

# 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](http://www.pendercountync.gov)

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## Sagebrook Residential (Last Phase of Silo Ridge) Application Information Major Subdivision- Preliminary Plat

**Case Number:** SUBMAJ 2025-138

**Application Type:** Preliminary Plat

**Applicant:** McAdams Homes, LLC, Grady Gordon

**Owners:** Silo Ridge SFR, LLC

**Location:** The property is located at the end of North Limehurst Ridge in the Silo Ridge Development. This development is located off of Sidbury Road about a half mile from US Highway 17.

**Property ID #(s):** 3271-23-1505-0000

**Description:** 17-lot single family subdivision on approximately 15 acres.

**Total Area of Project:** Approximately 6.37 acres

**Current Zoning:** Planned Development (PD)

**Application Materials:**

Application Package  
Site Plan

# **APPLICATION**

# Pender County Planning and Community Development



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## Planned Development & Residential Mixed Zoning Districts Preliminary Plat Submission

Applications will be considered for the Technical Review Committee hearing and reviewed by Staff only when deemed complete. The application will be regarded as incomplete until the following items are received by the Planning and Community Development Staff.

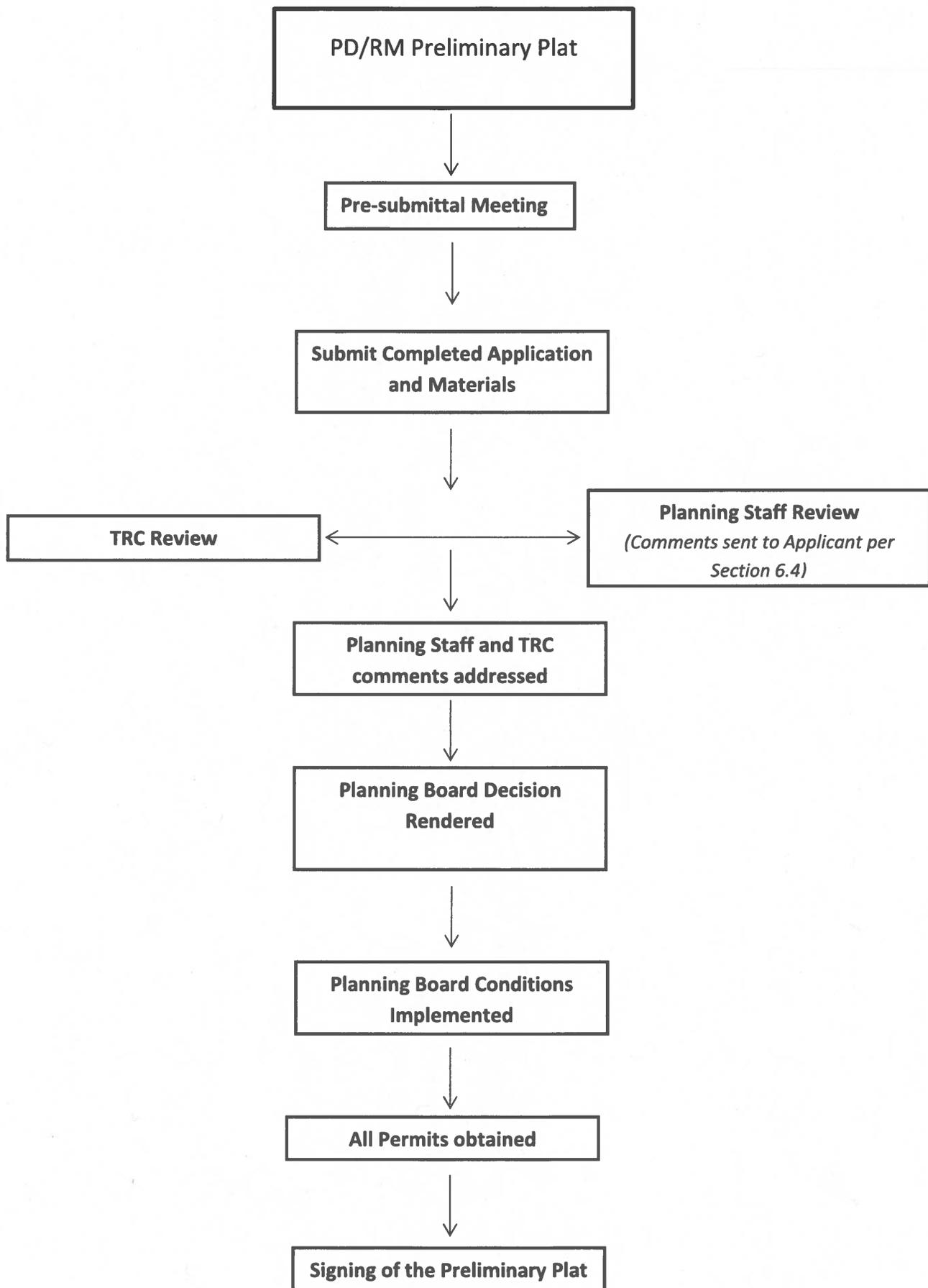
1. GG **Signed Application**
2. GG **Payment**  
Application fee and initial stormwater review fee invoices will be generated upon receipt of application for online payment. ***Do not include check with application.*** \$500 plus \$10 per lot for the first 100 lots/units, \$5 per lot thereafter. Stormwater review fee \$400, plus \$200 per subsequent stormwater review invoiced at time of resubmission
3. GG **Paper Plan Sets**  
One (1) 24 x 36, Two (2) 11 x 17
4. GG **Digital Submission**  
For all documents submitted in paper copy, please provide a digital copy. These may be emailed or uploaded to a share folder. ***Physical media such as CD or USB drives will not be accepted.***
5. GG **List of Property Owners Within 500'**  
A numbered list of names and addresses, as obtained from the county tax listings and tax abstract, ***including the applicant, the owner, and owners*** of all properties located within 500-feet of the perimeter of the project bounds as obtained from the county tax listings and tax abstract. Directions to obtain list of addresses available on Pender County's website on the Planning and Community Development page.
6. GG **500' Buffer Property Envelopes**  
The applicant shall provide a set of business envelopes addressed to the applicant, the owner, and each of the owners of all properties located within 500-feet of the perimeter of the project bounds and accompanied with first class postage adhered. Do not include return address or company branding on envelopes.
7. GG **Permits**  
Please include any permits issued on the project including but not limited to: environmental, traffic analysis, utility, or site specific conditions.
8. GG **Site Plan Requirements**  
A prepared site plan in accordance with the Unified Development Ordinance standards Section 6.4, Pender County Collector Street Plan, Pender County Transportation Plan, other approved State of Federal Transportation Improvement Plan, or any other adopted plan in Pender County.

I certify that all information presented in this application is accurate to the best of my knowledge.

Signature of Applicant GG

Date 7/28/25

Printed Name Grady Gordon



Specific requirements can be found in Section 6.4 of the Pender County Unified Development Ordinance

## Preliminary Plat Specific Requirements

Preliminary plats not illustrating or containing the data from Section A shall be returned to the developer or the authorized agent for completion and resubmission.

A. The preliminary plat shall be prepared in accordance with the following specifications:

1. Plat Requirements

- a) The plat must be prepared by an authorized Licensed Professional.
- b) The name(s), address(es), and telephone number(s) of the owner(s), registered land surveyor(s), land planner(s), architect(s), landscape architect(s), and professional engineer(s) responsible for the subdivision and the registration number(s) and seal(s) of the registered land surveyor(s).
- c) A sketch vicinity map at an appropriate scale, showing the relationship between the subdivision and the surrounding area.
- d) The date of the survey and the plan preparation; with spaces per subsequent revision.
- e) The name of the township, county, and state in which the subdivision is located.
- f) Deed book and reference of ownership acquisition.
- g) The names of current owners of adjacent landowners along with PIN, current uses, other legal reference where applicable, shall be shown.
- h) The exact boundary lines of the tract to be developed fully dimensioned by bearings and distances, and the location of intersecting boundary lines of adjoining lands.
- i) Scale at 1" = 50' or larger, denoted both graphically and numerically.
- j) North arrow in accordance with the Standards of Practice for Land Surveyors.
- k) The location, purpose, and dimensions of areas to be used for purposes other than residential;
- l) The blocks lettered alphabetically throughout the entire subdivision and the lots numbered consecutively throughout each block.
- m) The proposed minimum building setback lines and density calculations.
- n) The location and dimensions of all proposed and existing rights-of-way, utility or other easements, riding trails, pedestrian or bicycle paths, natural buffers, and areas if any to be dedicated to public use with the purpose of each stated.
- o) Property lines, buildings or other structures, water courses, railroads, bridges, culverts, storm drains, and corporate limits, township boundaries, and county lines.
- p) Sufficient survey to determine readily and reproduce on the ground every straight or curved boundary line, road line, lot line, right-of-way line, easement line, and setback line, including dimensions, bearings, or deflection angles, radii, central angles, and tangent distances for the center line of curved roads and curved property lines that are not the boundary of curved roads. All dimensions shall be in accordance with the Standards and Practices of Land Surveyors.
- q) The accurate locations and descriptions of all monuments, markers, and control points.
- r) Sufficient information shall be provided so that a corner of the property can be located on the ground and found with a measurement from the intersection of two state maintained roads.

Specific requirements can be found in Section 6.4 of the Pender County Unified Development Ordinance

2. Design Standards

- a) All subdivided land and parcels shall comply with Section 7.2, Lot Design.
- b) Street layout and access shall conform to Section 7.4, Access and Section 7.5, Street Design.
- c) Calculated open space requirements must adhere to Section 7.6, Open Space.
- d) Landscaping and Buffers shall be shown on the site plan and adhere to the landscaping standards set forth in Article 8, Landscaping and Buffers.

3. Road Layout

- a) Right-of-way lines and pavement widths of all roads and the location and width of all adjacent roads and easements.
- b) The location and design of parking areas and pedestrian and vehicular access points. That the design of traffic patterns, traffic control measures and street pavement areas, including plan profiles and cross section views, and with provisions for maintaining traffic flows for both public use as well as emergency management services are consistent with the requirements of this Ordinance and any other adopted plan.
- c) When the subdivision entrance does not connect to a NCDOT maintained road, recorded documents shall be submitted that confirm the property and the proposed lots have access to a NCDOT maintained road by a public or private street that meets the standards of this Ordinance.
- d) For non-residential and multifamily projects, the location of trash handling, recycling, grease bins, and other waste-related facilities employed in the normal operation of the use.
- e) When any development proposes private streets a description of the method to provide Pender County Emergency Service personnel and vehicles immediate access shall be submitted.
- f) Stormwater facilities, water supply, sanitary sewer service, fire protection and hydrants, street signs, and street lighting designed in conformance with department standards, specifications and guidelines;
- g) Plan profile and cross section of drainage and utility services and other proposed easements or dedications as required.

4.) Traffic Impacts

- a. Existing traffic counts for road(s) and intersection(s) studied and dates/times counts were conducted.
- b. Estimated AM and PM Peak Hour Trips per the Institute of Transportation Engineers Trip Generation Manual.
- c. A Traffic Impact Analysis is required when the development generates 100 trips in the morning or evening peak hours or over 1,000 trips per day. The Traffic Impact Analysis must state the dates and times the counts were conducted.

5.) Adopted Plan Compliance

- h) Compliance with all applicable requirements of this Ordinance and any other County adopted plan, policy document or approved Master Development Plan conditions.
- i) Demonstrate compliance with the most recent Comprehensive Land Use Plan and any other applicable adopted land use document(s).
- j) Compliance with site construction specifications.

Specific requirements can be found in Section 6.4 of the Pender County Unified Development Ordinance

- k) The Administrator, Technical Review Committee, or the Planning Board may request additional information be submitted that is pertinent to review of the proposed subdivision for compliance with the provisions of this Ordinance or other Pender County Ordinances.

B. Upon completion of Section A, the following additional materials or permits are required with the preliminary plat for final approval in accordance with Section 3.10.3.K.:

1. Wastewater (either; a or b, as applicable)

l) On-Site or Off-Site Wastewater Disposal System

- a. Verification by the Pender County Health Department.
- b. Soil suitability analysis indicating the suitability of the property for individual septic tanks
- c. Detailed description of any proposed waste water system and system maintenance arrangements and procedures to serve lots that are not suitable for traditional onsite septic systems, along with a map showing the proposed location of the offsite components of the system, including lines.

m) Community Wastewater Systems

- a. Authorization to Construct, as approved by the appropriate State Agency
- b. Wastewater line extensions based upon previous approval of wastewater system
- c. Construction plans sealed by a registered engineer, as approved by the appropriate State Agency
- d. If applicable, Certification that the system will be owned by a Public or Community Water System as defined in this Ordinance with conditional acceptance of ownership or certification that the system will be owned by a homeowners association established under the provisions of this Ordinance.

2) Water (either a or b, as applicable)

a. Public Water System

- i. Authorization to Construct, as approved by the appropriate State Agency
- ii. Construction plans sealed by a registered engineer, as approved by the appropriate State Agency ~~NC-DEQ~~,
- iii. Acceptance of operation and maintenance of the system by a Public (Pender County Utilities) or Community Water system as defined in this Ordinance,
- iv. If applicable, Certification that the system will be owned by a Public or Community Water system as defined in this Ordinance with conditional acceptance of ownership or certification that the system will be owned by a homeowners association established under the provisions of this Ordinance.

b. Private Water

- i. Well permits for each individual as demonstrated through verification of receipt of the preliminary plat of the development by the Pender County Health Department.

3. Road Layout

a) Public Right of Way

- i) Driveway Permit: Approval by NCDOT of connection of subdivision roads with NCDOT maintained roads.
- ii) Plan Approval: Street construction & street drainage plans as approved by NCDOT District Engineer with letter of approval (for public streets).

Specific requirements can be found in Section 6.4 of the Pender County Unified Development Ordinance

iii) Verification of receipt of the preliminary plat of the development by the NCDOT District Engineer or his the appointed designee.

b) Private Right of Way

i) Street construction & street drainage plans in accord with NCDOT submittal requirements, design and construction standards or in accord with Section 7.5, Street Design, private street standards. The plans must be signed and sealed by a registered surveyor or engineer.

ii.) A letter from the design professional will accompany the plans certifying that they meet the NCDOT submittal requirements, design and construction standards or Private Street Standards, Pender County (for private streets).

iii) When any street layout or geometric design does not specifically meet the NCDOT Secondary Road Standards or the adopted Pender County Private Street Standards, a narrative explanation, justification detailed drawing of the design shall be submitted for review.

4. Approved road and subdivision names in accordance with Article 11.

5. Stormwater Management and Drainage Plans

a.) Stormwater Management Plan as approved by the appropriate State Agency (with letter of approval).

b) Drainage Plan: a general description and map of the proposed drainage for the subdivision shall include the following:

–The boundaries of all drainage basins that flow through the property from upstream.

–All drainage facilities that flow through the property and receive any stormwater discharge from upstream.

–The boundaries of all drainage basins that receive discharge from the property that is located from the discharge point on the property to the recipient perennial stream.

–All drainage facilities that receive stormwater discharge from the property from the discharge point to the recipient perennial stream.

–This information can be described in a narrative submission and shown on a copy of a USGS 7.5 Minute Quad or other similar topographical map (11 X 17 map submission)

–A drainage plan that will include all portions of the development shall be submitted.

This plan shall be prepared and sealed by a registered engineer. The plan and facilities shall provide for a drainage system for these areas that will accommodate the ten-year storm event without flooding or substantial ponding of water in the areas included in the plan. The plan must also accommodate any discharge from properties in upland portions of the drainage basin that flows through the property for the same storm event for the type development for which that property is zoned. The boundary of any drainage area on a portion of the site and/or upland from the site and drainage areas between stormwater discharge points from the site to the recipient perennial stream shall be shown on a map (copy of 7.5 min. USGS Quad or similar map). Any drainage facility receiving stormwater discharge from the development shall have the capacity to carry the anticipated stormwater flow from areas that discharge through them for the 10 year storm event from the point of discharge at the development to the recipient perennial stream without over flowing their banks. The location, size

Specific requirements can be found in Section 6.4 of the Pender County Unified Development Ordinance

and/or capacity of all structures included in the drainage system and receiving discharge from the development to the recipient perennial stream shall be shown on the plan and calculations used in designing the drainage system shall be submitted in a legible format. This plan may be included in the street and drainage plan, stormwater management plan or on the preliminary plat, as long as the design professional certifies that the specific drainage plan submitted complies with these requirements and the information required is shown or submitted.

- 4) Approval from the Division of Coastal Management when the development is located in an Area of Environmental Concern.
- 5) Sediment & Erosion Control Plans as approved by the appropriate State Agency (with letter of approval).
- 7) Wetlands
  - b) Approval of Wetlands Delineation by the Army Corps of Engineers (USACE) (if wetlands in development).
  - c) Wetlands fill authorization or permit if construction in wetlands is involved.
- 8) Flood Requirements in accordance with the Flood Damage Prevention Ordinance
- 9) Any other local, State or Federal permit as required for the specific project.

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## **Preliminary Plat Subdivision Application**

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### **Major Subdivision**

Proposed subdivisions consisting of eleven (11) lots or more are classified as Major Subdivisions and are required to follow the Master Development Plan review process found in Figure 2 and 3 at the end of Section 3.4. All major subdivisions shall include a preliminary and final plat. Upon approval of the Master Development Plan by the Planning Board, the applicant may proceed with the preparation of the preliminary plat.

### **Review**

- A. Completed plats, application, fees and other required data must be submitted 45 days before a scheduled Planning Board meeting.
- B. When required submission material is submitted as noted above, it shall be placed on the next scheduled Planning Board agenda, if applicable.
- C. The Administrator will forward the Major Subdivision application and site plan to the Technical Review Committee for review. The TRC shall make recommendations concerning whether the plan meets the requirements and or plans of their particular state agency, county department or utility authority
- D. Major subdivision plans must meet all the requirements prescribed in Section 6.4, Preliminary Plat Contents and Section 6.5, Final Plat Contents.
- E. The preliminary plat must be submitted in digital format to the Administrator within the time frame indicated above. The digital submission of the plat will be considered proprietary information. The digital layout will be made available to the Tax Supervisor for parcel update and the digital submission may be returned to the person submitting it.
- F. The plat will be reviewed for compliance with this Ordinance.
- G. Due to the subdivision of land for residential purposes a portion of land must be dedicated to open space by means of providing recreational area to the residents or payments in lieu of dedication to the County. Open space requirements may be referenced in Section 7.6, Open Space.
- H. Planning Board will take action on the plat submission within 65 days after completed submission.
- I. Planning Board Master Development Plan approval shall be valid for two years. If all conditions of preliminary plat are met and a phase of the final plat is recorded, the preliminary plat status shall remain valid perpetually for all remaining phases.
- J. Preliminary plat approval constitutes approval of the layout and authorizes the developer to proceed with construction of the subdivision and improvements in accord with the approved plat, conditions attached to the approval, and submittal of required permits.
- K. All conditions of preliminary plat approval must be completed and submitted within two (2) years of the approval date.
- L. If a preliminary plat is not approved, the reasons for disapproval must be specified and provided to the developer in writing. Disapproval of a preliminary plat may be appealed to the Pender County Board of Commissioners.
- M. A preliminary plat will not be scheduled for review that is incomplete or does not have the required documents submitted with it.

### **Minor Subdivision**

Proposed subdivisions of ten (10) lots or less, except family and three lot divisions are classified as a minor subdivision and shall follow the preliminary plat review process. Proposed minor subdivisions located in PD, Planned Development district must follow the Master Development Plan review process which requires Planning Board approval.

## **Review**

- A. Application form must be completed and fee paid at the time of submission.
- B. Minor subdivision plans must meet all the requirements prescribed in Section 6.4, Preliminary Plat Contents and Section 6.5, Final Plat Contents.
- C. The Administrator will forward the Minor Subdivision application and site plan to the Technical Review Committee for review. The TRC shall make recommendations concerning whether the plan meets the requirements and/or plans of their particular state agency, county department or utility authority within five (5) business days.
- D. For projects in the PD zoning district, the administrator may request that the site plan be presented to the Planning Board for its review.
  - 1) The Planning Board may make recommendations to the Administrator concerning the site plan.
  - 2) The Administrator shall incorporate such recommendations into the review of the site plan.
- E. When required submission material is submitted, the Administrator shall review and provide comments or approval to the applicant within fifteen (15) working days.
- F. The plat will be reviewed for compliance with this Ordinance.
- G. Plat approval constitutes approval of the layout and authorizes the developer to proceed with construction of the subdivision and improvements in accord with the approved plat and any conditions attached to the approval.
- H. If a plat is not approved, the reasons for disapproval must be specified and provided to the applicants in writing. Disapproval of a plat may be appealed to the Pender County Zoning Board of Adjustment.
- I. Approval of the preliminary plat shall be valid for two (2) years of the approval date unless building permits have been obtained for construction.

## APPLICATION FOR SUBDIVISION

<b>SECTION 1: APPLICANT INFORMATION</b>			
<b>Applicant's Name:</b>	McAdams Homes, LLC	<b>Owner's Name:</b>	Silo Ridge SFR, LLC
<b>Applicant's Address:</b>	213 Racine Dr Suite 100	<b>Owner's Address:</b>	228 Main St
<b>City, State, &amp; Zip</b>	Wilmington, NC 28403	<b>City, State, &amp; Zip</b>	Venice CA 90291
<b>Phone Number:</b>	910.798.3006	<b>Phone Number:</b>	
<b>Email Address:</b>	Grady@McAdamshomes.net	<b>Email Address:</b>	info@banyanres.com

**Legal relationship of applicant to landowner:**

### SECTION 2: PROJECT INFORMATION

<b>Preliminary Plat</b>	<input checked="" type="checkbox"/> <b>Residential</b> <i>RP, PD, RM, MH District</i>	<input type="checkbox"/> <b>Mixed Use</b> <i>PD</i>	
<b>Subdivision Type</b>	<input checked="" type="checkbox"/> Major (11 lots or more)	<input type="checkbox"/> Minor (10 lots or less)	
<b>Property Identification Number (PIN):</b>	3271-23-1505-0000	<b>Township:</b>	Topsail
<b>Zoning Classification:</b>	PD	<b>Total property acreage:</b>	14.95
<b>Number of Lots:</b>	PCU	<b>Acreage to be disturbed:</b>	6.37
<b>Water Provider:</b>	PCU	<b>Wastewater Provider:</b>	Pluris
<b>Additional Information:</b>		<b>Road Type:</b>	<b>Public/Private/Both</b>
		<b>NAICS (if mixed use):</b>	

### SECTION 3: SIGNATURES

<b>Applicant's Signature</b>		<b>Date:</b>	7/28/25
<b>Applicant's Printed Name:</b>	Grady Gordon	<b>Date:</b>	7/28/25
<b>Owner's Signature</b>		<b>Date:</b>	7/28/25
<b>Owner's Printed Name:</b>	Ben Brosseau	<b>Date:</b>	7/28/25

**NARRATIVE**

# GSP CONSULTING

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July 31, 2025

Pender County  
Planning and Community Development  
805 S. Walker Street  
Burgaw, NC 28425

Re: Sagebrook  
Project Narrative

This submittal is for a Preliminary Plat for the Sagebrook project which is the final phase of the Silo Ridge development located off Sidbury Road in Pender County, North Carolina, to be developed by McAdams Homes, LLC. This Master Development Plan for this development was approved at the September 1, 2020 Planning Board Meeting (Case #MDP 2020-23) and a revision was approved at the January 4, 2022 Planning Board Meeting (Case #MDP 2021-35) and was to consist of 316 residential units with a mixture of single family homes, townhomes and duplexes to be served by private streets.

The total area for the Silo Ridge development is 74.52 acres. To date 75 Single Family Homes and 224 townhome and duplex units have been constructed on 59.57 acres. Sagebrook is proposing the remaining 17 single family homes on the remaining 14.95 acres. Sewer will be extended from an existing manhole located within the N. Limehurst Ridge Right of Way and will be public to be owned and maintained by Pluris, Inc. There is an existing waterline that runs through this portion of the development that services will tie into and is owned and maintained by Pender County Utilities. A storm water permit from NCDEQ for this portion of the development has been approved however a revision to this permit is being processed.

Please contact me immediately at (910) 442-7870 or [gpape@gsp-consulting.com](mailto:gpape@gsp-consulting.com) if you have any questions or require additional information.

Sincerely,

**GSP CONSULTING, PLLC.**

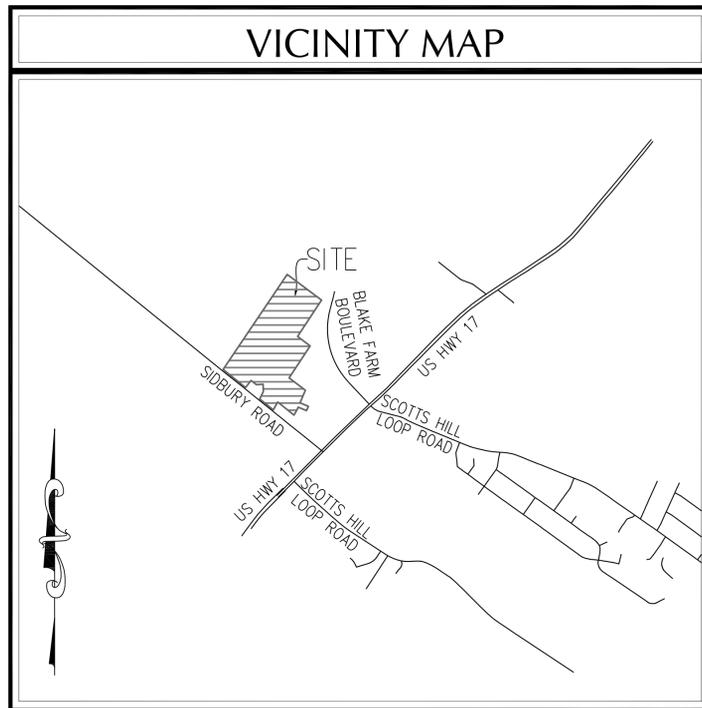


Garry S. Pape, P.E.

# **SITE PLAN**

# Preliminary Plat for Sagebrook

## Pender County, North Carolina August 2025



DESCRIPTION	EXISTING	PROPOSED
1' CONTOUR INTERVAL	-----	-----
5' CONTOUR INTERVAL	-----	-----
PROPERTY LINE	-----	-----
ROADWAY CENTERLINE	-----	-----
RIGHT OF WAY LIMITS	-----	-----
EASEMENT LINE	-----	-----
CURB & GUTTER	-----	-----
SANITARY SEWER FACILITIES	---●---	---●---
STORM SEWER FACILITIES	---■---	---■---
WATERLINE	---●---	---●---
FIRE HYDRANT ASSEMBLY	⊕	⊕
WATERWAYS	~~~~~	N/A
PROPOSED LOT AND S.F.	⊙	⊙
OPEN SPACE LABEL	⊙	⊙
OPEN SPACE	▨	▨
BUILDING SET BACKS	-----	-----
PRIVATE SANITARY SET BACKS	-----	-----
	PROPOSED x 5,000 s.f.	
	STREET SIGN	⊕
	404 WETLANDS	▨
	FLOW DIRECTION	→

**DEVELOPER/PURCHASER**

McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, North Carolina 28403  
Phone: (910) 799-3006

**PREPARED BY:**

**GSP CONSULTING, PLLC**  
**ENGINEERING**  
213 Racine Drive, Suite 100, Wilmington, North Carolina 28403 tel: 910-442-7870 fax: 910-799-6659 License # P-0718

**INDEX OF SHEETS**

SHT C-0	COVER SHEET
SHT C-1	GENERAL NOTES
SHT C-2.1	EXISTING CONDITIONS
SHT C-3.1	OVERALL SITE PLAN
SHT C-3.2	SITE PLAN
SHT C-3.3 & C-3.4	ROAD PLAN & PROFILES
SHT C-4.1	UTILITY PLAN
SHT C-4.2	UTILITY PROFILES
SHT C-5.1	GRADING, DRAINAGE & E&SC PLAN
SHT C-6.1	WET DETENTION BASIN DETAILS
SHT C-7.1 to C-7.3	STANDARD DETAILS

SITE DATA TABLE	
<b>DEVELOPMENT NOTES:</b>	
1.	PENDER COUNTY PARCEL NO'S: 3271-23-1505-0000, 3271-12-6568-0000 (PARENT) PROJECT SHALL ADHERE TO ALL CONDITIONS OF APPROVAL ASSOCIATED WITH THE APPROVED MDP MDP 2020-23 & MDP 2021-35; SEE SHEET C-1 FOR CONDITIONS
2.	TOTAL TRACT AREA: 3,246,149 SF = 74.52 AC.±/651,235 SF = 14.95 AC.±(CURRENT PHASE)
3.	ZONING: PLANNED DEVELOPMENT (PD)
4.	LAND CLASSIFICATION: VACANT
5.	THIS PROPERTY IS NOT WITHIN A SPECIAL FLOOD HAZARD ZONE PER FEMA FLOOD INSURANCE RATE MAP #3720327100A, EFFECTIVE DATE 2/16/2007
6.	THIS PROPERTY DOES NOT CONTAIN ANY A.E.C. AREAS OR IS UNDER CAMA JURISDICTION.
7.	THIS PROPERTY DOES CONTAIN 404 FEDERAL WETLANDS WHICH HAVE BEEN APPROVED BY THE USACOE.
<b>GENERAL NOTES:</b>	
1.	OWNERSHIP REFERENCE: SILO RIDGE SFR, LLC D.B. 4792 P.G 1236
2.	PROPERTY IS LOCATED IN PENDER COUNTY AND IS ZONED PLANNED DEVELOPMENT (PD)
3.	A HOME OWNERS ASSOCIATION WILL BE FORMED TO GUARANTEE CONTINUAL MAINTENANCE OF THE COMMON AREAS AND OPEN SPACE.
4.	ALL INTERIOR ROADWAYS TO BE PRIVATE AND BUILT TO NCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS.
5.	INTERIOR ROADWAYS ARE TO BE PRIVATE TO BE OWNED AND MAINTAINED BY THE HOA.
6.	A HOME OWNERS ASSOCIATION WILL BE FORMED PRIOR TO THE SALE OF ANY LOTS AND MEMBERSHIP WILL BE AUTOMATIC UPON PURCHASE.
7.	THE DEVELOPERS HAVE THE SOLE RIGHT TO MODIFY THIS MASTER PLAN/PRELIMINARY PLAT IN ACCORDANCE WITH MARKET CONDITIONS OR OTHER CONDITIONS WHICH INDICATE A CHANGE IS DESIRED OR REQUIRED. ANY AND ALL CHANGES MUST BE REVIEWED BY THE PLANNING DEPARTMENT AND IN SOME INSTANCES MAY REQUIRE PLANNING BOARD APPROVAL.
8.	BUFFERS WILL BE PROVIDED PER CURRENT PENDER COUNTY ZONING ORDINANCE.
9.	WETLANDS IMPACTED WILL BE MITIGATED IN ACCORDANCE WITH ANY REQUIREMENTS OF APPLICABLE STATE AND FEDERAL PERMITS.
10.	ALL LOTS SHALL MEET CURRENT PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE REGULATIONS.
<b>SINGLE FAMILY DEVELOPMENT STANDARDS:</b>	
<b>MINIMUM LOT DIMENSIONS:</b>	<b>PROPOSED BUILDING SETBACKS:</b>
AREA IN (S.F.) 5,000 SF	FRONT - 15'
MAX USABLE LOT AREA (%) 95%	REAR - 20'
MIN LOT WIDTH (FT) 40'	SIDE - ZERO LOT LINE
MIN CHORD AT ROW (CUL-DE-SAC) 30'	(10' MAINTENANCE EASEMENT BETWEEN STRUCTURES, STRUCTURES TO BE A MINIMUM OF 5' FROM SIDE PROPERTY LINE)
MAX BLDG. HT. (FT) 38'	CORNER - 10'
	ANY PERIPHERAL PROPERTY LINE STRUCTURES - AS PER NORTH CAROLINA STATE BUILDING CODE
<b>SINGLE FAMILY ATTACHED DEVELOPMENT STANDARDS:</b>	
<b>MINIMUM LOT DIMENSIONS:</b>	<b>PROPOSED BUILDING SETBACKS:</b>
AREA IN (S.F.) 1,000 SF	FRONT - 15'
MAX USABLE LOT AREA (%) 100%	REAR - 20'
MIN LOT WIDTH (FT) 24'	SIDE - ZERO LOT LINE
MAX BLDG. HT. (FT) 38'	(10' MAINTENANCE EASEMENT BETWEEN STRUCTURES)
	CORNER - 10'
	ANY PERIPHERAL PROPERTY LINE STRUCTURES - AS PER NORTH CAROLINA STATE BUILDING CODE
<b>REQUIRED OPEN SPACE (ENTIRE DEVELOPMENT):</b>	
316 UNITS * 0.03 AC/UNIT = 9.48 AC±	
<b>PROVIDED OPEN SPACE</b>	
20.47 AC± TOTAL OPEN SPACE PROVIDED	
NOTE: PROPOSED OPENSAPCE/RECREATION SPACE AREAS ARE NOT FOR BUILDING OR STRUCTURAL DEVELOPMENT & ARE SUBJECT TO CHANGE	
<b>TRIP GENERATION:</b>	<b>DEVELOPMENT DATA:</b>
92 SINGLE FAMILY HOMES* & 224 TOWNHOME UNITS**	TOTAL TRACT AREA = 74.52 AC
2,182 - TOTAL DAILY TRIPS	WETLAND ACREAGE = 9.72 AC
168 - AM PEAK HOUR	RIGHT OF WAY ACREAGE = 10.81 AC
209 - PM PEAK HOUR	OPEN SPACE ACREAGE = 9.48 AC
**PER ITE TRIP GENERATION MANUAL 8TH EDITION, ITE CODE 210	ACTIVE = 4.74 AC
**PER ITE TRIP GENERATION MANUAL 8TH EDITION, ITE CODE 230	PASSIVE = 4.74 AC
	TOTAL UNITS = 316
	DEVELOPABLE LAND = 49.26 AC
	NET DENSITY = 6.42 UNITS/AC
<b>DEVELOPMENT DATA:</b>	
TOTAL TRACT AREA = 3,246,149 SF = 74.52 AC.±	
AVERAGE LOT SIZE - 7,121 SF	
AREA OF SINGLE FAMILY LOTS - 534,087 SF = 12.26 AC±	
AREA OF TOWNHOME/DUPLEX LOTS - 728,331 SF = 16.72 AC±	
AREA OF RIGHT OF WAY - 395,830 SF = 9.09 AC±	
TOTAL PROPOSED ROAD LENGTH - 10,218 L.F.±	
<b>UNIT BREAKDOWN -</b>	
2 BEDROOM UNITS - 134 (GARAGE DUPLEX)	
3 BEDROOM UNITS - 90 (GARAGE DUPLEX/TOWNHOME)	
SINGLE FAMILY LOTS - 92	
TOTAL UNITS - 316	
<b>UTILITY DATA:</b>	
TOTAL - 17 UNITS @ 180 GPD/UNIT = 3,060 GPD	
<b>DEVELOPMENT NOTES:</b>	
1. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE.	
2. PROJECT SHALL COMPLY WITH ALL CITY, STATE & FEDERAL REGULATIONS.	
<b>NOTE:</b>	
ALL DESIGN AND CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE & THE STATE OF NORTH CAROLINA	



**COORDINATION NOTES**

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL WORK IS TO BE IN ACCORDANCE WITH PENDER COUNTY AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.

**GENERAL NOTES:**

1. EXISTING TOPOGRAPHY, BOUNDARY AND UTILITIES, HAVE BEEN PREPARED BY A FIELD SURVEY BY ATLANTIC COAST SURVEY, PLLC (P-0822) AND OTHER AVAILABLE INFORMATION.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC...
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE DOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 1 (800) 632-4949 AND ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. CONTRACTOR SHALL REMOVE ASPHALT, AGGREGATE BASE COURSE, AND CONCRETE CURB & GUTTER WITHIN LIMITS OF DEMOLITION AS SHOWN ON PLAN.

**DEMOLITION NOTES**

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE SOILS ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. EXISTING UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION
7. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
8. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVER HEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
9. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
10. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
11. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS OF THE MAINS BY DIGGING TEST PITS BY HAND.

**EROSION AND SEDIMENT CONTROL NOTES**

**GENERAL NOTES:**

1. CLEAR AND REMOVE FROM SITE ALL TREES, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN DESIGNATED CLEARING LIMITS.
2. PLANT GRASS OVER ALL GRADED AREAS AS SHOWN IN THE TABLE ON THIS SHEET OF CEASE OF ANY GRADING ACTIVITY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION MEASURES.
4. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETED, CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL INSPECTION AND APPROVAL BY THE NCDENR DIVISION OF LAND QUALITY.
5. WATER, FERTILIZE, MOW AND MAINTAIN SPRIGGED, SOODED AND PLANTED AREAS UNTIL FINAL APPROVAL BY THE NCDENR DIVISION OF LAND QUALITY.
6. ANY BORROW MATERIAL BROUGHT ONTO SITE MUST BE FROM A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE.
7. ANY EXCESS MATERIAL REMOVED FROM SITE MUST BE HAULED TO A LEGALLY OPERATED MINE OR OTHER APPROVED SOURCE.

**MAINTENANCE PLAN**

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES 0.5 FEET DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE STAKES WILL BE SPACED 6 FEET APART UNLESS A WIRE BACKING IS USED WITH 8 FOOT STAKE SPACING.
4. INSPECT INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 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.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
6. INSPECT TEMPORARY SEDIMENT TRAPS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. 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. PLACE THE SEDIMENT THAT IS REMOVED IN THE DISPOSAL AREA, AND REPLACE THE PART OF THE GRAVEL FACING THAT IS IMPAIRED BY SEDIMENT.

IF THE SKIMMER IS CLOGGED WITH TRASH AND THESE 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.

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 STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FEET BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.

AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS, AND STABILIZE PROPERLY.

7. INSPECT EXCELISOR MATTING AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT REPAIR IMMEDIATELY. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE MATTING. ANY AREAS OF THE MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED. MONITOR AND REPAIR THE MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

8. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL EVENT. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

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, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.

AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

**STABILIZATION NOTES**

1. ALL DISTURBED AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY AND SLOPES WITHIN 21 CALENDAR DAYS.

**PERMANENT SEEDING SCHEDULE – MIXTURE 5CP**

SPECIES	RATE (LB./ACRE)
CENTPEDE GRASS	10-20

**Seeding Dates**

MARCH – JUNE

**Soil Amendments**

APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 300 LB/ACRE 10-10-10 FERTILIZER.

**Mulch**

DO NOT MULCH.

**Maintenance**

FERTILIZE VERY SPARINGLY LB/ACRE NITROGEN IN SPRING WITH NO PHOSPHORUS. CENTPEDE GRASS CANNOT TOLERATE HIGH PH OR EXCESS FERTILIZER.

**TEMPORARY SEEDING—LATE WINTER/EARLY SPRING**

**WINTER AND EARLY SPRING**

SPECIES	RATE (LB./ACRE)
Rye (GRAIN)	120
*ANNUAL LESPEDEZA (KOBÉ IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50

\*OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

**SUMMER**

SPECIES	RATE (LB./ACRE)
GERMAN MILLET	40

**FALL**

SPECIES	RATE (LB./ACRE)
RYE (GRAIN)	120

**Seeding dates**

COASTAL PLAIN – DEC.1–APR. 15 – LATE WINTER AND EARLY SPRING  
APRIL 15 – AUG. 15 – SUMMER  
AUG. 15 – DEC. 30 – FALL

**Soil amendments**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**Mulch**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**Maintenance**

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**GENERAL GRADING NOTES**

1. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF SUCH UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF THE DITCHING OPERATION BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF THE TRENCHING OPERATIONS SO AS TO AVOID AND PREVENT DAMAGE TO THE EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING BUT NOT LIMITED TO REPAIRS AND LOSS SERVICE REVENUE. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC...
2. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
3. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE NCDOT.
4. ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE OR BURNED IF PROPER PERMITS ARE RECEIVED.

**SITE NOTES**

1. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND R.O.W.'S PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
3. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
4. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
7. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
8. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
9. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENT SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER.
10. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL\* TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
11. ALL PERMITS RELATIVE TO PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION
12. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY, AND LOCAL CODES.
13. FOR BUILDING DIMENSIONS, SEE ARCHITECTURAL DRAWINGS.
14. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.
15. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
16. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

**GENERAL STORM SEWER NOTES**

1. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PENDER COUNTY AND THE STATE OF NORTH CAROLINA REQUIREMENTS AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
2. BEDDING FOR ALL STORM SEWER PIPE SHALL BE AS SPECIFIED ON THE DRAWINGS, PROJECT SPECIFICATIONS, AND MANUFACTURER SPECIFICATIONS.
3. ALL STORM SEWER PIPES ON PRIVATE PROPERTY TO BE HDPE ADS N-12 OR EQUIVALENT, UNLESS OTHERWISE SPECIFIED. ALL STORM SEWER PIPES LOCATED WITHIN THE PUBLIC ROW TO BE RCP CLASS III.
4. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON PLANS.

**EXISTING UTILITY NOTES**

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.

**UTILITY CONTACTS:**

1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING AND DIGGING. 1-800-632-4949

**NOTICE REQUIRED**

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED BY CONTRACTOR PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO ANY EXCAVATION OR DEMOLITION.

CONTACT "CAROLINA ONE CALL" AT 1-800-632-4949

EMERGENCY DIAL 911 POLICE - FIRE - RESCUE

**1. GROUND STABILIZATION**

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HOW ZONES)

**MDP 2021-35 CONDITIONS OF APPROVAL:**

- A) CROSSWALKS SHALL BE PROVIDED AT ALL APPROPRIATE LOCATIONS WHERE A SIDEWALK WOULD CROSS A STREET AND SHALL BE DEMONSTRATED ON ALL PRELIMINARY PLANS ASSOCIATED WITH THIS MASTER DEVELOPMENT PLANS.
- B) THE APPLICANT SHALL BE REQUIRED TO DESIGN THEIR STORMWATER MANAGEMENT SYSTEM FOR 50-YEAR STORM EVENTS TO MITIGATE POST STORM EVENT RUNOFF.
- C) THE APPLICANT SHALL BE REQUIRED TO CONSTRUCT A MULTI-USE PATH ALONG SIDBURY ROAD (SR 1572) TO INCREASE PEDESTRIAN CONNECTIVITY WITHIN THE DEVELOPMENT AND OUTSIDE THE DEVELOPMENT FOR FUTURE RESIDENTS OF PENDER COUNTY TO UTILIZE.
- D) CURRENTLY, THE NORTHERN PROPERTY LINE REQUIRES AN A BUFFER AS THE ADJACENT TRACT IS VACANT. HOWEVER, A COLLECTOR STREET, HUGGINS ROAD, WILL BE BUILT ALONG THE SHARED PROPERTY LINE. THIS WOULD REQUIRE A CHANGE IN BUFFERING STANDARDS FROM A BUFFER A TO A BUFFER B. THE APPLICANT HAS CHOSEN TO PLACE A BUFFER C ALONG THE SHARED PROPERTY LINE, WHICH IS A DENSER BUFFER STANDARD THAN EITHER BUFFER A OR BUFFER B. THEREFORE, THE DEVELOPER SHALL BE REQUIRED TO CONSTRUCT A C BUFFER ALONG THE SHARED PROPERTY LINE WITH THE FUTURE HUGGINS ROAD.
- E) THE APPLICANT SHALL BE REQUIRED TO CONSTRUCT A C-1 BUFFER WITH AN EIGHT (8) FOOT FENCE ALONG THE SIDBURY A EASEMENT.
- F) THE APPLICANT SHALL BE REQUIRED TO CONSTRUCT A C-1 BUFFER WITH AN EIGHT (8) FOOT FENCE ALONG PARCELS: 3271-11-0760-0000 AND 3271-11-2651-0000.

No.	Revision	Date	By

Designer	GSP	Scale	
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Topsail Township**      **Sagebrook**      **Pender County**      **North Carolina**

**GENERAL NOTES**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC**  
ENGINEERING

213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

Sheet No.  
**C-1**





No.	Revision	Date	By

Designer: GSP  
 Drawn By: GSP  
 License #: P-0718  
 Scale: 1"=50'  
 Date: August, 2025  
 Job No.: 2020-0005

**Sagebrook**  
 Pender County  
 North Carolina  
 Topsail Township

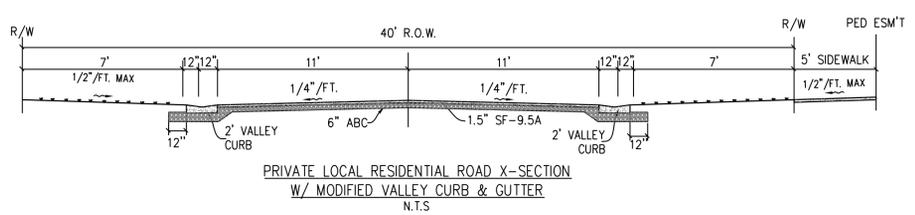
**EXISTING CONDITIONS**

PREPARED FOR:  
 McAdams Homes, LLC  
 213 Racine Drive, Suite 100  
 Wilmington, NC 28403  
 910-799-3006

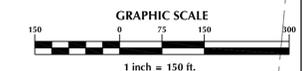
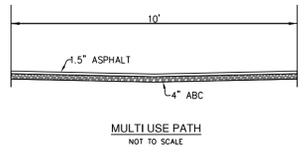
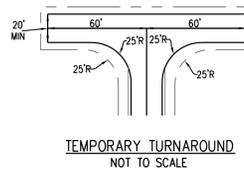
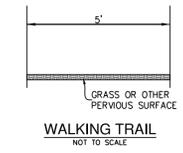
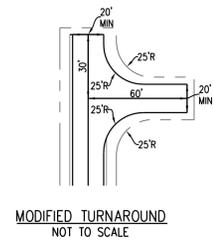
**GSP CONSULTING, PLLC**  
 ENGINEERING  
 213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gspace@gsp-consulting.com

Sheet No.  
**C-2.1**





- NOTE:
1. THE DEVELOPER OR HOA TO BE RESPONSIBLE FOR MAINTENANCE OF COMMON AREAS, DRAINAGE EASEMENTS AND THE STORMWATER SYSTEM.
  2. ALL DRAINAGE EASEMENTS MUST REMAIN FREE OF OBSTRUCTIONS, INCLUDING FENCES.
  3. ALL IMPERVIOUS SURFACES MUST DRAIN TO THE ENGINEERED STORMWATER SYSTEM.



No.	Revision	Date	By

Designer	GSP	Scale	1"=150'
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

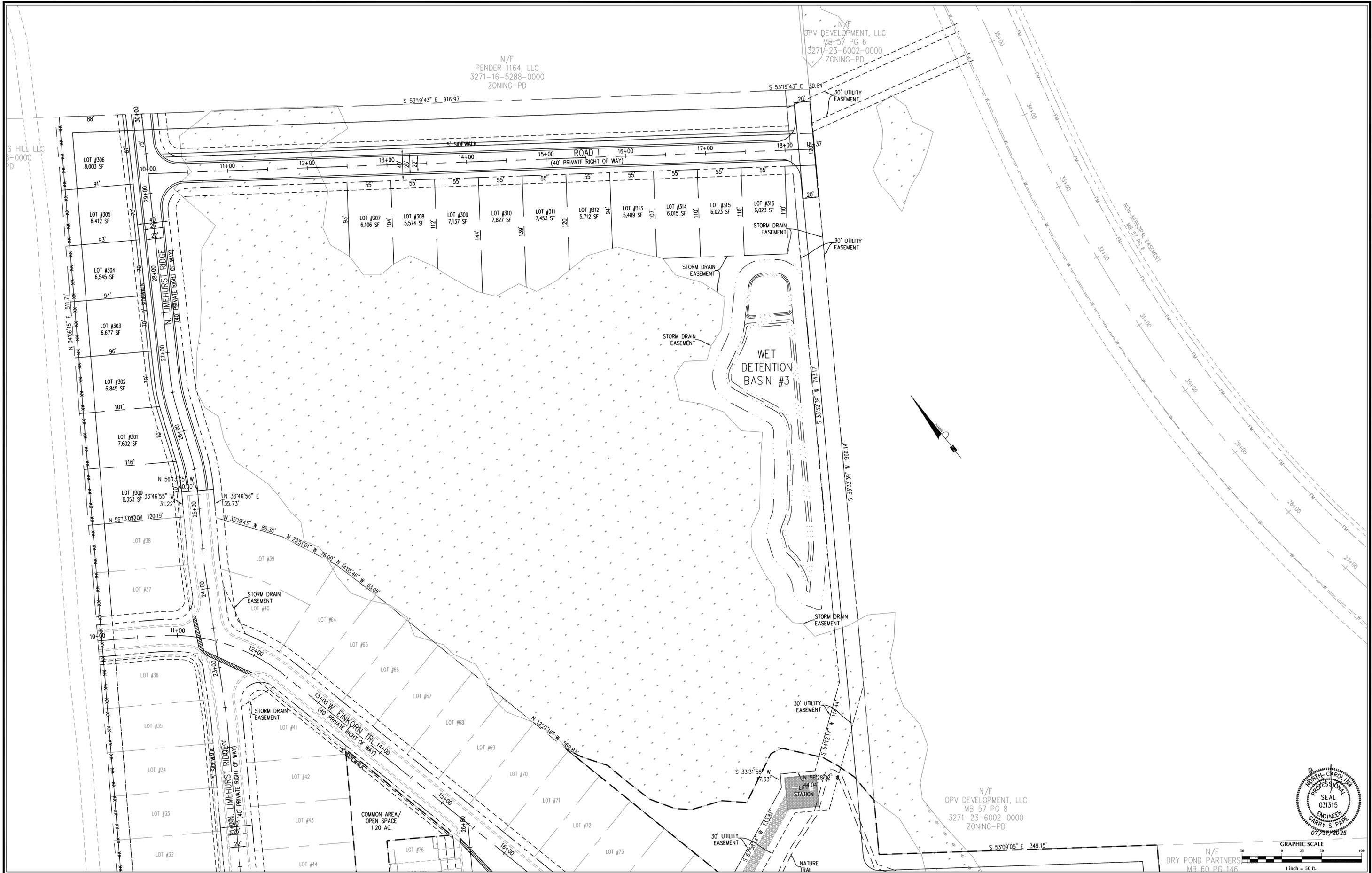
**Sagebrook**  
 Pender County  
 North Carolina  
 Topsail Township

## OVERALL SITE PLAN

PREPARED FOR:  
 McAdams Homes, LLC  
 213 Racine Drive, Suite 100  
 Wilmington, NC 28403  
 910-799-3006

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 ENGINEERING  
 213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

Sheet No.  
**C-3.1**



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Designer	GSP	Scale	1"=50'
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
 Pender County  
 North Carolina  
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## SITE PLAN

PREPARED FOR:  
 McAdams Homes, LLC  
 213 Racine Drive, Suite 100  
 Wilmington, NC 28403  
 910-799-3006

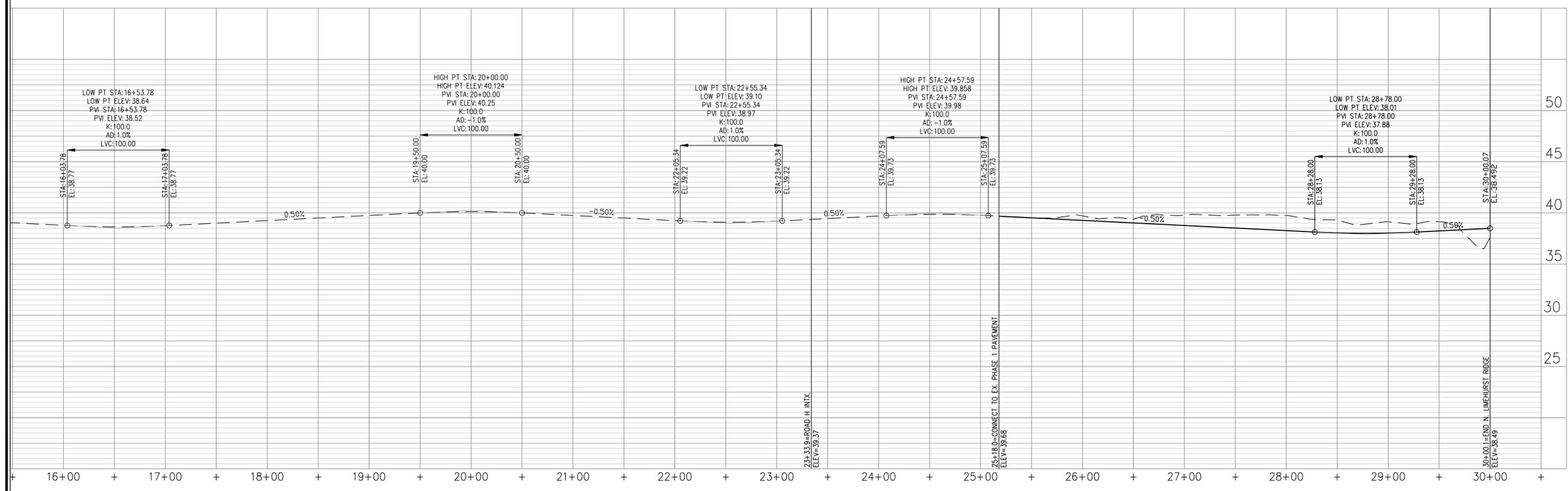
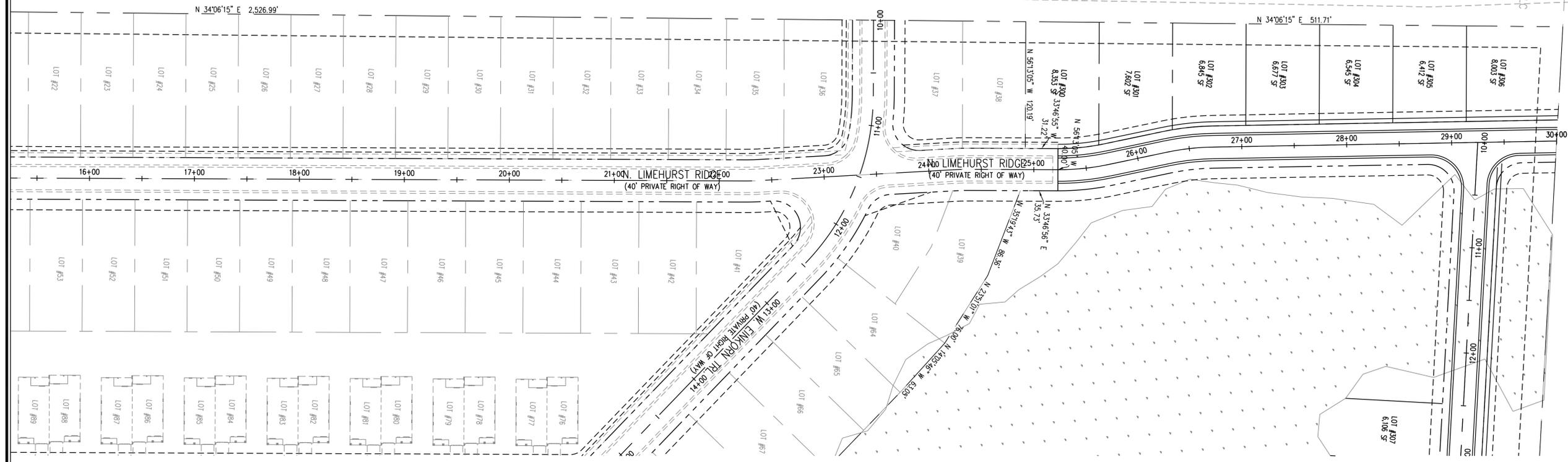
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Sheet No.  
**C-3.2**



N/F  
S OF SCOTT'S HILL, LLC  
61-94-1698-0000  
ZONING-PD

N/F  
S OF SCOTT'S HILL, LLC  
3261-94-1698-0000  
ZONING-PD



No.	Revision	Date	By

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Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

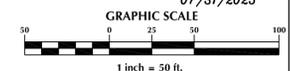
**Sagebrook**  
Pender County  
North Carolina  
Topsail Township

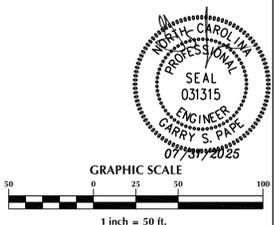
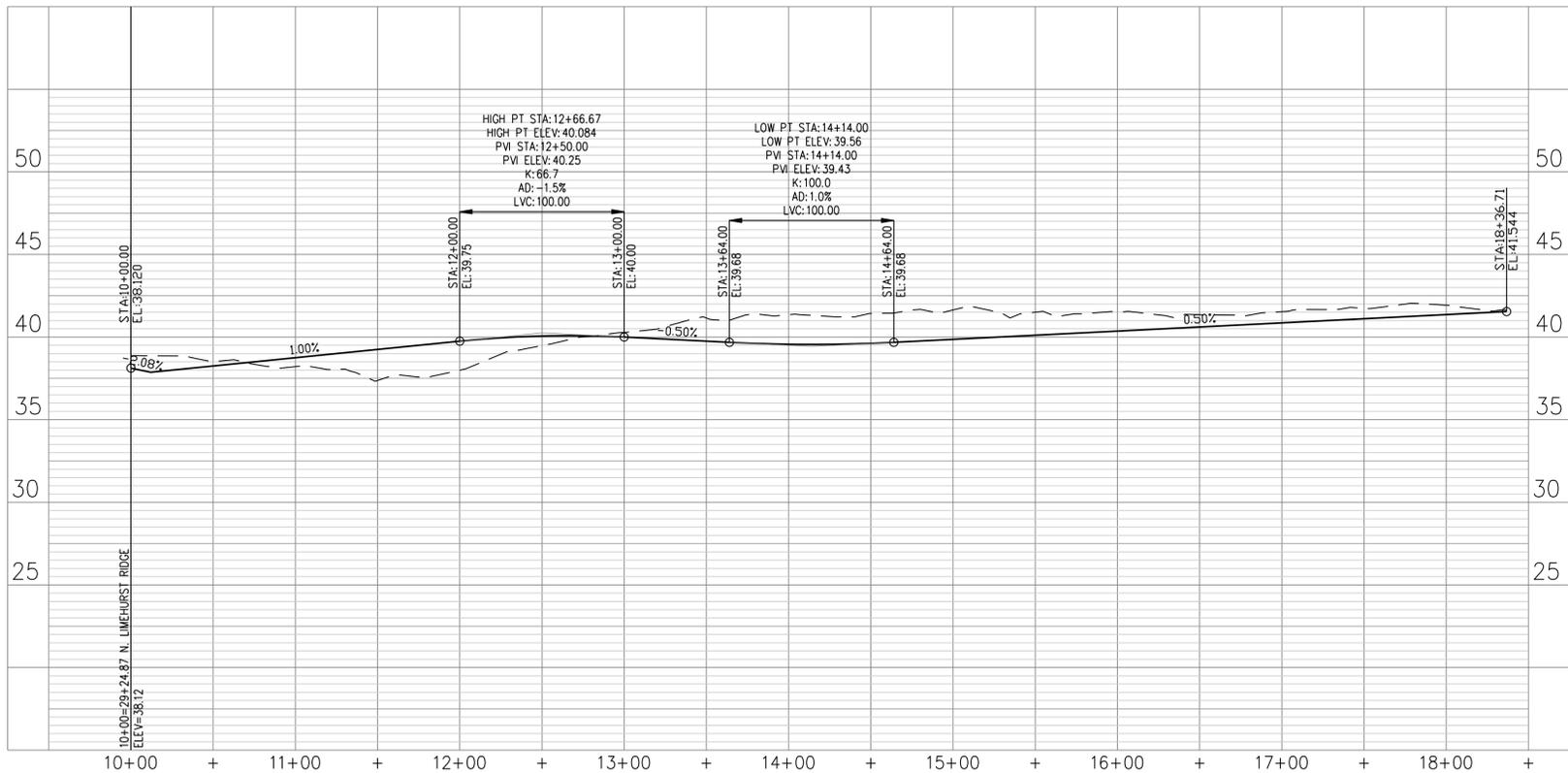
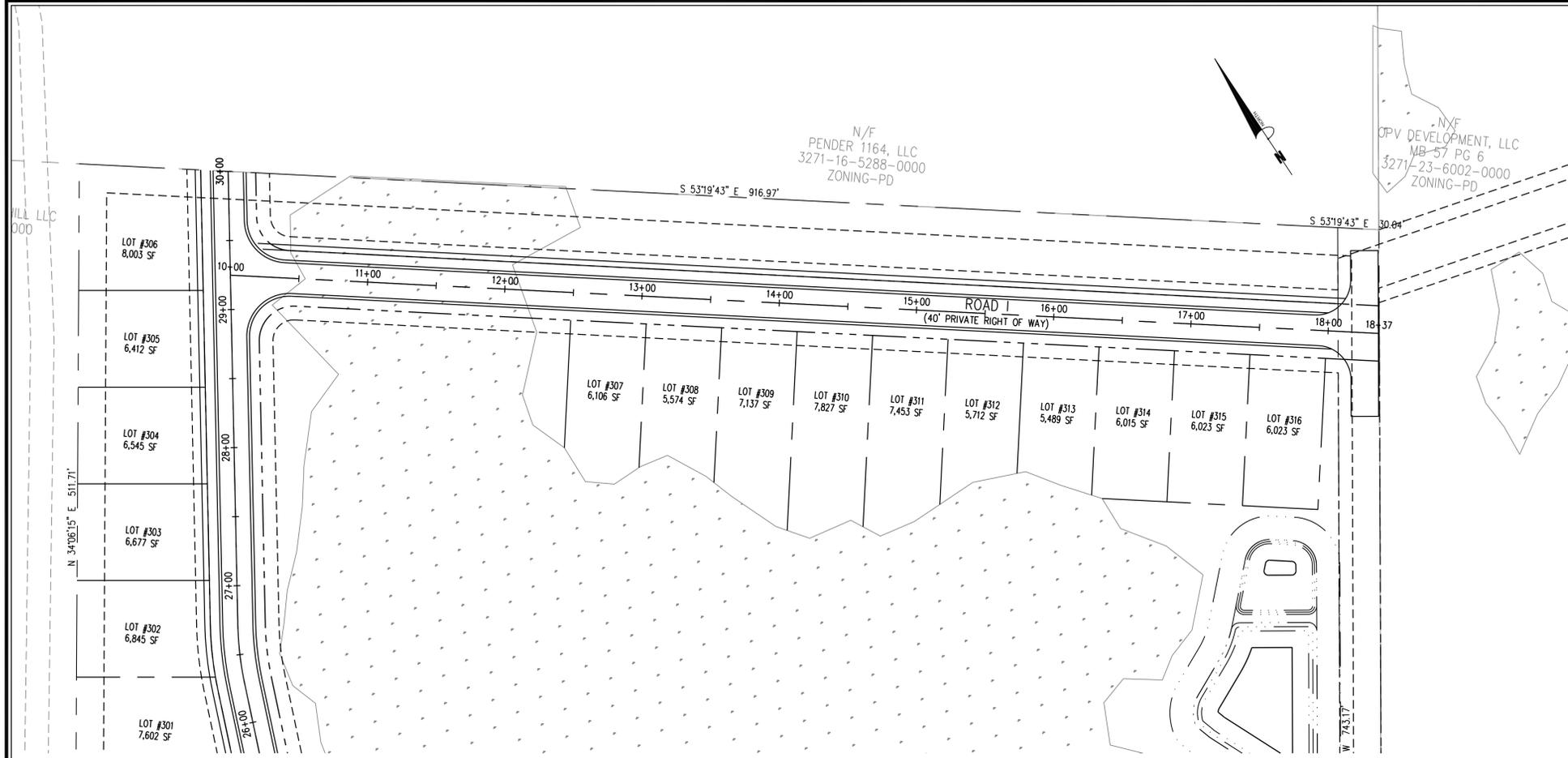
**N. LIMEHURST RIDGE  
PLAN & PROFILE**

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McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC**  
ENGINEERING  
213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gape@gsp-consulting.com

Sheet No.  
**C-3.3**





No.	Revision	Date	By

Designer	GSP	Scale	
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
Pender County  
North Carolina

**ROAD I  
PLAN & PROFILE**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC  
ENGINEERING**  
213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

Sheet No.  
**C-3.4**

N/F  
BLAKES OF SCOTTS HILL LLC  
3261-94-1698-0000  
ZONING-PD

N/F  
PENDER 1164, LLC  
3271-16-5288-0000  
ZONING-PD

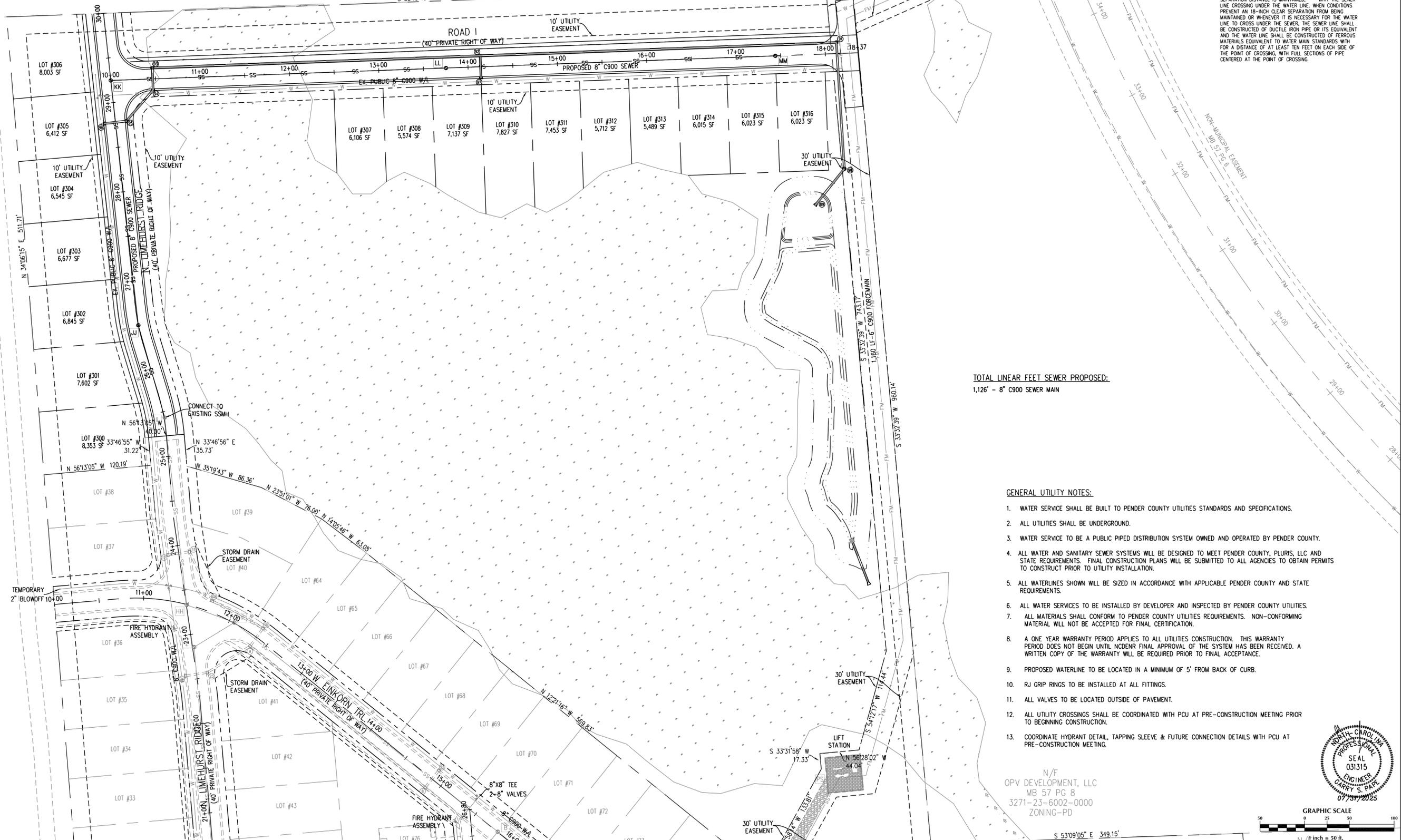
N/F  
OPV DEVELOPMENT, LLC  
MB 57 PG 6  
3271-23-6002-0000  
ZONING-PD

CONNECT TO  
EXISTING 12" W/L  
W/12"x8" TAPPING  
SLEEVE & VALVE  
1-8" VALVE

CONNECT TO  
EXISTING  
FORCEMAIN

**GENERAL SEWER NOTES:**

1. ALL WATERLINES TO HAVE MINIMUM 10' SEPARATION FROM ALL SEWER LINES, MANHOLES AND CLEANOUTS & TO HAVE 3" OF COVER AND 18" CLEARANCE WHERE WATER CROSSES OTHER UTILITY LINES
2. ANY SANITARY SEWER SYSTEM OR ANY PORTION THEREOF, INCLUDING THE PUMP CHAMBER AND SERVICE CONNECTION PIPE TO THE COLLECTION MAIN, SHALL BE LOCATED AT LEAST A MINIMUM OF 10-FEET FROM ANY WATER LINE. SEWER LINES MAY CROSS A WATER LINE IF 18-INCH CLEAR SEPARATION DISTANCE IS MAINTAINED. WITH THE SEWER LINE CROSSING UNDER THE WATER LINE, WHEN CONDITIONS PRESENT AN 18-INCH CLEAR SEPARATION FROM BEING MAINTAINED OR WHENEVER IT IS NECESSARY FOR THE WATER LINE TO CROSS UNDER THE SEWER, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE OR ITS EQUIVALENT AND THE WATER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS EQUIVALENT TO WATER MAIN STANDARDS WITH FOR A DISTANCE OF AT LEAST TEN FEET ON EACH SIDE OF THE POINT OF CROSSING, WITH FULL SECTIONS OF PIPE CENTERED AT THE POINT OF CROSSING.

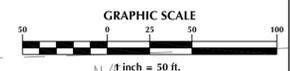


**TOTAL LINEAR FEET SEWER PROPOSED:**  
1,126' - 8" C900 SEWER MAIN

**GENERAL UTILITY NOTES:**

1. WATER SERVICE SHALL BE BUILT TO PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
2. ALL UTILITIES SHALL BE UNDERGROUND.
3. WATER SERVICE TO BE A PUBLIC PIPED DISTRIBUTION SYSTEM OWNED AND OPERATED BY PENDER COUNTY.
4. ALL WATER AND SANITARY SEWER SYSTEMS WILL BE DESIGNED TO MEET PENDER COUNTY, PLURIS, LLC AND STATE REQUIREMENTS. FINAL CONSTRUCTION PLANS WILL BE SUBMITTED TO ALL AGENCIES TO OBTAIN PERMITS TO CONSTRUCT PRIOR TO UTILITY INSTALLATION.
5. ALL WATERLINES SHOWN WILL BE SIZED IN ACCORDANCE WITH APPLICABLE PENDER COUNTY AND STATE REQUIREMENTS.
6. ALL WATER SERVICES TO BE INSTALLED BY DEVELOPER AND INSPECTED BY PENDER COUNTY UTILITIES.
7. ALL MATERIALS SHALL CONFORM TO PENDER COUNTY UTILITIES REQUIREMENTS. NON-CONFORMING MATERIAL WILL NOT BE ACCEPTED FOR FINAL CERTIFICATION.
8. A ONE YEAR WARRANTY PERIOD APPLIES TO ALL UTILITIES CONSTRUCTION. THIS WARRANTY PERIOD DOES NOT BEGIN UNTIL NCDENR FINAL APPROVAL OF THE SYSTEM HAS BEEN RECEIVED. A WRITTEN COPY OF THE WARRANTY WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE.
9. PROPOSED WATERLINE TO BE LOCATED IN A MINIMUM OF 5' FROM BACK OF CURB.
10. RJ GRIP RINGS TO BE INSTALLED AT ALL FITTINGS.
11. ALL VALVES TO BE LOCATED OUTSIDE OF PAVEMENT.
12. ALL UTILITY CROSSINGS SHALL BE COORDINATED WITH PCU AT PRE-CONSTRUCTION MEETING PRIOR TO BEGINNING CONSTRUCTION.
13. COORDINATE HYDRANT DETAIL, TAPPING SLEEVE & FUTURE CONNECTION DETAILS WITH PCU AT PRE-CONSTRUCTION MEETING.

N/F  
OPV DEVELOPMENT, LLC  
MB 57 PG 8  
3271-23-6002-0000  
ZONING-PD



No.	Revision	Date	By

Designer	GSP	Scale	1"=50'
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
Pender County  
North Carolina

**UTILITY PLAN**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC**  
ENGINEERING  
213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

Sheet No.  
**C-4.1**

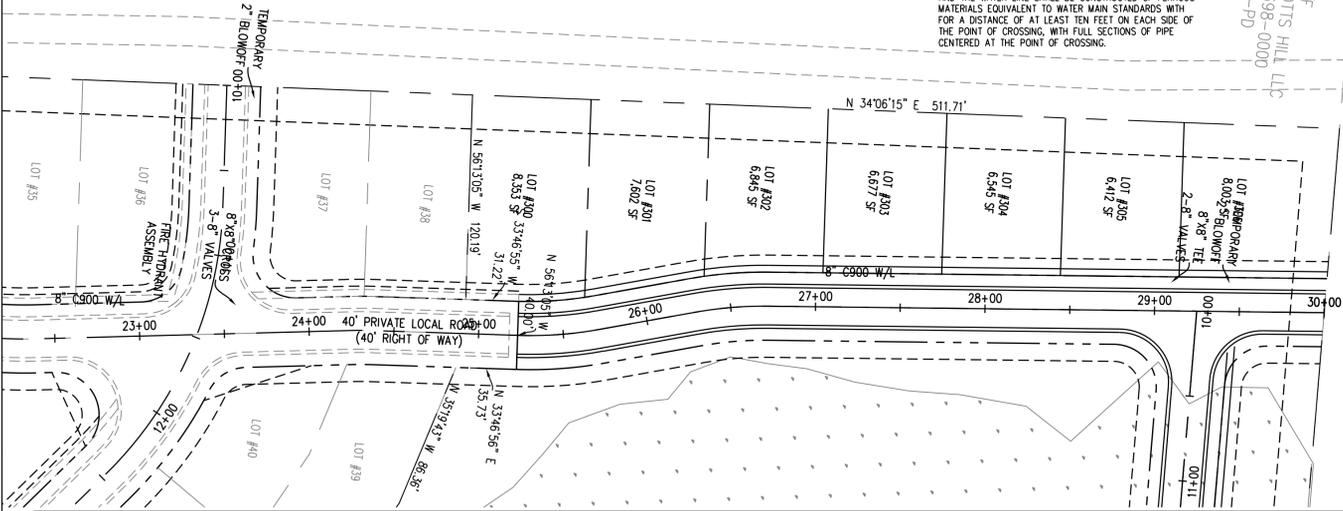
**GENERAL SEWER NOTES:**

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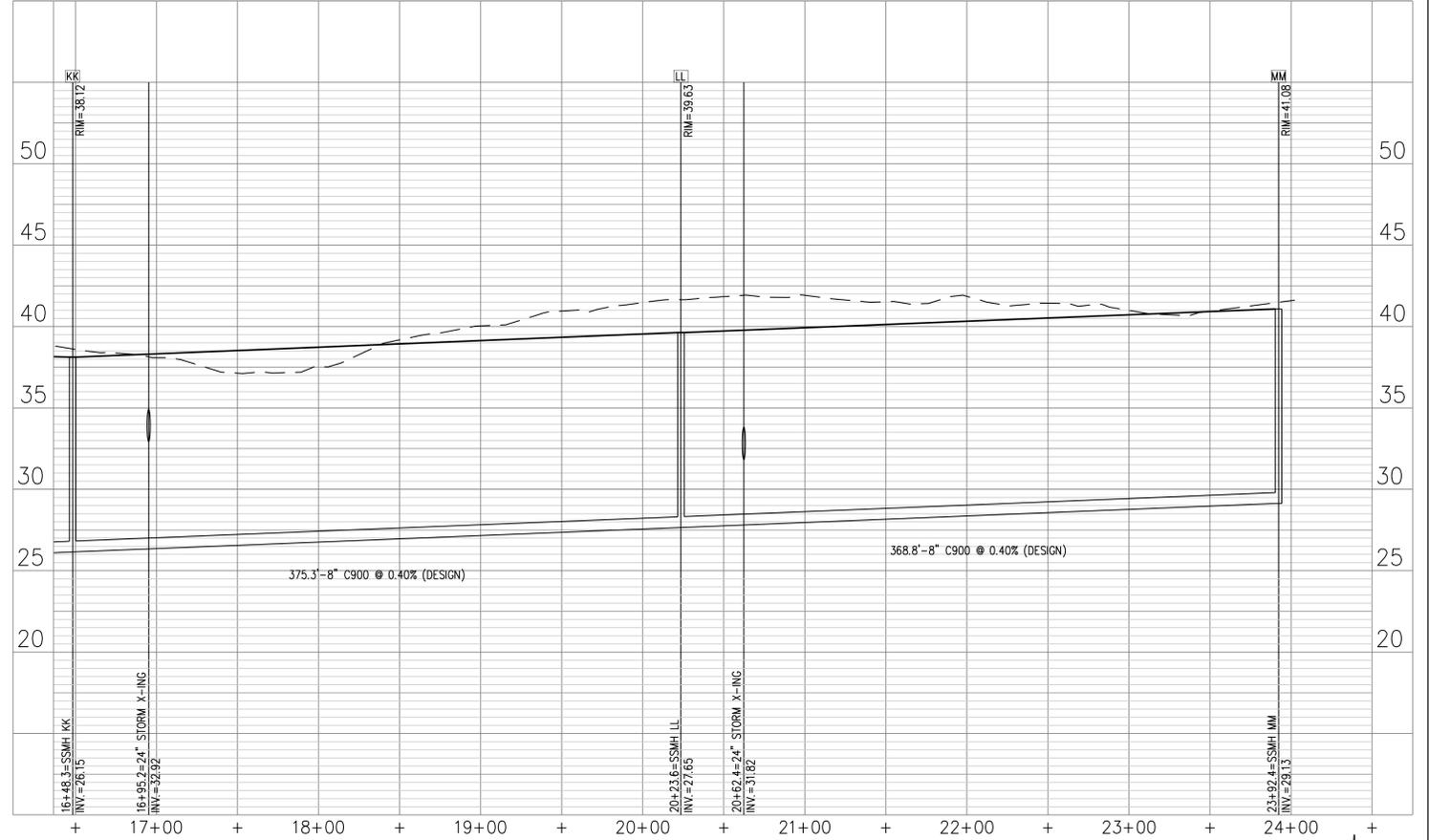
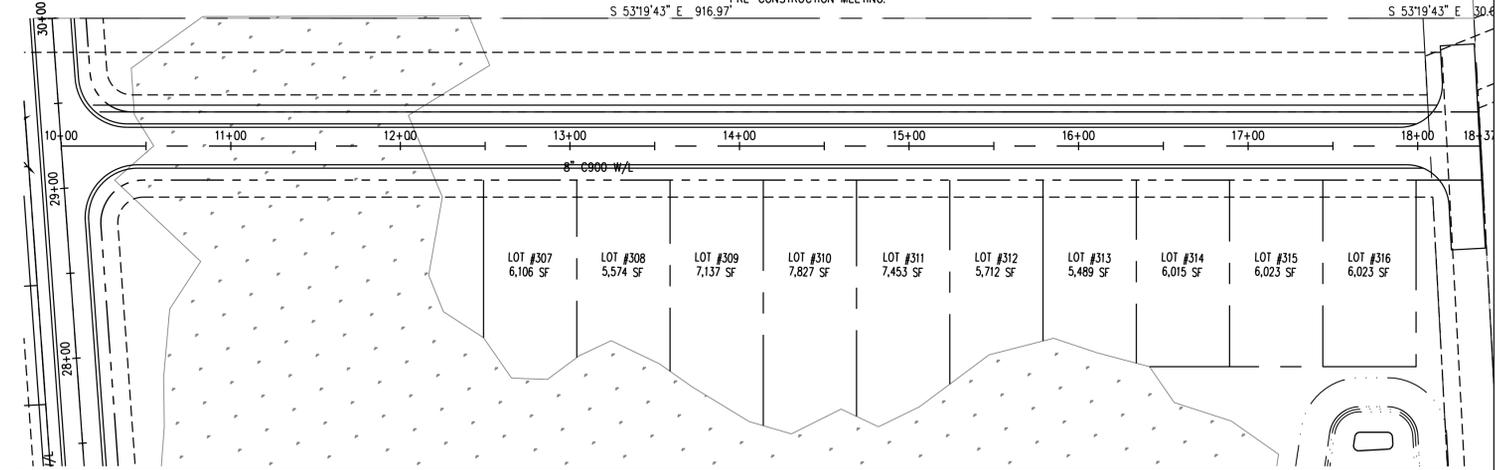
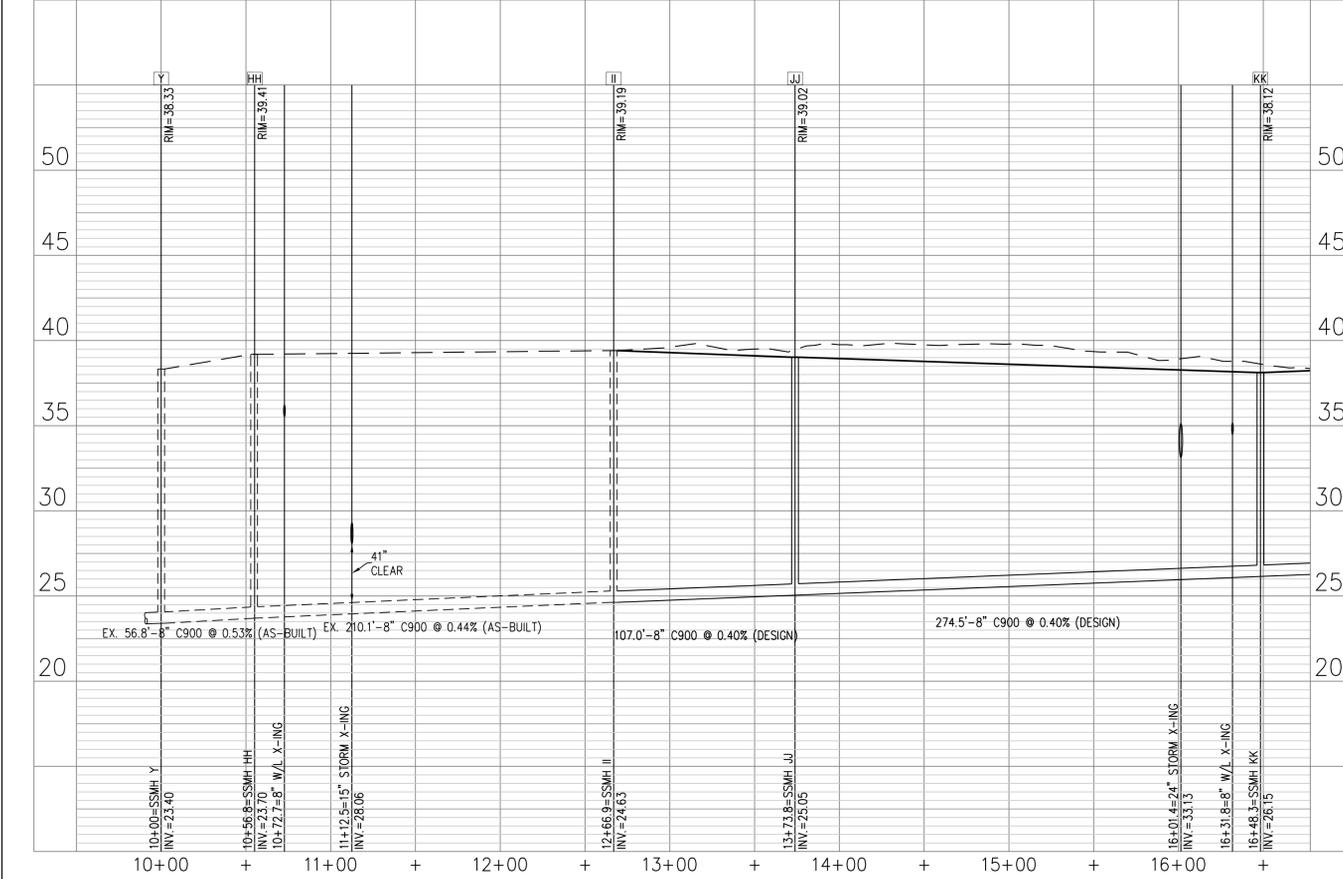
**GENERAL UTILITY NOTES:**

- WATER SERVICE SHALL BE BUILT TO PENDER COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.
- ALL UTILITIES SHALL BE UNDERGROUND.
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- PROPOSED WATERLINE TO BE LOCATED IN A MINIMUM OF 5' FROM BACK OF CURB.
- RJ GRIP RINGS TO BE INSTALLED AT ALL FITTINGS.
- ALL VALVES TO BE LOCATED OUTSIDE OF PAVEMENT.
- ALL UTILITY CROSSINGS SHALL BE COORDINATED WITH PCU AT PRE-CONSTRUCTION MEETING PRIOR TO BEGINNING CONSTRUCTION.
- COORDINATE/HYDRANT DETAIL, TAPPING SLEEVE & FUTURE CONNECTION DETAILS WITH PCU AT PRE-CONSTRUCTION MEETING.



N/E  
BLAKES OF SCOTT'S HILL LLC  
3761-94-1698-0000  
ZONING-PD



No.	Revision	Date	By

Designer	GSP	Scale	1"=50'
Drawn By	GSP	Date	August, 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
Pender County  
North Carolina  
Topsail Township

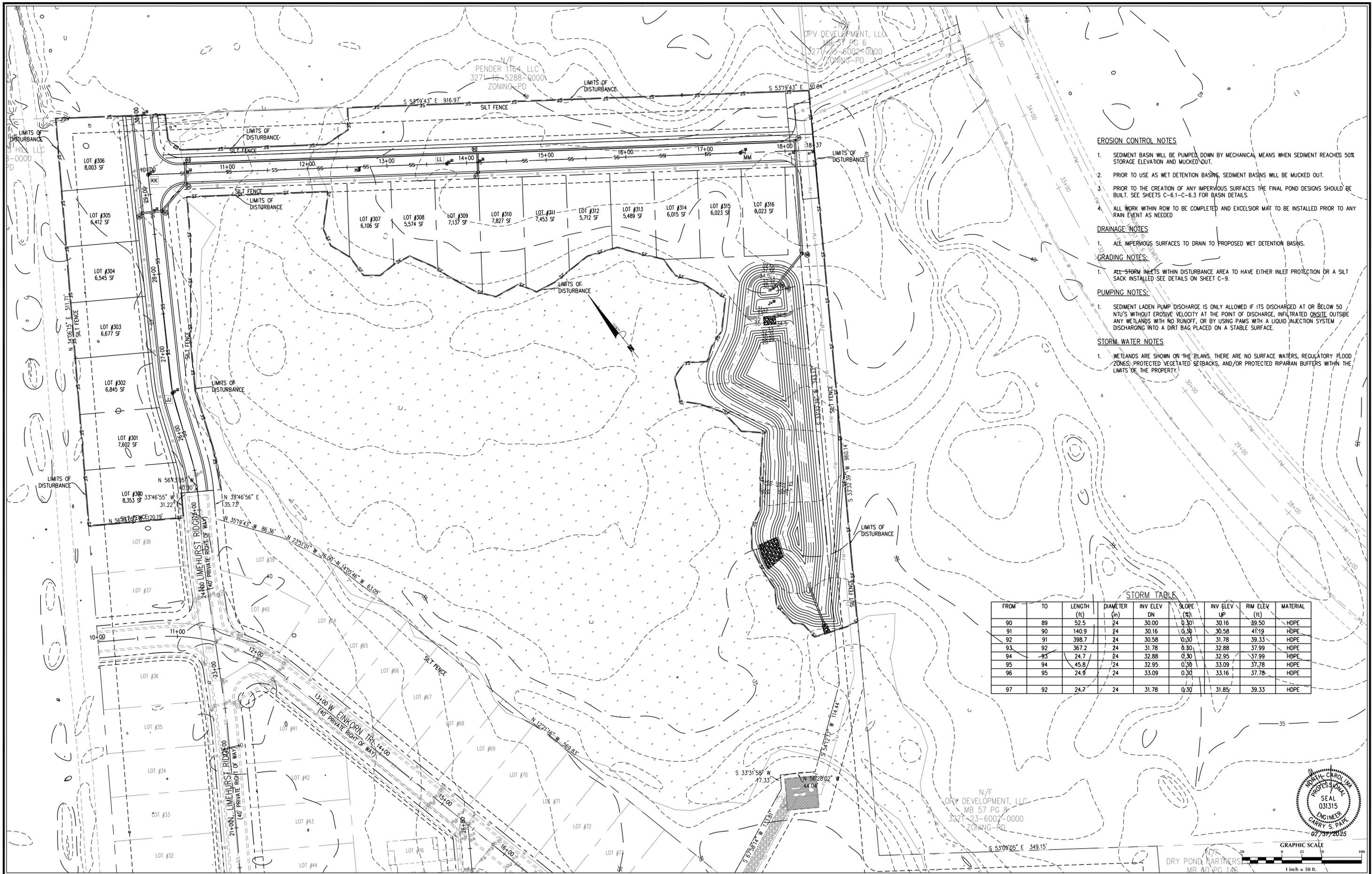
**UTILITY PROFILES**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC**  
ENGINEERING  
213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gspape@gsp-consulting.com

Sheet No.  
**C-4.2**





**EROSION CONTROL NOTES**

1. SEDIMENT BASIN WILL BE PUMPED DOWN BY MECHANICAL MEANS WHEN SEDIMENT REACHES 50% STORAGE ELEVATION AND MUCKED OUT.
2. PRIOR TO USE AS WET DETENTION BASINS, SEDIMENT BASINS WILL BE MUCKED OUT.
3. PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL POND DESIGNS SHOULD BE BUILT. SEE SHEETS C-6.1-C-6.3 FOR BASIN DETAILS.
4. ALL WORK WITHIN ROW TO BE COMPLETED AND EXCLOSUR MAT TO BE INSTALLED PRIOR TO ANY RAIN EVENT AS NEEDED

**DRAINAGE NOTES**

1. ALL IMPERVIOUS SURFACES TO DRAIN TO PROPOSED WET DETENTION BASINS.

**GRADING NOTES:**

1. ALL STORM INLETS WITHIN DISTURBANCE AREA TO HAVE EITHER INLET PROTECTION OR A SILT SACK INSTALLED SEE DETAILS ON SHEET C-9.

**PUMPING NOTES:**

1. SEDIMENT LADEN PUMP DISCHARGE IS ONLY ALLOWED IF ITS DISCHARGED AT OR BELOW 50 NTU'S WITHOUT EROSION VELOCITY AT THE POINT OF DISCHARGE, INFILTRATED ONSITE OUTSIDE ANY WETLANDS WITH NO RUNOFF, OR BY USING PUMPS WITH A LIQUID INJECTION SYSTEM DISCHARGING INTO A DIRT BAG PLACED ON A STABLE SURFACE.

**STORM WATER NOTES**

1. WETLANDS ARE SHOWN ON THE PLANS, THERE ARE NO SURFACE WATERS, REGULATORY FLOOD ZONES, PROTECTED VEGETATED SETBACKS, AND/OR PROTECTED RIPARIAN BUFFERS WITHIN THE LIMITS OF THE PROPERTY.

**STORM TABLE**

FROM	TO	LENGTH (ft)	DIAMETER (in)	INV ELEV DN	SLOPE (%)	INV ELEV UP	RIM ELEV (ft)	MATERIAL
90	89	52.5	24	30.00	0.30	30.16	39.50	HDPE
91	90	140.9	24	30.16	0.30	30.58	41.19	HDPE
92	91	398.7	24	30.58	0.30	31.78	39.33	HDPE
93	92	367.2	24	31.78	0.30	32.88	37.99	HDPE
94	93	24.7	24	32.88	0.30	32.95	37.99	HDPE
95	94	45.8	24	32.95	0.30	33.09	37.78	HDPE
96	95	24.9	24	33.09	0.30	33.16	37.78	HDPE
97	92	24.7	24	31.78	0.30	31.85	39.33	HDPE



No.	Revision	Date	By

Designer	GSP	Scale	1"=50'
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

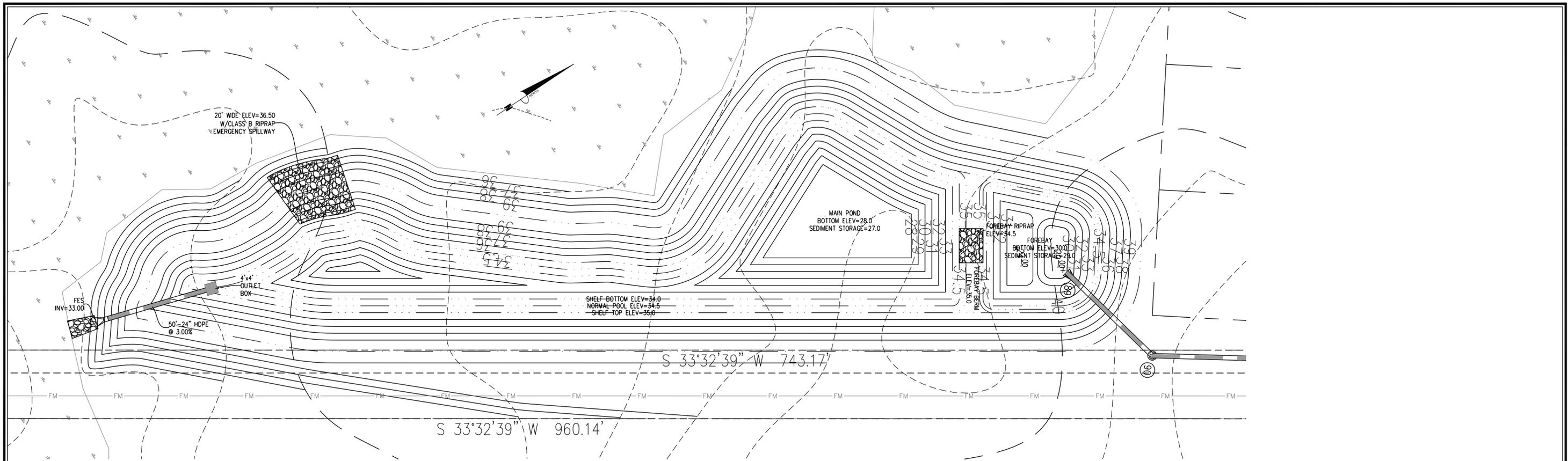
**Sagebrook**  
 Pender County  
 North Carolina  
 Topsail Township

**GRADING, DRAINAGE & EROSION & SEDIMENT CONTROL PLAN**

PREPARED FOR:  
 McAdams Homes, LLC  
 213 Racine Drive, Suite 100  
 Wilmington, NC 28403  
 910-799-3006

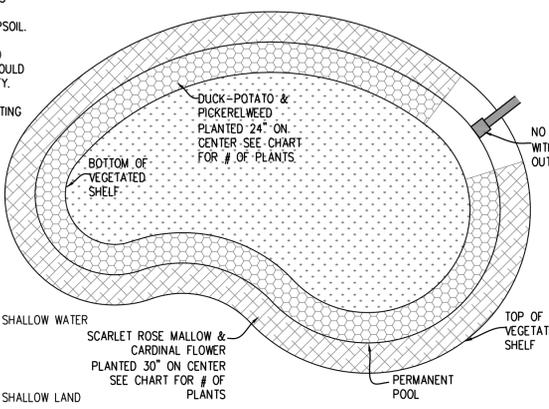
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 ENGINEERING  
 213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

Sheet No.  
**C-5.1**



**NOTES:**

1. NO PLANTINGS WITHIN 10' OF OUTLET STRUCTURE.
2. BECAUSE MOST STORMWATER BASINS ARE EXCAVATED TO DEEP SUB-SOILS, THEY OFTEN LACK THE NUTRIENTS AND ORGANIC MATTER NEEDED TO SUPPORT VIGOROUS GROWTH OF PLANTS. ALL LANDSCAPE MATERIAL, INCLUDING GRASS, SHOULD BE PLANTED IN GOOD TOPSOIL. NATIVE UNDERLYING SOILS MAY BE SUITABLE FOR PLANTING IF AMENDED WITH 4 INCHES OF WELL-AGED COMPOST TILLED INTO THE SUBGRADE. COMPOST SHOULD MEET SPECIFICATIONS FOR GRADE A COMPOST QUALITY.
3. A MINIMUM TWO-YEAR WARRANTY PERIOD STIPULATING REQUIREMENTS FOR PLANT SURVIVAL/REPLACEMENT.

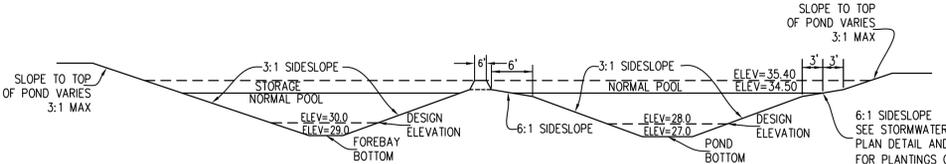


SHALLOW WATER COMMUNITY (NORMAL POOL TO SHELF BOTTOM) = 2,188 S.F.  
@ 50 PLANTS PER 200 SF (24\"/>

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	274	Sagittaria latifolia	Duck Potato	CONT.	4\"/>		
HERBACEOUS	274	Pontederia cordata	Pickerelweed	CONT.	4\"/>		

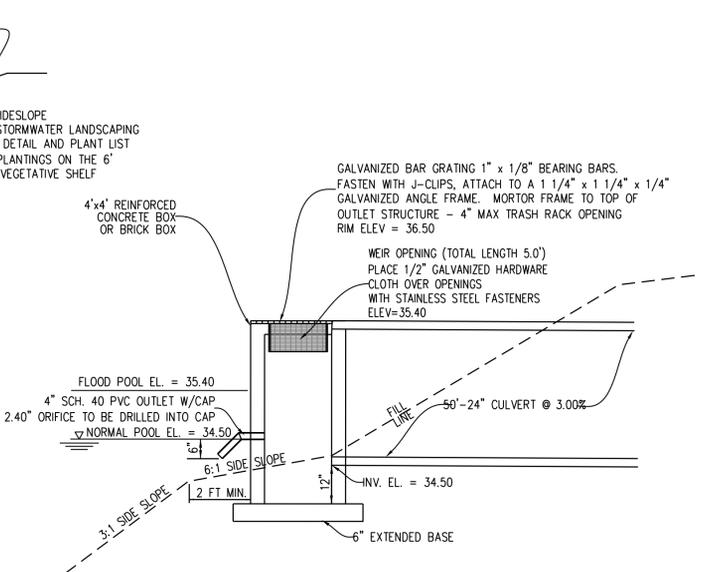
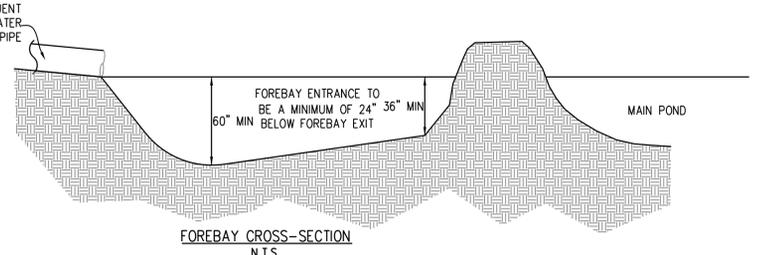
SHALLOW LAND COMMUNITY (NORMAL POOL TO SHELF TOP) = 2,220 S.F.  
@ 50 PLANTS PER 200 SF (30\"/>

PLANT TYPE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CALIPER	HEIGHT	NOTES
HERBACEOUS	278	Hibiscus coccineus	Scarlet Rose Mallow	CONT.	4\"/>		
HERBACEOUS	278	Lobelia cardinalis	Cardinal Flower	CONT.	4\"/>		

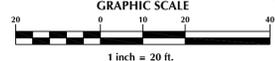
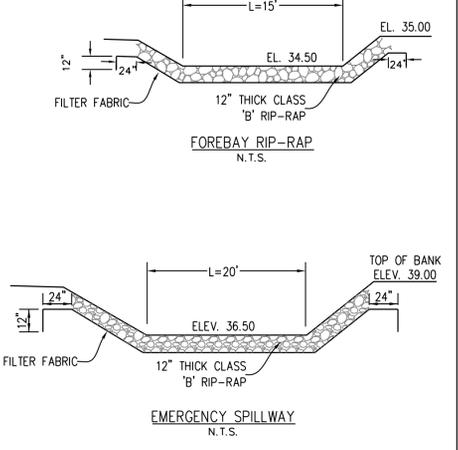


**POND CROSS-SECTION**  
N.T.S.

NORMAL POOL ELEVATION	SHELF BOTTOM ELEVATION	POND DEPTH (FT)	SHELF BOTTOM AREA (SF)	POND BOTTOM AREA (SF)	SURFACE AREA PROVIDED (SF)	SURFACE AREA REQUIRED (SF)	AVERAGE POND DEPTH (FT)
34.50	34.00	6.0	9,190	1,683	11,399	8,846	3.42



- NOTES:**
1. DESIGN ELEVATIONS FOR WET DETENTION BASIN ARE TO AN ELEVATION OF 28.0 IN THE MAIN POND AND 30.0 IN THE FOREBAY WITH SEDIMENT STORAGE DOWN TO 27.0 IN THE MAIN POND AND 29.0 IN THE FOREBAY.
  2. ALL IMPERVIOUS SITE AREA TO BE DRAINED TO PROPOSED STORM SYSTEM AND DISCHARGED TO THE WET DETENTION POND.
  3. POND WILL BE PUMPED DOWN BY MECHANICAL MEANS IN CASE OF EMERGENCY. PRIOR TO USE AS A WET DETENTION BASIN, SEDIMENT BASIN WILL BE MUCKED OUT & PRIOR TO THE CREATION OF ANY IMPERVIOUS SURFACES THE FINAL POND DESIGN SHOULD BE BUILT POND SIDE SLOPES TO BE SODDED WITH CENTIPEDE GRASS OR EQUIVALENT.
  4. ALL SLOPES ABOVE PERMANENT POOL TO BE 3:1 MAX.



No.	Revision	Date	By

Designer	GSP	Scale	1"=20'
Drawn By	GSP	Date	August, 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
Pender County  
North Carolina

**Topsail Township**

**WET DETENTION BASIN #3 DETAILS**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

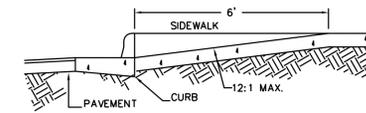
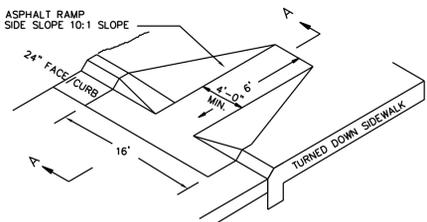
**GSP CONSULTING, PLLC**  
ENGINEERING

213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gspape@gsp-consulting.com

Sheet No.  
**C-6.1**

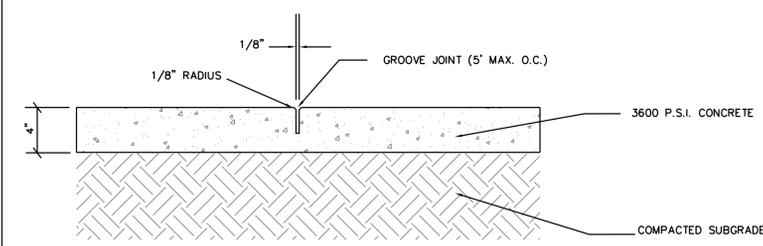
GENERAL NOTES

- I. LOCATION OF WHEELCHAIR RAMPS:
  1. IN ACCORDANCE WITH THE RATIFIED HOUSE BILL 1296, ALL STREET CURBS IN NORTH CAROLINA BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTERS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
  2. WHEELCHAIR RAMPS SHOULD BE LOCATED AS INDICATED IN DETAIL DRAWINGS, HOWEVER EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.
- II. CONSTRUCTION NOTES:
  1. NO SLOPE SHALL EXCEED 1"=1" (12:1) ON THE RAMP OR SIDEWALK.
  2. IN NO CASE SHALL THE WIDTH OF WHEELCHAIR RAMPS BE LESS THAN 40" (3'-4"). WIDTHS MAY EXCEED 40" IF NECESSARY.
  3. USE CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
  4. 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
  5. CONSTRUCTION METHODS SHALL CONFORM WITH THOSE OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
- III. ADDITIONAL NOTES:
  1. THE INSIDE PEDESTRIAN CROSSWALK LINES SHALL BE ESTABLISHED BY BISECTING THE INTERSECTION RADII WHERE MARKED (SEE NOTE 6).
  2. THE WHEELCHAIR RAMP SHALL BE LOCATED SO THAT THE BEGINNING OF THE WHEEL CHAIR RAMP WILL BE TWO FEET FROM THE INSIDE PEDESTRIAN CROSSWALK LINE.
  3. THE WIDTH OF THE PEDESTRIAN CROSSWALK SHALL BE 10 FEET UNLESS A GREATER WIDTH IS REQUIRED TO ACCOMMODATE THE PEDESTRIAN TRAFFIC.
  4. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN, OR OTHER LEGAL REQUIREMENTS.
  5. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
  6. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402.

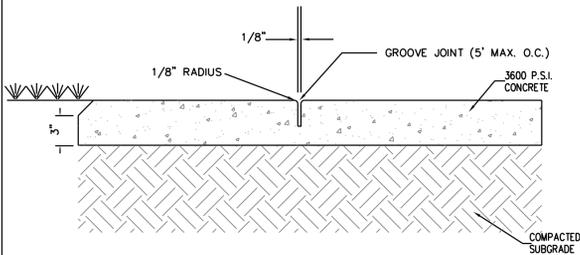


SECTION A-A  
WHEELCHAIR RAMP (DROP CURB)  
WHEELCHAIR RAMP  
N.T.S.

GUIDELINES FOR WHEELCHAIR RAMPS

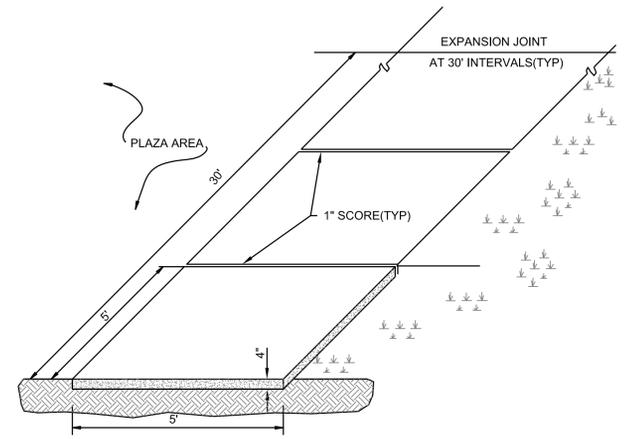


CONCRETE SIDEWALK DETAIL



SIDEWALK ADJACENT TO GRASSED AREAS AND PLANTERS

CONCRETE SIDEWALK  
N.T.S.

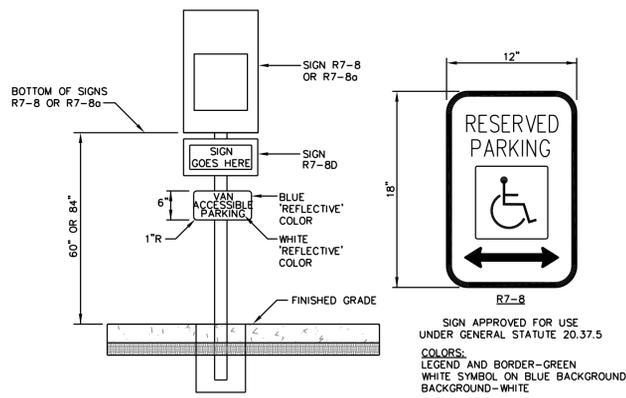


STANDARD SIDEWALK DETAIL  
NOT TO SCALE

**GENERAL NOTES:**  
A GROOVE JOINT 1" DEEP WITH 1/8" RADI SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB & GUTTER AND ANY RIGID STRUCTURES. IN SIDEWALKS & PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.

STORM TABLE

FROM	TO	LENGTH (ft)	DIAMETER (in)	INV ELEV DN	SLOPE (%)	INV ELEV UP	RIM ELEV (ft)	MATERIAL
90	89	52.5	24	30.00	0.30	30.16	39.50	HDPE
91	90	140.9	24	30.16	0.30	30.58	41.19	HDPE
92	91	398.7	24	30.58	0.30	31.78	39.33	HDPE
93	92	367.2	24	31.78	0.30	32.88	37.99	HDPE
94	93	24.7	24	32.88	0.30	32.95	37.99	HDPE
95	94	45.8	24	32.95	0.30	33.09	37.78	HDPE
96	95	24.9	24	33.09	0.30	33.16	37.78	HDPE
97	92	24.7	24	31.78	0.30	31.85	39.33	HDPE



HANDICAP PARKING SIGNAGE  
NOT TO SCALE

No.	Revision	Date	By

Designer	GSP	Scale	NO SCALE
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
Pender County  
North Carolina

Topsail Township

**STANDARD DETAILS**

PREPARED FOR:  
McAdams Homes, LLC  
213 Racine Drive, Suite 100  
Wilmington, NC 28403  
910-799-3006

**GSP CONSULTING, PLLC**  
ENGINEERING

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

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

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 DOMELS 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 "G", "F" AND "E" 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.  
 CONSTRUCT WITH PIPE CHAINS MATCHING.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.

DETAIL SHOWING METHOD OF RISER CONSTRUCTION

SHEET 1 OF 2  
840.02

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

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

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 DOMELS 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 "G", "F" AND "E" 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.  
 CONSTRUCT WITH PIPE CHAINS MATCHING.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.

SHEET 1 OF 2  
840.02

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

ENGLISH STANDARD DRAWING FOR CONCRETE DROP INLET 12" THRU 30" PIPE

GENERAL NOTES:  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 USE DROPPED INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.00.  
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.  
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
 CONSTRUCT WITH PIPE CHAINS MATCHING.  
 SEE STANDARD DRAWING 840.26 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.  
 INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 7MM STONE IN A POROUS FABRIC BAG OR BASKET AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.

WITH GRATE & FRAME REMOVED

SHEET 1 OF 1  
840.14

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

ENGLISH STANDARD DRAWING FOR CONCRETE DROP INLET 12" THRU 30" PIPE

GENERAL NOTES:  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 USE DROPPED INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.00.  
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.  
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
 CONSTRUCT WITH PIPE CHAINS MATCHING.  
 SEE STANDARD DRAWING 840.26 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.  
 INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 7MM STONE IN A POROUS FABRIC BAG OR BASKET AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.

DIMENSIONS OF BOX & PIPE		CUBIC YARDS CONC. IN BOX		DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH
12"	3'-0"	2'-0"	2'-0"	0.222	0.222
15"	3'-0"	2'-3"	2'-3"	0.448	0.033
18"	3'-0"	2'-6"	2'-6"	0.703	0.049
24"	3'-0"	3'-0"	3'-0"	0.814	0.085
30"	3'-0"	3'-0"	3'-6"	0.222	0.222

SHEET 1 OF 1  
840.14

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

ENGLISH STANDARD DRAWING FOR REINFORCED CONCRETE ENDWALL FOR SINGLE 72" PIPE 90° SKEW

GENERAL NOTES:  
 SEE STD. # 838.45 FOR GENERAL NOTES.  
 BILL OF MATERIAL FOR ENDWALL

REIN. STEEL	1 PIPE
BAR SIZE	LENGTH
B1 #4	5'-6"
B2 #4	4'-6"
G1 #7	9'-8"
H1 #4	7'-2"
H2 #4	5'-6"
H3 #4	3'-5"
N1 #5	3'-11"
N2 #4	3'-5"
T1 #4	14'-6"
T4 #4	6'-9"
T5 #4	2'-6"
V1 #4	7'-3"
V2 #4	5'-10"
V3 #4	5'-0"
V4 #4	4'-1"
V5 #4	3'-2"
Z1 #6	4'-8"
Z2 #5	4'-0"
Z3 #4	3'-4"

REIN. STEEL LBS. 555

CON./R.C. CU. YDS. 7.1

SHEET 1 OF 2  
838.39

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

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW ADJUSTMENT FOR VERTICAL WALL SECTION

SHEET 1 OF 2  
840.03

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

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW ADJUSTMENT FOR VERTICAL WALL SECTION

SHEET 1 OF 2  
840.03

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

ENGLISH STANDARD DRAWING FOR DROP INLET FRAME AND GRATES FOR USE WITH STD. DWS S 840.14 AND 840.15

SHEET 1 OF 1  
840.16

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

ENGLISH STANDARD DRAWING FOR DROP INLET FRAME AND GRATES FOR USE WITH STD. DWS S 840.14 AND 840.15

SHEET 1 OF 1  
840.16

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

ENGLISH STANDARD DRAWING FOR REINFORCED CONCRETE ENDWALL FOR SINGLE 72" PIPE 90° SKEW

GENERAL NOTES:  
 SEE STD. # 838.45 FOR GENERAL NOTES.  
 BILL OF MATERIAL FOR ENDWALL

REIN. STEEL	1 PIPE
BAR SIZE	LENGTH
B1 #4	5'-6"
B2 #4	4'-6"
G1 #7	9'-8"
H1 #4	7'-2"
H2 #4	5'-6"
H3 #4	3'-5"
N1 #5	3'-11"
N2 #4	3'-5"
T1 #4	14'-6"
T4 #4	6'-9"
T5 #4	2'-6"
V1 #4	7'-3"
V2 #4	5'-10"
V3 #4	5'-0"
V4 #4	4'-1"
V5 #4	3'-2"
Z1 #6	4'-8"
Z2 #5	4'-0"
Z3 #4	3'-4"

REIN. STEEL LBS. 555

CON./R.C. CU. YDS. 7.5

SHEET 2 OF 2  
838.39

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

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

RAISED FLOW ARROW 1/8" HIGH

SHEET 2 OF 2  
840.03

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

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

RAISED FLOW ARROW 1/8" HIGH

SHEET 2 OF 2  
840.03

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

ENGLISH STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE

GENERAL NOTES:  
 CHAMFER ALL EXPOSED CORNERS 1".  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOMELS 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.  
 INCLUDE THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E., DIAGONAL BARS SLOTTED 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 FEET.

SHEET 1 OF 1  
840.31

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

ENGLISH STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE

SHEET 1 OF 1  
840.31

DIMENSIONS OF BOX AND PIPE		REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX		TOTAL QUANTITIES FOR BOX AND SLAB		DEDUCTIONS FOR ONE PIPE CU. YD.	
PIPE	SPAN	WIDTH	HEIGHT	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	REIN. LBS.	CON. YDS.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.135	22
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.198	0.198	0.244	24
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.282	30
24"	3'-0"	3'-0"	3'-3"	18	3'-9"	4'-0"	4'-0"	0.298	0.298	0.269	40
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77
48"	5'-4"	5'-4"	5'-7"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.497	111
54"	5'-10"	5'-10"	5'-9"	26	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	136
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.431	145
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.918	169

SHEET 1 OF 1  
840.31

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

ENGLISH STANDARD DRAWING FOR CONCRETE JUNCTION BOX (WITH OPTIONAL MANHOLE) 12" THRU 66" PIPE

TRANSITION FROM 2' MODIFIED VALLEY GUTTER TO N.C.D.O.T. CATCH BASIN STD. 840.02

TRANSITION FROM 2' VALLEY GUTTER TO CATCH BASIN

TRANSITION FROM 2' VALLEY GUTTER TO CATCH BASIN

TRANSITION FROM 2' MODIFIED VALLEY GUTTER TO N.C.D.O.T. CATCH BASIN STD. 840.03

SHEET 1 OF 1  
840.31

No.	Revision	Date	By

Designer	GSP	Scale	NO SCALE
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

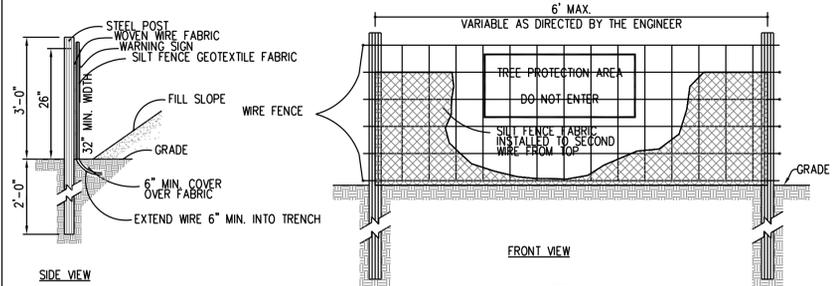
Topsail Township  
 Pender County  
 North Carolina

Sagebrook  
 STANDARD DETAILS

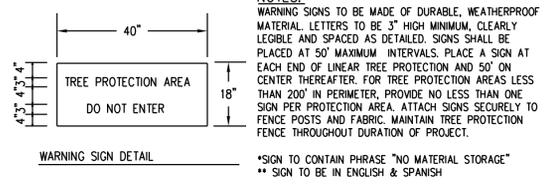
PREPARED FOR:  
 McAdams Homes, LLC  
 213 Racine Drive, Suite 100  
 Wilmington, NC 28403  
 910-799-3006

GSP CONSULTING, PLLC  
 ENGINEERING  
 213 Racine Drive, Suite 100 Wilmington, North Carolina 28403 910-442-7870 gsp@gsp-consulting.com

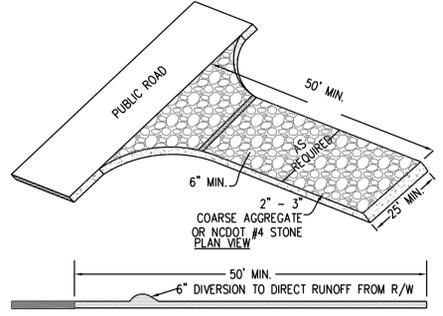
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 C-7.2



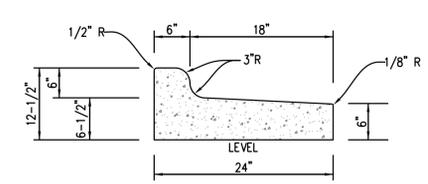
**NOTES:**  
 1. SYNTHETIC FILTER FABRIC SHOULD BE OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER PER ASTM D 6461 AND SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS PER ASTM D 4355.  
 2. WIRE FENCE SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.  
 3. SEE THE NC EROSION AND SEDIMENTATION CONTROL MANUAL FOR OTHER SPECIFICATIONS.



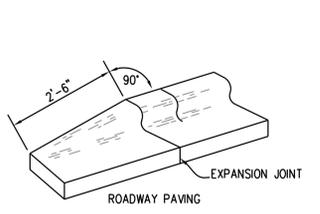
STANDARD TEMPORARY SILT / TREE PROTECTION FENCE  
N.T.S.



TEMPORARY CONSTRUCTION ENTRANCE  
N.T.S.

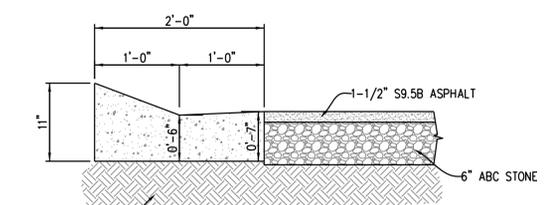


24" CURB AND GUTTER (REVERSE SLOPE)

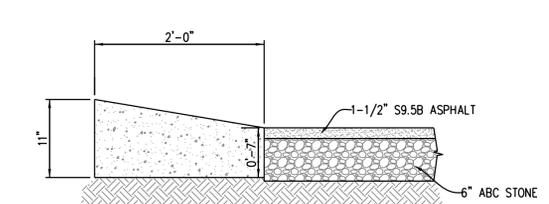


24" CURB & GUTTER TERMINATION DETAIL

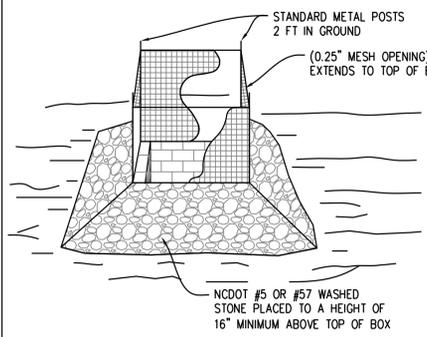
**GENERAL NOTES:**  
 CONTRACTION JOINTS SHALL BE SPACED AT MAX. 10' INTERVALS, EXCEPT THAT A 15 FOOT SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10 FOOT INTERVALS. JOINT SPACING MAY BE ALTERED BY THE ENGINEER TO PREVENT UNCONTROLLED CRACKING. CONTRACTION JOINTS MAY BE INSTALLED BY THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. WHERE SUCH JOINTS ARE NOT FORMED BY TEMPLATES, A MINIMUM DEPTH OF 1-1/2" SHALL BE OBTAINED. ALL CONTRACTION JOINTS EXCEPT IN 8" X 6" MEDIAN CURB SHALL BE FILLED WITH JOINT SEALER. EXPANSION JOINTS SHALL BE SPACED AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



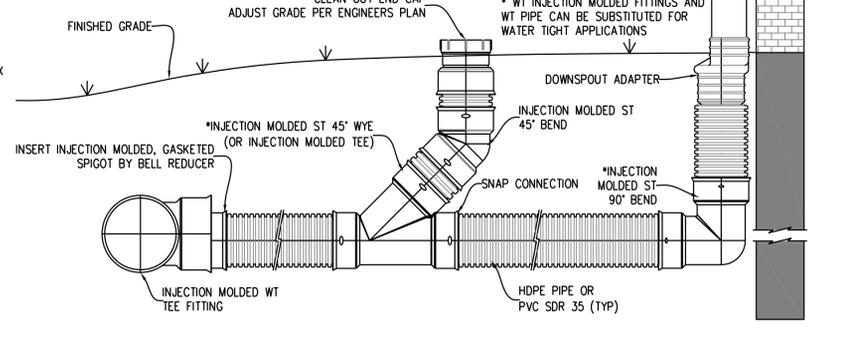
MODIFIED VALLEY GUTTER  
N.T.S.



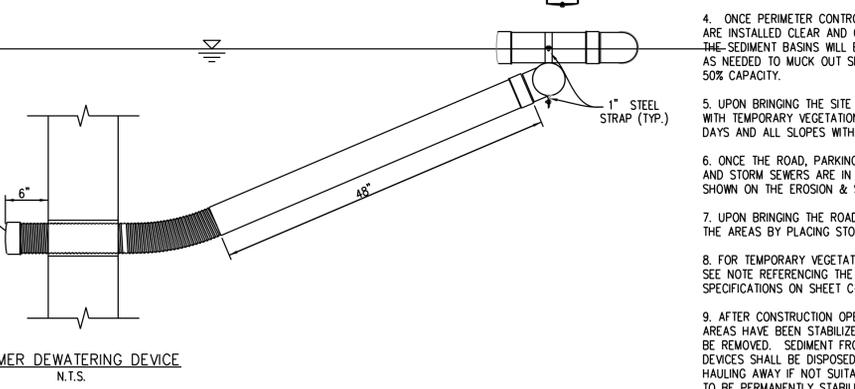
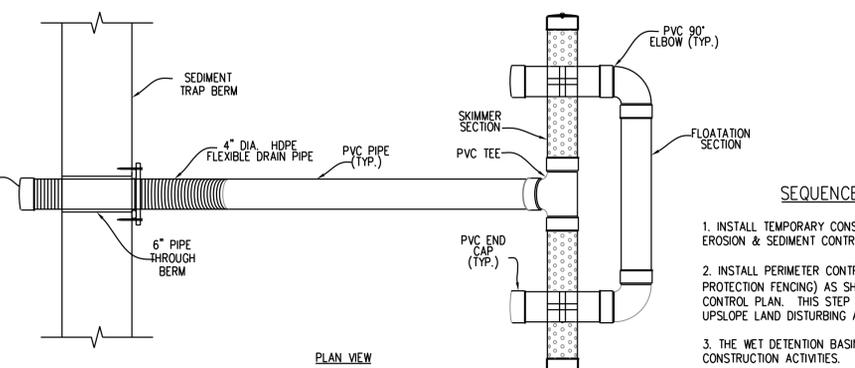
SPILL CURB  
N.T.S.



**NOTES:**  
 1. 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.  
 2. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 1-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.  
 3. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A MIN HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.



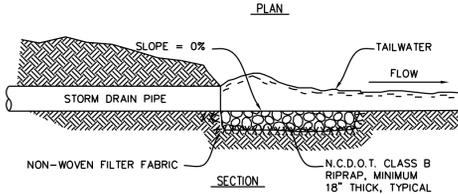
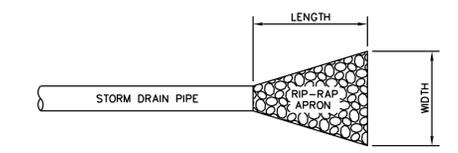
ROOF DRAIN DETAIL WITH CLEANOUT  
N.T.S.



SKIMMER DEWATERING DEVICE  
N.T.S.

**SEQUENCE OF CONSTRUCTION**

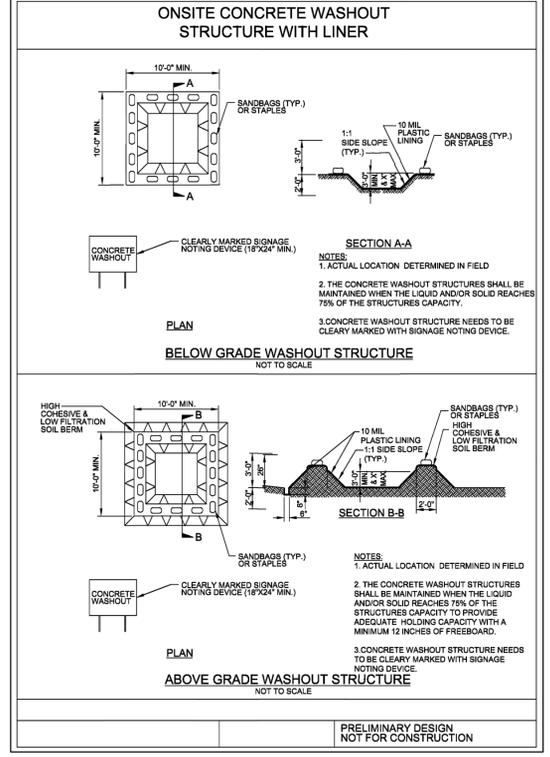
1. INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON EROSION & SEDIMENT CONTROL PLAN.
2. INSTALL PERIMETER CONTROLS (TEMPORARY SILT FENCE, TREE PROTECTION FENCING) AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN. THIS STEP NEEDS TO BE COMPLETED PRIOR TO UPSLOPE LAND DISTURBING ACTIVITIES.
3. THE WET DETENTION BASINS WILL ACT AS SEDIMENT BASINS DURING CONSTRUCTION ACTIVITIES.
4. ONCE PERIMETER CONTROLS AND SEDIMENT TRAPPING MEASURES ARE INSTALLED CLEAR AND GRUB SITE WITHIN LIMITS OF DISTURBANCE. THE SEDIMENT BASINS WILL BE PUMPED DOWN BY MECHANICAL MEANS AS NEEDED TO MUCK OUT SEDIMENT WHEN THE SEDIMENT REACHES 50% CAPACITY.
5. UPON BRINGING THE SITE TO ROUGH GRADE, STABILIZE ALL AREAS WITH TEMPORARY VEGETATION IF LEFT UNDISTURBED FOR 15 WORKING DAYS AND ALL SLOPES WITHIN 21 CALENDAR DAYS.
6. ONCE THE ROAD, PARKING AREAS, SANITARY SEWERS, WATERLINES AND STORM SEWERS ARE IN PLACE, INSTALL INLET PROTECTION AS SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN.
7. UPON BRINGING THE ROADS TO SUBGRADE ELEVATIONS, STABILIZE THE AREAS BY PLACING STONE BASE AS EARLY AS POSSIBLE.
8. FOR TEMPORARY VEGETATIVE STABILIZATION OF ALL DENUDED AREAS SEE NOTE REFERENCING THE EROSION CONTROL PROGRAM AND SPECIFICATIONS ON SHEET C-1.
9. AFTER CONSTRUCTION OPERATIONS HAVE ENDED AND ALL DISTURBED AREAS HAVE BEEN STABILIZED, MECHANICAL SEDIMENT CONTROLS SHALL BE REMOVED. SEDIMENT FROM TEMPORARY SEDIMENT TRAPPING DEVICES SHALL BE DISPOSED OF BY SPREADING ON THE SITE OR HAULING AWAY IF NOT SUITABLE FOR FILL. ALL DENUDED AREAS ARE TO BE PERMANENTLY STABILIZED WITH PERMANENT VEGETATION.



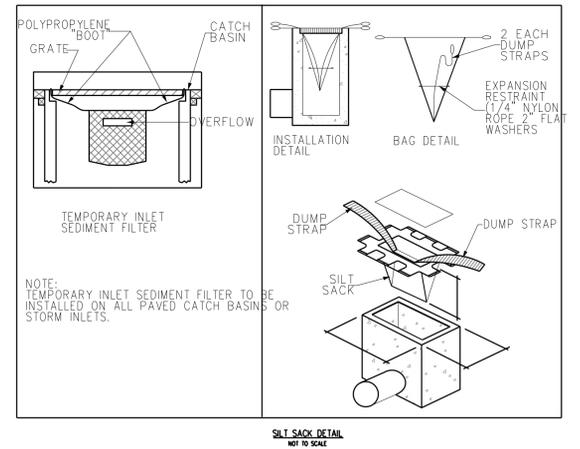
RIPRAP LOCATIONS	LENGTH (FT.)	UPSTREAM WIDTH (FT.)	DOWNSTREAM WIDTH (FT.)
15" CULVERT	7.5	3.75	5.0
18" CULVERT	9.0	4.5	6.0
24" CULVERT	12.0	6.0	8.0
30" CULVERT	15.0	7.5	10.0
36" CULVERT	18.0	9.0	12.0
48" CULVERT	24.0	12.0	16.0

RIP-RAP OUTLET PROTECTION  
N.T.S.

**WITH LINER, NO GRAVEL APPROACH**



PRELIMINARY DESIGN  
NOT FOR CONSTRUCTION



SILT SACK DETAIL  
NOT TO SCALE

No.	Revision	Date	By

Designer	GSP	Scale	NO SCALE
Drawn By	GSP	Date	August 2025
License #	P-0718	Job No.	2020-0005

**Sagebrook**  
 Pender County  
 North Carolina  
 Topsail Township

**STANDARD DETAILS**

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Sheet No.  
**C-7.3**

