

### LEGEND

	PROPERTY LINE		EXISTING TREE TO BE REMOVED
	DISTURBED AREA LIMITS		EXISTING TREE TO BE SAVED AND PROTECTED
	PROPOSED CONTOUR		WETLANDS
	TEMPORARY SILT FENCE		EROSION CONTROL MAT
	PROPOSED STORMDRAIN PIPE		6' WIDE MULTI USE PATH
	SWALE		
	PROPOSED WATERLINE		
	PROPOSED SANITARY SEWER		
	EXISTING CONTOUR		
	TREE PROTECTION FENCING		
	PERENNIAL STREAM CENTERLINE		
	WATERS OF THE US TOB		
	LOT DRAINAGE ARROW		
	PROPOSED FINISH GRADE		
	SPOT ELEVATION		
	FLARED END SECTION WITH RIP-RAP ENERGY DISSIPATOR		
	DROP INLET WITH INLET PROTECTION (DI)		
	CURB INLET WITH INLET PROTECTION (CI)		
	JUNCTION BOX WITH INLET PROTECTION (JB)		
	PROPOSED FIRE HYDRANT		

NOTE:  
 CI TOP REFERS TO ELEVATION AT FLOW LINE  
 DI TOP REFERS TO ELEVATION AT GRATE

### NOTES:

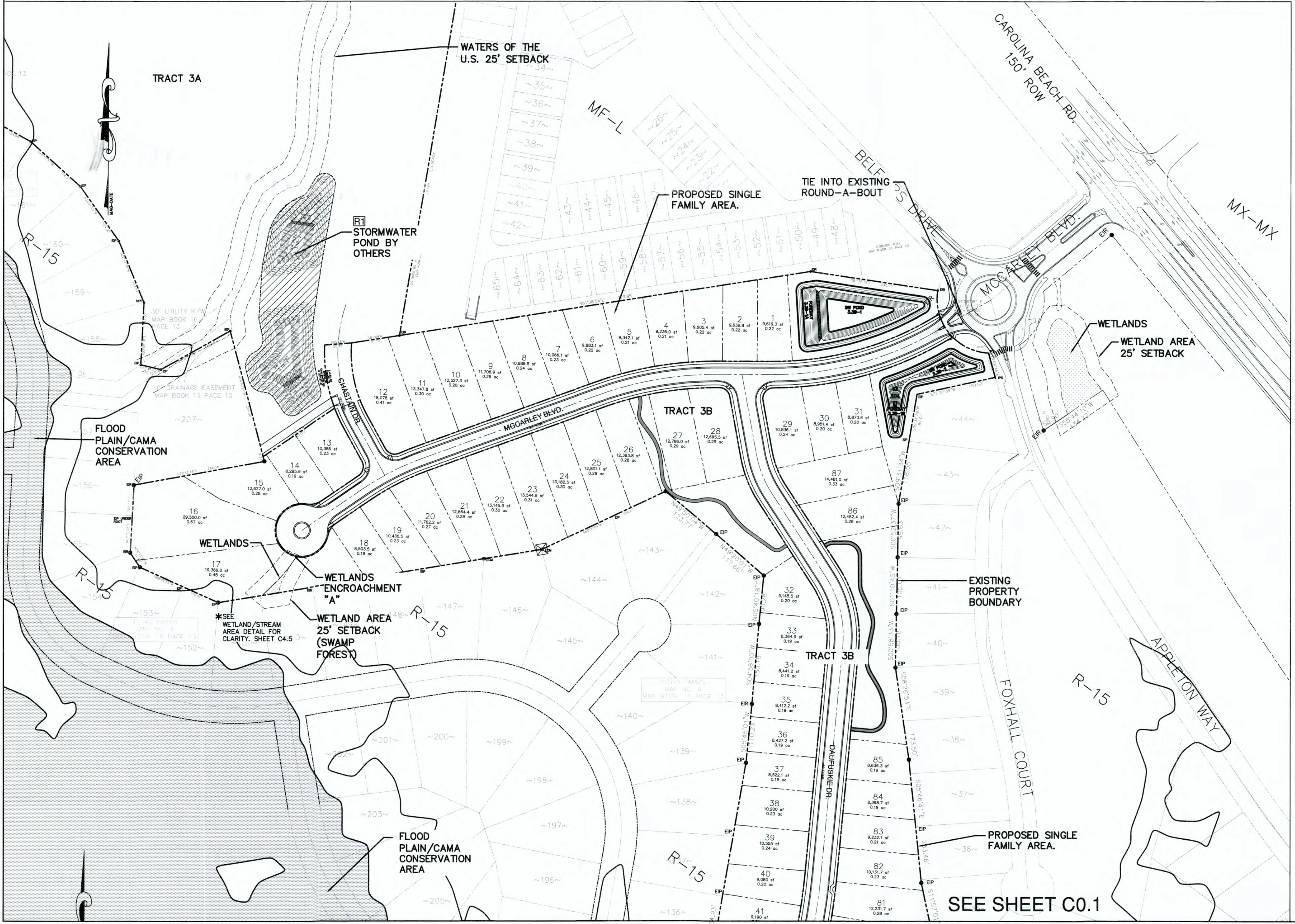
1. ALL COMMON SPACE/OPEN SPACE SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION AFTER COMPLETION OF CONSTRUCTION AND AFTER BEING TURNED OVER TO THE PROPERTY OWNERS ASSOCIATION BY THE DEVELOPER.
2. ALL STRUCTURES LOCATED WITHIN THE FLOOD PLAIN MUST COMPLY WITH ALL FLOOD PLAIN REQUIREMENTS.
3. FLOOD LINES SHOWN ON PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND REFLECT THE PRELIMINARY FIRMS EXPECTED TO BECOME EFFECTIVE AUGUST 2018.
4. IF THESE UNITS ARE SOLD AT ANY POINT, THE BUYER MUST RECEIVE A SUBDIVISION STREET DISCLOSURE STATEMENT.
5. ANY RESURFACING/CONSTRUCTION OF PEDESTRIAN TRAILS IN CONSERVATION RESOURCE WILL BE LIMITED TO HAND EQUIPMENT AND MINIMAL DISTURBANCE PERMITTED DUE TO THE SENSITIVITY OF THE RESOURCE.

### SITE DATA TABLE TRACT 3B

TRACT 3B AREA: 36.32 AC (1,582,509 SF)
TRACT 3B PHL PROPOSED AREA OF SINGLE FAMILY: 37.40 AC (1,629,144 SF) (1.08 AC FROM TRACT 3A)
ZONE: MF-M
CAMA LAND CLASSIFICATION: URBAN/CONSERVATION AREA
REQUIRED SETBACKS:
ATT/DET/DU/TR/Q: F=15' R=15' SI=5 SC=10
PROPOSED SETBACKS: PROVIDED AS PER CODE
BUILDING SEPARATION: 16' MIN. REQUIRED AND PROVIDED
SINGLE FAMILY LOTS SIZE: APPROXIMATELY 60' WIDE X 120' LONG.
MINIMUM WIDTH: 50'
MINIMUM SQUARE FOOTAGE: 5,000 SF
MAXIMUM LOT COVERAGE: 50%
MAX. BUILDING HEIGHT: 35'-96' WITH ADDITIONAL YARD REQUIREMENTS.
MAXIMUM ALLOWED DENSITY: 9 UNITS/ACRE
FOR AREAS LOCATED WITHIN A CAMA CONSERVATION AREA THE MAXIMUM ALLOWED DENSITY IS 2.5 UNITS/ACRE.
DENSITY TRACT 3B:
92 UNITS
MAXIMUM ALLOWED UNITS @ 9 UNITS/ACRE = 337 UNITS
PROPOSED DENSITY 2.45 UNITS/ACRE = 92 UNITS
OPEN SPACE REQUIREMENT SF: 0.03 AC PER LOT
TRACT 3B REQUIRED: 2.76 AC AVAILABLE: 4.93 AC
AS SHOWN: 1.65 AC OPEN SPACE 3.28 AC ACTIVE OPEN SPACE
SOLID WASTE DISPOSAL:
SF: HAND CART
WATER AND SEWER CAPACITY:
SF: 480 G.P.D. PER UNIT = 44,160 G.P.D.
ADJACENT PROPERTY INFORMATION: SEE SURVEY PLAN

NO.	DATE	DESCRIPTION	BY
01	05/11/2021	ISSUED FOR PERMITTING	W. NORRIS & TUNSTALL
02	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
03	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
04	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
05	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
06	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
07	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
08	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
09	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL
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92	05/11/2021	REVISED PER PERMITTING	W. NORRIS & TUNSTALL

OVERALL SITE PLAN  
 WOODLANDS AT ECHO FARMS  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY



### WETLANDS IMPERVIOUS ENCROACHMENT

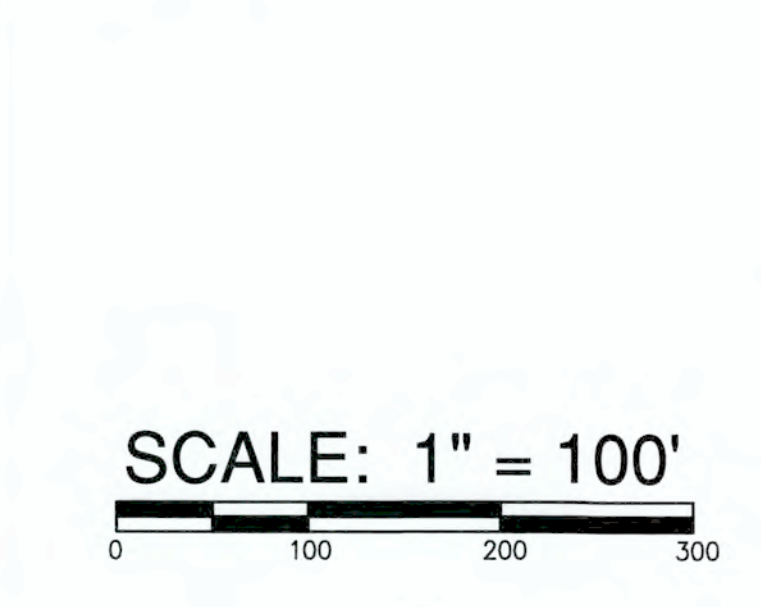
CAMA LAND CLASSIFICATION: URBAN/CONSERVATION AREA  
 WETLANDS (SWAMP FOREST) EXIST ON SITE AND ARE DELINEATED ON THE SITE PLAN.  
 CONSERVATION OVERLAY DISTRICT: NO ENCROACHMENT ALLOWED.  
 CONSERVATION OVERLAY DISTRICT: 25' OFFSET FROM WETLANDS UP TO 25% ENCROACHMENT OF IMPERVIOUS IS ALLOWED.  
 ENCROACHMENT "A": TOTAL AREA WITHIN 25' SETBACK= 6,064 SF (LOT 17)  
 25%= 1516 SF IMPERVIOUS ALLOWED  
 AREA OF ENCROACHMENT=130 SF  
 PERCENT OF ENCROACHMENT=2.14%  
 AMOUNT ALLOWED REMAINING=1,386 SF  
 (SEE WETLANDS/STREAM AREA DETAIL C4.5)

<b>EXISTING IMPERVIOUS AREA</b>	
TRACT 3B IMPERVIOUS AREA SINGLE FAMILY DETACHED:	
CART PATH:	40,575 SF
CART PATH TO BE REMOVED:	40,575 SF
CART PATH TO REMAIN:	0 SF
<b>NEW IMPERVIOUS AREA</b>	
TRACT 3B IMPERVIOUS AREA SINGLE FAMILY DETACHED:	
SIDEWALK:	46,769 SF
ASPHALT/CONC./C&G:	167,871 SF
MULTI USE PATH:	21,930 SF
LOTS (92) @ 3,900 SF:	349,800 SF
TRACT 3B FUTURE:	56,322 SF
<b>R1 TOTAL:</b>	<b>642,492 SF</b>
PERCENT IMP.:	40.6%
<b>NEW OFF-SITE IMPERVIOUS AREA</b>	
TRACT 3B IMPERVIOUS AREA SINGLE FAMILY DETACHED:	
SIDEWALK:	1,229 SF
ASPHALT/CONC./C&G:	5,195 SF
<b>TOTAL:</b>	<b>6,424 SF</b>

### SRB APPROVAL #OBG-4-317

NOTE: ALL FEDERAL, STATE AND LOCAL PERMITS ARE REQUIRED PRIOR TO FULL CONSTRUCTION RELEASE. THIS INCLUDES, BUT IS NOT LIMITED TO: STATE STORM WATER, STATE UTILITY EXTENSION PERMITS, WETLAND DISTURBANCE PERMITS, CITY STORM WATER PERMITS, TREE PROTECTION PERMITS, ETC.

NOTE: UPON COMPLETION OF A PROJECT, AND BEFORE A CERTIFICATE OF OCCUPANCY SHALL BE GRANTED, THE APPLICANT SHALL CERTIFY THAT THE COMPLETED PROJECT IS IN ACCORDANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS AND DESIGNS, AND SHALL SUBMIT ACTUAL "AS-BUILT" PLANS FOR ALL STORMWATER MANAGEMENT FACILITIES OR PRACTICES AFTER FINAL CONSTRUCTION IS COMPLETED. AS-BUILT PLANS SHALL BE PREPARED IN ACCORDANCE WITH THE CITY TECHNICAL STANDARDS. AS-BUILT STORMWATER MEASURES, CONTROLS, AND DEVICES ARE TO BE IN COMPLIANCE WITH THE REQUIREMENTS OF THIS ORDINANCE. A FINAL INSPECTION AND APPROVAL BY THE CITY MANAGER SHALL OCCUR BEFORE THE RELEASE OF ANY PERFORMANCE SECURITIES.



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.	NCDENR PWSS WATER PERMIT #:	_____ GPD
	WATER CAPACITY:	_____ GPD
	DWO SEWER PERMIT #:	_____ GPD
	SEWER CAPACITY:	_____ GPD
	SEWER SHED # AND PLANT:	_____
	SEWER TO FLOW THROUGH NEI:	YES OR NO (CIRCLE ONE)

City of WILMINGTON  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_  
 Approved Construction Plan  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

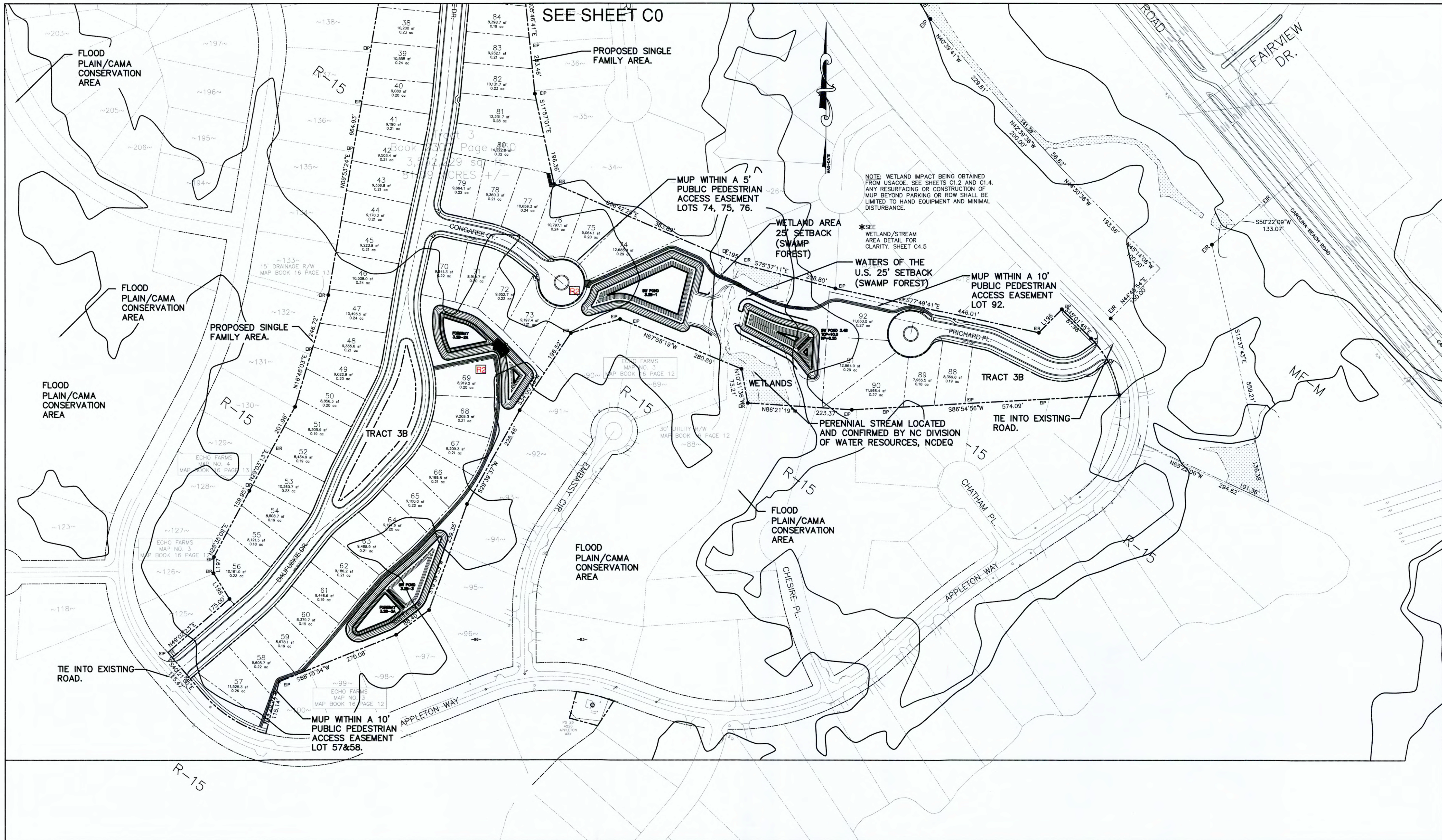
LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CRANFORD, NJ 08812  
 732-521-2900

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 1429 ASHLITTLE RIVER RD. NW  
 WILMINGTON, NC 28420  
 PHONE (910) 343-9653

Licence #C-3641  
**16083**  
 DES. JUST  
 CKD. JPN  
 DRWN. NKS  
 DATE 6/27/18  
 NORTH CAROLINA PROFESSIONAL SEAL 1985  
 W. NORRIS & TUNSTALL  
 ENGINEERS P.C.  
 CO

C:\projects\2016\16083 Woodlands at Echo Farms\16083 master.rvt.dwg, 5/11/2021 8:39:45 AM





SEE SHEET C0

NOTE: WETLAND IMPACT BEING OBTAINED FROM USACE. SEE SHEETS C1.2 AND C1.4. ANY RESURFACING OR CONSTRUCTION OF MUP BEYOND PARKING OR ROW SHALL BE LIMITED TO HAND EQUIPMENT AND MINIMAL DISTURBANCE.

\*SEE WETLAND/STREAM AREA DETAIL FOR CLARITY. SHEET C4.5

PERENNIAL STREAM LOCATED AND CONFIRMED BY NC DIVISION OF WATER RESOURCES, NCDEQ

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SCALE: 1" = 100'

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

NCDENR PWSS WATER PERMIT # \_\_\_\_\_ GPD  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT # \_\_\_\_\_ GPD  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

WILMINGTON NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_  
 Approved Construction Plan  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

SYMBOL	DATE	DESCRIPTION	BY
	3.9.21	UPDATED IMPERVIOUS NUMBERS BASED ON SIDEWALK AND MUP CHANGES.	

REVISIONS

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LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CRANFURY, NJ 08012  
 732-521-2900

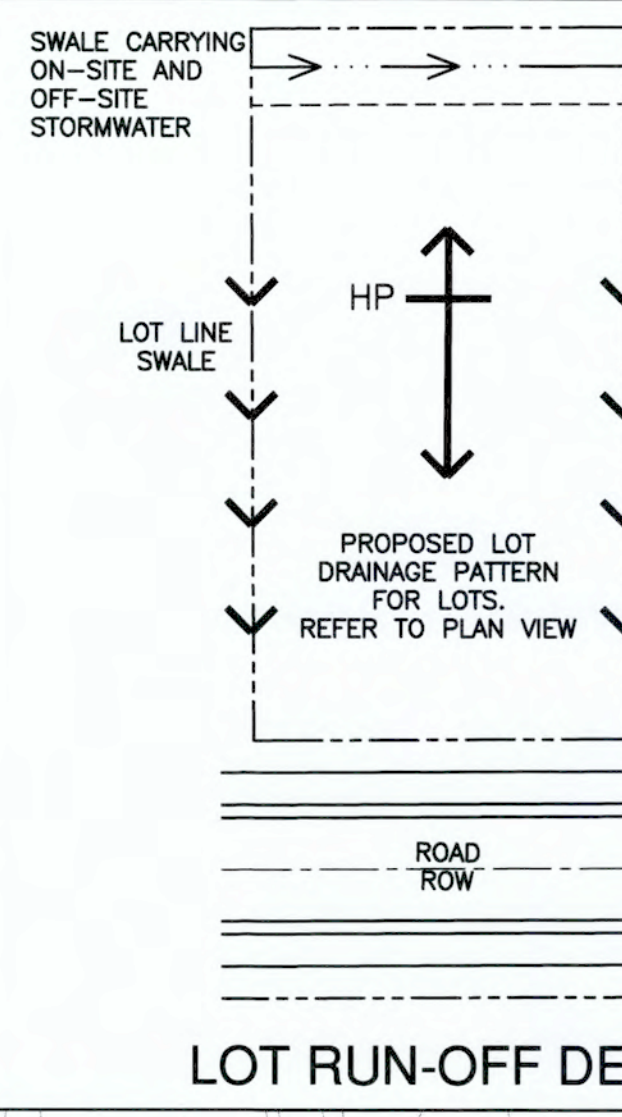
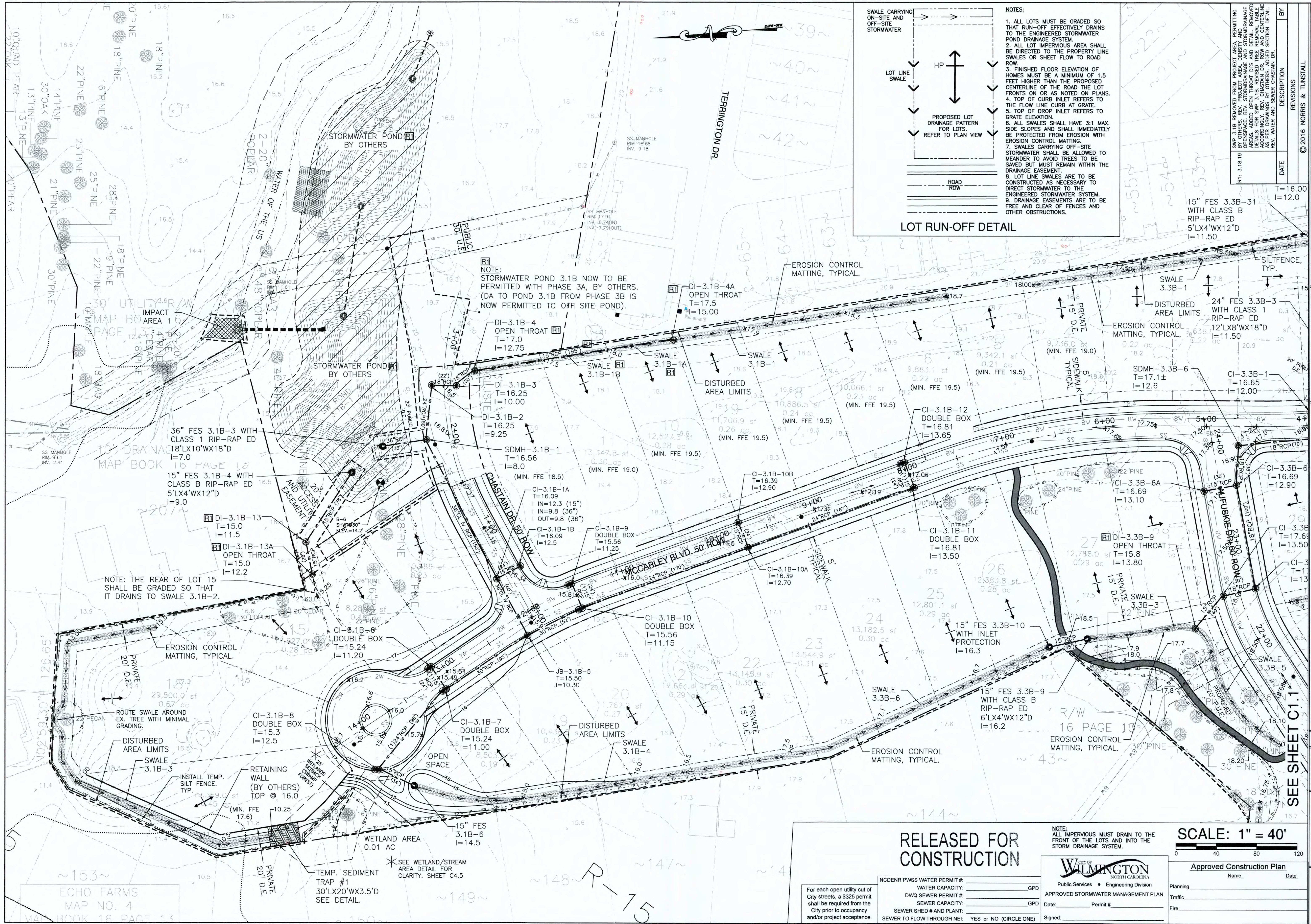
**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 902 MARKET STREET  
 WILMINGTON, NC 28401  
 PHONE (910) 343-9653  
 1429 ASHLITTLE RIVER RD, NW  
 ASHL, NC 28420  
 PHONE (910) 287-5900

Licence #C-3641  
 16083  
 DES. JST  
 ORD. JPN  
 DRWN. NKS  
 DATE 6/29/21

SEAL 19851  
 JOHN S. TUNSTALL  
 ENGINEER

C0.1





- NOTES:**
1. ALL LOTS MUST BE GRADED SO THAT RUN-OFF EFFECTIVELY DRAINS TO THE ENGINEERED STORMWATER POND DRAINAGE SYSTEM.
  2. ALL LOT IMPERVIOUS AREA SHALL BE DIRECTED TO THE PROPERTY LINE SWALES OR SHEET FLOW TO ROAD ROW.
  3. FINISHED FLOOR ELEVATION OF HOMES MUST BE A MINIMUM OF 1.5 FEET HIGHER THAN THE PROPOSED CENTERLINE OF THE ROAD THE LOT FRONTS ON OR AS NOTED ON PLANS.
  4. TOP OF CURB INLET REFERS TO THE FLOW LINE CURB AT GRATE.
  5. TOP OF DROP INLET REFERS TO GRATE ELEVATION.
  6. ALL SWALES SHALL HAVE 3:1 MAX. SIDE SLOPES AND SHALL IMMEDIATELY BE PROTECTED FROM EROSION WITH EROSION CONTROL MATTING.
  7. SWALES CARRYING OFF-SITE STORMWATER SHALL BE ALLOWED TO MEANDER TO AVOID TREES TO BE SAVED BUT MUST REMAIN WITHIN THE DRAINAGE EASEMENT.
  8. LOT LINE SWALES ARE TO BE CONSTRUCTED AS NECESSARY TO DIRECT STORMWATER TO THE ENGINEERED STORMWATER SYSTEM.
  9. DRAINAGE EASEMENTS ARE TO BE FREE AND CLEAR OF FENCES AND OTHER OBSTRUCTIONS.

DATE	DESCRIPTION	BY

**GRADING, DRAINAGE AND EROSION CONTROL PLAN**  
**WOODLANDS AT ECHO FARMS**  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

**LAND OWNER/APPLICANT**  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 GRANBURY, NJ 08512  
 732-521-2800

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 1429 ASH-LITTLE RIVER RD. NW  
 WILMINGTON, NC 28401  
 PHONE (910) 345-9653

SEE SHEET C1.1

16083

DES. JST  
 DED. JPN  
 DRN. NKS

DATE 9/20/19

SCALE: 1" = 40'

Approved Construction Plan

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

**C1**

**RELEASED FOR CONSTRUCTION**

**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN

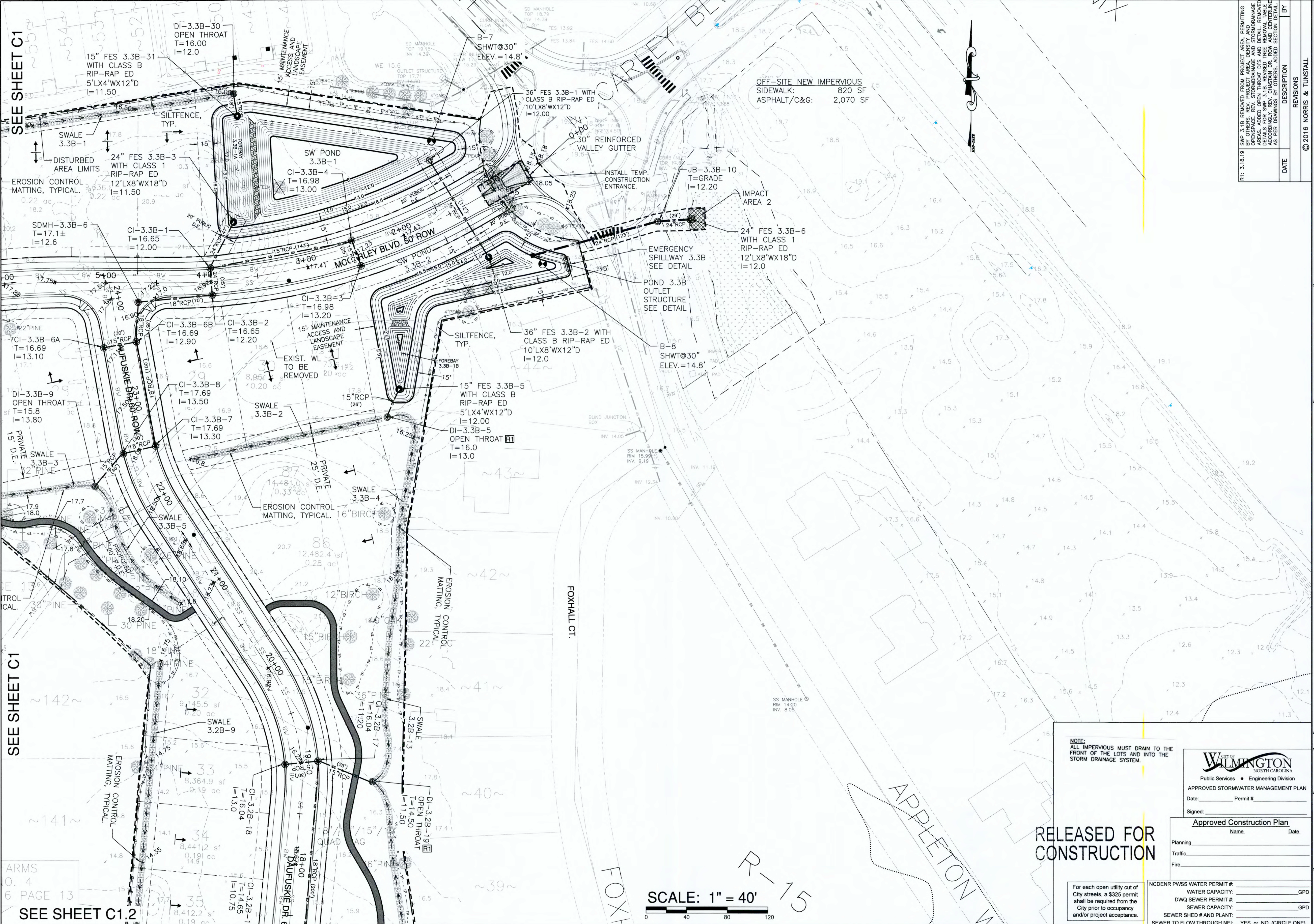
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CONDENR PWSS WATER PERMIT #: \_\_\_\_\_  
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 DWQ SEWER PERMIT #: \_\_\_\_\_  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

Date: \_\_\_\_\_ Permit #: \_\_\_\_\_  
 Signed: \_\_\_\_\_

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SEE SHEET C1

SEE SHEET C1

SEE SHEET C1.2

DATE	DESCRIPTION	BY

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GRADING, DRAINAGE AND EROSION CONTROL PLAN  
WOODLANDS AT ECHO FARMS  
4114 ECHO FARMS BLVD.  
WILMINGTON, NC 28412  
NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
ECHO FARMS, LLC  
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34400 FORSGATE DRIVE  
CHAMBERS, NJ 00812  
732-321-2500

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License #C-3641

16083

DES. JUST  
O.D. JPN  
DRWN. NKS

DATE 9/20/19

**BEAL**  
REGISTERED PROFESSIONAL ENGINEER  
NO. 17349  
NORRIS & TUNSTALL

**C1.1**

NOTE:  
ALL IMPERVIOUS MUST DRAIN TO THE  
FRONT OF THE LOTS AND INTO THE  
STORM DRAINAGE SYSTEM.

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

Approved Construction Plan

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_

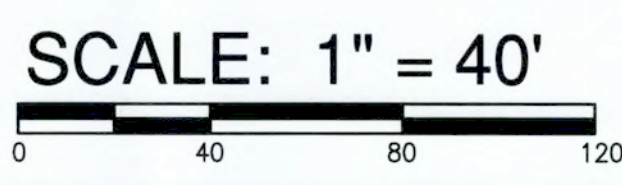
Traffic: \_\_\_\_\_

Fire: \_\_\_\_\_

RELEASED FOR  
CONSTRUCTION

For each open utility cut of  
City streets, a \$325 permit  
shall be required from the  
City prior to occupancy  
and/or project acceptance.

NCDENR PWSS WATER PERMIT #	_____
WATER CAPACITY:	_____ GPD
DWQ SEWER PERMIT #	_____
SEWER CAPACITY:	_____ GPD
SEWER SHED # AND PLANT:	_____
SEWER TO FLOW THROUGH NEI:	YES OR NO (CIRCLE ONE)

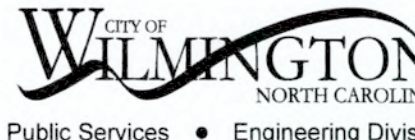




NCDENR PWSS WATER PERMIT # \_\_\_\_\_ GPD  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT # \_\_\_\_\_ GPD  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

**Approved Construction Plan**  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_


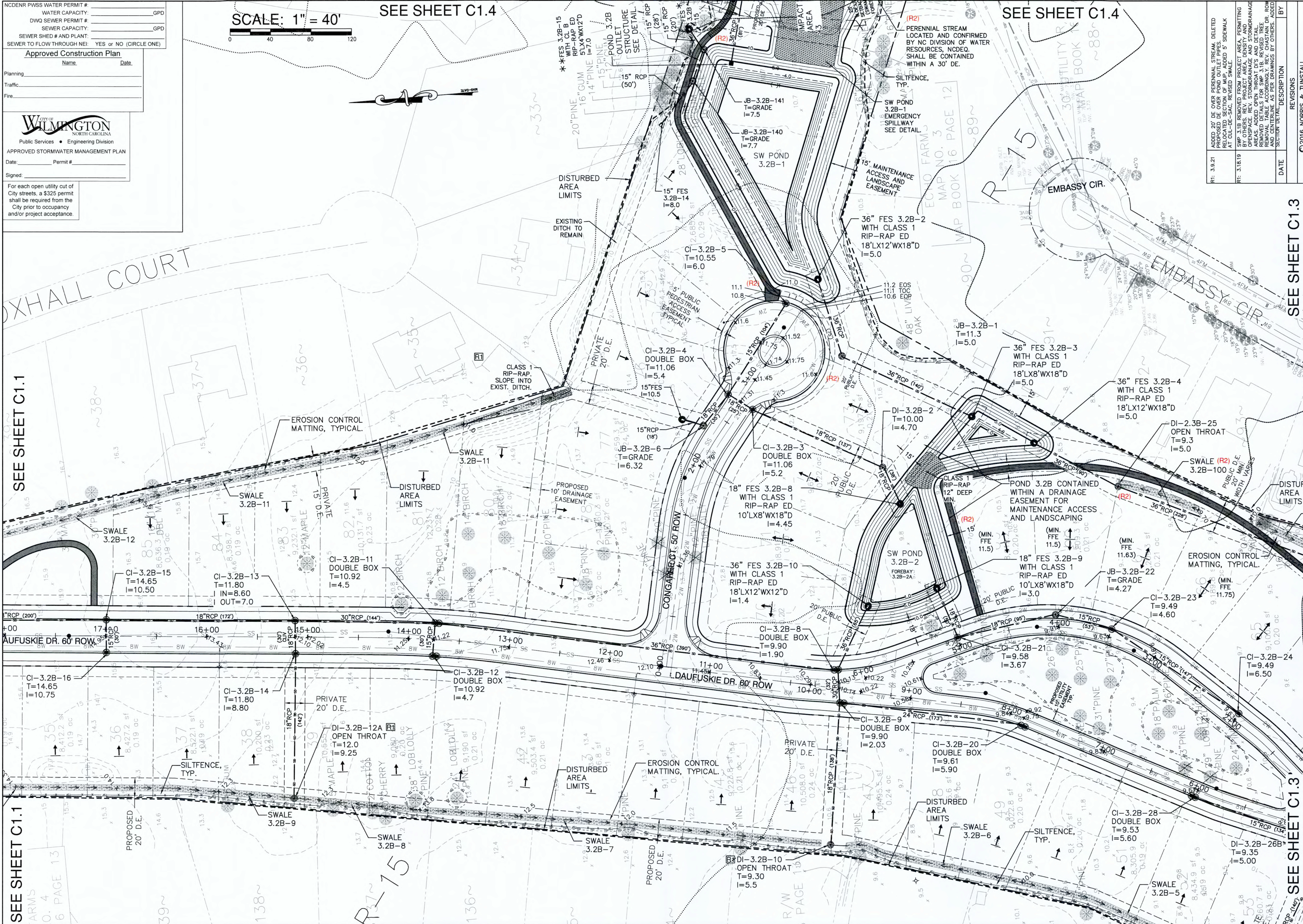
Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_



Public Services • Engineering Division  
**APPROVED STORMWATER MANAGEMENT PLAN**  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

SCALE: 1" = 40'  
 SEE SHEET C1.4

NO.	DATE	DESCRIPTION	BY
1	3.9.21	ADDED 30' DE OVER PERENNIAL STREAM, DELETED PROPOSED SECTION OF M.P., ADDED 5' SIDEWALK AT CUL-DE-SAC, REVISED SWALE.	
2	3.18.19	SWP 3.1B REMOVED FROM PROJECT AREA, PERMITTING OPERATIONS, NEW STORMWATER AND STORAGE AREAS, ADDED THROAT DI'S AND DETAIL. REMOVED DETAILS FOR SWP 3.1B, REVISED TREE AND CENTERLINE AS PER DRAWINGS BY OTHERS. ADDED SECTION DETAIL DESCRIPTION.	

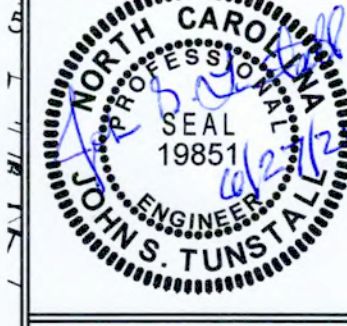
© 2016 NORRIS & TUNSTALL

SEE SHEET C1.3

LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CRANFORD, NJ 08012  
 732-521-2900

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 902 MARKET STREET  
 WILMINGTON, NC 28401  
 ASH, NC 28420  
 PHONE (910) 343-9653  
 PHONE (910) 287-5900

Licence #C-3641  
**16083**  
 DES: JST  
 CKD: JPN  
 DRWN: NKS  
 DATE: 9/20/19



SEE SHEET C1.3

SEE SHEET C1.1

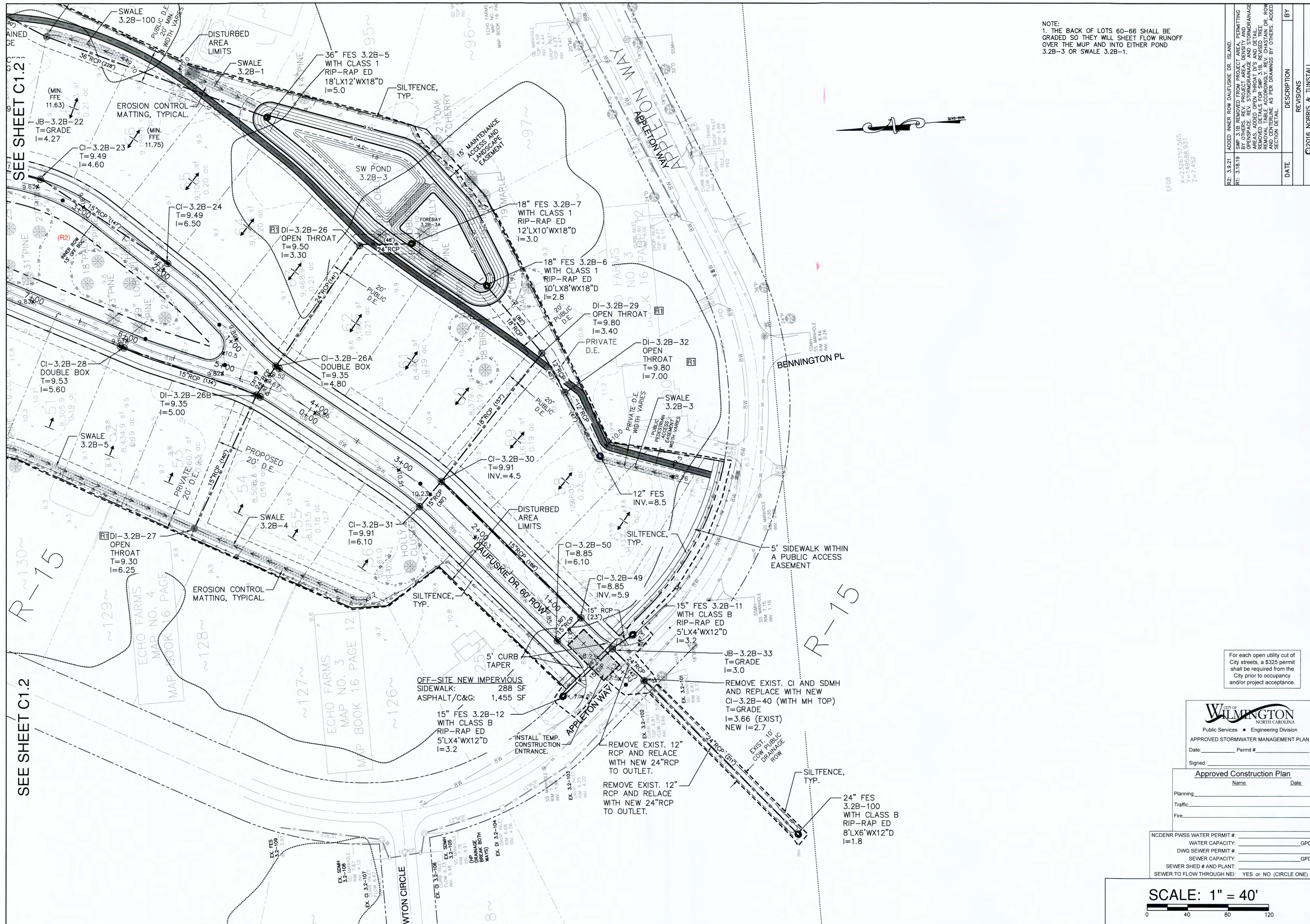
SEE SHEET C1.1

SEE SHEET C1.4

SEE SHEET C1.3

C1.2





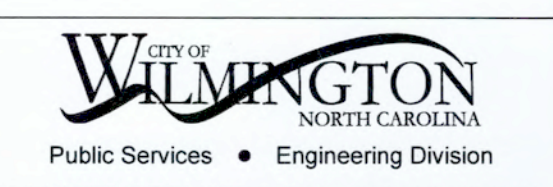
NOTE:  
1. THE BACK OF LOTS 60-66 SHALL BE GRADED SO THEY WILL SHEET FLOW RUNOFF OVER THE MUP AND INTO EITHER POND 3.2B-3 OR SWALE 3.2B-1.

DATE	DESCRIPTION	BY
3.9.21	ADDED INNER ROW DAUFUSKIE DR. ISLAND.	
3.18.19	SWP 3.1B REMOVED FROM PROJECT AREA, PERMITTING OPENSPACE, REV. STORMDRAINAGE AND STORMDRAINAGE AREAS, ADDED OPEN THROAT DI'S AND DETAIL. REMOVED EXIST. SWALE 3.2B-10. REVISED ROW AND CENTERLINE AS PER DRAWINGS BY OTHERS. ADDED SECTION DETAIL.	

LAND OWNER/APPLICANT  
ECHO FARMS, LLC  
MATRIX DEVELOPMENT GROUP  
CNA4000 FORSGATE DRIVE  
CRANBURY, NJ 08512  
732-621-2900

GRADING, DRAINAGE AND EROSION CONTROL PLAN  
WOODLANDS AT ECHO FARMS  
4114 ECHO FARMS BLVD.  
WILMINGTON, NC 28412  
NEW HANOVER COUNTY

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



Approved Construction Plan

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_

Traffic: \_\_\_\_\_

Fire: \_\_\_\_\_

NCDENR PWSS WATER PERMIT #	_____	GPD
WATER CAPACITY	_____	GPD
DWO SEWER PERMIT #	_____	GPD
SEWER CAPACITY	_____	GPD
SEWER SHED # AND PLANT:	_____	
SEWER TO FLOW THROUGH NEI:	YES or NO (CIRCLE ONE)	

SCALE: 1" = 40'

**NORRIS & TUNSTALL**  
CONSULTING ENGINEERS, P.C.

902 MARKET STREET  
WILMINGTON, NC 28401  
PHONE: (910) 343-9653

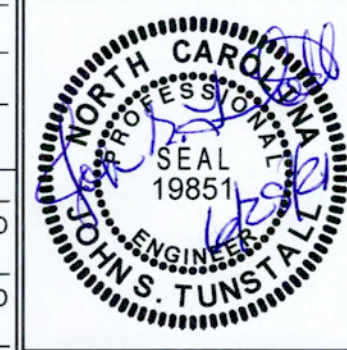
1429 ASH-LITTLE RIVER RD. NW  
ASH, NC 28420  
PHONE: (910) 287-5900

License #C-3641

16083

DES. JST  
CHK. JPN  
DRWN. NKS

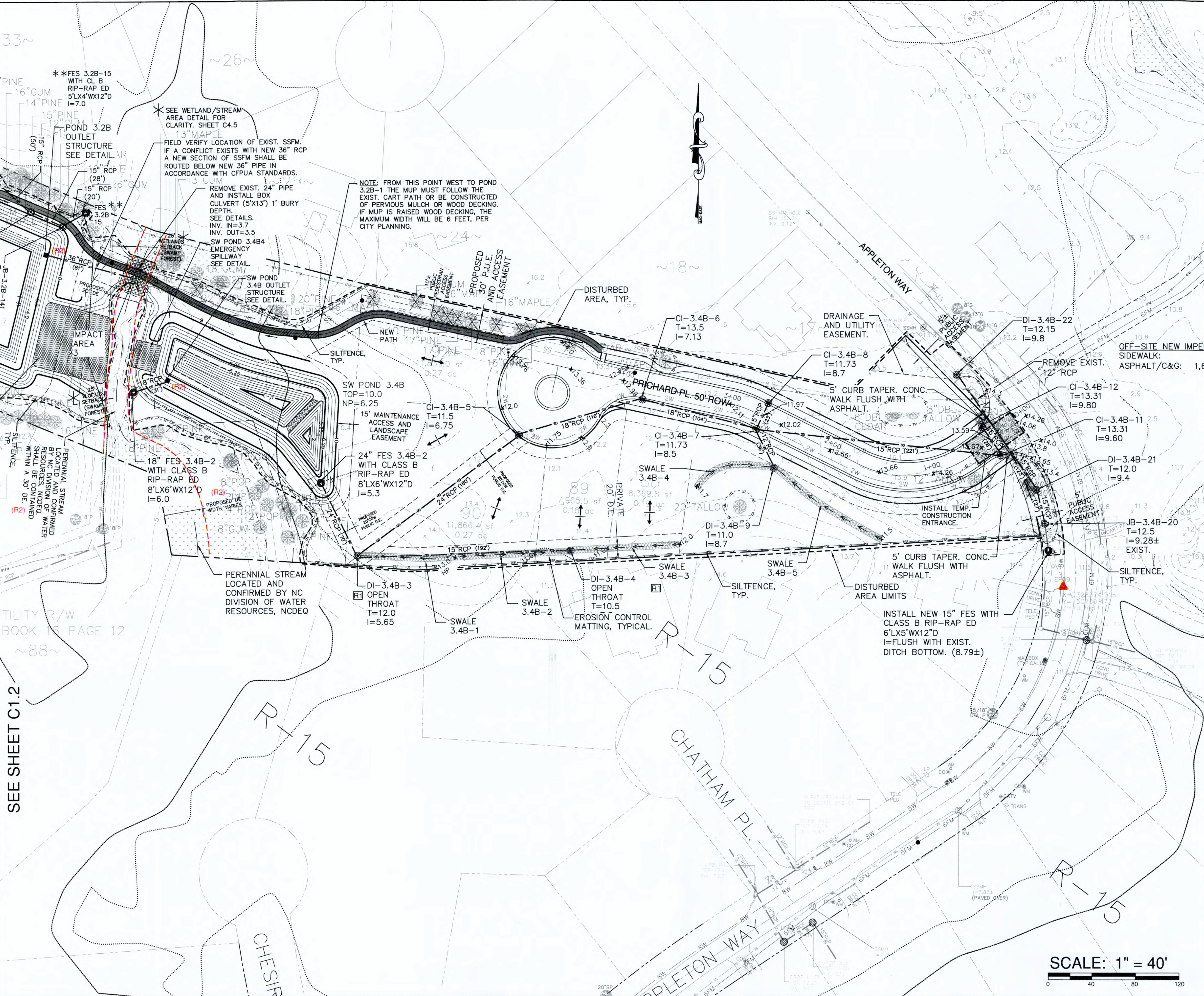
DATE 6/28/21



**C1.3**



SEE SHEET C1.2



DATE	DESCRIPTION	BY
3.9.21	ADDED 20' DE OVER PERENNIAL STREAM. DELETED PROPOSED DE OVER POND OUTLET PIPES.	
3.18.19	SWP 3.1B REMOVED FROM PROJECT AREA. PERMITTING BY OTHERS. REV. PROJECT AREA. REVISED DRAINAGE AREAS. ADDED OPEN THROAT DI'S AND DETAIL. REMOVED DETAILS FOR SWP 3.1B. REVISED TREE AND CENTURINE AS PER DRAWINGS BY OTHERS. ADDED	

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**GRADING, DRAINAGE AND EROSION CONTROL PLAN**  
**WOODLANDS AT ECHO FARMS**  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

**LAND OWNER/APPLICANT**  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CHANBURY, NJ 00512  
 732-521-2900

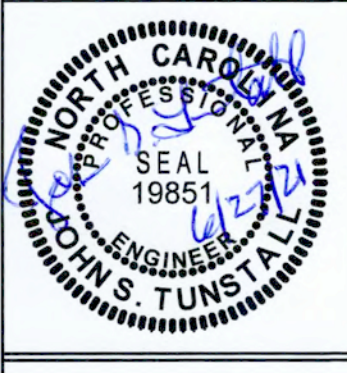
**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 1429 ASHLITTLE RIVER RD, NW  
 WILMINGTON, NC 28401  
 PHONE (910) 343-9653

License #C-3641  
**16083**  
 DES. JST  
 CKD. JPN  
 DRWN. NKS  
 DATE 9/20/19

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

NC DENR PWSS WATER PERMIT #: \_\_\_\_\_  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT #: \_\_\_\_\_  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)



**SCALE: 1" = 40'**  
 0 40 80 120

**C1.4**

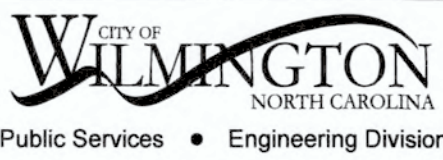
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NCDENR PWSS WATER PERMIT # \_\_\_\_\_ GPD  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT # \_\_\_\_\_ GPD  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

**Approved Construction Plan**  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_



Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_

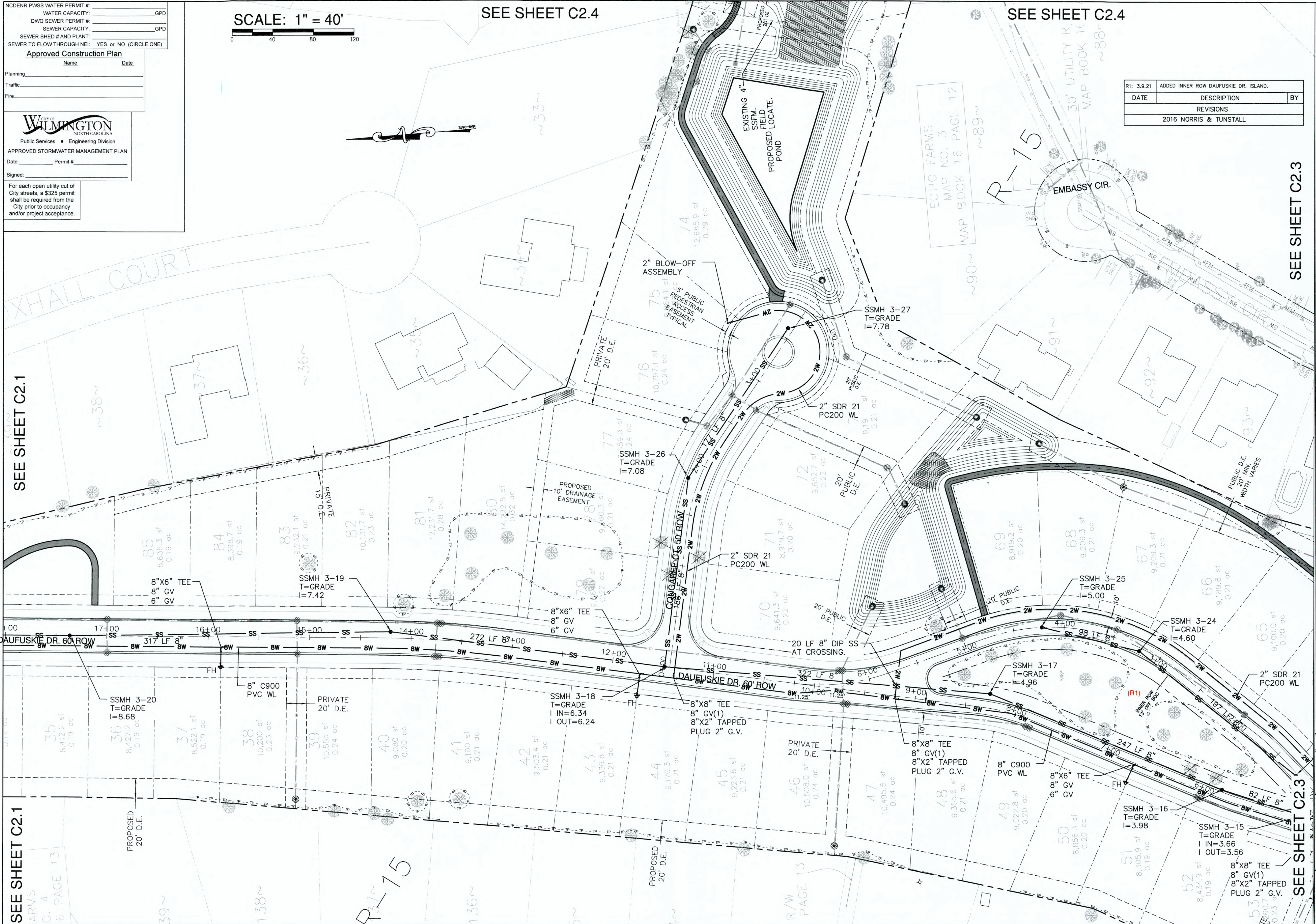
For each open utility cut of  
 City streets, a \$325 permit  
 shall be required from the  
 City prior to occupancy  
 and/or project acceptance.

SCALE: 1" = 40'

SEE SHEET C2.4

SEE SHEET C2.4

DATE	DESCRIPTION	BY
R1: 3.9.21	ADDED INNER ROW DAUFUSKIE DR. ISLAND.	
REVISIONS		
2016 NORRIS & TUNSTALL		



SEE SHEET C2.1

SEE SHEET C2.3

SEE SHEET C2.1

SEE SHEET C2.3

**UTILITY PLAN**  
 WOODLANDS AT ECHO FARMS  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

**LAND OWNER/APPLICANT**  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 4040 FORSGATE DRIVE  
 CHANDLER, NC 27512  
 732-521-2800

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 902 MARKET STREET  
 WILMINGTON, NC 28401  
 1429 ASH-LITTLE RIVER RD. NW  
 ASH, NC 28420  
 PHONE (910) 343-9653

Licence #C-3641  
**16083**  
 DES: JST  
 CDR: JPN  
 DRWN: NKS  
 DATE: 9/20/19

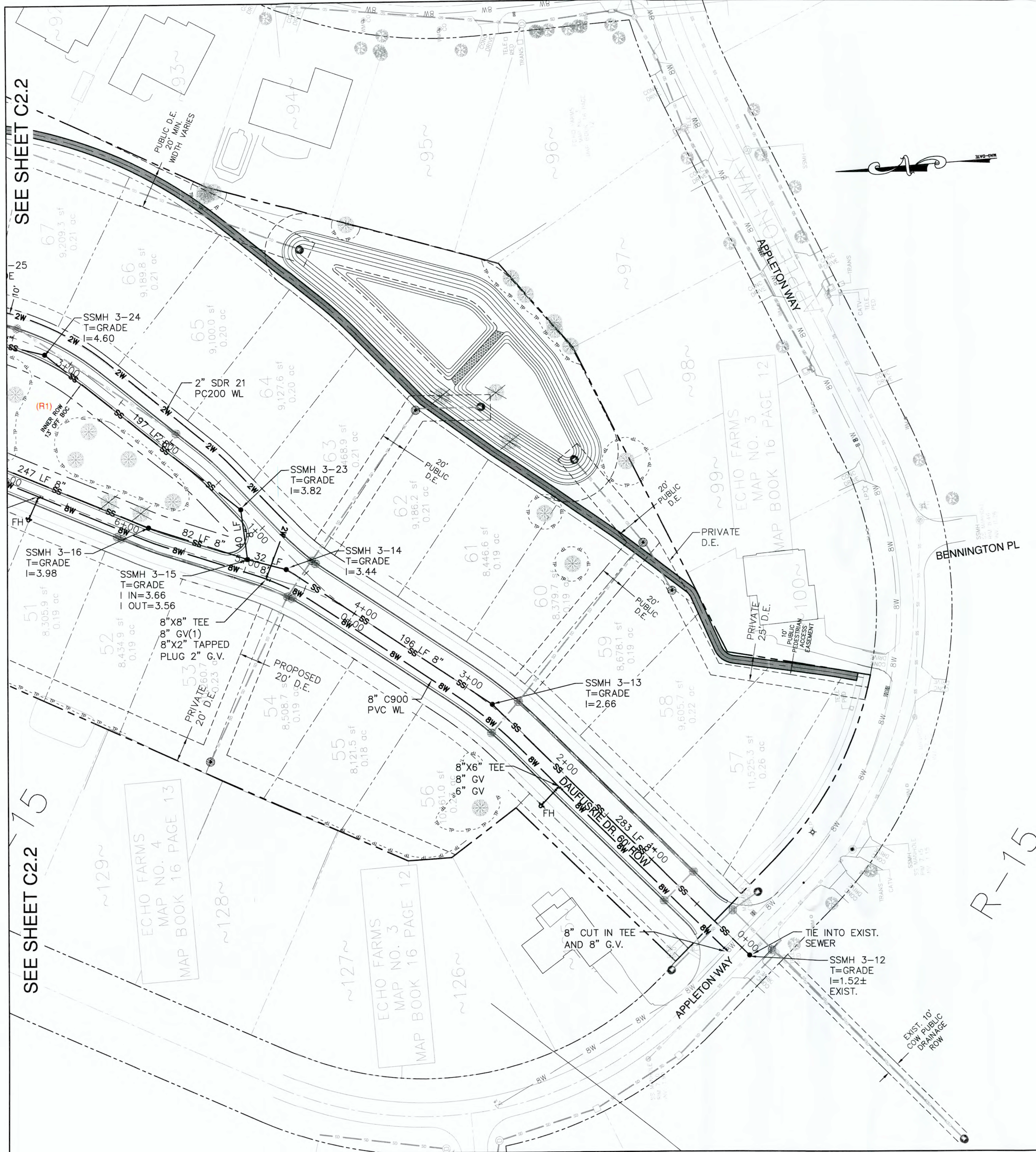


**C2.2**

C:\projects\2016\16083\_Woodlands at Echo Farms\16083\_Plans\dwg\16083\_master.rvt.dwg, 5/18/2021 8:09:23 AM



R1: 3.9.21	ADDED INNER ROW DAUFUSKIE DR. ISLAND.	
DATE	DESCRIPTION	BY
REVISIONS		
2016 NORRIS & TUNSTALL		



SEE SHEET C2.2

SEE SHEET C2.2

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_  
**Approved Construction Plan**  
 Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

NCDENR PWSS WATER PERMIT # \_\_\_\_\_  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT # \_\_\_\_\_  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NE: YES or NO (CIRCLE ONE)

**SCALE: 1" = 40'**  
 0 40 80 120

UTILITY PLAN  
 WOODLANDS AT ECHO FARMS  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CRANFORD, NJ 08512  
 732-521-2900

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.  
 902 MARKET STREET  
 WILMINGTON, NC 28401  
 PHONE: (910) 343-9653  
 1429 ASHLITTLE RIVER RD., NW  
 WILMINGTON, NC 28401  
 PHONE: (910) 287-5300

License #C-3641  
**16083**

DES. JST  
 CKD. JPN  
 DRWN. NKS

DATE 9/20/19



**C2.3**



NC DENR PWSS WATER PERMIT # \_\_\_\_\_ GPD  
 WATER CAPACITY: \_\_\_\_\_ GPD  
 DWQ SEWER PERMIT # \_\_\_\_\_ GPD  
 SEWER CAPACITY: \_\_\_\_\_ GPD  
 SEWER SHED # AND PLANT: \_\_\_\_\_  
 SEWER TO FLOW THROUGH NET: YES or NO (CIRCLE ONE)

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

SCALE: 1" = 40'

SEE SHEET C3.4

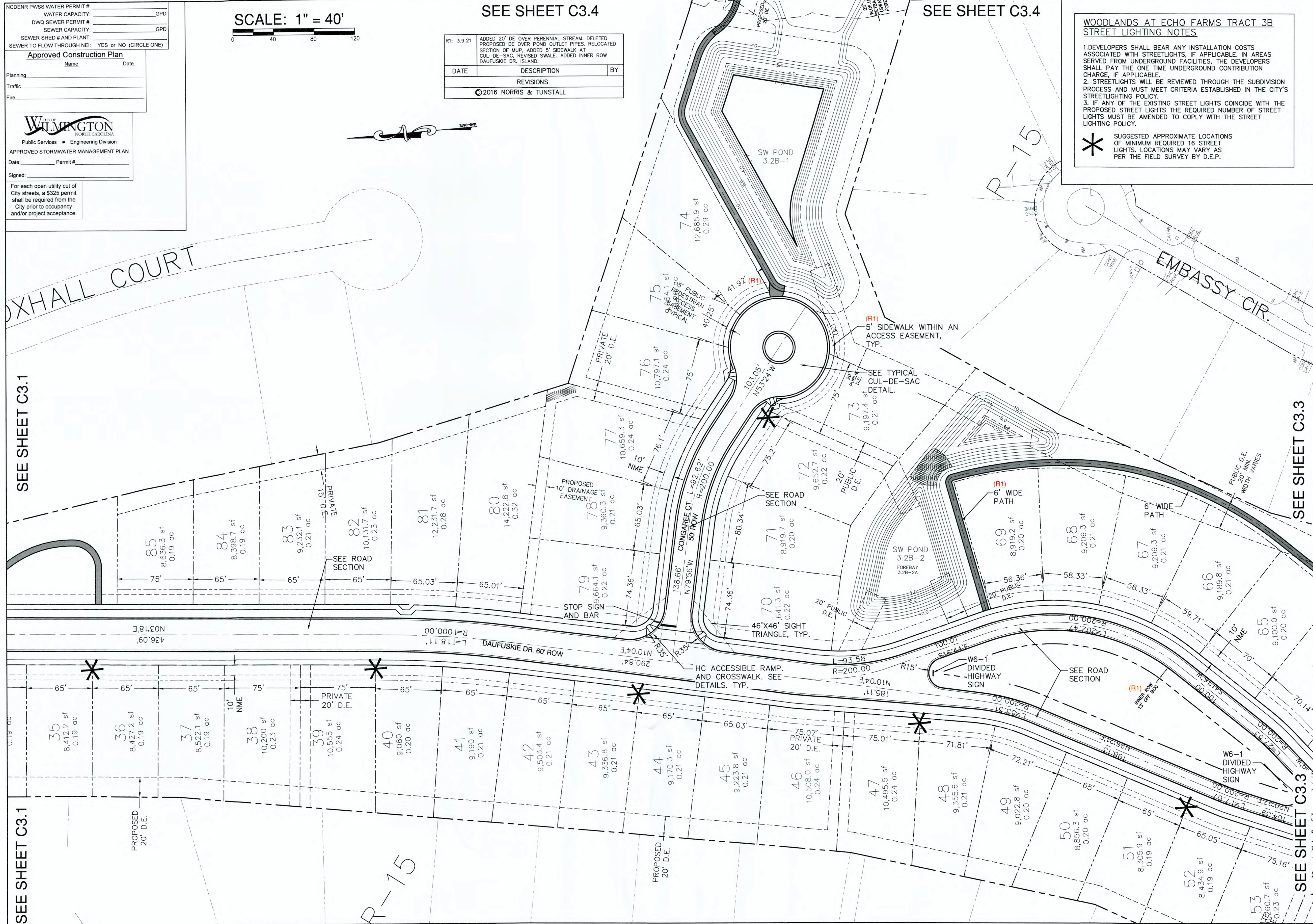
R1: 3.9.21	ADDED 20' DE OVER PERENNIAL STREAM. DELETED PROPOSED DE OVER POND OUTLET PIPES. RELOCATED SECTION OF MUP. ADDED 5' SIDEWALK AT CUL-DE-SAC, REVISED SWALE. ADDED INNER ROW DAUFUSKIE DR. ISLAND.	BY
DATE	DESCRIPTION	BY
REVISIONS		
©2016 NORRIS & TUNSTALL		

SEE SHEET C3.4

**WOODLANDS AT ECHO FARMS TRACT 3B STREET LIGHTING NOTES**

1. DEVELOPERS SHALL BEAR ANY INSTALLATION COSTS ASSOCIATED WITH STREETLIGHTS, IF APPLICABLE, IN AREAS SERVED FROM UNDERGROUND FACILITIES, THE DEVELOPERS SHALL PAY THE ONE TIME UNDERGROUND CONTRIBUTION CHARGE, IF APPLICABLE.
2. STREETLIGHTS WILL BE REVIEWED THROUGH THE SUBDIVISION PROCESS AND MUST MEET CRITERIA ESTABLISHED IN THE CITY'S STREETLIGHTING POLICY.
3. IF ANY OF THE EXISTING STREET LIGHTS COINCIDE WITH THE PROPOSED STREET LIGHTS THE REQUIRED NUMBER OF STREET LIGHTS MUST BE AMENDED TO COMPLY WITH THE STREET LIGHTING POLICY.

**\*** SUGGESTED APPROXIMATE LOCATIONS OF MINIMUM REQUIRED 16 STREET LIGHTS. LOCATIONS MAY VARY AS PER THE FIELD SURVEY BY D.E.P.



SEE SHEET C3.1

SEE SHEET C3.3

SEE SHEET C3.1

SEE SHEET C3.3

LAYOUT PLAN  
 WOODLANDS AT ECHO FARMS  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 CN4000 FORSGATE DRIVE  
 CRANFORD, NJ 07012  
 732-521-2900

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.

902 MARKET STREET  
 WILMINGTON, NC 28401  
 PHONE (910) 343-9653

1429 ASHLITTLE RIVER RD., NW  
 ASHLAND, NC 28801  
 PHONE (910) 287-5906

License #C-3641  
**16083**

DES. JST  
 CDD. JPN  
 DRWN. NKS

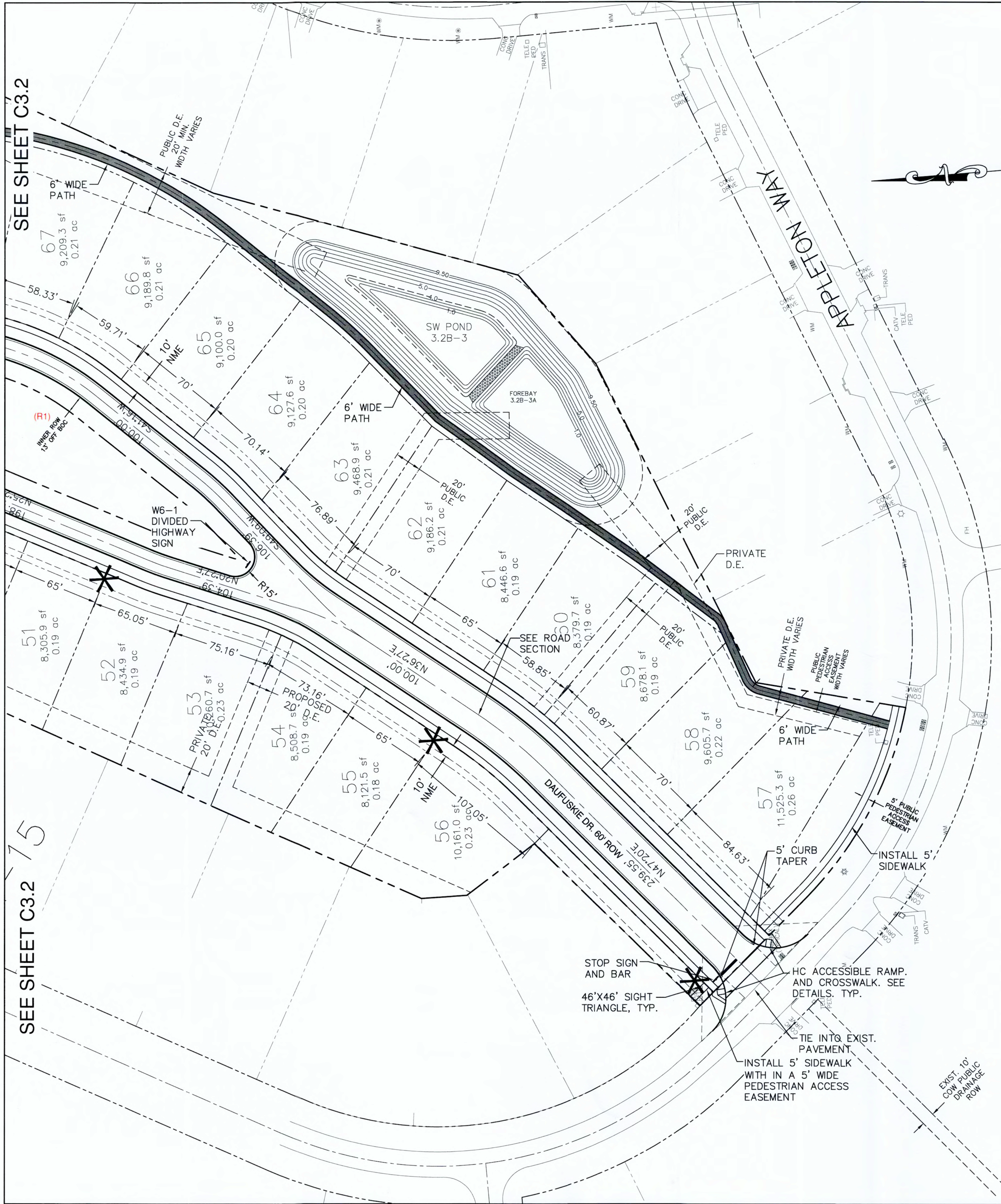
DATE 6/27/18

**SEAL**  
 19851  
 NORRIS & TUNSTALL  
 ENGINEERS P.C.

**C3.2**

\projects\2016\16083 Woodlands at Echo Farms\16083.master.rvt.dwg, 5/19/2021 7:57:55 AM





SEE SHEET C3.2

SEE SHEET C3.2

**WOODLANDS AT ECHO FARMS TRACT 3B STREET LIGHTING NOTES**

1. DEVELOPERS SHALL BEAR ANY INSTALLATION COSTS ASSOCIATED WITH STREETLIGHTS, IF APPLICABLE. IN AREAS SERVED FROM UNDERGROUND FACILITIES, THE DEVELOPERS SHALL PAY THE ONE TIME UNDERGROUND CONTRIBUTION CHARGE, IF APPLICABLE.

2. STREETLIGHTS WILL BE REVIEWED THROUGH THE SUBDIVISION PROCESS AND MUST MEET CRITERIA ESTABLISHED IN THE CITY'S STREETLIGHTING POLICY.

3. IF ANY OF THE EXISTING STREET LIGHTS COINCIDE WITH THE PROPOSED STREET LIGHTS THE REQUIRED NUMBER OF STREET LIGHTS MUST BE AMENDED TO COMPLY WITH THE STREET LIGHTING POLICY.

**\*** SUGGESTED APPROXIMATE LOCATIONS OF MINIMUM REQUIRED 16 STREET LIGHTS. LOCATIONS MAY VARY AS PER THE FIELD SURVEY BY D.E.P.

DATE	DESCRIPTION	BY
R1: 3.9.21	ADDED INNER ROW DAUFUSKIE DR. ISLAND.	
REVISIONS		
© 2016 NORRIS & TUNSTALL		

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

NC DENR PWSS WATER PERMIT #: \_\_\_\_\_ GPD

WATER CAPACITY: \_\_\_\_\_ GPD

DWQ SEWER PERMIT #: \_\_\_\_\_ GPD

SEWER CAPACITY: \_\_\_\_\_ GPD

SEWER SHED # AND PLANT: \_\_\_\_\_

SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

**SCALE: 1" = 40'**

LAYOUT PLAN  
WOODLANDS AT ECHO FARMS  
4114 ECHO FARMS BLVD.  
WILMINGTON, NC 28412  
NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
ECHO FARMS LLC  
MATRIX DEVELOPMENT GROUP  
CN 4000 FORSGATE DRIVE  
CHANDLER, NC 27512  
732-521-2500

**NORRIS & TUNSTALL**  
CONSULTING ENGINEERS P.C.

1429 ASHLITTLE RIVER RD. NW  
WILMINGTON, NC 28401  
PHONE (910) 343-9653

Licence #C-3641

**16083**

DES. JST  
CKD. JPN  
DRWN. NKS

DATE 6/28/21

Professional Engineer Seal: **NORRIS & TUNSTALL**, SEAL 1985

**C3.3**

R-15



SEE SHEET C3.2

SEE SHEET C3.2

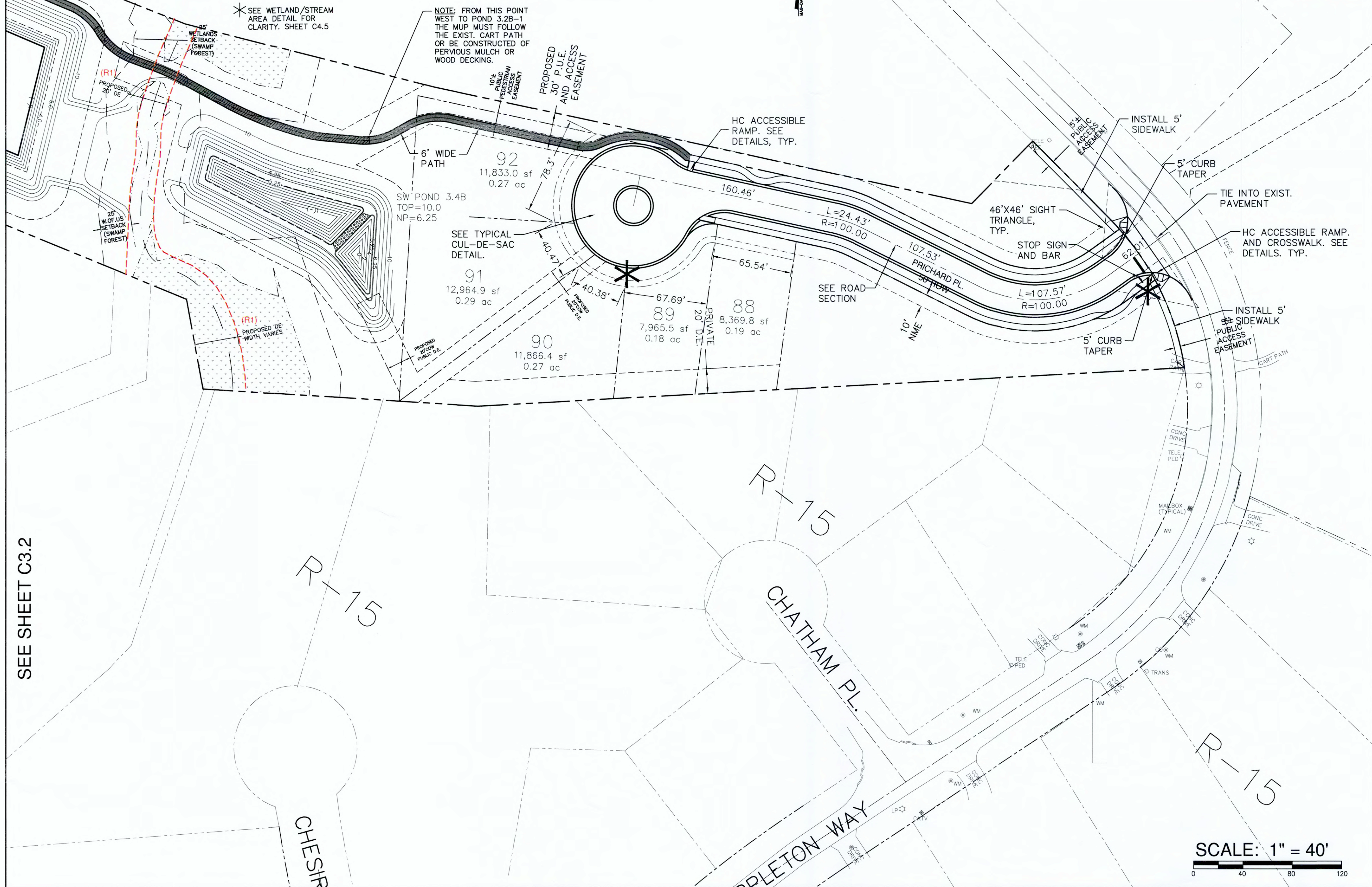
RT: 3.9.21	ADDED 20' DE OVER PERENNIAL STREAM, DELETED PROPOSED DE OVER POND OUTLET PIPES.	
DATE	DESCRIPTION	BY
REVISIONS		
© 2016 NORRIS & TUNSTALL		

NOTE: ANY RESURFACING/CONSTRUCTION OF PEDESTRIAN TRAILS IN CONSERVATION RESOURCE WILL BE LIMITED TO HAND EQUIPMENT AND MINIMAL DISTURBANCE PERMITTED DUE TO THE SENSITIVITY OF THE RESOURCE.

**WOODLANDS AT ECHO FARMS TRACT 3B STREET LIGHTING NOTES**

1. DEVELOPERS SHALL BEAR ANY INSTALLATION COSTS ASSOCIATED WITH STREETLIGHTS, IF APPLICABLE. IN AREAS SERVED FROM UNDERGROUND FACILITIES, THE DEVELOPERS SHALL PAY THE ONE TIME UNDERGROUND CONTRIBUTION CHARGE, IF APPLICABLE.
2. STREETLIGHTS WILL BE REVIEWED THROUGH THE SUBDIVISION PROCESS AND MUST MEET CRITERIA ESTABLISHED IN THE CITY'S STREETLIGHTING POLICY.
3. IF ANY OF THE EXISTING STREET LIGHTS COINCIDE WITH THE PROPOSED STREET LIGHTS THE REQUIRED NUMBER OF STREET LIGHTS MUST BE AMENDED TO COMPLY WITH THE STREET LIGHTING POLICY.

\* SUGGESTED APPROXIMATE LOCATIONS OF MINIMUM REQUIRED 16 STREET LIGHTS. LOCATIONS MAY VARY AS PER THE FIELD SURVEY BY D.E.P.



LAYOUT PLAN  
WOODLANDS AT ECHO FARMS  
4114 ECHO FARMS BLVD.  
WILMINGTON, NC 28412  
NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
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MATRIX DEVELOPMENT GROUP  
CN4000 FORSGATE DRIVE  
CRANFORD, NJ 07012  
732-521-2900

**NORRIS & TUNSTALL**  
CONSULTING ENGINEERS P.C.  
1429 ASH-LITTLE RIVER RD. NW  
ASH, NC 28420  
PHONE (910) 287-5900

902 MARKET STREET  
WILMINGTON, NC 28401  
PHONE (910) 343-9653

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

City of WILMINGTON NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_  
Approved Construction Plan  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Planning: \_\_\_\_\_  
Traffic: \_\_\_\_\_  
Fire: \_\_\_\_\_

NCDENR PWSS WATER PERMIT # \_\_\_\_\_  
WATER CAPACITY: \_\_\_\_\_ GPD  
DWO SEWER PERMIT # \_\_\_\_\_  
SEWER CAPACITY: \_\_\_\_\_ GPD  
SEWER SHED # AND PLANT: \_\_\_\_\_  
SEWER TO FLOW THROUGH NEI: YES or NO (CIRCLE ONE)

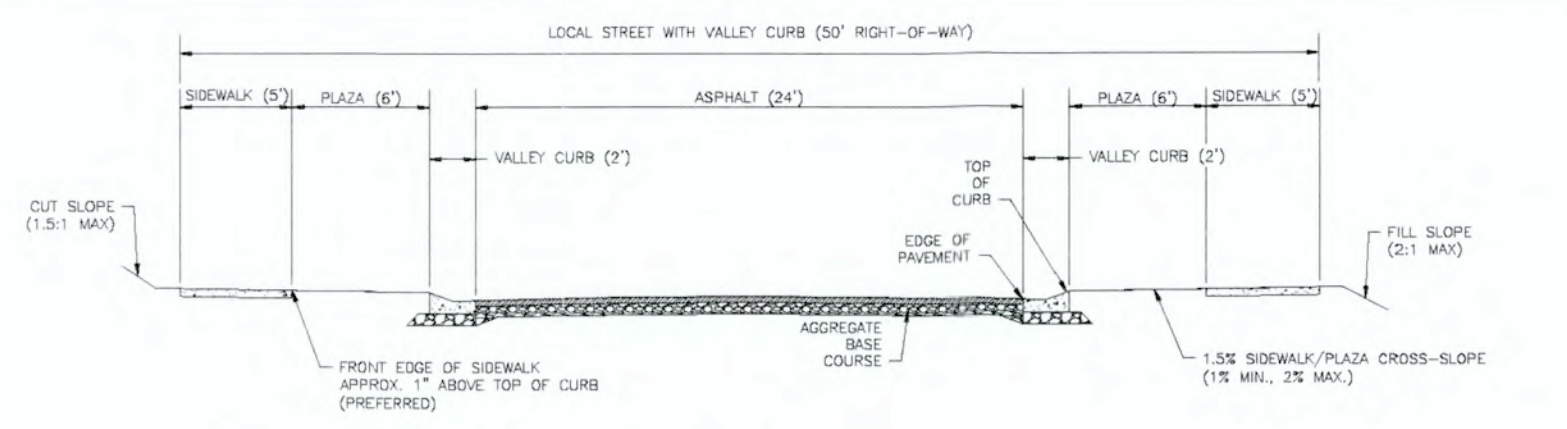


SCALE: 1" = 40'  
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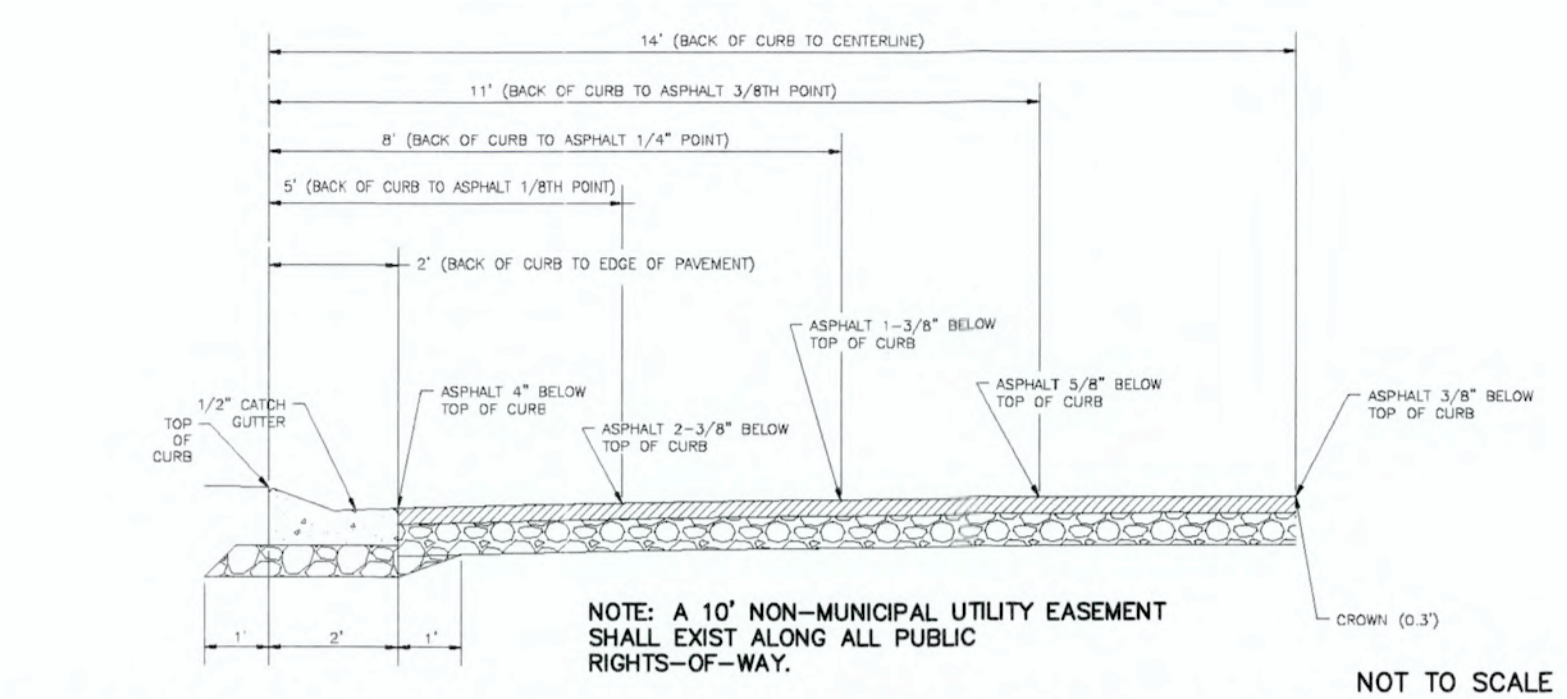
C3.4

©\projects\2016\16083 Woodlands at Echo Farms\16083.mxd (16083.mxd) - 3/11/2021 11:31:02 AM

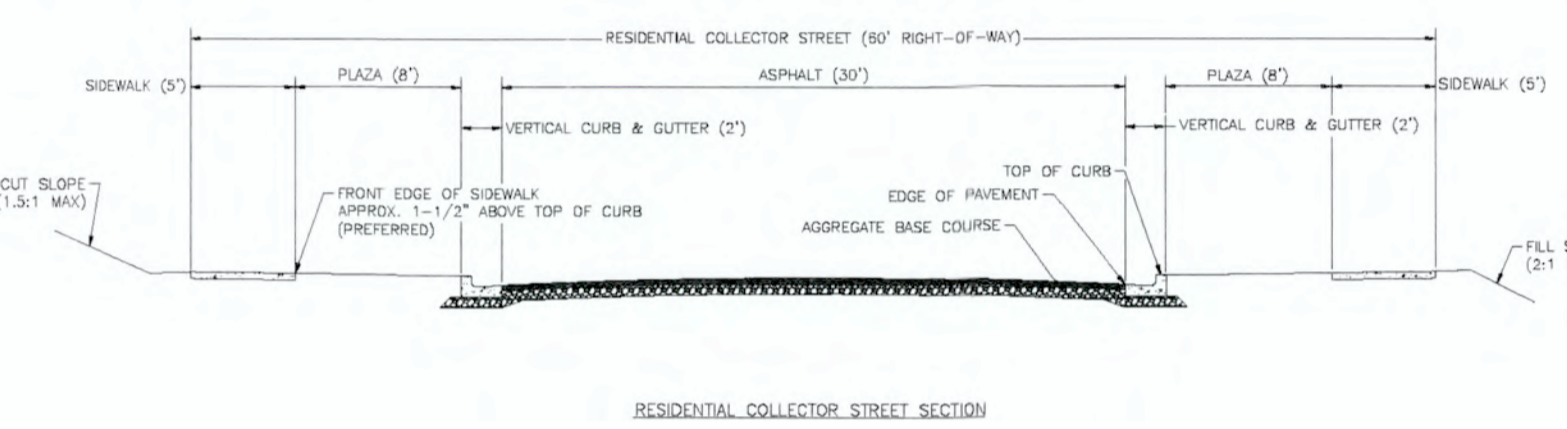




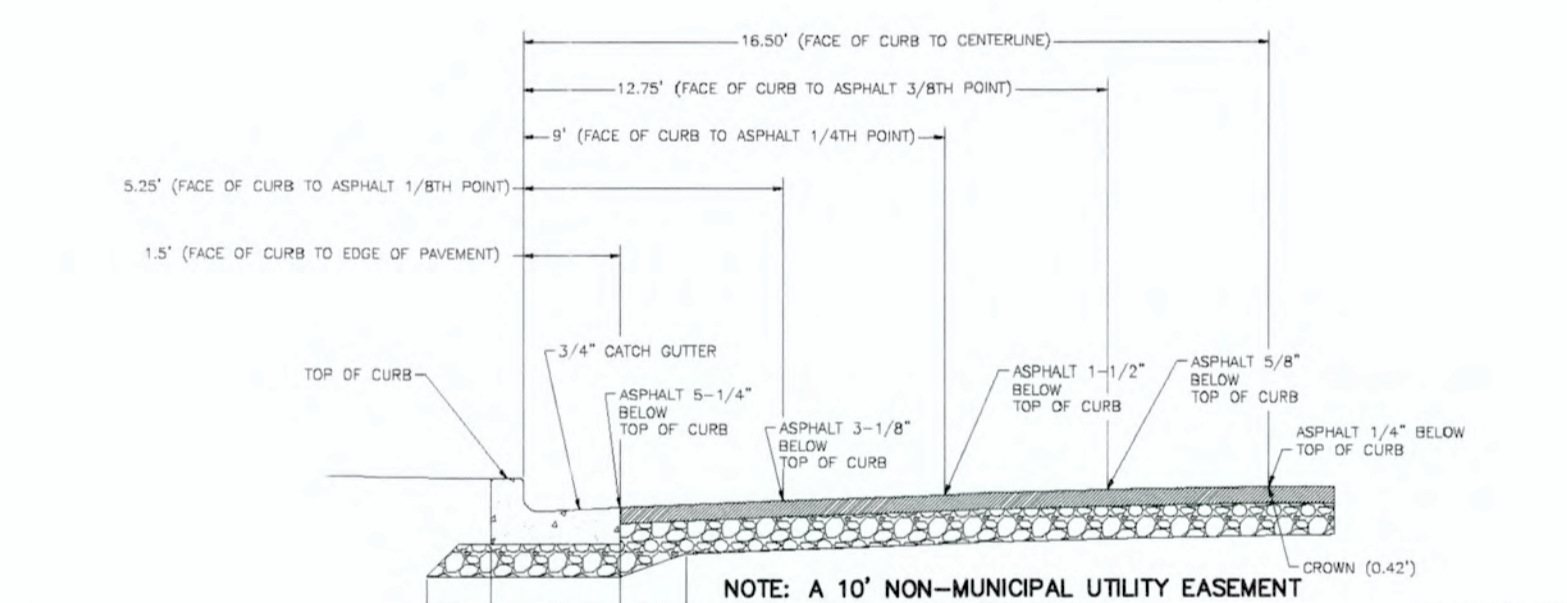
LOCAL STREET WITH VALLEY CURB-SECTION



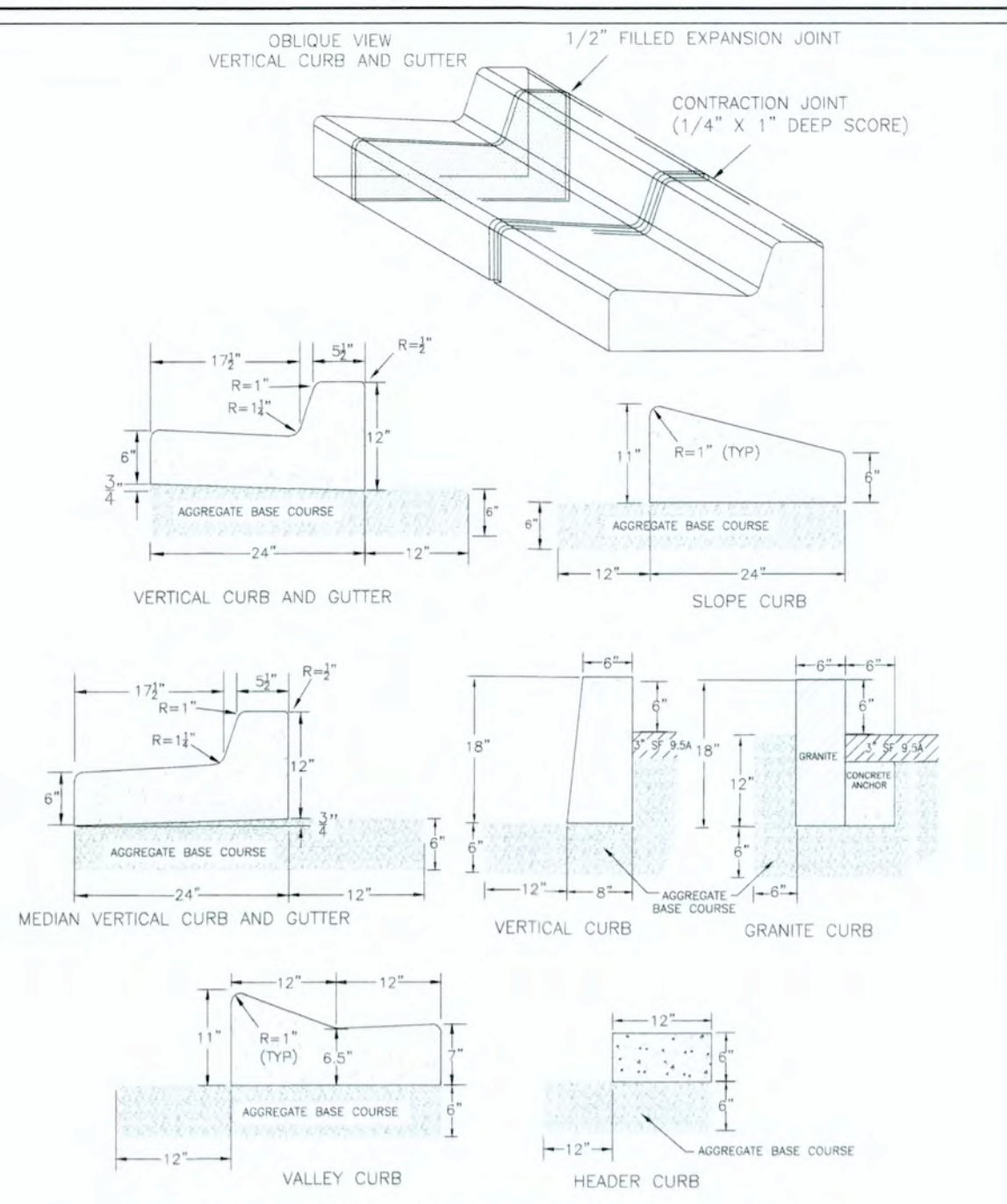
C.O.W. LOCAL STREET WITH VALLEY CURB DETAIL



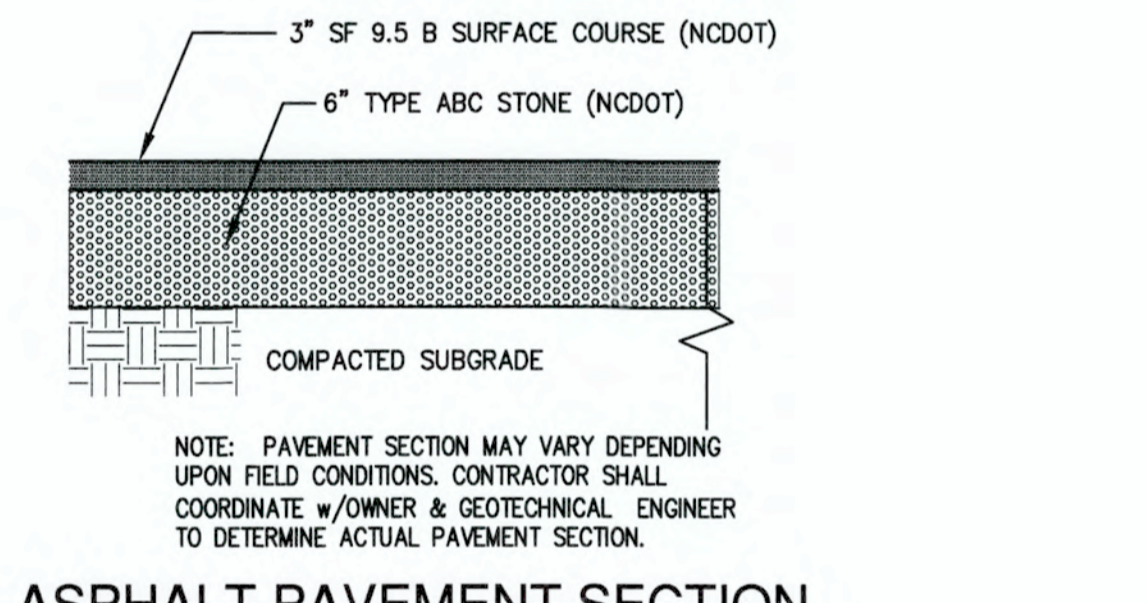
RESIDENTIAL COLLECTOR STREET SECTION



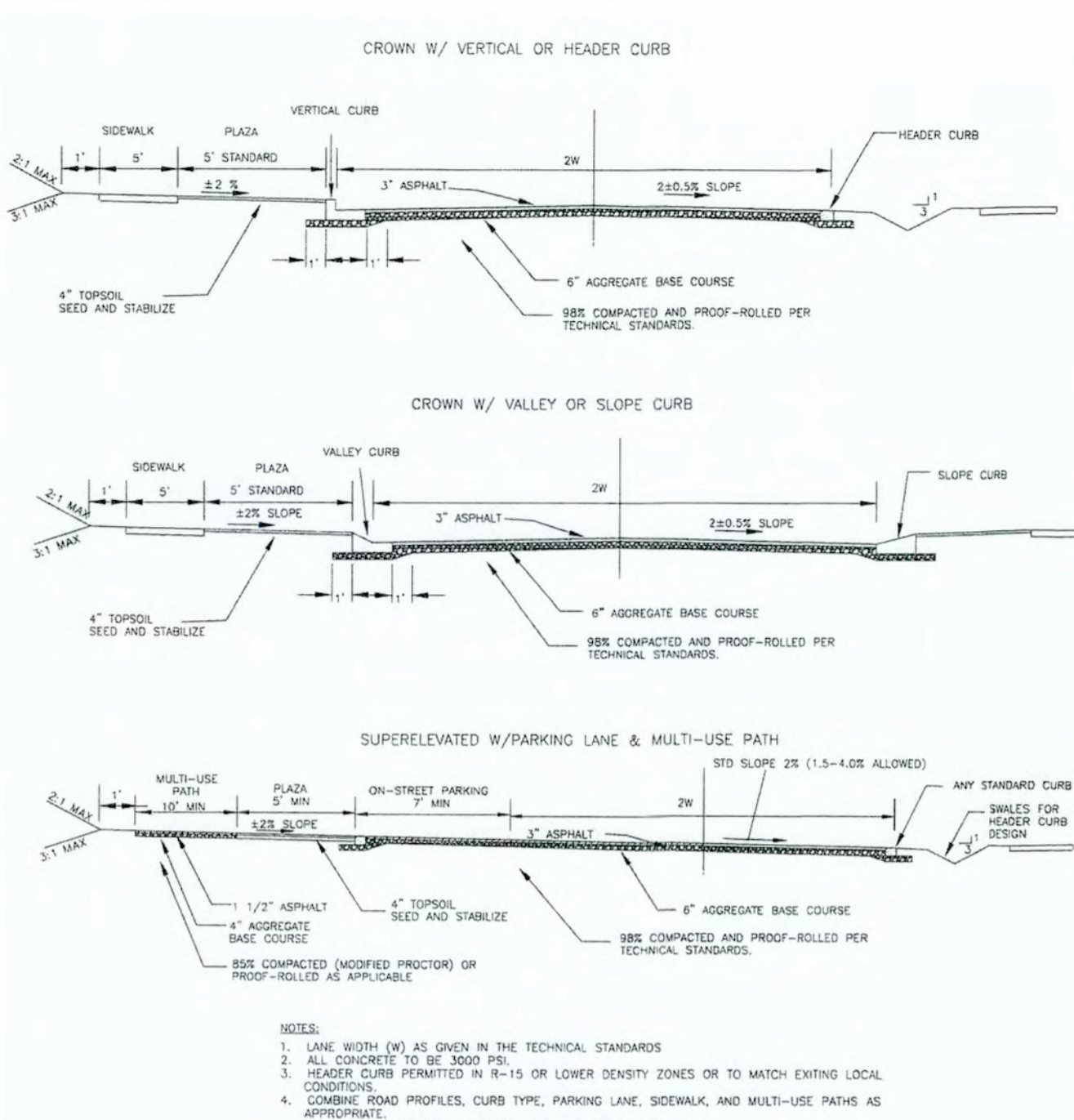
C.O.W. RESIDENTIAL COLLECTOR STREET WITH VALLEY CURB DETAIL



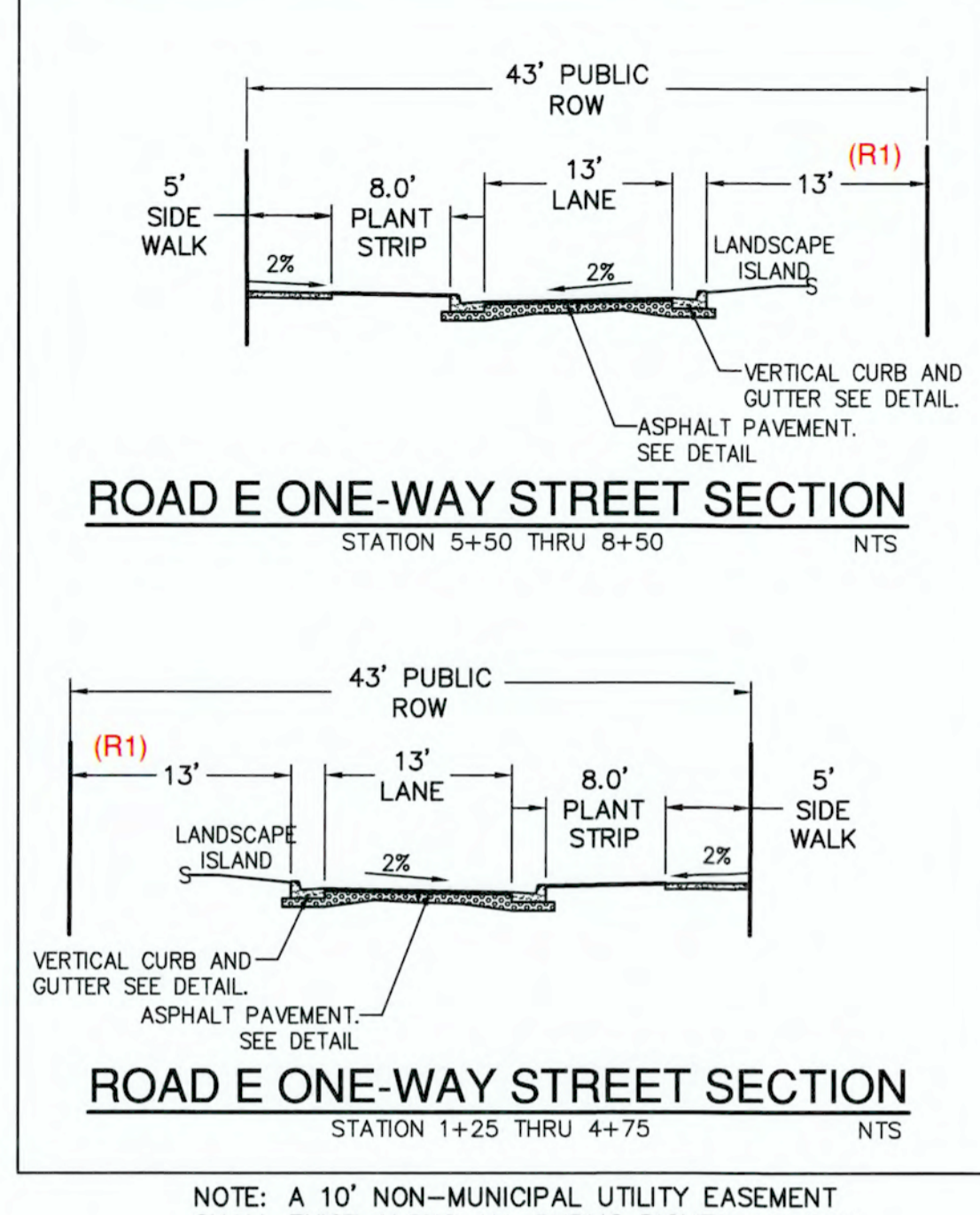
C.O.W. STANDARD CURBING DETAIL



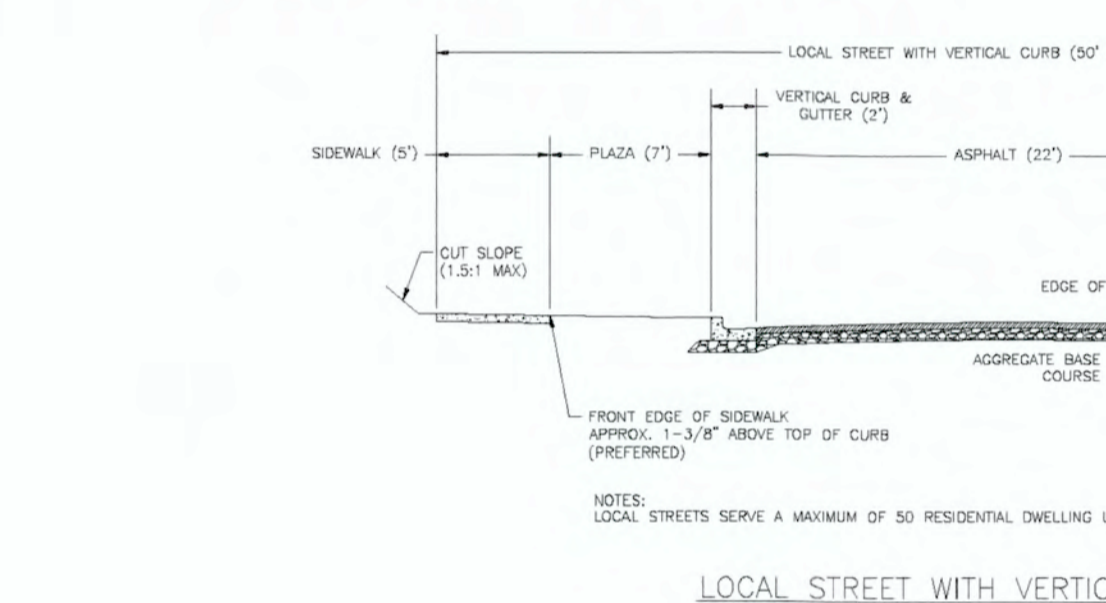
ASPHALT PAVEMENT SECTION



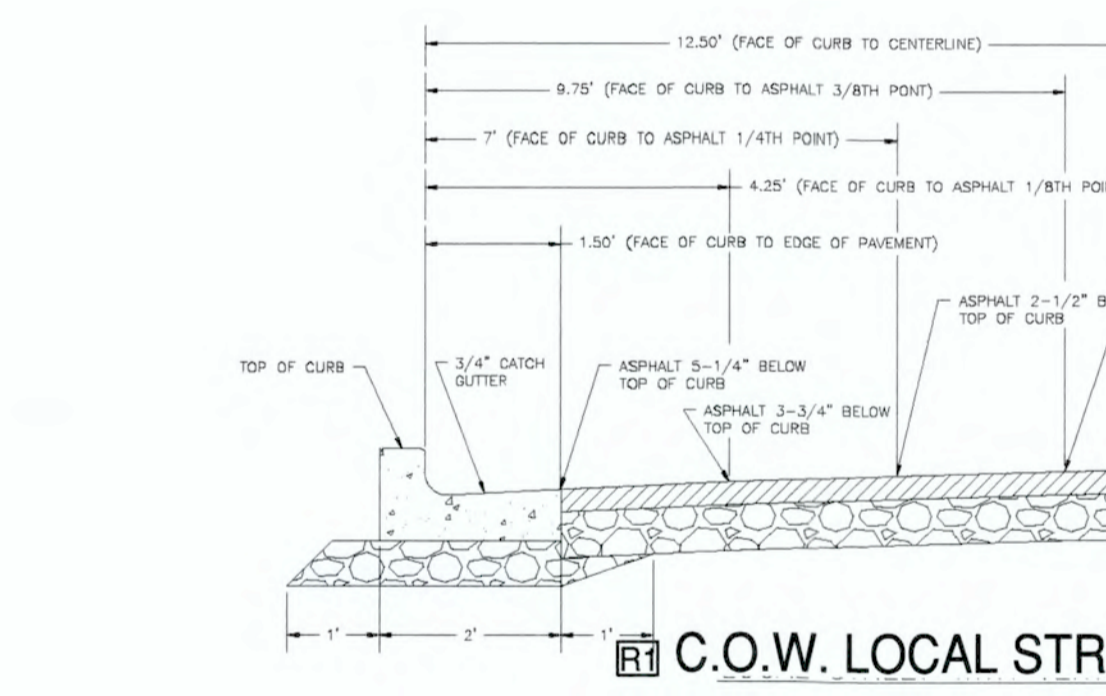
C.O.W. STREET SECTIONS



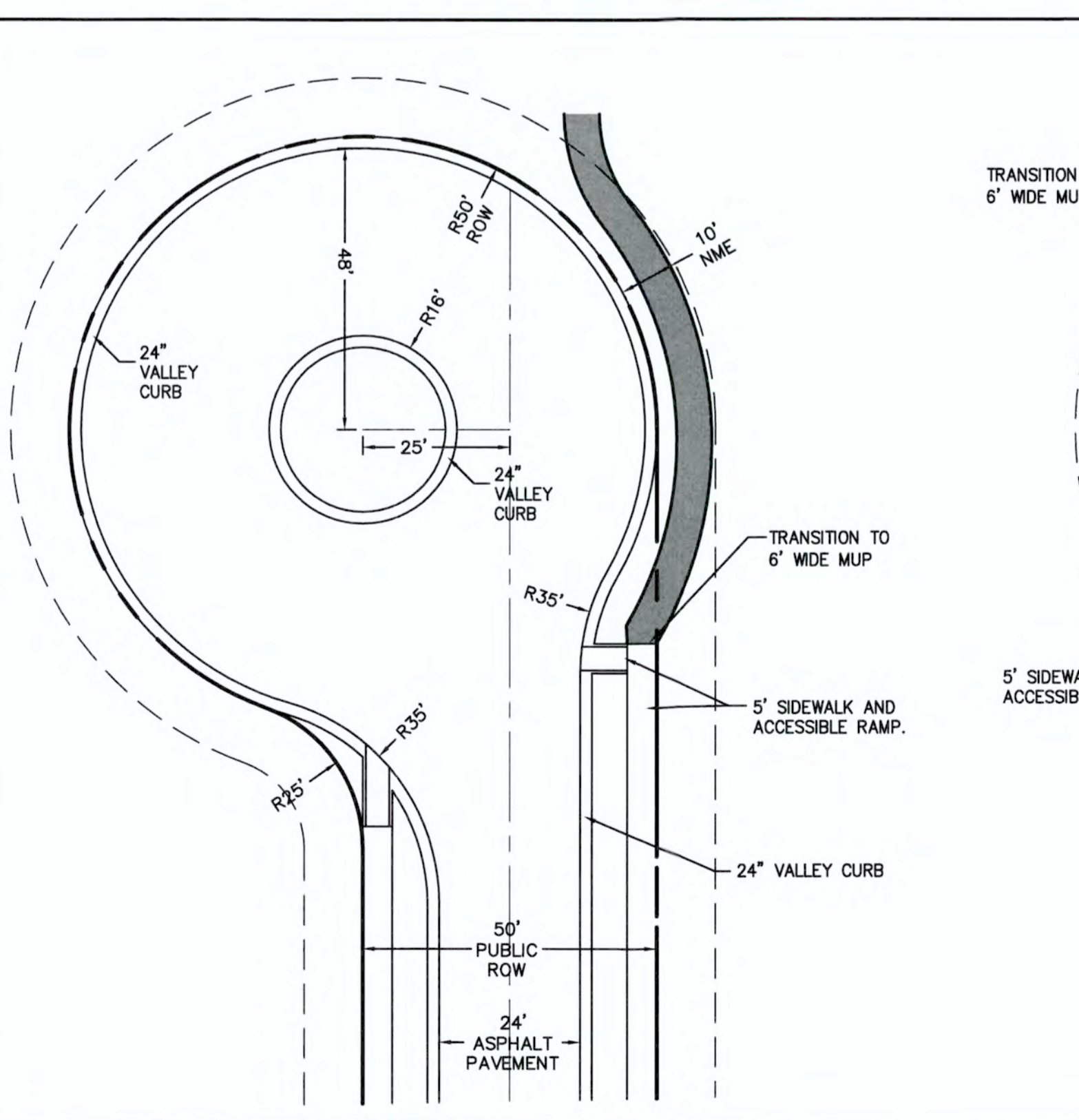
ROAD E ONE-WAY STREET SECTION



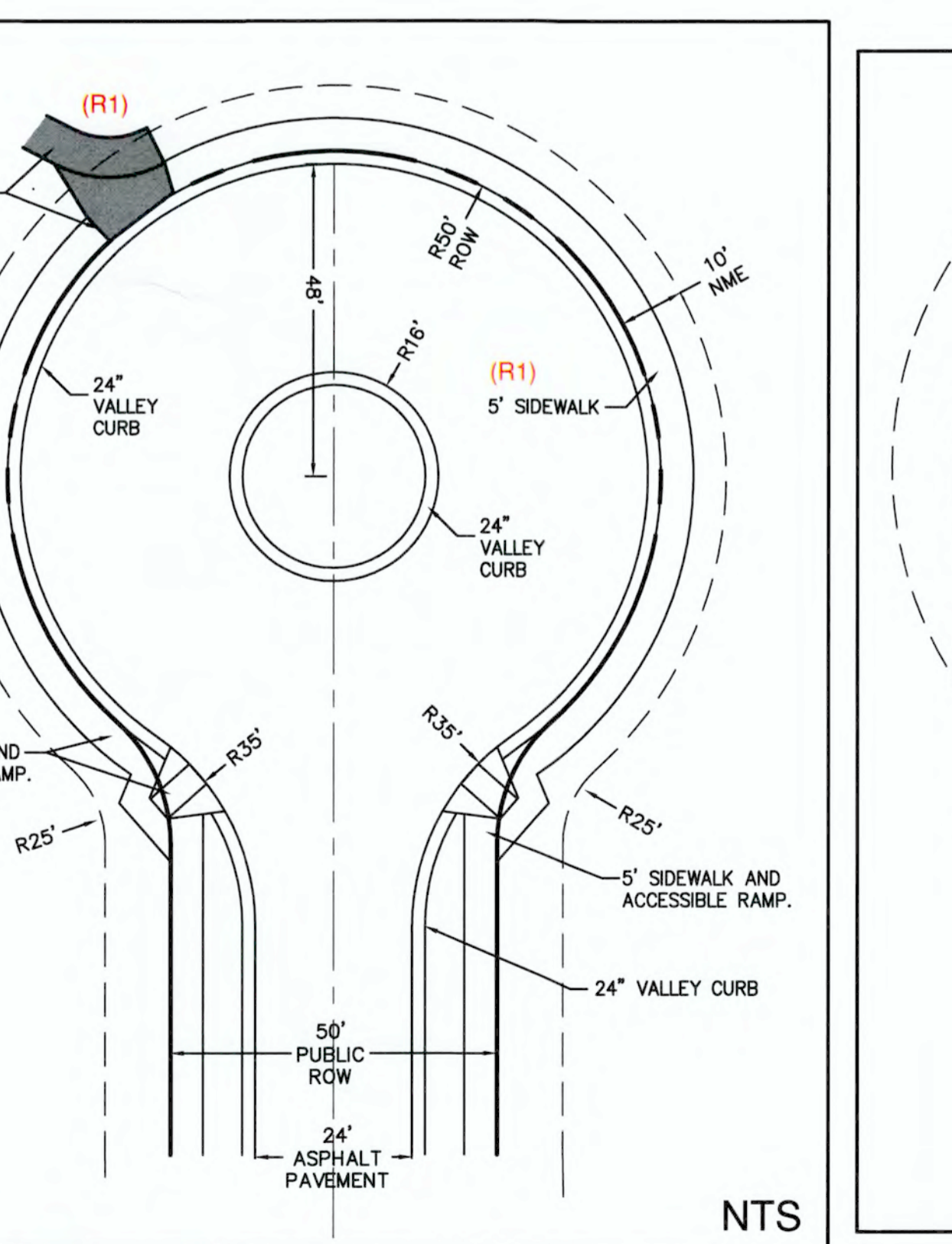
LOCAL STREET WITH VALLEY CURB SECTION



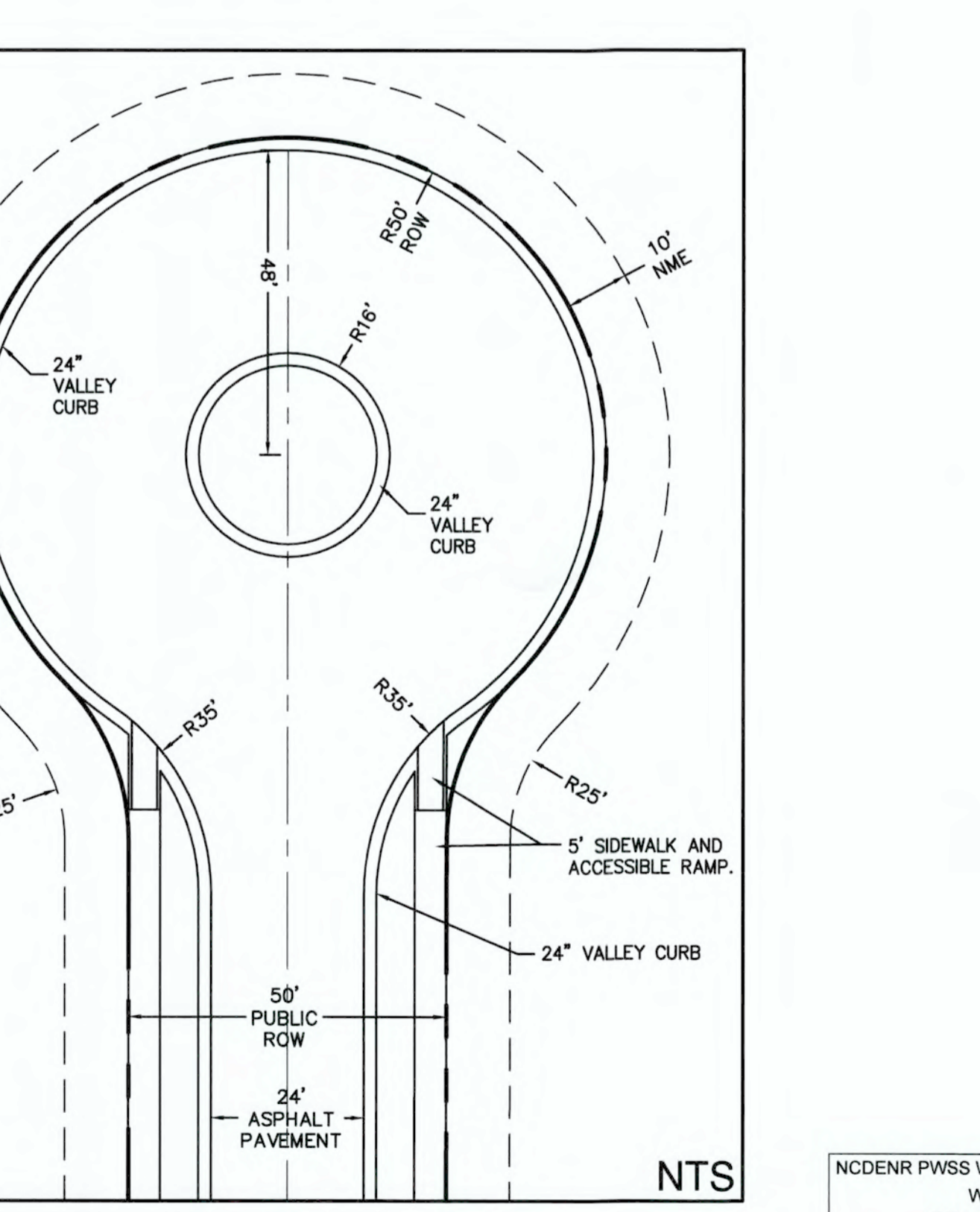
C.O.W. LOCAL STREET WITH VALLEY CURB



CUL-DE-SAC DETAIL PRICHARD PL.



CUL-DE-SAC DETAIL CONGAREE CT.



TYPICAL CUL-DE-SAC DETAIL

- CITY OF WILMINGTON STANDARD NOTES:**
- CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4948.
  - PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
  - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
  - ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
  - TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
  - IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. POSTED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
  - CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
  - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
  - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED.
  - CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
  - PROJECT SHALL COMPLY WITH CFWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION.
  - IF THE CONTRACTOR DESIRES CFWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
  - ANY IRRIGATION SYSTEM SUPPLIED BY CFWA WATER SHALL COMPLY WITH CFWA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION.
  - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USOPCCOHR OR ASSE.
  - WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED SINGLE STRAND COPPER WIRE INSTALLED THE ENTIRE LENGTH AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
  - THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
  - UNDERGROUND FIRE LINE MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC ROW TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0896 FOR ADDITIONAL INFORMATION.
  - A LANDSCAPE PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
  - IF AN IRRIGATION SYSTEM IS PLANNED FOR THE SITE, UTILIZE MOISTURE SENSORS.
  - ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.
  - PLEASE CONSIDER INCORPORATING XERIC LANDSCAPING FOR ALL NEW LANDSCAPING.
  - THE CONTRACTOR WILL MAINTAIN ALL WEATHER EMERGENCY ACCESS TO CONSTRUCTION SITE AT ALL TIMES.

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Planning: \_\_\_\_\_ GPD

Traffic: \_\_\_\_\_ GPD

Fire: \_\_\_\_\_ GPD

SEWER TO FLOW THROUGH NEI: YES OR NO (CIRCLE ONE)

APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit #: \_\_\_\_\_

Signed: \_\_\_\_\_

NO.	DATE	DESCRIPTION	BY
R2:3:9:21		RELOCATED SECTION OF M.I.P. ADDED 5' SIDEWALK AT CUL-DE-SAC. ADDED INNER ROW DAUPHINE DR. ISLAND.	
R1:3:18:19		REVISIONS TO PERMITTING BY OTHER REVIEW PROJECTS. PERMITTING OPEN SPACE. REV. STORMDRAINAGE AND STORMDRAINAGE AREAS. ADDED OPEN THROUGH D/S AND DETAIL REMOVAL TABLE ACCORDING TO REV. CHASTAIN DR. ROW AND CENTERLINE AS PER DRAWINGS BY OTHERS. ADDED SECTION DETAIL.	

NOTES AND DETAILS  
 WOODLANDS AT ECHO FARMS  
 4114 ECHO FARMS BLVD.  
 WILMINGTON, NC 28412  
 NEW HANOVER COUNTY

LAND OWNER/APPLICANT  
 ECHO FARMS, LLC  
 MATRIX DEVELOPMENT GROUP  
 60400 FORSGATE DRIVE  
 CRANBURY, NJ 08512  
 732-521-2800

**NORRIS & TUNSTALL**  
 CONSULTING ENGINEERS P.C.

1429 ASH-LITTLE RIVER RD. NW  
 ASH, NC 28401  
 PHONE (910) 287-5900

902 MARKET STREET  
 WILMINGTON, NC 28401  
 PHONE (910) 343-9653

Licence #C-3641

**16083**

DES. JST  
 OKD. JPN  
 DRWN. NKS

DATE 6/27/18

**C4.1**