

PROJECT NAME:
BERRY
WAREHOUSE
 147 GREYSON LOOP
 POWELLS POINT
 CURRITUCK COUNTY
 NORTH CAROLINA

REVISIONS:	DATE:
CLIENT REVIEW	8 / 18 / 23
COUNTY REVIEW	8 / 22 / 23

DRAWING NAME:
BUILDING
PLAN

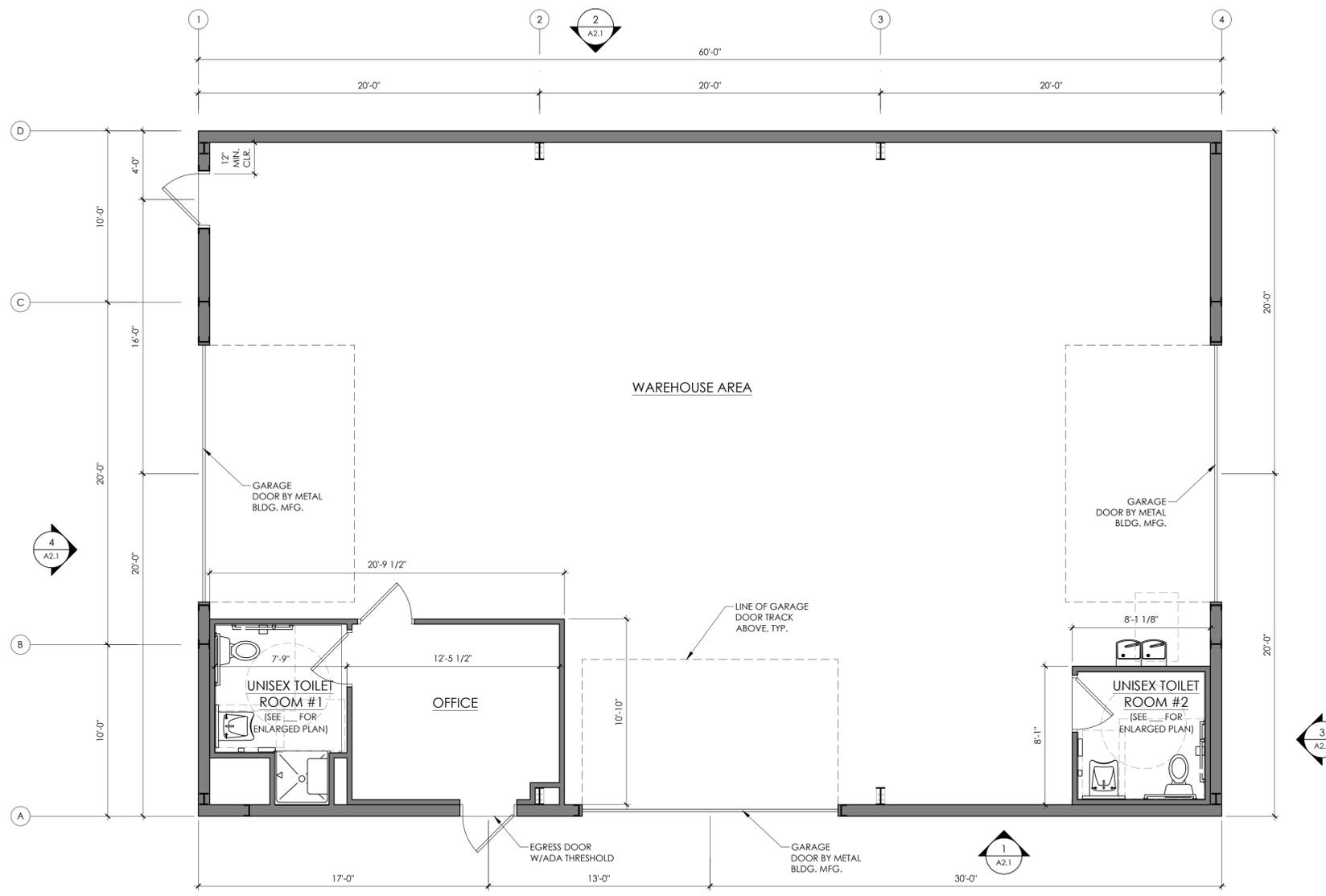
NOT FOR
CONSTRUCTION

DRAWN BY: CN

DATE: 8 / 22 / 23

SCALE: -

STAMP:
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 DO NOT START CONSTRUCTION
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 CONSTRUCTION DOCUMENTS
 FROM THE ARCHITECT.



1 FLOOR PLAN
 SCALE: 1/4" = 1'-0"

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BERRY WAREHOUSE
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 NORTH CAROLINA

REVISIONS:	DATE:
CLIENT REVIEW	8 / 18 / 23
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DRAWING NAME:
EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

DRAWN BY: CN

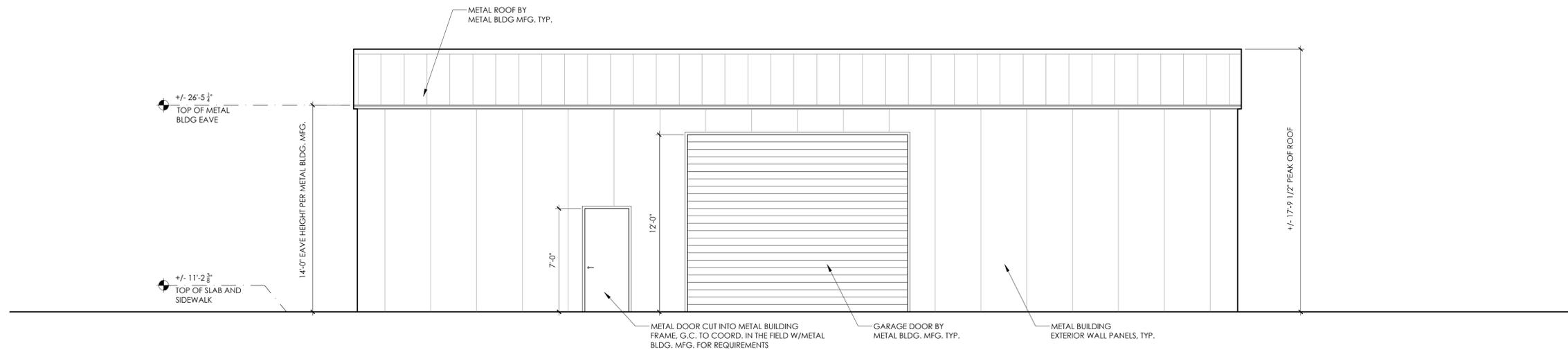
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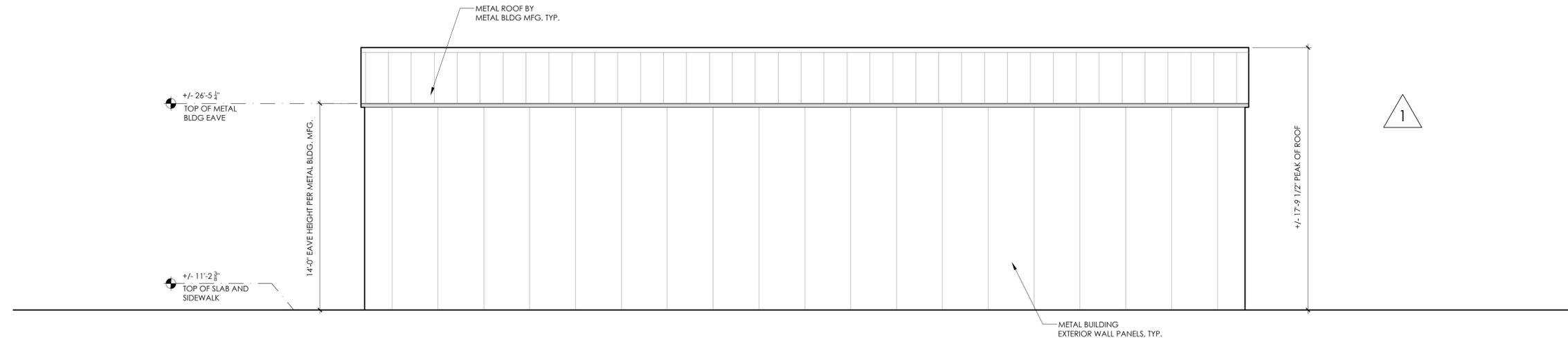
STAMP:
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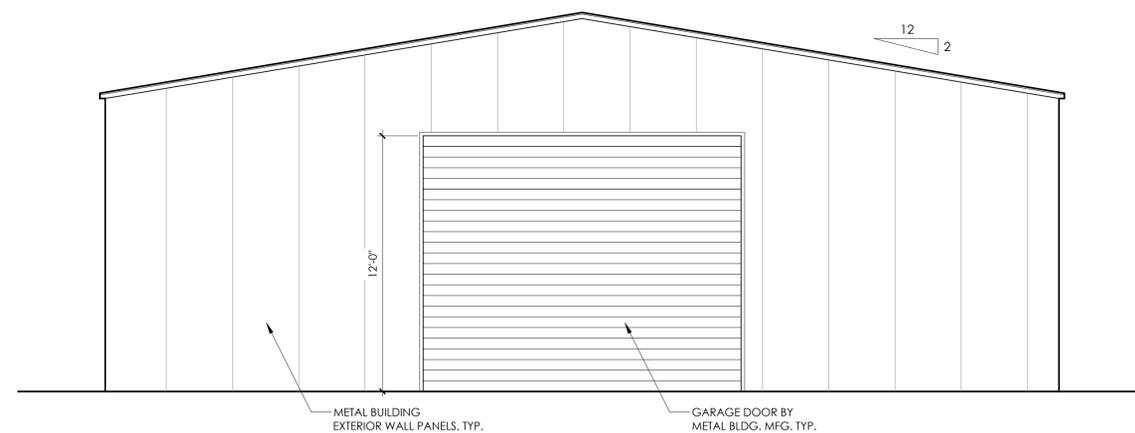
SHEET:
A2.1



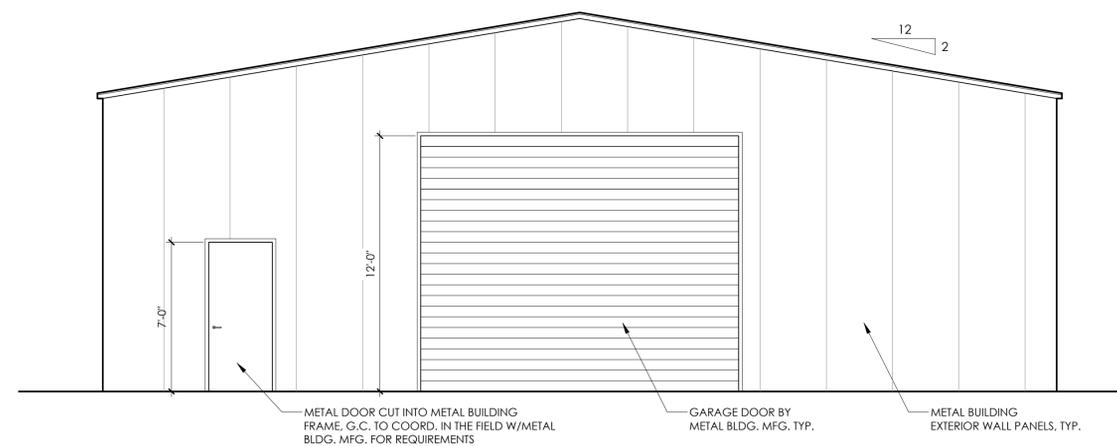
1 EXTERIOR ELEVATION
 SCALE: 1/4" = 1'-0"



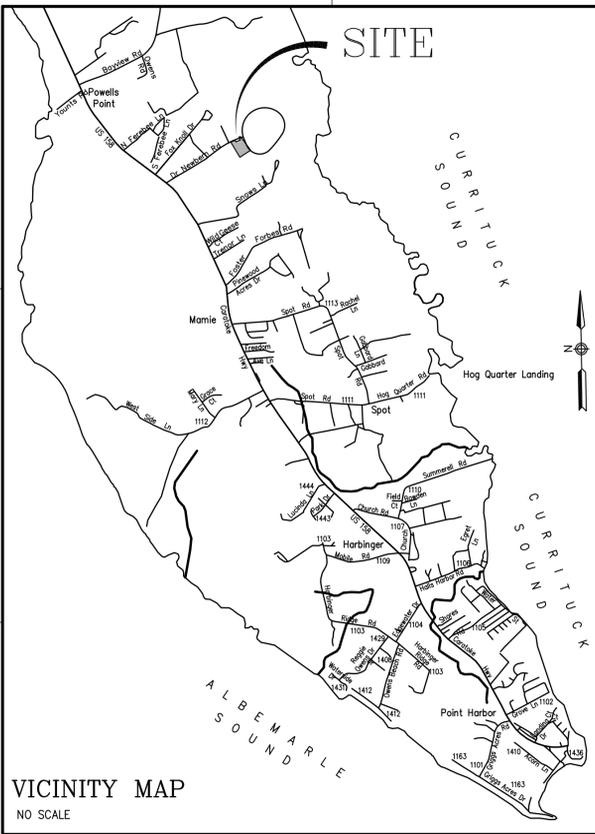
2 EXTERIOR ELEVATION
 SCALE: 1/4" = 1'-0"



3 EXTERIOR ELEVATION
 SCALE: 1/4" = 1'-0"



4 EXTERIOR ELEVATION
 SCALE: 1/4" = 1'-0"



VICINITY MAP
NO SCALE

GENERAL NOTES:

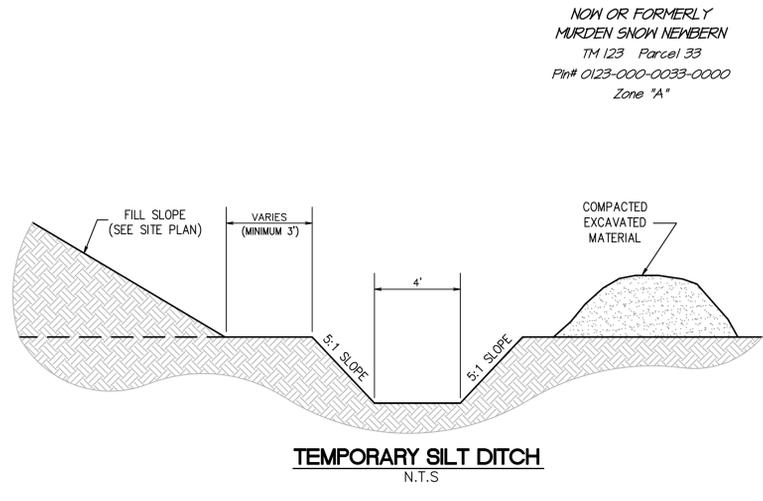
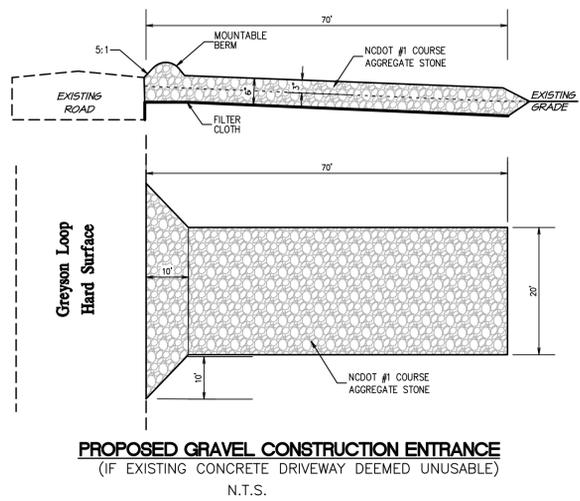
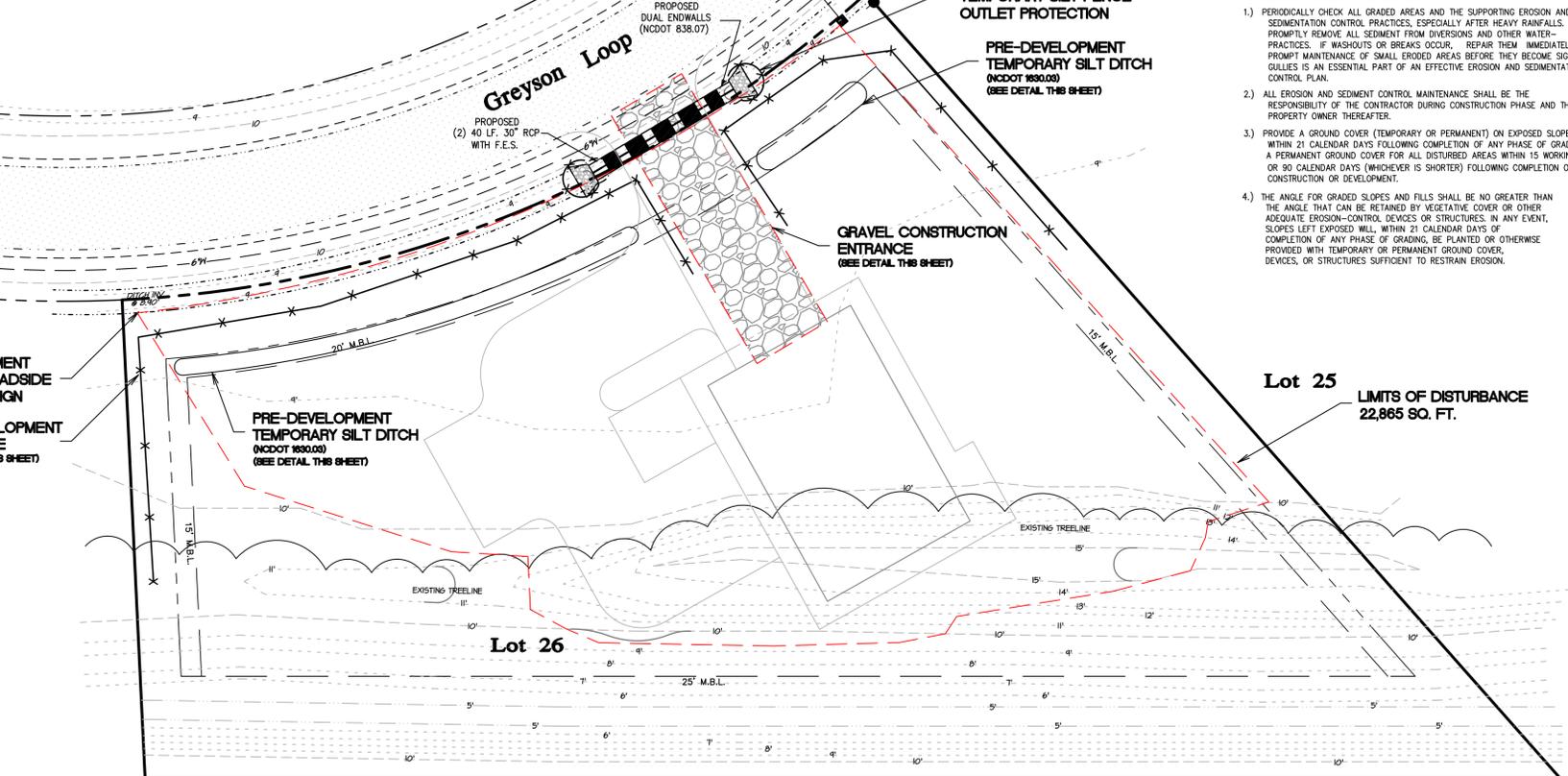
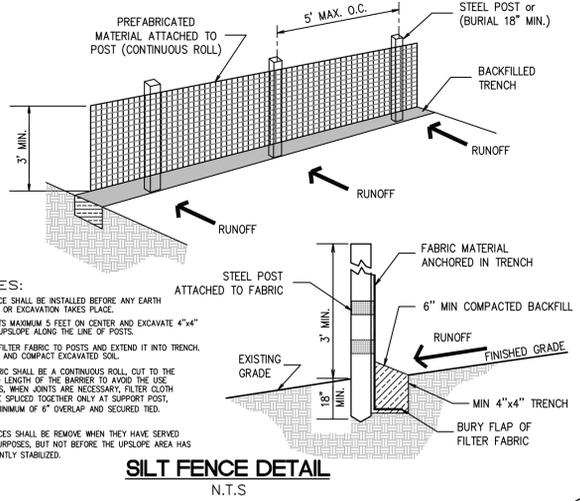
- * SUBJECT PROPERTY: LOT 26 CURRITUCK INDUSTRIAL PARK, POPLAR BRANCH TOWNSHIP, CURRITUCK COUNTY, NC
- * STREET ADDRESS: 147 GREYSON LOOP, CURRITUCK COUNTY, NC 27966
- * PARCEL ID NUMBER: 12360000269000
- * GLOBAL PIN: 9829-47-1956
- * RECORDED REFERENCE: D.B. 1496, Pg. 899, P.C. 1, S.L. 279
- * LOT AREA: 41,837 SQ. FT. (Survey)
- * FEMA DATA: COMMUNITY - CURRITUCK COUNTY, FIRM ZONE - AS SHOWN, FLOOD ZONES SUBJECT TO CHANGE BY FEMA
- * SUBJECT PROPERTY ZONING: LI (LIGHT INDUSTRIAL)
- * BUILDING SETBACKS: FRONT - 20', SIDE - 15', REAR - 25'
- * PROPOSED DEVELOPMENT: STORAGE WAREHOUSE 40' X 60' METAL BUILDING
- * SURVEY PREPARED BY: SADDLER SURVEYING PLLC

Seeding Specifications

PERMANENT VEGETATION		TEMPORARY VEGETATION	
SEED MIXTURE	APPLICATION RATES/ACRE	SEED MIXTURE	APPLICATION RATES/ACRE
BAHIA	50 LBS.	RYE GRASS	175 LBS.
COMMON BERMUDA (UNPAILED)	50 LBS.		
GERMAN MILLETT	15 LBS.	FERTILIZER	10-10-10 @ 1000 LB/ACRE
FESCUE	20 LBS.		
FERTILIZER	26-13-13 @ 500 LB/ACRE		
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.	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.
BEACH GRASS	SPRING AT 6' O.C.		

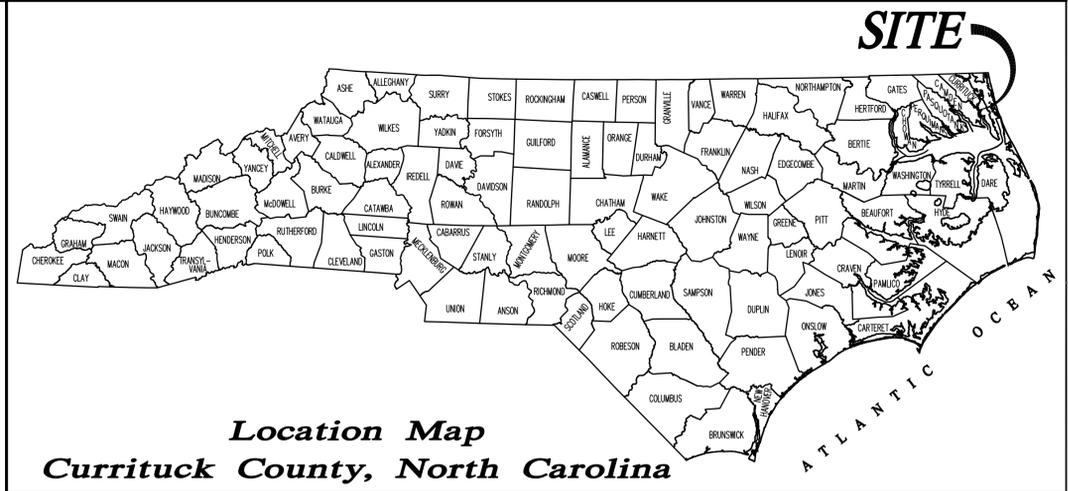
GENERAL: FERTILIZER RATES SHOWN ARE GENERAL RECOMMENDATIONS; FREQUENCY AND AMOUNT OF FERTILIZATION CAN BEST BE DETERMINED THROUGH SITE SPECIFIC SOIL TESTING. SATISFACTORY STABILIZATION AND EROSION CONTROL REQUIRES A COMPLETE VEGETATIVE COVER EVEN SMALL BREACHES IN VEGETATIVE COVER CAN EXPAND RAPIDLY IF LEFT UNATTENDED. A SINGLE HEAVY RAIN IS OFTEN SUFFICIENT TO GREATLY ENHANCE SOIL SPOTS, AND THE LONGER REPAIRS ARE DELAYED THE MORE COSTLY THEY BECOME. PROMPT ACTION WILL KEEP SEDIMENT LOSS AND REPAIR COST DOWN. NEW SEEDINGS SHOULD BE INSPECTED FREQUENTLY AND MAINTENANCE PERFORMED AS NEEDED. IF HILLS AND QUILLS DEVELOP THEY MUST BE FILLED, RE-SEED, AND MULCHED AS SOON AS POSSIBLE. DIVERSIONS MAY BE NEEDED UNTIL NEW PLANTS TAKE HOLD. MAINTENANCE REQUIREMENTS EXTEND BEYOND THE SEEDING PHASE. NEW OR DAMAGED SPOTS MUST BE REIMED, FERTILIZED, AND RE-SEED AS PROMPTLY AS POSSIBLE. RE-FERTILIZATION WILL BE NEEDED TO MAINTAIN PRODUCTIVE STANDS. ALL DISTURBED AREAS SHALL BE SEEDING AND MULCHED ACCORDING TO THE FOLLOWING SPECIFICATIONS:

BEFORE YOU DIG!



Sheet Index

- C1 Existing Conditions / Index Sheet
- C2 Site and Utility Plan
- C3 Grading and Drainage Plan
- C4 Landscape and Lighting Plan



Location Map
Currituck County, North Carolina

EROSION AND SEDIMENT CONTROL

- MAINTENANCE NOTES**
- PERIODICALLY CHECK ALL GRADED AREAS AND THE SUPPORTING EROSION AND SEDIMENTATION CONTROL PRACTICES, ESPECIALLY AFTER HEAVY RAINFALLS. PROMPTLY REMOVE ALL SEDIMENT FROM DIVERSIONS AND OTHER WATER- DISPOSAL PRACTICES. IF WASHOUTS OR BREAKS OCCUR, REPAIR THEM IMMEDIATELY. PROMPT MAINTENANCE OF SMALL ERODED AREAS BEFORE THEY BECOME SIGNIFICANT GULLIES IS AN ESSENTIAL PART OF AN EFFECTIVE EROSION AND SEDIMENTATION CONTROL PLAN.
 - ALL EROSION AND SEDIMENT CONTROL MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR DURING CONSTRUCTION PHASE AND THE PROPERTY OWNER THEREAFTER.
 - PROVIDE A GROUND COVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND A PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
 - THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION-CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

SOIL EROSION + SEDIMENT CONTROL PLAN NOTES:

- OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
- FLAG AND/OR ROUGH STAKE WORK LIMITS.
- HOLD PRECONSTRUCTION CONFERENCE (OWNER, CONTRACTOR, ENGINEER, AND APPROPRIATE GOVERNMENT OFFICIALS) AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION ACTIVITIES.
- INSTALL SILT AND SAND FENCING @ LOCATIONS SHOWN ON PLAN
- COMPLETE CLEARING AND GRUBBING PROCEDURES.
- GRADE SITE ACCORDING TO PLAN
- ALL EROSION SEDIMENT CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER HEAVY RAINFALL EVENTS. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
- NO DEBRIS WILL BE BURIED ON THIS SITE.
- ALL EROSION AND SEDIMENT CONTROL, STORMWATER MANAGEMENT AND DRAINAGE DESIGN SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT AND STORMWATER REGULATIONS AND WITH THE TOWN OF Kill Devil Hills CODE.
- EXISTING UTILITIES ARE IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT THE GOVERNING UTILITY COMPANIES (3) THREE DAYS PRIOR TO CONSTRUCTION IN ORDER TO VERIFY THE UTILITY LOCATIONS IN THE FIELD.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY AND ALL DAMAGES DONE TO THEM DUE TO HIS NEGLIGENCE SHALL BE IMMEDIATELY AND COMPETENTLY REPAIRED AT HIS EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS, INSURANCE, BONDS, ETC. REQUIRED BY LOCAL, STATE AND/ OR FEDERAL AGENCIES NECESSARY FOR CONSTRUCTION.
- PLAN LOCATION AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PROPOSED AREA TO BE DISTURBED IS (+/- 22,865 SQ. FT.)
- ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITHIN THIRTY DAYS OF LAND DISTURBING ACTIVITIES. IF SAID ACTIVITIES OCCUR OUTSIDE THE PERMANENT VEGETATION SEEDING DATES (APR. 1 - SEP.30) THEN TEMPORARY VEGETATION SEEDING SPECIFICATIONS SHALL BE FOLLOWED FOR PLANTING UNTIL THE NEXT APPROPRIATE PERMANENT SEEDING PERIOD, AT WHICH TIME PERMANENT VEGETATION SHALL BE ESTABLISHED ACCORDING TO PERMANENT VEGETATION SEEDING SPECIFICATIONS (SEE PERM. & TEMP. SEEDING SPEC'S THIS SHEET).
- IF EXCESSIVE WIND EROSION OR STORMWATER RUNOFF EROSION DEVELOPS DURING CONSTRUCTION IN ANY LOCATION ON THE PROJECT, ADDITIONAL SAND OR SILT FENCING SHALL BE INSTALLED AS DIRECTED BY ENGINEER SO AS TO PREVENT DAMAGE TO ADJACENT PROPERTY. SEE SAND AND SILT FENCE DETAIL THIS SHEET.
- SOIL EROSION AND SEDIMENTATION CONTROLS TO BE INSPECTED, MAINTAINED AND REPAIRED AS NECESSARY UNTIL PERMANENT CONTROLS ARE ESTABLISHED PER CONSTRUCTION SCHEDULE.

INCIDENTAL DRAINAGE

- TEMPORARY DRAINAGE DURING CONSTRUCTION WILL BE PROVIDED BY THE OWNER/DEVELOPER/CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS AND/OR ADJACENT PROPERTIES AS DIRECTED BY PLANNING/CIVIL INSPECTIONS.
- THE PLANNING/CIVIL INSPECTOR WILL PERFORM AN ON-SITE INSPECTION OF STORM SEWER PIPE INSTALLATION PRIOR TO ANY BACKFILLING OF THE INSTALLED PIPE.
- IF PRECAST DRAINAGE STRUCTURES ARE USED, SHOP DRAWINGS WILL BE SUBMITTED TO THE DESIGN ENGINEER BY THE OWNER/DEVELOPER/CONTRACTORS DESIGN CONSULTANT, ALONG WITH THE PROPER CERTIFICATIONS, UNLESS PREVIOUSLY APPROVED BY THE TOWN OF KILL DEVIL HILL PLANNER.
- ALL STORM SEWER PIPE JOINTS WILL BE INSTALLED, SILT FREE, OR WILL BE COMPLETELY WRAPPED WITH TWO FEET (2') WIDE APPROVED FILTER FABRIC, SECURED IN PLACE PRIOR TO BACKFILLING.

ENGINEER SEAL

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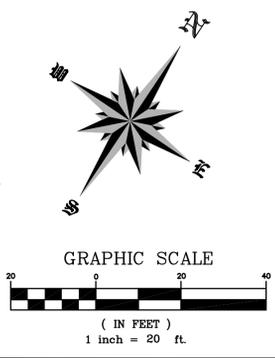
HOUSE ENGINEERING, P.C.

Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

APPROVALS	DATE
Drawn: D. NEFF	08/24/23
Checked: R. HOUSE	08/24/23
Engineer: R. HOUSE	08/24/23

REVISIONS		
No.	Date	Description

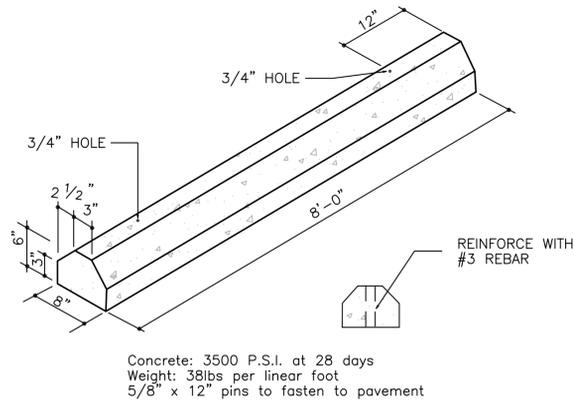
Existing Conditions / Index Sheet and Soil Erosion and Sedimentation Control				
Lee Ann Leah and Brian Berry				
Lot 26 Currituck Industrial Park				
Location: 147 Greyson Loop				
Polplar Branch Township Currituck County North Carolina				
SIZE	PROJECT NUMBER	REV	SHEET NO.	
D	236926	-	C1 OF 4	
CAD FILENAME: 236926		SCALE: 1"=20'		



NOW OR FORMERLY
MURDEN SNOW NEWBERN
TM 123 Parcel 33
Pin# 0123-000-0033-0000
Zone "A"

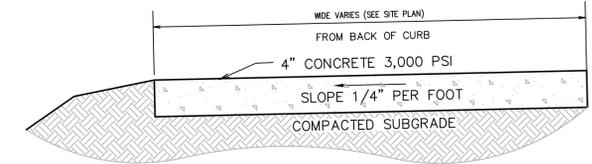
GENERAL NOTES:

- SUBJECT PROPERTY: LOT 26 CURRITUCK INDUSTRIAL PARK FORPLAR BRANCH TOWNSHIP, CURRITUCK COUNTY, NC
- STREET ADDRESS: 147 GREYSON LOOP CURRITUCK COUNTY, NC. 27966
- PARCEL ID NUMBER: 123E0000260000
- GLOBAL PIN: 9838-47-1956
- RECORDED REFERENCE: D.B. 1496, Pg. 899, P.C. 1, SL. 279
- LOT AREA: 41,637 SQ. FT. (Survey)
- FEMA DATA: COMMUNITY - CURRITUCK COUNTY FIRM ZONE - AS SHOWN FLOOD ZONES SUBJECT TO CHANGE BY FEMA
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- PARKING REQUIREMENTS: 3 EMPLOYEES 3 SPACES 1 SPACE / 2,500 SF 4 SPACE REQUIRED 4 SPACE PROVIDED
- IMPERVIOUS COVERAGE: BUILDING 2,400 SQ. FT. CONCRETE VEHICULAR CIRCULATION AREA 1,736 SQ. FT. GRAVEL VEHICULAR CIRCULATION AREA 3,943 SQ. FT. CONCRETE WALK 1,015 SQ. FT. TOTAL IMPERVIOUS COVERAGE 9,094 SQ. FT. LOT AREA : 9,094/41,637 = 21.84%
- SURVEY PREPARED BY SADDLER SURVEYING, PLLC



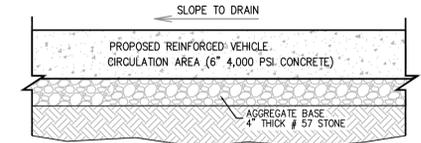
WHEEL STOP BLOCK

NTS



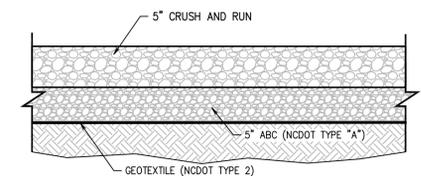
TYPICAL SIDEWALK SECTION

N.T.S.



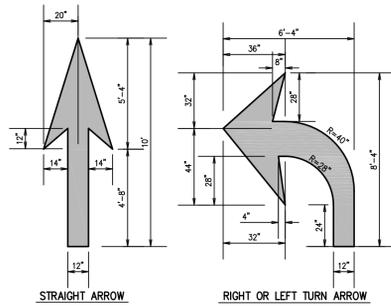
STONE BASE CONCRETE VEHICULAR AREA

N.T.S.



GRAVEL PAVEMENT SECTION

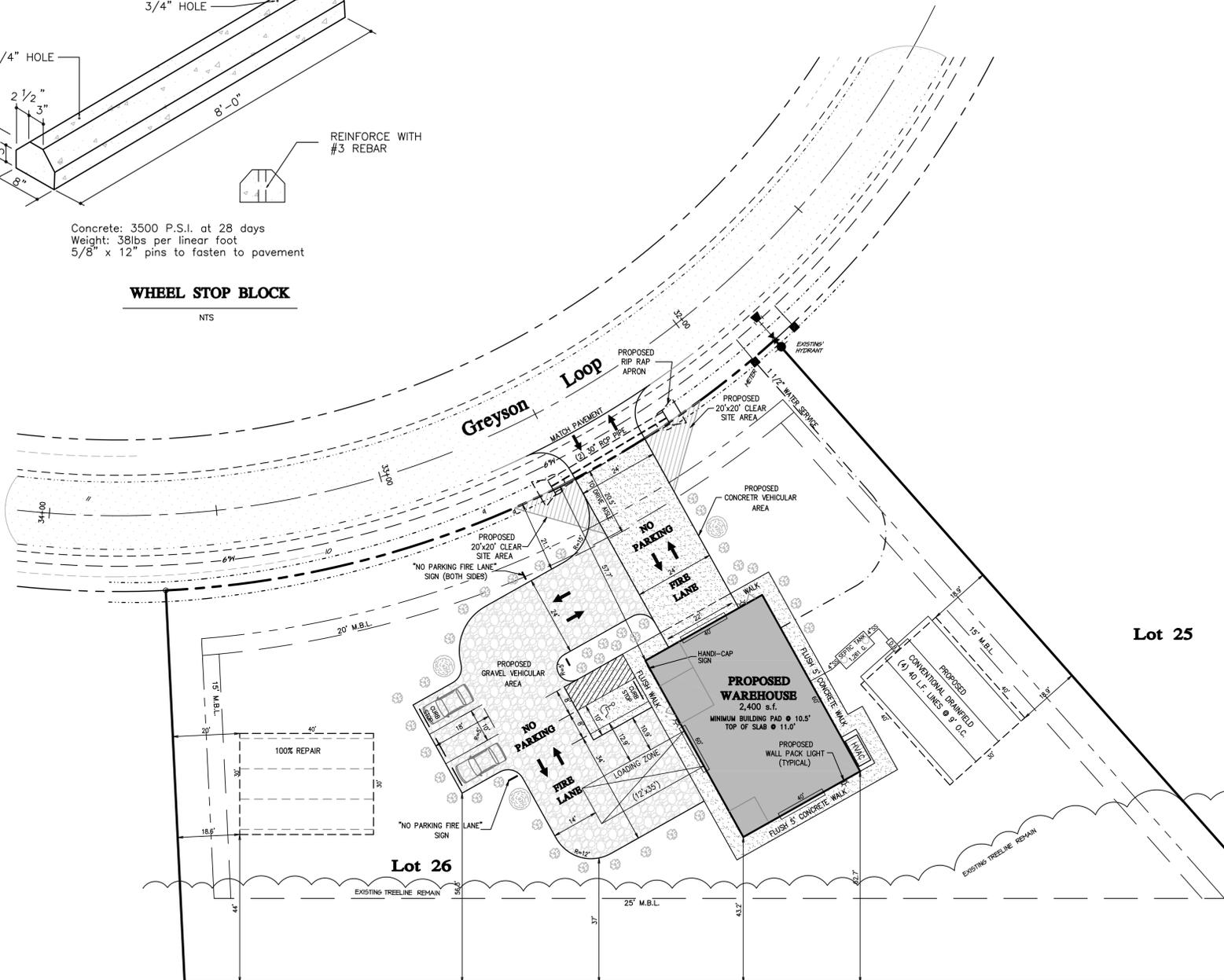
N.T.S.



PAVEMENT MARKING-ARROW SYMBOLS

N.T.S.

- PAVEMENT MARKINGS SHALL BE THERMOPLASTIC
- ALL PAVEMENT MARKING SYMBOLS SHALL BE WHITE IN COLOR. PAVEMENT MARKING SYMBOLS SHALL NOT BE LOCATED AS TO ENCRoACH INTO INTERSECTION AREAS.
- ON PORTLAND CEMENT CONCRETE PAVEMENTS, PAVEMENT MARKING SYMBOLS SHALL NOT BE PLACED ACROSS TRANSVERSE EXPANSION JOINTS, UNLESS APPROVED BY THE ENGINEER.
- ALL SYMBOLS SHALL CONFORM TO THE FHWA "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" REFER TO SHEET 4 THRU 7). SYMBOL DIMENSIONS MAY VARY ALONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE, HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.



LEGEND:

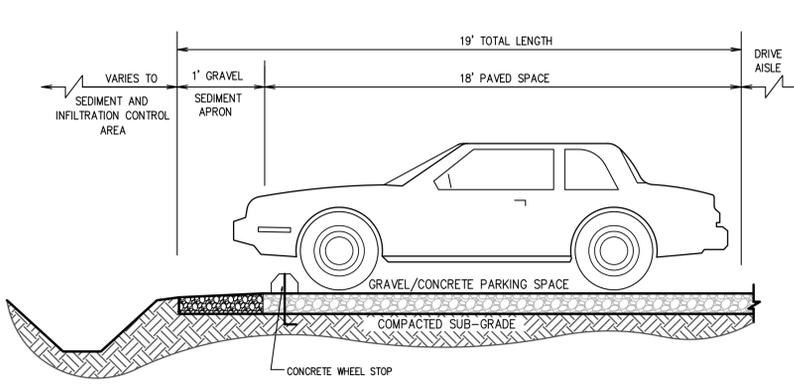
- PROPOSED CONCRETE VEHICLE CIRCULATION AREA
- PROPOSED DWELLING AREA
- PROPOSED OPEN DECKS
- PROPOSED CONCRETE AREA
- PROPOSED GRAVEL VEHICLE CIRCULATION AREA

NOTE:
THE DATA GIVEN ON THESE PLANS IS BELIEVED TO BE ACCURATE, BUT THE ACCURACY IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL LEVELS, LOCATIONS, TYPES, AND DIMENSIONS OF THE EXISTING UTILITIES PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND, WORK SHALL CEASE AND THE ENGINEER NOTIFIED. WORK MAY CONTINUE UPON ENGINEERS NOTICE TO PROCEED.

BEFORE YOU DIG!

North Carolina 811

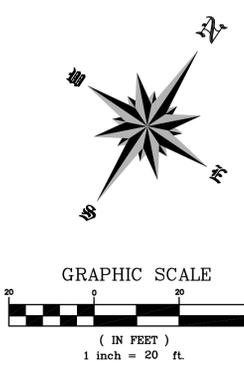
WWW.nc811.ORG



Typical Parking Layout

NTS

NOW OR FORMERLY
MURDEN SNOW NENBERN
TM 123 Parcel 33
Pin# 0123-000-0033-0000
Zone "A"



ENGINEER SEAL

Firm Certification# C-1955
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Engineer:	R. HOUSE	08/24/23

REVISIONS		
No.	Date	Description

Site and Utility Plan
Lee Ann Leah and Brian Berry
Lot 26 Currituck Industrial Park
Location:
147 Greyson Loop
Polplar Branch Township Currituck County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	236926	-	C2 OF 4

CAD FILENAME: 236926 SCALE: 1"=20'

STORMWATER NOTES:

TO REDUCE POST-DEVELOPMENT PEAK DISCHARGE FROM A 5-YEAR 24-HOUR STORM, IS ACHIEVED BY RUNOFF REDUCTION TECHNIQUES SUCH AS INFILTRATION TO OFF-SITE FACILITY AREAS.

STORMWATER MANAGEMENT NARRATIVE

STORMWATER MANAGEMENT NARRATIVE
THE STORMWATER MANAGEMENT PLAN SHOWN HEREON HAS BEEN PREPARED TO ADDRESS STORMWATER MANAGEMENT ON THE SUBJECT PROPERTY.
THE STORMWATER RUNOFF WILL BE MANAGED THROUGH A REGIONAL STORMWATER MANAGEMENT FACILITY THEREFORE ON SITE STORMWATER AND STORMWATER PERMITTING IS NOT REQUIRED. NCDEQ PERMIT # SW7040601
IN ADDITION THE GRAVEL BASE VEHICULAR AREA WILL ALLOW FOR RUNOFF SEDIMENT

RUNOFF FROM ALL DEVELOPED AREAS WILL BE CONVEYED TO AN EXISTING OFF-SITE STORMWATER CONTROL MEASURE TO MEET PEAK FLOW REQUIREMENTS. THE STORMWATER CONTROL MEASURE WILL BE DESIGNED TO MEET THE PEAK FLOW REQUIREMENTS OF THE 2-YEAR 24-HOUR STORM EVENT. THE DESIGN WILL ENSURE THAT THE POST-DEVELOPMENT RUNOFF RATE AND VOLUME ARE EQUAL TO OR LESS THAN THE PRE-DEVELOPMENT RATE AND VOLUME BY USING LOW IMPACT DEVELOPMENT (LID) TECHNIQUES THAT MIMIC A SITE'S PREDEVELOPMENT HYDROLOGY BY USING DESIGN TECHNIQUES THAT INFILTRATE, FILTER, STORE AND EVAPORATE STORMWATER RUNOFF AT OR CLOSE TO ITS SOURCE.

DESIGN STORM EVENT:
5-year 24-hour storm event means a 4.23-inch event with rainfall distributed according to the median NOAA Atlas 14 1st quartile distribution
2-year 24-hour storm event means a 2.8-inch event with rainfall distributed according to the median NOAA Atlas 14 1st quartile distribution.

EXISTING SOIL DATA:
SOURCE: USDA, NATURAL RESOURCES CONSERVATION SERVICE, SOIL SURVEY
SOIL TYPE: CnA - CONETOE LOAMY SAND
DRAINAGE CLASS: WELL DRAINED SOIL

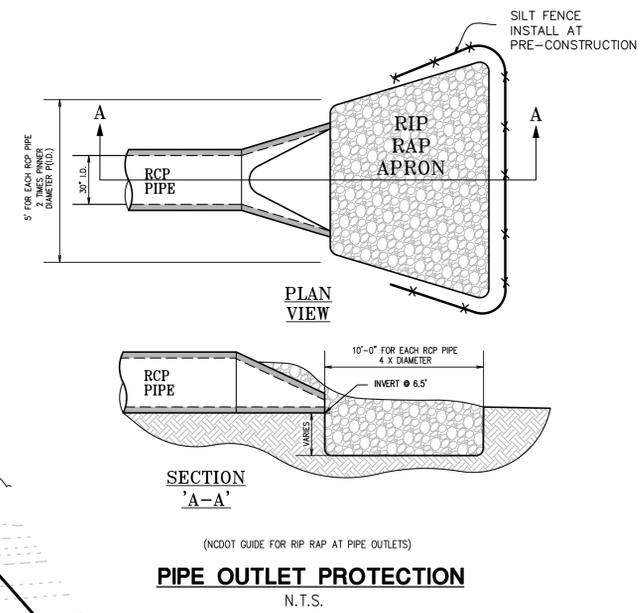
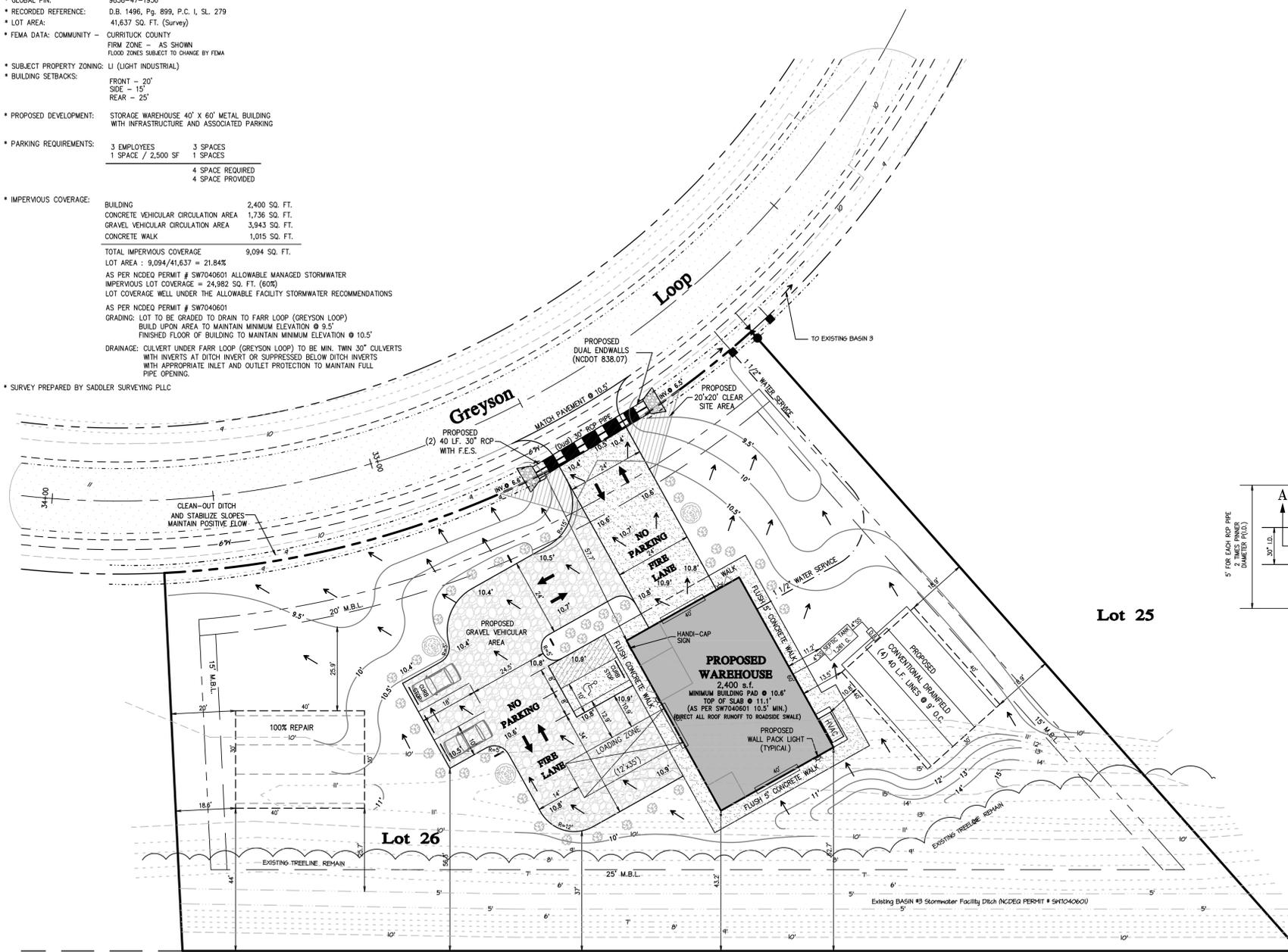
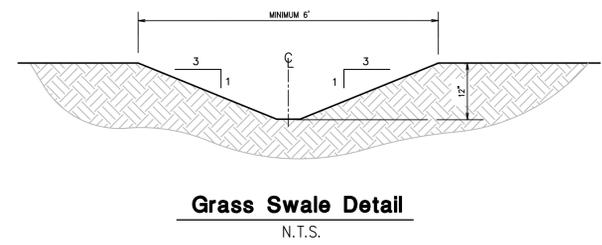
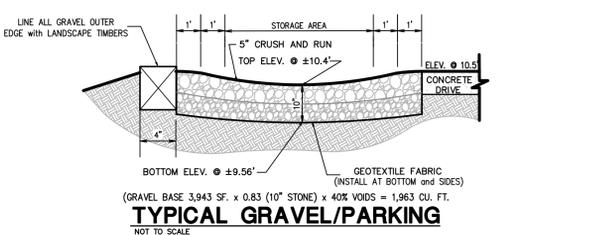
SEASONAL HIGH WATER TABLE ELEVATION = 6.0' +/- MSL. (Protocol Sampling Service, Inc.)
Given a 20% porosity value for the loamy sand surface soils and an infiltration rate of at least 1.0-inches/hour, the infiltration area should easily accept any storm water flow from the impervious areas.

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- PARKING REQUIREMENTS: 3 EMPLOYEES 3 SPACES, 1 SPACE / 2,500 SF 1 SPACE, 4 SPACE REQUIRED 4 SPACE PROVIDED
- IMPERVIOUS COVERAGE: BUILDING 2,400 SQ. FT., CONCRETE VEHICULAR CIRCULATION AREA 1,736 SQ. FT., GRAVEL VEHICULAR CIRCULATION AREA 3,943 SQ. FT., CONCRETE WALK 1,015 SQ. FT., TOTAL IMPERVIOUS COVERAGE 9,094 SQ. FT., LOT AREA : 9,094/41,637 = 21.84%, AS PER NCDEQ PERMIT # SW7040601 ALLOWABLE MANAGED STORMWATER IMPERVIOUS LOT COVERAGE = 24,982 SQ. FT. (60%), LOT COVERAGE WELL UNDER THE ALLOWABLE FACILITY STORMWATER RECOMMENDATIONS
- AS PER NCDEQ PERMIT # SW7040601 GRADING: LOT TO BE GRADED TO DRAIN TO FARR LOOP (GREYSON LOOP) BUILD UPON AREA TO MAINTAIN MINIMUM ELEVATION @ 9.5' FINISHED FLOOR OF BUILDING TO MAINTAIN MINIMUM ELEVATION @ 10.5'
- DRAINAGE: CULVERT UNDER FARR LOOP (GREYSON LOOP) TO BE MIN. TWIN 30" CULVERTS WITH INVERTS AT DITCH INVERT OR SUPPRESSED BELOW DITCH INVERTS WITH APPROPRIATE INLET AND OUTLET PROTECTION TO MAINTAIN FULL PIPE OPENING.
- SURVEY PREPARED BY SADDLER SURVEYING PLLC

LEGEND:

- PROPOSED CONCRETE VEHICULAR CIRCULATION AREA
- PROPOSED DWELLING AREA
- PROPOSED OPEN DECKS
- PROPOSED GRAVEL VEHICULAR CIRCULATION AREA
- PROPOSED DECK WITH COVERAGE BELOW
- PROPOSED CONCRETE AREA
- EXISTING GRADE CONTOURS
- PROPOSED PARKING ZONE
- PROPOSED FINISHED SPOT GRADE
- PROPOSED FINISHED GRADE CONTOUR
- PROPOSED DRAINAGE DIRECTIONAL FLOW ARROW

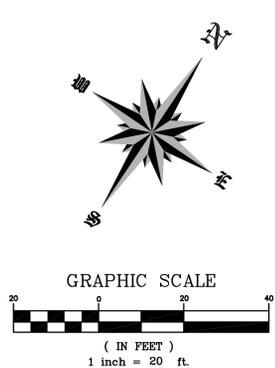


NOTE:
THE DATA GIVEN ON THESE PLANS IS BELIEVED TO BE ACCURATE, BUT THE ACCURACY IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL LEVELS, LOCATIONS, TYPES, AND DIMENSIONS OF THE EXISTING UTILITIES PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND, WORK SHALL CEASE AND THE ENGINEER NOTIFIED. WORK MAY CONTINUE UPON ENGINEERS NOTICE TO PROCEED.

BEFORE YOU DIG!

North Carolina 811

WWW.nc811.ORG



ENGINEER SEAL

Firm Certification# C-1955
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HOUSE ENGINEERING, P.C.

Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

APPROVALS	DATE
Drawn: D. NEFF	08/24/23
Checked: R. HOUSE	08/24/23
Engineer: R. HOUSE	08/24/23

REVISIONS		
No.	Date	Description

Grading and Drainage Plan
Lee Ann Leah and Brian Berry
Lot 26 Currituck Industrial Park
Location:
147 Greyson Loop
Polplar Branch Township Currituck County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	236926	-	C3 OF 4

CAD FILENAME: 236926 SCALE: 1"=20'

WPLED52

RAB



LED 52W Wall packs, 3 cutoff options, patent pending thermal management system. 100,000 hour L70 lifespan. 5-year, no-compromise warranty. Color: Bronze Weight: 17.7 lbs

Project: Greysen Loop, Type: Full Cutoff, Prepared By: D. Neff, Date: 08/21/23, Driver Info, LED Info

Technical Specifications

Compliance, UL Listed, ESNA LM-79 & LM-80 Testing, DLC Listed, Electrical, Dimming Driver, THD, Power Factor

Need help? Tech help line: (888) 722-1000 Email: sales@rablighting.com Website: www.rablighting.com

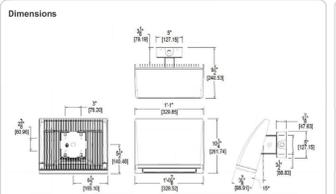
Page 1 of 3

WPLED52

RAB

Technical Specifications (continued)

Other, Replacement, Dimensions, Features



Ordering Matrix table with columns for Family, Cutoff, Wattage, Color Temp, Finish, Driver Options, Options

Need help? Tech help line: (888) RAB-1900 Email: sales@rabweb.com Website: www.rabweb.com

Page 2 of 2

BEFORE YOU DIG!



LIGHTING LEGEND

PROPOSED WALL PACK LIGHT RAB LIGHTING (MODEL# WPLED52) (OR APPROVED EQUAL) MOUNTING HEIGHT @ 12' with 15' angle (SEE DETAIL THIS SHEET)

LIGHTING NOTES

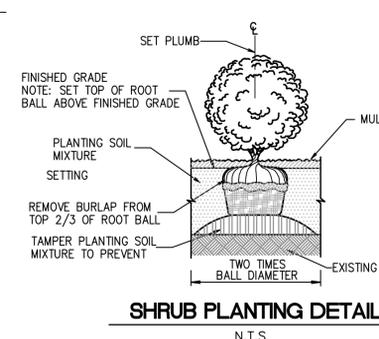
* ALL LIGHT PRODUCED ON SITE SHALL BE CONTAINED WITHIN THE PERIMETER OF THE SITE BY DESIGN, ORIENTATION OR SHIELDING OF THE LIGHT SOURCE

GENERAL NOTES:

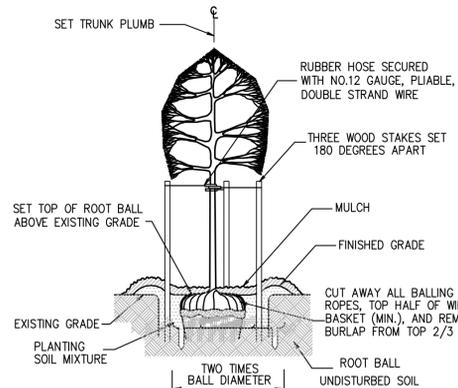
- SUBJECT PROPERTY: LOT 26 CURRITUCK INDUSTRIAL PARK... STREET ADDRESS: 147 GREYSON LOOP... PARCEL ID NUMBER: 123E0000260000... SUBJECT PROPERTY ZONING: LI (LIGHT INDUSTRIAL)

LEGEND:

- PROPOSED CONCRETE VEHICLE CIRCULATION AREA, PROPOSED DWELLING AREA, PROPOSED OPEN DECKS, PROPOSED GRAVEL VEHICLE CIRCULATION AREA, PROPOSED DECK WITH COVERAGE BELOW, PROPOSED CONCRETE AREA



SHRUB PLANTING DETAIL N.T.S.



TREE PLANTING DETAIL N.T.S.

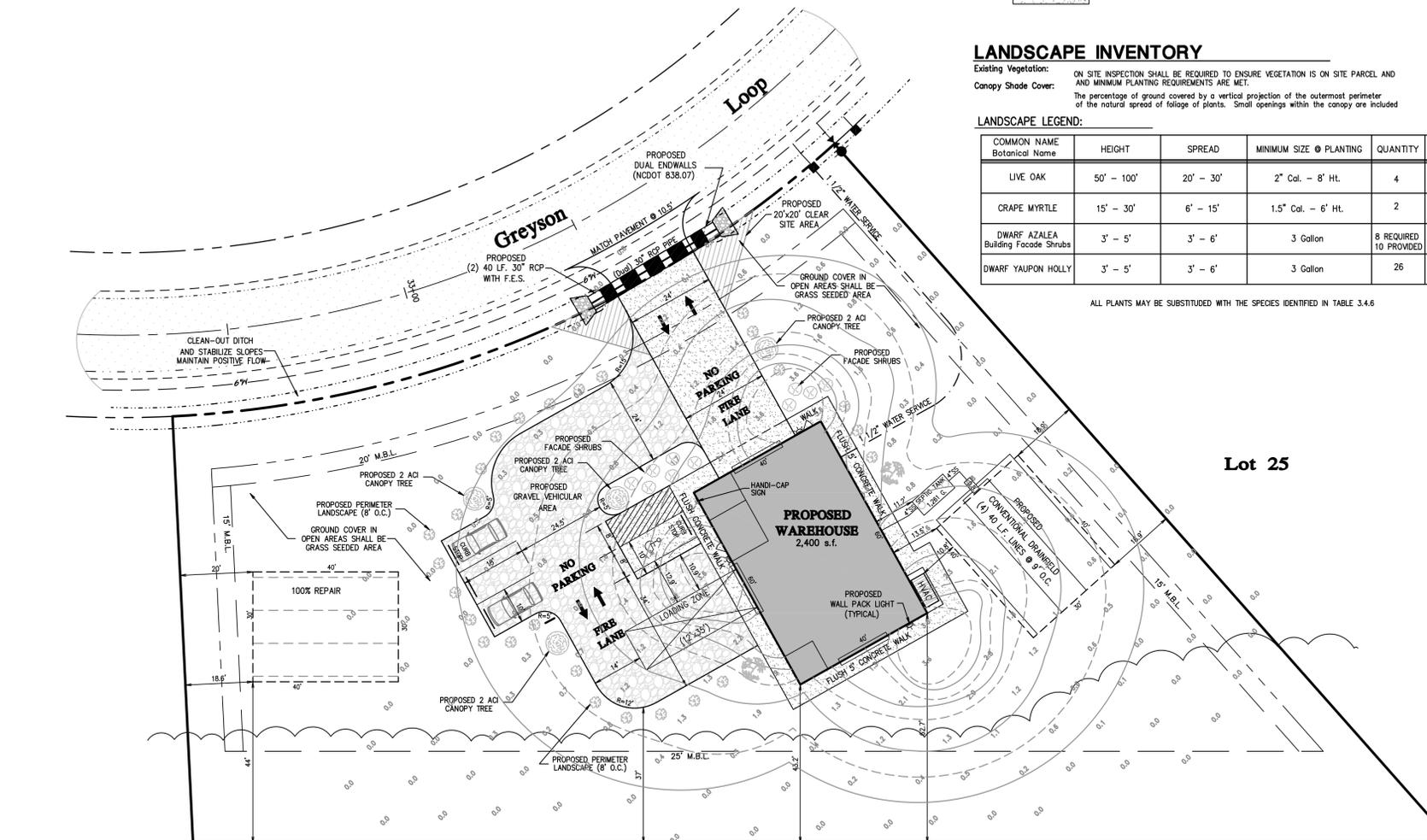
LANDSCAPE INVENTORY

Existing Vegetation: ON SITE INSPECTION SHALL BE REQUIRED TO ENSURE VEGETATION IS ON SITE PARCEL AND AND MINIMUM PLANTING REQUIREMENTS ARE MET.

LANDSCAPE LEGEND:

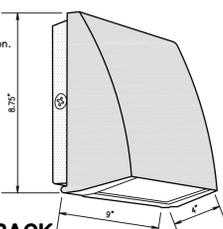
Table with columns: COMMON NAME, Botanical Name, HEIGHT, SPREAD, MINIMUM SIZE @ PLANTING, QUANTITY, SYMBOL

ALL PLANTS MAY BE SUBSTITUTED WITH THE SPECIES IDENTIFIED IN TABLE 3.4.6



LIGHTING NOTES

- * ALL LIGHT PRODUCED ON SITE SHALL BE CONTAINED WITHIN THE PERMETER OF THE SITE BY DESIGN, ORIENTATION OR SHIELDING OF THE LIGHT SOURCE



RAB SLIM POLE AND WALLPACK (MODEL# WPLED52) NOT TO SCALE

LIGHTING NOTES

- 1) REFER TO CURRITUCK COUNTY ORDINANCE, SECTION Subsection 5.4.3: Lighting Plan (EXTERIOR LIGHTING)



GRAPHIC SCALE (IN FEET) 1 inch = 20 ft



Table with columns: APPROVALS, DATE, REVISIONS

HOUSE ENGINEERING, P.C. logo and contact information

Landscape and Lighting Plan title block with project details

Michael W. Robinson, P.E., P.L.S.

August 17, 2023

Fire Hydrant Flow Testing

Fire Hydrant located at 147 Greyson Loop, Lot 26, Currituck Industrial Park
6" water main along the East Right of Way of Greyson Loop
Poplar Branch Township, Currituck County, North Carolina
Refer to Attached Exhibit A for line and hydrant locations

Test date: 05-11-2023

Time: 9:00 a.m.

Test made by: Michael W. Robinson, P.E.

Test 1: Hydrant located at 147 Greyson Loop off 6" water main along the along the East Right of Way of Greyson Loop.
Flow measured at Fire Hydrant A with static and residual pressures measured at Fire Hydrant B.

Hydrant discharge coefficient = 0.80.

Static Pressure at Hydrant B = 55 psig

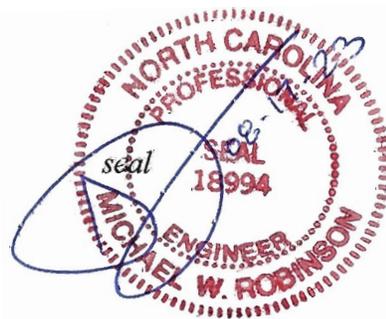
Direct read flow at Hydrant A (full open) = 1,030 gpm (pitot gauge)

Residual Pressure during flow at Hydrant A = 48 psig

Calculated flow to 20 psi residual = 2,456 gpm (See Calculation form)

08-17-23

Michael W. Robinson P.E., P.L.S.



Michael W. Robinson P.E., P.L.S.

P.O. Box 2852, Kill Devil Hills, NC 27948

252-255-8026

mrobinson@obxengineering.com

HYDRANT # & LOCATION 147 Grayson Loop, Lot 26, Currituck Industrial Park DATE: 8/17/2023

TEST BY: Mike Robinson Day or Week: Thursday TIME OF DAY: 10:00 a.m. MIN. OF FLOW: 1

WATER SUPPLIED BY: Currituck County Mainland Water

PURPOSE OF TEST: Available Fire Flow at Hydrant

DATA

FLOW HYDRANT(S)	B		
SIZE OPENING:	<u>2.5</u>	_____	_____
COEFFICIENT:	<u>0.8</u>	_____	_____
PITOT READING:	<u>37</u>	_____	_____
GPM:	<u>1030</u>	_____	_____

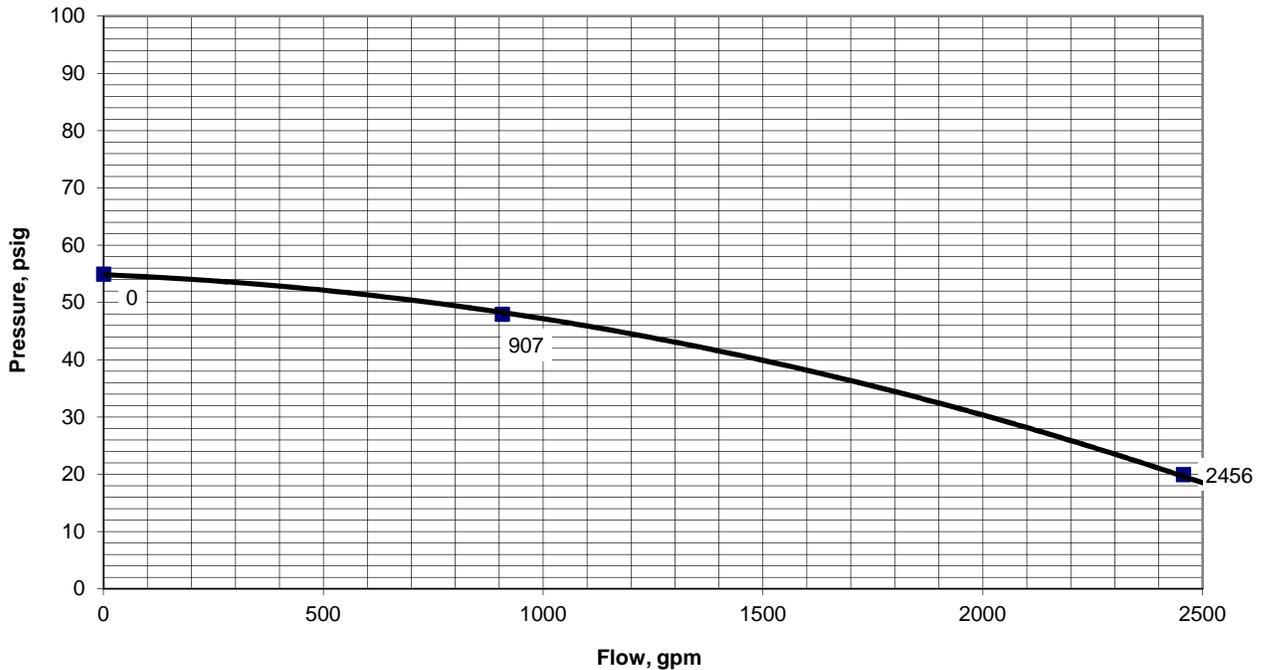
TOTAL FLOW DURING TEST: 1030 GPM

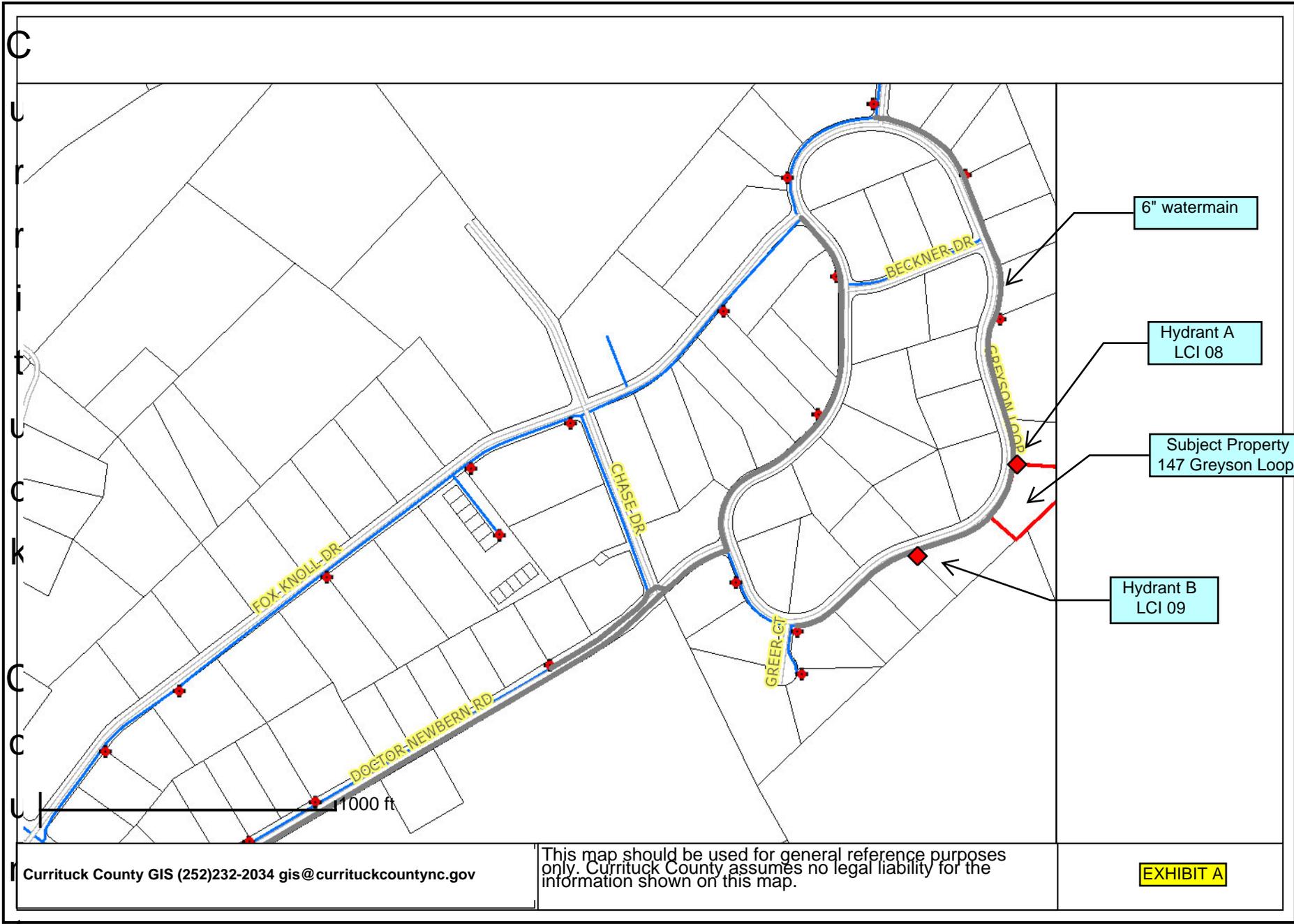
STATIC READING: 55 PSI RESIDUAL: 48 PSI

RESULTS: AT 20 PSI RESIDUAL 2456 GPM AT 0 PSI 3135 GPM

ESTIMATED CONSUMPTION: 1030 GAL.

REMARKS: See Report Exhibit A for Hydrant Location





6" watermain

Hydrant A
LCI 08

Subject Property
147 Greyson Loop

Hydrant B
LCI 09

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Static Pressure - Hydrant A



Direct Flow - Hydrant A



Residual Pressure During Flow- Hydrant B



ALBEMARLE REGIONAL HEALTH SERVICES
APPLICATION FOR ENVIRONMENTAL SERVICES

County: Currituck

File#

Parcel Identification Number (for Site Evaluations only): 123E0000060000

Type of Service Requested: Site Evaluation/Improvement Permit for Wastewater System (\$225)
Existing Wastewater System Inspection (\$60)
Construction Authorization for Repair of Wastewater System (\$60)

Applicant Name : Mancuso Development
Mailing Address : 610 Currituck Club House Dr Suite 7
City/State/Zip : Corolla, Nc 27927
Telephone Number : 252-305-4663 Fax: Email: jay@mancusodevelopment.com

Property Owner Name : Lee Ann Leah & Bryan Berry
Mailing Address : 104 Arnold Dr
City/State/Zip : Powells Point, Nc 27966
Telephone Number : 252-599-1114
Check if same as Applicant

Location of Property: (Directions if no address) 147 Greyson Loop

If Existing System Inspection; list size/type of new construction:

Type of Facility (House, Mobile Home, etc):

Number of Bedrooms: Number of People:

Size of Property (acres): .96 Plat or Site Plan provided (yes or no):

Type of Water Supply (public supply or private well): Public

THE APPLICANT SHALL MARK THE SITE AND MAKE THE SITE ACCESSIBLE FOR A SITE EVALUATION. A \$60.00 REVISIT FEE WILL BE CHARGED IF THE PROPERTY IS UNIDENTIFIABLE OR UNACCESSIBLE DUE TO VEGETATIVE OVERGROWTH, LOCKED GATES, LOOSE DOGS, ETC.

THE APPLICANT SHALL BE RESPONSIBLE FOR NOTIFYING THE HEALTH DEPARTMENT OF ANY DESIGNATED WETLANDS ON THE PROPERTY.

THE APPLICANT SHALL BE RESPONSIBLE FOR NOTIFYING THE HEALTH DEPARTMENT IF THERE IS WASTEWATER GENERATED ON THE SITE OTHER THAN DOMESTIC WASTEWATER.

IF THE INFORMATION SUBMITTED BY THE APPLICANT IS FOUND TO BE INCORRECT, OR IF THE SITE AND SOIL CONDITIONS ARE ALTERED, ANY IMPROVEMENT PERMIT SHALL BECOME INVALID.

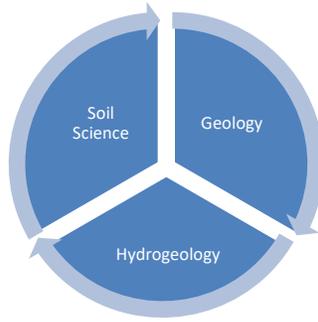
PLEASE ALLOW UP TO 2 WEEKS FOR COMPLETION.

I have read this application and certify that the information provided herein is true, complete, and correct. Authorized county and state officials are granted right of entry to the property to conduct the services requested.

Date: 5/3/23 Owner or Agent Signature: [Signature]

NOTE: A minimum additional fee of \$225.00 is required for the issuance of an Authorization for Wastewater System Construction on suitable lots where an Improvement Permit has been issued.

Table with contact information for various counties: Bertie Co., Camden Co., Chowan Co., Currituck Co., Gates Co., Hertford Co., Pasquotank Co., Perquimans Co. Includes phone numbers for each.



4114 Laurel Ridge Drive
Raleigh, North Carolina 27612

Protocol Sampling Service, Inc.
"Experts in Environmental Compliance"

Protocolsampling@yahoo.com
Environmentalservicesnc.com

August 23, 2023

Mr. Rick House, P.E.
House Engineering, P.C.
Post Office Box 466
Kitty Hawk, North Carolina 27949

Re: **Soil Inspection – Stormwater – 147 Greyson Loop
Lot 26, Currituck Industrial Park
Powells Point, Currituck County, North Carolina
Protocol Project No. 23-113**

Dear Mr. House:

The subject property that will be developed as a warehouse facility was inspected by Protocol Sampling Service, Inc., personnel Monday, August 21, 2023. Protocol personnel inspected the lot by advancing two (2) soil borings for lithologic descriptions, depth to the seasonal high-water table and the depth to static water table in the proposed storm water infiltration areas.

The infiltration areas were found to be graded flat, with an average elevation of 9.0 feet msl. The seasonal high-water table was found from 36 to 48 inches below land surface and the static water table was not found to a depth of 60-inches below the soil surface across the study area. The soil matched the Conetoe soil series profile with excellent structure (granular), consistence (friable) and texture (loamy sand) at the seasonal high water table elevation of 6.0' msl. Given a 20% porosity value for the loamy sand surface soils and an infiltration rate of at least 1.0-inches/hour, the infiltration area should easily accept any storm water flow from the impervious areas.

Please call me at (919) 210-6547 if you have any questions or comments.

Sincerely,
Protocol Sampling Service, Inc.

David E. Meyer, N.C.L.S.S.
President



cc: file

Soil Profile Description
147 Greyson Loop – Profile 1&2

- A 0 – 10 inches; dark brown (7.5YR 3/3) loamy fine sand; granular; friable.
- E 10 – 24 inches; yellowish brown (10YR 5/4) loamy sand; granular; friable.
- Bt 24 – 36 inches; brownish yellow (10YR 6/8) sandy loam; subangular blocky; friable.
- BC 36 – 45 inches; brownish yellow (10YR 6/8) and very pale brown (10YR 7/4) loamy sand with strong brown (7.5YR 5/6) concentrations and gray (10YR 6/1) depletions; subangular blocky; friable.
- C1 45 – 60 inches; brownish yellow (10YR 6/8) fine sand; single grained; loose
- C2 60 – 80 inches; light yellowish brown (10YR 6/4) fine sand; single grained; loose

Soil Series: **Conetoe**
Landscape: Coastal Plain
Landform: terrace
Parent Material: Marine sediments
Drainage Class: well drained
Particle Size Class: sandy
Temperature Regime: thermic
Subgroup Classification: Arenic Hapludult
Examination Method: auger boring
Date: August 21, 2023
Weather: Sunny, 85°
Investigators: David Meyer
Shwt: 36-48"
Measured water table depth: >60"

4 SPACES REQUIRED
4 SPACES PROVIDED

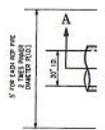
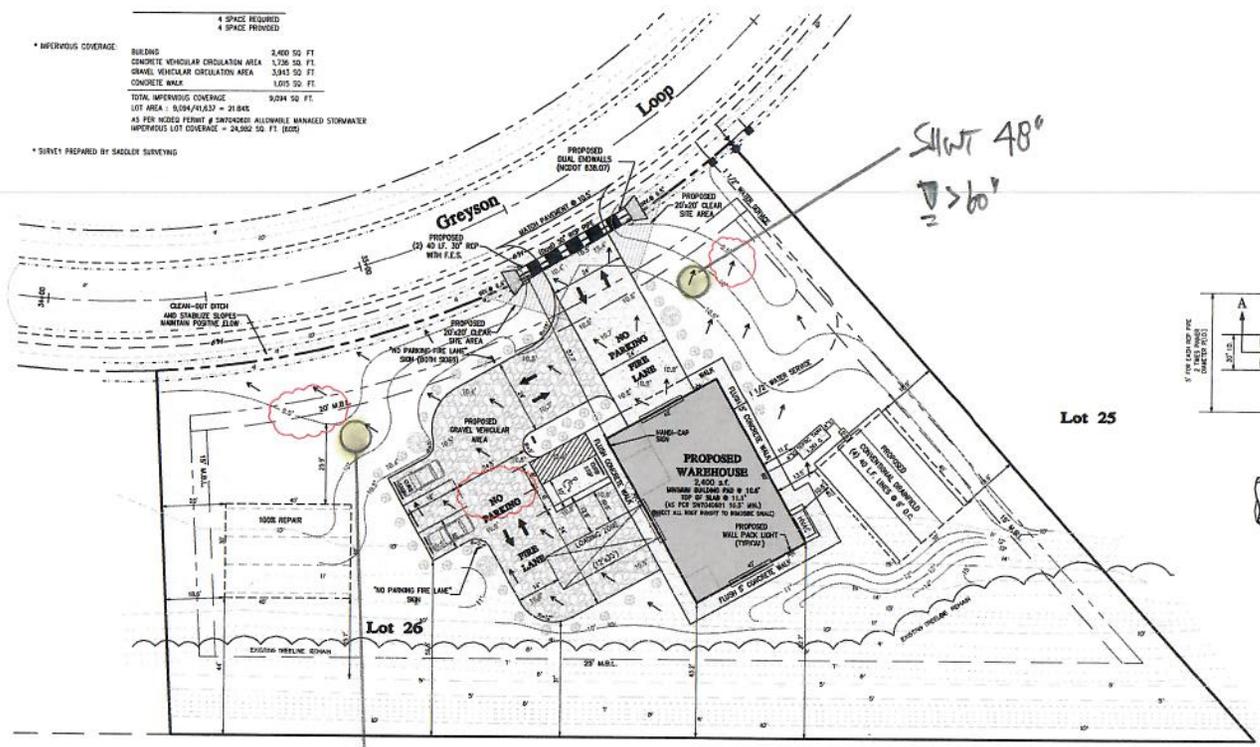
IMPERVIOUS COVERAGE

BUILDING	2,400 SQ. FT.
CONCRETE VEHICULAR CIRCULATION AREA	1,736 SQ. FT.
GRAVEL VEHICULAR CIRCULATION AREA	3,943 SQ. FT.
CONCRETE WALK	1,015 SQ. FT.
TOTAL IMPERVIOUS COVERAGE	9,094 SQ. FT.

LOT AREA = 9,094/41.637 = 218.4%

AS PER MOVED PERMIT @ 20% HOODS ALLOWABLE MINIMUM STORMWATER IMPERVIOUS LOT COVERAGE = 24,382 SQ. FT. (20%)

* SURVEY PREPARED BY SADDLER SURVEYING



ENGINEER SEAL

SHWT 36"
D > 60"

FIRE & RESCUE			Page 1/3																					
ISO Fire Flow Worksheet																								
Needed Fire Flow Work Sheet (ISO formulas)			$NFF = (Ci)(Oi)(Xi+Pi)$ $C=18F(Ai)^{0.5}$																					
Address:	147 Greyson Loop, Currituck County																							
Project Name:	Berry Warehouse	Occupancy Type:	Mixed Use																					
Const. Type:	VB Combustible	Number of Stories:	1																					
STEP 1																								
Take the area, which is 100% sq. ft. of the first floor plus the following percentage of the total area of the other floors.																								
First Floor Area in Sq. Ft	2400	Sq. Ft. @ 100%																						
Additional Floors																								
Enter total area in sq. ft for all other floors	0																							
Total Area Entire Building	2400																							
STEP 2																								
F = Coefficient related to the class of construction as determined by using the construction type found in SBCCI																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Construction Type</th> <th style="text-align: center;">Class</th> <th style="text-align: center;">F Value</th> </tr> </thead> <tbody> <tr> <td>Frame</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1.5</td> </tr> <tr> <td>Joist Masonry</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Non-combustible</td> <td style="text-align: center;">3</td> <td style="text-align: center;">0.8</td> </tr> <tr> <td>Heavy Timber</td> <td style="text-align: center;">4</td> <td style="text-align: center;">0.8</td> </tr> <tr> <td>Modified fire resistance</td> <td style="text-align: center;">5</td> <td style="text-align: center;">0.6</td> </tr> <tr> <td>Fire resistive</td> <td style="text-align: center;">6</td> <td style="text-align: center;">0.6</td> </tr> </tbody> </table>				Construction Type	Class	F Value	Frame	1	1.5	Joist Masonry	2	1	Non-combustible	3	0.8	Heavy Timber	4	0.8	Modified fire resistance	5	0.6	Fire resistive	6	0.6
Construction Type	Class	F Value																						
Frame	1	1.5																						
Joist Masonry	2	1																						
Non-combustible	3	0.8																						
Heavy Timber	4	0.8																						
Modified fire resistance	5	0.6																						
Fire resistive	6	0.6																						
Construction Class	1																							
Square Root of the Area x F x 18	1250	= C Value																						

ISO Fire Flow Worksheet

Needed Fire Flow Work Sheet (ISO formulas)

STEP 3	Multiply result of rounded off GPM by the Occupancy Factor (Oi)	Occupancy Factor
	Noncombustible (C-1) = No active fuel loads such as storage of asbestos, clay, glass, marble, stone, or metal products.	0.75
	Limited - Combustible (C-2) = Limited fuel loads such as airports, apartments, art studios, auto repair, auto showroom, aviaries, banks, barber shops, beauty shops, churches, clubs, cold storage warehouses, day care center, educational occupancies, gas stations, green houses, health clubs, hospitals, jails, libraries, medical labs, motels, museums, nursing homes, offices, radio stations, recreation centers, and rooming houses.	0.85
	Combustible (C-3) = Moderate fuel loads such as auto part stores, auto repair training center, bakery, bookstores, bowling centers, casinos, commercial laundries, contractor equipment storage, dry cleaners with no flammable fluids, leather processing, municipal storage buildings, nursery sales stores, pavilions, pet shops, photographic supplies, printers, restaurants, shoe repair, supermarkets, theaters, vacant buildings, and most wholesale & retail sales occupancies.	1.0
	Free-Burning (C-4) = Active fuel loads such as aircraft hangers, cabinet making, combustible metals, dry cleaners using flammable fluids, feed stores, furniture stores, kennels, lumber, packaging and crating, paper products manufacturing, petroleum bulk distribution centers, tire manufacturers, tire recapping or retreading, wax products, and wood working shops.	1.15
	Rapid-Burning (C-5) = Contents that burn with great intensity, spontaneously ignite, have flammable or explosive vapors, or large quantities of dust such as ammunition, feed mills, fireworks, flammable compressed gases, flammable liquids, flour mills, highly flammable solids, matches, mattress factories, nitrocellulose-based products, rag storage, upholstery shops, & waste paper storage.	1.25
	Occupancy Class Selected (1 thru 5) 1	
	GPM x Oi 937.5	

ISO Fire Flow Worksheet

Needed Fire Flow Work Sheet (ISO formulas)

STEP 4

Now consider the exposure factor (Xi) - (Separation between buildings)

Distance (feet to the exposed building)	Xi	>3 stories
0-10	0.22	0.47
11-30	0.18	0.43
31-60	0.13	0.38
61-100	0.09	0.34

Distance, in feet, to the exposed Bldg.

Xi (from table)

Multiply GPM from step 4 by (1+Xi)

Total From Step 4

STEP 5

Approved Fire Sprinkler System? (Y or N)

Take fire flow from step 5 and multiply by sprinkler credit of 0.25

Sprinkler credit

Now subtract sprinkler credit from fire flow in step 4

NEEDED FIRE FLOW

1000 GPM

STORMWATER DIVISION CODING SHEET
POST-CONSTRUCTION PERMITS

PERMIT NO.	SW <u>7040601</u>
DOC TYPE	<input checked="" type="checkbox"/> CURRENT PERMIT <input type="checkbox"/> APPROVED PLANS <input type="checkbox"/> HISTORICAL FILE
DOC DATE	<u>20241102</u> YYYYMMDD

WaRO



**North Carolina Department of Environment and Natural Resources
Division of Water Quality**

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
Alan W. Klimek, P.E., Director

**DIVISION OF WATER QUALITY
November 2, 2004**

Mr. John W. Harris
John Harris and Associates, LLC
P.O. Box 2187
Kitty Hawk, NC 27949

**Subject: Permit No. SW7040601
Fox Knoll Commerce Park, Phase Two modification
High Density Stormwater Project
Currituck County**

Dear Mr. Harris:

The Washington Regional Office received a Stormwater Application for the subject project on June 7, 2004. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW7040601 dated November 2, 2004 to John Harris and Associates, LLC for the modification of a wet detention pond to serve Fox Knoll Commerce Park, Phase Two located in Currituck County, NC. This permit replaces permit SW7000905 issued January 17, 2001.

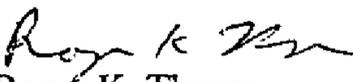
This permit shall be effective from the date of issuance until November 2, 2014 and shall be subject to the conditions and limitations as specified therein. Please pay special attention to Section II condition 8. which requires submittal of an amended Declaration of Protective Covenants. Also pay special attention to the Operation and Maintenance requirements in this permit. Failure to establish an adequate system for operation and maintenance of the stormwater management system will result in future compliance problems.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings,

Pare 2
Mr. John Harris
November 2, 2004

If you have any questions, or need additional information concerning this matter, please contact me at (252) 948-3923.

Sincerely,


Roger K. Thorpe
Environmental Engineer
Washington Regional Office

cc: Performance Engineering
Hyman & Robey
Daniel Khoury, PO Box 2, Kitty Hawk, NC 27949
Currituck County Inspections
Washington Regional Office
Central Files

**STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY**

STATE STORMWATER MANAGEMENT PERMIT

HIGH DENSITY DEVELOPMENT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

John Harris and Associates, LLC

Currituck County

FOR THE

Construction, operation and maintenance of stormwater management systems in compliance with the provisions of 15A NCAC 2H.1000 (hereafter referred to as the "*stormwater rules*") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit for grassed swales and a wet detention pond to serve Fox Knoll Commerce Park, Phase Two located off US Highway 158 in Currituck, NC.

This permit replaces permit SW7000905 issued January 17, 2001. This permit shall be effective upon the date of issuance until November 2, 2014 and shall be subject to the following specified conditions and limitations:

I. DESIGN STANDARDS

1. This permit is effective only with respect to the nature and volume of stormwater described in the application and other supporting data.

**DIVISION OF WATER QUALITY
PROJECT DATA**

Project Name: Fox Knoll Commerce Park Phase Two

Permit Number: SW7040601

Location: Currituck County

Applicant: John Harris and Associates, LLC

Mailing Address: P.O. Box 2187
Kitty Hawk, NC 27949

Application Date: 6/7/2004 (original)

Receiving Stream: UT to North River

Classification of Water Body: C

Total Site Area: 25.12 ac

Total Impervious: 8.17 ac

Wet Pond Depth: 6.96 ft

Required Storage Volume: 31,231 cf

Provided Storage Volume: 32,527 cf

Required Surface Area: 18,602 sf

Provided Surface Area: 72,436 sf

Controlling Orifice: 2 inch @ elevation 5.46 ft

- d. Immediate repair of eroded areas
 - e. Maintenance of side slopes in accordance with approved plans and specifications
 - f. Debris removal and unclogging of outlet structure, orifice device and catch basins and piping.
4. Records of maintenance activities must be kept and made available upon request to authorized personnel of DWQ. The records will indicate the date, activity, name of person performing the work and what actions were taken.
 5. This permit shall become voidable unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
 6. On or before April 30, 2005 a certification must be received from an appropriate designer for the system installed certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting documentation. Mail the Certification to the Washington Regional Office, 943 Washington Square Mall, Washington, North Carolina, 27889, attention Division of Water Quality.
 7. A copy of the approved plans and specifications shall be maintained on file by the Permittee for a minimum of five years from the date of the completion of construction
 8. On or before March 31, 2005 submit an amended Declaration of Protective Covenants to correct an inaccurate reference in Section 8.03 Enforcement. The current Enforcement section indicates that the State is the beneficiary of Section 5.05 (Exterior Maintenance) when it should reference Section 4.03 (North Carolina Department on Environment and Natural Resources Water Quality Stormwater Regulations).

III. GENERAL CONDITIONS

1. This permit is not transferable. In the event there is a desire for the facilities to change ownership, or there is a name change of the Permittee, a formal permit request must be submitted to the Division of Water Quality accompanied by an application fee, documentation from the parties involved, and other supporting materials as may be

4. No homeowner/lot owner/developer shall be allowed to fill in, alter, or pipe any vegetative practices (such as swales) shown on the approved plans as part of the stormwater management system without submitting a revision to the permit and receiving approval from the Division.
5. The following items will require a modification to the permit:
 - a. Any revision to the approved plans, regardless of size
 - b. Project name change
 - c. Transfer of ownership
 - d. Redesign or addition to the approved amount of built-upon area
 - e. Further subdivision of the project area.

In addition, the Director may determine that other revisions to the project should require a modification to the permit.

6. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

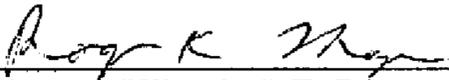
II. SCHEDULE OF COMPLIANCE

1. The permittee will comply with the following schedule for construction and maintenance of the stormwater management system.
 - a. The stormwater management system shall be constructed in its entirety, vegetated and operational for its intended use prior to the construction of any built-upon surfaces except roads.
 - b. During construction, erosion shall be kept to a minimum and any eroded areas of the system will be repaired immediately.
2. The facilities must be properly maintained and operated at all times. The approved Operation and Maintenance Plan must be followed in its entirety and maintenance must occur at the scheduled intervals.
3. The permittee shall at all times provide the operation and maintenance necessary to assure the permitted stormwater system functions at optimum efficiency including, but not limited

3. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state, and federal) which have jurisdiction.
4. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those as may be required by this Division, such as the construction of additional or replacement stormwater management systems.
5. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance or termination does not stay any permit condition.

Permit issued this the 2 nd day of November, 2004.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Alan W. Klimek, P.E. Director

Division of Water Quality

By Authority of the Environmental Management Commission

Permit Number SW7040601

Fox Knoll Commerce Park, Phase Two
Stormwater Permit No. SW7040601

Designer's Certification

I, _____, as a duly

registered Professional Engineer in the State of North Carolina, having been authorized to observe
(periodically/weekly/full time)

the construction of the project, _____

_____ (Project)

for _____ (Project Owner).

hereby state that to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

Fox Knoll Commerce Park, Phase Two
Stormwater Permit No. SW7040601

Designer's Certification

I, Robert J. Stewart, Jr., as a duly

registered Professional Engineer in the State of North Carolina, having been authorized to observe
(periodically/~~weekly~~/~~full-time~~)

the construction of the project, Fox Knoll Commerce Park,

Phase Two - modifications to wet detention pond (Project)

for John Harris and Associates, LLC (Project Owner)

hereby state that to the best of my abilities, due care and diligence was used in the observation of the project construction such that the construction was observed to be built within substantial compliance and intent of the approved plans and specifications.

Robert J. Stewart, Jr.



OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number
12-27	\$420	SW7000905

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

This form may be photocopied for use as an original

I. GENERAL INFORMATION

1. Applicants name (specify the name of the corporation, individual, etc. who owns the project):
JOHN HARRIS AND ASSOCIATES, LLC

2. Print Owner/Signing Official's name and title (person legally responsible for facility and compliance):
JOHN W. HARRIS, MGR.

3. Mailing Address for person listed in item 2 above:
P.O. Box 2187
City: KITTY HAWK State: NC Zip: 27949
Telephone Number: (252) 261-7743

4. Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):
FOX KNOLL COMMERCE PARK, PHASE TWO

5. Location of Project (street address):
US HWY 158 (CARATOKE HWY.)
City: POINELL'S POINT County: CORRITUCK

6. Directions to project (from nearest major intersection):
PROJECT TRACT IS 6 MILES NORTH OF THE WRIGHT MEMORIAL BRIDGE ON THE EAST SIDE OF U.S. HWY. 158

7. Latitude: N 36° 08' 47" Longitude: W 75° 50' 41" of project

8. Contact person who can answer questions about the project:
Name: ROBERT STEWART Telephone Number: (252) 491-8354

2. If this application is being submitted as the result of a renewal or modification to an existing permit, list the existing permit number N/A and its issue date (if known) N/A
3. Specify the type of project (check one):
 Low Density High Density Redevelop General Permit Other
4. Additional Project Requirements (check applicable blanks):
 CAMA Major Sedimentation/Erosion Control 404/401 Permit NPDES Stormwater

Information on required state permits can be obtained by contacting the Customer Service Center at 1-877-623-6748.

III. PROJECT INFORMATION

1. In the space provided below, summarize how stormwater will be treated. Also attach a detailed narrative (one to two pages) describing stormwater management for the project.

STORMWATER WILL BE CONVEYED THROUGH GRASSED ROADSIDE SWALES AND CULVERTS TO AN APPROVED WET DETENTION BASIN

2. Stormwater runoff from this project drains to the PASQUOTANK River basin.
3. Total Project Area: 25.1185 acres
 (PHASE TWO ONLY)
4. Project Built Upon Area: 40 %
5. How many drainage areas does the project have? 2
6. Complete the following information for each drainage area. If there are more than two drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below.

Basin Information	Drainage Area 1	Drainage Area 2
Receiving Stream Name	U.T. TO CURRITUCK SOUND	
Receiving Stream Class	S.C.	
Drainage Area	1,094,163 SF (25.1185 AC)	
Existing Impervious* Area	NONE	
Proposed Impervious* Area	440,499 SF	
% Impervious* Area (total)	40%	

Impervious* Surface/Area	Drainage Area 1	Drainage Area 2
On-site Buildings (SEE NOTE BELOW)	387,089 SF	
On-site Streets	32,148 SF	
On-site Parking		

2. If this application is being submitted as the result of a renewal or modification to an existing permit, list the existing permit number N/A and its issue date (if known) N/A

3. Specify the type of project (check one):
 Low Density High Density Redevelop General Permit Other

4. Additional Project Requirements (check applicable blanks):
 CAMA Major Sedimentation/Erosion Control 404/401 Permit NPDES Stormwater

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1. In the space provided below, summarize how stormwater will be treated. Also attach a detailed narrative (one to two pages) describing stormwater management for the project.

STORMWATER WILL BE CONVEYED THROUGH GRASSED ROADSIDE SWALES AND CULVERTS TO AN APPROVED WET DETENTION BASIN

2. Stormwater runoff from this project drains to the PASQUOTANK River basin.

3. Total Project Area: 25.1185 acres (PHASE TWO ONLY) 4. Project Built Upon Area: 40 %

5. How many drainage areas does the project have? 2

6. Complete the following information for each drainage area. If there are more than two drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below.

Basin Information	Drainage Area 1	Drainage Area 2
Receiving Stream Name	U.T. TO CURRITUCK SOUND	
Receiving Stream Class	S.C.	
Drainage Area	1,094,163 SF (25.1185 AC)	
Existing Impervious* Area	NONE	
Proposed Impervious* Area	440,499 SF	
% Impervious* Area (total)	40%	

Impervious* Surface Area	Drainage Area 1	Drainage Area 2
On-site Buildings (SEE NOTE BELOW)	387,089 SF	
On-site Streets	32,148 SF	
On-site Parking		

7. How was the off-site impervious area listed above derived? FROM AUTOCAD R14 AREA
CALCULATION ROUTINE

IV. DEED RESTRICTIONS AND PROTECTIVE COVENANTS

The following italicized deed restrictions and protective covenants are required to be recorded for all subdivisions, outparcels and future development prior to the sale of any lot. If lot sizes vary significantly, a table listing each lot number, size and the allowable built-upon area for each lot must be provided as an attachment.

1. *The following covenants are intended to ensure ongoing compliance with state stormwater management permit number _____ as issued by the Division of Water Quality. These covenants may not be changed or deleted without the consent of the State.*
2. *No more than 607 ~~square feet~~ of any lot shall be covered by structures or impervious materials. Impervious materials include asphalt, gravel, concrete, brick, stone, slate or similar material but do not include wood decking or the water surface of swimming pools.*
3. *Swales shall not be filled in, piped, or altered except as necessary to provide driveway crossings.*
4. *Built-upon area in excess of the permitted amount requires a state stormwater management permit modification prior to construction.*
5. *All permitted runoff from outparcels or future development shall be directed into the permitted stormwater control system. These connections to the stormwater control system shall be performed in a manner that maintains the integrity and performance of the system as permitted.*

By your signature below, you certify that the recorded deed restrictions and protective covenants for this project shall include all the applicable items required above, that the covenants will be binding on all parties and persons claiming under them, that they will run with the land, that the required covenants cannot be changed or deleted without concurrence from the State, and that they will be recorded prior to the sale of any lot.

V. SUPPLEMENT FORMS

The applicable state stormwater management permit supplement form(s) listed below must be submitted for each BMP specified for this project. Contact the Stormwater and General Permits Unit at (919) 733-5083 for the status and availability of these forms.

Form SWU-102	Wet Detention Basin Supplement
Form SWU-103	Infiltration Basin Supplement
Form SWU-104	Low Density Supplement
Form SWU-105	Curb Outlet System Supplement
Form SWU-106	Off-Site System Supplement
Form SWU-107	Underground Infiltration Trench Supplement

VI. SUBMITTAL REQUIREMENTS

Only complete application packages will be accepted and reviewed by the Division of Water Quality (DWQ). A complete package includes all of the items listed below. The complete application package should be submitted to the appropriate DWQ Regional Office.

1. Please indicate that you have provided the following required information by initialing in the space provided next to each item.

- | | Initials |
|---|----------------|
| • Original and one copy of the Stormwater Management Permit Application Form | <u> RGS </u> |
| • One copy of the applicable Supplement Form(s) for each BMP | <u> RGS </u> |
| • Permit application processing fee of \$420 (payable to NCDENR) | <u> RGS </u> |
| • Detailed narrative description of stormwater treatment/management | <u> RGS </u> |
| • Two copies of plans and specifications, including: | <u> RGS </u> |
| - Development/Project name | |
| - Engineer and firm | |
| - Legend | |
| - North arrow | |
| - Scale | |
| - Revision number & date | |
| - Mean high water line | |
| - Dimensioned property/project boundary | |
| - Location map with named streets or NCSR numbers | |
| - Original contours, proposed contours, spot elevations, finished floor elevations | |
| - Details of roads, drainage features, collection systems, and stormwater control measures | |
| - Wetlands delineated, or a note on plans that none exist | |
| - Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations | |
| - Drainage areas delineated | |
| - Vegetated buffers (where required) | |

VII. AGENT AUTHORIZATION

If you wish to designate authority to another individual or firm so that they may provide information on your behalf, please complete this section.

Designated agent (individual or firm): PERFORMANCE ENGINEERING
 Mailing Address: 8604 CARATOKE HWY
 City: POWELL'S POINT State: NC Zip: 27966
 Phone: (252) 491 8354 Fax: (252) 491 5112

VIII. APPLICANT'S CERTIFICATION

I, (print or type name of person listed in General Information, item 2) JOHN W. HARRIS, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions and protective covenants will be recorded, and that the proposed project complies with the requirements of 15A

VI. SUBMITTAL REQUIREMENTS

Only complete application packages will be accepted and reviewed by the Division of Water Quality (DWQ). A complete package includes all of the items listed below. The complete application package should be submitted to the appropriate DWQ Regional Office.

1. Please indicate that you have provided the following required information by initialing in the space provided next to each item.

- Original and one copy of the Stormwater Management Permit Application Form
- One copy of the applicable Supplement Form(s) for each BMP
- Permit application processing fee of \$420 (payable to NCDENR)
- Detailed narrative description of stormwater treatment/management
- Two copies of plans and specifications, including:
 - Development/Project name
 - Engineer and firm
 - Legend
 - North arrow
 - Scale
 - Revision number & date
 - Mean high water line
 - Dimensioned property/project boundary
 - Location map with named streets or NCSR numbers
 - Original contours, proposed contours, spot elevations, finished floor elevations
 - Details of roads, drainage features, collection systems, and stormwater control measures
 - Wetlands delineated, or a note on plans that none exist
 - Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations
 - Drainage areas delineated
 - Vegetated buffers (where required)

Initials

RQS

RQS

RQS

RQS

RQS

VII. AGENT AUTHORIZATION

If you wish to designate authority to another individual or firm so that they may provide information on your behalf, please complete this section.

Designated agent (individual or firm): PERFORMANCE ENGINEERING

Mailing Address: 8604 CARATOKE HWY

City: POWELL'S POINT State: NC Zip: 27966

Phone: (252) 491 8354 Fax: (252) 491 5112

VIII. APPLICANT'S CERTIFICATION

I, (print or type name of person listed in General Information, item 2) JOHN W. HARRIS certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions

Permit No. _____
(to be provided by DWQ)

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

WET DETENTION BASIN SUPPLEMENT

This form may be photocopied for use as an original

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes an application form, a wet detention basin supplement for each basin, design calculations, and plans and specifications showing all basin and outlet structure details.

I. PROJECT INFORMATION

Project Name: FOX KNOLL COMMERCE PARK, PHASE TWO

Contact Person: ROBERT STEWART Phone Number: (252) 491-8354

For projects with multiple basins, specify which basin this worksheet applies to: BASIN # 2

elevations

Basin Bottom Elevation - 1.5 ft. (*floor of the basin*)
Permanent Pool Elevation 4.5 ft. (*elevation of the orifice*)
Temporary Pool Elevation 6.0 ft. (*elevation of the discharge structure overflow*)

areas

Permanent Pool Surface Area 31,081 sq. ft. (*water surface area at the orifice elevation*)
Drainage Area 25,1185 ac. (*on-site and off-site drainage to the basin*)
Impervious Area 10,1125 ac. (*on-site and off-site drainage to the basin*)

volumes

Permanent Pool Volume 108,543 cu. ft. (*combined volume of main basin and forebay*)
Temporary Pool Volume 52,351 cu. ft. (*volume detained above the permanent pool*)
Forebay Volume 23,988 cu. ft. (*approximately 20% of total volume*)

22%

Other parameters

Footnotes:

- ¹ When using the Division SA/DA tables, the correct SA/DA ratio for permanent pool sizing should be computed based upon the actual impervious % and permanent pool depth. Linear interpolation should be employed to determine the correct value for non-standard table entries.
- ² In the 20 coastal counties, the requirement for a vegetative filter may be waived if the wet detention basin is designed to provide 90% TSS removal. The NCDENR BMP manual provides design tables for both 85% TSS removal and 90% TSS removal.

II. REQUIRED ITEMS CHECKLIST

The following checklist outlines design requirements per the Stormwater Best Management Practices Manual (N.C. Department of Environment, Health and Natural Resources, February 1999) and Administrative Code Section: 15 A NCAC 2H .1008.

Initial in the space provided to indicate the following design requirements have been met and supporting documentation is attached. If the applicant has designated an agent in the Stormwater Management Permit Application Form, the agent may initial below. **If a requirement has not been met, attach justification.**

Applicants Initials

- | | |
|------------|--|
| <u>RGS</u> | a. The permanent pool depth is between 3 and 6 feet (required minimum of 3 feet). |
| <u>RGS</u> | b. The forebay volume is approximately equal to 20% of the basin volume. |
| <u>RGS</u> | c. The temporary pool controls runoff from the design storm event. |
| <u>RGS</u> | d. The temporary pool draws down in 2 to 5 days. |
| <u>N/A</u> | e. If required, a 30-foot vegetative filter is provided at the outlet (include non-erosive flow calculations) |
| <u>RGS</u> | f. The basin length to width ratio is greater than 3:1. |
| <u>RGS</u> | g. The basin side slopes above the permanent pool are no steeper than 3:1. |
| <u>RGS</u> | h. A submerged and vegetated perimeter shelf with a slope of 6:1 or less (show detail). |
| <u>RGS</u> | i. Vegetative cover above the permanent pool elevation is specified. |
| <u>RGS</u> | j. A trash rack or similar device is provided for both the overflow and orifice. |
| <u>N/A</u> | k. A recorded drainage easement is provided for each basin including access to nearest right-of-way. |
| <u>N/A</u> | l. If the basin is used for sediment and erosion control during construction, clean out of the basin is specified prior to use as a wet detention basin. |
| <u>N/A</u> | m. A mechanism is specified which will drain the basin for maintenance or an emergency. |

III. WET DETENTION BASIN OPERATION AND MAINTENANCE AGREEMENT

Maintenance activities shall be performed as follows:

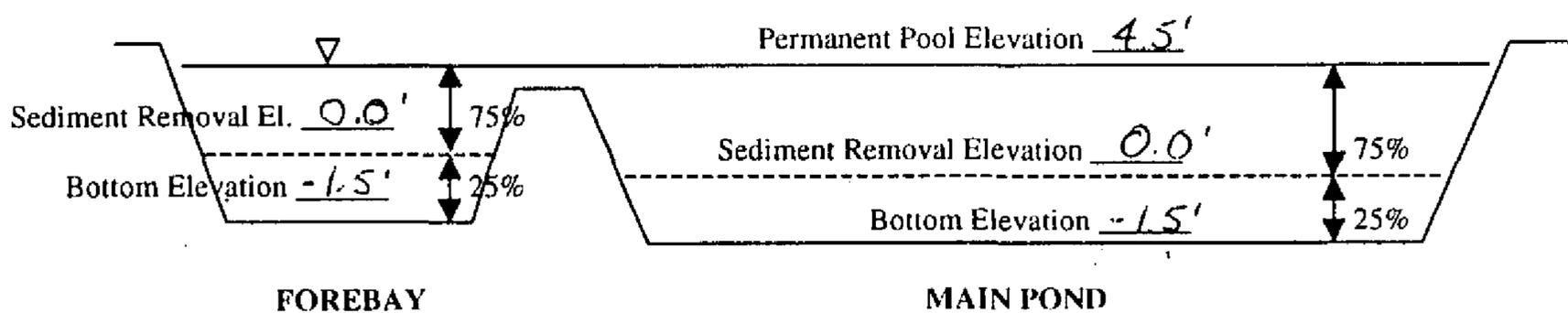
1. After every significant runoff producing rainfall event and at least monthly:
 - a. Inspect the wet detention basin system for sediment accumulation, erosion, trash accumulation, vegetated cover, and general condition.
 - b. Check and clear the orifice of any obstructions such that drawdown of the temporary pool occurs within 2 to 5 days as designed.
2. Repair eroded areas immediately, re-seed as necessary to maintain good vegetative cover, mow vegetative cover to maintain a maximum height of six inches, and remove trash as needed.
3. Inspect and repair the collection system (i.e. catch basins, piping, swales, riprap, etc.) quarterly to maintain proper functioning.
4. Remove accumulated sediment from the wet detention basin system semi-annually or when depth is reduced to 75% of the original design depth (see diagram below). Removed sediment shall be disposed of in an appropriate manner and shall be handled in a manner that will not adversely impact water quality (i.e. stockpiling near a wet detention basin or stream, etc.).

The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the permanent pool depth reads _____ feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads _____ feet in the forebay, the sediment shall be removed.

BASIN DIAGRAM
(fill in the blanks)



7. All components of the wet detention basin system shall be maintained in good working order.

I acknowledge and agree by my signature below that I am responsible for the performance of the seven maintenance procedures listed above. I agree to notify DWQ of any problems with the system or prior to any changes to the system or responsible party.

Print name: JOHN W. HARRIS

Title: OWNER

Address: P.O. BOX 2187 KITTY HAWK, NC 27949

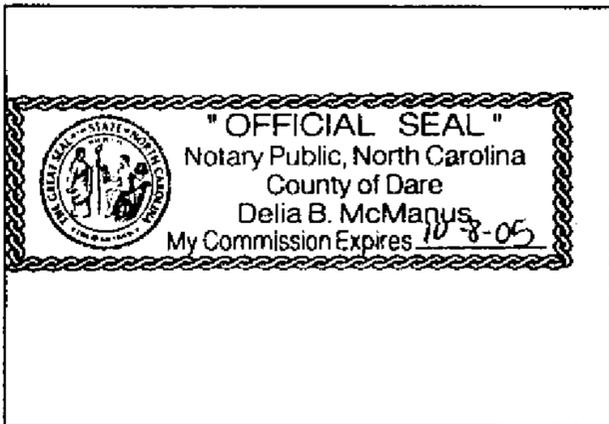
Phone: 252 761 7243

Signature: *John W. Harris*

Date: 12/21/00

Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

I, Delia B. McManus, a Notary Public for the State of North Carolina,
County of Dare, do hereby certify that John W. Harris
personally appeared before me this 21st day of December, 2000, and acknowledge the due
execution of the forgoing wet detention basin maintenance requirements. Witness my hand and official seal,



SEAL

My commission expires 10-8-2005

RECEIVED

OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number
JUN 7 2004	\$420	SW 7040601

DWQ-WARO

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

This form may be photocopied for use as an original

I. GENERAL INFORMATION

1. Applicants name (specify the name of the corporation, individual, etc. who owns the project):

Fox Knoll Property Owners' Association, Inc

2. Print Owner/Signing Official's name and title (person legally responsible for facility and compliance):

John W. Harris, President

3. Mailing Address for person listed in item 2 above:

P.O. Box 2187

City: Kitty Hawk

State: NC

Zip: 27949

Telephone Number: (252) 261-7243

4. Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):

Fox Knoll Commerce Park, Phase Two

5. Location of Project (street address):

Fox Knoll Drive, off U.S. Hwy 158

City: Powells Point

County: Currituck

6. Directions to project (from nearest major intersection):

Project tract is 6 miles north of The Wright Memorial Bridge on the east side of US Hwy 158

7. Latitude: N 36° 08' 47" Longitude: W 75° 50' 41" of project

8. Contact person who can answer questions about the project:

Name: Robert Stewart

Telephone Number: (252) 491-8354

2. If this application is being submitted as the result of a renewal or modification to an existing permit, list the existing permit number SW 7000905 and its issue date (if known) Jan 17, 2001

3. Specify the type of project (check one):
 Low Density High Density Redevelop General Permit Other

4. Additional Project Requirements (check applicable blanks):
 CAMA Major Sedimentation/Erosion Control 404/401 Permit NPDES Stormwater

Information on required state permits can be obtained by contacting the Customer Service Center at 1-877-623-6748.

III. PROJECT INFORMATION

1. In the space provided below, summarize how stormwater will be treated. Also attach a detailed narrative (one to two pages) describing stormwater management for the project.

Stormwater will be conveyed via roadside, grassed swales, to a wet detention basin for treatment.

2. Stormwater runoff from this project drains to the Pasquotank River basin:

3. Total Project Area: 21.1185 acres 4. Project Built Upon Area: 33 %

5. How many drainage areas does the project have? ONE DRAINAGE AREA FOR PHASE 2

6. Complete the following information for each drainage area. If there are more than two drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below.

Basin Information	Drainage Area 1	Drainage Area 2
Receiving Stream Name	<u>U.T. TO CURRITUCK SOUND</u>	
Receiving Stream Class	<u>SC</u>	
Drainage Area	<u>1,094,163 SF (25.1185 AC)</u>	
Existing Impervious* Area	<u>53,410 SF</u>	
Proposed Impervious* Area	<u>302,380 SF</u>	
% Impervious* Area (total)	<u>355,790 SF (32.5%)</u>	

Impervious* Surface Area	Drainage Area 1	Drainage Area 2
On-site Buildings **	<u>323,642 SF</u>	
On-site Streets	<u>32,148 SF</u>	
On-site Parking		
On-site Sidewalks		

7. How was the off-site impervious area listed above derived? AUTOCAD AREA CALCULATION ROUTINE AND MINIMAL CALCULATION OF 60% X LOT AREAS

IV. DEED RESTRICTIONS AND PROTECTIVE COVENANTS

The following italicized deed restrictions and protective covenants are required to be recorded for all subdivisions, outparcels and future development prior to the sale of any lot. If lot sizes vary significantly, a table listing each lot number, size and the allowable built-upon area for each lot must be provided as an attachment.

- 1. The following covenants are intended to ensure ongoing compliance with state stormwater management permit number _____ as issued by the Division of Water Quality. These covenants may not be changed or deleted without the consent of the State.*
- 2. No more than 60% ~~square feet~~ of any lot shall be covered by structures or impervious materials. Impervious materials include asphalt, gravel, concrete, brick, stone, slate or similar material but do not include wood decking or the water surface of swimming pools.*
- 3. Swales shall not be filled in, piped, or altered except as necessary to provide driveway crossings.*
- 4. Built-upon area in excess of the permitted amount requires a state stormwater management permit modification prior to construction.*
- 5. All permitted runoff from outparcels or future development shall be directed into the permitted stormwater control system. These connections to the stormwater control system shall be performed in a manner that maintains the integrity and performance of the system as permitted.*

By your signature below, you certify that the recorded deed restrictions and protective covenants for this project shall include all the applicable items required above, that the covenants will be binding on all parties and persons claiming under them, that they will run with the land, that the required covenants cannot be changed or deleted without concurrence from the State, and that they will be recorded prior to the sale of any lot.

V. SUPPLEMENT FORMS

The applicable state stormwater management permit supplement form(s) listed below must be submitted for each BMP specified for this project. Contact the Stormwater and General Permits Unit at (919) 733-5083 for the status and availability of these forms.

Form SWU-102	Wet Detention Basin Supplement
Form SWU-103	Infiltration Basin Supplement
Form SWU-104	Low Density Supplement
Form SWU-105	Curb Outlet System Supplement
Form SWU-106	Off-Site System Supplement
Form SWU-107	Underground Infiltration Trench Supplement
Form SWU-108	Narrow Basin Basin Supplement

VI. SUBMITTAL REQUIREMENTS

Only complete application packages will be accepted and reviewed by the Division of Water Quality (DWQ). A complete package includes all of the items listed below. The complete application package should be submitted to the appropriate DWQ Regional Office.

1. Please indicate that you have provided the following required information by initialing in the space provided next to each item.

- | | Initials |
|---|------------|
| • Original and one copy of the Stormwater Management Permit Application Form | <u>RGS</u> |
| • One copy of the applicable Supplement Form(s) for each BMP | <u>RGS</u> |
| • Permit application processing fee of \$420 (payable to NCDENR) | <u>RGS</u> |
| • Detailed narrative description of stormwater treatment/management | <u>RGS</u> |
| • Two copies of plans and specifications, including: | <u>RGS</u> |
| - Development/Project name | |
| - Engineer and firm | |
| - Legend | |
| - North arrow | |
| - Scale | |
| - Revision number & date | |
| N/A - Mean high water line | |
| - Dimensioned property/project boundary | |
| - Location map with named streets or NCSR numbers | |
| - Original contours, proposed contours, spot elevations, finished floor elevations | |
| - Details of roads, drainage features, collection systems, and stormwater control measures | |
| - Wetlands delineated, or a note on plans that none exist | |
| - Existing drainage (including off-site), drainage easements, pipe sizes, runoff calculations | |
| - Drainage areas delineated | |
| - Vegetated buffers (where required) | |

VII. AGENT AUTHORIZATION

If you wish to designate authority to another individual or firm so that they may provide information on your behalf, please complete this section.

Designated agent (individual or firm): Performance Engineering
Mailing Address: 8604 Caratoke Hwy.
City: Powells Point State: NC Zip: 27966
Phone: (252) 491-8354 Fax: (252) 491-5112

VIII. APPLICANT'S CERTIFICATION

I, (print or type name of person listed in General Information, item 2) John W. Harris,
certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions and protective covenants will be recorded, and that the proposed project complies with the requirements of 15A

Permit No. _____
(to be provided by DWQ)

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

RECEIVED

WET DETENTION BASIN SUPPLEMENT

This form may be photocopied for use as an original

JUN 7 2004

DWO Stormwater Management Plan Review:

DWO-WARO

A complete stormwater management plan submittal includes an application form, a wet detention basin supplement for each basin, design calculations, and plans and specifications showing all basin and outlet structure details.

I. PROJECT INFORMATION

Project Name: Fox Knell Commerce Park, Phase Two

Contact Person: Robert J. Stewart, Jr. Phone Number: (252) 491-8354

For projects with multiple basins, specify which basin this worksheet applies to: _____

elevations

Basin Bottom Elevation - 1.5 ft. (floor of the basin) *AS ORIGINALLY DESIGNED*
Permanent Pool Elevation 5.46 ft. (elevation of the orifice)
Temporary Pool Elevation 5.9 ft. (elevation of the discharge structure overflow)

areas

Permanent Pool Surface Area 72,436 sq. ft. (water surface area at the orifice elevation)
Drainage Area 25.1185 ac. (on-site and off-site drainage to the basin)
Impervious Area 8.1678 ac. (on-site and off-site drainage to the basin)

volumes

Permanent Pool Volume ^{392,786} 392,786 cu. ft. (combined volume of main basin and forebay)
Temporary Pool Volume 32,527 cu. ft. (volume detained above the permanent pool)
Forebay Volume _{42,935} 42,935 cu. ft. (approximately 20% of total volume)

Other parameters

Footnotes:

- ¹ When using the Division SA/DA tables, the correct SA/DA ratio for permanent pool sizing should be computed based upon the actual impervious % and permanent pool depth. Linear interpolation should be employed to determine the correct value for non-standard table entries.
- ² In the 20 coastal counties, the requirement for a vegetative filter may be waived if the wet detention basin is designed to provide 90% TSS removal. The NCDENR BMP manual provides design tables for both 85% TSS removal and 90% TSS removal.

II. REQUIRED ITEMS CHECKLIST

RJS T MUL

The following checklist outlines design requirements per the Stormwater Best Management Practices Manual (N.C. Department of Environment, Health and Natural Resources, February 1999) and Administrative Code Section: 15 A NCAC 2H .1008.

Initial in the space provided to indicate the following design requirements have been met and supporting documentation is attached. If the applicant has designated an agent in the Stormwater Management Permit Application Form, the agent may initial below. **If a requirement has not been met, attach justification.**

Applicants Initials

- + 7 ft. deep a. The permanent pool depth is between 3 and 6 feet (required minimum of 3 feet).
- 11% + b. The forebay volume is approximately equal to 20% of the basin volume.
- RJS c. The temporary pool controls runoff from the design storm event.
- RJS d. The temporary pool draws down in 2 to 5 days.
- N/A e. If required, a 30-foot vegetative filter is provided at the outlet (include non-erosive flow calculations)
- RJS f. The basin length to width ratio is greater than 3:1.
- RJS g. The basin side slopes above the permanent pool are no steeper than 3:1.
- RJS h. A submerged and vegetated perimeter shelf with a slope of 6:1 or less (show detail).
- RJS i. Vegetative cover above the permanent pool elevation is specified.
- RJS j. A trash rack or similar device is provided for both the overflow and orifice.
- _____ k. A recorded drainage easement is provided for each basin including access to nearest right-of-way.
- N/A l. If the basin is used for sediment and erosion control during construction, clean out of the basin is specified prior to use as a wet detention basin.
- N/A m. A mechanism is specified which will drain the basin for maintenance or an emergency.

III. WET DETENTION BASIN OPERATION AND MAINTENANCE AGREEMENT

Maintenance activities shall be performed as follows:

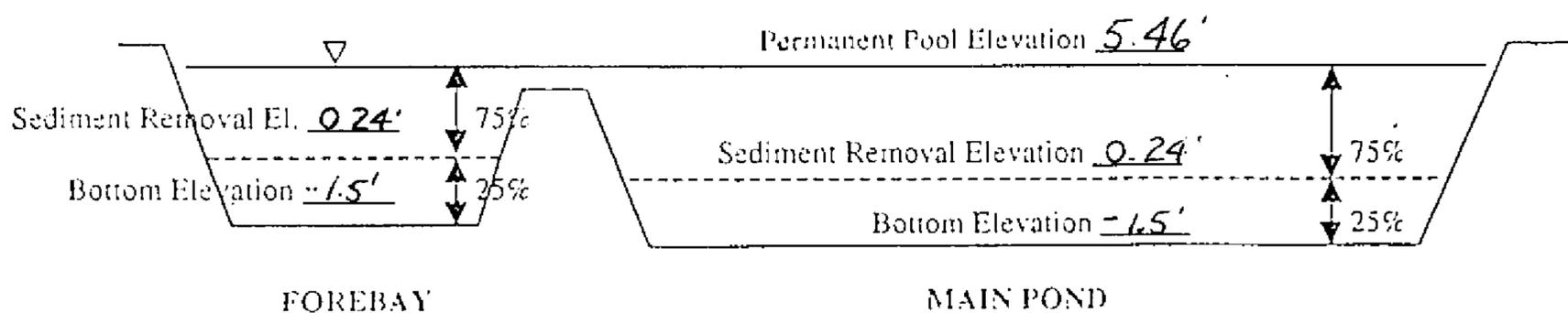
1. After every significant runoff producing rainfall event and at least monthly:
 - a. Inspect the wet detention basin system for sediment accumulation, erosion, trash accumulation, vegetated cover, and general condition.
 - b. Check and clear the orifice of any obstructions such that drawdown of the temporary pool occurs within 2 to 5 days as designed.
2. Repair eroded areas immediately, re-seed as necessary to maintain good vegetative cover, mow vegetative cover to maintain a maximum height of six inches, and remove trash as needed.
3. Inspect and repair the collection system (i.e. catch basins, piping, swales, riprap, etc.) quarterly to maintain proper functioning.
4. Remove accumulated sediment from the wet detention basin system semi-annually or when depth is reduced to 75% of the original design depth (see diagram below). Removed sediment shall be disposed of in an appropriate manner and shall be handled in a manner that will not adversely impact water quality (i.e. stockpiling near a wet detention basin or stream, etc.).

The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the permanent pool depth reads _____ feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads _____ feet in the forebay, the sediment shall be removed.

BASIN DIAGRAM
(fill in the blanks)



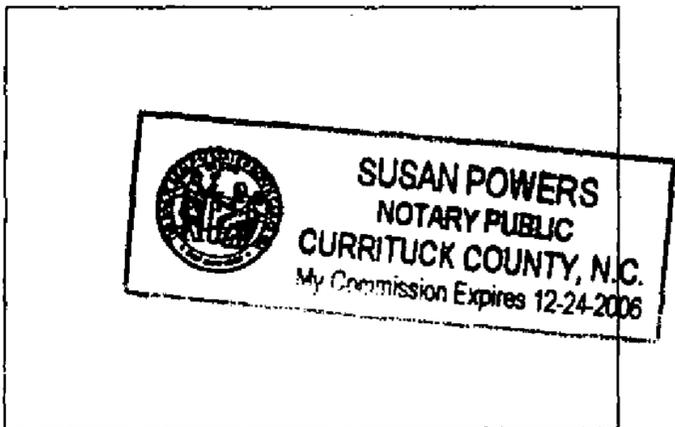
7. All components of the wet detention basin system shall be maintained in good working order.

I acknowledge and agree by my signature below that I am responsible for the performance of the seven maintenance procedures listed above. I agree to notify DWQ of any problems with the system or prior to any changes to the system or responsible party.

Print name: John W. Harris
Title: President
Address: P.O. Box 2187 Kitty Hawk, NC 27949
Phone: (752) 261-7243
Signature: [Handwritten Signature]
Date: April 29, 2004

Note: The legally responsible party should not be a homeowners-association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

I, Susan Powers, a Notary Public for the State of North Carolina
County of Currituck, do hereby certify that John W. Harris
personally appeared before me this 29th day of April, 2004, and acknowledge the due
execution of the forgoing wet detention basin maintenance requirements. Witness my hand and official seal,



SEAL

Susan Powers

My commission expires _____