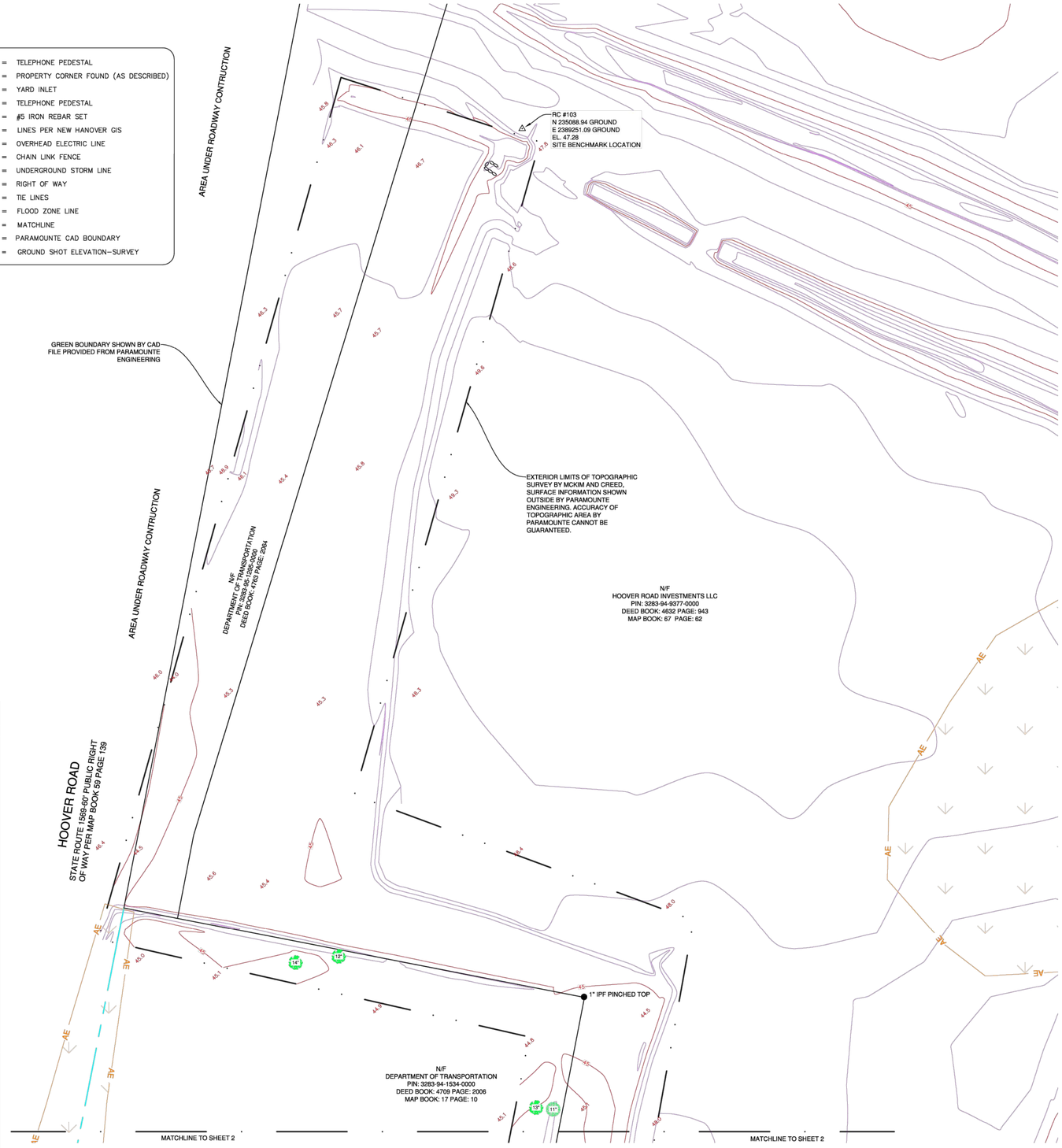
LEGEND

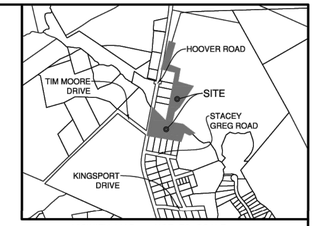
△	= REBAR & CAP	T	= TELEPHONE PEDESTAL
○	= POWER POLE	●	= PROPERTY CORNER FOUND (AS DESCRIBED)
GW	= GUY WIRE	YI	= YARD INLET
IPF	= IRON PIPE FOUND	T	= TELEPHONE PEDESTAL
N/F	= NOW/FORMERLY	IRS	= #5 IRON REBAR SET
PIN	= PARCEL IDENTIFICATION #		= LINES PER NEW HANOVER GIS
CMP	= CORRUGATED METAL PIPE	OHE	= OVERHEAD ELECTRIC LINE
	= CONCRETE	x x	= CHAIN LINK FENCE
	= ASPHALT PAVEMENT	SD	= UNDERGROUND STORM LINE
	= GRAVEL		= RIGHT OF WAY
	= HOUSE		= TIE LINES
	= AE FLOOD ZONE	AE	= FLOOD ZONE LINE
	= M & C SURVEYED BOUNDARY		= MATCHLINE
	= RIP RAP		= PARAMOUNTE CAD BOUNDARY
	= M & C TOPOGRAPHIC LIMITS	12.3	= GROUND SHOT ELEVATION–SURVEY

TREE LEGEND

= HOLLY
= OAK
= MAGNOLIA
= MAPLE



MAP BOOK 67 PAGE 62



VICINITY MAP – NOT TO SCALE

PROJECT NAME:	HOOVER ROAD TOPOGRAPHIC SURVEY
PROJECT NUMBER:	01298-0257

SIGNIFICANT TREE COUNT	
AMERICAN HOLLY	14
MAGNOLIA	1
RED MAPLE	20
OAKS	12
TOTAL	**47**

POINT NUMBER	NORTHING	EASTING	DBH	COMMON NAME
36807	233858.2167	2388910.892	6	HOLLY TWIN
36813	233797.5355	2389081.131	13	HOLLY
36814	233792.2613	2389092.361	9	HOLLY
36885	233683.4768	2389188.933	11	HOLLY TWIN
36894	233736.3299	2389122.388	10	HOLLY
36896	233706.5607	2389112.279	7	HOLLY TWIN
36897	233698.2201	2389116.672	11	HOLLY
36900	233724.1784	2389142.327	6	HOLLY
36904	233697.1647	2389152.067	7	HOLLY
37145	233595.6746	2389375.362	8	HOLLY
37146	233591.6415	2389364.811	8	HOLLY
37147	233604.7196	2389391.151	6	HOLLY CLUSTER
37148	233564.3624	2389365.242	9	HOLLY TWIN
37154	233537.3185	2389354.272	7	HOLLY
36722	233650.9	2389077.17	11	MAG
36155	234644.935	2389130.436	14	MAPLE CLUSTER
36156	234648.2273	2389153.429	12	MAPLE
36157	234567.8677	2389258.516	13	MAPLE TWIN
36230	234516.2668	2389236.898	12	MAPLE TWIN
36237	234444.429	2389241.805	12	MAPLE
36267	233777.9153	2389150.708	12	MAPLE
36268	233786.1126	2389141.724	14	MAPLE
36289	233619.3183	2389551.03	20	MAPLE
36290	233627.8278	2389570.989	12	MAPLE
36719	233677.2533	2389118.881	12	RED MAPLE TWIN
36788	233825.4403	2388999.319	12	MAPLE
36796	233617.243	2388984.349	12	MAPLE CLUSTER
36815	233833.8052	2389081.994	19	MAPLE
36816	233832.2033	2389078.898	15	MAPLE
36898	233726.0306	2389128.459	14	MAPLE
36899	233723.396	2389151.513	16	MAPLE
36902	233694.8852	2389156.271	24	MAPLE
37019	233633.3177	2389473.013	12	MAPLE CLUSTER
37166	233510.3572	2389320.454	22	MAPLE
37167	233513.0728	2389300.454	14	MAPLE TWIN
36158	234566.9162	2389267.65	11	WATER OAK
36411	234052.3214	2389346.639	8	WAter OAK
36720	233629.3171	2389129.857	20	WATER OAK
36778	233816.0021	2388888.626	15	WATER OAK
36779	233800.7293	2388887.987	10	WATER OAK
36780	233801.3029	2388891.733	9	WATER OAK
36781	233786.6486	2388882.02	15	WATER OAK
36793	233715.9832	2389034.168	15	WATER OAK
36795	233670.4763	2389039.09	17	WATER OAK
36806	233857.7949	2388896.987	18	WHITE OAK
36818	233758.603	2388960.469	26	WATER OAK
37191	234392.5809	2389241.884	9	WATER OAK

1. ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
2. BEARINGS BASED ON MAP BOOK 67 PAGE 62. COORDINATES AND BEARINGS AND ESTABLISHED USING THE CONTROL CORNERS SHOWN ON THE REFERENCED MAP BOOK AND PAGE. VERTICAL CONTROL IS BASED ON NAVD88 (GEOID18) HOLDING THE ELEVATION USING NC VRS ESTABLISHED ON POINT #103.
3. REFERENCES: AS SHOWN ON MAP
4. THIS SURVEY HAS BEEN PERFORMED WITHOUT THE BENEFIT OF A CURRENT TITLE SEARCH.
5. TWO BOUNDARIES ARE SHOWN, THE BOUNDARY SHOWN AROUND THE PARCELS WITH THE PIN(S) OF 3283-93-1673, 3283-83-9765-0000 HAS BEEN SURVEYED BY MCKIM AND CREED. THE BOUNDARY SHOWN AROUND THE PROPERTY WITH THE PIN OF 3283-94-9377-0000 IS THE SAME BOUNDARY SHOWN IN THE CAD FILE THAT WAS PROVIDED FROM THE SURVEY BY PARAMOUNTE ENGINEERING. THE BOUNDARY SHOWN BY PARAMOUNTE ENGINEERING HAS NOT BEEN SURVEYED BY MCKIM AND CREED AND NO STATEMENT OF ACCURACY CAN BE STATED TO THAT BOUNDARY.
5. UNDERGROUND UTILITIES ARE SHOWN ONLY WHERE ABOVEGROUND SERVICES WERE VISIBLE.
6. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
7. THE EXISTENCE OR NONEXISTENCE OF WETLANDS ON SUBJECT PROPERTY HAS NOT BEEN DETERMINED BY THIS SURVEY.
8. SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.
9. A PORTION OF THE TRACTS WITH THE PIN(S) OF 3283-93-1673, 3283-83-9765-0000, AND 3283-94-9377-0000 SHOWN LIE IN FLOOD HAZARD ZONE "AE" AS SHOWN ON FEMA FRIS MAP HAVING THE PANEL NUMBER OF 3720328300J, WITH AN EFFECTIVE DATE OF 2/16/2007. AREAS HATCHED AS FLOOD ZONE AREAS ARE FLOOD ZONE "AE" FROM SAID FEMA FRIS MAP & CONFIRMED AS THE SAME SHOWN IN THE PARAMOUNTE ENGINEERING CAD FILE PROVIDED.
10. TOPOGRAPHIC DATA SHOWN OUTSIDE THE LINE NOTED AS "TOPOGRAPHIC LIMITS", IS FROM A CAD FILE FROM PARAMOUNTE ENGINEERING. DATA HAS BEEN COMBINED FOR EASE OF USE FOR ENGINEER BUT DATA ACCURACY OUTSIDE OF TOPOGRAPHIC LIMITS CANNOT BE GUARANTEED BY MCKIM AND CREED.
11. SIGNIFICANT TREES LOCATED AND SHOWN CAN BE REFERENCED FROM PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE SECTION 8.1.3, AND FURTHER DESCRIBED IN THE PLANTING TABLE PER APPENDIX B. TREE SIZE IS LOCATED AT THE "DBH" BEING THE DIAMETER AT BREAST HEIGHT.
12. THE PURPOSE OF THIS MAP IS A TOPOGRAPHIC SURVEY OF PROPERTIES WITH THE PIN(S) OF 3283-93-1673, 3283-83-9765-0000,AND A PORTION OF3283-94-9377-0000.

I, RYAN LOCKHART PLS L-5427, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISON; THAT THIS GROUND SURVEY WAS PERFORMED AT 0.04' @ 95% CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THIS SURVEY WAS PERFORMED TO MEET THE REQUREMENTS FOR A TOPOGRAPHIC SURVEY TO THE ACCURACY OF CLASS AA AND VERTICAL ACCURACY WHEN THE APPLICABLE TO CLASS A STANDARD, AND THAT THE ORIGINAL DATA WAS OBTAINED ON 08/21/23; THAT THE SURVEY WAS COMPLETED ON 10/10/23; AND ALL COORDINATES AND BEARINGS ARE BASED ON CONTROL CORNERS SHOWN IN MAP BOOK 67 PAGE 62 AND THAT THE ELEVATIONS ARE BASED ON NAVD88(GEOID18); THAT THIS PLAT MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56. 1600);

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL THIS _____ DAY OF _____, AD

PRELIMINARY PLAT
NOT FOR RECORDATION, CONVEYANCES, OR SALES

RYAN LOCKHART
PROFESSIONAL LAND SURVEYOR L-5427

SCALE: 1" = 30'
0 15' 30' 60' 90'

McKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

TOPOGRAPHIC SURVEY & PLATTING
FOR
HOOVER ROAD PROPERTIES LLC
PIN: 3283-93-1673-0000 & 3283-83-9765-0000
A PORTION OF 3283-94-9377-0000
HOOVER ROAD, TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA
OCTOBER 10, 2023

JOB NUMBER:	01298-0257
SCALE:	1"=30'
CAD NUMBER:	VT-HooverRoad-01298-0257
PLS:	RL
PARTY CHIEF:	MS
CAD TECH:	RL
FIELD BOOK/PAGE:	MS 9-11-23
DRAWING NUMBER:	2023-109

N/F
DEPARTMENT OF TRANSPORTATION
PIN: 3283-94-1534-0000
DEED BOOK: 4709 PAGE: 2006
MAP BOOK: 17 PAGE: 10

MATCHLINE TO SHEET 1

MATCHLINE TO SHEET 1

N/F
HOOVER ROAD INVESTMENTS LLC
PIN: 3283-94-9377-0000
DEED BOOK: 4632 PAGE: 943
MAP BOOK: 67 PAGE: 62

RC #203
N 234486.00 GROUND
E 2388989.15 GROUND
EL. 44.19

RC #101
N 234507.73 GROUND
E 2389353.39 GROUND
EL. 47.86

S81°37'58"W
588.96' (TIE)

EXTERIOR LIMITS OF TOPOGRAPHIC SURVEY BY MCKIM AND CREED, SURFACE INFORMATION SHOWN OUTSIDE BY PARAMOUNTE ENGINEERING. ACCURACY OF TOPOGRAPHIC AREA BY PARAMOUNTE CANNOT BE GUARANTEED.

1" IPF

N/F
GERTRAUD LIFE BARANOWSKI ESTATE
PIN: 3283-94-1309-0000
DEED BOOK: 4763 PAGE: 911
MAP BOOK: 17 PAGE: 10

1" IPF PT
2" IPF

1/2 IRF W/ Nut

N/F
GERTRAUD LIFE BARANOWSKI ESTATE
PIN: 3283-94-0287-0000
DEED BOOK: 4763 PAGE: 911
MAP BOOK: 17 PAGE: 10

N11°09'26"E
350.02' (TIE)

1" IPF PT

N/F
GERTRAUD LIFE BARANOWSKI ESTATE
PIN: 3283-94-0174-0000
DEED BOOK: 4763 PAGE: 911
MAP BOOK: 17 PAGE: 10

1" IPF PT

N11°09'26"E
150.76' (TIE)

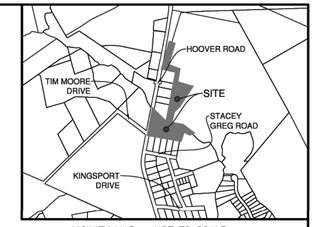
1" IPF (IN PVC)
2.14' FROM CALCULATED CORNER

N/F
HILDUR CHRISTINA BARANOWSKI
PIN: 3283-93-0949-0000
DEED BOOK: 4684 PAGE: 1779
MAP BOOK: 17 PAGE: 10

MATCHLINE TO SHEET 3

EXTERIOR LIMITS OF TOPOGRAPHIC SURVEY BY MCKIM AND CREED, SURFACE INFORMATION SHOWN OUTSIDE BY PARAMOUNTE ENGINEERING. ACCURACY OF TOPOGRAPHIC AREA BY PARAMOUNTE CANNOT BE GUARANTEED.

MATCHLINE TO SHEET 3



VICINITY MAP – NOT TO SCALE

MAP BOOK 67 PAGE 62

LEGEND

△	= REBAR & CAP	⊓	= TELEPHONE PEDESTAL
○	= POWER POLE	●	= PROPERTY CORNER FOUND (AS DESCRIBED)
GW	= GUY WIRE		= YARD INLET
IPF	= IRON PIPE FOUND	⊠	= TELEPHONE PEDESTAL
N/F	= NOW/FORMERLY	IRS	= #5 IRON REBAR SET
PIN	= PARCEL IDENTIFICATION #		= LINES PER NEW HANOVER GIS
CMP	= CORRUGATED METAL PIPE	OHE	= OVERHEAD ELECTRIC LINE
	= CONCRETE	x x	= CHAIN LINK FENCE
	= ASPHALT PAVEMENT	SD	= UNDERGROUND STORM LINE
	= GRAVEL		= RIGHT OF WAY
	= HOUSE		= TIE LINES
	= AE FLOOD ZONE	AE	= FLOOD ZONE LINE
	= M & C SURVEYED BOUNDARY		= MATCHLINE
	= RIP RAP		= PARAMOUNTE CAD BOUNDARY
	= M & C TOPOGRAPHIC LIMITS	12.3	= GROUND SHOT ELEVATION–SURVEY

TREE LEGEND

	= HOLLY
	= OAK
	= MAGNOLIA
	= MAPLE

PRELIMINARY PLAT
NOT FOR RECORDATION, CONVEYANCES, OR SALES

SCALE: 1" = 30'
0 15' 30' 60' 90'

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

TOPOGRAPHIC SURVEY & PLATTING
FOR
HOOVER ROAD
PIN: 3283-93-1673-0000 & 3283-83-9765-0000
A PORTION OF 3283-94-9377-0000
HOOVER ROAD, TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA
OCTOBER 10, 2023

JOB NUMBER:	01298–0257
SCALE:	1"=30'
CAD NUMBER:	VT–HooverRoad–01298–0257
PLS:	RL
PARTY CHIEF:	MS
CAD TECH:	RL
FIELD BOOK/PAGE:	MS 9–11–23
DRAWING NUMBER:	2023-109

CULVERT OUTLET
ELLIPTICAL CMP
APPROXIMATELY 96" W X 72" H
INV. EL. 33.82'

RC #202
N 233987.34 GROUND
E 2388892.99 GROUND
EL. 44.14

CULVERT INLET
ELLIPTICAL CMP
APPROXIMATELY 96" W X 72" H
INV. EL. 34.34'

PIPE OUTLET
24" CMP INV. EL. 40.67'

DROP INLET
RIM EL. 43.66'
24" CMP INV. EL. 40.70' (S)
24" CMP INV. EL. 40.64' (N)

DROP INLET
RIM EL. 45.17'
15" CMP INV. EL. 42.94' (S)
24" CMP INV. EL. 42.23' (N)

RC #201
N 233613.76 GROUND
E 2388826.53 GROUND
EL. 45.78

DROP INLET
RIM EL. 45.26'
15" CMP INV. EL. 43.45' (S)
15" CMP INV. EL. 43.44' (N)

DROP INLET
RIM EL. 45.42'
15" CMP INV. EL. 43.70' (N)

1" IPF (IN PVC)
2.14' FROM CALCULATED CORNER

N/F
HILDUR CHRISTINA BARANOWSKI
PIN: 3283-93-0949-0000
DEED BOOK: 4684 PAGE: 1779
MAP BOOK: 17 PAGE: 10

MATCHLINE TO SHEET 2

MATCHLINE TO SHEET 2

HOOVER ROAD
STATE ROUTE 1569-60' PUBLIC RIGHT OF WAY PER MAP BOOK 59 PAGE 139

N11°09'28"E 240.87' (TOTAL)

S70.29'

S45°30'34"E 240.12'

N11°00'40"E (TIE) 606.63'

4" CHAIN LINK FENCE CLEAR OF PROPERTY LINE

CONTAINER

SHED

GRAVEL DRIVEWAY

IRS

1" IPF PINCHED TOP (IN STREAM)

S60°26'09"E 52.60'

N21°36'13"W 49.01' (TIE)

RC #35031
N 233757.86 GROUND
E 2389142.21 GROUND
EL. 40.58

S33°48'50"E 108.03'

PROPERTY LINE PER DEED BOOK 4784 PAGE 1890 AND SHOWN PER M & C RECORDED SURVEY AS DESCRIPTION MAP THAT IS NOT YET RECORDED

HOOVER ROAD INVESTMENTS LLC
PIN: 3283-83-9765-0000
TRACT 1 PER
DEED BOOK: 4784 PAGE: 1890
MAP BOOK: 19 PAGE: 68
1038 HOOVER ROAD

SIDEWALK AND DECK AROUND BUILDING

HOUSE

SIDEWALK AND DECK AROUND BUILDING

N11°09'28"E 207.75'

S25°48'28"W 101.88'

3/4" REBAR FOUND

N89°33'37"E 96.51'

S82°26'09"E 112.07'

IRS

1/2" REBAR FOUND (UNDERWATER)

RC #102
N 233829.18 GROUND
E 2389314.53 GROUND
EL. 45.82

EXTERIOR LIMITS OF TOPOGRAPHIC SURVEY BY MCKIM AND CREED, SURFACE INFORMATION SHOWN OUTSIDE BY PARAMOUNTE ENGINEERING. ACCURACY OF TOPOGRAPHIC AREA BY PARAMOUNTE CANNOT BE GUARANTEED.

HOOVER ROAD INVESTMENTS LLC
PIN: 3283-93-1673-0000
TRACT 2 PER
DEED BOOK: 4784 PAGE: 1890
MAP BOOK: 19 PAGE: 98

S28°05'16"W 209.86'

CONCRETE DRIVEWAY

HOUSE

POOL

CONTAINER

RC #200
N 233549.26 GROUND
E 2389057.01 GROUND
EL. 43.56

IRS

2" IPF PINCHED TOP

1" IPF PINCHED TOP

N78°00'40"W 200.20'

99.90'

99.97'

1/2" REBAR FOUND

100.14'

1/2" REBAR FOUND

N78°59'54"W 471.18' (TOTAL)

100.18'

1/2" REBAR FOUND

70.93'

1/2" REBAR FOUND (UNDERWATER)

S78°59'54"E 28.86' (TIE)

1 1/2" IPF OPEN END

N/F
PAULA MARIE ROCK
PIN: 3283-83-8457-0000
DEED BOOK: 2775 PAGE: 008
MAP BOOK: 22 PAGE: 153
LOT 32 SECTION 1
KINGSPORT SUBDIVISION

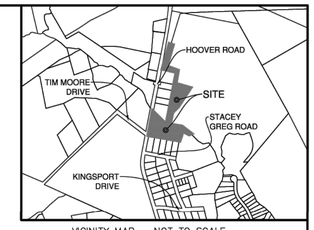
N/F
MARK BRADLEY
PIN: 3283-83-9464-0000
DEED BOOK: 4672 PAGE: 1989
MAP BOOK: 22 PAGE: 153
LOT 33 SECTION 1
KINGSPORT SUBDIVISION

N/F
LAURA BETH PAYNE
PIN: 3283-93-0451-0000
DEED BOOK: 4706 PAGE: 028
MAP BOOK: 22 PAGE: 153
LOT 34 SECTION 1
KINGSPORT SUBDIVISION

N/F
HENRY MICHAEL ANDERSON
PIN: 3283-93-1450-0000
DEED BOOK: 4674 PAGE: 1265
MAP BOOK: 22 PAGE: 153
LOT 35 SECTION 1
KINGSPORT SUBDIVISION

N/F
TIMOTHY A. THORPE
PIN: 3283-93-2348-0000
DEED BOOK: 3788 PAGE: 318
MAP BOOK: 22 PAGE: 153
LOT 36 SECTION 1
KINGSPORT SUBDIVISION

N/F
WILLIAM MELVIN DURBIN
PIN: 3283-93-5350-0000
DEED BOOK: 4709 PAGE: 2188
MAP BOOK: 65 PAGE: 103
TRACT 3-1



VICINITY MAP – NOT TO SCALE

MAP BOOK 67 PAGE 62

TREE LEGEND

= HOLLY
= OAK
= MAGNOLIA
= MAPLE

LEGEND

= REBAR & CAP
= POWER POLE
= GUY WIRE
IPF = IRON PIPE FOUND
N/F = NOW/FORMERLY
PIN = PARCEL IDENTIFICATION #
CMP = CORRUGATED METAL PIPE
= CONCRETE
= ASPHALT PAVEMENT
= GRAVEL
= HOUSE
= AE FLOOD ZONE
= M & C SURVEYED BOUNDARY
= RIP RAP
= M & C TOPOGRAPHIC LIMITS
= TELEPHONE PEDESTAL
= PROPERTY CORNER FOUND (AS DESCRIBED)
= YARD INLET
= TELEPHONE PEDESTAL
IRS = #5 IRON REBAR SET
= LINES PER NEW HANOVER GIS
OHE = OVERHEAD ELECTRIC LINE
= CHAIN LINK FENCE
SD = UNDERGROUND STORM LINE
= RIGHT OF WAY
= TIE LINES
AE = FLOOD ZONE LINE
= MATCHLINE
= PARAMOUNTE CAD BOUNDARY
= GROUND SHOT ELEVATION–SURVEY

PRELIMINARY PLAT
NOT FOR RECORDATION, CONVEYANCES, OR SALES

SCALE: 1" = 30'
0 15' 30' 60' 90'

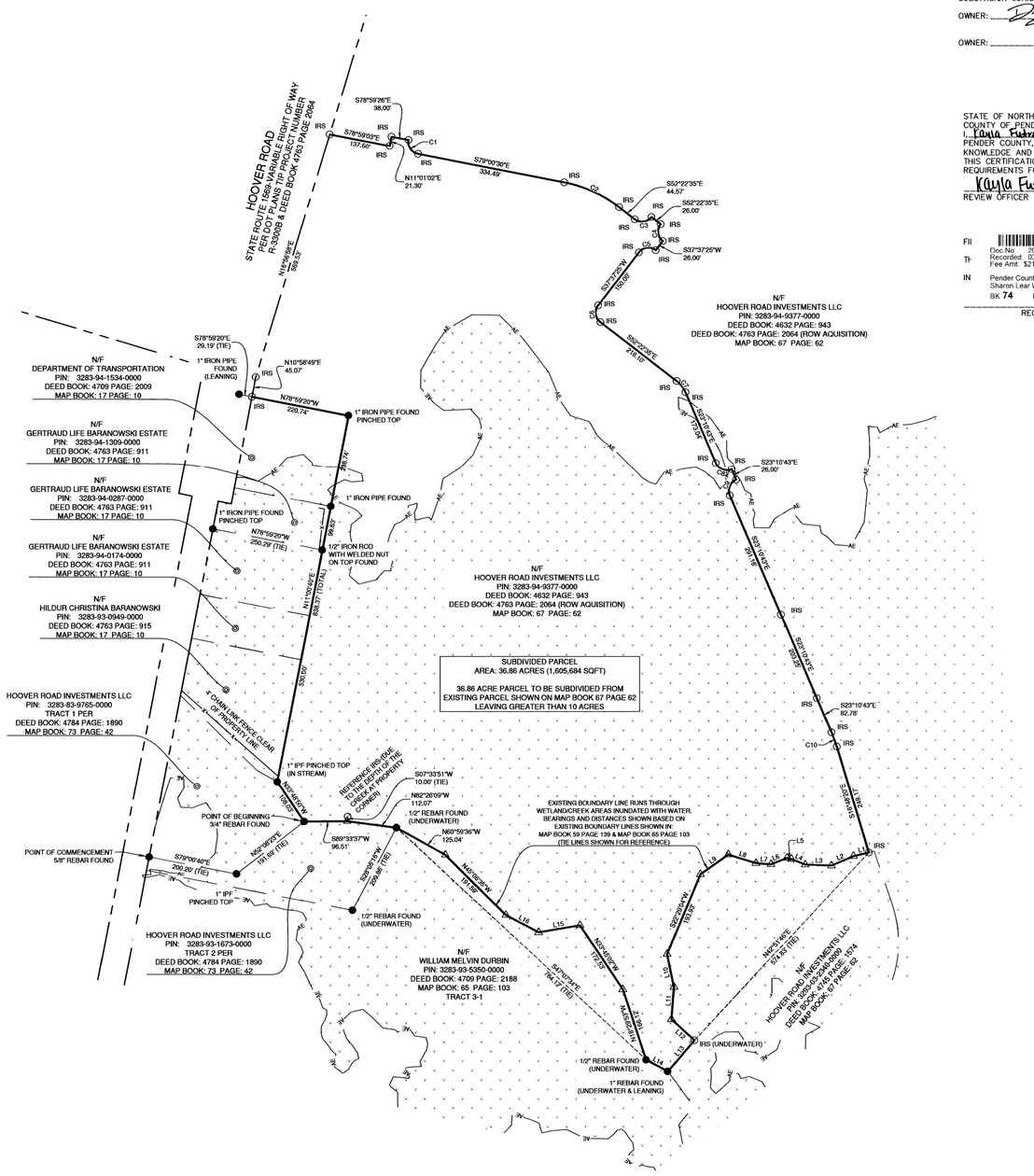
McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

TOPOGRAPHIC SURVEY
FOR
HOOVER ROAD PROPERTIES LLC
PIN: 3283-93-1673-0000 & 3283-83-9765-0000
A PORTION OF 3283-94-9377-0000
HOOVER ROAD, TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA
OCTOBER 10, 2023

JOB NUMBER:	09686-0001
SCALE:	1"=30'
CAD NUMBER:	VT-HooverRoad-01298-0257
PLS:	RL
PARTY CHIEF:	MS
CAD TECH:	RL
FIELD BOOK/PAGE:	MS 9-11-23
DRAWING NUMBER:	2023-109

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA
C1	27.00'	42.42'	27.01'	S33°59'55"E	38.19'	90°01'10"
C2	293.00'	136.19'	69.35'	S65°41'32"E	134.97'	26°37'55"
C3	27.00'	42.41'	27.00'	N82°37'25"E	38.18'	90°00'00"
C4	27.00'	42.41'	27.00'	S07°22'35"E	38.18'	90°00'00"
C5	27.00'	42.41'	27.00'	S82°37'25"W	38.18'	90°00'00"
C6	27.00'	42.41'	27.00'	S07°22'35"E	38.18'	90°00'00"
C7	63.00'	32.10'	16.41'	S37°46'39"E	31.76'	29°11'52"
C8	27.00'	42.41'	27.00'	S68°10'43"E	38.18'	90°00'00"
C9	27.00'	42.41'	27.00'	S21°49'17"W	38.18'	90°00'00"
C10	313.00'	34.81'	17.43'	S19°59'32"E	34.80'	6°22'23"

LINE TABLE		
LINE #	BEARING	LENGTH
L1	S76°22'37"W	35.44'
L2	S67°00'39"W	53.90'
L3	N87°48'33"W	58.57'
L4	N67°49'26"W	33.49'
L5	N78°13'16"W	10.54'
L6	S68°03'28"W	37.38'
L7	N85°43'07"W	34.09'
L8	N72°43'59"W	65.24'
L9	S54°49'17"W	76.82'
L10	S11°47'55"E	75.65'
L11	S04°36'14"W	72.60'
L12	S47°24'27"E	69.51'
L13	S40°15'53"W	90.79'
L14	N62°05'22"W	55.84'
L15	S80°16'07"W	94.49'
L16	N61°55'52"W	82.96'



LEGEND

△	=	CALCULATED POINT
●	=	PROPERTY CORNER FOUND (AS DESCRIBED)
○IRS	=	#5 IRON REBAR SET
IPF	=	IRON PIPE FOUND
N/F	=	NOW/FORMERLY
PIN	=	PARCEL IDENTIFICATION #
——— ———	=	LINES PER PENDER COUNTY GIS
——x——x——	=	CHAIN LINK FENCE
— — — —	=	RIGHT OF WAY
- - - - - - - -	=	TIE LINES
———————	=	SUBDIVIDED BOUNDARY
———AE———	=	FLOOD ZONE "AE"
⋰⋰⋰	=	FLOOD ZONE HATCH

CERTIFICATE OF OWNERSHIP, DEDICATION, AND JURISDICTION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HERE ON AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) OWN FREE CONSENT AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS, AND OTHER AREAS TO PUBLIC OR PRIVATE USE AS NOTED. FURTHER, I (WE) CERTIFY THAT THE LAND AS SHOWN HERE ON IS LOCATED WITHIN THE SUBDIVISION JURISDICTION OF PENDER COUNTY.

OWNER: _____ DATE: 3/7/24

OWNER: _____ DATE: _____

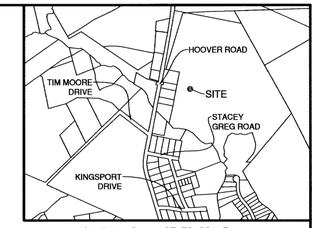
STATE OF NORTH CAROLINA
COUNTY OF PENDER

I, Kayla Futrell, REVIEW OFFICER OF PENDER COUNTY, CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THE MAP/PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS THE STATUTORY REQUIREMENTS FOR RECORDING.

Kayla Futrell 3-8-24
REVIEW OFFICER DATE

FII
Tr
IN
Doc No: 20125879
Recorded: 03/08/2024 10:00:35 AM
Fee Amt: $21.00 Page 1 of 1
Pender County North Carolina
Sharon Lear Willoughby, Register of Deeds
BK 74 PG 28 - 28 (1)

REGISTER OF DEEDS



VICINITY MAP – NOT TO SCALE

MAP BOOK 67 PAGE 62

1. ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
2. BEARINGS BASED ON MAP BOOK 67 PAGE 62.
3. REFERENCES: AS SHOWN ON MAP
4. THIS SURVEY HAS BEEN PERFORMED WITHOUT THE BENEFIT OF A CURRENT TITLE SEARCH.
5. A PORTION OF THE TRACTS WITH THE PIN OF 3283-94-9377-0000 SHOWN LIE IN FLOOD HAZARD ZONE "AE" AS SHOWN ON FEMA FRIS MAP HAVING THE PANEL NUMBER OF 3720328300J, WITH AN EFFECTIVE DATE OF 2/16/2007.
6. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
7. THE EXISTENCE OR NONEXISTENCE OF WETLANDS ON SUBJECT PROPERTY HAS NOT BEEN DETERMINED BY THIS SURVEY.
8. SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.
9. THE PURPOSE OF THIS MAP IS AN SUBDIVIDE A 36.86 ACRE PORTION OF THE PARCEL OWNED BY HOOVER ROAD INVESTMENTS LLC WITH THE PIN: 3283-94-9377-0000 FROM THE EXISTING PARCEL LEAVING GREATER THAN 10 ACRES, RESULTING IN AN EXEMPT SUBDIVISION PLAT.

I, RYAN LOCKHART PLS L-5427, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 4784, PAGE 1890); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM PENDER COUNTY GIS; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:54680; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

GS 47-30 (F) (11) D.

THIS SURVEY IS OF ANOTHER CATEGORY, SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT-ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION.

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER, AND SEAL

THIS THE 7TH DAY OF MARCH A.D., 2024

Ryan Lockhart
RYAN LOCKHART
PROFESSIONAL LAND SURVEYOR L-5427

NORTH CAROLINA PROFESSIONAL SEAL L-5427 LAND SURVEYOR RYAN LOCKHART

Approved for Pender County
Office of Planning
Date 03/08/24

SCALE: 1" = 150'
0 75' 150' 300' 450'

McKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1048
FAX: (910) 251-8282
NORTH CAROLINA FIRM LICENSE NUMBER: F-1222

EXEMPT SUBDIVISION PLAT
FOR
HOOVER ROAD INVESTMENTS LLC
A 36.86 ACRE PORTION OF PIN: 3283-94-9377-0000
DEED BOOK: 4745 PAGE: 1574 MAP BOOK: 67 PAGE: 62
HAMPSTEAD, TOPSAIL TOWNSHIP, PENDER COUNTY, NORTH CAROLINA
MARCH 7TH, 2024

JOB NUMBER:	09686-0002
SCALE:	1"=150'
CAD NUMBER:	VS-HooverRoad-09686-0002
PLS:	RL
PARTY CHIEF:	MS
CAD TECH:	RL
FIELD BOOK/PAGE:	MS-021224
DRAWING NUMBER:	2024-029

SHEET 1 OF 1

MB 74 PG 28

3283-93-2348-0000 TIMOTHY A THORPE D.B. 3788, PG. 318 P.B. 22, PG. 153 ZONING: RESIDENTIAL PERFORMANCE (RP) USE: RESIDENTIAL

3283-93-1450-0000 HENRY MICHAEL ANDERSEN D.B. 4674, PG. 1265 P.B. 22, PG. 153 ZONING: RESIDENTIAL PERFORMANCE (RP) USE: RESIDENTIAL

3283-93-0451-0000 LAURA BETH PAYNE D.B. 4706, PG. 28 P.B. 22, PG. 153 ZONING: RESIDENTIAL PERFORMANCE (RP) USE: RESIDENTIAL

3283-83-9464-0000 BRADLEY, MARK D.B. 4672, PG. 1998 P.B. 22, PG. 153 ZONING: RESIDENTIAL PERFORMANCE (RP) USE: RESIDENTIAL

3283-83-8457-0000 PAULA MARIE ROCK D.B. 2775, PG. 8 P.B. 22, PG. 153

DROP INLET RIM EL. 45.26'

STACY GREGG ROAD

REMOVE EXISTING DRAIN INLET

THRUSH TR.

DEMOLITION NOTES:

1. UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES HAVING UTILITIES WITHIN OR ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL HAVE THE UTILITIES FIELD LOCATED AND COORDINATE WITH THE UTILITY COMPANIES TO HAVE CONFLICTS RELOCATED WHEN NECESSARY OR ADAPTED FOR TIE-INS.
2. RECEIPT OF ALL PERMITS AND APPROVALS IS REQUIRED BEFORE ANY CONSTRUCTION ACTIVITY.
3. EXISTING SOIL SERIES IS Fo, Mu, Wo FOR ENTIRE DISTURBED AREA.
4. TREES TO REMAIN MUST BE PROTECTED DURING DEMOLITION AND CONSTRUCTION PHASE. REFERENCE TREE PROTECTION AND REPLACEMENT PLANS FOR TREE REMOVAL AND PROTECTION.
5. CONSTRUCTION FENCING OR SILT FENCE SHALL NOT OBSTRUCT TRAFFIC FLOW ON EXISTING STREETS UNLESS CLOSURE PERMIT IS OBTAINED.
6. CONTRACTOR SHALL CONTROL DUST LEAVING THE SITE DURING DEMOLITION AND CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION AND RELOCATION WITH APPROPRIATE UTILITY PROVIDER.
8. CONTRACTOR SHALL PROTECT SURROUNDING BUILDING UTILITY SERVICES DURING CONSTRUCTION AND COORDINATE ALL SERVICE IMPACTS WITH OWNER.
9. NO GRADED SLOPE SHALL EXCEED 3H:1V.
10. THE PROJECT SITE DOES LIE WITHIN A FLOOD HAZARD AREA PER FIRM PANEL 3720329300J DATED 2/16/2007.
11. CONTRACTOR SHALL MAINTAIN AN ADA COMPLIANT PEDESTRIAN PATH ALONG THE ADJACENT STREET FRONTAGE THROUGHOUT CONSTRUCTION.
12. CONTRACTOR SHALL FOLLOW ALL PROCEDURES AND RECOMMENDATIONS FROM ENVIRONMENTAL ASSESSMENTS PROVIDED BY THE OWNER.

DEMOLITION LEGEND:

- REMOVE EXISTING OBJECT
- REMOVE EXISTING STRUCTURE
- REMOVE EXISTING ASPHALT PAVEMENT
- REMOVE EXISTING CONCRETE PAVEMENT
- REMOVE EXISTING GRAVEL
- REMOVE EXISTING UTILITIES, FENCING, CURB & GUTTER, & WALLS
- X REMOVE EXISTING TREES / BUSHES

Know what's below. Call before you dig.

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

PREPARED BY
Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
25 BULL ST, SUITE 400
SAVANNAH, GA 31401
PHONE (912) 231-4384
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	09/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY 6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
DEMOLITION PLAN

SHEET NUMBER
C1-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C1-00 - DEMOLITION PLAN.dwg C1-00 DEMOLITION PLAN Jan 29, 2025 10:37am by: mike.fritz

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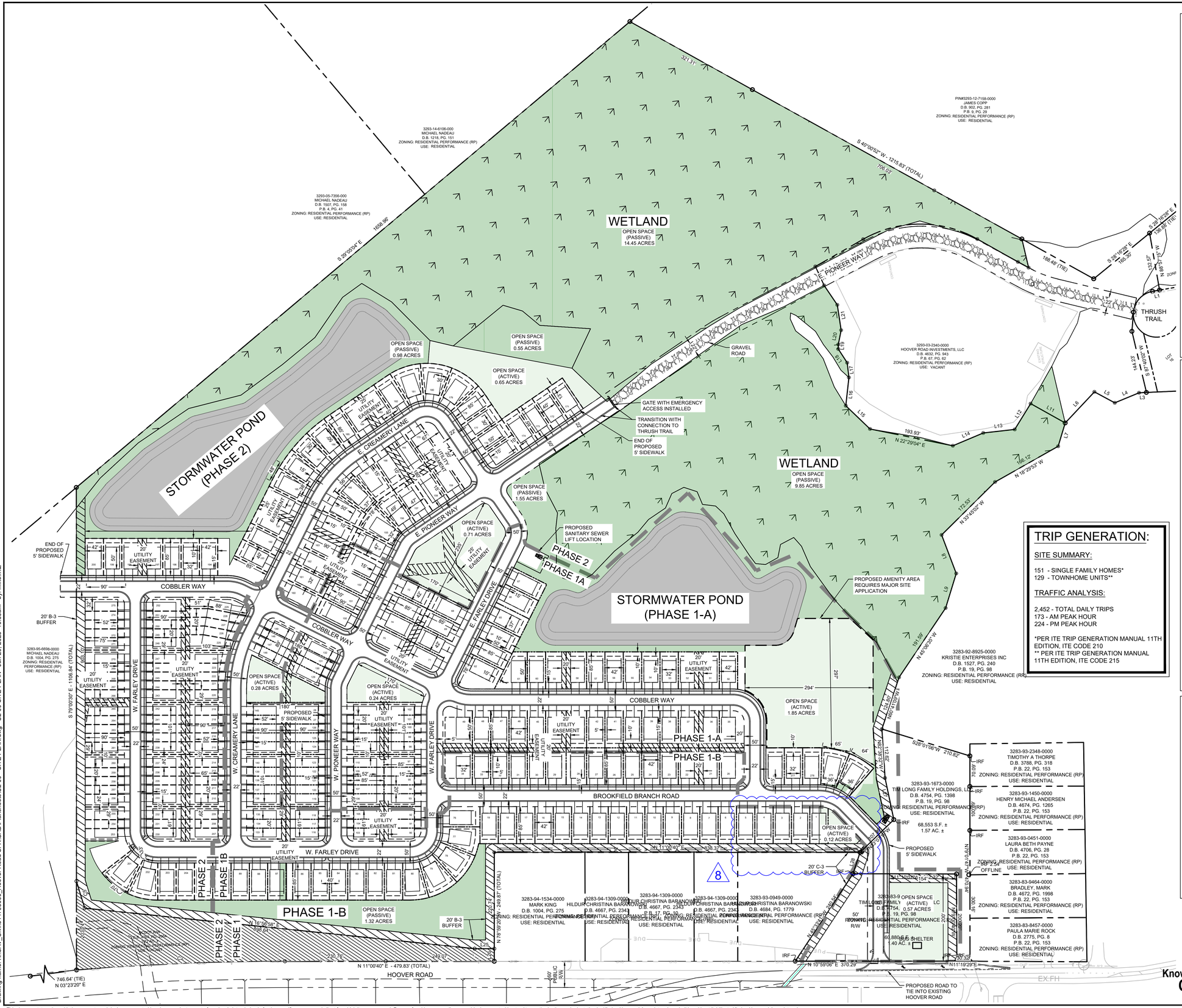

DEVELOPMENT SUMMARY:

SITE SUMMARY:

ZONING:	RM (RESIDENTIAL MIXED)	
SITE AREA:	79	ACRES
ROW DEDICATION:	10.4	ACRES
ADJUSTED SITE AREA:	68.6	ACRES
NON-RESIDENTIAL AREA:	10.8	ACRES
WETLAND AREA:	24.3	ACRES
IMPERVIOUS AREA:	28.7	ACRES (36.3%)
PERVIOUS AREA:	50.30	ACRES (63.7%)
TOTAL DISTURBED AREA:	46.9	ACRES
OPEN SPACE		
REQUIRED :	8.4	ACRES (0.03 AC/DU)
PROVIDED :	33.45	ACRES (48.76 %)
ACTIVE :	4.76	ACRES (6.94 %)
PASSIVE:	28.69	ACRES (41.82 %)
BUILDING SETBACK:		
FRONT :	15	FT
SIDE :	5	FT
REAR :	10	FT
CORNER :	5	FT

PROPOSED LAND USES & DENSITIES:

MAXIMUM ALLOWABLE DU	395	UNITS (5 DU/AC)
TOTAL DWELLING UNITS	280	UNITS (3.54 DU/AC)
SINGLE FAMILY-ATTACHED	129	UNITS (46 %)
PHASE 1-A:	34	UNITS (12.1 %)
PHASE 1-B:	26	UNITS (9.3 %)
PHASE 2:	69	UNITS (24.6 %)
SINGLE FAMILY	151	UNITS (54 %)
PHASE 1-A:	52	UNITS (18.6 %)
PHASE 1-B:	49	UNITS (17.6 %)
PHASE 2:	50	UNITS (17.8 %)
RECREATIONAL UNIT CALCULATION		
REQUIREMENT :	3 UNITS OR MIN. $ 30,000	
PROPOSED :	3 UNITS OVER $ 100,000	

SITE NOTES:

1. THE PROPOSED BUILDING INFORMATION SHOWN HEREON IS FROM AN ELECTRONIC FILE PROVIDED BY ARCHITECT, DATED 12/05/2023 AND IS FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT BUILDING INFORMATION.
2. THE DATE OF OWNERSHIP ACQUISITION IS 3/19/2021 PER PENDER COUNTY GIS.
3. EXISTING CONDITIONS SHOWN HEREON ARE FROM A SURVEY FILE PROVIDED BY MCKIM & CREED INC., DATED 10/10/2023.
4. ALL DIMENSIONS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
5. SIDEWALK INSTALLED AGAINST BACK OF CURB SHALL BE INSTALLED PER THE PLAN AS MEASURED FROM THE BACK OF CURB.
6. ALL SIGNAGE AND STRIPING MUST MEET THE LATEST REQUIREMENTS SET FORTH BY MUTCD, NCDOT, AND NORTH CAROLINA STATE CODE.
7. REFERENCE LANDSCAPE PLANS FOR ALL HARDSCAPE AND LANDSCAPE DETAILS AND SPECIFICATIONS.
8. APPLICANTS FOR SUBDIVISION APPROVAL SHALL OBTAIN APPROVAL FOR STREET NAMES FROM THE PENDER COUNTY ADDRESSING COORDINATOR. A COPY OF THE APPROVED PRELIMINARY PLAT WITH APPROVED STREET NAMES MUST BE SUBMITTED TO THE ADMINISTRATOR WITHIN 30 DAYS OF APPROVAL OF THE PRELIMINARY PLAT AND PRIOR TO FINAL PLAT SUBMISSION.
9. PENDER COUNTY EMERGENCY PERSONNEL HAS ACCESS TO ALL PRIVATE STREET.
10. TRAFFIC IMPACT ANALYSIS ON HOOVER ROAD RESIDENTIAL DEVELOPMENT IS CONDUCTED AND SUBMITTED IN OCTOBER 2023 TO NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.

TRIP GENERATION:

SITE SUMMARY:

151 - SINGLE FAMILY HOMES*
129 - TOWNHOME UNITS**

TRAFFIC ANALYSIS:

2,452 - TOTAL DAILY TRIPS
173 - AM PEAK HOUR
224 - PM PEAK HOUR

*PER ITE TRIP GENERATION MANUAL 11TH EDITION, ITE CODE 210
** PER ITE TRIP GENERATION MANUAL 11TH EDITION, ITE CODE 215

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- WETLAND
- OPEN SPACE (ACTIVE)
- OPEN SPACE (PASSIVE)
- (10) LOT NUMBER

Know what's below. Call before you dig.

GRAPHIC SCALE IN FEET
0 50 100 200

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
1	RW	08/18/2024
2	TCS	06/24/2024
3	CDJ	06/03/2024
4	MRF	03/06/2024
5	MRF	02/12/2024
6	MRF	12/18/2023
7	MRF	12/08/2023
8	MRF	ISSUANCE AND REVISION DESCRIPTIONS
1	MRF	REVISED PHASE BOUNDARY
2	TCS	REVISED PER NC DEQ PRIVATE WATER COMMENTS
3	CDJ	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
4	MRF	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
5	MRF	REVISED PER COUNTY COMMENTS DATED 01/22/2024
6	MRF	REVISED PER COUNTY COMMENTS DATED 12/11/2023
7	MRF	REVISED PER COUNTY COMMENTS DATED 11/07/2023
8	MRF	REVISED PER COUNTY COMMENTS DATED 12/08/2023

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
SITE PLAN

SHEET NUMBER
C2-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C2-00 - SITE PLAN.dwg C2-00 SITE PLAN Jan 29, 2025 10:38am by: mike.fritz

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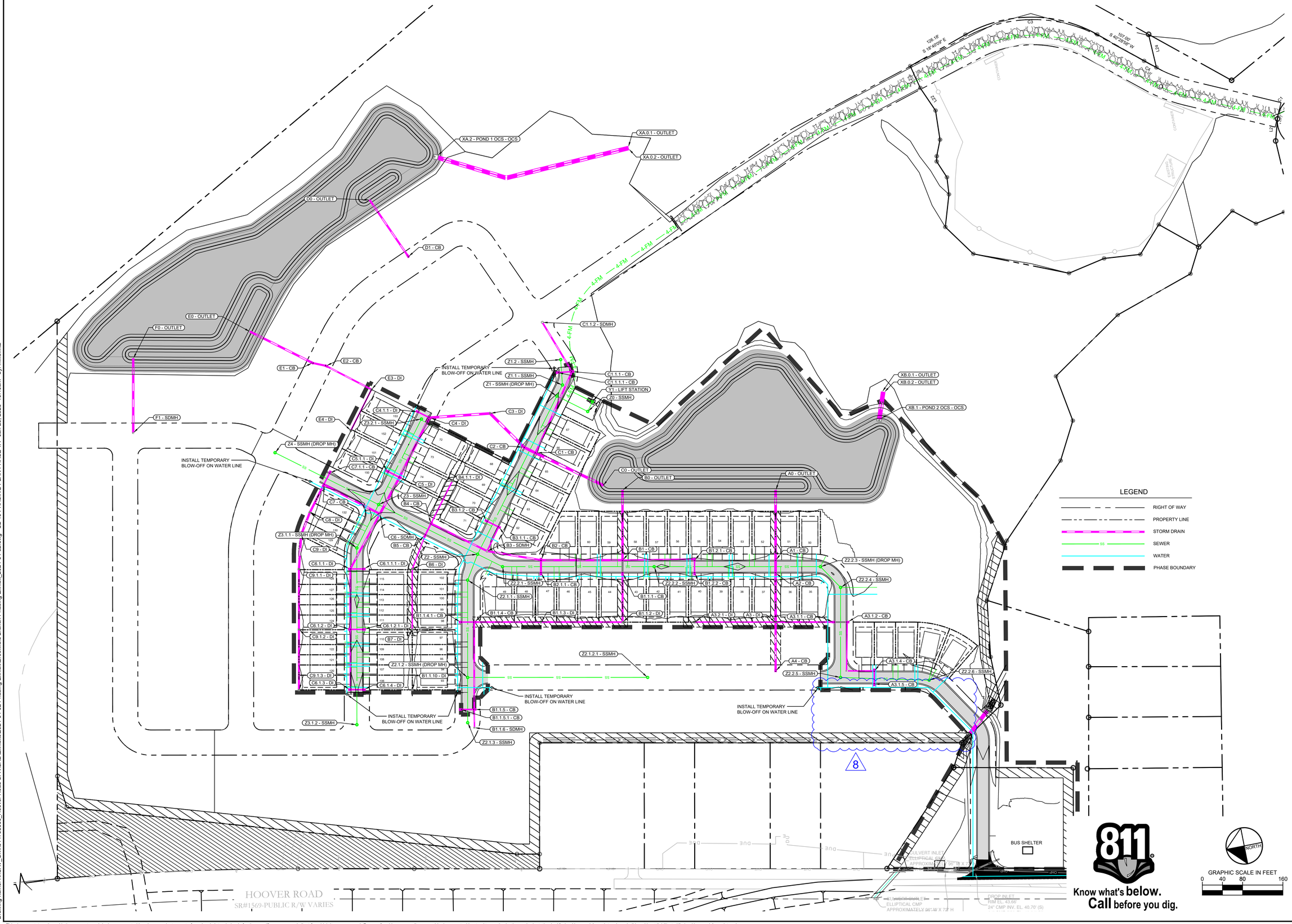

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

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60 GREGORY ROAD (SUITE 1)
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PHONE: 910-507-2115

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1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	FHO
DESIGNED BY	FHO
REVIEWED BY	RWB
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
PHASING PLAN PHASE 1A

SHEET NUMBER
C2-10

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Exhibits\2024-04-02 Phasing Exhibit\Brookfield Branch Phasing Exhibit_2024-04-02.dwg C2-10 PHASING PLAN PHASE 1A Jan 29, 2025 10:40am by: mike.fritz

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Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Exhibits\2024-04-02 Phasing Exhibit\Brookfield Branch Phasing Exhibit_2024-04-02.dwg C2-11 PHASING PLAN PHASE 1B Jan 29, 2025 10:40am by: mike.fritz

No.	REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

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PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	RKO
DESIGNED BY	RKO
REVIEWED BY	RJB
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
PHASING PLAN PHASE 1B

SHEET NUMBER
C2-11

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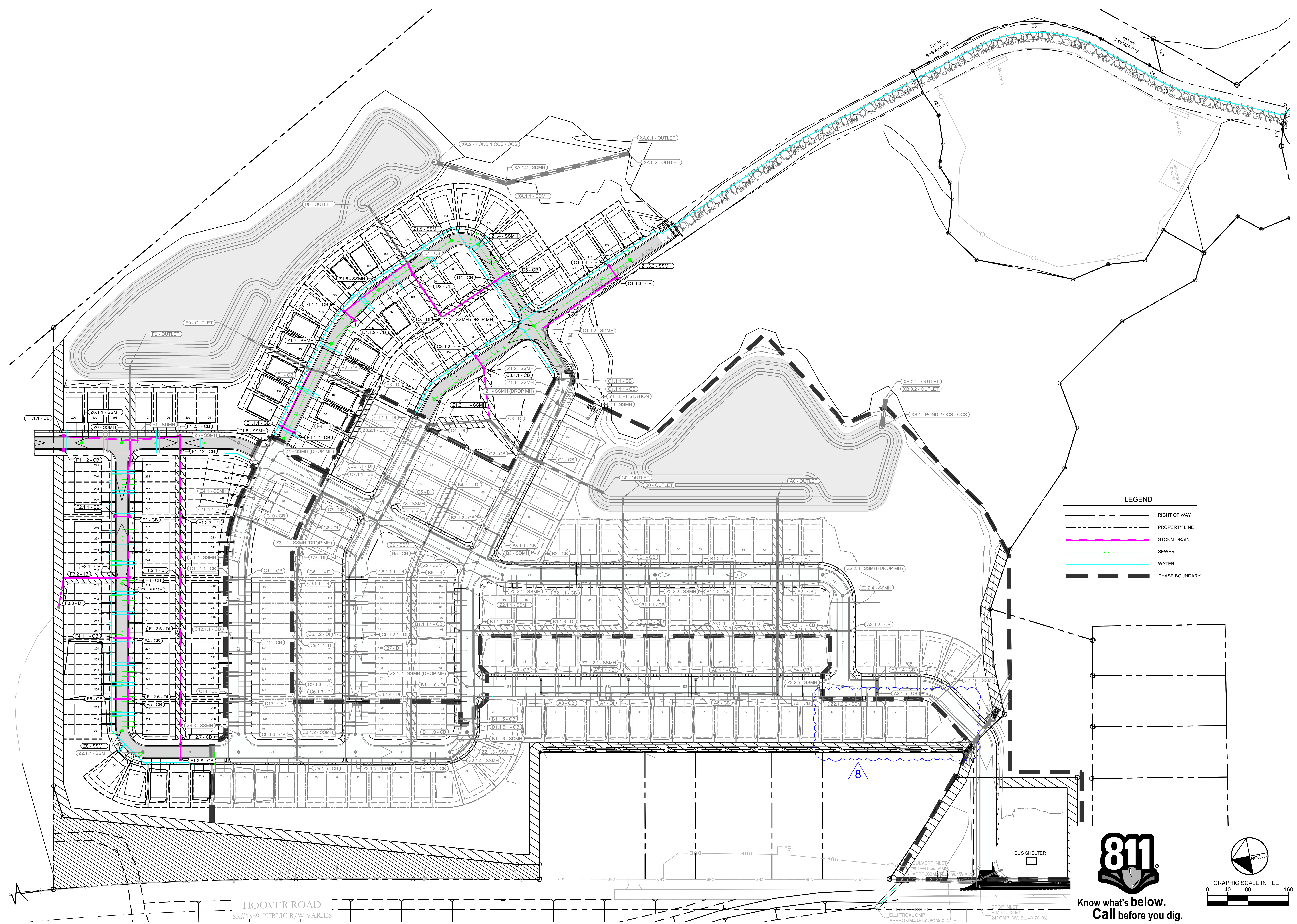

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BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	09/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH

1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY 6/24/24

DRAWN BY	RJ
DESIGNED BY	RJ
REVIEWED BY	RWB
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

PHASING PLAN PHASE 2

SHEET NUMBER

C2-12

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Exhibits\2024-04-02 Phasing Exhibit\Brookfield Branch Phasing Exhibit_2024-04-02.dwg C2-12 PHASING PLAN PHASE 2 Jan 29, 2025 10:40am by: mike.fritz

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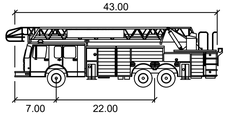
DESIGN FIRE TRUCK:



Aerial Fire Truck

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

3293-05-7356-000
MICHAEL NADEAU
D.B. 1507, PG. 158
P.B. 4, PG. 41
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

WETLAND
OPEN SPACE
(PASSIVE)
14.45 ACRES

WETLAND
OPEN SPACE
(PASSIVE)
9.85 ACRES

STORMWATER POND
(PHASE 2)

STORMWATER POND
(PHASE 1-A)

E. CREAMERY LANE
E. PIONEER WAY
E. FARLEY DRIVE
COBBLER WAY
COBBLER WAY
W. FARLEY DRIVE
W. CREAMERY LANE
W. PIONEER WAY
W. FARLEY DRIVE
BROOKFIELD BRANCH ROAD
HOOVER ROAD
E. PIONEER WAY

PHASE 2
PHASE 1A
PHASE 1-A
PHASE 1-B
PHASE 2
PHASE 1B
PHASE 2
PHASE 1
PHASE 1-B

FH
1505'
1500'
1505'
1500'
1505'
509'
500'
300'

3283-92-8925-0000
KRISTIE ENTERPRISES INC
D.B. 1527, PG. 240
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

N09°47'06"W 134.86'
S25°01'06"W 210.82'
N25°01'06"E 229.42'
N11°19'29"E 207.32'
N79°07'47"W 360.10'
S11°00'02"E 227.42'
N79°07'47"W 378.97'
N79°07'47"W 134.86'
S 87°28'58" W 107.35'
N 87°28'58" E 106.16'

3283-93-2348-0000
TIMOTHY A THORPE
D.B. 3788, PG. 318
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-1673-0000
TIM LONG FAMILY HOLDINGS, LLC
D.B. 4754, PG. 1398
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-1450-0000
HENRY MICHAEL ANDERSEN
D.B. 4674, PG. 1265
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

68,553 S.F. ±
1.57 AC. ±

3283-93-0451-0000
LAURA BETH PAYNE
D.B. 4706, PG. 28
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

REF 2-24
OFFLINE

3283-83-9464-0000
BRADLEY, MARK
D.B. 4672, PG. 1998
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-83-9765-0000
TIM LONG FAMILY HOLDINGS, LLC
D.B. 4754, PG. 1395
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-83-9457-0000
PAULA MARIE ROCK
D.B. 2775, PG. 4
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

60 BUS SHELTER
1.49 AC. ±

3283-94-1534-0000
MARK KING
D.B. 1004, PG. 275
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4667, PG. 2343
P.B. 17, PG. 176
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4667, PG. 2343
P.B. 17, PG. 176
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4684, PG. 1779
P.B. 17, PG. 176
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-0949-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4684, PG. 1779
P.B. 17, PG. 176
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

EX.FH

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

GRAPHIC SCALE IN FEET
0 50 100 200

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LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JANE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
FIRE PROTECTION PLAN

SHEET NUMBER
C2-30

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C2-00 - SITE PLAN.dwg C2-30 FIRE PROTECTION PLAN Jan 29, 2025 10:41am by: mike.fritz

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SIGN SCHEDULE

STOP	30" X 30" R1-1 STOP SIGN PER MUTCD SECTION 2B.04 (16 SIGNS)
YIELD HERE TO PED	36" X 36" R1-5 YIELD HERE TO PEDESTRIAN SIGN PER MUTCD SECTION 2B.19 (2 SIGNS)
SPEED LIMIT 35	24" X 30" R2-1 SPEED LIMIT SIGN PER MUTCD SECTION 2B.21 (1 SIGN)
	LONGITUDINAL BAR CROSWALK STRIPING PER MUTCD SECTION 3C.02 (11 LOCATIONS)
STOP	STOP BAR WITH STOP TEXT AND STOP SIGN PER MUTCD SECTIONS 2A.18, 2B.04, AND 3B.20. (16 LOCATIONS)

3293-14-6106-000
MICHAEL NADEAU
D.B. 1218, PG. 151
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3293-05-7356-000
MICHAEL NADEAU
D.B. 1507, PG. 158
P.B. 4, PG. 41
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

PIN#3293-12-7158-0000
JAMES COPP
D.B. 902, PG. 281
P.B. 9, PG. 29
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3293-03-2340-0000
HOOVER ROAD INVESTMENTS, LLC
D.B. 4632, PG. 943
P.B. 67, PG. 62
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: VACANT

3283-95-6698-0000
MICHAEL NADEAU
D.B. 1004, PG. 275
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

S 40°00'52" W - 1215.83' (TOTAL)
706.03'
321.31'
1658.96'
S 29°05'04" E
188.48' (TIE)
S 28°16'28" E
136.88' (TIE)
S 28°16'28" E
185.30'
N 18°29'53" W
132.57'
N 28°07'18" E
144.32'
193.93'
N 22°29'04" E
166.12'
N 18°29'53" W
172.93'
N 34°45'02" W
191.99'
N 48°06'05" W
294'
N 11°00'40" E - 439.32'
N 11°00'40" E - 479.83' (TOTAL)
N 78°59'20" W - 249.87' (TOTAL)
N 16°58'58" E
998.64'
N 10°59'06" E 370.29'
N 85°32'32" W 230.56'
S 79°00'30" E - 1106.84' (TOTAL)
746.64' (TIE)
N 03°23'20" E
70.09'
100.69'
230.76'
249.07'
SPEED LIMIT 35
SHELTER
EX.FH
GRAPHIC SCALE IN FEET
0 50 100 200
NORTH

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PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
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1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	06/24/2024
PROJECT NO.	014793000

TITLE
SIGNING AND STRIPING PLAN

SHEET NUMBER
EX1

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C2-00 - SIGNING AND STRIPING PLAN.dwg EX1 SIGNING AND STRIPING PLAN Jan 29, 2025 10:41am by: mike.fritz

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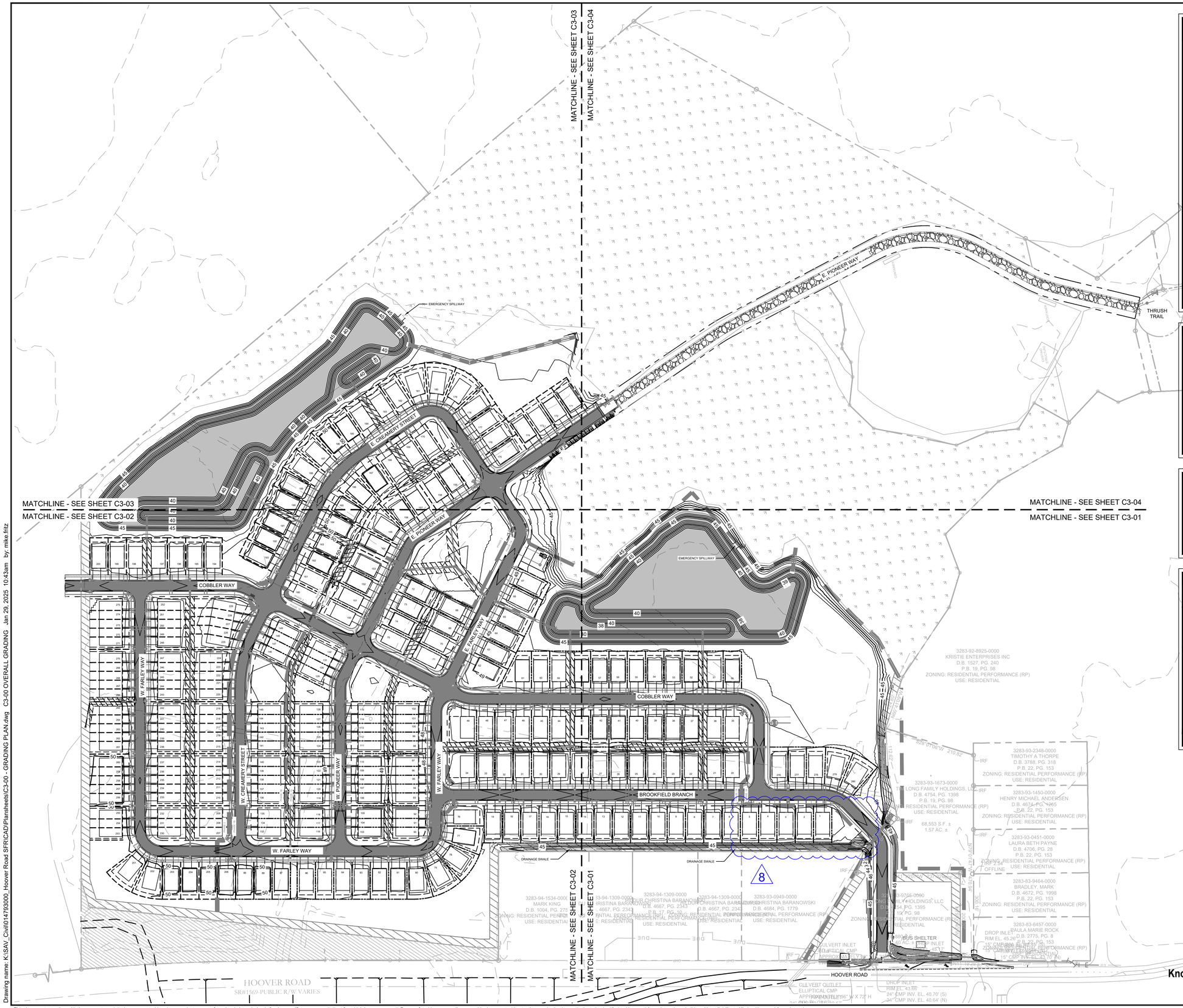

GRADING & DRAINAGE NOTES:

1. SITE AREA: 79 ACRES
   DISTURBED AREA: 46.9 ACRES
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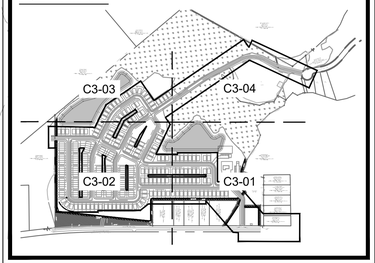
GRADING LEGEND:

950	EXISTING MAJOR CONTOUR
948	EXISTING MINOR CONTOUR
945	PROPOSED MAJOR CONTOUR
944	PROPOSED MINOR CONTOUR
×945.00	PROPOSED SPOT GRADE
	DRAINAGE FLOW ARROW
×FP: 945.00	PROPOSED BUILDING FOOTPRINT ELEVATION
×HP: 945.00	PROPOSED HIGH POINT
×LP: 945.00	PROPOSED LOW POINT

STORM DRAINAGE LEGEND:

SDMH	JUNCTION BOX (NCDOT DETAIL 840.31)
CB	ROLLED CURB INLET (NCDOT DETAIL 840.02)
DI	YARD DRAIN (NDS CATCH BASIN OR COMPARABLE)
OCS	OUTLET CONTROL STRUCTURE (CAST-IN-PLACE)
	PROPOSED STORM PIPE

KEYMAP:



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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	REVISED PHASE BOUNDARY	08/16/2024	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
OVERALL GRADING PLAN

SHEET NUMBER
C3-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-00 - GRADING PLAN.dwg C3-00 OVERALL GRADING Jan 29, 2025 10:43am by: mike.fritz

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MATCHLINE - SEE SHEET C3-04

MATCHLINE - SEE SHEET C3-02

MATCHLINE - SEE SHEET C3-02

EMERGENCY SPILLWAY

POND 1

POND 1
TOP OF BANK: 47.00'
PERMANENT W.S.: 43.00'
BOTTOM OF POND: 37.00'

DRAINAGE SWALE

8

3283-92-8925-0000
KRISTIE ENTERPRISES INC
D.B. 1527, PG. 240
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-2348-0000
TIMOTHY A THORPE
D.B. 3788, PG. 318
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-1673-0000
TIM LONG FAMILY HOLDINGS, LLC
D.B. 4754, PG. 1398
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

68,553 S.F. ±
1.57 AC. ±

3283-93-1450-0000
HENRY MICHAEL ANDERSEN
D.B. 4624, PG. 1265
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-0451-0000
LAURA BETH PAYNE
D.B. 4706, PG. 28
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-83-9464-0000
BRADLEY, MARK
D.B. 4672, PG. 1998
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-83-8457-0000
PAULA MARIE ROCK
D.B. 2775, PG. 8
P.B. 22, PG. 153
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4667, PG. 2343
P.B. 17, PG. 10
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4667, PG. 2343
P.B. 17, PG. 10
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-1309-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4667, PG. 2343
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-93-0949-0000
HILDUR CHRISTINA BARANOWSKI
D.B. 4694, PG. 1779
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-83-9765-0000
TIM LONG FAMILY HOLDINGS, LLC
D.B. 4754, PG. 1395
P.B. 19, PG. 98
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

60,850 S.F. ±
1.40 AC. ±

BUS SHELTER

DROP INLET
RIM EL. 45.26'
15" CMP INV. EL. 43.43' (N)
15" CMP INV. EL. 42.70' (N)

DROP INLET
RIM EL. 45.40'
15" CMP INV. EL. 43.44' (N)

DROP INLET
RIM EL. 43.66'
24" CMP INV. EL. 40.70' (S)
24" CMP INV. EL. 40.64' (N)

CULVERT OUTLET
ELLIPTICAL CMP
APPROXIMATELY 98" W X 72" H
INV. EL. 33.82'

PIPE OUTLET
24" CMP INV. EL. 40.67'

CULVERT INLET
ELLIPTICAL CMP
APPROXIMATELY [illegible] W X [illegible] H
INV. EL. 34.24'

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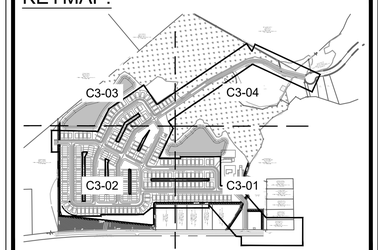
	PROPOSED STORM PIPE

KEYMAP:



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BELVILLE, NC 28451
PHONE: 910-507-2115

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1	SSJUANCE AND REVISION DESCRIPTIONS		

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HAMPSTEAD, NC 28443
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APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
GRADING PLAN

SHEET NUMBER
C3-01

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-00 - GRADING PLAN.dwg C3-01 GRADING PLAN Jan 29, 2025 10:43am by: mike.fritz

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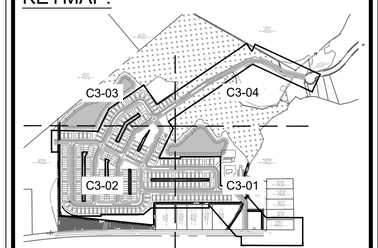
OCS	OUTLET CONTROL STRUCTURE (CAST-IN-PLACE)
	PROPOSED STORM PIPE

KEYMAP:



MATCHLINE - SEE SHEET C3-03

MATCHLINE - SEE SHEET C3-01

DRAINAGE SWALE

HOOVER ROAD
SR#1569-PUBLIC R/W VARIES

3283-94-1534-0000
MARK KING
D.B. 1004, PG. 275
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

3283-94-2439-0000
HILDUR CHRISTINE BARANOWS
D.B. 2343, PG. 2343
ZONING: RESIDENTIAL PERFORMAN
USE: RESIDENTIAL

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WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	SSJUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
GRADING PLAN

SHEET NUMBER
C3-02

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-00 - GRADING PLAN.dwg Jan 29, 2025 10:44am by: mike.fritz

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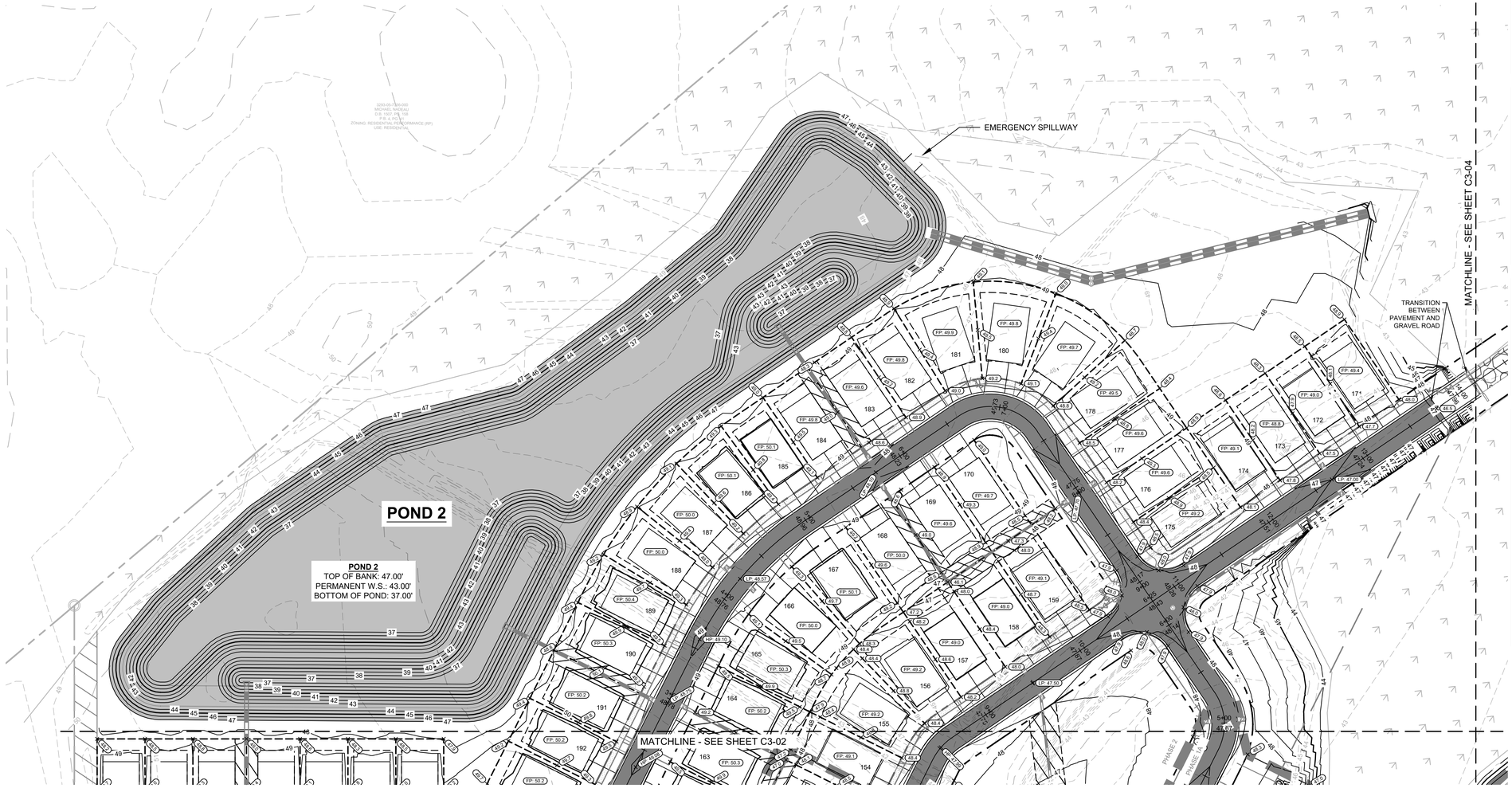

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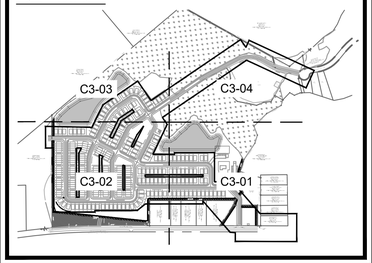
KEYMAP:



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GRAPHIC SCALE IN FEET
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TITLE
GRADING PLAN

SHEET NUMBER
C3-03

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   DISTURBED AREA: 46.9 ACRES
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6. NO GRADED SLOPE SHALL EXCEED 3H:1V
7. ALL WALLS GREATER THAN 30" IN HEIGHT SHALL BE DESIGNED AND PERMITTED BY AN ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA.
8. ALL WALLS GREATER THAN 30" IN HEIGHT SHALL HAVE FALL PROTECTION THROUGH FENCING OR HANDRAIL AT A MINIMUM OF 42" TALL. REFERENCE LANDSCAPE PLANS FOR DETAILS.

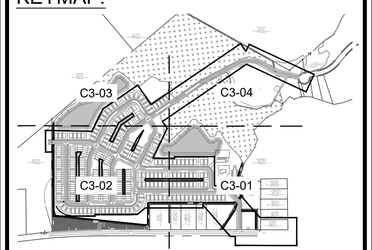
GRADING LEGEND:

950	EXISTING MAJOR CONTOUR
948	EXISTING MINOR CONTOUR
945	PROPOSED MAJOR CONTOUR
944	PROPOSED MINOR CONTOUR
×945.00	PROPOSED SPOT GRADE
	DRAINAGE FLOW ARROW
×FP: 945.00	PROPOSED BUILDING FOOTPRINT ELEVATION
×HP: 945.00	PROPOSED HIGH POINT
×LP: 945.00	PROPOSED LOW POINT

STORM DRAINAGE LEGEND:

SDMH	JUNCTION BOX (NCDOT DETAIL 840.31)
CB	ROLLED CURB INLET (NCDOT DETAIL 840.02)
DI	YARD DRAIN (NDS CATCH BASIN OR COMPARABLE)
OCS	OUTLET CONTROL STRUCTURE (CAST-IN-PLACE)
	PROPOSED STORM PIPE

KEYMAP:



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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER AMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
GRADING PLAN

SHEET NUMBER
C3-04

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Planesheets\C3-00 - GRADING PLAN.dwg C3-04 GRADING PLAN Jan 29, 2025 10:44am by: mike.fritz

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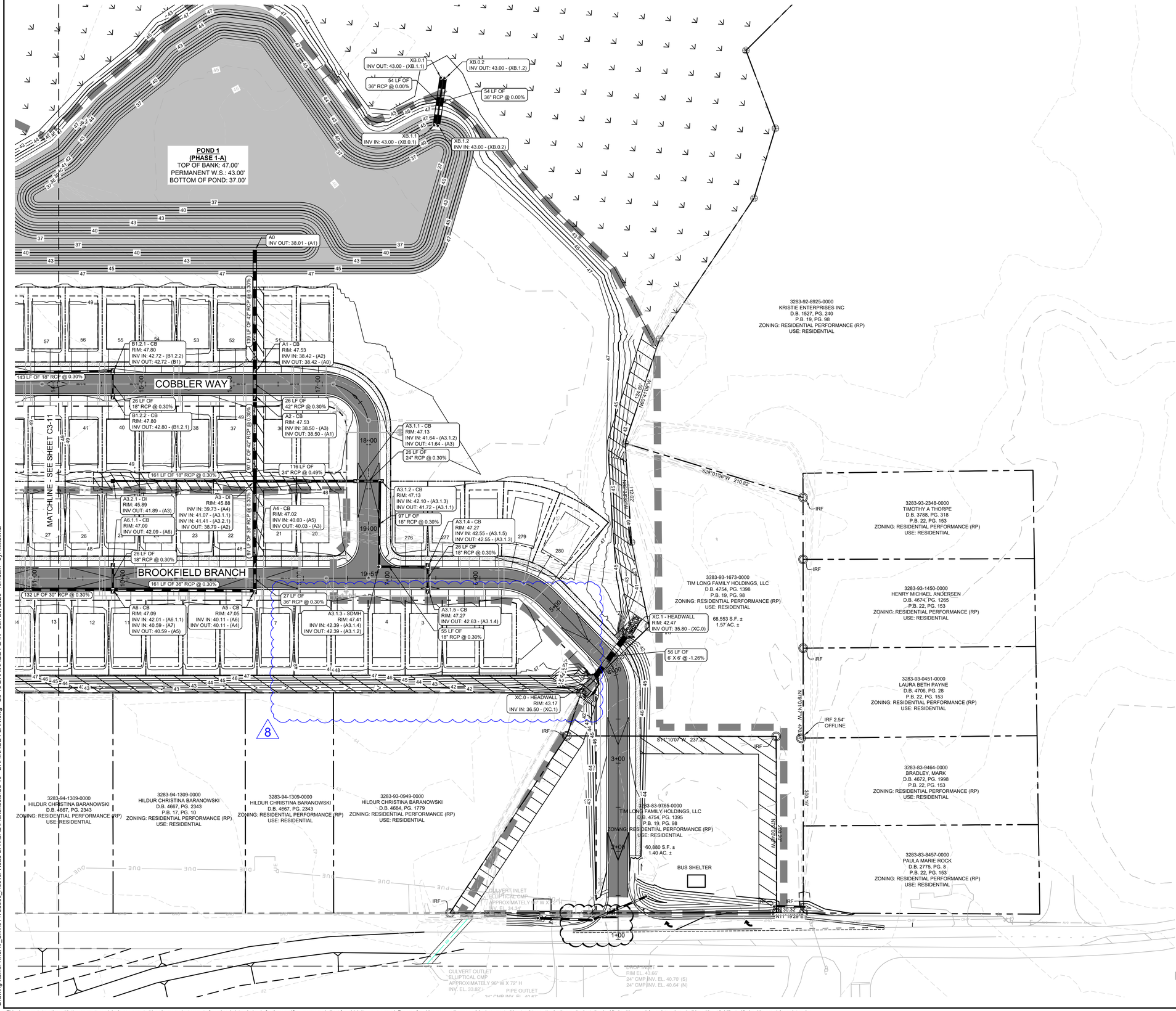

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GRADING LEGEND:

950	EXISTING MAJOR CONTOUR
948	EXISTING MINOR CONTOUR
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DI	YARD DRAIN (NDS CATCH BASIN OR COMPARABLE)
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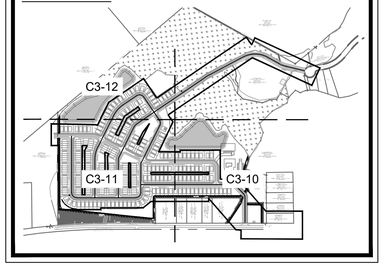
	PROPOSED STORM PIPE

KEYMAP:



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LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

NO.	DESCRIPTION	DATE	BY
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
DRAINAGE PLAN

SHEET NUMBER
C3-10

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-10 - DRAINAGE PLAN.dwg C3-10 DRAINAGE PLAN Jan 29, 2025 10:46am by: mike.fritz

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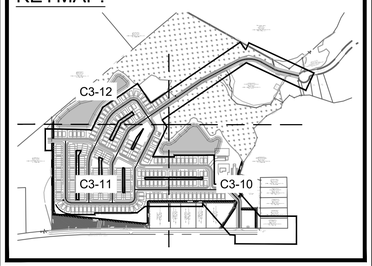

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LOGAN DEVELOPERS INC.
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PHONE: 910-507-2115

NO.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. CWALINA

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
DRAINAGE PLAN

SHEET NUMBER
C3-11

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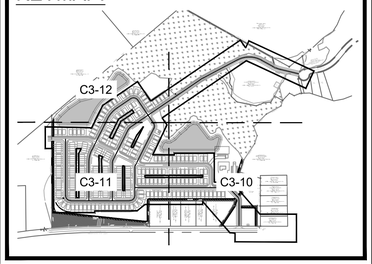

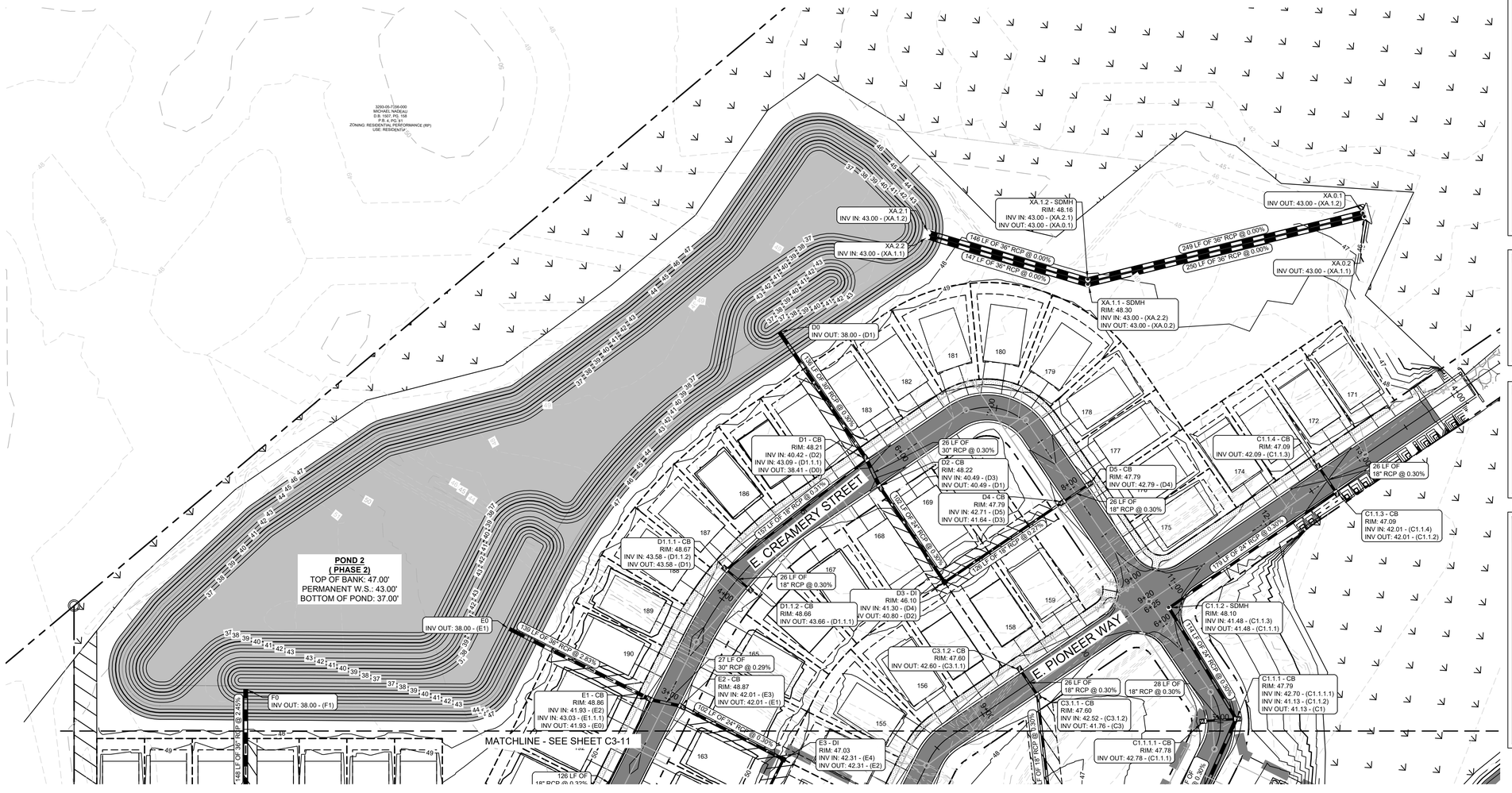

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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
DRAINAGE PLAN

SHEET NUMBER
C3-12

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-10 - DRAINAGE PLAN.dwg C3-12 DRAINAGE PLAN Jan 29, 2025 10:46am by: mike.fritz

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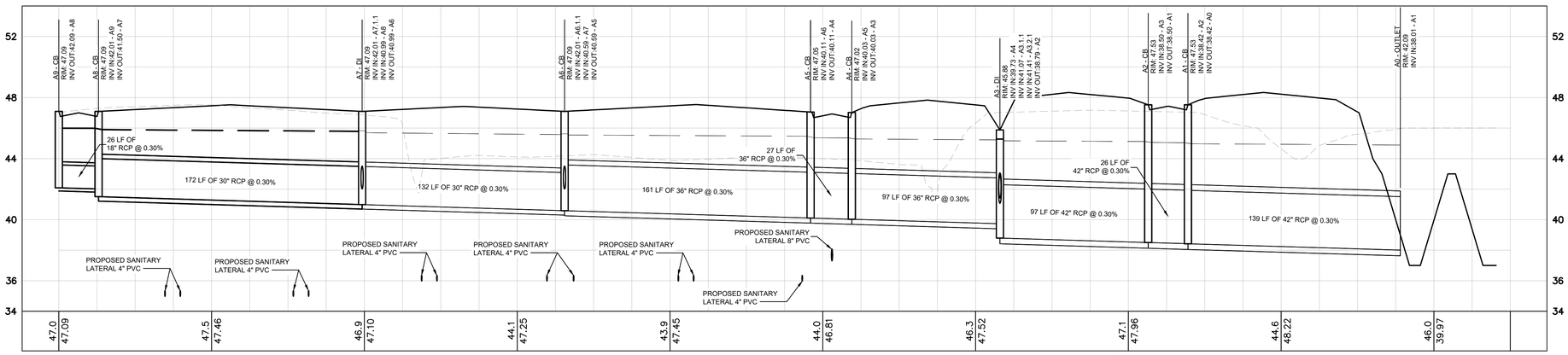
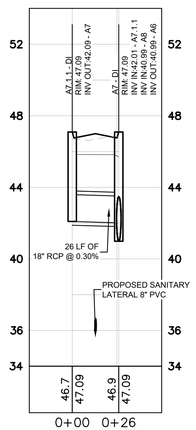
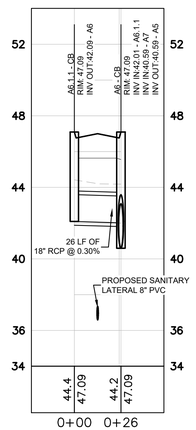


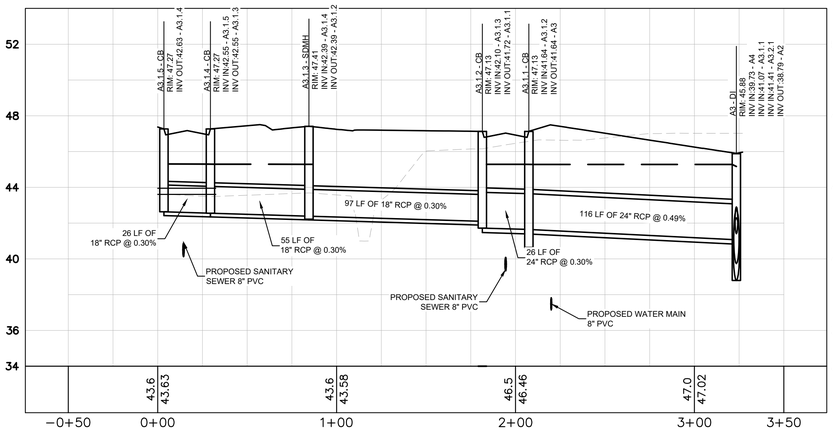
A9 TO A0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



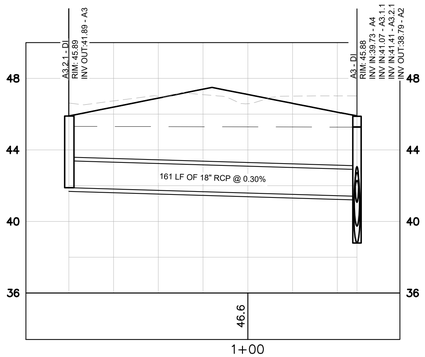
A7.1.1 TO A7
HORIZONTAL: 1"=40
VERTICAL: 1"=4



A6.1.1 TO A6
HORIZONTAL: 1"=40
VERTICAL: 1"=4



A3 TO A3.1.5
HORIZONTAL: 1"=40
VERTICAL: 1"=4



A3 TO A3.2.1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

STORM DRAINAGE PROFILE NOTES:

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5. RIM ELEVATIONS GIVEN ARE APPROXIMATE. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR STRUCTURE THROAT / RIM ELEVATIONS.
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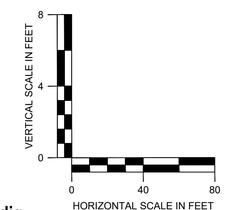

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SAVANNAH, GA 31401
PHONE: 912-234-3454
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-50

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-50 STORM SEWER PROFILES Jan 29, 2025, 10:49am by: mike.fritz

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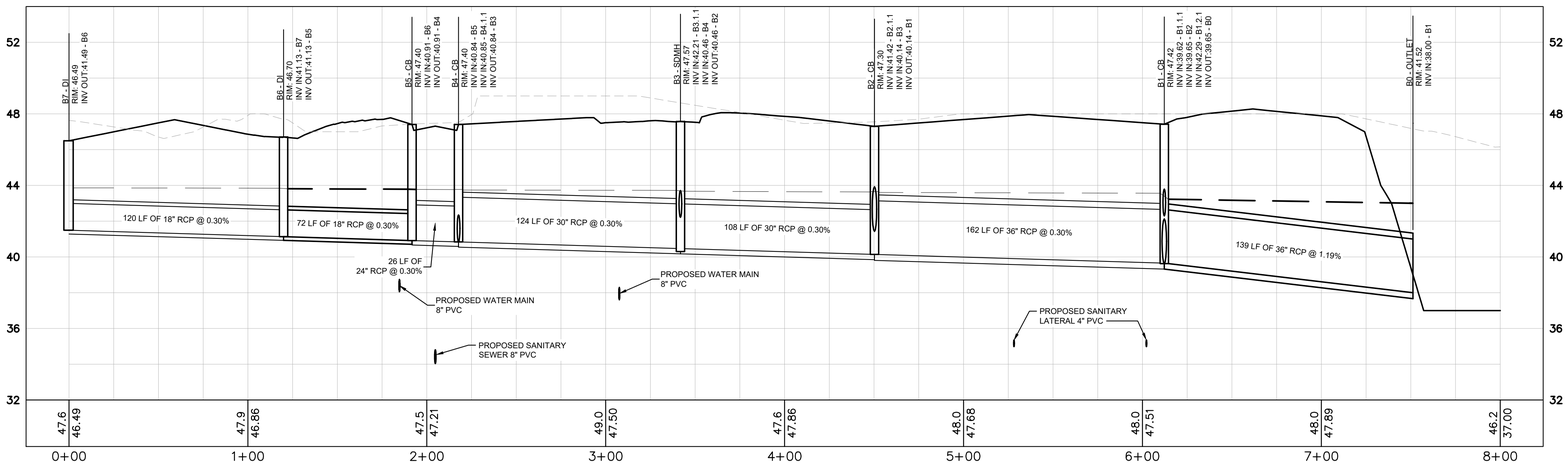
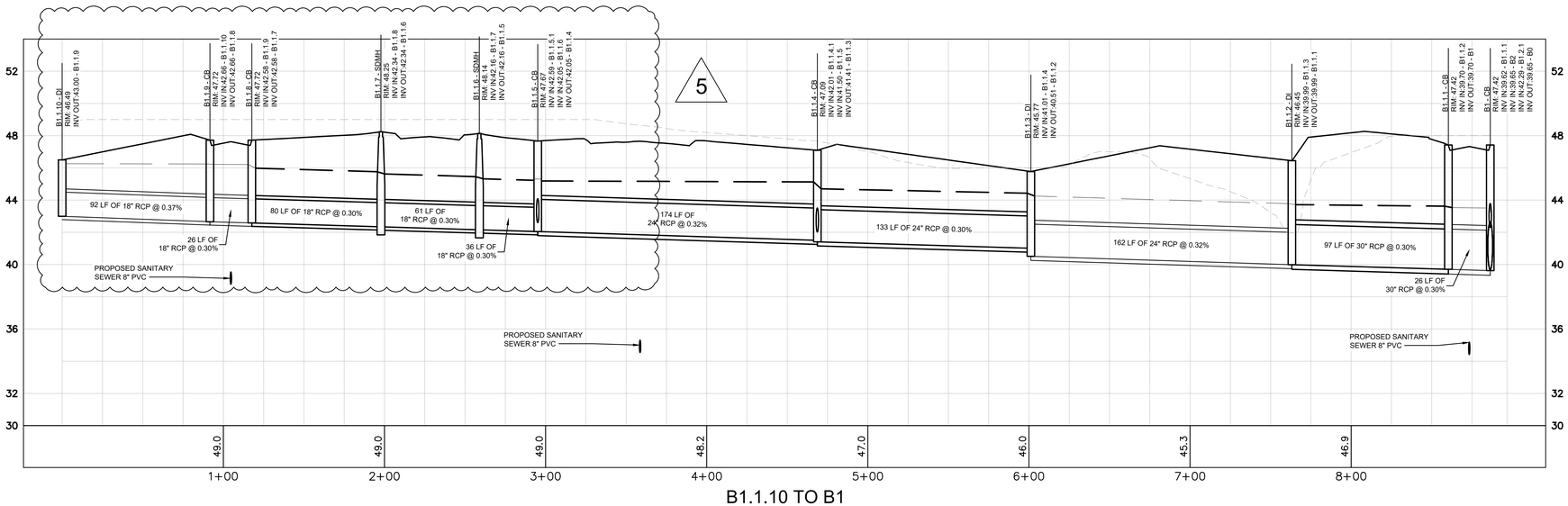


B7 TO B0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



B1.1.10 TO B1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

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VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
6	06/03/2024	CDJ
5	03/06/2024	MRF
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3	12/18/2023	MRF
2	12/08/2023	MRF
1	DATE	BY

8 REVISED PHASE BOUNDARY
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1 ISSUANCE AND REVISION DESCRIPTIONS

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL
SEAL 030526
ENGINEER
JAMIE N. GWALTNEY

DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-51

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-51 STORM SEWER PROFILES Jan 29, 2025 10:49am by: mike.fritz

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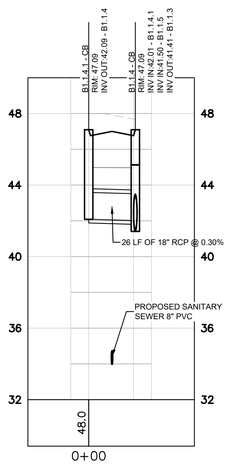
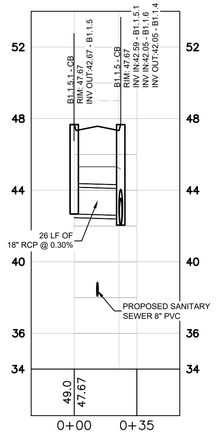
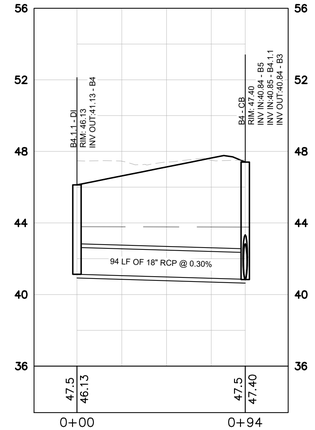


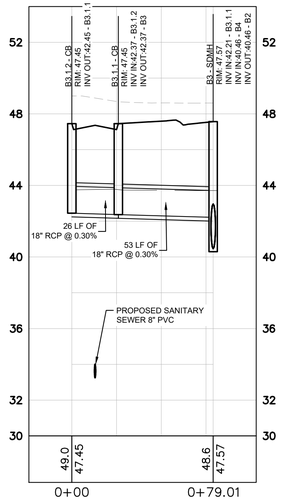
B1.1.4.1 TO B1.1.4
HORIZONTAL: 1"=40
VERTICAL: 1"=4



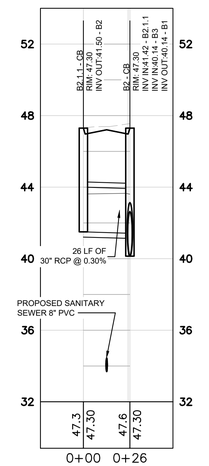
B1.1.5.1 TO B1.1.5
HORIZONTAL: 1"=40
VERTICAL: 1"=4



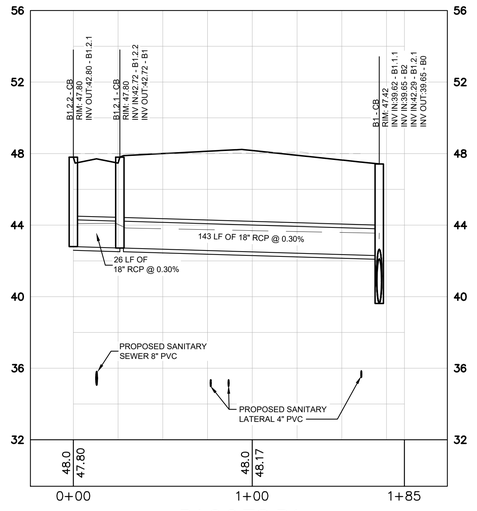
B4.1.1 TO B4
HORIZONTAL: 1"=40
VERTICAL: 1"=4



B3.1.2 TO B3
HORIZONTAL: 1"=40
VERTICAL: 1"=4



B2.1.1 TO B2
HORIZONTAL: 1"=40
VERTICAL: 1"=4



B1.2.2 TO B1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

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HORIZONTAL SCALE IN FEET: 0, 40, 80

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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-52

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-52 STORM SEWER PROFILES Jan 29, 2025 10:49am by: mike.fritz

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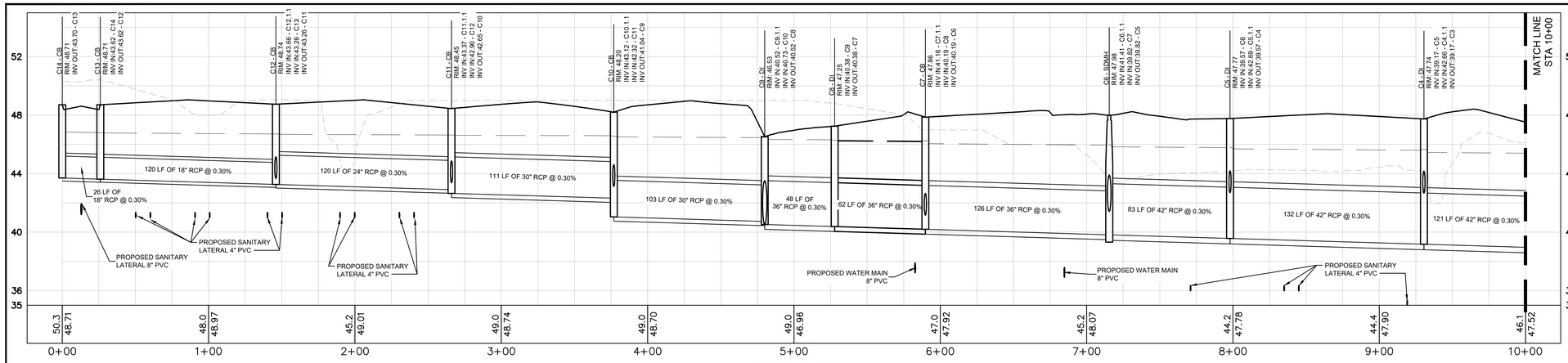

C14 TO C0
HORIZONTAL: 1"=40
VERTICAL: 1"=4

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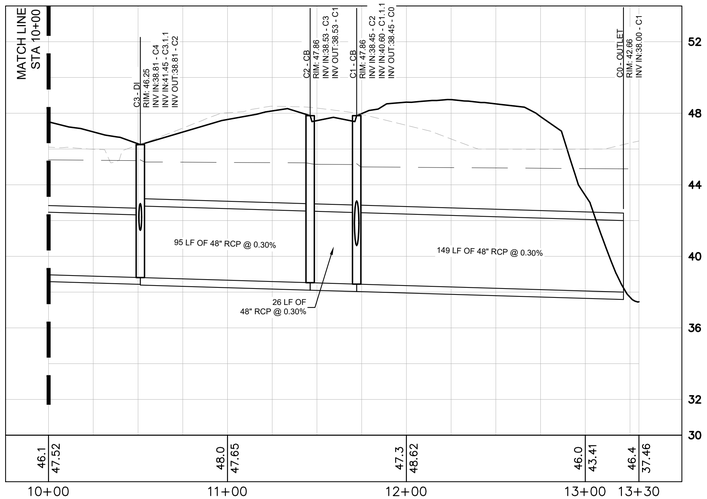
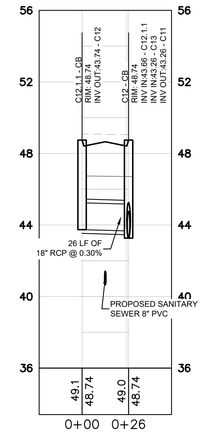
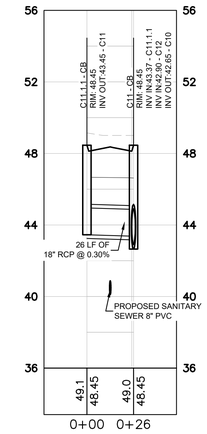


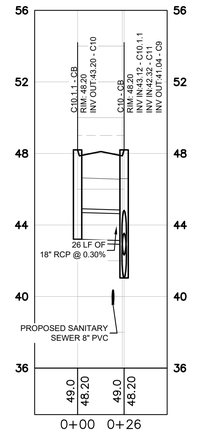
C14 TO C0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



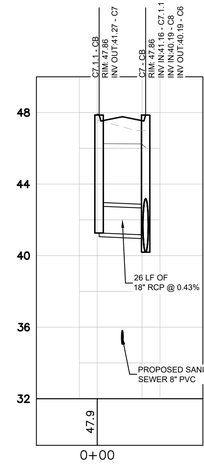
C12.1.1 TO C12
HORIZONTAL: 1"=40
VERTICAL: 1"=4



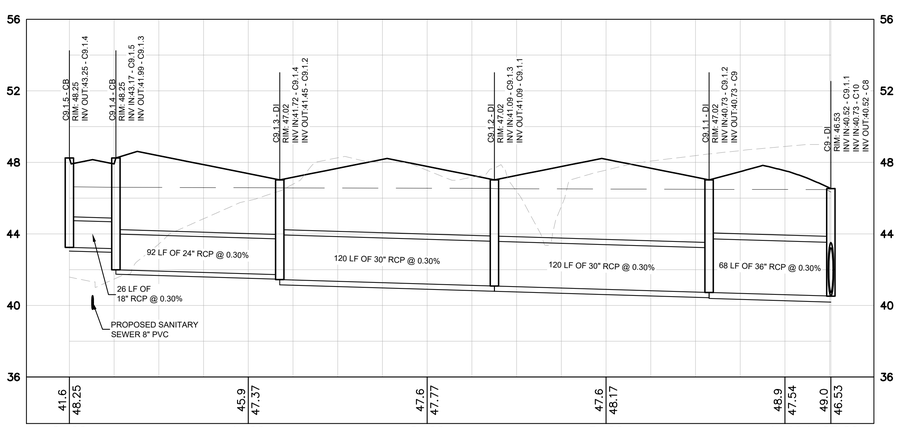
C11.1.1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



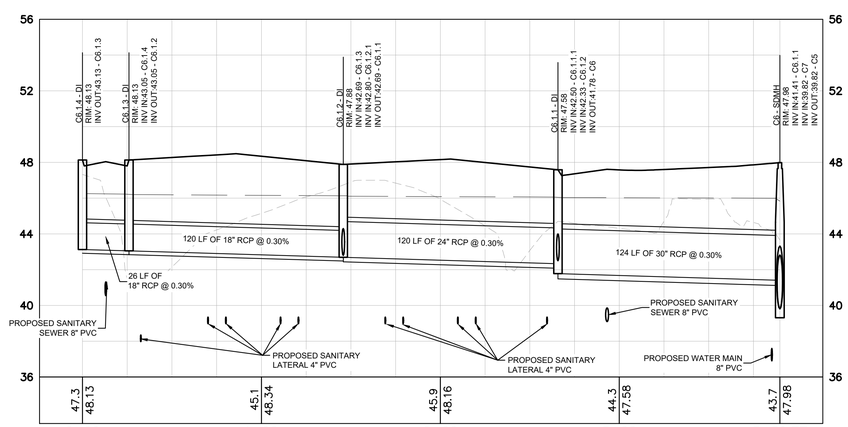
C10.1.1 TO C10
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C7.1.1 TO C7
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C9.1.5 TO C9
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C6.1.4 TO C6
HORIZONTAL: 1"=40
VERTICAL: 1"=4

Know what's **below.**
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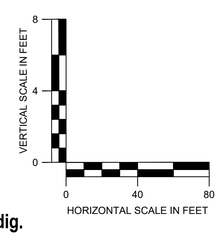

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Kimley»Horn
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APPROVED MDP 2023-41

DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-53

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-53 STORM SEWER PROFILES Jan 29, 2025 10:49am by: mike.fritz

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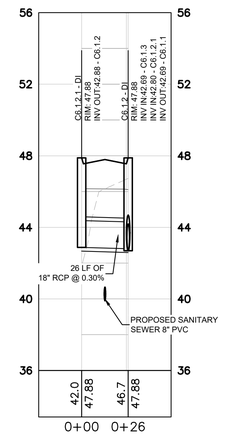

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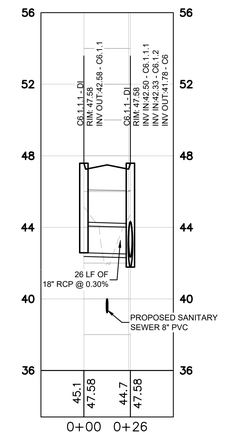
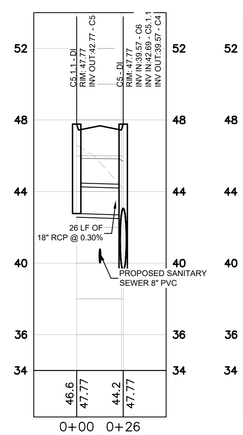
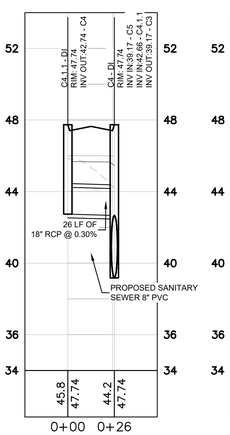
VERTICAL: 1"=4



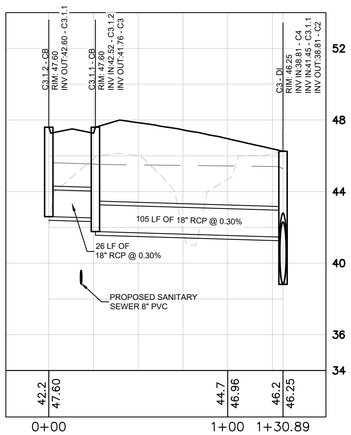
C6.1.1.1 TO C6.1.1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



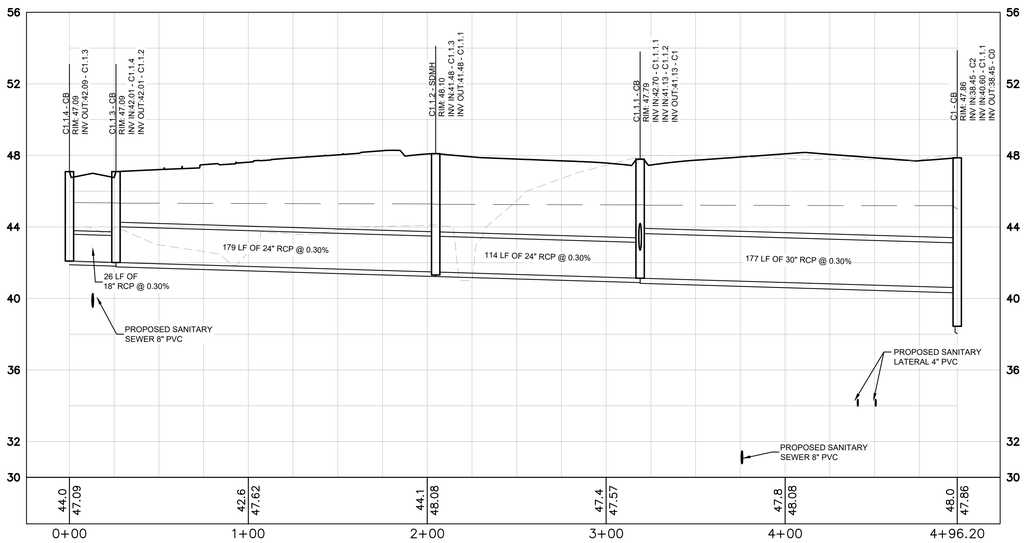
C5.1.1 TO C5
HORIZONTAL: 1"=40
VERTICAL: 1"=4



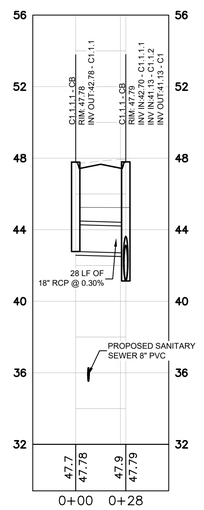
C4.1.1 TO C4
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C3.1.2 TO C3
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C1.1.4 TO C1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



C1.1.1.1 TO C1.1.1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

STORM DRAINAGE PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR STORM DRAINAGE SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
3. ALL STORM PIPE SHALL HAVE BEDDING PER BEDDING DETAILS IN CONSTRUCTION DETAIL SHEETS.
4. ALL STORM PIPING TO BE RCP UNLESS OTHERWISE NOTED. SEE CHART FOR PIPE CLASS.
5. RIM ELEVATIONS GIVEN ARE APPROXIMATE. CONTRACTOR SHALL REFERENCE GRADING PLAN FOR STRUCTURE THROAT / RIM ELEVATIONS.
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7. ALL STORM JOINTS TO BE WATER TIGHT.

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE
- 25-YR HYDRAULIC GRADE LINE
- 100-YR HYDRAULIC GRADE LINE

RCP PIPE CLASSIFICATION CHART:

1-15' CLASS III
15'-20' CLASS IV
20'-30' CLASS V

ALL CONCRETE PIPE SHALL BE A MINIMUM CLASS III WITH 12" MINIMUM COVER. REFERENCE GDOT DETAIL 1030D FOR ADDITIONAL GUIDANCE.

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VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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SAVANNAH, GA 31401
PHONE: 912-234-5454
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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
3	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED		
1	SSJUANCE AND REVISION DESCRIPTIONS		

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-54

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-54 STORM SEWER PROFILES Jan 29, 2025 10:49am by: mike.fritz

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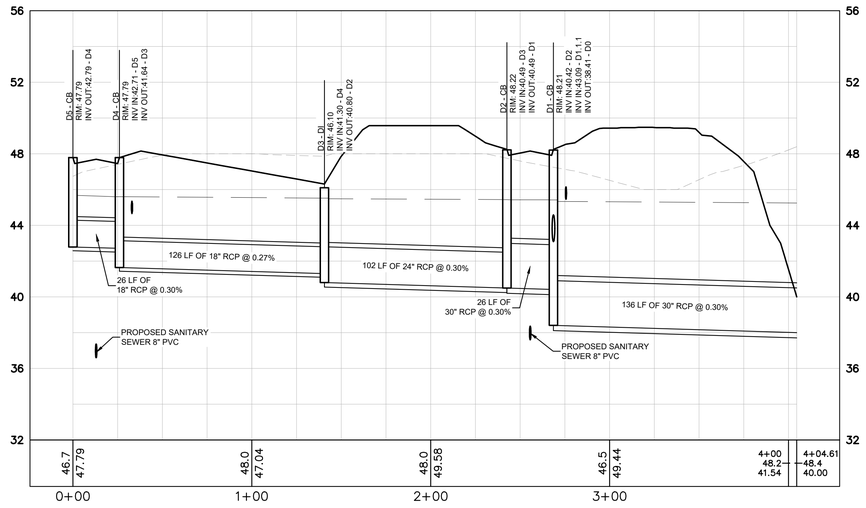
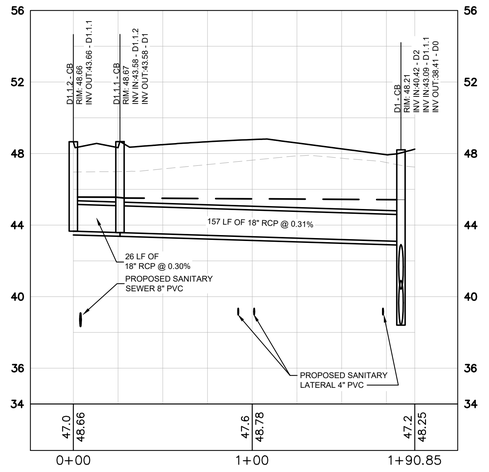
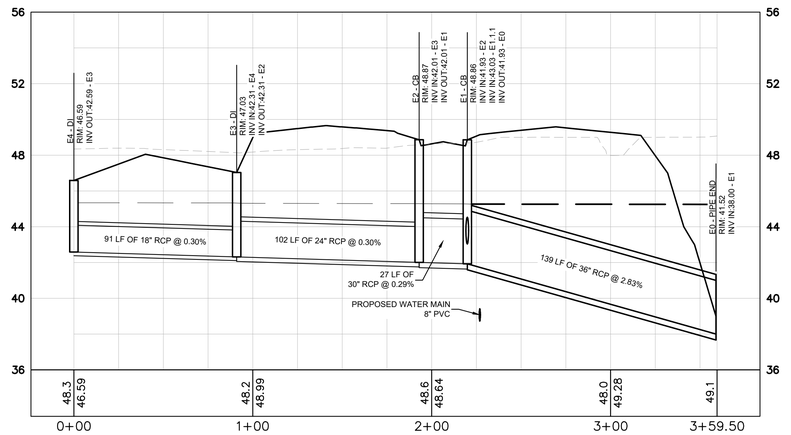


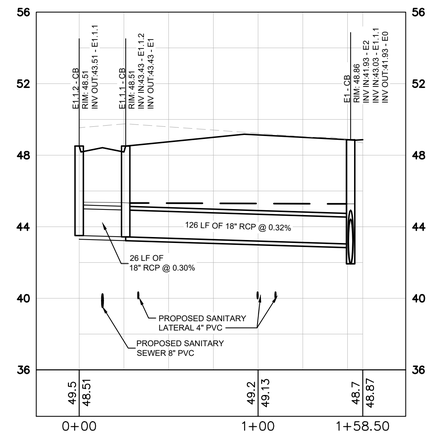
D5 TO D0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



D1.1.2 TO D1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



E4 TO E0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



E1.1.2 TO E1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

STORM DRAINAGE PROFILE NOTES:

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PROFILE LINE LEGEND:

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- 100-YR HYDRAULIC GRADE LINE

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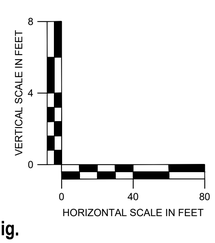

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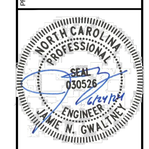
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
8	MRF	08/16/2024
7	TCS	06/24/2024
6	CDJ	06/03/2024
5	MRF	03/06/2024
4	MRF	02/12/2024
3	MRF	12/18/2023
2	MRF	12/08/2023
1	BY	DATE

1 SSUJANCE AND REVISION DESCRIPTIONS
2 REVISED PHASE BOUNDARY
3 REVISED PER NC DEQ PRIVATE WATER COMMENTS
4 REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
5 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
6 REVISED PER COUNTY COMMENTS DATED 01/22/2024
7 REVISED PER COUNTY COMMENTS DATED 12/11/2023
8 REVISED PER COUNTY COMMENTS DATED 11/07/2023

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41



DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-55

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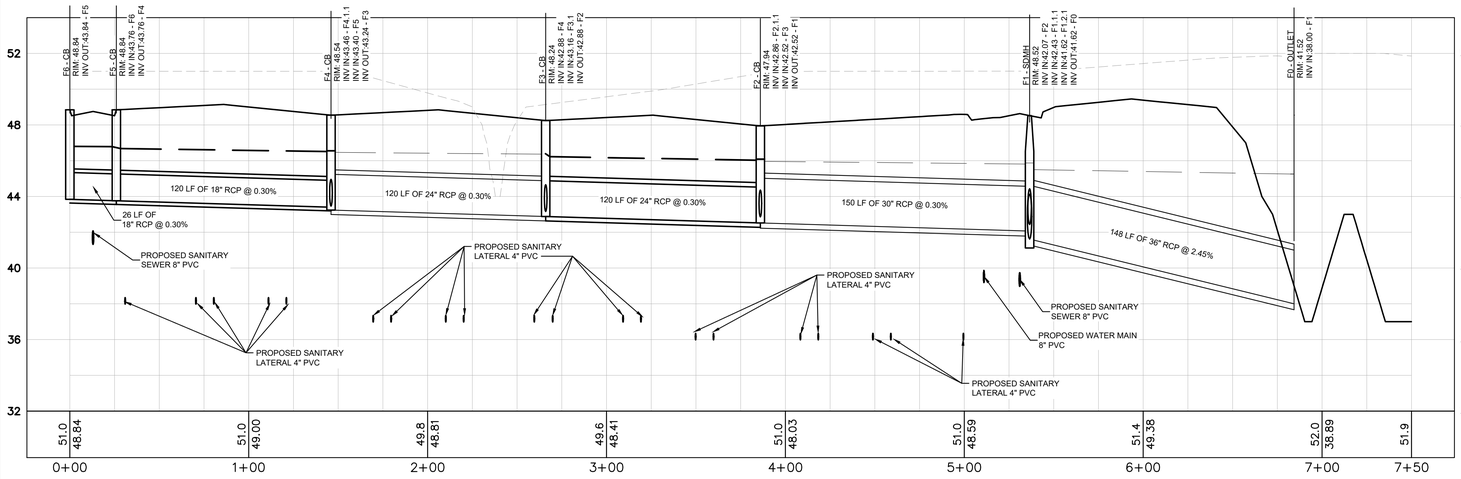
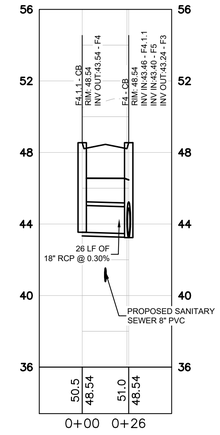
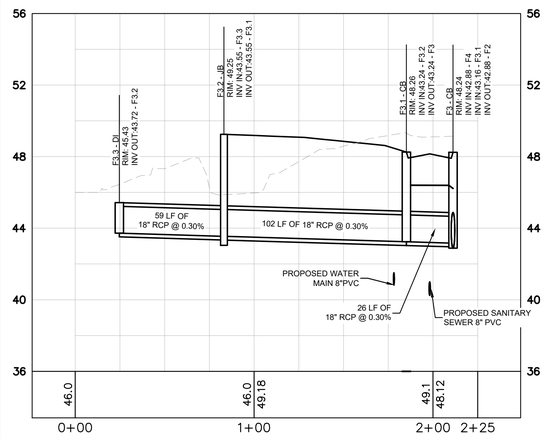
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-55 STORM SEWER PROFILES Jan 29, 2025 10:49am by: mike.fritz



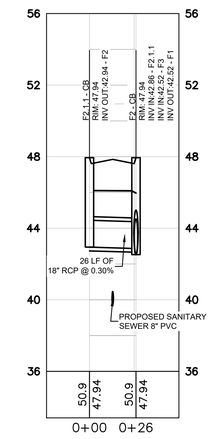
F6 TO F0
HORIZONTAL: 1"=40
VERTICAL: 1"=4



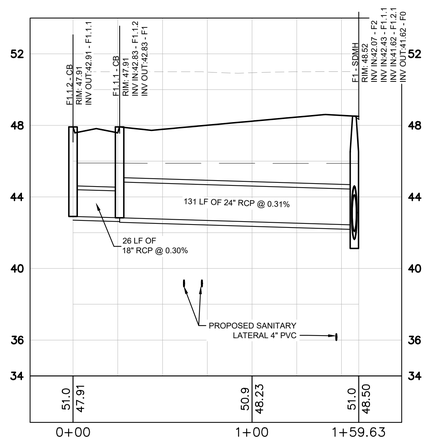
F4.1.1 TO F4
HORIZONTAL: 1"=40
VERTICAL: 1"=4



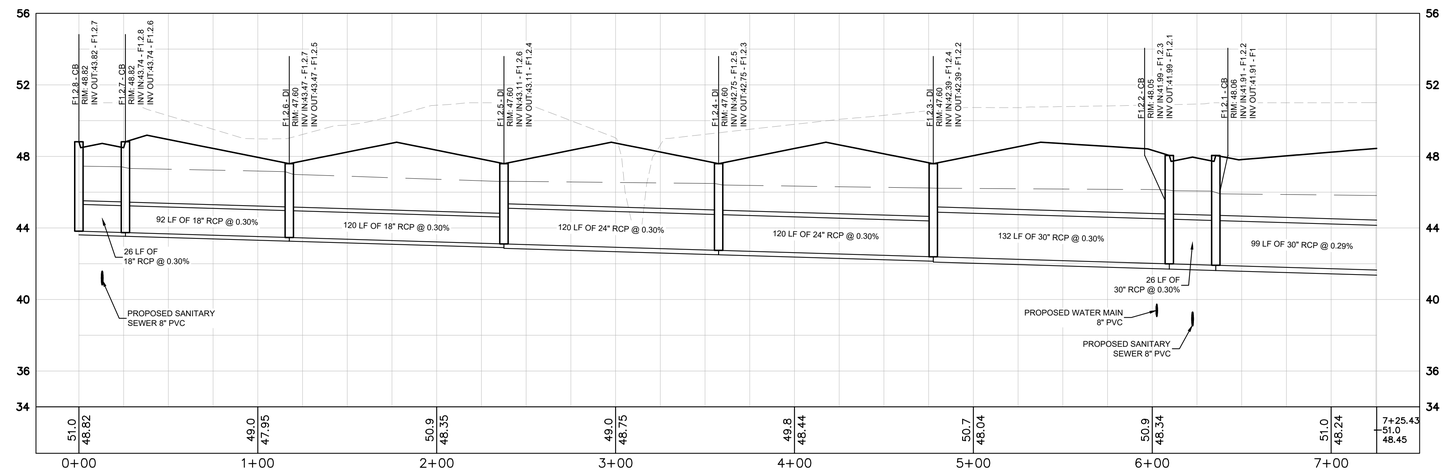
F3.1.1 TO F3.3
HORIZONTAL: 1"=40
VERTICAL: 1"=4



F2.1.1 TO F2
HORIZONTAL: 1"=40
VERTICAL: 1"=4



F1.1.2 TO F1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



F1.2.8 TO F1
HORIZONTAL: 1"=40
VERTICAL: 1"=4

STORM DRAINAGE PROFILE NOTES:

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20'-30' CLASS V

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

VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
8	MRF	08/16/2024
7	TCS	06/24/2024
6	CDJ	06/03/2024
5	MRF	03/06/2024
4	MRF	02/12/2024
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1	BY	DATE

1 SSUJANCE AND REVISION DESCRIPTIONS
2 REVISED PER COUNTY COMMENTS DATED 11/07/2023
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5 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
6 REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
7 REVISED PER NC DEQ PRIVATE WATER COMMENTS 06/24/2024
8 REVISED PHASE BOUNDARY 08/16/2024

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-56

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-56 STORM SEWER PROFILES Jan 29, 2025 10:50am by: mike.fritz

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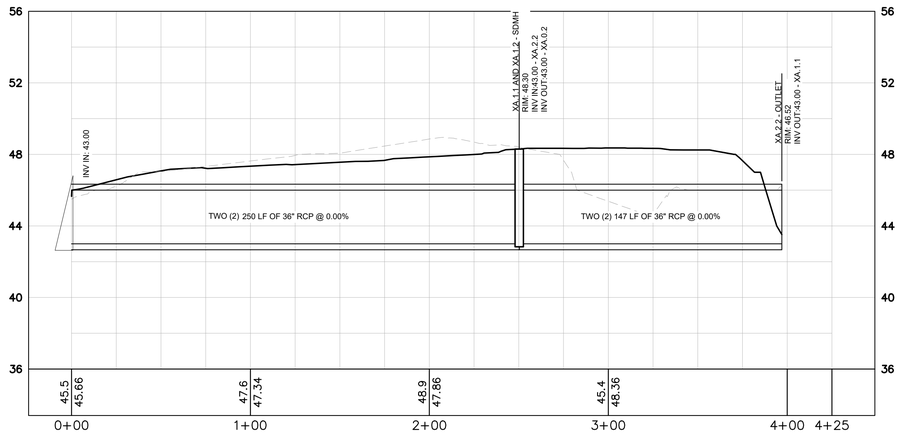
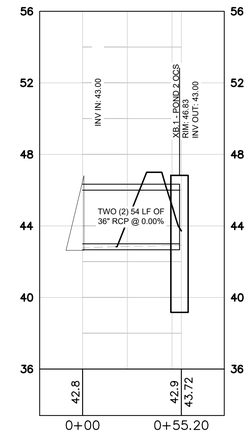
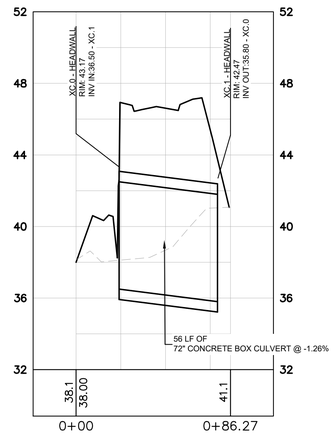


XA.0 TO XA.2 - POND 1 OCS
HORIZONTAL: 1"=40
VERTICAL: 1"=4



XB.0 TO XB.1
HORIZONTAL: 1"=40
VERTICAL: 1"=4



XC1 TO XC0
HORIZONTAL: 1"=40
VERTICAL: 1"=4

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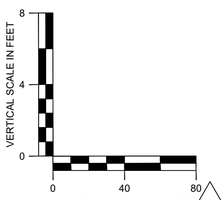
Know what's **below.**
Call before you dig.



5

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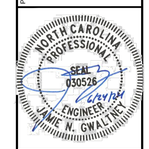
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41



DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM SEWER PROFILES

SHEET NUMBER
C3-57

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-50 - STORM SEWER PROFILES.dwg C3-57 STORM SEWER PROFILES Jan 29, 2025 10:50am by: mike.fritz

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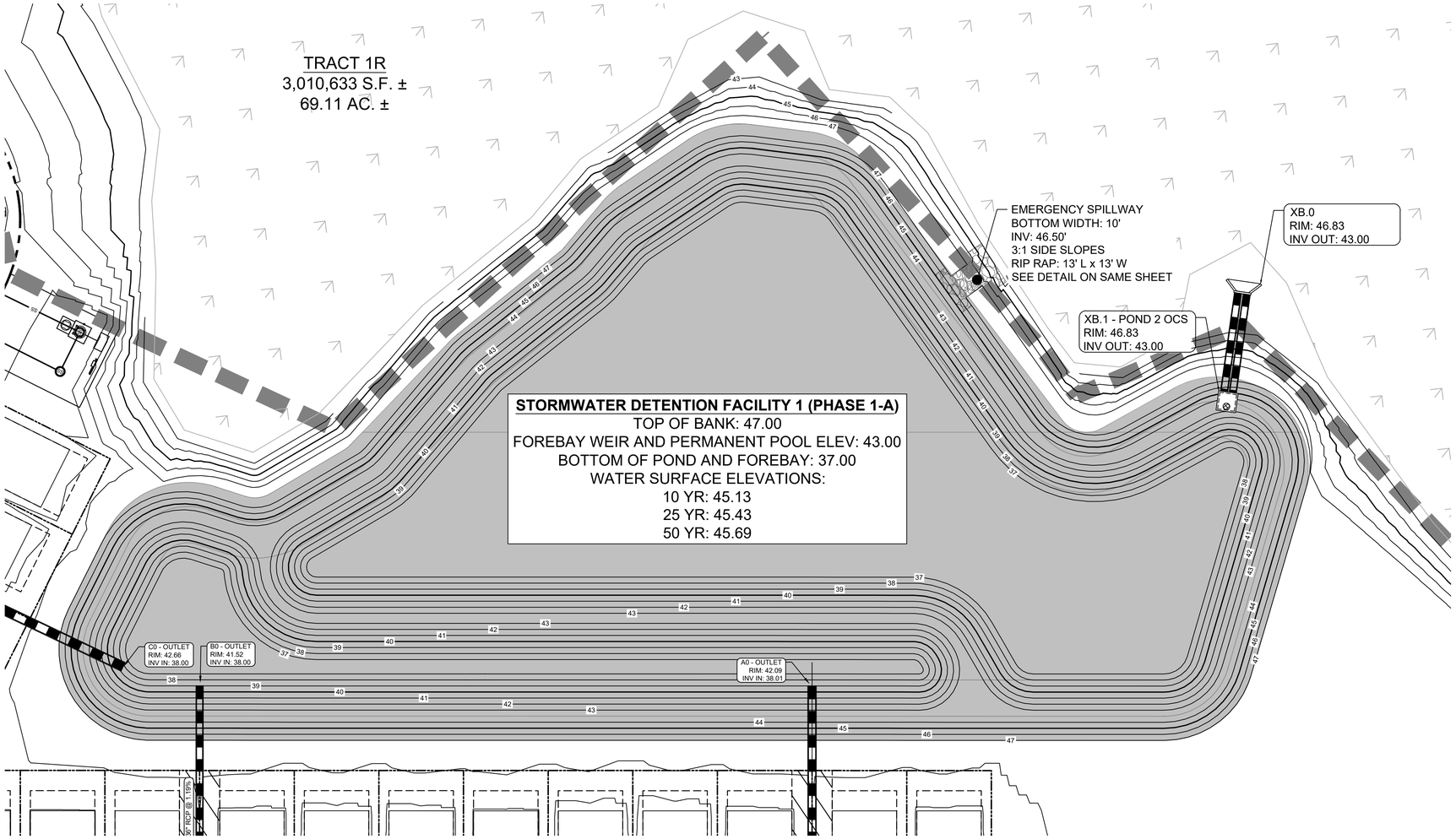
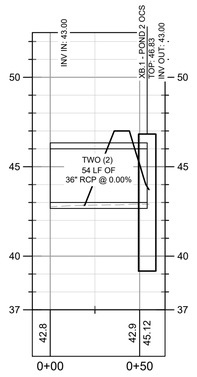
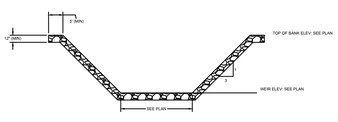
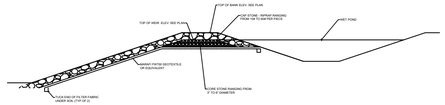




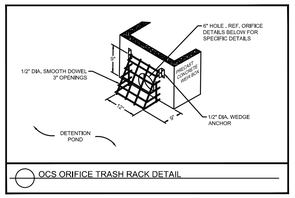
PROFILE VIEW
XB.0 TO XB.1
1" = 40' HORZ.
1" = 4' VERT.



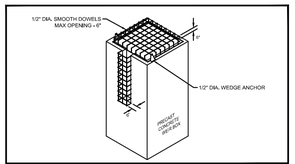
WEIR CROSS SECTION
N.T.S.



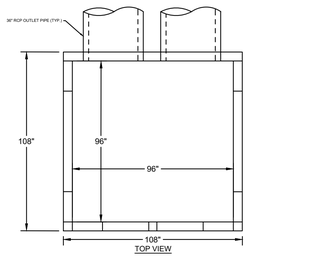
OUTFALL CONTROL WEIR DETAIL
N.T.S.



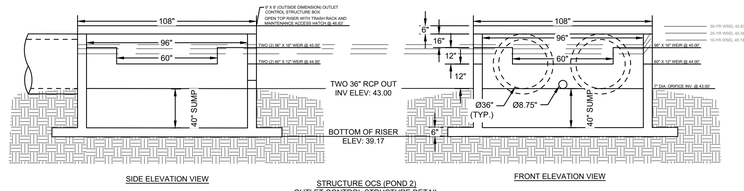
OCS ORIFICE TRASH RACK DETAIL



OCS TRASH RACK DETAIL



TOP VIEW



SIDE ELEVATION VIEW

STRUCTURE OCS (POND 2)
OUTLET CONTROL STRUCTURE DETAIL
(N.T.S.)

FRONT ELEVATION VIEW

GRADING LEGEND:

950	EXISTING MAJOR CONTOUR
948	EXISTING MINOR CONTOUR
945	PROPOSED MAJOR CONTOUR
944	PROPOSED MINOR CONTOUR

Know what's **below.**
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GRAPHIC SCALE IN FEET
0 15 30 60

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: (910)-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY
6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORMWATER MANAGEMENT PLAN - POND 1

SHEET NUMBER
C3-80

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-80 - STORMWATER MANAGEMENT PLAN.dwg C3-80 STORMWATER MANAGEMENT PLAN Jan 29, 2025 10:52am by: mike.fritz

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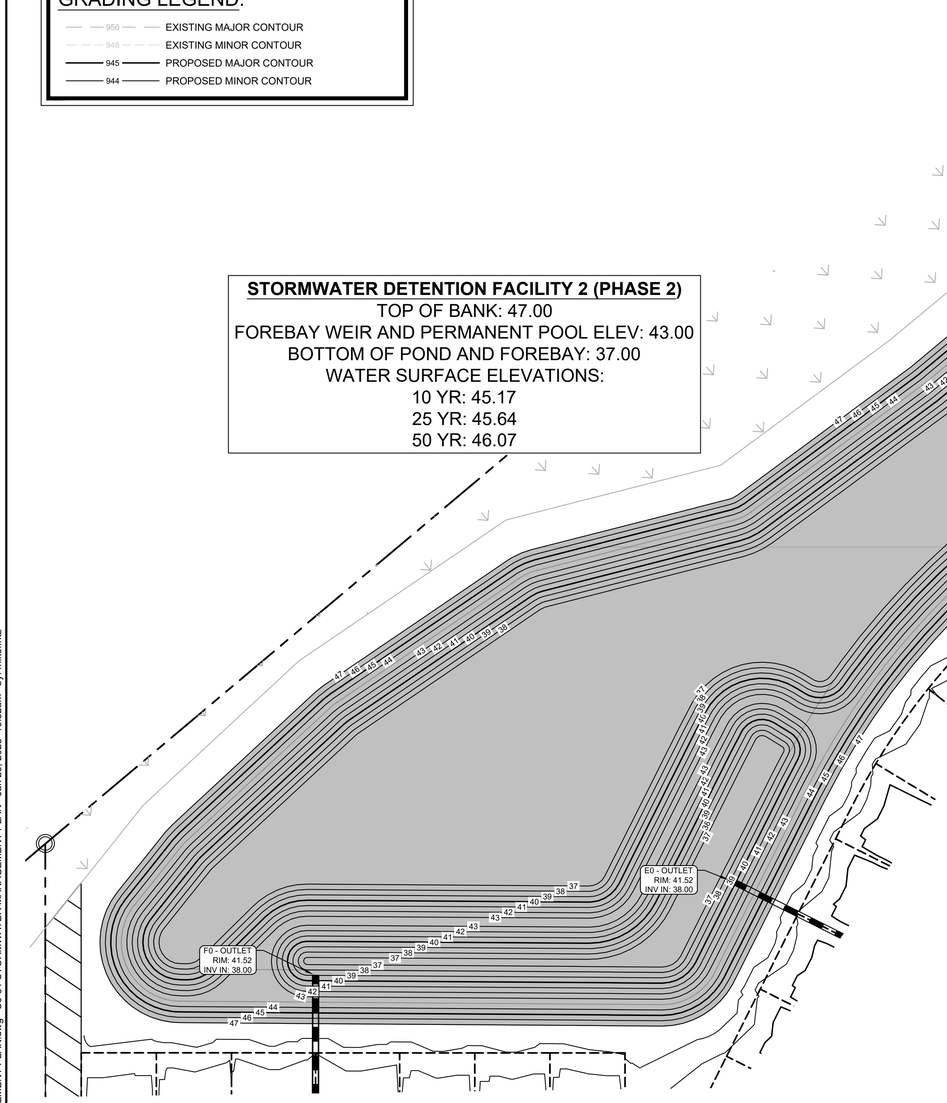
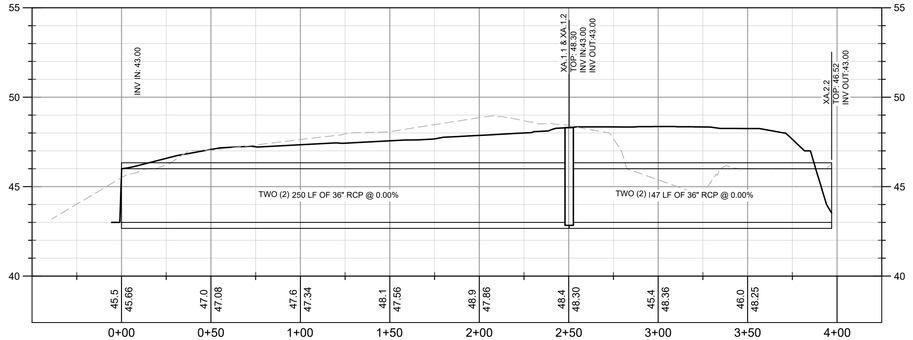
GRADING LEGEND:

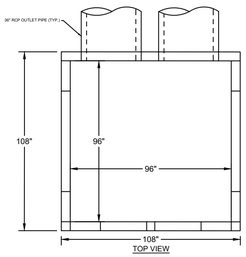
- 950 — EXISTING MAJOR CONTOUR
- 948 — EXISTING MINOR CONTOUR
- 945 — PROPOSED MAJOR CONTOUR
- 944 — PROPOSED MINOR CONTOUR

STORMWATER DETENTION FACILITY 2 (PHASE 2)
TOP OF BANK: 47.00
FOREBAY WEIR AND PERMANENT POOL ELEV: 43.00
BOTTOM OF POND AND FOREBAY: 37.00
WATER SURFACE ELEVATIONS:
10 YR: 45.17
25 YR: 45.64
50 YR: 46.07

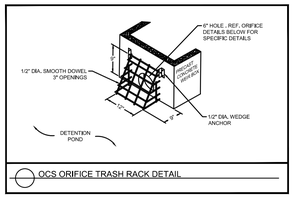




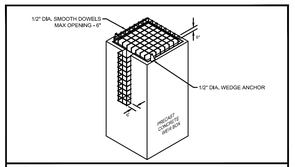
PROFILE VIEW
XA.0 TO XA.2 - POND 1 OCS
1" = 40' HORZ.
1" = 4' VERT.



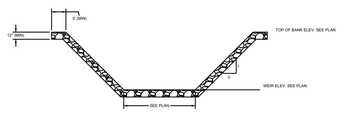
TOP VIEW



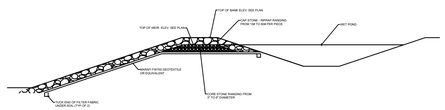
OCS ORIFICE TRASH RACK DETAIL



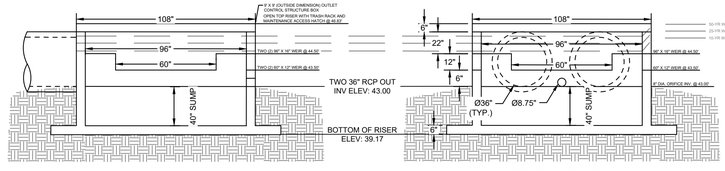
OCS TRASH RACK DETAIL



WEIR CROSS SECTION
N.T.S.



OUTFALL CONTROL WEIR DETAIL
N.T.S.



SIDE ELEVATION VIEW

STRUCTURE OCS (POND 1)
OUTLET CONTROL STRUCTURE DETAIL
(N.T.S.)

FRONT ELEVATION VIEW

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

GRAPHIC SCALE IN FEET
0 20 40 80

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

NO.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
	ISSUANCE AND REVISION DESCRIPTIONS		

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER ANNE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORMWATER MANAGEMENT PLAN - POND 2

SHEET NUMBER
C3-81

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C3-80 - STORMWATER MANAGEMENT PLAN.dwg C3-81 STORMWATER MANAGEMENT PLAN Jan 29, 2025 10:52am by: mike.fritz

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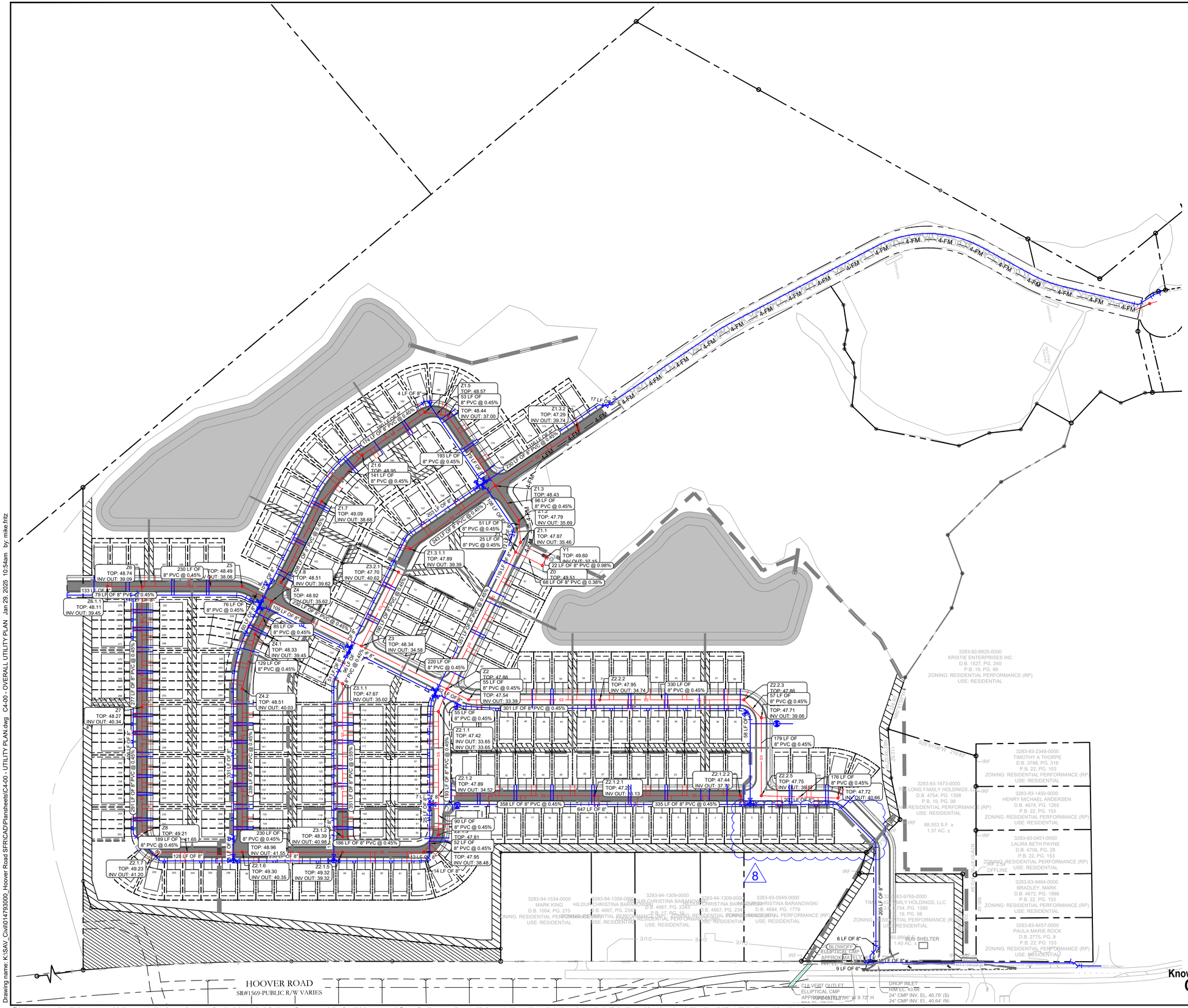

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/18/2024	MRF
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4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PREPARED BY

Kimley»Horn

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25 BULL ST, SUITE 400
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PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
OVERALL UTILITY PLAN

SHEET NUMBER
C4-00

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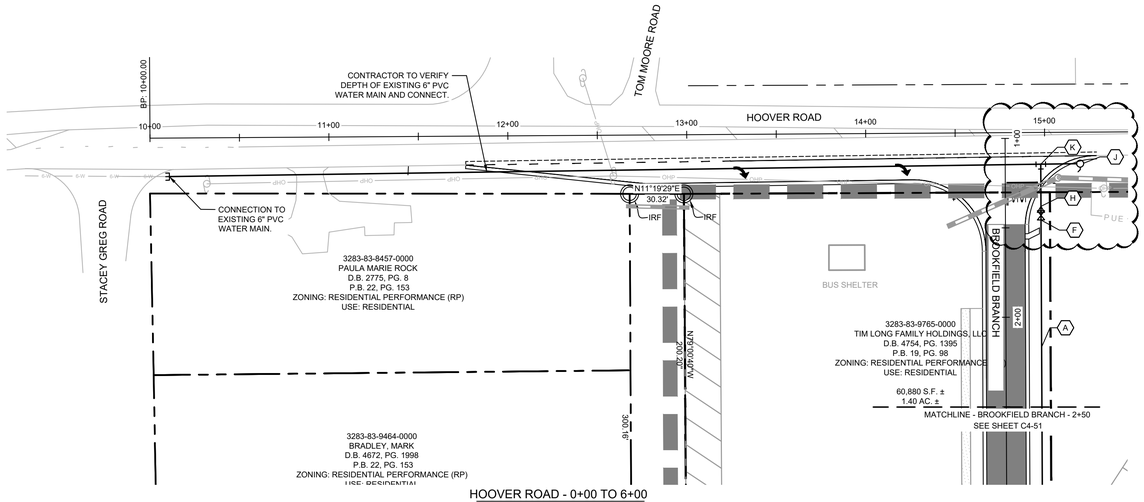
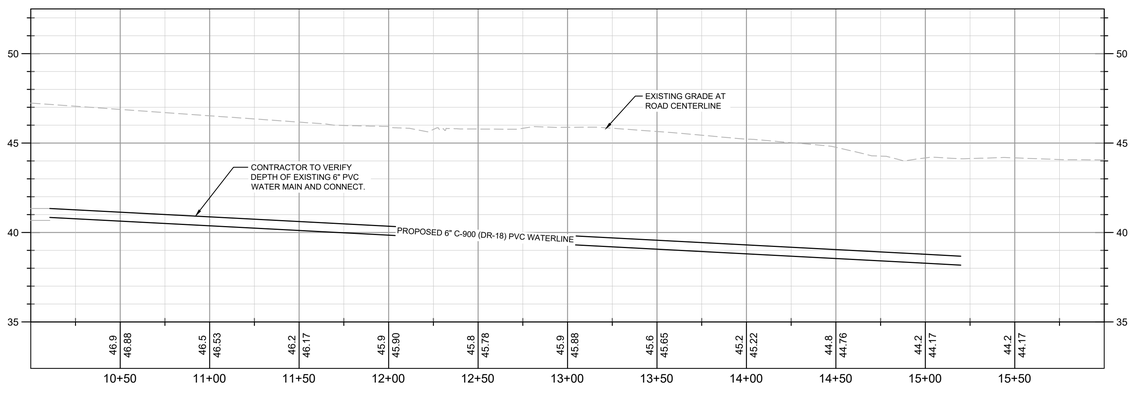


HOOVER ROAD - 0+00 TO 6+00
PLAN VIEW



PROFILE VIEW
HOOVER ROAD
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR SANITARY SEWER AND WATER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
3. ALL SANITARY SEWER PIPE SHALL BE INSTALLED PER PLURIS, LLC STANDARDS AND SPECIFICATIONS.
4. ALL WATER PIPE SHALL BE INSTALLED PER PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
5. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
6. ALL SERVICES LINES TAPS TO MANHOLE MUST CONNECT BENEATH THE MANHOLE CONE SEAM. ALL MANHOLE ENTRIES MUST BE WATER TIGHT, GROUTED, AND EMPTY OUT INTO THE TROUGH STREAM
7. ALL MANHOLES MUST HAVE RAIN AND DUST COVERS INSIDE EACH MANHOLE LIDS.

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

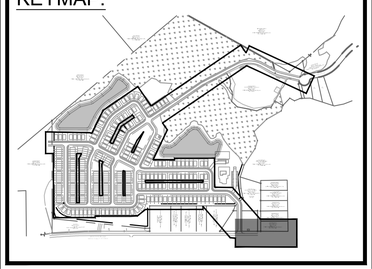
UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

A	8" C-900 (DR-18) PVC WATER MAIN
B	11.25° BEND
C	22.5° BEND
D	45° BEND
E	8" X 8" X 8" MJ TEE
F	8" MJ GATE VALVE
G	FIRE HYDRANT ASSEMBLY
H	8" X 6" REDUCER
I	8" PLUG
J	BLOWOFF ASSEMBLY
K	6" X 6" X 6" MJ TEE

KEYMAP:



NORTH

Know what's below. Call before you dig.

VERTICAL SCALE IN FEET: 8, 4, 0
HORIZONTAL SCALE IN FEET: 0, 40, 80

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LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
8	MRF	08/16/2024
7	TCS	06/24/2024
6	CDJ	06/03/2024
5	MRF	03/06/2024
4	MRF	02/12/2024
3	MRF	12/18/2023
2	MRF	12/08/2023
1	BY	DATE

1 SSUANCE AND REVISION DESCRIPTIONS
2 REVISED PER COUNTY COMMENTS DATED 11/07/2023
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7 REVISED PER NC DEQ PRIVATE WATER COMMENTS
8 REVISED PHASE BOUNDARY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-50

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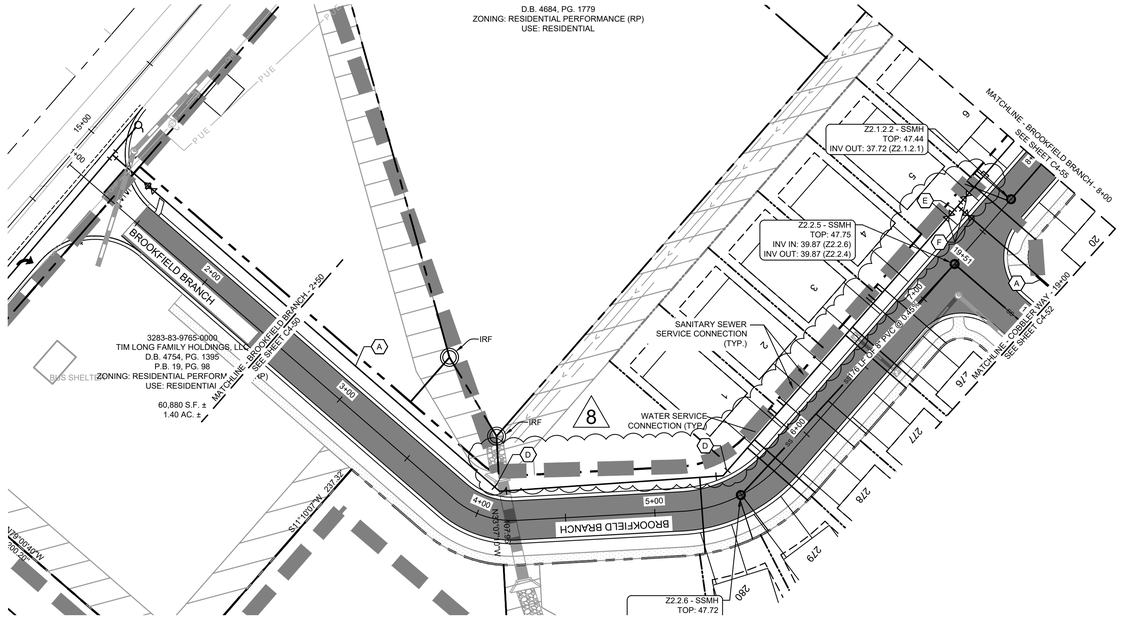
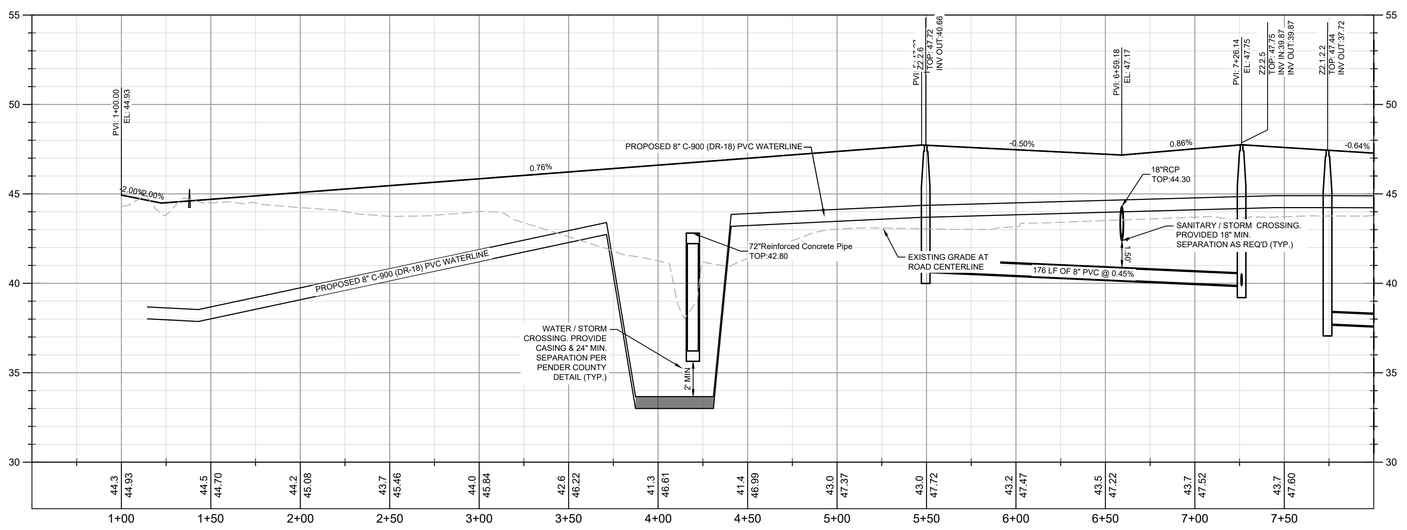
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-50 UTILITY PLANS AND PROFILES Jan 29, 2025 10:56am by: mike.fritz



BROOKFIELD BRANCH - 7+00 TO 12+50
PLAN VIEW



PROFILE VIEW
STREET A
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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7. ALL MANHOLES MUST HAVE RAIN AND DUST COVERS INSIDE EACH MANHOLE LIDS.

PROFILE LINE LEGEND:

PROPOSED GRADE LINE

EXISTING GRADE LINE

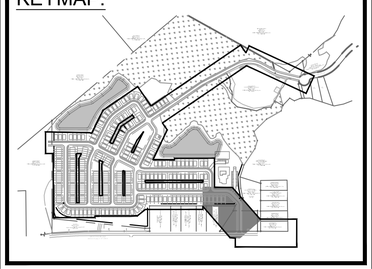
UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

A	8" C-900 (DR-18) PVC WATER MAIN
B	11.25° BEND
C	22.5° BEND
D	45° BEND
E	8" X 8" X 8" MJ TEE
F	8" MJ GATE VALVE
G	FIRE HYDRANT ASSEMBLY
H	8" X 6" REDUCER
I	8" PLUG
J	BLOWOFF ASSEMBLY
K	6" X 6" X 6" MJ TEE

KEYMAP:



NORTH

Know what's **below.**
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VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
6	06/03/2024	CDJ
5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
2	12/08/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	
	REVISED PHASE BOUNDARY	
	REVISED PER NC DEQ PRIVATE WATER COMMENTS	
	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	
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	REVISED PER COUNTY COMMENTS DATED 01/22/2024	
	REVISED PER COUNTY COMMENTS DATED 12/11/2023	
	REVISED PER COUNTY COMMENTS DATED 11/07/2023	

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-51

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-51 UTILITY PLANS AND PROFILES Jan 29, 2025 10:56am by: miles.fritz

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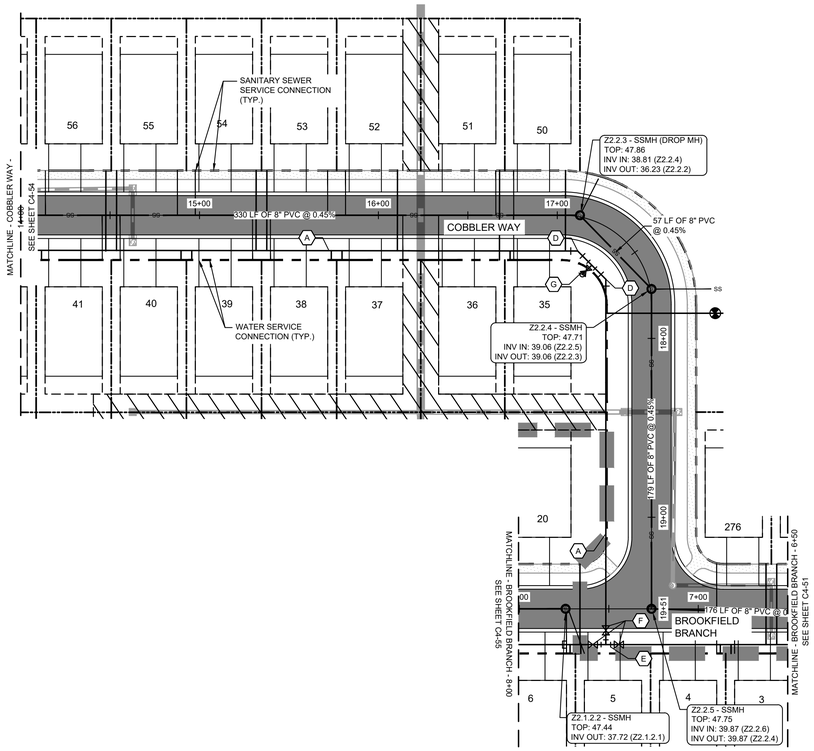
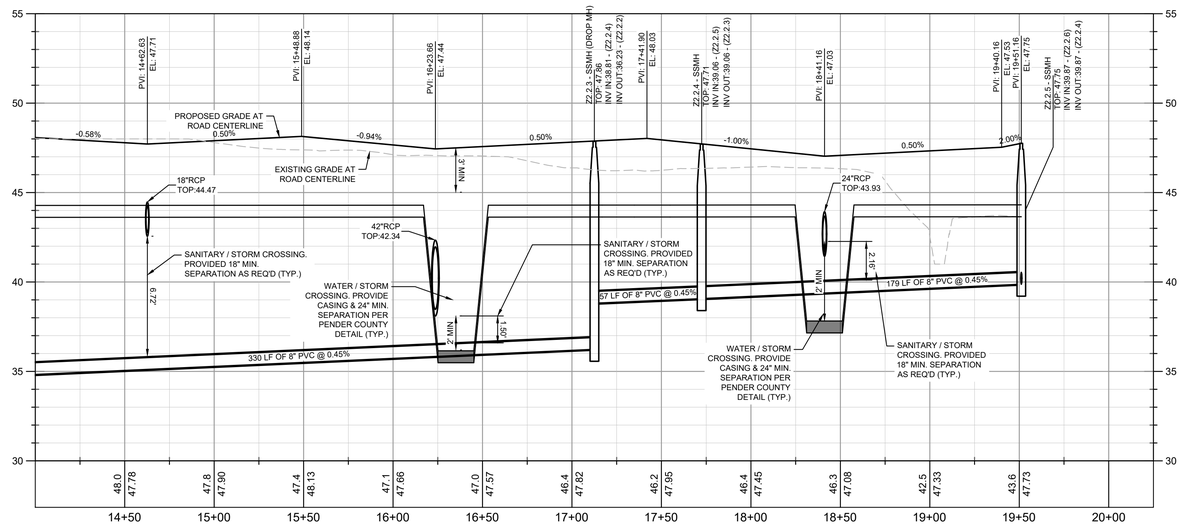


COBBLER WAY - 14+00 TO 19+51
PLAN VIEW



PROFILE VIEW
STREET B
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

UTILITY LEGEND:

- W — PROPOSED WATER LINE
- SS — PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
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- WATER CONNECTIONS AND BENDS

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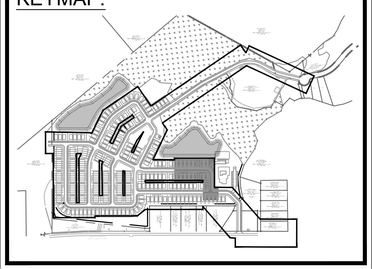
KEYMAP:



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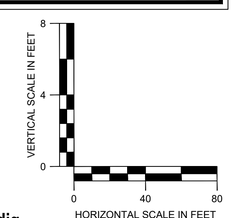

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
1	MRF	08/16/2024
2	TCS	06/24/2024
3	CDJ	06/03/2024
4	MRF	02/12/2024
5	MRF	12/18/2023
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8	MRF	06/05/2024

1 ISSUANCE AND REVISION DESCRIPTIONS
2 REVISED PER COUNTY COMMENTS DATED 11/07/2023
3 REVISED PER COUNTY COMMENTS DATED 12/11/2023
4 REVISED PER COUNTY COMMENTS DATED 01/22/2024
5 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
6 REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
7 REVISED PER NC DEQ PRIVATE WATER COMMENTS
8 REVISED PHASE BOUNDARY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-93-1673-0000, 3283-94-9377-0000
3283-83-9765-0000, 3283-93-1673-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY
6/24/24

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-52

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-52 UTILITY PLANS AND PROFILES Jan 29, 2025 10:56am by: mike.fritz

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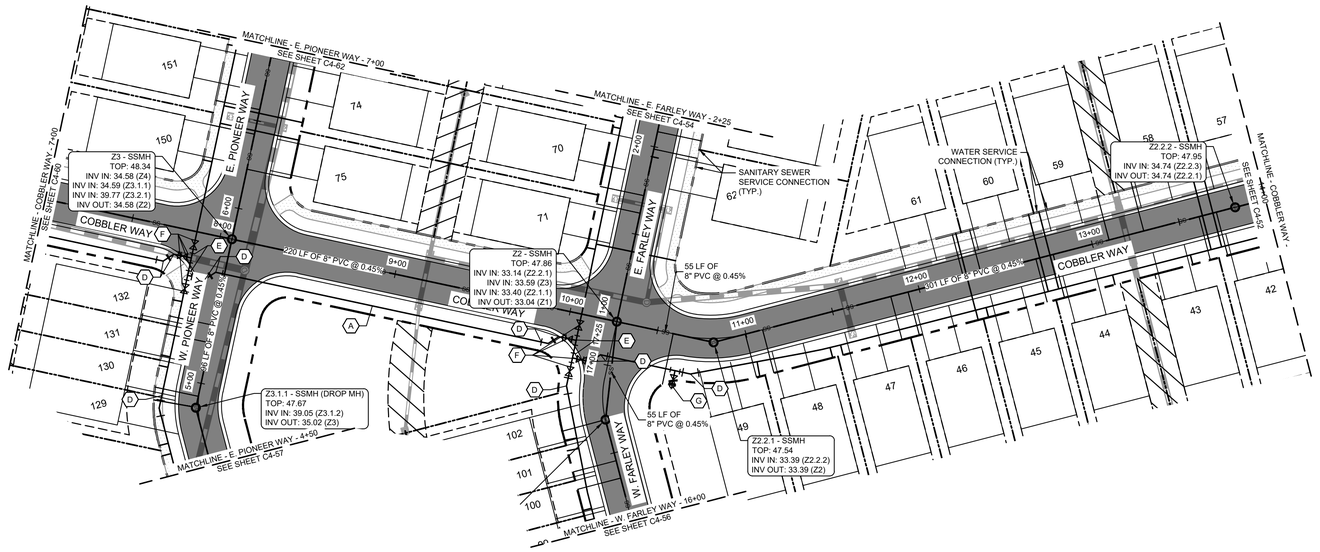
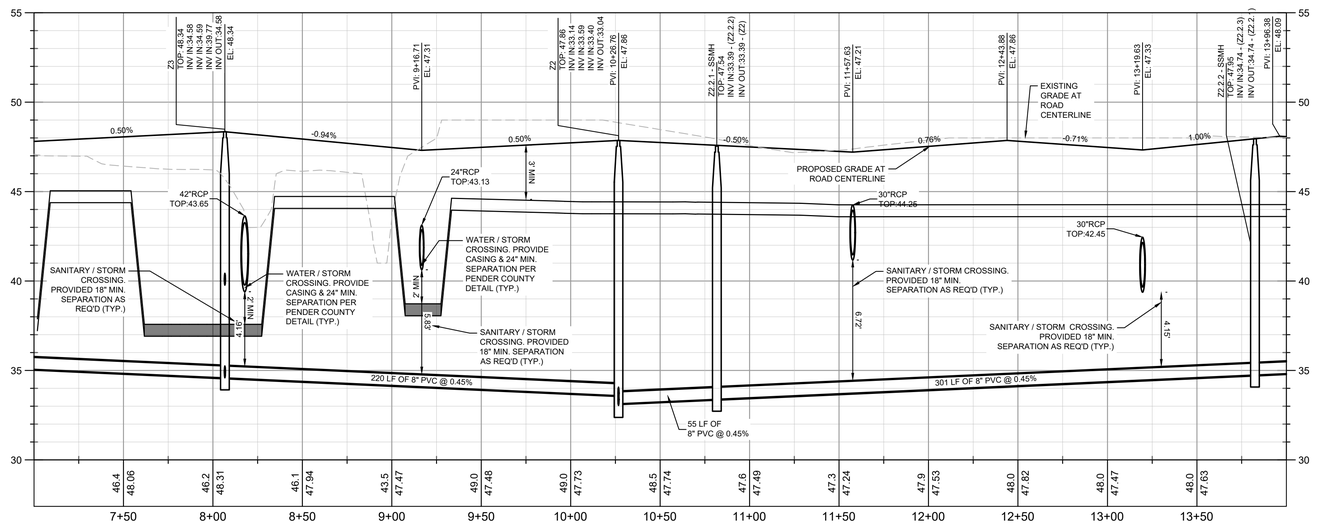


COBBLER WAY - 7+00 TO 14+00
PLAN VIEW



PROFILE VIEW
STREET B
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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- EXISTING GRADE LINE

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- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

- (A) 8" C-900 (DR-18) PVC WATER MAIN
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- (I) 8" PLUG
- (J) BLOWOFF ASSEMBLY
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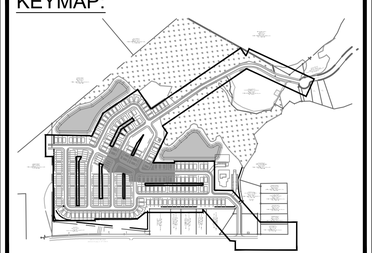
KEYMAP:



NORTH

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HORIZONTAL SCALE IN FEET: 0, 40, 80

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LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: (910-507-2115

No.	REVISIONS	BY	DATE
8	REVISED PHASE BOUNDARY	MRF	08/16/2024
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	TCS	06/24/2024
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	CDJ	06/03/2024
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	MRF	03/06/2024
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	MRF	02/12/2024
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	MRF	12/18/2023
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	MRF	12/08/2023
No.	SSUANCE AND REVISION DESCRIPTIONS	BY	DATE

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-53

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-53 UTILITY PLANS AND PROFILES Jan 29, 2025 10:56am by: mike.fritz

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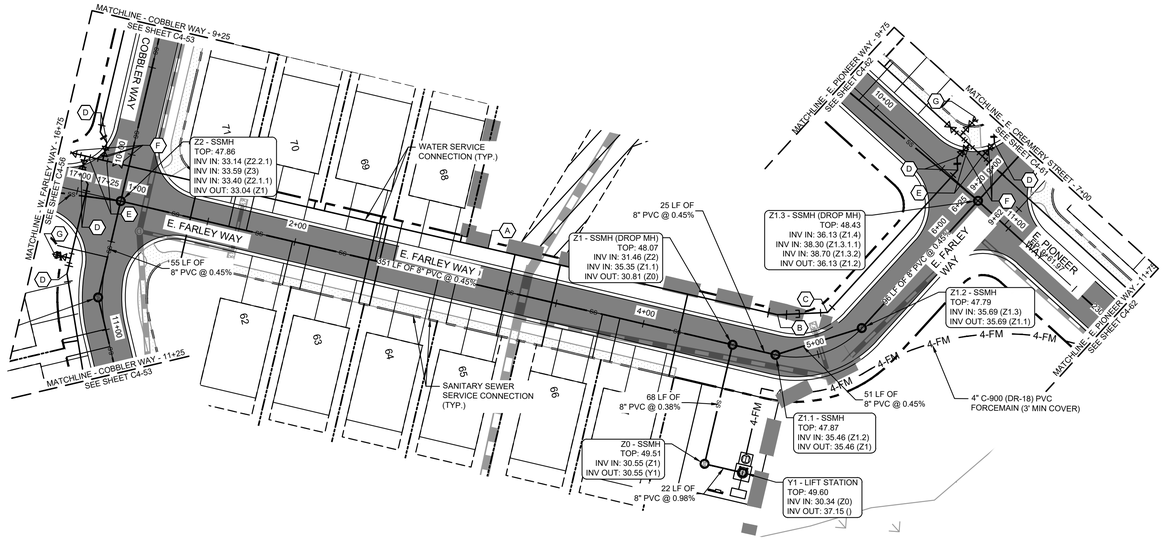
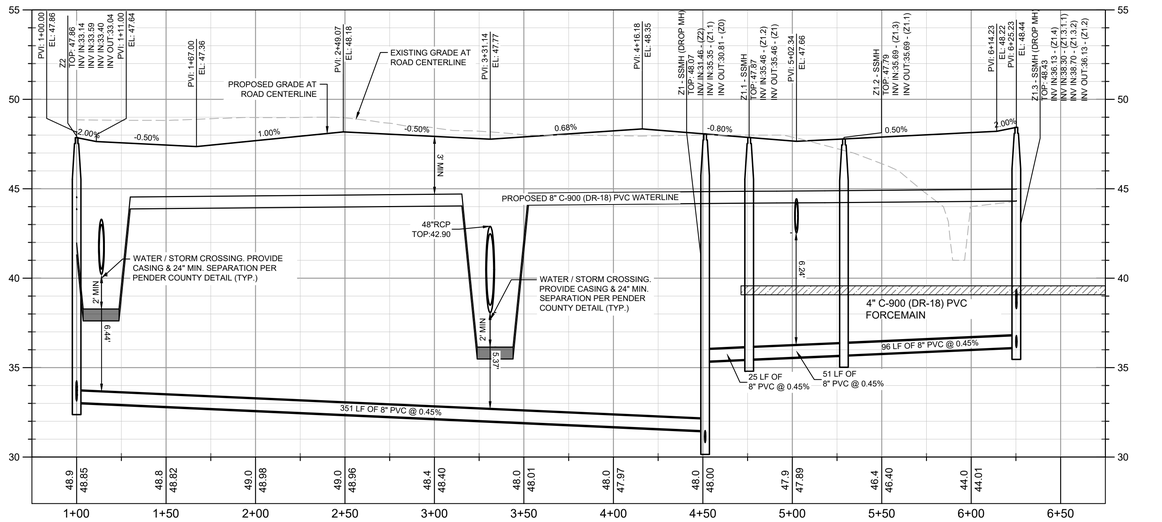


E. FARLEY WAY - 1+00 TO 6+26
PLAN VIEW



PROFILE VIEW
STREET C
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1" = 4' VERT.

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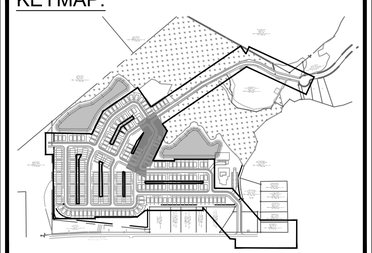

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VERTICAL SCALE IN FEET: 0, 4, 8
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PROJECT
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HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-54

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-54 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: mike.fritz

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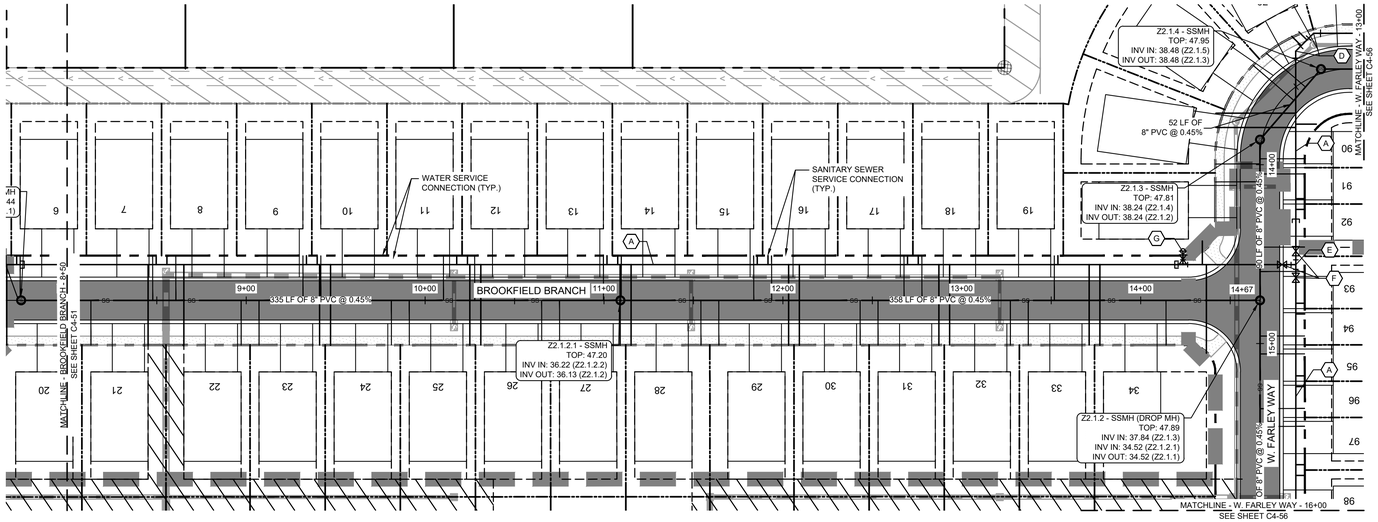
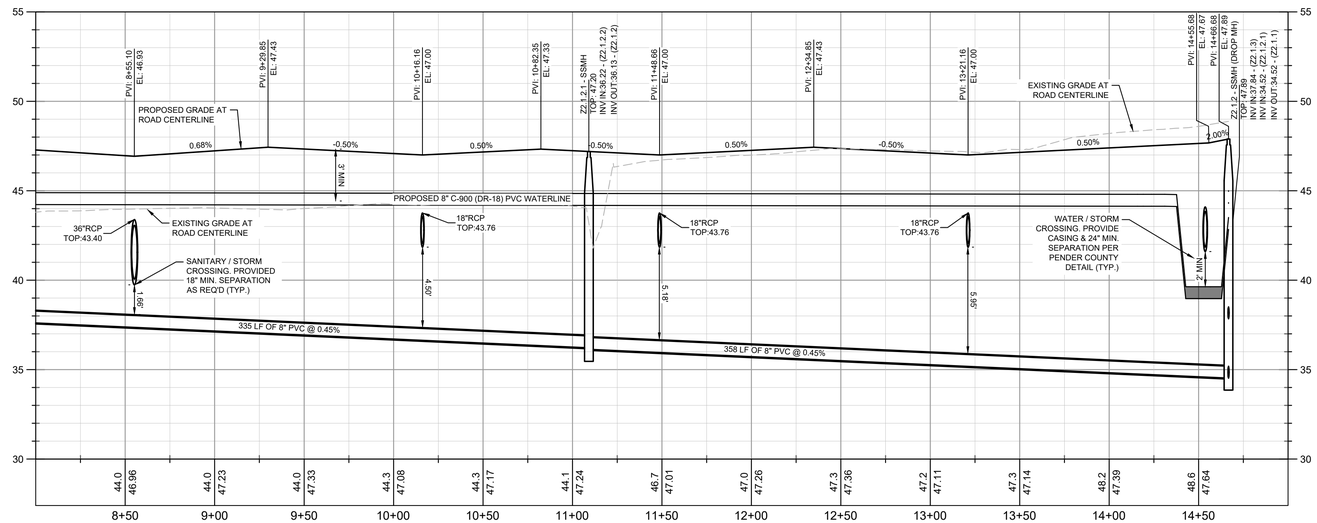


BROOKFIELD BRANCH - 8+00 TO 14+67
PLAN VIEW



PROFILE VIEW
STREET A
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PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

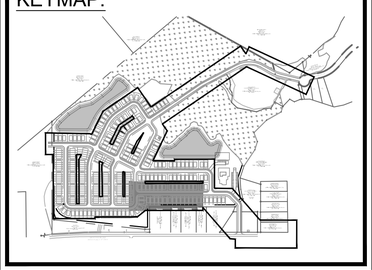
UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

- (A) 8" C-900 (DR-18) PVC WATER MAIN
- (B) 11.25° BEND
- (C) 22.5° BEND
- (D) 45° BEND
- (E) 8" X 8" X 8" MJ TEE
- (F) 8" MJ GATE VALVE
- (G) FIRE HYDRANT ASSEMBLY
- (H) 8" X 6" REDUCER
- (I) 8" PLUG
- (J) BLOWOFF ASSEMBLY
- (K) 6" X 6" MJ TEE

KEYMAP:



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

VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	REVISION	BY	DATE
8	REVISED PHASE BOUNDARY	MRF	08/16/2024
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	TCS	06/24/2024
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	CDJ	06/03/2024
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	MRF	03/06/2024
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	MRF	02/12/2024
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	MRF	12/18/2023
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	MRF	12/08/2023
No.	ISSUANCE AND REVISION DESCRIPTIONS	BY	DATE

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-55

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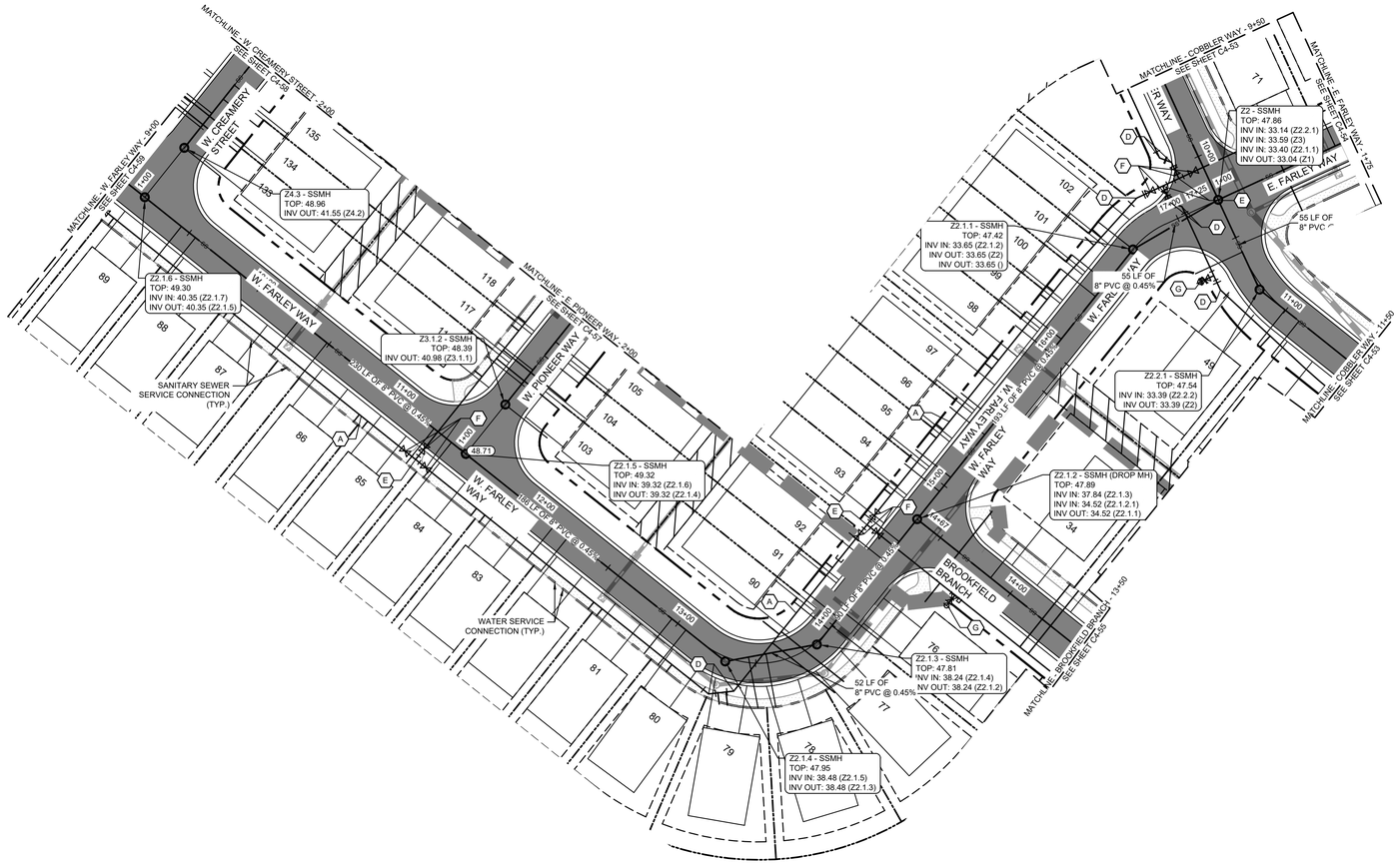
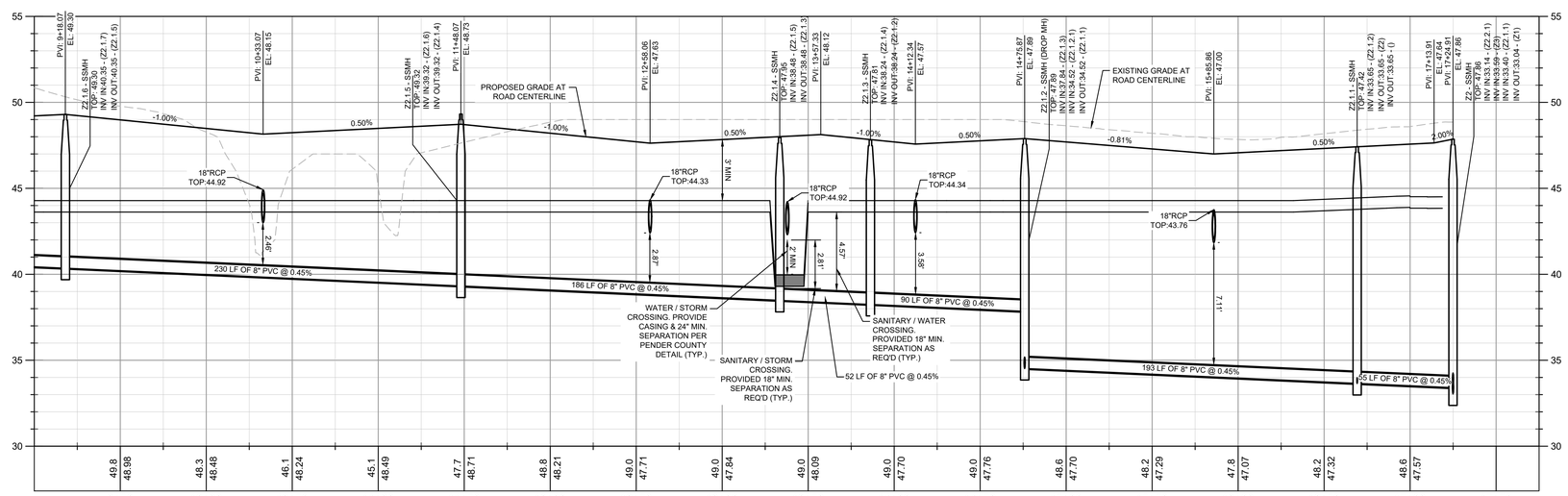
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-55 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: miles.fritz



W. FARLEY WAY - 9+00 TO 17+25
PLAN VIEW



PROFILE VIEW
STREET F
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR SANITARY SEWER AND WATER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
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PROFILE LINE LEGEND:

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- EXISTING GRADE LINE

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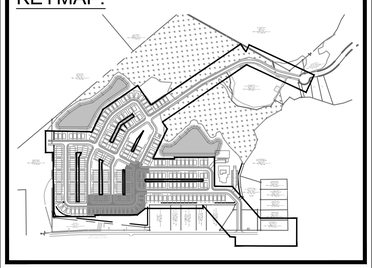

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VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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PHONE: (910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 NATALIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-56

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-56 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: mike.fritz

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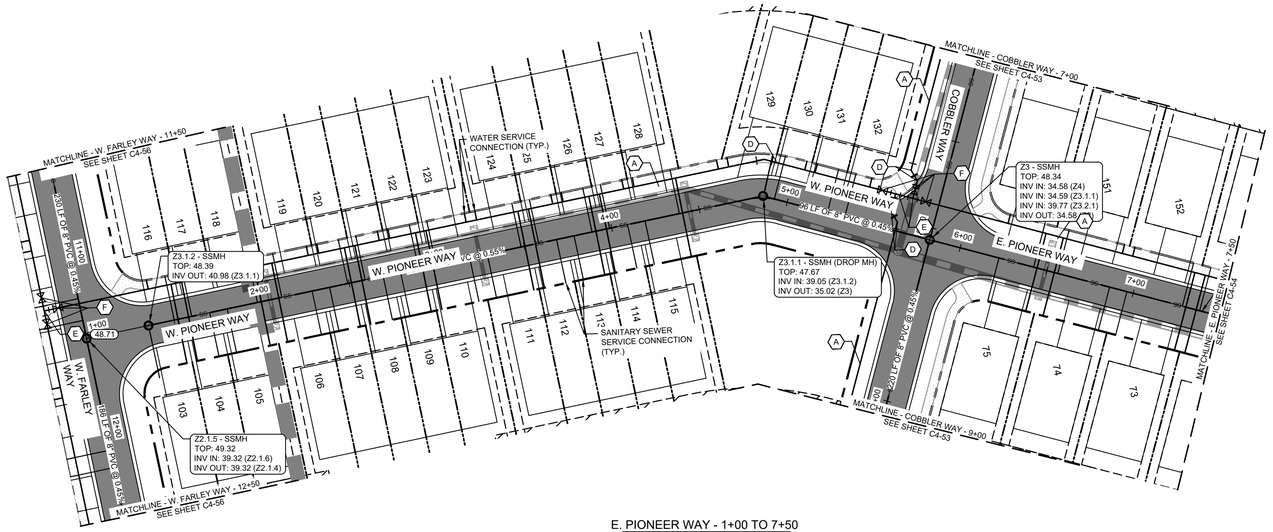
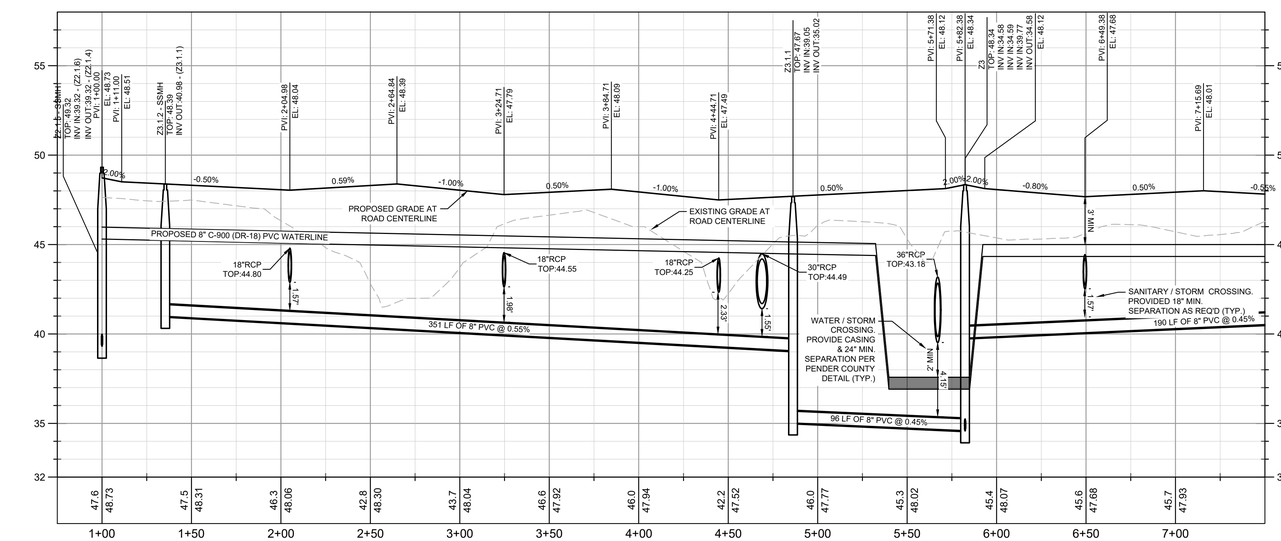


E. PIONEER WAY - 1+00 TO 7+50
PLAN VIEW



PROFILE VIEW
STREET D
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1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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PROFILE LINE LEGEND:

PROPOSED GRADE LINE

EXISTING GRADE LINE

UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
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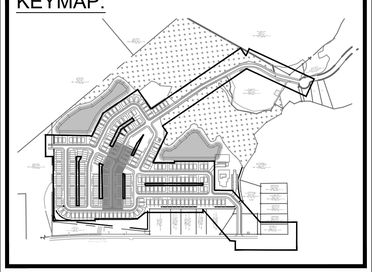
KEYMAP:



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VERTICAL SCALE IN FEET: 0, 4, 8
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BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
6	06/03/2024	CDJ
5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
2	12/08/2023	MRF
1	SSUANCE AND REVISION DESCRIPTIONS	
	REVISED PHASE BOUNDARY	
	REVISED PER NC DEQ PRIVATE WATER COMMENTS	
	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	
	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	
	REVISED PER COUNTY COMMENTS DATED 01/22/2024	
	REVISED PER COUNTY COMMENTS DATED 12/11/2023	
	REVISED PER COUNTY COMMENTS DATED 11/07/2023	

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-57

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-57 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: mike.fritz

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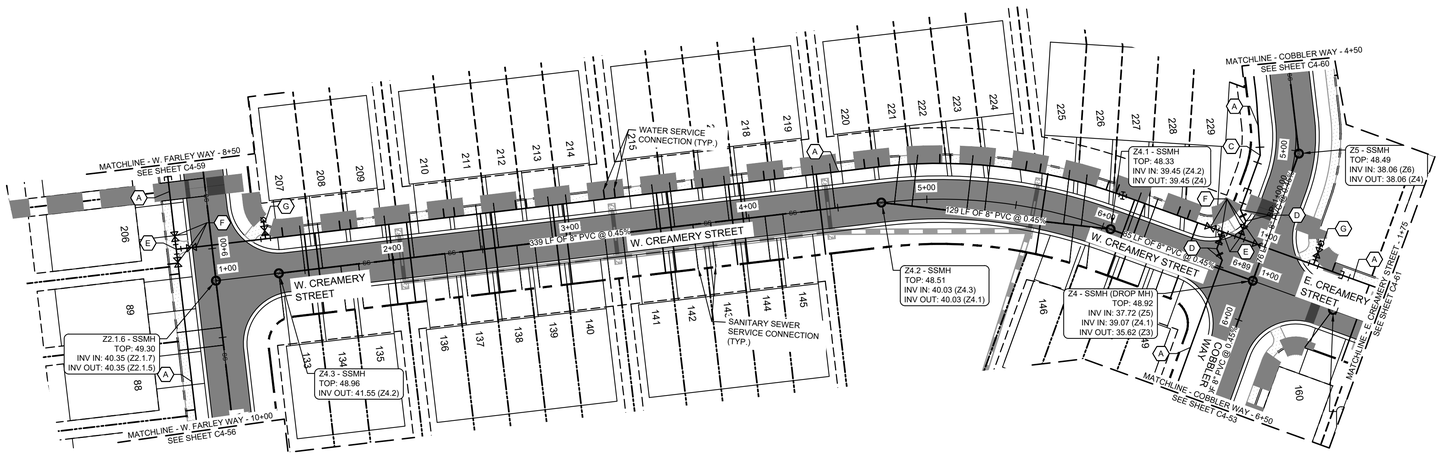
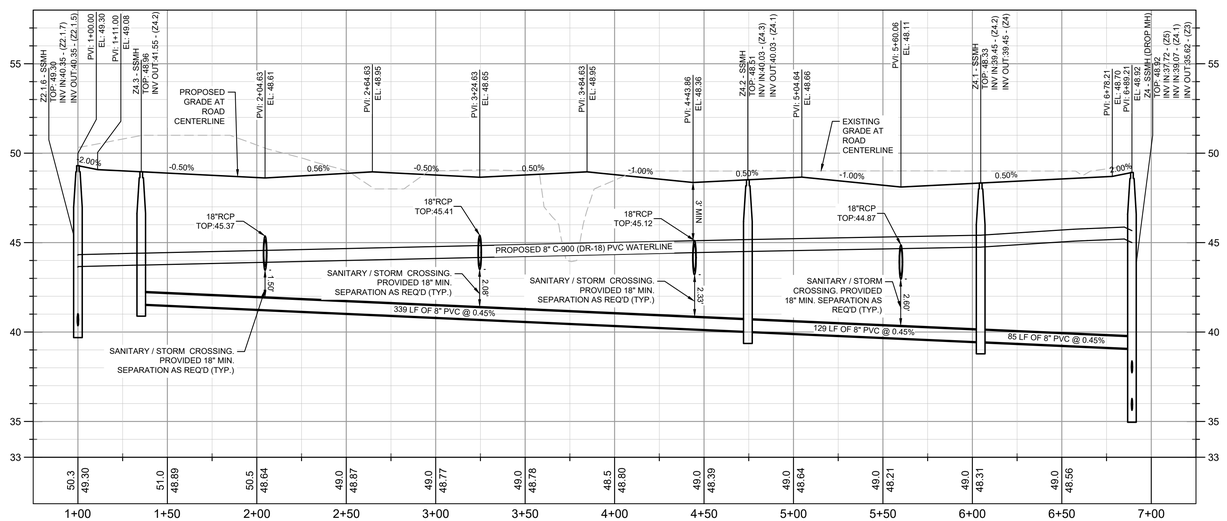


W. CREAMERY STREET - 1+00 TO 6+89
PLAN VIEW



PROFILE VIEW
STREET G
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

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PROFILE LINE LEGEND:

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EXISTING GRADE LINE

UTILITY LEGEND:

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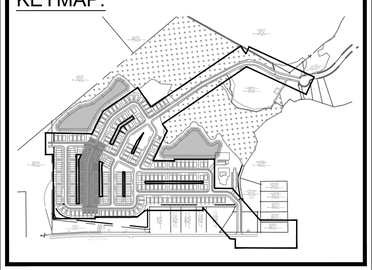

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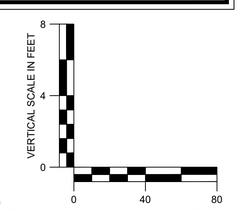

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1038 HOOVER ROAD,
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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
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DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-58

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-58 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: mike.fritz

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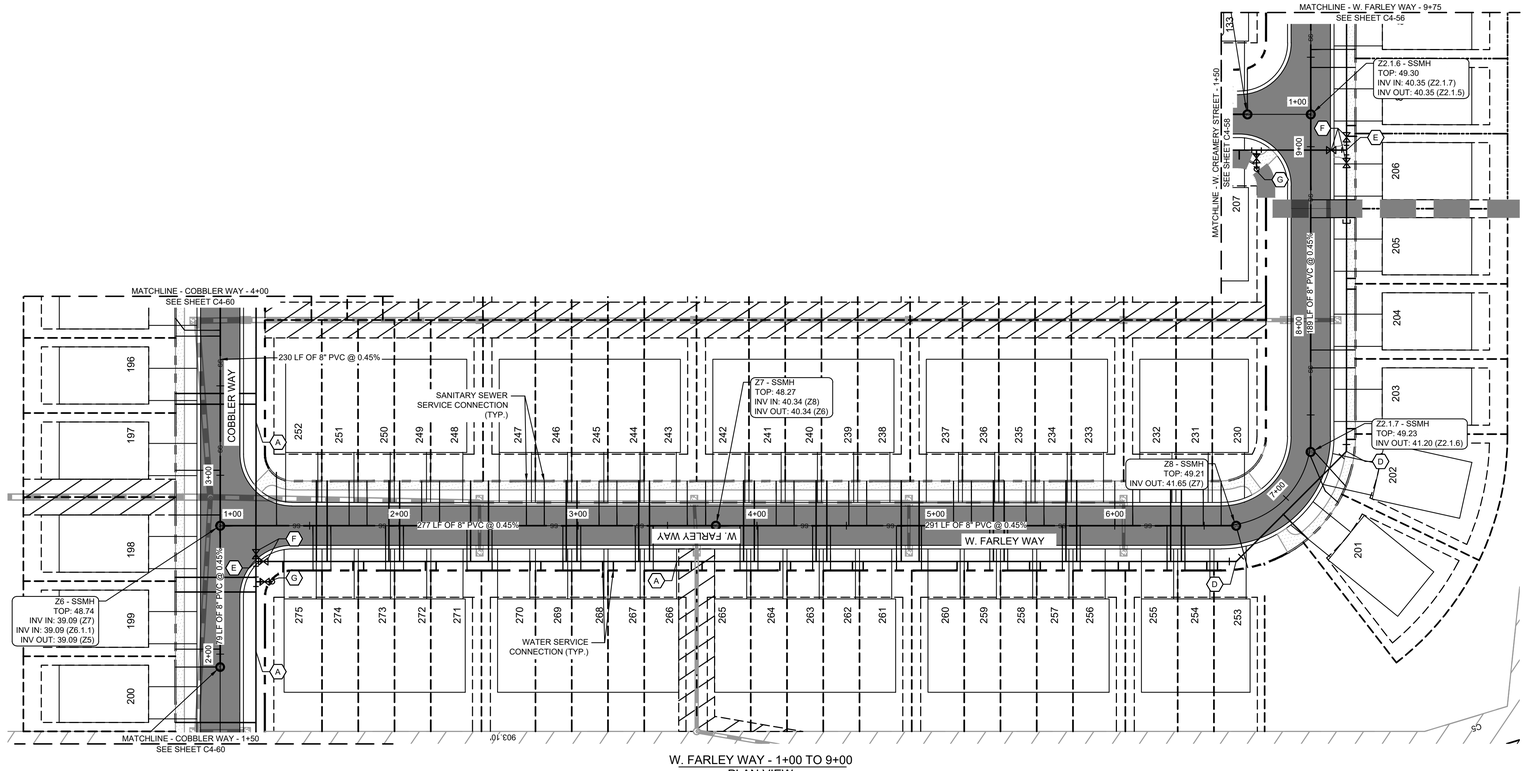
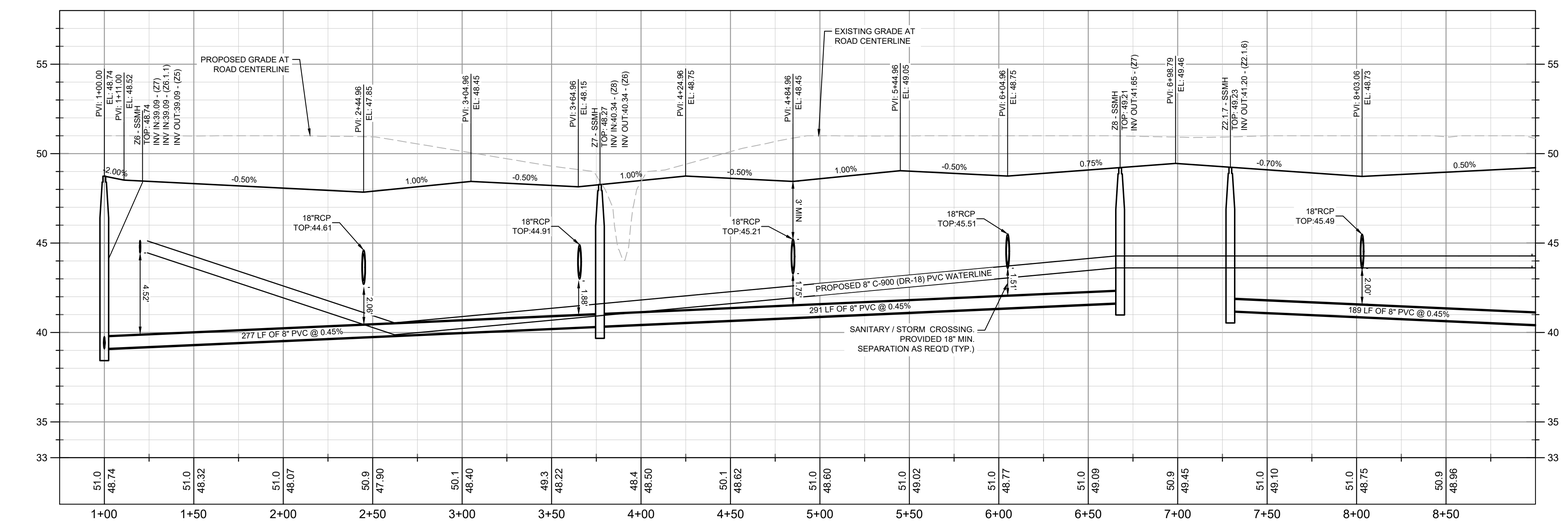


W. FARLEY WAY - 1+00 TO 9+00
PLAN VIEW



PROFILE VIEW
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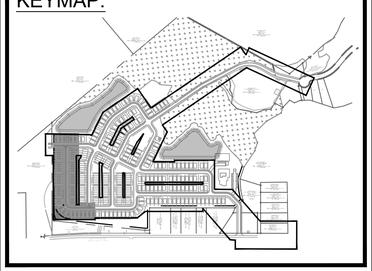
- (E) 8" X 8" X 8" MJ TEE
- (F) 8" MJ GATE VALVE
- (G) FIRE HYDRANT ASSEMBLY
- (H) 8" X 6" REDUCER
- (I) 8" PLUG
- (J) BLOWOFF ASSEMBLY
- (K) 6" X 6" X 6" MJ TEE

KEYMAP:



NORTH

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

VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	BY	DATE
8	MRF	08/16/2024
7	TCS	06/24/2024
6	CDJ	06/03/2024
5	MRF	03/06/2024
4	MRF	02/12/2024
3	MRF	12/18/2023
2	MRF	12/08/2023
No.	BY	DATE

REVISED PHASE BOUNDARY
REVISED PER NC DEQ PRIVATE WATER COMMENTS
REVISED SEWER AND LIFT STATION DETAILS
REVISED SEWER PER OWNER REVIEW
REVISED PER COUNTY COMMENTS DATED 01/22/2024
REVISED PER COUNTY COMMENTS DATED 12/11/2023
REVISED PER COUNTY COMMENTS DATED 11/07/2023
ISSUANCE AND REVISION DESCRIPTIONS

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-84-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-59

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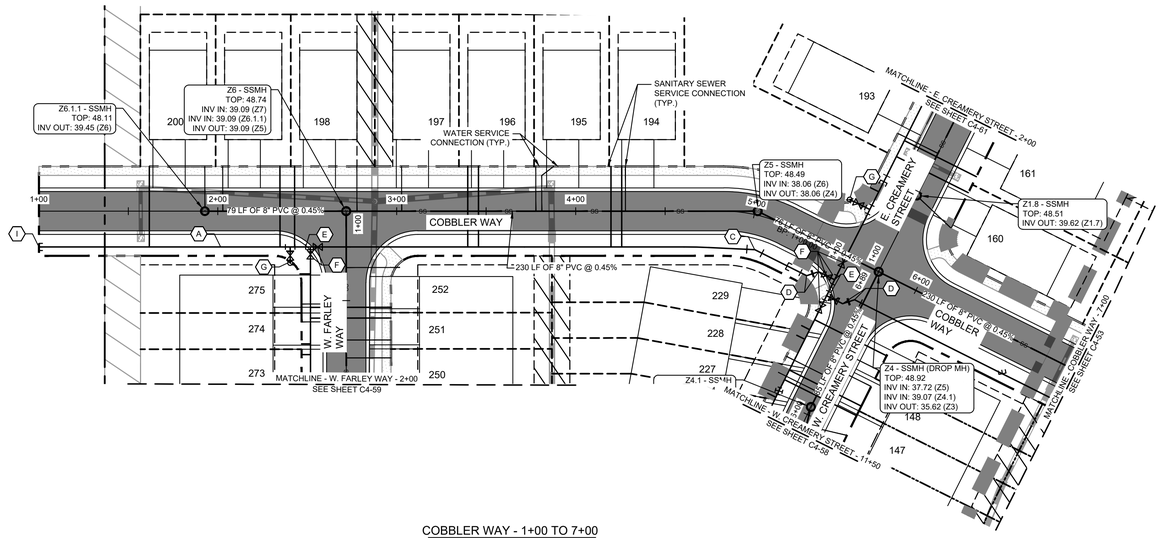
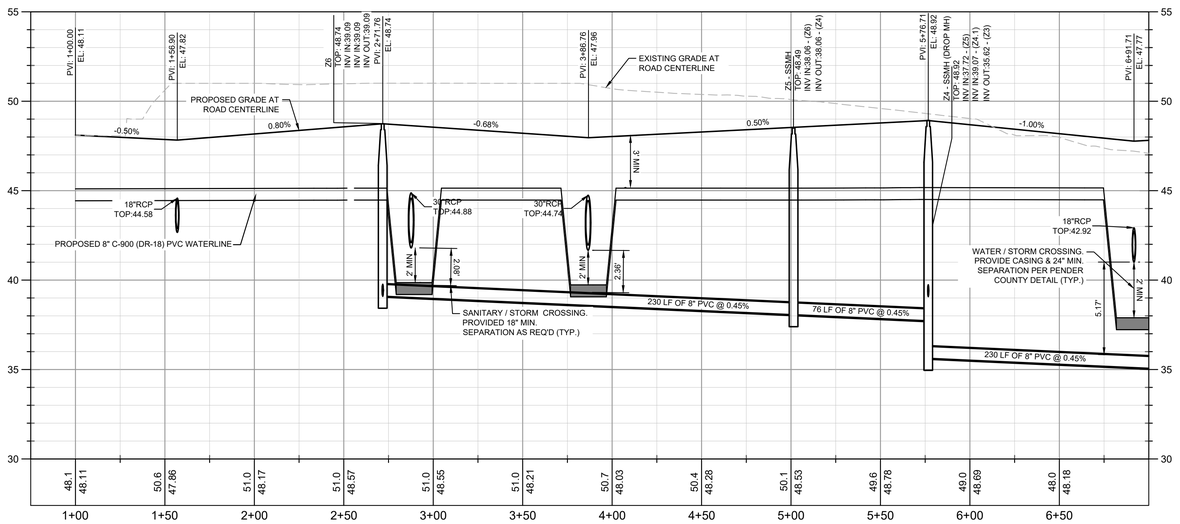
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-59 UTILITY PLANS AND PROFILES Jan 29, 2025 10:57am by: miles.fritz



COBBLER WAY - 1+00 TO 7+00
PLAN VIEW



PROFILE VIEW
STREET B
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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7. ALL MANHOLES MUST HAVE RAIN AND DUST COVERS INSIDE EACH MANHOLE LIDS.

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

- (A) 8" C-900 (DR-18) PVC WATER MAIN
- (B) 11.25° BEND
- (C) 22.5° BEND
- (D) 45° BEND
- (E) 8" X 8" X 8" MJ TEE
- (F) 8" MJ GATE VALVE
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- (H) 8" X 6" REDUCER
- (I) 8" PLUG
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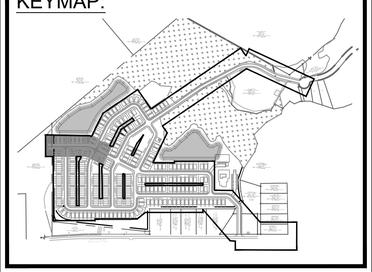
KEYMAP:



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HORIZONTAL SCALE IN FEET: 0, 40, 80

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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-60

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-60 UTILITY PLANS AND PROFILES Jan 29, 2025 10:58am by: mike.fritz

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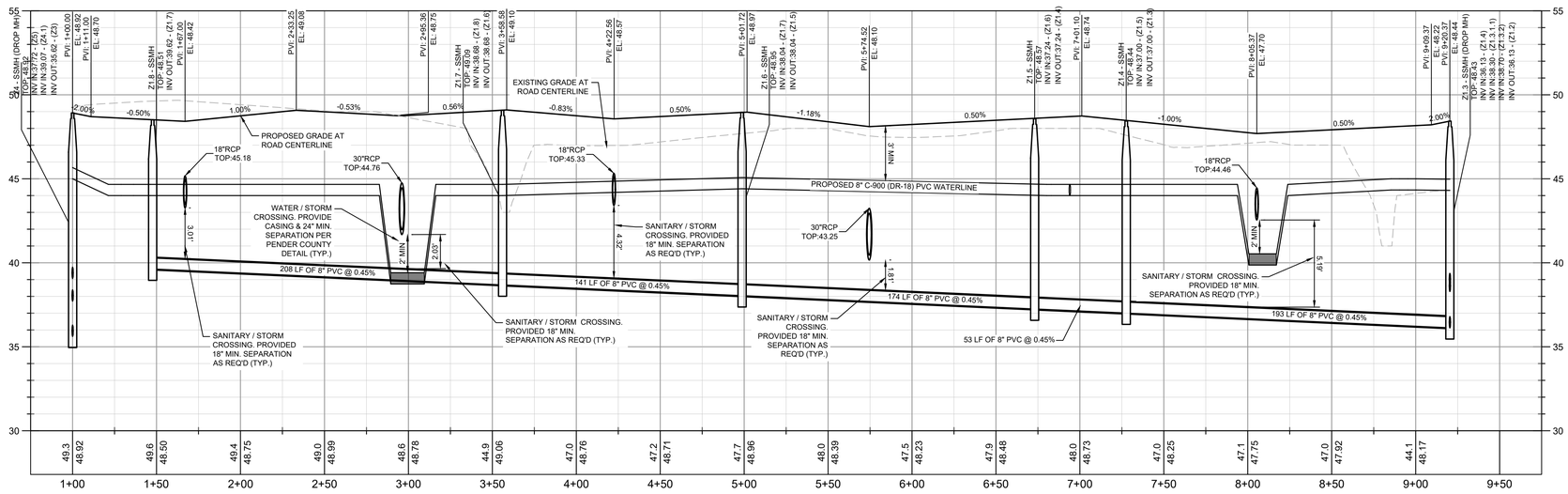
E. CREAMERY STREET - 1+00 TO 9+25
PLAN VIEW



PROFILE VIEW
STREET E
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

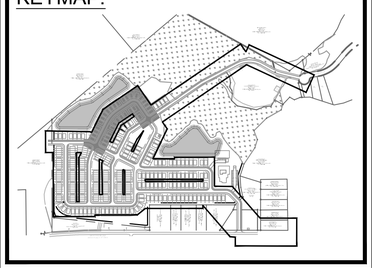
UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

A	8" C-900 (DR-18) PVC WATER MAIN
B	11.25° BEND
C	22.5° BEND
D	45° BEND
E	8" X 8" X 8" MJ TEE
F	8" MJ GATE VALVE
G	FIRE HYDRANT ASSEMBLY
H	8" X 6" REDUCER
I	8" PLUG
J	BLOWOFF ASSEMBLY
K	6" X 6" X 6" MJ TEE

KEYMAP:



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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PERMIT	08/18/2024	MRF
2	REVISED PER COUNTY COMMENTS DATED 12/08/2023	06/24/2024	TCS
3	REVISED PER COUNTY COMMENTS DATED 12/18/2023	06/03/2024	CDJ
4	REVISED PER COUNTY COMMENTS DATED 02/12/2024	03/06/2024	MRF
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	06/03/2024	MRF
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/05/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
8	REVISED PHASE BOUNDARY	08/18/2024	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. O'MALLEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-61

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-61 UTILITY PLANS AND PROFILES Jan 29, 2025 10:58am by: mike.fritz

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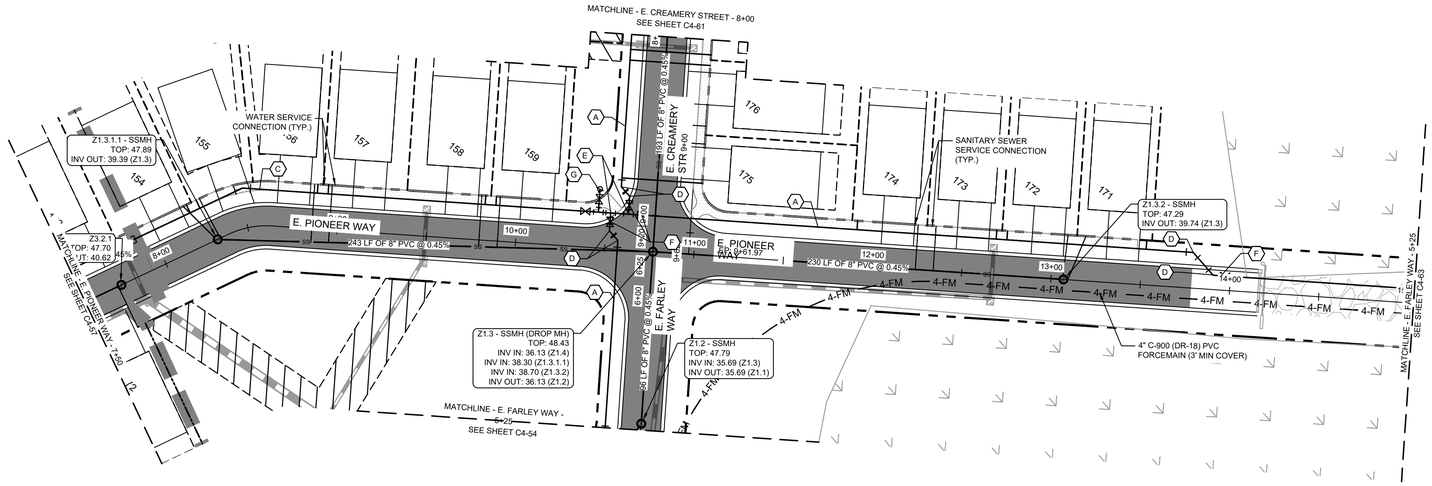
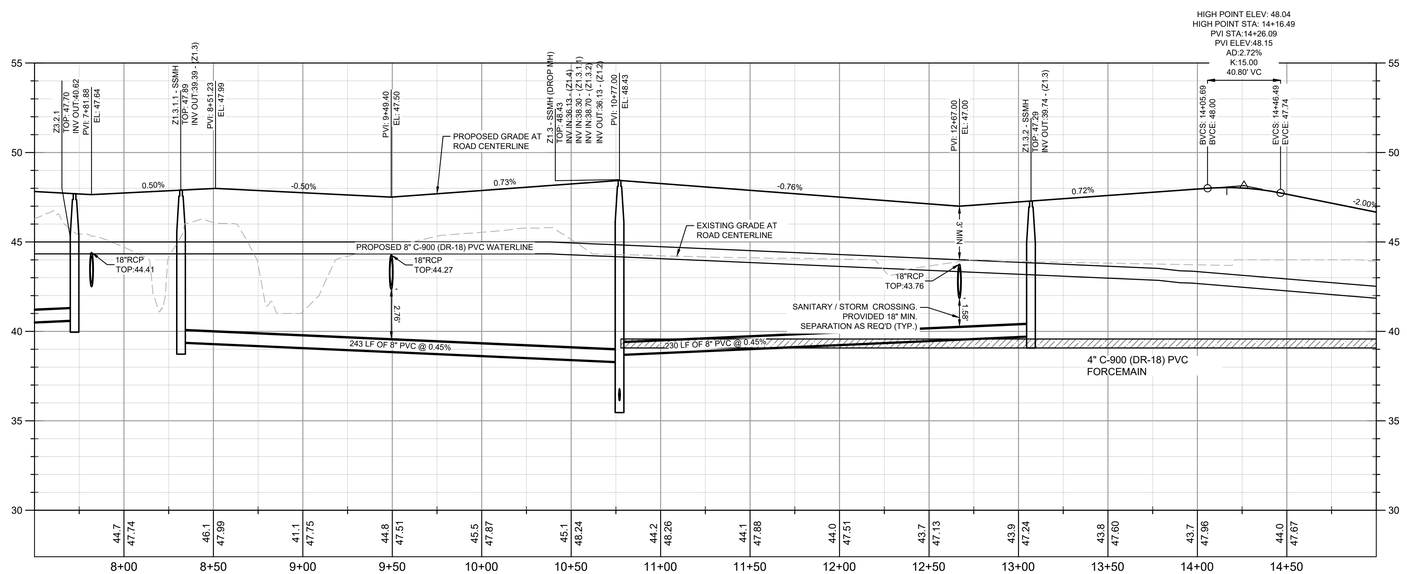


E. PIONEER WAY - 7+50 TO 15+00
PLAN VIEW



PROFILE VIEW
STREET D
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
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PROFILE LINE LEGEND:

PROPOSED GRADE LINE

EXISTING GRADE LINE

UTILITY LEGEND:

PROPOSED WATER LINE

PROPOSED SANITARY SEWER PIPE

PROPOSED SANITARY SEWER CLEANOUT

SANITARY SEWER MANHOLE

WATER VALVE

FIRE DEPARTMENT CONNECTION (FDC)

FIRE HYDRANT

WATER MAIN TAPPING SLEEVE

WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

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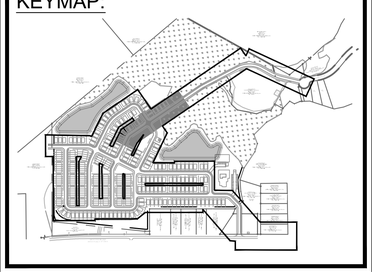
KEYMAP:



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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
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5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
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1	SSUANCE AND REVISION DESCRIPTIONS	
8	REVISED PHASE BOUNDARY	
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3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-62

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-62 UTILITY PLANS AND PROFILES Jan 29, 2025 10:58am by: mike.fritz

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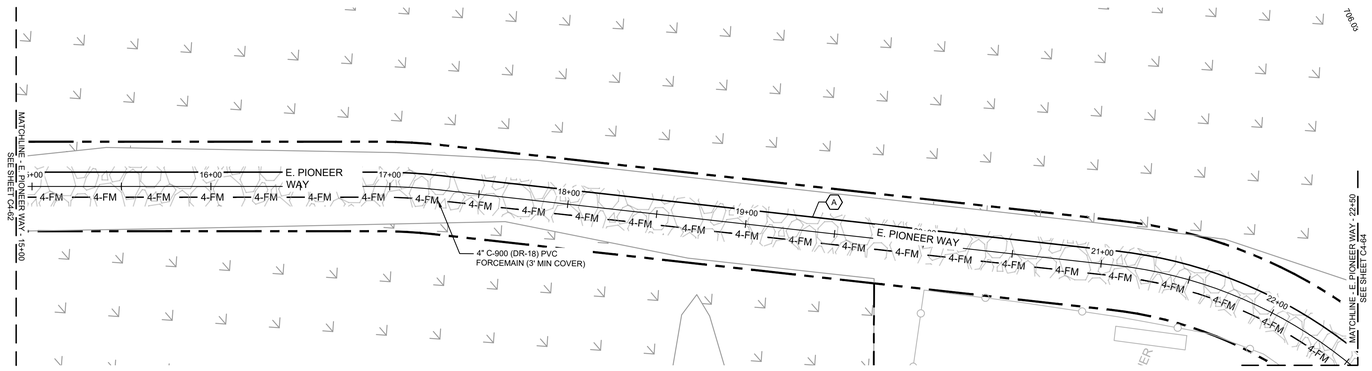
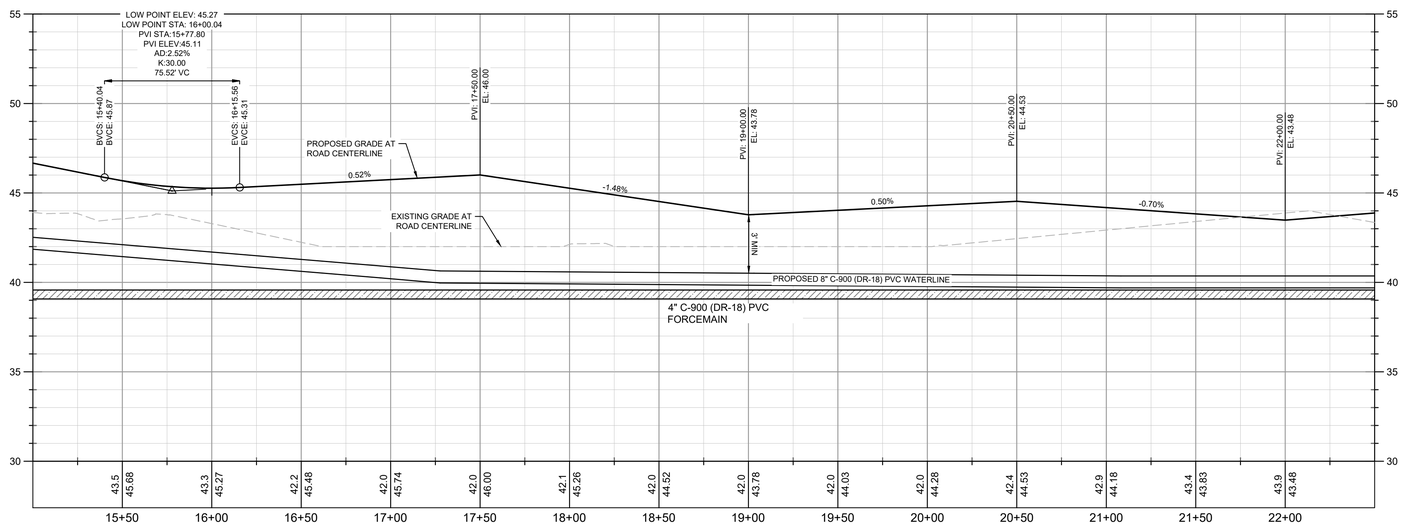


E. PIONEER WAY - 7+50 TO 15+00
PLAN VIEW



PROFILE VIEW
STREET D
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1" = 4' VERT.

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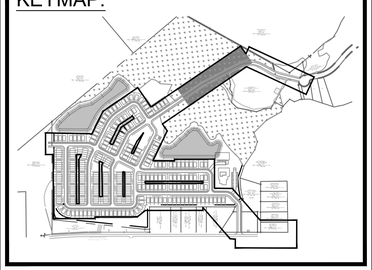

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6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
UTILITY PLANS AND PROFILES

SHEET NUMBER
C4-63

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C4-50 - SANITARY SEWER PROFILES.dwg C4-63 UTILITY PLANS AND PROFILES Jan 29, 2025 10:58am by: mike.fritz

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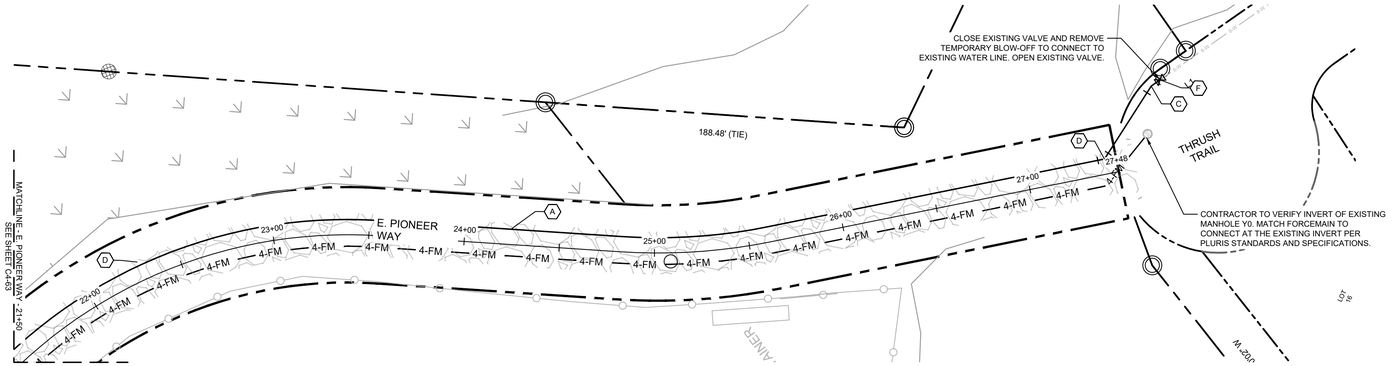
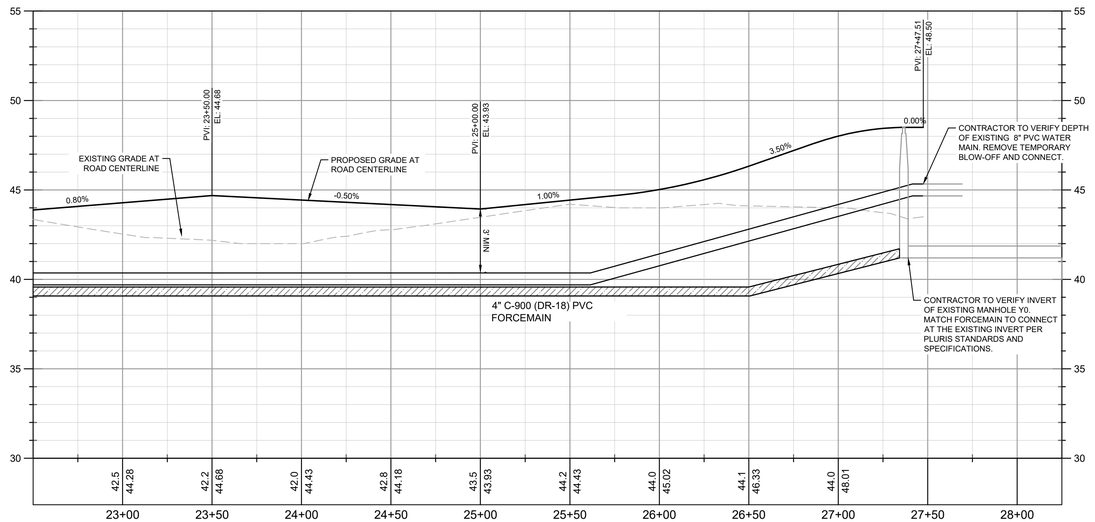


E. PIONEER WAY - 7+50 TO 15+00
PLAN VIEW



PROFILE VIEW
STREET D
1" = 40' HORZ.
1" = 4' VERT.

UTILITY PLAN AND PROFILE NOTES:

1. ALL PIPE LENGTHS SPECIFIED IN THESE PLANS ARE THE HORIZONTAL DISTANCE AND ARE SHOWN FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ACTUAL LENGTHS BASED ON PROPOSED PIPE SLOPE. PIPE LENGTHS IN PLANS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FIELD VERIFY EXISTING INVERT FOR SANITARY SEWER AND WATER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
3. ALL SANITARY SEWER PIPE SHALL BE INSTALLED PER PLURIS, LLC STANDARDS AND SPECIFICATIONS.
4. ALL WATER PIPE SHALL BE INSTALLED PER PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
5. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
6. ALL SERVICES LINES TAPS TO MANHOLE MUST CONNECT BENEATH THE MANHOLE CONE SEAM. ALL MANHOLE ENTRIES MUST BE WATER TIGHT, GROUTED, AND EMPTY OUT INTO THE TROUGH STREAM
7. ALL MANHOLES MUST HAVE RAIN AND DUST COVERS INSIDE EACH MANHOLE LIDS.

PROFILE LINE LEGEND:

- PROPOSED GRADE LINE
- EXISTING GRADE LINE

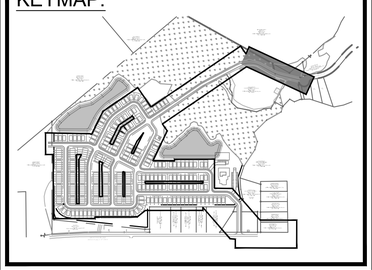
UTILITY LEGEND:

- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE HYDRANT
- WATER MAIN TAPPING SLEEVE
- WATER CONNECTIONS AND BENDS

WATER KEYNOTE LEGEND:

A	8" C-900 (DR-18) PVC WATER MAIN
B	11.25° BEND
C	22.5° BEND
D	45° BEND
E	8" X 8" X 8" MJ TEE
F	8" MJ GATE VALVE
G	FIRE HYDRANT ASSEMBLY
H	8" X 6" REDUCER
I	8" PLUG
J	BLOWOFF ASSEMBLY
K	6" X 6" X 6" MJ TEE

KEYMAP:



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

VERTICAL SCALE IN FEET: 0, 4, 8
HORIZONTAL SCALE IN FEET: 0, 40, 80

NORTH

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Skimmer Basin 1		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	8.11	AC
TOTAL DISTURBED AREA	7.29	AC
Tc	15	MIN
RATIONAL C	0.35	
DESIGN STORM INTENSITY	6.42	IN/HR
PEAK FLOW	18.22	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	5,923	SF
SURFACE AREA PROVIDED	7,314	SF
VOLUME REQUIRED	13,122	CF
DEWATERING TIME	2.88	DAYS
VOLUME PROVIDED	15,381	CF
EMBANKMENT WIDTH	5	FT
EMERGENCY SPILLWAY LENGTH	18.0	FT
EMERGENCY SPILLWAY CAPACITY	19.1	CFS
SKIMMER SIZE	2.50	IN
SKIMMER ORIFICE DIAMETER	2.25	IN
SKIMMER OUTLET ELEVATION	39.00	FT
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	4991	39.0
PRIMARY SPILLWAY ELEVATION:	7314	41.5
TOP OF DAM:	8878	43.0

Sediment Basin 2		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	6.65	AC
TOTAL DISTURBED AREA	6.65	AC
Tc	30	MIN
RATIONAL C	0.35	
DESIGN STORM INTENSITY	4.65	IN/HR
PEAK FLOW	10.82	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	3,517	SF
SURFACE AREA PROVIDED	7,275	SF
VOLUME REQUIRED	11,970	CF
VOLUME PROVIDED	15,175	CF
DEWATERING TIME	2.84	DAYS
SKIMMER SIZE	2.50	IN
SKIMMER ORIFICE DIAMETER	2.25	IN
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	4865	42.0
PRIMARY SPILLWAY ELEVATION:	7275	44.5
EMERGENCY SPILLWAY ELEVATION:	8338	45.5
TOP OF DAM:	10039	47.0
SPILLWAY DESIGN		
EMBANKMENT WIDTH	10	FT
PRIMARY SPILLWAY (RISER) CAPACITY	14.4	CFS
# OF PRIMARY SPILLWAYS	1	
RISER STYLE/MATERIAL	CIRCULAR : CMP	
RISER SIZE	24.0	DIA (IN)
BARREL MATERIAL	CMP	
BARREL DIAMETER	18.0	IN
BARREL LENGTH	50.0	FT
BARREL OUTLET ELEVATION	40.0	FT
BARREL SLOPE	4%	
ANTI-FLOATATION CONCRETE REQ.	3.59	CF
EMERGENCY SPILLWAY LENGTH	20.0	FT
EMERGENCY SPILLWAY CAPACITY	21.2	CFS

Sediment Trap 3		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	1.96	AC
TOTAL DISTURBED AREA	1.96	AC
Tc	5	MIN
RATIONAL C	0.40	
DESIGN STORM INTENSITY	9.52	IN/HR
PEAK FLOW	7.46	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	2,428	SF
SURFACE AREA PROVIDED	3,096	SF
VOLUME REQUIRED	3,528	CF
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	1615	40.0
PRIMARY SPILLWAY ELEVATION:	3096	42.5
TOP OF DAM:	4155	44.0

Skimmer Basin 4		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	9.84	AC
TOTAL DISTURBED AREA	9.37	AC
Tc	30	MIN
RATIONAL C	0.35	
DESIGN STORM INTENSITY	4.65	IN/HR
PEAK FLOW	16.01	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	5,205	SF
SURFACE AREA PROVIDED	8,329	SF
VOLUME REQUIRED	16,866	CF
DEWATERING TIME	3.30	DAYS
VOLUME PROVIDED	17,639	CF
EMBANKMENT WIDTH	5	FT
EMERGENCY SPILLWAY LENGTH	16.0	FT
EMERGENCY SPILLWAY CAPACITY	17.0	CFS
SKIMMER SIZE	2.50	IN
SKIMMER ORIFICE DIAMETER	2.25	IN
SKIMMER OUTLET ELEVATION	39.00	FT
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	5782	40.0
PRIMARY SPILLWAY ELEVATION:	8329	42.5
TOP OF DAM:	10026	44.0

Sediment Basin 5		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	17.37	AC
TOTAL DISTURBED AREA	10.65	AC
Tc	15	MIN
RATIONAL C	0.35	
DESIGN STORM INTENSITY	6.42	IN/HR
PEAK FLOW	39.03	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	16,978	SF
SURFACE AREA PROVIDED	17,323	SF
VOLUME REQUIRED	19,170	CF
VOLUME PROVIDED	38,860	CF
DEWATERING TIME	2.76	DAYS
SKIMMER SIZE	4.00	IN
SKIMMER ORIFICE DIAMETER	3.25	IN
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	13765	42.0
PRIMARY SPILLWAY ELEVATION:	17323	44.5
EMERGENCY SPILLWAY ELEVATION:	18845	45.5
TOP OF DAM:	21234	47.0
SPILLWAY DESIGN		
EMBANKMENT WIDTH	10	FT
PRIMARY SPILLWAY (RISER) CAPACITY	34.1	CFS
# OF PRIMARY SPILLWAYS	1	
RISER STYLE/MATERIAL	CIRCULAR : CMP	
RISER SIZE	42.0	DIA (IN)
BARREL MATERIAL	CMP	
BARREL DIAMETER	30.0	IN
BARREL LENGTH	50.0	FT
BARREL OUTLET ELEVATION	42.0	FT
BARREL SLOPE	0%	
ANTI-FLOATATION CONCRETE REQ.	11.01	CF
EMERGENCY SPILLWAY LENGTH	38.0	FT
EMERGENCY SPILLWAY CAPACITY	40.3	CFS

Skimmer Basin 6		
DESIGN INFORMATION		
TOTAL DRAINAGE AREA	9.90	AC
TOTAL DISTURBED AREA	0.84	AC
Tc	15	MIN
RATIONAL C	0.35	
DESIGN STORM INTENSITY	6.42	IN/HR
PEAK FLOW	22.25	CFS
DESIGN CALCULATIONS		
SURFACE AREA REQUIRED	7,230	SF
SURFACE AREA PROVIDED	9,666	SF
VOLUME REQUIRED	1,512	CF
DEWATERING TIME	2.86	DAYS
VOLUME PROVIDED	20,650	CF
EMBANKMENT WIDTH	5	FT
EMERGENCY SPILLWAY LENGTH	22.0	FT
EMERGENCY SPILLWAY CAPACITY	23.3	CFS
SKIMMER SIZE	3.00	IN
SKIMMER ORIFICE DIAMETER	2.50	IN
SKIMMER OUTLET ELEVATION	39.00	FT
BASIN GEOMETRY		
	AREA (SF)	ELEV (FT)
BOTTOM OF BASIN:	6854	44.0
PRIMARY SPILLWAY ELEVATION:	9666	46.5
TOP OF DAM:	11523	48.0

EROSION CONTROL NOTES:

1. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK.

2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITHIN THESE PLANS IN ACCORDANCE WITH APPLICABLE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND PENDER COUNTY EROSION AND SEDIMENT CONTROL REGULATIONS.

3. ALL CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER GENERAL PERMIT.

4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.

5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCDEQ EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.

7. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS. CONTACT PROJECT ENGINEER AND PROJECT EROSION CONTROL INSPECTOR TO ENSURE ADDITIONAL EROSION CONTROL MEASURES ARE INSTALLED PRIOR TO OFF-SITE GRADING.

8. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS, STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NCDEQ FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.

9. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.

10. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT IS REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.

11. CONTRACTOR TO ENSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE SITE LIMITS OR ENTER PROTECTED AREAS. ANY SEDIMENT DEPOSITED BEYOND DISTURBED AREA WITHIN SITE LIMITS SHALL BE REMOVED.

12. ROLLED EROSION CONTROL PRODUCTS (RECP'S) SHOULD BE USED TO AID PERMANENT VEGETATED STABILIZATION OF SLOPES 2:1 OR GREATER AND WITH MORE THAN 10' OF VERTICAL RELIEF. RECP'S SHOULD ALSO BE USED WHEN MULCH CANNOT BE ADEQUATELY TACKED AND WHERE IMMEDIATE GROUND COVER IS REQUIRED TO PREVENT EROSION DAMAGE.

13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 21 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

14. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

15. WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.

16. TEMPORARY CONSTRUCTION ENTRANCES SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREAS. TWO TO THREE INCH STONE SHALL BE USED FOR THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE.

17. ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.

18. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

19. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

20. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

21. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.

22. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

23. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. NCDEQ INSPECTOR'S FINAL APPROVAL IS REQUIRED.

24. STABILIZATION MEASURES SHALL BE APPLIED TO STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

25. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING UPON FIELD CONDITIONS.

26. LIMITS OF GRADING SHOWN ON THE PLAN ARE MAXIMUM LIMITS FOR EROSION CONTROL PURPOSES ONLY. SURVEYOR TO DETERMINE ACTUAL LIMIT.

27. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF NCDEQ EROSION CONTROL ORDINANCE, AND IS SUBJECT TO A FINE.

28. DISTURBANCE OF MORE THAN 1 ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE NCDEQ EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.

Know what's **below.**
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PREPARED BY

Kimley»Horn

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C5-00

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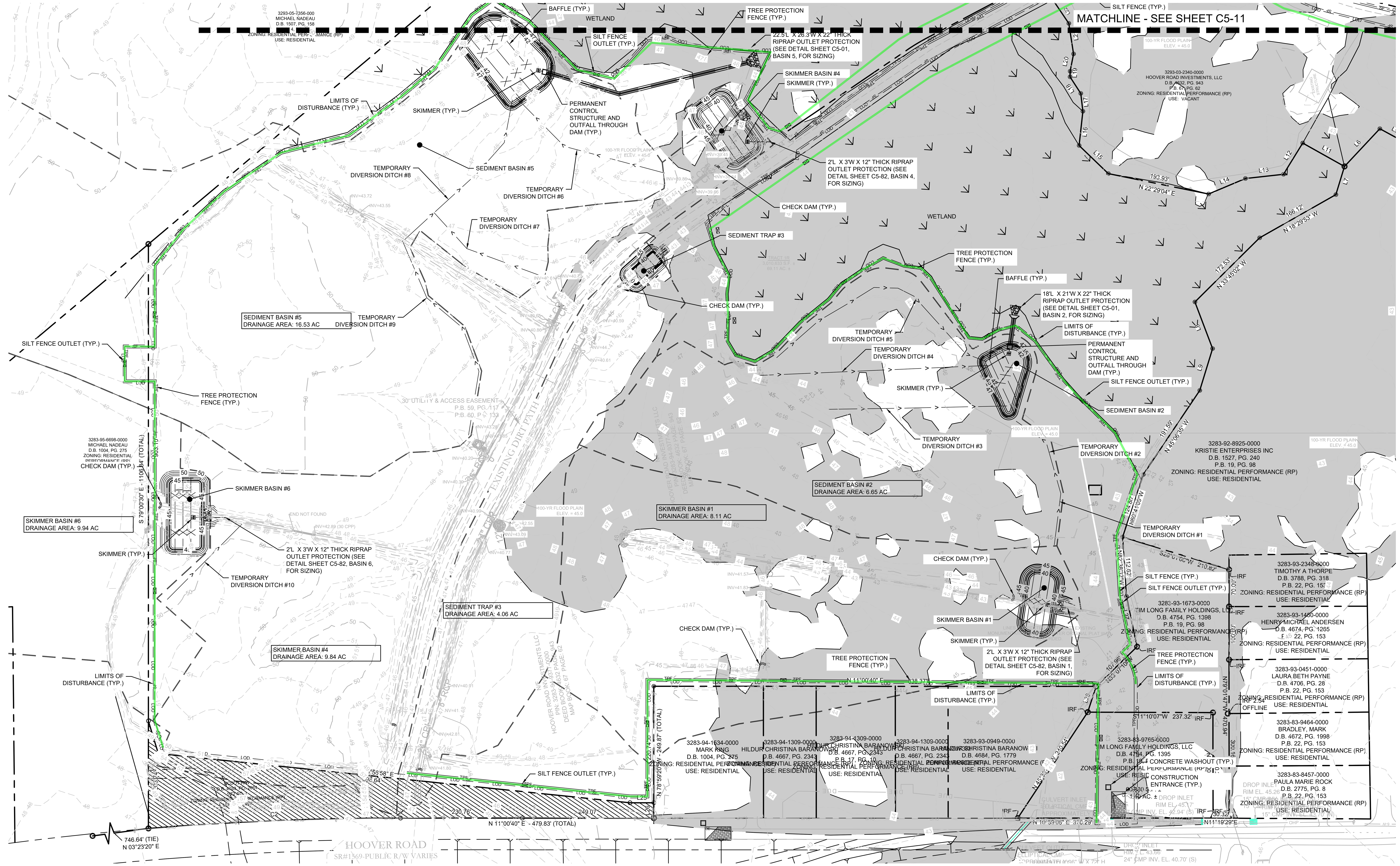

EROSION CONTROL LEGEND

- PROPERTY LINE
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- CLEARING LIMITS (CL)
- SILT FENCE (SF)
- TREE PROTECTION FENCE (TPF)
- COMBINATION TREE PROTECTION/ SILT FENCE (SF/TPF)
- TEMPORARY DIVERSION DITCH (TD)
- CLEAN WATER DIVERSION DITCH (TD(CW))
- SEDIMENT BASIN POROUS BAFFLES (X)
- PUMP DISCHARGE HOSE
- EXISTING CONTOUR (805)
- PROPOSED CONTOUR (805)
- DRAINAGE AREA BOUNDARY
- CONSTRUCTION ENTRANCE (CE)
- SILT FENCE OUTLET
- CONCRETE WASHOUT STATION
- ROCK CHECK DAM
- INLET PROTECTION
- ROCK PIPE INLET PROTECTION
- SKIMMER
- TEMPORARY SLOPE DRAIN
- RIP-RAP OUTLET PROTECTION
- SILT BAG
- DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
- TEMPORARY EROSION CONTROL MATTING

PHASE 1 CONSTRUCTION SEQUENCE:

1. THE FOLLOWING PHASE 1 CONSTRUCTION SEQUENCE IS FURNISHED AS A GENERAL GUIDE FOR PREPARATION OF A SEQUENCE OF CONSTRUCTION EVENTS.
2. SET UP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH NCDEQ EROSION CONTROL INSPECTOR TO DISCUSS EROSION CONTROL MEASURES.
3. OBTAIN GRADING/EROSION CONTROL PLAN APPROVAL FROM NCDEQ.
4. INSTALL TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, INLET PROTECTION, SKIMMER SEDIMENT BASIN, TEMPORARY SEDIMENT BASIN, DIVERSION DITCHES, TREE PROTECTION, AND OTHER MEASURES AS SHOWN ON PLANS, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES (SEE LOD FOR INITIAL CLEARING LIMITS). SEED, MAT, MULCH, AND ANCHOR DIVERSION DITCHES AND BASIN IMMEDIATELY AFTER CONSTRUCTION AS APPROPRIATE.
5. CALL FOR ON-SITE INSPECTION BY INSPECTOR ONCE ALL EROSION CONTROL MEASURES ARE INSTALLED. TREE PROTECTION FENCING MUST BE INSTALLED AND INSPECTED BY NCDEQ SITE INSPECTOR PRIOR TO A GRADING PERMIT BEING ISSUED. OBTAIN CERTIFICATE OF COMPLIANCE FROM NCDEQ.
6. ONCE CERTIFICATE OF COMPLIANCE HAS BEEN OBTAINED, APPLY FOR NCDEQ eNOI ON NCDEQ WEBSITE.
7. UPON APPROVAL, CLEARING AND DEMOLITION MAY BEGIN. MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY. EROSION CONTROL MEASURES SHALL BE RESTORED TO ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO 50% OF DESIGN DEPTH.
8. INSPECT AND REPAIR EROSION CONTROL MEASURES AFTER EVERY RAINFALL EVENT OF 1/2" OR GREATER OR EVERY SEVEN (7) CALENDAR DAYS.
9. SEDIMENT / SKIMMER BASINS SHALL BE CLEANED WHEN ONE-HALF FULL.
10. FOR PHASED EROSION CONTROL PLANS, CONTRACTOR SHALL MEET WITH EROSION CONTROL INSPECTOR PRIOR TO COMMENCING EACH PHASE OF EROSION CONTROL MEASURES. SEED AND MULCH DENUDED AREA WITHIN 15 CALENDAR DAYS AFTER ANY PHASE OF GRADING. MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
11. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NCDENR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U.S. DEPARTMENT OF AGRICULTURE, AND PENDER COUNTY EROSION CONTROL ORDINANCES.
12. REFER TO SHEET C5-00 – EROSION CONTROL NOTES FOR GENERAL EROSION CONTROL NOTES AND MAINTENANCE.

GRAPHIC SCALE IN FEET: 0 50 100 200

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PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	09/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030526 JAMIE N. GWALTNEY 6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 1

SHEET NUMBER
C5-10

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-10 - EROSION CONTROL PLAN.dwg C5-10 EROSION CONTROL PLAN PHASE 1 Jan 29, 2025 10:59am by: mike.fritz

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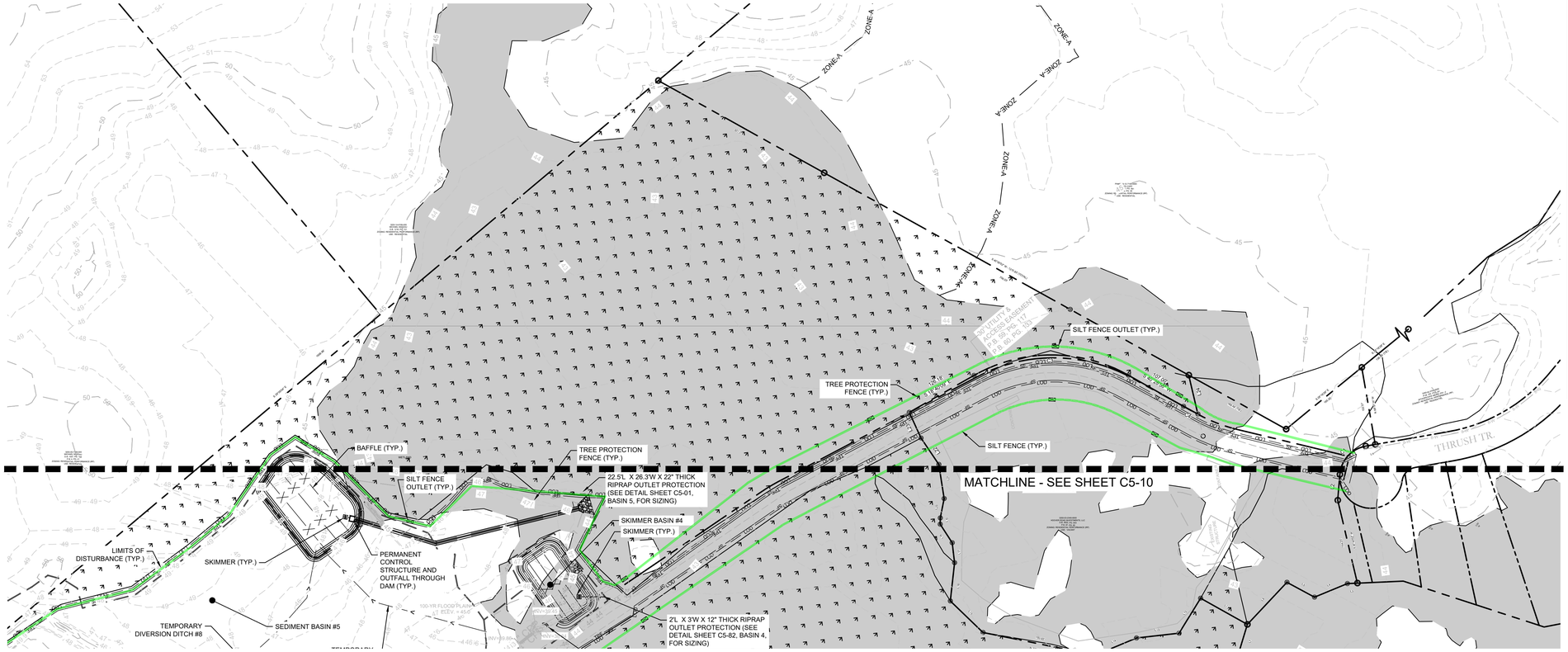

EROSION CONTROL LEGEND

	PROPERTY LINE
TCE	TEMPORARY CONSTRUCTION EASEMENT
CL	CLEARING LIMITS
SF	SILT FENCE
TPF	TREE PROTECTION FENCE
SF/TPF	COMBINATION TREE PROTECTION/ SILT FENCE
TD → TD	TEMPORARY DIVERSION DITCH
TD(CW)	CLEAN WATER DIVERSION DITCH
X	SEDIMENT BASIN POROUS BAFFLES
	PUMP DISCHARGE HOSE
805	EXISTING CONTOUR
805	PROPOSED CONTOUR
	DRAINAGE AREA BOUNDARY
CE	CONSTRUCTION ENTRANCE
	SILT FENCE OUTLET
	CONCRETE WASHOUT STATION
	ROCK CHECK DAM
	INLET PROTECTION
	ROCK PIPE INLET PROTECTION
	SKIMMER
	TEMPORARY SLOPE DRAIN
	RIP-RAP OUTLET PROTECTION
	SILT BAG
	DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
	TEMPORARY EROSION CONTROL MATTING

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

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DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 1

SHEET NUMBER
C5-11

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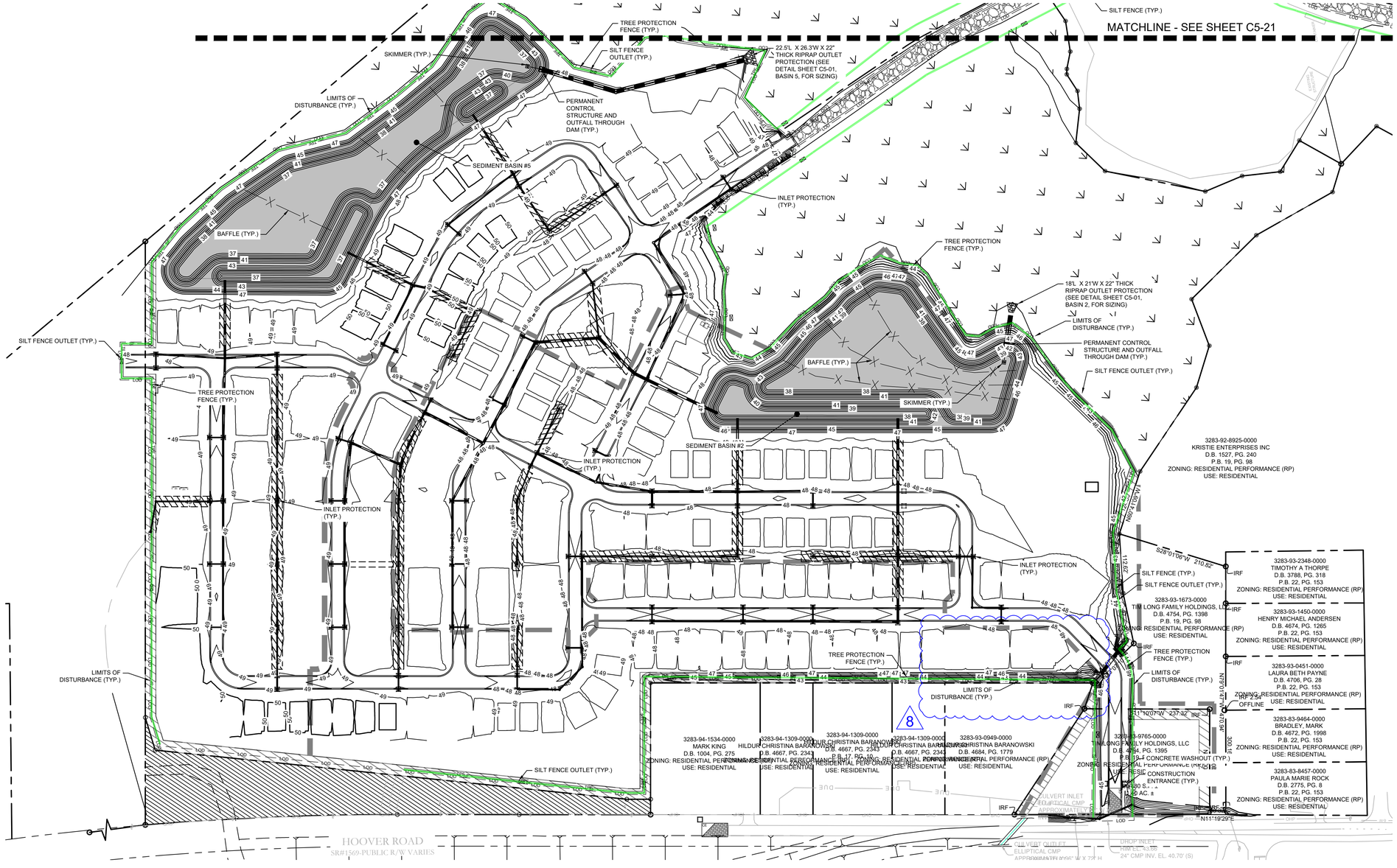

EROSION CONTROL LEGEND

- PROPERTY LINE
- TCE — TEMPORARY CONSTRUCTION EASEMENT
- CL — CLEARING LIMITS
- SF — SILT FENCE
- TPF — TREE PROTECTION FENCE
- SF/TPF — COMBINATION TREE PROTECTION/ SILT FENCE
- TD — TEMPORARY DIVERSION DITCH
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- X — SEDIMENT BASIN POROUS BAFFLES
- PUMP DISCHARGE HOSE
- 805 — EXISTING CONTOUR
- 805 — PROPOSED CONTOUR
- DRAINAGE AREA BOUNDARY
- CE — CONSTRUCTION ENTRANCE
- SILT FENCE OUTLET
- CONCRETE WASHOUT STATION
- ROCK CHECK DAM
- INLET PROTECTION
- ROCK PIPE INLET PROTECTION
- SKIMMER
- TEMPORARY SLOPE DRAIN
- RIP-RAP OUTLET PROTECTION
- SILT BAG
- DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
- TEMPORARY EROSION CONTROL MATTING

PHASE 2 CONSTRUCTION SEQUENCE:

1. THE FOLLOWING PHASE 2 CONSTRUCTION SEQUENCE IS FURNISHED AS A GENERAL GUIDE FOR PREPARATION OF A SEQUENCE OF CONSTRUCTION EVENTS.
2. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NCDENR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, U.S. DEPARTMENT OF AGRICULTURE, AND PENDER COUNTY EROSION CONTROL ORDINANCES.
3. MAINTAIN CONSTRUCTION ENTRANCES, SILT FENCE, INLET PROTECTION, DIVERSION DITCHES, AND SEDIMENT BASINS.
4. CALL FOR ON-SITE INSPECTION BY INSPECTOR ONCE ALL PHASE 2 EROSION CONTROL MEASURES ARE INSTALLED. TREE PROTECTION FENCING MUST BE INSTALLED AND INSPECTED BY NCDEQ SITE INSPECTOR PRIOR TO A GRADING PERMIT BEING ISSUED. OBTAIN CERTIFICATE OF COMPLIANCE FROM NCDEQ.
5. CONTRACTOR IS TO CUT AND/OR FILL AREAS TO BRING THE SITE TO THE PROPOSED GRADES SHOWN ON THE GRADING AND DRAINAGE PLANS. GRADING ACTIVITY SHALL BE LIMITED TO WITHIN THE CLEARING LIMITS. MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY.
6. PROVIDE GROUND COVER ON SLOPES GREATER THAN 3:1 WITHIN 7 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PROVIDE GROUND COVER TO ALL OTHER AREAS WITHIN 14 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY.
7. INSPECT AND REPAIR EROSION CONTROL MEASURES AFTER EVERY RAINFALL EVENT OF 1/2" OR GREATER OR EVERY SEVEN (7) CALENDAR DAYS.
8. SEDIMENT / SKIMMER BASINS SHALL BE CLEANED WHEN ONE-HALF FULL.
9. SEDIMENT BASINS 2 AND 5 TO BE EXPANDED TO ENCOMPASS FULL BUILD-OUT DIMENSIONS AS SHOWN PER THIS SHEET.
10. UPON INSTALLATION OF THE STORM DRAINAGE SYSTEM, WHICH MUST DIVERT FLOW FROM SKIMMER BASINS 1, 4, AND 6 AND TEMPORARY SEDIMENT TRAP 3 AND REDIRECT THE FLOW TO SEDIMENT BASINS 2 AND 5, AND APPROVAL FROM THE INSPECTOR, SKIMMER BASINS 1, 4, AND 6 AND TEMPORARY SEDIMENT TRAP 3 SHALL BE REMOVED.
11. UPON THE DECOMMISSION OF SKIMMER BASINS 1, 4, AND 6, AND TEMPORARY SEDIMENT TRAP 3, TERMINATE THE TEMPORARY DIVERSION DITCHES WHERE RUNOFF CAN FILTER THROUGH SILT FENCE OUTLETS.
12. UPON STABILIZATION OF UPSTREAM AREA AND APPROVAL FROM THE INSPECTOR, SEDIMENT BASINS 2 AND 5 SHALL BE CLEANED OF SEDIMENT AND CONVERTED TO A WET POND. CONTRACTOR TO MAINTAIN OUTLET STRUCTURE OF SEDIMENT BASINS 2 AND 5 AS EXCAVATION CONTINUES.
13. REFER TO SHEET C5-00 – EROSION CONTROL NOTES FOR GENERAL EROSION CONTROL NOTES AND MAINTENANCE.
12. ALL SEDIMENT SHALL REMAIN OUT OF THE PERMANENT BMP ONCE CONVERTED. SEDIMENT THAT ENTERS THE BMP SHALL BE REMOVED IMMEDIATELY, AND THE BMP INSPECTED TO ENSURE COMPLIANCE HAS BEEN MAINTAINED.
13. ALL EROSION CONTROL MEASURES TO REMAIN IN PLACE UNTIL +/- 80% STABILIZATION IS ACHIEVED.

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PHONE: (910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PERMIT	08/18/2024	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	06/24/2024	TCS
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	06/03/2024	CDJ
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	03/06/2024	MRF
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	02/12/2024	MRF
6	REVISED SEWER AND LIFT STATION DETAILS 05/05/2024	12/18/2023	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	12/08/2023	MRF
8	REVISED PHASE BOUNDARY	08/18/2024	MRF

PROJECT
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1038 HOOVER ROAD,
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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER ANNE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 2

SHEET NUMBER
C5-20

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-20 - EROSION CONTROL PLAN.dwg C5-20 EROSION CONTROL PLAN PHASE 2 Jan 29, 2025 11:00am by: mike.fritz

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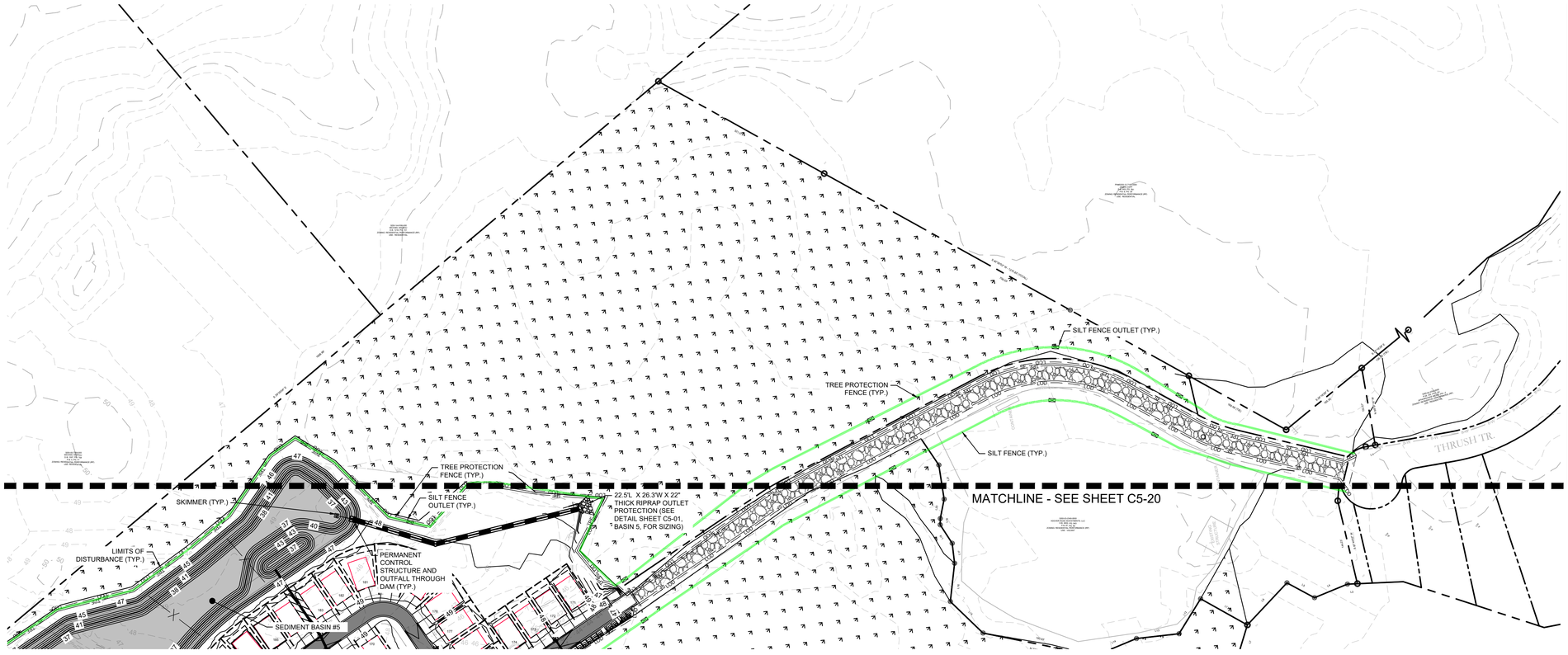

EROSION CONTROL LEGEND

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- TCE — TEMPORARY CONSTRUCTION EASEMENT
- CL — CLEARING LIMITS
- SF — SILT FENCE
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- TD — TD — TEMPORARY DIVERSION DITCH
- TD(CW) — CLEAN WATER DIVERSION DITCH
- X — SEDIMENT BASIN POROUS BAFFLES
- PUMP DISCHARGE HOSE
- 805 — EXISTING CONTOUR
- 805 — PROPOSED CONTOUR
- DRAINAGE AREA BOUNDARY
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- INLET PROTECTION
- ROCK PIPE INLET PROTECTION
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- TEMPORARY SLOPE DRAIN
- RIP-RAP OUTLET PROTECTION
- SILT BAG
- DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
- TEMPORARY EROSION CONTROL MATTING

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PHONE: 910-507-2115

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8	08/16/2024	MRF
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6	06/03/2024	CDJ
5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
2	12/08/2023	MRF
1	DATE	BY

No. ISSUANCE AND REVISION DESCRIPTIONS
1 REVISED PHASE BOUNDARY
2 REVISED PER NC DEQ PRIVATE WATER COMMENTS
3 REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
4 REVISED PER COUNTY COMMENTS DATED 01/22/2024
5 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
6 REVISED PER COUNTY COMMENTS DATED 12/11/2023
7 REVISED PER COUNTY COMMENTS DATED 11/07/2023
8 REVISED PER COUNTY COMMENTS DATED 08/16/2024

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-93-1673-0000, 3283-94-9377-0000
3283-83-9765-0000, 3283-94-9377-0000
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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER RYAN W. GWALTNEY

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DESIGNED BY	NJ
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DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 2

SHEET NUMBER
C5-21

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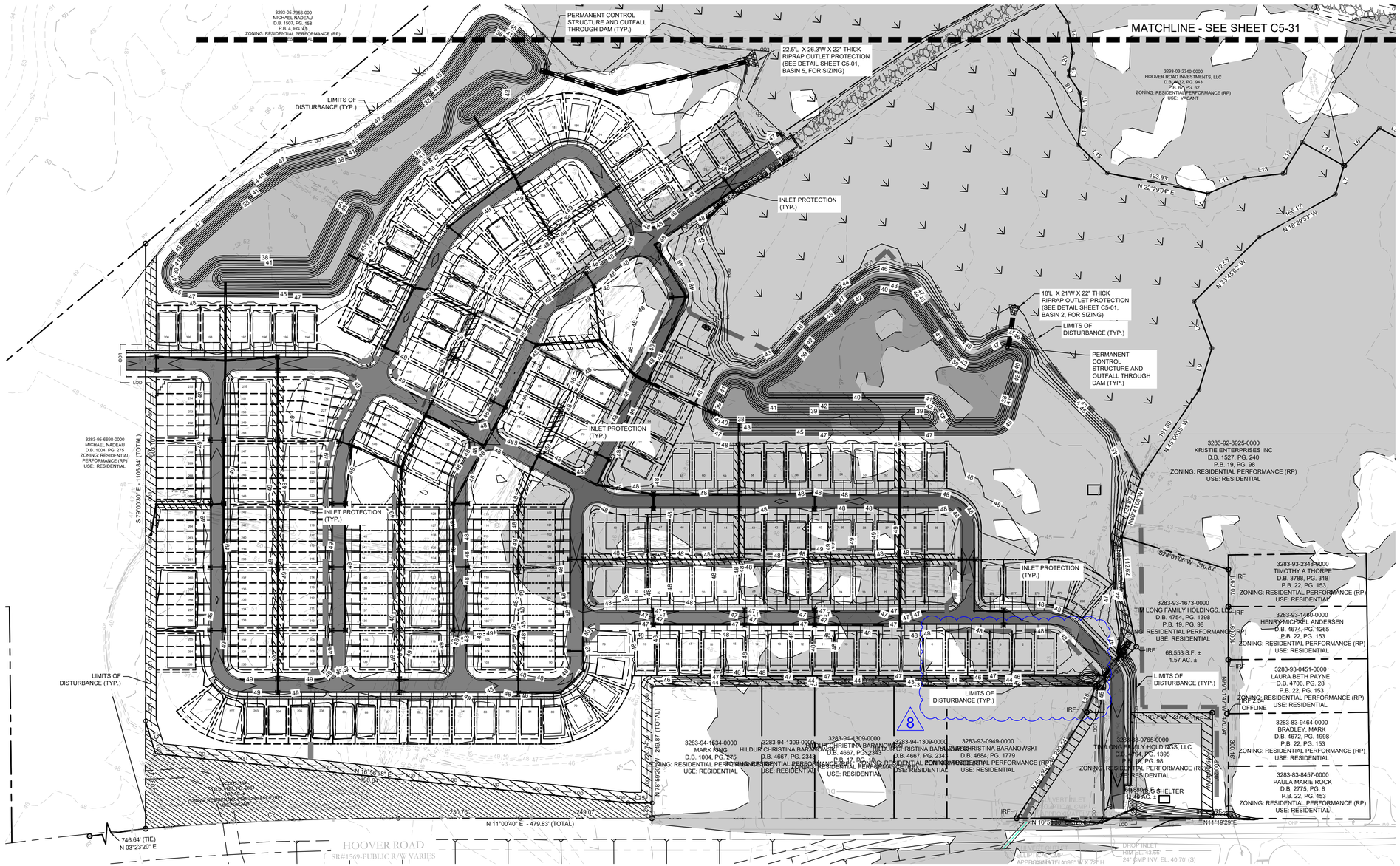

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- RIP-RAP OUTLET PROTECTION
- SILT BAG
- DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
- TEMPORARY EROSION CONTROL MATTING

PHASE 3 CONSTRUCTION SEQUENCE:

1. THE FOLLOWING PHASE 3 CONSTRUCTION SEQUENCE IS FURNISHED AS A GENERAL GUIDE FOR PREPARATION OF A SEQUENCE OF CONSTRUCTION EVENTS.
2. INSTALL SILT FENCE AND EXCAVATED DROP INLETS AS SHOWN ON THE PHASE 3 EROSION CONTROL PLANS.
3. CONTRACTOR TO ENSURE NO SEDIMENT–LADEN RUNOFF IS TRANSPORTED TO THE APPROVED WET POND.
4. CALL FOR ON–SITE INSPECTION BY INSPECTOR ONCE ALL PHASE 3 EROSION CONTROL MEASURES ARE INSTALLED.
5. CONTRACTOR IS TO FINE GRADE AREAS TO BRING THE SITE TO THE PROPOSED GRADES SHOWN ON THE GRADING AND DRAINAGE PLANS. GRADING ACTIVITY SHALL BE LIMITED TO WITHIN THE CLEARING LIMITS. MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY.
6. INLET PROTECTION SHALL BE INSTALLED ON ALL NEW INLETS AS THE STORM DRAINAGE IS BEING INSTALLED.
7. PROVIDE GROUND COVER ON SLOPES GREATER THAN 3:1 WITHIN 7 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PROVIDE GROUND COVER TO ALL OTHER AREAS WITHIN 14 DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING OR INACTIVITY.
8. INSPECT AND REPAIR EROSION CONTROL MEASURES AFTER EVERY RAINFALL EVENT OF 1/2" OR GREATER OR EVERY SEVEN (7) CALENDAR DAYS.
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10. REFER TO SHEET C5–00 – EROSION CONTROL NOTES FOR GENERAL EROSION CONTROL NOTES AND MAINTENANCE.
12. ALL SEDIMENT SHALL REMAIN OUT OF THE PERMANENT BMP ONCE CONVERTED. SEDIMENT THAT ENTERS THE BMP SHALL BE REMOVED IMMEDIATELY, AND THE BMP INSPECTED TO ENSURE COMPLIANCE HAS BEEN MAINTAINED.
13. ALL EROSION CONTROL MEASURES TO REMAIN IN PLACE UNTIL +/– 80% STABILIZATION IS ACHIEVED.
14. ONCE ENTIRE SITE IS STABILIZED, CALL FOR FINAL INSPECTION. IF APPROVED, APPLY FOR eNOI FROM NCDEQ WEBSITE FOR CLOSEOUT OF THE NPDES PERMIT.

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PHONE: (910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/19/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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3	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 06/05/2023	06/30/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
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1038 HOOVER ROAD,
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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 3

SHEET NUMBER
C5-30

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EROSION CONTROL LEGEND

- PROPERTY LINE
- TCE — TEMPORARY CONSTRUCTION EASEMENT
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- RIP-RAP OUTLET PROTECTION
- SILT BAG
- DESIGNATED AREAS TO BE STABILIZED WITHIN 7 DAYS
- TEMPORARY EROSION CONTROL MATTING

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BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JANE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL PLAN PHASE 3

SHEET NUMBER
C5-31

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-30 - EROSION CONTROL PLAN.dwg C5-31 EROSION CONTROL PLAN PHASE 3 Jan 29, 2025 11:01am by: mike.fritz

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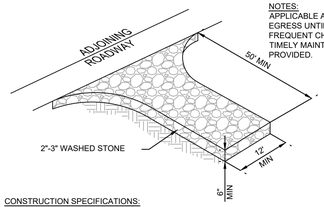


NOTES:
APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

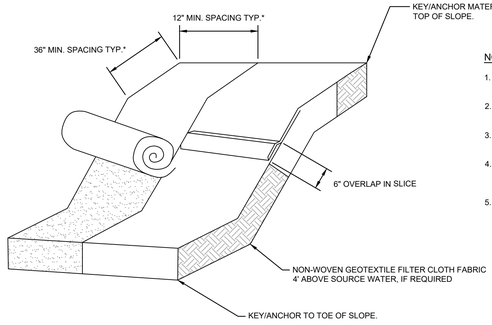
CONSTRUCTION SPECIFICATIONS:

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

MAINTENANCE NOTES:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

TEMPORARY CONSTRUCTION ENTRANCE
N.T.S. KHA DETAIL NO: 01.101.R02 XX



NOTES

1. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
2. * DIMENSIONS SHOWN ARE MINIMUM, MANUFACTURED PRODUCTS MAY HAVE ADDITIONAL REQUIREMENTS THAT MUST BE MET.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, SOIL CLODS, STICKS, GRASS. MAT/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
4. THE DETAIL SHOWN IS FOR SLOPE MATTING. FOR CHANNEL OR PIPE OUTFALL MATTING SPECIFICATIONS, PLEASE REFER TO NCESCPDM STANDARD #6.17 AND MANUFACTURER'S GUIDELINES.
5. ALL MATTING TO BE ERONET™ S150® EROSION CONTROL BLANKET OR APPROVED EQUIVALENT.

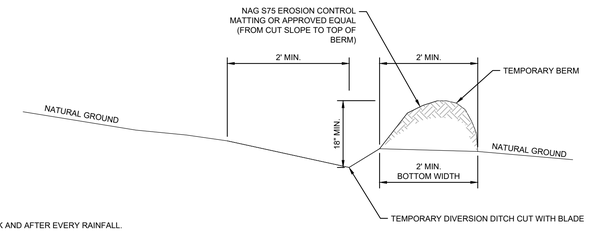
TEMPORARY MATTING
N.T.S. KHA DETAIL NO: 01.105.R01 XX

CONSTRUCTION SPECIFICATIONS:

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.

MAINTENANCE NOTES:

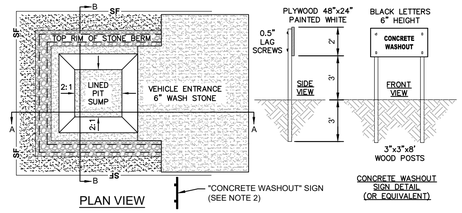
1. INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL.
2. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE.
3. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
4. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND AND APPROPRIATELY STABILIZE IT.



NOTES:

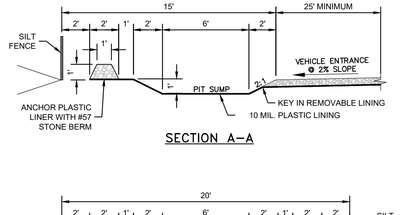
1. DITCH SHOULD HAVE LONGITUDINAL SLOPE OF 1%.
2. SILT FENCE MAY BE REQUIRED BEHIND BERM.

TEMPORARY DIVERSION DITCH
N.T.S. KHA DETAIL NO: 01.106.R02 XX



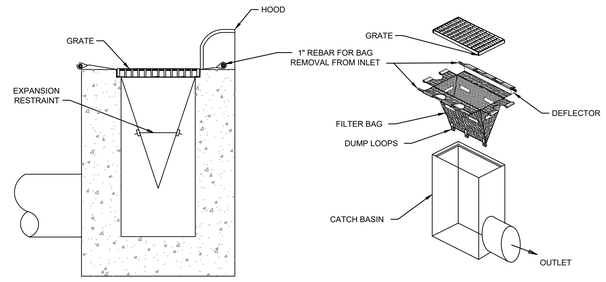
NOTES
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
5. PIT CAPACITY IS MINIMUM OF 6 CUBIC FEET PER 10 CUBIC YARDS OF CONCRETE.

CONCRETE WASHOUT STATION
N.T.S. KHA DETAIL NO: 01.102.R01 XX

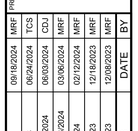


NOTES

1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
2. FILTER TYPES SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO INSTALLATION.
3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE.
5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
6. FILTER BAGS SHALL NOT BE ALLOWED IN EXISTING CITY OR NCDOT ROADS.



CATCH BASIN INLET PROTECTION
N.T.S. KHA DETAIL NO: 01.201.R01 XX



GUTTERBUDDY® SPECIFICATIONS
FOR CURB GUTTER STORM DRAINS

1.0 DESCRIPTION

1.1 THIS WORK SHALL CONSIST OF FURNISHING, PLACING, MAINTAINING AND REMOVING THE GUTTERBUDDY® SEDIMENT CONTROL DEVICE AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THE CONTRACT DRAWINGS. THE GUTTERBUDDY® SEDIMENT CONTROL SYSTEM IS DISTRIBUTED BY THE BMP STORE.

2.0 MATERIALS

2.1 GUTTERBUDDY®
THE GUTTERBUDDY® SHALL BE SYNTHETIC FILTER MANUFACTURED FROM RECYCLED SYNTHETIC FIBERS.

2.1.1 THE GUTTERBUDDY® WILL BE MANUFACTURED TO BE 9" IN DIAMETER AND ARE AVAILABLE IN 4', 6', 8', 10', 12', 14' AND 16' LENGTHS AND A MINIMUM OF TWENTY-FOUR (24) INCHES LONGER THAN THE CURB INLET OPENING. THIS WILL ALLOW FOR SUFFICIENT LENGTH TO COVER THE INLET WITH TWELVE (12) INCHES BEYOND THE INLET ON BOTH ENDS.

3.0 CONSTRUCTION SEQUENCE

3.1 GENERAL

3.1.1 INSTALL THE GUTTERBUDDY® IN FRONT OF THE CURB INLET OPENING. EACH END OF THE GUTTERBUDDY® SHOULD OVERLAP THE CURB INLET APPROXIMATELY 12".

3.1.2 THE GUTTERBUDDY® SHOULD BE CLEANED IF A VISUAL INSPECTION SHOWS SILT AND DEBRIS BUILD UP AROUND THE GUTTERBUDDY®.

3.1.3 TO REMOVE THE GUTTERBUDDY®, LIFT OUT OF THE OPENING.

3.1.4 THE GUTTERBUDDY® IS REUSABLE. ONCE THE CONSTRUCTION PROJECT IS COMPLETE AND IT IS NO LONGER NEEDED FOR SEDIMENT CONTROL, REMOVE, CLEAN AND STORE OUT OF THE SUNLIGHT UNTIL NEEDED ON THE NEXT PROJECT.

3.1.5 PONDING IS LIKELY IF SEDIMENT IS NOT REMOVED REGULARLY. INSPECTION OF GUTTERBUDDY® SHOULD BE ON A REGULAR BASIS AND IMMEDIATELY AFTER MAJOR RAIN EVENTS.

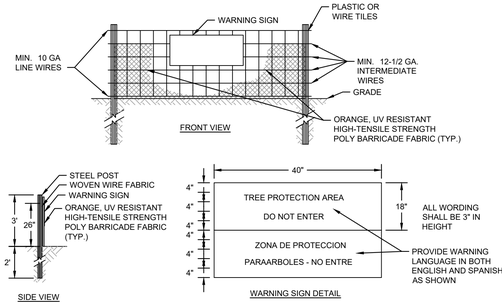
4.0 BASIS OF PAYMENT

4.1 THE PAYMENT FOR ANY GUTTERBUDDY® USED DURING THE CONSTRUCTION IS TO BE INCLUDED IN THE BID OF THE OVERALL EROSION AND SEDIMENT CONTROL PLAN AND PRICED BY THE LINEAR FOOT.

NOTE

INSTALL ROCK AND GRAVEL AROUND GUTTER BUDDY TO PRECLUDE SEDIMENT LADEN RUNOFF FROM FLOWING UNDERNEATH INLET PROTECTION.

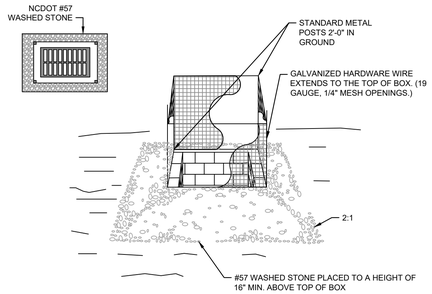
CURB INLET SILT PROTECTION
N.T.S. KHA DETAIL NO: 01.204.R01 XX



NOTES

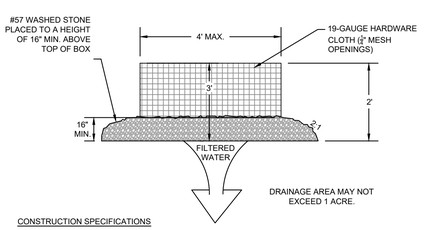
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (CRZ) OF TREES. (CRZ DEFINED AS RADIUS x 1.25' (FT) PER INCH AT DBH FROM TRUNK OF TREE.
2. IF CONSTRUCTION OCCURS WITHIN THE CRZ AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
3. THE TREE PROTECTION FENCING MUST NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT.
4. THERE WILL BE ZERO TOLERANCE FOR STORING OR PARKING VEHICLES, SUPPLIES, OR EQUIPMENT UNDER PROTECTED TREES.
5. IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION.
6. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS SHOWN.
7. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
8. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
9. SHOULD THE FABRIC OF A PROTECTION FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, CONTRACTOR SHALL REPLACE IT PROMPTLY.

TREE PROTECTION FENCE
N.T.S. KHA DETAIL NO: 01.304.R01 XX



MAINTENANCE

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.



CONSTRUCTION SPECIFICATIONS

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

CATCH BASIN AND YARD INLET PROTECTION
N.T.S. KHA DETAIL NO: 01.202.R01 XX

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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. CWALINA

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C5-80

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-80 - EROSION CONTROL DETAILS.dwg C5-80 EROSION CONTROL DETAILS Jan 29, 2025 11:01am by: mike.fritz

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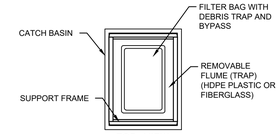
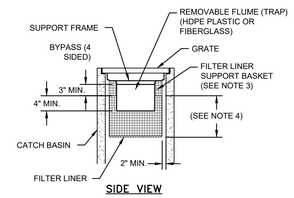


TOP VIEW
(GRATE NOT SHOWN)

CAPACITY CHART				
MODEL NO.	INLET SIZE	LINER DEPTH	STORAGE CAPACITY*	CLEAN FLOW RATE**
FF-2424HC	24" X 24"	12"	1.67 CU. FT.	470 GPM
" "	24" X 24"	24"	4.18 CU. FT.	914 GPM
" "	24" X 24"	36"	6.69 CU. FT.	1,357 GPM
FF-2436HC	24" X 36"	12"	2.55 CU. FT.	641 GPM
" "	24" X 36"	24"	6.38 CU. FT.	1,201 GPM
" "	24" X 36"	36"	10.20 CU. FT.	1,761 GPM
FF-3636HC-GO	36" X 36"	12"	3.36 CU. FT.	772 GPM
" "	36" X 36"	24"	8.39 CU. FT.	1,402 GPM
" "	36" X 36"	36"	13.43 CU. FT.	2,032 GPM
* STORAGE CAPACITY REFLECTS MAXIMUM SOLIDS COLLECTION PRIOR TO IMPEDING BYPASS.				
** FLOW RATES ARE "CALCULATED CLEAN FLOW RATES" BASED ON LINER MATERIAL FLOW RATE OF 70 GPM/SQ. FT. (RECOMMEND APPLYING FACTOR OF .25 TO .50 TO FLOW RATES TO ALLOW FOR SEDIMENT AND DEBRIS)				



SIDE VIEW

NOTES

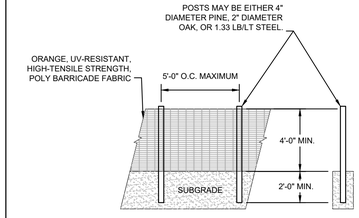
1. CATCH BASIN INSERTS ARE AVAILABLE IN SIZES TO FIT MOST INDUSTRY-STANDARD CATCH BASINS (SEE CAPACITY CHART). CUSTOM SIZES ARE AVAILABLE.
2. FILTER SUPPORT FLANGES SHALL BE CONSTRUCTED FROM STAINLESS STEEL (TYPE 304) DEBRIS TRAP (FLUME) SHALL BE CONSTRUCTED FROM EITHER PETROLEUM RESISTANT FIBERGLASS OR HDPE PLASTIC.
3. FILTER LINER SUPPORT BASKET SHALL BE CONSTRUCTED FROM A BIAXIAL GEOGRID WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 900 X 1400, AS TESTED IN ACCORDANCE WITH ASTM D-4595.
4. INSERT LINERS ARE AVAILABLE IN STANDARD DEPTHS OF 12", 24" OR 36" (REFER TO CAPACITY CHART). CUSTOM LINER DEPTHS MAY BE SPECIFIED.

MAINTENANCE SPECIFICATIONS

INSPECT THE PROTECTION INSERT AND REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF UNIT AFTER EACH STORM EVENT. IF THE CONTAINMENT IS MORE THAN 1/3 FULL OF SEDIMENT, EMPTY THE PROTECTION INSERT BY LIFTING THE UNIT OUT OF THE INLET AND REPLACING.

CATCH BASIN SILT PROTECTION INSERT

N.T.S. KHA DETAIL NO: 01.203.R01 XX

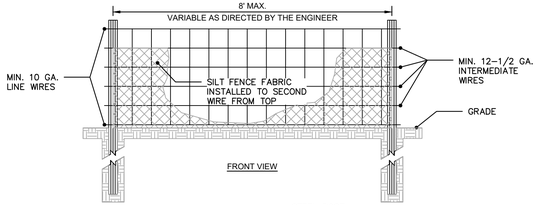


MAINTENANCE SPECIFICATIONS

SHOULD THE FABRIC OF A PROTECTION FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

ORANGE SAFETY FENCE

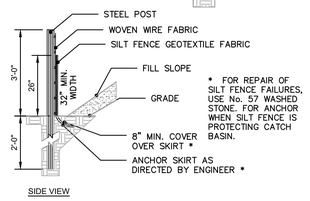
N.T.S. KHA DETAIL NO: 01.301.R01 XX



FRONT VIEW

NOTES

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.



SIDE VIEW

CONSTRUCTION SPECIFICATIONS

MATERIALS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TEMPORARY SILT FENCE

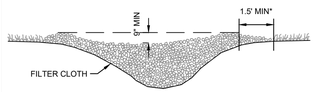
N.T.S. KHA DETAIL NO: 01.302.R02 XX

CONSTRUCTION SPECIFICATIONS:

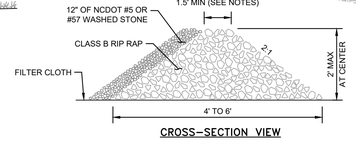
1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.
2. KEEP THE CENTER STONE SECTION AT LEAST 1 FOOT BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM.
5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.
6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

MAINTENANCE NOTES:

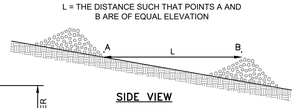
1. INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL.
2. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN SUCH AS INSTALLING A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.



PLAN VIEW



CROSS-SECTION VIEW



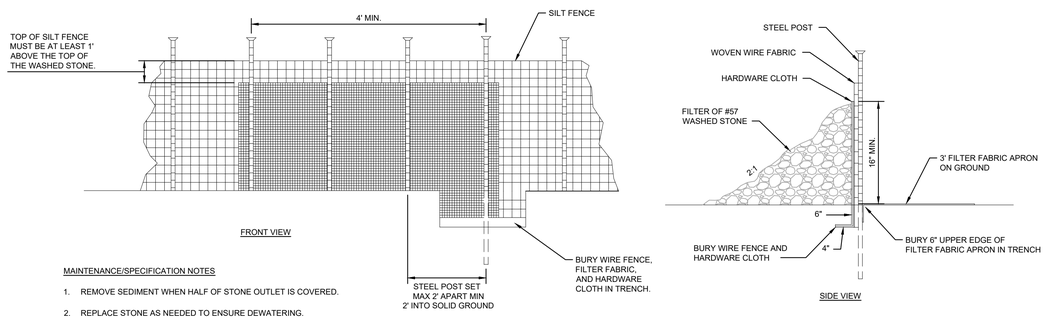
SIDE VIEW

NOTES:

1. KEY THE STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 1.5 FEET TO AVOID WASHOUT FROM OVERFLOW AROUND THE DAM
2. SEE NCDEQ STANDARDS AND SPECS FOR COMPLETE DESIGN CRITERIA AND MAINTENANCE.

ROCK CHECK DAM

N.T.S. KHA DETAIL NO: 01.403.R02 XX



FRONT VIEW

SIDE VIEW

MAINTENANCE/SPECIFICATION NOTES

1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.
3. SILT FENCE OUTLETS SHOULD NOT BE LOCATED WHERE THE OUTFLOW WILL ERODE THE SOIL BELOW.

SILT FENCE OUTLET

N.T.S. KHA DETAIL NO: 01.303.R02 XX

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No.	BY	DATE
1	MRF	08/16/2024
2	TCS	06/24/2024
3	CDJ	06/03/2024
4	MRF	03/06/2024
5	MRF	02/12/2024
6	MRF	12/18/2023
7	MRF	12/08/2023
8	MRF	08/15/2023

1 ISSUANCE AND REVISION DESCRIPTIONS
2 REVISED PER NC DEQ PRIVATE WATER COMMENTS
3 REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
4 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
5 REVISED PER COUNTY COMMENTS DATED 01/22/2024
6 REVISED PER COUNTY COMMENTS DATED 12/11/2023
7 REVISED PER COUNTY COMMENTS DATED 11/07/2023
8 REVISED PER COUNTY COMMENTS

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C5-81

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-80 - EROSION CONTROL DETAILS.dwg C5-81 EROSION CONTROL DETAILS Jan 29, 2025 11:01am by: mike.fritz

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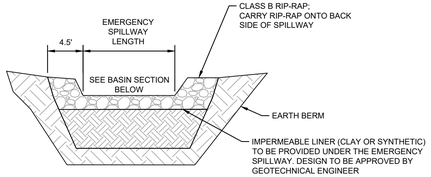
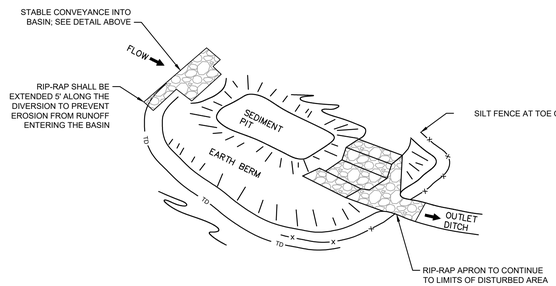
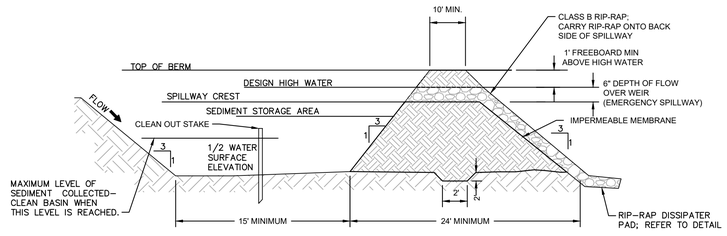


SECTION THROUGH BERM AND FILTER



PERSPECTIVE VIEW



SECTION THROUGH BASIN AND FILTER

SKIMMER SEDIMENT BASIN

N.T.S.

KHA DETAIL NO: 01.401.R02 XX

GENERAL NOTES:

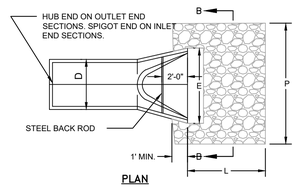
1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE BASIN AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVERSIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE BEING CONSTRUCTED. SPILLWAYS SHOULD NOT BE CONSTRUCTED THROUGH FILL SECTIONS.
3. CONSTRUCTION OPERATION SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
4. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
5. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.
6. STORAGE AREA IS SHOWN AS RECTANGULAR FOR ILLUSTRATIVE PURPOSES ONLY, AND MAY BE CONSTRUCTED IN ANY SHAPE PROVIDED THE MINIMUM STORAGE VOLUME REQUIREMENT IS MET. THE BASIN SHOULD ALSO BE ORIENTED SUCH THAT THE FILTER AND THE MAIN FLOW OF WATER AND SEDIMENT ARE ON OPPOSITE ENDS ON THE LONGER BASIN DIMENSIONS.
7. REQUIRED STORAGE IS 1800 CUBIC FEET OF STORAGE VOLUME PER DENUDED ACRE. RECOMMENDED STORAGE IS 1800 CUBIC FEET OF STORAGE PER ACRE OF DRAINAGE AREA.
8. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURERS INSTRUCTIONS, OR AS DESIGNED.
9. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
10. THE LENGTH OF THE STONE OUTLET (SPILLWAY) IS TO BE BASED ON A 10 YEAR STORM.
11. WHENEVER TOPOGRAPHY ALLOWS, THE BASIN LENGTH SHOULD BE TWICE (2X) THE BASIN WIDTH, TO ALLOW FOR SETTLING. BAFFLES SHOULD BE PROVIDED IN THE BASIN WHERE THE LENGTH IS LESS THAN TWICE THE WIDTH.
12. SAFETY FENCING 3' HIGH SHOULD BE PLACED AROUND ALL SEDIMENT BASINS.
13. FOR DESIGN OF RISER TYPE SEDIMENT BASINS, REFER TO THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
14. THE BASIN SHALL BE INSPECTED AFTER EACH RAIN MADE AS NECESSARY. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
15. IMPERMEABLE LINER WILL BE INSTALLED ON THE SPILLWAY.

CONSTRUCTION SPECIFICATIONS:

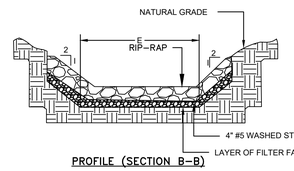
1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED.
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER, AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9 INCHES, AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6 INCHES TO ALLOW FOR SETTLEMENT.
3. SHAPE THE BASIN TO THE SPECIFIED DIMENSIONS. PREVENT THE SKIMMING DEVICE FROM SETTLING INTO THE MUD BY EXCAVATING A SHALLOW PIT UNDER THE SKIMMER OR PROVIDING A LOW SUPPORT UNDER THE SKIMMER OF STONE OR TIMBER.
4. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4-INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES.
5. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
6. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURER'S INSTRUCTIONS, OR AS DESIGNED.
7. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.
8. EARTHEN SPILLWAYS–INSTALL THE SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT POSSIBLE. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE SPILLWAY. THE SPILLWAY SHOULD BE LINED WITH LAMINATED PLASTIC OR IMPERMEABLE GEOTEXTILE FABRIC. THE FABRIC MUST BE WIDE AND LONG ENOUGH TO COVER THE BOTTOM AND SIDES AND EXTEND ONTO THE TOP OF THE DAM FOR ANCHORING IN A TRENCH. THE EDGES MAY BE SECURED WITH 8-INCH STAPLES OR PINS. THE FABRIC MUST BE LONG ENOUGH TO EXTEND DOWN THE SLOPE AND EXIT ONTO STABLE GROUND. THE WIDTH OF THE FABRIC MUST BE ONE PIECE, NOT JOINED OR SPLICED; OTHERWISE WATER CAN GET UNDER THE FABRIC. IF THE LENGTH OF THE FABRIC IS INSUFFICIENT FOR THE ENTIRE LENGTH OF THE SPILLWAY, MULTIPLE SECTIONS, SPANNING THE COMPLETE WIDTH, MAY BE USED. THE UPPER SECTION(S) SHOULD OVERLAP THE LOWER SECTION(S) SO THAT WATER CANNOT FLOW UNDER THE FABRIC. SECURE THE UPPER EDGE AND SIDES OF THE FABRIC IN A TRENCH WITH STAPLES OR PINS. (ADAPTED FROM "A MANUAL FOR DESIGNING, INSTALLING AND MAINTAINING SKIMMER SEDIMENT BASINS." FEBRUARY 1999. J. W. FAIRCLOTH & SON.).
9. INLETS-DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY (REFERENCES: RUNOFF CONTROL MEASURES AND OUTLET PROTECTION).
10. EROSION CONTROL–CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION (REFERENCES: SURFACE STABILIZATION).
11. INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES, OF THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
12. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY (REFERENCES: SURFACE STABILIZATION).

MAINTENANCE NOTES:

1. INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
2. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.
3. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.
4. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.
5. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.



PLAN



PROFILE (SECTION B–B)

SIZING CHART									
STRUCTURE	Q–FULL (CFS)	E (FT)	L (FT)	P (FT)	D (IN)	STONE THICKNESS (IN)	STONE DIAMETER (IN)	STONE CLASS	VELOCITY (FPS)
BASIN 1	0.03	2	3	4	2.50	12	3	A	0.88
BASIN 2	36.63	9	18	21	36	22	6	B	5.18
BASIN 4	0.03	2	3	4	2.50	12	3	A	0.88
BASIN 5	36.63	11.25	22.50	26.25	36	22	6	B	5.18
BASIN 6	0.03	2	3	4	2.50	12	3	A	0.88

NOTES

1. THE LENGTHS OF THE RIP–RAP APRONS WERE DETERMINED BY USING THE NEW YORK DOT DISSIPATOR METHOD, AS OUTLINED IN SECTION 8.06 OF THE NCDEQ EROSION CONTROL MANUAL.
2. RIP–RAP APRONS DESIGNED FOR FULL FLOW CAPACITY

NOTES:

1. END OF THE PIPE OR CULVERT AT THE DISCHARGE OUTLET AT A MAXIMUM SLOPE OF 2:1 AND A HEIGHT NOT LESS THAN TWO THIRDS THE PIPE DIAMETER OR CULVERT HEIGHT.
2. THERE SHALL BE NO OVERFLOW FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIP-RAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF OR TOE WALL AT THE DOWNSTREAM END.
3. THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL.
4. MAXIMUM TAPER TO RECEIVING CHANNEL 5:1.
5. ALL SUBGRADE BELOW THE STRUCTURE TO BE COMPACTED TO 95% OR GREATER.
6. THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
7. NO BENDS OR CURVES IN THE HORIZONTAL ALIGNMENT OF THE APRON WILL BE PERMITTED.

MAINTENANCE NOTES:
IN GENERAL, ONCE A RIPRAP INSTALLATION HAS BEEN PROPERLY DESIGNED AND INSTALLED IT REQUIRES VERY LITTLE MAINTENANCE. RIPRAP SHOULD BE INSPECTED PERIODICALLY FOR SCOUR OR DISLODGED STONES. CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.

CONSTRUCTION SPECIFICATIONS:
1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES SHOWN IN THE PLAN. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.
2. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP SO THE TOP LAYER IS ABOVE THE DOWNSTREAM LAYER A MINIMUM OF 1 FOOT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.
4. RIPRAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER.
5. THE MINIMUM THICKNESS OF THE RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
6. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY WEATHER-RESISTANT AND WELL GRADED.
7. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFILL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT ITS LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.
9. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION.

RIP-RAP APRON AT FLARED END SECTION

N.T.S.

KHA DETAIL NO: 03.205.R02 XX

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NO.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
NO.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT

BROOKFIELD BRANCH

1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

EROSION CONTROL DETAILS

SHEET NUMBER

C5-82

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-80 - EROSION CONTROL DETAILS.DWG C5-82 EROSION CONTROL DETAILS Jan 29, 2025 11:01am by: miles.fritz

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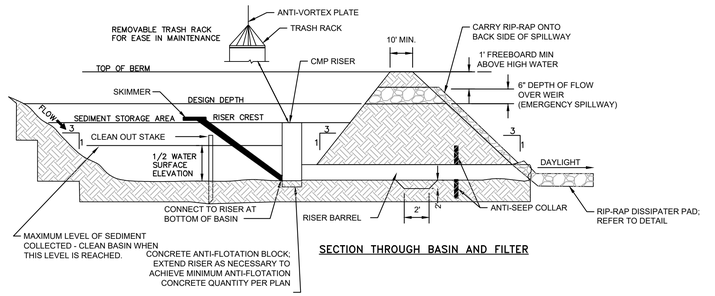
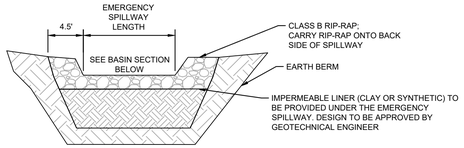


SECTION THROUGH BASIN AND FILTER

MAINTENANCE NOTES:

1. INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS.
2. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.

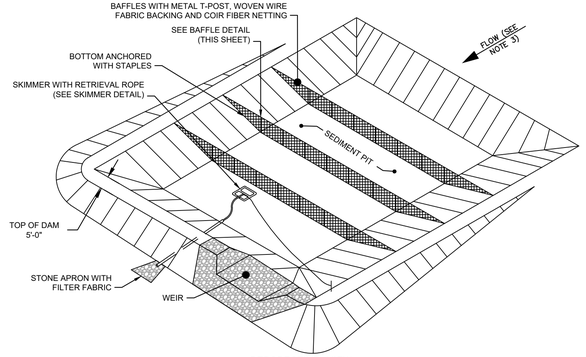


SECTION THROUGH BERM AND FILTER

CONSTRUCTION SPECIFICATIONS:

1. SITE PREPARATIONS– CLEAR, GRUB, AND STRIP TOPSOIL FROM AREAS UNDER THE EMBANKMENT TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEARING THE POOL AREA UNTIL THE DAM IS COMPLETE AND THEN REMOVE BRUSH, TREES, AND OTHER OBJECTIONABLE MATERIALS TO FACILITATE SEDIMENT CLEANOUT. STOCKPILE ALL TOPSOIL OR SOIL CONTAINING ORGANIC MATTER FOR USE ON THE OUTER SHELL OF THE EMBANKMENT TO FACILITATE VEGETATIVE ESTABLISHMENT. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW THE BASIN AS NEEDED.
2. CUT–OFF TRENCH– EXCAVATE A CUT–OFF TRENCH ALONG THE CENTER LINE OF THE EARTH FILL EMBANKMENT. CUT THE TRENCH TO STABLE SOIL MATERIAL, BUT IN NO CASE MAKE IT LESS THAN 2 FEET DEEP. THE CUT–OFF TRENCH MUST EXTEND INTO BOTH ABUTMENTS TO AT LEAST THE ELEVATION OF THE RISER CREST. MAKE THE MINIMUM BOTTOM WIDTH WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT, BUT IN NO CASE LESS THAN 2 FEET. MAKE SIDE SLOPES OF THE TRENCH NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS ARE THE SAME AS THOSE FOR THE EMBANKMENT. KEEP THE TRENCH DRY DURING BACKFILLING AND COMPACTION OPERATIONS.
3. EMBANKMENT– TAKE FILL MATERIAL FROM THE APPROVED AREAS SHOWN ON THE PLANS. IT SHOULD BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, ROCKS, AND OTHER OBJECTIONABLE MATERIAL. CLARIFY AREAS ON WHICH FILL IS TO BE PLACED BEFORE PLACING FILL. THE FILL MATERIAL MUST CONTAIN SUFFICIENT MOISTURE SO IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF THE BALL, IT IS TOO WET FOR PROPER COMPACTION. PLACE FILL MATERIAL IN 6 TO 8 INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF THE FILL AREA AND COMPACT IT. COMPACTION MAY BE OBTAINED BY ROUTING THE CONSTRUCTION HAULING EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF HEAVY EQUIPMENT, OR A COMPACTOR MAY BE USED. CONSTRUCT THE EMBANKMENT TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN HEIGHT TO ALLOW FOR SETTLING.
4. CONDUIT SPILLWAYS– SECURELY ATTACH THE RISER TO THE BARREL OR BARREL STUB TO MAKE A WATERTIGHT STRUCTURAL CONNECTION. SECURE ALL CONNECTIONS BETWEEN BARREL SECTIONS BY APPROVED WATERTIGHT ASSEMBLIES. PLACE THE BARREL AND RISER ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERIAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE OR ANTI–SEEP COLLARS. PLACE THE FILL MATERIAL AROUND THE PIPE SPILLWAY IN 4–INCH LAYERS, AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES. PLACE A MINIMUM DEPTH OF 2 FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. ANCHOR THE RISER IN PLACE BY CONCRETE OR OTHER SATISFACTORY MEANS TO PREVENT FLOTATION. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
5. EMERGENCY SPILLWAY– INSTALL THE EMERGENCY SPILLWAY IN UNDISTURBED SOIL. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADE, DESIGN WIDTH, AND ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY.
6. INLETS– DISCHARGE WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT–LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY.
7. EROSION CONTROL– CONSTRUCT THE STRUCTURE SO THAT THE DISTURBED AREA IS MINIMIZED. DIVERT SURFACE WATER AWAY FROM BARE AREAS. COMPLETE THE EMBANKMENT BEFORE THE AREA IS CLEARED. STABILIZE THE EMERGENCY SPILLWAY EMBANKMENT AND ALL OTHER DISTURBED AREAS ABOVE THE CREST OF THE PRINCIPAL SPILLWAY IMMEDIATELY AFTER CONSTRUCTION.
8. INSTALL POROUS BAFFLES AS SPECIFIED IN PRACTICE 6.65, POROUS BAFFLES, OF THE NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
9. SAFETY– SEDIMENT BASINS MAY ATTRACT CHILDREN AND CAN BE DANGEROUS. AVOID STEEP SIDE SLOPES, AND FENCE AND MARK BASINS WITH WARNING SIGNS IF TRESPASSING IS LIKELY. FOLLOW ALL STATE AND LOCAL REQUIREMENTS.

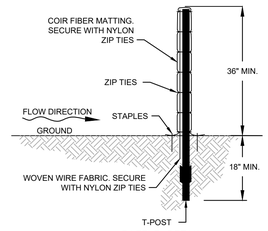
SEDIMENT BASIN WITH RISER
N.T.S.
KHA DETAIL NO: 01.405.R01 XX



PERSPECTIVE VIEW

NOTES:

1. DRIVE STEEL FENCE POST AT LEAST 18 INCHES INTO SOLID GROUND.
2. WOOD POST ARE NOT ACCEPTABLE.
3. DIRECT WATER TO TOP OF BASIN USING STABILIZED DITCH, SLOPE DRAIN PIPE OR OTHER APPROVED METHOD.



BAFFLE DETAIL

CONSTRUCTION SPECIFICATIONS:

MATERIALS

1. USE MATTING MADE OF 100% COCONUT FIBER (COIR) TWINE WOVEN INTO HIGH STRENGTH MATRIX WITH THE PROPERTIES SHOWN IN TABLE 6.65A IN NCDEQ EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
2. STAPLES SHOULD BE MADE OF 0.125 INCH DIAMETER NEW STEEL WIRE FORMED INTO A 'U' SHAPE NOT LESS THAN 12 INCHES IN LENGTH WITH A THROAT OF 1 INCH IN WIDTH. THE STAPLES ANCHOR THE POROUS BAFFLES INTO THE SIDES AND BOTTOM OF THE BASIN.
3. ENSURE THAT STEEL POSTS FOR POROUS BAFFLES ARE OF A SUFFICIENT HEIGHT TO SUPPORT BAFFLES AT DESIRED HEIGHT. POSTS SHOULD BE APPROXIMATELY 1-3/8" WIDE MEASURED PARALLEL TO THE FENCE, AND HAVE A MINIMUM WEIGHT OF 1.25 LB/LINEAR FT. THE POSTS MUST BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14.0 SQUARE INCHES AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE TO HAVE A MEANS OF RETAINING WIRE AND COIR FIBER MAT IN THE DESIRED POSITION WITHOUT DISPLACEMENT.
4. USE 9-GAUGE HIGH TENSION WIRE FOR SUPPORT WIRE.

CONSTRUCTION

1. GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
2. INSTALL THE COIR FIBER BAFFLES IMMEDIATELY UPON EXCAVATION OF THE BASINS.
3. INSTALL POSTS ACROSS THE WIDTH OF THE SEDIMENT TRAP.
4. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES AND SPACED A MAXIMUM OF 4 FEET APART. THE TOP OF THE FABRIC SHOULD BE A MINIMUM OF 6 INCHES HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE A MINIMUM OF 2 INCHES LOWER THAN THE TOP OF THE EARTHEN EMBANKMENT.
5. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISCHARGE POINT. BASINS LESS THAN 20 FEET IN LENGTH MAY USE 2 BAFFLES.
6. ATTACH A 9 GAUGE HIGH TENSION WIRE STRAND TO THE STEEL POSTS AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION WITH PLASTIC TIES OR WIRE FASTENERS TO PREVENT SAGGING. IF THE TEMPORARY SEDIMENT BASIN WILL BE CONVERTED TO A PERMANENT STORMWATER BASIN OF A GREATER DEPTH, THE BAFFLE HEIGHT SHOULD BE BASED ON THE POOL DEPTH DURING USE AS A TEMPORARY SEDIMENT BASIN.
7. EXTEND 9 GAUGE MINIMUM HIGH TENSION WIRE STRAND TO SIDE OF BASIN OR INSTALL STEEL T-POSTS TO ANCHOR BAFFLE TO SIDE OF BASIN AND SECURE TO VERTICAL END POSTS.
8. DRAPE THE COIR FIBER MAT OVER THE WIRE STRAND MOUNTED AT A HEIGHT OF 6 INCHES ABOVE THE SPILLWAY ELEVATION. SECURE THE COIR FIBER MAT TO THE WIRE STRAND WITH PLASTIC TIES OR WIRE FASTENERS. ANCHOR THE MATTING TO THE SIDES AND FLOOR OF THE BASIN WITH 12 INCH WIRE STAPLES, APPROXIMATELY 1 FT APART, ALONG THE BOTTOM AND SIDE SLOPES OF THE BASIN.
9. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.
10. ADJUSTMENTS MAY BE REQUIRED IN THE STAPLING REQUIREMENTS TO FIT INDIVIDUAL SITE CONDITIONS.

MAINTENANCE NOTES:

1. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
4. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED AND APPROVAL FROM NCDEQ, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

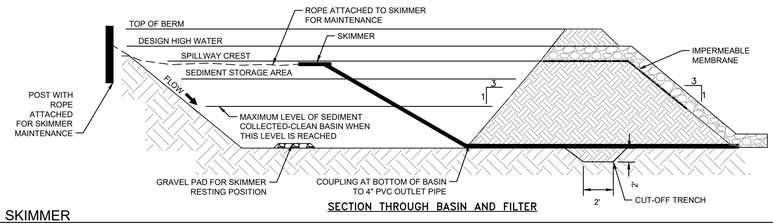
BAFFLE
N.T.S.
KHA DETAIL NO: 01.406.R01 XX

MAINTENANCE NOTES:

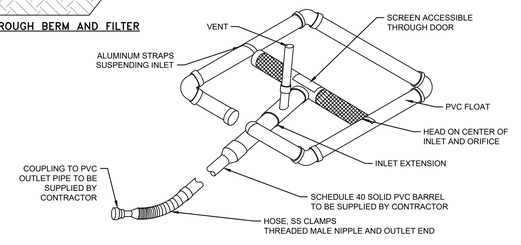
1. INSPECT SKIMMER AND TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT STORAGE.
2. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE BASIN.
3. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AN DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.
4. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

NOTES:

1. SKIMMER DEVICE REQUIRED IN EACH SEDIMENT BASIN.
2. SKIMMER TO BE 4" FAIRCLOTH SKIMMER WITH INLET SIZED TO DEWATER BASIN IN MINIMUM 48 HOURS.
3. CONTACT J.W. FAIRCLOTH AND SON, (919) 732-1244, FOR ADDITIONAL INFORMATION AND ORDERING OF THE REQUIRED SKIMMERS.
4. CONTRACTOR WILL PROVIDE A ROPE ATTACHMENT FOR MAINTENANCE.



SECTION THROUGH BASIN AND FILTER



GRAVEL AND RIP–RAP FILTER BASIN SKIMMER DEVICE

SKIMMER
N.T.S.
KHA DETAIL NO: 01.402.R02 XX

No.	REVISED PHASE BOUNDARY	08/16/2024	MRF
8	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
7	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
6	REVISED PER OWNER REVIEW	03/06/2024	MRF
5	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
3	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
2	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY

PREPARED BY

Kimley»Horn

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PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C5-83

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Planesheets\C5-80 - EROSION CONTROL DETAILS.DWG C5-83 EROSION CONTROL DETAILS Jan 29, 2025 11:01am by: mike.fritz

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

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

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

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

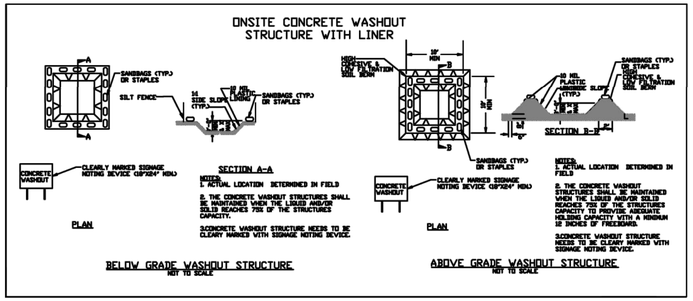
PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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

NORTH CAROLINA *Environmental Quality*



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-80 - EROSION CONTROL DETAILS.DWG C5-84 EROSION CONTROL DETAILS Jan 29, 2025 11:02am by: miles.fritz

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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PERMIT	08/16/2024	MRF
2	REVISED PHASE BOUNDARY	08/24/2024	TCS
3	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/03/2024	CDJ
4	REVISED SEWER AND LIFT STATION DETAILS	06/06/2024	MRF
5	REVISED SEWER PER OWNER REVIEW	02/12/2024	MRF
6	REVISED PER COUNTY COMMENTS DATED 01/22/2024	12/18/2023	MRF
7	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/08/2023	MRF
8	REVISED PER COUNTY COMMENTS DATED 11/07/2023		

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C5-84

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 wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit 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 documented in the manner described:

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

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency 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 30 days. 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.

(c) All data used to complete the Notice of Intent and older 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).

(a) 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.

(b) Anticipated bypasses and unanticipated bypasses.

(c) 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 Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

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.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. CWALINA

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE: EROSION CONTROL DETAILS

SHEET NUMBER: C5-85

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C5-80 - EROSION CONTROL DETAILS.DWG C5-85 EROSION CONTROL DETAILS Jan 29, 2025 11:02am by: miles.fritz

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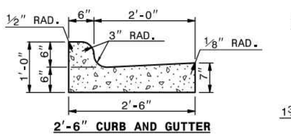
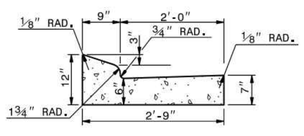
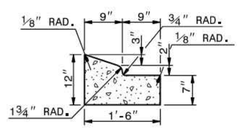


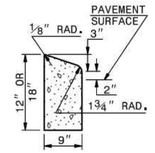
2'-6" CURB AND GUTTER



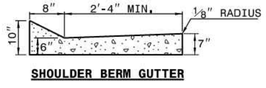
2'-9" CURB AND GUTTER



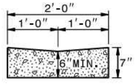
1'-6" CURB AND GUTTER



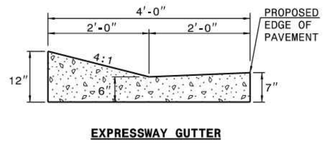
9" X 12" OR 18" CONCRETE CURB



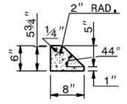
SHOULDER BERM GUTTER



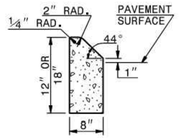
VALLEY GUTTER



EXPRESSWAY GUTTER



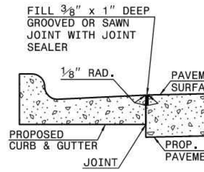
8" X 6" MEDIAN CURB



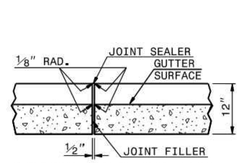
8" X 12" OR 18" CONCRETE CURB

SECTION VIEW OF CURBS OR CURBS AND GUTTERS

GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
- JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
- CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
- FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
- SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.

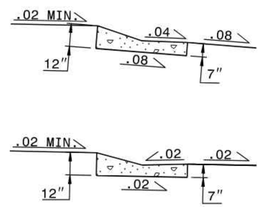


LONGITUDINAL JOINT

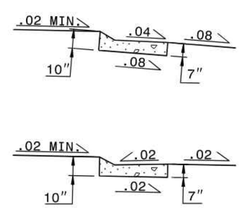


TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER

SECTION VIEW OF JOINTS

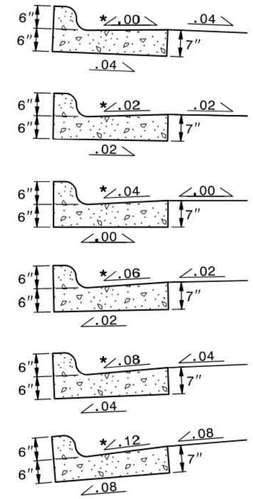


EXPRESSWAY GUTTER



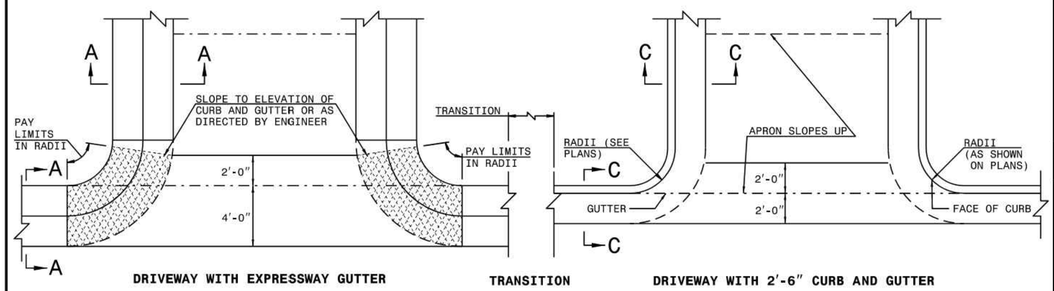
SHOULDER BERM GUTTER

SECTION VIEWS OF EXPRESSWAY GUTTER AND SHOULDER BERM GUTTER SUPERELEVATION RATES



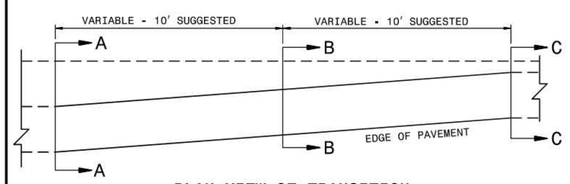
* THE GUTTER SLOPE FOR 1'-6" CURB AND GUTTER SHALL MATCH THE SLOPE OF THE ADJOINING PAVEMENT.

SECTION VIEWS OF 1'-6", 2'-6" (DEPICTED) AND 2'-9" CURB AND GUTTER SUPERELEVATION RATES

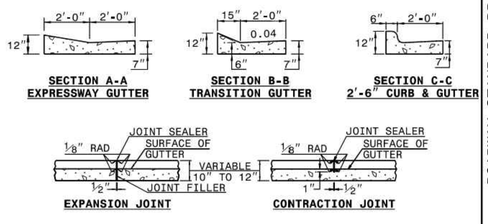


DRIVEWAY WITH EXPRESSWAY GUTTER — TRANSITION — DRIVEWAY WITH 2'-6" CURB AND GUTTER

PLAN VIEW OF TYPICAL CURB AND GUTTER OCCURENCES



PLAN VIEW OF TRANSITION
EXPRESSWAY GUTTER TO 2'-6" CURB AND GUTTER



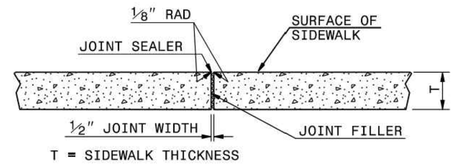
NOTES:
- IN THE TRANSITION FROM 4'-0" CONCRETE EXPRESSWAY GUTTER TO 2'-6" CONCRETE CURB AND GUTTER, PLACE ½" EXPANSION JOINTS AT 25' INTERVALS.
- PLACE GROOVE JOINTS 1" DEEP AT 12'-6" INTERVALS BETWEEN EXPANSION JOINTS.
- FILL AND SEAL THE TOP ½" OF THE EXPANSION JOINTS AND 1" OF CONTRACTION JOINTS WITH APPROVED JOINT SEALING COMPOUND.

NOTES:

CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

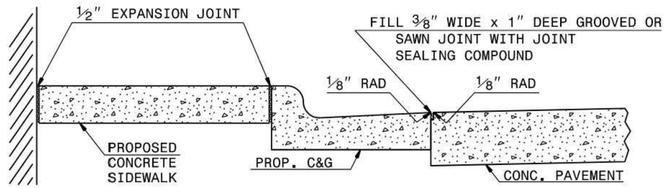
PLACE A GROOVE JOINT 1" DEEP WITH ⅛" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.05 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



T = SIDEWALK THICKNESS

TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE CURB, GUTTER AND CURB & GUTTER

ROADWAY STANDARD DRAWING FOR
CONCRETE SIDEWALK

PREPARED FOR
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2	MRF	12/08/2023
1	BY	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER MIKE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C6-00

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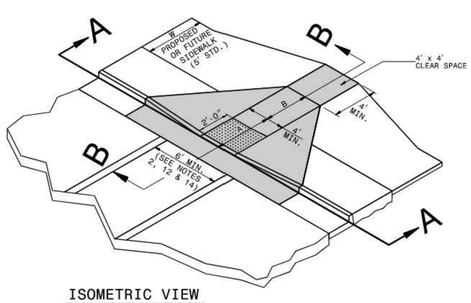
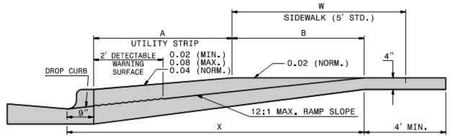
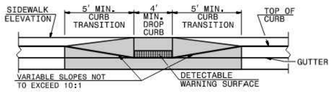


ISOMETRIC VIEW



SECTION B-B

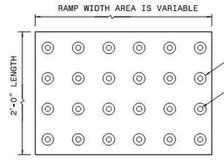


SECTION A-A

PAY LIMITS FOR CURB RAMP

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

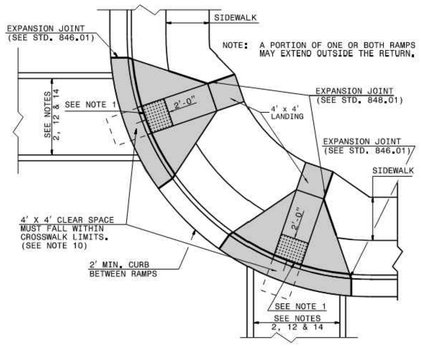
DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X-(A+9")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



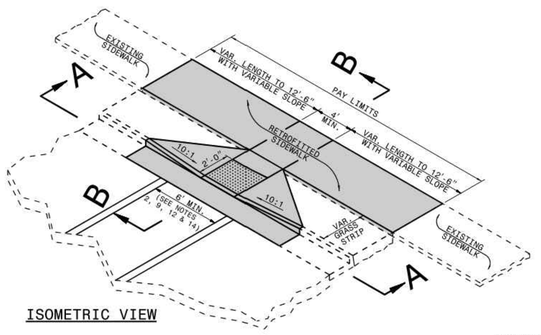
PLAN VIEW
DUAL RAMPS
ANY RADII
(4' MIN. FLOOR WIDTH)

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

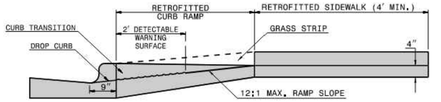
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

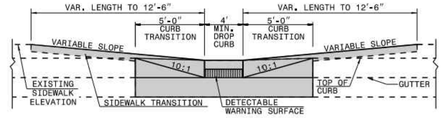
SHEET 1 OF13
848.06



ISOMETRIC VIEW



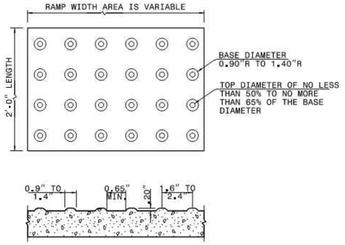
SECTION B-B



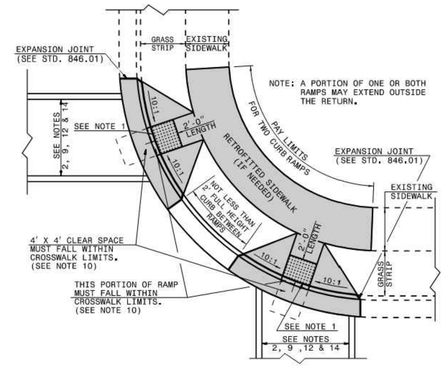
SECTION A-A

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE



PLAN VIEW
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

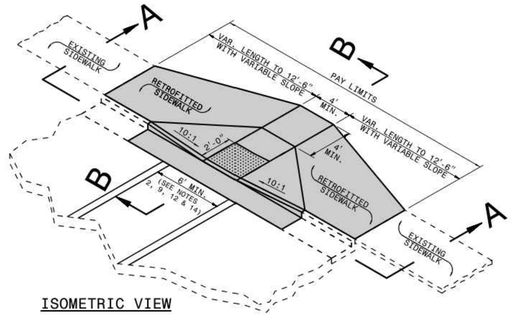
PAY LIMITS OF CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

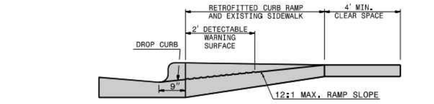
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP AND EXISTING SIDEWALK
WITH GRASS STRIP

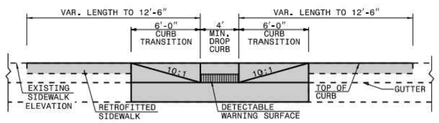
SHEET 2 OF13
848.06



ISOMETRIC VIEW



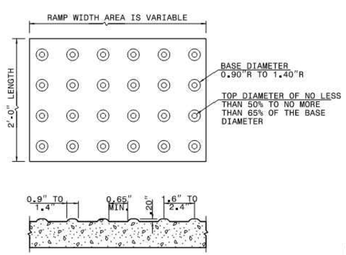
SECTION B-B



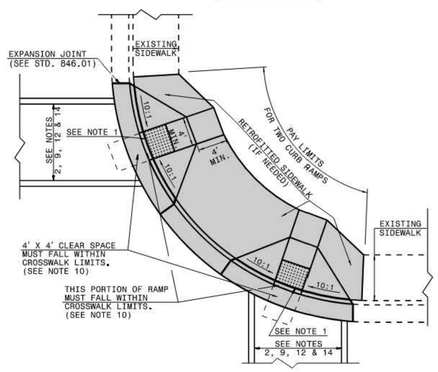
SECTION A-A

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE



PLAN VIEW
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

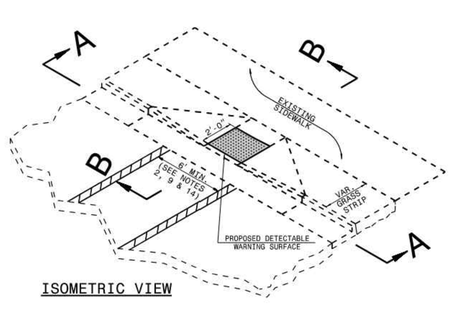
PAY LIMITS OF CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

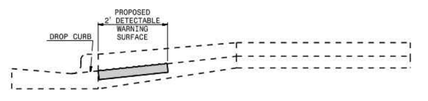
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
ADJACENT TO CURB

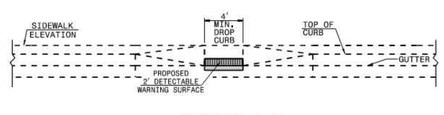
SHEET 3 OF13
848.06



ISOMETRIC VIEW



SECTION B-B



SECTION A-A

NOTES:
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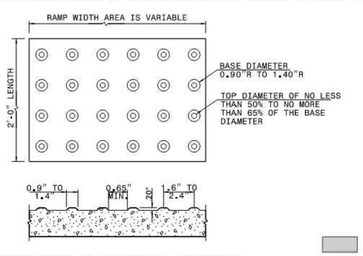
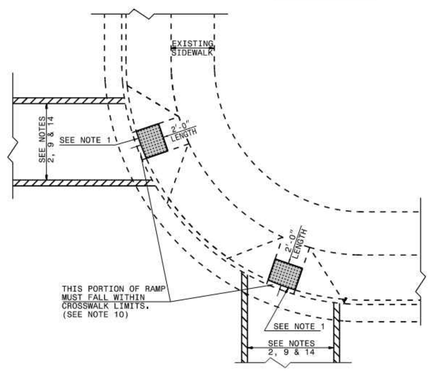
DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE



PLAN VIEW
DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

PAY LIMITS OF RETROFIT CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
RETROFITTING DETECTABLE WARNING SURFACE
ONTO EXISTING CURB RAMP

SHEET 4 OF13
848.06

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

NO.	BY	DATE
1	TCS	08/18/2024
2	TCS	06/24/2024
3	CDJ	06/03/2024
4	MRF	03/06/2024
5	MRF	02/12/2024
6	MRF	12/18/2023
7	MRF	12/08/2023
8	MRF	

REVISED PHASE BOUNDARY
REVISED PER NC DEQ PRIVATE WATER COMMENTS
REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
REVISED PER COUNTY COMMENTS DATED 01/22/2024
REVISED PER COUNTY COMMENTS DATED 12/11/2023
REVISED PER COUNTY COMMENTS DATED 11/07/2023
ISSUANCE AND REVISION DESCRIPTIONS

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY
6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C6-01

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-00 - CONSTRUCTION DETAILS.dwg C6-01 CONSTRUCTION DETAILS Jan 29, 2025 11:02am by: mike.fritz

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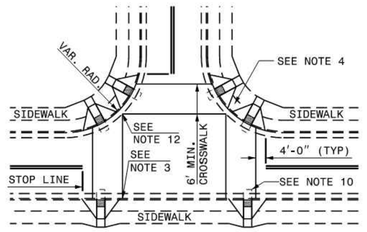
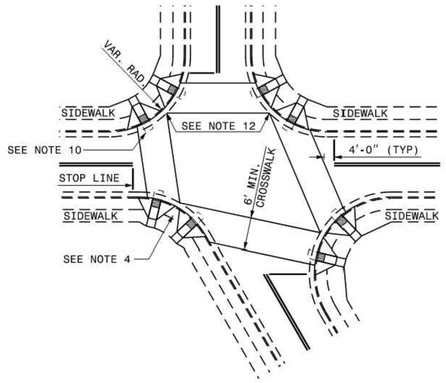


DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF CURB RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

ROADWAY PLAN SYMBOL
CR
FOR PROPOSED CURB RAMP

PROPOSED CURB RAMP W/ CLEAR SPACE
PROPOSED OR FUTURE SIDEWALK

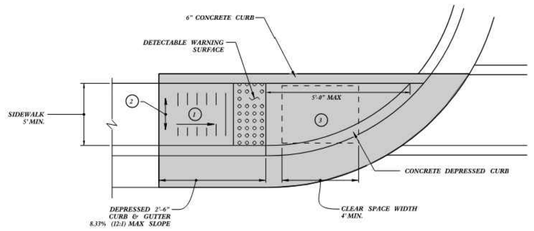
ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

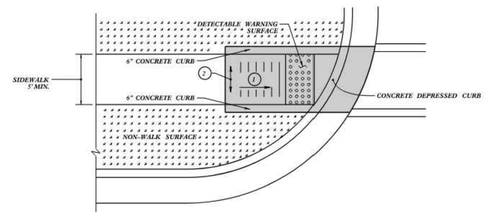
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
CURB RAMP LOCATION

SHEET 5 OF13
848.06



TYPE 1

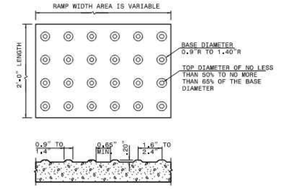


TYPE 1 MODIFIED

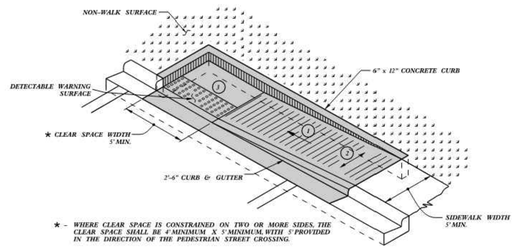
1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE



TYPE 1A

★ - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4' MINIMUM X 5' MINIMUM WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.

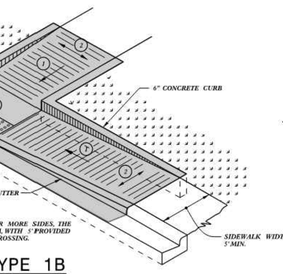
PAY LIMITS FOR 1 CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

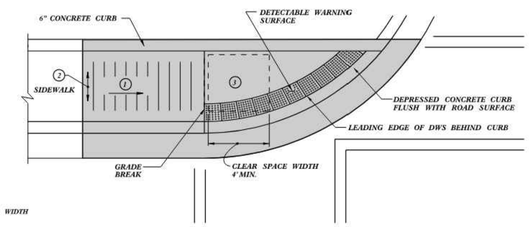
ROADWAY STANDARD DRAWING FOR
CURB RAMP
DIRECTIONAL RAMP

SHEET 6 OF13
848.06



★ - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4' MINIMUM X 5' MINIMUM WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.

TYPE 1B

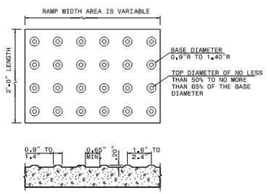


TYPE 1C

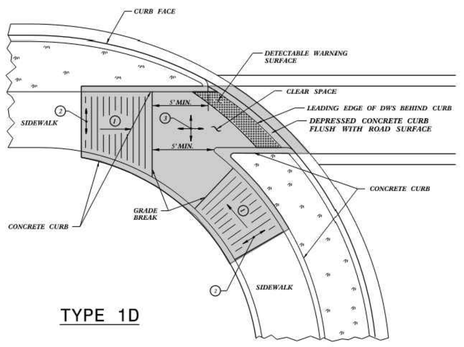
1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE



TYPE 1D

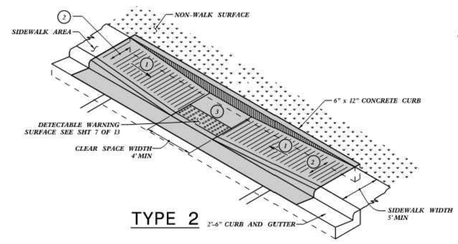
PAY LIMITS FOR 1 CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

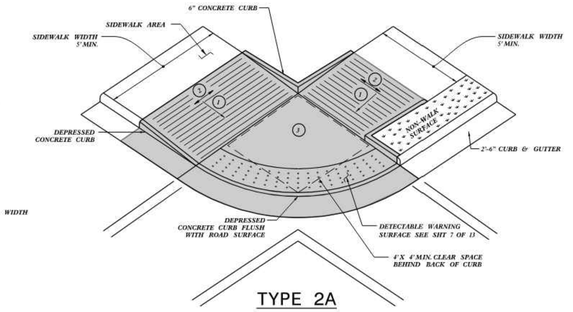
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
DIRECTIONAL RAMP

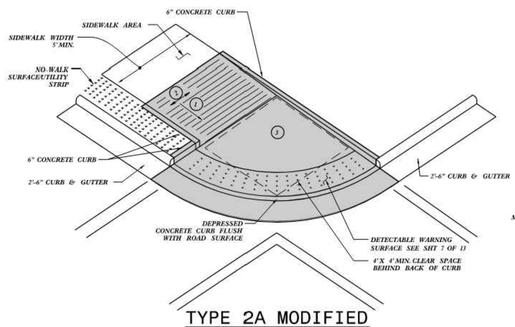
SHEET 7 OF13
848.06



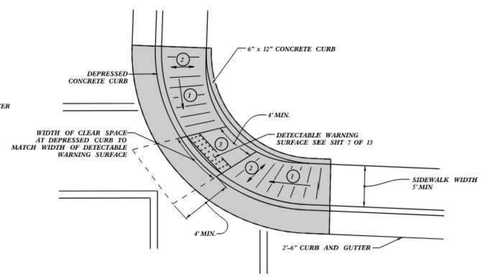
TYPE 2



TYPE 2A



TYPE 2A MODIFIED



TYPE 2B

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

PAY LIMITS FOR 1 CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PARALLEL RAMP

SHEET 8 OF13
848.06

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/18/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 05/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-93-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER NICHOLAS J. GWALTNEY

DRAWN BY: NJ
DESIGNED BY: NJ
REVIEWED BY: RW
DATE: 6/24/2024
PROJECT NO.: 014793000

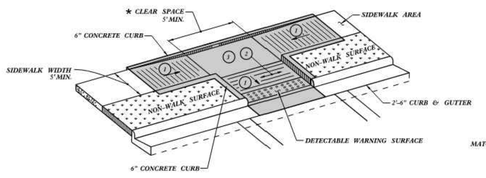
TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C6-02

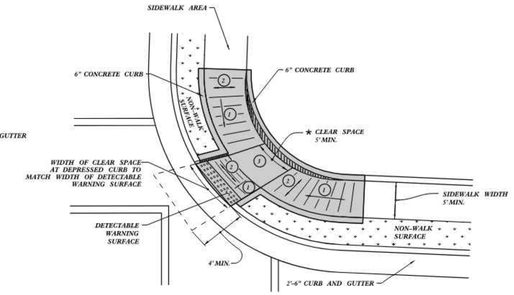
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-00 - CONSTRUCTION DETAILS.dwg C6-02 CONSTRUCTION DETAILS Jan 29, 2025 11:02am by: mike.fritz

★ - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4'-MINIMUM X 5'-MINIMUM, WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.



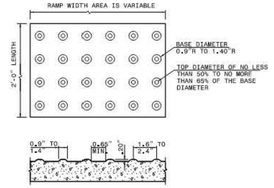
TYPE 3



TYPE 3 MODIFIED
INSTALLATION IN A RADIUS

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

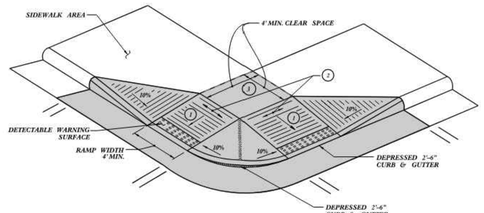
PAY LIMITS FOR 1 CURB RAMP

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PARALLEL RAMP

SHEET 9 OF 13
848.06



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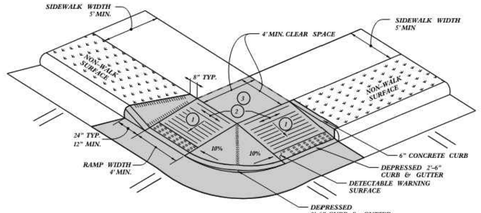
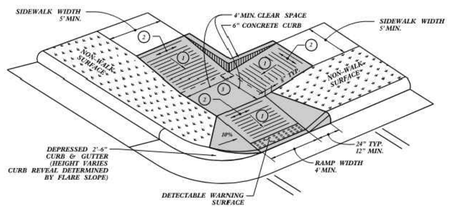
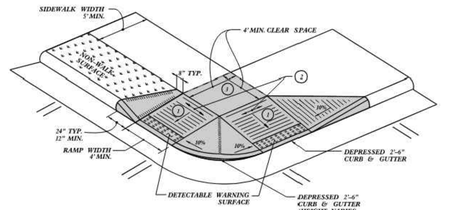


TYPE 4A



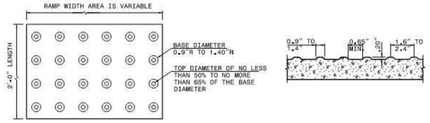
TYPE 4B



TYPE 4C

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

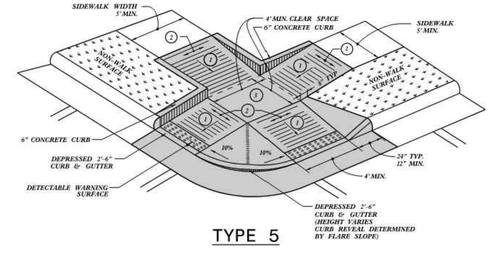
PAY LIMITS FOR 1 OR 2 CURB RAMPS (CALCULATE BASED ON NUMBER OF SETS OF DETECTABLE WARNING SURFACES)

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

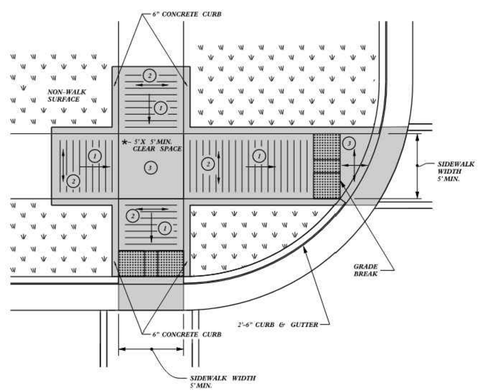
1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
SHARED LANDING

SHEET 10 OF 13
848.06



TYPE 5

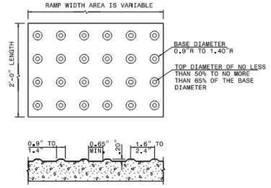


★ - WHERE CLEAR SPACE IS CONSTRAINED ON TWO OR MORE SIDES, THE CLEAR SPACE SHALL BE 4'-MINIMUM X 5'-MINIMUM, WITH 5' PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.

TYPE 5A

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

1. 8.33% (12:1) MAX RAMP SLOPE
2. CROSS SLOPE: 2.00%
3. MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00%.

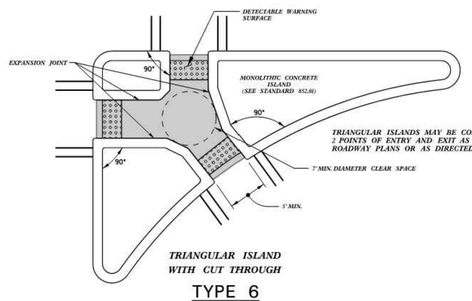
PAY LIMITS FOR 1 OR 2 CURB RAMPS (CALCULATE BASED ON NUMBER OF SETS OF DETECTABLE WARNING SURFACES)

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

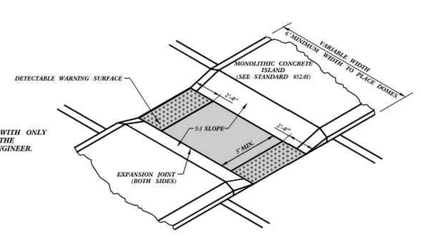
ROADWAY STANDARD DRAWING FOR
CURB RAMP
SHARED LANDING

SHEET 11 OF 13
848.06



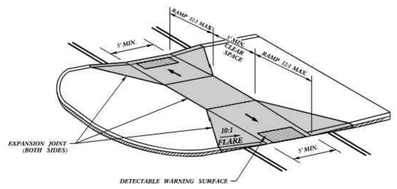
TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

TRIANGULAR ISLAND
WITH CUT THROUGH
TYPE 6



MEDIAN ISLAND
WITH CUT THROUGH
TYPE 7

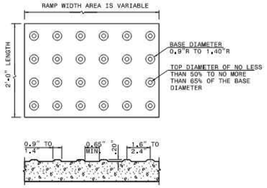
PAY LIMITS FOR 2 OR 3 CURB RAMPS (CALCULATE BASED ON NUMBER OF SETS OF DETECTABLE WARNING SURFACES)



MEDIAN ISLAND
CURB RAMPS
TYPE 8

NOTES:
DETECTABLE WARNING SURFACE SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.

DETECTABLE WARNING SURFACE SHALL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING SURFACE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CURB RAMP
ISLAND RAMP

SHEET 12 OF 13
848.06

PREPARED BY

Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.

25 BULL ST., SUITE 400
SAVANNAH, GA 31401
PHONE: (912) 335-5454
WWW.KIMLEY-HORN.COM

PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

NO.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW	DATED 03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED	01/22/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED	12/11/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED	11/07/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C6-03

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Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Planesheets\C6-00 - CONSTRUCTION DETAILS.dwg C6-03 CONSTRUCTION DETAILS Jan 29, 2025 11:02am by: mike.fritz

NOTES:

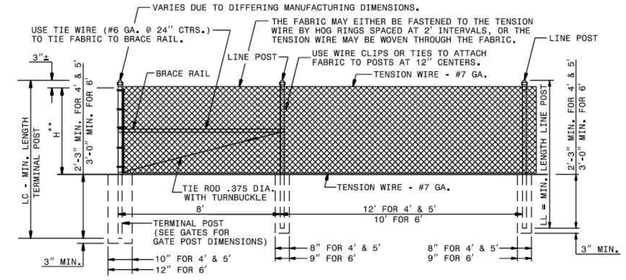
1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4′x4′ CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4′ MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20′ FROM THE BACK OF PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4′ WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT CLEAR SPACES FOR SIDEWALK A MINIMUM OF 4′x4′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT CLEAR SPACES FOR MEDIAN ISLANDS A MINIMUM OF 5′x5′ WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. IF CONSTRAINED ON TWO OR MORE SIDES, THE THE CLEAR SPACE SHALL BE 4′ MINIMUM X 5′ MINIMUM, WITH 5′ PROVIDED IN THE DIRECTION OF THE PEDESTRIAN STREET CROSSING.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6′ WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGH THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5′X5′ CLEAR SPACE AT THE TOP OF RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, WHERE THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE, OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½″ EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01.
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. DETECTABLE WARNING SURFACES WILL COVER 2′-0″ LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
19. DETECTABLE WARNING SURFACES WILL CONTRAST VISIBLY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

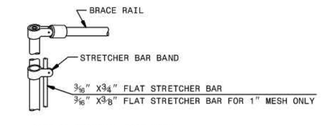
ROADWAY STANDARD DRAWING FOR
CURB RAMP
NOTES

SHEET 13 OF 13
848.06

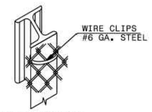


**"H" IS THE HEIGHT OF FENCE. SEE PAY ITEM DESCRIPTION FOR REQ'D HEIGHT FOR PROJECT.

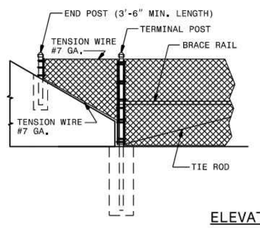
NOTE: ROLL FORMED LINE POST MAY BE DRIVEN TO A MINIMUM OF 3′-0″ IN LIEU OF CONCRETE ANCHOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



GATE OR TERMINAL POST WITH STRETCHER BAR ATTACHMENT

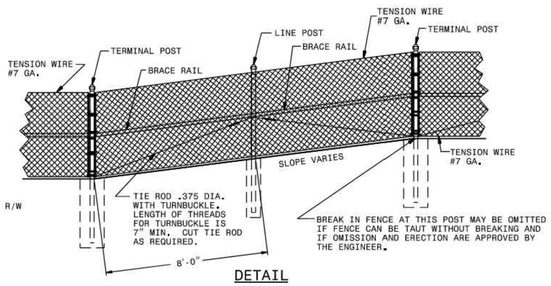


METHOD OF TYING FABRIC TO "H" POST



ELEVATION

METHOD OF TYING FENCE TO ENDWALL



DETAIL

METHOD OF CONSTRUCTING FENCE ON SHARP BREAK IN GRADE

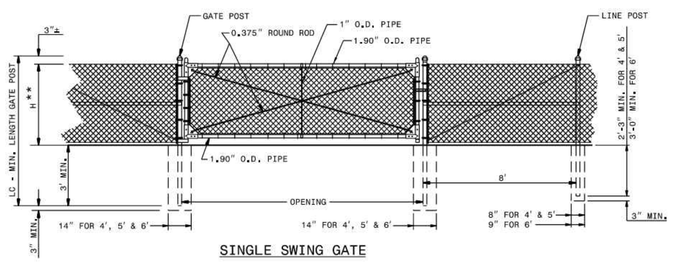
NOTES:
CAPS ARE REQUIRED ON PIPE POST. CAPS ARE NOT REQUIRED ON "H" POST OR ROLL FORMED POST. INSTALL FENCE FABRIC ON THE SIDE FARTHEST FROM THE HIGHWAY EXCEPT THAT ON HORIZONTAL CURVES GREATER THAN THREE DEGREES, INSTALL THE FENCE TO PULL AGAINST LINE POST. CONSIDER ALL CHANGES IN DIRECTION OF FENCE LINE OF 30° OR MORE AS CORNERS.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

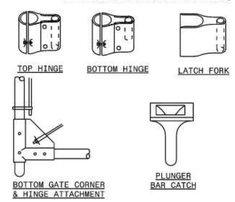
ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4′, 5′ AND 6′ HIGH FENCE

SHEET 1 OF 3
866.01



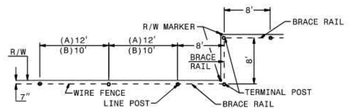
SINGLE SWING GATE

NOTE:
FENCE HARDWARE VARIES DUE TO DIFFERING MANUFACTURES SUPPLIES.



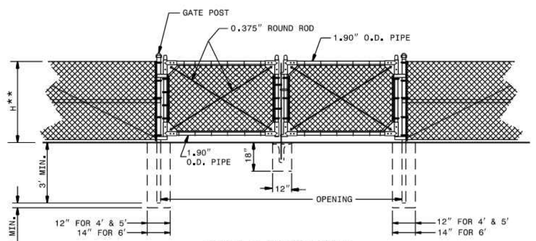
**"H" IS THE HEIGHT OF FENCE. SEE PAY ITEM DESCRIPTION FOR REQ'D HEIGHT FOR PROJECT.

NOTE: ROLL FORMED LINE POST MAY BE DRIVEN TO A MINIMUM OF 3′-0″ IN LIEU OF CONCRETE ANCHOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



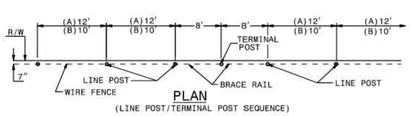
PLAN

PLACEMENT OF FENCE ALONG RIGHT OF WAY (BRACE ALL TERMINAL POSTS AS SHOWN ABOVE)



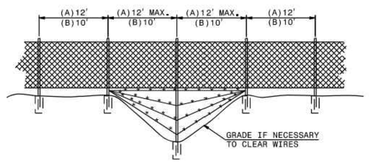
DOUBLE SWING GATE

USE WHERE SWINGING CLEARANCE IS LIMITED



PLAN

(LINE POST/TERMINAL POST SEQUENCE)



DETAIL OF DITCH CROSSING

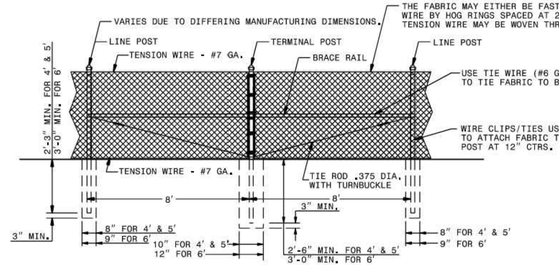
MAXIMUM WIRE SPACING TO BE 6″.
MAXIMUM CLEARANCE BETWEEN LOWEST STRAND AND GROUND TO BE 6″.
ERECT BRACE RAILS BETWEEN TERMINAL OR GATE POSTS AT INTERVALS NOT EXCEEDING 700′ ON TANGENTS OR 350′ ON SHORT RADIUS CURVES.
ERECT ADDITIONAL TERMINAL POSTS IF DIRECTED BY THE ENGINEER.
BRACE TERMINAL POSTS FROM BOTH SIDES OF POST.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

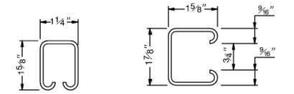
ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4′, 5′ AND 6′ HIGH FENCE

SHEET 2 OF 3
866.01



LINE BRACE DETAIL

**"H" IS THE HEIGHT OF FENCE. SEE PAY ITEM DESCRIPTION FOR REQ'D HEIGHT FOR PROJECT.



ROLL FORMED LINE POST MAY BE DRIVEN TO A MINIMUM OF 3′-0″ IN LIEU OF CONCRETE ANCHOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

FABRIC	GALV. STEEL OR ALUMINUM COATED STEEL #11 GAGE			ALUMINUM ALLOY OR ALUMINUM COATED STEEL(#11 GAGE)	
FRAME COMPONENTS	GALVANIZED STEEL #11 GAGE			ALUMINUM ALLOY	
SYSTEM	G1	G2	G3	A1	A2
LINE POST	1.90″ O.D. STEEL PIPE	1.625″ X 1.875″ STEEL H	1.625″ X 1.875″ STEEL R.F.	2.375″ O.D. ALUMINUM PIPE	2.00″ X 2.50″ ALUMINUM PIPE
TERMINAL POST (END, CORNER, BRACES)	2.375″ O.D. STEEL PIPE	2.375″ O.D. STEEL PIPE	2.375″ O.D. STEEL PIPE	2.875″ O.D. ALUMINUM PIPE	2.875″ O.D. ALUMINUM PIPE
GATE POST UP THRU 6′ LEAF	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE	2.875″ O.D. ALUMINUM PIPE	2.875″ O.D. ALUMINUM PIPE
GATE POST 7′ THRU 12′ LEAF	4.000″ O.D. STEEL PIPE	4.000″ O.D. STEEL PIPE	4.000″ O.D. STEEL PIPE	4.000″ O.D. ALUMINUM PIPE	4.000″ O.D. ALUMINUM PIPE
BRACE RAIL	1.660″ O.D. STEEL PIPE	1.660″ O.D. STEEL PIPE	1.250″ X 1.625″ STEEL R.F. OR 1.660″ O.D. STEEL PIPE	1.660″ O.D. ALUMINUM PIPE	1.660″ O.D. ALUMINUM PIPE

FOR 4′ AND 5′ FENCE SYSTEMS

FABRIC	GALV. STEEL OR ALUMINUM COATED STEEL #11 GAGE		
FRAME COMPONENTS	GALVANIZED STEEL		
SYSTEM	G1	G2	G3
LINE POST	2.375″ O.D. STEEL PIPE	1.625″ X 1.875″ STEEL H	1.625″ X 1.875″ STEEL R.F.
TERMINAL POST (END, CORNER, BRACES)	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE
GATE POST UP THRU 6′ LEAF	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE	2.875″ O.D. STEEL PIPE
GATE POST 7′ THRU 12′ LEAF	4.000″ O.D. STEEL PIPE	4.000″ O.D. STEEL PIPE	4.000″ O.D. STEEL PIPE
BRACE RAIL	1.660″ O.D. STEEL PIPE	1.660″ O.D. STEEL PIPE	1.250″ X 1.625″ STEEL R.F. OR 1.660″ O.D. STEEL PIPE

FOR 6′ FENCE SYSTEMS

ALLOWABLE COMPONENTS FOR FENCE SYSTEMS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4′, 5′ AND 6′ HIGH FENCE

SHEET 3 OF 3
866.01

PREPARED BY
Kimley»Horn
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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
No.	SSJUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
CONSTRUCTION DETAILS

SHEET NUMBER
C6-04

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-00 - CONSTRUCTION DETAILS.dwg C6-04 CONSTRUCTION DETAILS Jan 29, 2025 11:02am by: mike.fritz

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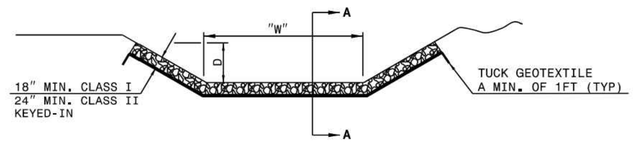
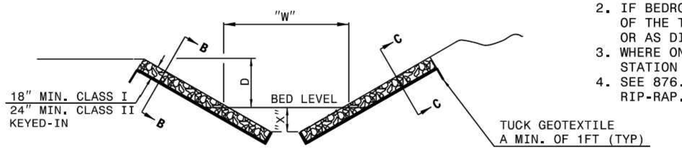
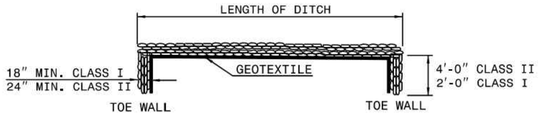


DITCH OR CHANNEL WITH CLASS I OR CLASS II RIP RAP ("W" < 6.0FT)



DITCH OR CHANNEL WITH CLASS I OR CLASS II RIP RAP*

GENERAL NOTES:
1. USE RIP-RAP IN CHANNEL BED WHERE SHOWN ON PLANS.
2. IF BEDROCK IS ENCOUNTERED WITHIN THE LIMITS OF THE TOEWALL, BEGIN TOEWALL ON THE BEDROCK OR AS DIRECTED BY THE ENGINEER.
3. WHERE ONLY ONE SIDE REQUIRES RIP-RAP, LIST STATION AND SIDE OF SAME.
4. SEE 876.04 FOR DITCH OR CHANNEL WITH CLASS B RIP-RAP.



LONGITUDINAL SECTION A-A, B-B OR C-C

CLASS I	
*"W"	"X"
6'-10'	12"
11'-20'	18"

*FOR "V" DITCH "W" IS 0'

CLASS II	
*"W"	"X"
ALL	36"

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

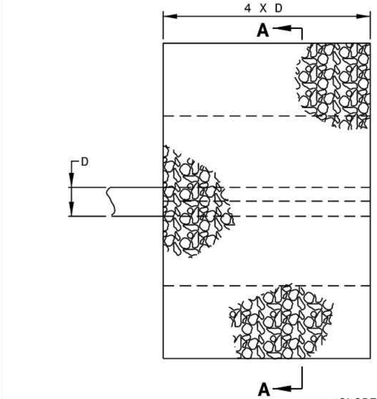
1-24

ROADWAY STANDARD DRAWING FOR

RIP RAP IN CHANNELS AND DITCHES

SHEET 1 OF 1

876.01



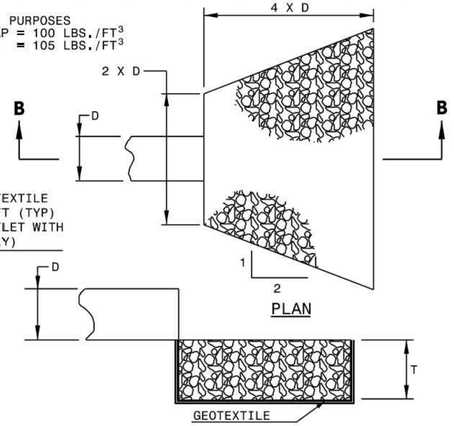
SECTION A-A

PIPE OUTLET WITH DITCH

H= RIP RAP TO TOP OF PIPE (MAX. H = D + T)
T= 18" CLASS I RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
T= 12" CLASS 'B' RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
KEY-IN RIP-RAP

D	OUTLET W/DITCH					OUTLET W/O DITCH				
	CLASS 'B' RIP RAP		CLASS I RIP RAP			CLASS 'B' RIP RAP		CLASS I RIP RAP		
	TONS	NON-TEXTILE (8"x1')	S.Y.	TONS	NON-TEXTILE (8"x1')	TONS	NON-TEXTILE (8"x1')	S.Y.	TONS	NON-TEXTILE (8"x1')
12"	2	5	5	2	5	1	4	2	1	4
15"	2	7	7	3	7	1	5	3	2	6
18"	3	10	9	4	10	2	7	4	2	8
24"	5	14	15	7	15	3	11	7	4	12
30"	8	21	21	11	22	5	16	11	7	17
36"	11	28	29	15	30	7	22	16	10	23
42"	15	37	39	20	39	10	28	22	13	30
48"	-	-	49	26	50	-	-	28	17	38
54"	-	-	60	33	62	-	-	36	21	47
60"	-	-	73	40	75	-	-	44	26	56
66"	-	-	87	48	89	-	-	54	32	67
72"	-	-	102	57	104	-	-	64	38	78

NOTE:
FOR CALCULATION PURPOSES
CLASS 'B' RIP RAP = 100 LBS./FT^3
CLASS I RIP RAP = 105 LBS./FT^3



SECTION B-B

PIPE OUTLET WITHOUT DITCH

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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

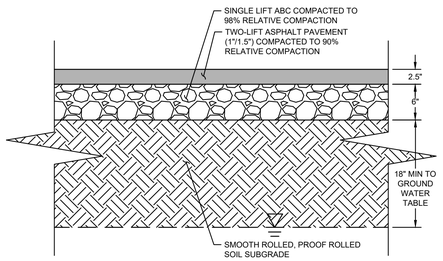
1-24

ROADWAY STANDARD DRAWING FOR

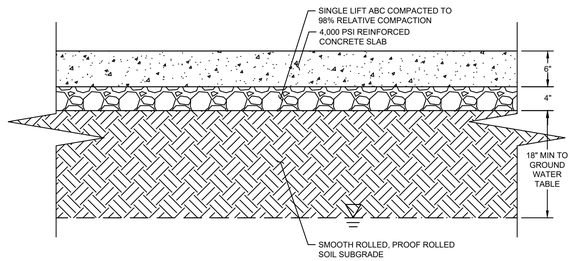
GUIDE FOR RIP RAP AT PIPE OUTLETS

SHEET 1 OF 1

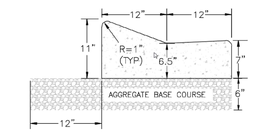
876.02



1 LIGHT DUTY ASPHALT PAVEMENT
NOT TO SCALE



2 HEAVY DUTY CONCRETE PAVEMENT
NOT TO SCALE



3 CURB AND GUTTER DETAIL
NOT TO SCALE

PREPARED BY

Kimley»Horn

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PROJECT

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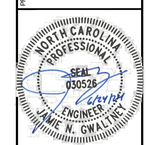
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41



DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

C6-05

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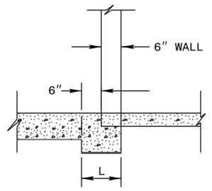
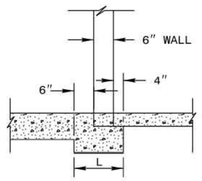
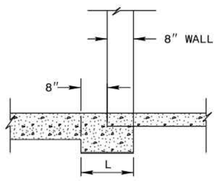


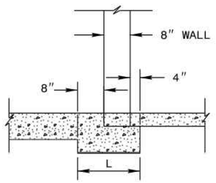
PART SECTION
6" WALL



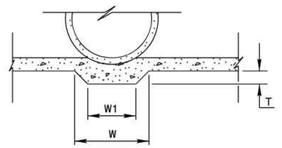
PART SECTION
6" WALL WITH 4" LIP



PART SECTION
8" WALL



PART SECTION
8" WALL WITH 4" LIP



PART SECTION
OF END ELEVATION

GENERAL NOTES:
USE THIS STANDARD WITH ALL DRAINAGE STRUCTURES USING REINFORCED CONCRETE PIPE SET IN BASE SLAB.

TABLES OF QUANTITIES FOR PIPE SET IN PAD

PIPE D	"W" DIM	"W1" DIM	"T" DIM	C.Y. QUANTITIES WHEN L IS 12"	16"	20"
12"	1'-1 7/8"	0'-7 7/8"	0'-2"	0.005	0.007	0.008
15"	1'-3 5/8"	0'-9 1/8"	0'-2"	0.006	0.008	0.010
18"	1'-5 1/4"	0'-10 3/8"	0'-2"	0.007	0.010	0.012
24"	1'-8 3/4"	1'-0 1/8"	0'-3"	0.011	0.014	0.018
30"	2'-0 1/4"	1'-2 3/4"	0'-3 1/2"	0.014	0.018	0.023
36"	2'-3 3/4"	1'-5 3/8"	0'-4"	0.017	0.023	0.025
42"	2'-7 1/8"	1'-7"	0'-5 1/4"	0.025	0.030	0.038
48"	2'-10 5/8"	1'-8 3/4"	0'-5 3/4"	0.028	0.038	0.047
54"	3'-2 1/8"	1'-10 1/2"	0'-6 1/4"	0.035	0.047	0.058
60"	3'-5 5/8"	2'-0 1/4"	0'-6 3/4"	0.042	0.056	0.071
66"	3'-9"	2'-2 1/4"	0'-7 1/4"	0.050	0.067	0.084
72"	4'-0 1/2"	2'-3 3/4"	0'-7 3/4"	0.059	0.078	0.098

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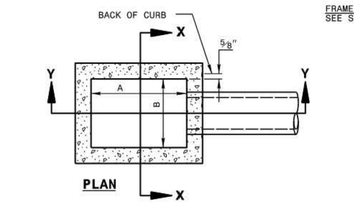
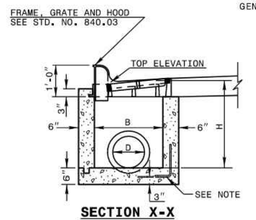
ROADWAY STANDARD DRAWING FOR
CONCRETE BASE PAD FOR DRAINAGE STRUCTURES

SHEET 1 OF 1
840.00

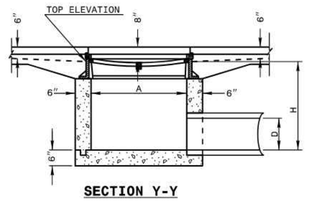


PLAN

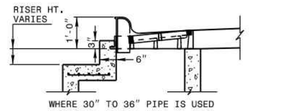


SECTION X-X

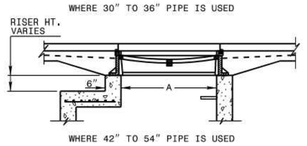
GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



SECTION Y-Y

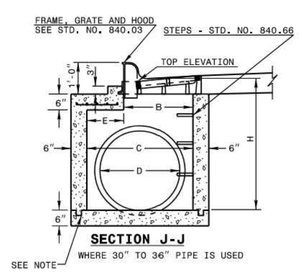


WHERE 30" TO 36" PIPE IS USED

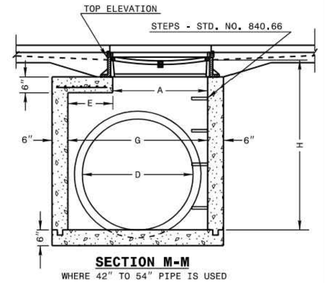


WHERE 42" TO 54" PIPE IS USED

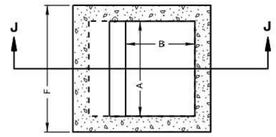
DETAIL SHOWING METHOD OF RISER CONSTRUCTION



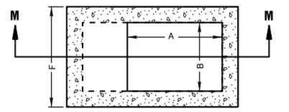
SECTION J-J
WHERE 30" TO 36" PIPE IS USED



SECTION M-M
WHERE 42" TO 54" PIPE IS USED



PLAN



PLAN

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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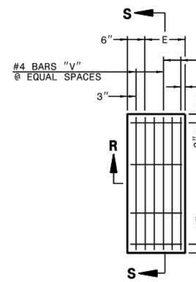
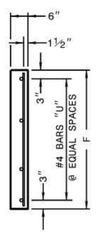
ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

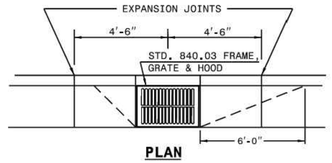
SHEET 1 OF 2
840.02



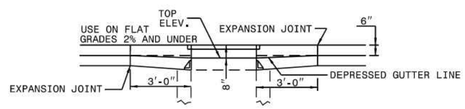
PLAN OF TOP SLAB



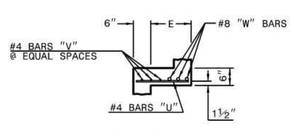
SECTION S-S



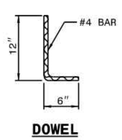
PLAN
CURB AND GUTTER WITH CATCH BASIN ON STEEP GRADES



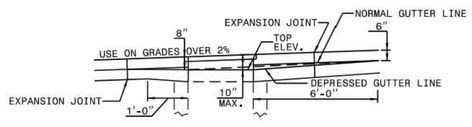
ELEVATION
NORMAL CURB AND GUTTER ON LIGHT GRADES



SECTION R-R



DOWEL



ELEVATION
NORMAL CURB AND GUTTER ON STEEP GRADES

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W		TOTAL LBS.	CU.YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT										TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	C	G	H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH						
12"	3'-0"	2'-2"		--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"		--	3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"		--	3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"		--	3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

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RALEIGH, N.C.

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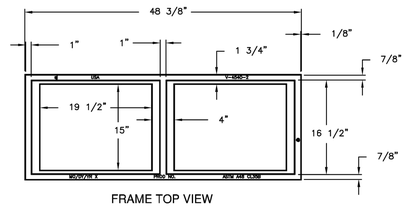
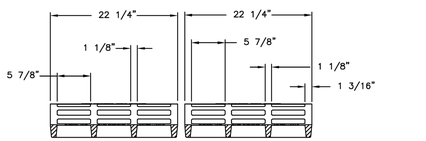
ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02

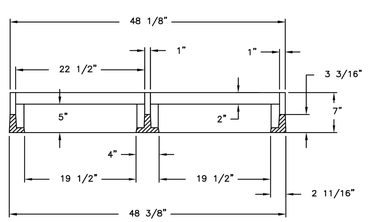
V4540-2 Set



FRAME TOP VIEW

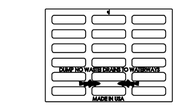


GRATE SECTION GRATE SECTION

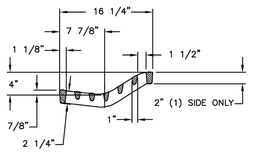


FRAME SECTION

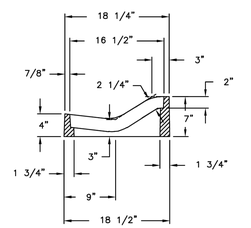
NOTE: COMPONENTS ARE SHIPPED LOOSE. UNASSEMBLED



GRATE TOP VIEW



GRATE SECTION



FRAME SECTION

Product Number
44540230C01

Design Features
-Materials
Curb Inlet Frame
Gray Iron (CL35B)
Grate
Gray Iron (CL35B)

-Load Rating
Heavy Duty
-Open Area
312 in²
-Coating
Undipped
-√ Designates Machined Surface

Certification
- ASTM A48
- ASTM A48
-
-Country of Origin:USA

Major Components
44540210
44540230

Drawing Revision
2/5/2024 Designer: MAH
Revised By:

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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PHONE: (910-507-2115

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
6	06/03/2024	CDJ
5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
2	12/08/2023	MRF
1	DATE	BY

8 REVISED PHASE BOUNDARY
7 REVISED PER NC DEQ PRIVATE WATER COMMENTS
6 REVISED SEWER AND LIFT STATION DETAILS
5 REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
4 REVISED PER COUNTY COMMENTS DATED 01/22/2024
3 REVISED PER COUNTY COMMENTS DATED 12/11/2023
2 REVISED PER COUNTY COMMENTS DATED 11/07/2023
1 SSJUANCE AND REVISION DESCRIPTIONS

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY
6/24/24

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

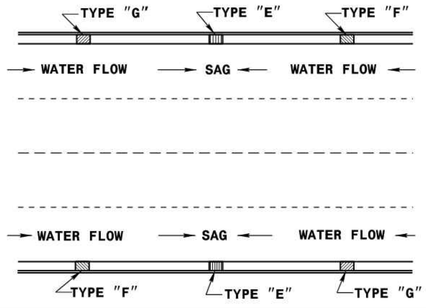
TITLE
STORM STRUCTURE DETAILS

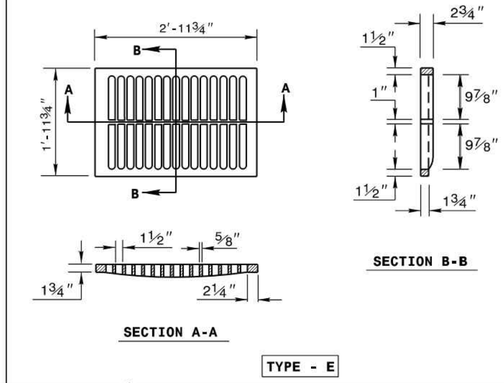
SHEET NUMBER
C6-30

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-30 - STORM STRUCTURE DETAILS.DWG C6-30 STORM STRUCTURE DETAILS Jan 29, 2025 11:03am by: mike.fritz

DETAIL SHOWING TYPES OF GRATES
USE ACCORDING TO WATER FLOW.





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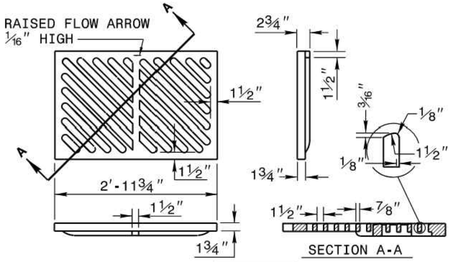

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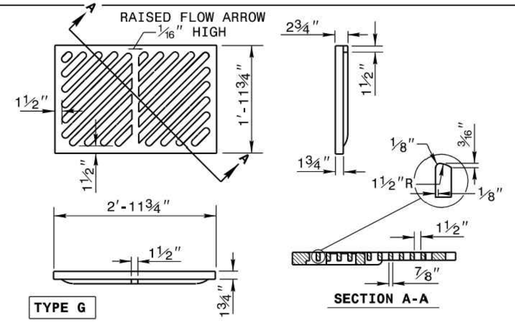

TYPE G

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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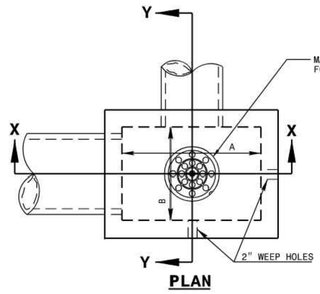
SHEET 2 OF 2
840.03



PLAN

NOTES: USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

USE #4 BAR DOWELS AT 12" CENTERS

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. DWG. 840.45 OR 840.46 CONTROLS MAX. DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

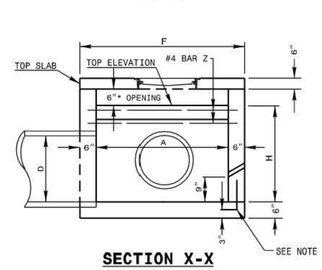
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

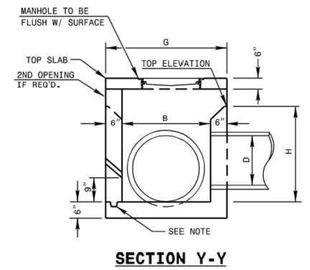
CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

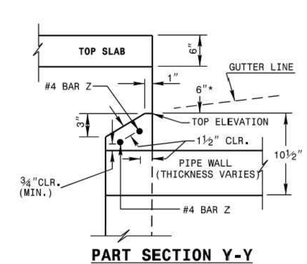
* INCREASE THE SIZE OF THE 6" OPENING TO 8" MAX., AS DIRECTED BY THE ENGINEER BY ADDING 2" TO THE WALL HIEGHT ABOVE THE TOP ELEVATION. ADJUST QUANTITIES ACCORDINGLY.



SECTION X-X



SECTION Y-Y



PART SECTION Y-Y
SHOWING DETAILS AT OPENING

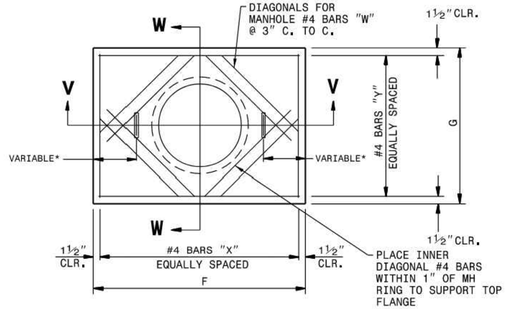
MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H)																			
DIM'S OF BOX & PIPE				REINFORCING								TOP & BOT. SLAB DIMENSIONS		CU. YDS. CONC. IN BOX			TOTAL QUANTITIES BOX & SLABS		DEDUCTION ONE PIPE		DED. ONE 6" THROAT OPENING
PIPE	SPAN	WIDTH	HEIGHT	BARS - W		BARS - X		BARS - Y		BARS - Z											
				NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH			TOP SLAB	BOT. SLAB	BALL/FT. HT.	LBS. REINF.	YD³ (MIN H)	C.S.	R.C.	YD³
D	A	B	H									F	G								
12"	3'-6"	2'-3"	1'-10"	8	3'-8"	4	3'-0"	6	4'-3"	2	4'-3"	4'-6"	3'-3"	0.207	0.271	0.250	47	1.046	0.015	0.032	0.046
15"	3'-6"	2'-3"	2'-1"	8	3'-8"	4	3'-0"	6	4'-3"	2	4'-3"	4'-6"	3'-3"	0.207	0.271	0.250	47	1.108	0.023	0.036	0.046
18"	4'-0"	2'-8"	2'-4"	8	5'-0"	5	3'-5"	7	4'-9"	2	4'-9"	5'-0"	3'-8"	0.275	0.340	0.284	61	1.379	0.033	0.049	0.053
24"	4'-0"	2'-8"	2'-10"	8	5'-0"	5	3'-5"	7	4'-9"	2	4'-9"	5'-0"	3'-8"	0.275	0.340	0.284	61	1.521	0.059	0.085	0.053
30"	4'-0"	3'-6"	3'-4"	8	6'-2"	5	4'-3"	9	4'-9"	2	4'-9"	5'-0"	4'-6"	0.353	0.417	0.315	77	1.916	0.092	0.127	0.053
36"	4'-6"	4'-0"	3'-10"	8	7'-2"	5	4'-9"	10	5'-3"	2	5'-3"	5'-6"	5'-0"	0.445	0.510	0.352	94	2.390	0.132	0.178	0.059
42"	5'-0"	4'-6"	4'-4"	8	8'-0"	5	5'-3"	12	5'-9"	2	5'-9"	6'-0"	5'-6"	0.547	0.611	0.389	119	2.914	0.180	0.243	0.066
48"	5'-0"	5'-0"	4'-10"	8	9'-8"	5	5'-9"	13	5'-9"	2	5'-9"	6'-0"	6'-0"	0.603	0.666	0.407	128	3.298	0.235	0.317	0.066

ROADWAY STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
(WITH MANHOLE)
12" THRU 48" PIPE

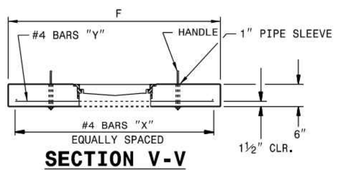
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

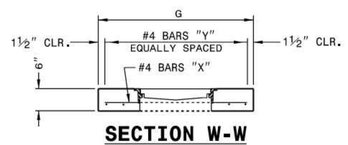
SHEET 1 OF 2
840.04



PLAN
PRECAST OR CAST IN PLACE TOP SLAB

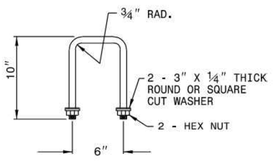


SECTION V-V

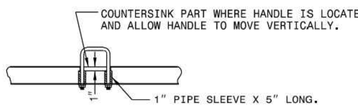


SECTION W-W

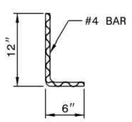
*PLACE HANDLES A MINIMUM 8" FROM OUTSIDE EDGE AND IN A MANNER TO AVOID REINFORCEMENT BARS AS DIRECTED BY THE ENGINEER



DETAIL OF HANDLE



PART SECTION
THRU COVER SHOWING HANDLE



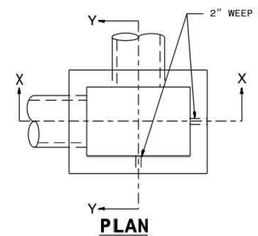
DOWEL

ROADWAY STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
(WITH MANHOLE)
12" THRU 48" PIPE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

SHEET 2 OF 2
840.03



PLAN
WITH GRATE & FRAME REMOVED

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

MAX.DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STD. DWG. 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.

CONSTRUCT WITH PIPE CROWNS MATCHING.

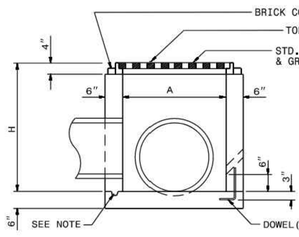
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

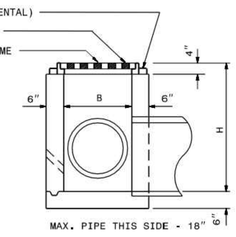
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

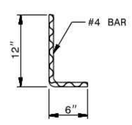
DRAWING NOT TO SCALE.



SECTION X-X



SECTION Y-Y



DOWEL

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)								
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"			2'-3"			0.648	0.023	0.036
18"			2'-6"			0.703	0.033	0.049
24"			3'-0"			0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
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RALEIGH, N.C.

1-24

SHEET 1 OF 1
840.14

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NO.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER AMIE N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
STORM STRUCTURE DETAILS

SHEET NUMBER
C6-31

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-30 - STORM STRUCTURE DETAILS.DWG C6-31 STORM STRUCTURE DETAILS Jan 29, 2025 11:03am by: mike.fritz

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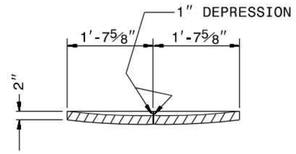
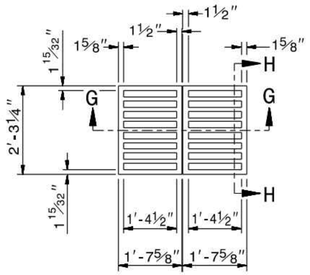
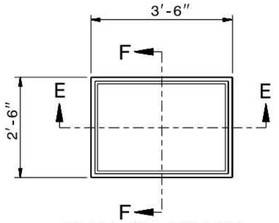


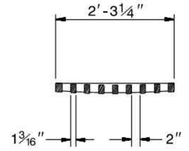
SECTION G-G



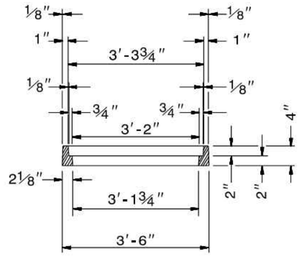
PLAN OF GRATING
CAST IRON



PLAN OF FRAME
CAST IRON



SECTION H-H



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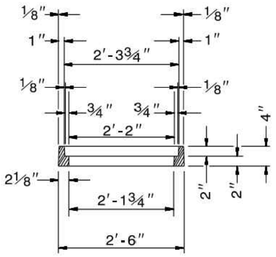

SECTION F-F

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

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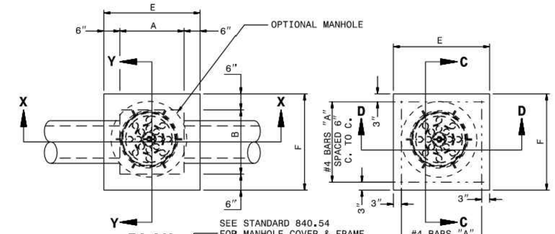
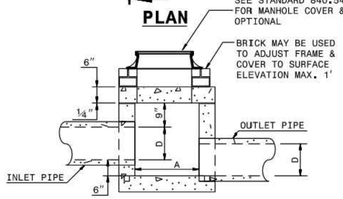
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

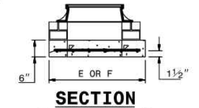
SHEET 1 OF 1
840.16



PLAN



SECTION X-X



SECTION
C-C OR D-D

GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

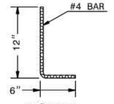
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

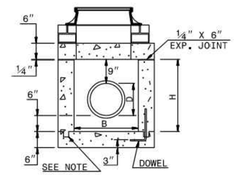
PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STANDARD DRAWING 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.



DOWEL



SECTION Y-Y

DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

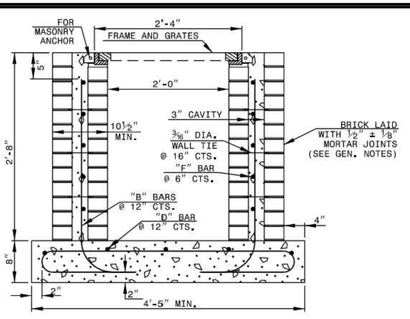
DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
D	A	B	H											
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

ROADWAY STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
12" THRU 66" PIPE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

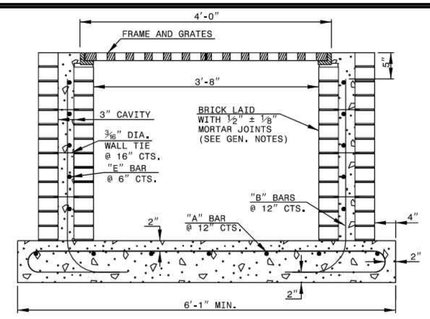
1-24

SHEET 1 OF 1
840.31



SECTION X-X

BRICK ALT.



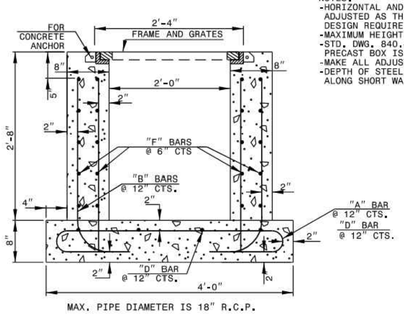
SECTION Y-Y

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING GRATED DROP INLET
FOR DOUBLE FRAME AND GRATES

SHEET 1 OF 2
840.35

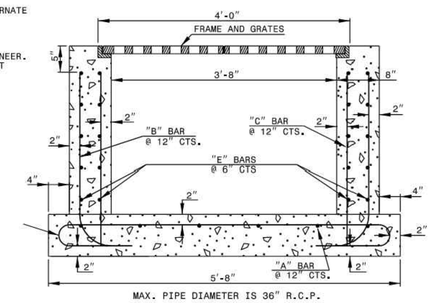


MAX. PIPE DIAMETER IS 18" R.C.P.

SECTION X-X

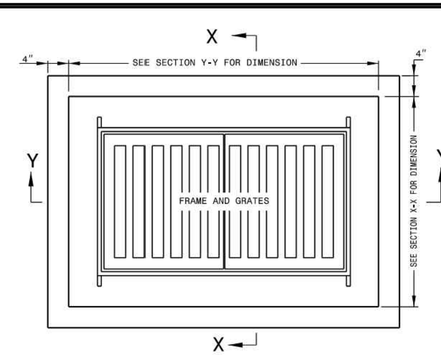
CONCRETE ALT.

NOTES:
-HORIZONTAL AND VERTICAL DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGN REQUIRE.
-MAXIMUM HEIGHT FOR THIS STRUCTURE IS 14'-0".
-STD. DWG. 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
-MAKE ALL ADJUSTMENTS AS DIRECTED BY THE ENGINEER.
-DEPTH OF STEEL GRATE WILL REQIURE DEEPER SEAT ALONG SHORT WALLS.

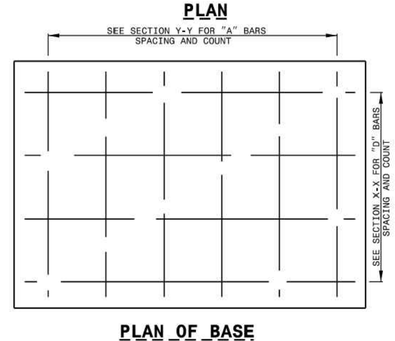


MAX. PIPE DIAMETER IS 36" R.C.P.

SECTION Y-Y



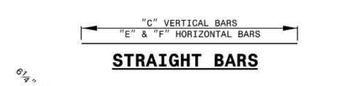
PLAN



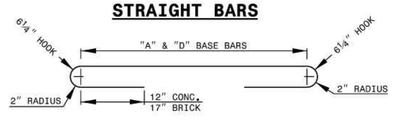
PLAN OF BASE

BILL OF MATERIALS

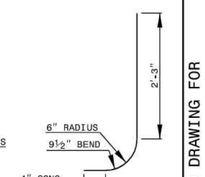
COMMON		CONCRETE ALT.			BRICK ALT.		
BAR	SIZE	LENGTH	QUANTITY	WEIGHT	LENGTH	QUANTITY	WEIGHT
A	#5	6'-4½"	6	39.9	7'-7½"	6	47.7
B	#5	3'-4½"	16	56.3	3'-4½"	16	56.3
C	#5	2'-8"	14	38.9	-0-	-0-	-0-
D	#5	8'-0½"	4	33.6	9'-3½"	4	38.8
E	#5	3'-0"	20	62.6	3'-0"	10	31.3
F	#5	4'-8"	20	97.3	4'-8"	10	48.7
REINF. STEEL (TOTAL WEIGHT LBS.)				328.6			222.8
CONCRETE IN BASE CLASS 'AA' (CUBIC YARDS)				0.56			0.66
CONCRETE IN WALLS CLASS 'AA' (CUBIC YARDS)				0.92			-0-
CONCRETE IN WALLS CLASS 'B' (CUBIC YARDS)				-0-			0.36
BRICK IN WALLS (CUBIC YARDS)				-0-			0.91
CONCRETE TOTAL (CUBIC YARDS)				1.48			1.02
BRICK & CONCRETE TOTAL (CUBIC YARDS)				1.48			1.93
CONC. CUBIC YARDS IN WALL/FOOT OF HEIGHT				0.35			0.14
BRICK CUBIC YARDS IN WALL/FOOT OF HEIGHT				-0-			0.34
LBS. OF REINF. STEEL IN WALL/FOOT OF HEIGHT				94.9			47.6



STRAIGHT BARS



BASE BARS



CORNER BARS

GENERAL NOTES:
-USE CLASS 'AA' CONCRETE FOR CAST IN PLACE CONCRETE BOX.
-USE CLASS 'B' CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS 'AA' FOR THE FOOTING BASE.
-CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
-PRECAST UNITS MADE OF CLASS 'AA' CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.
-INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
-CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.
-CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.
-PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.66.
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING GRATED DROP INLET
FOR DOUBLE FRAME AND GRATES

SHEET 2 OF 2
840.35

PREPARED BY

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM STRUCTURE DETAILS

SHEET NUMBER
C6-32

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-30 - STORM STRUCTURE DETAILS.DWG C6-32 STORM STRUCTURE DETAILS Jan 29, 2025 11:03am by: mike.fritz

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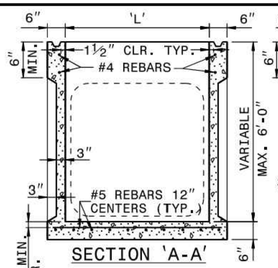
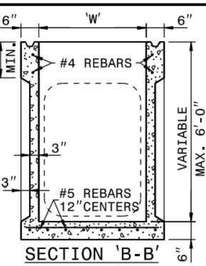
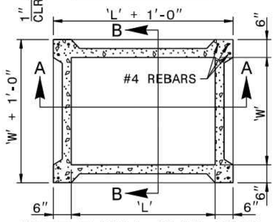


SECTION 'A-A'

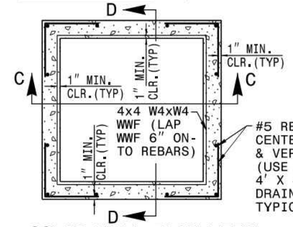


SECTION 'B-B'

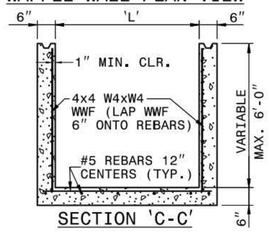
THE PATTERN OF THE KNOCK-OUT PANELS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.



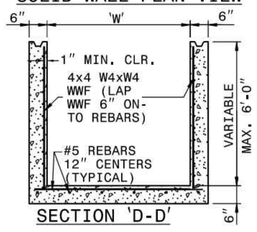
WAFFLE WALL PLAN VIEW



SOLID WALL PLAN VIEW



SECTION 'C-C'



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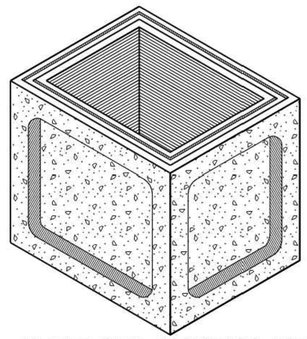
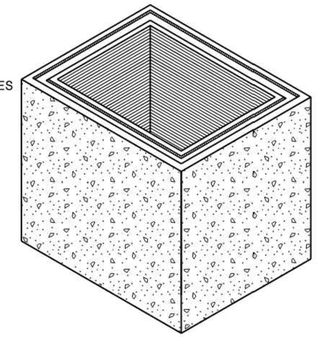


WAFFLE WALL ISOMETRIC VIEW



SOLID WALL ISOMETRIC VIEW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

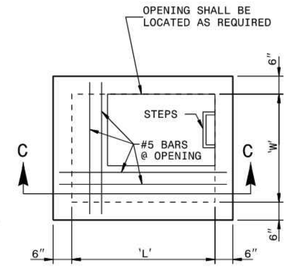
1-24

ROADWAY STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(SOLID AND WAFFLE WALL)

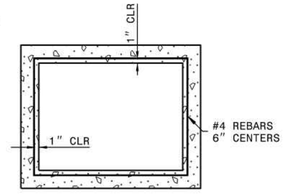
SHEET 1 OF 2
840.45

GENERAL NOTES:

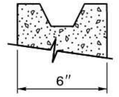
* THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.01, 840.02, 840.04, 840.05, 840.13, 840.14, 840.15, 840.17, 840.18, 840.19, 840.26, 840.27, 840.28, 840.31, 840.32 AND 840.41.
* INSTALL PRECAST DRAINAGE STRUCTURES AND PAY FOR IN ACCORDANCE WITH SPECIFICATION SECTION 840.
* DO NOT PLACE PRECAST DRAINAGE STRUCTURES UNDER TRAFFIC OR WHERE TRAFFIC WILL BE DETOURED.
* USE 4000 PSI CONCRETE.
* PROVIDE ALL REINFORCING STEEL WHICH MEETS ASTM A615 FOR GRADE 60 AND WELDED WIRE FABRIC CONFORMING TO ASTM A1064.
* LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB FOR WAFFLE WALL STRUCTURE TO 10'-0"; LIMIT SOLID WALL STRUCTURE TO 15'-0".
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
* CUT OR FORM OPENINGS FOR PIPE TO PROVIDE REQUIRED SIZE AND LOCATION. ORIENT WAFFLE WALL STRUCTURES SO THAT PIPES ENTER THROUGH THE KNOCKOUT/WAFFLE PANELS ONLY. PIPES MAY ENTER THROUGH THE CORNERS OF SOLID WALL BOXES IF A MINIMUM OF 6" OF WALL IS PROVIDED ABOVE THE HOLE.
* ALL ELEMENTS PRECAST TO MEET ASTM C913.
* FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
* PROVIDE PRECAST STRUCTURES OVER 3'-6" IN DEPTH WITH STEPS AS DIRECTED BY THE ENGINEER.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED.
* SEAL JOINTS WITH A FLEXIBLE BUTYL RUBBER BASE CONFORMING TO FEDERAL SPECIFICATION SS-S-21A, AASHTO M-198, TYPE B - BUTYL RUBBER.
* LIMIT MAXIMUM STRUCTURE SIZE TO INSIDE CLEAR DIMENSIONS OF 5'-0" X 5'-0".
* THE OUTSIDE PIPE DIAMETER PLUS 2" OR THE OPENING REQUIRED FOR FRAME AND GRATE IS THE MINIMUM STRUCTURE SIZE WHICHEVER IS GREATER.
* USE MANHOLE FRAME AND COVER AS INDICATED ON THE PLANS. REINFORCE OPENING AS SHOWN ON THIS SHEET.



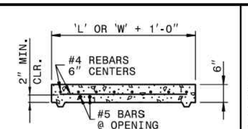
PLAN TOP SLAB



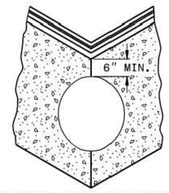
PRECAST RISER PLAN



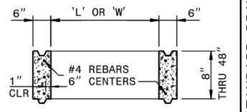
SECTION VIEW



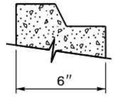
SECTION 'C-C'



CORNER CUT DETAIL (SOLID WALL BOX)



PRECAST RISER DETAIL



SECTION VIEW

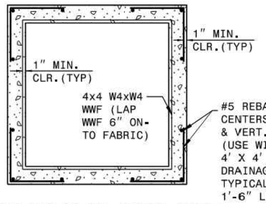
OPTIONAL JOINT DETAILS

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
PRECAST DRAINAGE STRUCTURE
(GENERAL NOTES AND DETAILS)

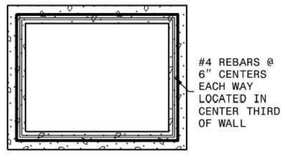
SHEET 2 OF 2
840.45



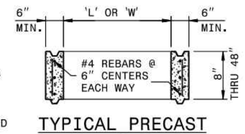
PLAN VIEW OF BASE UNIT

SECTION VIEWS

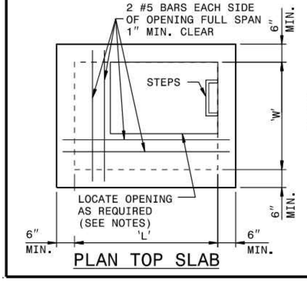
OPTIONAL JOINT DETAILS



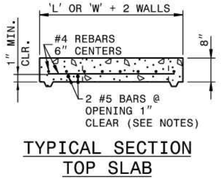
PRECAST RISER PLAN



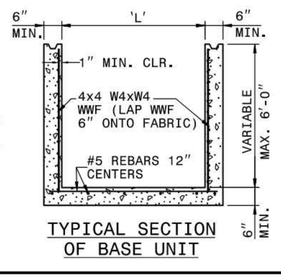
TYPICAL PRECAST RISER SECTION



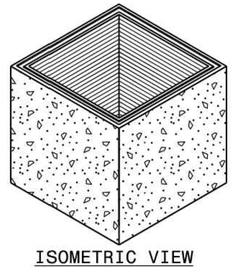
PLAN TOP SLAB



TYPICAL SECTION TOP SLAB



TYPICAL SECTION OF BASE UNIT



ISOMETRIC VIEW

GENERAL NOTES:

* THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.01, 840.02, 840.04, 840.05, 840.14, 840.15, 840.31, 840.32, 840.34, 840.35, 840.36 AND 840.41.
* INSTALL AND PAY FOR PRECAST DRAINAGE STRUCTURES IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATION SECTION 840.
* USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
* USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1064 WELDED WIRE FABRIC (WWF).
* LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB TO 15'-0".
* PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
* ORIENT STRUCTURES SO THAT CORNERS WILL NOT BE CUT OR MODIFIED UNLESS ALLOWED BY DETAIL IN PLANS.
* PRECAST ALL ELEMENTS TO MEET ASTM C913.
* FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
* PROVIDE PRECAST STRUCTURES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
* WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR IF THE SAME MIN. AREA OF STEEL IS PROVIDED.
* SEAL JOINTS WITH A FLEXIBLE BUTYL RUBBER BASE CONFORMING TO FEDERAL SPECIFICATIONS SS-S-21A, AASHTO M-198, TYPE B - BUTYL RUBBER.
* LIMIT MAXIMUM STRUCTURE SIZE INSIDE CLEAR DIMENSIONS TO 6'-0" X 6'-0".
* THE OUTSIDE PIPE DIAMETER PLUS 2" IS THE MINIMUM STRUCTURE SIZE OR THE OPENING REQUIRED FOR GRATE AND FRAME WHICHEVER IS GREATER.
* ROUND MANHOLE MAY BE USED IN LIEU OF SQUARE PROVIDED 2 EXTRA #5'S ARE PLACED ON EVERY SIDE NOT ADJACENT TO A WALL. SEE STD. DWG. 840.34 FOR MANHOLE INSTALLATION.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

SHEET 1 OF 1
840.46

GENERAL NOTES

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1064 WELDED WIRE FABRIC (WWF).

FABRICATE, ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.

ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

THE HEIGHT OF GRADE ADJUSTMENT RINGS PLUS FRAME AND COVER SHALL NOT EXCEED 24".

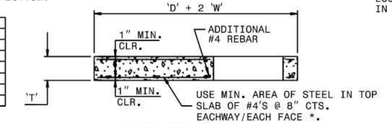
WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.

LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.

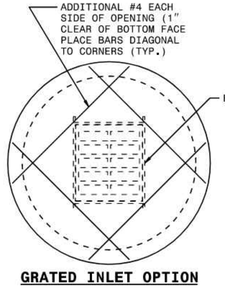
THE MIN. SLAB THICKNESS 'T' IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.

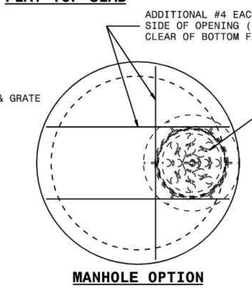
FRAME AND GRATES	STD. NO.
TRAFFIC BEARING	840.37
	840.39
NONTRAFFIC BEARING‡	840.22
	840.24
	840.26
	840.29
	840.33



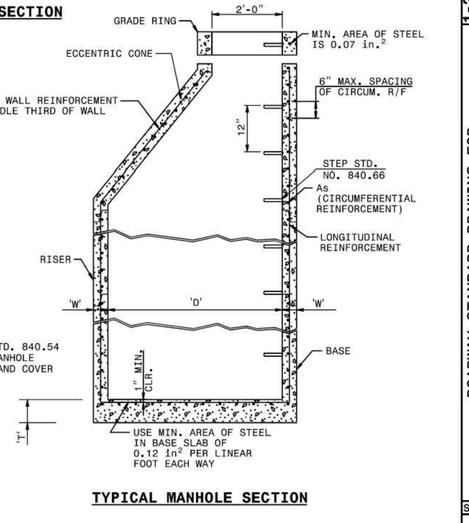
FLAT TOP SLAB



GRATED INLET OPTION

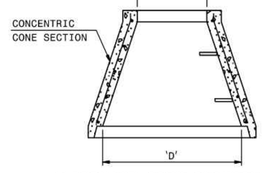


MANHOLE OPTION



TYPICAL MANHOLE SECTION

D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
4	4	6	0.12
5	5	8	0.15
6	6	8	0.18



ALTERNATE CONE SECTION

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
PRECAST MANHOLE 4',5' AND 6' DIAMETER 12" THRU 48" PIPE

SHEET 1 OF 1
840.52

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PREPARED BY

Kimley»Horn

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BELVILLE, NC 28451
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PROJECT

BROOKFIELD BRANCH

1038 HOOVER ROAD,
HAMPSTEAD, NC 28443

3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
STORM STRUCTURE DETAILS

SHEET NUMBER
C6-33

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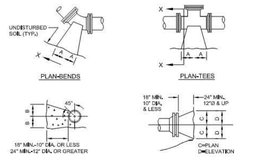
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-39 - STORM STRUCTURE DETAILS.DWG C6-33 STORM STRUCTURE DETAILS Jan 29, 2025 11:03am by: mike.fritz



PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼-16° BEND		TEE			PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D	
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"	
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"	
8"	24"	18"	13"	18"	10"	12"	10"	12"	16"	18"	25"	11"	
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"	
12"	32"	26"	19"	26"	14"	18"	14"	18"	22"	26"	37"	17"	
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"	

ASSUME 2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. CONCRETE SHALL NOT CONTACT BOLTS OR MECHANICAL FITTINGS.
5. CONCRETE SHALL BE 3000 PSI.
6. TRENCHES SHALL CONFORM WITH STANDARD EMBEDMENT DETAIL.
7. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.
8. SEE STD. THRUST BLOCK SHEET 2 OF 4 FOR OTHER SOILS.

PSD NO. 1 - THRUST BLOCKING DETAIL
NOT TO SCALE

REACTION BEARING AREAS FOR HORIZONTAL WATER/SEWER PIPE BENDS

BASED ON TEST PRESSURE OF 200 PSIG

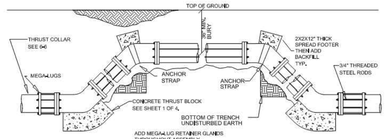
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DIAMETER OF BEND	STATIC THRUST IN POUNDS	MINIMUM BEARING AREA UNDISTURBED SOIL	MINIMUM BEARING AREA GRAVEL	MINIMUM BEARING AREA SOFT CLAY	MINIMUM BEARING AREA MUCK	MINIMUM BEARING AREA SOFT ROCK	MINIMUM BEARING AREA CONCRETE	MINIMUM BEARING AREA WET SAND	MINIMUM BEARING AREA FOR TEE, PLUG OR VALVE
6"									
11 1/4 °	1,108	1	1	1	1	1	1	2	1
22 1/2 °	2,207	1	2	2	1	1	1	3	1
45 °	4,328	2	3	3	1	1	2	5	1
90 °	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	2	3	4	1	1	2	6	1
8"									
11 1/4 °	1,970	1	1	2	1	1	1	2	1
22 1/2 °	3,922	1	2	3	1	1	1	4	1
45 °	7,694	2	4	5	1	1	2	8	1
90 °	14,215	4	8	9	2	2	4	15	2
PLUG	10,053	3	5	6	2	2	3	10	1
12"									
11 1/4 °	4,433	2	3	3	1	1	2	5	1
22 1/2 °	8,826	3	5	6	2	2	3	9	1
45 °	17,312	5	9	11	3	3	5	18	2
90 °	31,983	9	16	19	4	4	8	32	4
PLUG	22,619	6	12	14	3	3	6	23	3
16"									
11 1/4 °	7,881	2	4	5	1	1	2	8	1
22 1/2 °	15,691	4	8	10	2	2	4	16	2
45 °	30,779	8	16	19	4	4	8	31	4
90 °	56,861	15	29	35	8	8	15	57	6
PLUG	40,213	10	21	25	6	5	10	41	5

REACTION BEARING AREAS ARE IN SQUARE FEET
MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT
AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" x 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

PSD NO.2 - THRUST BLOCKING DESIGN QUANTITY TABLE
NOT TO SCALE



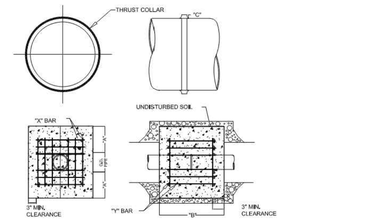
ROD REQUIREMENTS

SIZE OF 45 BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	4
8"	7,694	4
12"	17,312	4
16"	30,779	6
24"	69,252	6

GENERAL NOTES:

1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT OR COLD DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. MEGALUGS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON EYE BOLTS WHERE NECESSARY.

PSD NO. 3 - VERTICAL BEND DETAIL
NOT TO SCALE



REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1,043 LBS/FT	1'-1"	1.1 LBS. EACH	X=24, Y=12
48" & greater	#6	2'-2"+ O.D. PIPE	1,502 LBS/FT	1'-0"	1.9 LBS. EACH	X=24, Y=12

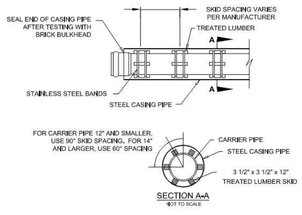
THRUST COLLAR, AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"
6" - 36"	1'-4"	1'-7"	"C=6"=16", 20"=24", 30"=36", 48"
48" & greater	1'-8"	1'-9"	2" 3" 4" 6"

NOTES:

1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD EMBEDMENT DETAIL.
4. BACKFILL TAMPED IN 6" LIFTS PER STANDARD EMBEDMENT DETAIL.
5. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

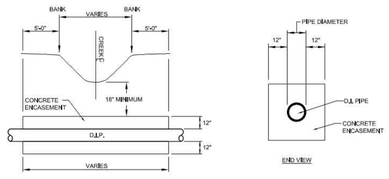
PSD NO. 4 - THRUST COLLAR DETAIL
NOT TO SCALE



NOTES:

1. SKID TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED, CONTINUOUS SKIDS MAY BE USED AS ALTERNATIVE. 2. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.
3. CASING PIPE TO BE OF FERROUS METAL AND HAVE A MINIMUM DIAMETER TWICE THATOF THE CARRIER PIPE.
4. CASING PIPE TO HAVE A MINIMUM THICKNESS OF .25".
5. FOR ALL BORES UNDER NCDOT RIGHT OF WAYS FOLLOW ALL NCDOT GUIDELINES FOR PIPE SIZE AND THICKNESS.

PSD NO. 5 - PIPE CASING DETAIL
NOT TO SCALE



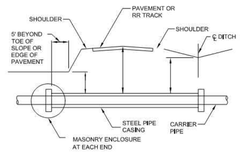
CROSS SECTION

NOTES:

1. CONCRETE SHALL BE 3,000 PSI.
2. CONCRETE ENCASEMENT NOT REQUIRED WHEN PIPE IS AT LEAST THREE (3) FEET UNDER CENTERLINE OF CREEK BOTTOM.
3. ALL STREAM CROSSINGS TO BE PERMITTED BY NCDENR.
4. ALL WETLAND CROSSINGS AND COASTAL WETLAND CROSSINGS TO BE PERMITTED BY ALL APPROPRIATE AGENCIES.

PSD NO. 6 - STREAM/WETLAND CROSSING DETAIL DETAIL
NOT TO SCALE

CASING PIPE SIZE (O.D.)	WALL THICKNESS
4" - 12 3/4"	0.250"
16"	0.250"
18"	0.250"
20"	0.250"
24"	0.250"
30"	0.312"
36"	0.375"
48"	0.500"



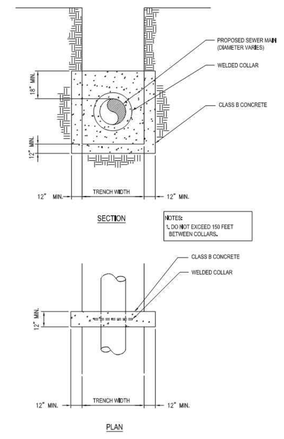
TYPICAL PIPE CROSSING

ENCASEMENTS SHALL EXTEND FROM DITCH LINE TO DITCH LINE IN CUT SECTIONS, FIVE (5) FEET BEYOND THE TOE OF SLOPES IN FILL SECTIONS, AND TEN (10) FEET BEYOND EDGE OF PAVEMENT IN SECTIONS WITH NO DITCH OR FILL AREA.

NOTES:

1. STEEL ENCASEMENT PIPE SHALL CONFORM TO ASTM A-139 WITH WALL THICKNESS AND GRADE AS DEFINED IN THE SPECIFICATIONS, MINIMUM ALLOWABLE YIELD STRENGTH IS 35,000 PSI.
2. CARRIER PIPE SHALL BE ADEQUATELY SUPPORTED THE ENTIRE LENGTH WITHIN THE CASING BY USING "SPIDER" STEEL SUPPORTS AT A MAXIMUM OF 9 FOOT CENTERS (ONE AT EACH JOINT AND ONE INTERMEDIATE). OTHER METHODS MUST MEET APPROVAL OF THE ENGINEER.
3. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE WAY.
4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY SEDIMENT AND EROSION CONTROL PRACTICES REQUIRED DURING CONSTRUCTION AND THE SUBSEQUENT STABILIZATION OF ALL DISTURBED AREAS AFTER CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAY DOWN AND STOCKPILE AREAS.
7. FOR BORES ON THE NCDOT RIGHT OF WAY, NO WORK WILL BEGIN UNTIL THE CONTRACTOR HAS A COPY OF THE NCDOT ENCROACHMENT PERMIT FOR THE PROJECT.

PSD NO. 7 - BORE DETAIL DETAIL
NOT TO SCALE



PSD NO. 8 - ANTI SEEP COLLAR DETAIL
NOT TO SCALE

STANDARD DETAILS SHEET A

PLURIS

PREPARED BY

Kimley»Horn

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
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4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

SANITARY SEWER DETAILS

SHEET NUMBER

C6-40

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-40 - SANITARY SEWER DETAILS.DWG C6-40 SANITARY SEWER DETAILS Jan 29, 2025 11:03am by: mike.fritz

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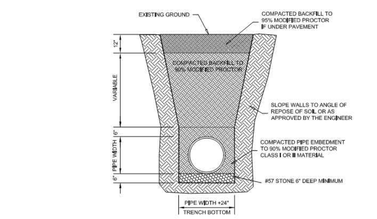
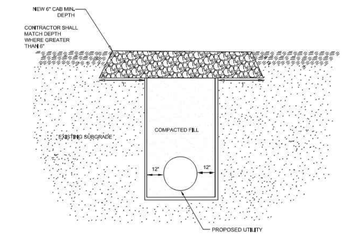


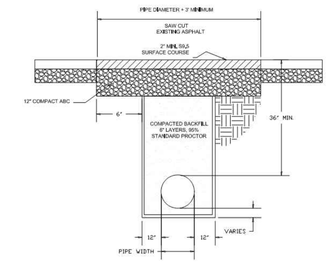
NOTES:
1. MINIMUM BURY DEPTH FOR ALL FORCE MAINS AND GRAVITY LINES IS 36" UNLESS SPECIFICALLY ALLOWED BY THE ENGINEER. ALL LINES SHALLOWER THAN 36" MUST GIVE CONSIDERATION TO USING HIGHER PRESSURE AND THICKNESS CLASSES OF DIP.
2. ALL LINES TO BE BEDDED IN 6" OF #57 STONE MINIMUM, FOR LINES INSTALLED BELOW THE WATER TABLE #57 STONE SHOULD EXTEND TO THE SPRING LINE OF THE PIPE AT A MINIMUM.
3. THE USE OF #57 STONE BEDDING AND BACKFILL SHOULD BE COMMENSURATE WITH THE CONDITIONS IN THE TRENCH. THE CONTRACTOR IS RESPONSIBLE FOR PROPER BEDDING AND BACKFILLING TO INSURE PIPE STABILITY AND UNIFORM GRADE.

PSD NO. 9 - PIPE TRENCH AND BEDDING DETAIL
NOT TO SCALE



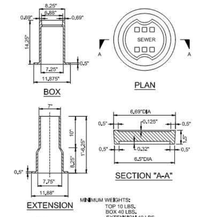
NOTES:
1. THE REPLACED STONE SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH ASSMTO T-180 AS MODIFIED BY NCDOT.

PSD NO. 10 - GRAVEL DRIVEWAY REPAIR DETAIL
NOT TO SCALE



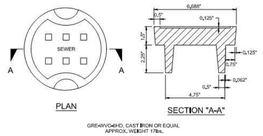
NOTES:
1. THE PAVEMENT SHALL BE DEFINED BY A STRAIGHT EDGE, PREFERABLY A MACHINED SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH DRY SOIL OR ABC STONE USING MAXIMUM 6" LIFTS TO WITHIN 12" OF THE ROAD SURFACE. THE BACKFILL SHALL BE COMPACTED PER ASTM D698 TO A DENSITY OF 95% OF THE MAXIMUM DRY DENSITY OF THE SOIL.
3. WHEN ROADS MAINTAINED BY NCDOT, THE TRENCH SHALL BE BACKFILLED AND COMPACTED USING FLOWABLE FILL OR ABC STONE TO WITHIN 12" OF THE ROAD SURFACE. WHERE ABC STONE IS USED, IT SHALL BE COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO#99 AS MODIFIED BY NCDOT.
4. THE FINAL 7' 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-180 AS MODIFIED BY NCDOT. BITUMINOUS BASE OR BINDER MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEERS.
5. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
6. ALL EXISTING ASPHALT PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 6" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATCH.

PSD NO. 11 - ASPHALT PAVING REPAIR DETAIL
NOT TO SCALE



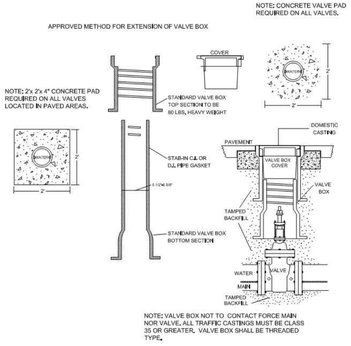
NOTE:
VALVE BOX LID NOT FOR USE IN ROADWAY LOCATIONS. HEAVY DUTY LID REQUIRED, SEE SD 1440.

PSD NO. 12 - CAST IRON VALVE BOX DETAIL
NOT TO SCALE

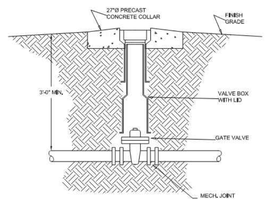


PSD NO. 13 - HEAVY DUTY CAST IRON VALVE BOX LID DETAIL
NOT TO SCALE

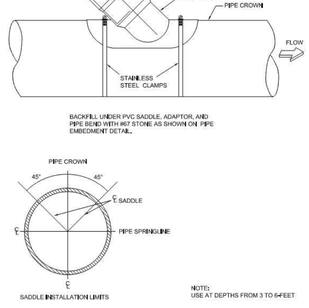
NOTE: CONCRETE VALVE PAD REQUIRED ON ALL VALVES.



PSD NO. 14 - VALVE BOX INSTALLATION AND EXTENSION DETAIL
NOT TO SCALE



PSD NO. 15 - GATE VALVE DETAIL
NOT TO SCALE



NOTE:
USE AT DEPTHS FROM 3 TO 6-FEET

PSD NO. 16 - SADDLE INSTALLATION DETAIL
NOT TO SCALE

STANDARD DETAILS SHEET B

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3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY
6/24/24

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
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SHEET NUMBER
C6-41

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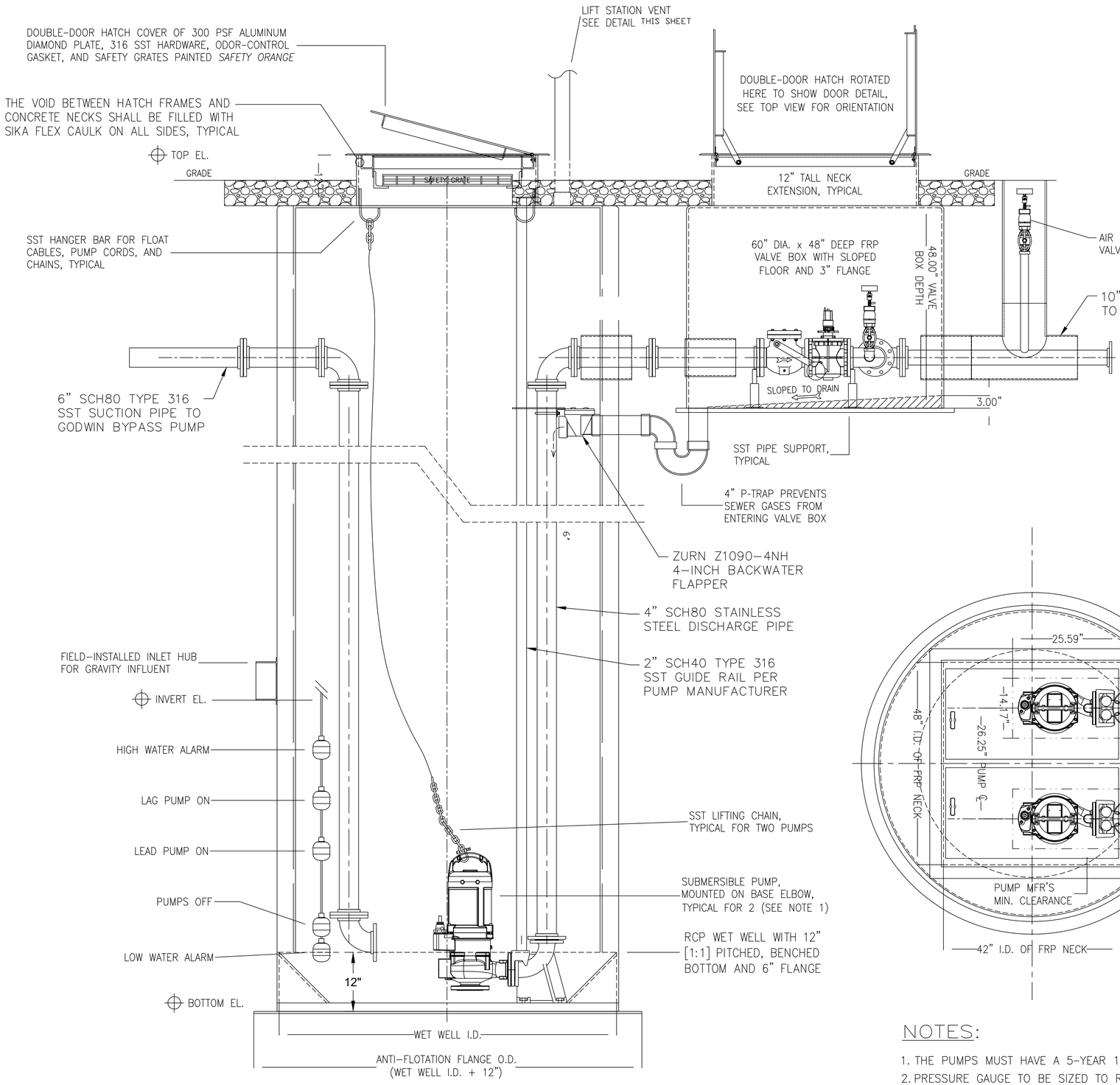
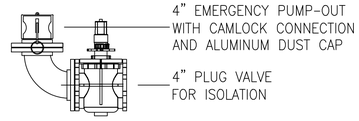
PUMP STATION GENERAL INFORMATION	
AVERAGE DAILY FLOW	38 GPM
PEAK INFLOW	96 GPM
WETWELL DIAMETER	72 INCHES
WETWELL CONCRETE BALLAST REQ'D	1.5 CY (INSTALLED PER WETWELL MANUFACTURER RECOMMENDATION)
VALVE VAULT CONCRETE BALLAST REQ'D	
FORCE MAIN PIPING	4" PVC, DR 18, 235 psi
PUMP CURVE POINT #1	80 GPM @ 20 FT TDH
PUMP CURVE POINT #2	56 GPM @ 108 FT TDH
PUMP CURVE POINT #3	GPM @ FT TDH
PUMP CURVE POINT #4	GPM @ FT TDH
CALCULATED PUMP OPERATING POINT	153 GPM @ 46 FT TDH
ALLOWABLE CURVE DEVIATION	±3% FLOW, ±2% HEAD
PUMP	Myers 4RX Series
HORSEPOWER	7 HP
VOLTAGE/PHASE/CYCLES	480 V / 3 PHASE / 60 HZ
MAX OPERATING SPEED	1,750 RPM
IMPELLER	5.25"
PRIMARY LEVEL SENSING METHOD	
CHECK VALVES	1
PLUG VALVES	1
AIR RELEASE VALVES	1
WET WELL & VALVE VAULT COATING	

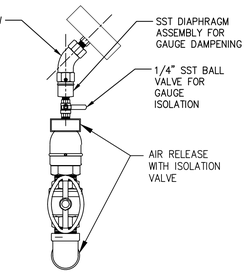
PUMP STATION ELEVATIONS	
TOP OF WET WELL	50.0 FT MSL
GROUND SURFACE ELEVATION	49.5 FT MSL
GRAVITY INVERT IN	30.3 FT MSL
HIGH WATER ALARM	29.3 FT MSL
LAG PUMP ON	28.3 FT MSL
LEAD PUMP ON	27.3 FT MSL
PUMPS OFF	24.3 FT MSL
LOW WATER ALARM	23.3 FT MSL
LIFT STATION INVERT / WET WELL BOTTOM	20.3 FT MSL



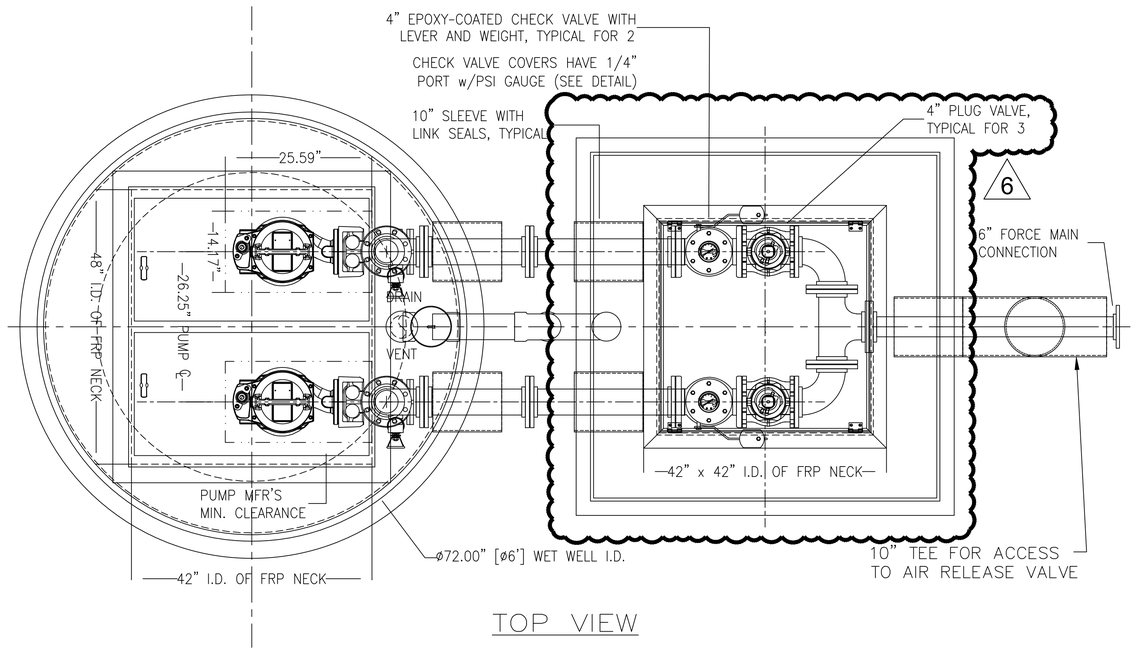
WET WELL ELEVATION



DETAIL A – A



PRESSURE GAUGE DETAIL
NTS



TOP VIEW

NOTES:

1. THE PUMPS MUST HAVE A 5-YEAR 100% REPAIR PARTS AND LABOR WARRANTY AS PROVIDED BY THE PUMP MANUFACTURER.
2. PRESSURE GAUGE TO BE SIZED TO READ NO MORE THAN 1-1/2 TIMES THE MAXIMUM PRESSURE PUMP PROVIDES AT DEAD HEAD.
3. FLOATS SHALL BE ANCHOR SCIENTIFIC ROTO FLOAT MERCURY SWITCH SUSPENDED TYPE WITH INTERNAL WEIGHTS.

PREPARED BY

Kimley»Horn

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PROJECT

BROOKFIELD BRANCH

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APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

LIFT STATION MECHANICAL PLAN

SHEET NUMBER

C6-42

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-41 - LIFT STATION DETAILS.dwg C6-42 - LIFT STATION MECHANICAL PLAN Jan 29, 2025 11:05am by: mike.fritz

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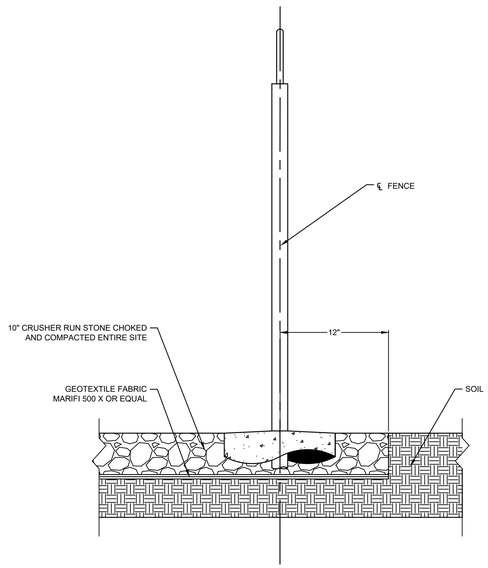
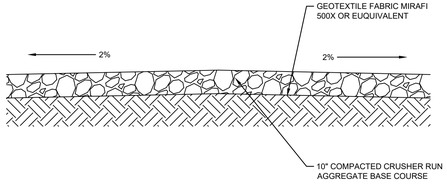
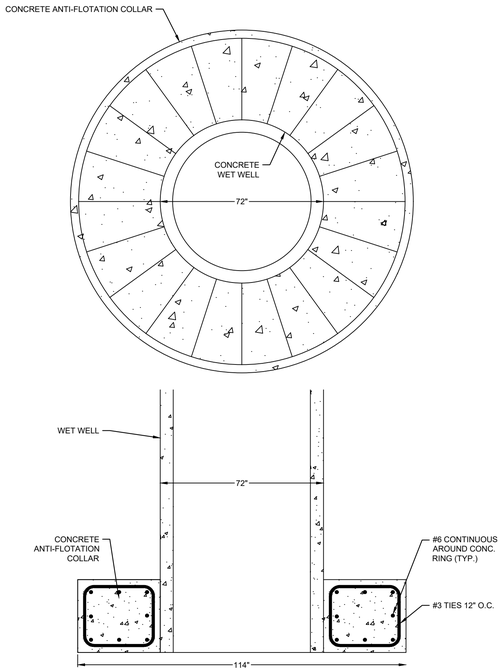


SITE SURFACING
NTS

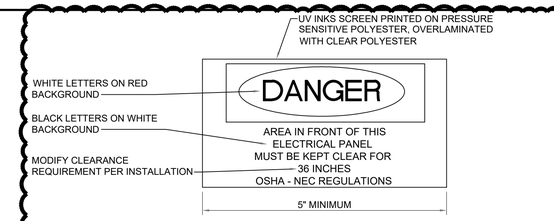


NOTE: CONTRACTOR SHALL REMOVE (BLADE OFF) EXISTING SODPRIOR TO PLACEMENT OF STONE

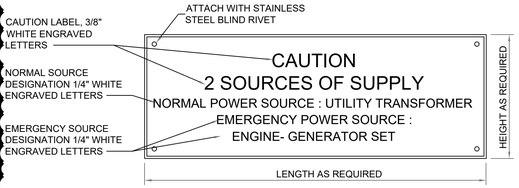
TYPICAL PUMP STATION GRAVEL PAD SECTION
NTS



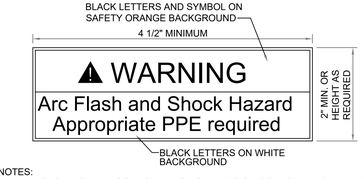
ANTI-FLOTATION COLLAR DETAIL
NTS



A3 NEC WORKING SPACE LABEL DETAIL
NOT TO SCALE



A4 CAUTION NAMEPLATE DETAIL
NOT TO SCALE



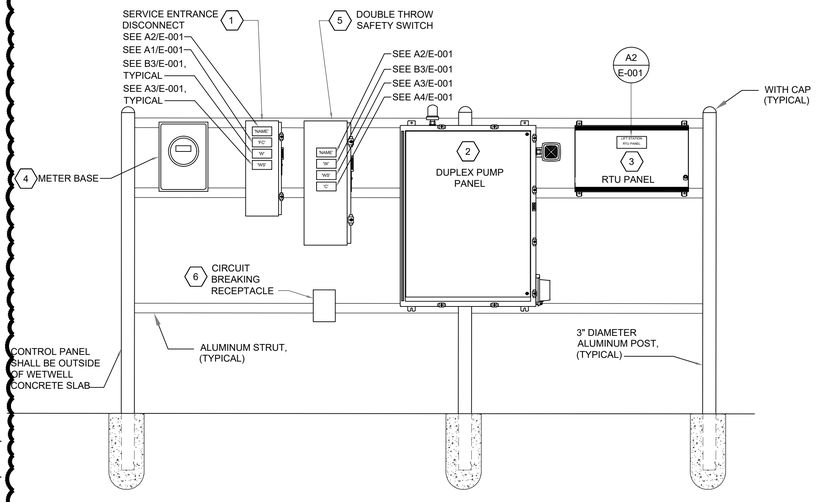
NOTES:
1. LABEL SHOWN CAN BE SOURCED FROM SAFETYSIGN.COM, OTHER SUPPLIERS ARE COMPLIANTSIGNS.COM & SETON.COM

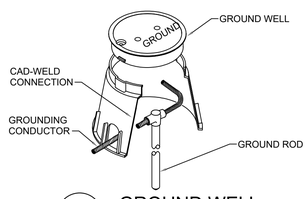
2. THIS WARNING LABEL MINIMALLY COMPLIES WITH NEC, HOWEVER IF ELECTRICAL EQUIPMENT IS LIKELY TO REQUIRE EXAMINATION OR MAINTENANCE WHILE ENERGIZED A DETAILED SHORT CIRCUIT AND ARC FLASH HAZARD ANALYSIS IS RECOMMENDED.

B3 ELECTRICAL EQUIPMENT WARNING LABEL DETAIL
NOT TO SCALE

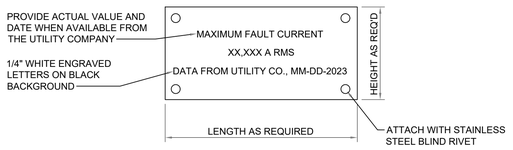
LIFT STATION SITE PLAN
NTS

NOTES:
1. RECEIVING MANHOLE TO BE LOCATED WITHIN FENCED AREA OF LIFT STATION SITE.
2. ALL 230V/3ø ELECTRIC SERVICE NOT REQUIRING A DISCONNECT BEFORE THE METER SHALL BE PLACED OUTSIDE THE FENCE. FOR 460V/3ø SERVICE, THE METER AND DISCONNECT CAN BE INSIDE THE FENCE ON EITHER SIDE OF THE ENTRANCE GATE. MAINTAIN 3-FOOT MINIMUM CLEARANCE AROUND THE METER. THE METER MUST BE READABLE FROM OUTSIDE THE FENCE.
3. SITE SHALL BE PROVIDED WITH SUFFICIENT AREA FOR EQUIPMENT TURN-AROUND.

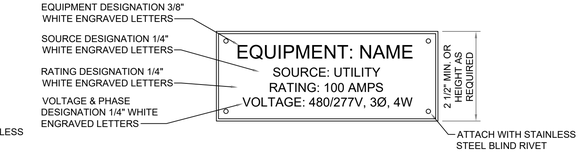




A5 GROUND WELL
NOT TO SCALE



A1 FAULT CURRENT NAMEPLATE DETAIL
NOT TO SCALE



A2 TYPICAL EQUIPMENT NAMEPLATE DETAIL
NOT TO SCALE

6

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
LIFT STATION DETAILS

SHEET NUMBER
C6-43

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-41 - LIFT STATION DETAILS.dwg C6-43 - LIFT STATION SITE DETAILS Jan 29, 2025 11:05am by: mike.fritz

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ABBREVIATIONS:

A,AMP	AMPERE
AFG	ABOVE FINISH GRADE
AFF	ABOVE FINISH GRADE
AIC	AMPS INTERUPTING CAPACITY
AMSL	ABOVE MEAN SEA LEVEL
AOR	ACCEPTABLE OPERATING RANGE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISH GRADE
C	CONDUIT
C&I	CONTROLS AND INDICATORS
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CU	COPPER
D	DEEP
DED	DEDICATED CIRCUIT
DHL	DELTA HIGH-LEG
ECB	ENCLOSED CIRCUIT BREAKER
EG	EQUIPMENT GROUND
ETM	ELAPSED TIME METER
EX	EXISTING
FMC	FLEXIBLE METAL CONDUIT
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H	HIGH
HP	HORSEPOWER
HPS	HIGH-PRESSURE SODIUM
IBC	INTERNATIONAL BUILDING CODE
IG	ISOLATED GROUND
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
KW	KILOWATT
KVA	KILOVOLT-AMPERES
LFNC	LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
MANF	MANUFACTURER
MBJ	MAIN BONDING JUMPER
MCB	MAIN CIRCUIT BREAKER
MCC	MAIN CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MLO	MAIN LUGS ONLY
MSL	MEAN SEA LEVEL
N	NEUTRAL
NCSBC	NORTH CAROLINA STATE BUILDING CODE
NCDEQ	NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NRTL	NATIONALLY RECOGNIZED TESTING LABRATORY
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVERCURRENT PROTECTION
PC	PHOTOCELL
PCP	PUMP CONTROL PANEL
PCRS	PVC-COATED RIGID GALVANIZED STEEL
PID	PROPORTIONAL-INTEGRAL-DERIVATIVE
PNL	PANEL
RGS	RIGID GALVANIZED STEEL
RTU	REMOTE (OR RADIO) TELEMETRY
RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
RVSS	REDUCED VOLTAGE SOLID STATE
SBJ	SYSTEM BONDING JUMPER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	SCHEDULE
SE	SERVICE ENTRANCE
SKVA	STARTING KILOVOLT-AMPERES
SLD	SINGLE-LINE DIAGRAM
SPD	SURGE PROTECTION DEVICE
SSBJ	SUPPLY-SIDE BONDING JUMPER
SBT	SOLID BARE TINNED
SST	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WP	WEATHERPROOF
WPIU	WEATHERPROOF IN-USE
WWTB	WET WELL TERMINAL BOX
XFMR	TRANSFORMER

LADDER LOGIC LEGEND	
SYMBOL	DESCRIPTION
	PUSHBUTTON NC
	PUSHBUTTON NO
X	CONTACT NCTO
X	CONTACT NCTC
	CONTACT NOTO
X	CONTACT NOTC
	COIL
	CONTACT NO
	CONTACT NC
	CONTINUANCE
	SINGLE TAP TRANSFORMER
	FUSE

LADDER LOGIC LEGEND	
SYMBOL	DESCRIPTION
	PROXIMITY SWITCH NO
	PROXIMITY SWITCH NC
	SINGLE-THROW SWITCH
⊠	EXTERNAL TERMINAL
□	INTERNAL TERMINAL
	BREAKER
	REDUCED-VOLTAGE SOLID-STATE SOFT STARTERS
	CONDUCTORS CONNECTED
	CONDUCTORS NOT CONNECTED
	MOTOR

LADDER LOGIC LEGEND	
SYMBOL	DESCRIPTION
	FLOAT SWITCH NO
	FLOAT SWITCH NC
	PRESSURE SWITCH NO
	PRESSURE SWITCH NC
	FLOW SWITCH NO
	FLOW SWITCH NC
	CAM SWITCH NO
	CAM SWITCH NC
	EPO SWITCH NO
	EPO SWITCH NC
	TEMPERATURE SWITCH NO
	TEMPERATURE SWITCH NC

LADDER LOGIC LEGEND	
SYMBOL	DESCRIPTION
	MOTOR OVERLOAD PROTECTION
	GROUND
	HORN
	LIGHT
	ALARM LIGHT
	PUSH TEST LIGHT
	PLUG
	SOCKET
	PLUG AND SOCKET
A A	SWITCH 2POS
A B C	SWITCH 3POS
A B C D	SWITCH 4POS

ELECTRICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	FUSE
	LUG(S)
●	JUNCTION OR SPLICE (WHEN ASSOCIATED WITH POWER)
M	METER
	TRANSFORMER
	CONTRACTOR
	MOTOR OVERLOAD DEVICE
	MOTOR
	GROUND
	RECEPTACLE
$	SWITCH 3: 3-WAY 4: 4-WAY LOWERCASE LETTERS INDICATE SWITCHING
	GROUND ROD
●	GROUND BOND (WHEN ASSOCIATED WITH GROUNDING)
—G—G—G—	GROUND CONDUCTOR

C&I CONDUCTOR COLOR		
SYSTEM		COLOR
DC POWER	POSITIVE	RED
	NEGATIVE	BLACK
DC CONTROL		BLUE
120VAC CONTROL	SINGLE CONDUCTORS	RED
	INTERLOCK CONDUCTORS	YELLOW
240VAC CONTROL		ORANGE

POWER CONDUCTOR COLOR			
PHASE	240/120V 208/120V	240/120V DHL	480/277V
A	BLACK	BLACK	BROWN
B	RED	ORANGE	ORANGE
C	BLUE	BLUE	YELLOW
N	WHITE	WHITE	GRAY
G	BARE OR GREEN		

PUMP CONTROL LOGIC

FLOAT #	FLOAT NAME	EVENT	ACTION
4	HIGH WATER ALARM	ACTIVATE	LEAD AND LAG PUMPS RUN, ALARM HORN, STROBE AND "HIGH WATER" LIGHT IN PCP ENERGIZE, AUTODIALER RESPONSE ACTIVATED.
4	HIGH WATER ALARM	DEACTIVATE	ALARM HORN DE-ENERGIZES, STROBE AND "HIGH WATER" LIGHT IN PCP REMAIN ENERGIZED UNTIL RESET LOCALLY.
3	LAG PUMP ON	ACTIVATE	LEAD AND LAG PUMPS RUN
3	LAG PUMP ON	DEACTIVATE	NO ACTION
2	LEAD PUMP ON	ACTIVATE	LEAD PUMP RUN
2	LEAD PUMP ON	DEACTIVATE	NO ACTION
1	PUMPS OFF	ACTIVATE	NO ACTION
1	PUMPS OFF	DEACTIVATE	PUMPS STOP
0	LOW WATER ALARM	ACTIVATE	NO ACTION
0	LOW WATER ALARM	DEACTIVATE	INHIBITS PUMP OPERATION, AUTODIALER RESPONSE ACTIVATED.

RTU DIALER ALARM CONDITIONS

THE FOLLOWING FAULT CONDITIONS SHALL BE MONITORED ON SEVEN DIALER ALARM GROUPS:	
FAULT 1	WET WELL HIGH LEVEL
FAULT 2	PUMP #1 FAILURE (OVER TEMP/OVERLOAD)
FAULT 3	PUMP #2 FAILURE (OVER TEMP/OVERLOAD)
FAULT 4	POWER FAILURE
FAULT 5	WET WELL LOW LEVEL
FAULT 6	SPARE
FAULT 7	SPARE

ELECTRICAL NOTES

CODES, STANDARDS, & SPECIFICATIONS

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL MATERIALS AND LABOR RELATED DIRECTLY OR INDIRECTLY TO ALL ELECTRICAL WORK DOCUMENTED IN THESE DRAWINGS SHALL BE PROVIDED AND PERFORMED IN CONFORMANCE WITH ALL CURRENT GOVERNING CODES, STANDARDS, AND PROFESSIONAL STANDARD OF CARE TO INCLUDE THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), UNDERWRITERS LABORATORY (UL), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), AMERICAN STANDARDS ASSOCIATION (ASA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AND THE NATIONAL ELECTRICAL CODE (NEC).
2. CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 36" IN FRONT OF ALL ELECTRICAL EQUIPMENT AS REQUIRED BY NEC.
3. IF CONDUIT RUNS HAVE MORE THAN THREE (3) CONSECUTIVE 90 DEGREE TURNS, THE CONTRACTOR SHALL INSTALL PULL BOXES AS REQUIRED BY NEC. NO RUNS WITH MORE THAN TWO (2) CONSECUTIVE 90 DEGREE TURNS ARE ANTICIPATED.
4. CONTRACTOR SHALL FURNISH AND INSTALL GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC REQUIREMENTS.
5. CONDUCTORS AND CONDUITS SHALL BE SIZED IN ACCORDANCE WITH NEC REQUIREMENTS FOR THE INTENDED USE.
6. IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, CONTRACTOR SHALL PROVIDE A GENERATOR COORDINATION STUDY IN ACCORDANCE WITH ARTICLE 700 OF THE NEC.

WET WELL, VALVE VAULT AND MANHOLES COMPRISE HAZARDOUS (CLASSIFIED) LOCATIONS. PER NFPA ARTICLE 820, INTERIOR OF THE WET WELL AND AREA WITHIN 36" OF WET WELL VENT COMPRISE A HAZARDOUS (CLASSIFIED) LOCATION, CLASS 1, GROUP D, DIVISION 1 (WET WELL) OR DIVISION 2 (VALVE VAULT). REFER TO MOST CURRENT VERSION OF NFPA 820 FOR CLASS 1, GROUP D, DIVISION 1 AND 2 BOUNDARY DEFINITIONS AROUND WET WELL OPENINGS AND VENTS. REFER TO MOST CURRENT VERSION OF NFPA 70 ARTICLE 500 FOR WIRING REQUIREMENTS.

GENERAL

1. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, ACCESSORIES, ETC., FOR A COMPLETE WORKING ELECTRICAL INSTALLATION.
2. CONTRACTOR SHALL PROTECT ADJACENT EQUIPMENT AND FINISHES FROM DAMAGE AND SHALL REPAIR TO ORIGINAL CONDITION ANY ITEMS DAMAGED AS A RESULT OF THE WORK.
3. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL RACK AND CONTROL PANEL DESIGN, AND SHALL SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW. SHOP DRAWING SHALL INCLUDE, AT A MINIMUM:
   a. LADDER LOGIC / CONTROLS SCHEMATIC
   b. ENCLOSURE AND ACCESSORIES
   c. MAIN POWER COMPONENTS
   d. CONTROLS COMPONENTS
   e. SWITCHES AND INDICATORS
   f. RELAYS AND MISCELLANEOUS COMPONENTS
   g. ALARM COMPONENTS
   h. LABELS
4. CONTRACTOR SHALL INDICATE THE LOCATION OF ALL UNDERGROUND CONDUIT ON THE RECORD DRAWINGS.
5. ELECTRICAL SERVICE SHALL BE 277/480V, 3 PHASE, 4-WIRE.
6. NOTIFY THE UTILITY SERVICE OF NEW SITE LOADS AND COORDINATE WITH THE ELECTRICAL UTILITY FOR EXACT METERING REQUIREMENTS AND SERVICE SIZING.

MATERIALS AND INSTALLATION

1. ALL EQUIPMENT AND MATERIALS SHOWN SHALL BE CONSIDERED NEW UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
2. FINAL CONNECTIONS OF EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS.
3. CONTRACTOR SHALL PROVIDE AND INSTALL AN ENGRAVED PHENOLIC NAME PLATE ON THE FRONT OF ALL ELECTRICAL EQUIPMENT ENCLOSURES. THE NAME PLATE SHALL IDENTIFY THE EQUIPMENT, POWER SOURCE, AND CIRCUIT NUMBER.
4. CONTRACTOR SHALL PROVIDE A PANELBOARD DIRECTORY FOR THE LOAD CENTER IN A PROTECTIVE PLASTIC COVER MOUNTED ON THE INSIDE DOOR OF THE PANEL.
5. UNLESS OTHERWISE NOTED, ALL ABOVE GRADE ELECTRICAL CONDUIT SHALL BE PVC-COATED RIGID GALVANIZED STEEL (RGS) AND ALL BELOW GRADE ELECTRICAL CONDUIT SHALL BE SCH 80 PVC. CONDUIT PENETRATING SEWER STRUCTURES SHALL BE PVC COATED RGS AND AS NECESSARY TO COMPLY WITH NEC AND LOCAL CODES METALLIC CONDUIT IN CONTACT WITH CONCRETE SHALL BE COATED WITH ASPHALTIC PAINT FOR A MINIMUM OF 4" ON EACH SIDE OF THE CONTACT SURFACE.
6. ALL METALLIC CONDUIT ENTERING ENCLOSURES SHALL TERMINATE VIA THREADED MYERS HUBS.
7. ELECTRICAL COMPONENTS INSTALLED WITHIN 5' OF SEWER VENTS, VAULT HATCHES, OR OTHER SOURCES OF SEWER GASSES SHALL CARRY EXPLOSION PROOF RATING.
8. THERE SHALL BE NO SPLICES INSIDE THE WETWELL NOR JUNCTION BOX. MOTOR CABLE SHALL BE OF SUFFICIENT LENGTH TO RUN FROM MOTOR TO RESPECTIVE CONTROL PANEL.
9. EACH PANEL SHALL BE REMOVABLE WITHOUT THE REMOVAL OF ADJACENT PANELS. PROVIDE 3" MINIMUM SEPARATION BETWEEN ALL PANELS AND COMPONENTS.
10. CONTRACTOR SHALL INSTALL AND CONNECT WIRE AND CONDUIT FROM CONTROL PANEL ALARM CIRCUITRY TO THE MAIN BUILDING SECURITY/CONTROL ROOM WITH AUDIBLE AND VISUAL ALARM.
11. CONNECT POWER AND CONTROL WIRING IN ACCORDANCE WITH SINGLE-LINE DIAGRAM.
12. SEAL AROUND WIRE ENTERING JUNCTION BOX AND CONTROL PANELS TO PREVENT MIGRATION OF MOISTURE INTO CONTROL PANELS.
13. CONTRACTOR SHALL SEAL ALL CONDUITS ENTERING AN UNDERGROUND ENCLOSURE WITH NON-HARDENING CONDUIT SEALANT THAT IS COMPATIBLE WITH THE INSULATION OF THE CONDUCTORS IN THE CONDUIT.
14. SEALS SHALL BE NON-HARDENING SEAL COMPOUND IDEAL CAT NO. 31-601 (OR EQUIVALENT). AFTER INSTALLATION, COAT SEAL-OFFS WITH PVC COATING TO INHIBIT CORROSION.
15. NO PUMP CABLES NOR FLOAT SWITCH CABLES SHALL BE SUPPORTED OR BE IN CONTACT WITH LADDER OR STEPS.
16. ALL ENCLOSURES EXPOSED TO WEATHER ELEMENTS SHALL BE NEMA 4X RATED.
17. AUTOMATIC TRANSFER SWITCH SHALL BE ASCO, THOMSON, OR BY THE SAME MANUFACTURER AS THE GENERATOR SET.
18. SURGE PROTECTION DEVICE SHALL BE SQUARE D MODEL SDSA3650D SERIES 001.
19. ALL FEEDERS AND CIRCUITRY SHALL BE TORQUED PER THE PANEL BREAKER AND/OR PARTICULAR EQUIPMENT MANUFACTURER'S SPECIFICATIONS.
20. MANUFACTURER'S NAMES AND MODEL NUMBERS ARE GIVEN FOR DESCRIPTIVE PURPOSES TO INDICATE A QUALITY STANDARD AND ARE NOT INTENDED TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER. PRODUCTS DEEMED EQUAL AND APPROVED BY THE OWNER WILL BE ACCEPTED.
21. ALL DEVICE TERMINATIONS SHALL BE RATED AT 75°C.
22. IDENTIFY CONDUCTORS ACCORDING TO THE CONDUCTOR COLOR SCHEDULE ON THIS SHEET. CONDUCTORS 4 AWG AND LARGER MAY BE BLACK IF IDENTIFIED BY COLORED TAPE AT EACH TERMINATION, CONNECTION, AND SPLICE POINT. APPLY TAPE IN HALF-OVERLAPPING TURNS FOR A MINIMUM OF 3" FROM TERMINAL POINTS.
23. WIRING TO ALL DEVICES SHALL BE TERMINATED IN THE DEVICES SCREW TERMINALS.
24. CONTRACTOR SHALL COORDINATE LOCATION OF METER AND CONDUIT CONNECTION FOR THE TRANSFORMER AND GENERATOR.

PRECONSTRUCTION COORDINATION

1. CONTRACTOR SHALL APPLY FOR UTILITY SERVICES, BOTH ELECTRICAL AND TELEPHONE, ON THE BEHALF OF THE OWNER. THIS APPLICATION SHALL BE MADE NO LATER THAN THE NEXT BUSINESS DAY FOLLOWING THE AWARD OF THE CONTRACT. CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY FOR THE EXACT TRANSFORMER LOCATION, METER LOCATION, AND SERVICE ROUTING. CONTRACT SHALL COORDINATE WITH THE TELEPHONE UTILITY FOR THE EXACT TELEPHONE REQUIREMENTS AND SERVICE ROUTING.
2. CONTRACTOR SHALL PERFORM FULL ARC-FLASH STUDY IN ACCORDANCE WITH NFPA-70E. THE CONTRACTOR SHALL PROVIDE NFPA-STANDARD ARC FLASH LABELS, IDENTIFYING THE INCIDENT ENERGY AND APPROPRIATE PPE REQUIRED FOR LIVE ELECTRICAL WORK.

FUNCTIONAL DESCRIPTION

1. SEE PUMP STATION MECHANICAL DETAIL SHEET FOR FLOAT ELEVATIONS.
2. THE TERM "ACTIVATE" WITH REGARD TO FLOATS IS DEFINIED AS THE EVENT WHEN THE INTERNAL SWITCH OF A FLOAT IS CHANGED FROM ITS NATURAL, HANGING FREE STATE TO ITS FLOATING STATE.
3. THE TERM "DEACTIVATE" WITH REGARD TO FLOATS IS DEFINED AS THE EVENT WHEN THE INTERNAL SWITCH OF A FLOAT IS CHANGED FROM ITS FLOATING STATE TO ITS NATURAL HANGING FREE STATE.
4. ALL PUMP FAULTS SHALL TRIGGER THE ALARM AND STROBE.
5. THE RESET BUTTON IN PCP SHALL RESET ALL ALARM-RELATED RELAYS AND DE-ENERGIZE THE "HIGH WATER" AND "LOW WATER" LIGHTS IN THE PCP.
6. THE SILENCE BUTTON SHALL PREVENT THE ALARM FROM SOUNDING UNTIL THE RESET BUTTON IS PRESSED.
7. PUMP CONTROL LOGIC SHALL BE AS SHOWN IN THE TABLE TO THE LEFT.
8. RTU DIALER ALARM FAULT CONDITIONS SHALL BE MONITORED AS SHOWN IN THE TABLE TO THE LEFT.

PREPARED BY

Kimley»Horn

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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7	REVISED PER NCDEQ PRIVATE WATER COMMENTS	12/08/2023	MRF
8	REVISED PHASE BOUNDARY		

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. CWALINA

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
LIFT STATION ELECTRICAL NOTES

SHEET NUMBER
C6-44

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-41 - LIFT STATION DETAILS.dwg C6-44 - LIFT STATION ELECTRICAL NOTES Jan 29, 2025 11:05am by: mike fritz

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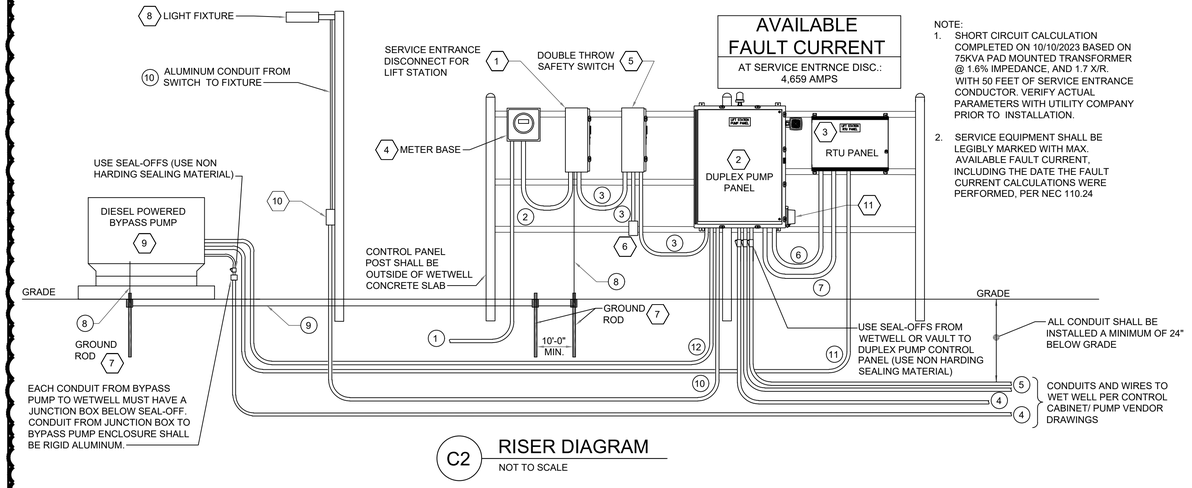


C2 RISER DIAGRAM

NOT TO SCALE

AVAILABLE FAULT CURRENT
AT SERVICE ENTRNCE DISC.: 4,659 AMPS

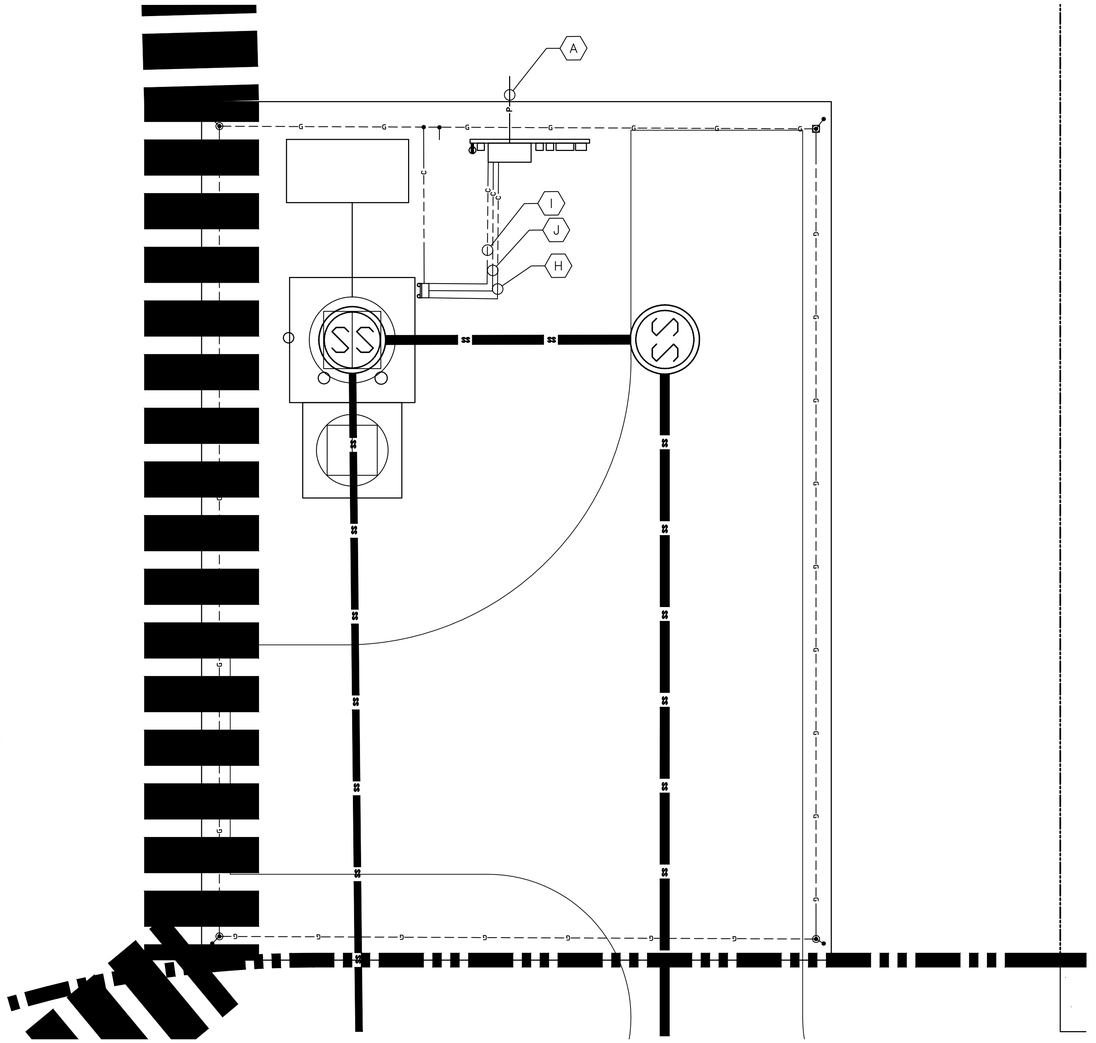
NOTE:
1. SHORT CIRCUIT CALCULATION COMPLETED ON 10/10/2023 BASED ON 75KVA PAD MOUNTED TRANSFORMER @ 1.6% IMPEDANCE, AND 1.7 X/R. WITH 50 FEET OF SERVICE ENTRANCE CONDUCTOR. VERIFY ACTUAL PARAMETERS WITH UTILITY COMPANY PRIOR TO INSTALLATION.
2. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED WITH MAX. AVAILABLE FAULT CURRENT, INCLUDING THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED, PER NEC 110.24

ELECTRICAL CIRCUIT SCHEDULE

MARK	CKT. TYPE	WIRE	CONDUIT	REMARK
1	480V,3Ø,4W		3" MIN.	COORDINATE SERVICE ENTRY WITH LOCAL UTILITY
2	480V,3Ø, 4W	4 #3	1 1/4"	
3	480V,3Ø,4W	4#3 & 1 #8GND	1 1/4"	
4	CONTROL	FLOAT CABLES	2"	CABLES BY FLOAT MANUFACTURER
5	POWER	MOTOR CABLES	2"	CABLES BY PUMP VENDOR
6	CONTROL	AS REQ'D	1"	
7	120V,1Ø	2#12, 1#12 GND	3/4"	RTU POWER
8	EARTH GROUND	#6 BARE COPPER	N/A	EXOTHERMICALLY WELD DIRECTLY TO GROUND ROD
9	EARTH GROUND	#6 BARE COPPER	N/A	EXOTHERMICALLY WELD DIRECTLY TO GROUND ROD
10	120V,1Ø	2#12, 1#12 GND	3/4"	SITE LIGHT
11	ALARMS	AS REQ'D	2"	DIESEL PUMP ALARMS
12	120V,1Ø	4#12, 1#12 GND	1"	DIESEL BYPASS PUMP BATTERY CHARGER AND JACKET HEATER

ELECTRICAL EQUIPMENT SCHEDULE

MARK	DESCRIPTION	REMARK
1	SUITABLE FOR SERVICE ENTRANCE RATED, 100A 480V, 3P FUSED DISCONNECT WITH 100A FUSES	STAINLESS STEEL NEMA 4X RAIN PROOF SQUARE D
2	PUMP CONTROL PANEL	STAINLESS STEEL, NEMA 4X, PER PLURIS SPECIFICATIONS- RSI CONTROL PANELS SHALL NOT BE ACCEPTED
3	SCADA / MONITOR	MISSION RTU, NEMA 4X, PER PLURIS SPECIFICATIONS
4	ELECTRICAL UTILITY METER	FURNISHED AND INSTALLED BY CONTRACTOR
5	100A HEAVY DUTY DOUBLE THROW, 480V, 3P SAFETY SWITCH WITH SOLID NEUTRAL	STAINLESS STEEL, NEMA 4X
6	100A CIRCUIT BREAKING 4 POLE 4 WIRE RECEPTACLE ASSEMBLY CROUSE HINDS OR APPROVED EQUAL	COORDINATE RECEPTACLE CONFIGURATION WITH PLURIS
7	3/4" X 10' COPPER CLAD GROUND ROD, SEE DETAIL A5/E-001	EXOTHERMICALLY WELDED GROUNDS
8	LED AREA LIGHT UL. LISTED WET LOCATION, PROVIDE WITH EXTERNAL PHOTOCELL, LITHONIA: RSX1LEDP440KR3MVOLTRPAHSPEDDBXD	POLE MOUNTED AT 30' ON CLASS V UTILITY POLE. POLE MUST BE RATED FOR 150MPH LOAD.
9	DIESEL BYPASS PUMP	PER PLURIS STANDARDS
10	MALLEABLE IRON FS BOX WITH WP LIGHT SWITCH AS TO BYPASS THE PHOTOCELL.	MOUNTED 42" ABOVE FINISHED GRADE ON LIGHT POLE.
11	WP GFI DUPLEX RECEPTACLE WITH IN-USE COVER	MOUNTED TO CONTROL PANEL OR PEDESTAL AT BY-PASS PUMP



PROPOSED ELECTRICAL SITE PLAN

6

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. CWALINA

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
LIFT STATION ELECTRICAL NOTES

SHEET NUMBER
C6-45

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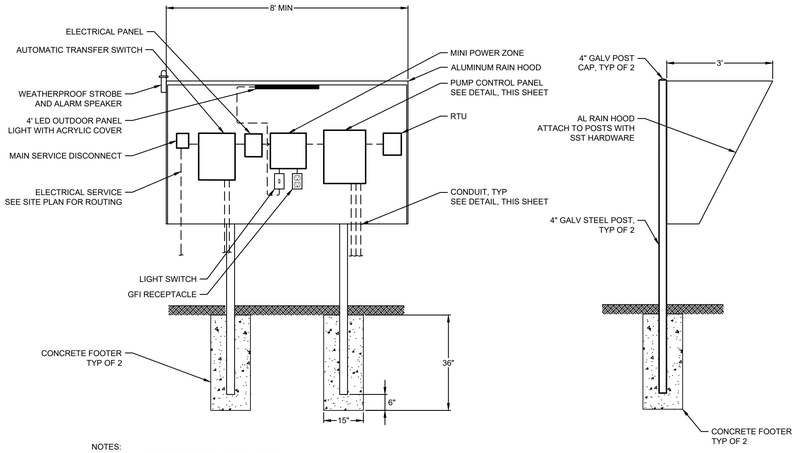
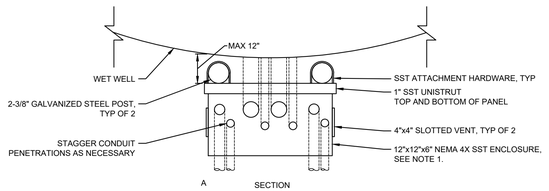
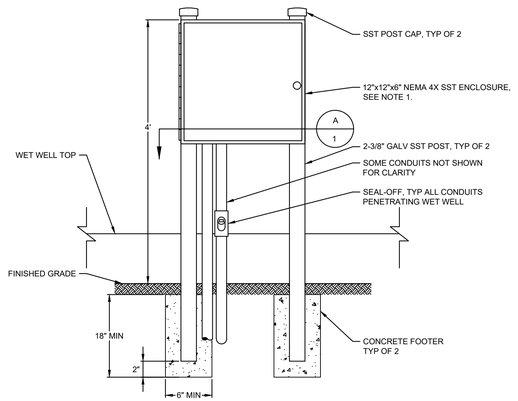


NOTES:
1. SEAL ALL PENETRATIONS THROUGH HOOD.

ELECTRICAL AND CONTROLS RACK
NTS

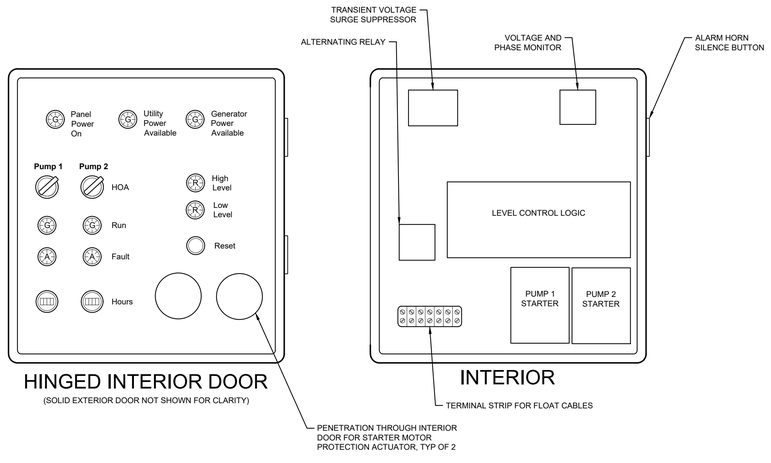




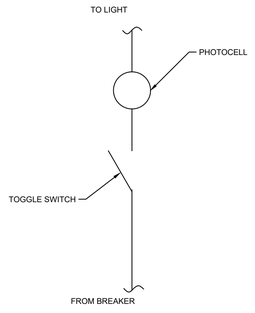
NOTES:
1. PANEL SHALL INCLUDE TERMINAL STRIPS FOR ALL CONTROL, SIGNAL, AND POWER CONDUCTORS.
2. INSTALL TWO (2) 2" PVC COATED RGS CONDUITS AND TWO (2) 1" PVC COATED RGS CONDUITS FROM JUNCTION PANEL INTO WET WELL FOR PUMP LEADS AND FLOATS.
3. ENCLOSURE SHALL HAVE 4"x4" SLOTTED VENTS ON EACH SIDE.
4. ALL CONDUITS PENETRATING WET WELL SHALL BE PVC COATED RGS.

WET WELL JUNCTION PANEL
NTS

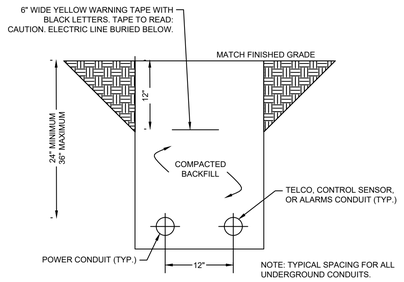
NOTES:
1. ALL HARDWARE, INCLUDING BUT NOT LIMITED TO UNISTRUTS, POSTS, BOLTS, WASHERS, NUTS, FASTENERS, ETC., SHALL BE STAINLESS STEEL.
2. ALL ENCLOSURES SHALL BE NEMA 4X, UNLESS OTHERWISE NOTED.



PROPOSED PUMP CONTROL PANEL (PCP)
NTS



POLE AREA LIGHT CIRCUITING
NTS



CONDUIT TRENCH DETAIL
NTS

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APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
LIFT STATION ELECTRICAL DETAILS

SHEET NUMBER
C6-46

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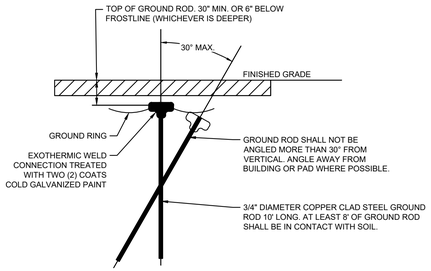
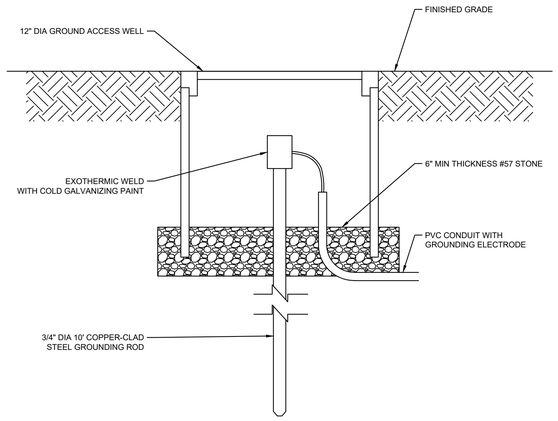
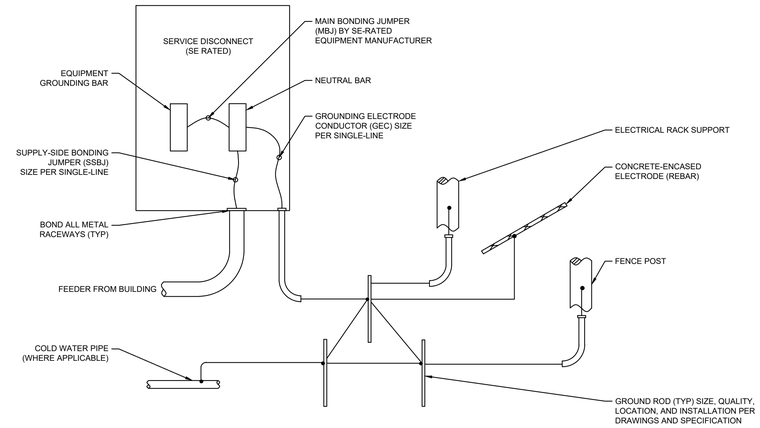


GROUND ROD
NTS



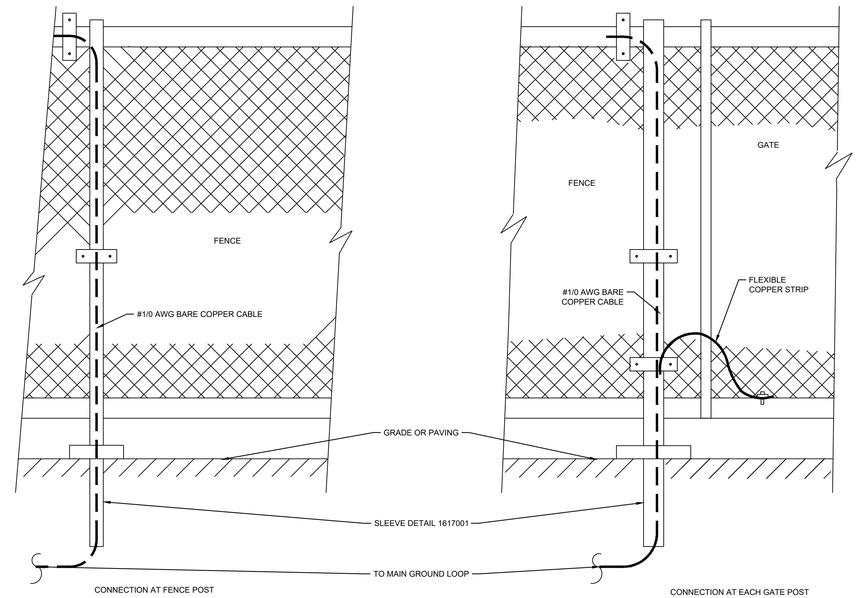
NOTES:
1. MINIMUM 8' OF GROUND ROD SHALL BE IN CONTACT WITH SOIL.
2. GROUND ROD SHALL BE ANGLED AWAY FROM ADJACENT STRUCTURES OR SLABS AT NO GREATER THAN 30° FROM VERTICAL.
3. WELLS AND COVERS IN VEHICULAR TRAFFIC AREAS SHALL BE AASHTO H-20 RATED.

GROUND ROD TEST WELL
NTS



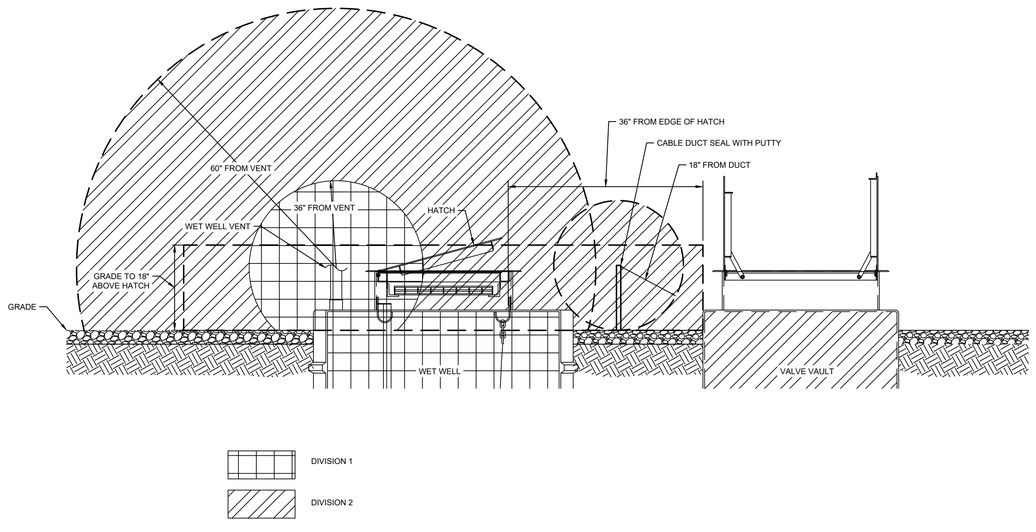
GROUND NOTES
1. UNO, GROUNDING CONDUCTORS SHALL BE 2AWG SBT CU.
2. UNO, ABOVE-GRADE GROUNDING CONDUCTORS SHALL BE SLEEVED IN ¾" PVC OR LFNC TO 6" BELOW GRADE.

SERVICE GROUNDING
NTS



NOTES:
1. SITES WITH PRIMARY AND SECONDARY FEEDERS RUN IN CONDUIT, CABLE TRAY OR BUS DUCT SHALL HAVE EVERY OTHER FENCE POST GROUNDED.
2. SITES WITH OPEN WIRING INSTALLED ON INCOMING LINE OR TERMINATING STRUCTURES OR WITH OPEN WIRING ON SECONDARY DISTRIBUTION STRUCTURES SHALL HAVE EVERY FENCE POST GROUNDED.

FENCE GROUNDING INSTALLATION
NTS



NOTES:
1. PER NFPA 820-2020, TABLE 4.2.2, ROW 14 AND 32, INTERIOR OF WET WELL AND AREA WITHIN 36" OF WET WELL VENT COMPRISE A HAZARDOUS (CLASSIFIED) LOCATION, CLASS I, GROUP D, DIVISION 1. REMAINDER OF SHADED AREA SHOWN COMPRISES A HAZARDOUS (CLASSIFIED) LOCATION, CLASS I, GROUP D, DIVISION 2. INSTALLATION WITHIN THESE AREAS SHALL COMPLY WITH NEC 501.
2. PER NFPA 820-2020, TABLE 4.22, ROW 29, INTERIOR OF VALVE VAULT AND ARE WITHIN 36" OF VALVE VAULT VENT COMPRISE A HAZARDOUS (CLASSIFIED) LOCATION, CLASS I, GROUP D, DIVISION 2. INSTALLATION WITHIN THESE AREAS SHALL COMPLY WITH NEC 501.

BOUNDARIES OF NEC HAZARDOUS (CLASSIFIED) LOCATIONS
NTS

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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
LIFT STATION ELECTRICAL DETAILS

SHEET NUMBER
C6-47

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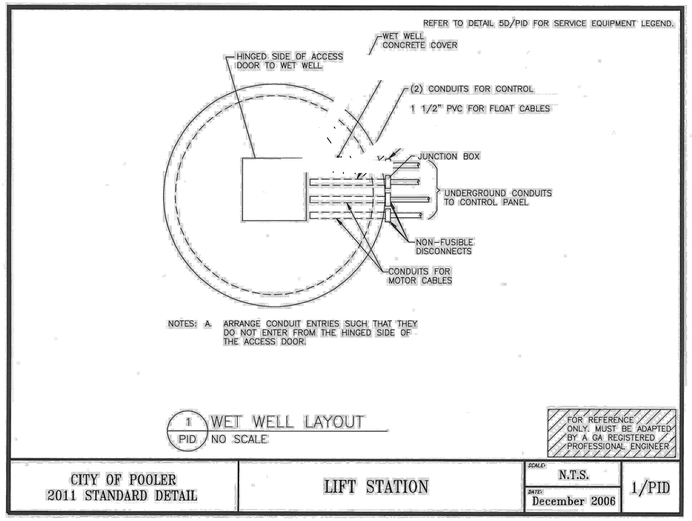

1 PID — WET WELL LAYOUT — NO SCALE

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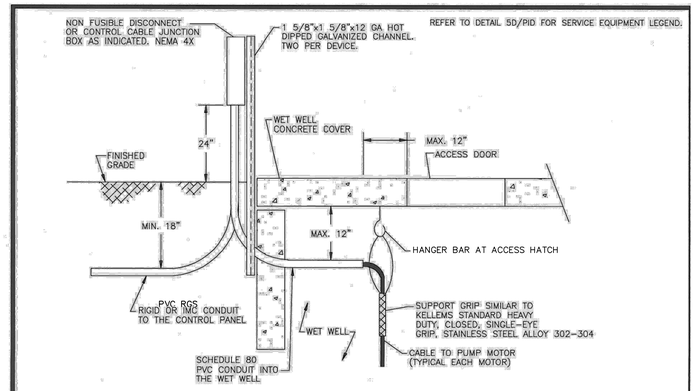
CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: December 2006	1/PID



2 PID — PUMP CABLE INSTALLATION — NO SCALE

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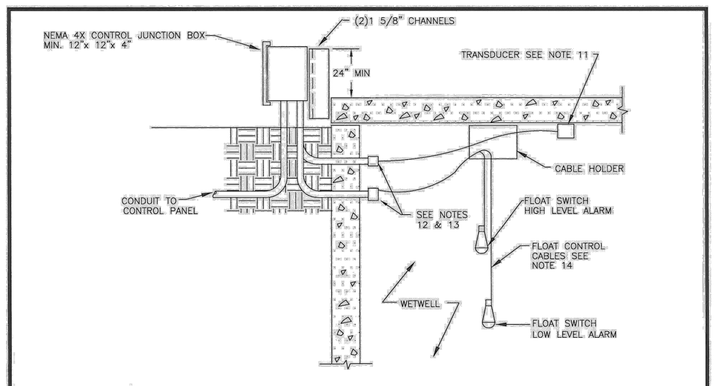
CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: December 2006	2/PID



3 PID — FLOAT SWITCHES & LEVEL TRANSDUCER INSTALLATION — NOT TO SCALE

REFER TO DETAIL 3/PED FOR REFERENCED NOTES.
REFER TO DETAIL 5D/PID FOR SERVICE EQUIPMENT LEGEND.

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CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: June 2012	3B/PID

NOTES:

1. THE SERVICE AND SERVICE EQUIPMENT HAS BEEN SIZED FOR THE FUTURE PUMP SHOWN.
2. ALL CONDUITS, EXCEPT GROUNDING CONDUCTOR CONDUIT, SHALL BE RIGID GALVANIZED OR IMC WITH CORROSION PROTECTION WHEN BURIED IN EARTH. CORROSION PROTECTION SHALL EXTEND TO 6" ABOVE FINISHED GRADE.
3. SEAL THE ENDS OF CONDUITS, ENTERING ANY ELECTRICAL ENCLOSURE FROM THE WETWELL WITH PROMAGUM SEALING COMPOUND. IT IS NOT NECESSARY TO SEAL THE END IN THE WET WELL.
4. THE EXACT LOCATION OF THE METER AND THE PAD MOUNTED TRANSFORMER OR THE SERVICE POLE SHALL BE COORDINATED IN THE FIELD WITH THE UTILITY COMPANY AND WITH THE OTHER WORK ON THE PROJECT SITE.
5. SIZE THE BACKBOARD TO FIT EQUIPMENT TO BE INSTALLED.
6. PROVIDE CONDUITS TO THE WETWELL FOR INSTALLATION OF CABLES FOR LIQUID LEVEL SENSORS AS SHOWN IN DETAIL 1/PID.
7. PROVIDE ONE 3" CONDUIT TO THE WETWELL FOR EACH POWER CABLE WHICH IS FURNISHED INTEGRAL WITH A SUBMERSIBLE PUMP. INSTALL CABLE AND MAKE CONNECTIONS. PROVIDE A CONDUIT FOR THE FUTURE PUMP.

8A. IT IS ANTICIPATED THAT SAVANNAH ELECTRIC WILL CHARGE THE OWNER TO PROVIDE SERVICE FOR THIS INSTALLATION. THE COST FOR THIS SERVICE WILL BE BORNE DIRECTLY BY THE OWNER. THE CONTRACTOR SHALL COORDINATE THE DETAILS OF SECURING THIS SERVICE ON BEHALF OF THE OWNER FOR EXECUTION BY THE OWNER AND THE COST OF THIS SERVICE WILL BE INCLUDED IN THE BASE BID FOR THE PROJECT.

8B. IT IS ANTICIPATED THAT SAVANNAH ELECTRIC WILL CHARGE TO PROVIDE SERVICE TO THIS INSTALLATION. THIS CHARGE WILL BE INCLUDED AS A MAXIMUM ALLOWANCE IN THE GENERAL CONTRACT. THE ALLOWANCE WILL BE ($10,000) AND IT WILL BE USED TO PAY SAVANNAH ELECTRIC. ANY LEFT OVER WILL BE RETURNED TO THE OWNER BY CHANGE ORDER. ANY OVERAGE WILL BE CHARGED TO THE OWNER BY CHANGE ORDER. ALL COSTS INCLUDING GENERAL AND SUB CONTRACTORS O.H. AND PROFIT ASSOCIATED WITH SECURING THE SERVICE FROM SAVANNAH ELECTRIC WILL BE INCLUDED IN THE BASE BID. THE ALLOWANCE WILL BE APPLIED ONLY TO THE ACTUAL AMOUNT OF SAVANNAH ELECTRIC CHARGES.

9. THE CABINET FRONT PANEL, BACK PANEL AND ANY OTHER NECESSARY COMPONENTS SHALL BE SIZED FOR THE FUTURE PUMP SHOWN. THE FRONT PANEL SHALL HAVE CUT-OUTS WITH SCREW HELD COVERS TO ACCOMODATE THE FUTURE DEVICES.
10. PROVIDE A CONCRETE PAD FOR THE GENERATOR. PAD SHALL BE 12" THICK WITH TOP 6" ABOVE FINISHED GRADE. THE DIMENSIONS SHALL EXCEED THOSE OF THE GENERATOR BY 12" ON ALL SIDES. PROVIDE REINFORCING MESH AT TOP AND BOTTOM PLACED 2" FROM THE SURFACES.
11. INSTALL TRANSDUCER ACCORDING TO MANUFACTURERS INSTRUCTION.
12. ALL CONDUITS IN WET WELL SHALL BE INSTALLED AND SUPPORTED SO THAT ENDS ARE ACCESSIBLE FROM WET WELL ENTRANCE.
13. SEAL THE CONDUITS, ENTERING DISCONNECTS AND JUNCTION BOXES FROM THE WET WELL USE PREMAGUM SEALING COMPOUND. SEAL AT THE ENTRY INTO THE EQUIPMENT ONLY AND NOT IN THE WET WELL.
14. DO NOT SPLICE CABLE FOR FLOAT SWITCH OR LEVEL TRANSDUCER. TERMINATE ON TERMINAL BLOCKS WHICH SHALL BE MOUNTED IN THE CONTROL JUNCTION BOX AND IN THE MOTOR DISCONNECTS MOUNTED TO THE WETWELL.

REFER TO DETAIL 5D/PID FOR SERVICE EQUIPMENT LEGEND.

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CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: June 2012	3/PED

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1	ISSUANCE AND REVISION DESCRIPTIONS	BY	DATE

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APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
LIFT STATION ELECTRICAL DETAILS

SHEET NUMBER
C6-48

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-41 - LIFT STATION DETAILS.dwg C6-48 - LIFT STATION ELECTRICAL DETAILS Jan 29, 2025 11:05am by: mike.fritz

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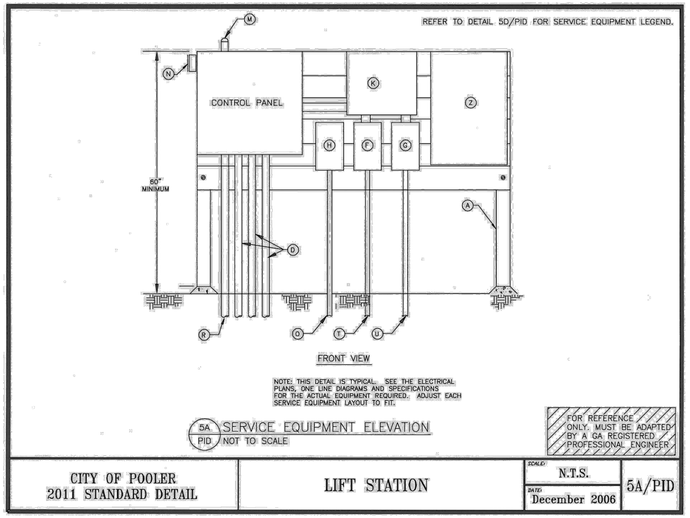
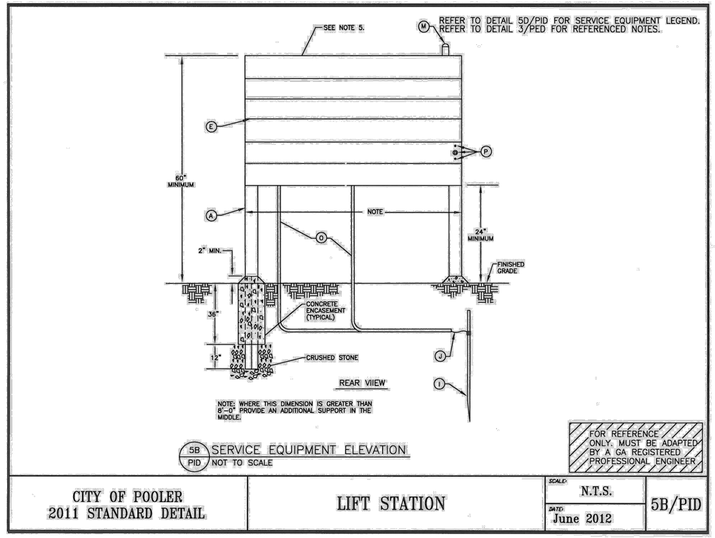


CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: December 2006	5A/PID



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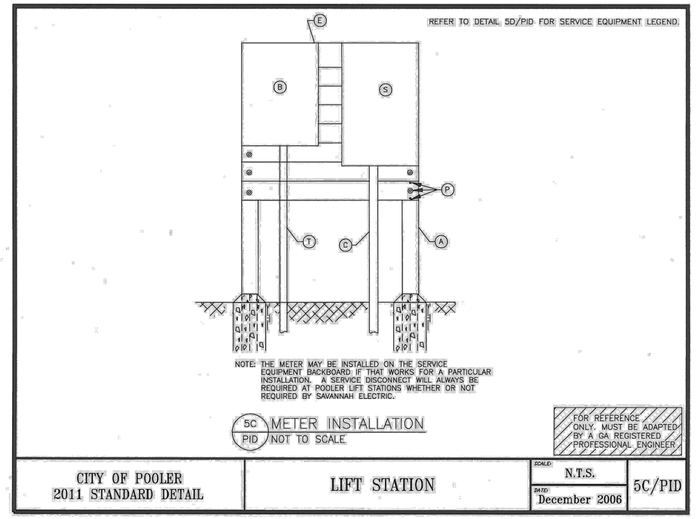
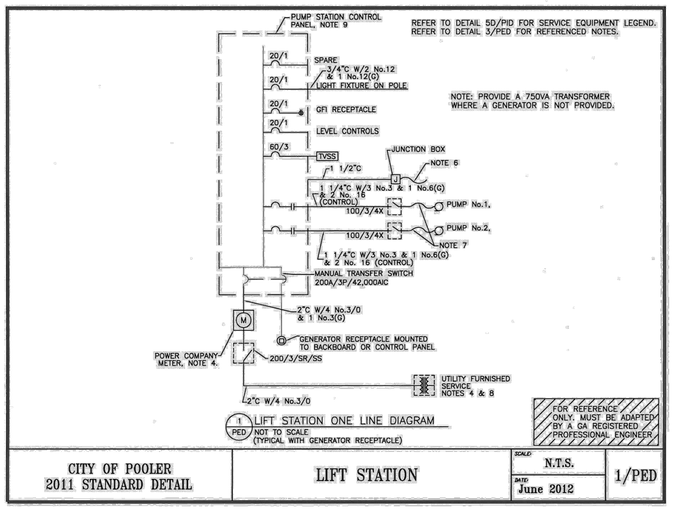
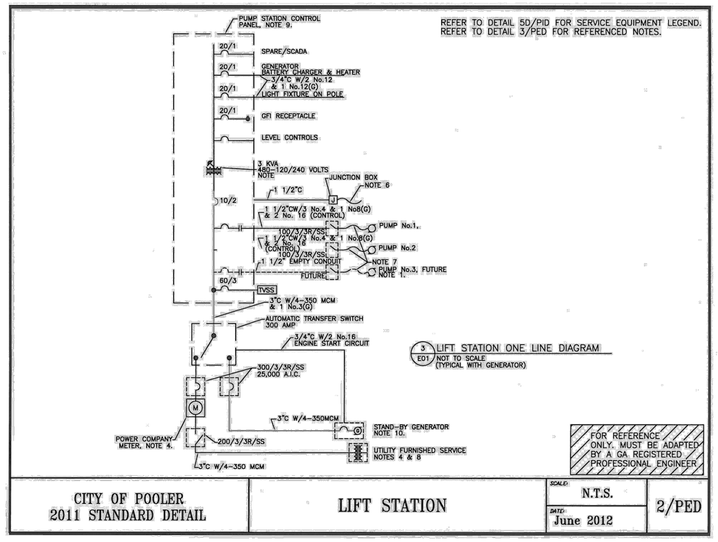


CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: December 2006	5C/PID



CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: June 2012	1/PED



CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: June 2012	2/PED

SERVICE EQUIPMENT SCHEDULE:

- (A) NOMINAL 4"x 6" TREATED POLE SET 48" INTO EARTH, CUT TO LENGTH AS REQUIRED IN THE FIELD, ENCASE IN CONCRETE TO A DEPTH OF 36".
- (B) POWER COMPANY METER.
- (C) SERVICE CONDUIT FROM THE PAD MOUNTED TRANSFORMER OR SERVICE POLE.
- (D) CONDUIT TO DISCONNECT OR CONTROL JUNCTION BOX AT WET WELL.
- (E) NOMINAL 2"x 8" TREATED LUMBER, FRONT AND BACK, PAINTED WITH TWO COATS OF FLAT GRAY PAINT. QUANTITY AS REQUIRED FOR EQUIPMENT AND RIGIDITY.
- (F) NORMAL POWER CIRCUIT BREAKER
- (G) EMERGENCY POWER CIRCUIT BREAKER
- (H) SURGE SUPPRESSION EQUIPMENT.(TVSS)
- (I) COPPERWELD GROUND RODS (3/4"x 10'= 0"). THREE REQUIRED, SPACED 10' ON CENTER IN A TRIANGULAR CONFIGURATION, WITH THE GROUND CONDUCTOR FORMING A CLOSED DELTA LOOP ON THE GROUND RODS.
- (J) PROVIDE SEPARATE No.4 BARE COPPER FOR SURGE PROTECTION AND SERVICE GROUND. CONNECT EACH TO THE GROUND FIELD.
- (K) AUTOMATIC TRANSFER SWITCH
- (L) GENERATOR RECEPTACLE
- (M) ALARM LIGHT
- (N) ALARM HORN
- (P) 3/8" BOLTS & 20D NAILS, (HOT-DIPPED GALVANIZED) AT EACH END OF EACH 2"x 8" BOARD.
- (Q) CONDUIT: 3/4" PVC W/ 1 No. 4 BARE Cu. GROUNDING CONDUCTOR.
- (R) CONDUIT: 3/4" TO THE POLE LIGHT
- (S) SERVICE DISCONNECT: SERVICE EQUIPMENT RATED
- (T) CONDUIT BETWEEN METER AND SERVICE EQUIPMENT
- (U) CONDUIT FROM STAND-BY GENERATOR
- (Z) SCADA CABINET

FOR REFERENCE ONLY. MUST BE ADAPTED BY A GA REGISTERED PROFESSIONAL ENGINEER

CITY OF POOLER 2011 STANDARD DETAIL	LIFT STATION	SCALE: N.T.S. DATE: December 2006	5D/PID

No.	DATE	BY
8	08/16/2024	MRF
7	06/24/2024	TCS
6	06/03/2024	CDJ
5	03/06/2024	MRF
4	02/12/2024	MRF
3	12/18/2023	MRF
2	12/08/2023	MRF
1	ISSUANCE AND REVISION DESCRIPTIONS	

REVISED PHASE BOUNDARY
REVISED PER NC DEQ PRIVATE WATER COMMENTS
REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
REVISED PER COUNTY COMMENTS DATED 01/22/2024
REVISED PER COUNTY COMMENTS DATED 12/11/2023
REVISED PER COUNTY COMMENTS DATED 11/07/2023

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
LIFT STATION ELECTRICAL DETAILS

SHEET NUMBER
C6-49

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-41 - LIFT STATION DETAILS.dwg C6-49 - LIFT STATION ELECTRICAL DETAILS Jan 29, 2025 11:05am by: mike.fritz

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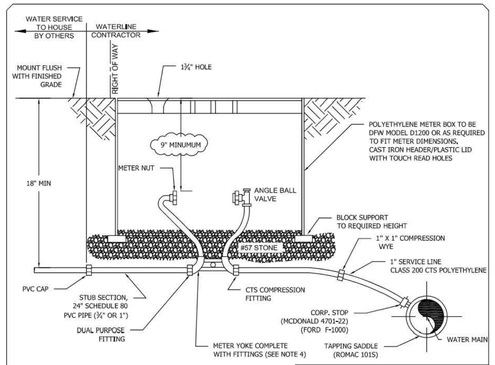
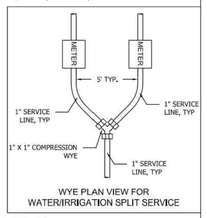


NOTE:
1. CONTRACTOR SHALL PLACE METER BOX IN NON-TRAFFIC AREA ONLY.
2. ALL TAPS TO BE MADE ON THE TOP QUARTER OF THE WATER MAIN.
3. CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
4. (¾") MCDONALD 26-702WX2D 33, FORD VB72-7W-41-33-NL (1") MCDONALD 26-410WX2D 44, FORD VB72-10W-41-44-NL
5. BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10, PRO READ REGISTER, R900 MIU)
6. METER TO BE SET BY COUNTY UPON RECEIPT OF WATER SERVICE FEES, AND SATISFACTORY INSPECTION OF WATER SERVICE TO HOUSE.
7. TAPS ON WATER MAINS LARGER THAN 16" SHALL BE MADE WITH DUAL WIDE BAND, STAINLESS STEEL TAPPING SADDLES (ROMAC 202S).
8. 1 ½" METERS REQUIRE 2" TAP AND 2" SQUARE NUT GATE VALVE PER 2" METER DETAIL. REDUCE TO 1 ½" SERVICE PIPE.
9. INSTALL WYE TO PROVIDE A DOMESTIC METER SETTER AND IRRIGATION METER SETTER PER SPLIT SERVICE INSET.



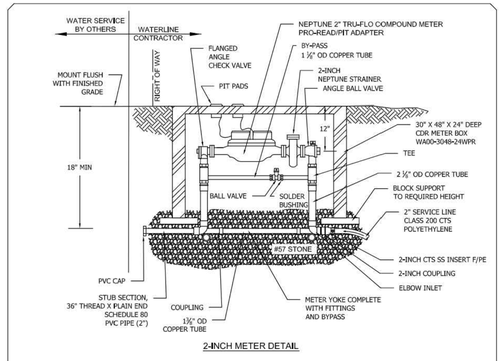
WYE PLAN VIEW FOR WATER/IRRIGATION SPLIT SERVICE

STANDARD WATER SERVICE DETAIL

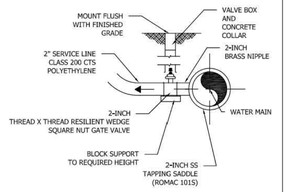
NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

WATER SERVICE (¾" - 1")
STANDARD DETAIL
VERSION #4 - FEB 2016



2-INCH METER DETAIL



2-INCH TAP DETAIL

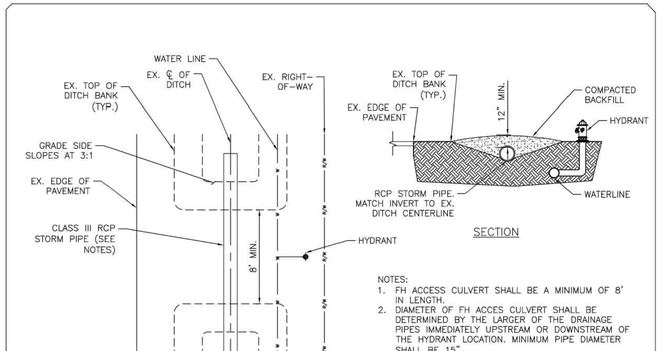
NOTE:
1. CONTRACTOR SHALL PLACE METER BOX IN NON-TRAFFIC AREA ONLY.
2. CONTRACTOR SHALL CENTER METER YOKE IN METER BOX AS REQUIRED TO PROPERLY FIT METER.
3. BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER AND STRAINER, (NEPTUNE 2" TRU-FLO COMPOUND METER PRO-READ/PIT ADAPTER)
4. TAPS ON WATER MAINS LARGER THAN 16" SHALL BE MADE WITH DUAL WIDE BAND, STAINLESS STEEL TAPPING SADDLES (ROMAC 202S).
5. ANY TAP LARGER THAN 2-INCHES SHALL BE MADE WITH A TAPPING SLEEVE AND VALVE, A STRAINER AND BY-PASS SHALL ALSO BE PROVIDED.

STANDARD 2-INCH WATER SERVICE DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

2-INCH WATER SERVICE
STANDARD DETAIL
VERSION #1 - AUGUST 2010



NOTES:
1. FH ACCESS CULVERT SHALL BE A MINIMUM OF 8' IN LENGTH.
2. DIAMETER OF FH ACCES CULVERT SHALL BE DETERMINED BY THE LARGER OF THE DRAINAGE PIPES IMMEDIATELY UPSTREAM OR DOWNSTREAM OF THE HYDRANT LOCATION. MINIMUM PIPE DIAMETER SHALL BE 15".

FIRE HYDRANT ACCESS DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

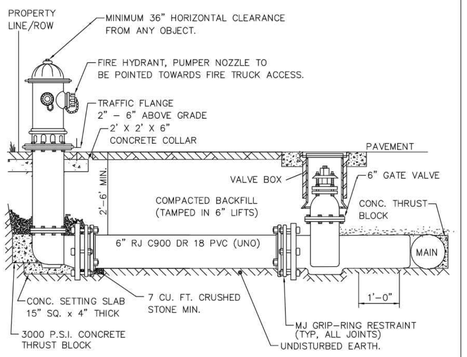
FIRE HYDRANT ACCESS
STANDARD DETAIL
VERSION #1 - SEPTEMBER 2015

PCU STANDARD NOTES

1. A PRE-CONSTRUCTION MEETING IS REQUIRED BEFORE BEGINNING WORK. THE MEETING MUST BE SCHEDULED WITH PENDER COUNTY UTILITIES (PCU) AT LEAST ONE WEEK IN ADVANCE. ATTENDEES MUST INCLUDE PCU, THE UTILITY CONTRACTOR'S SUPERINTENDENT, THE SUPPLIER, AND THE CONSULTING ENGINEER.
2. ALL MATERIALS USED SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
3. ALL PIPE SHALL BE C900 CR18 PVC, UNLESS OTHERWISE NOTED (SEE PCU STANDARD DETAIL). PCU MUST APPROVE THE USE OF DIP IN THE FIELD BEFORE INSTALLATION. PIPE SHOULD NEVER BE UNDER THE ROADWAY, PARKING LOT, OR SIDEWALKS. PENDER COUNTY UTILITIES DOES NOT ALLOW SIZE-ON-SIZE TAPS.
4. PCU STANDARD WATERLINE PIPE RESTRAINING METHOD IS MEGA LUGS. AT A MINIMUM ALL FITTINGS, VALVES, ETC. MUST BE RESTRAINED (SEE PCU STANDARD DETAIL).
5. PCU MUST INSPECT CASING INSTALLATIONS PRIOR TO BACKFILL. PCU MUST WITNESS PRESSURE TESTS, AND WITHDRAWAL OF BACTERIOLOGICAL SMAPLES. CONTACT PENDER COUNTY UTILITIES INSPECTOR TO SCHEDULE.
6. CLOSE-OUT DOCUMENTS WHICH MUST BE RECEIVED PRIOR TO PCU SIGNING THE NCDEQ PWSS APPLICANT CERTIFICATION INCLUDE: BACTERIOLOGICAL TESTS, PRESSURE TESTS, DEED OF DEDICATION, AFFIDAVIT/RELEASE OF LIENS, WARRANTY, AND RECORDS DRAWINGS (PDF & GIO REFERENCED CAD).
7. AN 18-MONTH WARRANTY PERIOD APPLIES TO ALL WATERLINE CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED FROM NCDEQ PWSS.

PENDER COUNTY UTILITIES
605 E FREMONT STREET
PO BOX 995. BURGAW. NC 28425

STANDARD NOTES
PCU WATER SYSTEMS
VERSION #4 – OCTOBER 2023



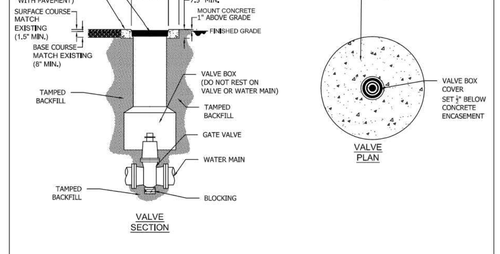
NOTES:
1. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.
2. FIRE HYDRANTS TO BE LOCATED IN RIGHT-OF-WAY.
3. INSTALL WITH BURY LINE FLUSH TO FINAL GRADE.
4. HYDRANTS TO BE AVK SERIES 2780, MUELLER SUPER CENTURION A423 W/PENDER CO. OPTIONS 981, OR CLOW MEDALLION WITH STAINLESS STEEL STEMS. HYDRANTS SHALL BE NOSTALGIC STYLE DRY BARREL.
5. HYDRANTS TO BE RED WITH SILVER CAPS AND BONNET.

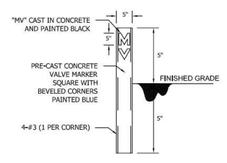
FIRE HYDRANT ASSEMBLY DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

FIRE HYDRANT ASSEMBLY
STANDARD DETAIL
VERSION #2 - APRIL 2016





NOTE:
1. DO NOT ALLOW VALVE BOX TO REST ON THE VALVE OR WATER MAIN.
2. A VALVE MARKER SHALL BE PLACED ON THE RIGHT OF WAY AT EACH ISOLATION VALVE.

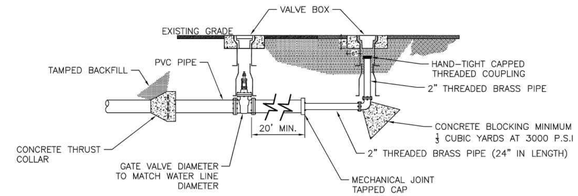
VALVE INSTALLATION DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

VALVE INSTALLATION
STANDARD DETAIL
VERSION #3 - JUNE 2016

NOTE:
1. ALL PVC SHALL BE RESTRAINED PER THE RESTRAINED LENGTH SCHEDULE PROVIDED ELSEWHERE.
2. A BLOW OFF MARKER SHALL BE PLACED ON THE RIGHT OF WAY AT EACH BLOW.
3. BLOW OFF MARKER TO BE SAME DESIGN AS VALVE MARKER EXCEPT DENOTE "BO" ON MARKER RATHER THAN "MV"



TEMPORARY BLOW-OFF ASSEMBLY DETAIL

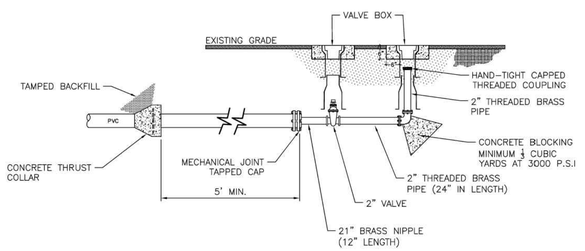
NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

TEMPORARY BLOW-OFF ASSEMBLY
STANDARD DETAIL
VERSION #1 - SEPTEMBER 2015

NOTE:
1. A BLOW OFF MARKER SHALL BE PLACED ON THE RIGHT OF WAY AT EACH BLOW.
2. BLOW OFF MARKER TO BE SAME DESIGN AS VALVE MARKER EXCEPT DENOTE "BO" ON MARKER RATHER THAN "MV"

NOTES:
1. ALL PVC SHALL BE RESTRAINED PER THE RESTRAINED LENGTH SCHEDULE PROVIDED ELSEWHERE.



PERMANENT BLOW-OFF ASSEMBLY DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

PERMANENT BLOW-OFF ASSEMBLY
STANDARD DETAIL
VERSION #1 - SEPTEMBER 2015

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PHONE: (910-507-2115

No.	DESCRIPTION	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS	06/03/2024	CDJ
5	REVISED PER COUNTY COMMENTS DATED 05/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF
1	SSJUANCE AND REVISION DESCRIPTIONS	DATE	BY

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAMIE N. GWALTNEY
6/24/24

DRAWN BY NJ
DESIGNED BY NJ
REVIEWED BY RW
DATE 6/24/2024
PROJECT NO. 014793000

TITLE
WATER DETAILS

SHEET NUMBER
C6-50

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\C6-50 - WATER CONSTRUCTION DETAILS.DWG C6-50 WATER DETAILS Jan 29, 2025 11:06am by: mike.fritz

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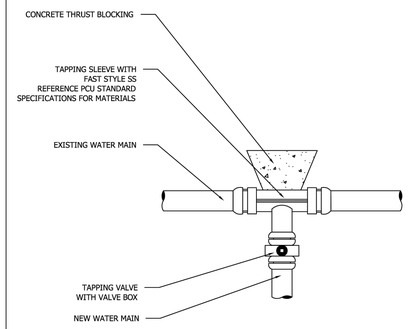
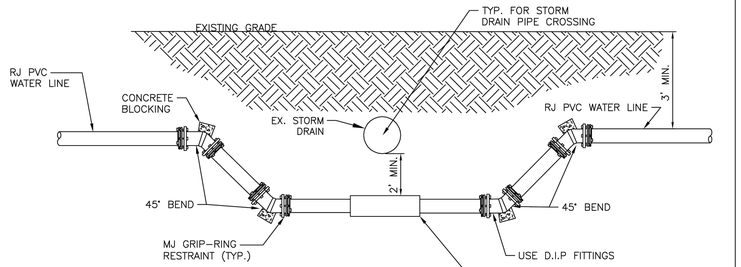


TAPPING SLEEVE AND VALVE ASSEMBLY DETAIL

NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

TAPPING SLEEVE AND VALVE ASSEMBLY
STANDARD DETAIL
VERSION #3 - FEB 2016



NOTES:

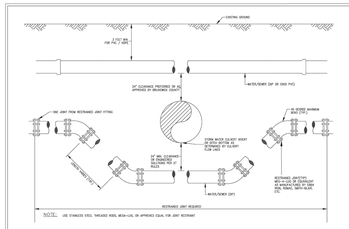
1. SPACERS SHALL BE PROVIDED WITHIN THE CASING PIPE AND CASING ENDS SHALL BE SEALED PER "PCU STANDARD BORE ENCASEMENT".
2. DIP SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF PCU IN THE FIELD.
3. CARRIER PIPE TO BE C900 DR 18 PVC.

PIPE CROSSING "A" DETAIL

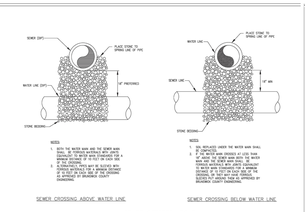
NOT TO SCALE

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28425

PIPE CROSSING "A"
STANDARD DETAIL
VERSION #1 - SEPTEMBER 2015



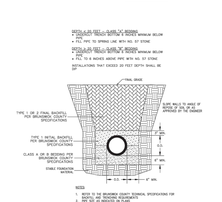
DITCH AND/OR STORM DRAIN CROSSING
OFFSETS BETWEEN WATER/SEWER
PRESSURE MAIN AND STORM DRAIN
DETAIL WSI-20



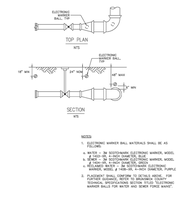
SEWER CROSSING ABOVE WATER LINE

SEWER CROSSING BELOW WATER LINE

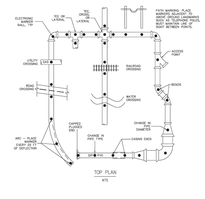
SEWER OFFSETS ABOVE
AND BELOW WATER MAINS
DETAIL WSI-21



GRAVITY SEWER
PIPE TRENCH / BEDDING DETAIL
DETAIL WSI-22



ELECTRONIC MARKER
BALL PLACEMENT DETAIL
DETAIL WSI-23



GENERAL WATER & SEWER DETAIL
VERSION #1 - APRIL 2024

PENDER COUNTY UTILITIES
605 EAST FREMONT STREET
BURGAW, NC 28525

PREPARED BY

Kimley»Horn

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PREPARED FOR

LOGAN
DEVELOPERS INC.

60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

BY	DATE	ISSUANCE AND REVISION DESCRIPTIONS
MRF	08/16/2024	REVISED PHASE BOUNDARY
TCS	06/24/2024	REVISED PER NC DEQ PRIVATE WATER COMMENTS
CDJ	06/03/2024	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024
MRF	03/06/2024	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024
MRF	02/12/2024	REVISED PER COUNTY COMMENTS DATED 01/22/2024
MRF	12/18/2023	REVISED PER COUNTY COMMENTS DATED 12/11/2023
MRF	12/08/2023	REVISED PER COUNTY COMMENTS DATED 11/07/2023
MRF	12/08/2023	ISSUANCE AND REVISION DESCRIPTIONS
BY	DATE	No.

PROJECT

BROOKFIELD BRANCH

1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE

WATER DETAILS

SHEET NUMBER

C6-51

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Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\Plansheets\C6-50_WATER CONSTRUCTION DETAILS.DWG C6-51 WATER DETAILS Jan 29, 2025 11:06am Jaime.Fritz

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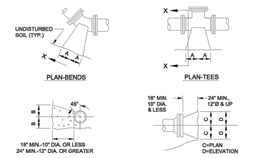


SECTION X-X
BENDS & TEES

PLAN & ELEVATION
PLUGS

PIPE SIZE	30° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"
8"	24"	18"	13"	19"	10"	12"	10"	12"	18"	18"	25"	11"
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"
12"	32"	28"	18"	29"	14"	19"	14"	19"	22"	29"	37"	17"
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"

ASSUME 2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. CONCRETE SHALL NOT CONTACT BOLTS OR MECHANICAL FITTINGS.
5. CONCRETE SHALL BE 3000 PSI.
6. TRENCHES SHALL CONFORM WITH STANDARD EMBEDMENT DETAIL.
7. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.
8. SEE STD. THRUST BLOCK SHEET 2 OF 4 FOR OTHER SOILS.

PSD NO. 1 - THRUST BLOCKING DETAIL
NOT TO SCALE

REACTION BEARING AREAS FOR HORIZONTAL WATER/SEWER PIPE BENDS

BASED ON TEST PRESSURE OF 200 P.S.I.

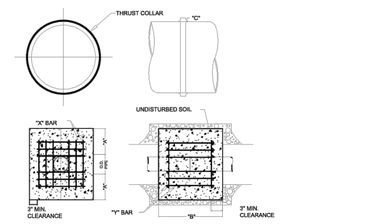
ALL AREAS GIVEN IN SQUARE FEET.

	DEP END ENDRE RING	STATIC-SOILS W/ FORMS	MEDIUM CLAY SOILS (WET) MODERATELY SOFT	SOFT CLAY SOILS (WET)	GRAVEL, COARSE SAND (DRY) MODERATELY FIRM	VERY CLAY - SILTY SOILS (WET) SOFT	SAND, GRAVEL OR FIRM SOIL (DRY)	SAND, GRAVEL OR FIRM SOIL (WET)	CONCRETE, VERY POOR SOIL (DRY)	SOFT CLAY SOILS (DRY)	SOFT, POOR SOILS (WET)
6"											
11 1/4 °	1,108	1	1	1	1	1	1	2	1		
22 1/2 °	2,207	1	2	2	1	1	1	3	1		
45 °	4,328	2	3	3	1	1	2	5	1		
90 °	7,936	2	4	5	1	1	2	8	1		
PLUG	5,655	2	3	4	1	1	2	6	1		
8"											
11 1/4 °	1,970	1	1	2	1	1	1	2	1		
22 1/2 °	3,922	1	2	3	1	1	1	4	1		
45 °	7,694	2	4	5	1	1	2	8	1		
90 °	14,215	4	8	9	2	2	4	15	2		
PLUG	10,053	3	6	6	2	2	3	10	1		
12"											
11 1/4 °	4,433	2	3	3	1	1	2	5	1		
22 1/2 °	8,826	3	5	6	2	2	3	9	1		
45 °	17,312	5	9	11	3	3	5	18	2		
90 °	31,983	8	16	19	4	4	8	32	4		
PLUG	22,619	6	12	14	3	3	6	23	3		
16"											
11 1/4 °	7,881	2	4	5	1	1	2	8	1		
22 1/2 °	15,691	4	8	10	2	2	4	16	2		
45 °	30,779	8	16	19	4	4	8	31	4		
90 °	56,861	15	29	35	8	8	15	57	8		
PLUG	40,213	10	21	25	6	6	10	41	5		

REACTION BEARING AREAS ARE IN SQUARE FEET
MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 0° - 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

PSD NO.2 - THRUST BLOCKING DESIGN QUANTITY TABLE
NOT TO SCALE



REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 30"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

THRUST COLLAR, AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"-6"-16", 20"-24", 30"-36", 48"		
6" - 36"	1'-4"	1'-7"	2"	3"	4"
48" & greater	1'-8"	1'-9"		6"	

NOTES:

1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD EMBEDMENT DETAIL.
4. BACKFILL TAMPED IN 6" LIFTS PER STANDARD EMBEDMENT DETAIL.
5. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

PSD NO. 4 - THRUST COLLAR DETAIL
NOT TO SCALE

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PREPARED BY

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		12/08/2023	MRF

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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
WATER DETAILS

SHEET NUMBER
C6-52

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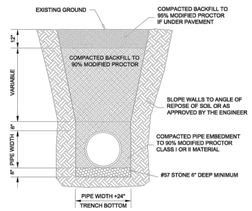
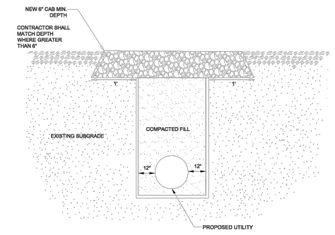


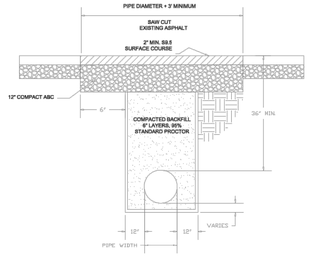
NOTES:
1. MINIMUM BURY DEPTH FOR ALL FORCE MAINS AND GRAVITY LINES IS 36" UNLESS SPECIFICALLY ALLOWED BY THE ENGINEER. ALL LINES SHALLOWER THAN 36" MUST GIVE CONSIDERATION TO USING HIGHER PRESSURE AND THICKNESS CLASSES OF DIP.
2. ALL LINES TO BE BEDDED IN 6" OF #57 STONE MINIMUM. FOR LINES INSTALLED BELOW THE WATER TABLE #57 STONE SHOULD EXTEND TO THE SPRING LINE OF THE PIPE AT A MINIMUM.
3. THE USE OF #57 STONE BEDDING AND BACKFILL SHOULD BE COMMENSURATE WITH THE CONDITIONS IN THE TRENCH. THE CONTRACTOR IS RESPONSIBLE FOR PROPER BEDDING AND BACKFILLING TO INSURE PIPE STABILITY AND UNIFORM GRADE.

PSD NO. 9 - PIPE TRENCH AND BEDDING DETAIL
NOT TO SCALE



NOTES:
1. THE REPLACED STONE 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.

PSD NO. 10 - GRAVEL DRIVEWAY REPAIR DETAIL
NOT TO SCALE

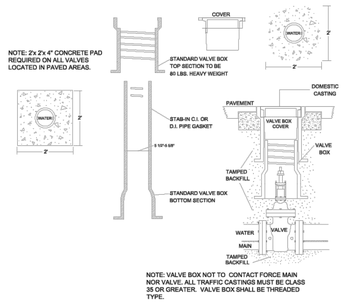


NOTES:
1. THE PAVEMENT SHALL BE DEFINED BY A STRAIGHT EDGE, PREFERABLY A MACHINED SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH DRY SOIL OR ABC STONE USING EQUIPMENT THAT IS WITHIN 10' OF THE ROAD SURFACE. THE BACKFILL SHALL BE COMPACTED PER ASTM D698 TO A DENSITY OF 95% OF THE STANDARD PROCTOR DENSITY.
3. WITHIN ROADS MAINTAINED BY NCDOT, THE TRENCH SHALL BE BACKFILLED AND COMPACTED USING FLOWABLE FILL OR ABC STONE TO WITHIN 12" OF THE ROAD SURFACE. WHERE ABC STONE IS USED, IT SHALL BE COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO-99 AS MODIFIED BY NCDOT.
4. THE TOP 12" OF THE TRENCH SHALL BE 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 THE ENGINEER.
5. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATCH.

PSD NO. 11 - ASPHALT PAVING REPAIR DETAIL
NOT TO SCALE

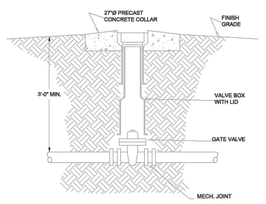
NOTE: CONCRETE VALVE PAD REQUIRED ON ALL VALVES.

APPROVED METHOD FOR EXTENSION OF VALVE BOX



NOTE: VALVE BOX NOT TO CONTACT FORCE MAIN NOR VALVE. ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER. VALVE BOX SHALL BE THREADED TYPE.

PSD NO. 14 - VALVE BOX INSTALLATION AND EXTENSION DETAIL
NOT TO SCALE



PSD NO. 15 - GATE VALVE DETAIL
NOT TO SCALE

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1038 HOOVER ROAD,
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NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	NJ
DESIGNED BY	NJ
REVIEWED BY	RW
DATE	6/24/2024
PROJECT NO.	014793000

TITLE
WATER DETAILS

SHEET NUMBER
C6-53

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Sheetsheets\C6-53_WATER CONSTRUCTION DETAILS.DWG C6-53 WATER DETAILS Jan 29, 2025 11:06am Jaime.fritz

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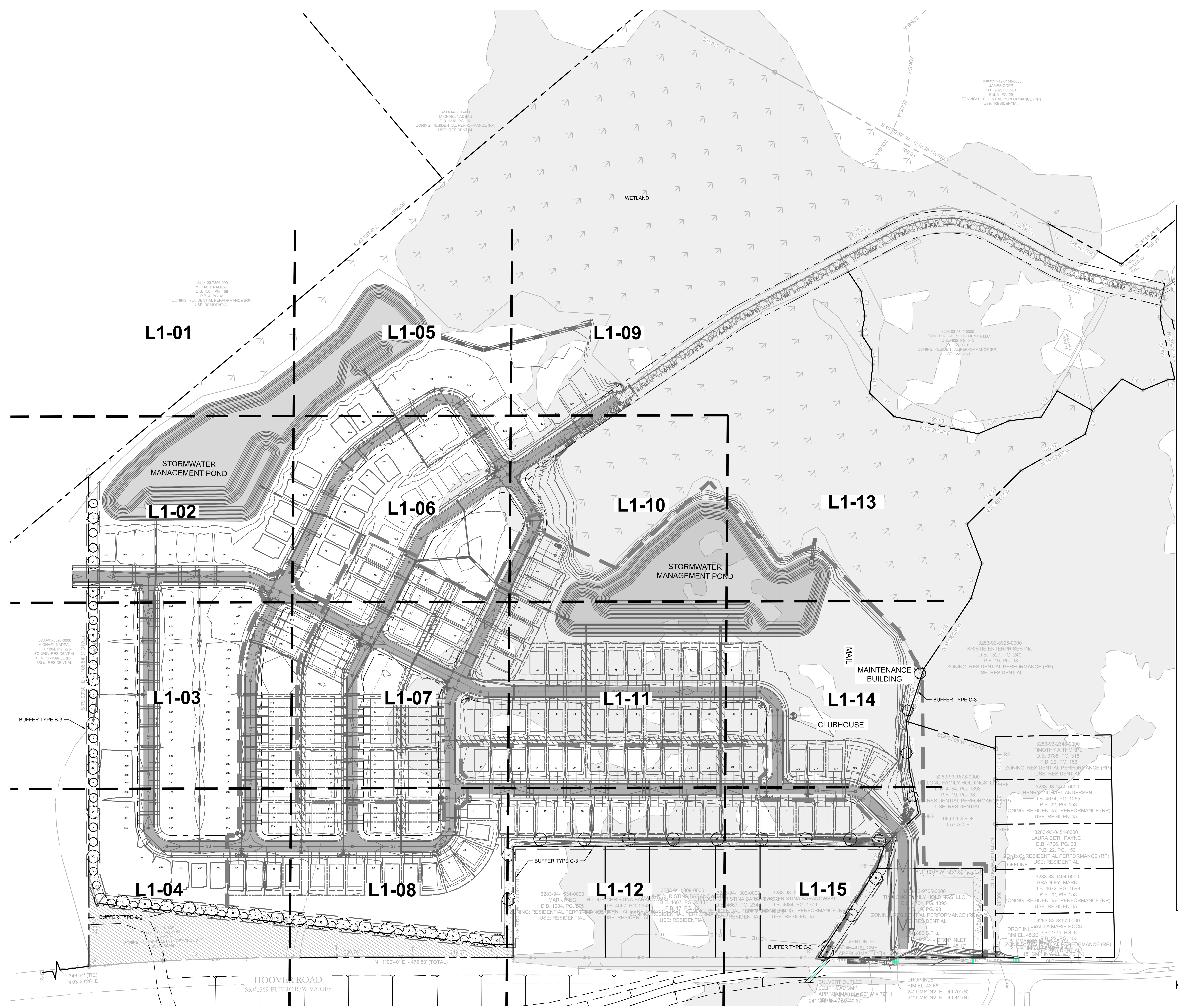

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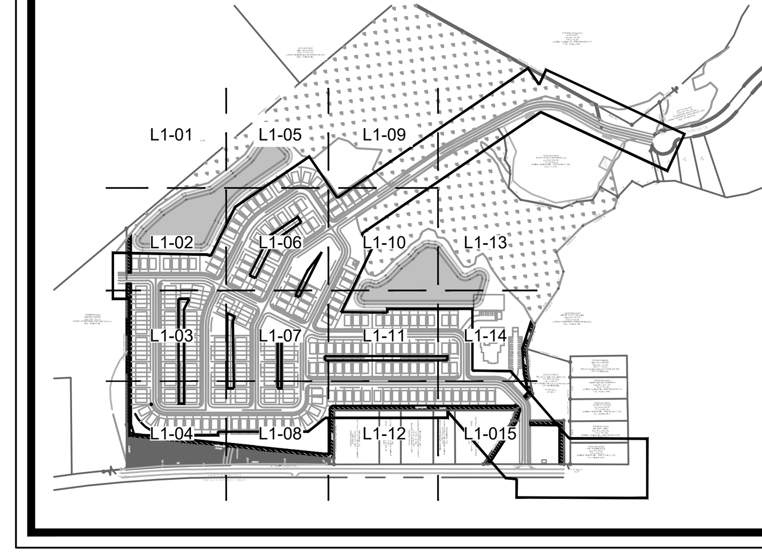


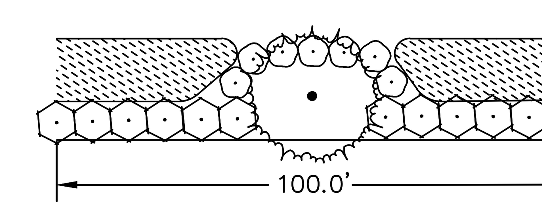
LANDSCAPE REQUIREMENTS

1. NO LANDSCAPE REQUIREMENTS SPECIFIED FOR SINGLE-FAMILY DEVELOPMENTS IN ARTICLE 8 OF PENDER COUNTY UDO.
2. NO SPECIMEN TREES LOCATED ON EXISTING SITE FOR PRESERVATION.

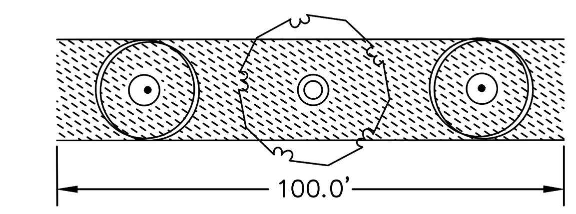
BUFFER REQUIREMENTS

1. WHEN LANDSCAPING AND BUFFER REQUIREMENTS SHALL APPLY PER SECTION 8.1.2 AND WHEN A SITE IS FIVE (5) ACRES OR LARGER, THE REQUIRED BUFFER MAY BE LOCATED WITHIN THE OUTER PERIMETER OF THE LIMIT OF DISTURBANCE OF THE PROJECT AREA ON THE LOT OR PARCEL. IF THE LIMIT OF DISTURBANCE IS EXPANDED, THE BUFFER SHALL BE ADJUSTED ACCORDINGLY.
2. A REQUIRED BUFFER IS ENCOURAGED TO RETAIN AREAS OF NATIVE HABITAT AND MAY INCORPORATE WATER RESOURCES INCLUDING STORMWATER DETENTION/RETENTION FACILITIES DESIGNED AS A NATURAL-APPEARING AMENITY. HOWEVER A MINIMUM 10-FOOT CONTIGUOUS WIDTH OF THE BUFFER SHALL BE PRESERVED AS A PLANTING AREA WITHOUT STORMWATER FACILITIES.
3. THE BUFFER AREA MAY BE INCLUDED AS PART OF THE CALCULATION OF ANY REQUIRED OPEN SPACE.
4. THE REQUIRED CANOPY AND UNDERSTORY TREES SHALL GENERALLY BE SPREAD UNIFORMLY ALONG THE BUFFER. SHRUBS MAY BE CLUSTERED WHEN A 98% GRASS COVER IS PROVIDED IN ALL AREAS OF THE BUFFER OTHER THAN WITHIN 4 FT. OF THE BASE OF ANY TREE OR SHRUB.
5. BUFFER TYPES REQUIRED FOR PLANNED DEVELOPMENTS ARE AS FOLLOWS:
   - **5.1.** TYPE A BUFFER ALONG ALL BOUNDARIES ADJACENT TO A STREET.
   - **5.2.** TYPE C BUFFERS ALONG ALL BOUNDARIES ADJACENT TO SINGLE FAMILY RESIDENTIAL USES OR RESIDENTIAL LOTS WITH A PARCEL SIZE OF LESS THAN 1 ACRE AND WHEN A SINGLE FAMILY STRUCTURE IS WITHIN 50' OF THE BOUNDARY OF THE DEVELOPMENT.
   - **5.3.** TYPE B BUFFERS ALONG ALL OTHER BOUNDARIES.
6. BUFFER TYPES PROVIDED:
   - **6.1.** BUFFER TYPE B-3: 20-FOOT WIDE BUFFER STRIP WITH (1) CANOPY TREE, (2) UNDERSTORY TREES, AND EITHER A GRASS COVER OF AT LEAST 98% (EXCEPT WITHIN 4-FEET OF ANY TREE OR SHRUB) OR 15 SHRUBS PER 100 LINEAR FEET.
   - **6.2.** BUFFER TYPE C-3: 20-FOOT WIDE STRIP WITH AN EVERGREEN HEDGE THAT WILL PROVIDE A CONTINUOUS SCREEN AT LEAST 6' HIGH WITHIN 4 YEARS AND (1) CANOPY TREE OR (3) UNDERSTORY TREES AND A GRASS COVER OF AT LEAST 98 % COVERAGE (EXCEPT WITHIN 4 FEET OF THE BASE OF ANY TREE), PER 100 LINEAR FEET.

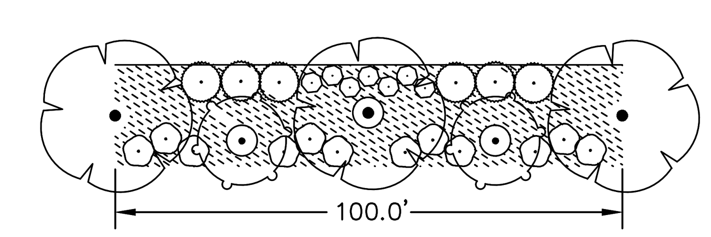
BUFFER PLANTING EXAMPLES:



BUFFER TYPE C–3



BUFFER TYPE B–3



BUFFER TYPE A–2

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

GRAPHIC SCALE IN FEET
0 50 100 200

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-00 TREE PROTECTION PLAN Jan 29, 2025 11:08am by: mike.fritz

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NOTE

NO TREES OR SHRUBS PROPOSED IN THIS AREA OF THE SITE.
SEE SITE NOTES FOR ADDITIONAL INFORMATION.

3293-05-7355-000
MICHAEL NADEAU
D.B. 1507, PG. 158
P.B. 4, PG. 41
ZONING: RESIDENTIAL PERFORMANCE (RP)
USE: RESIDENTIAL

PROPERTY LINE

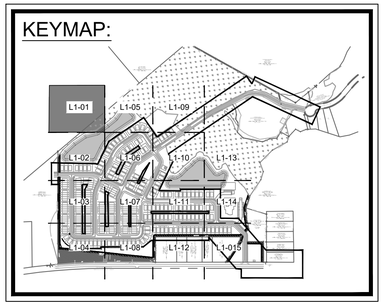
WETLAND

STORMWATER MANAGEMENT POND

MATCH LINE SHEET: L1-02

MATCH LINE SHEET: L1-05

KEYMAP:



SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
2. CONTRACTOR RESPONSIBLE FOR ALL PLANT QUANTITIES.
3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
4. REPAIR OF EXISTING WETLAND BUFFER VEGETATION AREAS DAMAGED BY THE CONTRACTOR IN THE PROGRESS OF THEIR WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
	CV	WHITE FRINGETREE	CHIONANTHUS VIRGINICUS
	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA

SHRUBS	CODE	COMMON NAME	BOTANICAL NAME
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS

GROUND COVERS	CODE	COMMON NAME	BOTANICAL NAME
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

PREPARED BY

Kimley»Horn

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25 BULL ST, SUITE 400
SAVANNAH, GA 31401
PHONE: 912-373-4454
WWW.KIMLEY-HORN.COM

PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
WARREN C. HARRELL
SEAL
036161
REGISTERED
LANDSCAPE ARCHITECT
NORTH CAROLINA

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE

LANDSCAPE PLAN

SHEET NUMBER

L1-01

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-01 TREE REPLACEMENT PLAN Jan 29, 2025 11:08am by: mike.fritz

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MATCH LINE SHEET: L1-01

PROPERTY LINE

WETLAND

BUFFER TYPE B-3

STORMWATER
MANAGEMENT POND

MATCH LINE SHEET: L1-06

200 199 198 197 196 195 194 193 192

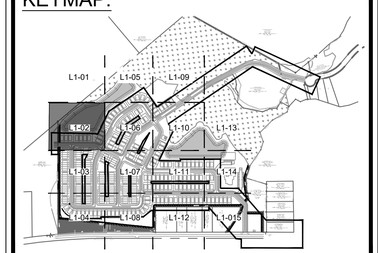
PHASE 2

PHASE 1

275 274 252 229 228

MATCH LINE SHEET: L1-03

KEYMAP:



SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
2. CONTRACTOR RESPONSIBLE FOR ALL PLANT QUANTITIES.
3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
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PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
	CV	WHITE FRINGETREE	CHIONANTHUS VIRGINICUS
	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
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	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
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	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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GRAPHIC SCALE IN FEET
0 10 20 40

PREPARED BY

Kimley»Horn

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25 BULL ST, SUITE 400
SAVANNAH, GA 31401
PHONE: (912) 721-3454
WWW.KIMLEY-HORN.COM

PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: (910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PERMIT	12/08/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/18/2023	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	02/12/2024	MRF
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6	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	06/24/2024	TCS
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	08/16/2024	MRF
8	REVISED PHASE BOUNDARY		

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL
040262
LAURA BOLDUC
10/16/2025
REGISTERED
ENGINEERING
SURVEYING

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-02

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-02 TREE REPLACEMENT PLAN Jan 29, 2025 11:09am by: mike.fritz

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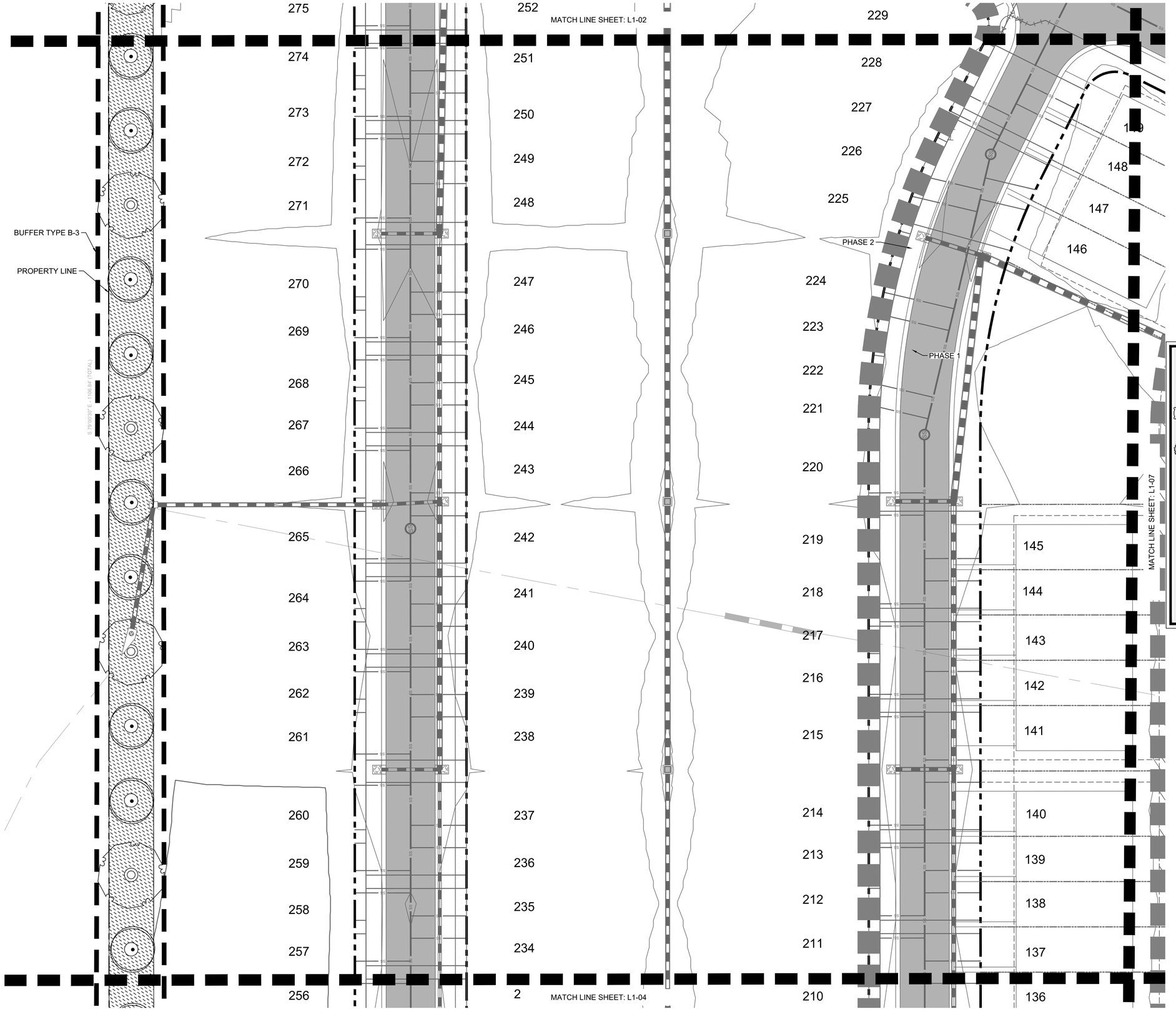
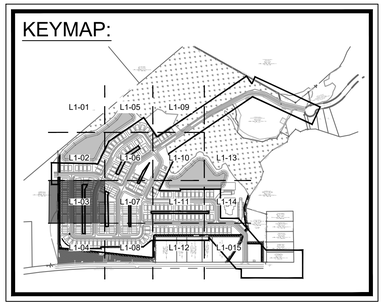


KEYMAP:



SITE NOTES:

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3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
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PLANT SCHEDULE

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	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
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	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
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	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

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Kimley»Horn
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25 BULL ST, SUITE 400
SAVANNAH, GA 31401
PHONE: (912) 721-4084
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
6	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
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2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5482 MARK R. FRITZ REGISTERED LANDSCAPE ARCHITECT N. CAROLINA

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-03

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-03 TREE REPLACEMENT PLAN Jan 29, 2025 11:09am by mike.fritz

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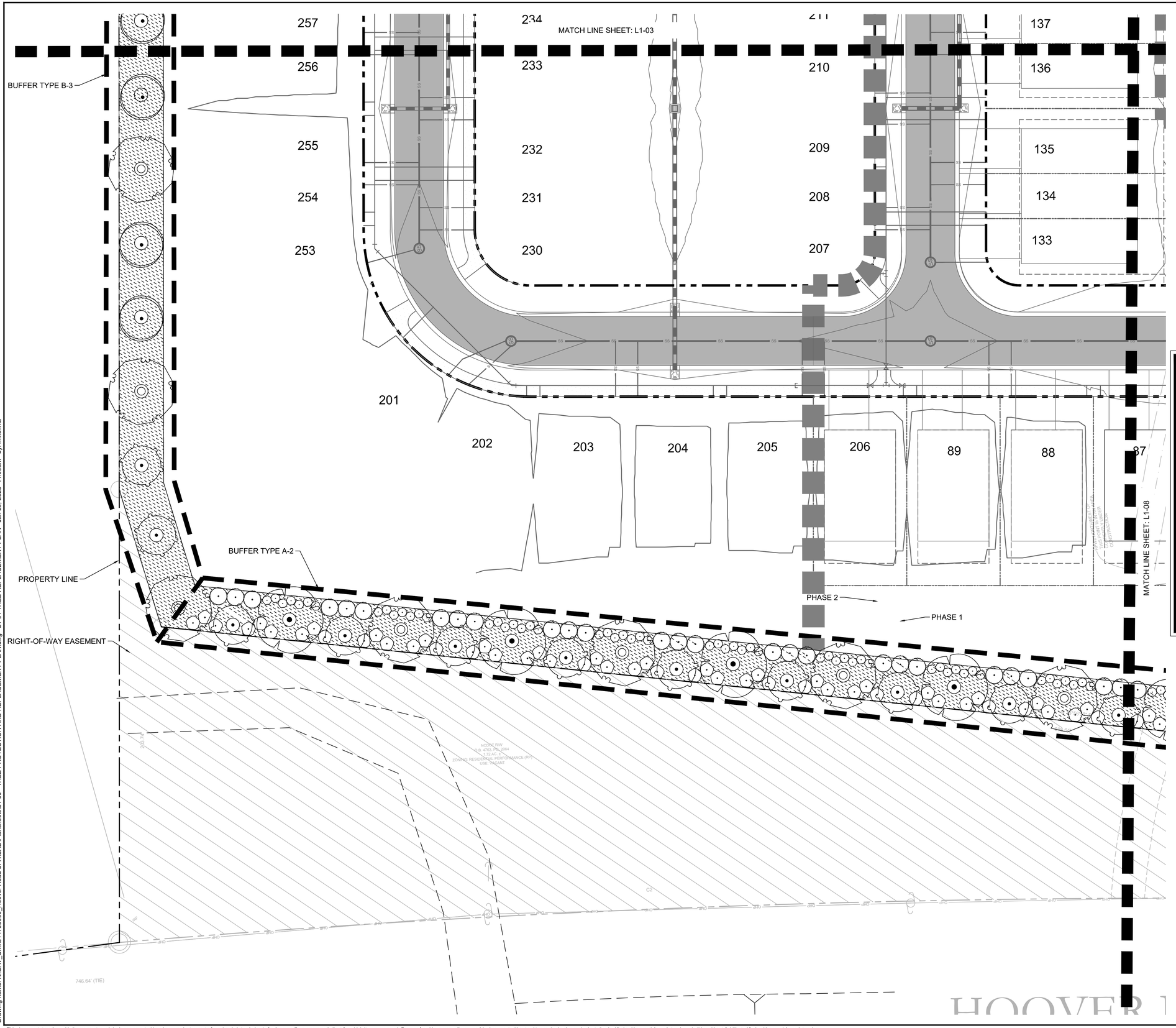

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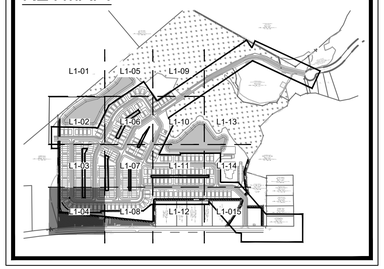

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
2. CONTRACTOR RESPONSIBLE FOR ALL PLANT QUANTITIES.
3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
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PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
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	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
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	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
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	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

PREPARED BY
Kimley»Horn
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25 BULL ST, SUITE 400
SAVANNAH, GA 31401
PHONE: (912) 417-5004
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PHASE BOUNDARY	08/16/2024	MRF
2	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
3	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
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8	REVISED PHASE BOUNDARY	08/16/2024	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
LICENSED
LANDSCAPE
ARCHITECT
SEAL
5147
Lee Brown
LEE A. BROWN
REGISTERED
LANDSCAPE
ARCHITECT

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-04

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Planisheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-04 TREE REPLACEMENT PLAN Jan 29, 2025 11:09am by mike.fritz

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NOTE

NO TREES OR SHRUBS PROPOSED IN THIS AREA OF THE SITE.
SEE SITE NOTES FOR ADDITIONAL INFORMATION.

PROPERTY LINE

S 29°05'04" E

FLOOD ZONE

WETLANDS

STORMWATER MANAGEMENT POND

MATCH LINE SHEET: L1-01

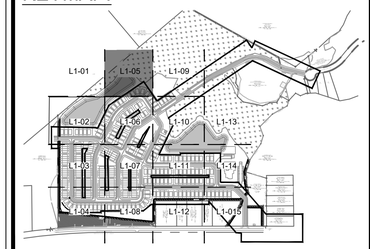
MATCH LINE SHEET: L1-09

MATCH LINE SHEET: L1-06

181 180 179 182 183 178 184 177

D D

KEYMAP:



SITE NOTES:

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PLANT SCHEDULE

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SITE PLAN LEGEND:

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- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

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Kimley»Horn
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25 BULL ST., SUITE 400
SAVANNAH, GA 31401
PHONE: 912-234-3454
WWW.KIMLEY-HORN.COM

PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5462 FRANCES CARSON CRAWFORD 10/31/2025

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-05

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-05 TREE REPLACEMENT PLAN Jan 29, 2025 11:09am by: mike.fritz

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NOTE

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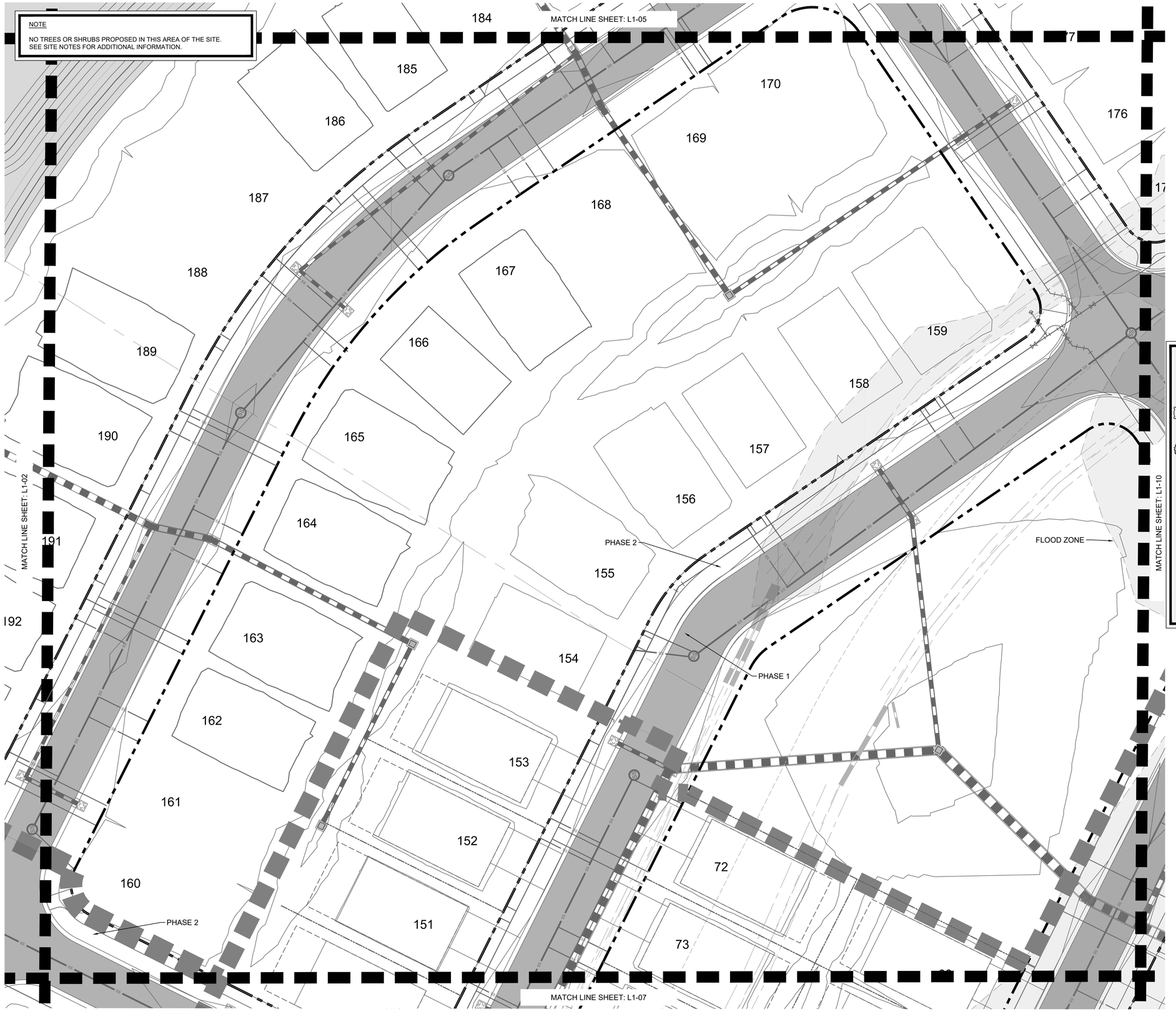
SEE SITE NOTES FOR ADDITIONAL INFORMATION.



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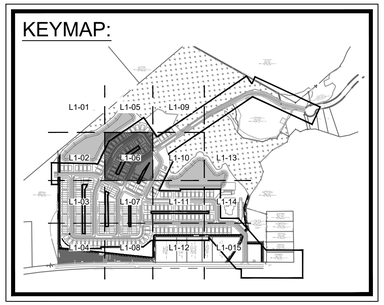

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
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	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

PREPARED BY

Kimley»Horn

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WWW.KIMLEY-HORN.COM

PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUANCE FOR MDP	08/15/2024	MRF
2	REVISED PHASE BOUNDARY	08/15/2024	MRF
3	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
4	REVISED SEWER AND LIFT STATION DETAILS 06/05/2024	06/03/2024	CDJ
5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
6	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
7	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
8	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-84-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
REGISTERED
LANDSCAPE ARCHITECT
SEAL
5482
LAURA BOYETTE
NORTH CAROLINA
REGISTERED
LANDSCAPE ARCHITECT
SEAL
5482
LAURA BOYETTE

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE

LANDSCAPE PLAN

SHEET NUMBER

L1-06

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Planlsheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-06 TREE REPLACEMENT PLAN Jan 29, 2025 11:09am by: mike.fritz

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NOTE

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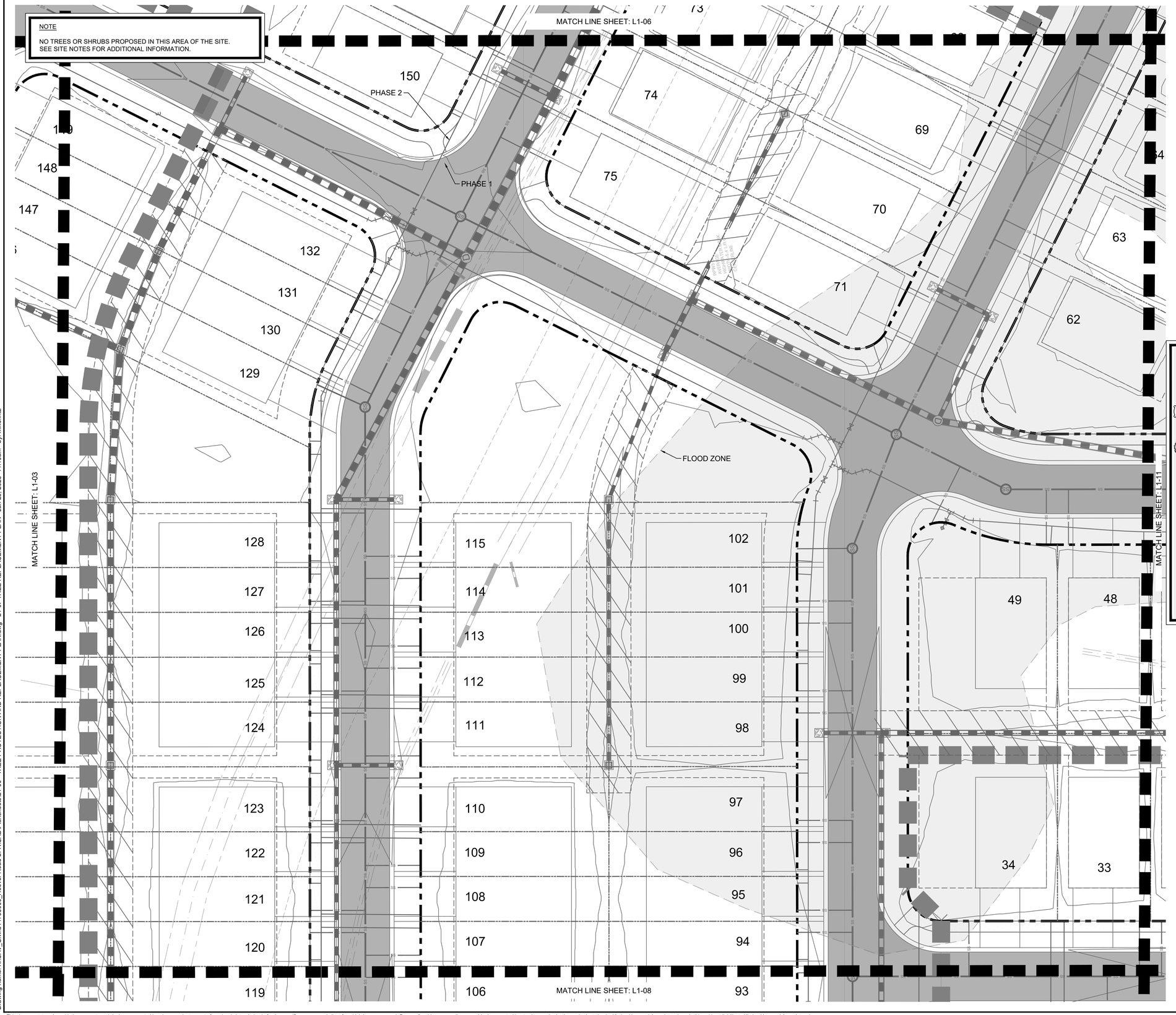
SEE SITE NOTES FOR ADDITIONAL INFORMATION.



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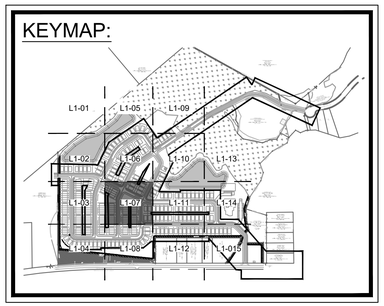

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
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4. REPAIR OF EXISTING WETLAND BUFFER VEGETATION AREAS DAMAGED BY THE CONTRACTOR IN THE PROGRESS OF THEIR WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
	CV	WHITE FRINGETREE	CHIONANTHUS VIRGINICUS
	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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PHONE: (912) 417-5004
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PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: (910)-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-93-1673-0000, 3283-94-9377-0000
3283-83-9765-0000, 3283-94-0341-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049451 FRANCIS CHRISTOPHER GWILTNEY

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-07

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-07 TREE REPLACEMENT PLAN Jan 29, 2025 11:10am by mike.fritz

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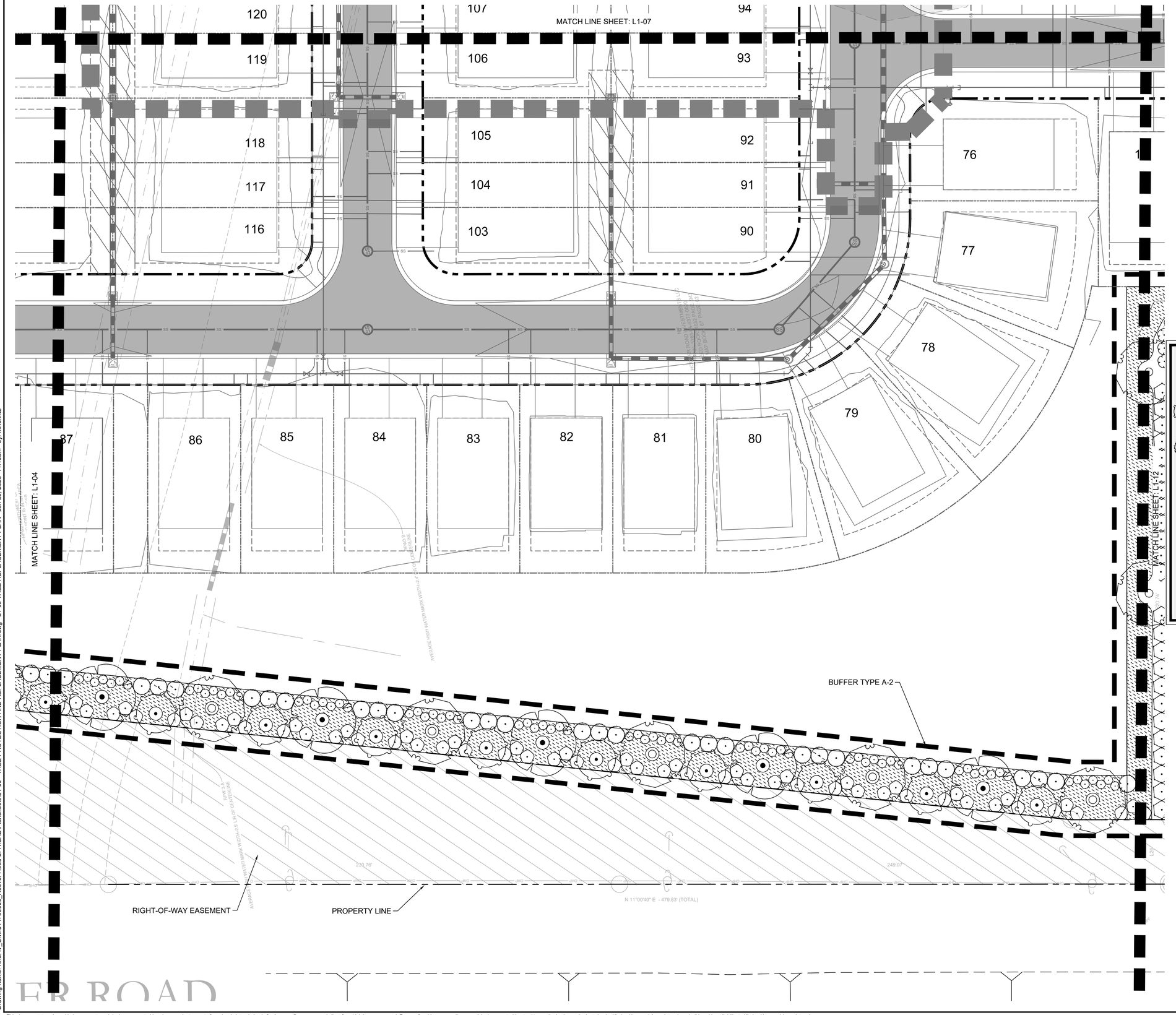

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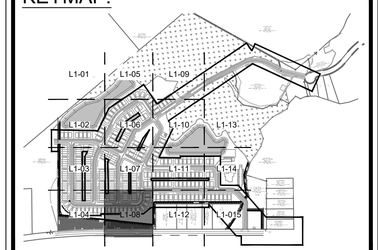

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	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
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SITE PLAN LEGEND:

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- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049662 LANDSCAPE ARCHITECT

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-08

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-08 TREE REPLACEMENT PLAN Jan 29, 2025 11:10am by mike.fritz

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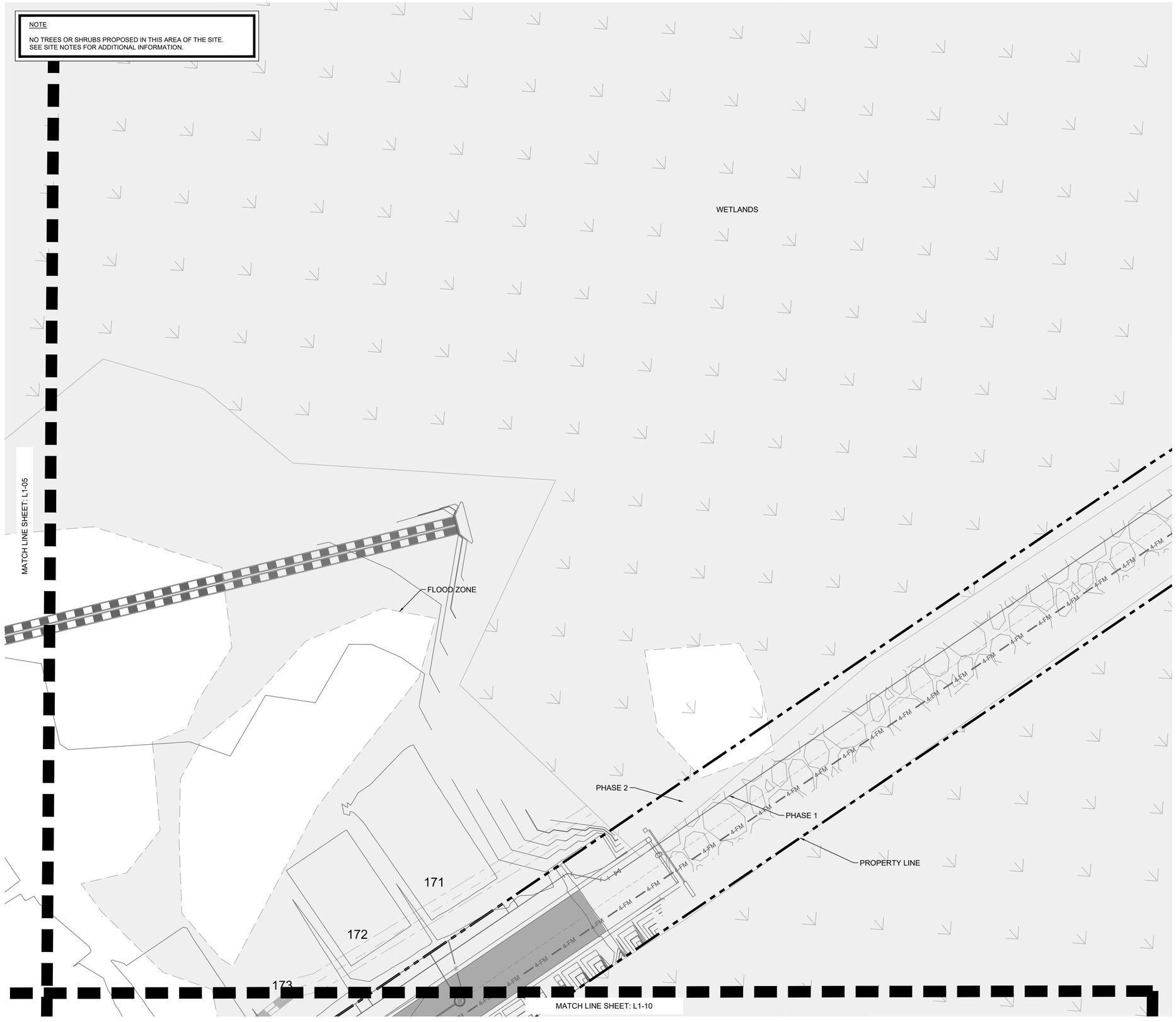

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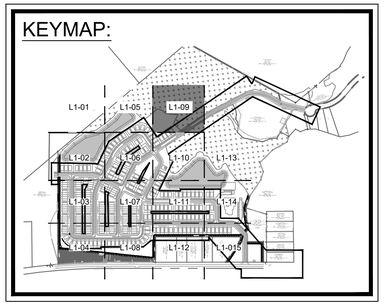

SITE NOTES:

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PLANT SCHEDULE

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	TD	BALD CYPRESS	TAXODIUM DISTICHUM
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GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
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SITE PLAN LEGEND:

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- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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PHONE: 912-417-4554
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LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5460 REBECCA L. BOLTON

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-09

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-09 TREE REPLACEMENT PLAN Jan 29, 2025 11:10am by: mike.fritz

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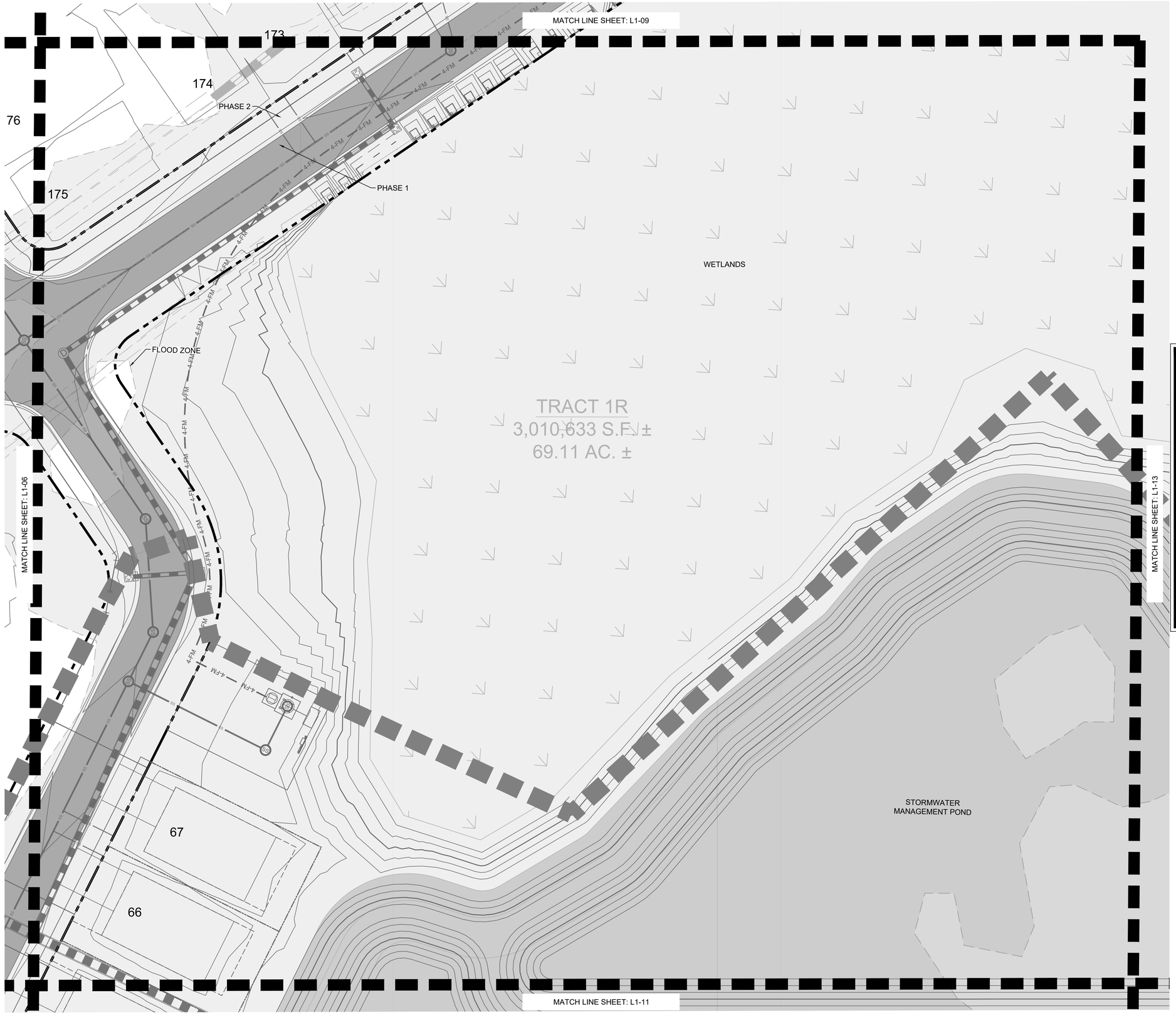

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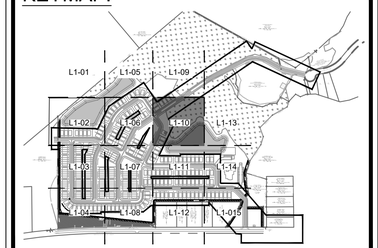

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
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60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-83-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
SEAL
019462
Mary Ruth Fritz
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-10

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-10 TREE REPLACEMENT PLAN Jan 29, 2025 11:10am by: mike.fritz

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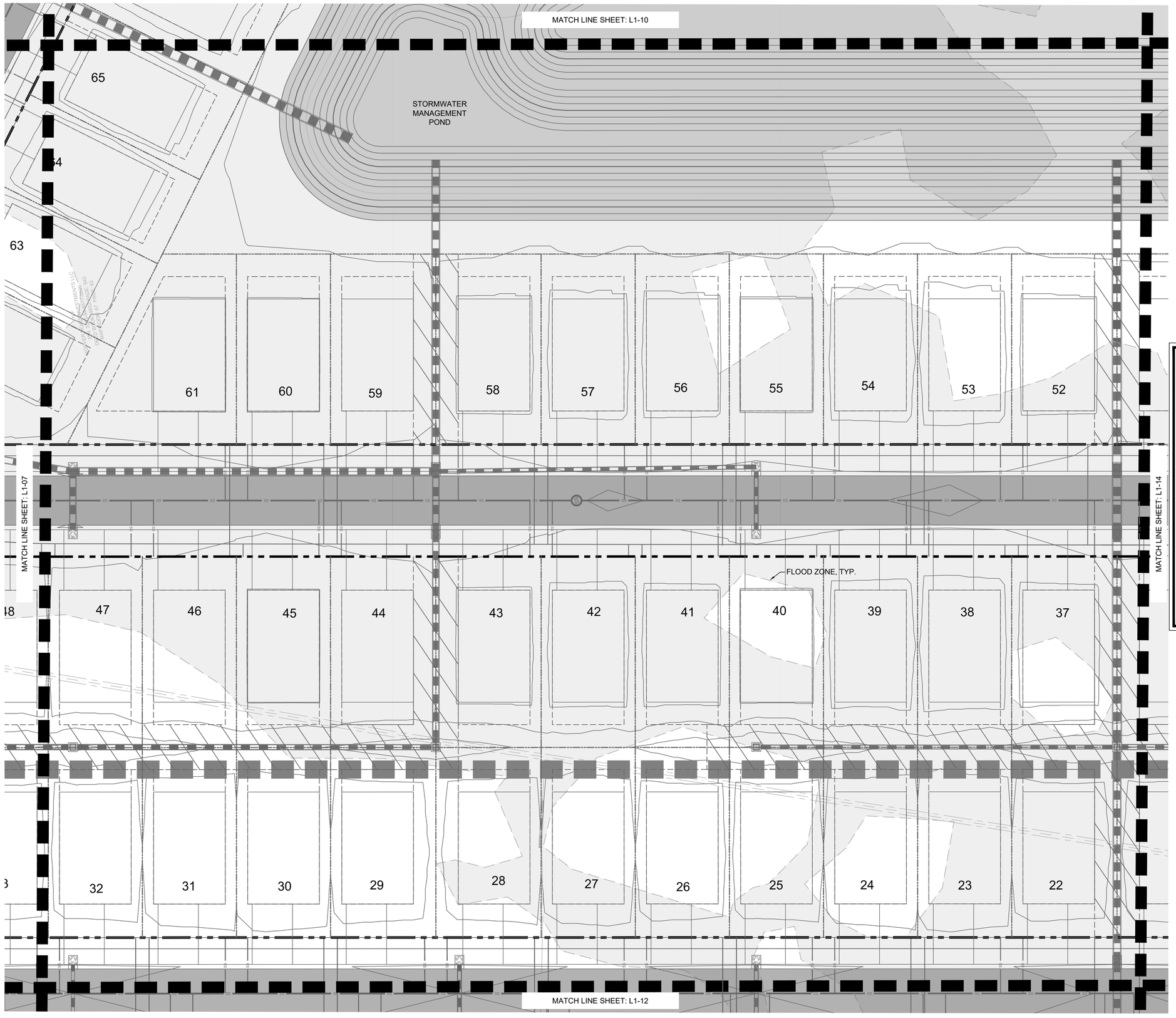

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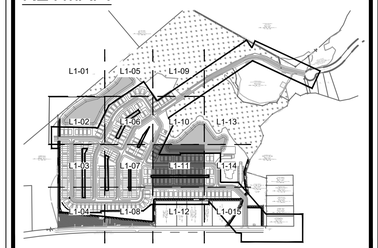

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Kimley»Horn

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PHONE: (910)-507-2115

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5	REVISED SEWER PER OWNER REVIEW DATED 03/06/2024	03/06/2024	MRF
4	REVISED PER COUNTY COMMENTS DATED 01/22/2024	02/12/2024	MRF
3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-93-1673-0000, 3283-94-9377-0000
3283-83-9765-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5382 MARK R. FRITZ

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-11

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-11 TREE REPLACEMENT PLAN Jan 29, 2025 11:10am by: mike.fritz

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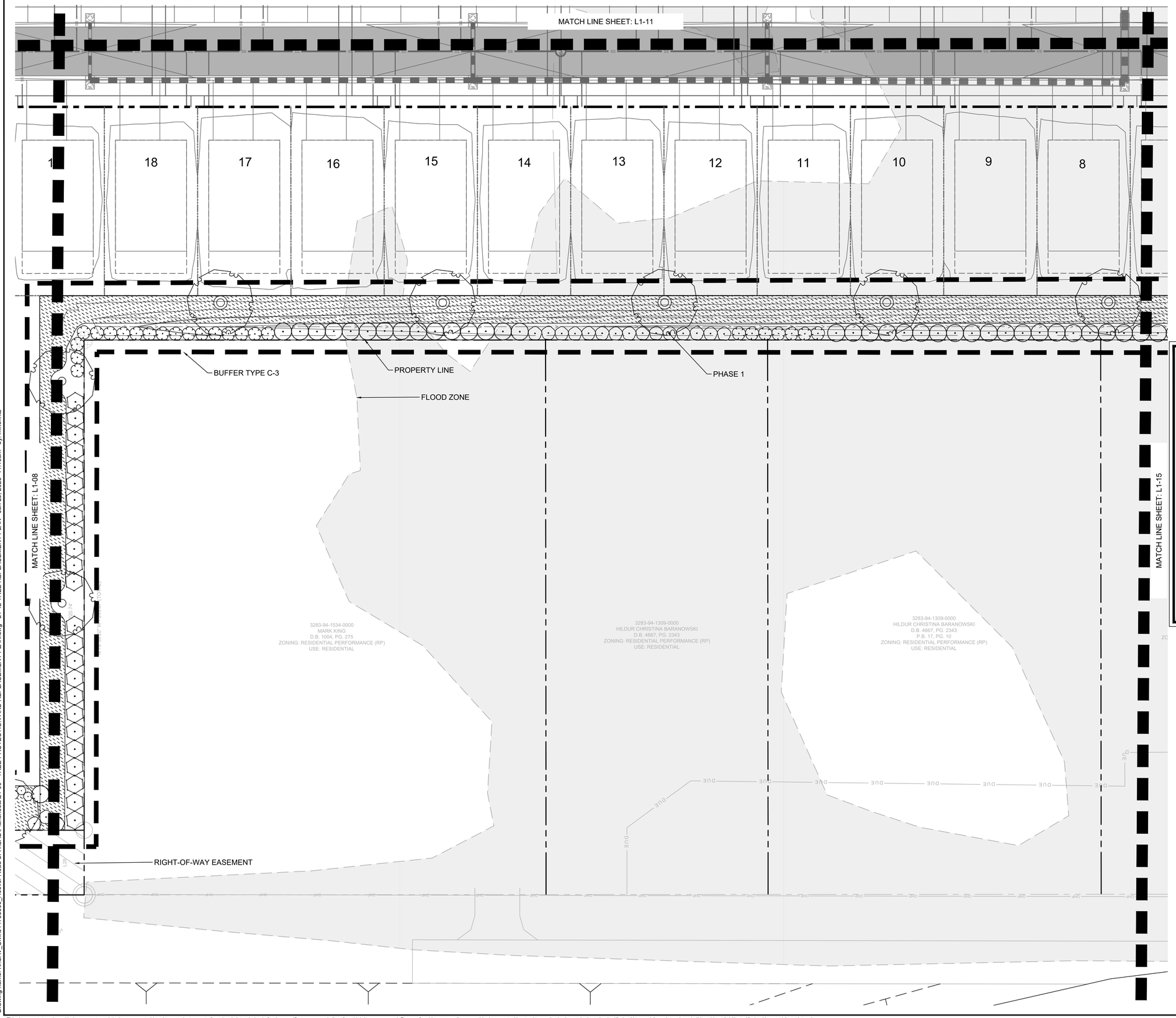

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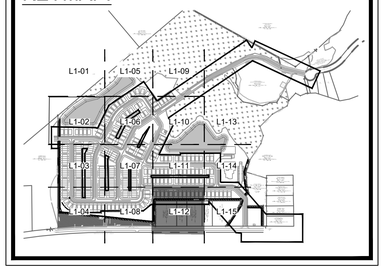

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
2. CONTRACTOR RESPONSIBLE FOR ALL PLANT QUANTITIES.
3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
4. REPAIR OF EXISTING WETLAND BUFFER VEGETATION AREAS DAMAGED BY THE CONTRACTOR IN THE PROGRESS OF THEIR WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
	CV	WHITE FRINGETREE	CHIONANTHUS VIRGINICUS
	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA
SHRUBS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	AF	FORMOSA INDICA AZALEA	AZALEA INDICA 'FORMOSA'
	IS	SHAMROCK INKBERRY HOLLY	ILEX GLABRA 'SHAMROCK'
	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS
GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
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PREPARED BY

Kimley»Horn

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PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
8	REVISED PHASE BOUNDARY	08/16/2024	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/24/2024	TCS
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3	REVISED PER COUNTY COMMENTS DATED 12/11/2023	12/18/2023	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	12/08/2023	MRF

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
REGISTERED
SEAL
036362
LANDSCAPE ARCHITECT
KIM BOLDING
NORTH CAROLINA

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE

LANDSCAPE PLAN

SHEET NUMBER

L1-12

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN\L1-12 TREE REPLACEMENT PLAN.dwg Jan 29, 2025 11:10am by: mike.fritz

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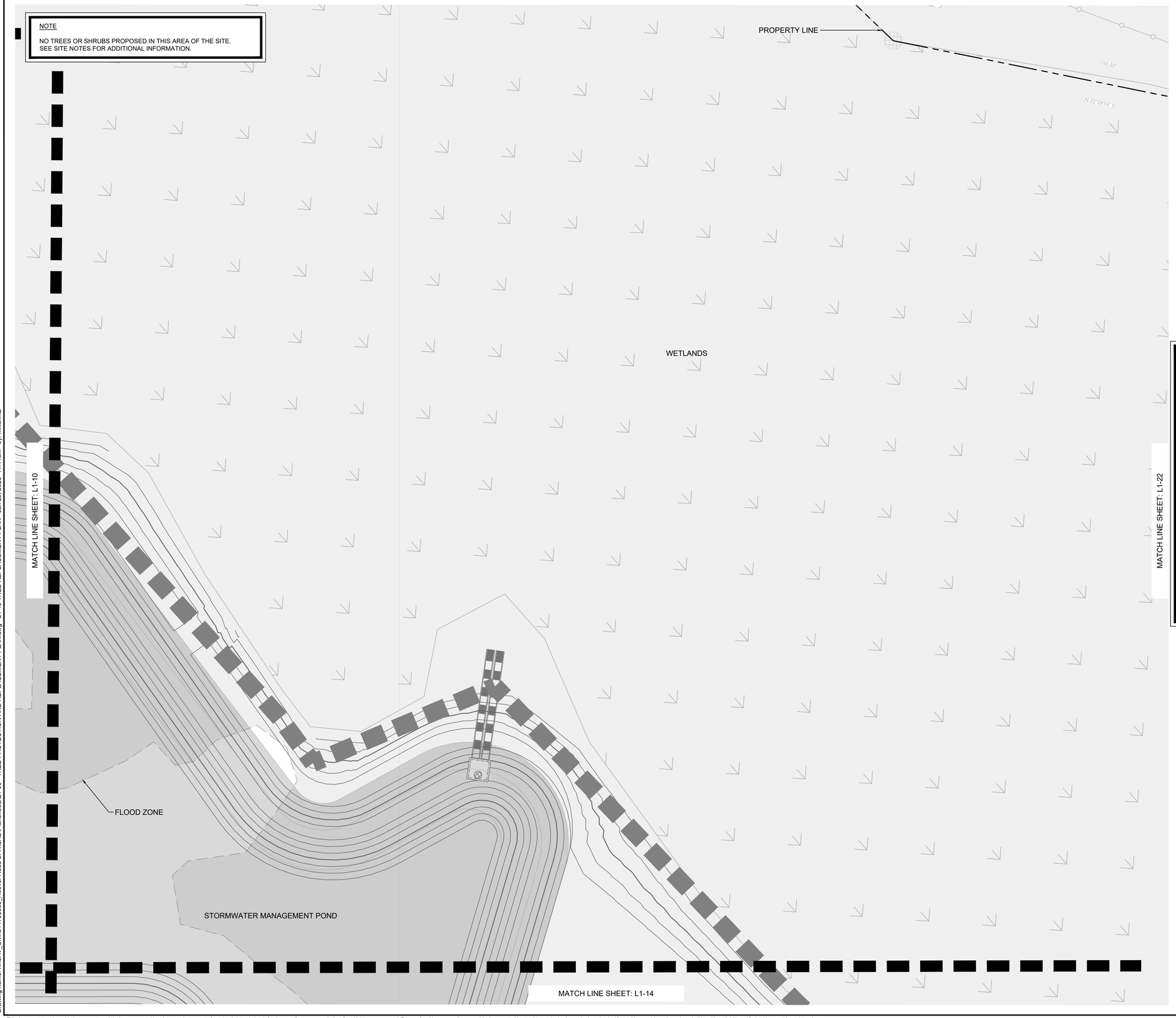
NOTE

NO TREES OR SHRUBS PROPOSED IN THIS AREA OF THE SITE.
SEE SITE NOTES FOR ADDITIONAL INFORMATION.



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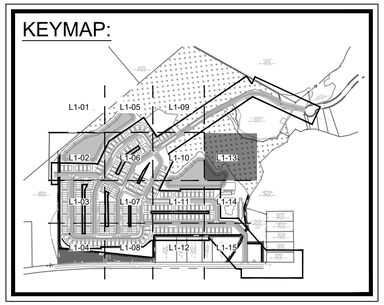

SITE NOTES:

1. SEE MASTER PLANT SCHEDULE ON SHEET L2-00 FOR FULL PLANT INFORMATION.
2. CONTRACTOR RESPONSIBLE FOR ALL PLANT QUANTITIES.
3. SEE CIVIL PLANS FOR PERMANENT EROSION CONTROL FOR GROUNDCOVER IN AREAS NOT INDICATED AS SEEDED OR SODDED ON LANDSCAPE PLANS.
4. REPAIR OF EXISTING WETLAND BUFFER VEGETATION AREAS DAMAGED BY THE CONTRACTOR IN THE PROGRESS OF THEIR WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PLANT SCHEDULE

TREES	CODE	COMMON NAME	BOTANICAL NAME
	CV	WHITE FRINGETREE	CHIONANTHUS VIRGINICUS
	MS	SWEETBAY MAGNOLIA	MAGNOLIA VIRGINIANA
	QN	NUTTALL OAK	QUERCUS NUTTALLII
	TD	BALD CYPRESS	TAXODIUM DISTICHUM
	UP	LACEBARK ELM	ULMUS PARVIFOLIA

SHRUBS	CODE	COMMON NAME	BOTANICAL NAME
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	IF	FOSTER'S HOLLY	ILEX X ATTENUATA 'FOSTERI'
	MG	BANANA SHRUB	MAGNOLIA FIGO
	OF	SWEET OLIVE	OSMANTHUS FRAGRANS

GROUND COVERS	CODE	COMMON NAME	BOTANICAL NAME
	EO	CENTIPEDE SOD	EREMOCHLOA OPHIUROIDES

SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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

GRAPHIC SCALE IN FEET
0 10 20 40

PREPARED BY

Kimley»Horn

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PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	REVISION DESCRIPTIONS	DATE	BY
1	ISSUANCE AND REVISION DESCRIPTIONS	08/16/2024	MRF
2	REVISED PER COUNTY COMMENTS DATED 11/07/2023	06/24/2024	TCS
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6	REVISED SEWER AND LIFT STATION DETAILS 05/05/2024	12/18/2023	MRF
7	REVISED PER NC DEQ PRIVATE WATER COMMENTS	12/08/2023	MRF
8	REVISED PHASE BOUNDARY		

PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL
049662
FRANCIS C. CHALINE
11/7/2025

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE

LANDSCAPE PLAN

SHEET NUMBER

L1-13

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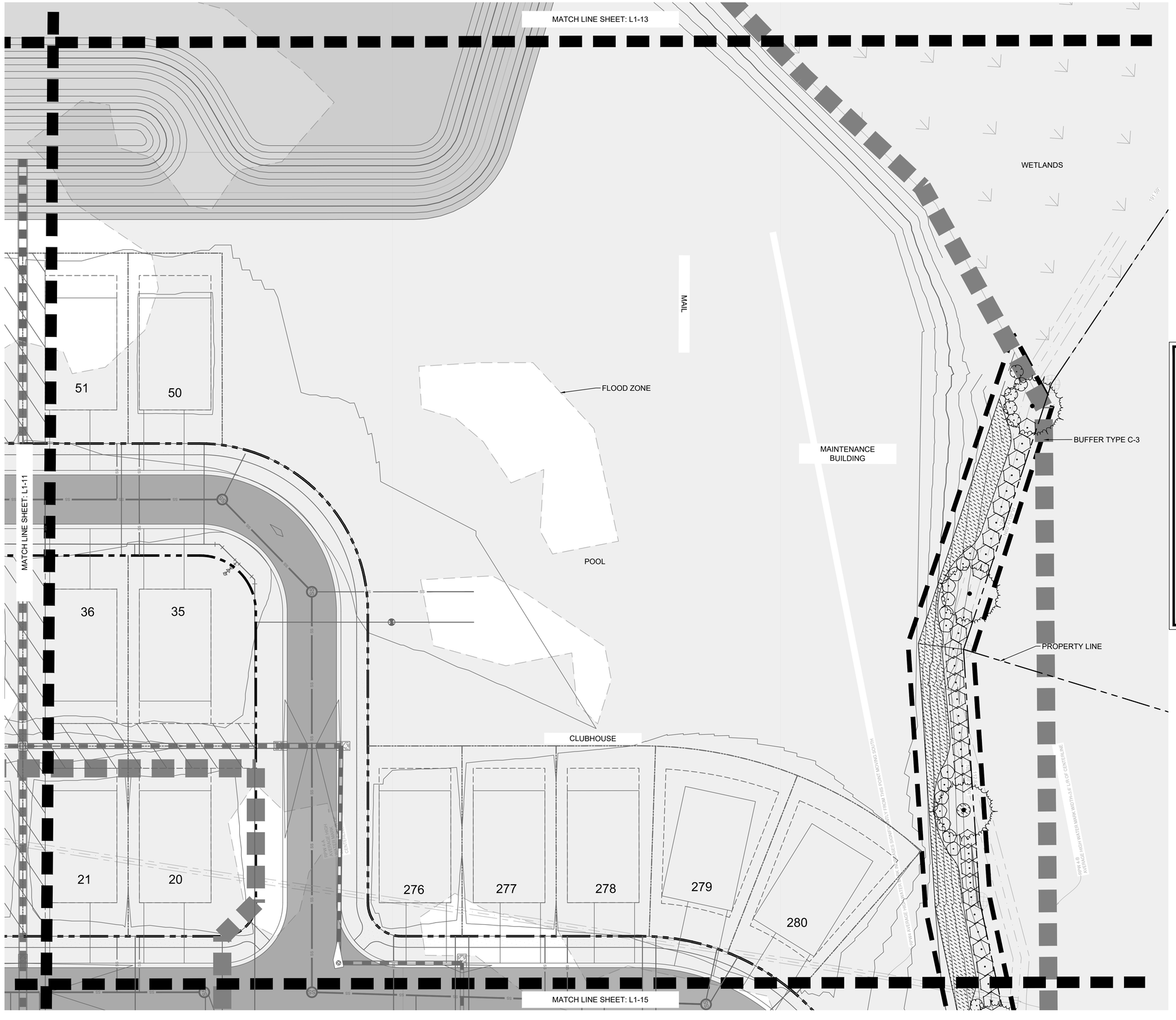
Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-13 TREE REPLACEMENT PLAN Jan 29, 2025 11:11am by: mike.fritz



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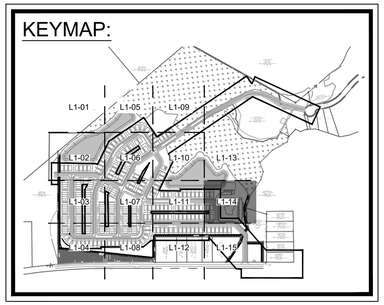

SITE NOTES:

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GROUND COVERS	**CODE**	**COMMON NAME**	**BOTANICAL NAME**
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SITE PLAN LEGEND:

- PROPERTY LINE
- BUILDING SETBACK LINE
- 20 FT LANDSCAPE BUFFER LINE
- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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GRAPHIC SCALE IN FEET
0 10 20 40

PREPARED BY

Kimley»Horn

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PHONE: (912) 234-3454
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PREPARED FOR

LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT

BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5482 — 10/31/2025 — GWALTNEY

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-14

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-14 TREE REPLACEMENT PLAN Jan 29, 2025 11:11am by: mike.fritz

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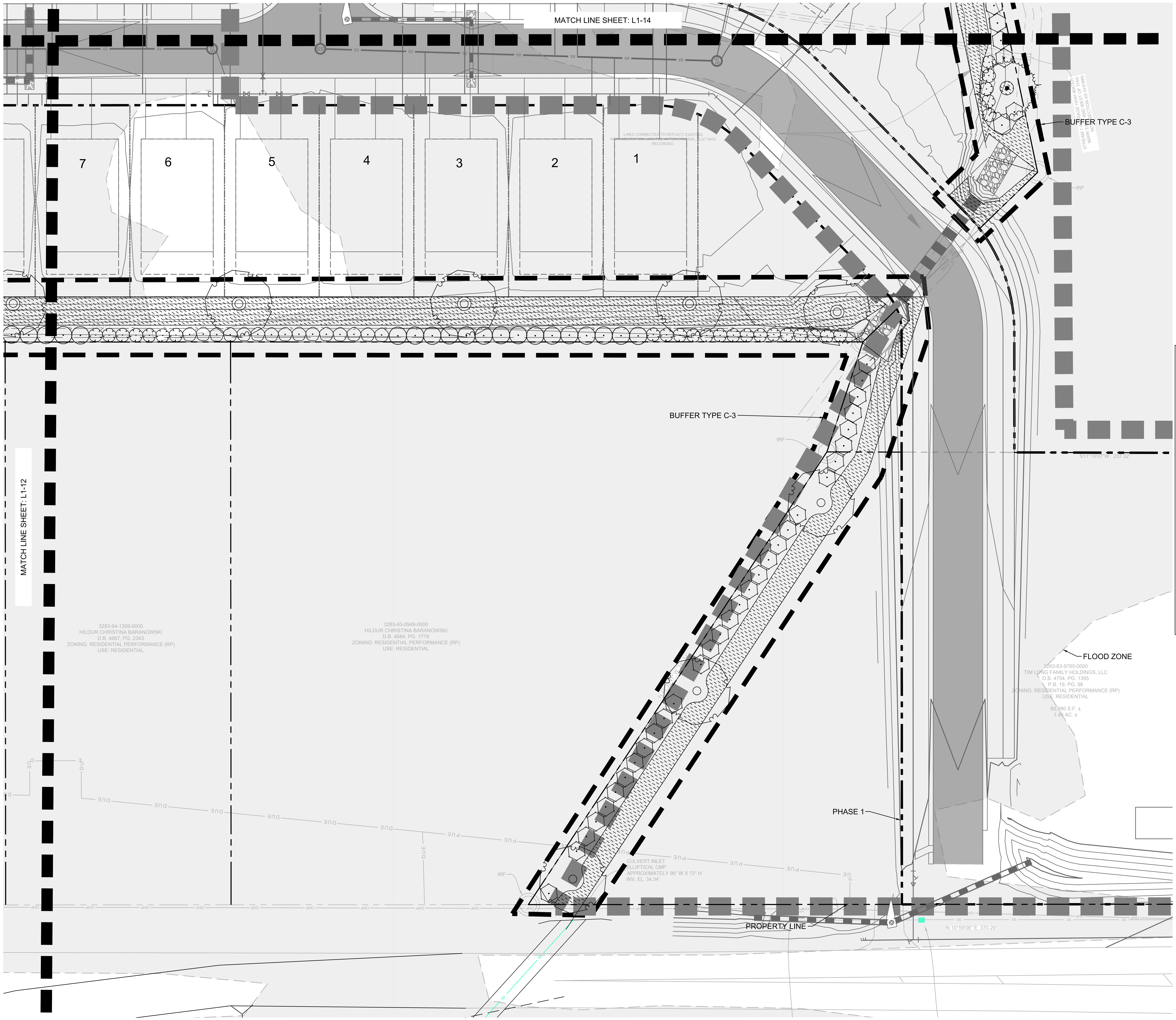

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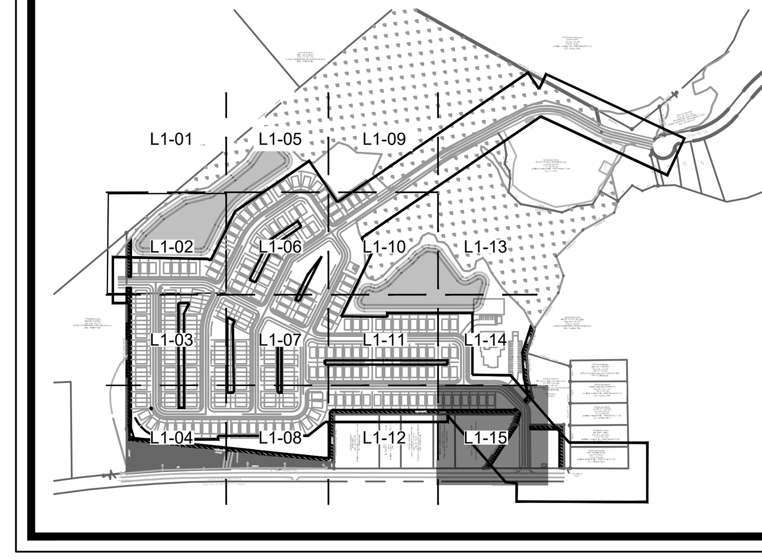

SITE NOTES:

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SITE PLAN LEGEND:

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- STANDARD DUTY ASPHALT PAVEMENT
- (10) LOT NUMBER

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GRAPHIC SCALE IN FEET
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PREPARED BY
Kimley»Horn

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PHONE (912) 231-4384
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PREPARED FOR
LOGAN DEVELOPERS INC.
60 GREGORY ROAD (SUITE 1)
BELVILLE, NC 28451
PHONE: 910-507-2115

No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
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PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL
LAURA BABCOCK
JAMIE N. GWALTNEY

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE PLAN

SHEET NUMBER
L1-15

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L1-15 TREE REPLACEMENT PLAN Jan 29, 2025 11:11am by: mike.fritz

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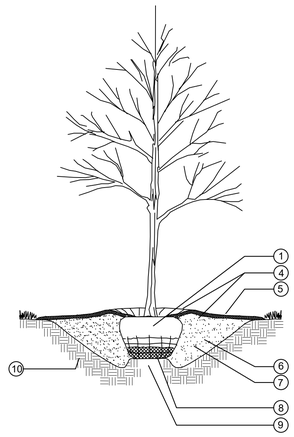
LANDSCAPE NOTES

- REFER TO CIVIL SHEETS FOR GRADING AND DRAINAGE WITHIN LANDSCAPE AND HARDSCAPE AREAS.
- ALL PLANT MATERIAL MUST MEET THE MINIMUM STANDARDS AS PROVIDED IN THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1) TREES MUST BE FREE OF INJURY, PESTS, DISEASE, NUTRITIONAL DISORDERS OR ROOT DEFECTS AND MUST BE IN GOOD VIGOR TO ASSURE A REASONABLE EXPECTATION OF SURVIVAL. STANDARDS FOR TRANSPLANTING SHALL BE IN KEEPING WITH THOSE ESTABLISHED IN THE INTERNATIONAL SOCIETY OF ARBORICULTURE PUBLICATION TREE AND SHRUB PLANTING MANUAL OR A SIMILAR PUBLICATION.
- ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIAL AND FREE OF PESTS AND DISEASE.
- ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.
- ALL PLANT MATERIAL QUANTITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE COVERAGE OF ALL PLANTING BEDS AT SPACING SHOWN .
- ALL PLANTS ARE SUBJECT TO APPROVAL OF THE OWNER BEFORE, DURING AND AFTER INSTALLATION
- ALL PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH SHREDDED HARDWOOD MULCH AT A MINIMUM OF 3 INCHES. THE MULCH SHALL BE FREE FROM MOLD, STICKS, CONES, WEEDS AND OTHER DEBRIS. COMPACTION OF THE MULCH SHALL OCCUR NATURALLY OVER A TWO WEEK PERIOD DURING WHICH AT LEAST ONE SIGNIFICANT RAINFALL HAS OCCURRED. ADDITIONAL MULCH SHALL BE PLACED IN ORDER TO MAINTAIN THE MINIMUM DEPTH UNTIL DATE OF FINAL ACCEPTANCE.
- THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES AND 811 TO HAVE THE LOCATIONS OF THEIR UNDERGROUND UTILITIES MARKED PRIOR TO BEGINNING WORK. CAUTION SHALL BE EXERCISED TO AVOID INTERRUPTION OF SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING UNTIL THE WORK IS ACCEPTED BY THE OWNER. MAINTENANCE INCLUDES BUT IS NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING.
- THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR BEGINNING AT THE DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE THE END OF THE GUARANTEE PERIOD (AS PER DIRECTION FROM THE OWNER)
- ANY PLANT MATERIAL THAT DIES, TURNS BROWN, OR DEFOLIATES PRIOR TO FINAL ACCEPTANCE SHALL BE REMOVED AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY AND SIZE AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL SUPPLY ALL PLANTING MIX: 50% ORGANIC SOIL ADDITIVES AND 50% TOPSOIL.
- THE AREA TO BE PLANTED SHALL BE SPRAYED WITH HERBICIDE ONE WEEK PRIOR TO TILLING AND PLANTING. ALL EXISTING TURF AND VEGETATION SHALL BE STRIPPED AND REMOVED PRIOR TO THE INSTALLATION OF ANY TURF OR PLANT MATERIAL.
- CONTRACTOR TO VERIFY THAT PLANTING LOCATIONS DO NOT CONFLICT WITH EXISTING UTILITIES, STRUCTURES, EASEMENTS OR DRAINAGE PATTERNS.
- CONTRACTOR TO REFER TO THE EROSION CONTROL PLANS FOR ALL TEMPORARY AND PERMANENT SEEDING AREAS.
- THE QUANTITIES SHOWN IN THE PLANT SCHEDULE ARE SOLELY FOR THE INFORMATION OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE QUANTITIES SHOWN IN THE PLANT SCHEDULE WITH THE QUANTITIES SHOWN ON THE PLANTING PLAN. ALL DIFFERENCES IN THE QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. CONTRACTOR IS RESPONSIBLE TO INSTALL THE PLANT MATERIAL QUANTITIES THAT ARE SHOWN IN THE LANDSCAPE PLANS.
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE SITE (INCLUDING, BUT NOT LIMITED TO WEEDING, WATERING, SPRAYING, MULCHING, FERTILIZING, ETC…) OF PLANTING AREAS AND LAWN AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE LANDSCAPE ARCHITECT AND THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR THE FULL WARRANTY OF ALL THE PLANT MATERIAL UNTIL FINAL ACCEPTANCE.
- ALL SLOPES THAT ALL GREATER THAN 3:1 SHALL BE STABILIZED WITH EROSION CONTROL FABRIC PRIOR TO PLANTING. EROSION CONTROL FABRIC SHALL BE OF THE TYPE THAT DECOMPOSES AFTER 18 MONTHS TO 2 YEARS.
- THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT, AT ANY TIME UNTIL THE END OF THE GUARANTEE PERIOD, ANY AND/OR ALL PLANT MATERIAL THAT DOES NOT MEET THE SPECIFICATIONS AS SET FORTH HERIN AND IN THE PLANT SCHEDULE.

IRRIGATION PERFORMANCE SPECIFICATION:

CONTRACTOR SHALL PROVIDE A FULLY AUTOMATED IRRIGATION SYSTEM WHICH SHALL SUPPLY FULL COVERAGE IRRIGATION FOR ALL PLANTING AREAS. TREES, SHRUBS AND GROUNDCOVERS SHALL BE WATERED BY MEANS OF DRIP IRRIGATION LINE ON DEDICATED ZONES WITH SIMILAR PLANTING MATERIAL SPECIES AND WATERING REQUIREMENTS. ALL POTS SHALL HAVE A FLEX IRRIGATION LINE RUN UP THE BACK SIDE TO PROVIDE A DRIP LINE FOR POTTED PLANTINGS. IRRIGATION SHALL BE PROVIDED TO THE ROOF TERRACE. THE SYSTEM SHALL INCLUDE AN EVAPOTRANSPIRATION (ET) / RAIN-FREEZE SENSOR. FINAL LOCATION OF CONTROLLER AND LOCATION OF SLEEVING AND CONDUIT TO BE DETERMINED PRIOR TO PAVING INSTALLATION AND TO BE APPROVED BY OWNER / OWNER'S REPRESENTATIVE. AS-BUILT PLANS AND OPERATIONS MANUALS TO BE SUPPLIED TO THE OWNER UPON ACCEPTANCE OF THE INSTALLATION. SYSTEM SHALL MEET THE MORE STRINGENT OF EITHER LOCAL JURISDICTIONAL REQUIREMENTS OR ESTABLISHED INDUSTRY STANDARD.



SECTION

NOTES:
1. THIS DETAIL IS APPLICABLE FOR SOIL AND ROOTBALL INSTALLATION. SEE TREE GRATE DETAIL L6-02-3/4.

(1) ROOTBALL:
-IN ENGINEERED WELL DRAINED SOIL CONDITIONS:
SET TOP SURFACE ELEVATION OF ROOTBALL 2" ABOVE FINAL EXISTING GRADE.

(2) SHRUB PLANTING

(3) GROUNDCOVER PLANTING

(4) EARTHEN SAUCER

(5) 3" MULCH LAYER OR GRAVEL
-MULCH OR GRAVEL SHALL NOT BE PLACED WITHIN 6" OF TREE TRUNK ROOT FLARE
-MULCH OR GRAVEL SHALL NOT BE PLACE WITHIN 6" OF SHRUB TRUNK OR STEM FLARE

(6) TREE:
EXCAVATE PLANTING PIT TO 3 TIMES THE WIDTH OF ROOTBALL (8' MIN.) FLARING SIDES OF PIT AS SHOWN. SCARIFY SIDES OF PIT SO THAT THE SIDES ARE NOT SMOOTH OR GLAZED.
SHRUB:
EXCAVATE PIT TO 2 TIMES THE WIDTH OF ROOTBALL OR CONTAINER SCARIFY SIDES OF PIT SO THAT SIDES ARE NOT SMOOTH/GLAZED

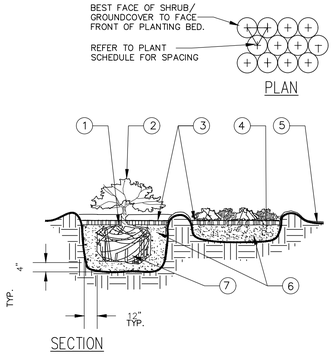
(7) BACKFILL WITH SOIL MIX PER SPECIFICATIONS

(8) REMOVE TOP 3/4 OF BURLAP ROOTBALL COVERING. REMOVE ALL SYNTHETIC COVERING FROM ENTIRE ROOTBALL.

(9) ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH. NOT LOOSE BACKFILL MATERIAL.

(10) UNDISTURBED SUBGRADE

1 TYPICAL TREE PLANTING
NTS

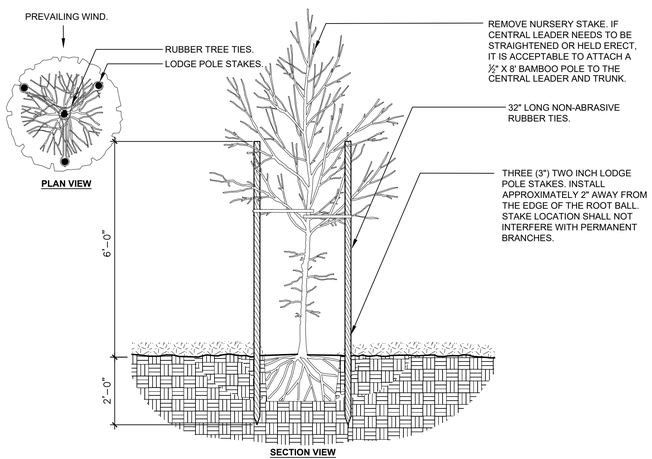


1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" – 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. WHEN USED IN MASSES– PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT
3. 3" MINIMUM OF HARDWOOD BARK MULCH COMPACTED OR AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. 5" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND–COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.

NOTES:
B&B MATERIAL
1. REMOVE ALL SYNTHETIC STRAP AND SYNTHETIC BURLAP FROM ROOTBALL
2. REMOVE ⅓ OF BURLAP FROM TOP OF ROOT BALL COVERING
3. REMOVE TOP ⅓ OF WIRE BASKET (IF PRESENT)
4. DO NOT INSTALL MULCH WITHIN 6" OF MAIN TRUNK OF STEM

CONTAINER MATERIAL
1. REMOVE CONTAINER FROM AROUND PLANT PRIOR TO PLANTING
2. BREAK UP ANY CIRCLING OR BINDING ROOTS
3. SCARIFY SIDE OF ROOTBALL
4. DO NOT INSTALL MULCH WITHIN 6" OF TRUNK FLARE

2 LANDSCAPE BED PLANTING DETAIL
NTS



3 TREE STAKING - LODGE POLES (3)
1/2" = 1'-0"

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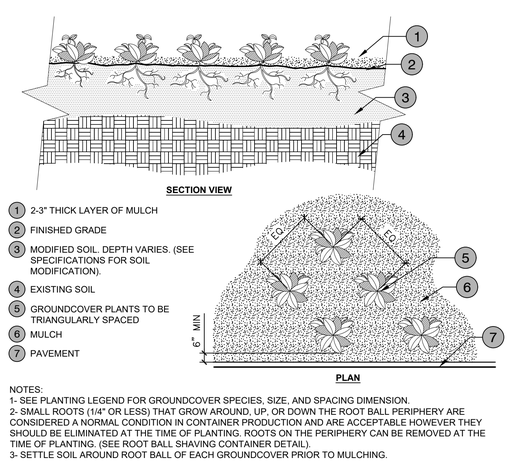

NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
2- SMALL ROOTS (1/4" OR LESS) THAT GROW AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL)
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

4 GROUNDCOVER
3/4" = 1'-0"

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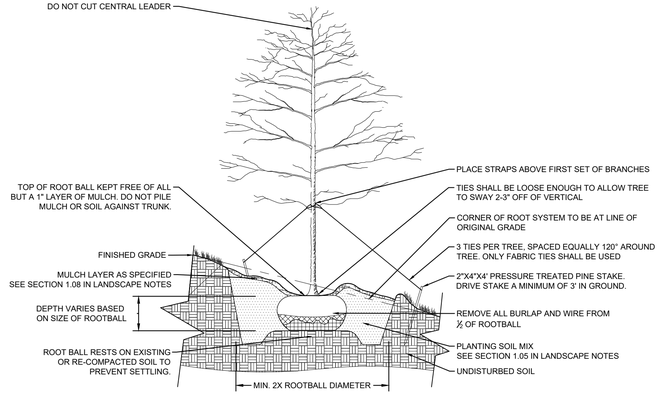

5 B&B TREE PLANTING ON SLOPE
NOT TO SCALE

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No.	ISSUANCE AND REVISION DESCRIPTIONS	DATE	BY
1	ISSUED FOR PERMIT	08/18/2024	MRF
2	REVISED PHASE BOUNDARY	06/24/2024	TCS
3	REVISED PER NC DEQ PRIVATE WATER COMMENTS	06/03/2024	CDJ
4	REVISED SEWER AND LIFT STATION DETAILS	06/05/2024	MRF
5	REVISED SEWER PER OWNER REVIEW	DATED 03/06/2024	MRF
6	REVISED PER COUNTY COMMENTS	DATED 01/22/2024	MRF
7	REVISED PER COUNTY COMMENTS	DATED 12/11/2023	MRF
8	REVISED PER COUNTY COMMENTS	DATED 11/07/2023	MRF

PROJECT
BROOKFIELD BRANCH
1038 HOOVER ROAD,
HAMPSTEAD, NC 28443
3283-83-9765-0000, 3283-93-1673-0000, 3283-94-9377-0000
APPROVED MDP 2023-41

NORTH CAROLINA PROFESSIONAL SEAL 030526 ENGINEER JAIME N. GWALTNEY

DRAWN BY	FC
DESIGNED BY	FC
REVIEWED BY	LB
DATE	
PROJECT NO.	014793000

TITLE
LANDSCAPE DETAILS

SHEET NUMBER
L2-00

Drawing name: K:\SAV_Civil\014793000_Hoover Road SFR\CAD\Plansheets\L1-00 - TREE PROTECTION AND REPLACEMENT PLAN.dwg L2-00 LANDSCAPE DETAILS Jan 29, 2025 11:11am by: mike.fritz

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