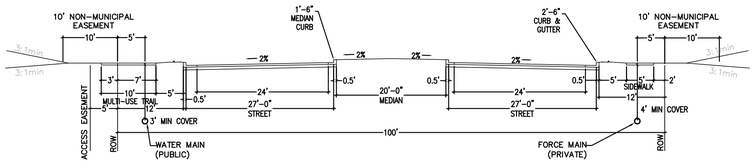
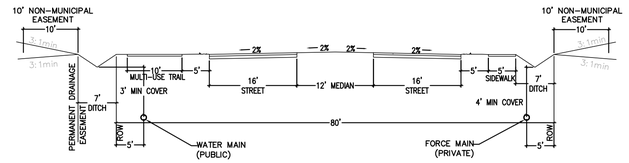
BLAKE FARM BOULEVARD - A

100' R/W (PUBLIC)



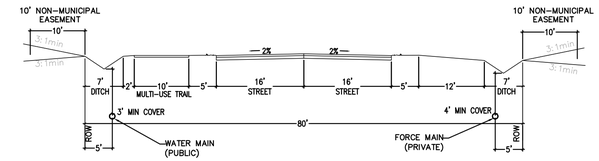
BLAKE FARM BOULEVARD - B

80' R/W (PUBLIC)



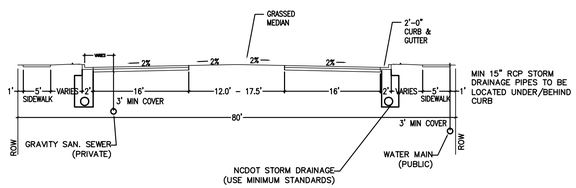
BLAKE FARM BOULEVARD - C

80' R/W (PUBLIC)



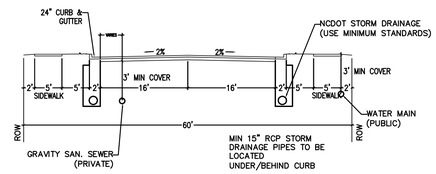
NORTH/SOUTH COLLECTOR

80' R/W (PUBLIC)



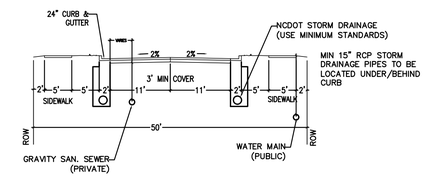
NORTH/SOUTH COLLECTOR (NO MEDIAN)

60' R/W (PUBLIC)



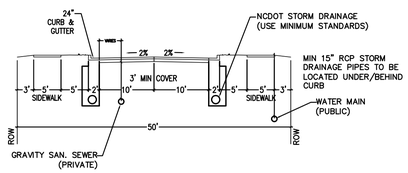
RESIDENTIAL COLLECTOR

50' R/W (PUBLIC)



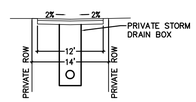
RESIDENTIAL LOCAL

50' R/W (PUBLIC)



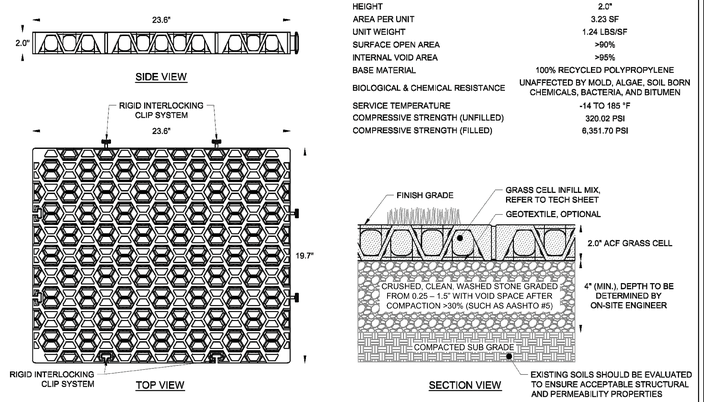
ALLEY

14' EASEMENT (PRIVATE)



ACF GRASS CELL

PANEL SIZE: 23.6" X 19.7" X 2"



SPECIFICATIONS

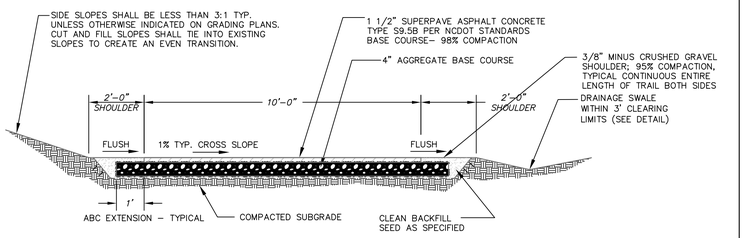
WIDTH	19.7"
LENGTH	23.6"
HEIGHT	2.0"
AREA PER UNIT	3.23 SF
UNIT WEIGHT	1.24 LBS/SF
SURFACE OPEN AREA	>90%
INTERNAL VOID AREA	>95%
BASE MATERIAL	100% RECYCLED POLYPROPYLENE
BIOLOGICAL & CHEMICAL RESISTANCE	UNAFFECTED BY MOLD, ALGAE, SOIL BORN CHEMICALS, BACTERIA, AND BITUMEN
SERVICE TEMPERATURE	-14 TO 185 °F
COMPRESSIVE STRENGTH (UNFILLED)	320.02 PSI
COMPRESSIVE STRENGTH (FILLED)	6,351.70 PSI

ACF ENVIRONMENTAL

ACF GRASS CELL

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

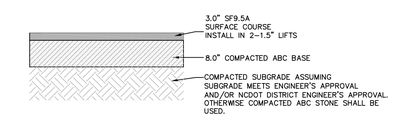
GRASS CELL DETAIL
EMERGENCY ACCESS DRIVES



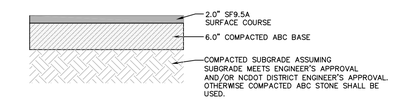
NOTES:
1. CROSS SLOPE DIRECTION VARIES. SEE LAYOUT PLANS FOR DIRECTION OF SLOPE.
2. CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING ALL SLOPES DISTURBED BY CONSTRUCTION.
3. MULTI-USE PATH MUST COMPLY WITH ALL APPLICABLE ADA REQUIREMENTS.
4. NCDOT OR PENDER COUNTY RESERVES THE RIGHT TO REQUIRE FIELD ADJUSTMENT OF THE ELEVATIONS AND/OR ALIGNMENT OF THE MULTI-USE PATH IF ACCESSIBILITY AND/OR SAFETY CONCERNS ARISE.

10' WIDE ASPHALT MULTI-USE TRAIL

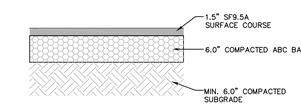
SECTION – NOT TO SCALE



ASPHALT PAVEMENT SECTION
BLAKE FARM BOULEVARD



ASPHALT PAVEMENT SECTION
(COLLECTORS AND LOCAL STREETS)



ASPHALT PAVEMENT SECTION
(ALLEY)

NOTE:
1) PAVEMENT SECTIONS ARE BASED UPON A SOILS REPORT PREPARED BY ECS CAROLINAS DATED JULY 24, 2014.
2) NCDOT SUBDIVISION GUIDELINES FOR GROUP II, FAIR TO POOR SOILS ARE LESS CONSERVATIVE. SO THE ECS GUIDELINES WERE USED FOR BLAKE FARM.

REV.NO.	DESCRIPTIONS	DATE
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E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

TYPICAL ROADWAY AND PAVEMENT SECTIONS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER G002
DRAWING NUMBER 2

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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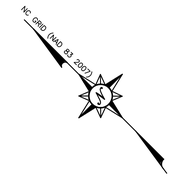
CERTIFICATE OF OWNERSHIP, DEDICATION AND JURISDICTION

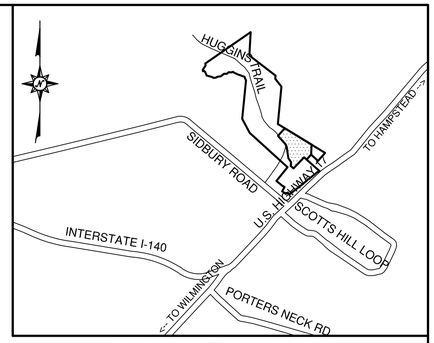
I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) OWN FREE CONSENT AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS, CONSERVATION SPACE AND OTHER AREAS TO PUBLIC OR PRIVATE USE AS NOTED. FURTHER,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

OWNER _____ DATE _____

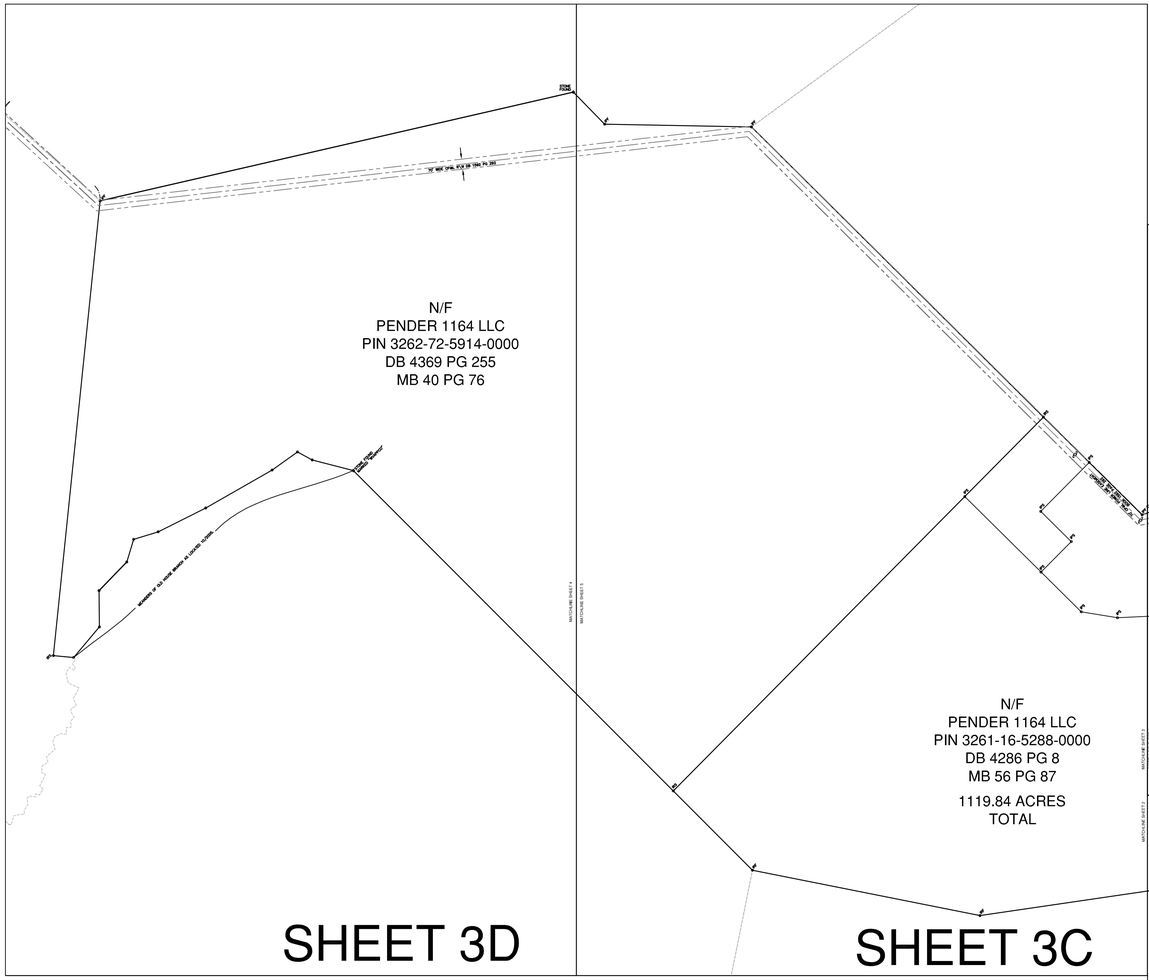
OWNER _____ DATE _____

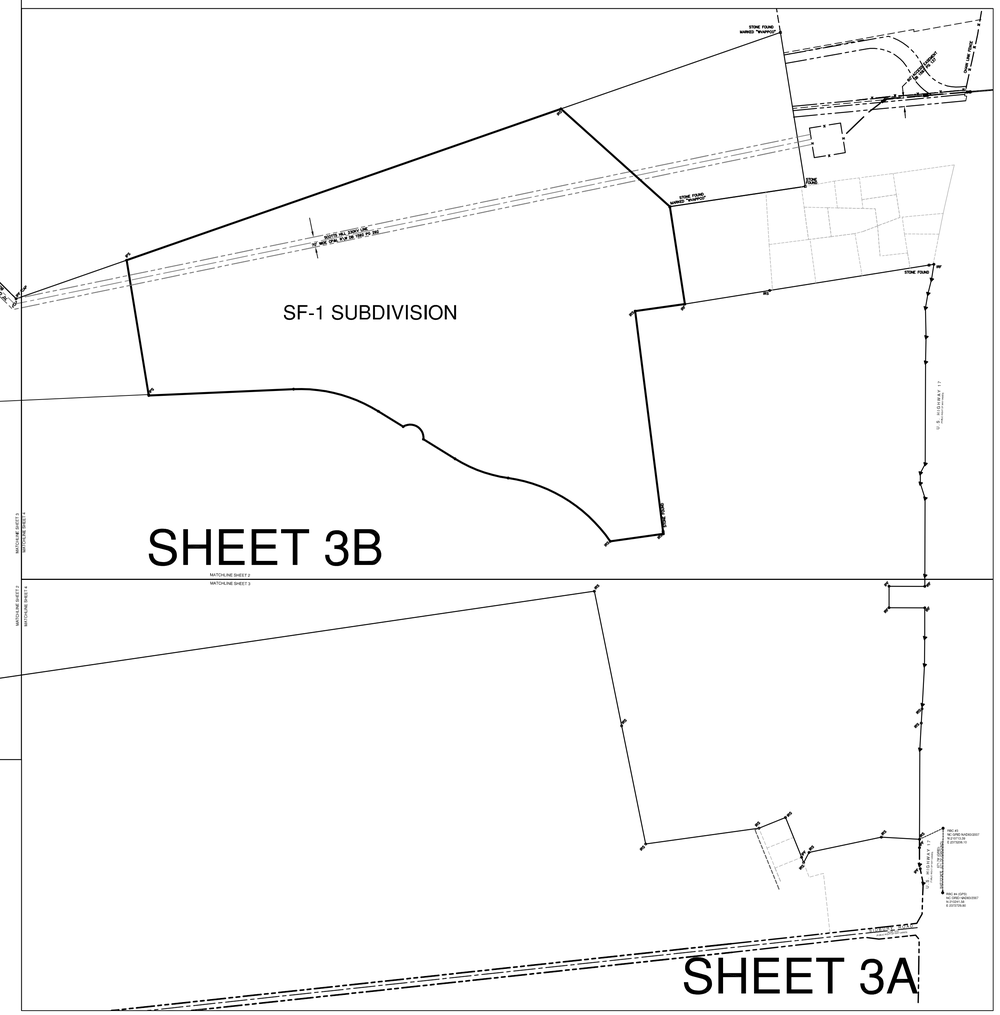
OWNER _____ DATE _____





VICINITY MAP - NOT TO SCALE





OVERALL NOT TO SCALE

NOTES:

1. ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
2. BEARINGS BASED ON NC GRID NAD83/2007.
3. REFERENCES: THIS IS A COMPILATION OF SURVEYS BASED ON MAPS BY MICHAEL N. UNDERWOOD MB 56 PG 87, JACK G. STOCKS MB 40 PG 76, DANFORD&BRISTOW LAND SURVEYING TITLED "SURVEY FOR HENRY BLAKE, II, DATED MAY 17, 2006" (UNRECORDED) AND McKIM & CREED MB 57 PG 6 AND MB 57 PG 1.
4. SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
5. UNDERGROUND UTILITIES ARE SHOWN ONLY WHERE ABOVEGROUND SERVICES WERE VISIBLE.
6. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
7. SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.
8. THIS PROPERTY LIES IN ZONE X (AREAS OUTSIDE THE 2% ANNUAL CHANCE FLOODPLAIN), ALL AS SCALED FROM FIRM MAP PANEL 3271 MAP NUMBER 3720327100J, EFFECTIVE DATE FEBRUARY 16, 2007.
9. GPS USED TO ESTABLISH CONTROL AND TIE FOR SITE.

THAT THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

LEGEND

	=	REBAR & CAP
▲	=	RIGHT OF WAY MONUMENT
CMF ⊡	=	STONE/CONCRETE MONUMENT
IRF ●	=	IRON ROD FOUND
IRS ○	=	IRON ROD SET (5/8" REBAR)
IPS ○	=	IRON PIPE SET
IPF ●	=	IRON PIPE FOUND
CP ○	=	CALCULATED POINT
R/W	=	RIGHT OF WAY
DB	=	DEED BOOK
MB	=	MAP BOOK
PG	=	PAGE
N/F	=	NOW/FORMERLY

CERTIFICATE OF FINAL PLAT APPROVAL

FINAL PLAT APPROVED UNDER THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE:

_____

PLANNING DIRECTOR DATE

PARCEL IDENTIFIER CERTIFICATE

PARCEL IDENTIFIERS HAVE BEEN ISSUED FOR ALL PARCELS SHOWN ON THIS PLAT.

_____

TAX SUPERVISOR DATE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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www.mckimcreed.com

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM - EST. 1949 -

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BOUNDARY COMPILATION MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: NOT TO SCALE
VERTICAL: N/A

M&C FILE NUMBER CB101
DRAWING NUMBER 3

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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SCALE: 1" = 200'

0 100 200 400 600

REV.NO.	DESCRIPTIONS	DATE
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BOUNDARY COMPILATION MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER: CB101A
DRAWING NUMBER: 3A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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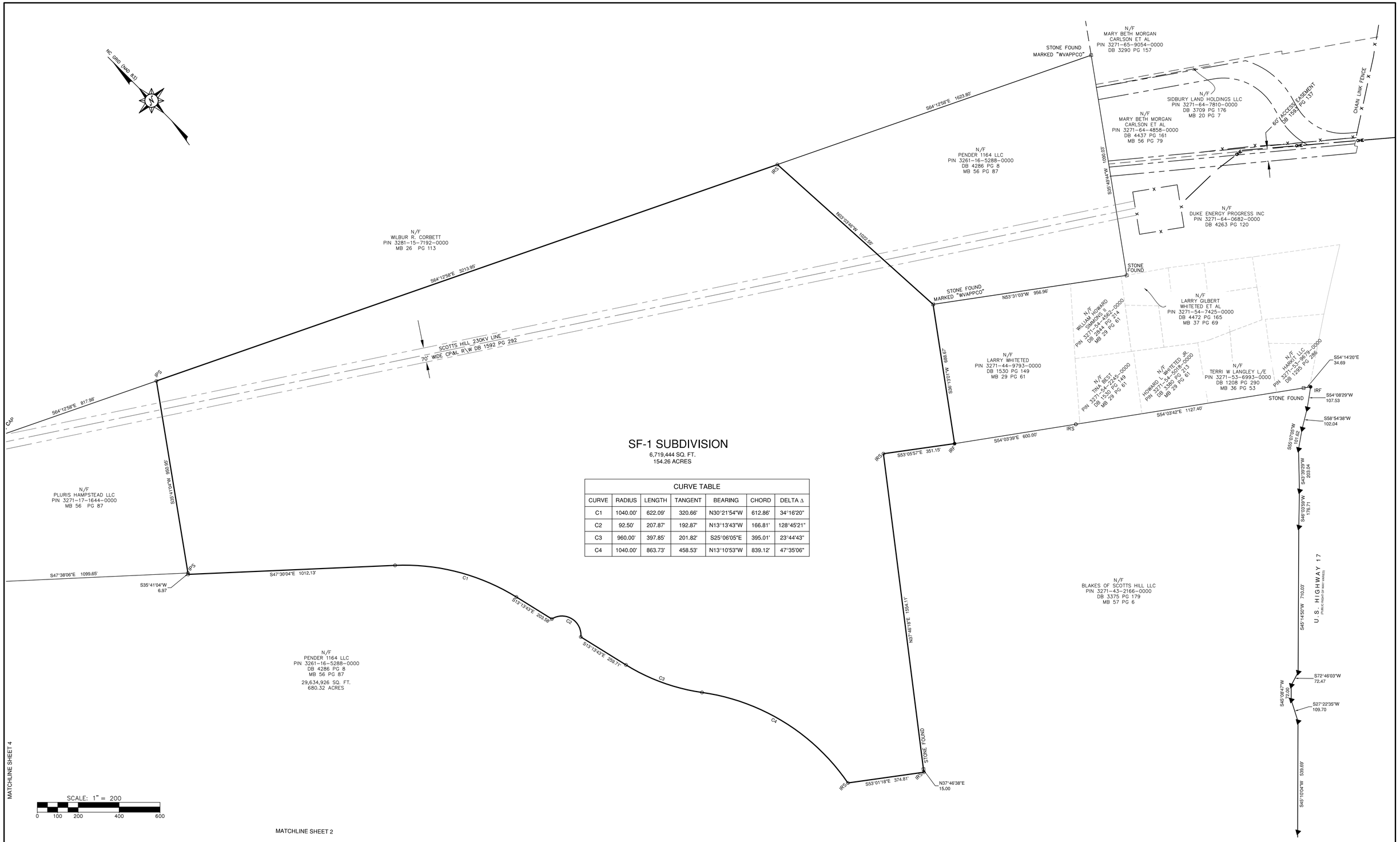

SF-1 SUBDIVISION

6,719,444 SQ. FT.
154.26 ACRES

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA Δ
C1	1040.00'	622.09'	320.66'	N30°21'54"W	612.86'	34°16'20"
C2	92.50'	207.87'	192.87'	N13°13'43"W	166.81'	128°45'21"
C3	960.00'	397.85'	201.82'	S25°06'05"E	395.01'	23°44'43"
C4	1040.00'	863.73'	458.53'	N13°10'53"W	839.12'	47°35'06"

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SEAL

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CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BOUNDARY COMPILATION MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CB101B
DRAWING NUMBER 3B

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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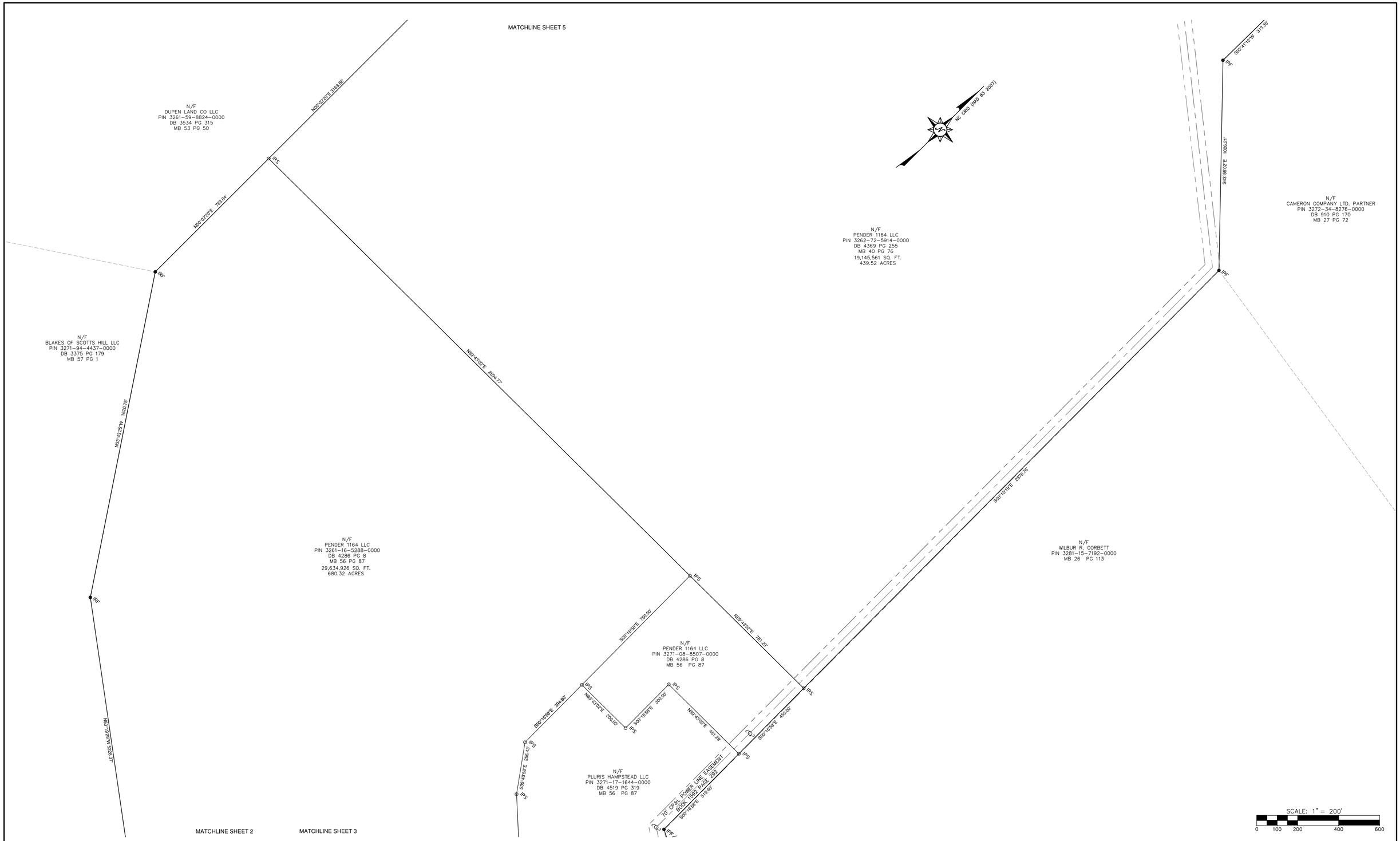

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REVISIONS

SEAL

FINAL PLANS-
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

NORTH CAROLINA
PROFESSIONAL
SEAL
22574
ENGINEER
RICHARD M. COLLIER

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BLAKE FARM
EST 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BOUNDARY COMPILATION MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER: CB101C
DRAWING NUMBER: 3C

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION: F

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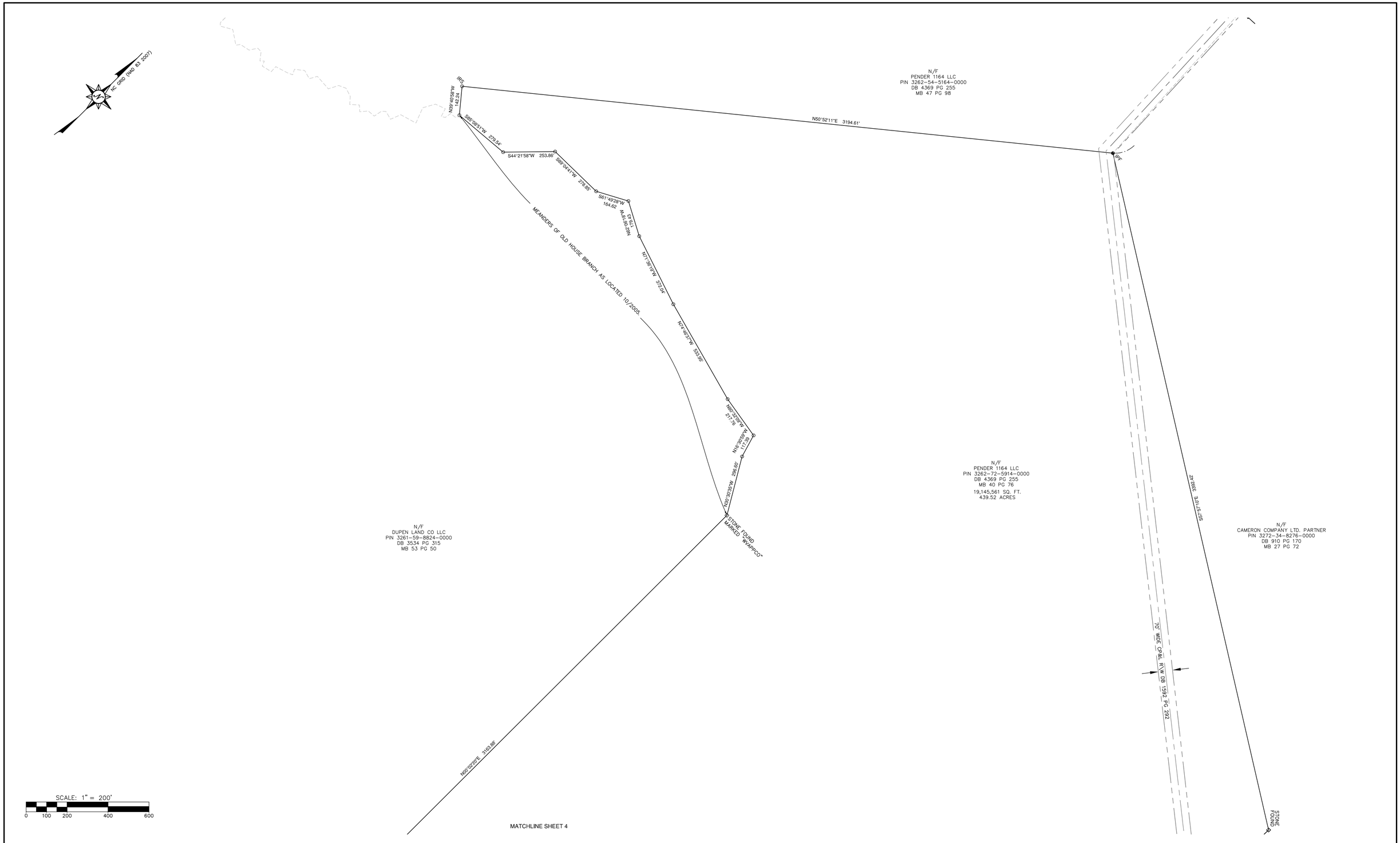

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BLAKE FARM
~ EST. 1946 ~

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BOUNDARY COMPILATION MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER: CB101D
DRAWING NUMBER: 3D

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION: F

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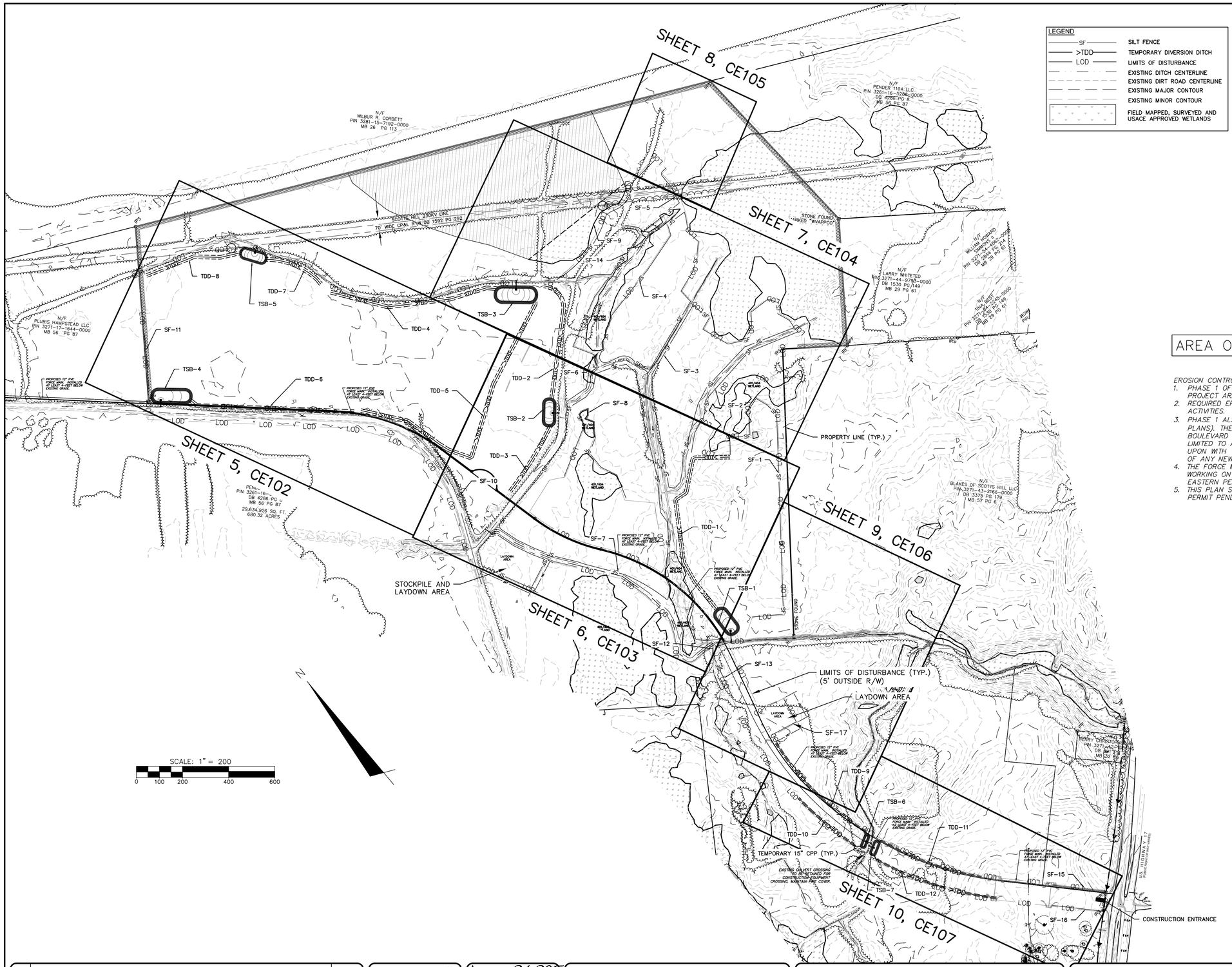
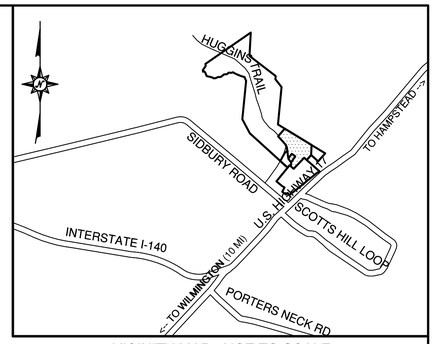


LEGEND

SF	SILT FENCE
>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS



VICINITY MAP - NOT TO SCALE

AREA OF DISTURBANCE = 107.02 ACRES

EROSION CONTROL PHASE 1 – BLAKE FARM:

1. PHASE 1 OF BLAKE FARM WILL CONSIST OF THE CLEARING AND GRADING OF THE OVERALL PROJECT AREA AS DEPICTED IN THIS PLAN SET.
2. REQUIRED EROSION CONTROL DEVICES WILL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITIES.
3. PHASE 1 ALSO INCLUDES THE INSTALLATION OF A 10" PVC FORCE MAIN (AS SHOWN IN THESE PLANS). THE FORCE MAIN IS GENERALLY LOCATED 5-FEET INSIDE THE NEW BLAKE FARM BOULEVARD RIGHT-OF-WAY. INITIAL DISTURBANCE FOR THE UTILITY INSTALLATION WILL BE LIMITED TO APPROXIMATELY 20-30 FEET IN WIDTH. EROSION CONTROL MEASURES AS AGREED UPON WITH THE DLQ EROSION CONTROL INSPECTOR WILL BE INSTALLED PRIOR TO INSTALLATION OF ANY NEW FORCE MAIN.
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5. THIS PLAN SUBMITTAL WILL BE AN AMENDMENT TO PREVIOUSLY APPROVED EROSION CONTROL PERMIT PENDER-2015-018.

REV.NO.	DESCRIPTIONS	DATE
F	PLAN REVISIONS FOR FINAL PERMITTING	08/19/15
C	BY-PASS DITCH DETAIL AND PLUNGE POOL ADDED PER NCDEMLR REVIEW COMMENTS	5/19/15
B	ESC RESUBMITTAL	5/7/15
A	ESC SUBMITTAL	12/3/14

REVISIONS

SEAL

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
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www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION
SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

OVERALL STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER: CE101
DRAWING NUMBER: 4

STATUS: FINAL DESIGN NOT FOR CONSTRUCTION
REVISION: F

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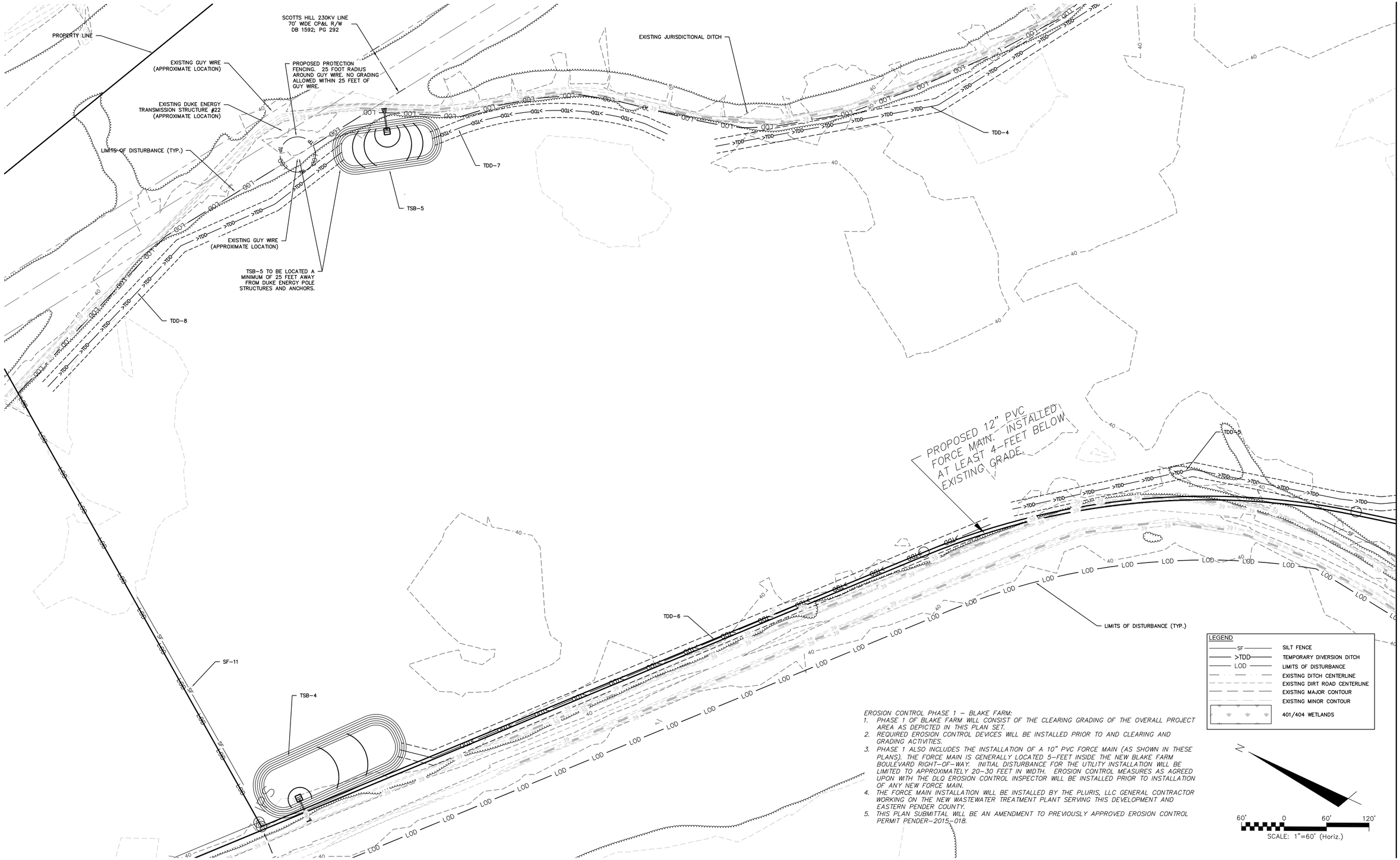

LEGEND

SF	SILT FENCE
>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	401/404 WETLANDS

EROSION CONTROL PHASE 1 – BLAKE FARM:

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5. *THIS PLAN SUBMITTAL WILL BE AN AMENDMENT TO PREVIOUSLY APPROVED EROSION CONTROL PERMIT PENDER–2015–018.*

N

60' 0 60' 120'

SCALE: 1"=60' (Horiz.)

REV.NO.	DESCRIPTIONS	DATE
F	PLAN REVISIONS FOR FINAL PERMITTING	08/19/15
C	BY-PASS DITCH DETAIL AND PLUNGE POOL ADDED PER NCDEMLR REVIEW COMMENTS	5/19/15
B	ESC RESUBMITTAL	5/7/15
A	ESC SUBMITTAL	12/3/14

REVISIONS

SEAL

FINAL PLANS-
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CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CE102
DRAWING NUMBER 5

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION F

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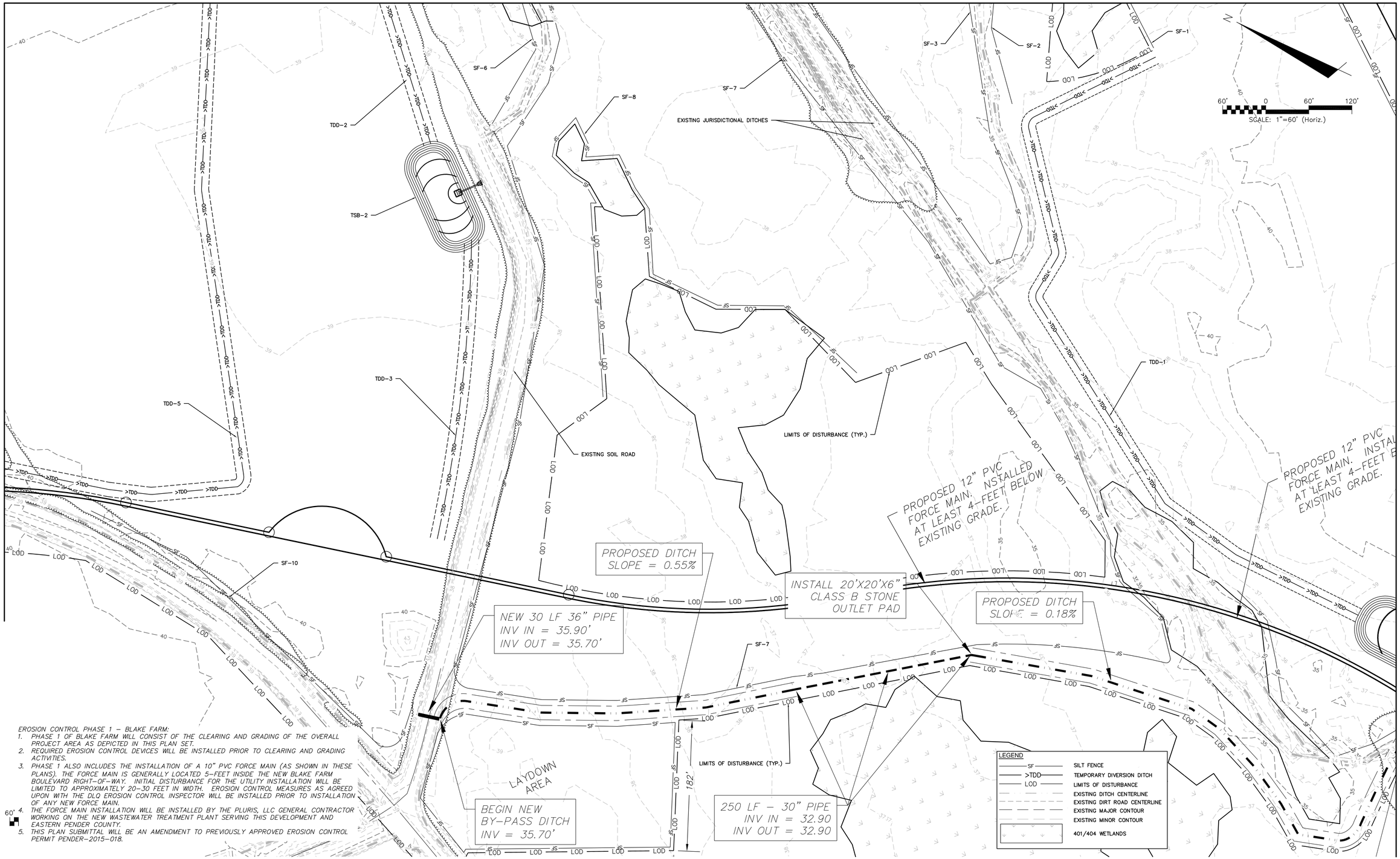
MATCHLINE - SEE SHEET CE104

MATCHLINE - SEE SHEET CE102

MATCHLINE - SEE SHEET CE106



EROSION CONTROL PHASE 1 – BLAKE FARM:

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60'

REV.NO.	DESCRIPTIONS	DATE
F	PLAN REVISIONS FOR FINAL PERMITTING	08/19/15
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B	ESC RESUBMITTAL	5/7/15
A	ESC SUBMITTAL	12/3/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER: CE103
DRAWING NUMBER: 6

STATUS: FINAL DESIGN NOT FOR CONSTRUCTION
REVISION: F

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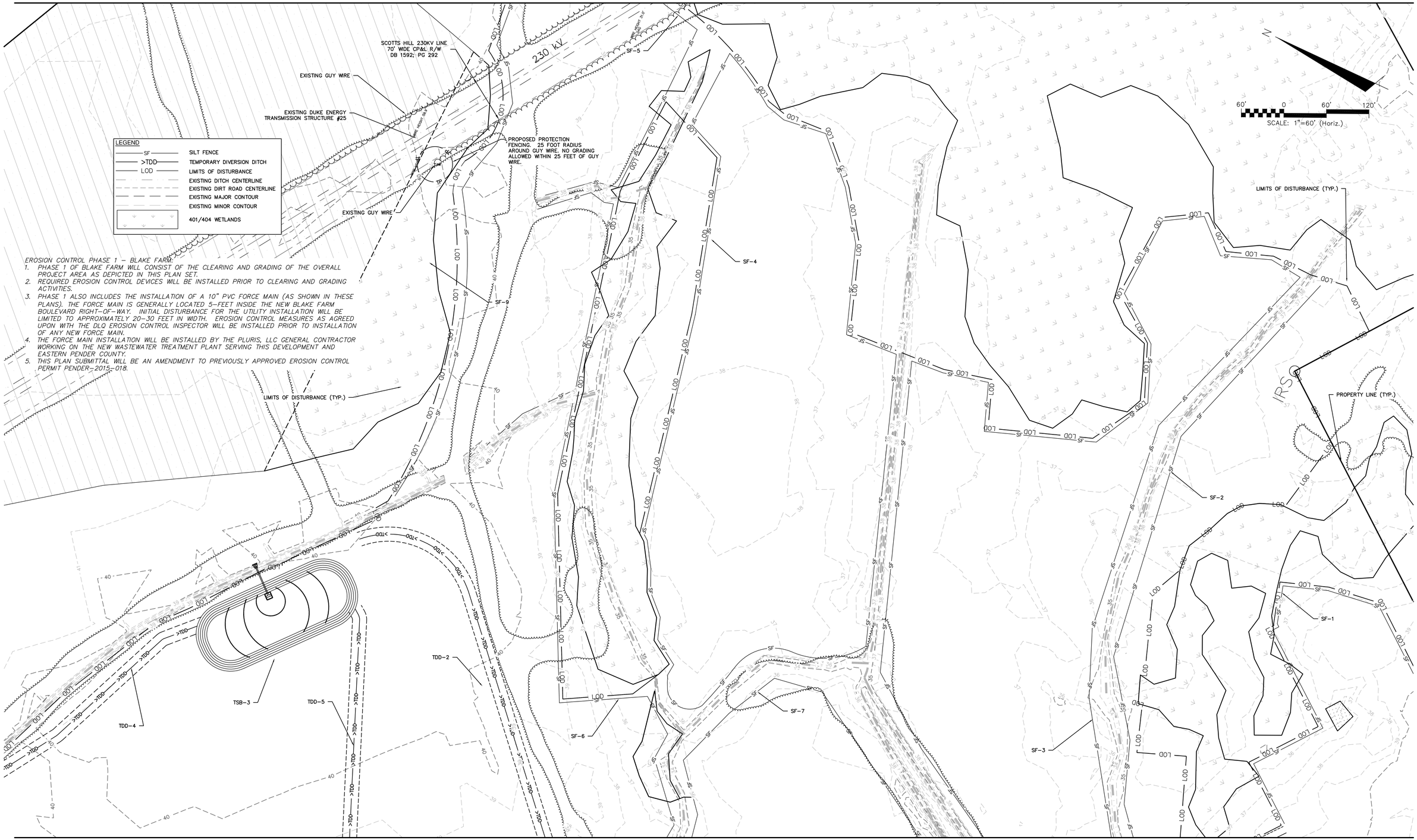
MATCHLINE - SEE SHEET CE105



MATCHLINE - SEE SHEET CE103

REV.NO.	DESCRIPTIONS	DATE
F	PLAN REVISIONS FOR FINAL PERMITTING	08/19/15
C	BY-PASS DITCH DETAIL AND PLUNGE POOL ADDED PER NCDEMLR REVIEW COMMENTS	5/19/15
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REVISIONS

SEAL

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August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER: CE104
DRAWING NUMBER: 7

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: F

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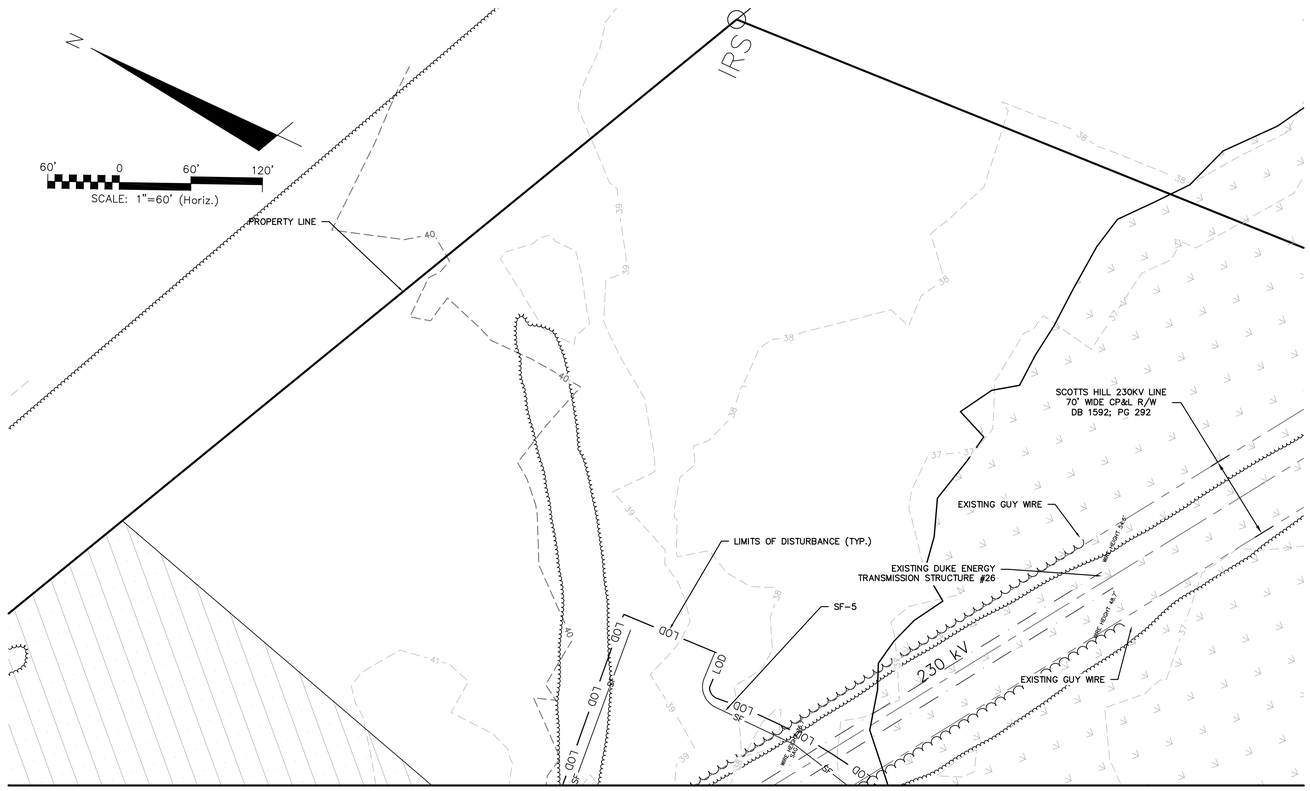

MATCHLINE - SEE SHEET CE104

EROSION CONTROL PHASE 1 – BLAKE FARM:

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LEGEND

—SF—	SILT FENCE
—>TDD—	TEMPORARY DIVERSION DITCH
—LOD—	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	401/404 WETLANDS

REV.NO.	DESCRIPTIONS	DATE
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A	ESC SUBMITTAL	12/3/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER: CE105
DRAWING NUMBER: 8

STATUS: FINAL DESIGN NOT FOR CONSTRUCTION
REVISION: F

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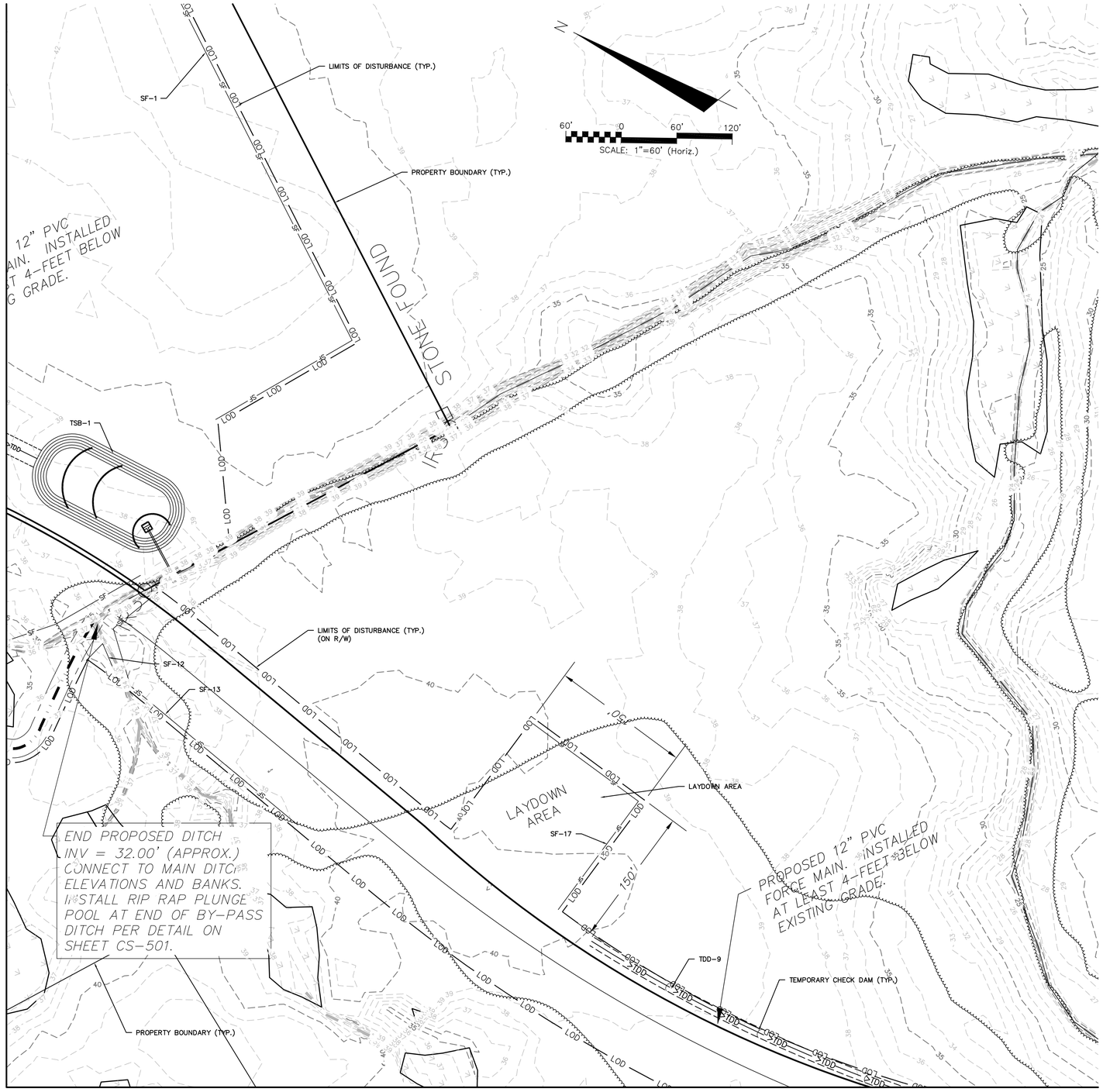
MATCHLINE - SEE SHEET CE105



MATCHLINE - SEE SHEET CE107

EROSION CONTROL PHASE 1 – BLAKE FARM:

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LEGEND

SF	SILT FENCE
>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	401/404 WETLANDS

REV.NO.	DESCRIPTIONS	DATE
F	PLAN REVISIONS FOR FINAL PERMITTING	08/19/15
C	BY-PASS DITCH DETAIL AND PLUNGE POOL ADDED PER NCDEMLR REVIEW COMMENTS	5/19/15
B	ESC RESUBMITTAL	5/7/15
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REVISIONS

SEAL

FINAL PLANS-
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CE106
DRAWING NUMBER 9

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION
REVISION F

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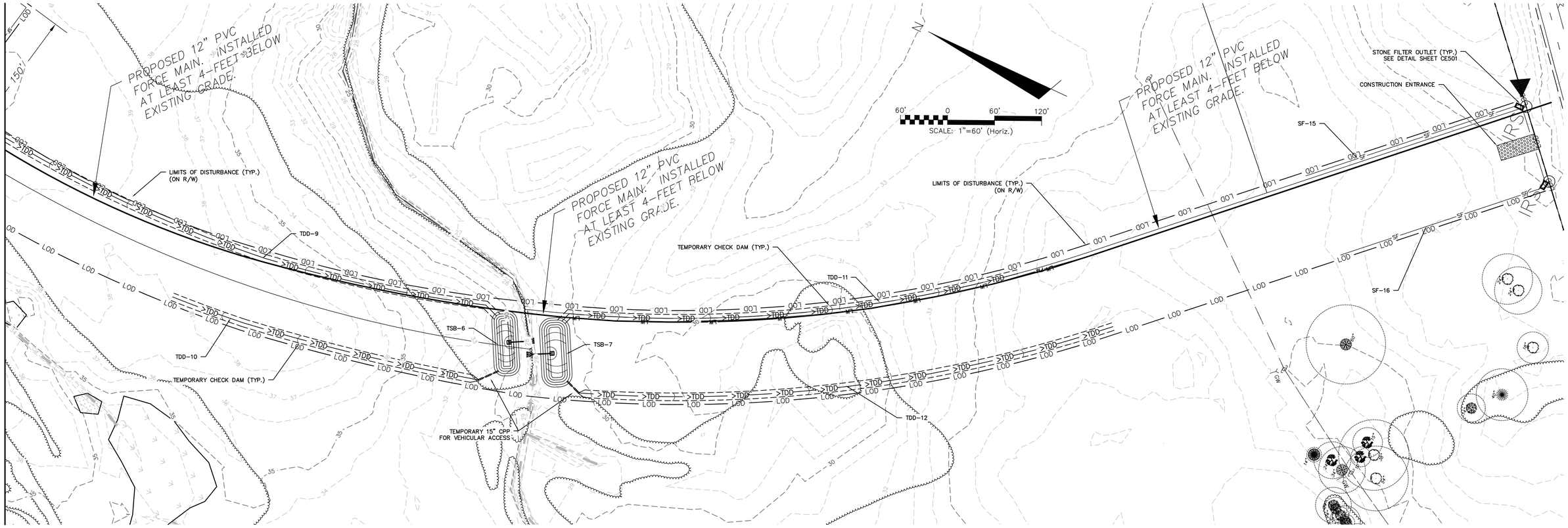

EROSION CONTROL PHASE 1 – BLAKE FARM:

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LEGEND

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>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
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	401/404 WETLANDS

REV.NO.	DESCRIPTIONS	DATE
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B	ESC RESUBMITTAL	5/7/15
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REVISIONS

SEAL

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

SCOTTS HILL COMMUNITY
PENDER COUNTY NORTH CAROLINA

ENLARGED STAGE 1 EROSION CONTROL PLAN

DATE:	2 FEBRUARY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RMC
CHECKED	RMC
PROJ. MGR.	RMC

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CE107
DRAWING NUMBER 10

STATUS: FINAL DESIGN NOT FOR CONSTRUCTION
REVISION F

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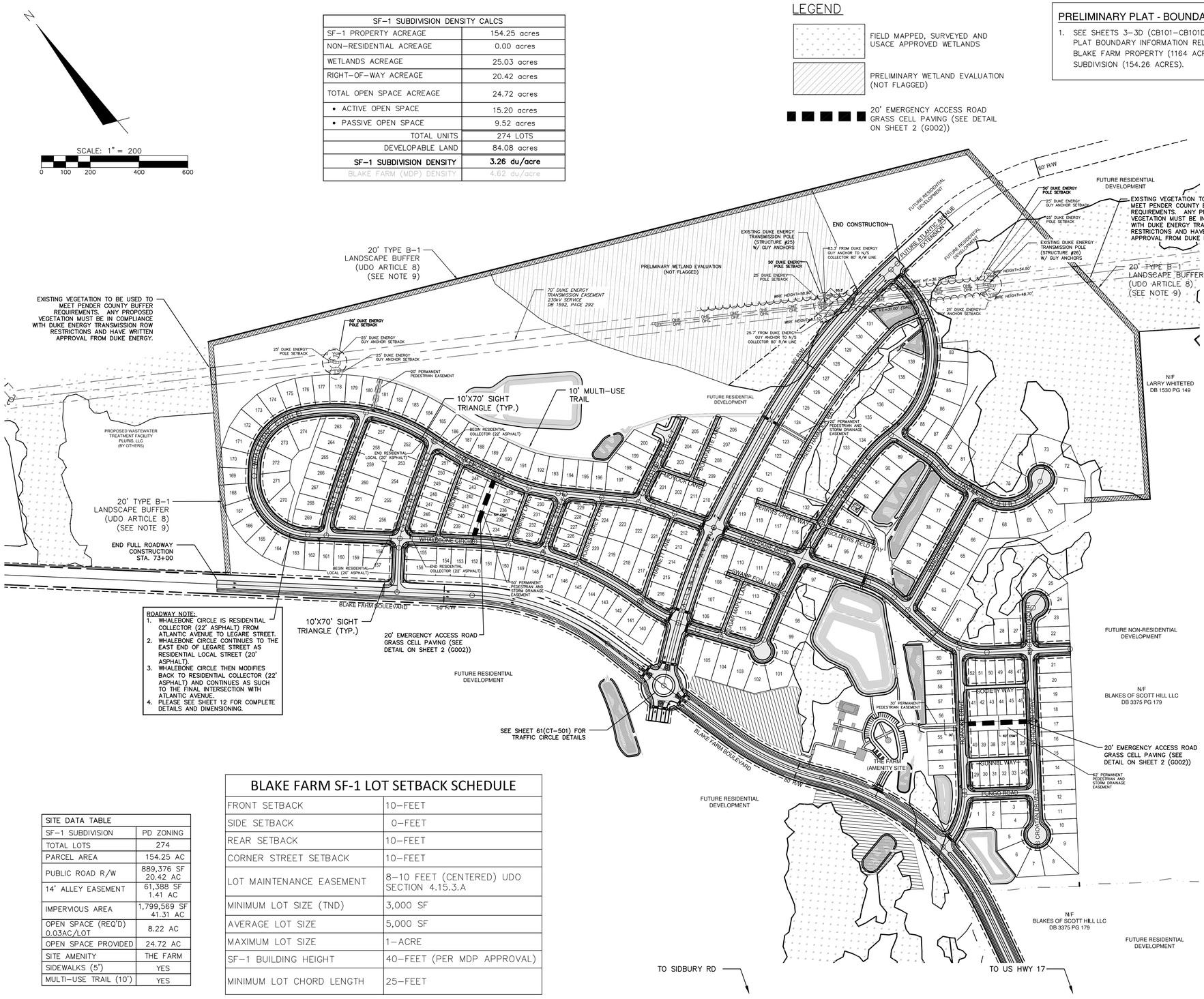
SF-1 SUBDIVISION DENSITY CALCS	
SF-1 PROPERTY ACREAGE	154.25 acres
NON-RESIDENTIAL ACREAGE	0.00 acres
WETLANDS ACREAGE	25.03 acres
RIGHT-OF-WAY ACREAGE	20.42 acres
TOTAL OPEN SPACE ACREAGE	24.72 acres
• ACTIVE OPEN SPACE	15.20 acres
• PASSIVE OPEN SPACE	9.52 acres
TOTAL UNITS	274 LOTS
DEVELOPABLE LAND	84.08 acres
SF-1 SUBDIVISION DENSITY	**3.26 du/acre**
BLAKE FARM (MDP) DENSITY	4.62 du/acre

LEGEND

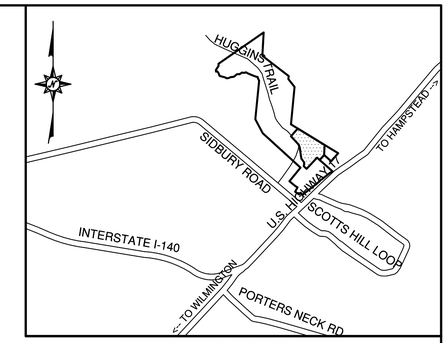
- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))

PRELIMINARY PLAT - BOUNDARY INFORMATION:

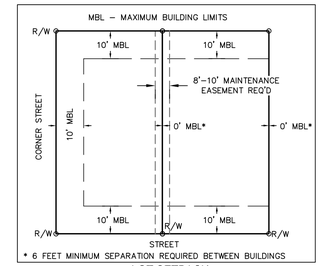
1. SEE SHEETS 3-3D (CB101-CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF-1 SUBDIVISION (154.26 ACRES).



ROADWAY NOTE:
1. WHALEBONE CIRCLE IS RESIDENTIAL COLLECTOR (22' ASPHALT) FROM ATLANTIC AVENUE TO LEGARE STREET.
2. WHALEBONE CIRCLE CONTINUES TO THE EAST END OF LEGARE STREET AS RESIDENTIAL LOCAL STREET (20' ASPHALT).
3. WHALEBONE CIRCLE THEN MODIFIES BACK TO RESIDENTIAL COLLECTOR (22' ASPHALT) AND CONTINUES AS SUCH TO THE FINAL INTERSECTION WITH ATLANTIC AVENUE.
4. PLEASE SEE SHEET 12 FOR COMPLETE DETAILS AND DIMENSIONING.



VICINITY MAP - NOT TO SCALE



LOT SETBACK
NOT TO SCALE

SITE DATA TABLE	
SF-1 SUBDIVISION	PD ZONING
TOTAL LOTS	274
PARCEL AREA	154.25 AC
PUBLIC ROAD R/W	889,376 SF 20.42 AC
14' ALLEY EASEMENT	61,388 SF 1.41 AC
IMPERVIOUS AREA	1,799,569 SF 41.31 AC
OPEN SPACE (REQ'D) 0.03AC/LOT	8.22 AC
OPEN SPACE PROVIDED	24.72 AC
SITE AMENITY	THE FARM
SIDEWALKS (5')	YES
MULTI-USE TRAIL (10')	YES

BLAKE FARM SF-1 LOT SETBACK SCHEDULE

FRONT SETBACK	10-FEET
SIDE SETBACK	0-FEET
REAR SETBACK	10-FEET
CORNER STREET SETBACK	10-FEET
LOT MAINTENANCE EASEMENT	8-10 FEET (CENTERED) UDO SECTION 4.15.3.A
MINIMUM LOT SIZE (TND)	3,000 SF
AVERAGE LOT SIZE	5,000 SF
MAXIMUM LOT SIZE	1-ACRE
SF-1 BUILDING HEIGHT	40-FEET (PER MDP APPROVAL)
MINIMUM LOT CHORD LENGTH	25-FEET

SITE NOTES:

1. THE MINIMUM LOT SIZE IN BLAKE FARM PER THE APPROVED MDP SHALL BE NO LESS THAN 3,000 SF.

   CONVENTIONAL LOTS WILL RANGE IN SIZE FROM 5,000 SF TO 1-ACRE.

2. LOTS THAT UTILIZE "ZERO-LOTLINE" SETBACKS SHALL RECORD AN 8'-10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC/LOT
   274 LOTS X 0.03 AC./LOT = 8.22 AC.
   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

7. PUBLIC SANITARY SEWER TO BE PROVIDED BY PLURIS HAMPSTEAD, LLC.

8. PUBLIC WATER TO BE PROVIDED BY PENDER COUNTY UTILITIES.

9. A BUFFER CONSISTING OF AT LEAST 1 CANOPY TREE, 2 UNDERSTORY TREES AND EITHER A GRASS OR OTHER APPROVED VEGETATIVE GROUND COVER OF AT LEAST 98% COVERAGE (EXCEPT WITHIN 4 FEET OF THE BASE OF ANY TREE OR SHRUB) OR 32 SHRUBS PER 100 LINEAR FEET WILL BE APPLIED ALONG MAIN STREET.

10. SITE IS LOCATED WITHIN FEMA FLOOD ZONE X - MINIMAL FLOOD RISK PER FEMA FIRM MAP PANEL 3271, MAP NUMBER 3720327100J.

11. SEE SHEET G002 FOR ROADWAY SECTIONS AND PAVEMENT DESIGN.

12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

TND LOTS IN SF-1 SUBDIVISION:

1. LOTS 28 - 51 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTE # 1 ABOVE.
2. LOTS 229 - 255 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTE # 1 ABOVE.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD; LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
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Wilmington, North Carolina 28401
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Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

OVERALL SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CS101
DRAWING NUMBER 11

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CS101_06525\0001.dwg, 8/31/2015 3:05:58 PM, rcollier

BLAKE FARM SF-1 LOT SETBACK SCHEDULE

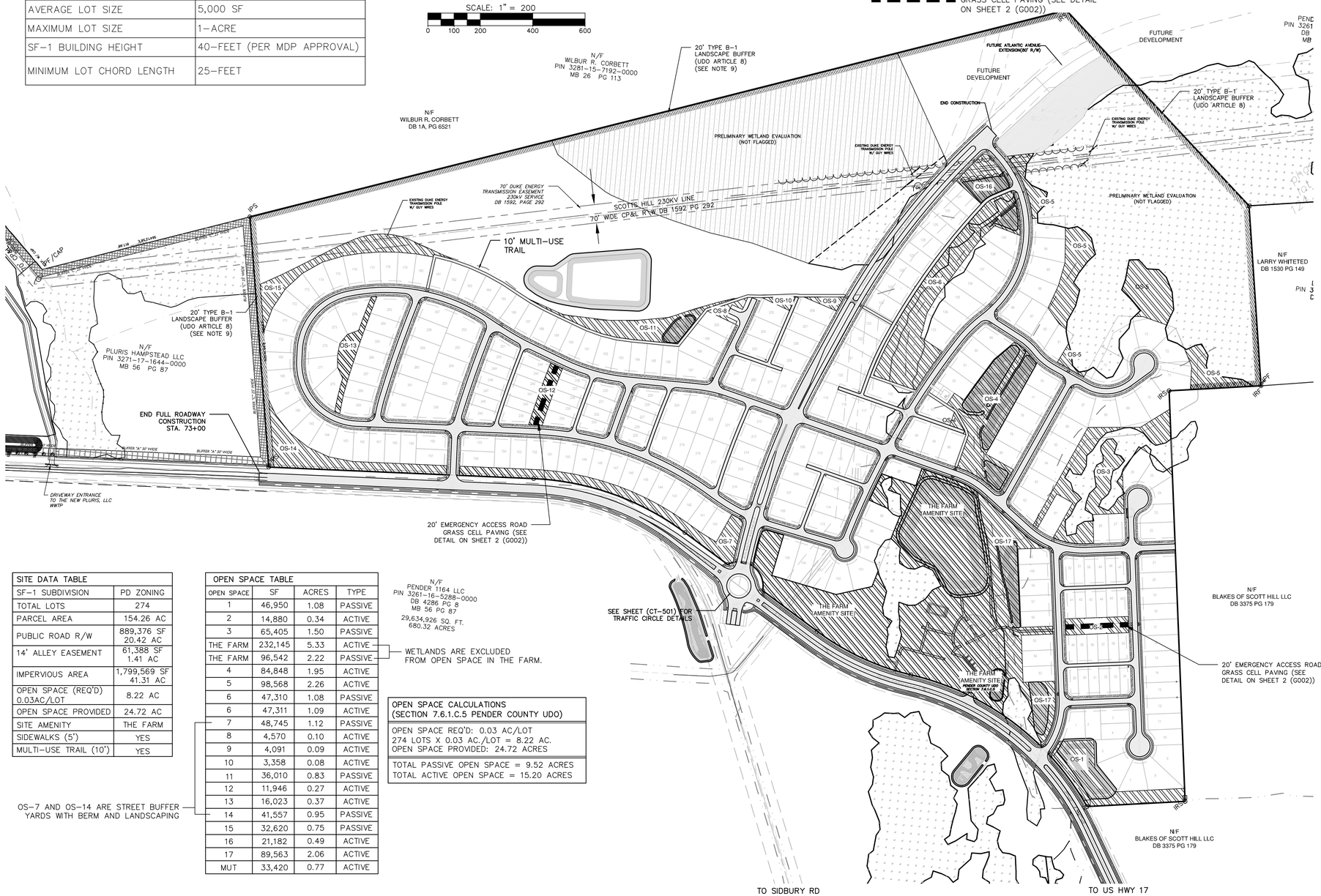
FRONT SETBACK	10–FEET
SIDE SETBACK	0–FEET
REAR SETBACK	10–FEET
CORNER STREET SETBACK	10–FEET
LOT MAINTENANCE EASEMENT	8–10 FEET (CENTERED) UDO SECTION 4.15.3.A
MINIMUM LOT SIZE (TND)	3,000 SF
AVERAGE LOT SIZE	5,000 SF
MAXIMUM LOT SIZE	1–ACRE
SF–1 BUILDING HEIGHT	40–FEET (PER MDP APPROVAL)
MINIMUM LOT CHORD LENGTH	25–FEET

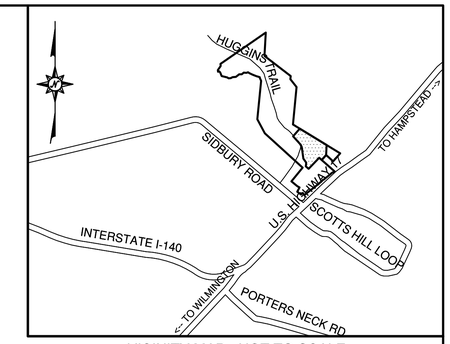
LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- OPEN SPACE
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))

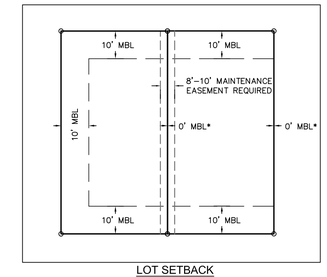
PRELIMINARY PLAT - BOUNDARY INFORMATION:

1. SEE SHEETS 3–3D (CB101–CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF–1 SUBDIVISION (154.26 ACRES).





VICINITY MAP - NOT TO SCALE



LOT SETBACK
NOT TO SCALE

SITE NOTES:

1. THE MINIMUM LOT SIZE IN BLAKE FARM PER THE APPROVED MDP SHALL BE NO LESS THAN 3,000 SF.

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2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC/LOT
   274 LOTS X 0.03 AC./LOT = 8.22 AC.
   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

7. PUBLIC SANITARY SEWER TO BE PROVIDED BY PLURIS HAMPSTEAD, LLC.

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10. SITE IS LOCATED WITHIN FEMA FLOOD ZONE X – MINIMAL FLOOD RISK PER FEMA MAP NUMBER 37203721100J.

11. SEE SHEET G002 FOR ROADWAY SECTIONS AND PAVEMENT DESIGN.

12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

TND LOTS IN SF-1 SUBDIVISION:

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SF–1 SUBDIVISION	PD ZONING
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OPEN SPACE (REQ'D) 0.03AC/LOT	8.22 AC
OPEN SPACE PROVIDED	24.72 AC
SITE AMENITY	THE FARM
SIDEWALKS (5')	YES
MULTI–USE TRAIL (10')	YES

OPEN SPACE TABLE			
OPEN SPACE	SF	ACRES	TYPE
1	46,950	1.08	PASSIVE
2	14,880	0.34	ACTIVE
3	65,405	1.50	PASSIVE
THE FARM	232,145	5.33	ACTIVE
THE FARM	96,542	2.22	PASSIVE
4	84,848	1.95	ACTIVE
5	98,568	2.26	ACTIVE
6	47,310	1.08	PASSIVE
6	47,311	1.09	ACTIVE
7	48,745	1.12	PASSIVE
8	4,570	0.10	ACTIVE
9	4,091	0.09	ACTIVE
10	3,358	0.08	ACTIVE
11	36,010	0.83	PASSIVE
12	11,946	0.27	ACTIVE
13	16,023	0.37	ACTIVE
14	41,557	0.95	PASSIVE
15	32,620	0.75	PASSIVE
16	21,182	0.49	ACTIVE
17	89,563	2.06	ACTIVE
MUT	33,420	0.77	ACTIVE

WETLANDS ARE EXCLUDED FROM OPEN SPACE IN THE FARM.

OS–7 AND OS–14 ARE STREET BUFFER YARDS WITH BERM AND LANDSCAPING

OPEN SPACE CALCULATIONS (SECTION 7.6.1.C.5 PENDER COUNTY UDO)
OPEN SPACE REQ'D: 0.03 AC/LOT 274 LOTS X 0.03 AC./LOT = 8.22 AC. OPEN SPACE PROVIDED: 24.72 ACRES
TOTAL PASSIVE OPEN SPACE = 9.52 ACRES TOTAL ACTIVE OPEN SPACE = 15.20 ACRES

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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Wilmington, North Carolina 28401
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

OPEN SPACE MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CS101A
DRAWING NUMBER 11A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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BLAKE FARM SF-1 LOT SETBACK SCHEDULE

FRONT SETBACK	10–FEET
SIDE SETBACK	0–FEET
REAR SETBACK	10–FEET
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LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))

PRELIMINARY PLAT - BOUNDARY INFORMATION:

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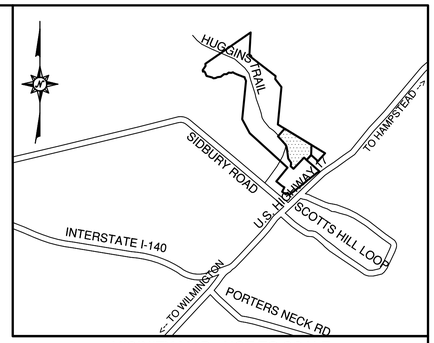
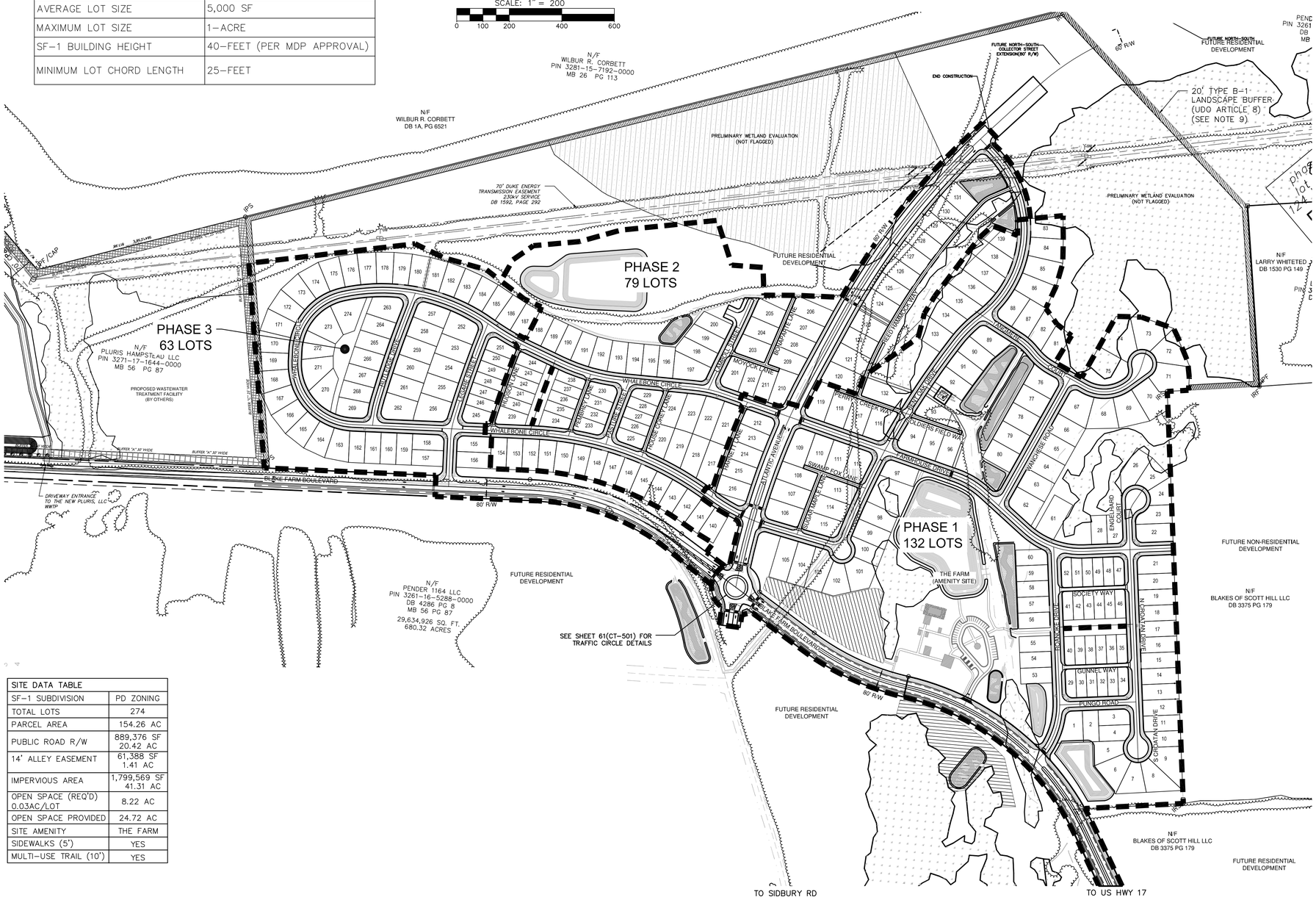


VICINITY MAP - NOT TO SCALE



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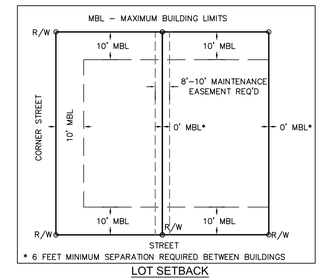

LOT SETBACK
NOT TO SCALE

SITE NOTES:

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12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

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REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	70% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL
FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM – EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PHASING MAP

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CS101B
DRAWING NUMBER 11B

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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IMPACT AREAS					
IMPACT #	SF	ACRES	TYPE	PHASE	
1	1,565	0.036	JD	1	BLAKE FARM BOULEVARD
2	2,760	0.063	JD	1	BLAKE FARM BOULEVARD
3	22,370	0.513	JD/WETLAND	1	BLAKE FARM BOULEVARD
4	6,343	0.146	JD	1	
4A	833	0.019	WETLAND	1	
5	599	0.014	JD	1	
6	393	0.009	JD	1	
7	338	0.008	JD	1	
8	2,741	0.063	JD	1	
9	909	0.021	JD	2	
10	154	0.004	JD	2	
11	5,285	0.121	WETLAND	2	
12	4,009	0.092	JD/WETLAND	2	
13	1,371	0.031	JD	3	BLAKE FARM BOULEVARD
14	7,078	0.162	JD/WETLAND	1	
15	1,371	0.031	JD	1	

*JD=JURSIDICTIONAL DITCH

LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))

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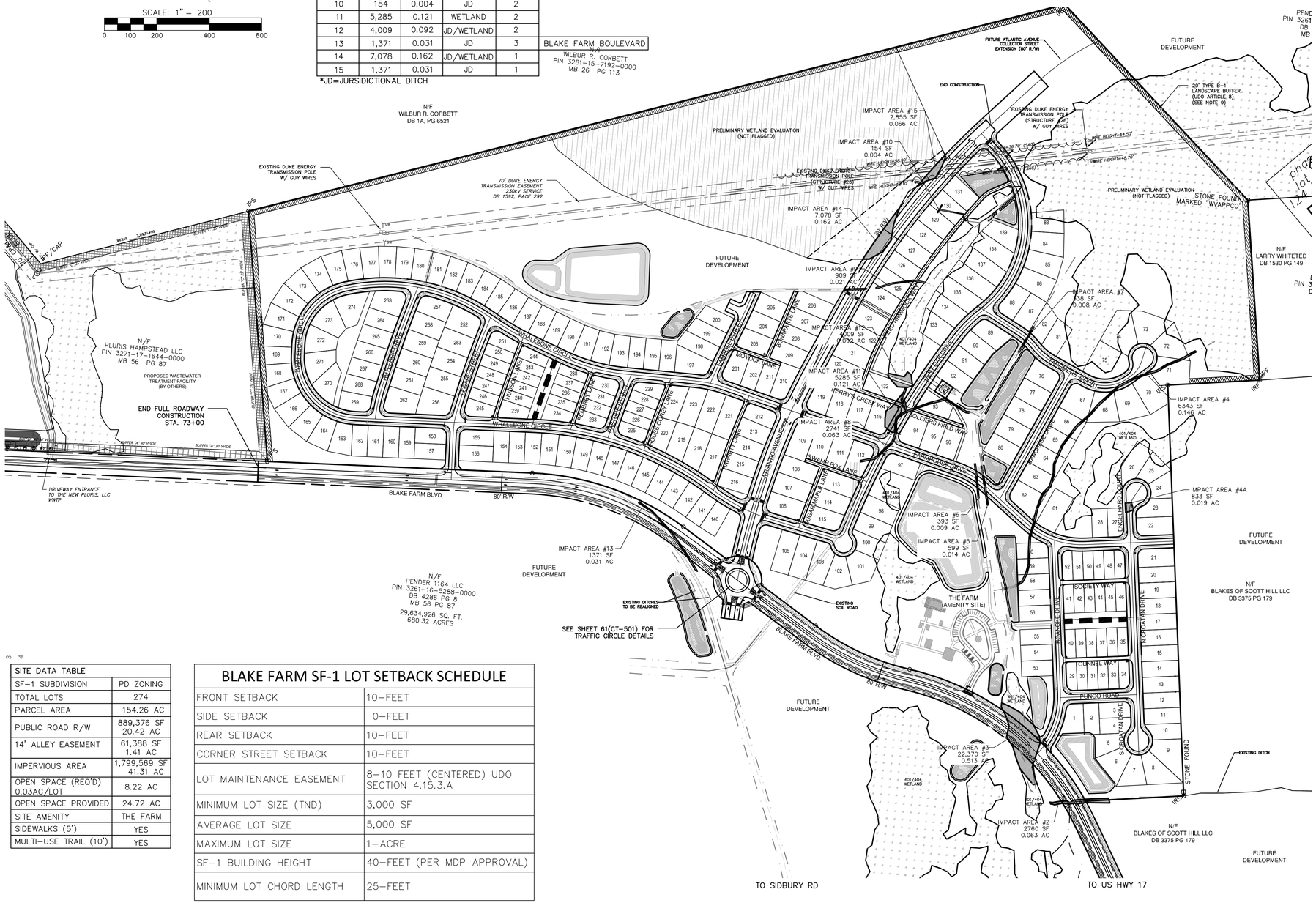
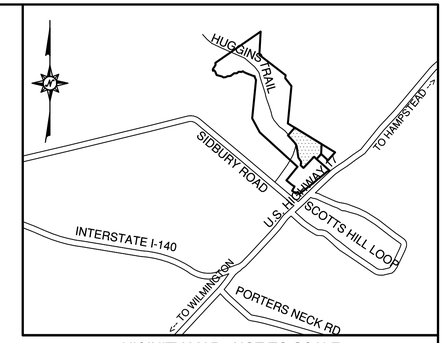
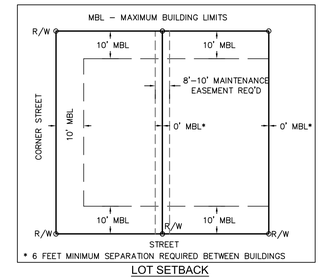




VICINITY MAP - NOT TO SCALE



LOT SETBACK
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MINIMUM LOT CHORD LENGTH	25-FEET

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
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Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

IMPACT MAP

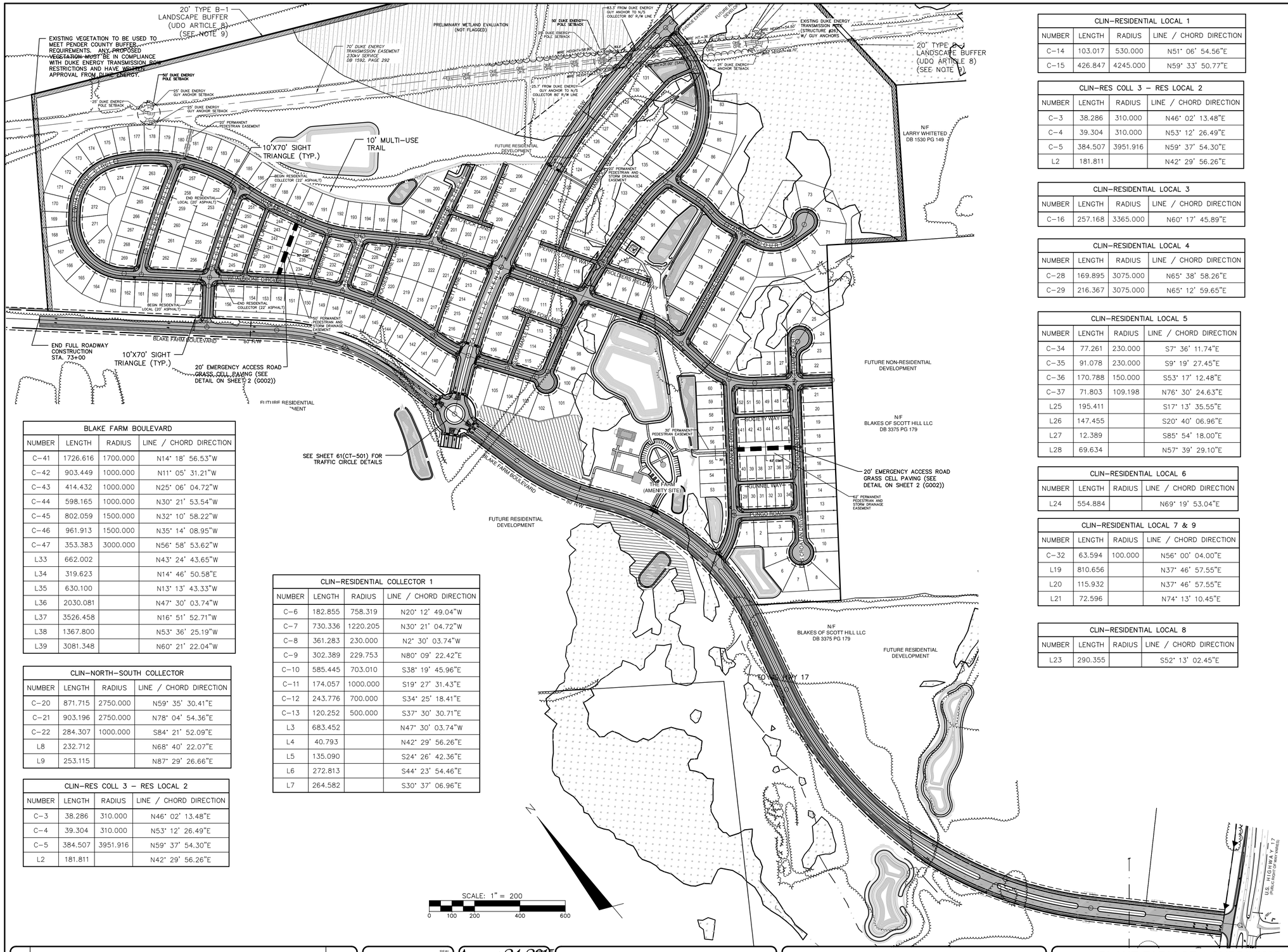
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CS101C
DRAWING NUMBER 11C

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\65250\0001\80-Drawings\CS101C_065250001.dwg, 8/31/2015 3:57:36 PM, rcollier



BLAKE FARM BOULEVARD			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-41	1726.616	1700.000	N14° 18' 56.53"W
C-42	903.449	1000.000	N11° 05' 31.21"W
C-43	414.432	1000.000	N25° 06' 04.72"W
C-44	598.165	1000.000	N30° 21' 53.54"W
C-45	802.059	1500.000	N32° 10' 58.22"W
C-46	961.913	1500.000	N35° 14' 08.95"W
C-47	353.383	3000.000	N56° 58' 53.62"W
L33	662.002		N43° 24' 43.65"W
L34	319.623		N14° 46' 50.58"E
L35	630.100		N13° 13' 43.33"W
L36	2030.081		N47° 30' 03.74"W
L37	3526.458		N16° 51' 52.71"W
L38	1367.800		N53° 36' 25.19"W
L39	3081.348		N60° 21' 22.04"W

CLIN-NORTH-SOUTH COLLECTOR			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-20	871.715	2750.000	N59° 35' 30.41"E
C-21	903.196	2750.000	N78° 04' 54.36"E
C-22	284.307	1000.000	S84° 21' 52.09"E
L8	232.712		N68° 40' 22.07"E
L9	253.115		N87° 29' 26.66"E

CLIN-RES COLL 3 - RES LOCAL 2			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-3	38.286	310.000	N46° 02' 13.48"E
C-4	39.304	310.000	N53° 12' 26.49"E
C-5	384.507	3951.916	N59° 37' 54.30"E
L2	181.811		N42° 29' 56.26"E

CLIN-RESIDENTIAL COLLECTOR 1			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-6	182.855	758.319	N20° 12' 49.04"W
C-7	730.336	1220.205	N30° 21' 04.72"W
C-8	361.283	230.000	N2° 30' 03.74"W
C-9	302.389	229.753	N80° 09' 22.42"E
C-10	585.445	703.010	S38° 19' 45.96"E
C-11	174.057	1000.000	S19° 27' 31.43"E
C-12	243.776	700.000	S34° 25' 18.41"E
C-13	120.252	500.000	S37° 30' 30.71"E
L3	683.452		N47° 30' 03.74"W
L4	40.793		N42° 29' 56.26"E
L5	135.090		S24° 26' 42.36"E
L6	272.813		S44° 23' 54.46"E
L7	264.582		S30° 37' 06.96"E

CLIN-RESIDENTIAL LOCAL 1			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-14	103.017	530.000	N51° 06' 54.56"E
C-15	426.847	4245.000	N59° 33' 50.77"E

CLIN-RES COLL 3 - RES LOCAL 2			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-3	38.286	310.000	N46° 02' 13.48"E
C-4	39.304	310.000	N53° 12' 26.49"E
C-5	384.507	3951.916	N59° 37' 54.30"E
L2	181.811		N42° 29' 56.26"E

CLIN-RESIDENTIAL LOCAL 3			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-16	257.168	3365.000	N60° 17' 45.89"E

CLIN-RESIDENTIAL LOCAL 4			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-28	169.895	3075.000	N65° 38' 58.26"E
C-29	216.367	3075.000	N65° 12' 59.65"E

CLIN-RESIDENTIAL LOCAL 5			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-34	77.261	230.000	S7° 36' 11.74"E
C-35	91.078	230.000	S9° 19' 27.45"E
C-36	170.788	150.000	S53° 17' 12.48"E
C-37	71.803	109.198	N76° 30' 24.63"E
L25	195.411		S17° 13' 35.55"E
L26	147.455		S20° 40' 06.96"E
L27	12.389		S85° 54' 18.00"E
L28	69.634		N57° 39' 29.10"E

CLIN-RESIDENTIAL LOCAL 6			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L24	554.884		N69° 19' 53.04"E

CLIN-RESIDENTIAL LOCAL 7 & 9			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-32	63.594	100.000	N56° 00' 04.00"E
L19	810.656		N37° 46' 57.55"E
L20	115.932		N37° 46' 57.55"E
L21	72.596		N74° 13' 10.45"E

CLIN-RESIDENTIAL LOCAL 8			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L23	290.355		S52° 13' 02.45"E

CLIN-RESIDENTIAL LOCAL 10			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-23	83.270	750.000	S30° 22' 45.24"E
C-24	864.815	3040.000	N69° 45' 50.32"E
C-25	130.542	500.000	N85° 23' 35.60"E
C-26	704.684	420.000	N44° 48' 24.42"E
C-27	59.220	40.000	S75° 58' 22.19"E
L10	232.837		S33° 33' 35.74"E
L11	77.022		N3° 15' 33.06"W

CLIN-RESIDENTIAL LOCAL 11			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-33	251.410	310.000	N61° 00' 57.91"E
L22	586.718		N37° 46' 57.55"E

CLIN-ALLEY 1			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-2	349.599	3800.000	N59° 26' 00.35"E

CLIN-ALLEY 2			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-17	249.548	3510.000	N59° 54' 35.48"E

CLIN-ALLEY 3			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-18	293.201	3220.000	N60° 39' 42.00"E

CLIN-ALLEY 4			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-19	386.257	2920.000	N60° 36' 08.86"E

CLIN-ALLEY 5			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L12	211.629		S30° 37' 06.96"E

CLIN-ALLEY 6			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L13	280.103		N63° 11' 55.34"E

CLIN-ALLEY 7			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L17	251.927		N60° 59' 47.70"E

CLIN-ALLEY 8			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L18	248.826		N30° 37' 06.96"W

CLIN-ALLEY 9			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L30	284.873		N30° 37' 06.96"W

CLIN-ALLEY 10			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
C-38	41.568	100.000	N84° 59' 51.05"W
C-39	647.570	2575.000	S75° 53' 23.18"W
C-40	164.008	1010.000	S64° 02' 00.06"W
L31	103.526		N73° 05' 21.38"W
L32	67.641		S59° 22' 53.04"W

CLIN-ALLEY 11			
NUMBER	LENGTH	RADIUS	LINE / CHORD DIRECTION
L29	223.510		S30° 37' 06.96"E

REV.NO.	DESCRIPTIONS	DATE
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FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

OVERALL SITE PLAN WITH STREET LINE/CURVE TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CS101D
DRAWING NUMBER 11D

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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A | PIC-008

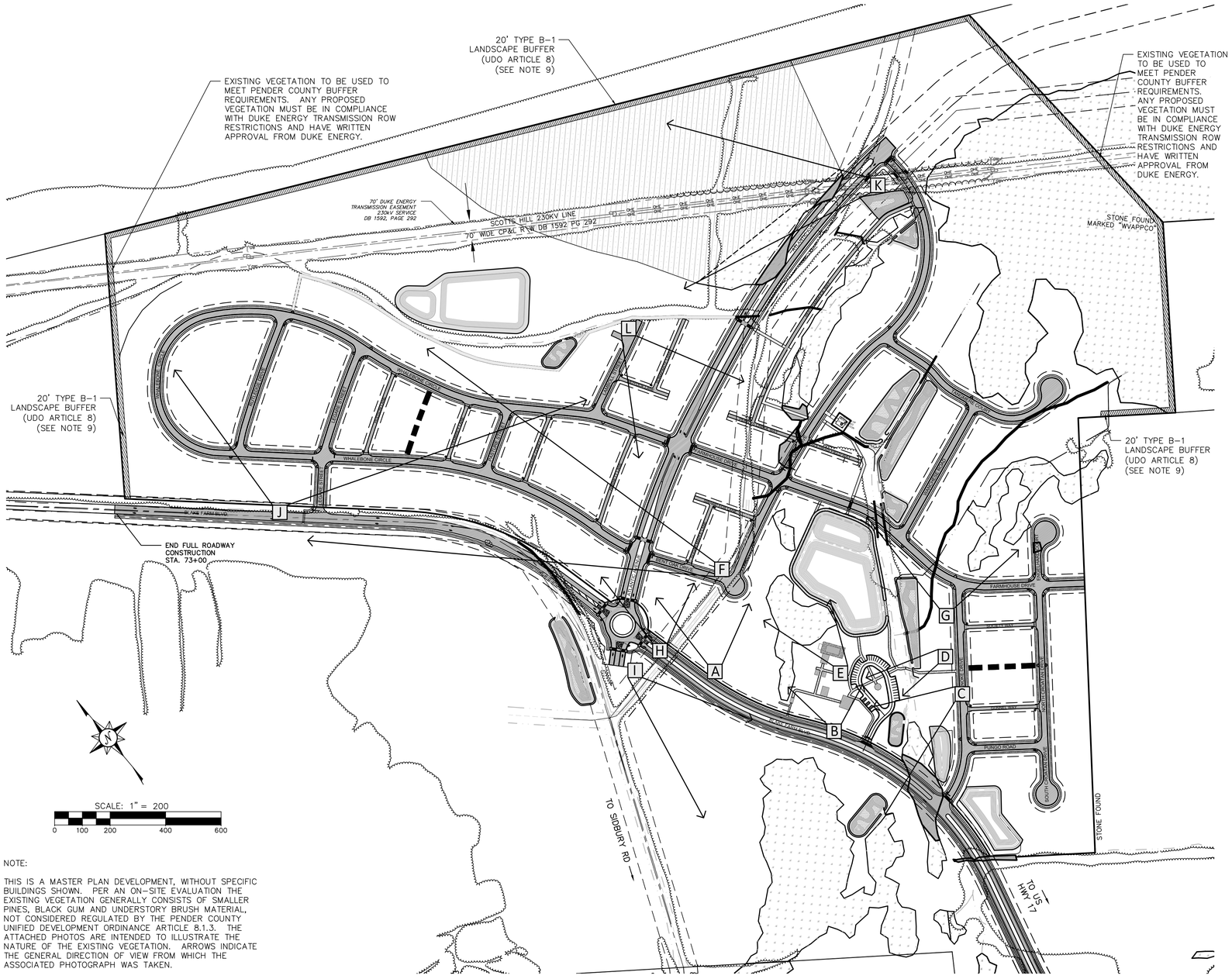
B | PIC-009

C | PIC-014

D | PIC-016

E | PIC-017

F | PIC-224



NOTE:

THIS IS A MASTER PLAN DEVELOPMENT, WITHOUT SPECIFIC BUILDINGS SHOWN. PER AN ON-SITE EVALUATION THE EXISTING VEGETATION GENERALLY CONSISTS OF SMALLER PINES, BLACK GUM AND UNDERSTORY BRUSH MATERIAL, NOT CONSIDERED REGULATED BY THE PENDER COUNTY UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8.1.3. THE ATTACHED PHOTOS ARE INTENDED TO ILLUSTRATE THE NATURE OF THE EXISTING VEGETATION. ARROWS INDICATE THE GENERAL DIRECTION OF VIEW FROM WHICH THE ASSOCIATED PHOTOGRAPH WAS TAKEN.

G | PIC-018

H | PIC-020

I | PIC-153

J | PIC-416

K | PIC-817

L | PIC-536

REV.NO.	DESCRIPTIONS	DATE
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REVISIONS

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

TREE INVENTORY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER: CxTree
DRAWING NUMBER: 11T

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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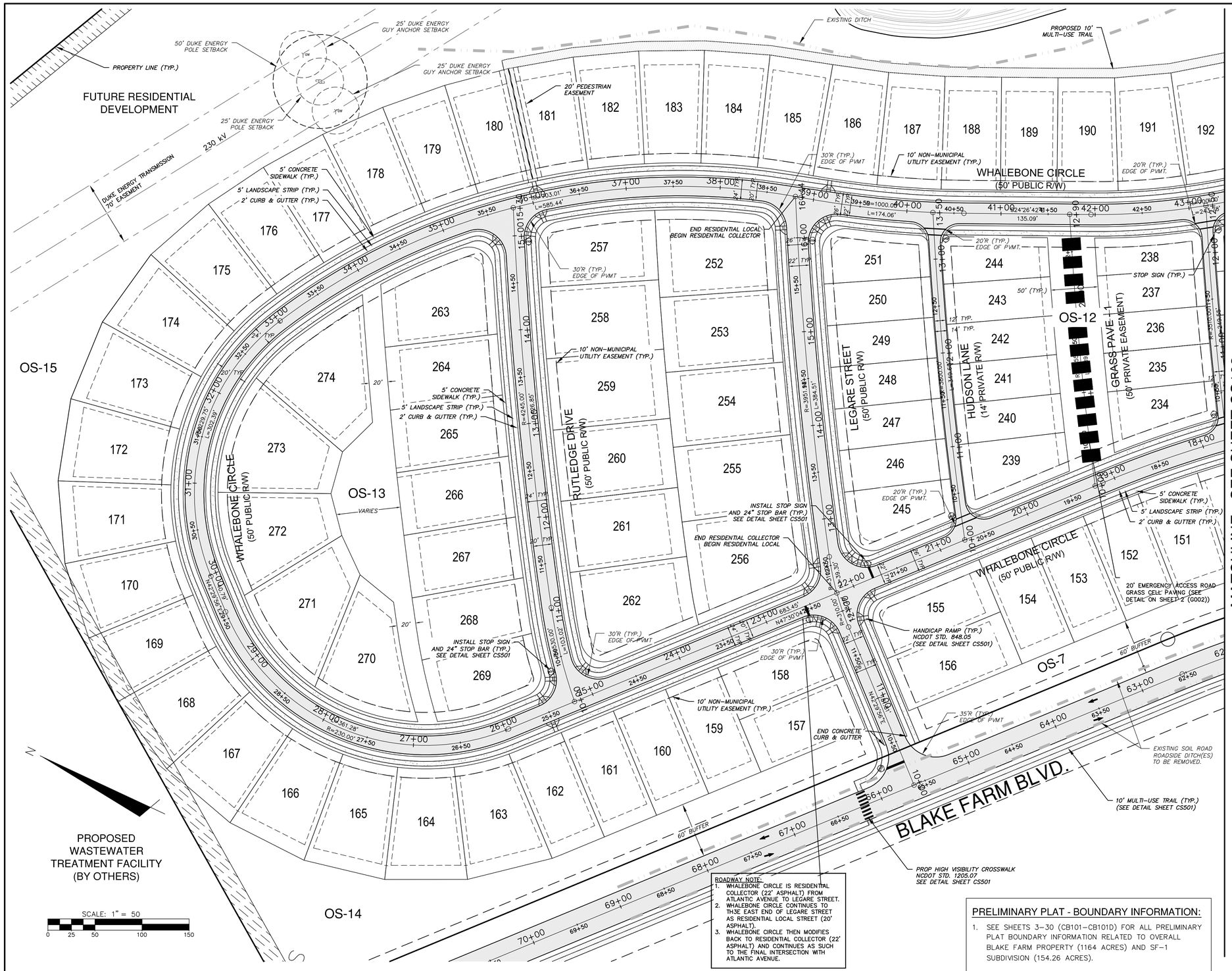


MATCHLINE - SEE SHEET CS103

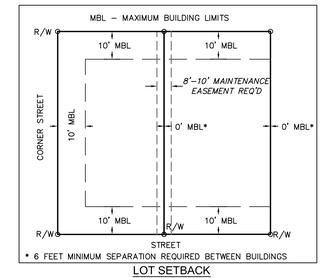
ROADWAY NOTE:
1. WHALEBONE CIRCLE IS RESIDENTIAL COLLECTOR (22' ASPHALT) FROM ATLANTIC AVENUE TO LEGARE STREET.
2. WHALEBONE CIRCLE CONTINUES TO TH3E EAST END OF LEGARE STREET AS RESIDENTIAL LOCAL STREET (20' ASPHALT).
3. WHALEBONE CIRCLE THEN MODIFIES BACK TO RESIDENTIAL COLLECTOR (22' ASPHALT) AND CONTINUES AS SUCH TO THE FINAL INTERSECTION WITH ATLANTIC AVENUE.

PRELIMINARY PLAT - BOUNDARY INFORMATION:

1. SEE SHEETS 3–30 (CB101–CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF–1 SUBDIVISION (154.26 ACRES).

LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))



LOT SETBACK
NOT TO SCALE

SITE NOTES:

1. THE MINIMUM LOT SIZE IN BLAKE FARM PER THE APPROVED MDP SHALL BE NO LESS THAN 3,000 SF.

   CONVENTIONAL LOTS WILL RANGE IN SIZE FROM 5,000 SF TO 1–ACRE.

2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC/LOT
   274 LOTS X 0.03 AC./LOT = 8.22 AC.
   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

7. PUBLIC SANITARY SEWER TO BE PROVIDED BY PLURIS HAMPSTEAD, LLC.

8. PUBLIC WATER TO BE PROVIDED BY PENDER COUNTY UTILITIES.

9. A BUFFER CONSISTING OF AT LEAST 1 CANOPY TREE, 2 UNDERSTORY TREES AND EITHER A GRASS OR OTHER APPROVED VEGETATIVE GROUND COVER OF AT LEAST 98% COVERAGE (EXCEPT WITHIN 4 FEET OF THE BASE OF ANY TREE OR SHRUB) OR 32 SHRUBS PER 100 LINEAR FEET WILL BE APPLIED ALONG BLAKE FARM BLVD.

10. SITE IS LOCATED WITHIN FEMA FLOOD ZONE X – MINIMAL FLOOD RISK PER FEMA MAP NUMBER 37203721001J.

11. SEE SHEET G002 FOR ROADWAY SECTIONS AND PAVEMENT DESIGN.

12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

13. RIGHT OF WAY RADII ON ALL PUBLIC STREETS IS 25'.

14. EDGE OF PAVEMENT TURNING RADIUS ON ALL PUBIC STREETS IS 30'.

15. PRIVATE STREETS HAVE A 10' RADIUS ON RIGHT–OF–WAY AND 20' RADIUS ON EDGE PAVEMENT.

TND LOTS IN SF-1 SUBDIVISION:

1. LOTS 28 – 51 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.
2. LOTS 229 – 255 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.

REV.NO.	DESCRIPTIONS	DATE
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A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

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August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CS102
DRAWING NUMBER 12

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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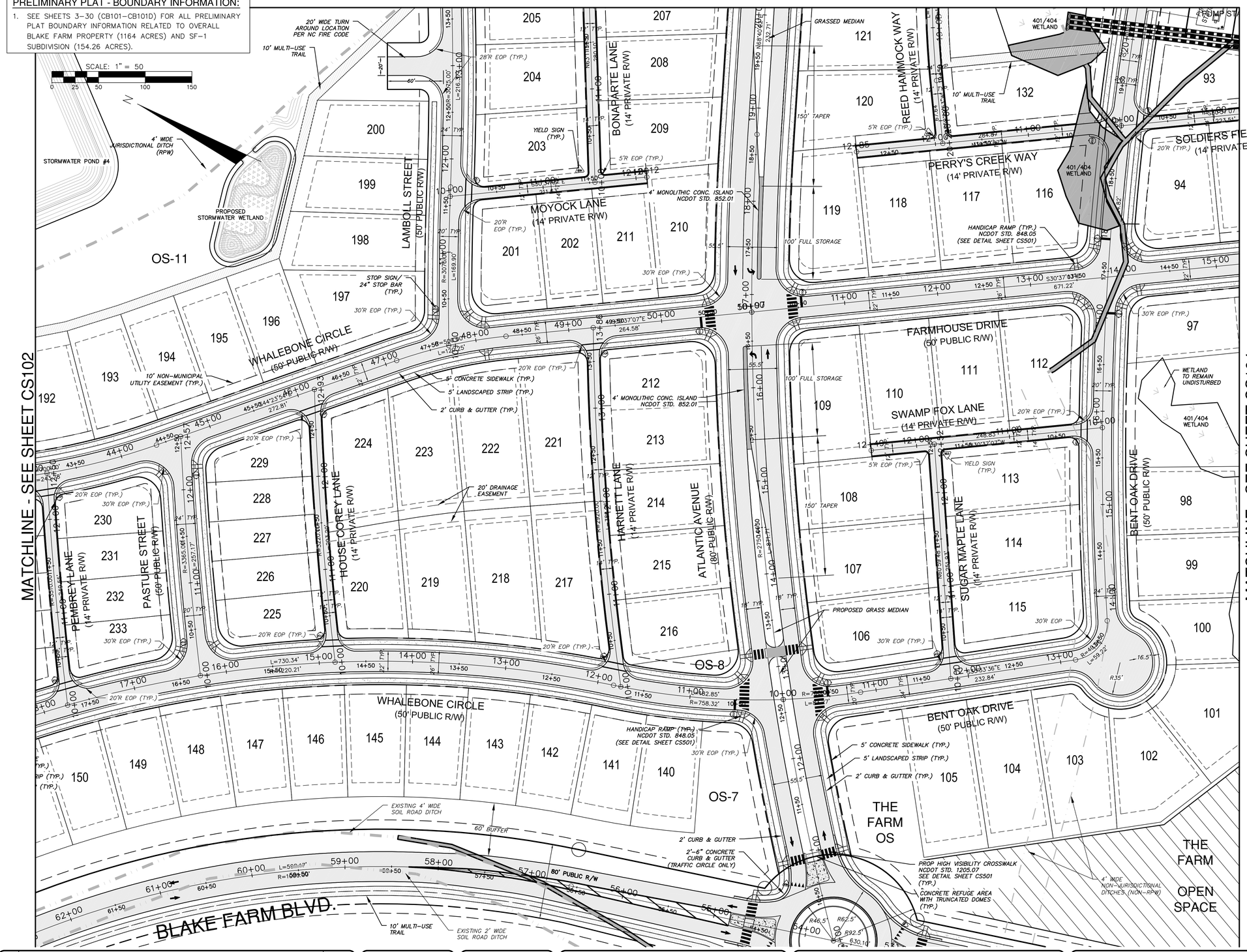
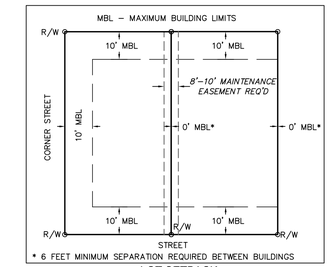
PRELIMINARY PLAT - BOUNDARY INFORMATION:

1. SEE SHEETS 3–30 (CB101–CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF–1 SUBDIVISION (154.26 ACRES).



LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- WETLAND IMPACTS JURSIDICTIONAL DITCH IMPACTS



LOT SETBACK
NOT TO SCALE

SITE NOTES:

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   OPEN SPACE PROVIDED: 24.72 ACRES

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15. PRIVATE STREETS HAVE A 10' RADIUS ON RIGHT–OF–WAY AND 20' RADIUS ON EDGE PAVEMENT.

TND LOTS IN SF-1 SUBDIVISION:

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

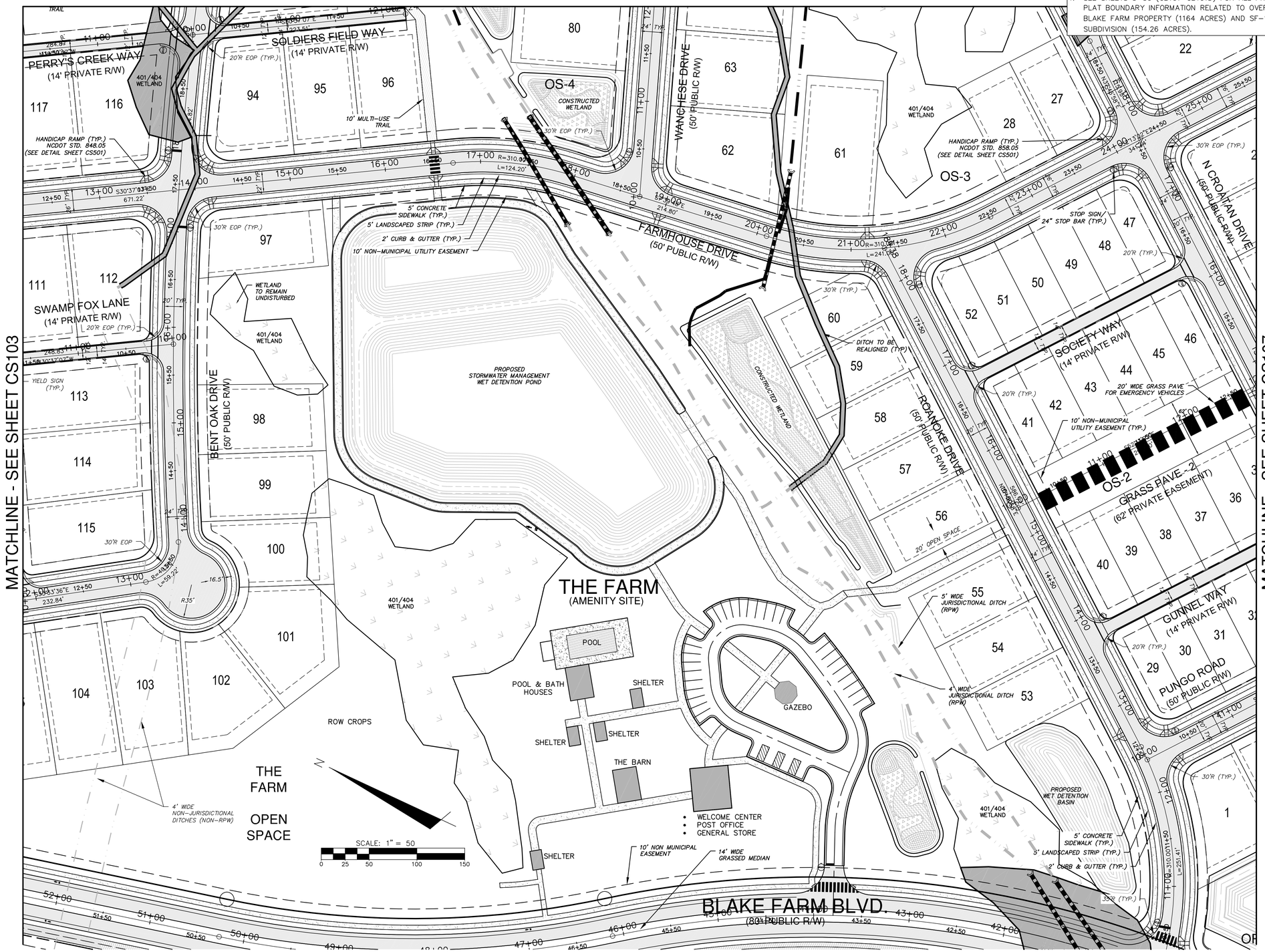
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER: CS103
DRAWING NUMBER: 13

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

S:\6525\0001\09-Drawings\CS102-105_06525000101.dwg, 8/11/2015 8:43:26 AM, rcollier

MATCHLINE - SEE SHEETS CS105 & CS106

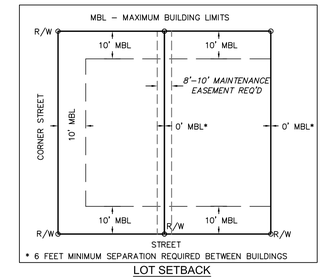


PRELIMINARY PLAT - BOUNDARY INFORMATION:

1. SEE SHEETS 3–30 (CB101–CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF–1 SUBDIVISION (154.26 ACRES).

LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- WETLAND AND JURSIDICTIONAL DITCH IMPACTS
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))



LOT SETBACK
NOT TO SCALE

SITE NOTES:

1. THE MINIMUM LOT SIZE IN BLAKE FARM PER THE APPROVED MDP SHALL BE NO LESS THAN 3,000 SF.

   CONVENTIONAL LOTS WILL RANGE IN SIZE FROM 5,000 SF TO 1–ACRE.

2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC/LOT
   274 LOTS X 0.03 AC./LOT = 8.22 AC.
   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

7. PUBLIC SANITARY SEWER TO BE PROVIDED BY PLURIS HAMPSTEAD, LLC.

8. PUBLIC WATER TO BE PROVIDED BY PENDER COUNTY UTILITIES.

9. A BUFFER CONSISTING OF AT LEAST 1 CANOPY TREE, 2 UNDERSTORY TREES AND EITHER A GRASS OR OTHER APPROVED VEGETATIVE GROUND COVER OF AT LEAST 98% COVERAGE (EXCEPT WITHIN 4 FEET OF THE BASE OF ANY TREE OR SHRUB) OR 32 SHRUBS PER 100 LINEAR FEET WILL BE APPLIED ALONG BLAKE FARM BLVD.

10. SITE IS LOCATED WITHIN FEMA FLOOD ZONE X – MINIMAL FLOOD RISK PER FEMA MAP NUMBER 37203721001J.

11. SEE SHEET G002 FOR ROADWAY SECTIONS AND PAVEMENT DESIGN.

12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

13. RIGHT OF WAY RADII ON ALL PUBLIC STREETS IS 25'.

14. EDGE OF PAVEMENT TURNING RADIUS ON ALL PUBIC STREETS IS 30'.

15. PRIVATE STREETS HAVE A 10' RADIUS ON RIGHT–OF–WAY AND 20' RADIUS ON EDGE PAVEMENT.

TND LOTS IN SF-1 SUBDIVISION:

1. LOTS 28 – 51 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.
2. LOTS 229 – 255 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLER

Richard M. Coller

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
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NC LIC. No. F-1222
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BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER: CS104
DRAWING NUMBER: 14

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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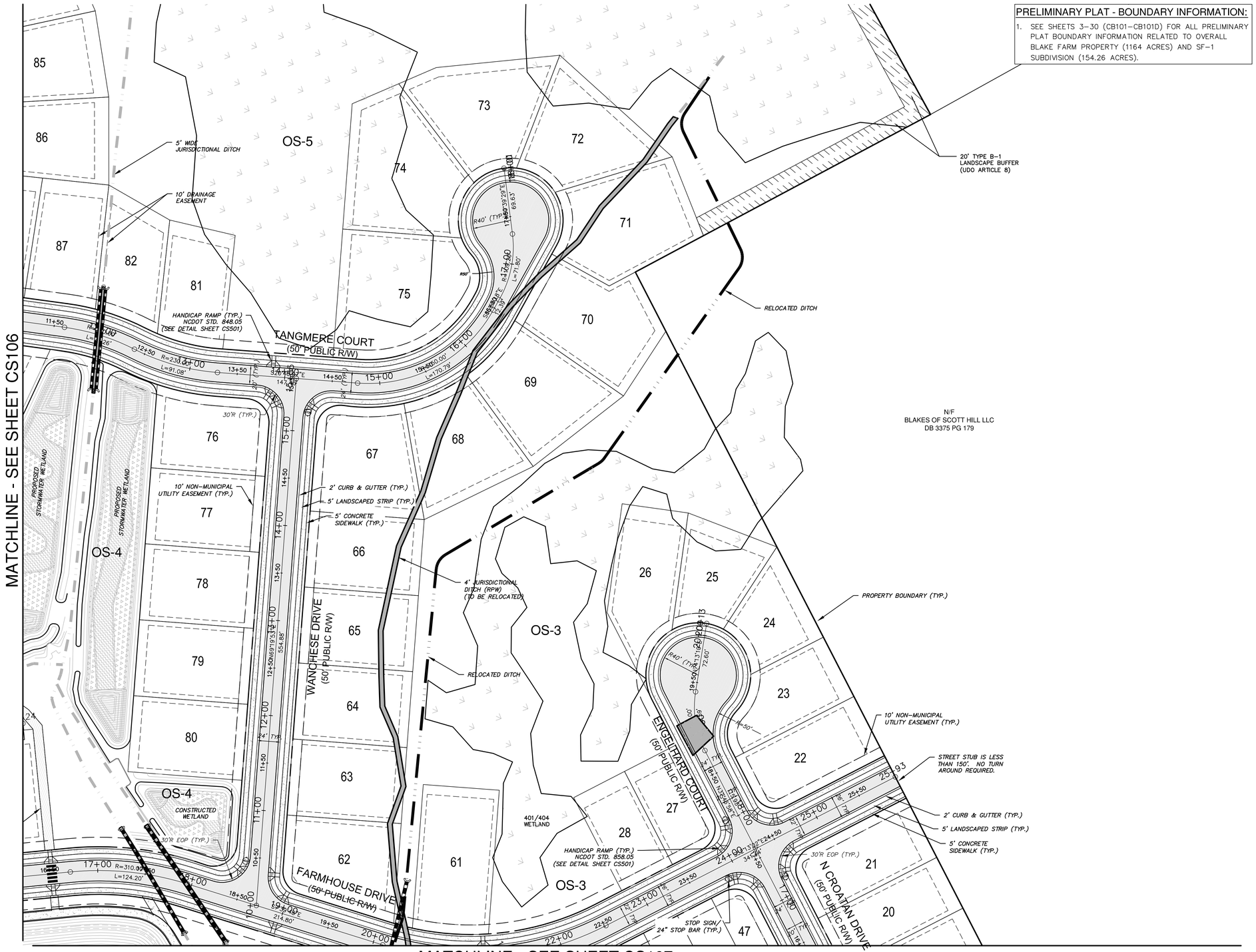
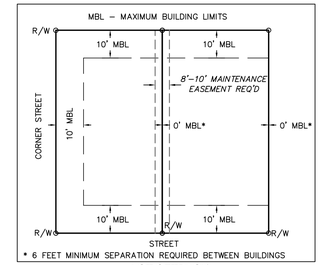


PRELIMINARY PLAT - BOUNDARY INFORMATION:

1. SEE SHEETS 3–30 (CB101–CB101D) FOR ALL PRELIMINARY PLAT BOUNDARY INFORMATION RELATED TO OVERALL BLAKE FARM PROPERTY (1164 ACRES) AND SF–1 SUBDIVISION (154.26 ACRES).

LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)
- WETLAND IMPACTS JURSIDICTIONAL DITCH IMPACTS



LOT SETBACK
NOT TO SCALE

SITE NOTES:

1. THE MINIMUM LOT SIZE IN BLAKE FARM PER THE APPROVED MDP SHALL BE NO LESS THAN 3,000 SF.

   CONVENTIONAL LOTS WILL RANGE IN SIZE FROM 5,000 SF TO 1–ACRE.

2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC/LOT
   274 LOTS X 0.03 AC./LOT = 8.22 AC.
   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

7. PUBLIC SANITARY SEWER TO BE PROVIDED BY PLURIS HAMPSTEAD, LLC.

8. PUBLIC WATER TO BE PROVIDED BY PENDER COUNTY UTILITIES.

9. A BUFFER CONSISTING OF AT LEAST 1 CANOPY TREE, 2 UNDERSTORY TREES AND EITHER A GRASS OR OTHER APPROVED VEGETATIVE GROUND COVER OF AT LEAST 98% COVERAGE (EXCEPT WITHIN 4 FEET OF THE BASE OF ANY TREE OR SHRUB) OR 32 SHRUBS PER 100 LINEAR FEET WILL BE APPLIED ALONG BLAKE FARM BLVD.

10. SITE IS LOCATED WITHIN FEMA FLOOD ZONE X – MINIMAL FLOOD RISK PER FEMA MAP NUMBER 372037210001J.

11. SEE SHEET G002 FOR ROADWAY SECTIONS AND PAVEMENT DESIGN.

12. SEE SHEETS CS108 & CS109 FOR PARCEL AREAS AND BOUNDARY BEARINGS & DISTANCES.

13. RIGHT OF WAY RADII ON ALL PUBLIC STREETS IS 25'.

14. EDGE OF PAVEMENT TURNING RADIUS ON ALL PUBIC STREETS IS 30'.

15. PRIVATE STREETS HAVE A 10' RADIUS ON RIGHT–OF–WAY AND 20' RADIUS ON EDGE PAVEMENT.

SCALE: 1" = 50
0 25 50 100 150

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT: PENDER CO. REVIEW	12/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL
FINAL PLANS: DO NOT USE FOR CONSTRUCTION
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM – EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CS105
DRAWING NUMBER 15

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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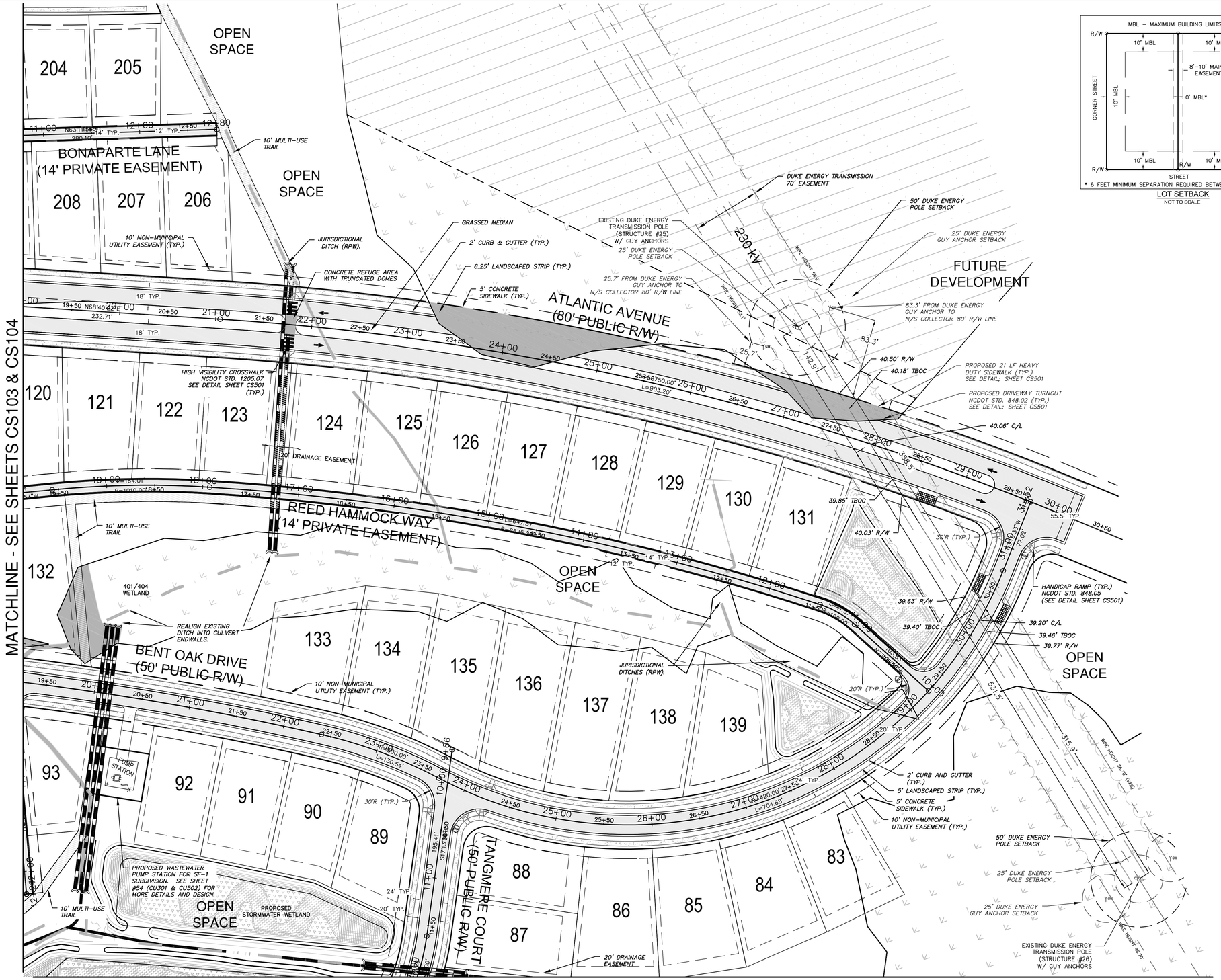

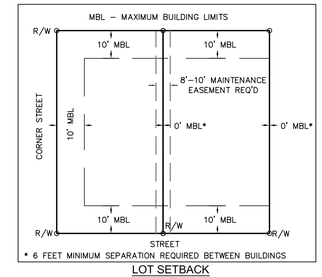

LOT SETBACK
NOT TO SCALE

SITE NOTES:

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   CONVENTIONAL LOTS WILL RANGE IN SIZE FROM 5,000 SF TO 1–ACRE.

2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

3. OPEN SPACE REQ'D: 0.03 AC./LOT
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   OPEN SPACE PROVIDED: 24.72 ACRES

4. THERE IS NO EVIDENCE OF ENDANGERED SPECIES OR HABITAT ISSUES ON THE PROPERTY. THERE ARE NO STATE CULTURAL RESOURCES FOUND ON THE PROPERTY.

5. THE TRACT IS NOT WITHIN SPECIAL FLOOD HAZARD AREA DESIGNATED BY NC FLOODPLAIN MAPPING.

6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

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- WETLAND IMPACTS JURSIDICTIONAL DITCH IMPACTS

SCALE: 1" = 50
0 25 50 100 150

N

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT; PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CS106
DRAWING NUMBER 16

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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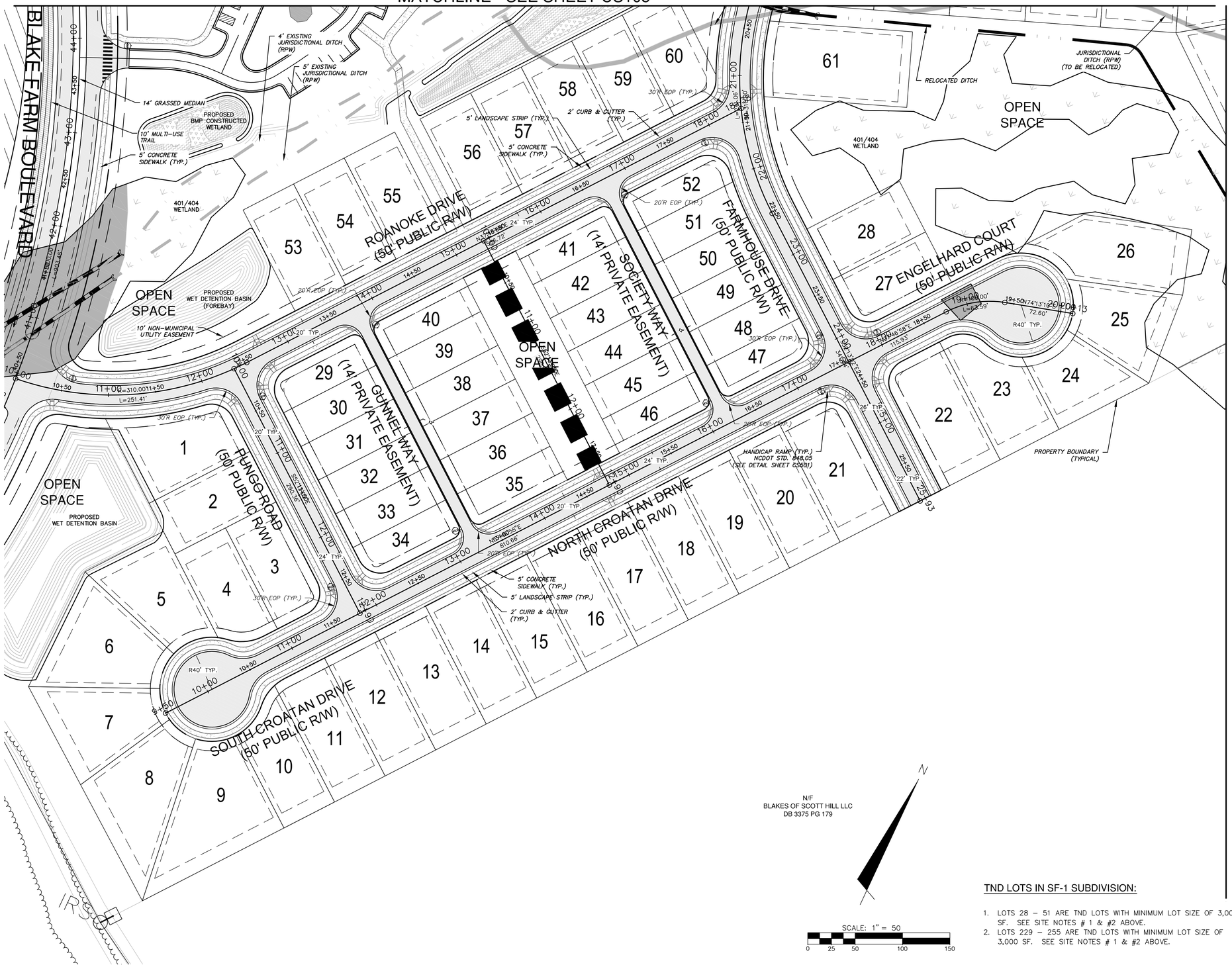
MATCHLINE - SEE SHEET CS105



MATCHLINE - SEE SHEET CS106

LEGEND

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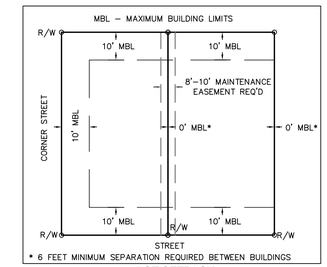
- 20' EMERGENCY ACCESS ROAD GRASS CELL PAVING (SEE DETAIL ON SHEET 2 (G002))



LOT SETBACK
NOT TO SCALE

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2. LOTS THAT UTILIZE "ZERO–LOTLINE" SETBACKS SHALL RECORD AN 8'–10' MAINTENANCE EASEMENT CENTERED ON THE PROPERTY LINE.

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6. PUBLIC STREETS ARE DESIGNED TO MEET NCDOT STANDARDS AND SPECIFICATIONS FOR COMPLETE STREETS AND NCDOT SUBDIVISION MANUAL.

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13. RIGHT OF WAY RADII ON ALL PUBLIC STREETS IS 25'.

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15. PRIVATE STREETS HAVE A 10' RADIUS ON RIGHT–OF–WAY AND 20' RADIUS ON EDGE PAVEMENT.

TND LOTS IN SF-1 SUBDIVISION:

1. LOTS 28 – 51 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.
2. LOTS 229 – 255 ARE TND LOTS WITH MINIMUM LOT SIZE OF 3,000 SF. SEE SITE NOTES # 1 & #2 ABOVE.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
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C	ISSUED FOR PERMITTING	01/21/15
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A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED SITE PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CS107
DRAWING NUMBER 17

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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PARCEL NUMBERS, AREAS, AND LAYOUTS FOR SF-1 PHASE 1 LOTS

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
1	9162.14	0.21	106.025 34.743 40.886 120.000 100.588	N57° 13' 06.91"E N87° 58' 12.50"E S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W
2	7200.00	0.17	60.000 60.000 60.000 26.587 33.413 120.000	S52° 13' 02.45"E S37° 46' 57.55"W S37° 46' 57.55"W N52° 13' 02.45"W N52° 13' 02.45"W N37° 46' 57.55"E
3	7065.87	0.16	95.000 39.270 35.000 120.000 60.000	S52° 13' 02.45"E S7° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E
4	6905.73	0.16	99.336 60.000 120.000 17.171 38.751 10.126	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W S59° 59' 07.98"W S76° 55' 55.52"W
5	8495.49	0.20	51.714 127.597 93.101 26.587 99.336	S44° 43' 16.34"W N72° 12' 54.61"W N37° 46' 57.55"E S52° 13' 02.45"E S52° 13' 02.45"E
6	10715.30	0.25	40.278 138.685 135.119 127.597	S3° 11' 41.22"E S65° 49' 32.16"W N1° 11' 58.59"E S72° 12' 54.61"E
7	8948.25	0.21	116.376 117.272 138.685 34.853	S28° 44' 11.57"W N52° 59' 35.65"W N65° 49' 32.16"E S42° 19' 41.71"E
8	10862.60	0.25	180.101 138.806 116.376 34.853	S6° 47' 23.33"E N52° 59' 35.65"W N28° 44' 11.57"E S78° 38' 09.45"E
9	12688.53	0.29	168.134 180.101 44.263 109.988	S37° 46' 42.22"W N6° 47' 23.33"W N60° 09' 17.00"E S52° 13' 02.45"E
10	7303.83	0.17	138.312 60.000 109.988 41.980 25.786	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N15° 13' 59.89"E N8° 08' 29.63"E
11	8392.06	0.19	139.987 60.000 138.312 12.974 47.171	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N30° 20' 57.18"E N37° 46' 57.55"E
12	8399.25	0.19	60.000 139.988 60.000 139.987	N37° 46' 57.55"E S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W
13	8399.32	0.19	139.989 60.000 139.988 60.000	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E
14	8399.40	0.19	60.000 139.991 60.000 139.989	N37° 46' 57.55"E S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W
15	8399.48	0.19	60.000 139.991 60.000 139.992	S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
16	8399.56	0.19	139.993 60.000 139.992 60.000	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E
17	8399.64	0.19	139.995 60.000 139.993 60.000	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E
18	8399.71	0.19	139.996 60.000 139.995 60.000	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E
19	8399.79	0.19	139.997 60.000 139.996 60.000	S52° 13' 02.45"E S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E
20	8399.87	0.19	60.000 139.997 60.000 139.998	S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
21	9665.82	0.22	70.000 139.998 45.000 39.270 115.000	S37° 47' 02.02"W N52° 13' 02.45"W N37° 46' 57.55"E N82° 46' 57.55"E S52° 13' 02.45"E
22	9659.20	0.22	70.000 114.908 39.270 45.000 139.901	S37° 46' 38.25"W N52° 13' 02.45"W N7° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
23	8411.01	0.19	70.000 139.901 9.630 43.084 42.330 85.644	S37° 46' 38.25"W N52° 13' 02.45"W N37° 46' 57.55"E N73° 02' 49.35"E N86° 15' 47.32"E S52° 13' 02.43"E
24	6853.11	0.16	106.534 85.644 58.227 102.990	S37° 46' 38.25"W N52° 13' 02.43"W N33° 53' 10.25"E S81° 58' 29.34"E
25	8062.14	0.19	99.590 102.990 56.369 123.954	S4° 00' 52.28"E N81° 58' 29.34"W N25° 48' 11.81"W N72° 55' 02.61"E
26	10252.50	0.24	70.000 123.954 83.565 102.422 115.138	S17° 04' 57.39"E S72° 55' 02.61"W S81° 18' 33.45"W N37° 46' 57.55"E N72° 55' 02.61"E
27	6465.87	0.15	85.000 39.270 35.000 110.000 60.000	S37° 46' 57.55"W S82° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
28	6600.00	0.15	110.000 60.000 110.000 60.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
29	4244.41	0.10	110.000 15.000 39.270 75.000 15.708 30.000	S37° 46' 57.55"W N52° 13' 02.45"W N7° 13' 02.45"W N37° 46' 57.55"E N82° 46' 57.55"E S52° 13' 02.45"E
30	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
31	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
32	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
33	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
34	4244.41	0.10	75.000 39.270 15.000 110.000 30.000 15.708	S37° 46' 57.55"W S82° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S7° 13' 02.45"E
35	4378.54	0.10	100.000 15.708 30.000 110.000 40.000	S37° 46' 57.55"W S82° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
36	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
37	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
38	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
39	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
40	4378.54	0.10	110.000 30.000 15.708 100.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N7° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
41	4378.54	0.10	40.000 100.000 15.708 30.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E N82° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
42	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
43	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
44	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
45	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
46	4378.54	0.10	100.000 40.000 110.000 30.000 15.708	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S7° 13' 02.45"E
47	4244.41	0.10	75.000 15.708 30.000 110.000 15.000 39.270	S37° 46' 57.55"W S82° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S7° 13' 02.45"E
48	4400.00	0.10	110.000 40.000 110.000 40.000	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E
49	4400.00	0.10	40.000 110.000 40.000 110.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
50	4400.31	0.10	110.000 40.000 110.109 8.565 31.436	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S51° 29' 05.65"E S52° 13' 02.45"E
51	4456.85	0.10	110.109 40.000 113.539 40.171	S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E S47° 19' 01.95"E
52	4456.49	0.10	30.000 15.708 80.656 43.707 10.726 113.539	N52° 13' 02.45"W N7° 13' 02.45"W N37° 46' 57.55"E N87° 52' 03.28"E S42° 57' 53.02"E S37° 46' 57.55"W
53	7200.00	0.17	120.000 60.000 120.000 60.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
54	7200.00	0.17	60.000 120.000 60.000 120.000	N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W
55	7200.00	0.17	120.000 60.000 120.000 60.000	S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E
56	7200.00	0.17	120.000 60.000 120.000 60.000	N52° 13' 02.45"W N37° 46' 57.55"E S52° 13' 02.45"E S37° 46' 57.55"W
57	7200.00	0.17	120.000 60.000 120.000 60.000	S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E
58	7200.00	0.17	120.000 60.000 120.000 60.000	S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E
59	7200.00	0.17	120.000 60.000 120.000 60.000	S52° 13' 02.45"E S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E
60	7010.94	0.16	101.480 5.504 27.479 34.303 120.000 60.000	S51° 43' 01.58"E S24° 43' 26.12"E S6° 17' 38.54"W S37° 46' 57.55"W N52° 13' 02.45"W N37° 46' 57.55"E

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
243 North Front Street
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NC LIC. No. F-1222
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Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PARCEL INFORMATION TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS108

DRAWING NUMBER 18

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

S:\6525\0001\80-drawings\85-model\06525-0001_east haven development\source drawings\alignments_06525\0001_Roads and Lots.dwg, 8/31/2015 6:48:55 PM, rcollier

PARCEL NUMBERS, AREAS, AND LAYOUTS FOR SF-1 PHASE 1 LOTS

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
61	12252.25	0.28	80.000 151.283 80.265 151.258	S20° 40' 06.96"E S69° 19' 53.04"W N20° 39' 00.91"W N69° 19' 53.04"E
62	10863.56	0.25	120.000 105.000 4.146 99.123 33.595 57.431	S20° 40' 06.96"E S69° 19' 53.04"W N8° 04' 48.40"W N7° 39' 48.26"W N30° 50' 02.39"E N69° 19' 53.04"E
63	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
64	9600.00	0.22	120.000 80.000 120.000 80.000	S20° 40' 06.96"E S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E
65	9600.00	0.22	120.000 80.000 120.000 80.000	S20° 40' 06.96"E S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E
66	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
67	11927.56	0.27	50.874 123.808 120.000 88.210 41.081 12.677	S28° 59' 48.27"E S55° 08' 10.02"W N20° 40' 06.96"W N69° 19' 53.04"E S63° 35' 34.31"E S18° 35' 34.31"E
68	11567.28	0.27	118.468 127.284 123.808 72.640	S28° 53' 33.05"W N51° 01' 31.19"W N55° 08' 10.02"E S49° 12' 58.26"E
69	12167.05	0.28	138.813 120.186 118.468 75.740 1.268	S9° 43' 39.73"W N63° 01' 20.24"W N28° 53' 33.05"E S73° 30' 22.48"E S85° 54' 18.00"E
70	12915.64	0.30	31.089 70.000 81.151 138.813 80.000 68.905	S53° 05' 45.30"E S37° 46' 18.29"W N81° 45' 50.60"W N9° 43' 39.73"E S85° 54' 18.00"E S4° 05' 42.00"W
71	13636.99	0.31	128.403 89.038 81.043 31.089 68.905 10.115 58.829	S41° 50' 05.72"E S43° 22' 04.14"W N53° 05' 45.30"W N53° 05' 45.30"W N4° 05' 42.00"E S85° 54' 18.00"E N63° 27' 08.79"E
72	11541.03	0.26	158.955 128.403 49.382 126.879	S17° 07' 45.14"W N41° 50' 05.72"W N7° 05' 17.46"E N85° 59' 44.94"E
73	12923.73	0.30	130.284 126.879 48.644 130.500 42.851	S30° 41' 34.26"E S85° 59' 44.94"W N43° 58' 14.17"W N27° 44' 20.11"E S48° 19' 53.13"E
74	15503.48	0.36	130.500 62.951 124.840 131.821 53.167	S27° 44' 20.11"W S77° 54' 10.86"W N20° 40' 06.96"W N69° 19' 53.04"E S48° 19' 53.13"E
75	16726.95	0.38	20.684 43.084 6.530 142.324 27.757 135.153 124.840	S34° 20' 23.89"W S58° 49' 50.19"W N85° 54' 18.00"W N53° 17' 12.48"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
76	9623.24	0.22	32.976 39.270 55.000 120.000 87.658 62.652	S20° 40' 06.96"E S24° 19' 53.04"W S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S13° 37' 47.88"E
77	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
78	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
79	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
80	9600.00	0.22	80.000 120.000 80.000 120.000	S69° 19' 53.04"W N20° 40' 06.96"W N69° 19' 53.04"E S20° 40' 06.96"E
81	8542.68	0.20	70.527 120.000 3.790 67.084 120.000	S11° 47' 43.93"E S71° 11' 36.87"W N20° 40' 06.96"W N11° 17' 38.17"W N71° 11' 36.87"E
82	8385.41	0.19	73.710 120.000 14.094 56.053 131.054	S4° 54' 23.62"W S71° 11' 36.87"W N0° 03' 01.35"E N4° 16' 38.13"W N71° 11' 36.87"E
83	9883.67	0.23	125.000 89.663 125.000 70.072	S55° 17' 38.72"E S39° 13' 01.13"W N46° 16' 19.02"W N39° 13' 01.13"E
84	10371.16	0.24	91.172 135.908 70.072 125.000	S41° 23' 21.09"W N37° 14' 59.32"W N48° 14' 20.83"E S46° 16' 19.02"E
85	10953.51	0.25	91.546 137.785 70.072 135.908	S56° 05' 22.66"W N28° 13' 39.63"W N57° 15' 40.52"E S37° 14' 59.32"E
86	11176.21	0.26	137.785 92.419 69.900 70.101 70.072	S28° 13' 39.63"E S64° 56' 29.09"W N18° 58' 54.10"W N18° 58' 54.10"W N66° 17' 00.22"E
87	9346.79	0.21	29.605 46.163 127.166 69.900 131.054	N13° 54' 01.94"W N17° 13' 35.55"W N73° 46' 28.14"E S18° 58' 54.10"E S71° 11' 36.87"W
88	8926.14	0.20	50.264 43.796 95.989 70.101 127.166	N17° 13' 35.55"W N32° 57' 37.33"E N76° 58' 15.13"E S18° 58' 54.10"E S73° 46' 28.14"W
89	9610.43	0.22	113.655 84.017 125.637 51.140 31.854	S17° 13' 35.55"E N90° 00' 00.00"W N11° 18' 43.16"W N86° 41' 01.76"E S53° 43' 44.55"E
90	8878.49	0.20	18.732 51.635 125.000 25.638 47.141 125.637	N90° 00' 00.00"W S76° 43' 57.23"W N12° 34' 24.70"W N77° 40' 12.30"E N80° 45' 24.60"E S11° 18' 43.16"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
91	8949.34	0.21	70.000 125.000 73.029 125.000	S76° 43' 57.23"W N13° 57' 40.85"W N76° 43' 57.23"E S12° 34' 24.70"E
92	8949.34	0.21	70.000 44.996 50.003 30.002 73.029 125.000	S75° 20' 41.07"W N15° 20' 57.01"W N15° 20' 57.01"W N15° 20' 57.01"W N75° 20' 41.07"E S13° 57' 40.85"E
93	8688.27	0.20	72.103 120.462 53.000 123.803 17.929	N72° 47' 31.65"E S16° 31' 21.97"E S59° 22' 53.04"W N30° 37' 06.96"W N20° 44' 39.16"E
94	10316.90	0.24	64.374 43.767 92.376 13.603 61.274 128.000	N30° 37' 06.96"W N19° 32' 05.03"E N70° 33' 55.98"E S69° 35' 15.58"E S30° 37' 06.96"E S59° 22' 53.04"W
95	8960.00	0.21	70.000 128.000 70.000 128.000	S30° 37' 06.96"E S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E
96	8960.00	0.21	70.000 128.000 70.000 128.000	S30° 37' 06.96"E S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E
97	9023.55	0.21	105.031 69.238 136.421 48.397 35.620	S30° 37' 06.96"E S59° 22' 53.04"W N30° 38' 41.20"W N67° 17' 09.28"E S71° 26' 10.42"E
98	9492.19	0.22	131.369 69.991 133.614 73.174	S25° 29' 30.90"E S62° 11' 14.48"W N26° 52' 47.42"W N64° 00' 59.55"E
99	9409.10	0.22	70.026 134.946 70.004 133.614	S61° 33' 57.79"W N26° 52' 47.42"W N62° 39' 21.94"E S26° 52' 47.42"E
100	7975.23	0.18	70.026 99.288 61.038 16.702 7.138 134.946	S61° 33' 57.79"W N26° 52' 47.42"W N33° 01' 48.95"E N29° 57' 24.53"E N61° 55' 23.19"E S26° 52' 47.42"E
101	11066.98	0.25	86.584 71.411 112.148 45.934 99.288	S61° 33' 57.79"W N62° 31' 45.36"W N26° 42' 17.01"E S85° 40' 47.22"E S26° 52' 47.42"E
109	11212.48	0.26	128.000 14.000 83.270 119.097 37.359 51.861	S59° 22' 53.04"W S59° 22' 53.04"W N30° 37' 06.96"W N62° 30' 06.95"E S73° 25' 43.85"E S30° 37' 06.96"E
110	9589.76	0.22	74.920 128.000 74.920 128.000	S30° 37' 06.96"E S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E
111	9589.76	0.22	128.000 74.920 128.000 74.920	S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E
112	10351.93	0.24	42.801 91.325 14.594 65.641 128.000 62.334	S18° 25' 38.12"W S66° 37' 10.72"W N72° 25' 34.58"W N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
113	10460.40	0.24	133.159 16.698 61.744 143.451 67.694 6.170	S30° 37' 06.96"E S17° 13' 08.38"W S64° 33' 20.66"W N30° 14' 55.36"W N60° 59' 47.70"E S74° 48' 39.63"E
114	10199.89	0.23	70.002 140.759 73.955 143.451	S63° 19' 14.79"W N31° 54' 24.61"W N60° 59' 47.70"E S30° 14' 55.36"E
115	9922.27	0.23	47.221 36.952 106.098 16.503 63.118 140.759	S62° 13' 19.04"W N75° 53' 19.15"W N33° 33' 35.74"W N13° 43' 05.98"E N60° 59' 47.70"E S31° 54' 24.61"E
116	11334.20	0.26	56.729 128.000 89.871 17.765 97.034 34.931	N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E S20° 16' 23.00"W S70° 15' 27.94"W N70° 38' 00.70"W
117	9958.40	0.23	77.800 128.000 77.800 128.000	N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E S59° 22' 53.04"W
118	9958.40	0.23	128.000 77.800 128.000 77.800	S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E
119	10808.98	0.25	58.056 42.114 115.296 67.364 14.000 128.000	N30° 37' 06.96"W N17° 38' 26.91"E N67° 07' 24.26"E S30° 33' 23.33"E S59° 22' 53.04"W S59° 22' 53.04"W
132	12343.47	0.28	177.841 66.883 13.538 148.042 7.854 56.784 11.217	S30° 37' 06.96"E S72° 26' 16.01"W N69° 24' 10.73"W N30° 37' 06.96"W N14° 22' 53.08"E N59° 23' 41.15"E N59° 42' 09.85"E
133	10331.64	0.24	136.348 15.630 70.500 99.234 95.765	S14° 17' 23.09"E S78° 45' 59.67"W S77° 15' 17.08"W N16° 11' 02.66"W N54° 38' 10.98"E
134	10909.84	0.25	76.721 136.348 76.033 153.259	S83° 48' 21.22"W N14° 17' 23.09"W N71° 05' 45.57"E S14° 19' 40.07"E
135	11837.28	0.27	171.303 32.542 44.719 153.259 71.548	S15° 22' 53.93"E N89° 29' 14.62"W N89° 34' 02.84"W N14° 19' 40.07"W N77° 02' 25.24"E
136	12673.51	0.29	71.198 171.303 73.633 178.570	S82° 59' 19.42"W N15° 22' 53.93"W N77° 02' 25.24"E S14° 20' 51.05"E
137	12247.58	0.28	173.527 68.637 178.570 69.925	S13° 52' 24.45"E S72° 50' 49.12"W N14° 20' 51.05"W N77° 02' 25.24"E
138	11840.45	0.27	151.902 77.136 173.527 69.443	S15° 54' 49.79"E S62° 16' 28.44"W N13° 52' 24.45"W N78° 50' 13.01"E
139	9427.60	0.22	102.720 92.327 151.902 62.445	S29° 00' 59.23"E S49° 59' 02.58"W N15° 54' 49.79"W N87° 15' 59.50"E

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PARCEL INFORMATION TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER: CS108A
DRAWING NUMBER: 18A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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PARCEL NUMBERS, AREAS, AND LAYOUTS FOR SF-1 PHASE 2 LOTS

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
102	9461.37	0.22	68.521 47.097 129.946 42.566 112.148	N62° 31' 45.36"W N33° 33' 35.74"W N60° 54' 55.09"E S34° 58' 22.84"E S26° 42' 17.01"W
103	11508.19	0.26	34.503 129.946 69.237 160.666 41.231 16.366	S9° 11' 04.88"W S60° 54' 55.09"W N33° 33' 35.74"W N56° 26' 24.26"E S33° 26' 42.35"E S2° 18' 11.31"E
104	11244.07	0.26	70.000 160.593 70.000 160.666	N33° 23' 05.22"W N56° 26' 24.26"E S33° 26' 42.35"E S56° 26' 24.26"W
105	11238.91	0.26	70.000 160.593 70.000 160.519	S33° 26' 42.35"E S56° 26' 24.26"W N33° 23' 05.22"W N56° 26' 24.26"E
106	10396.08	0.24	140.759 65.117 14.913 83.512 19.136 39.097 52.077	S31° 54' 23.76"E S60° 59' 47.70"W N76° 16' 54.02"W N33° 33' 35.74"W N32° 49' 42.92"W N13° 40' 47.81"E N57° 32' 33.60"E
107	10865.91	0.25	74.360 140.759 78.426 143.451	S60° 59' 47.70"W N31° 54' 23.76"W N58° 55' 20.04"E S30° 14' 55.36"E
108	10215.49	0.23	56.704 6.396 67.378 143.451 70.550 83.270	S30° 37' 06.96"E S15° 11' 20.37"W S60° 59' 47.70"W N30° 14' 55.36"W N60° 29' 49.51"E S30° 37' 15.18"E
140	7761.23	0.18	59.999 120.069 69.295 120.037	S18° 33' 05.03"E S69° 15' 38.31"W N18° 31' 16.74"W N73° 41' 48.20"E
141	7479.48	0.17	48.027 16.619 119.999 16.998 42.999 120.037	N14° 45' 57.57"W N13° 38' 28.80"W N75° 54' 58.70"E S13° 40' 44.88"E S14° 45' 56.49"E S73° 41' 48.20"W
142	7602.08	0.17	66.701 119.999 60.003 119.996	S15° 41' 07.14"E S75° 54' 58.70"W N15° 40' 57.81"W N72° 43' 05.68"E
143	7601.90	0.17	66.701 119.996 60.003 119.994	S18° 52' 58.17"E S72° 43' 05.68"W N18° 52' 50.83"W N69° 31' 12.66"E
144	7601.76	0.17	66.701 119.994 60.003 119.992	S22° 04' 49.17"E S69° 31' 12.66"W N22° 04' 43.85"W N66° 19' 19.64"E
145	7601.67	0.17	66.700 119.992 60.003 119.991	S25° 16' 40.16"E S66° 19' 19.64"W N25° 16' 36.88"W N63° 07' 26.61"E
146	7601.62	0.17	66.700 119.991 60.003 119.991	S28° 28' 31.14"E S63° 07' 26.61"W N28° 28' 29.90"W N59° 55' 33.59"E
147	7601.62	0.17	66.700 119.991 60.003 119.991	S31° 40' 22.12"E S59° 55' 33.59"W N31° 40' 22.92"W N56° 43' 40.57"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
148	7601.65	0.17	66.700 119.991 60.003 119.992	S34° 52' 13.10"E S56° 43' 40.57"W N34° 52' 15.95"W N53° 31' 47.54"E
149	7601.74	0.17	60.003 119.993 66.701 119.992	N38° 04' 08.97"W N50° 19' 54.52"E S38° 04' 04.08"E S53° 31' 47.54"W
150	7601.87	0.17	119.993 60.003 119.996 66.701	S50° 19' 54.52"W N41° 16' 01.99"W N47° 08' 01.50"E S41° 15' 55.08"E
151	7602.04	0.17	60.003 119.998 66.701 119.996	N44° 27' 55.02"W N43° 56' 08.47"E S44° 27' 46.11"E S47° 08' 01.50"W
152	7380.20	0.17	119.998 26.956 33.041 120.000 32.916 30.090	S43° 56' 08.47"W N46° 46' 57.63"W N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E S46° 46' 58.07"E
153	7200.00	0.17	60.000 120.000 60.000 120.000	N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E S42° 29' 56.26"W
154	7200.00	0.17	60.000 60.000 60.000 60.000 120.000	N47° 30' 03.74"W N42° 29' 56.26"E N42° 29' 56.26"E S47° 30' 03.74"E S42° 29' 56.26"W
189	7200.00	0.17	120.000 60.000 120.000 60.000	S65° 33' 17.64"W N24° 26' 42.36"W N65° 33' 17.64"E S24° 26' 42.85"E
190	7516.88	0.17	120.000 28.616 36.477 120.000 60.000	S63° 07' 33.36"W N25° 39' 34.50"W N24° 26' 42.36"W N65° 33' 17.64"E S24° 55' 16.61"E
191	8014.73	0.18	120.000 73.009 120.000 60.000	S56° 55' 43.59"W N29° 58' 21.52"W N63° 07' 33.36"E S29° 58' 21.52"E
192	8014.73	0.18	120.000 73.009 120.000 60.000	S50° 43' 53.82"W N36° 10' 11.29"W N56° 55' 43.59"E S36° 10' 11.29"E
193	7877.59	0.18	120.000 10.332 60.437 120.000 60.000	S45° 36' 05.54"W N44° 23' 54.46"W N41° 50' 00.32"W N50° 43' 53.82"E S42° 16' 29.97"E
194	7200.00	0.17	60.000 120.000 60.000 120.000	N44° 23' 54.46"W N45° 36' 05.54"E S44° 23' 54.46"E S45° 36' 05.54"W
195	7200.00	0.17	60.000 120.000 60.000 120.000	N44° 23' 54.46"W N45° 36' 05.54"E S44° 23' 54.46"E S45° 36' 05.54"W
196	7200.00	0.17	106.917 60.000 120.000 60.000 13.083	S45° 36' 05.54"W N44° 23' 54.46"W N45° 36' 05.54"E S44° 23' 54.46"E S45° 36' 05.54"W

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
197	10969.76	0.25	31.571 21.943 82.481 106.917 151.648 41.395	N79° 02' 21.42"W N42° 51' 43.32"W N44° 23' 54.46"W N45° 36' 05.54"E S24° 27' 21.80"E S65° 09' 41.29"W
198	9293.37	0.21	145.046 60.011 151.648 13.083 51.847	S23° 20' 49.52"E S66° 05' 54.34"W N24° 27' 21.80"W N45° 36' 05.54"E N78° 33' 15.54"E
199	8327.08	0.19	132.712 28.558 31.353 145.046 61.327	S23° 18' 15.15"E S66° 57' 50.48"W S66° 56' 33.38"W N23° 20' 49.52"W N78° 33' 15.54"E
200	7718.83	0.18	119.500 62.448 132.712 61.305	S24° 28' 39.08"E S66° 06' 32.79"W N23° 18' 15.15"W N78° 33' 15.54"E
201	9005.96	0.21	58.575 123.000 46.819 6.851 41.795 87.356 14.411	S30° 37' 06.96"E S59° 22' 53.04"W N30° 37' 06.96"W N30° 37' 06.96"W N17° 16' 30.35"E N65° 59' 21.47"E S71° 54' 15.83"E
202	7380.00	0.17	123.000 60.000 123.000 60.000	S59° 22' 53.04"W N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E
203	9076.85	0.21	69.970 6.017 107.889 17.040 66.538 118.383	S63° 11' 55.34"W N73° 42' 35.81"W N30° 37' 06.96"W N18° 11' 50.44"E N66° 23' 54.23"E S28° 46' 14.07"E
204	8511.05	0.20	115.839 70.749 118.383 74.923	S26° 46' 13.10"E S63° 11' 55.34"W N28° 46' 14.07"W N65° 05' 28.05"E
205	8404.54	0.19	115.253 70.771 115.839 74.942	S24° 41' 53.71"E S63° 11' 55.34"W N26° 46' 13.10"W N63° 42' 22.26"E
210	9215.79	0.21	115.684 36.556 37.486 123.000 14.000 77.255	S66° 47' 24.07"W N72° 30' 29.56"W N30° 37' 06.96"W N59° 22' 53.04"E N59° 22' 53.04"E S30° 37' 06.96"E
211	7380.00	0.17	60.000 123.000 60.000 123.000	N30° 37' 06.96"W N59° 22' 53.04"E S30° 37' 06.96"E S59° 22' 53.04"W
212	7577.45	0.17	87.126 41.092 39.770 123.000 50.167 14.949	S30° 37' 06.96"E S16° 28' 10.77"W S63° 08' 59.77"W N27° 15' 30.29"W N63° 14' 05.80"E S73° 26' 42.53"E
213	8382.57	0.19	66.681 123.000 69.621 123.000	S62° 03' 24.82"W N28° 37' 39.98"W N62° 03' 24.82"E S27° 15' 30.29"E
214	8386.81	0.19	123.000 66.730 123.000 69.641	S28° 37' 39.98"E S60° 41' 13.27"W N29° 59' 00.89"W N60° 41' 14.38"E
215	8386.73	0.19	66.699 123.000 69.671 123.000	S59° 19' 01.06"W N31° 22' 04.12"W N59° 19' 02.18"E S29° 59' 00.89"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
216	8443.56	0.19	123.000 66.780 116.155 12.252 61.271	S31° 22' 04.12"E S57° 56' 47.02"W N33° 15' 48.48"W N21° 33' 36.52"E N58° 01' 46.31"E
217	11211.67	0.26	157.958 18.870 11.479 49.210 153.774 68.437	S59° 11' 55.45"W N68° 17' 16.98"W N14° 29' 34.53"W N15° 52' 43.82"W N60° 19' 01.00"E S29° 15' 18.91"E
218	10403.82	0.24	71.838 140.269 25.653 45.626 153.774	N18° 40' 42.76"W N60° 00' 09.21"E S29° 59' 24.57"E S29° 15' 18.91"E S60° 19' 01.00"W
219	9461.32	0.22	140.269 12.554 59.164 126.874 1.228 69.444	S60° 00' 09.21"W N20° 37' 49.58"W N22° 15' 56.21"W N60° 11' 50.93"E S34° 44' 20.79"E S32° 42' 52.17"E
220	9062.17	0.21	65.475 14.887 105.340 76.082 0.001 126.874	N25° 07' 59.26"W N16° 00' 27.57"E N59° 35' 38.50"E S34° 42' 14.11"E S60° 11' 50.93"W S60° 11' 50.93"W
221	11228.24	0.26	149.842 68.437 158.785 63.251 16.458	S62° 12' 40.75"W N29° 15' 18.91"W N60° 19' 01.00"E S30° 37' 06.96"E S16° 31' 46.72"W
222	11246.39	0.26	45.626 25.653 153.413 61.632 10.733 158.785	N29° 15' 18.91"W N29° 59' 24.57"W N60° 00' 09.21"E S34° 20' 08.64"E S30° 37' 06.96"E S60° 19' 01.00"W
223	10404.05	0.24	69.444 1.228 141.812 19.121 52.607 153.413	N32° 42' 52.17"W N34° 42' 14.11"W N60° 11' 50.93"E S44° 23' 54.46"E S41° 13' 32.39"E S60° 00' 09.21"W
224	10077.33	0.23	76.082 107.059 15.049 12.734 67.457 141.812	N34° 42' 14.11"W N61° 29' 16.19"E N62° 38' 33.02"E S80° 52' 40.72"E S44° 23' 54.46"E S60° 11' 50.93"W
225	5681.35	0.13	42.423 16.251 77.257 39.591 26.626 113.001	S59° 04' 21.80"W N74° 44' 58.22"W N29° 58' 20.85"W N13° 37' 06.14"E N59° 12' 54.01"E S30° 43' 36.20"E
226	4688.64	0.11	113.001 40.779 113.001 42.206	S30° 00' 10.90"E S59° 48' 40.86"W N30° 43' 36.20"W N59° 48' 19.40"E
227	4688.88	0.11	113.001 40.781 113.001 42.208	S29° 16' 46.82"E S60° 32' 07.45"W N30° 00' 10.90"W N60° 31' 45.93"E
228	4689.04	0.11	113.001 40.781 113.001 42.211	S28° 33' 15.41"E S61° 15' 34.10"W N29° 16' 46.82"W N61° 15' 12.61"E
229	5349.98	0.12	85.851 18.662 50.927 113.001 13.417 32.182	S44° 23' 54.46"E S9° 03' 49.08"W S62° 04' 25.02"W N28° 33' 15.41"W N61° 43' 50.31"E S81° 16' 34.92"E
230	5947.15	0.14	113.000 37.369 14.501 74.805 44.241 35.155	N29° 12' 31.25"W N61° 05' 48.93"E S77° 03' 16.76"E S38° 28' 02.27"E S9° 16' 25.01"W S61° 04' 33.80"W

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRALLICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PARCEL INFORMATION TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS109
DRAWING NUMBER 19

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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PARCEL NUMBERS, AREAS, AND LAYOUTS FOR SF-1 PHASE 2 & PHASE 3 LOTS

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
231	5170.47	0.12	113.000 46.506 113.000 45.006	N29° 58' 09.67"W N60° 24' 39.54"E S29° 12' 31.25"E S60° 24' 39.54"W
232	5170.02	0.12	113.000 46.502 113.000 45.002	N30° 43' 47.83"W N59° 39' 01.25"E S29° 58' 09.67"E S59° 39' 01.25"W
233	5637.46	0.13	47.423 113.000 21.963 37.016 79.237 17.175	N58° 52' 55.99"E S30° 43' 47.83"E S59° 05' 03.99"W N78° 41' 03.96"W N38° 05' 26.21"W N9° 17' 25.57"E
234	5774.33	0.13	64.789 113.000 31.052 13.985 107.079	N58° 24' 10.21"E S31° 05' 21.72"E S58° 39' 27.70"W N81° 31' 49.98"W N43° 56' 25.08"W
235	4588.46	0.11	41.248 113.000 39.964 113.000	N59° 14' 10.18"E S30° 26' 17.92"E S59° 14' 10.18"W N31° 05' 21.72"W
236	4588.46	0.11	41.248 113.000 39.964 113.000	N59° 53' 13.98"E S29° 47' 14.13"E S59° 53' 13.98"W N30° 26' 17.92"W
237	4588.46	0.11	41.248 113.000 39.964 113.000	N60° 32' 17.77"E S29° 08' 10.33"E S60° 32' 17.77"W N29° 47' 14.13"W
238	4384.48	0.10	113.000 40.412 102.346 16.433 29.732	N29° 08' 10.33"W N61° 10' 57.83"E S28° 47' 27.31"E S14° 16' 13.67"W S61° 06' 21.51"W
239	6456.72	0.15	41.525 103.968 18.311 60.417 113.000	S58° 00' 02.62"W N47° 30' 03.74"W N4° 57' 18.56"E N57° 52' 03.61"E S31° 40' 33.63"E
240	4764.54	0.11	113.000 41.527 113.000 42.802	S31° 01' 46.06"E S58° 38' 50.16"W N31° 40' 33.63"W N58° 38' 50.16"E
241	4764.85	0.11	41.529 113.000 42.804 0.000 113.000	S59° 17' 37.80"W N31° 01' 46.06"W N59° 17' 37.80"E S30° 22' 58.35"E S30° 22' 58.34"E
242	4765.30	0.11	0.000 42.808 113.000 41.533 113.000	N30° 22' 58.35"W N59° 56' 25.64"E S29° 44' 10.39"E S59° 56' 25.64"W N30° 22' 58.34"W
243	4765.91	0.11	42.814 0.004 112.996 41.538 113.000	N60° 35' 13.73"E S29° 05' 22.15"E S29° 05' 22.15"E S60° 35' 13.73"W N29° 44' 10.39"W
244	5184.04	0.12	40.048 16.582 13.428 88.962 41.499 112.996 0.004	N61° 12' 46.75"E S70° 58' 45.17"E S23° 59' 54.67"E S24° 26' 42.36"E S61° 14' 00.87"W N29° 05' 22.15"W N29° 05' 22.15"W

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
120	11635.18	0.27	14.000 54.561 7.888 80.722 67.363 15.634 70.685 139.590	S59° 46' 28.62"W S59° 11' 02.77"W N75° 48' 57.23"W N30° 37' 06.96"W N30° 33' 15.44"W N68° 30' 27.10"E N68° 40' 22.07"E S25° 49' 16.32"E
121	10204.22	0.23	131.147 70.553 139.590 81.020	S21° 19' 37.93"E S62° 08' 57.81"W N25° 49' 16.32"W N68° 40' 22.07"E
122	9026.16	0.21	69.902 131.147 69.934 128.003	S66° 05' 39.28"W N21° 19' 37.93"W N68° 40' 22.07"E S21° 16' 31.54"E
123	9172.35	0.21	127.956 59.104 11.176 128.003 11.073 62.019	S20° 00' 57.53"E S69° 20' 25.13"W S68° 22' 17.11"W N21° 16' 31.54"W N68° 40' 22.07"E N69° 19' 42.27"E
124	9204.98	0.21	127.972 70.193 127.960 73.672	S18° 00' 54.30"E S71° 12' 57.67"W N19° 34' 21.67"W N71° 12' 22.02"E
125	9205.76	0.21	70.193 127.972 73.672 127.982	S72° 46' 18.60"W N18° 00' 54.30"W N72° 45' 49.39"E S16° 27' 26.92"E
126	9206.38	0.21	127.990 70.193 127.982 73.672	S14° 53' 59.55"E S74° 19' 39.50"W N16° 27' 26.92"W N74° 19' 16.76"E
127	9206.84	0.21	127.996 70.193 127.990 73.672	S13° 20' 32.18"E S75° 53' 00.39"W N14° 53' 59.55"W N75° 52' 44.13"E
128	9207.15	0.21	127.999 70.193 127.996 73.672	S11° 47' 04.81"E S77° 26' 21.26"W N13° 20' 32.18"W N77° 26' 11.50"E
129	9207.31	0.21	128.000 70.192 127.999 73.672	S10° 13' 37.44"E S78° 59' 42.13"W N11° 47' 04.81"W N78° 59' 38.87"E
130	9207.31	0.21	70.192 128.000 73.672 127.999	S80° 33' 02.99"W N10° 13' 37.44"W N80° 33' 06.25"E S8° 40' 10.07"E
131	9207.28	0.21	128.000 70.192 127.999 73.672	S7° 06' 42.70"E S82° 06' 36.87"W N8° 40' 10.07"W N82° 06' 33.62"E
155	7681.24	0.18	105.256 60.000 130.256 35.000 39.270	S47° 30' 03.74"E S42° 29' 56.26"W N47° 30' 03.74"W N42° 29' 56.26"E N87° 29' 56.26"E
156	7815.37	0.18	130.256 60.000 130.256 60.000	N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E S42° 29' 56.26"W
157	7200.00	0.17	60.000 120.000 60.000 120.000	S42° 29' 56.26"W N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
158	7065.87	0.16	39.270 35.000 120.000 60.000 95.000	S2° 30' 03.74"E S42° 29' 56.26"W N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E
159	7200.00	0.17	60.000 60.000 60.000 60.000 120.000	S47° 30' 03.74"E S42° 29' 56.26"W S42° 29' 56.26"W N47° 30' 03.74"W N42° 29' 56.26"E
160	7200.00	0.17	60.000 120.000 60.000 120.000	N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E S42° 29' 56.26"W
161	7200.00	0.17	60.000 120.000 60.000 120.000	N47° 30' 03.74"W N42° 29' 56.26"E S47° 30' 03.74"E S42° 29' 56.26"W
162	7199.90	0.17	120.000 50.155 9.847 120.000 9.848 50.155	S42° 29' 56.26"W N47° 30' 03.74"W N46° 23' 40.99"W N42° 29' 56.26"E S46° 23' 40.99"E S47° 30' 03.74"E
163	8991.91	0.21	59.999 120.000 92.623 120.000	S38° 32' 52.08"E S42° 29' 56.26"W N38° 56' 20.94"W N58° 11' 34.07"E
164	8741.78	0.20	59.999 120.000 88.031 120.000	S25° 03' 59.77"E S58° 11' 34.07"W N25° 03' 59.77"W N71° 40' 26.38"E
165	8741.78	0.20	59.999 120.000 88.031 120.000	S11° 35' 07.46"E S71° 40' 26.38"W N11° 35' 07.46"W N85° 09' 18.69"E
166	8761.47	0.20	60.139 120.000 88.235 120.000	S1° 54' 41.47"W S85° 09' 18.69"W N1° 54' 41.47"E S81° 19' 55.75"E
167	8761.47	0.20	19.547 40.592 120.000 88.235 120.000	S19° 59' 04.23"W S13° 13' 41.45"W N81° 19' 55.75"W N15° 25' 27.03"E S67° 49' 10.20"E
168	8760.47	0.20	60.139 120.000 88.217 120.000	S28° 56' 12.58"W N67° 49' 10.20"W N28° 56' 07.56"E S54° 18' 56.00"E
169	8002.65	0.18	74.259 120.000 29.754 30.290 120.000	N40° 27' 28.94"E S47° 30' 03.74"E S42° 29' 56.24"W S39° 05' 45.83"W N54° 18' 56.00"W
170	8479.00	0.19	49.107 11.018 120.000 83.061 120.000	S47° 58' 17.84"W S42° 29' 56.47"W N47° 30' 03.74"W N47° 15' 28.54"E S36° 28' 31.62"E
171	8762.43	0.20	60.147 120.000 88.246 120.000	S60° 15' 29.69"W N36° 28' 31.62"W N60° 15' 56.86"E S22° 57' 39.18"E
172	8759.48	0.20	119.931 60.155 120.000 88.230	S9° 27' 14.28"E S73° 47' 14.28"W N22° 57' 39.18"W N73° 49' 59.72"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
173	8757.05	0.20	119.941 60.147 119.931 88.235	S4° 03' 45.32"W S87° 18' 58.80"W N9° 27' 14.28"W N87° 18' 22.54"E
174	8759.52	0.20	120.000 60.147 119.941 88.234	S17° 34' 27.83"W N79° 09' 20.03"W N4° 03' 45.32"E S79° 12' 06.86"E
175	8378.25	0.19	14.542 45.573 120.000 81.292 120.000	N61° 36' 51.41"W N67° 15' 59.01"W N17° 34' 27.83"E S66° 16' 29.38"E S27° 45' 22.52"W
176	7776.95	0.18	120.000 60.017 120.000 70.167	S32° 36' 46.04"W N58° 40' 49.17"W N27° 45' 22.52"E S58° 50' 41.47"E
177	7892.37	0.18	120.000 60.017 120.000 72.125	S38° 24' 17.48"W N53° 57' 24.74"W N32° 36' 46.04"E S54° 02' 48.01"E
178	7762.04	0.18	120.000 60.017 120.000 69.890	S43° 07' 41.91"W N49° 14' 00.31"W N38° 24' 17.48"E S49° 14' 00.31"E
179	7762.04	0.18	60.017 120.000 69.890 120.000	N44° 30' 35.87"W N43° 07' 41.91"E S44° 30' 35.87"E S47° 51' 06.34"W
180	7762.04	0.18	120.000 60.017 120.000 69.890	S52° 34' 30.78"W N39° 47' 11.44"W N47° 51' 06.34"E S39° 47' 11.44"E
181	7762.04	0.18	60.017 120.000 69.890 120.000	N35° 03' 47.01"W N52° 34' 30.78"E S35° 03' 47.01"E S57° 17' 55.21"W
182	7762.04	0.18	120.000 60.017 120.000 69.890	S62° 01' 19.64"W N30° 20' 22.57"W N57° 17' 55.21"E S30° 20' 22.57"E
183	7762.04	0.18	69.890 120.000 60.017 120.000	S25° 36' 58.14"E S66° 44' 44.08"W N25° 36' 58.14"W N62° 01' 19.64"E
184	7762.04	0.18	69.890 120.000 60.017 120.000	S20° 53' 33.71"E S71° 28' 08.51"W N20° 53' 33.71"W N66° 44' 44.08"E
185	7621.21	0.17	67.460 120.000 8.445 51.569 120.000	S16° 18' 22.19"E S75° 01' 52.96"W N14° 43' 13.77"W N16° 30' 05.99"W N71° 28' 08.51"E
186	7727.91	0.18	60.000 120.000 68.435 120.000	S16° 58' 45.89"E S71° 00' 35.26"W N16° 58' 45.89"W N75° 01' 52.96"E
187	7727.91	0.18	60.000 120.000 68.435 120.000	S21° 00' 03.59"E S66° 59' 17.57"W N21° 00' 03.59"W N71° 00' 35.26"E

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRALUICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM – EST 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PARCEL INFORMATION TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS109A
DRAWING NUMBER 19A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\18-drawings\85-model\06525-0001_east haven development\source drawings\alignments_065250001_Roads and Lots.dwg, 8/31/2015 6:42:18 PM, rcollier

PARCEL NUMBERS, AREAS, AND LAYOUTS FOR SF-1 PHASE 2 & PHASE 3 LOTS

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
206	10021.23	0.23	136.016 10.043 58.347 144.965 56.985 3.000 5.277 13.778	S26° 48' 04.66"E S68° 46' 33.31"W S68° 40' 22.07"W N26° 48' 04.66"W N63° 11' 55.34"E S26° 48' 04.66"E N63° 11' 55.34"E S51° 45' 38.93"E
207	9646.87	0.22	68.390 138.441 68.078 144.965	S68° 40' 22.07"W N26° 48' 04.66"W N63° 11' 55.34"E S26° 48' 04.66"E
208	9202.72	0.21	138.441 68.390 131.917 68.078	S26° 48' 04.66"E S68° 40' 22.07"W N26° 48' 04.66"W N63° 11' 55.34"E
209	9661.44	0.22	37.585 33.840 77.255 44.056 6.550 75.203 131.917	S68° 40' 22.07"W S68° 19' 31.18"W N30° 37' 06.96"W N30° 37' 06.96"W N16° 17' 24.19"E N63° 11' 55.34"E S26° 48' 04.66"E
245	6279.56	0.14	45.685 40.792 112.995 34.670 13.129 76.708	N4° 51' 00.00"E N57° 30' 20.45"E S32° 12' 09.86"E S57° 32' 10.93"W N85° 06' 46.01"W N47° 30' 03.74"W
246	4948.93	0.11	44.439 112.993 43.158 112.995	N58° 07' 28.84"E S31° 33' 11.56"E S58° 07' 19.29"W N32° 12' 09.86"W
247	4949.18	0.11	112.993 44.441 112.992 43.160	N31° 33' 11.56"W N58° 46' 23.10"E S30° 54' 13.12"E S58° 46' 17.66"W
248	4949.62	0.11	44.446 112.992 43.165 112.992	N59° 25' 17.55"E S30° 15' 14.44"E S59° 25' 16.22"W N30° 54' 13.12"W
249	4950.27	0.11	44.451 112.992 43.170 112.992	N60° 04' 12.26"E S29° 36' 15.47"E S60° 04' 15.04"W N30° 15' 14.44"W
250	4951.11	0.11	43.177 112.992 44.459 112.994	S60° 43' 14.20"W N29° 36' 15.47"W N60° 43' 07.31"E S28° 57' 16.12"E
251	5675.45	0.13	32.916 43.552 75.343 14.553 34.622 112.994	N61° 16' 59.41"E S67° 29' 37.92"E S19° 42' 01.85"E S19° 52' 34.85"W S61° 18' 21.79"W N28° 57' 16.12"W
252	10804.35	0.25	125.006 18.941 73.831 104.653 35.023 56.670	N28° 59' 11.66"W N61° 08' 45.36"E N61° 47' 41.81"E S22° 51' 24.30"E S21° 41' 52.25"W S61° 24' 57.87"W
253	9828.98	0.23	125.008 24.950 54.896 125.006 77.408	N30° 06' 13.49"W N60° 04' 14.87"E N60° 37' 45.78"E S28° 59' 11.66"E S60° 27' 12.25"W
254	9830.89	0.23	125.007 30.962 48.899 125.008 77.423	N31° 13' 16.08"W N58° 59' 43.68"E N59° 33' 14.98"E S30° 06' 13.49"E S59° 20' 17.06"W
255	9833.54	0.23	77.445 125.004 36.978 42.905 125.007	S58° 13' 20.92"W N32° 20' 19.83"W N57° 55' 11.47"E N58° 28' 43.35"E S31° 13' 16.08"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
256	11672.76	0.27	36.913 125.004 56.931 1.003 33.019 107.228 40.720 32.964	N57° 24' 10.53"E S32° 20' 19.83"E S57° 15' 16.20"W S56° 49' 56.24"W N85° 20' 16.78"W N47° 30' 03.74"W N53° 36' 49.10"E N56° 54' 50.70"E
257	8862.35	0.20	35.810 103.886 73.831 125.000 43.961	S77° 05' 24.03"E S31° 39' 59.82"E S61° 47' 41.81"W N28° 43' 17.62"W N61° 34' 36.75"E
258	9370.49	0.22	76.091 125.000 18.941 54.896 125.000	N60° 45' 42.80"E S28° 43' 17.62"E S61° 08' 45.36"W S60° 37' 45.78"W N29° 45' 16.78"W
259	9372.02	0.22	125.000 76.103 125.000 24.950 48.899	N30° 47' 16.55"W N59° 43' 43.34"E S29° 45' 16.78"E S60° 04' 14.87"W S59° 33' 14.98"W
260	9374.30	0.22	76.122 125.000 30.962 42.905 125.000	N58° 41' 43.11"E S30° 47' 16.55"E S58° 59' 43.68"W S58° 28' 43.35"W N31° 49' 17.22"W
261	9377.35	0.22	76.147 125.000 36.978 36.913 125.000	N57° 39' 41.83"E S31° 49' 17.22"E S57° 55' 11.47"W S57° 24' 10.53"W N32° 51' 19.11"W
262	11069.65	0.25	33.970 125.000 32.964 40.720 98.115 43.871 42.066	N56° 54' 50.70"E S32° 51' 19.11"E S56° 54' 50.70"W S53° 36' 49.10"W N47° 30' 03.74"W N2° 46' 16.86"E N55° 20' 52.37"E
263	10132.98	0.23	93.935 46.524 68.914 120.107 66.941	S49° 00' 42.97"E S8° 16' 07.37"W S61° 07' 09.19"W N31° 47' 45.97"W N61° 01' 35.82"E
264	7923.09	0.18	65.111 120.107 66.941 120.107	S60° 13' 12.13"W N32° 40' 11.19"W N60° 09' 10.61"E S31° 47' 45.97"E
265	7923.09	0.18	120.107 65.111 120.107 66.941	S32° 40' 11.19"E S59° 20' 46.92"W N33° 32' 36.41"W N59° 16' 45.39"E
266	7923.09	0.18	65.111 120.107 66.941 120.107	S58° 28' 21.70"W N34° 25' 01.62"W N58° 24' 20.17"E S33° 32' 36.41"E
267	7923.55	0.18	65.115 120.107 66.945 120.107	S57° 35' 56.39"W N35° 17' 27.02"W N57° 31' 54.87"E S34° 25' 01.62"E
268	7602.79	0.17	120.107 35.673 24.121 119.984 35.444 31.535	S35° 17' 27.02"E S56° 55' 22.10"W S55° 46' 52.79"W N38° 43' 37.22"W N55° 10' 45.10"E N56° 53' 21.34"E
269	7973.72	0.18	37.262 36.789 31.119 68.011 67.207 119.984	S51° 03' 13.63"W N89° 39' 30.27"W N47° 30' 03.74"W N37° 59' 48.61"W N50° 49' 21.23"E S38° 43' 37.22"E
270	9690.64	0.22	46.000 29.863 99.795 116.950 128.437	S14° 17' 29.47"W S56° 52' 38.89"W S52° 34' 11.79"W N6° 19' 32.67"W N86° 57' 08.68"E

Parcel Table

Parcel #	Area (SF)	Area (Ac)	Segment Lengths	Segment Bearings
271	10338.64	0.24	46.000 128.437 116.216 8.406 121.517	S39° 59' 06.99"W S86° 57' 08.68"W N26° 15' 29.72"E N42° 29' 56.22"E S56° 33' 49.69"E
272	9705.18	0.22	120.019 46.000 121.517 32.408 81.659	S24° 19' 37.62"E S50° 25' 20.96"W N56° 33' 49.69"W N42° 29' 56.22"E N53° 52' 43.67"E
273	10712.82	0.25	120.674 46.000 120.019 130.291	S15° 36' 40.30"W S80° 31' 32.83"W N24° 19' 37.62"W N83° 31' 53.88"E
274	11436.85	0.26	87.338 136.108 44.844 120.674 57.036	S58° 32' 23.65"E S60° 27' 21.89"W N69° 35' 13.11"W N15° 36' 40.30"E S70° 15' 37.22"E

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PREUMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM – EST 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PARCEL INFORMATION TABLES

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS109B
DRAWING NUMBER 19B

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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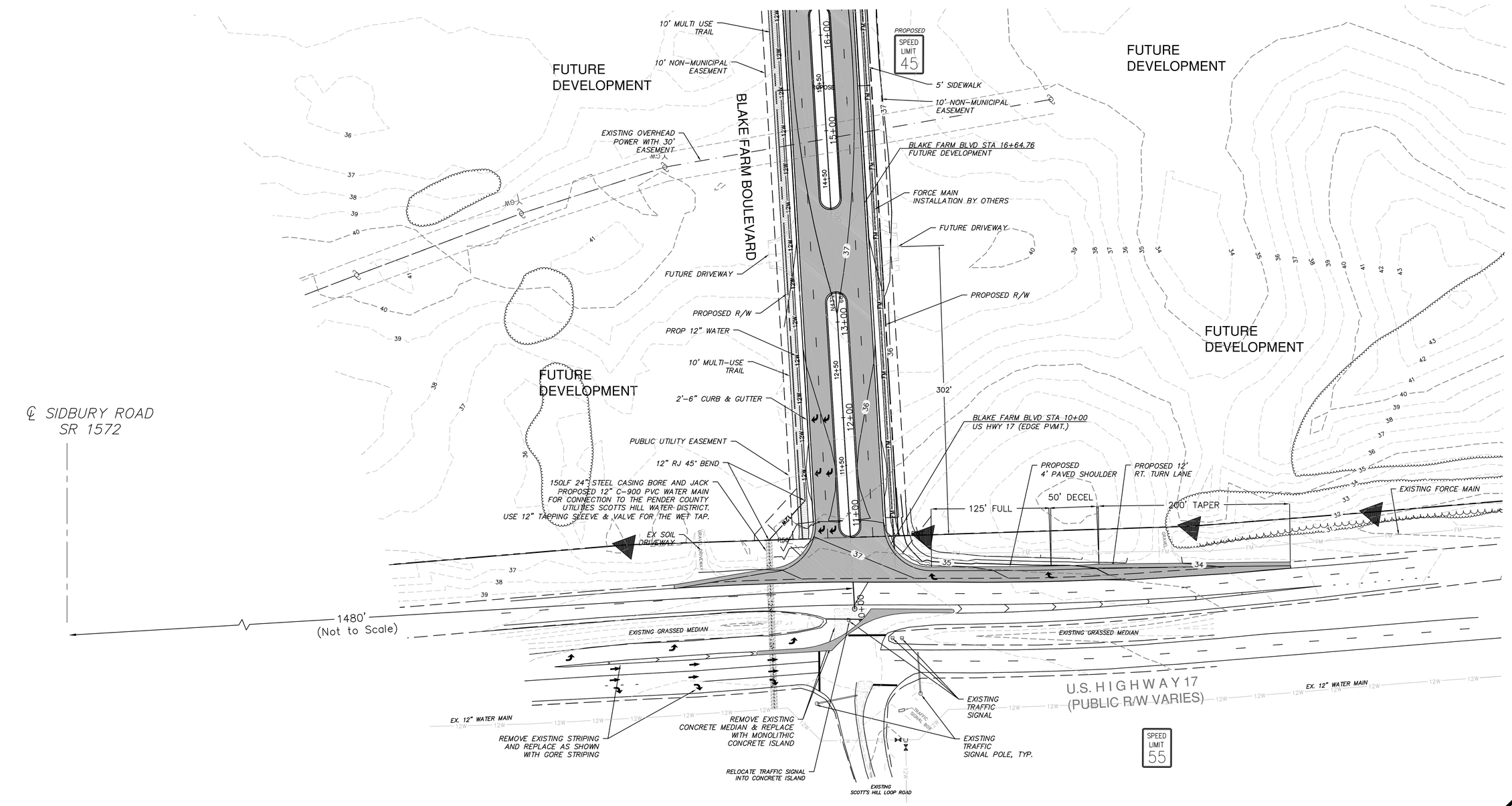

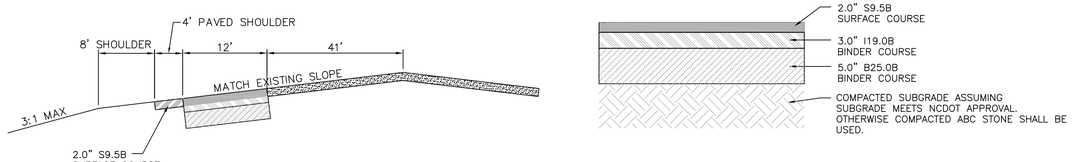

RIGHT TURN LANE ASPHALT PAVEMENT SECTION
(US HWY 17)

SCALE: 1" = 50
0 25 50 100 150

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURS HAMPSTEAD; LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL
FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

US HWY 17
ROADWAY IMPROVEMENTS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CS110
DRAWING NUMBER 20

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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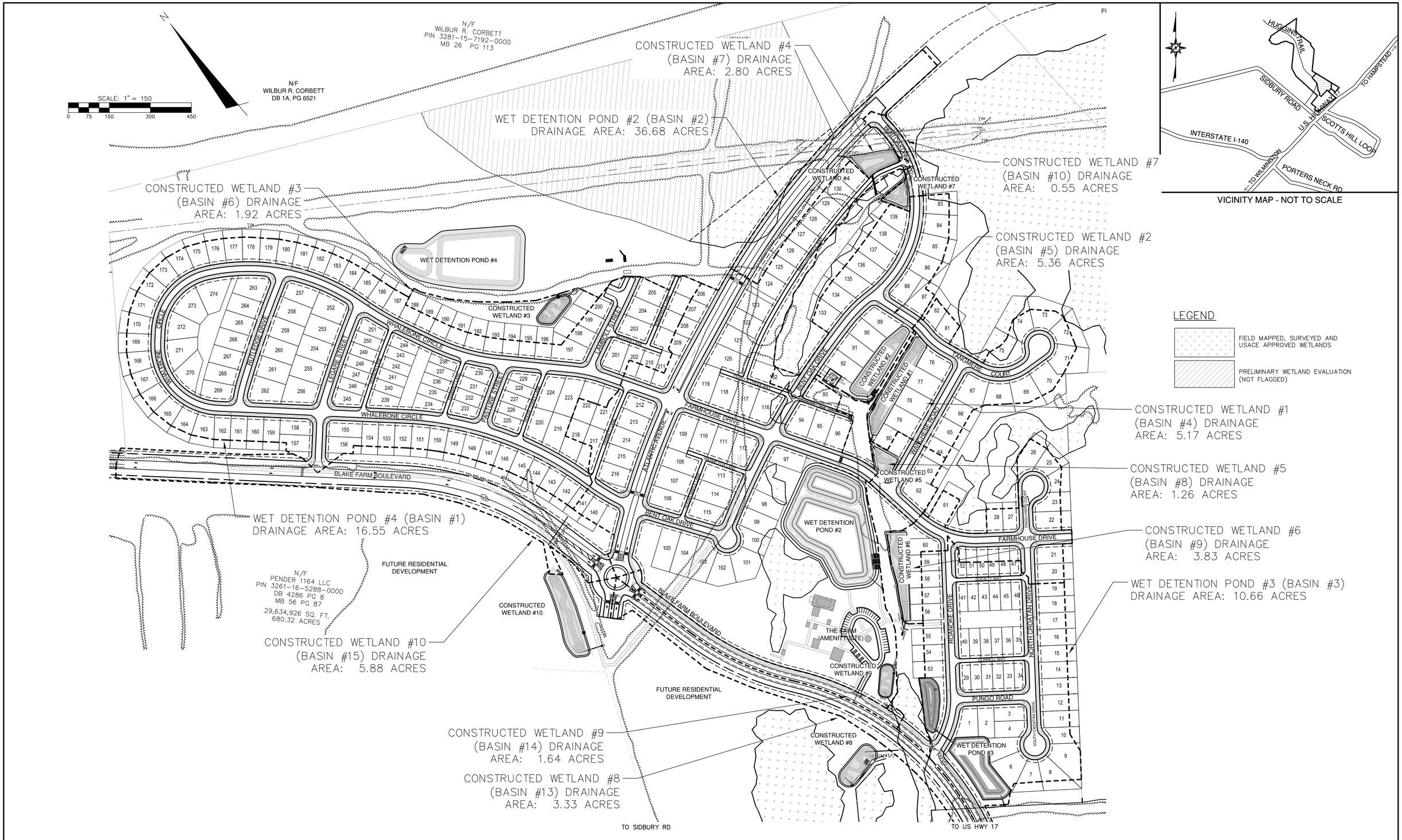

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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Trask Land CO INC
1202 Eastwood Road
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

DRAINAGE AREA PLAN

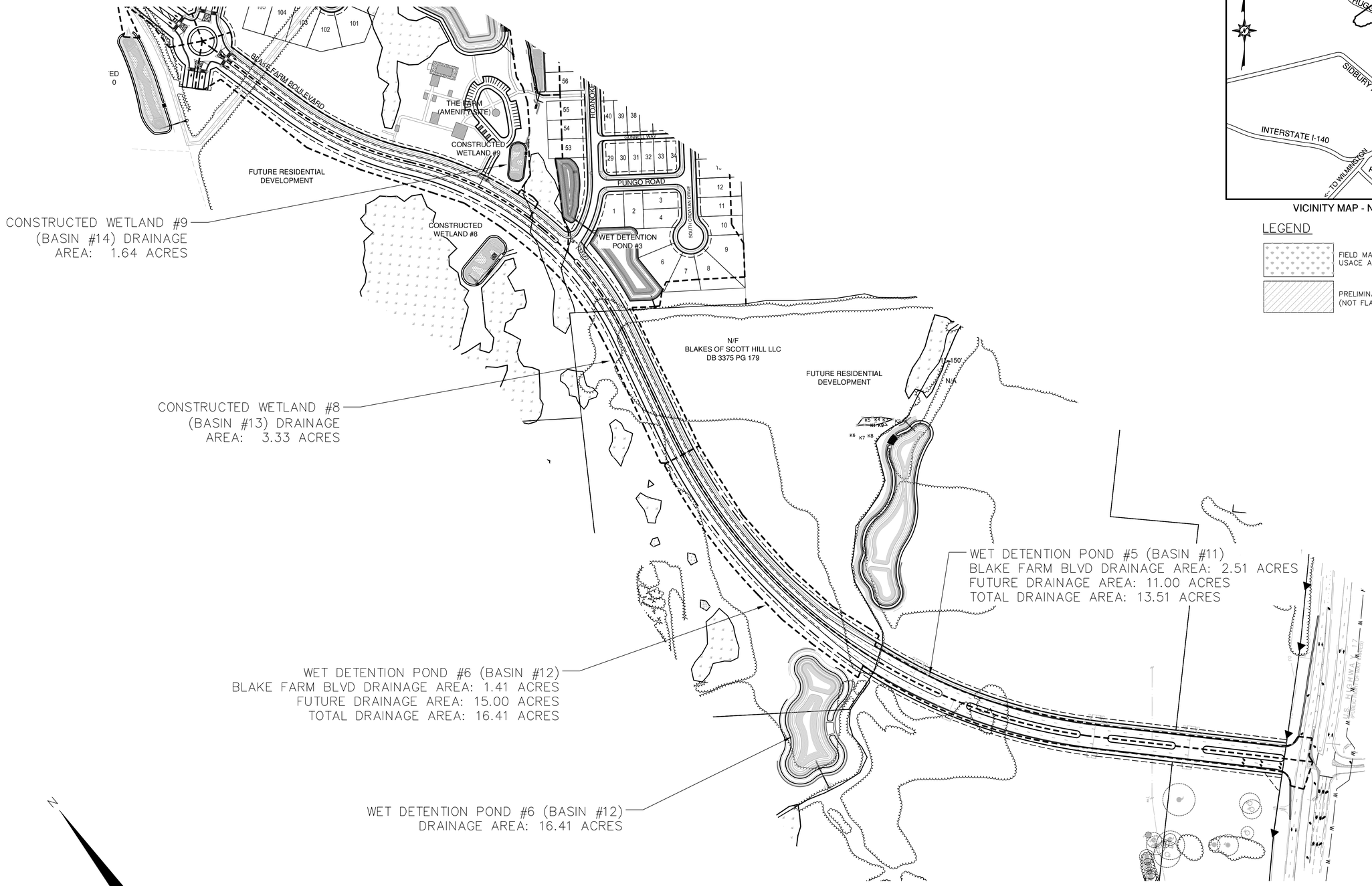
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

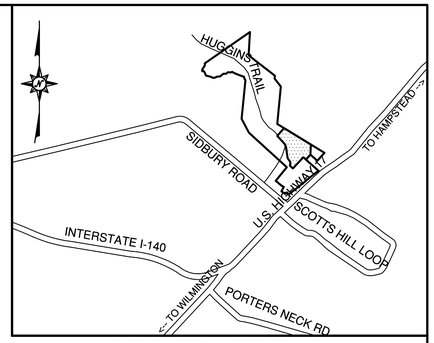
SCALE
HORIZONTAL: 1"=150'
VERTICAL: N/A

M&C FILE NUMBER CD101
DRAWING NUMBER 20A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CD101_065250001.dwg, 9/1/2015 5:16:36 PM, rcollier





VICINITY MAP - NOT TO SCALE

LEGEND

- FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
- PRELIMINARY WETLAND EVALUATION (NOT FLAGGED)

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURES HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW.	10/10/14
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REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

DRAINAGE AREA PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CD102
DRAWING NUMBER 20B

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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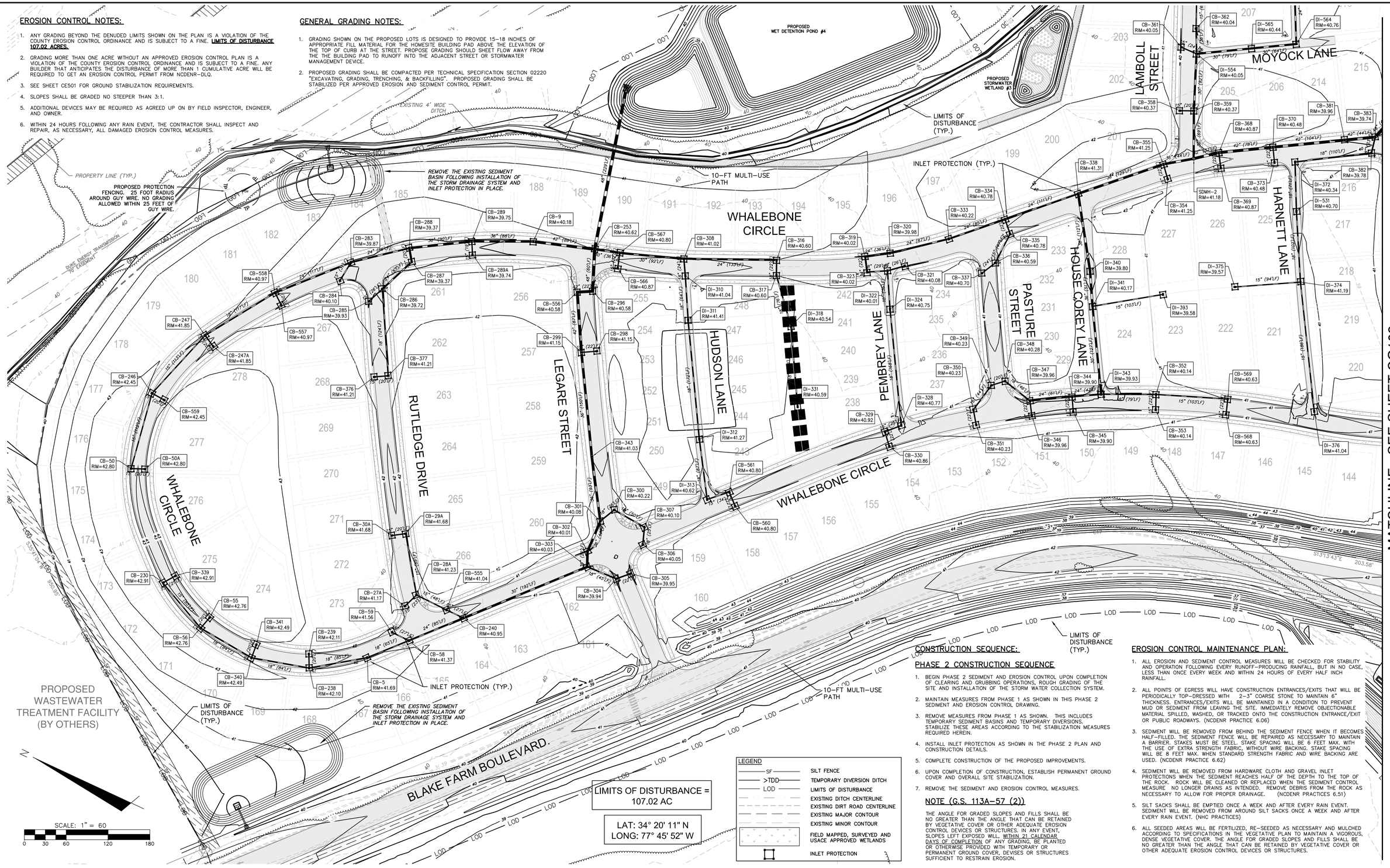
EROSION CONTROL NOTES:

1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE. **LIMITS OF DISTURBANCE 107.02 ACRES.**
2. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE. ANY BUILDER THAT ANTICIPATES THE DISTURBANCE OF MORE THAN 1 CUMULATIVE ACRE WILL BE REQUIRED TO GET AN EROSION CONTROL PERMIT FROM NCDENR–DLQ.
3. SEE SHEET CE501 FOR GROUND STABILIZATION REQUIREMENTS.
4. SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
5. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UP ON BY FIELD INSPECTOR, ENGINEER, AND OWNER.
6. WITHIN 24 HOURS FOLLOWING ANY RAIN EVENT, THE CONTRACTOR SHALL INSPECT AND REPAIR, AS NECESSARY, ALL DAMAGED EROSION CONTROL MEASURES.

GENERAL GRADING NOTES:

1. GRADING SHOWN ON THE PROPOSED LOTS IS DESIGNED TO PROVIDE 15–18 INCHES OF APPROPRIATE FILL MATERIAL FOR THE HOMESITE BUILDING PAD ABOVE THE ELEVATION OF THE TOP OF CURB AT THE STREET. PROPOSE GRADING SHOULD SHEET FLOW AWAY FROM THE THE BUILDING PAD TO RUNOFF INTO THE ADJACENT STREET OR STORMWATER MANAGEMENT DEVICE.
2. PROPOSED GRADING SHALL BE COMPACTED PER TECHNICAL SPECIFICATION SECTION 02220 "EXCAVATING, GRADING, TRENCHING, & BACKFILLING". PROPOSED GRADING SHALL BE STABILIZED PER APPROVED EROSION AND SEDIMENT CONTROL PERMIT.



CONSTRUCTION SEQUENCE:

PHASE 2 CONSTRUCTION SEQUENCE

1. BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
2. MAINTAIN MEASURES FROM PHASE 1 AS SHOWN IN THIS PHASE 2 SEDIMENT AND EROSION CONTROL DRAWING.
3. REMOVE MEASURES FROM PHASE 1 AS SHOWN. THIS INCLUDES TEMPORARY SEDIMENT BASINS AND TEMPORARY DIVERSIONS. STABILIZE THESE AREAS ACCORDING TO THE STABILIZATION MEASURES REQUIRED HEREIN.
4. INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 2 PLAN AND CONSTRUCTION DETAILS.
5. COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
7. REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.

NOTE (G.S. 113A–57 (2))

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 GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVISES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF–PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES/EXITS THAT WILL BE PERIODICALLY TOP–DRESSED WITH 2–3" COARSE STONE TO MAINTAIN 6" THICKNESS. ENTRANCES/EXITS WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO THE CONSTRUCTION ENTRANCE/EXIT OR PUBLIC ROADWAYS. (NCDENR PRACTICE 6.06)
3. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF–FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. (NCDENR PRACTICE 6.62)
4. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTIONS WHEN THE SEDIMENT REACHES HALF OF THE DEPTH TO THE TOP OF THE ROCK. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT CONTROL MEASURE NO LONGER DRAINS AS INTENDED. REMOVE DEBRIS FROM THE ROCK AS NECESSARY TO ALLOW FOR PROPER DRAINAGE. (NCDENR PRACTICES 6.51)
5. SILT SACKS SHALL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND SILT SACKS ONCE A WEEK AND AFTER EVERY RAIN EVENT. (NHC PRACTICES)
6. ALL SEEDED AREAS WILL BE FERTILIZED, RE–SEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. 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.

LEGEND

SF	SILT FENCE
>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
	INLET PROTECTION

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
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REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

STORM DRAINAGE & GRADING PLAN - EROSION CONTROL PHASE 2

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CG101
DRAWING NUMBER 21

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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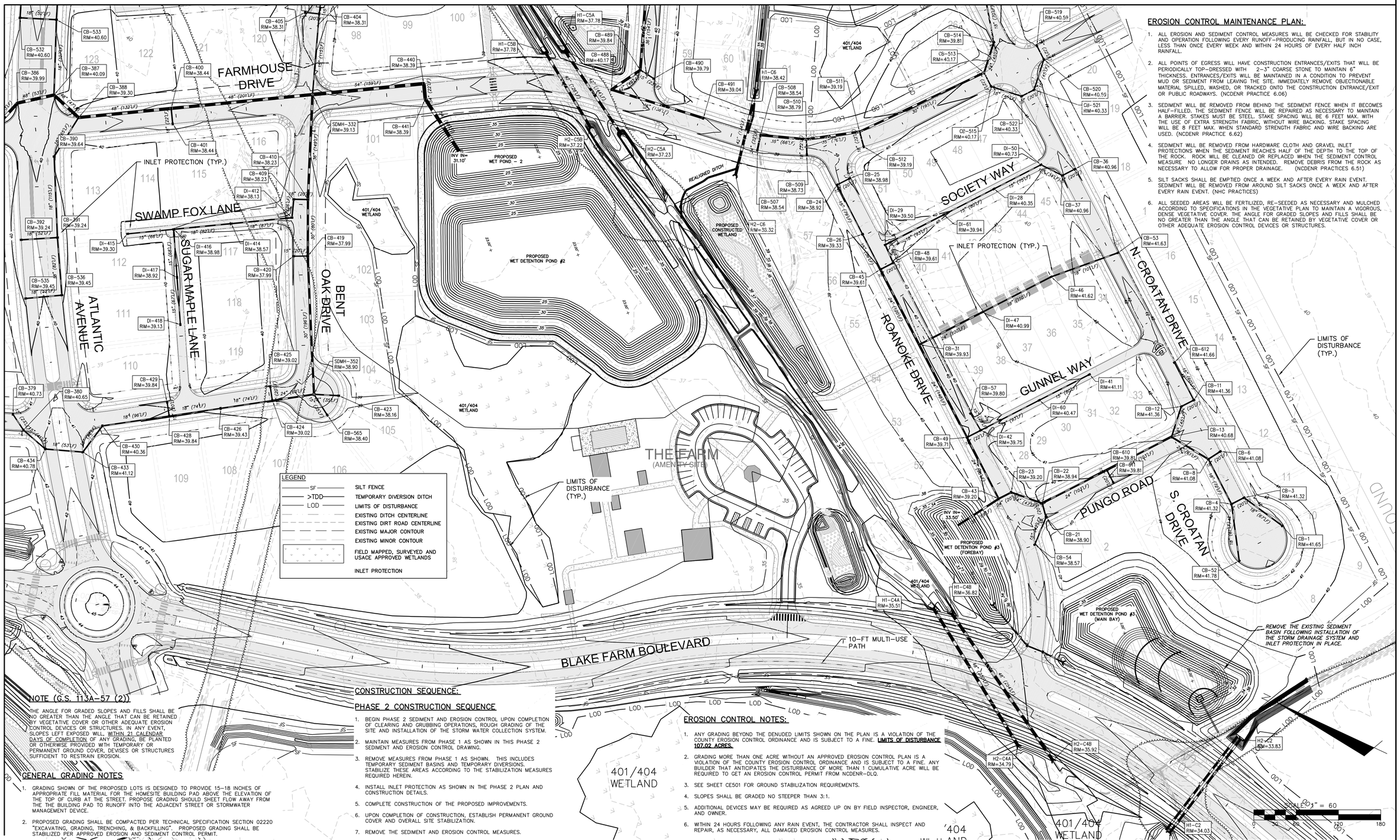
MATCHLINE - SEE SHEET CG103

MATCHLINE - SEE SHEET CG101



LEGEND

SF	SILT FENCE
>TDD	TEMPORARY DIVERSION DITCH
LOD	LIMITS OF DISTURBANCE
	EXISTING DITCH CENTERLINE
	EXISTING DIRT ROAD CENTERLINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	FIELD MAPPED, SURVEYED AND USACE APPROVED WETLANDS
	INLET PROTECTION

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES/EXITS THAT WILL BE PERIODICALLY TOP-DRESSED WITH 2-3" COARSE STONE TO MAINTAIN 6" THICKNESS. ENTRANCES/EXITS WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO THE CONSTRUCTION ENTRANCE/EXIT OR PUBLIC ROADWAYS. (NCDENR PRACTICE 6.06)
3. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF-FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. (NCDENR PRACTICE 6.62)
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5. SILT SACKS SHALL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND SILT SACKS ONCE A WEEK AND AFTER EVERY RAIN EVENT. (NHC PRACTICES)
6. ALL SEEDED AREAS WILL BE FERTILIZED, RE-SEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. 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.

NOTE (G.S. 113A-57 (2))

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 GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVISES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

GENERAL GRADING NOTES

1. GRADING SHOWN OF THE PROPOSED LOTS IS DESIGNED TO PROVIDE 15-18 INCHES OF APPROPRIATE FILL MATERIAL FOR THE HOMESITE BUILDING PAD ABOVE THE ELEVATION OF THE TOP OF CURB AT THE STREET. PROPOSE GRADING SHOULD SHEET FLOW AWAY FROM THE THE BUILDING PAD TO RUNOFF INTO THE ADJACENT STREET OR STORMWATER MANAGEMENT DEVICE.
2. PROPOSED GRADING SHALL BE COMPACTED PER TECHNICAL SPECIFICATION SECTION 02220 "EXCAVATING, GRADING, TRENCHING, & BACKFILLING". PROPOSED GRADING SHALL BE STABILIZED PER APPROVED EROSION AND SEDIMENT CONTROL PERMIT.

CONSTRUCTION SEQUENCE:

PHASE 2 CONSTRUCTION SEQUENCE

1. BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
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4. INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 2 PLAN AND CONSTRUCTION DETAILS.
5. COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
7. REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.

EROSION CONTROL NOTES:

1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE. **LIMITS OF DISTURBANCE 107.02 ACRES.**
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3. SEE SHEET CE501 FOR GROUND STABILIZATION REQUIREMENTS.
4. SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
5. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UP ON BY FIELD INSPECTOR, ENGINEER, AND OWNER.
6. WITHIN 24 HOURS FOLLOWING ANY RAIN EVENT, THE CONTRACTOR SHALL INSPECT AND REPAIR, AS NECESSARY, ALL DAMAGED EROSION CONTROL MEASURES.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
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REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM - EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP

PENDER COUNTY NORTH CAROLINA

STORM DRAINAGE & GRADING PLAN - EROSION CONTROL PHASE 2

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CG102

DRAWING NUMBER 22

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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EROSION CONTROL NOTES:

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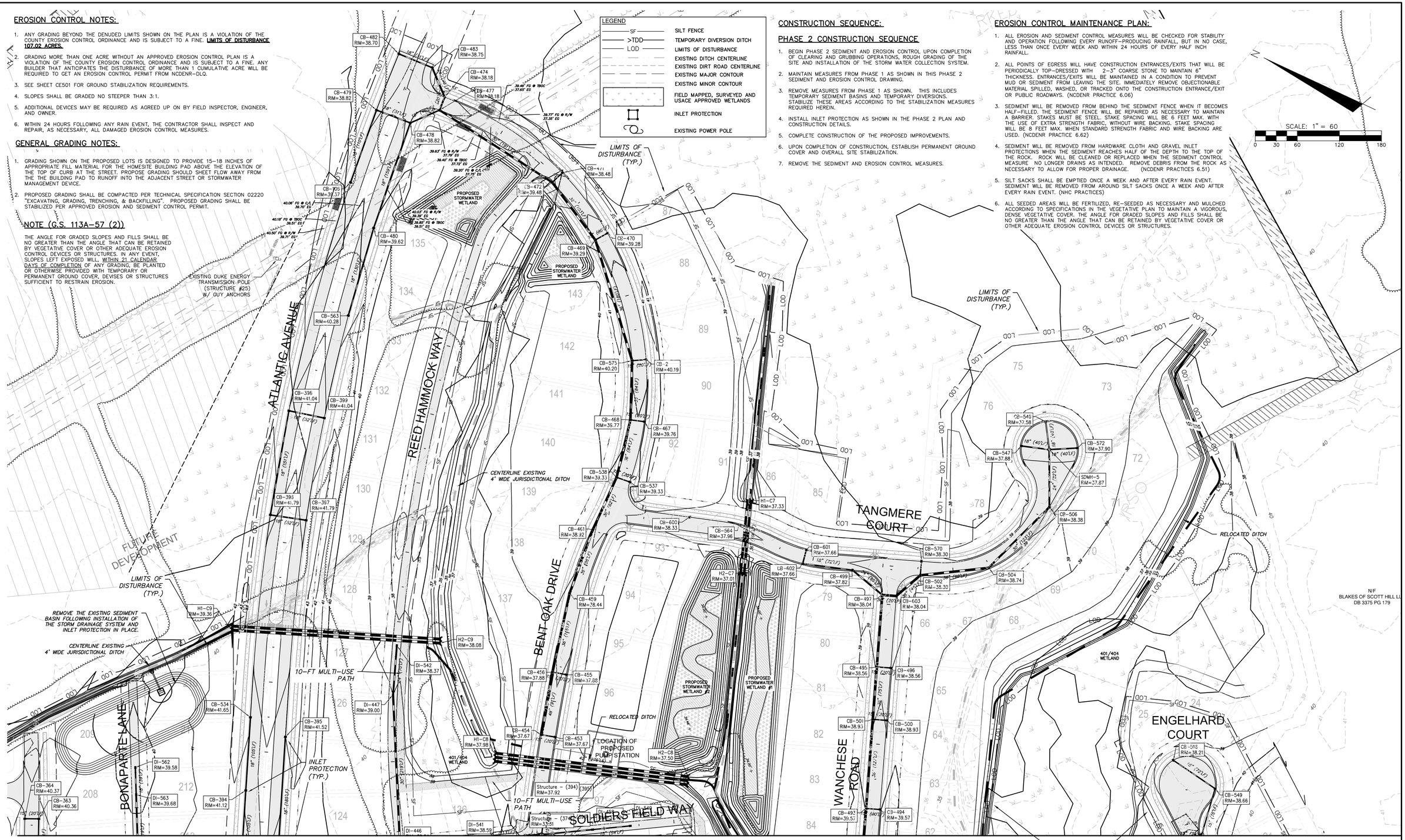
NOTE (G.S. 113A-57 (2))

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 GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVISES OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.



CONSTRUCTION SEQUENCE:

PHASE 2 CONSTRUCTION SEQUENCE

1. BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
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5. COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
7. REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES/EXITS THAT WILL BE PERIODICALLY TOP-DRESSED WITH 2-3" COARSE STONE TO MAINTAIN 6" THICKNESS. ENTRANCES/EXITS WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO THE CONSTRUCTION ENTRANCE/EXIT OR PUBLIC ROADWAYS. (NCDENR PRACTICE 6.06)
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4. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTIONS WHEN THE SEDIMENT REACHES HALF OF THE DEPTH TO THE TOP OF THE ROCK. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT CONTROL MEASURE NO LONGER DRAINS AS INTENDED. REMOVE DEBRIS FROM THE ROCK AS NECESSARY TO ALLOW FOR PROPER DRAINAGE. (NCDENR PRACTICES 6.51)
5. SILT SACKS SHALL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND SILT SACKS ONCE A WEEK AND AFTER EVERY RAIN EVENT. (NHC PRACTICES)
6. ALL SEEDED AREAS WILL BE FERTILIZED, RE-SEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. 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.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM - EST. 1946 -

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

STORM DRAIN & GRADING PLAN - EROSION CONTROL PHASE 2

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CG103
DRAWING NUMBER 23

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-441	POND-2	31.64'	31.46'	54"	88.07'	0.20%
CB-440	CB-441	31.68'	31.64'	54"	22.00'	0.18%
SDMH-332	CB-440	32.00'	31.68'	54"	158.52'	0.20%
CB-387	CB-388	33.56'	33.30'	48"	47.37'	0.55%
CB-386	CB-387	33.66'	33.56'	48"	52.91'	0.19%
CB-383	CB-386	33.75'	33.66'	48"	43.10'	0.21%
CB-400	SDMH-332	32.40'	32.00'	48"	201.29'	0.20%
CB-388	CB-400	33.30'	32.40'	48"	131.94'	0.68%
CB-381	CB-383	34.27'	34.18'	42"	43.82'	0.21%
CB-370	CB-381	34.79'	34.27'	42"	103.56'	0.50%
CB-368	CB-370	34.94'	34.79'	42"	78.10'	0.19%
SDMH-2	CB-368	35.02'	34.94'	42"	37.06'	0.22%
DI-341	DI-340	34.05'	33.79'	36"	50.77'	0.51%
DI-340	CB-338	33.79'	33.05'	36"	112.22'	0.66%
CB-338	CB-355	35.37'	35.11'	36"	129.40'	0.20%
CB-410	SDMH-332	31.90'	31.15'	36"	149.08'	0.50%
DI-541	SDMH-15	28.53'	28.08'	36"	113.03'	0.40%
CB-355	SDMH-2	35.11'	35.02'	36"	44.11'	0.20%
DI-565	DI-554	36.13'	35.97'	30"	79.47'	0.20%
DI-343	DI-341	34.68'	34.05'	30"	126.70'	0.50%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
SDMH-352	CB-419	33.28'	32.30'	30"	196.36'	0.50%
CB-419	CB-410	32.30'	31.90'	30"	80.23'	0.50%
DI-447	DI-446	30.07'	28.98'	30"	219.49'	0.50%
DI-446	DI-541	28.98'	28.53'	30"	89.79'	0.50%
DI-564	DI-565	36.26'	36.13'	30"	64.19'	0.20%
CB-359	SDMH-2	35.64'	35.50'	30"	68.62'	0.20%
DI-554	CB-359	35.80'	35.64'	30"	81.88'	0.20%
CB-323	CB-319	36.11'	36.00'	24"	22.00'	0.50%
CB-319	CB-320	36.00'	35.93'	24"	35.67'	0.20%
CB-320	CB-333	35.93'	35.76'	24"	87.07'	0.20%
CB-333	CB-334	35.76'	35.59'	24"	85.32'	0.20%
CB-347	CB-344	36.21'	35.91'	24"	60.79'	0.49%
CB-344	DI-343	35.91'	35.18'	24"	41.84'	1.74%
CB-334	CB-338	35.59'	35.37'	24"	111.21'	0.20%
CB-424	SDMH-352	35.27'	33.78'	24"	59.66'	2.50%
DI-542	DI-447	30.52'	30.07'	24"	70.33'	0.64%
DI-563	DI-564	36.50'	36.26'	24"	118.58'	0.20%
DI-328	DI-324	37.37'	36.54'	18"	167.70'	0.49%
DI-324	DI-322	36.54'	36.26'	18"	55.06'	0.51%
CB-323	DI-322	36.54'	36.11'	18"	29.30'	1.47%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
DI-322	CB-321	36.54'	36.83'	18"	25.84'	1.12%
CB-348	CB-347	36.79'	36.57'	18"	45.61'	0.48%
CB-352	DI-343	36.89'	35.68'	18"	78.71'	1.54%
DI-374	DI-531	35.10'	34.59'	18"	101.76'	0.50%
CB-535	CB-536	36.20'	35.94'	18"	51.50'	0.50%
CB-536	CB-391	35.94'	35.53'	18"	81.94'	0.50%
CB-392	CB-391	35.99'	35.73'	18"	51.50'	0.50%
CB-391	CB-390	35.53'	34.95'	18"	115.15'	0.50%
CB-433	CB-430	37.12'	36.89'	18"	46.38'	0.50%
CB-434	CB-433	37.39'	37.12'	18"	52.93'	0.50%
CB-423	SDMH-352	34.91'	34.28'	18"	35.00'	1.80%
CB-426	CB-424	36.04'	35.27'	18"	74.23'	1.04%
CB-428	CB-426	36.41'	36.04'	18"	73.62'	0.50%
CB-430	CB-428	36.89'	36.41'	18"	95.73'	0.50%
CB-409	CB-410	33.48'	31.90'	18"	20.00'	7.90%
DI-412	CB-409	33.61'	33.48'	18"	26.22'	0.50%
DI-414	DI-412	34.04'	33.61'	18"	86.61'	0.50%
DI-416	DI-414	34.45'	34.04'	18"	81.82'	0.50%
DI-458	SDMH-15	32.93'	32.93'	18"	72.89'	0.00%
CB-534	CB-394	35.33'	34.80'	18"	104.59'	0.50%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-394	CB-532	34.80'	34.28'	18"	105.45'	0.50%
CB-532	CB-533	34.28'	34.02'	18"	51.50'	0.50%
CB-395	CB-533	38.27'	37.35'	18"	184.75'	0.50%
CB-533	CB-387	34.02'	33.49'	18"	106.79'	0.50%
DI-562	DI-563	36.58'	36.50'	18"	38.73'	0.20%
CB-390	CB-388	34.95'	34.62'	18"	65.21'	0.51%
DI-531	DI-372	34.59'	34.23'	18"	70.80'	0.50%
DI-372	CB-382	34.23'	33.68'	18"	110.42'	0.50%
CB-382	CB-383	33.68'	33.56'	18"	23.24'	0.52%
CB-362	DI-554	36.66'	35.80'	18"	36.30'	2.37%
CB-401	CB-400	35.19'	35.08'	18"	22.00'	0.50%
CB-404	SDMH-332	29.93'	29.36'	15"	114.85'	0.50%
SDMH-15	CB-404	32.70'	29.93'	15"	36.91'	7.50%
CB-407	SDMH-15	31.84'	29.62'	15"	40.36'	5.50%
CB-406	CB-407	32.48'	32.38'	15"	19.99'	0.50%
CB-329	CB-330	37.50'	37.61'	15"	22.00'	0.50%
CB-329	DI-328	37.50'	37.37'	15"	25.25'	0.51%
CB-337	CB-336	37.70'	37.57'	15"	24.22'	0.54%
CB-336	CB-335	37.57'	37.33'	15"	46.67'	0.51%
CB-335	CB-334	37.33'	37.22'	15"	22.00'	0.50%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-351	CB-350	37.23'	37.12'	15"	22.00'	0.50%
CB-350	CB-349	37.12'	36.90'	15"	43.63'	0.50%
CB-349	CB-348	36.90'	36.79'	15"	20.39'	0.54%
CB-346	CB-347	36.96'	36.85'	15"	22.00'	0.50%
CB-345	CB-344	36.90'	36.79'	15"	22.00'	0.50%
CB-568	CB-569	37.63'	37.52'	15"	22.00'	0.50%
CB-353	CB-352	37.14'	37.03'	15"	22.00'	0.50%
CB-569	CB-352	37.52'	36.89'	15"	103.03'	0.61%
DI-393	DI-341	35.58'	34.05'	15"	102.51'	1.49%
CB-354	CB-355	38.15'	38.04'	15"	22.00'	0.50%
DI-376	DI-374	37.04'	35.10'	15"	186.47'	1.04%
DI-375	DI-374	35.57'	35.10'	15"	94.27'	0.50%
CB-379	CB-380	37.73'	37.60'	15"	27.13'	0.50%
CB-380	CB-434	37.60'	37.39'	15"	41.22'	0.50%
CB-420	CB-419	34.99'	34.89'	15"	20.00'	0.50%
CB-565	SDMH-352	35.40'	34.53'	15"	35.00'	2.49%
CB-425	CB-424	36.02'	35.92'	15"	20.00'	0.50%
CB-429	CB-428	36.84'	36.74'	15"	20.00'	0.50%
DI-415	DI-416	35.30'	34.45'	15"	65.59'	1.30%
DI-417	DI-416	34.79'	34.45'	15"	68.37'	0.50%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
DI-418	DI-417	35.13'	34.79'	15"	67.09'	0.51%
CB-404	CB-405	35.31'	35.21'	15"	20.01'	0.50%
DI-540	DI-458	33.20'	32.93'	15"	54.00'	0.50%
CB-363	CB-362	37.17'	36.66'	15"	61.78'	0.83%
CB-364	CB-363	37.27'	37.17'	15"	20.00'	0.50%
CB-373	CB-370	37.38'	37.16'	15"	22.00'	1.00%
CB-369	CB-368	37.87'	37.76'	15"	22.00'	0.50%
CB-358	CB-359	37.37'	37.27'	15"	20.00'	0.50%
CB-361	DI-554	37.05'	36.05'	15"	23.65'	4.23%

POND - 2 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-43	POND-3 INLET-1	32.62'	27.00'	30"	69.00'	8.14%
CB-8	CB-13	37.33'	36.93'	24"	61.06'	0.66%
CB-13	CB-610	36.93'	36.06'	24"	103.00'	0.84%
CB-610	CB-22	36.06'	35.19'	24"	103.00'	0.84%
CB-22	CB-23	32.96'	32.72'	24"	46.70'	0.50%
CB-23	CB-43	32.72'	32.62'	24"	20.00'	0.50%
CB-49	CB-43	33.54'	33.05'	24"	97.98'	0.50%
DI-47	CB-31	36.32'	34.28'	24"	100.00'	2.04%
CB-31	CB-49	34.28'	33.54'	24"	148.00'	0.50%
CB-45	CB-31	34.88'	34.28'	24"	120.00'	0.50%
BFB INLET	CB-59	34.00'	33.90'	18"	32.46'	0.31%
CB-59	CB-58	33.90'	33.85'	18"	24.06'	0.21%
CB-58	POND-3 INLET-2	33.85'	33.25'	18"	75.47'	0.80%
CB-11	CB-12	38.11'	38.01'	18"	20.00'	0.50%
CB-1	CB-3	38.40'	38.06'	18"	67.41'	0.50%
CB-52	CB-4	38.40'	37.97'	18"	81.46'	0.53%
CB-3	CB-4	38.06'	37.96'	18"	20.00'	0.50%
CB-4	CB-8	37.96'	37.60'	18"	71.66'	0.50%
CB-6	CB-8	37.83'	37.73'	18"	20.10'	0.50%
CB-12	CB-13	38.01'	37.43'	18"	45.25'	1.28%

STORM DRAINAGE SCHEDULE

START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-21	CB-22	33.06'	32.96'	18"	20.47'	0.50%
DI-42	CB-49	35.73'	35.62'	18"	21.75'	0.50%
CB-53	DI-46	38.25'	37.44'	18"	100.84'	0.80%
DI-46	DI-47	37.44'	36.82'	18"	110.00'	0.56%
CB-48	CB-45	34.98'	34.88'	18"	20.00'	0.50%
DI-29	CB-48	35.12'	34.98'	18"	28.05'	0.50%
DI-61	DI-29	35.59'	35.12'	18"	93.25'	0.50%
CB-612	CB-11	38.66'	38.36'	15"	60.02'	0.50%
CB-611	CB-610	36.81'	36.71'	15"	20.00'	0.50%
CB-54	CB-21	33.27'	33.06'	15"	42.00'	0.50%
CB-57	DI-42	36.80'	35.73'	15"	28.05'	3.81%
DI-60	DI-42	36.22'	35.73'	15"	93.25'	0.53%
DI-41	DI-60	37.11'	36.22'	15"	80.00'	1.11%
CB-36	CB-37	37.96'	37.86'	15"	20.00'	0.50%
CB-37	DI-50	37.86'	36.73'	15"	33.95'	3.33%
DI-50	DI-28	36.73'	36.35'	15"	75.00'	0.50%
DI-28	DI-61	36.10'	35.59'	15"	80.00'	0.64%
CB-26	CB-45	35.49'	35.21'	15"	56.00'	0.50%
CB-24	CB-26	35.88'	35.49'	15"	78.80'	0.50%
CB-25	CB-24	35.98'	35.88'	15"	20.00'	0.50%

POND - 3 STORM DRAINAGE SYSTEM SCHEDULE

NOTE: SEE SHEETS CT-503 THRU CT-506 FOR NCDOT DETAILS FOR STORM STRUCTURES, FRAMES, AND GRATES.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

STORM DRAINAGE SCHEDULE
SF-1 SUBDIVISION

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CG104
DRAWING NUMBER 23A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-296	POND-4 CB-253	33.00'	32.70'	48"	60.34'	0.50%
CB-253	POND-4	32.70'	30.00'	48"	228.89'	1.18%
CB-299	CB-556	33.55'	33.11'	42"	86.71'	0.50%
CB-556	CB-296	33.11'	33.00'	42"	22.00'	0.50%
CB-9	CB-253	33.48'	32.70'	42"	88.86'	0.88%
CB-289	CB-9	33.92'	33.48'	36"	88.08'	0.50%
CB-288	CB-289	34.37'	33.92'	36"	90.24'	0.50%
CB-303	CB-302	35.28'	35.00'	36"	21.86'	1.28%
CB-302	CB-301	35.00'	34.76'	36"	47.33'	0.51%
CB-301	CB-343	34.76'	34.29'	36"	93.31'	0.50%
CB-343	CB-299	34.29'	33.55'	36"	150.21'	0.50%
CB-287	CB-288	34.52'	34.37'	30"	20.00'	0.75%
CB-240	CB-303	36.70'	35.28'	30"	192.00'	0.74%
CB-567	CB-253	34.14'	32.70'	30"	36.49'	3.95%
CB-308	CB-567	34.60'	34.14'	30"	92.29'	0.50%
CB-286	CB-287	34.92'	34.52'	24"	57.44'	0.70%
CB-283	CB-288	36.53'	35.45'	24"	85.95'	1.26%
CB-558	CB-283	37.22'	36.53'	24"	117.43'	0.59%
CB-58	CB-240	37.62'	37.20'	24"	84.79'	0.50%
CB-316	CB-308	35.27'	34.60'	24"	132.97'	0.50%

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-566	CB-567	37.77'	37.65'	15"	22.00'	0.55%
CB-560	CB-561	37.80'	37.69'	15"	22.00'	0.50%
CB-561	DI-313	37.69'	36.37'	15"	33.54'	3.94%

POND - 4 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-602	CW-1	31.22'	29.25'	42"	48.37'	4.07%
CB-602	CB-499	31.22'	31.46'	36"	71.69'	0.33%
CB-499	CB-497	31.46'	31.63'	36"	55.15'	0.31%
CB-502	CB-603	31.96'	31.73'	36"	45.25'	0.51%
CB-603	CB-497	31.73'	31.63'	36"	20.00'	0.50%
CB-504	CB-502	32.45'	31.96'	30"	97.76'	0.50%
SDMH-5	CB-506	33.47'	33.06'	24"	82.01'	0.50%
CB-506	CB-504	33.06'	32.45'	24"	122.65'	0.50%
CB-546	SDMH-5	34.33'	33.47'	18"	40.00'	2.15%
CB-601	CB-602	34.47'	34.37'	15"	20.00'	0.50%
CB-572	SDMH-5	34.91'	33.62'	15"	40.00'	3.22%
CB-547	SDMH-5	34.89'	33.62'	15"	40.00'	3.18%
CB-570	CB-502	35.43'	35.33'	15"	20.00'	0.50%
CB-497	CB-495	31.63'	35.46'	15"	103.00'	3.72%
CB-496	CB-495	35.56'	35.46'	15"	20.00'	0.50%
CB-495	CB-501	35.46'	35.83'	15"	75.00'	0.49%
CB-501	CB-500	35.83'	35.93'	15"	20.00'	0.50%

CONSTRUCTED WETLAND - 1 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-538	CB-537	32.98'	32.88'	36"	20.00'	0.50%
CB-620	CB-537	32.64'	32.88'	36"	48.80'	0.49%
CB-600	CB-620	32.33'	32.64'	36"	60.92'	0.51%
CB-600	CB-564	32.33'	31.97'	36"	71.99'	0.50%
CB-564	CB-621	31.97'	31.87'	36"	20.00'	0.50%
CB-621	CW-2	31.87'	31.50'	36"	51.70'	0.72%
CB-461	CB-459	33.39'	33.87'	24"	96.43'	0.50%
CB-538	CB-461	32.98'	33.39'	24"	82.12'	0.50%
CB-459	CB-456	33.87'	34.45'	18"	114.97'	0.50%
CB-469	CB-470	36.25'	36.29'	15"	20.00'	0.20%
CB-575	CB-469	35.89'	36.25'	15"	179.98'	0.20%
CB-2	CB-575	37.20'	37.16'	15"	20.00'	0.20%
CB-575	CB-468	35.89'	35.72'	15"	84.44'	0.20%
CB-468	CB-467	36.72'	36.76'	15"	20.00'	0.20%
CB-453	CB-454	34.67'	34.63'	15"	20.00'	0.20%
CB-455	CB-456	34.87'	34.83'	15"	20.00'	0.20%
CB-456	CB-454	34.45'	34.63'	15"	90.98'	0.20%
CB-468	CB-538	35.72'	35.55'	15"	84.37'	0.20%

CONSTRUCTED WETLAND - 2 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-480	CW-4	34.99'	33.50'	24"	61.87'	2.41%
CB-480	CB-478	34.99'	35.31'	18"	158.66'	0.20%
CB-472	CW-4	34.13'	33.38'	15"	65.90'	1.15%
CB-472	CB-471	34.85'	34.89'	15"	20.00'	0.20%
CB-650	CB-651	34.27'	34.31'	15"	20.00'	0.20%
CB-650	CB-472	34.27'	34.13'	15"	72.14'	0.19%
CB-477	CB-650	35.14'	34.27'	15"	120.05'	0.72%
CB-477	CB-474	35.14'	35.18'	15"	20.00'	0.20%
CB-483	CB-478	35.48'	35.31'	15"	84.84'	0.20%
CB-482	CB-483	35.58'	35.48'	15"	51.50'	0.19%
CB-106	CB-479	36.37'	35.82'	15"	109.73'	0.50%
CB-479	CB-478	35.82'	35.72'	15"	51.50'	0.19%
CB-563	CB-480	37.28'	36.62'	15"	130.16'	0.51%
CB-399	CB-563	37.94'	37.28'	15"	150.10'	0.44%
CB-399	CB-398	37.94'	38.04'	15"	51.50'	0.19%
CB-399	CB-397	38.04'	38.69'	15"	148.10'	0.44%
CB-397	CB-396	38.69'	38.79'	15"	51.50'	0.19%

CONSTRUCTED WETLAND - 4 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-489	CW-5	35.21'	34.00'	18"	35.12'	3.45%
CB-490	CB-489	35.25'	35.21'	18"	22.69'	0.18%
CB-494	CB-493	36.57'	36.47'	15"	20.00'	0.50%
CB-493	CB-489	36.47'	35.21'	15"	154.07'	0.82%
CB-491	CB-490	35.35'	35.25'	15"	47.94'	0.21%
CB-606	CB-491	35.56'	35.35'	15"	103.75'	0.20%
CB-605	CB-606	35.60'	35.56'	15"	22.00'	0.18%

CONSTRUCTED WETLAND - 5 STORM DRAINAGE SYSTEM SCHEDULE

STORM DRAINAGE SCHEDULE						
START	END	Inlet Invert (ft)	Outlet Invert (ft)	Size	Length	Slope
CB-510	CB-508	34.04'	33.78'	36"	66.14'	0.39%
CB-507	CB-508	33.67'	33.78'	36"	22.00'	0.50%
CB-507	CW-6	33.67'	32.00'	36"	87.05'	1.92%
CB-511	CB-510	34.28'	34.04'	30"	74.85'	0.32%
CB-518	CB-514	34.91'	34.77'	24"	70.39'	0.20%
CB-514	CB-513	34.77'	34.68'	24"	45.25'	0.20%
CB-513	CB-511	34.68'	34.28'	24"	195.84'	0.20%
CB-549	CB-518	35.07'	34.91'	18"	76.42'	0.21%
CB-512	CB-511	35.93'	35.82'	18"	22.00'	0.50%
CB-509	CB-510	35.54'	35.43'	18"	22.00'	0.50%
CB-516	CB-549	35.21'	35.07'	15"	72.13'	0.19%
CB-550	CB-518	35.90'	35.78'	15"	23.59'	0.50%
CB-519	CB-520	37.59'	37.48'	15"	22.00'	0.50%
CB-520	CB-521	37.48'	37.25'	15"	45.25'	0.50%
CB-521	CB-522	37.25'	37.15'	15"	20.00'	0.50%
CB-522	CB-515	37.15'	36.93'	15"	45.25'	0.49%
CB-515	CB-513	36.93'	36.81'	15"	22.00'	0.55%

CONSTRUCTED WETLAND - 6 STORM DRAINAGE SYSTEM SCHEDULE

NOTE: SEE SHEETS CT-503 THRU CT-506 FOR NCDOT DETAILS FOR STORM STRUCTURES, FRAMES, AND GRATES.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ: NCDOT DISTRICT AND HYDRAULICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/20/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD A. COLLIER

Richard A. Collier

McKIM&CREED
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

STORM DRAINAGE SCHEDULE
SF-1 SUBDIVISION

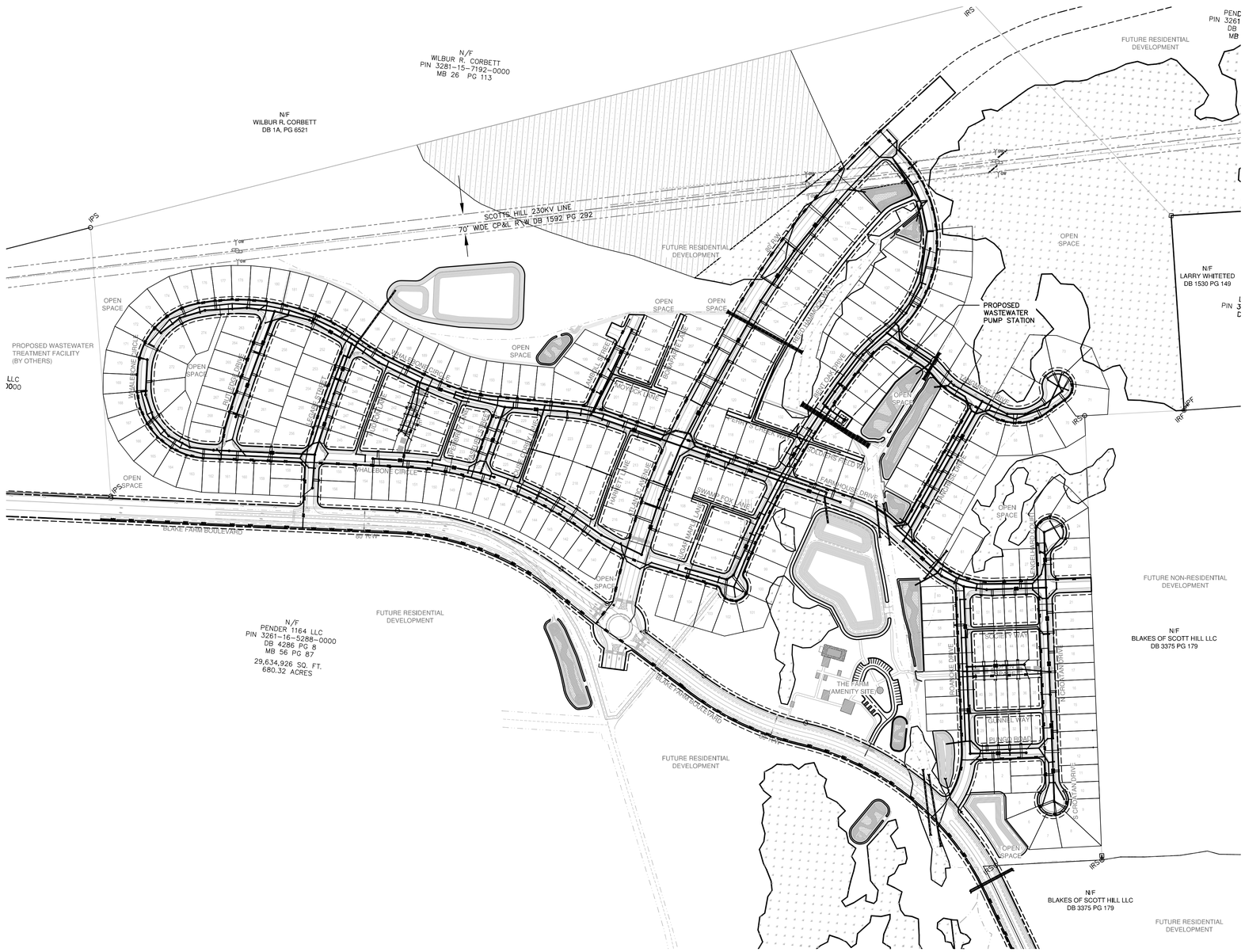
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

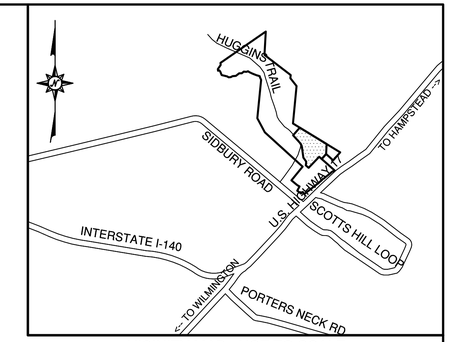
SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CG104
DRAWING NUMBER 23B

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CG104_06525000l1.dwg, 8/1/2015 5:33:40 PM, rcollier





VICINITY MAP - NOT TO SCALE

NOTES:

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3. CLEARING LIMITS HAVE NOT BEEN SHOWN ON THE PLANS.
4. CONTRACTOR SHALL BRACE / SUPPORT ALL POWER POLES AS REQUIRED FOR CONSTRUCTION.
5. PRECAST CONCRETE MANHOLES SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C 478. ALL SURFACES SHALL BE SMOOTH AND EVEN TEXTURED WITH A MINIMUM OF HONEYCOMB, FIN, AND OTHER IMPERFECTIONS.
6. JOINTS BETWEEN MANHOLE SECTIONS SHALL BE SEALED WATERTIGHT USING EITHER O-RING GASKETS CONFORMING WITH ASTM C 443 OR BUTYL RESIN CONFORMING WITH AASHTO M-198.
7. EXTERIOR JOINTS SHALL BE SEALED WITH A 4" WIDE BUTYL RUBBER WRAP.
8. HOLES FOR CONNECTION OF PIPE TO MANHOLE SHALL BE PRECAST OR CORED. DIAMETER OF HOLE SHALL NOT EXCEED OUTSIDE DIAMETER OR PIPE BY MORE THAN 3 INCHES.
9. CONNECTIONS OF PIPE TO MANHOLE SHALL BE MADE WATERTIGHT USING RESILIENT CONNECTORS CONFORMING TO ASTM C 923 OR NEOPRENE BOOTS EMBEDDED IN PRECAST BASE WITH STAINLESS STEEL COMPRESSION BANDS.
10. MANHOLE INVERTS SHALL BE INSTALLED USING BRICK AND MORTAR, OR MANHOLES MAY BE PRECAST, MONOLITHIC SECTIONS WITH FORMED INVERTS.
11. LIFT HOLES SHALL BE PLUGGED AND FILLED FLUSH WITH MORTAR.
12. ALL BRICK AND MORTAR SHALL RECEIVE A 1/2" MORTAR PARGE COAT ON INSIDE AND OUTSIDE.
13. ALL SPACE BETWEEN PIPE AND OPENING INSIDE OF MANHOLE TO BE GROUTED WITH TYPE S MORTAR
14. SEWER MAIN PENETRATIONS AND/OR SERVICE LATERAL PENETRATIONS ENTERING AT 30" OR LESS ABOVE THE MANHOLE BENCH SHALL HAVE A SLIDE CONSTRUCTED OF BRICK AND MORTAR.(SEE DETAIL)
15. ALL PENETRATIONS ENTERING MANHOLE AT GREATER THAN 30" SHALL BE AN INSIDE DROP MANHOLE (SEE DETAIL).
16. OUTSIDE DROP MANHOLES, AND PUMP STATION RECEIVING MANHOLES SHALL BE MINIMUM 5' DIAMETER MANHOLES.
17. SANITARY SEWER MANHOLES SHALL BE COATED WITH COAL TAR EPOXY 20 MILS THROUGHOUT THE INSIDE OF THE MANHOLE.
18. ALL MANHOLES SHALL HAVE A SEWER GUARD INSERT INSTALLED – PLASTIC IS ALLOWED IN NON-TRAFFIC AREAS – STAINLESS STEEL INSERT PANS ARE REQUIRED IN TRAFFIC AREAS
19. ADD INTERIOR HIGH SOLIDS EPOXY PROTECTION COATING FOR ALL MANHOLES RECEIVING DISCHARGE FROM FORCE MAINS (MIN. 20 MILS).
20. MANHOLES SHALL BE TRAFFIC BEARING WITH A MINIMUM HS-20 LOAD ALLOWANCE.
21. MANHOLES MORE THAN 15 FEET DEEP SHALL USE A 5' DIAMETER MANHOLE.
22. PUBLIC SANITARY SEWER PIPING SHALL BE C-900 (DR18) PVC UNLESS OTHERWISE NOTED.
23. PUBLIC WATER MAINS SHALL BE SDR-21 PVC UNLESS OTHERWISE NOTED.
24. ALL FITTINGS, VALVES, AND OTHER APPURTENANCES SHALL HAVE RESTRAINED JOINT FITTINGS AND THRUST BLOCKING AS APPLICABLE. RESTRAINED JOINT FITTINGS SHALL BE MEGA-LUG FITTINGS OR APPROVED EQUAL.

SCALE: 1" = 200'

0 100 200 400 600

REV.NO.	DESCRIPTIONS	DATE
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

OVERALL UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=200'
VERTICAL: N/A

M&C FILE NUMBER CU101
DRAWING NUMBER 24

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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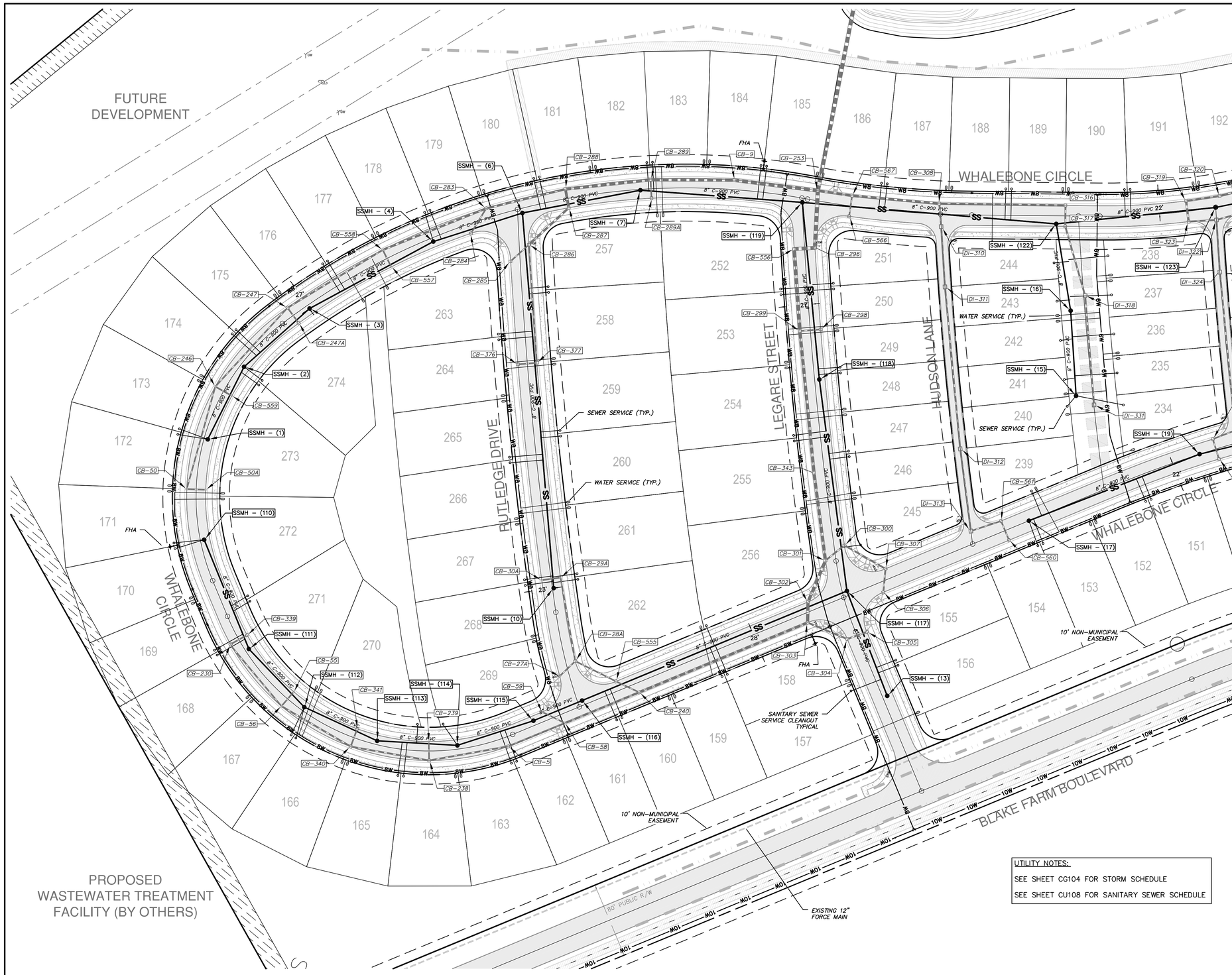

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UTILITY NOTES:

SEE SHEET CG104 FOR STORM SCHEDULE

SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

SCALE: 1" = 50

0 25 50 100 150

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU102
DRAWING NUMBER 25

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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MATCHLINE - SEE SHEET CU106

MATCHLINE - SEE SHEET CU102

MATCHLINE - SEE SHEET CU104

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UTILITY NOTES:

SEE SHEET CG104 FOR STORM SCHEDULE

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N

SCALE: 1" = 50

0 25 50 100 150

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER: CU103
DRAWING NUMBER: 26

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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MATCHLINE - SEE SHEETS CU105 & CU106

UTILITY NOTES:

SEE SHEET CG104 FOR STORM SCHEDULE

SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

NOTES:

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3. CLEARING LIMITS HAVE NOT BEEN SHOWN ON THE PLANS.
4. CONTRACTOR SHALL BRACE / SUPPORT ALL POWER POLES AS REQUIRED FOR CONSTRUCTION.
5. PRECAST CONCRETE MANHOLES SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C 478. ALL SURFACES SHALL BE SMOOTH AND EVEN TEXTURED WITH A MINIMUM OF HONEYCOMB, FIN, AND OTHER IMPERFECTIONS.
6. JOINTS BETWEEN MANHOLE SECTIONS SHALL BE SEALED WATERTIGHT USING EITHER O-RING GASKETS CONFORMING WITH ASTM C 443 OR BUTYL RESIN CONFORMING WITH AASHTO M-198.
7. EXTERIOR JOINTS SHALL BE SEALED WITH A 4" WIDE BUTYL RUBBER WRAP.
8. HOLES FOR CONNECTION OF PIPE TO MANHOLE SHALL BE PRECAST OR CORED. DIAMETER OF HOLE SHALL NOT EXCEED OUTSIDE DIAMETER OR PIPE BY MORE THAN 3 INCHES.
9. CONNECTIONS OF PIPE TO MANHOLE SHALL BE MADE WATERTIGHT USING RESILIENT CONNECTORS CONFORMING TO ASTM C 923 OR NEOPRENE BOOTS EMBEDDED IN PRECAST BASE WITH STAINLESS STEEL COMPRESSION BANDS.
10. MANHOLE INVERTS SHALL BE INSTALLED USING BRICK AND MORTAR, OR MANHOLES MAY BE PRECAST, MONOLITHIC SECTIONS WITH FORMED INVERTS.
11. LIFT HOLES SHALL BE PLUGGED AND FILLED FLUSH WITH MORTAR.
12. ALL BRICK AND MORTAR SHALL RECEIVE A 1/2" MORTAR PARGE COAT ON INSIDE AND OUTSIDE.
13. ALL SPACE BETWEEN PIPE AND OPENING INSIDE OF MANHOLE TO BE GROUTED WITH TYPE S MORTAR
14. SEWER MAIN PENETRATIONS AND/OR SERVICE LATERAL PENETRATIONS ENTERING AT 30" OR LESS ABOVE THE MANHOLE BENCH SHALL HAVE A SLIDE CONSTRUCTED OF BRICK AND MORTAR.(SEE DETAIL)
15. ALL PENETRATIONS ENTERING MANHOLE AT GREATER THAN 30" SHALL BE AN INSIDE DROP MANHOLE (SEE DETAIL).
16. OUTSIDE DROP MANHOLES, AND PUMP STATION RECEIVING MANHOLES SHALL BE MINIMUM 5' DIAMETER MANHOLES.
17. SANITARY SEWER MANHOLES SHALL BE COATED WITH COAL TAR EPOXY 20 MILS THROUGHOUT THE INSIDE OF THE MANHOLE.
18. ALL MANHOLES SHALL HAVE A SEWER GUARD INSERT INSTALLED – PLASTIC IS ALLOWED IN NON-TRAFFIC AREAS – STAINLESS STEEL INSERT PANS ARE REQUIRED IN TRAFFIC AREAS.
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22. PUBLIC SANITARY SEWER PIPING SHALL BE C-900 (DR-18) PVC UNLESS OTHERWISE NOTED.
23. PUBLIC WATER MAINS SHALL BE SDR-21 PVC UNLESS OTHERWISE NOTED.
24. ALL FITTINGS, VALVES, AND OTHER APPURTENANCES SHALL HAVE RESTRAINED JOINT FITTINGS AND THRUST BLOCKING AS APPLICABLE. RESTRAINED JOINT FITTINGS SHALL BE MEGA-LUG FITTINGS OR APPROVED EQUAL.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ: NCDOT DISTRICT AND HYDRAULICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD A. COLLER

Richard M. Coller

McKIM & CREED
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BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP

PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

M&C FILE NUMBER: CU104

DRAWING NUMBER: 27

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION: F

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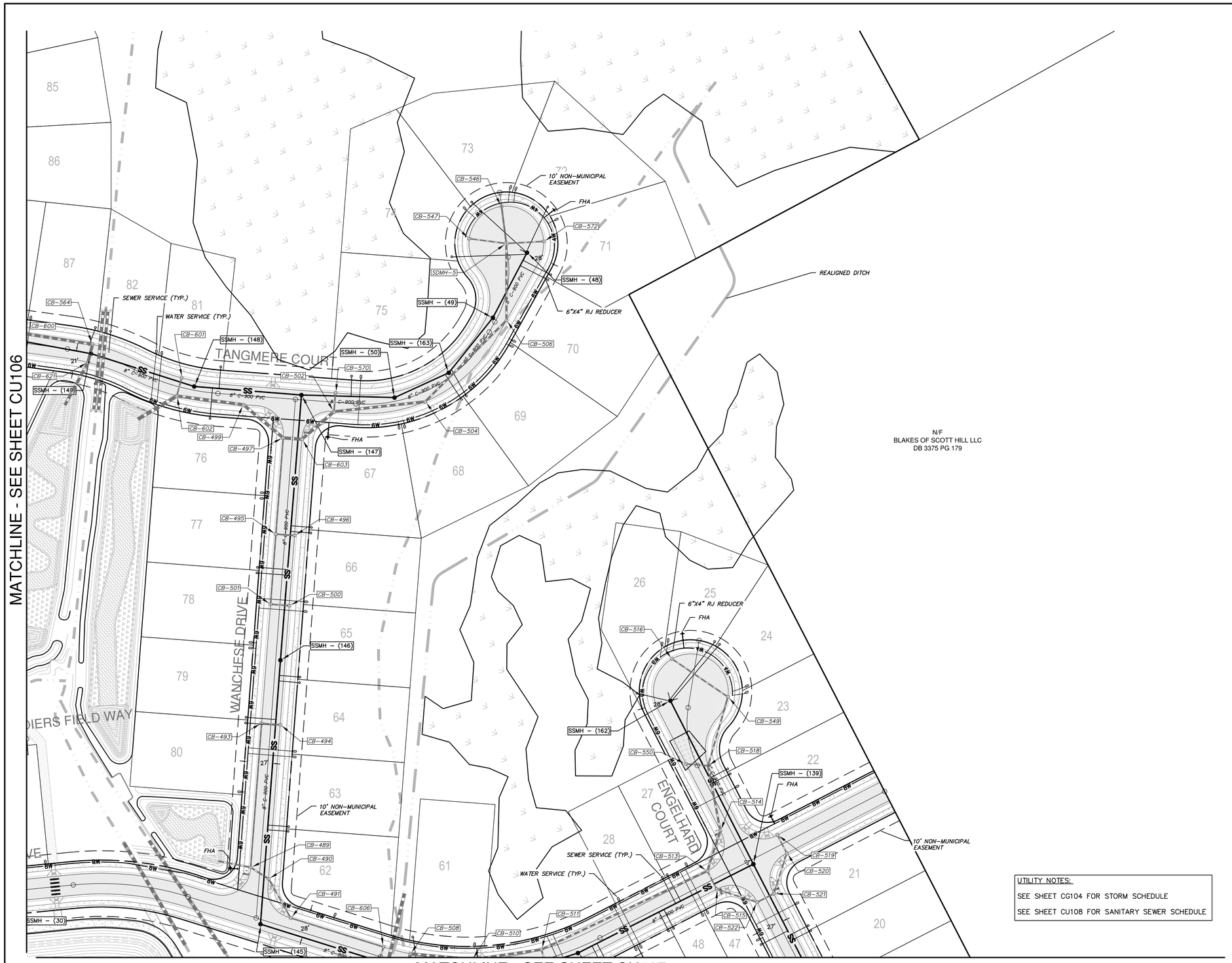

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UTILITY NOTES:

SEE SHEET CG104 FOR STORM SCHEDULE

SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

SCALE: 1" = 50

0 25 50 100 150

N

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT-NCDENR&DWQ:NCOOT DISTRICT AND HYDRAULICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
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REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU105
DRAWING NUMBER 28

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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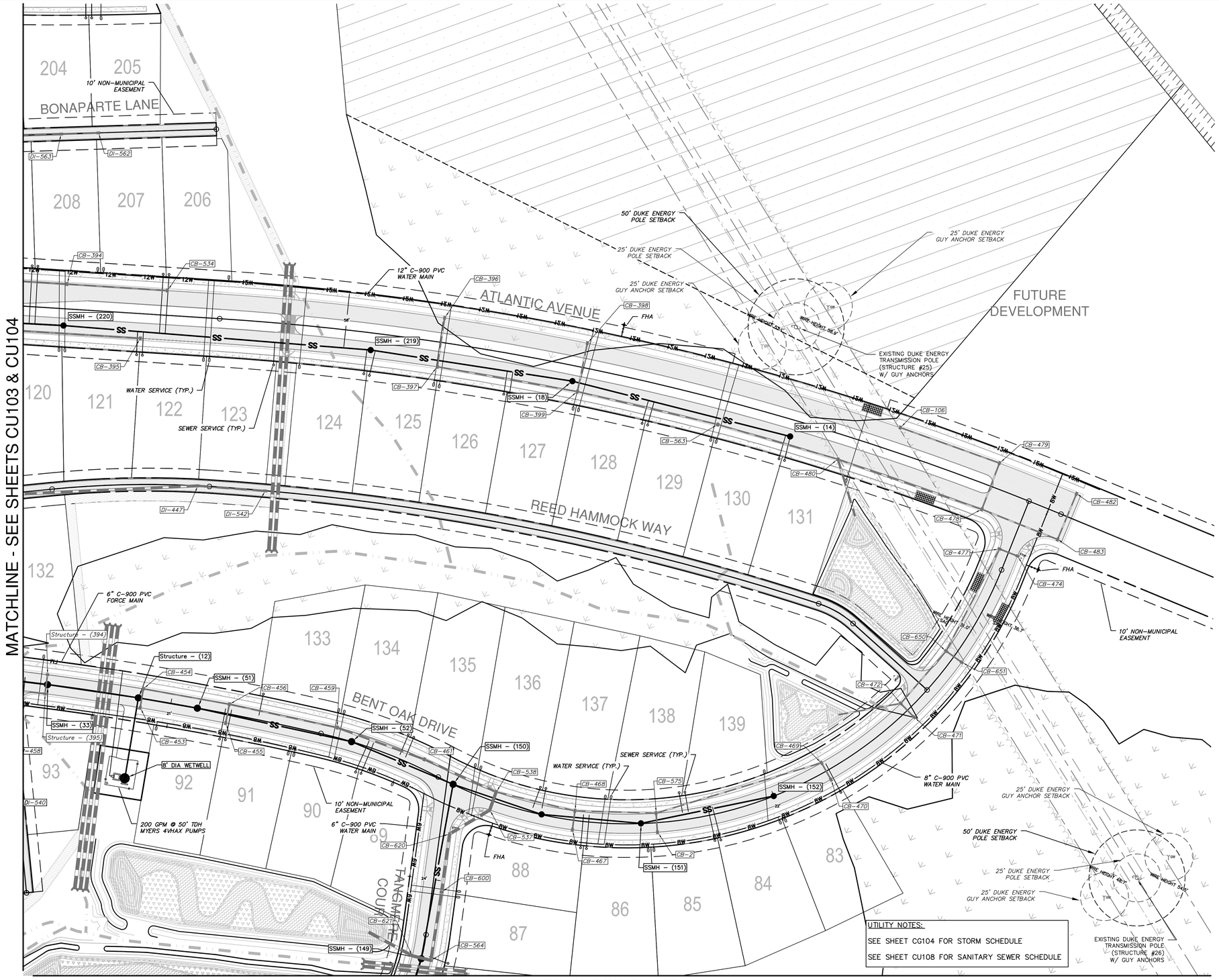

UTILITY NOTES:

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SCALE: 1" = 50

0 25 50 100 150

N

REV.NO.	DESCRIPTIONS	DATE
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REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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TOPSAIL TOWNSHIP

PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE

HORIZONTAL: 1"=50'

VERTICAL: N/A

M&C FILE NUMBER CU106

DRAWING NUMBER 29

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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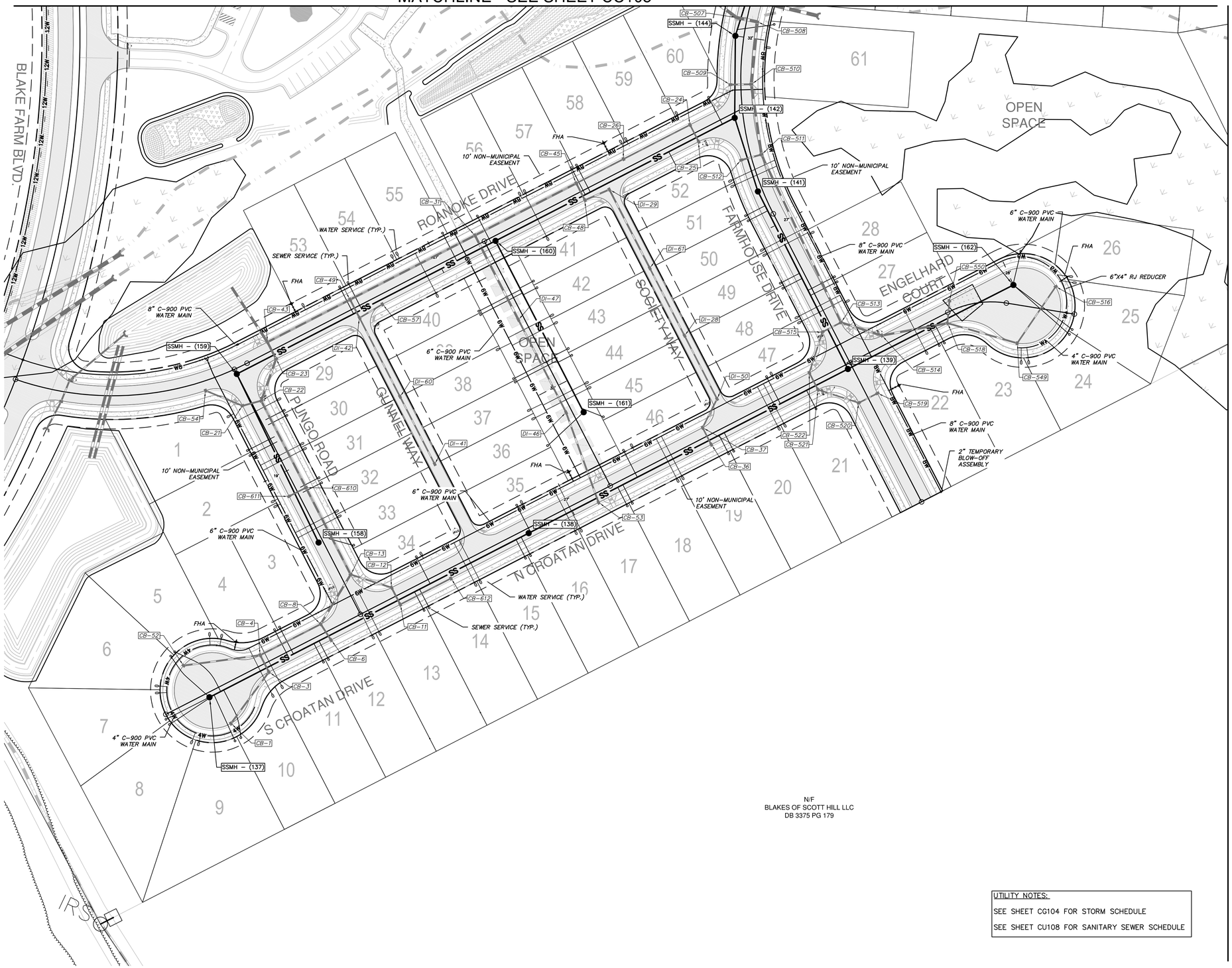
MATCHLINE - SEE SHEET CU105



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MATCHLINE - SEE SHEET CU106

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SEE SHEET CG104 FOR STORM SCHEDULE

SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

SCALE: 1" = 50

0 25 50 100 150

N

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT - NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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FINAL PLANS- DO NOT USE FOR CONSTRUCTION

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PENDER COUNTY NORTH CAROLINA

ENLARGED UTILITY PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU107

DRAWING NUMBER 30

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

S:\6525\0001\80-Drawings\CU106-107_R6525\0001.dwg, 8/1/2015 1:17:43 PM, rcollier

Sanitary Sewer Pipe Data Table							
FROM	TO	Length	Size	PIPE TYPE	Slope	UPSTREAM INVERT	DOWNSTREAM INVERT
	SSMH – (128)	13.82'	8"	C-900 PVC	0.45%	24.62'	24.56'
SSMH – (1)	SSMH – (2)	85.49'	8"	C-900 PVC	0.45%	35.09'	34.71'
SSMH – (2)	SSMH – (3)	92.48'	8"	C-900 PVC	0.45%	34.71'	34.29'
SSMH – (3)	SSMH – (4)	148.23'	8"	C-900 PVC	0.45%	34.29'	33.62'
SSMH – (4)	SSMH – (6)	98.60'	8"	C-900 PVC	0.45%	33.62'	33.18'
SSMH – (6)	SSMH – (7)	126.61'	8"	C-900 PVC	0.48%	33.11'	32.50'
SSMH – (7)	SSMH – (119)	171.19'	8"	C-900 PVC	0.44%	32.50'	31.75'
SSMH – (10)	SSMH – (6)	396.93'	8"	C-900 PVC	0.45%	34.90'	33.11'
SSMH – (13)	SSMH – (117)	118.47'	8"	C-900 PVC	0.45%	34.80'	34.27'
SSMH – (14)	SSMH – (18)	233.81'	8"	C-900 PVC	0.45%	33.00'	31.95'
SSMH – (15)	SSMH – (16)	89.92'	8"	C-900 PVC	0.45%	35.78'	35.38'
SSMH – (16)	SSMH – (122)	92.76'	8"	C-900 PVC	0.44%	35.38'	34.97'
SSMH – (17)	SSMH – (19)	193.10'	8"	C-900 PVC	0.45%	33.24'	32.37'
SSMH – (18)	SSMH – (219)	212.49'	8"	C-900 PVC	0.45%	31.90'	30.94'
SSMH – (19)	SSMH – (20)	191.43'	8"	C-900 PVC	0.45%	32.37'	31.50'
SSMH – (20)	SSMH – (124)	247.53'	8"	C-900 PVC	0.43%	31.50'	30.43'
SSMH – (22)	SSMH – (20)	50.37'	8"	C-900 PVC	0.45%	32.36'	32.13'
SSMH – (23)	SSMH – (24)	109.97'	8"	C-900 PVC	0.45%	32.13'	31.63'
SSMH – (24)	SSMH – (25)	109.86'	8"	C-900 PVC	0.45%	31.63'	31.13'
SSMH – (25)	SSMH – (26)	121.96'	8"	C-900 PVC	0.45%	31.13'	30.58'

Sanitary Sewer Pipe Data Table							
FROM	TO	Length	Size	PIPE TYPE	Slope	UPSTREAM INVERT	DOWNSTREAM INVERT
SSMH – (26)	SSMH – (27)	157.81'	8"	C-900 PVC	0.45%	30.58'	29.87'
SSMH – (27)	SSMH – (28)	200.84'	8"	C-900 PVC	0.46%	29.87'	28.95'
SSMH – (28)	SSMH – (128)	204.13'	8"	C-900 PVC	0.47%	28.95'	28.00'
SSMH – (29)	SSMH – (126)	333.19'	8"	C-900 PVC	1.95%	33.44'	26.94'
SSMH – (30)	SSMH – (31)	233.41'	8"	C-900 PVC	1.50%	31.47'	27.96'
SSMH – (31)	SSMH – (33)	212.97'	8"	C-900 PVC	0.45%	22.92'	21.96'
SSMH – (33)	Structure – (12)	95.57'	8"	C-900 PVC	0.45%	21.96'	21.53'
SSMH – (35)	SSMH – (36)	149.58'	8"	C-900 PVC	0.45%	32.63'	31.96'
SSMH – (36)	SSMH – (37)	28.35'	8"	C-900 PVC	0.45%	31.96'	31.83'
SSMH – (37)	SSMH – (47)	220.94'	8"	C-900 PVC	0.44%	31.83'	30.87'
SSMH – (47)	SSMH – (31)	149.50'	8"	C-900 PVC	0.47%	30.87'	30.17'
SSMH – (110)	SSMH – (111)	124.44'	8"	C-900 PVC	0.45%	35.62'	35.06'
SSMH – (111)	SSMH – (112)	84.66'	8"	C-900 PVC	0.45%	35.06'	34.68'
SSMH – (112)	SSMH – (113)	84.66'	8"	C-900 PVC	0.45%	34.68'	34.30'
SSMH – (113)	SSMH – (114)	84.66'	8"	C-900 PVC	0.45%	34.30'	33.92'
SSMH – (114)	SSMH – (115)	84.20'	8"	C-900 PVC	0.45%	33.92'	33.54'
SSMH – (115)	SSMH – (116)	55.53'	8"	C-900 PVC	0.45%	33.54'	33.29'
SSMH – (116)	SSMH – (117)	302.02'	8"	C-900 PVC	0.45%	33.29'	31.93'
SSMH – (117)	SSMH – (118)	224.89'	8"	C-900 PVC	0.45%	31.93'	30.92'
SSMH – (118)	SSMH – (119)	187.54'	8"	C-900 PVC	0.45%	30.92'	30.08'

Sanitary Sewer Pipe Data Table							
FROM	TO	Length	Size	PIPE TYPE	Slope	UPSTREAM INVERT	DOWNSTREAM INVERT
SSMH – (119)	SSMH – (122)	268.47'	8"	C-900 PVC	0.46%	30.08'	28.84'
SSMH – (122)	SSMH – (123)	168.78'	8"	C-900 PVC	0.42%	28.84'	28.13'
SSMH – (123)	SSMH – (124)	152.00'	8"	C-900 PVC	0.45%	28.13'	27.44'
SSMH – (124)	SSMH – (125)	220.93'	8"	C-900 PVC	0.45%	27.44'	26.45'
SSMH – (125)	SSMH – (126)	84.07'	8"	C-900 PVC	0.45%	26.45'	26.07'
SSMH – (126)		321.38'	8"	C-900 PVC	0.45%	26.07'	24.62'
SSMH – (128)	SSMH – (31)	363.97'	8"	C-900 PVC	0.45%	24.56'	22.92'
SSMH – (219)	SSMH – (220)	320.82'	8"	C-900 PVC	0.45%	30.90'	29.46'
SSMH – (220)	SSMH – (128)	264.08'	8"	C-900 PVC	0.55%	29.46'	28.00'
Structure – (12)	PS – 1	85.37'	8"	C-900 PVC	0.45%	21.50'	21.12'

Sanitary Sewer Pipe Data Table							
FROM	TO	Length	Size	PIPE TYPE	Slope	UPSTREAM INVERT	DOWNSTREAM INVERT
SSMH – (48)	SSMH – (49)	78.41'	8"	C-900 PVC	0.45%	31.16'	30.81'
SSMH – (49)	SSMH – (163)	75.24'	8"	C-900 PVC	0.42%	30.81'	30.49'
SSMH – (50)	SSMH – (147)	99.37'	8"	C-900 PVC	1.00%	30.18'	29.19'
SSMH – (51)	SSMH – (13-a)	62.41'	8"	C-900 PVC	0.45%	22.15'	21.87'
SSMH – (52)	SSMH – (51)	164.26'	8"	C-900 PVC	0.45%	22.89'	22.15'
SSMH – (137)	SSMH – (138)	378.25'	8"	C-900 PVC	0.45%	36.50'	34.80'
SSMH – (138)	SSMH – (139)	378.25'	8"	C-900 PVC	0.45%	34.80'	33.10'
SSMH – (139)	SSMH – (141)	209.84'	8"	C-900 PVC	0.45%	30.38'	29.44'
SSMH – (141)	SSMH – (142)	81.31'	8"	C-900 PVC	0.45%	29.44'	29.07'
SSMH – (142)	SSMH – (144)	86.46'	8"	C-900 PVC	0.45%	29.07'	28.68'
SSMH – (144)	SSMH – (145)	182.97'	8"	C-900 PVC	0.45%	28.68'	27.86'
SSMH – (145)	SSMH – (146)	282.44'	8"	C-900 PVC	0.45%	27.86'	26.59'
SSMH – (146)	SSMH – (147)	283.73'	8"	C-900 PVC	0.45%	26.59'	25.31'
SSMH – (147)	SSMH – (148)	114.78'	8"	C-900 PVC	0.45%	25.31'	24.79'
SSMH – (148)	SSMH – (149)	115.60'	8"	C-900 PVC	0.45%	24.79'	24.27'
SSMH – (150)	SSMH – (52)	114.59'	8"	C-900 PVC	0.45%	23.40'	22.89'
SSMH – (150)	SSMH – (149)	184.63'	8"	C-900 PVC	-0.47%	23.40'	24.27'
SSMH – (151)	SSMH – (164)	103.86'	8"	C-900 PVC	0.45%	31.81'	31.34'
SSMH – (152)	SSMH – (151)	141.15'	8"	C-900 PVC	0.80%	33.00'	31.87'
SSMH – (158)	SSMH – (159)	197.46'	8"	C-900 PVC	1.00%	33.68'	31.71'

Sanitary Sewer Pipe Data Table							
FROM	TO	Length	Size	PIPE TYPE	Slope	UPSTREAM INVERT	DOWNSTREAM INVERT
SSMH – (159)	SSMH – (160)	306.63'	8"	C-900 PVC	0.44%	31.71'	30.35'
SSMH – (160)	SSMH – (142)	283.44'	8"	C-900 PVC	0.45%	30.35'	29.07'
SSMH – (161)	SSMH – (160)	203.14'	8"	C-900 PVC	1.00%	36.26'	34.23'
SSMH – (162)	SSMH – (139)	195.61'	8"	C-900 PVC	0.45%	31.26'	30.38'
SSMH – (163)	SSMH – (50)	63.57'	8"	C-900 PVC	0.48%	30.49'	30.18'
SSMH – (164)	SSMH – (150)	97.29'	8"	C-900 PVC	2.97%	31.29'	28.40'

NOTES:
1. SANITARY SEWER PUMP STATION LOCATED ON SOUTH SIDE OF LOCAL 10 ADJACENT TO LOT 96.
2. SEE SHEETS CU-501 THRU CU-504 FOR DETAILED INFORMATION.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURB HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

SANITARY SEWER SCHEDULE
SF-1 SUBDIVISION

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER: CU108
DRAWING NUMBER: 30A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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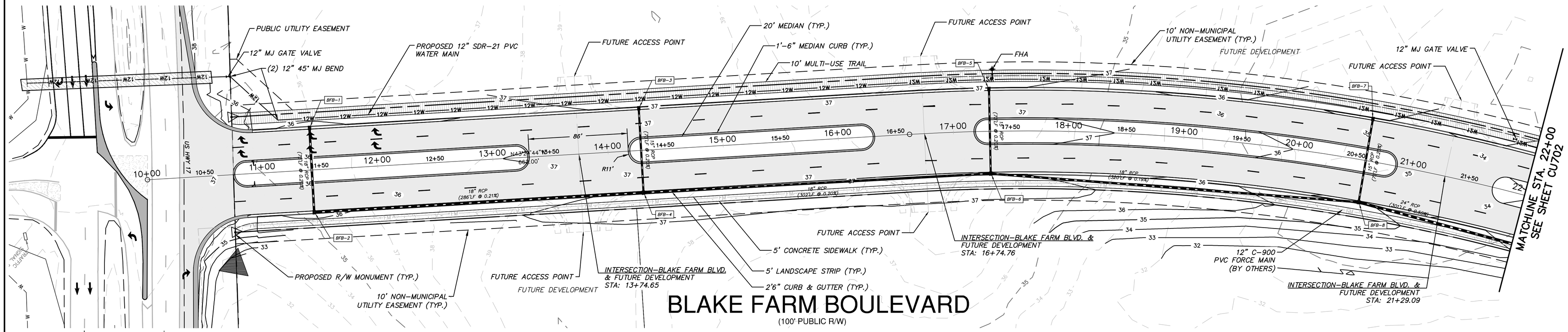
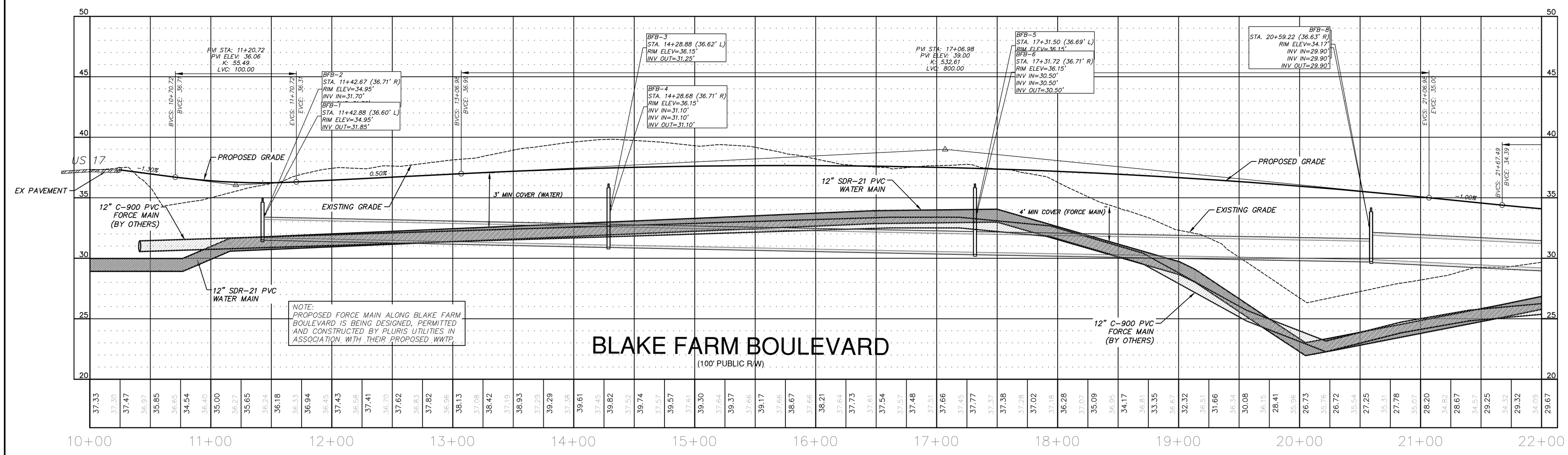


BLAKE FARM BOULEVARD

(100' PUBLIC R/W)

NOTE:
PHASE 1 CONSTRUCTION OF BLAKE FARM BOULEVARD IS LIMITED TO CONSTRUCTION OF THE MEDIAN AND ONE-LANE ON EACH SIDE OF THE MEDIAN (WITH BIKE LANE) THEN SLOPED SHOULDER OUT TO SIDEWALK OR MULTI-USE TRAIL. 30" CONCRETE CURB AND GUTTER AND THE TWO ADDITIONAL LANES WILL BE CONSTRUCTED IN ACCORDANCE WITH PHASE 2 TRAFFIC IMPROVEMENTS IN THE TRAFFIC IMPACT ANALYSIS.

SCALE: 1" = 40'



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL	08/19/15
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D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT; PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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Richard M. Collier

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www.mckimcreed.com

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BLAKE FARM BOULEVARD
PLAN AND PROFILE
STA. 10+00 TO 22+00

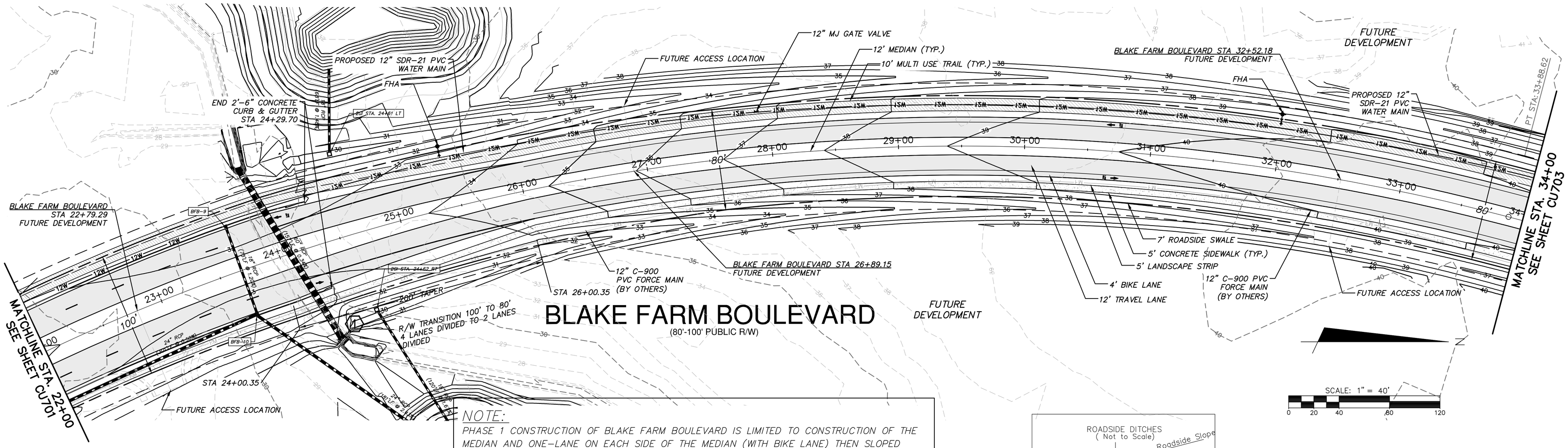
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

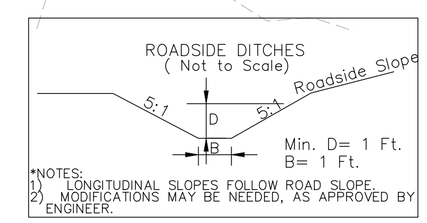
MAC FILE NUMBER: CU701
DRAWING NUMBER: 31

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

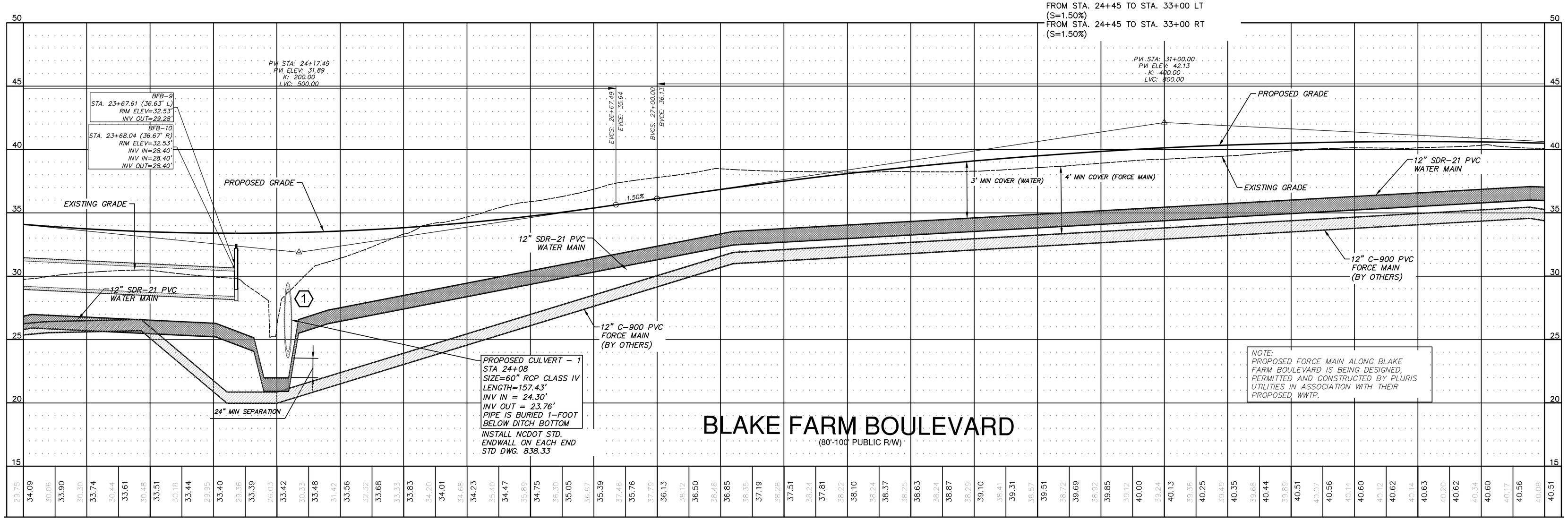
S:\6525\0001\80-Drawings\Plan Profile Sheets\CU701_065250001.dwg, 9/1/2015 5:33:43 PM, cnursey



NOTE:
PHASE 1 CONSTRUCTION OF BLAKE FARM BOULEVARD IS LIMITED TO CONSTRUCTION OF THE MEDIAN AND ONE-LANE ON EACH SIDE OF THE MEDIAN (WITH BIKE LANE) THEN SLOPED SHOULDER OUT TO SIDEWALK OR MULTI-USE TRAIL. 30" CONCRETE CURB AND GUTTER AND THE TWO ADDITIONAL LANES WILL BE CONSTRUCTED IN ACCORDANCE WITH PHASE 2 TRAFFIC IMPROVEMENTS IN THE TRAFFIC IMPACT ANALYSIS.



*NOTES:
1) LONGITUDINAL SLOPES FOLLOW ROAD SLOPE.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.



NOTE:
PROPOSED FORCE MAIN ALONG BLAKE FARM BOULEVARD IS BEING DESIGNED, PERMITTED AND CONSTRUCTED BY PLURIS UTILITIES IN ASSOCIATION WITH THEIR PROPOSED WWTP.

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER, II
Richard M. Collier

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BLAKE FARM EST 1546

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA
BLAKE FARM BLVD.
PLAN AND PROFILE
STA 22+00 TO 34+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU702
DRAWING NUMBER 32

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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BLAKE FARM BLVD.

(80' PUBLIC R/W)

MATCHLINE STA. 34+50
SEE SHEET CU702

MATCHLINE STA. 46+00
SEE SHEET CU704

PROPOSED 12" SDR-21 PVC WATER MAIN

PROPOSED R/W

12" C-900 PVC FORCE MAIN (BY OTHERS)

4' BIKE LANE

12' TRAVEL LANE

PROPERTY LINE

EXISTING DITCH (TYP.)

FUTURE DEVELOPMENT

CONSTRUCTED STORMWATER WETLAND #8

CONSTRUCTED STORMWATER WETLAND #9

FHA

12x8 TEE

12" MJ GATE VALVE

8" MJ GATE VALVE

20' STA. 42+25 LT RIM=33.57

20' STA. 42+25 RT RIM=33.60

14' MEDIAN (TYP.)

10' MULTI USE TRAIL (TYP.)

7' ROADSIDE SWALE (TYP.)

5' CONCRETE SIDEWALK (TYP.)

5' LANDSCAPE STRIP (TYP.)

4" STUB FOR DOMESTIC AND 8" STUB FOR FIRE SERVICE AT THE FARM

THE FARM

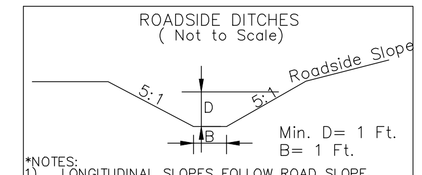
BLAKE FARM BOULEVARD STA 40+32.09
ROANOKE DRIVE STA 10+00

ROANOKE DRIVE

SCALE: 1" = 40'

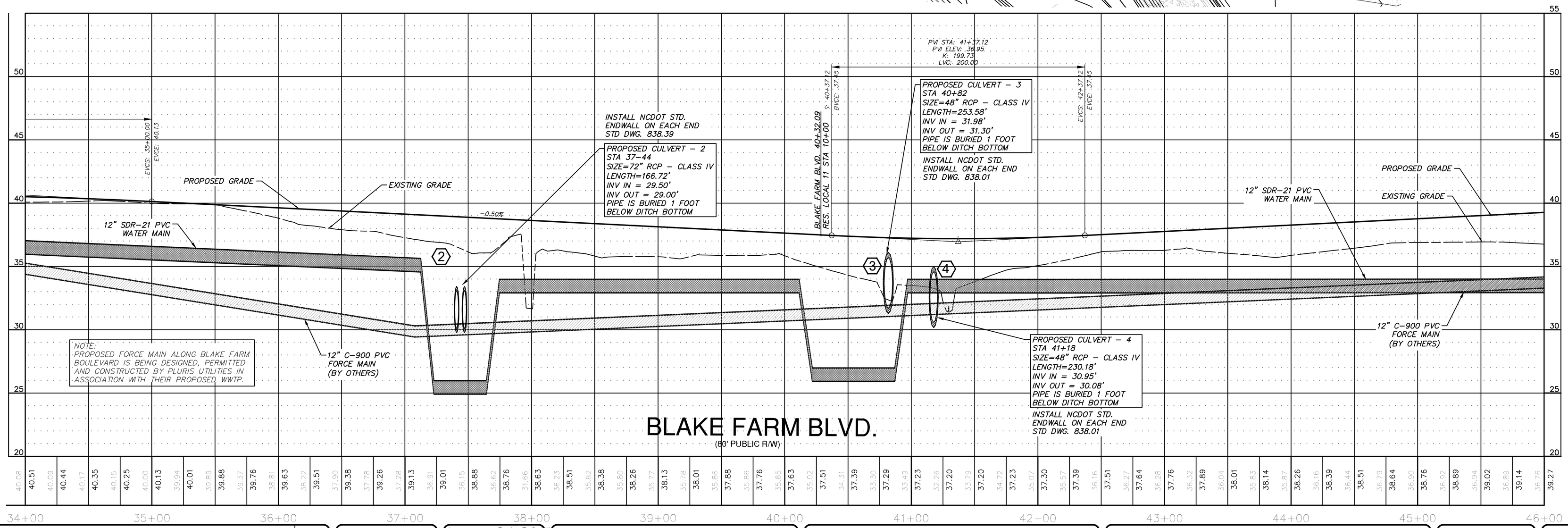
0 20 40 80 120

ROADSIDE DITCHES
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES FOLLOW ROAD SLOPE
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

FROM STA. 33+00 TO STA. 39+95 RT (S=0.50%)
FROM STA. 33+00 TO STA. 42+25 LT (S=0.50%)
FROM STA. 42+25 TO STA. 52+50 LT (S=0.50%)
FROM STA. 42+25 TO STA. 52+50 RT (S=0.50%)



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS, AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM EST. 1946

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BLAKE FARM BLVD.
PLAN AND PROFILE
STA 34+00 TO 46+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU703
DRAWING NUMBER 33

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION F

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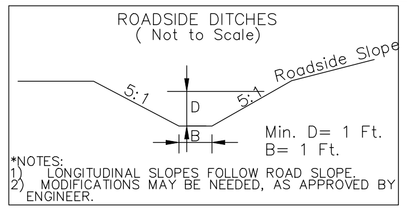
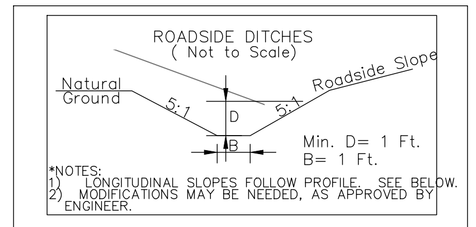
ROADSIDE DITCHES
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES FOLLOW ROAD SLOPE.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

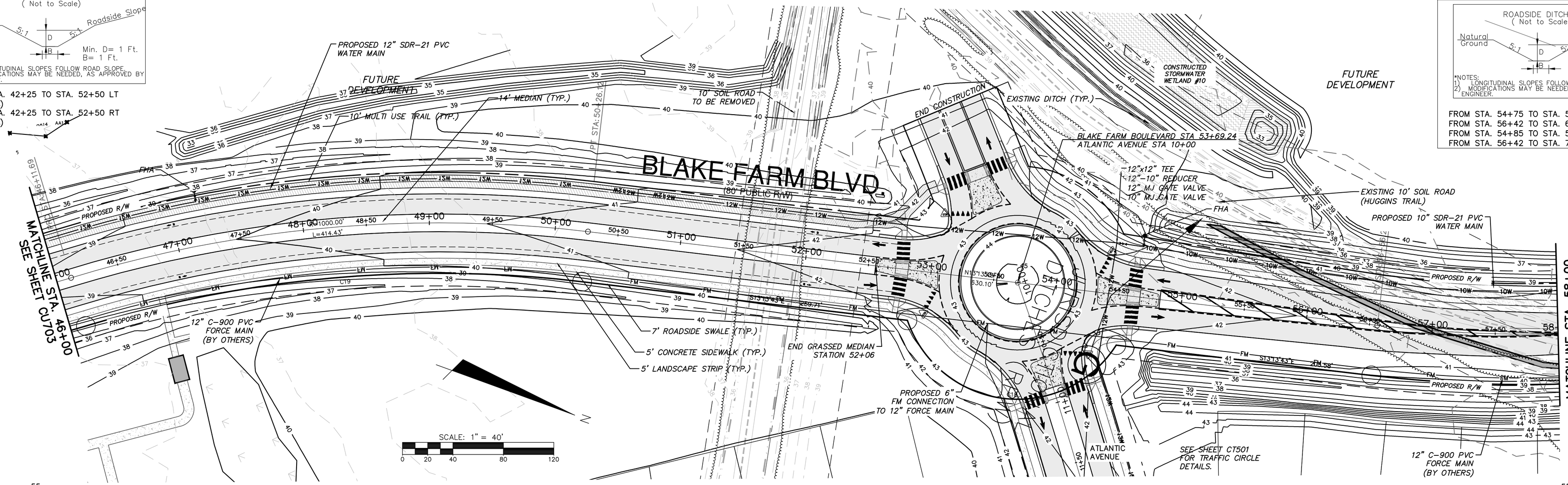
FROM STA. 42+25 TO STA. 52+50 LT (S=0.50%)
FROM STA. 42+25 TO STA. 52+50 RT (S=0.50%)

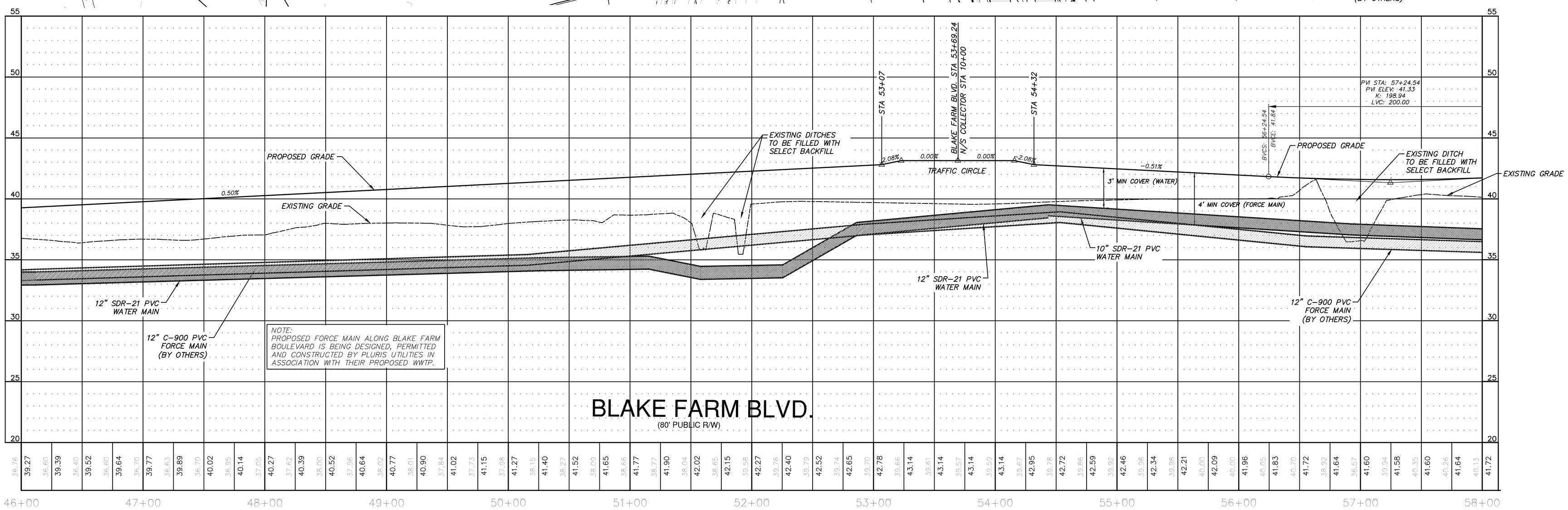
ROADSIDE DITCHES
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES FOLLOW PROFILE. SEE BELOW.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

FROM STA. 54+75 TO STA. 56+42 LT (S=0.35%)
FROM STA. 56+42 TO STA. 68+76 LT (S=-0.25%)
FROM STA. 54+85 TO STA. 56+42 RT (S=0.25%)
FROM STA. 56+42 TO STA. 73+00 RT (S=-0.25%)





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS, AND PENDER COUNTY UTILITIES RESUBMITTAL	08/10/15
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D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BLAKE FARM BLVD.
PLAN AND PROFILE
STA 46+00 TO 58+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU704
DRAWING NUMBER 34

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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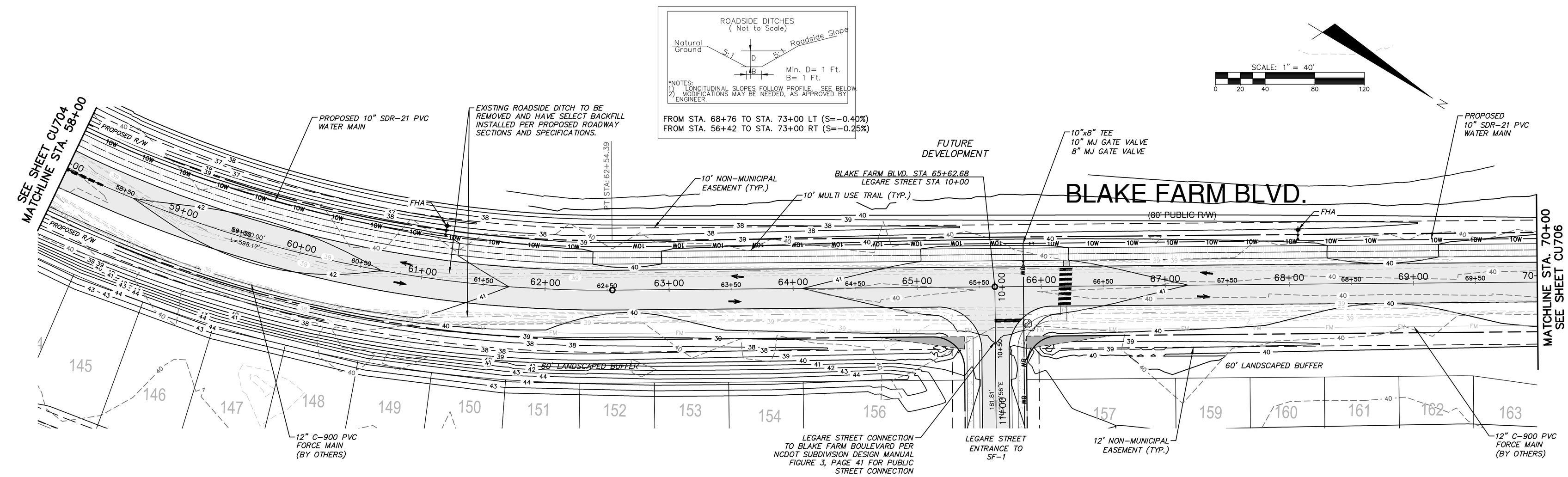

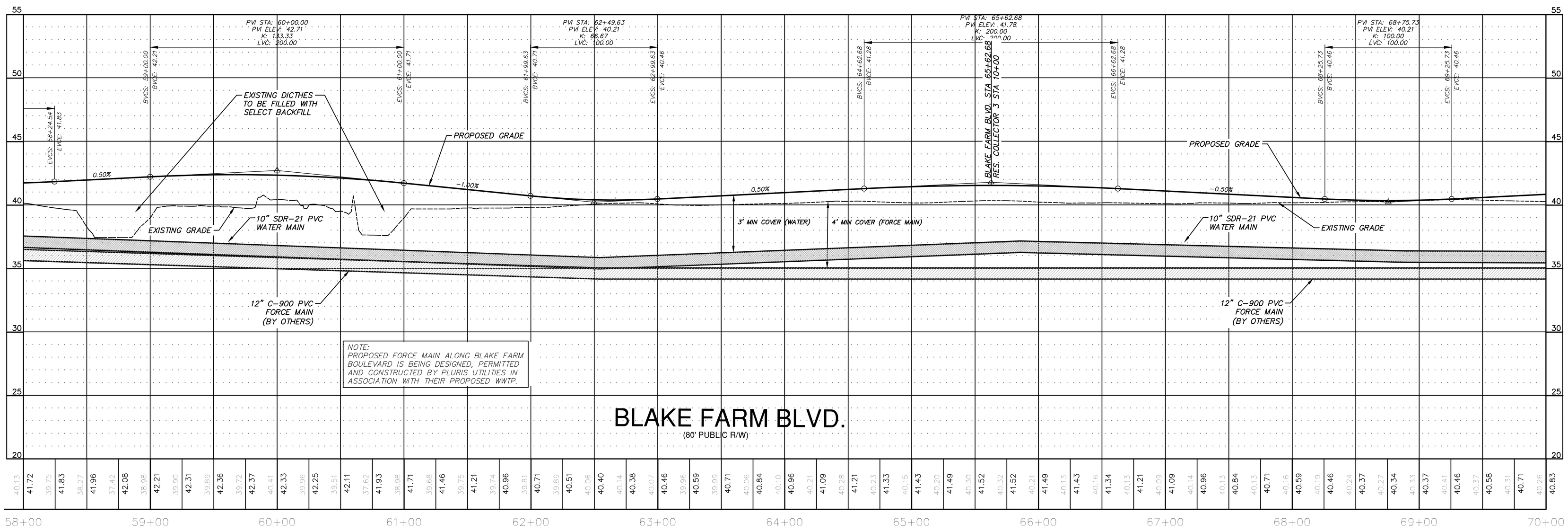

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS, AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BLAKE FARM BLVD.
PLAN AND PROFILE
STA 58+00 TO 70+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU705
DRAWING NUMBER 35

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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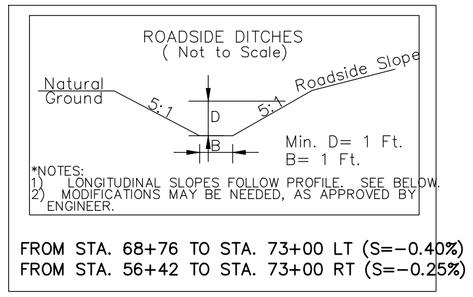
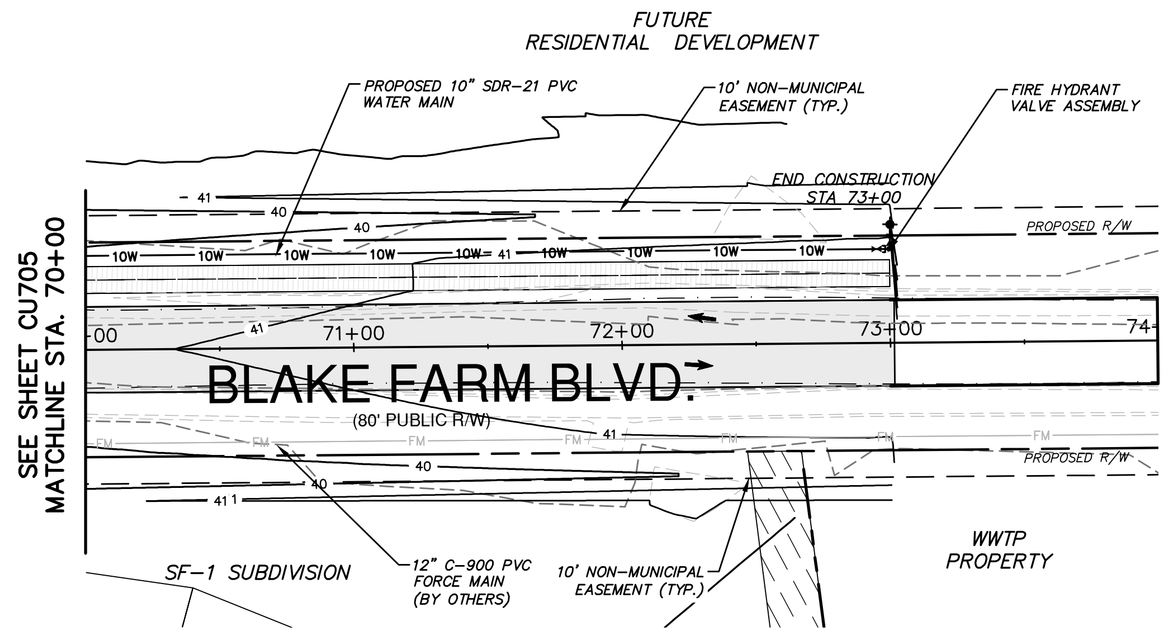
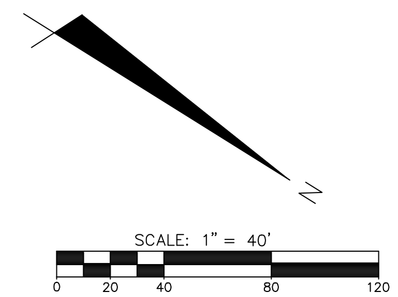
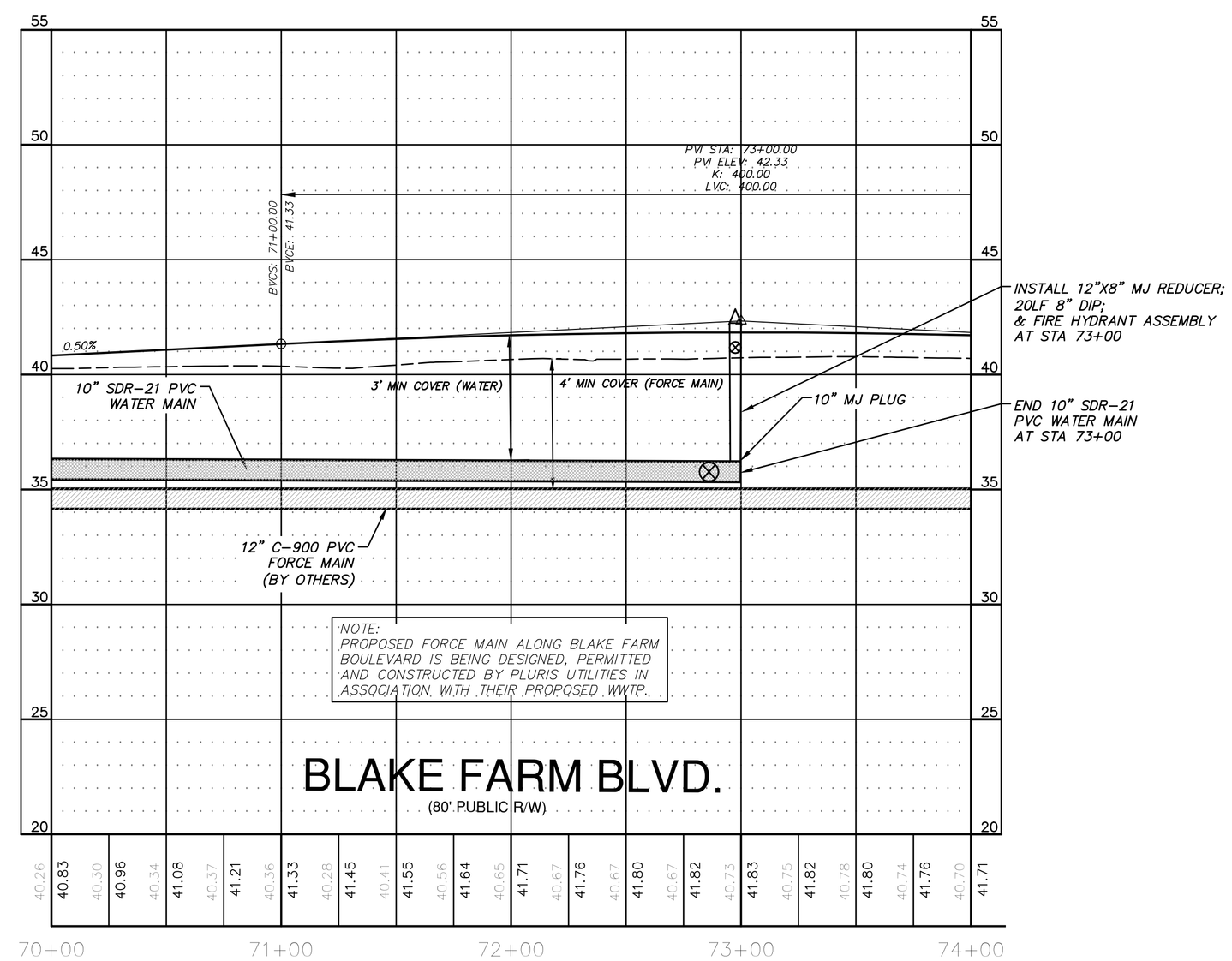


FROM STA. 68+76 TO STA. 73+00 LT (S=-0.40%)
FROM STA. 56+42 TO STA. 73+00 RT (S=-0.25%)







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL, BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER, P.E.

Richard M. Collier

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(910) 799-8755

BLAKE FARM - EST. 1946 -

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BLAKE FARM BLVD.
PLAN AND PROFILE
STA 70+00 TO 74+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER: CU706
DRAWING NUMBER: 36

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION: F

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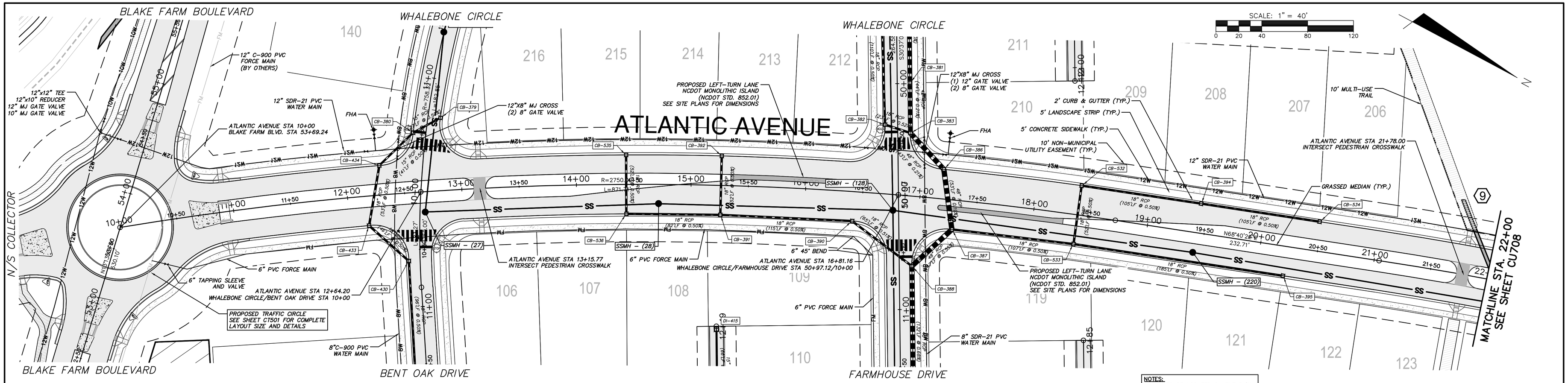
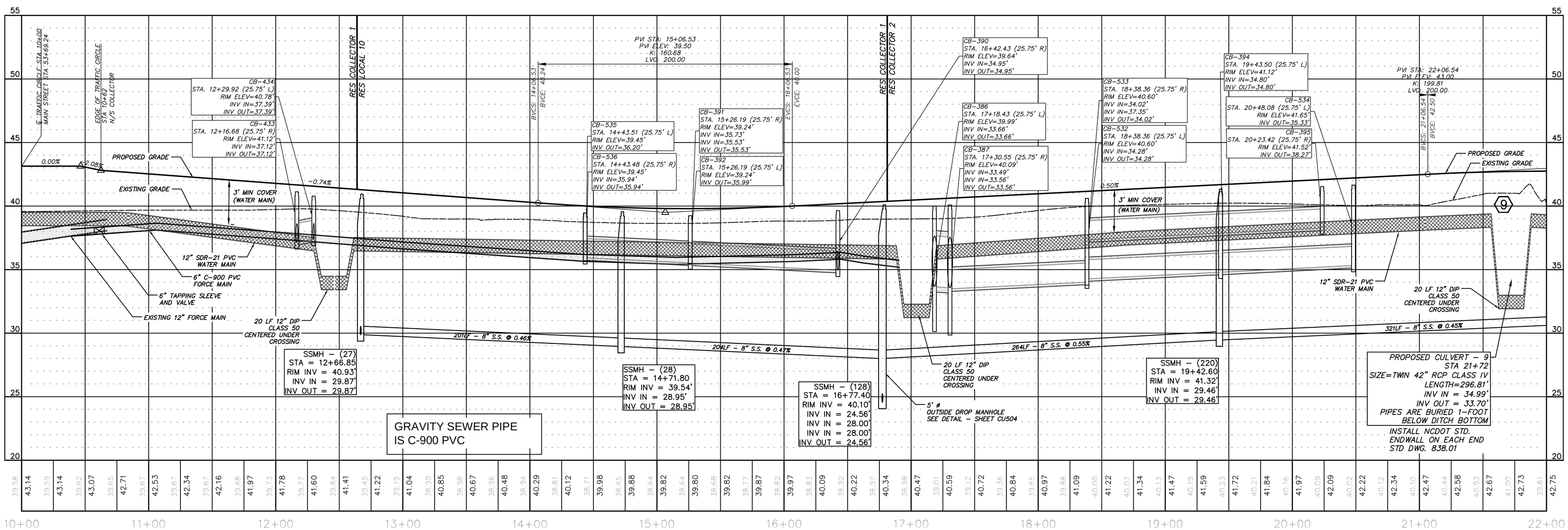


NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU10B FOR SANITARY SEWER SCHEDULE



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/FOWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL, BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER, P.E.

Richard M. Collier

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BLAKE FARM - EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ATLANTIC AVENUE
PLAN AND PROFILE
STA 10+00 TO 22+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

MAC FILE NUMBER: CU707
DRAWING NUMBER: 37

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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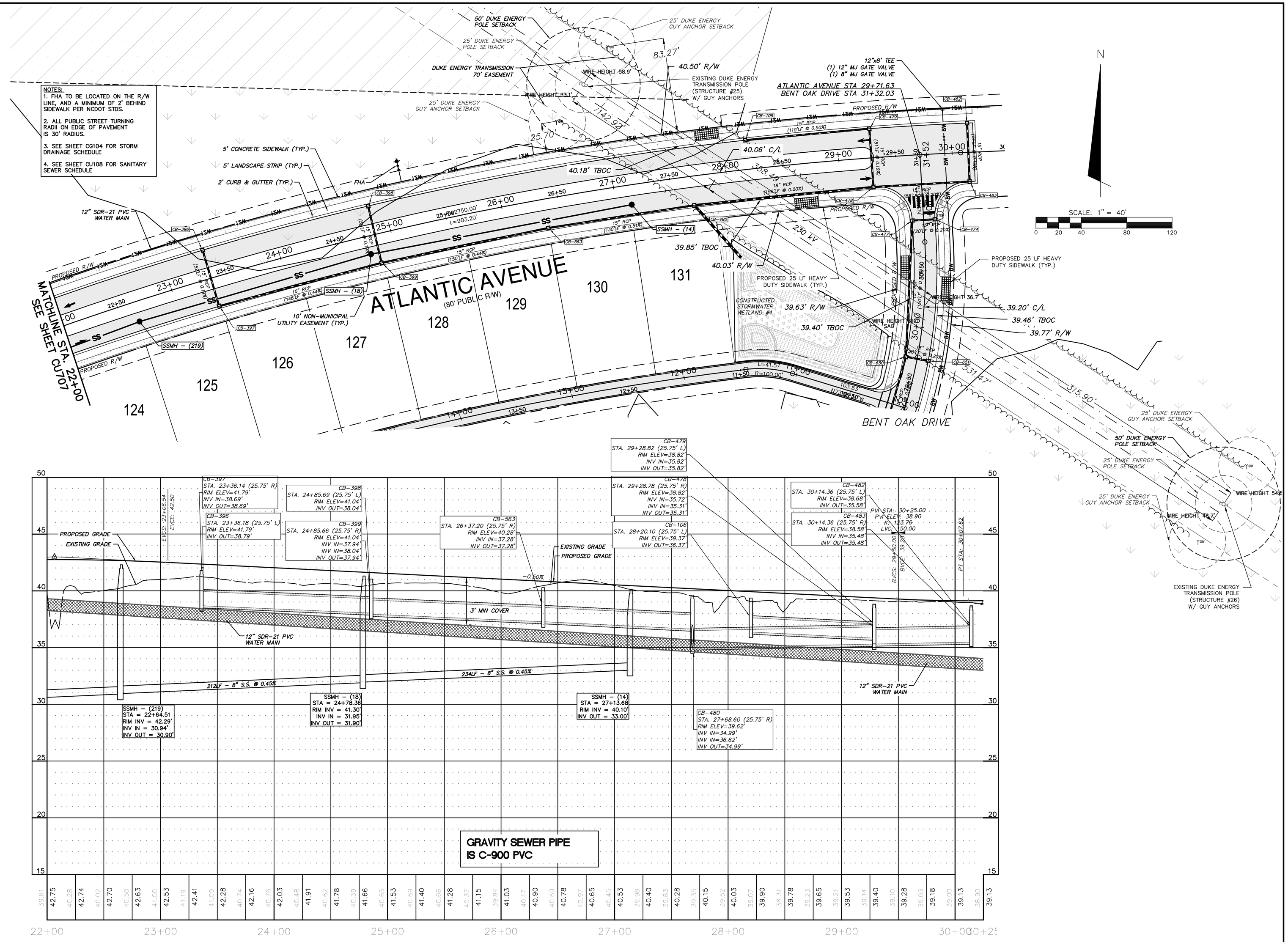
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS / HAMPSTEAD LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ATLANTIC AVENUE PLAN AND PROFILE STA 22+00 TO 30+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU708
DRAWING NUMBER 38

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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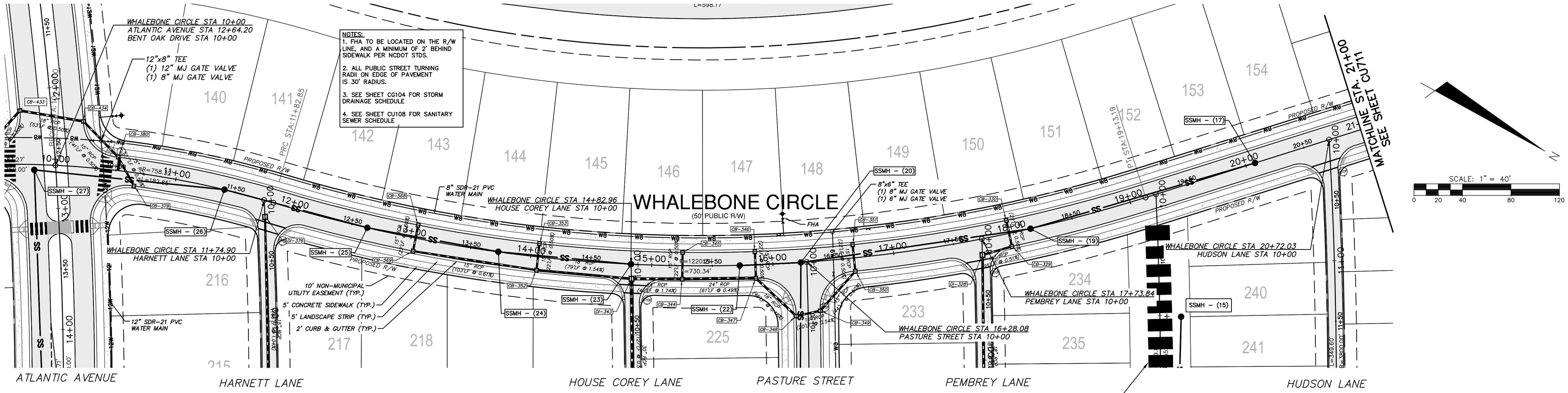

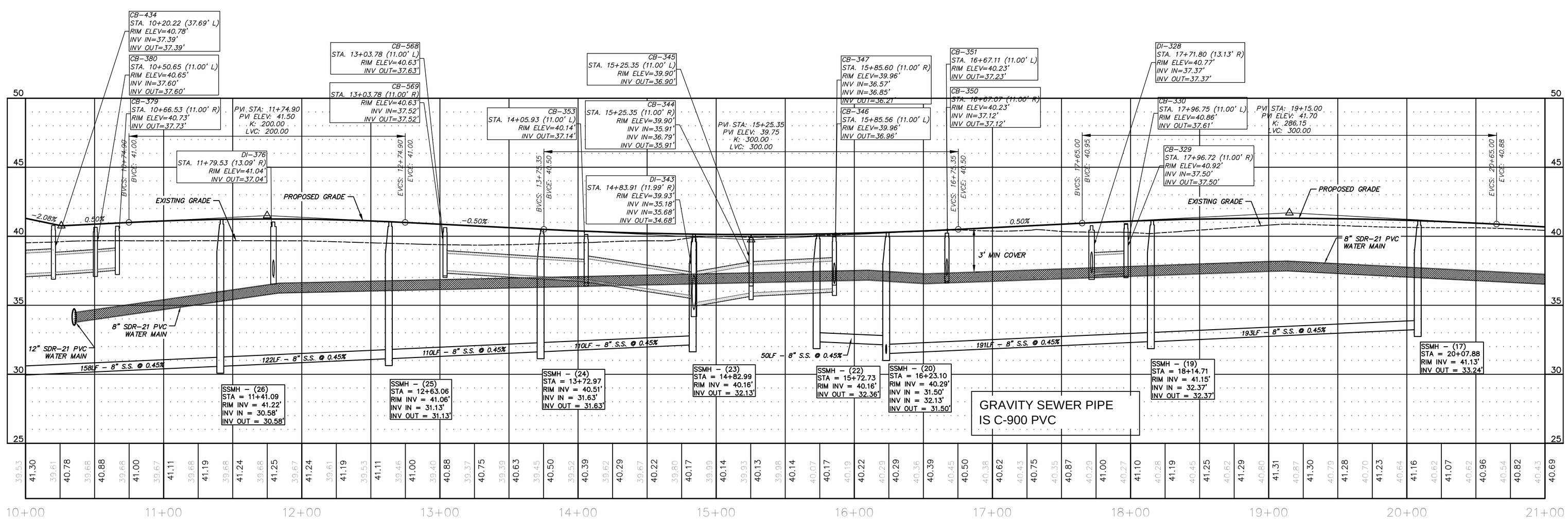

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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NC LIC. No. F-1222
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(910) 799-8755

BLAKE FARM EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WHALEBONE CIRCLE
PLAN AND PROFILE
STA 10+00 to 21+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU710

DRAWING NUMBER 40

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION F

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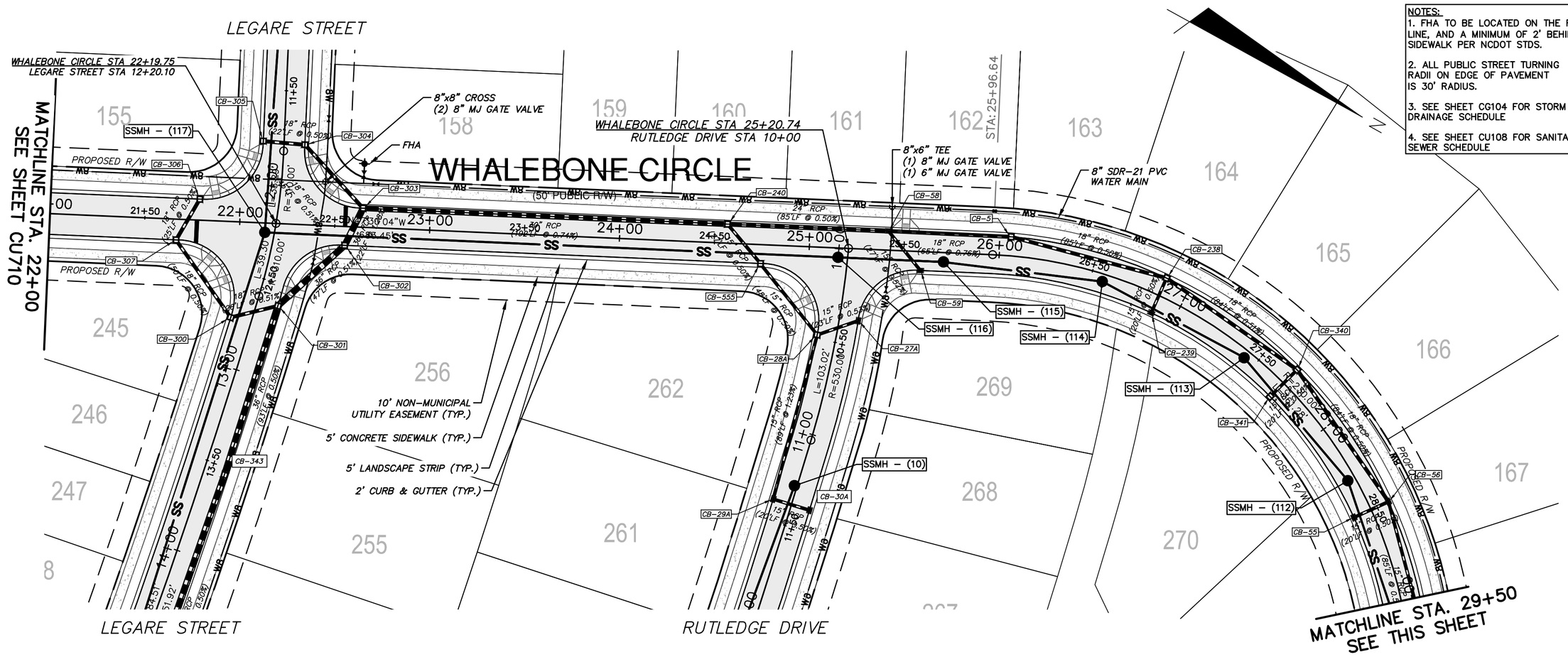
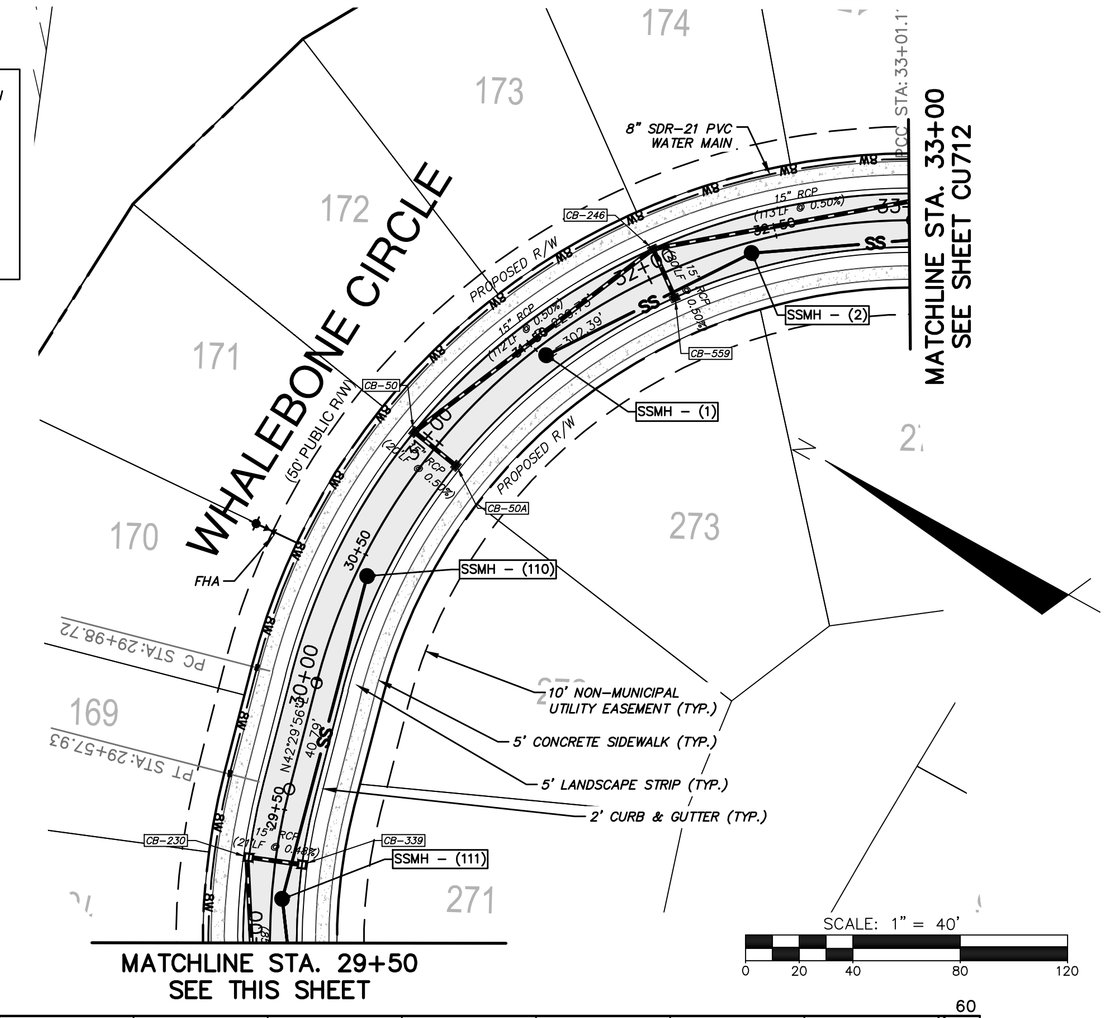
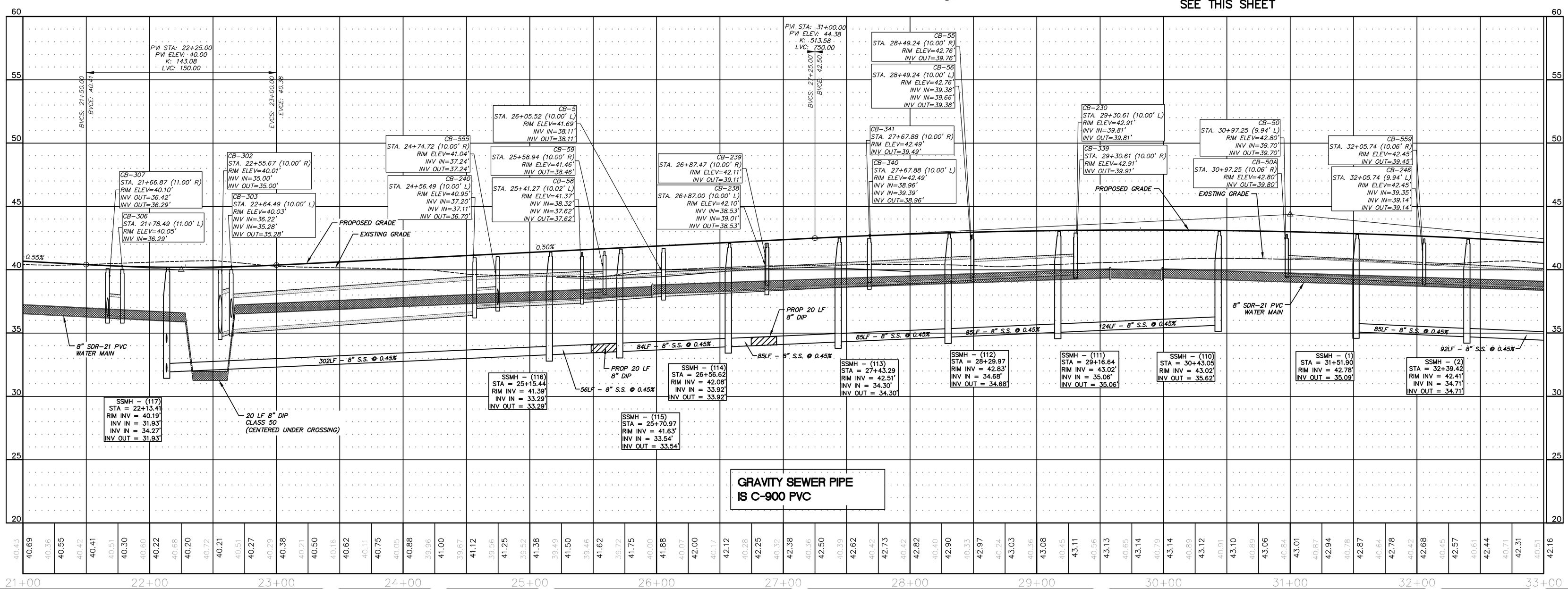
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS
DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER
RICHARD M. COLLIER, II
Richard M. Collier

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(910) 799-8755

BLAKE FARM
EST. 1946

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WHALEBONE CIRCLE
PLAN AND PROFILE
STA 21+00 TO 33+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

MAC FILE NUMBER: CU711
DRAWING NUMBER: 41

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION: F

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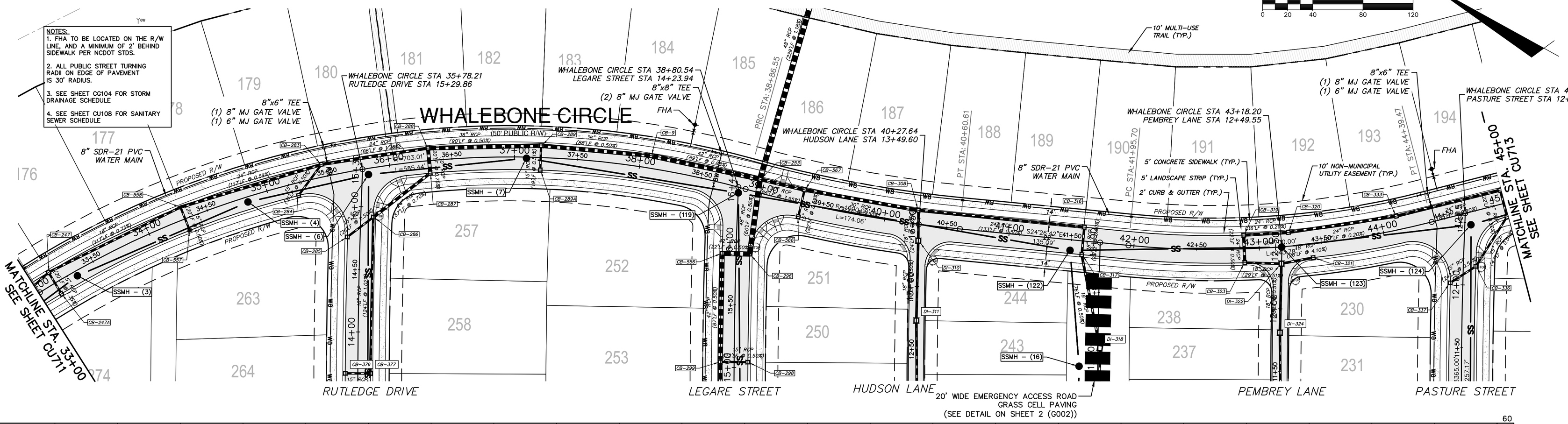
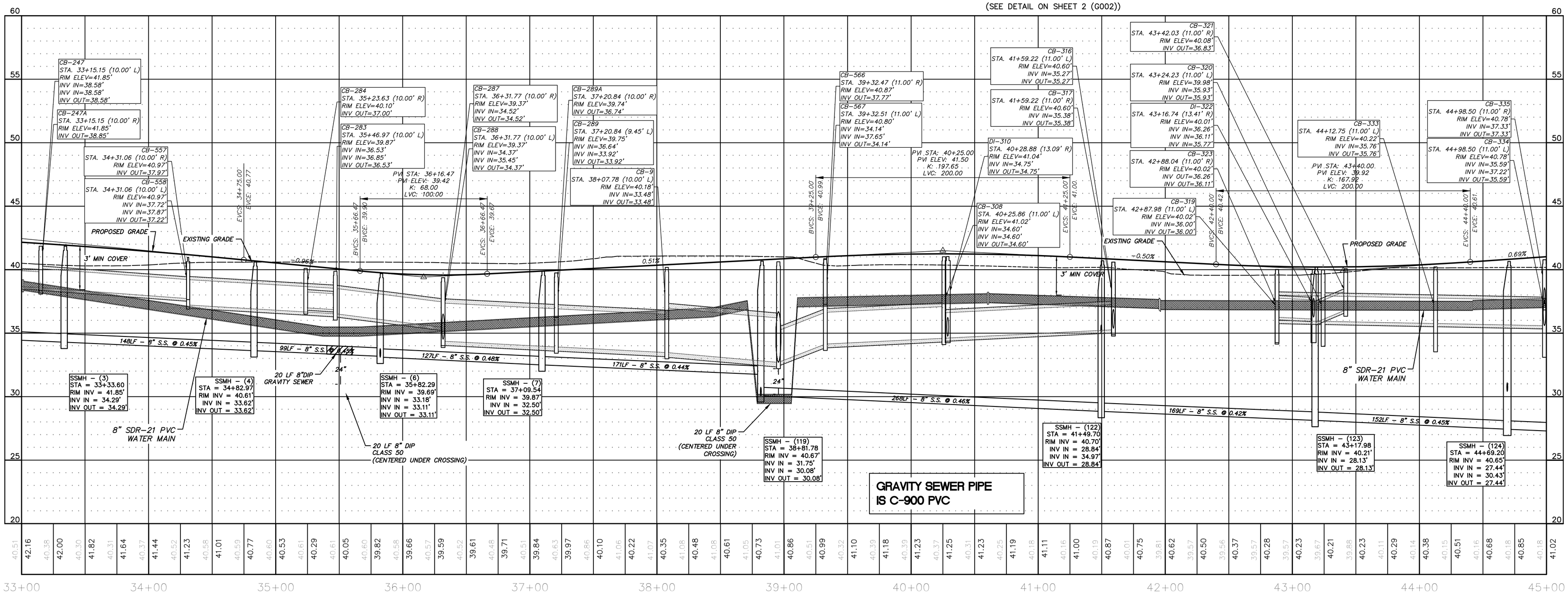
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLUMB HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD MCCOLLIER

Richard M. Collier

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(910) 799-8755

BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WHALEBONE CIRCLE
PLAN AND PROFILE
STA 33+00 TO 45+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU712
DRAWING NUMBER 42

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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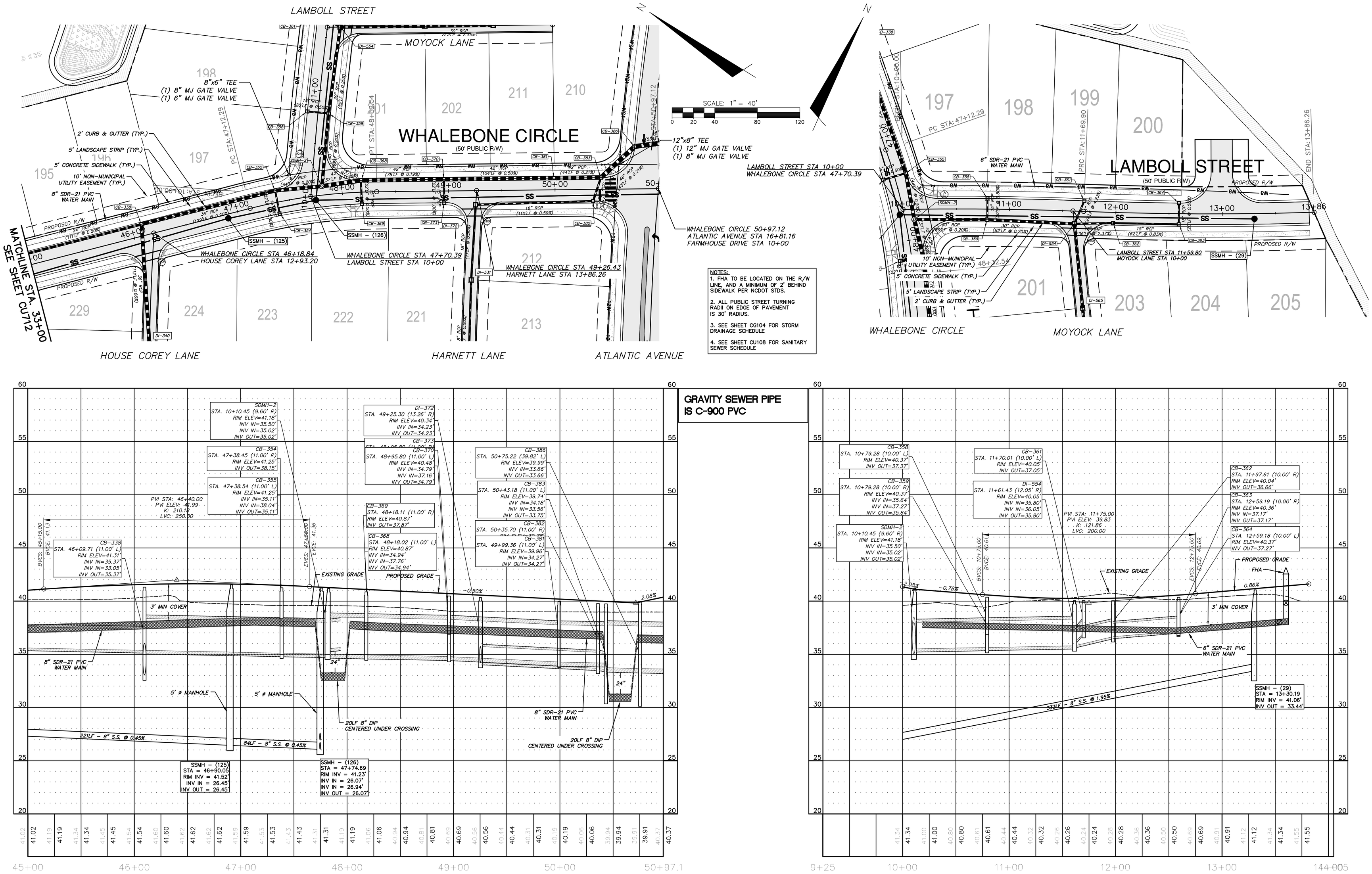

NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS, AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLUMB HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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NC LIC. No. F-1222
www.mckimcreed.com

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1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM EST. 1946

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA
WHALEBONE CIRCLE, LAMBOLL STREET
PLAN AND PROFILE
STA 45+00 - 50+97 ; STA 10+00 - 14+05

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

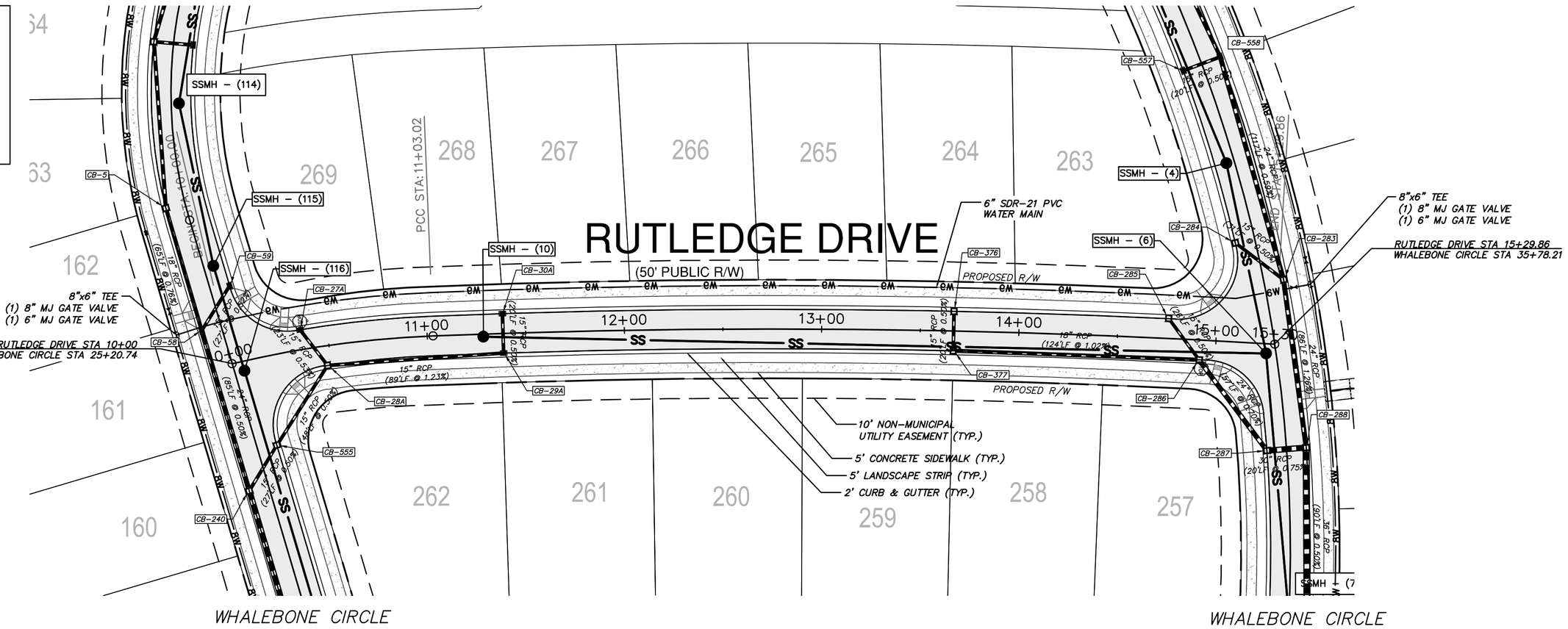
SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

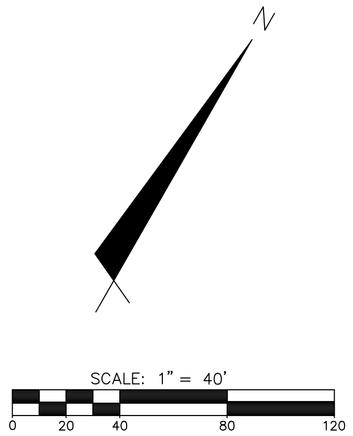
M&C FILE NUMBER CU713
DRAWING NUMBER 43

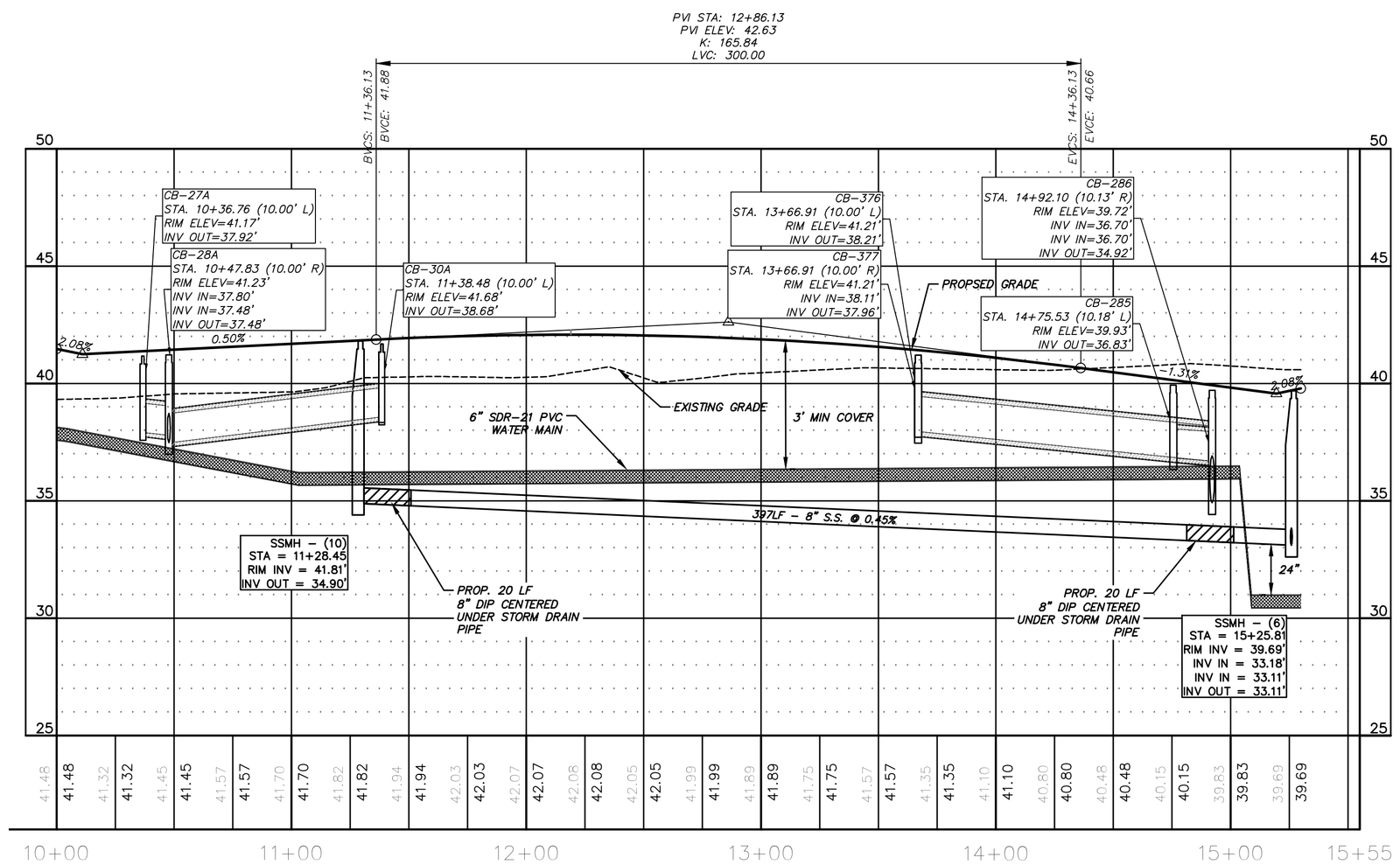
STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU713_065250001.dwg, 9/1/2015 11:41:17 AM, cmursey

NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ, NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL, BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER, III

Richard M. Collier

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282

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www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

RUTLEDGE DRIVE
PLAN AND PROFILE
STA 10+00 TO 15+29.86

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

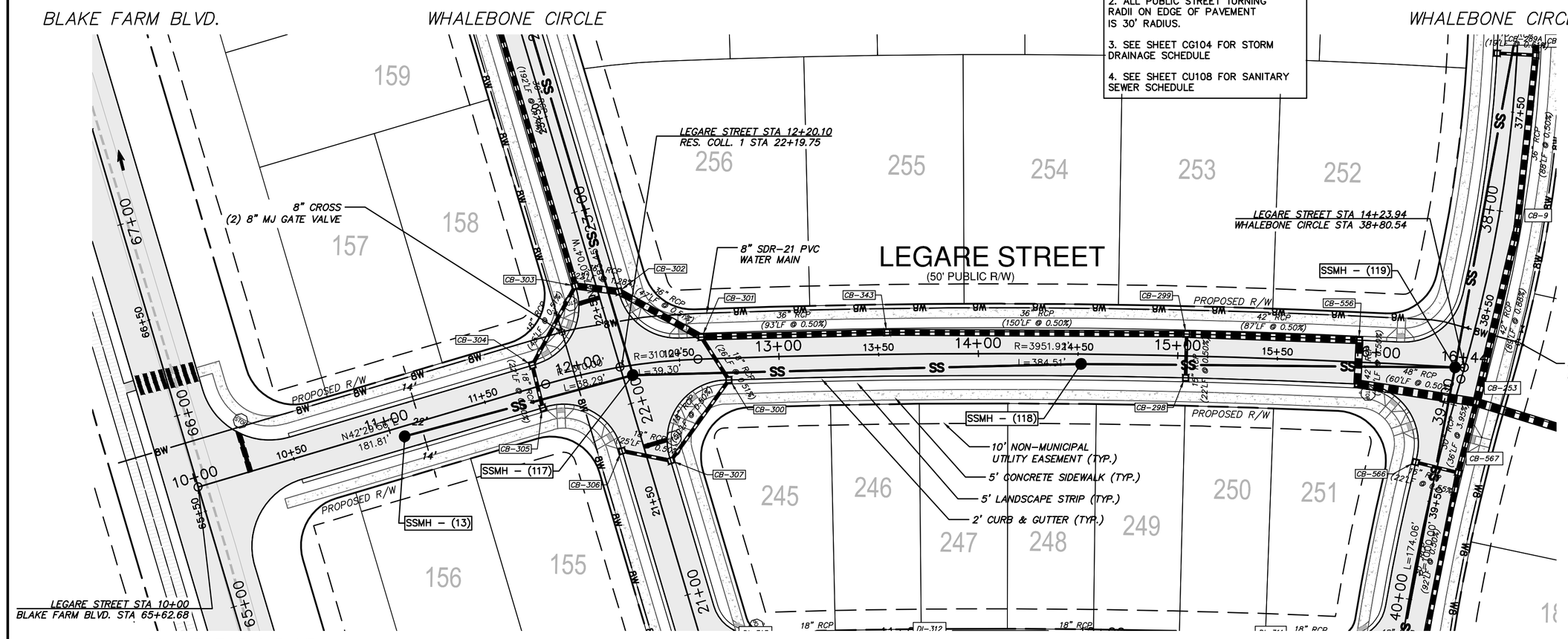
SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

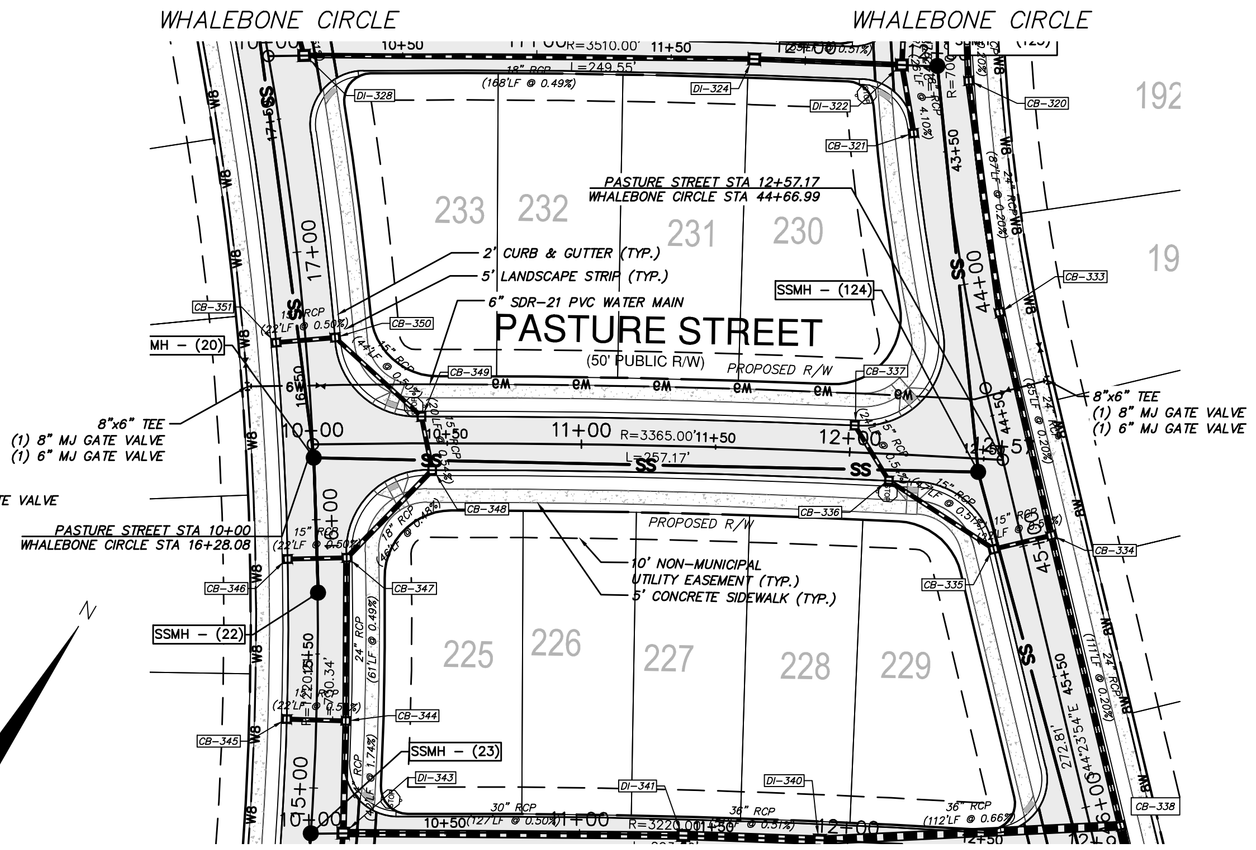
M&C FILE NUMBER: CU714
DRAWING NUMBER: 44

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU714_065250001.dwg, 9/1/2015 10:06:08 AM, cruntey

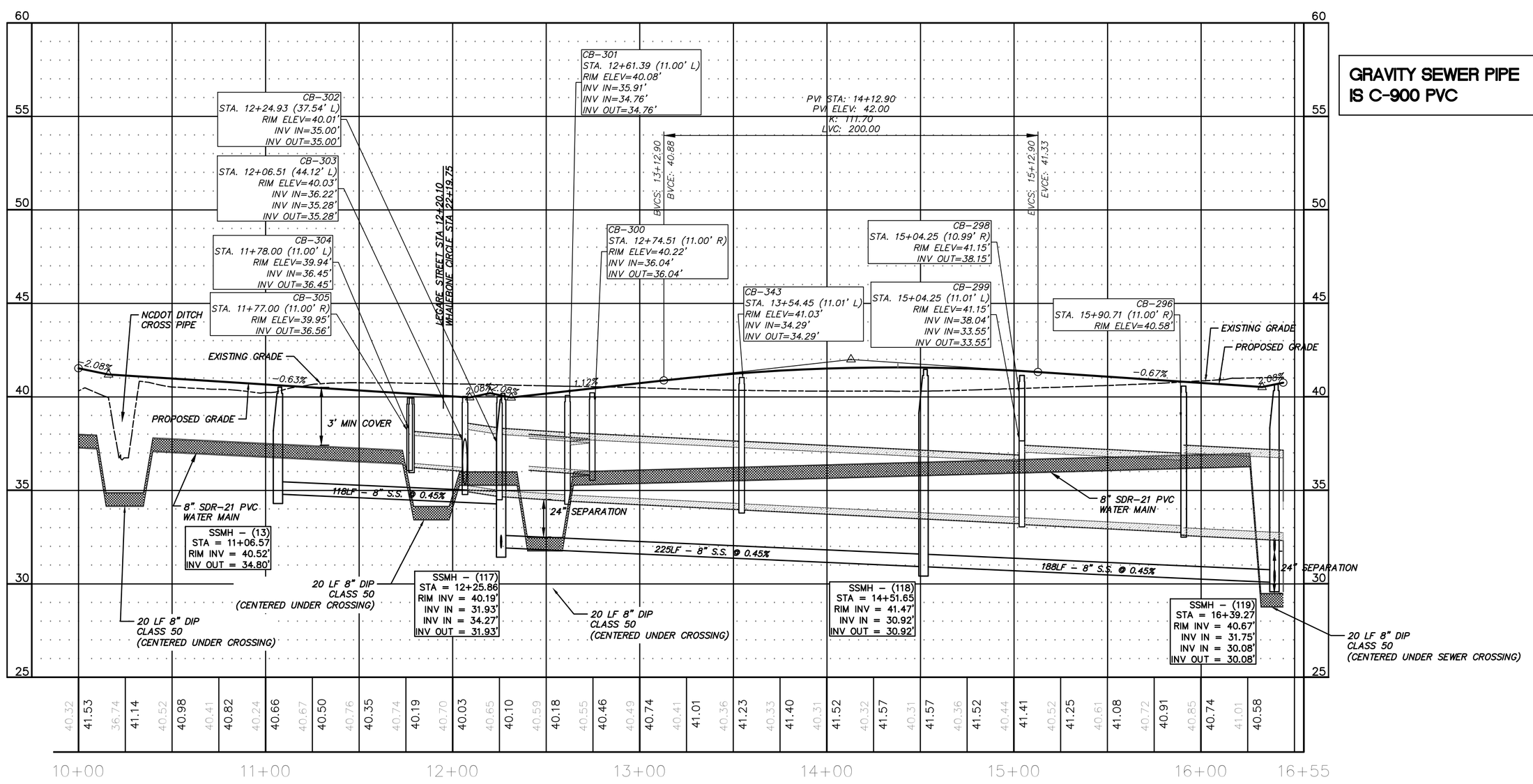
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

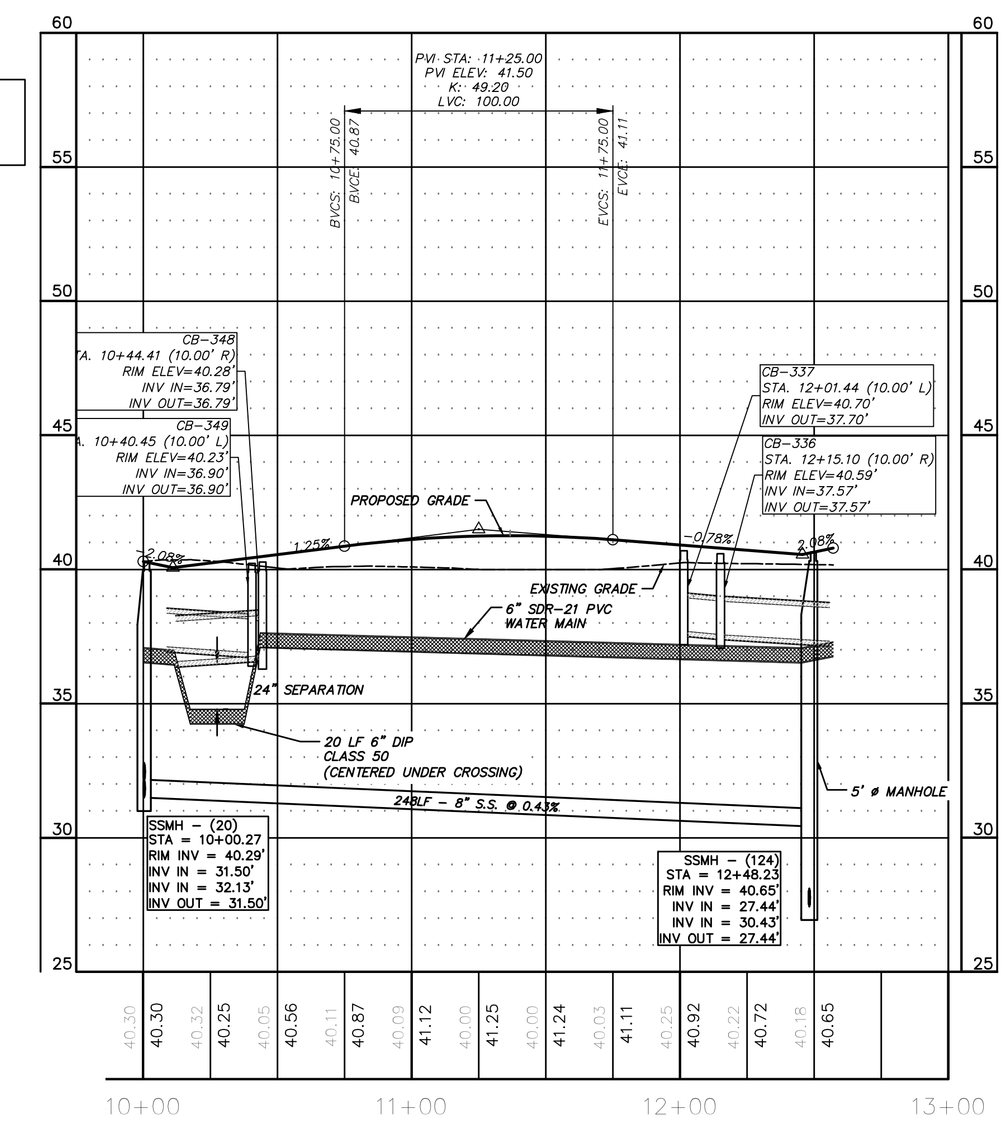




SCALE: 1" = 40'
0 20 40 80 120

GRAVITY SEWER PIPE
IS C-900 PVC





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIB HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL, BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

LEGARE STREET & PASTURE STREET PLAN AND PROFILE

STA 10+00 TO 16+43.91 AND 10+00 TO 12+57.17

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU715
DRAWING NUMBER 45

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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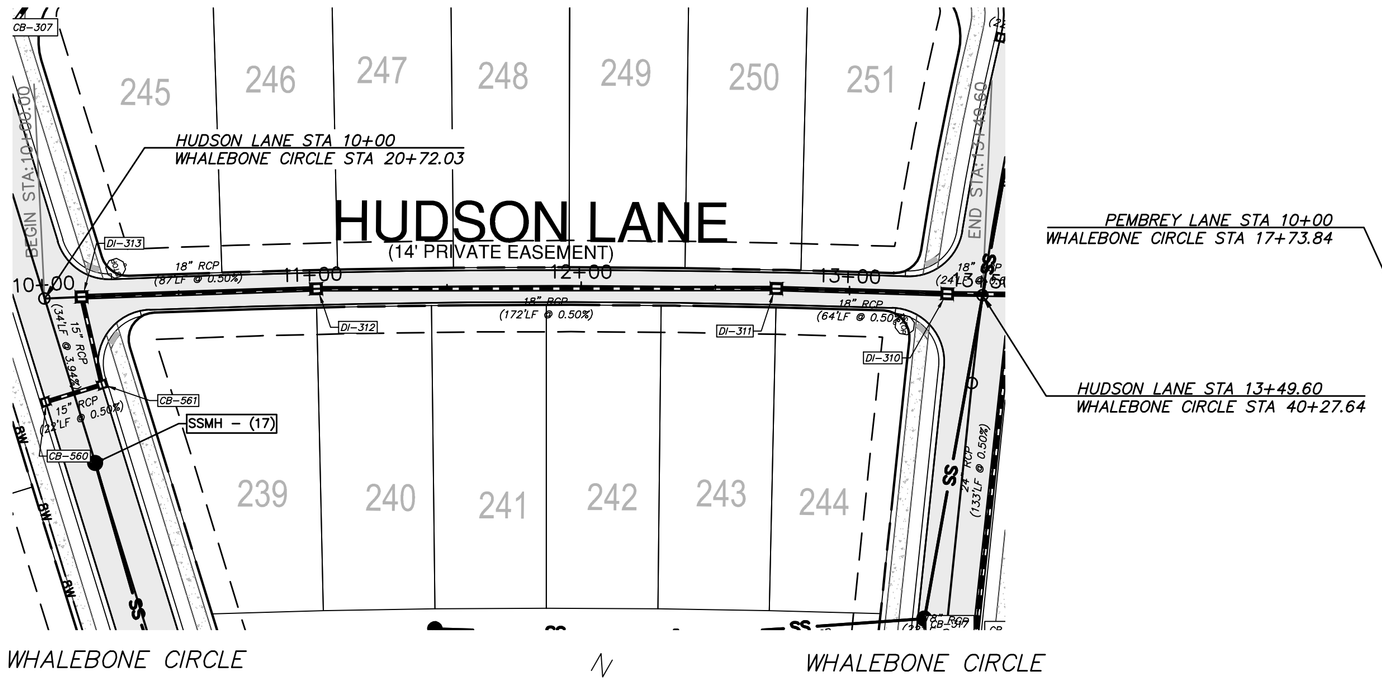
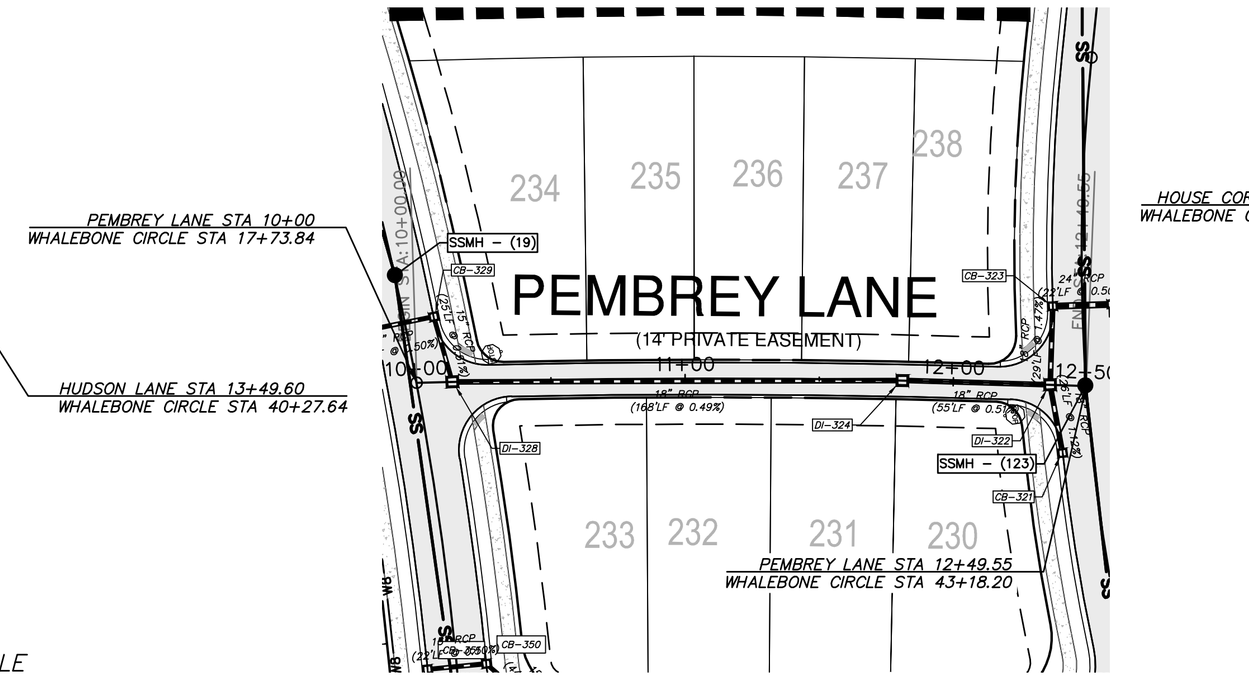
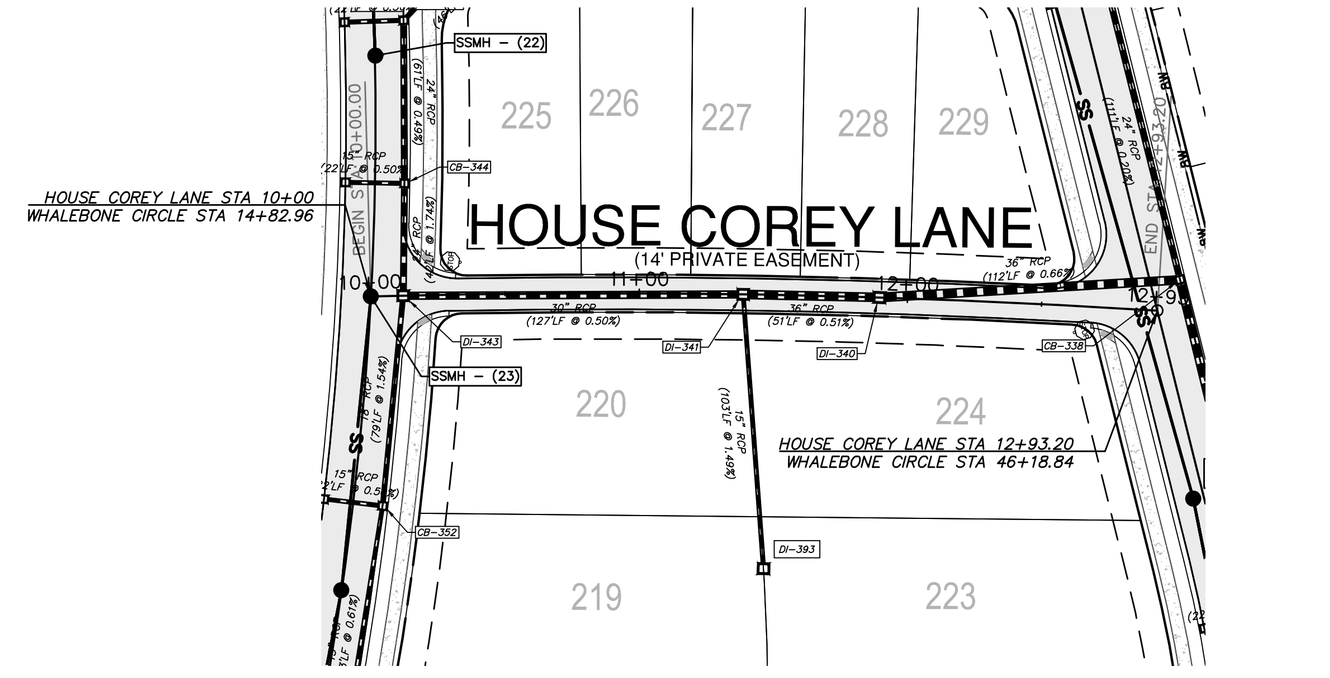
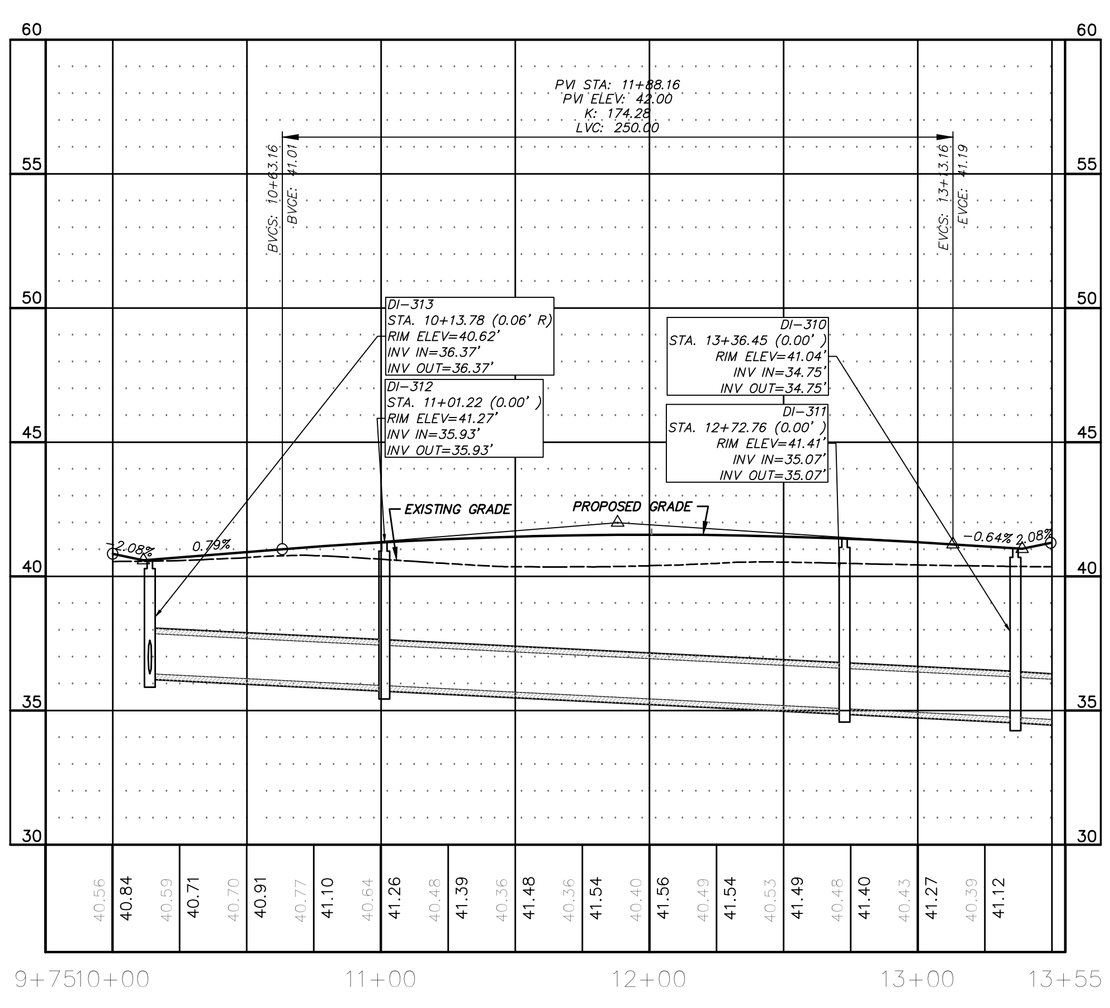


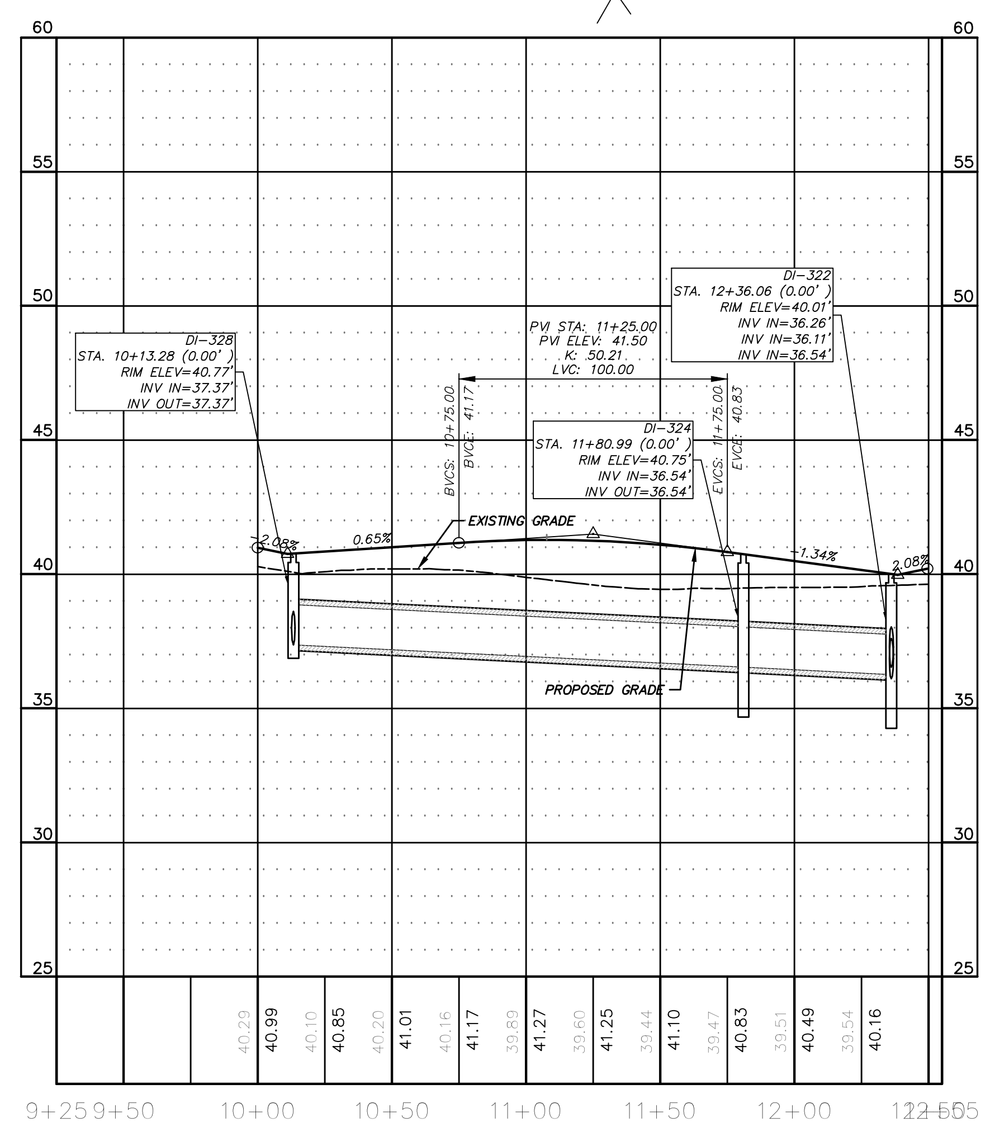


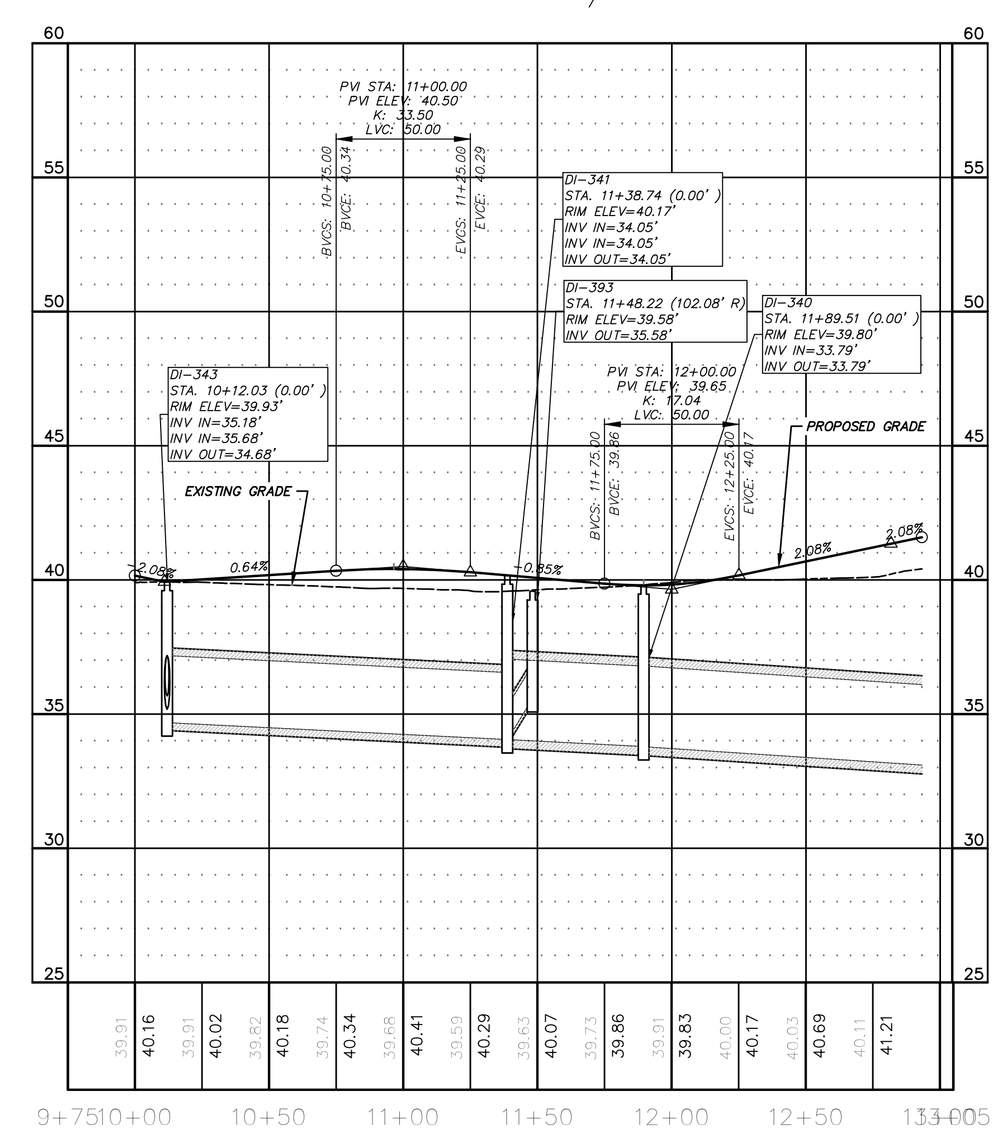


NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

SCALE: 1" = 40'
0 20 40 80 120







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	03/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL
FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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Trask Land CO INC
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(910) 799-8755

BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

HUDSON LANE, PEMBREY LANE & HOUSE COREY LANE PLAN AND PROFILE

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

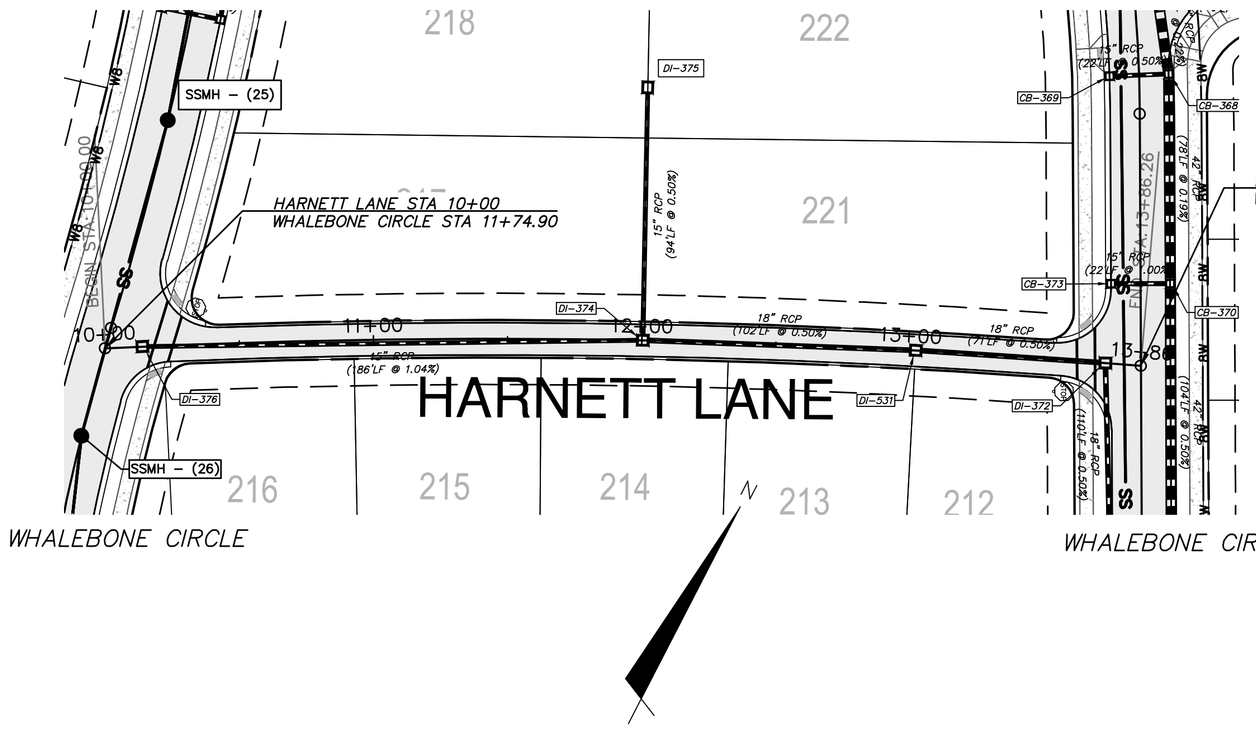
SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

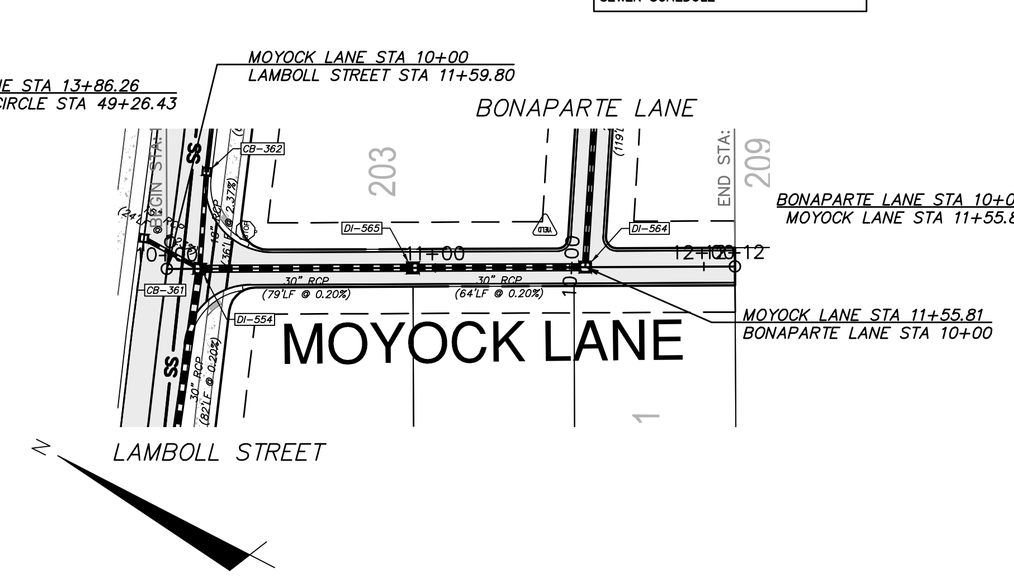
M&C FILE NUMBER: CU716
DRAWING NUMBER: 46

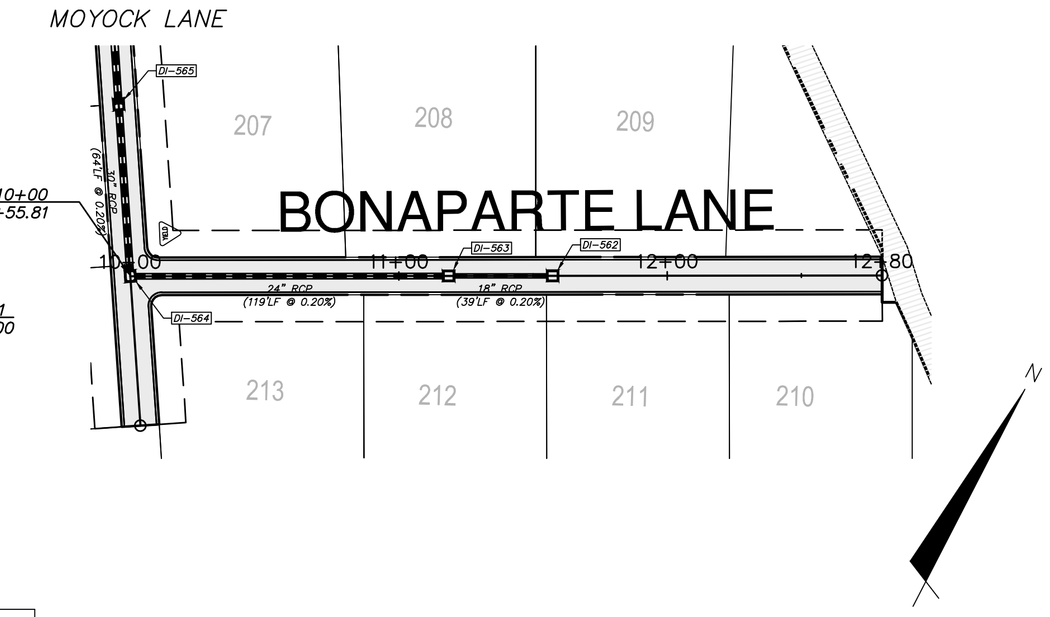
STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU716_066250001.dwg, 9/1/2015 12:33:22 PM, cmursey

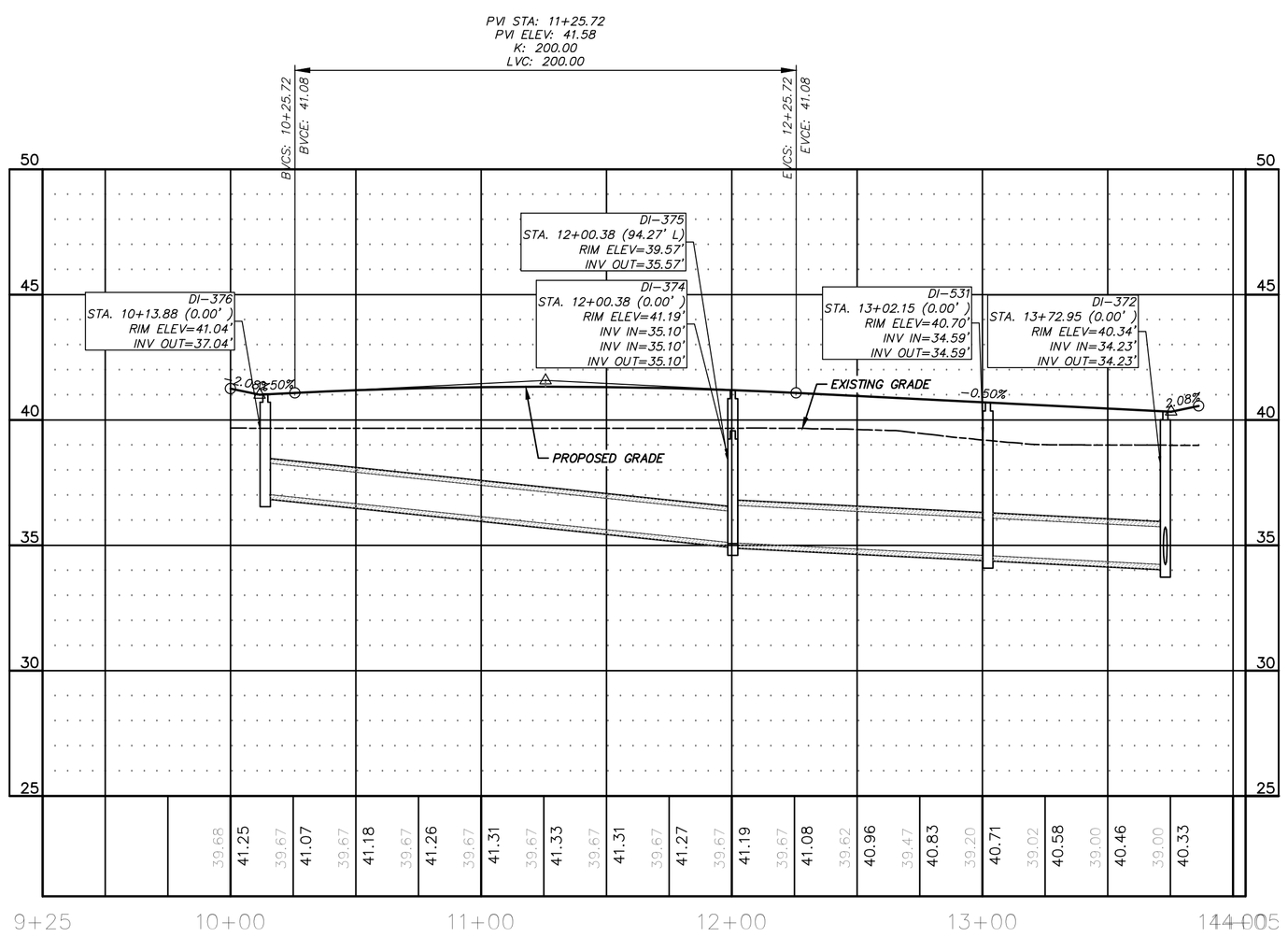
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

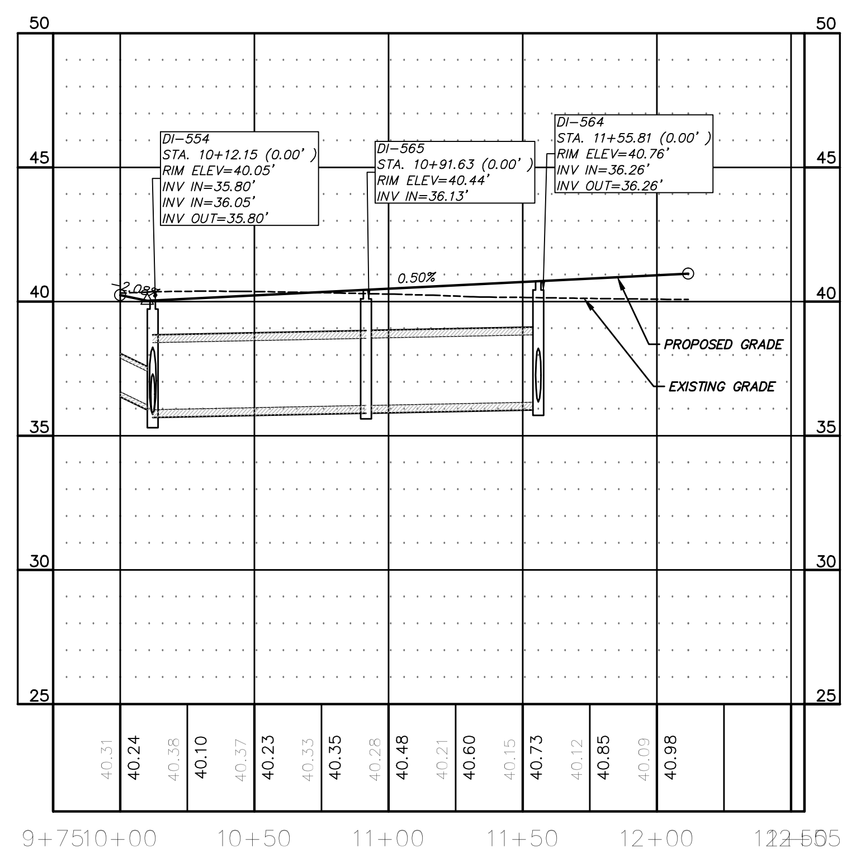


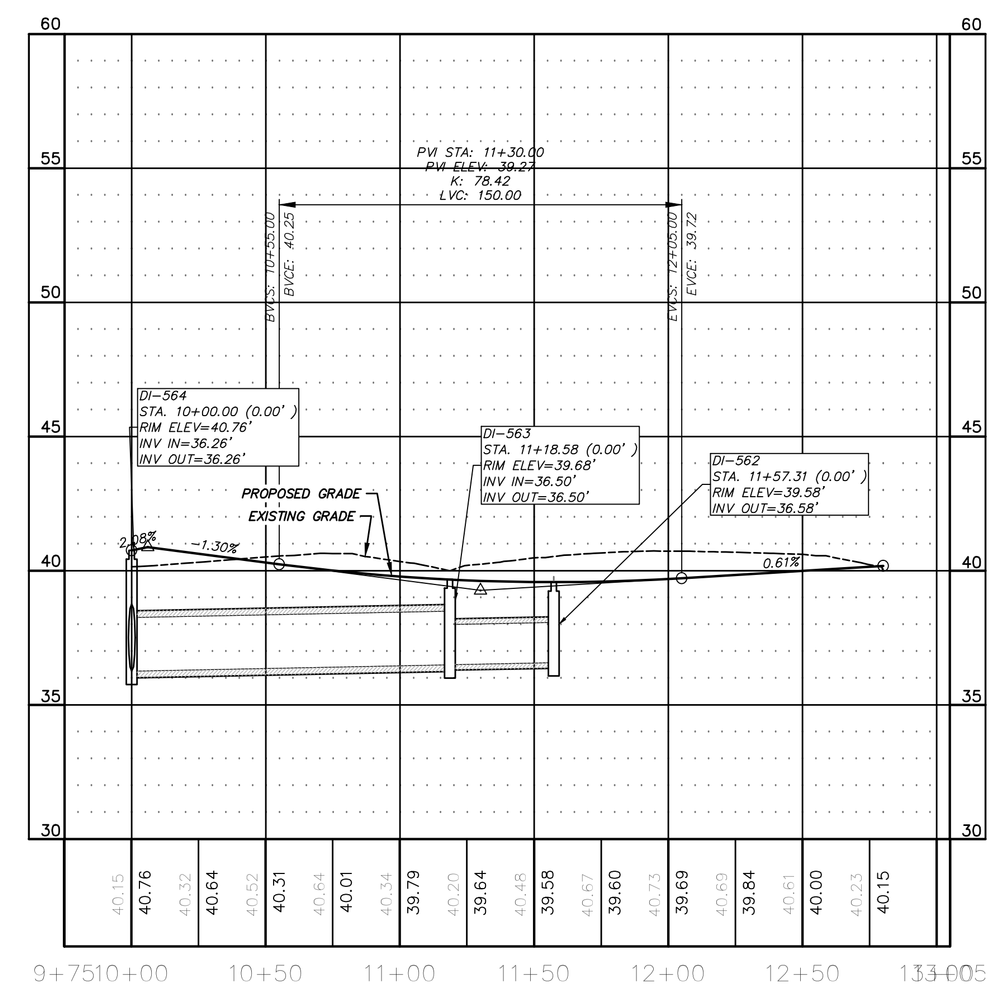




SCALE: 1" = 40'
0 20 40 80 120







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
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NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

HARNETT LANE, MOYOCK LANE, & BONAPARTE LANE PLAN AND PROFILE

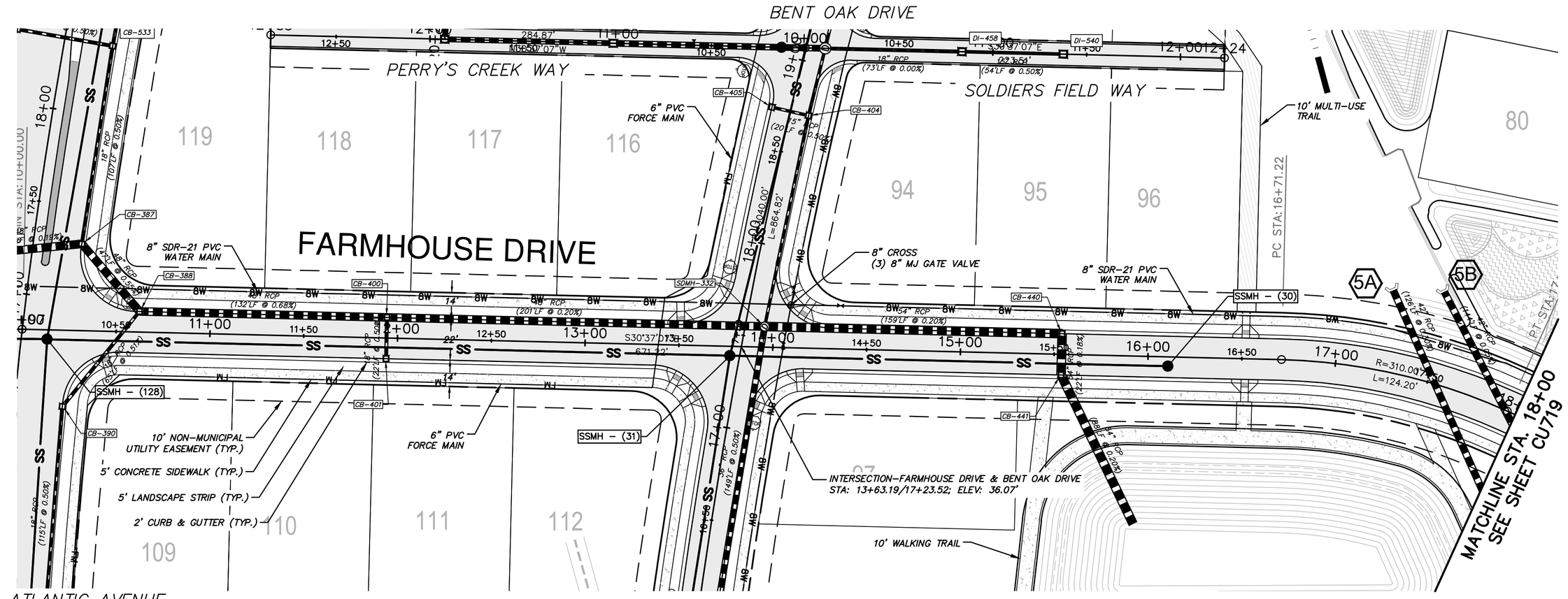
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

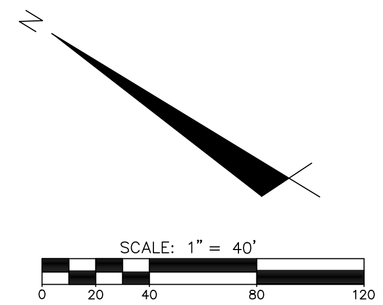
M&C FILE NUMBER CU717
DRAWING NUMBER 47

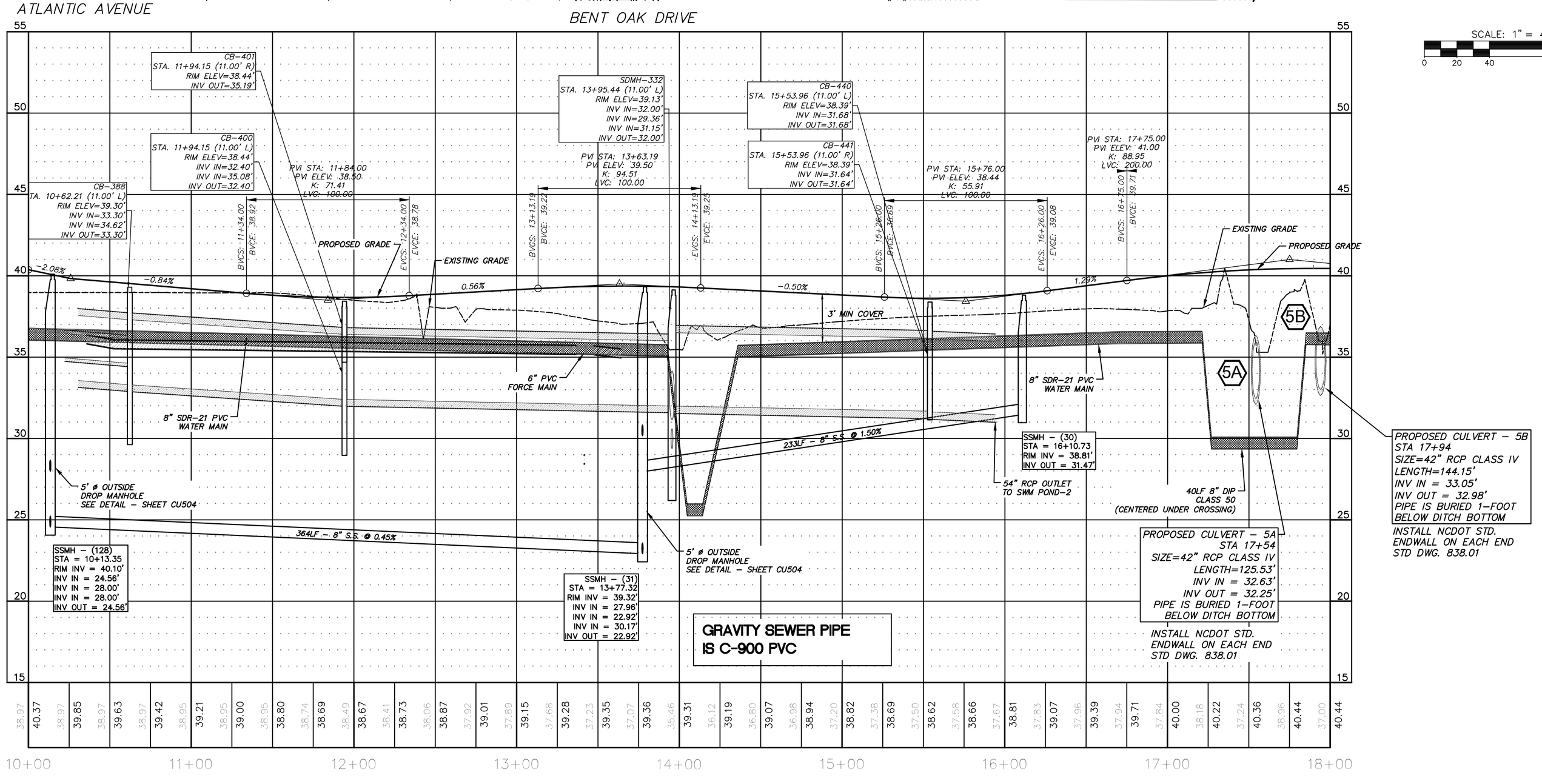
STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU717_065250001.dwg, 9/1/2015 12:42:45 PM, cnursey



NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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www.mckimcreed.com

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM — EST 1946 —

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

FARMHOUSE DRIVE
PLAN AND PROFILE
STA 10+00 TO 18+00

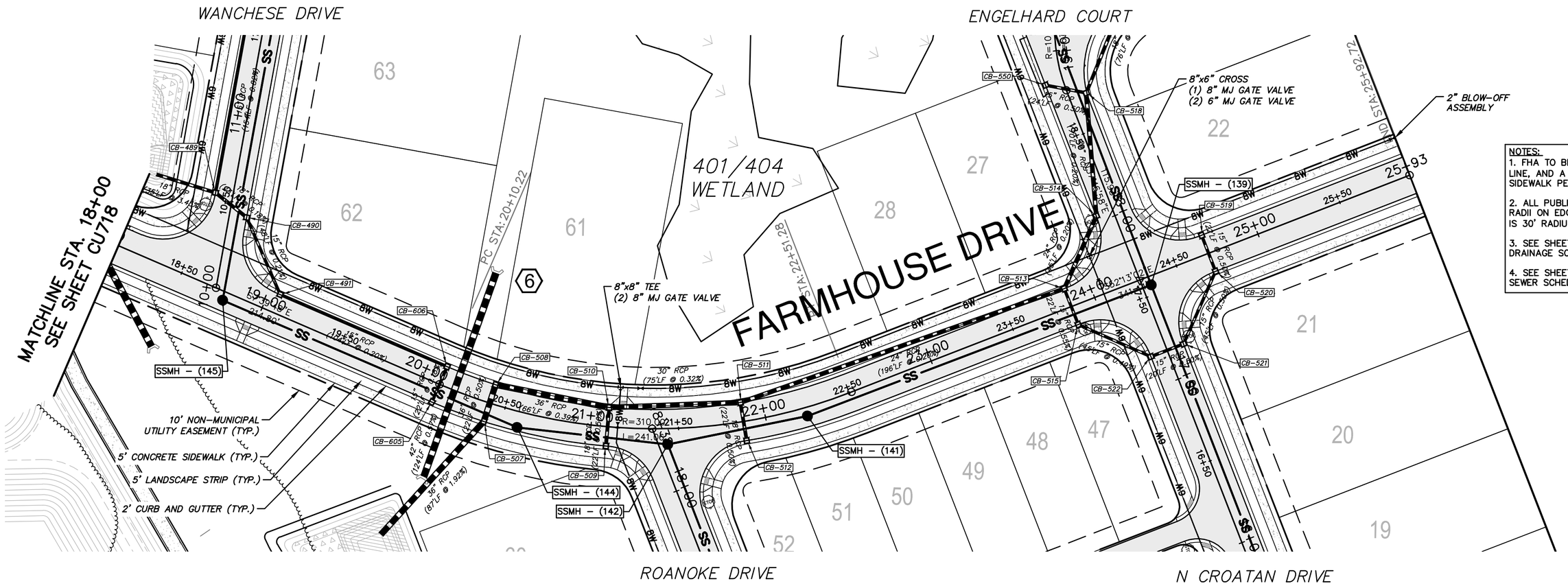
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU718
DRAWING NUMBER 48

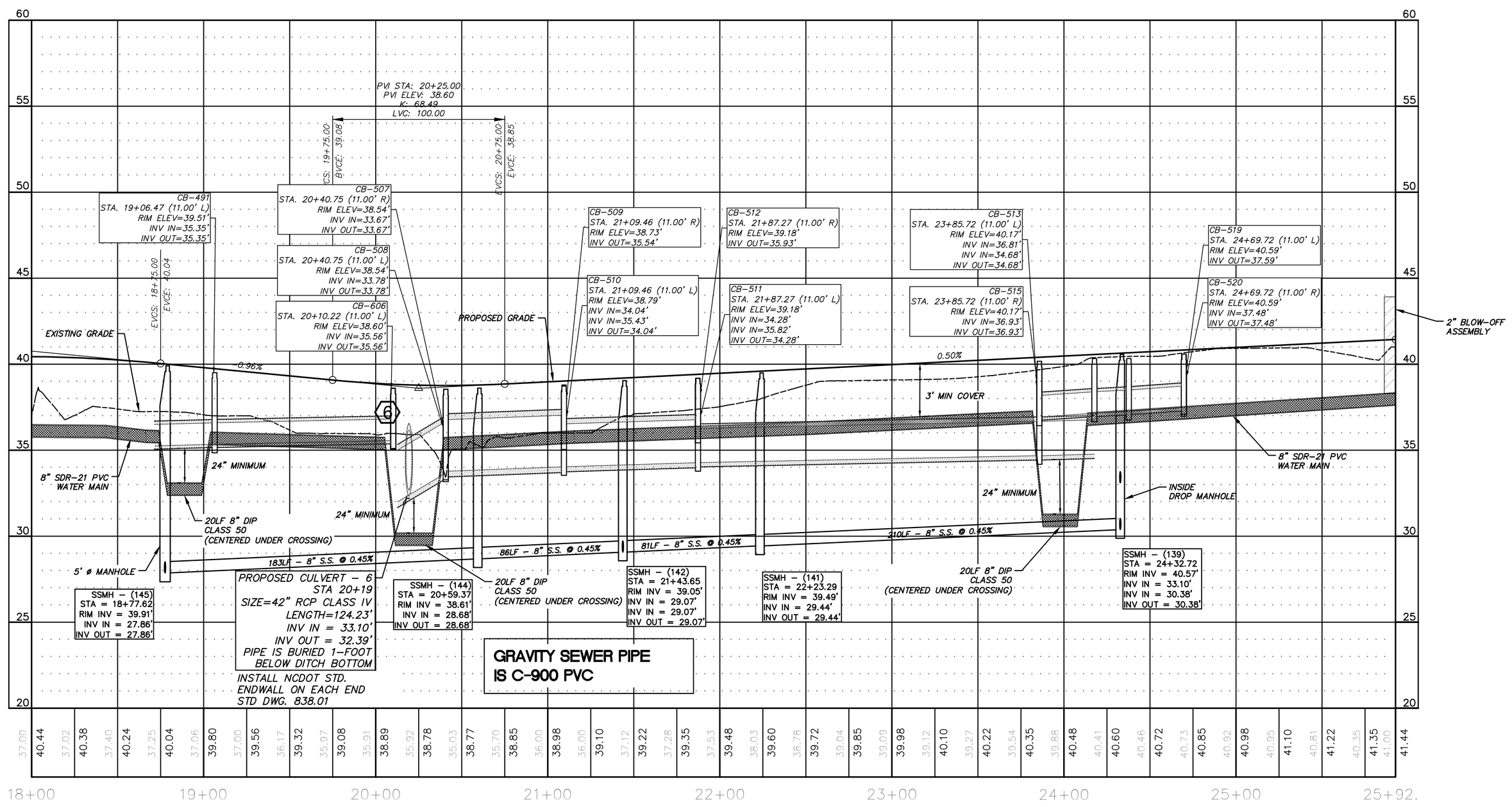
STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU718_06525001.dwg, 9/1/2015 1:02:11 PM, cnursey



NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

SCALE: 1" = 40'
0 20 40 80 120



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIB HARPSTEAD LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS. DO NOT USE FOR CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
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Wilmington, North Carolina 28401
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(910) 799-8755

BLAKE FARM - EST. 1946 -

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

FARMHOUSE DRIVE
PLAN AND PROFILE
STA 18+00 TO 25+93

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU719
DRAWING NUMBER 49

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\Plan Profile Sheets\CU719_06525001.dwg, 9/1/2015 1:22:16 PM, cruesky

NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
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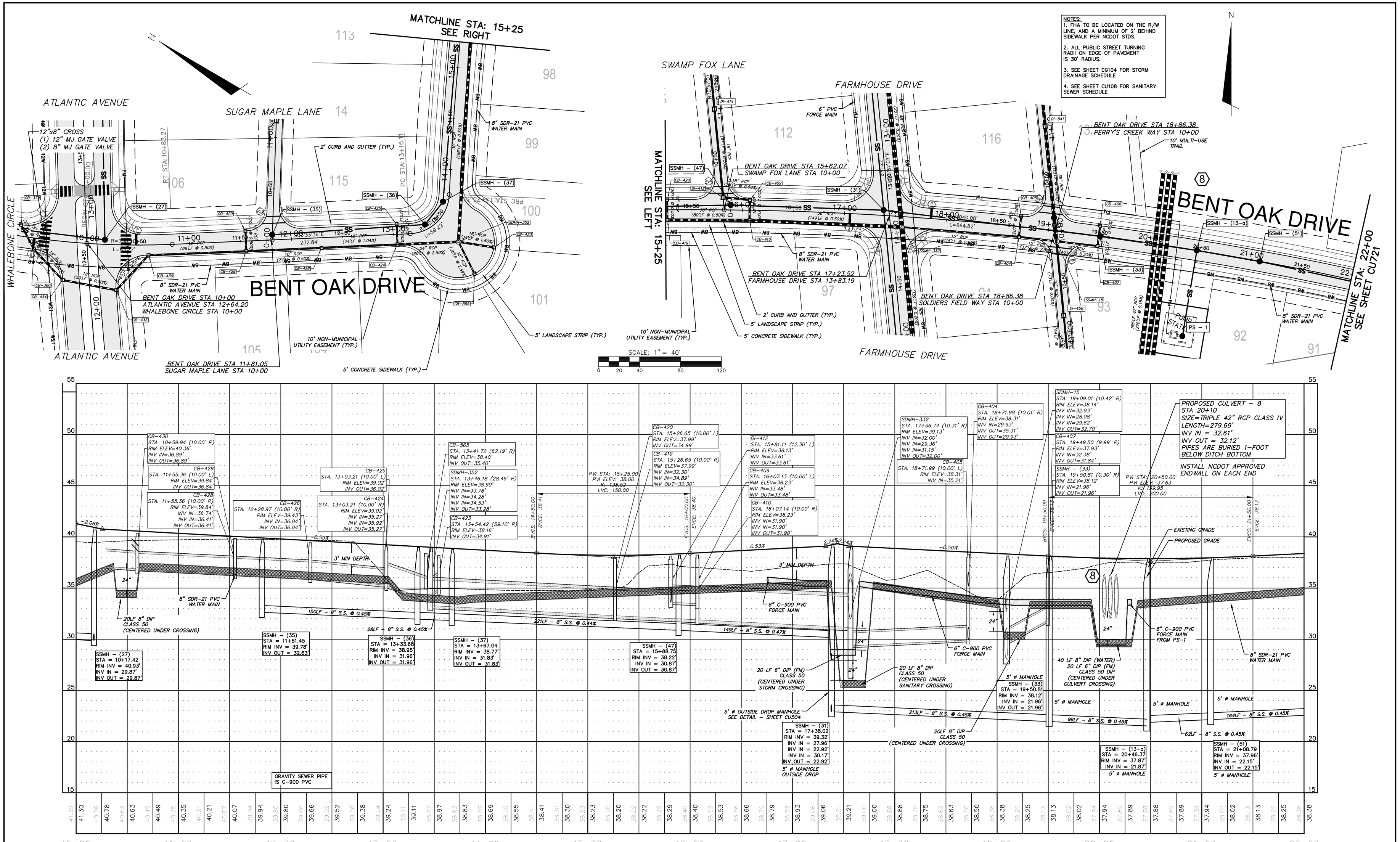
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BENT OAK DRIVE
PLAN AND PROFILE
STA 10+00 TO 22+00

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU720
DRAWING NUMBER 50

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

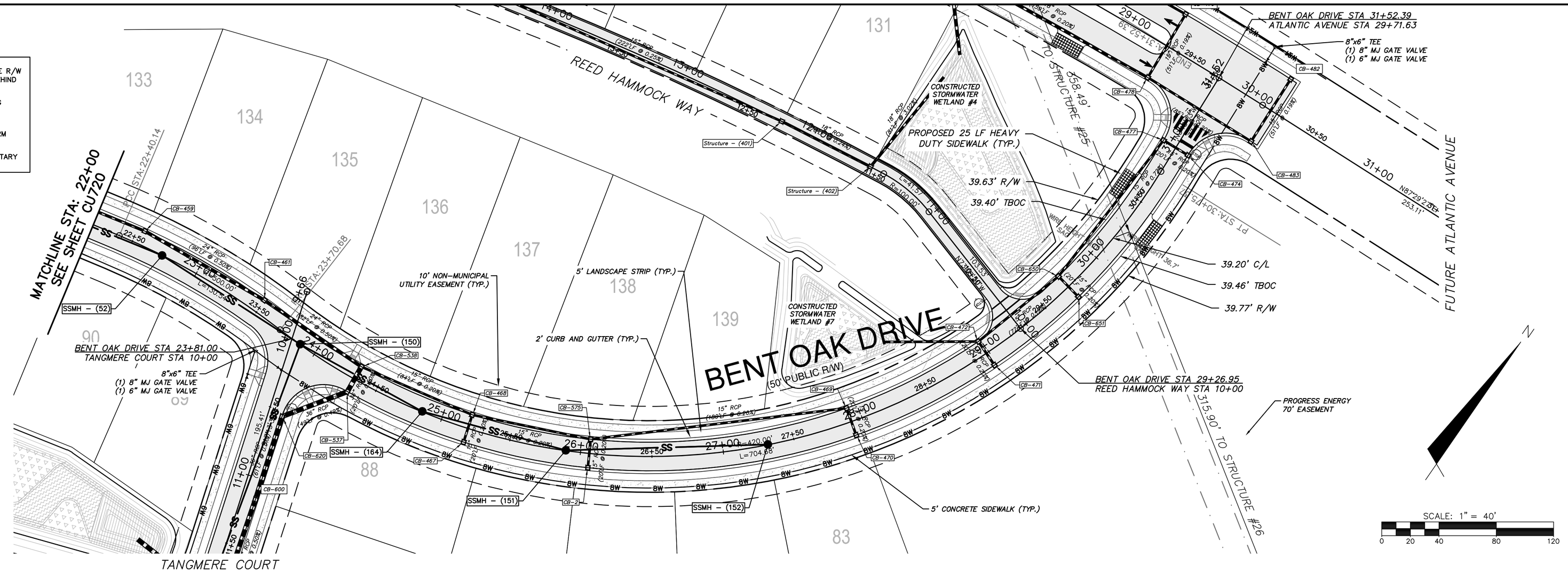
S:\6525\0001\9B-Drawings\Plan Profile Sheets\CU720_06250001.dwg, 9/1/2015 3:10:33 PM, cmursey

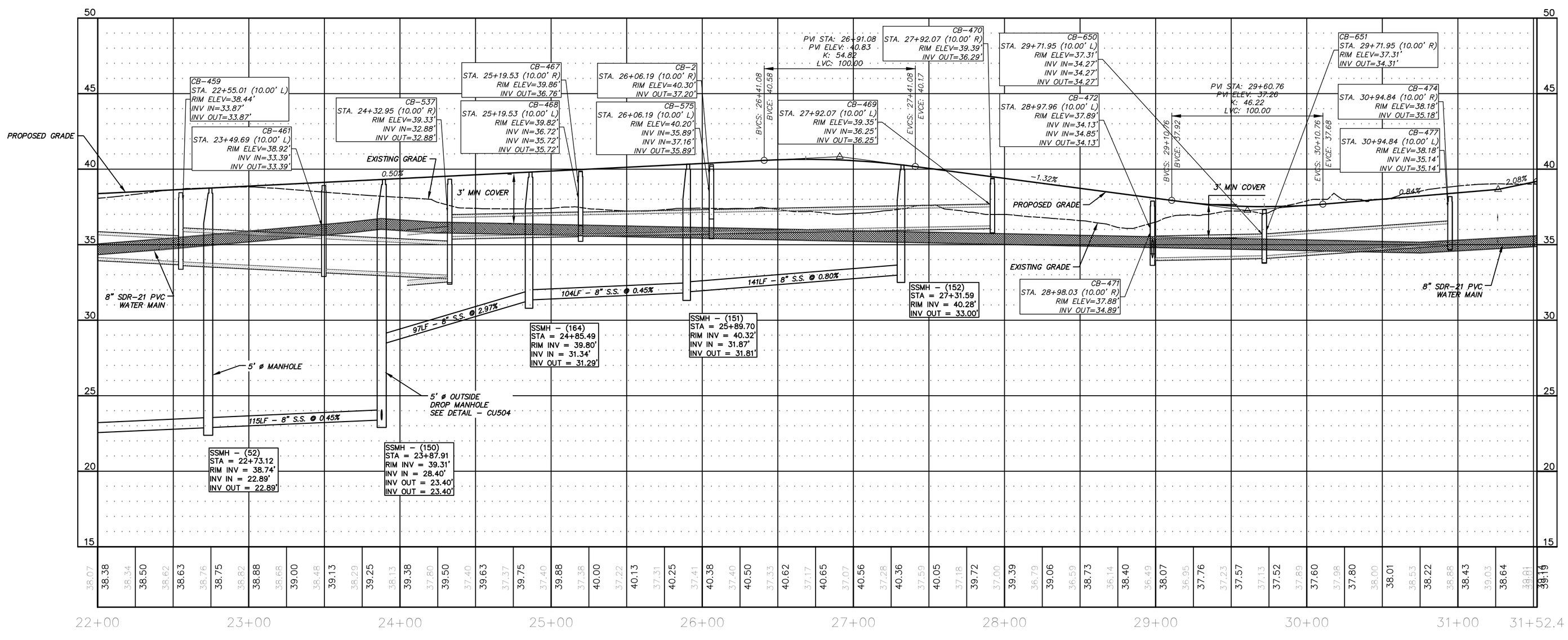
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.

2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.

3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE

4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PULRIS HAMPSTEAD, LLC REVIEW COMMENTS	06/30/15
D	RESPONSE SUBMITTAL, BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

BENT OAK DRIVE
PLAN AND PROFILE
STA 22+00 TO 31+52.39

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

MAC FILE NUMBER: CU721
DRAWING NUMBER: 51

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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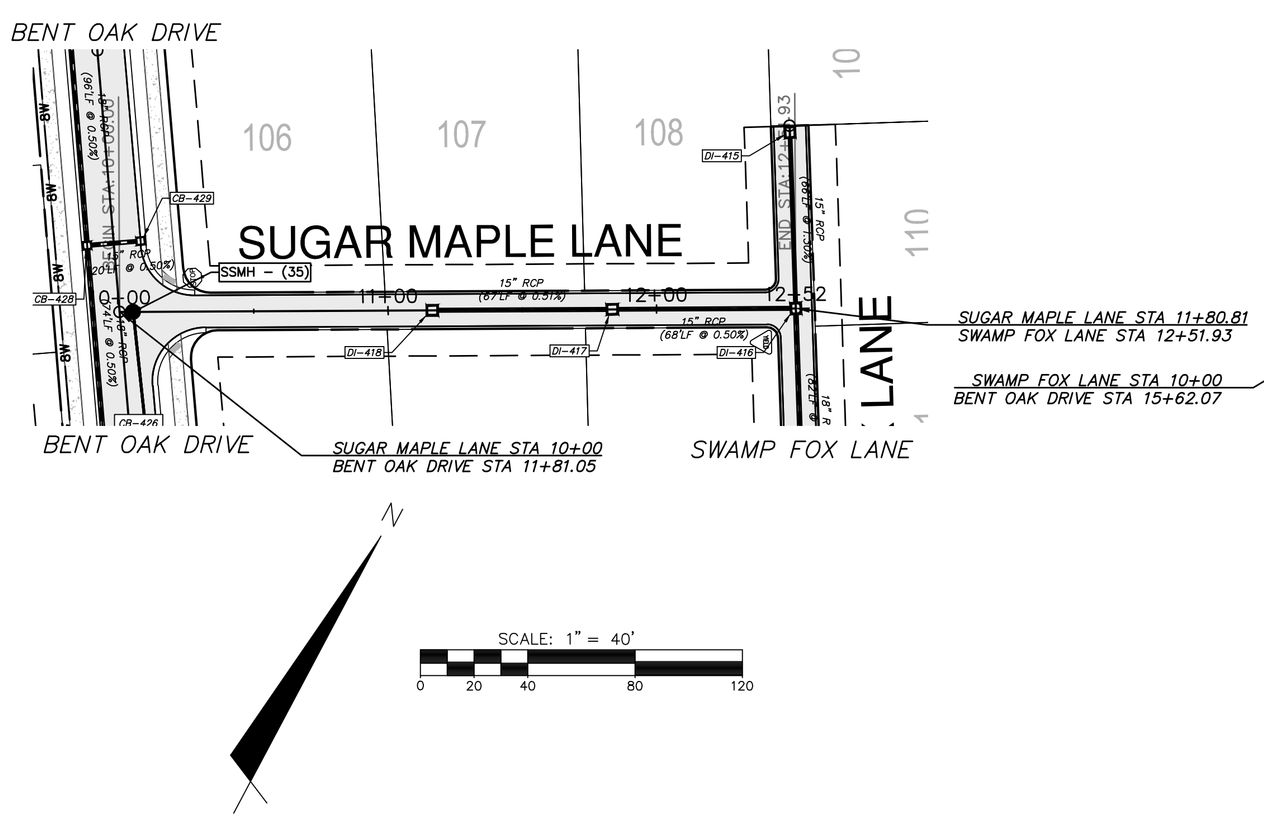
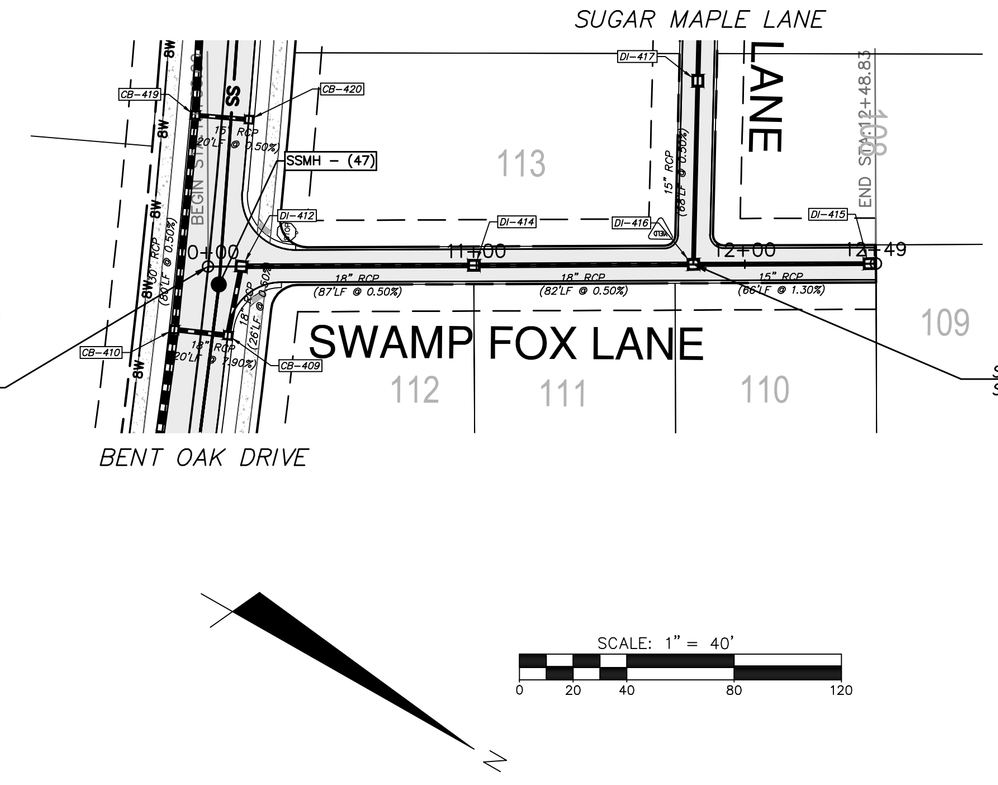
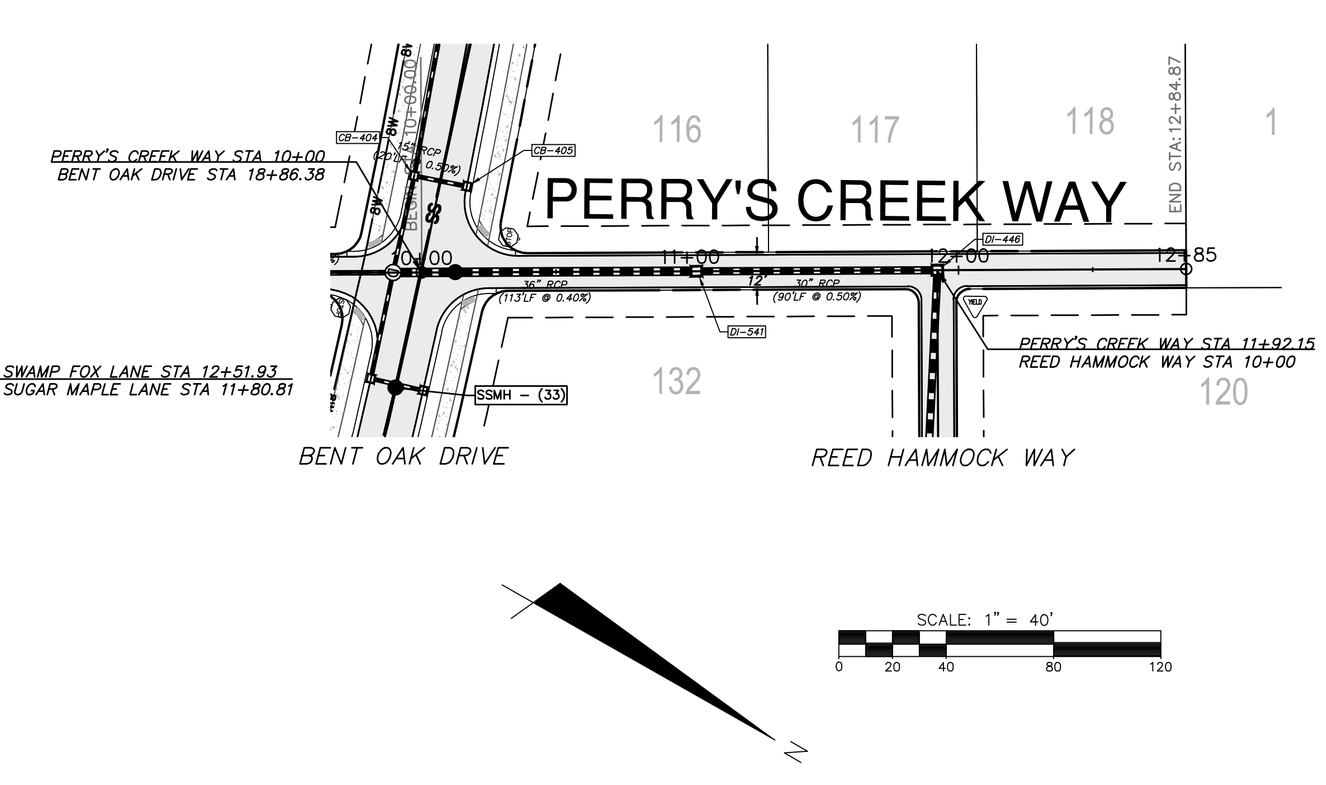
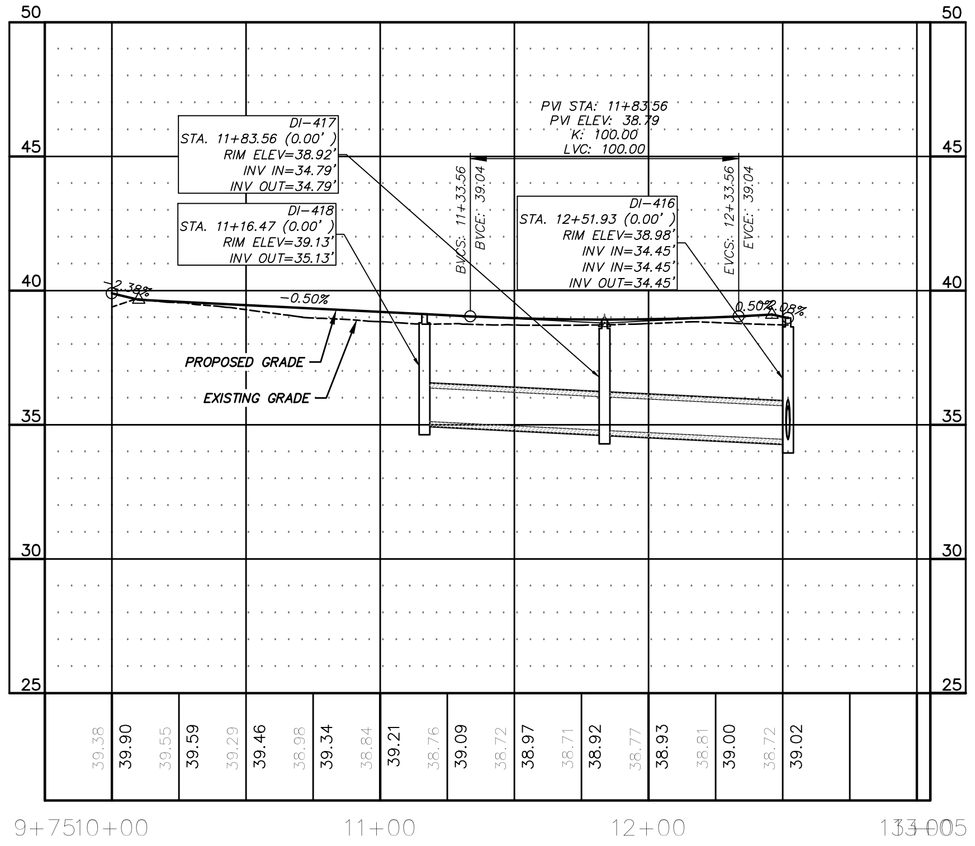
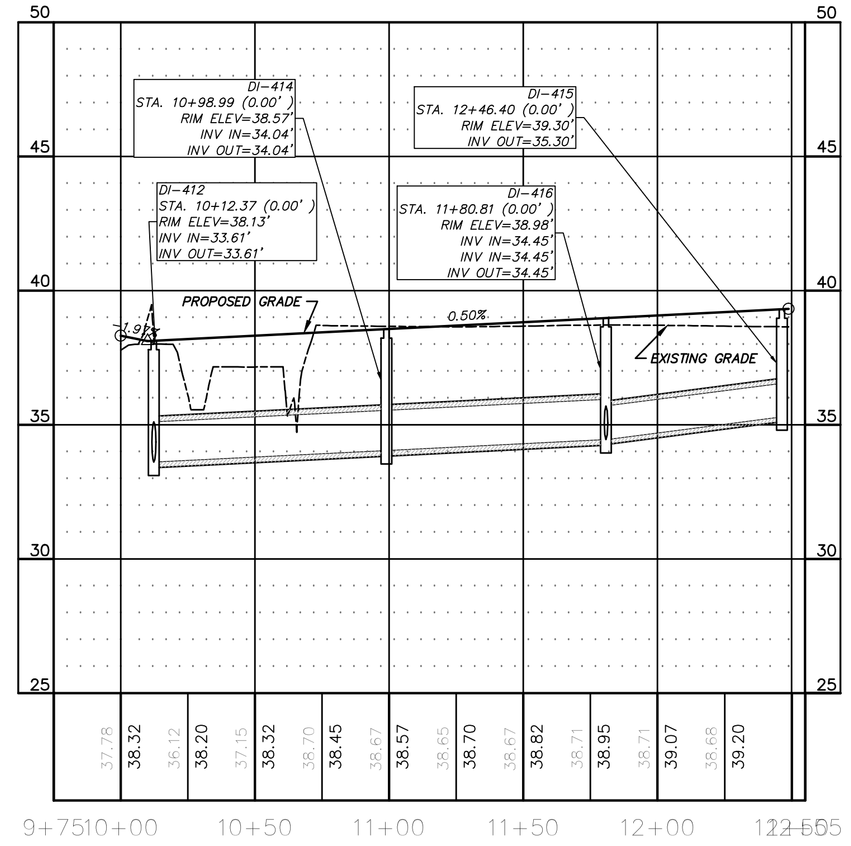


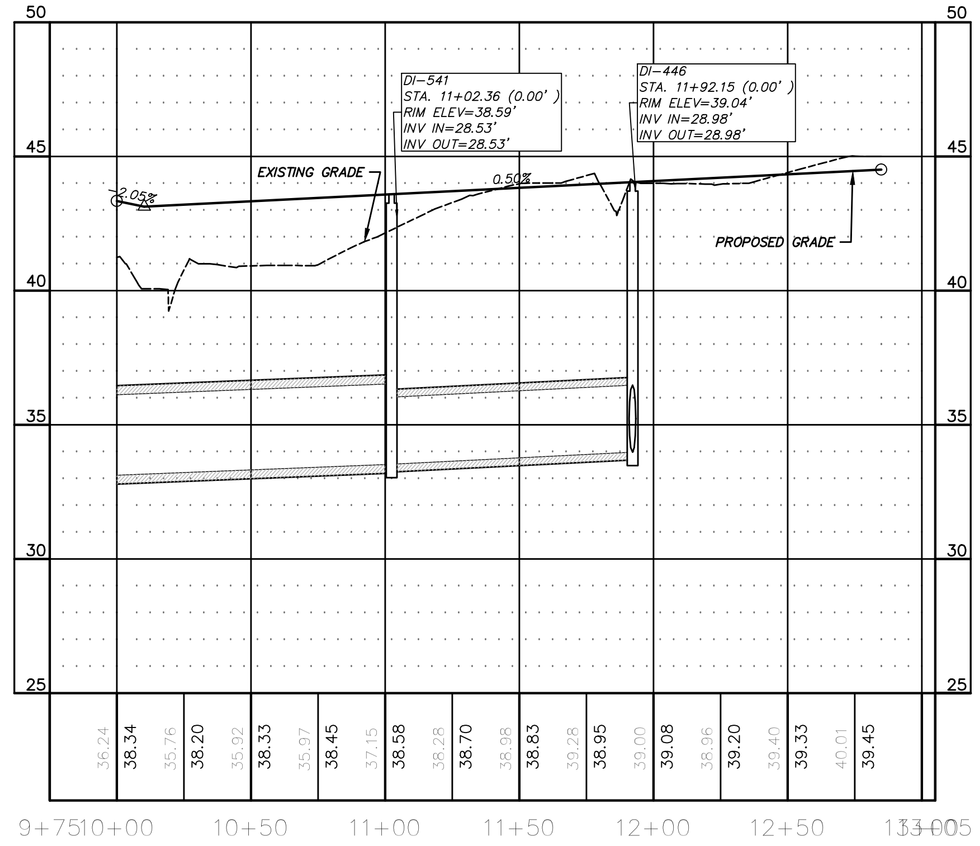




NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

SUGAR MAPLE LANE, SWAMP FOX LANE, & PERRY'S CREEK WAY PLAN AND PROFILE

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU722
DRAWING NUMBER 52

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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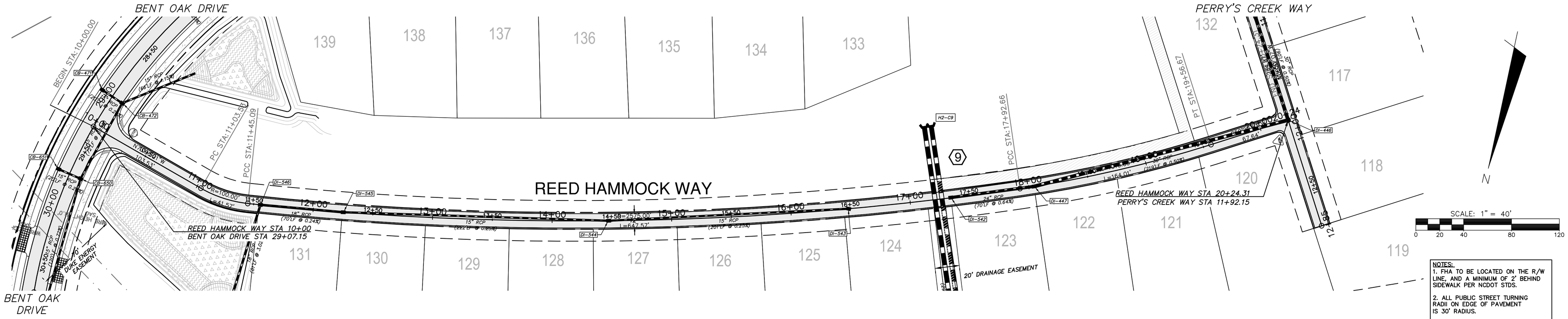
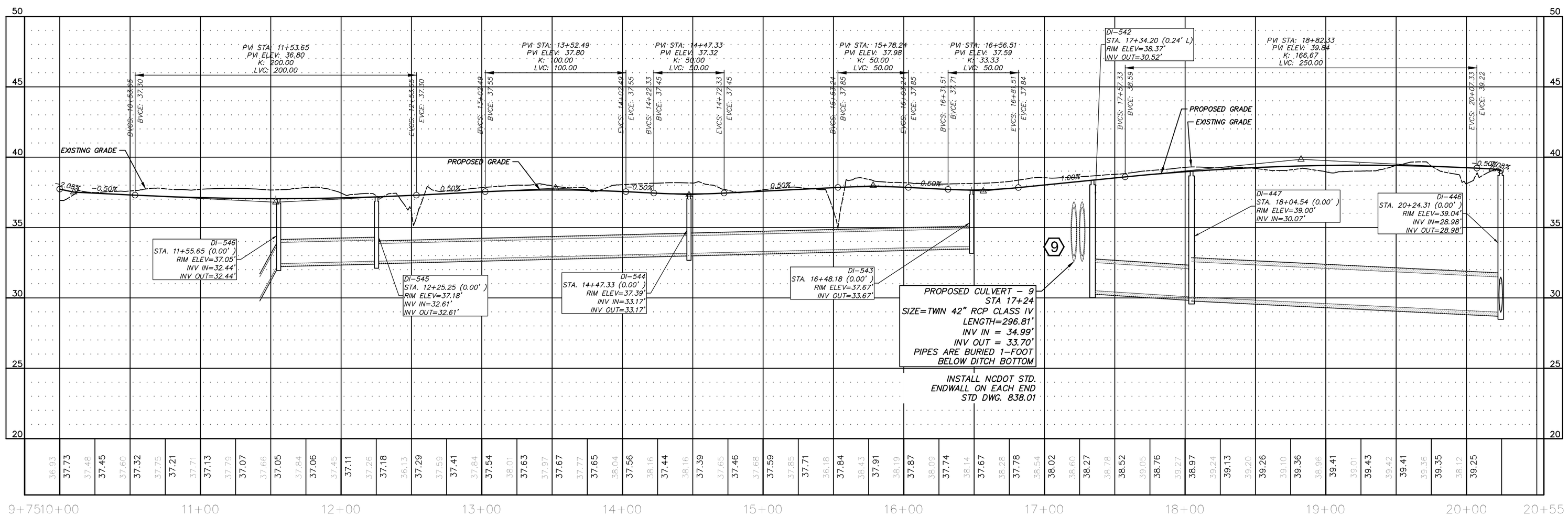


NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CC104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015
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Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

REED HAMMOCK WAY PLAN AND PROFILE

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU723
DRAWING NUMBER 53

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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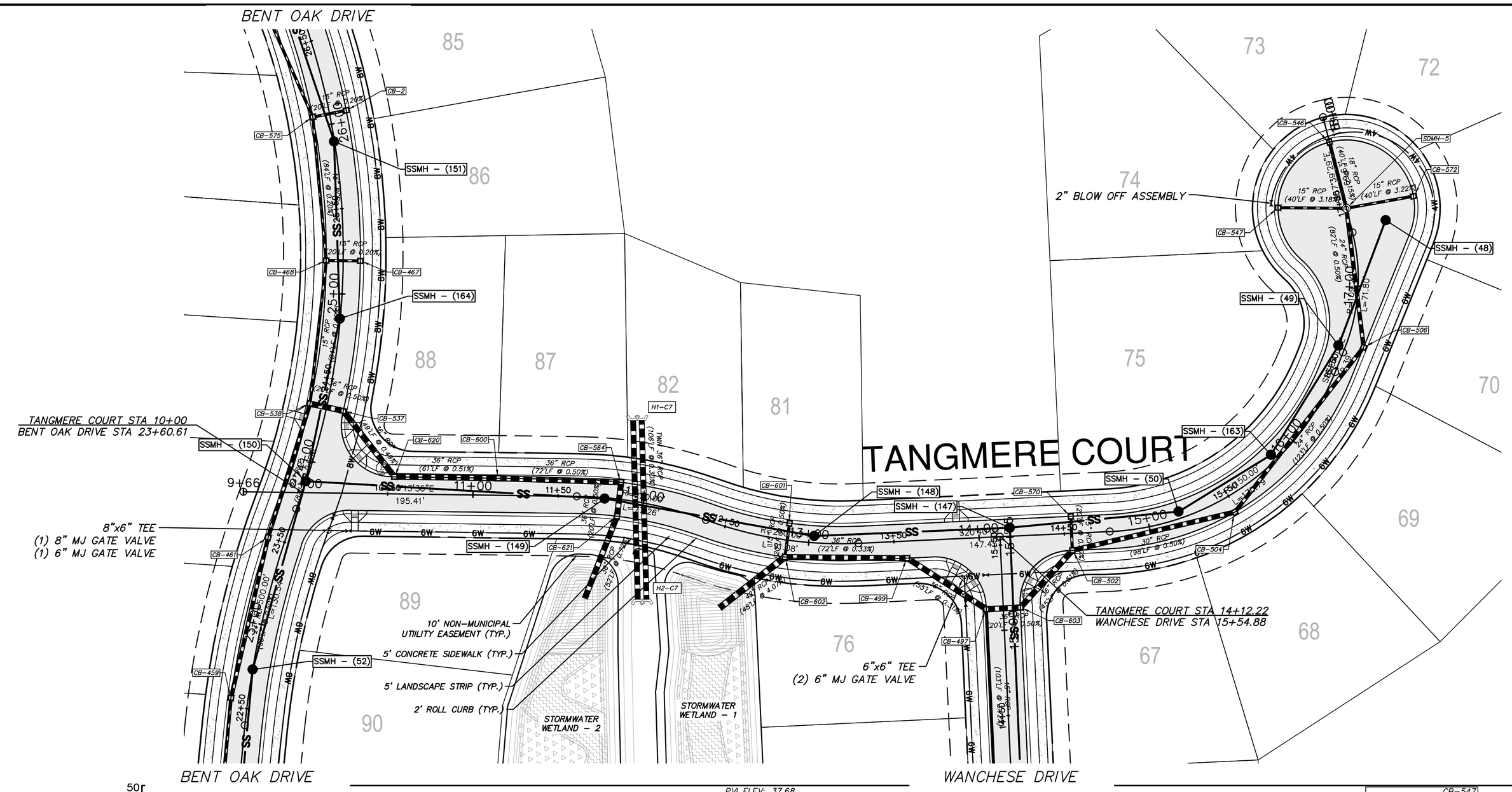
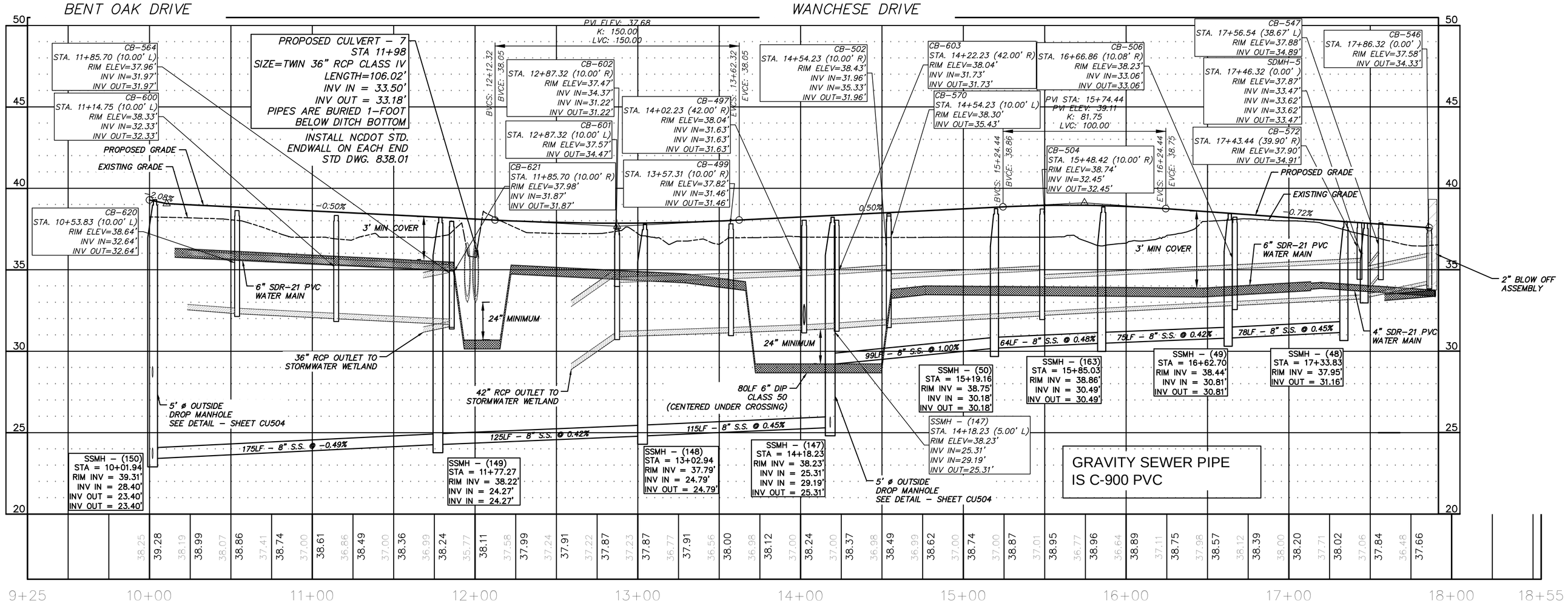
NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD MALLI, JR.

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BLAKE FARM EST 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

RESIDENTIAL LOCAL 5
PLAN AND PROFILE
STA 10+00 TO 17+93.86

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU724
DRAWING NUMBER 54

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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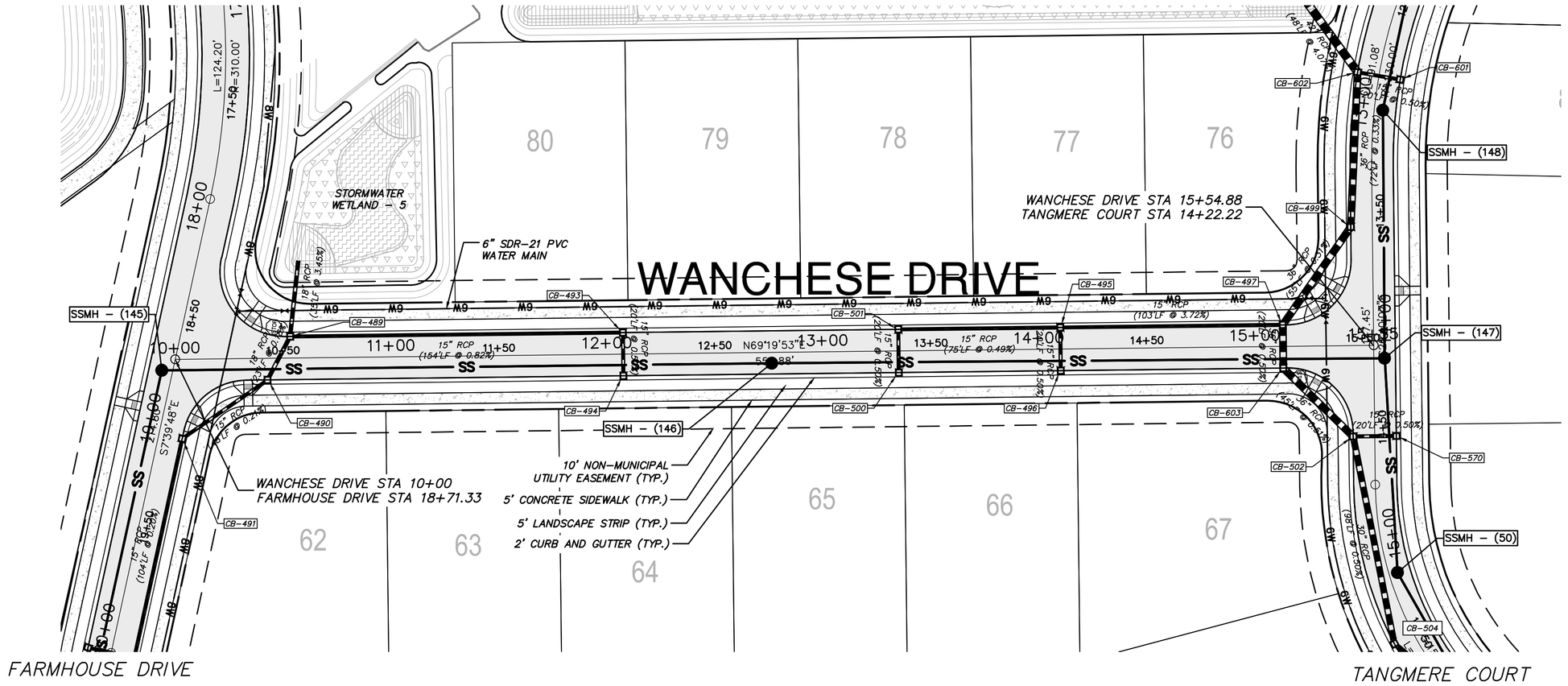

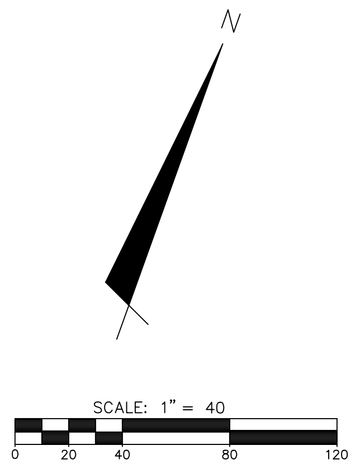

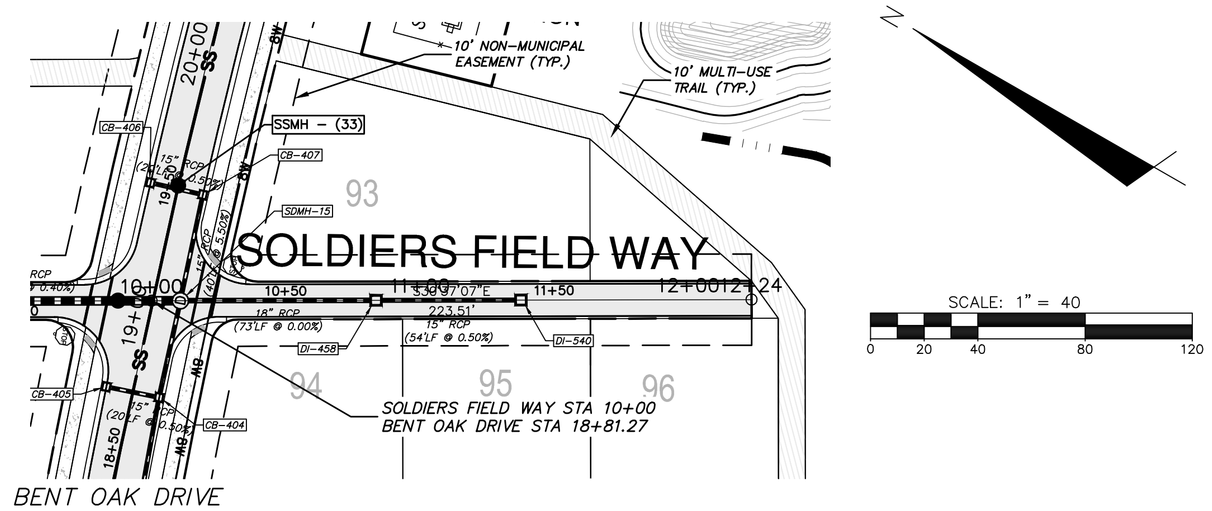

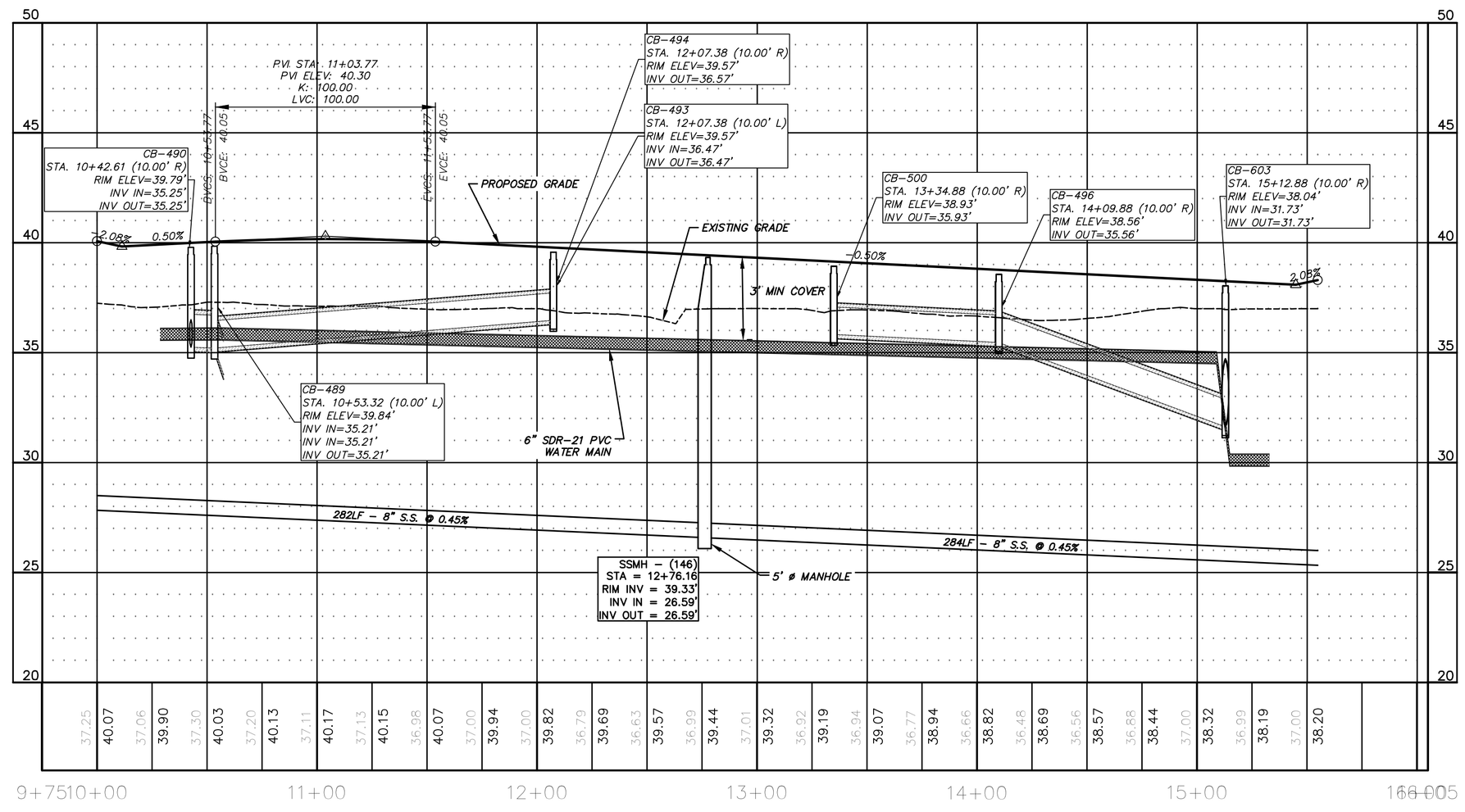

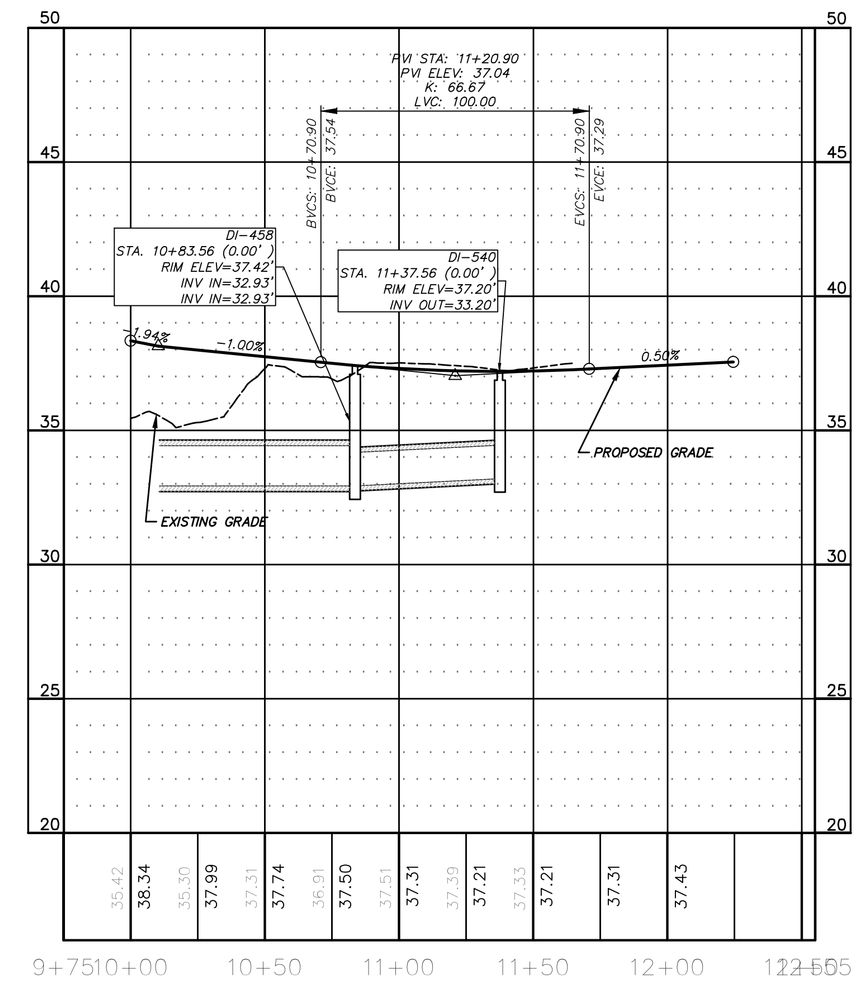

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WANCHESE DRIVE & SOLDIERS FIELD WAY PLAN AND PROFILE

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU725

DRAWING NUMBER 55

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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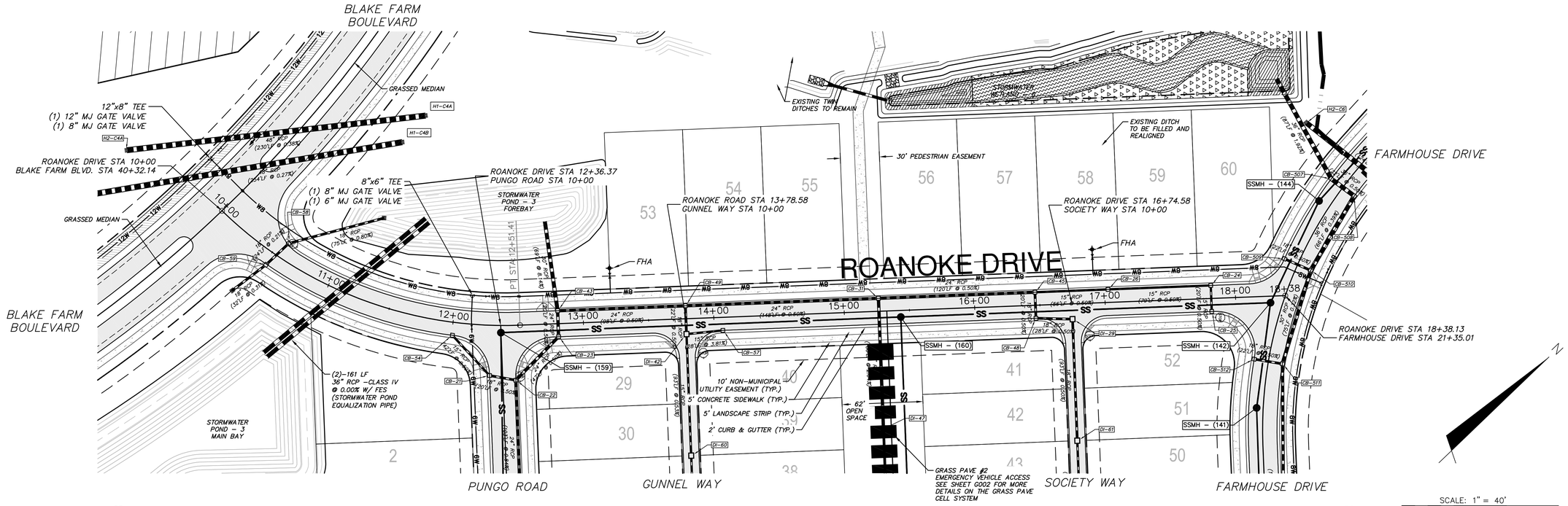

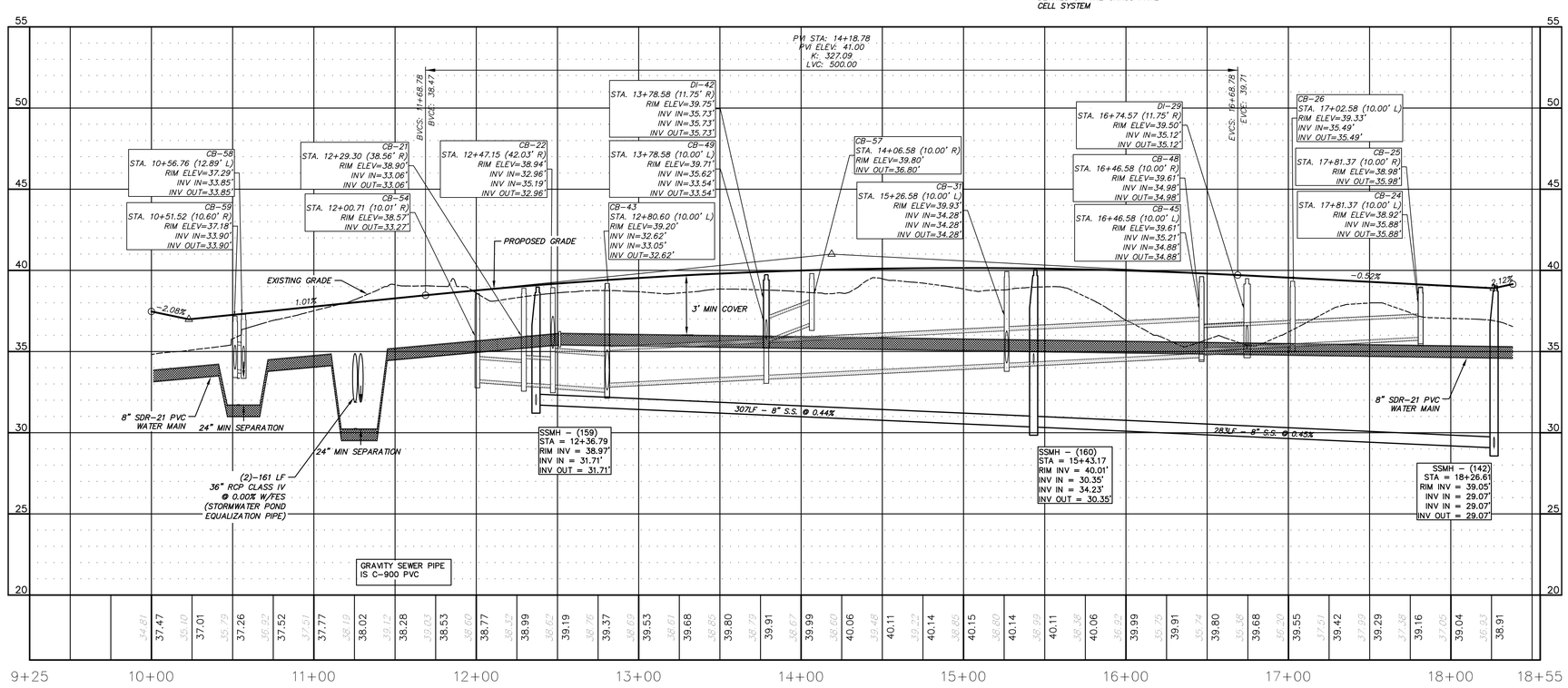

NOTES:
1. FHA TO BE LOCATED ON THE R/W LINE, AND A MINIMUM OF 2' BEHIND SIDEWALK PER NCDOT STDS.
2. ALL PUBLIC STREET TURNING RADII ON EDGE OF PAVEMENT IS 30' RADIUS.
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ: NCDOT DISTRICT AND HYDRAULICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/20/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS– DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROANOKE DRIVE
PLAN AND PROFILE
STA 10+00 TO 18+38.13

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU726
DRAWING NUMBER 56

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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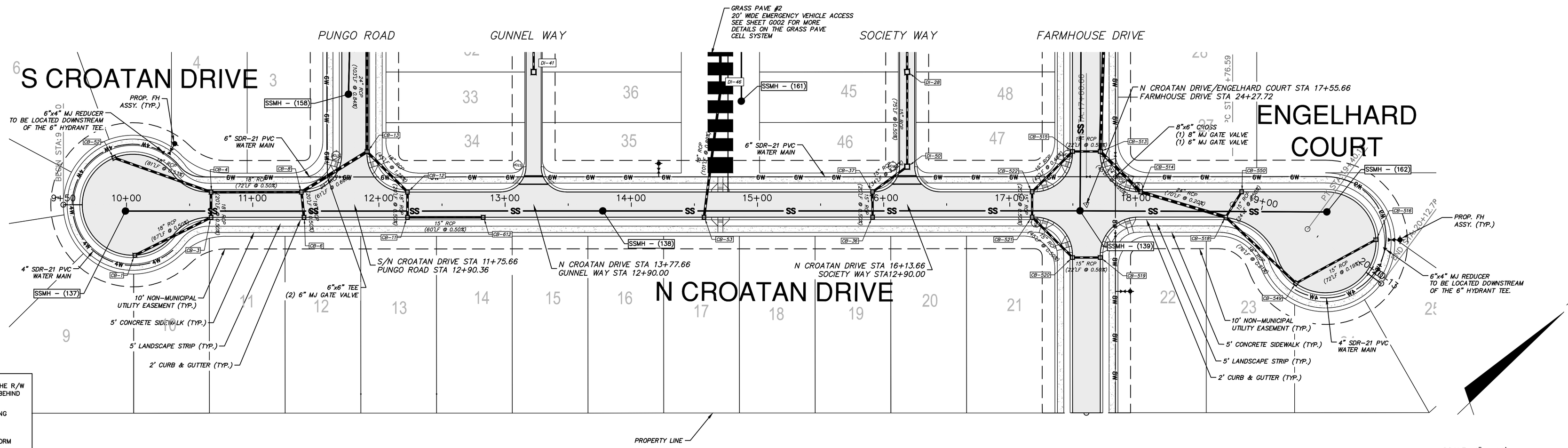

NOTES:
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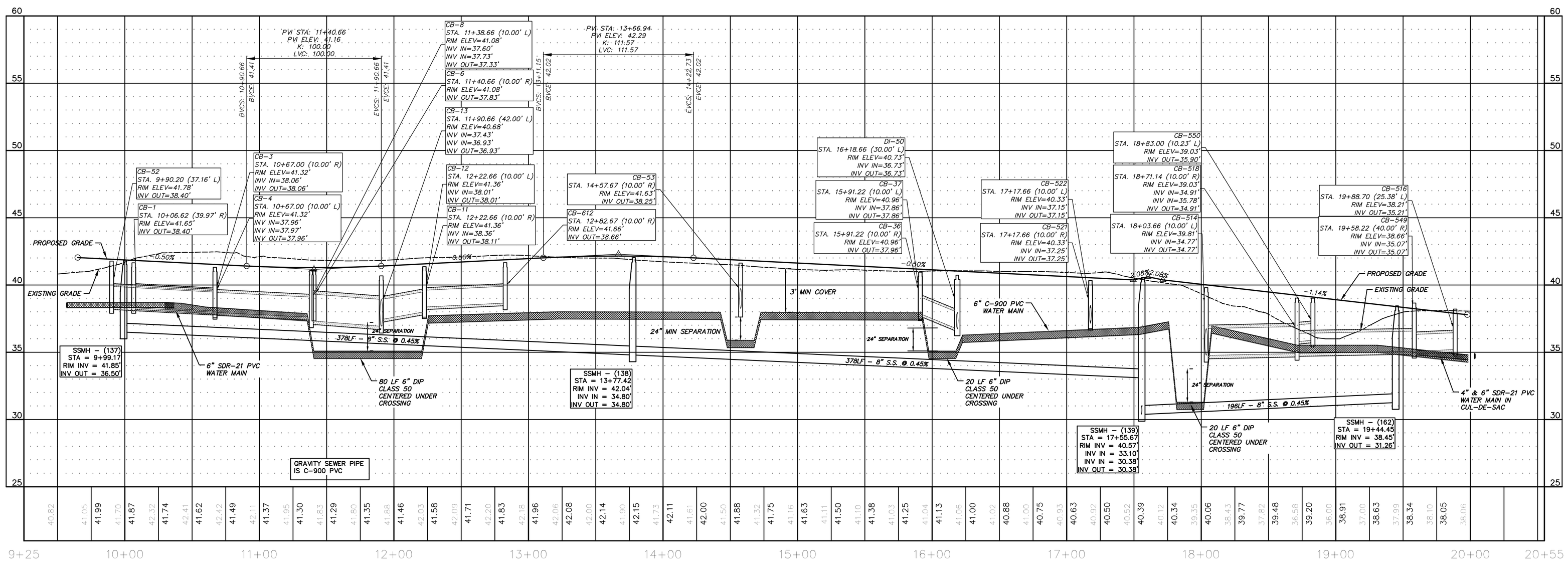
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE



REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	03/25/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS
DO NOT USE FOR
CONSTRUCTION

SEAL
August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

CROATAN DRIVE AND ENGELHARD COURT PLAN AND PROFILE STA 10+00 TO 20+00.14

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU727
DRAWING NUMBER 57

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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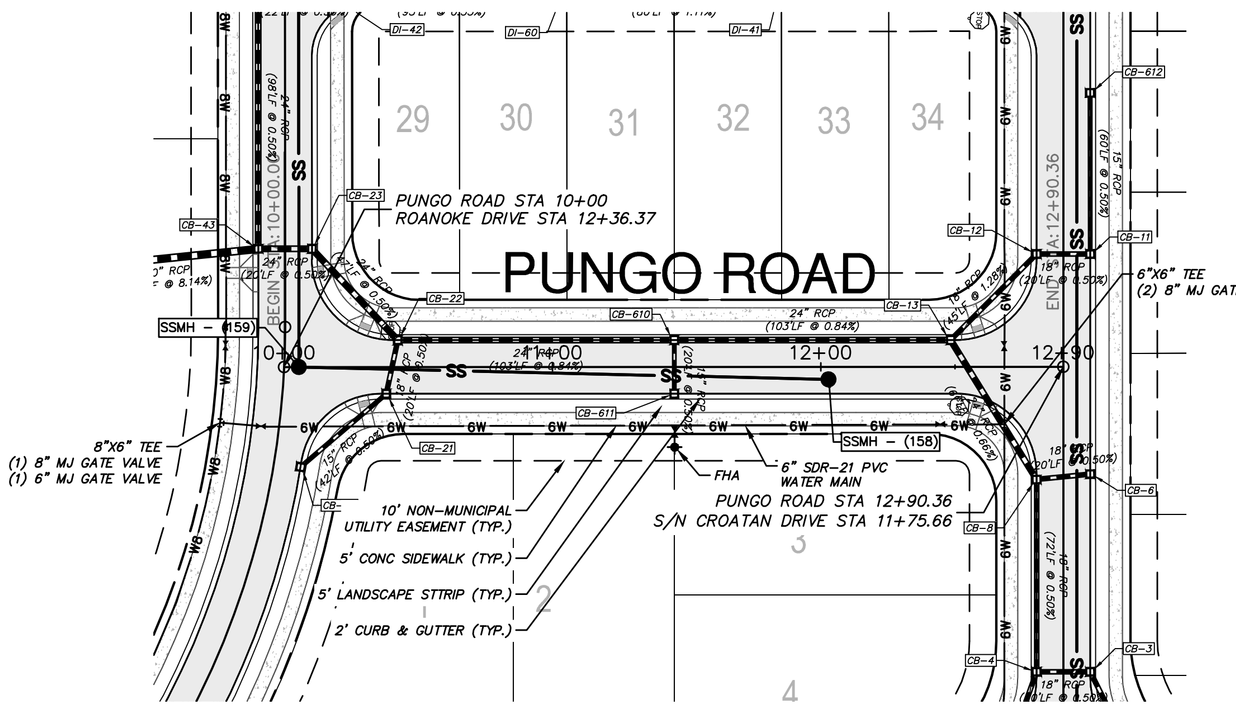

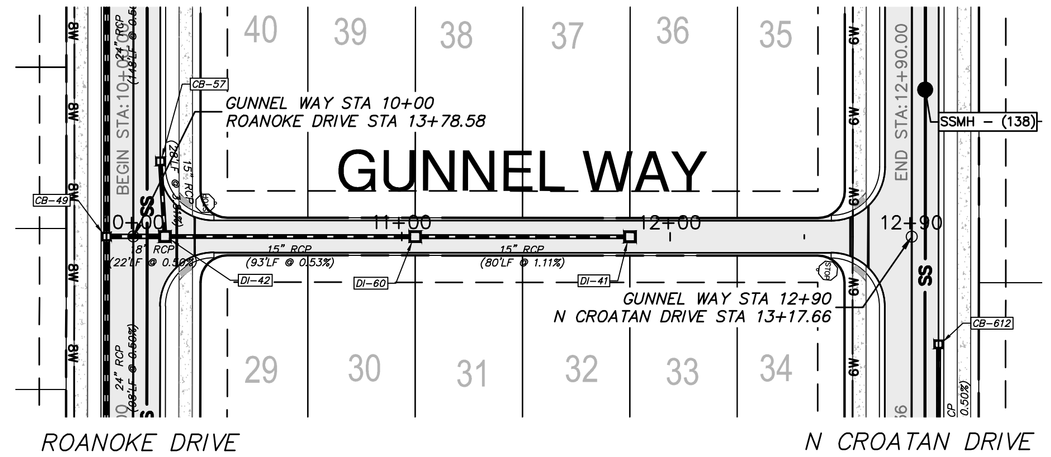

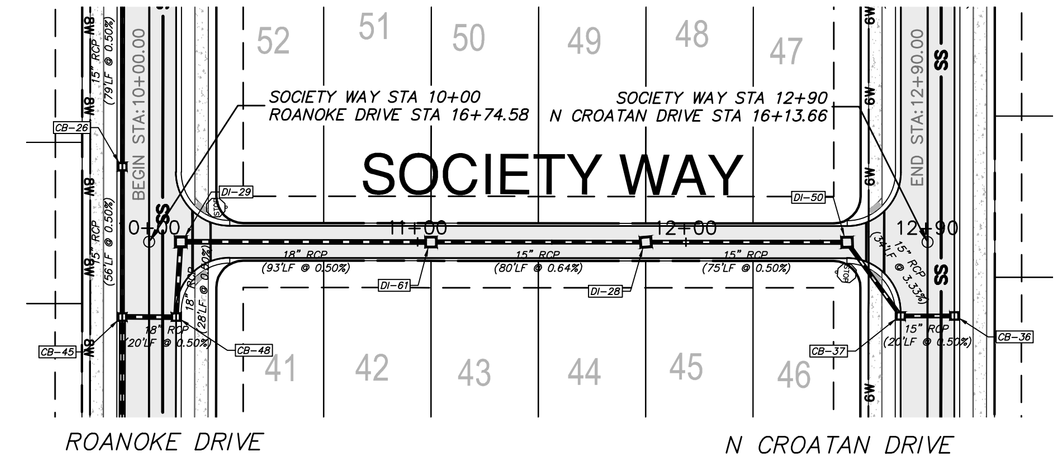

SCALE: 1" = 40'

SCALE: 1" = 40'

SCALE: 1" = 40'

NOTES:
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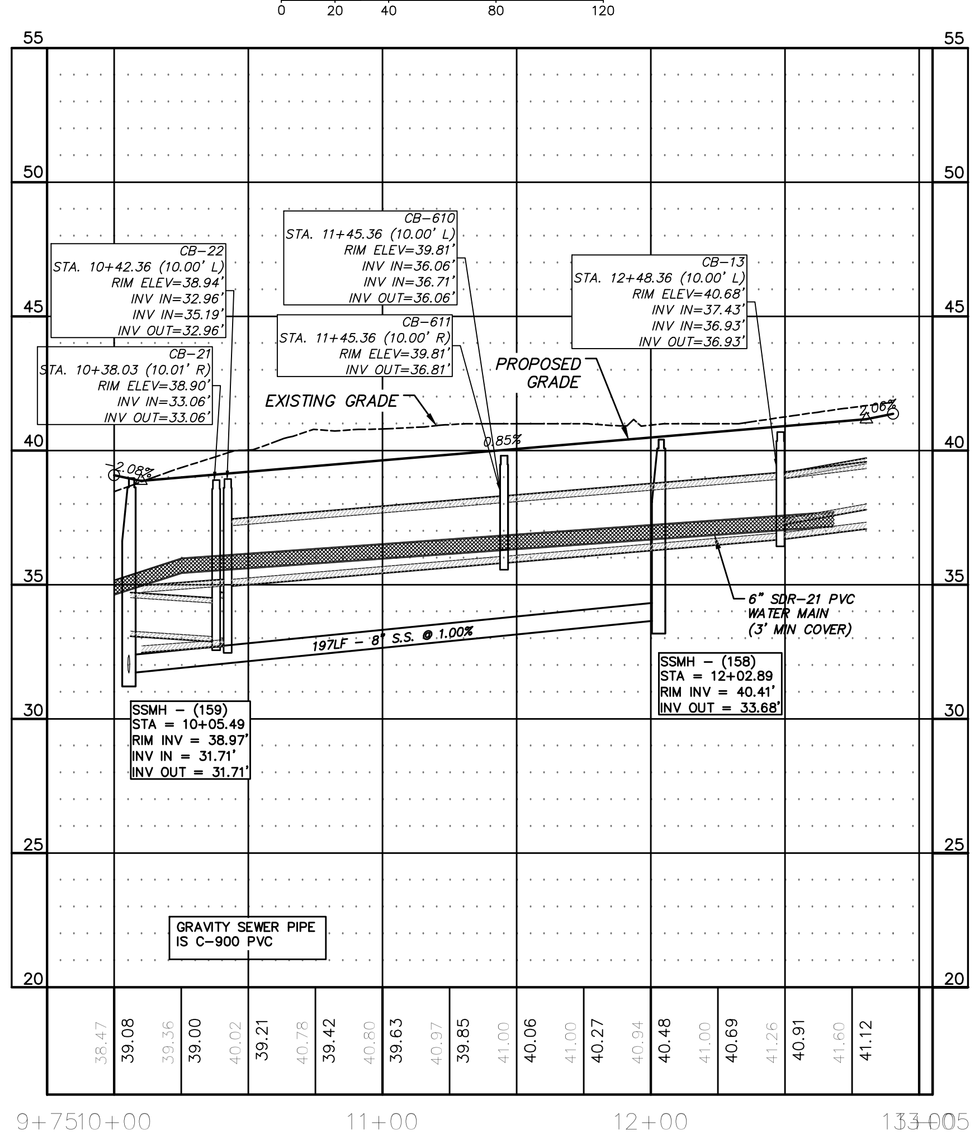
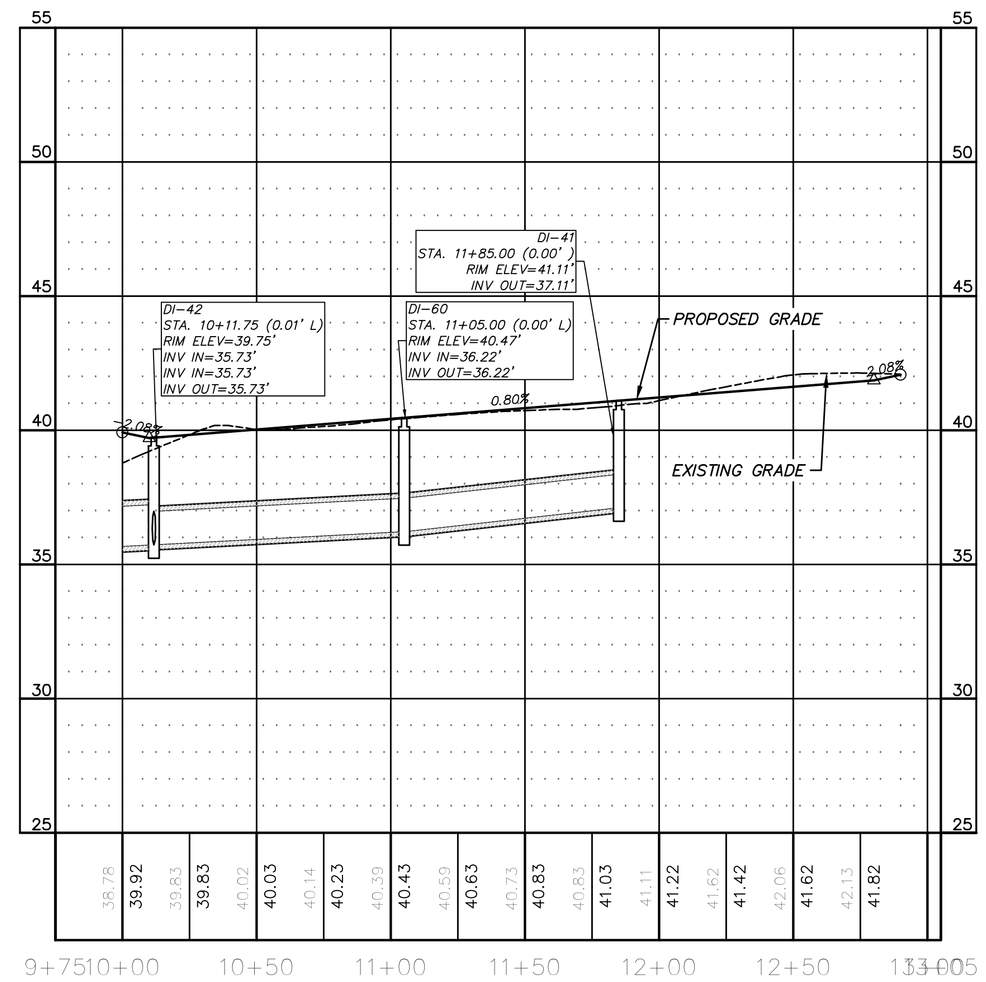
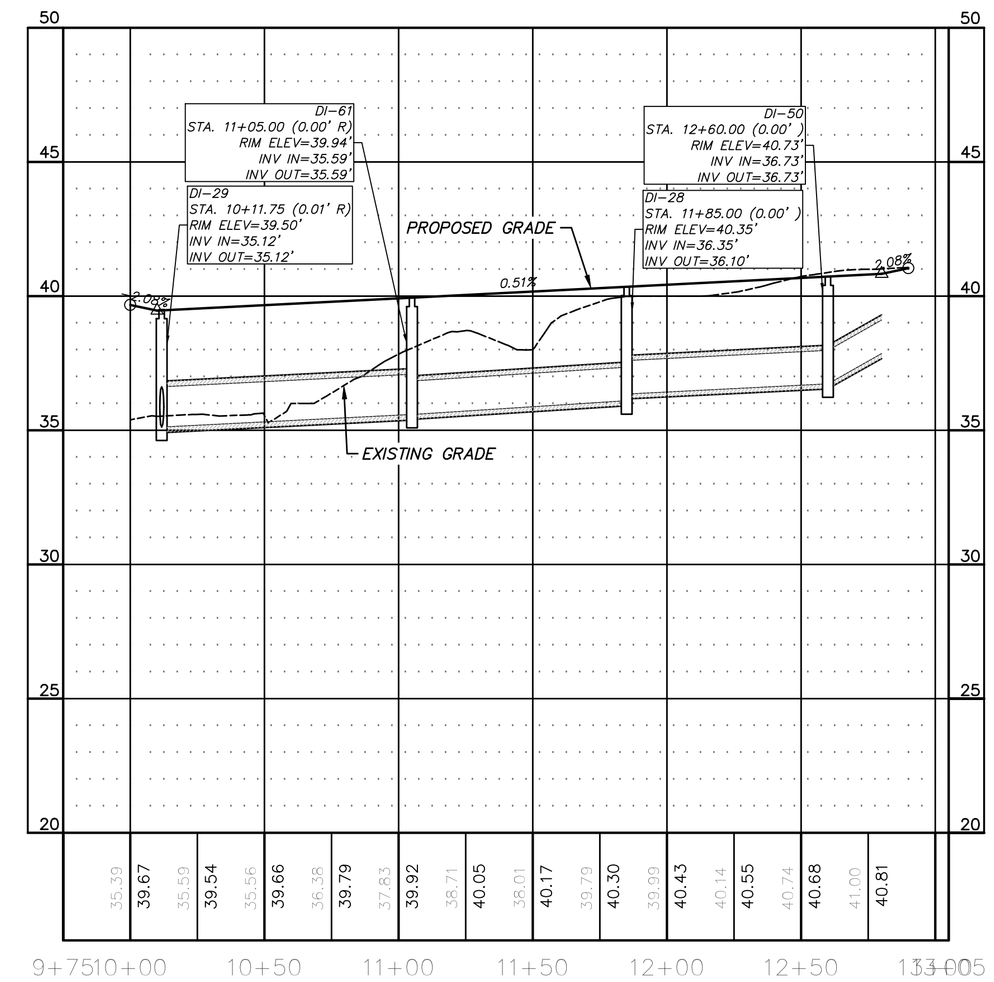
3. SEE SHEET CG104 FOR STORM DRAINAGE SCHEDULE
4. SEE SHEET CU108 FOR SANITARY SEWER SCHEDULE







REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	06/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	03/25/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS
DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER R. CHARLTON COLLIER

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PUNGO ROAD, GUNNEL WAY & SOCIETY WAY PLAN AND PROFILE

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

M&C FILE NUMBER CU728
DRAWING NUMBER 58

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION F

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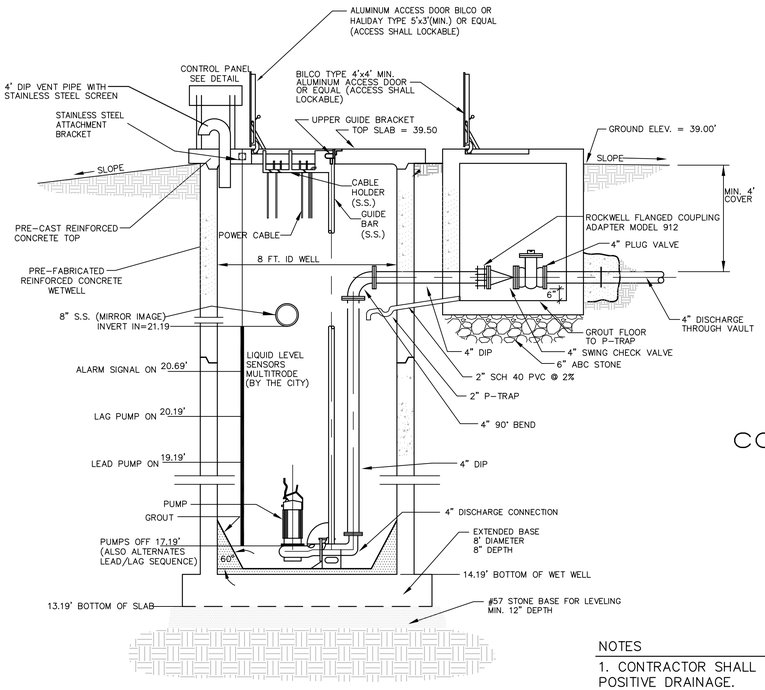
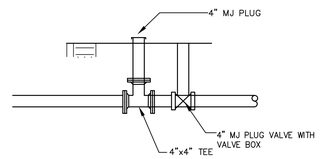


PUMP STATION — SECTION

NOT TO SCALE



EMERGENCY PUMP CONNECTIONS BYPASS SECTION

NOT TO SCALE

NOTES

1. CONTRACTOR SHALL FINE GRADE SITE FOR POSITIVE DRAINAGE.

2. THERE ARE NO WETLANDS WITHIN 50' OF PUMP STATION FENCE.

3. COMPLETE INSTALLATION OF THE 1" P.E. WATER SERVICE INCLUDING TAP, METER BOX, RPZ, YARD HYDRANT AND ALL MISCELLANEOUS APPURTENANCES SHALL BE INCLUDED IN THE LUMP SUM COST OF THE PUMP STATION.

4. ALL PUMP STATION EQUIPMENT AND APPURTENANCES SHALL COMPLY WITH PLURIS HAMPSTEAD, LLC STANDARDS AND SPECIFICATIONS.

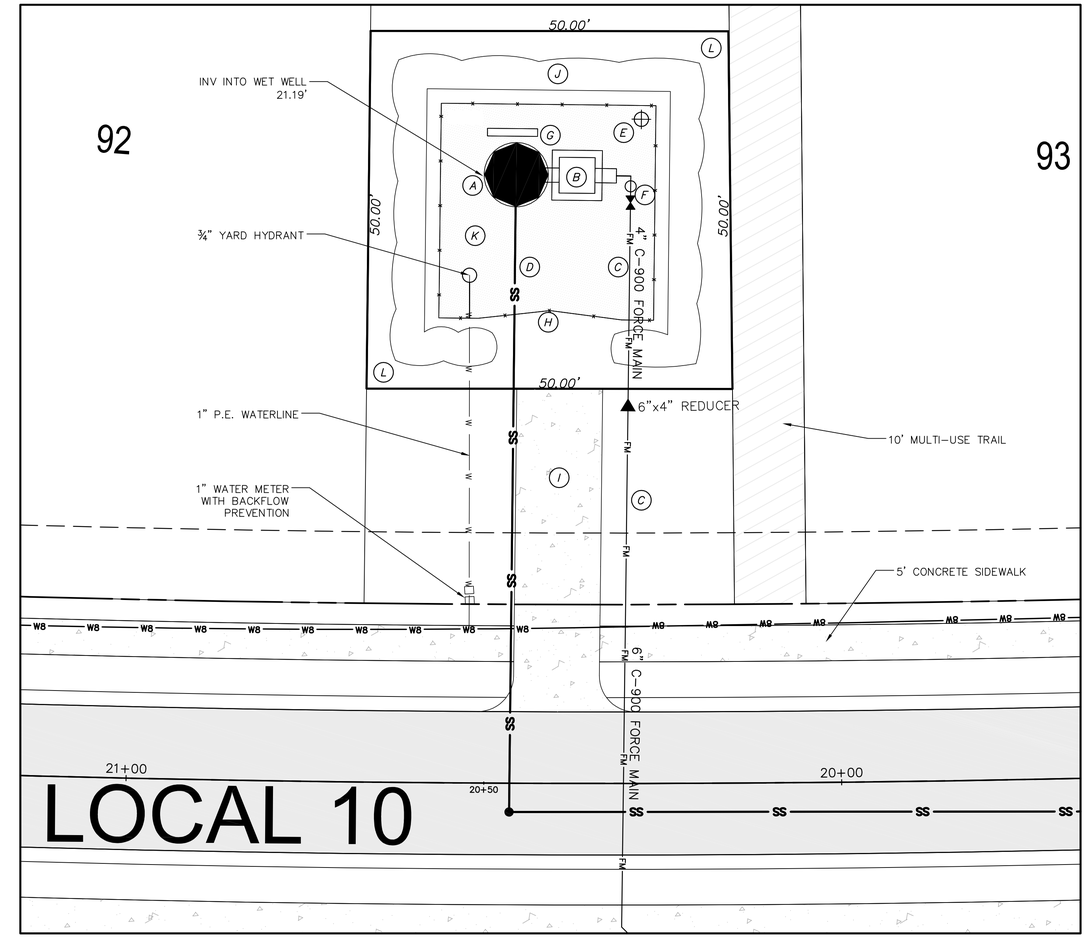
5. PUMPS SHALL BE MYERS PUMPS MEETING 200 GPM @ 50' TDH, 2 REQUIRED, 7.5 HP 3 PHASE, 230 VOLTS. RECOMMEND MYERS PUMP 4VHAX.

6. CONTROL PANEL SHALL BE SUPPLIED BY THE PUMP MANUFACTURER. PUMP MANUFACTURER SHALL BE APPROVED BY PLURIS HAMPSTEAD, LLC.

7. TELEMETRY PANEL AND COMPONENTS SHALL BE INTEGRATED WITH PUMP CONTROL PANEL AS SPECIFIED BY PLURIS HAMPSTEAD, LLC.

8. AREA LIGHT SHALL BE CONSTRUCTED WITH 30-FOOT CLASS 5 POLE HP SODIUM LIGHT WITH PHOTO-ELECTRIC EYE AT 18'-20' FIXTURE HEIGHT.

9. SEE SHEETS E1 & E2 FOR ELECTRICAL CONTROLS.



BLAKE FARM PUMP STATION — SITE PLAN

1"=10'

(A) 8-foot DIAMETER PRECAST WETWELL WITH AN EXTENDED BASE AND ANTI-FLOATATION

(B) 4'x6' PRECAST VALVE VAULT (MINIMUM)

(C) 6" AND 6" C-900 PVC DISCHARGE FORCE MAIN

(D) 8" C-900 PVC INFLOW GRAVITY SANITARY SEWER

(E) HIGH PRESSURE SODIUM VAPOR AREA LIGHT (600 IN) WITH PHOTO-ELECTRIC EYE AT 18'-20' FIXTURE HEIGHT INSTALLED ON A 30' CLASS 5 POLE (MAX HEIGHT)

(F) EMERGENCY BY-PASS CONNECTION – PROVIDE ONE (1) GODWIN DRI-PRIME CD103M (4") FOUR INCH SKID MOUNTED PUMP PER PLURIS HAMPSTEAD, LLC TECHNICAL SPECIFICATIONS SECTION 11311.

(G) ELECTRICAL CONTROL PANEL WITH RAIN SHIELD

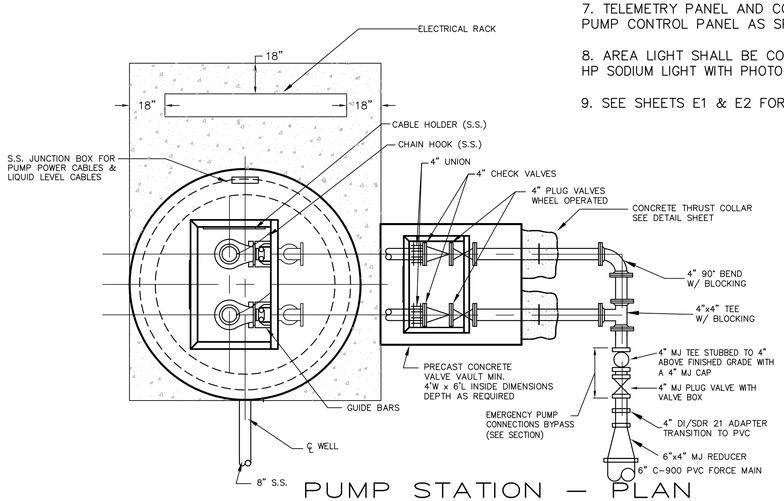
(H) 6' HIGH CHAIN LINK FENCE WITH DOUBLE SWING GATE (2 AT 10' WIDE) FENCED AREA=30'X30'

(I) 6" THICK REINFORCED CONCRETE DRIVEWAY, 12' WIDE

(J) LANDSCAPED SCREENING

(K) 8" ABC GRAVEL BASE

(L) PROVIDE SOD AS REQUIRED; USE JAMAR ZOYSIA SOD.



PUMP STATION — PLAN

NOT TO SCALE

PUMP STATION CHART	
PUMPS:	MYERS PUMPS (2) REQUIRED; 200 GPM; 50 TDH; 7.5 HP
INFLOW:	8" C-900 PVC GRAVITY
DRAINAGE:	6" C-900 PVC FORCE MAIN
8" INFLOW INVERT:	21.19'
HIGH WATER ALARM:	20.69'
LAG PUMP ON:	20.19'
LEAD PUMP ON:	19.19'
PUMPS OFF:	17.19'
BOTTOM WETWELL:	14.19'
EMERGENCY BY-PASS PUMP:	GODWIN DRI-PRIME CD103M (4") FOUR INCH SKID MOUNTED PUMP

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ: NCDOT DISTRICT AND HYDRAULICS: AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP

PENDER COUNTY NORTH CAROLINA

PUMP STATION DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE

HORIZONTAL: N/A

VERTICAL: N/A

M&C FILE NUMBER CU301

DRAWING NUMBER 59

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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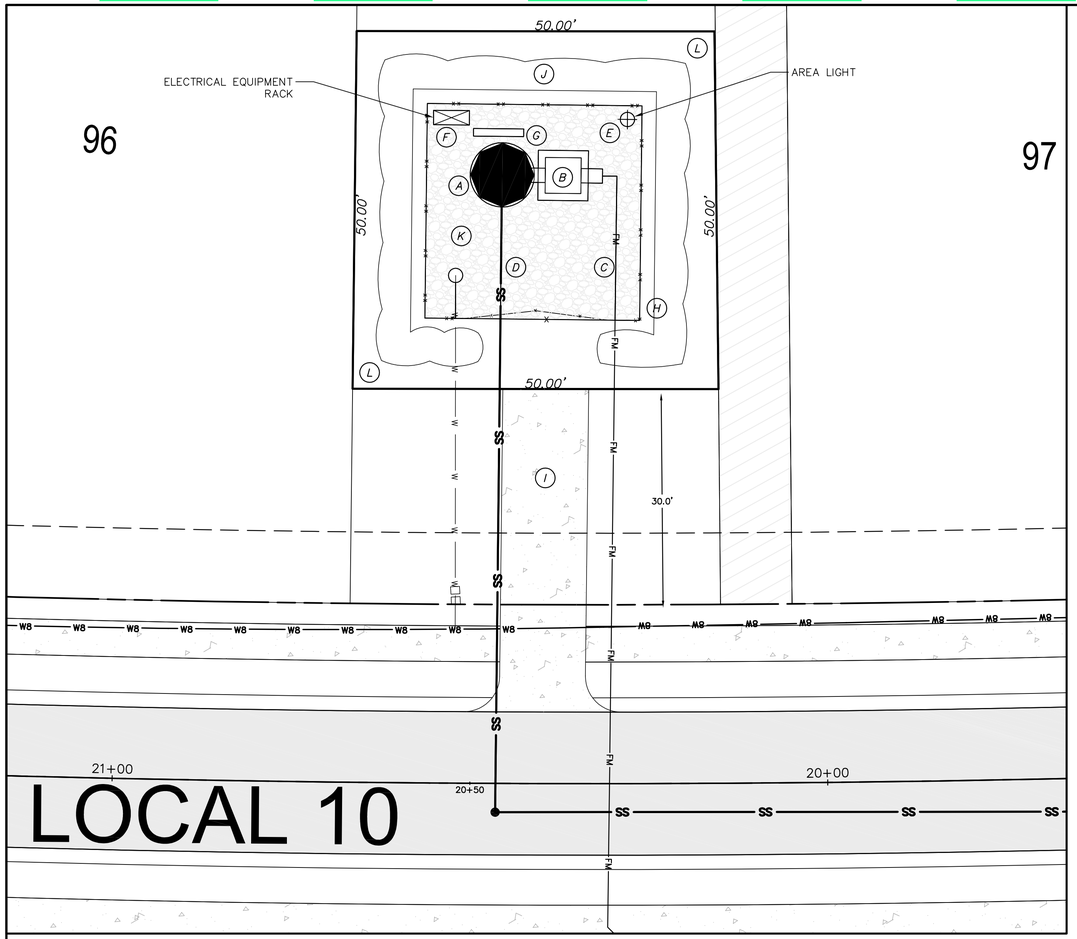
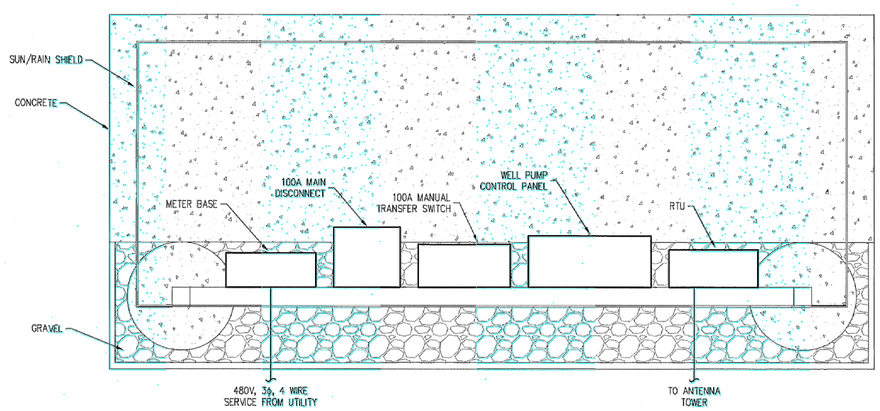


BLAKE FARM PUMP STATION — SITE PLAN

1"=10'



ELECTRICAL EQUIPMENT RACK

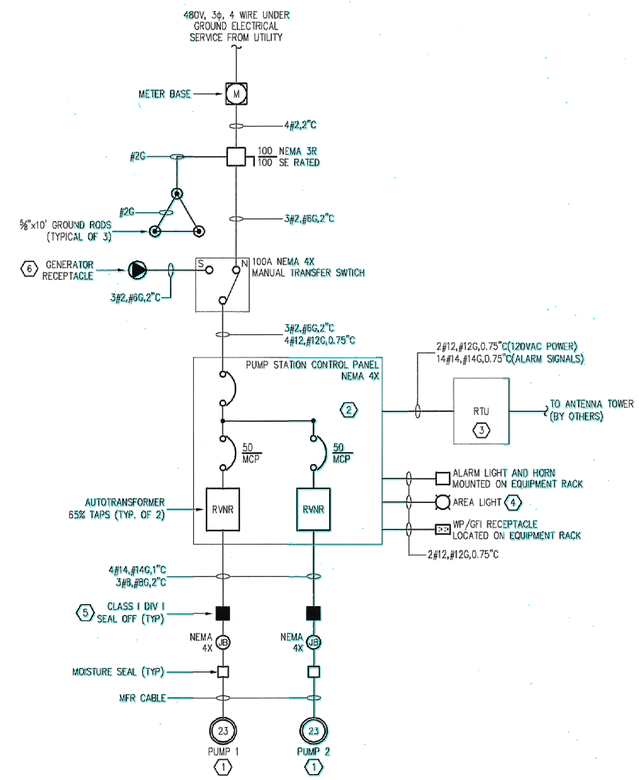
SCALE: 1" = 1'

NOTES:

1. UTILITY CONTACT INFORMATION: 3 PHASE, 4 WIRE SERVICE, 480/277VAC.
2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND LOCAL ELECTRICAL CODES.
3. ALL PUMP STATION EQUIPMENT AND APPURTENANCES SHALL COMPLY WITH CITY OF NEW BERN STANDARDS AND SPECIFICATIONS.

KETNOTES:

1. COORDINATE WIRE AND CONDUIT REQUIREMENTS WITH THE PUMP SUPPLIER TO ENSURE THAT ANY ADDITIONAL WIRES AND CONDUIT NEEDED FOR PUMP/MOTOR PROTECTION (I.E. MOISTURE INTRUSION AND MOTOR TEMPERATURE SWITCH, ETC.) ARE PROVIDED BETWEEN THE PUMP AND THE PUMP CONTROL PANEL. SEPARATE POWER AND SIGNAL WIRING SO THAT 240V, 120V, AND <48V WIRING ARE IN SEPARATE CONDUITS. MINIMUM PUMP MOTOR FEED SHALL BE AS SHOWN TO THE JUNCTION BOX. PROVIDE CONDUIT SEALS. THE PUMP SUPPLIER SHALL BE RESPONSIBLE FOR SIZING OF THIS EQUIPMENT, CONDUIT, AND WIRE.
2. THE PUMP CONTROL SHALL BE PROVIDED BY THE PUMP SUPPLIER. PANEL SHALL MEET MINIMUM REQUIREMENTS SHOWN ON THIS DRAWING. REFER TO SPECIFICATIONS 11311. PUMP CONTROL PANEL SHALL BE CONFIGURED FOR THE PUMPS SUPPLIED.
3. TELEMETRY PANEL AND COMPONENTS SHALL BE INTEGRATED WITH PUMP CONTROL PANEL AND SUPPLIED BY MULTI-TRODE.
4. AREA LIGHT SHALL BE CONSTRUCTED WITH 30-FOOT CLASS 5 POLE 150W HIGH PRESSURE SODIUM LIGHT WITH PHOTO-ELECTRIC EYE WITH A MOUNTING HEIGHT OF 18'-20'.
5. REFER TO CLASS I DIV. 1 AREA DETAIL ON DRAWING E2.
6. 100 AMP GENERATOR RECEPTACLE WITH JUNCTION BOX CROUSE-HINDS # AR 1042, APPLETON ADR 1034, OR EQUAL COMPATABLE WITH OWNER'S GENERATOR



SINGLE LINE DIAGRAM

SCALE: NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRALUICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ELECTRICAL POWER PLAN

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER: EP101
DRAWING NUMBER: E1

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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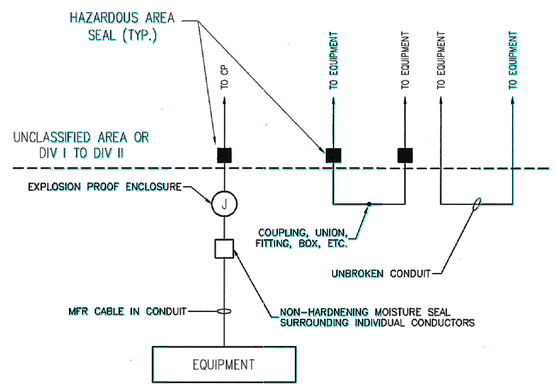
HAZARDOUS AREA TABLE

CLASSIFICATION	APPLICATION	LOCATION OF SEAL
CONDUIT SEALS CLASS I, DIVISION I	SWITCH ENCLOSURE CIRCUIT BREAKER ENCLOSURE FUSE ENCLOSURE RELAY ENCLOSURE RESISTOR ENCLOSURE ARCING OR SPARKING APPARATUS HIGH-TEMPERATURE APPARATUS	IN CONDUIT RUN WITHIN 18 IN. OF ENCLOSURE
	EXPLOSION PROOF ENCLOSURE CONTAINING ARCING OR SPARKING CONTACTS THAT ARE HERMETICALLY SEALED AGAINST GAS OR VAPOR ENTRY	IN CONDUIT RUNS OF 1.5 IN. AND SMALLER, NO SEAL IS REQUIRED. IF CONDUIT IS LARGER THAN 1.5 IN., IN CONDUIT RUN WITHIN 18 IN. OF ENCLOSURE
	ENCLOSURE CONTAINING TERMINALS, SPLICES, OR TAPS FITTING CONTAINING TERMINALS, SPLICES, OR TAPS	IN CONDUIT RUNS SMALLER THAN TRADE SIZE 2, NO SEAL IS REQUIRED. IF CONDUIT IS 2 IN. OR LARGER, IN CONDUIT RUN WITHIN 18 IN. OF ENCLOSURE
	TWO EXPLOSION PROOF ENCLOSURES WITH A CONDUIT RUN BETWEEN THEM OF 36 IN. OR LESS	IN CONDUIT RUN WITHIN 18 IN. OF EACH ENCLOSURE. PERMITTED TO USE A SINGLE SEAL IN EACH RUN AS LONG AS THE SEAL IS WITHIN 18 IN. OF EACH ENCLOSURE
	TWO EXPLOSION PROOF ENCLOSURES WITH A CONDUIT RUN BETWEEN THEM GREATER THAN 36 IN.	IN CONDUIT RUN WITHIN 18 IN. OF EACH ENCLOSURE
	CONDUIT RUN LEAVING DIVISION 1 LOCATION	ON EITHER SIDE OF BOUNDARY. NO UNIONS, COUPLINGS, BOXES, OR FITTINGS (OTHER THAN EXPLOSION PROOF REDUCERS) PERMITTED BETWEEN THE SEAL FITTING AND THE POINT WHERE THE CONDUIT LEAVES THE DIVISION 1 LOCATION.
	METAL CONDUIT CONTAINING NO UNIONS, COUPLINGS, BOXES, OR FITTINGS THAT PASSES COMPLETELY THROUGH A CLASS I, DIVISION 1 LOCATION, WITH NO FITTINGS LESS THAN 12 IN. BEYOND EACH BOUNDARY	NOT REQUIRED TO BE SEALED IF THE TERMINATION POINTS OF THE UNBROKEN CONDUIT ARE IN UNCLASSIFIED LOCATIONS.

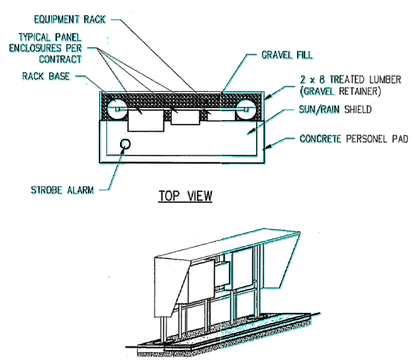


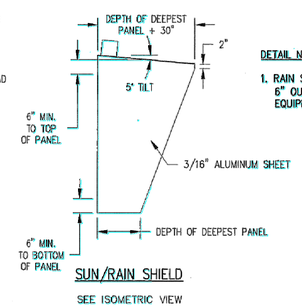
HAZARDOUS AREA TABLE

CLASSIFICATION	APPLICATION	LOCATION OF SEAL
CLASS I, DIVISION II	ENCLOSURE REQUIRED TO BE EXPLOSION PROOF	SEAL AS REQUIRED FOR SIMILAR EQUIPMENT IN DIVISION 1 LOCATION
	CONDUIT RUN LEAVING DIVISION 2 LOCATION	ON EITHER SIDE OF BOUNDARY. NO UNIONS, COUPLINGS, BOXES, OR FITTINGS (OTHER THAN EXPLOSION PROOF REDUCERS) PERMITTED BETWEEN THE SEAL FITTING AND THE POINT WHERE THE CONDUIT LEAVES THE DIVISION 2 LOCATION.
	METAL CONDUIT CONTAINING NO UNIONS, COUPLINGS, BOXES, OR FITTINGS THAT PASSES COMPLETELY THROUGH A DIVISION 2 LOCATION WITH NO FITTINGS LESS THAN 12 IN. BEYOND EACH BOUNDARY	NOT REQUIRED TO BE SEALED IF THE TERMINATION POINTS OF THE UNBROKEN CONDUIT ARE IN UNCLASSIFIED LOCATIONS.
	CONDUIT SYSTEMS TERMINATING AT AN UNCLASSIFIED LOCATION WHERE A WIRING METHOD TRANSITION IS MADE TO CABLE TRAY, CABLE BUS, VENTILATED BUSWAY, TYPE MI CABLE, OR OPEN WIRING	NOT REQUIRED TO BE SEALED IF PASSING FROM THE CLASS I, DIVISION 2 LOCATION INTO AN OUTDOOR UNCLASSIFIED LOCATION OR AN INDOOR LOCATION IF THE CONDUIT SYSTEM IS ALL IN ONE ROOM. THE CONDUITS DO NOT TERMINATE AT AN ENCLOSURE CONTAINING AN IGNITION SOURCE IN NORMAL OPERATION.
CONDUIT SEALS CLASS I, DIVISION I	MULTICONDUCTOR CABLES	SEAL IN THE DIVISION 1 LOCATION AFTER REMOVING THE JACKET AND ANY OTHER COVERINGS, SO THAT THE SEALING COMPOUND SURROUNDS EACH INDIVIDUAL INSULATED CONDUCTOR AND THE OUTER JACKET.

NOTES:
1. REFER TO NEC CHAPTER 5 FOR HAZARDOUS WIRING REQUIREMENTS. HAZARDOUS AREA TABLE SUMMARIZES NEC REQUIREMENTS, BUT NEC SHALL GOVERN.

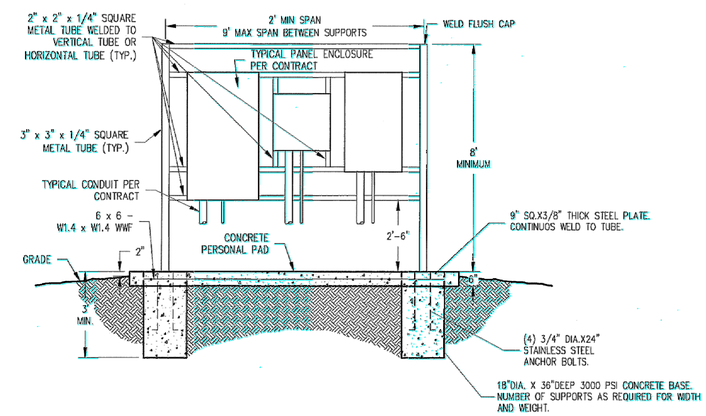
CLASS I DIV I OR DIV II AREA
TYPICAL WIRING





DETAIL NOTES:
1. RAIN SHIELD SHALL EXTEND 6" OUT FROM THE SIDE OF EQUIPMENT RACK.

SUN/RAIN SHIELD DETAIL
SCALE: NOT TO SCALE



DETAIL NOTES:
1. RACK SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL. GRIND SMOOTH ALL WELDS.
2. ALL MOUNTING HARDWARE TO BE 316 STAINLESS STEEL.
3. PROVIDE ADDITIONAL 2"x2"x1/4" SQUARE TUBE SUPPORTS WELDED TO OTHER HORIZONTAL OR VERTICAL SUPPORTS TO MOUNT EACH PANEL. EACH PANEL ENCLOSURE SHALL BE SUPPORTED BY A MINIMUM OF TWO 2"x2"x1/4" SQUARE TUBE SUPPORTS ON THE BACK OF PANELS TOP/BOTTOM OR SIDES.
4. CONCRETE SHALL BE 3000 PSI. PAD SHALL BE REINFORCED WITH 6x6-1.4Wx1.4W WWF. PAD SHALL EXTEND 36" OUT FROM DEEPEST PANEL AND 6" OUT FROM SIDES OF RAIN SHIELD.
5. WOOD SHALL BE TREATED LUMBER WITH WATERPROOFING APPLIED.
6. PROVIDE ADDITIONAL VERTICAL 3"x3"x1/4" SQUARE TUBE RACK SUPPORT AND BASES LIKE ENDS SHOWN TO SPAN GREATER THAN 108".
7. SUBMIT LAYOUT OF EQUIPMENT RACKS PRIOR TO FABRICATION.
8. WHERE THE EQUIPMENT RACK IS SHOWN ON THE PLANS NEXT TO AN EQUIPMENT PAD, THE EQUIPMENT PAD WILL TAKE THE PLACE OF THE PERSONAL PAD SHOWN ON THIS DETAIL. PROVIDE ADDITIONAL GRAVEL AND WOOD EDGING TO EQUAL THE HEIGHT OF THE EQUIPMENT PAD.
9. WHERE SHOWN OR PROVIDED, ALARM STROBE AND HORN SHALL BE MOUNTED ON SUN/RAIN SHIELD.
10. WHERE SCHEDULED OR SHOWN ON THE PLANS PROVIDE WEATHERPROOF CORROSION RESISTANT FLUORESCENT FIXTURE MOUNTED UNDERNEATH SUN/RAIN SHIELD, LIGHT SWITCH, AND GFI RECEPTACLE.
11. WHERE SHOWN ON PLANS PROVIDE BACK-BACK RACK EQUIPMENT MOUNTING.

ELECTRICAL EQUIPMENT RACK DETAIL
SCALE: NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT; DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
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REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ELECTRICAL DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE: HORIZONTAL: N/A VERTICAL: N/A

M&C FILE NUMBER: HE301

DRAWING NUMBER: E2

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION: F

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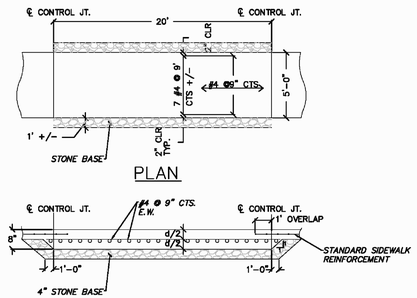
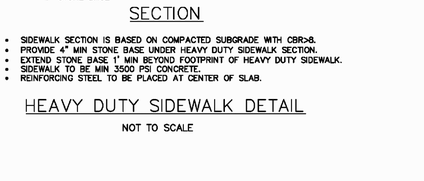


PLAN



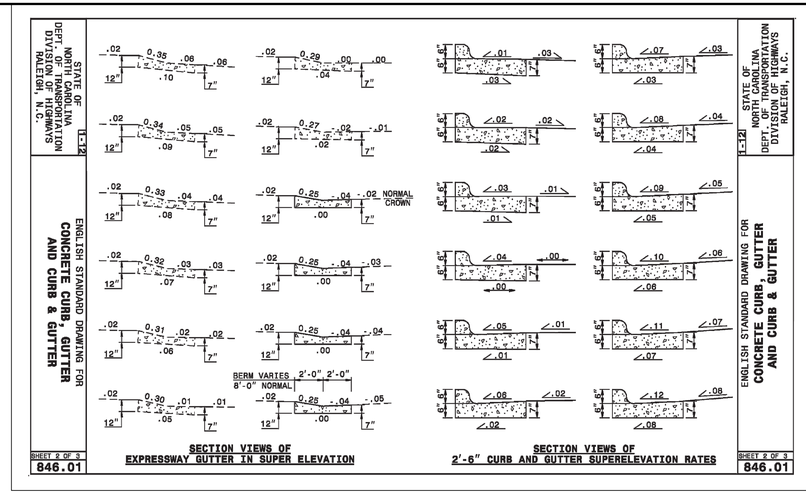
SECTION

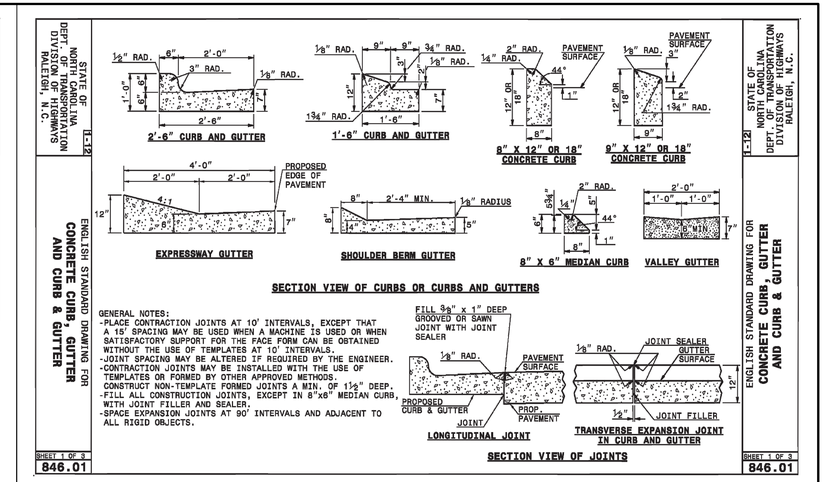
- SIDEWALK SECTION IS BASED ON COMPACTED SUBGRADE WITH CBR>8.
- PROVIDE 4" MIN STONE BASE UNDER HEAVY DUTY SIDEWALK SECTION.
- EXTEND STONE BASE 1' MIN BEYOND FOOTPRINT OF HEAVY DUTY SIDEWALK.
- SIDEWALK TO BE MIN 3500 PSI CONCRETE.
- REINFORCING STEEL TO BE PLACED AT CENTER OF SLAB.

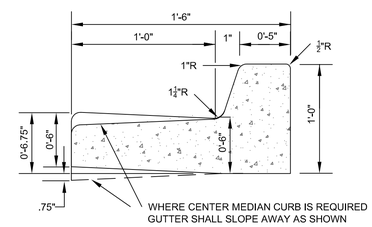
HEAVY DUTY SIDEWALK DETAIL

NOT TO SCALE

DUKE ENERGY TRANSMISSION CROSSING
HEAVY DUTY SIDEWALK
BLAKE FARM SF-1 SUBDIVISION

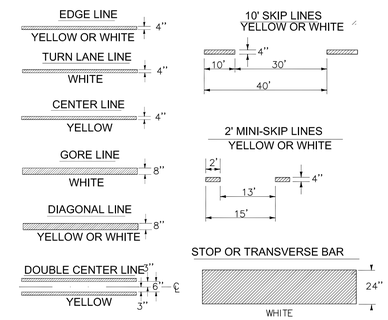






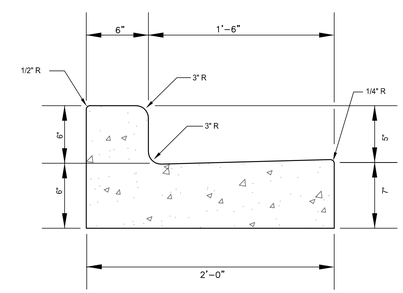
STANDARD 18" CURB SECTION

NOT TO SCALE



PAVEMENT MARKING DETAIL

NOT TO SCALE



STD. 24" CURB AND GUTTER

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT; DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

SITE DETAILS

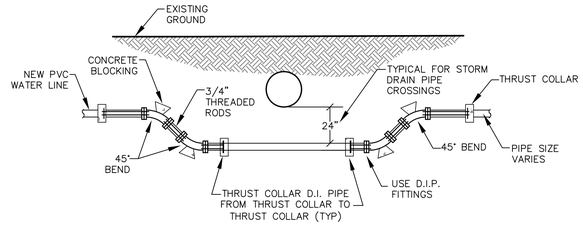
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS501
DRAWING NUMBER 60

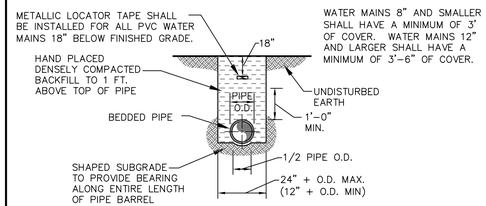
STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CS501_065250001.dwg, 9/17/2015 8:23:54 PM, rcollier

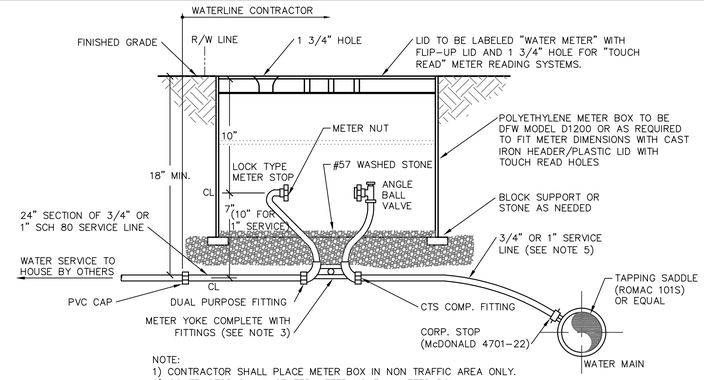


NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.

PIPE CROSSING DETAIL "A"
NOT TO SCALE

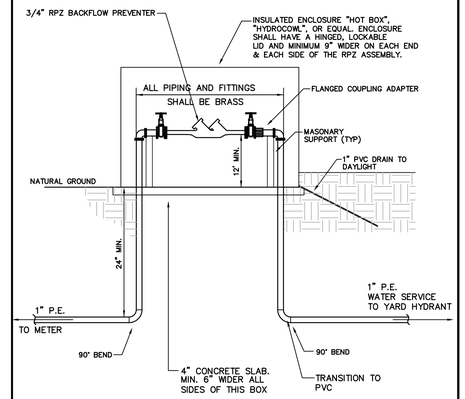


PIPE LAYING CONDITIONS
NOT TO SCALE

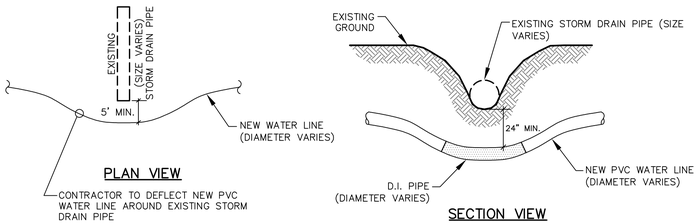


NOTE:
1) CONTRACTOR SHALL PLACE METER BOX IN NON TRAFFIC AREA ONLY.
2) CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
3) McDONALD 26-207WX2D 33 (3/4")
McDONALD 26-410WX2D 44 (1") OR EQUAL
4) BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10, PRO READ REGISTER, R900 MIU)
5) SERVICE LINE SHALL BE CLASS 200 CTS POLYETHYLENE.

5/8", 3/4", 1" AND 2" WATER METER SERVICE DETAIL
NOT TO SCALE



3/4" RPZ DETAIL
NOT TO SCALE

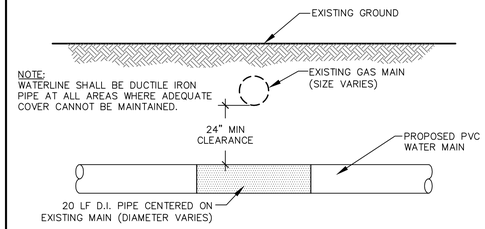


PLAN VIEW

SECTION VIEW

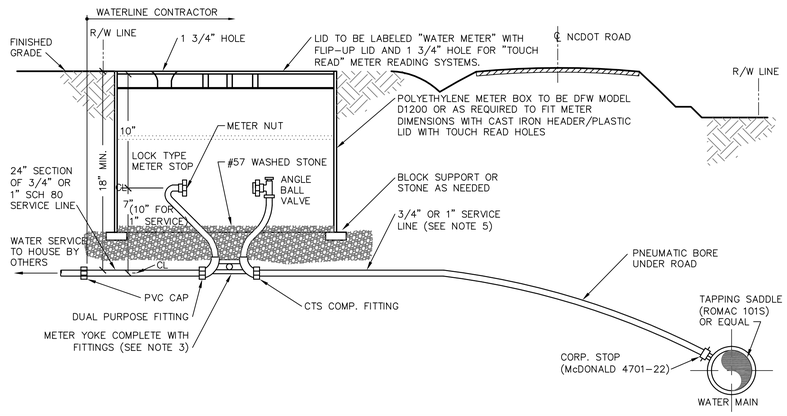
PIPE CROSSING DETAIL "B"
NOT TO SCALE

NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.

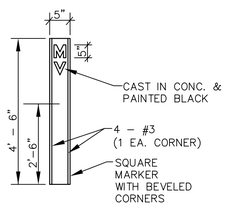


NOTE:
WATERLINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE ADEQUATE COVER CANNOT BE MAINTAINED.

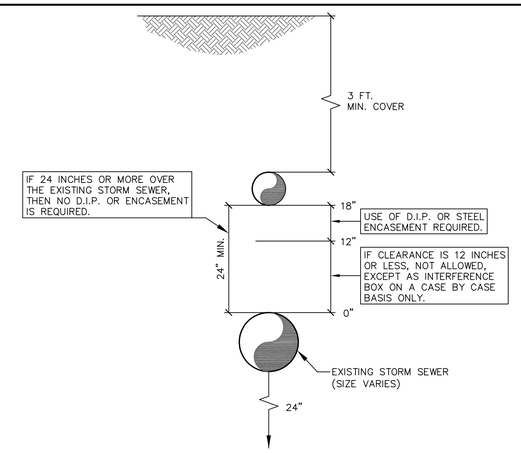
PIPE CROSSING DETAIL "D"
NOT TO SCALE



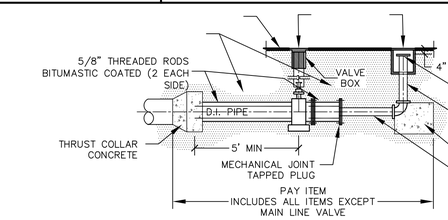
NOTE:
1) CONTRACTOR SHALL PLACE METER BOX IN NON TRAFFIC AREA ONLY.
2) CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
3) McDONALD 26-207WX2D 33 (3/4")
McDONALD 26-410WX2D 44 (1") OR EQUAL
4) BOX TO BE ADJUSTED VERTICALLY TO ACCEPT COUNTY'S STANDARD SERVICE METER. (NEPTUNE T-10 PRO READ REGISTER, R900 MIU)
5) SERVICE LINE SHALL BE CLASS 200 CTS. POLYETHYLENE.
6) DRY BORE ALL SERVICES LOCATED ON OPPOSITE SIDE OF STATE HIGHWAYS.
7) BORE SHALL EXTEND 5' OUTISDE NCDOT DITCH ON EACH SIDE OF ROAD.
8) MAINTAIN 3'-6" COVER UNDER PAVED SURFACES AND 3'-0" UNDER DITCHES.



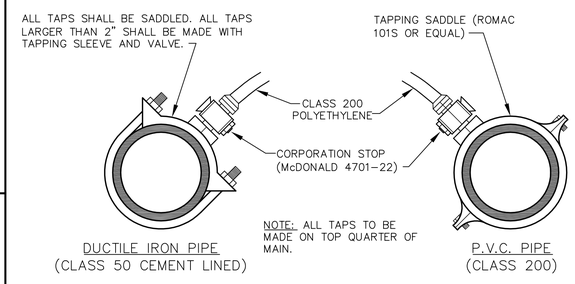
VALVE MARKER DETAIL
NOT TO SCALE



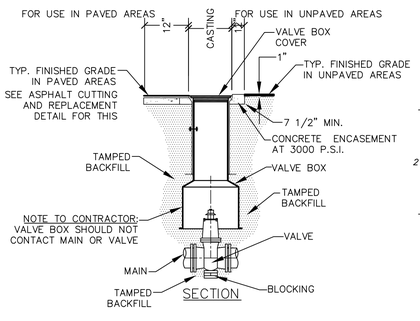
PIPE CROSSING DETAIL "C"
NOT TO SCALE



TEMPORARY BLOW-OFF ASSEMBLY
NOT TO SCALE

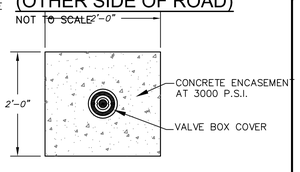


STANDARD WATER TAP DETAIL
NOT TO SCALE



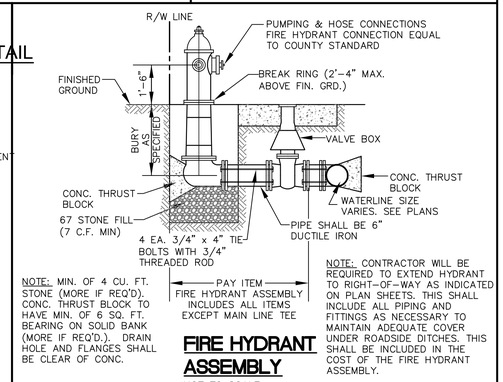
VALVE AND VALVE BOX INSTALLATION
NOT TO SCALE

WATER METER SERVICE DETAIL (OTHER SIDE OF ROAD)
NOT TO SCALE



PLAN

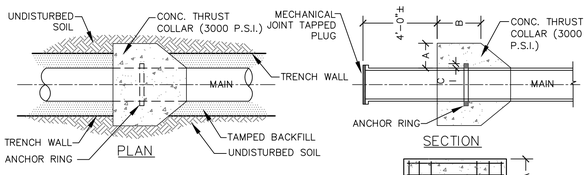
NOTES:
1. D.I.P. MAY BE USED FOR VALVE BOX EXTENSIONS.
2. PRECAST CONCRETE COLLARS MAY BE USED IN SHOULDER AREAS.



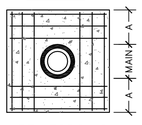
NOTE: MIN. OF 4 CU. FT. STONE (MORE IF REQ'D). CONC. THRUST BLOCK TO HAVE MIN. OF 6 SQ. FT. BEARING ON SOLID BANK (MORE IF REQ'D.). DRAIN HOLE AND FLANGES SHALL BE CLEAR OF CONC.

NOTE: CONTRACTOR WILL BE REQUIRED TO EXTEND HYDRANT TO RIGHT-OF-WAY AS INDICATED ON PLAN SHEETS. THIS SHALL INCLUDE ALL PIPING AND FITTINGS AS NECESSARY TO MAINTAIN ADEQUATE COVER UNDER ROADSIDE DITCHES. THIS SHALL BE INCLUDED IN THE COST OF THE FIRE HYDRANT ASSEMBLY.

FIRE HYDRANT ASSEMBLY
NOT TO SCALE



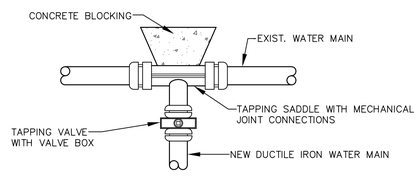
SCHEDULE				
PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR COLLAR	RINGS REQUIRED
	A	B	C	
6",8",12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO



REINFORCING

NOTE:
6" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS BARS PLACED AS SHOWN

THRUST COLLAR INSTALLATION
NOT TO SCALE



TAPPING SADDLE AND VALVE ASSEMBLY
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM - EST. 1946 -

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

UTILITY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER: CU501
DRAWING NUMBER: 61

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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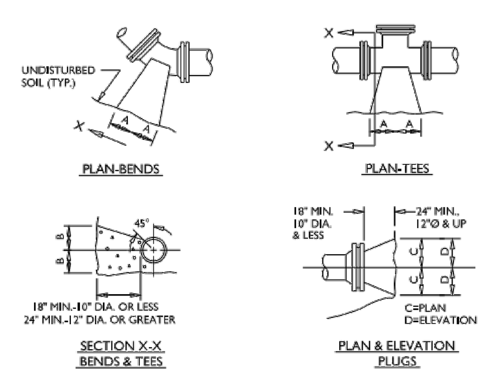


PIPE SIZE	90° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"
8"	24"	18"	13"	18"	10"	12"	10"	12"	16"	18"	25"	11"
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"
12"	32"	28"	19"	28"	14"	18"	14"	18"	22"	28"	37"	17"
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"

ASSUME 2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. CONCRETE SHALL NOT CONTACT BOLTS OR MECHANICAL FITTINGS.
5. CONCRETE SHALL BE 3000 PSI.
6. TRENCHES SHALL CONFORM WITH STANDARD EMBEDMENT DETAIL
7. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.
8. SEE STD. THRUST BLOCK SHEET 2 OF 4 FOR OTHER SOILS.

PSD NO. 1 - THRUST BLOCKING DETAIL

NOT TO SCALE

REACTION BEARING AREAS FOR HORIZONTAL WATER/SEWER PIPE BENDS

BASED ON TEST PRESSURE OF 200 P.S.I.

ALL AREAS GIVEN IN SQUARE FEET.

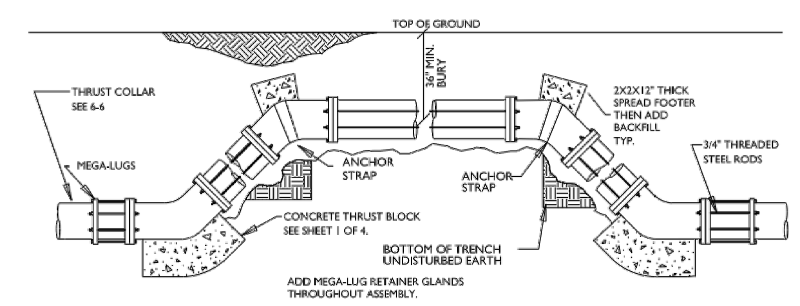
SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT²	SOFT CLAY 2000 LBS/FT²	GRAVEL / COARSE SAND 1600 LBS/FT²	DRY CLAY - ALWAYS DRY 8000 LBS/FT²	SAND, COMPACT FIRM 8000 LBS/FT²	SAND, CLEAN DRY 4000 LBS/FT²	QUICKSAND - VERY POOR SOIL 1000 LBS/FT²	ROCK - POOR 10,000 LBS/FT²
6"									
11 1/4°	1,108	1	1	1	1	1	1	2	1
22 1/2°	2,207	1	2	2	1	1	1	3	1
45°	4,328	2	3	3	1	1	2	5	1
90°	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	2	3	4	1	1	2	6	1
8"									
11 1/4°	1,970	1	1	2	1	1	1	2	1
22 1/2°	3,922	1	2	3	1	1	1	4	1
45°	7,694	2	4	5	1	1	2	8	1
90°	14,215	4	8	9	2	2	4	15	2
PLUG	10,053	3	5	6	2	2	3	10	1
12"									
11 1/4°	4,433	2	3	3	1	1	2	5	1
22 1/2°	8,826	3	5	6	2	2	3	9	1
45°	17,312	5	9	11	3	3	5	18	2
90°	31,983	8	16	19	4	4	8	32	4
PLUG	22,619	6	12	14	3	3	6	23	3
16"									
11 1/4°	7,881	2	4	5	1	1	2	8	1
22 1/2°	15,691	4	8	10	2	2	4	16	2
45°	30,779	8	16	19	4	4	8	31	4
90°	56,861	15	29	35	8	8	15	57	6
PLUG	40,213	10	21	25	5	5	10	41	5

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" - 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

PSD NO.2 - THRUST BLOCKING DESIGN QUANTITY TABLE

NOT TO SCALE



ROD REQUIREMENTS

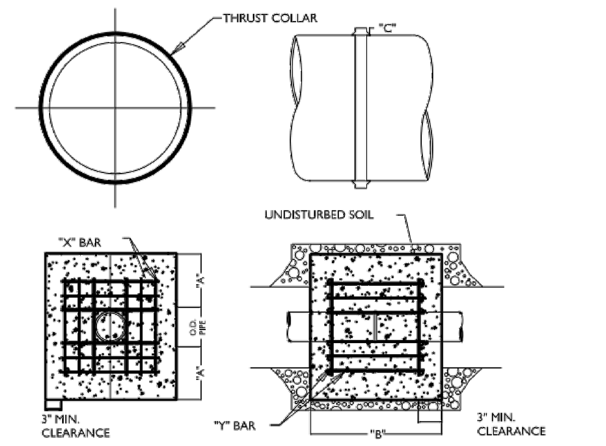
SIZE OF 45 BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	4
8"	7,694	4
12"	17,312	4
16"	30,779	8
24"	69,252	8

GENERAL NOTES:

1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT OR COLD DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. MEGA-LUGS TO BE USED AT ALL FITTINGS.
4. MUST USE DUCTILE IRON EYE BOLTS WHERE NECESSARY.

PSD NO. 3 - VERTICAL BEND DETAIL

NOT TO SCALE



REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

THRUST COLLAR, AND THRUST SCHEDULE

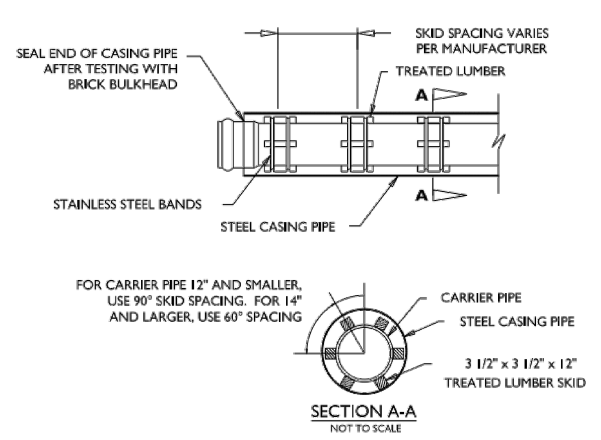
I.D. PIPE	"A"	"B"	"C-6"-16", 20"-24", 30"-36", 48"
6" - 36"	1'-4"	1'-7"	2" 3" 4"
48" & greater	1'-8"	1'-9"	6"

NOTES:

1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD EMBEDMENT DETAIL.
4. BACKFILL TAMPED IN 6" LIFTS PER STANDARD EMBEDMENT DETAIL.
5. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

PSD NO. 4 - THRUST COLLAR DETAIL

NOT TO SCALE

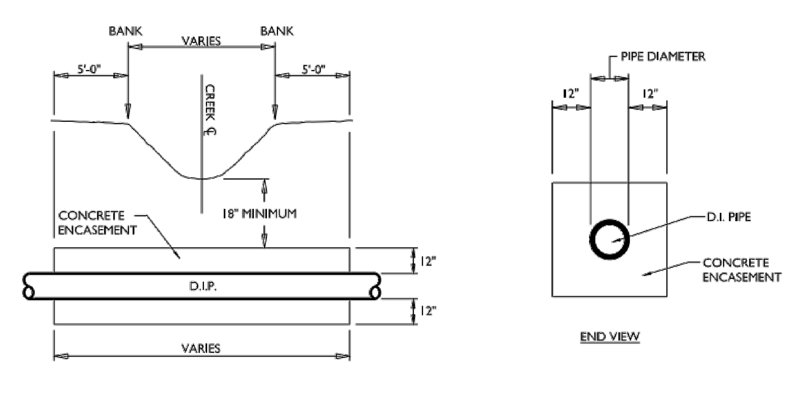


NOTES:

1. SKID TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SKIDS MAY BE USED AS ALTERNATIVE. 2. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.
3. CASING PIPE TO BE OF FERROUS METAL AND HAVE A MINIMUM DIAMETER TWICE THATOF THE CARRIER PIPE.
4. CASING PIPE TO HAVE A MINIMUM THICKNESS OF .25".
5. FOR ALL BORES UNDER NCDOT RIGHT OF WAYS FOLLOW ALL NCDOT GUIDELINES FOR PIPE SIZE AND THICKNESS.

PSD NO. 5 - PIPE CASING DETAIL

NOT TO SCALE

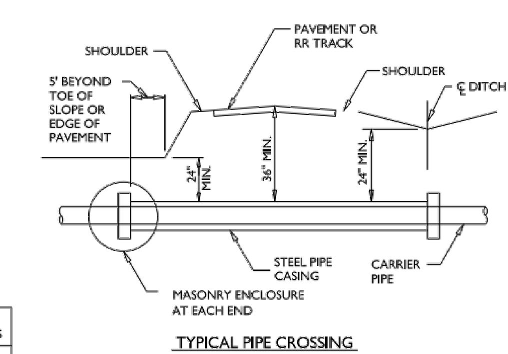


NOTES:

1. CONCRETE SHALL BE 3,000 P.S.I.
2. CONCRETE ENCASEMENT NOT REQUIRED WHEN PIPE IS AT LEAST THREE (3) FEET UNDER CENTERLINE OF CREEK BOTTOM.
3. ALL STREAM CROSSINGS TO BE PERMITTED BY NCDENR.
4. ALL WETLAND CROSSINGS AND COASTAL WETLAND CROSSINGS TO BE PERMITTED BY ALL APPROPRIATE AGENCIES.

PSD NO. 6 - STREAM/WETLAND CROSSING DETAIL DETAIL

NOT TO SCALE



CASING PIPE SIZE (O.D.)	WALL THICKNESS
4" - 12 3/4"	0.250"
16"	0.250"
18"	0.250"
20"	0.250"
24"	0.250"
30"	0.312"
36"	0.375"
48"	0.500"

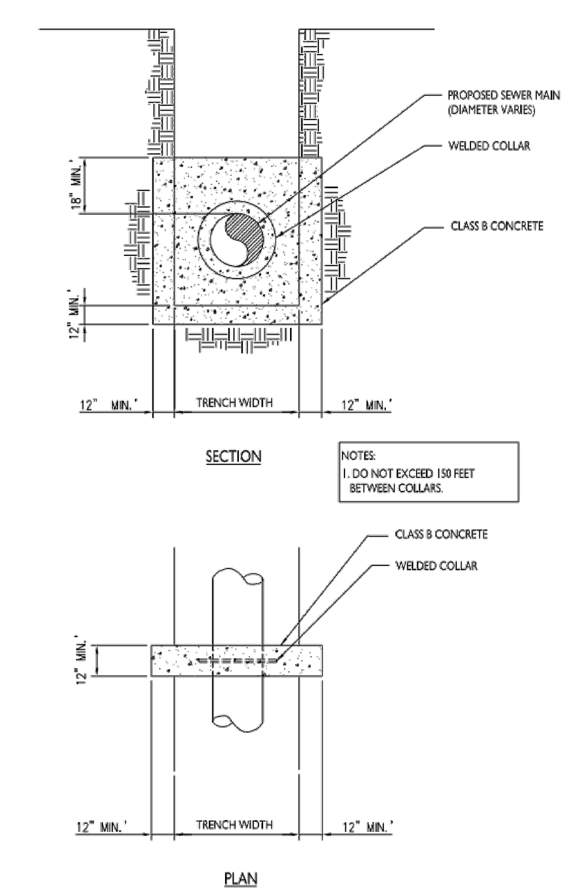
ENCASEMENTS SHALL EXTEND FROM DITCH LINE TO DITCH LINE IN CUT SECTIONS, FIVE (5) FEET BEYOND THE TOE OF SLOPES IN FILL SECTIONS, AND TEN (10) FEET BEYOND EDGE OF PAVEMENT IN SECTIONS WITH NO DITCH OR FILL AREA.

NOTES:

1. STEEL ENCASEMENT PIPE SHALL CONFORM TO ASTM A-139 WITH WALL THICKNESS AND GRADE AS DEFINED IN THE SPECIFICATIONS. MINIMUM ALLOWABLE YIELD STRENGTH IS 35,000 PSI.
2. CARRIER PIPE SHALL BE ADEQUATELY SUPPORTED THE ENTIRE LENGTH WITHIN THE CASING BY USING "SPIDER" STEEL SUPPORTS AT A MAXIMUM OF 9 FOOT CENTERS (ONE AT EACH JOINT AND ONE INTERMEDIATE). OTHER METHODS MUST MEET APPROVAL OF THE ENGINEER.
3. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE WAY.
4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY SEDIMENT AND EROSION CONTROL PRACTICES REQUIRED DURING CONSTRUCTION AND THE SUBSEQUENT STABILIZATION OF ALL DISTURBED AREAS AFTER CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAY DOWN AND STOCKPILE AREAS.
7. FOR BORES ON THE NCDOT RIGHT OF WAY, NO WORK WILL BEGIN UNTIL THE CONTRACTOR HAS A COPY OF THE NCDOT ENCROACHMENT PERMIT FOR THE PROJECT.

PSD NO. 7 - BORE DETAIL DETAIL

NOT TO SCALE



NOTES:
1. DO NOT EXCEED 150 FEET BETWEEN COLLARS.

PSD NO. 8 - ANTI SEEP COLLAR DETAIL

NOT TO SCALE

STANDARD DETAILS SHEET A

PLURIS, LLC

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM
EST 1946

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

UTILITY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CU502
DRAWING NUMBER 62

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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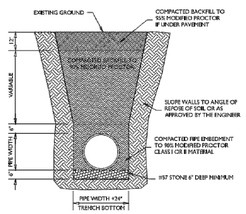
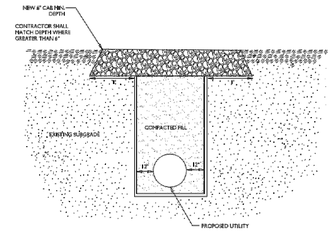


NOTES:
1. MINIMUM BURY DEPTH FOR ALL FORCE MAINS AND GRAVITY LINES IS 36" UNLESS SPECIFICALLY ALLOWED BY THE ENGINEER. ALL LINES SHALLOWER THAN 36" MUST GIVE CONSIDERATION TO USING HIGHER PRESSURE AND THICKNESS CLASSES OF DIP.
2. ALL LINES TO BE BEDDED IN 6" OF #57 STONE MINIMUM. FOR LINES INSTALLED BELOW THE WATER TABLE #57 STONE SHOULD EXTEND TO THE SPRING LINE OF THE PIPE AT A MINIMUM.
3. THE USE OF #57 STONE BEDDING AND BACKFILL SHOULD BE COMMENSURATE WITH THE CONDITIONS IN THE TRENCH. THE CONTRACTOR IS RESPONSIBLE FOR PROPER BEDDING AND BACKFILLING TO INSURE PIPE STABILITY AND UNIFORM GRADE.

PSD NO. 9 - PIPE TRENCH AND BEDDING DETAIL

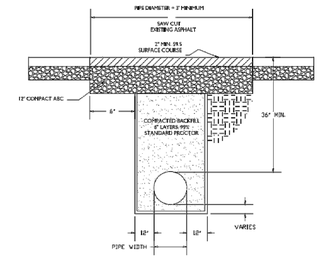
NOT TO SCALE



NOTES:
1. THE REPACKED STONE SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH ASSHTO T-180 AS MODIFIED BY NCDOT.

PSD NO. 10 - GRAVEL DRIVEWAY REPAIR DETAIL

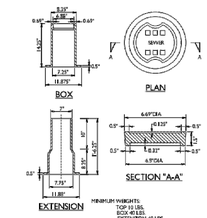
NOT TO SCALE



NOTES:
1. THE PAVEMENT SHALL BE DIRMMED BY A STRAIGHT EDGE, PREFERABLY A MACHINED SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH DRY SOIL OR ABC STONE USING MAXIMUM 6" LIFTS TO WITHIN 12" OF THE ROAD SURFACE. WHERE ABC STONE IS USED IT SHALL BE COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH ASSHTO T-180 AS MODIFIED BY NCDOT.
3. WITHIN ROADS MAINTAINED BY NCDOT, THE TRENCH SHALL BE BACKFILLED AND COMPACTED USING ROWABLE FILL OR ABC STONE TO WITHIN 12" OF THE ROAD SURFACE. WHERE ABC STONE IS USED IT SHALL BE COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH ASSHTO T-180 AS MODIFIED BY NCDOT.
4. THE TRIAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THIS MATERIAL IN ACCORDANCE WITH ASSHTO T-180 AS MODIFIED BY NCDOT. BITUMINOUS BASE OR SM25B INFV IB SUBSTITUTED IF APPROVED BY THE ENGINEER.
5. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 2" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY TO ACHIEVE A SMOOTH LEVEL PATCH.

PSD NO. 11 - ASPHALT PAVING REPAIR DETAIL

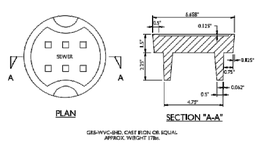
NOT TO SCALE



NOTE:
VALVE BOX LID NOT FOR USE IN ROADWAY LOCATIONS. HEAVY DUTY LID REQUIRED. SEE SD 14-01E.

PSD NO. 12 - CAST IRON VALVE BOX DETAIL

NOT TO SCALE

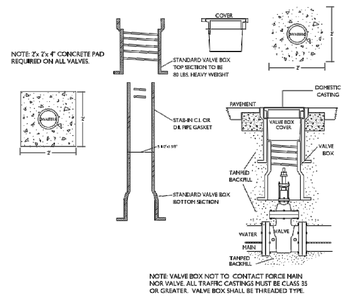


PSD NO. 13 - HEAVY DUTY CAST IRON VALVE BOX LID DETAIL

NOT TO SCALE

NOTE: CONCRETE VALVE PAD REQUIRED ON ALL VALVES.

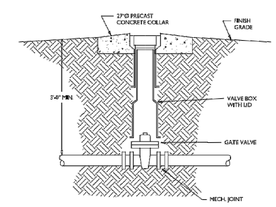
APPROVED METHOD FOR EXTENSION OF VALVE BOX



NOTE: VALVE BOX NOT TO CONTACT FORCE MAIN NOR VALVE. ALL TRAFFIC CASTINGS MUST BE CLASS 35 OR GREATER. VALVE BOX SHALL BE THREADED TYPE.

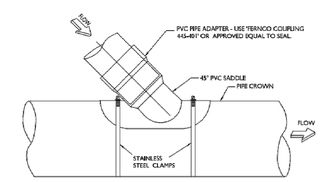
PSD NO. 14 - VALVE BOX INSTALLATION AND EXTENSION DETAIL

NOT TO SCALE

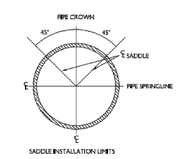


PSD NO. 15 - GATE VALVE DETAIL

NOT TO SCALE



BACKFILL UNDER PVC SADDLE, ADAPTOR, AND PIPE BEND WITH #57 STONE AS SHOWN ON PIPE EMBEDMENT DETAIL.



NOTE:
USE AT DEPTHS FROM 3 TO 6-FEET.

PSD NO. 16 - SADDLE INSTALLATION DETAIL

NOT TO SCALE

STANDARD DETAILS SHEET B

PLURIS, LLC

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

UTILITY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CU503
DRAWING NUMBER 63

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION F

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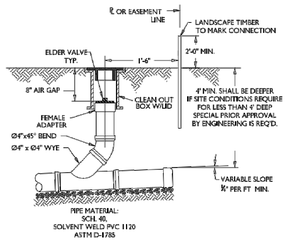
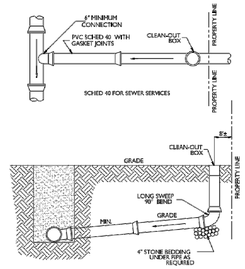


NOTE: ALL SEVICES FOR SINGLE FAMILY RESIDENCES AND SINGLE COMMERCIAL STRUCTURES ARE TO BE INSTALLED WITH AN ELDER VALVE .

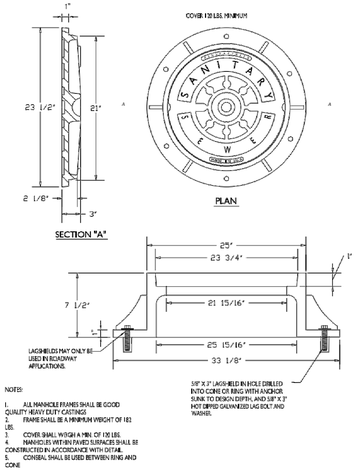
PSD NO. 17A - STANDARD SERVICE CLEAN OUT DETAIL

NOT TO SCALE



PSD NO. 17 - STANDARD SERVICE DETAIL

NOT TO SCALE

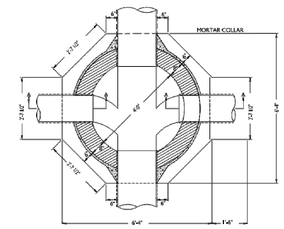


NOTES:

1. ALL MANHOLE FRAMES SHALL BE GOOD QUALITY HEAVY DUTY CASTINGS.
2. FRAME SHALL BE A MINIMUM WEIGHT OF 183 LBS.
3. COVER SHALL WEIGH A MIN. OF 120 LBS.
4. MANHOLES WITHIN PAVED SURFACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAIL.
5. CONSEAL SHALL BE USED BETWEEN RING AND CONE

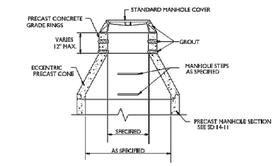
PSD NO. 18 - STANDARD MANHOLE RING AND COVER DETAIL

NOT TO SCALE



PSD NO. 19 - SANITARY SEWER MANHOLE PLAN VIEW DETAIL

NOT TO SCALE



PSD NO. 20 - SANITARY SEWER PRECAST RING EXTENSION DETAIL

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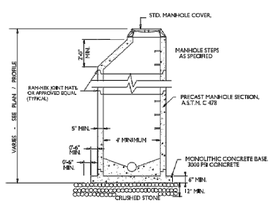
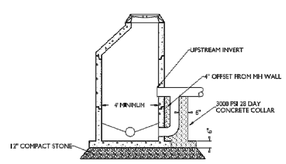


NOTE:
ADDITIONAL EXTENDED BASE MAY BE REQUIRED WHERE MANHOLES DEPENDING ON ANTIFLOTATION CALCULATIONS

PSD NO. 21 - SANITARY SEWER PRECAST MANHOLE DETAIL

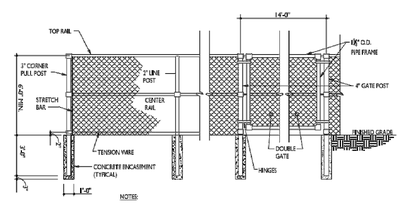
NOT TO SCALE



NOTE:
CONCRETE COLLAR TO EXTEND 3" ON EACH SIDE OF DROP PIPE. USE OUTSIDE DROP MANHOLE WHEN UPSTREAM INVERT IS OVER 24" HIGHER THAN DOWNSTREAM INVERT.

PSD NO. 22 - OUTSIDE DROP MANHOLE DETAIL

NOT TO SCALE

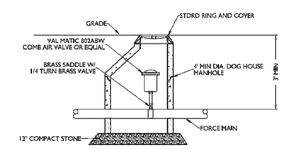


NOTES:

1. DOUBLE GATE SHALL HAVE A LOCKING MECHANISM, DROP ROD, AND TRUSS ROD.
2. ALL FENCE COMPONENT MATERIALS SHALL BE EITHER HOT DIPPED GALVANIZED STEEL OR IRON. FENCE FABRIC SHALL BE ALUMINUM COATED.
3. PRIVACY SLATS WHEN INDICATED

PSD NO. 23 - LIFT STATION FENCING DETAIL

NOT TO SCALE



NOTE:
AIR RELEASE VALVES TO BE LOCATED AT HIGH POINTS OF THE FORCE MAIN WHERE GRADE DIFFERENCES EXCEED 18" IN ELEVATION.

PSD NO. 24 - AIR RELEASE MANHOLE DETAIL

NOT TO SCALE

STANDARD DETAILS SHEET C

PLURIS, LLC

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08-19-15
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REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM

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PENDER COUNTY NORTH CAROLINA

UTILITY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CU504

DRAWING NUMBER 64

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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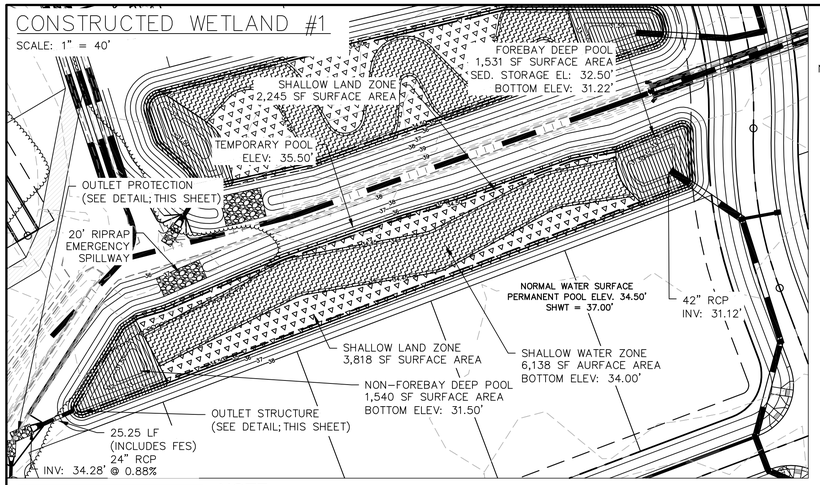
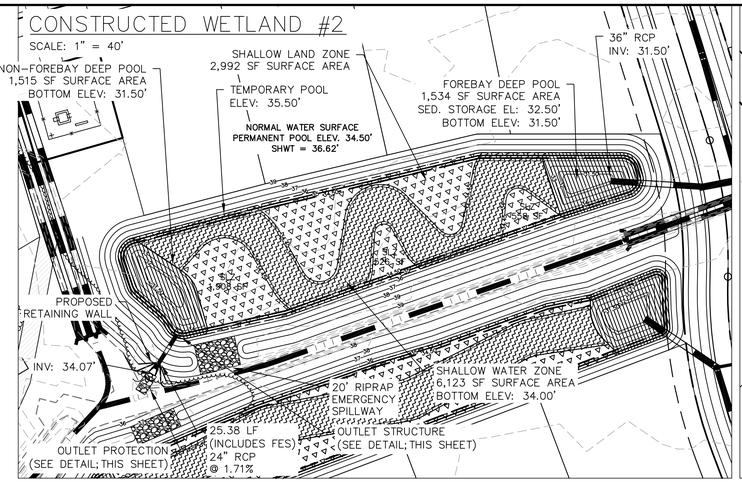
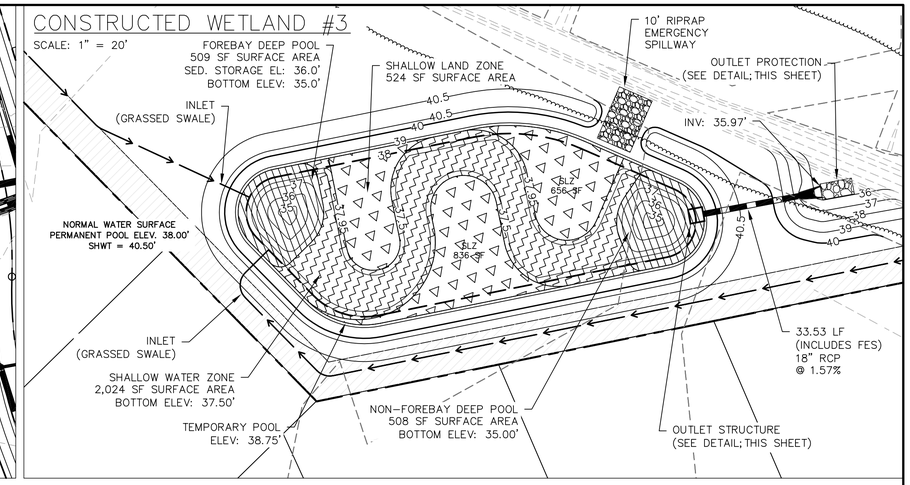






LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

NOTE:

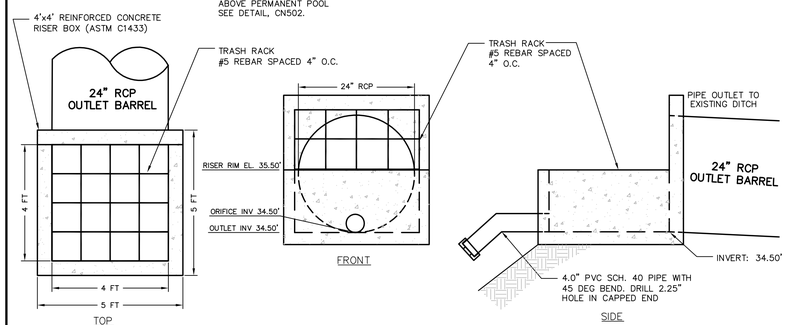
CONSTRUCTED WETLANDS TO USE GEOSYNTHETIC CLAY LINER, GSE BENTO LINER OR APPROVED EQUAL. INSTALLATION PER MANUFACTURER RECOMMENDATIONS, SOILS ENGINEERS REQUIREMENTS, AND MAINTAIN <0.01 IN/HR PER NCDENR-DWQ. KEY-IN GCL LINER IN CUTOFF TRENCH 6" ABOVE PERMANENT POOL SEE DETAIL, CN502.

SCALE: 1" = 40 (0 20 40 80 120)

SCALE: 1" = 40 (0 20 40 80 120)

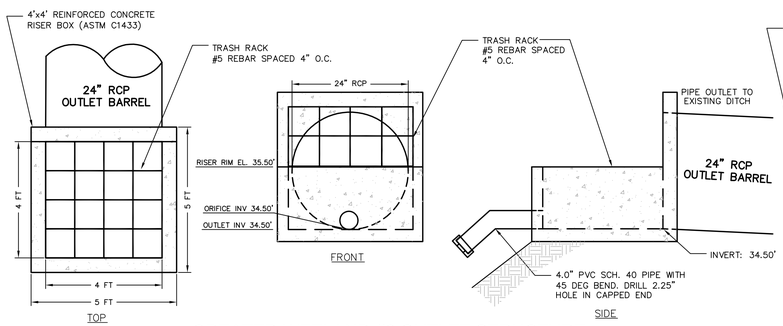
SCALE: 1" = 20 (0 10 20 40 60)

N



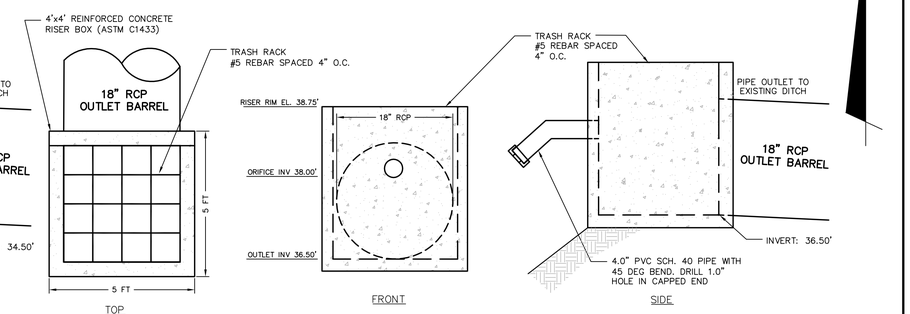
CREATED WETLAND #1 OUTLET STRUCTURE

NOT TO SCALE



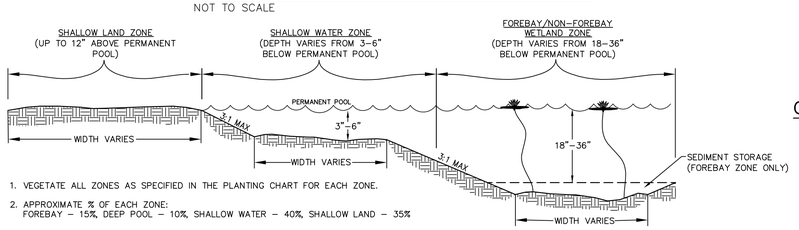
CREATED WETLAND #2 OUTLET STRUCTURE

NOT TO SCALE



CREATED WETLAND #3 OUTLET STRUCTURE

NOT TO SCALE



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

GENERAL PLANTING NOTES:

PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

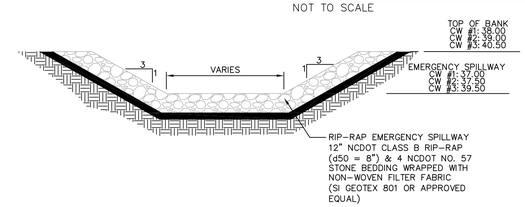
SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

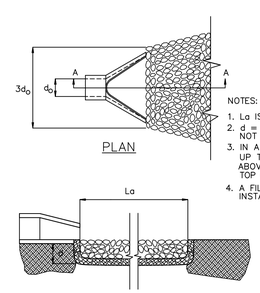
* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

STORM ELEVATIONS			
CREATED WETLAND	#1	#2	#3
1.5" PROPOSED DEPTH:	35.50'	35.50'	38.75'
DESIGN STORM			
2–YEAR:	35.68'	35.69'	38.90'
10–YEAR:	36.28'	36.25'	39.05'
25–YEAR:	36.77'	36.70'	39.16'
100–YEAR:	37.34'	37.50'	39.58'



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL – DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

OUTLET PROTECTION DETAIL

NOT TO SCALE

CONSTRUCTED WETLAND OUTFALL PROTECTION			
	WETLAND 1	WETLAND 2	WETLAND 3
OUTLET PIPE DIA.	24"	24"	18"
OUTLET FLOW RATE	9.75 CFS	12.38 CFS	8.62 CFS
OUTLET VELOCITY	6.60 FT/S	9.00 FT/S	7.1 FT/S
MATERIAL	CLASS B	CLASS B	CLASS A
LENGTH	12.0'	12.0'	6.0'
WIDTH	6.0'	6.0'	4.5'
STONE DIA.	6"	6"	3"
THICKNESS	22"	22"	9"

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

CONSTRUCTED WETLANDS #1, #2 & #3 DETAILS

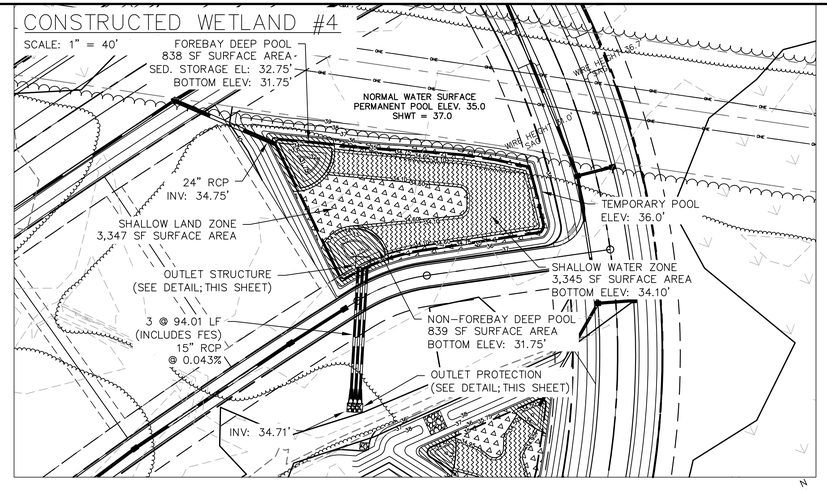
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

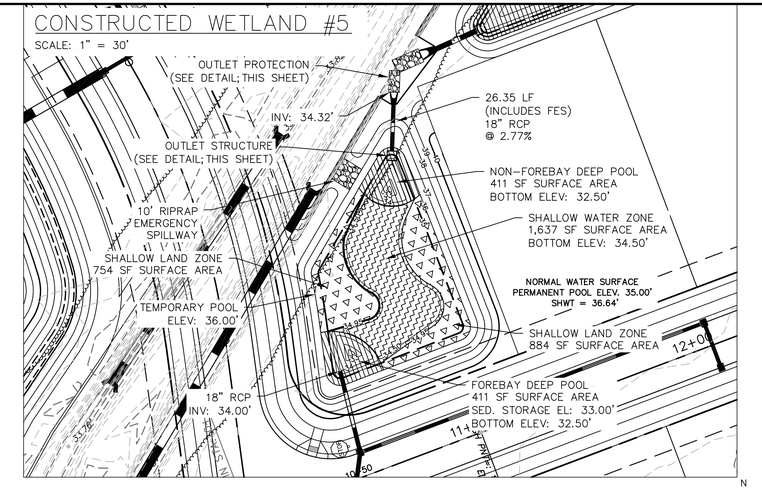
SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER: CN501
DRAWING NUMBER: 65

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

STORM ELEVATIONS		
CREATED WETLAND	#4	#5
1.5" PROPOSED DEPTH:	35.75'	36.00'
DESIGN STORM		
2-YEAR:	35.86'	36.07'
10-YEAR:	36.30'	36.29'
25-YEAR:	36.57'	36.43'
100-YEAR:	37.09'	36.80'



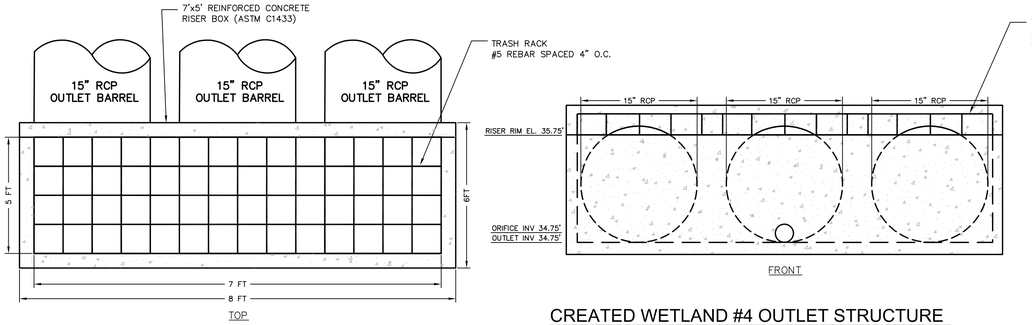


LEGEND

- SHALLOW LAND ZONE
- SHALLOW WATER ZONE
- DEEP POOL AND FOREBAY ZONE

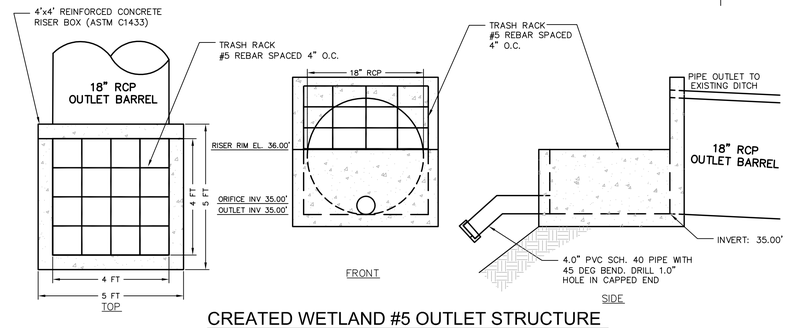
NOTE:

CONSTRUCTED WETLANDS TO USE GEOSYNTHETIC CLAY LINER, GSE BENTO LINER OR APPROVED EQUAL. INSTALLATION PER MANUFACTURER RECOMMENDATIONS, SOILS ENGINEERS REQUIREMENTS, AND MAINTAIN <0.01 IN/HR PER NCDENR-DWQ. KEY-IN GCL LINER IN CUTOFF TRENCH 6" ABOVE PERMANENT POOL SEE DETAIL, CN502.



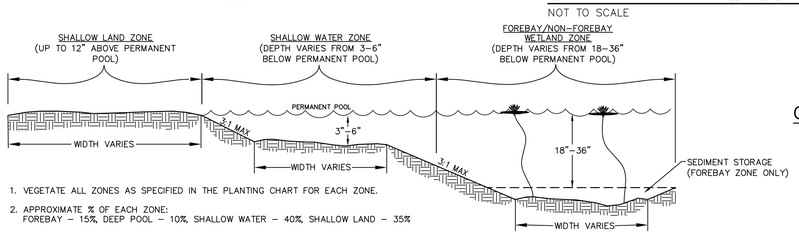
CREATED WETLAND #4 OUTLET STRUCTURE

NOT TO SCALE



CREATED WETLAND #5 OUTLET STRUCTURE

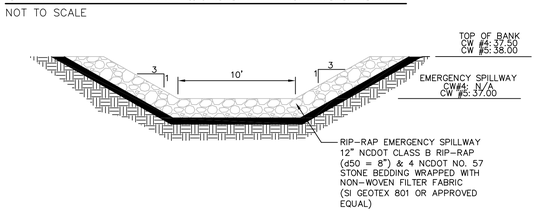
NOT TO SCALE



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

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TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
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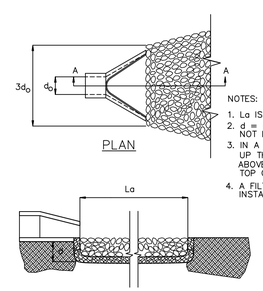

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OUTLET PROTECTION DETAIL

NOT TO SCALE

CONSTRUCTED WETLAND OUTFALL PROTECTION		
	WETLAND 4	WETLAND 5
OUTLET PIPE DIA.	3 @ 15"	18"
OUTLET FLOW RATE	9.17 CFS	5.05 CFS
OUTLET VELOCITY	2.66 FT/S	7.93 FT/S
MATERIAL	CLASS A	CLASS B
LENGTH	5.0'	9.0'
WIDTH	7.6'	4.5'
STONE DIA.	3"	6"
THICKNESS	9"	22"

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08-19-15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06-30-15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05-15-15
C	ISSUED FOR PERMITTING	01-21-15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10-10-14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08-11-14

REVISIONS

SEAL

FINAL PLANS-
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

CONSTRUCTED WETLANDS #4 & #5 DETAILS

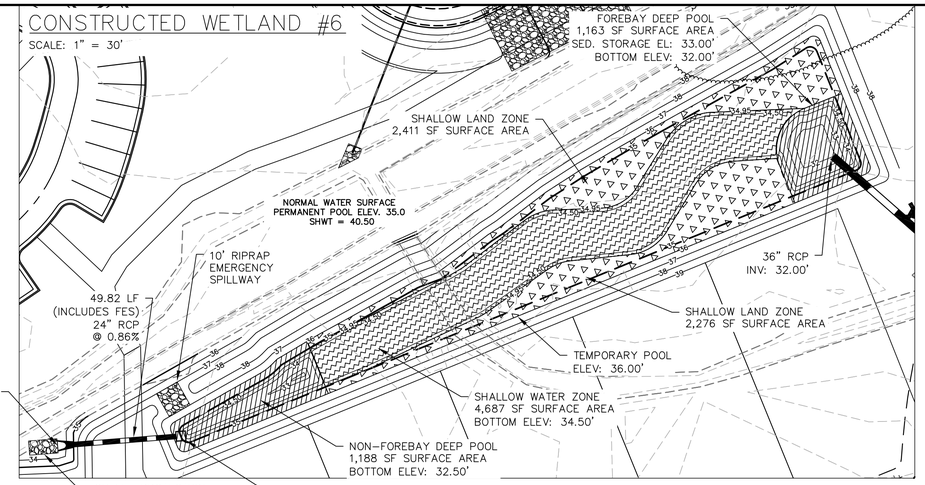
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

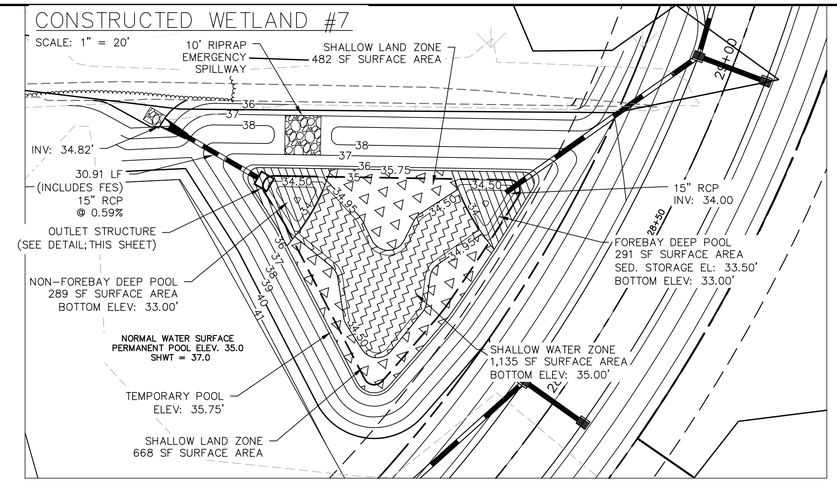
SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CN501A
DRAWING NUMBER 65A

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION F

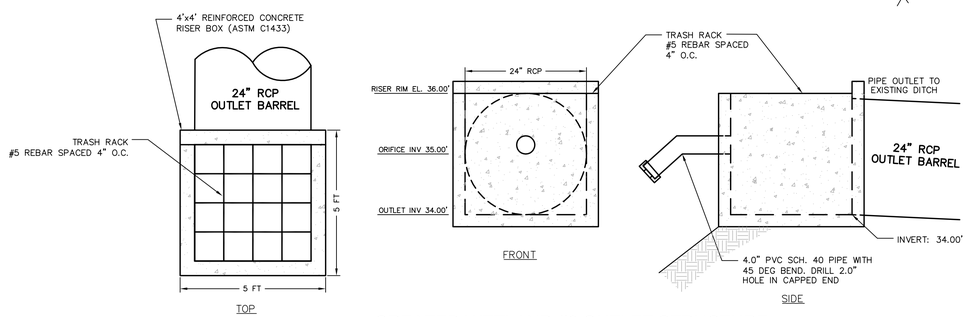




LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

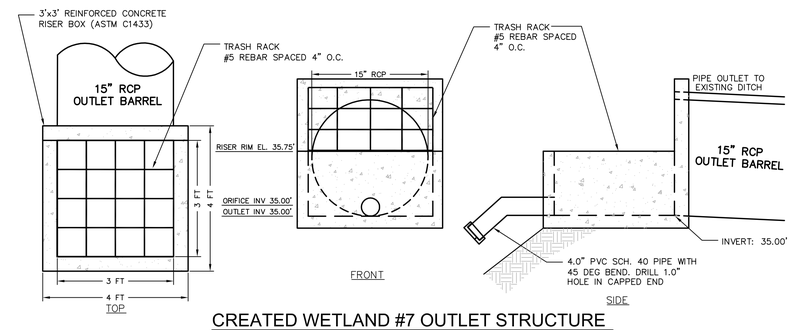
NOTE:

CONSTRUCTED WETLANDS TO USE GEOSYNTHETIC CLAY LINER, GSE BENTO LINER OR APPROVED EQUAL. INSTALLATION PER MANUFACTURER RECOMMENDATIONS, SOILS ENGINEERS REQUIREMENTS, AND MAINTAIN <0.01 IN/HR PER NCDENR-DWQ. KEY-IN GCL LINER IN CUTOFF TRENCH 6" ABOVE PERMANENT POOL SEE DETAIL, CN502.



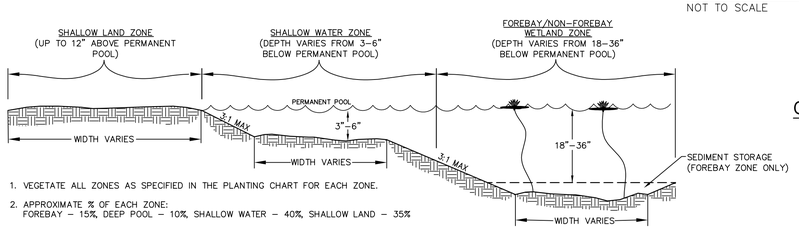
CREATED WETLAND #6 OUTLET STRUCTURE

NOT TO SCALE



CREATED WETLAND #7 OUTLET STRUCTURE

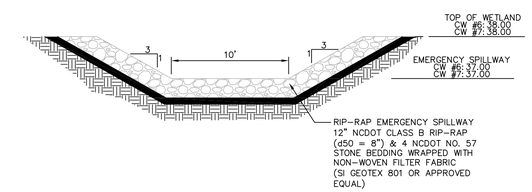
NOT TO SCALE



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

STORM ELEVATIONS		
CREATED WETLAND	#6	#7
1.5" PROPOSED DEPTH:	36.00'	35.75'
DESIGN STORM		
2-YEAR:	36.12'	35.78'
10-YEAR:	36.43'	35.93'
25-YEAR:	36.66'	36.03'
100-YEAR:	37.15'	36.28'

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

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TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
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ORGANIC CONTENT: 5–8%
P-I: 20<50
pH: 6.0–7.0

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GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
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GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
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PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

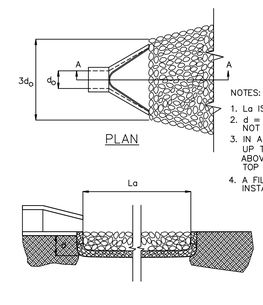
SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
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3. IN A WELL – DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

OUTLET PROTECTION DETAIL

NOT TO SCALE

CONSTRUCTED WETLAND OUTFALL PROTECTION		
	WETLAND 6	WETLAND 7
OUTLET PIPE DIA.	24"	15"
OUTLET FLOW RATE	13.81 CFS	2.31 CFS
OUTLET VELOCITY	7.151 FT/S	4.3 FT/S
MATERIAL	CLASS B	CLASS A
LENGTH	12.0'	5.0'
WIDTH	6.0'	3.8'
STONE DIA.	6"	3"
THICKNESS	22"	9"

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
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C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS. DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
243 North Front Street
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BLAKE FARM – EST 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

CONSTRUCTED WETLAND DETAILS

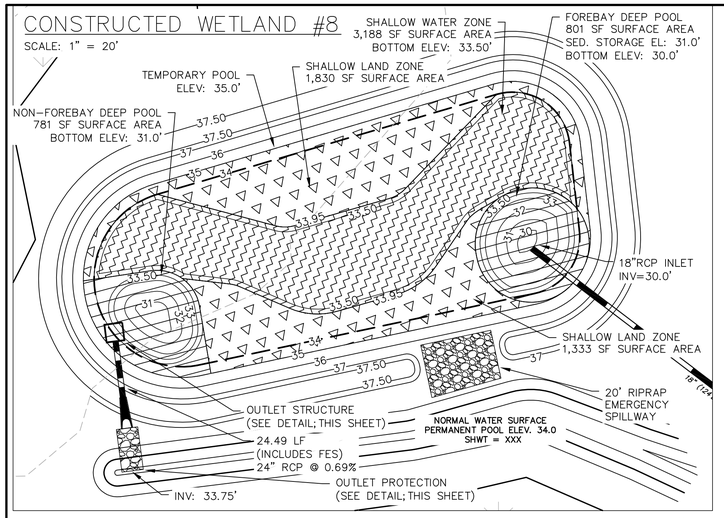
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

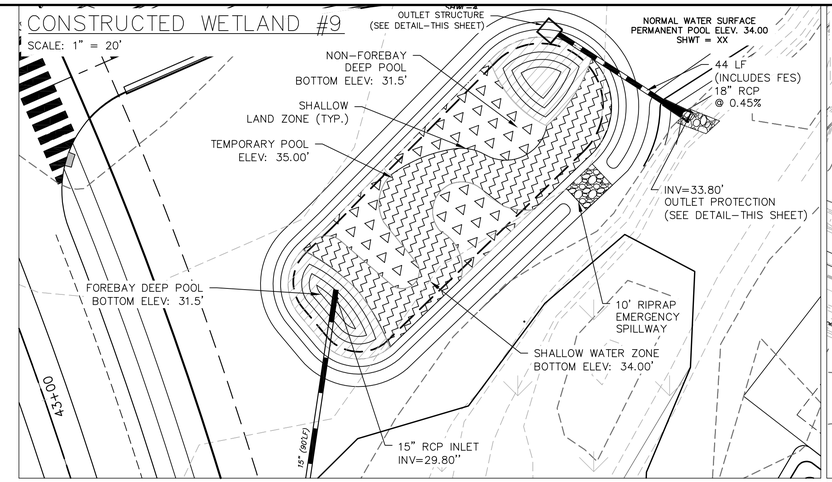
SCALE
HORIZONTAL:
VERTICAL:

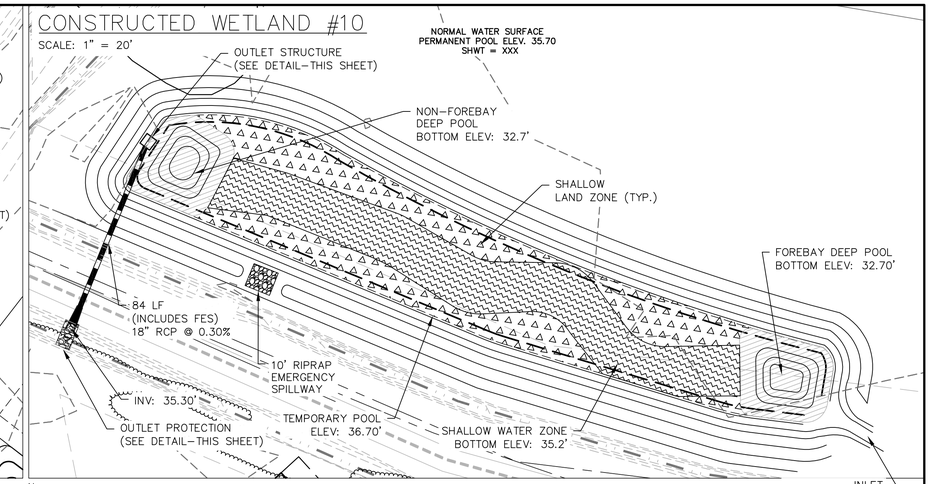
M&C FILE NUMBER: CN501B
DRAWING NUMBER: 65B

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION: F





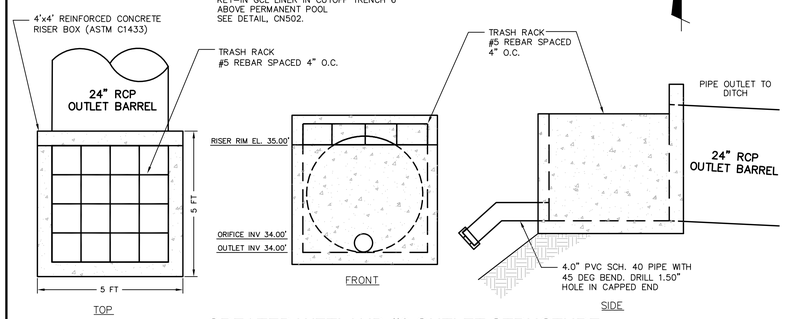


LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

NOTE:

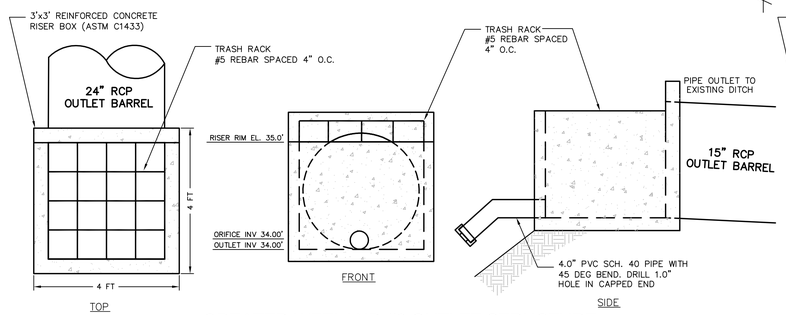
CONSTRUCTED WETLANDS TO USE GEOSYNTHETIC CLAY LINER, GSE BENTO LINER OR APPROVED EQUAL. INSTALLATION PER MANUFACTURER RECOMMENDATIONS, SOILS ENGINEERS REQUIREMENTS, AND MAINTAIN <0.01 IN/HR PER NCDENR-DWQ. KEY-IN GCL LINER IN CUTOFF TRENCH 6" ABOVE PERMANENT POOL SEE DETAIL, CN502.

SCALE: 1" = 20 (0, 10, 20, 40, 60)



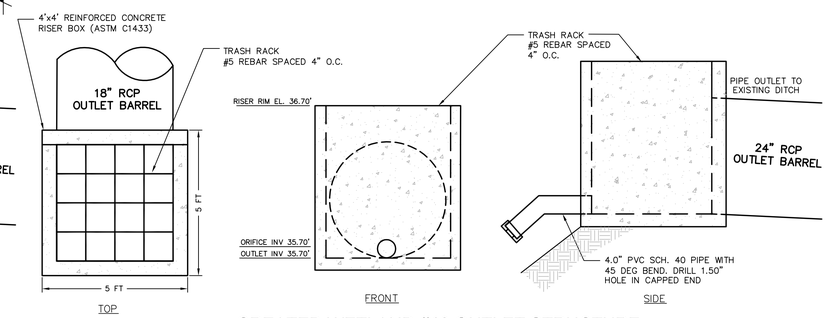
CREATED WETLAND #8 OUTLET STRUCTURE

NOT TO SCALE



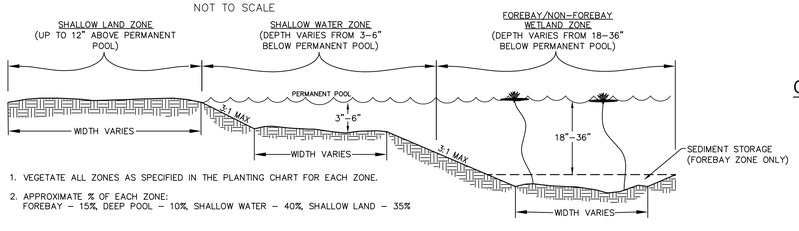
CREATED WETLAND #9 OUTLET STRUCTURE

NOT TO SCALE



CREATED WETLAND #10 OUTLET STRUCTURE

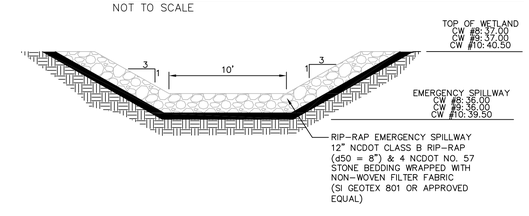
NOT TO SCALE



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

GENERAL PLANTING NOTES:

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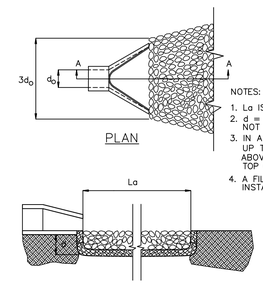

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OUTLET PROTECTION DETAIL

NOT TO SCALE

CONSTRUCTED WETLAND OUTFALL PROTECTION			
	WETLAND 8	WETLAND 9	WETLAND 10
OUTLET PIPE DIA.	18"	15"	24"
OUTLET FLOW RATE	6.5 CFS	5.7 CFS	17.2 CFS
OUTLET VELOCITY	3.7 FT/S	3.0 FT/S	5.6 FT/S
MATERIAL	CLASS A	CLASS A	CLASS A
LENGTH	6.0'	5.0'	8.0'
WIDTH	4.5'	4.0'	6.0'
STONE DIA.	3"	3"	3"
THICKNESS	9"	9"	9"

REV.NO.	DESCRIPTIONS	DATE
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E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
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C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS. DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
243 North Front Street
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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

CONSTRUCTED WETLAND DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CN501
DRAWING NUMBER 65C

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

WET DETENTION POND NOTES

1) TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.

2) CONTRACTOR SHALL INSTALL EQUAL NUMBERS OF THE LISTED SUITABLE SPECIES FOR THE VEGETATED SHELF. GROUP SIMILAR SPECIES OF PLANTS TOGETHER, INSTALL PLANTS 24" O.C. IN A CHECKERBOARD PATTERN, AND NO PLANTS SHALL BE PLANTED WITHIN 10 FT OF THE OUTLET STRUCTURE. LISTED SUITABLE SPECIES FOR VEGETATED SHELF ARE: **ARROW ARUM, BLUE FLAG IRIS, CANA LILY, AND PICKEREL WEED.**

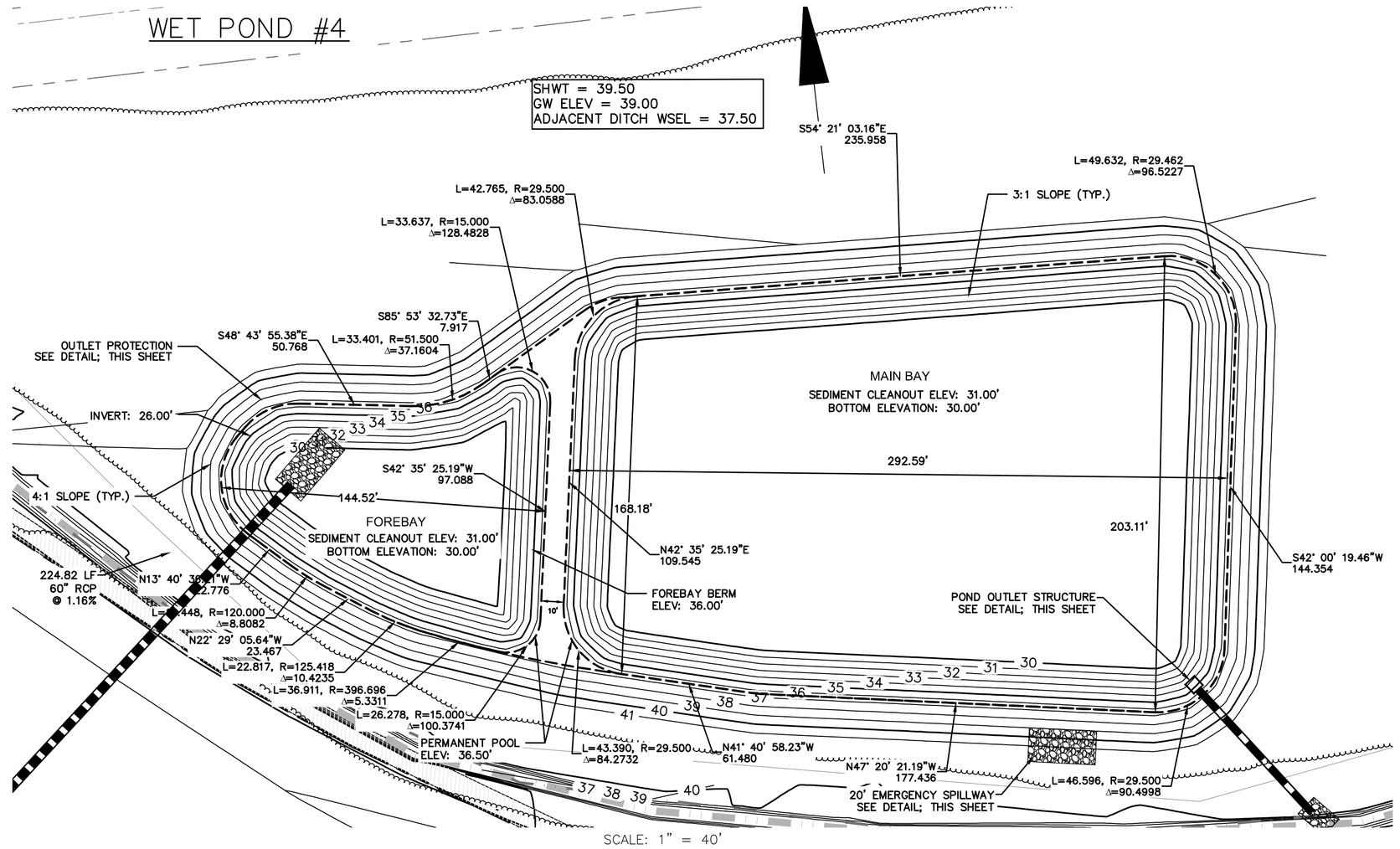
3) SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.

4) CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.

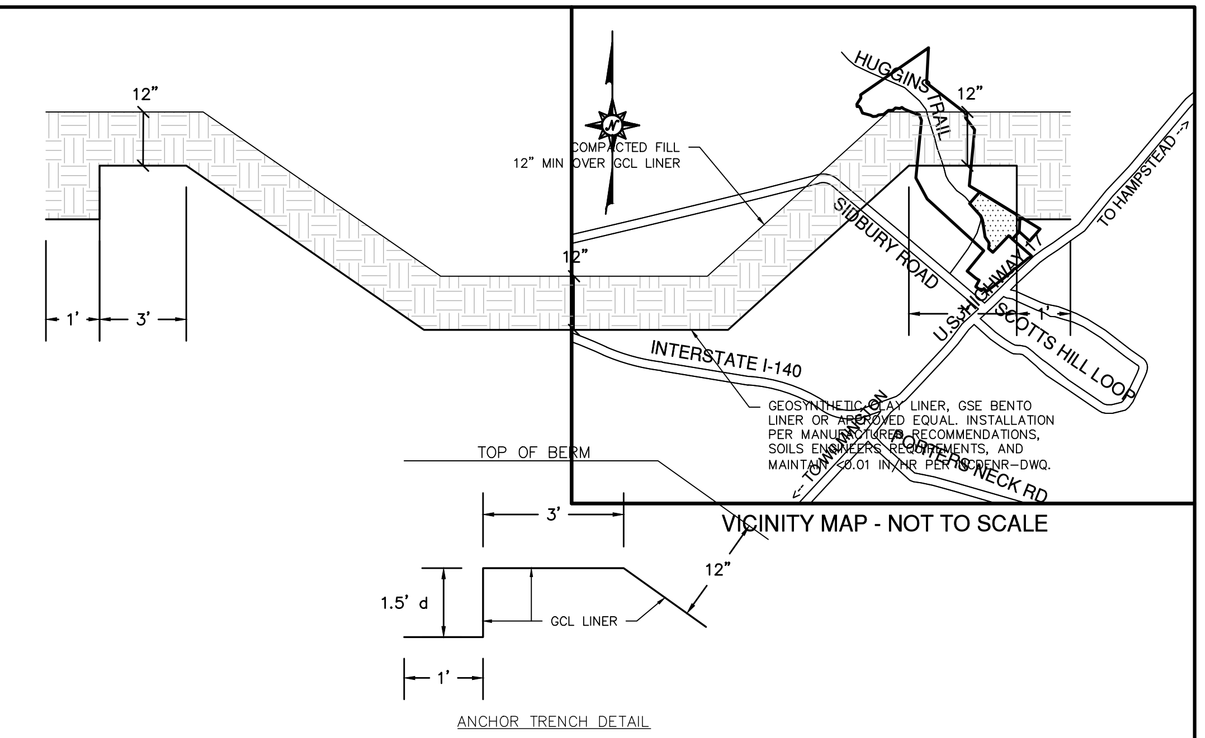
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES.
2. BASED ON FIRM FLOOD INSURANCE RATE MAP FOR PENDER COUNTY, THIS PARCEL IS NOT LOCATED IN A FLOOD HAZARD ZONE.
3. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
4. SITE WILL REQUIRE A STATE EROSION CONTROL PERMIT AND STATE STORMWATER PERMIT.
5. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED STATE PERMITTED STORMWATER POND.
6. SURVEY INFORMATION PROVIDED BY MCKIM & CREED.

WET POND #4



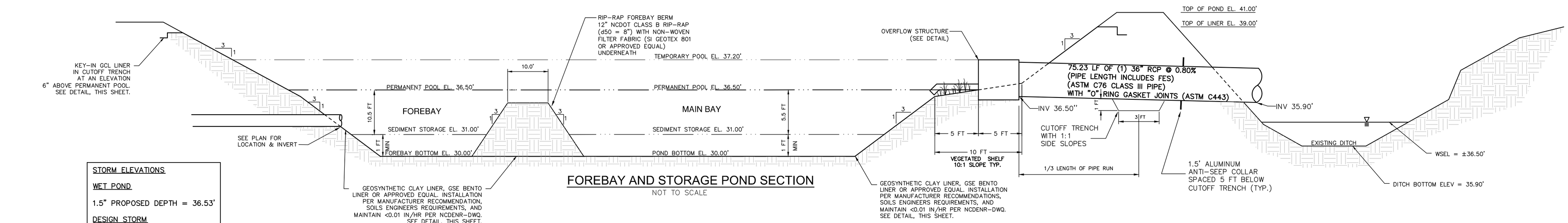
SCALE: 1" = 40'



VICINITY MAP - NOT TO SCALE

GCL LINER INSTALL DETAIL

NOT TO SCALE



FOREBAY AND STORAGE POND SECTION

NOT TO SCALE

STORM ELEVATIONS

WET POND

1.5" PROPOSED DEPTH = 36.53'

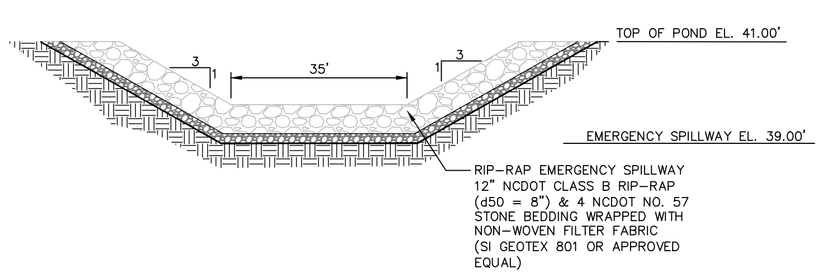
DESIGN STORM

2-YEAR = 37.29'

10-YEAR = 37.74'

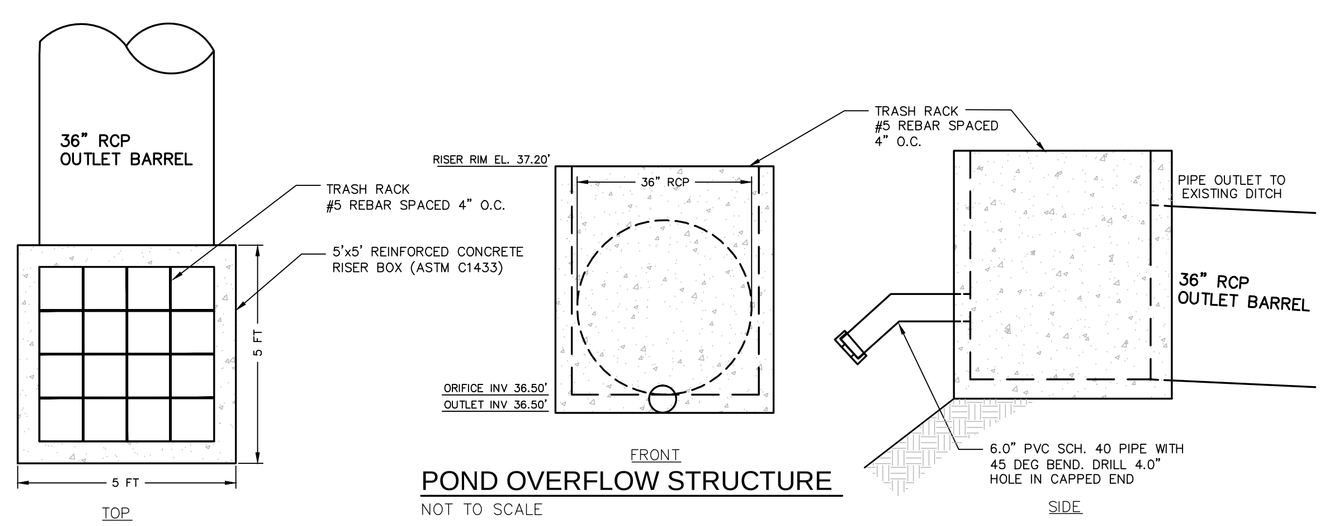
25-YEAR = 38.24'

100-YEAR = 39.28'



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

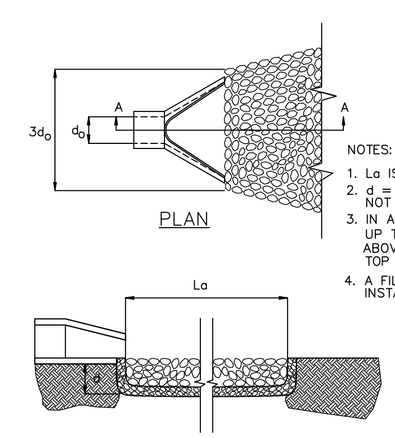


POND OVERFLOW STRUCTURE

NOT TO SCALE

OUTLET PIPE INTO FOREBAY OUTLET PROTECTION	
OUTLET PIPE DIA.	60"
OUTLET FLOW RATE	87.63 CFS
OUTLET VELOCITY	4.5 FT/S
MATERIAL	CLASS B
LENGTH	30'
WIDTH	15'
STONE DIA.	6"
THICKNESS	22"

POND OUTLET STRUCTURE PROTECTION	
OUTLET PIPE DIA.	36"
OUTLET FLOW RATE	11.19 CFS
OUTLET VELOCITY	6.5 FT/S
MATERIAL	CLASS B
LENGTH	18'
WIDTH	9'
STONE DIA.	6"
THICKNESS	22"



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PIPE OUTLET PROTECTION

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
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REVISIONS

SEAL

FINAL PLANS
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND #4 DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER: CN502
DRAWING NUMBER: 66

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION: F

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WET DETENTION POND NOTES

1) TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.

2) CONTRACTOR SHALL INSTALL EQUAL NUMBERS OF THE LISTED SUITABLE SPECIES FOR THE VEGETATED SHELF. GROUP SIMILAR SPECIES OF PLANTS TOGETHER, INSTALL PLANTS 24" O.C. IN A CHECKERBOARD PATTERN, AND NO PLANTS SHALL BE PLANTED WTHIN 10 FT OF THE OUTLET STRUCTURE. LISTED SUITABLE SPECIES FOR VEGETATED SHELF ARE: **ARROW ARUM, BLUE FLAG IRIS, CANA LILY, AND PICKEREL WEED.**

3) SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.

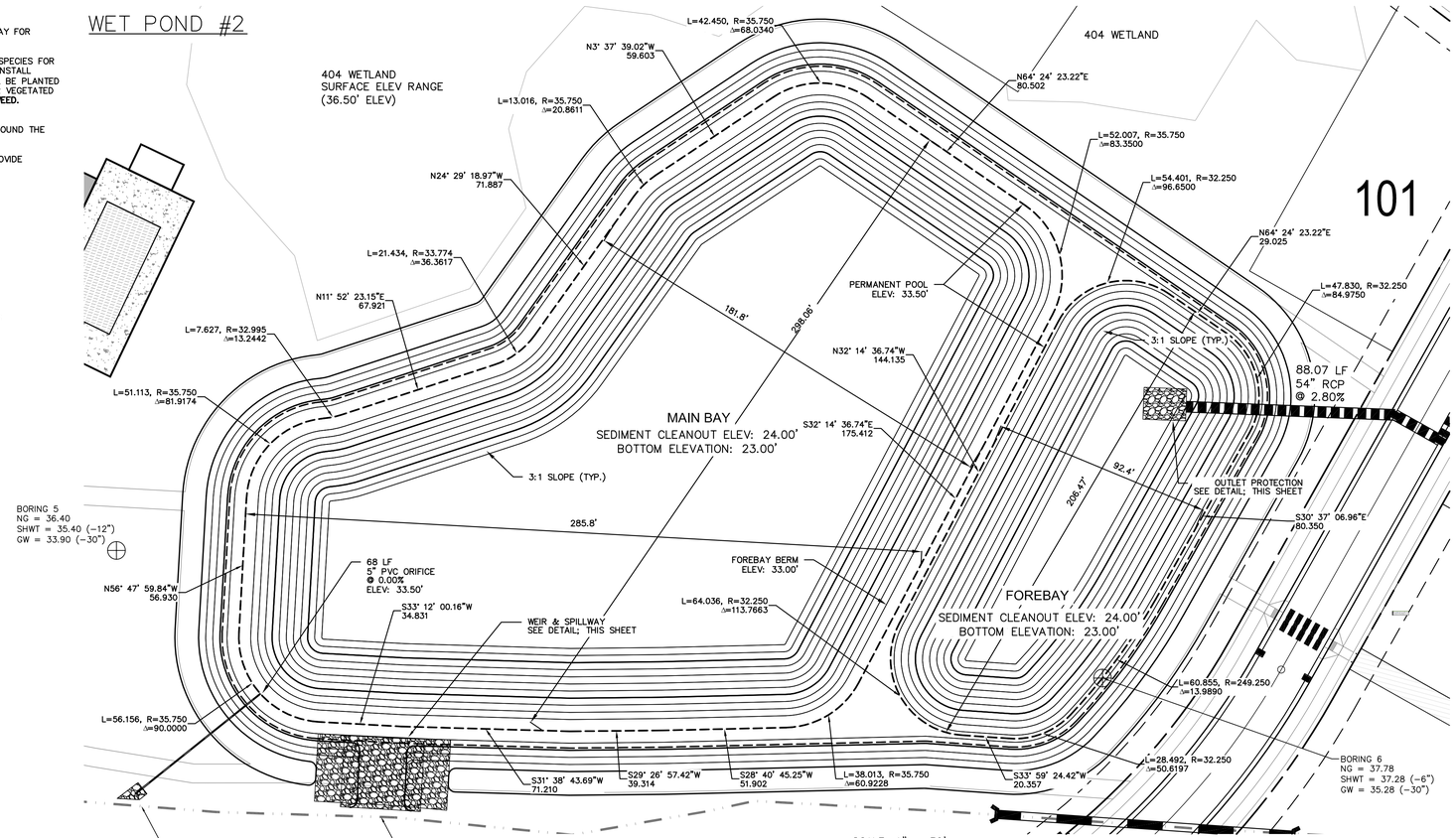
4) CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.

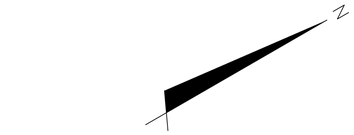
GENERAL NOTES

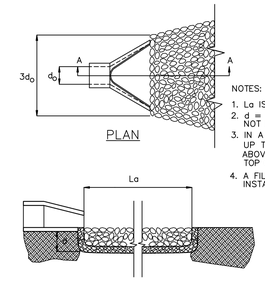
1. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES.
2. BASED ON FIRM FLOOD INSURANCE RATE MAP FOR PENDER COUNTY, THIS PARCEL IS NOT LOCATED IN A FLOOD HAZARD ZONE.
3. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
4. SITE WILL REQUIRE A STATE EROSION CONTROL PERMIT AND STATE STORMWATER PERMIT.
5. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED STATE PERMITTED STORMWATER POND.
6. SURVEY INFORMATION PROVIDED BY MCKIM & CREED.

SHWT = 37.28' (MAX)
GW ELEV = 35.28'
ADJACENT DITCH WSEL = 33.45'
ADJACENT WETLANDS = ±36.50'

WET POND #2







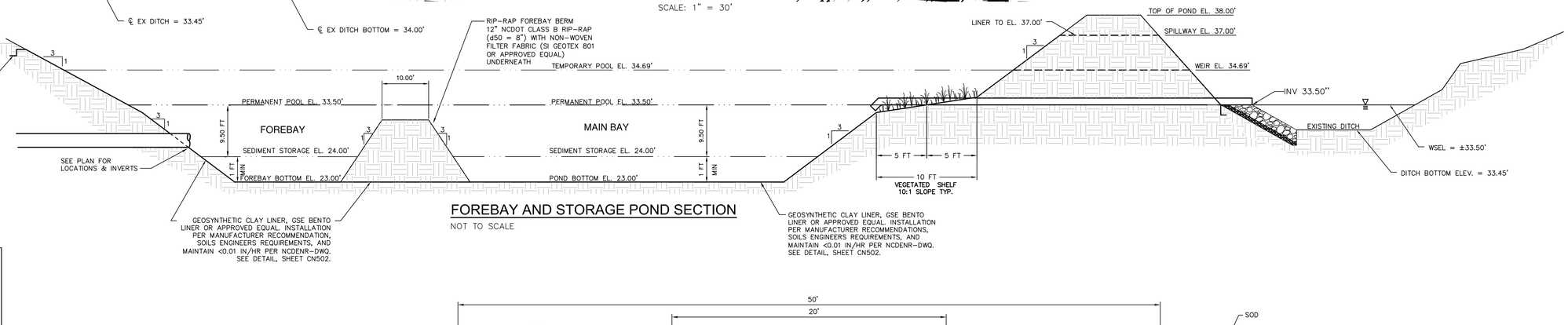
NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL – DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

PIPE OUTLET PROTECTION

NOT TO SCALE

INLET PROTECTION	
OUTLET PIPE DIA.	54"
OUTLET FLOW RATE	67.91 CFS
OUTLET VELOCITY	2.13 FT/S
MATERIAL	CLASS B
LENGTH	27'
WIDTH	13.5'
STONE DIA.	6"
THICKNESS	22"

OUTLET PROTECTION	
OUTLET PIPE DIA.	6"
OUTLET FLOW RATE	0.41 CFS
OUTLET VELOCITY	3.26 FT/S
MATERIAL	CLASS A
LENGTH	1.7'
WIDTH	1.3'
STONE DIA.	3"
THICKNESS	9"



FOREBAY AND STORAGE POND SECTION

NOT TO SCALE

STORM ELEVATIONS

WET POND

1.5" PROPOSED DEPTH = 34.69'

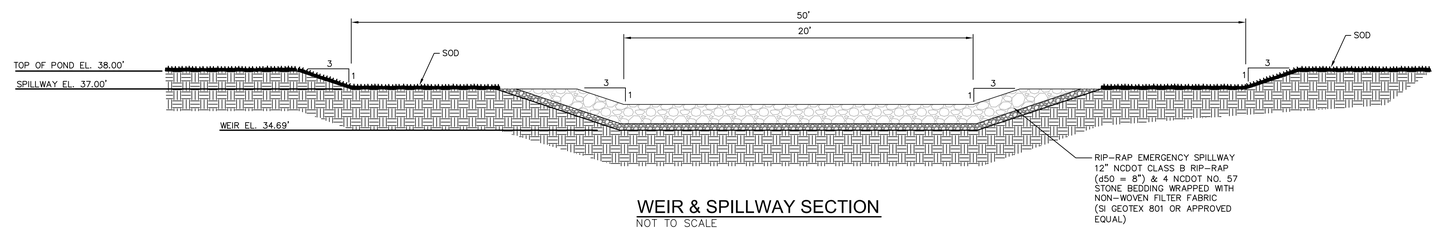
DESIGN STORM

2-YEAR = 35.04'

10-YEAR = 35.73'

25-YEAR = 36.11'

100-YEAR = 36.66'



WEIR & SPILLWAY SECTION

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS-
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282

NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND #2 DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

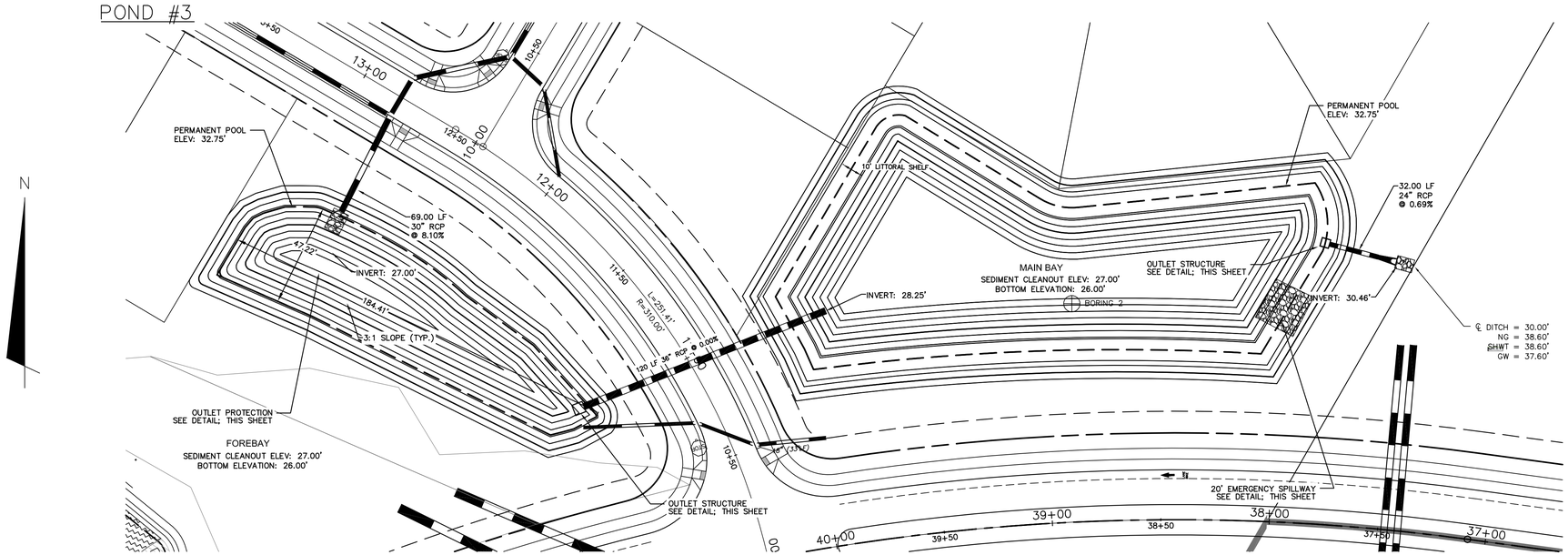
M&C FILE NUMBER CN503

DRAWING NUMBER 67

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

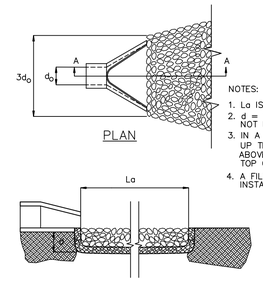
REVISION F

POND #3



OUTLET PIPE INTO FOREBAY OUTLET PROTECTION	
OUTLET PIPE DIA.	30"
OUTLET FLOW RATE	33.31 CFS
OUTLET VELOCITY	8.1 FT/S
MATERIAL	CLASS A
LENGTH	10'
WIDTH	7.5'
STONE DIA.	3"
THICKNESS	9"

POND OUTLET STRUCTURE PROTECTION	
OUTLET PIPE DIA.	24"
OUTLET FLOW RATE	3.09 CFS
OUTLET VELOCITY	4.1 FT/S
MATERIAL	CLASS A
LENGTH	8'
WIDTH	6'
STONE DIA.	3"
THICKNESS	9"



NOTES:

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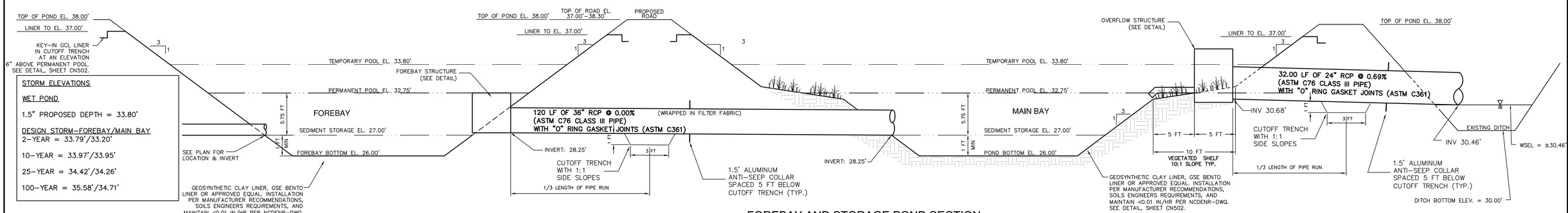
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

PIPE OUTLET PROTECTION

NOT TO SCALE



STORM ELEVATIONS

WET POND

1.5" PROPOSED DEPTH = 33.80'

DESIGN STORM–FOREBAY/MAIN BAY
2–YEAR = 33.79'/33.20'

10–YEAR = 33.97'/33.95'

25–YEAR = 34.42'/34.26'

100–YEAR = 35.58'/34.71'

FOREBAY AND STORAGE POND SECTION

NOT TO SCALE

MAIN BAY
SHWT = 38.60'
GW ELEV = 37.60'
ADJACENT DITCH WSEL = 30.00'

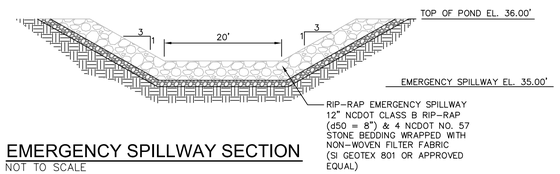
WET DETENTION POND NOTES

1) TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.

2) CONTRACTOR SHALL INSTALL EQUAL NUMBERS OF THE LISTED SUITABLE SPECIES FOR THE VEGETATED SHELF. GROUP SIMILAR SPECIES OF PLANTS TOGETHER, INSTALL PLANTS 24" O.C. IN A CHECKERBOARD PATTERN, AND NO PLANTS SHALL BE PLANTED WITHIN 10 FT OF THE OUTLET STRUCTURE. LISTED SUITABLE SPECIES FOR VEGETATED SHELF ARE: **ARROW ARUM, BLUE FLAG IRIS, CANA LILY, AND PICKEREL WEED.**

3) SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.

4) CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.

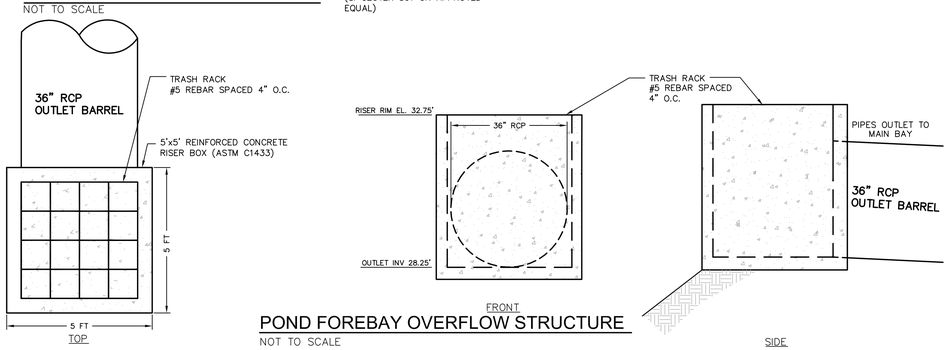


EMERGENCY SPILLWAY SECTION

NOT TO SCALE

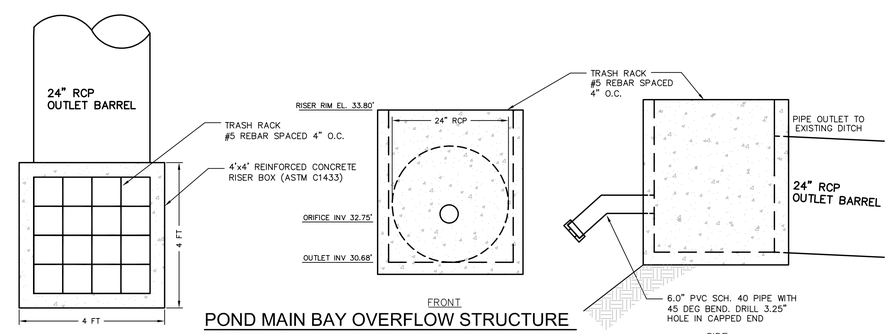
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES.
2. BASED ON FIRM FLOOD INSURANCE RATE MAP FOR PENDER COUNTY, THIS PARCEL IS NOT LOCATED IN A FLOOD HAZARD ZONE.
3. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
4. SITE WILL REQUIRE A STATE EROSION CONTROL PERMIT AND STATE STORMWATER PERMIT.
5. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED STATE PERMITTED STORMWATER POND.
6. SURVEY INFORMATION PROVIDED BY MCKIM & CREED



POND FOREBAY OVERFLOW STRUCTURE

NOT TO SCALE



POND MAIN BAY OVERFLOW STRUCTURE

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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243 North Front Street
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(910) 799-8755

BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION
POND #3 DETAILS

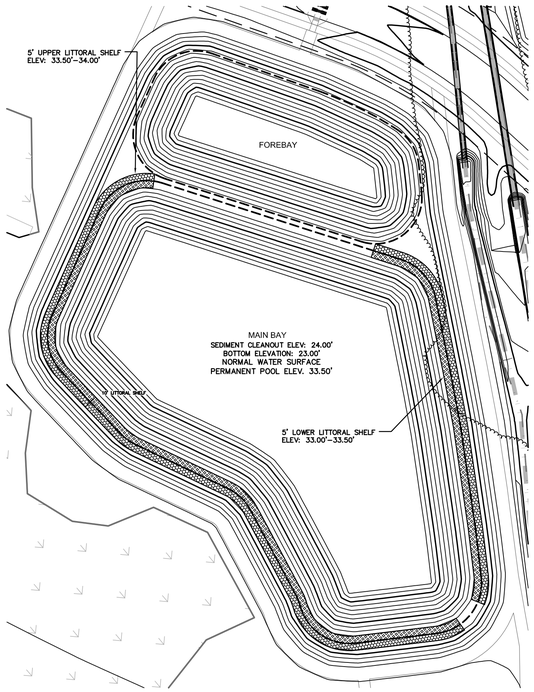
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER: CN504
DRAWING NUMBER: 68

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION: F



WET POND #2

SCALE: 1" = 50'

BLAKE FARM – SF-1 SUBDIVISION				
WET DETENTION POND #2 – LITTORAL SHELF – PLANT SCHEDULE				
AREAS:				
1. LOWER POND SHELF = 3982 SF SW / 200 x 50 = 996 (1000, 100 ea)				
2. UPPER POND SHELF = 4121 SF SL / 200 x 50 = 1030 (1030, 103 ea)				
SHALLOW WATER ZONE (0"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	100	2' o.c. in groups of 10
Southern Blue Flag Iris	Iris virginica	Large plugs	100	2' o.c. in groups of 10
Arrow arum	Peltandra virginica	Large plugs	100	2' o.c. in groups of 10
Pickerel weed	Pontederia cordata	Large plugs	100	2' o.c. in groups of 10
Lizard Tail	Saururus cernuus	Large plugs	100	2' o.c. in groups of 10
Bulltongue	Sagittaria lancifolia	Large plugs	100	2' o.c. in groups of 10
Duck Potato	Sagittaria latifolia	Large plugs	100	2' o.c. in groups of 10
Threesquare	Schoenoplectus americanus	Large plugs	100	2' o.c. in groups of 10
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	100	2' o.c. in groups of 10
Burreed	Sparganium americanum	Large plugs	100	2' o.c. in groups of 10
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	103	2' o.c. in groups of 7–9
Shallow Sedge	Carex lurida	Large plugs	103	2' o.c. in groups of 7–9
River Oats	Chasmanthium latifolium	Large plugs	103	2' o.c. in groups of 7–9
Beaked Panicgrass	Panicum anceps	Large plugs	103	2' o.c. in groups of 7–9
Swamp Milkweed	Asclepias incarnata	Large plugs	103	2' o.c. in groups of 7–9
Swamp Sunflower	Helianthus angustifolius	Large plugs	103	2' o.c. in groups of 7–9
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	103	2' o.c. in groups of 7–9
Rose Mallow	Hibiscus moscheutos	Large plugs	103	2' o.c. in groups of 7–9
Seashore Mallow	Kosteletzkya virginica	Large plugs	103	2' o.c. in groups of 7–9
New York Ironweed	Vernonia noveboracensis	Large plugs	103	2' o.c. in groups of 7–9

BLAKE FARM – SF-1 SUBDIVISION				
WET DETENTION POND #3 – LITTORAL SHELF – PLANT SCHEDULE				
AREAS:				
1. LOWER POND SHELF = 3021 SF SW / 200 x 50 = 755 (760, 76 ea)				
2. UPPER POND SHELF = 3179 SF SL / 200 x 50 = 795 (800, 80 ea)				
SHALLOW WATER ZONE (0"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	76	2' o.c. in groups of 7–9
Southern Blue Flag Iris	Iris virginica	Large plugs	76	2' o.c. in groups of 7–9
Arrow arum	Peltandra virginica	Large plugs	76	2' o.c. in groups of 7–9
Pickerel weed	Pontederia cordata	Large plugs	76	2' o.c. in groups of 7–9
Lizard Tail	Saururus cernuus	Large plugs	76	2' o.c. in groups of 7–9
Bulltongue	Sagittaria lancifolia	Large plugs	76	2' o.c. in groups of 7–9
Duck Potato	Sagittaria latifolia	Large plugs	76	2' o.c. in groups of 7–9
Threesquare	Schoenoplectus americanus	Large plugs	76	2' o.c. in groups of 7–9
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	76	2' o.c. in groups of 7–9
Burreed	Sparganium americanum	Large plugs	76	2' o.c. in groups of 7–9
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	80	2' o.c. in groups of 8
Shallow Sedge	Carex lurida	Large plugs	80	2' o.c. in groups of 8
River Oats	Chasmanthium latifolium	Large plugs	80	2' o.c. in groups of 8
Beaked Panicgrass	Panicum anceps	Large plugs	80	2' o.c. in groups of 8
Swamp Milkweed	Asclepias incarnata	Large plugs	80	2' o.c. in groups of 8
Swamp Sunflower	Helianthus angustifolius	Large plugs	80	2' o.c. in groups of 8
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	80	2' o.c. in groups of 8
Rose Mallow	Hibiscus moscheutos	Large plugs	80	2' o.c. in groups of 8
Seashore Mallow	Kosteletzkya virginica	Large plugs	80	2' o.c. in groups of 8
New York Ironweed	Vernonia noveboracensis	Large plugs	80	2' o.c. in groups of 8

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

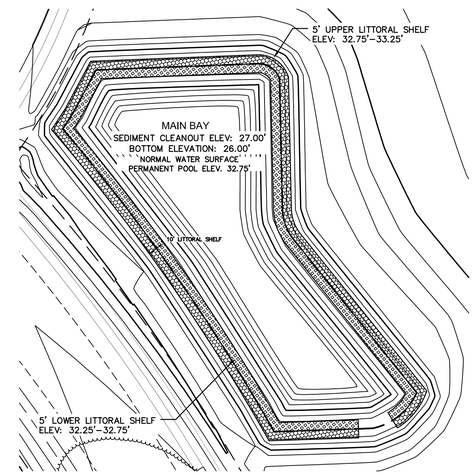
UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

LITTORAL SHELF LANDSCAPE NOTES

1. ALL PLANTS WITHIN THE SHALLOW WATER ZONE SHALL BE INSTALLED OPTIMALLY BETWEEN APRIL 15TH AND AUGUST 31ST OR SECONDARILY BETWEEN APRIL 1ST TO SEPTEMBER 30TH. INSTALLATION OF SHALLOW WATER PLANTS OUTSIDE OF THIS PERIOD ENTAILS SIGNIFICANT RISK OF FAILURE AND MAY ONLY BE PERFORMED UPON MUTUAL AGREEMENT BETWEEN THE INSTALLATION CONTRACTOR AND THE DESIGNER, OWNER OR OWNER'S REPRESENTATIVE.
2. ALL SHALLOW LAND AND SHALLOW WATER PLANTS, UNLESS OTHERWISE INDICATED, SHALL BE GROWN IN CONTAINERS OF 4.5 CUBIC INCHES OR GREATER CAPACITY ("LARGE PLUGS").
3. ALL PLANTS (OTHER THAN TURF GRASSES INSTALLED ON THE SIDE SLOPES) MUST BE NATIVE TO THE SAME PHYSIOGRAPHIC REGION AS THE STORMWATER POND. THE GENETIC ORIGIN ("PROVENANCE") OF THE PLANTS SHALL BE AS CLOSE AS FEASIBLE TO THE STORMWATER SITE. SPECIFIC PERMISSION SHOULD BE OBTAINED FROM THE DESIGNER, OWNER OR OWNER'S REPRESENTATIVE BEFORE INSTALLING PLANTS WITH A GENETIC PROVENANCE OF MORE THAN 200 MILES FROM THE POND SITE. EXCEPT FOR PROVENANCE, GENETIC DIVERSITY IS ENCOURAGED AND CULTIVARS SHOULD NOT BE UTILIZED.
4. THE INSTALLER MUST TAKE GREAT CARE TO ENSURE THAT PLANTS AWAITING INSTALLATION ARE KEPT MOIST AND SHADED AT ALL TIMES. UNDER NO CIRCUMSTANCES SHALL PLANT ROOTS BE ALLOWED TO DRY OUT DURING TRANSPORT, STORAGE OR INSTALLATION.
5. IF YOU ARE PLANTING DURING A DROUGHT AND YOUR PLANTING SHELVES ARE DRY, PREPARE 1) HYDROGEL TO INSTALL WITH EACH PLANT PLACED IN DRY SOIL 2) A SYSTEM FOR THE INITIAL WATERING–IN OF EACH PLANT PLACED IN DRY SOIL AND/OR 3) A TEMPORARY IRRIGATION SYSTEM TO KEEP THE SOIL MOIST FOR THE FIRST 6–8 WEEKS AFTER INSTALLATION.
6. EACH PLANTING AREA (SHALLOW LAND AND SHALLOW WATER) SHALL BE CLEARLY IDENTIFIED AND MARKED PRIOR TO INSTALLING PLANTS. VERTICAL DISTANCE FROM NORMAL POOL (PERMANENT POOL) SHALL BE THE PRIMARY MEANS OF LOCATING THE PLANTING AREAS.
7. ALL PLANTS INSTALLED IN THE SHALLOW WATER AND SHALLOW LAND ZONES SHALL BE LAID OUT IN LARGE DRIFTS OF A SINGLE PLANT SPECIES, UNLESS OTHERWISE SPECIFIED.
8. PLANTING HOLES OR SLITS FOR SPECIES INSTALLED IN SHALLOW LAND ZONES SHALL BE DEEP ENOUGH TO ALLOW THE CROWN OF THE PLANT TO BE AT GRADE LEVEL, WHILE ROOTS EXTEND VERTICALLY INTO THE SUBSTRATE WITHOUT KINKING. SOIL SHOULD NOT BE LOOSENED MORE THAN NECESSARY.
9. PLANTING HOLES OR SLITS FOR SPECIES INSTALLED IN SHALLOW LAND ZONES SHALL BE DEEP ENOUGH TO ALLOW THE CROWN OF THE PLANT TO BE AT GRADE LEVEL OR UP TO 2" BELOW GRADE LEVEL, WHILE ROOTS EXTEND VERTICALLY INTO THE SUBSTRATE WITHOUT KINKING. SOIL SHOULD NOT BE LOOSENED MORE THAN NECESSARY.
10. APPROXIMATELY 5 GRAMS OF AS BALANCED SLOW RELEASE FERTILIZER SHALL BE INSTALLED NEXT TO EACH LARGE PLUG. FERTILIZER MAY BE OMITTED IF 6 INCHES OF FERTILE TOPSOIL HAS BEEN APPLIED THROUGHOUT THE VEGETATED SHELVES.
11. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO ENSURE THAT THE SOIL IN EACH PLANTING AREA IS MOIST OR WET WHEN PLANTS ARE INSTALLED AND FOR 42 DAYS AFTER INSTALLATION.
12. A TWO–YEAR WARRANTY PERIOD IS REQUIRED FOR SURVIVAL AND REPLACEMENT OF PLANT MATERIALS. PLANTS THAT HAVE NOT SURVIVED MUST BE REPLACED. WARRANTY PROCEDURES INCLUDE PLANT REPLACEMENT, WEED CONTROL, ANIMAL/VANDAL DAMAGE AND WATERING.



WET POND #3

SCALE: 1" = 40'

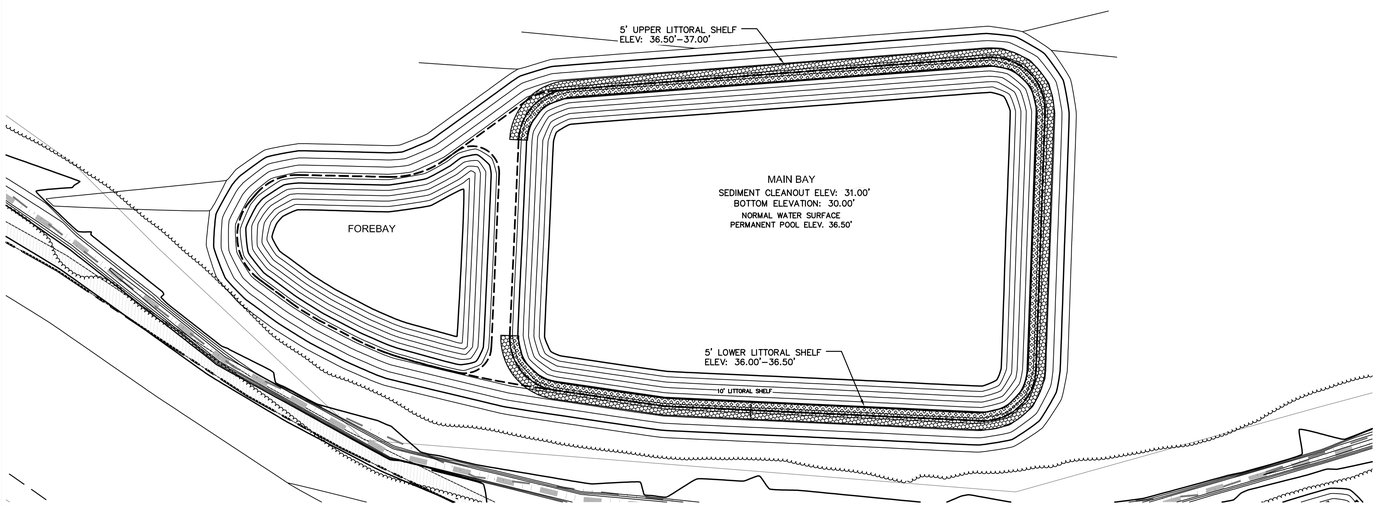
PLANTING LEGEND

LOWER LITTORAL SHELF (SHALLOW WATER ZONE)

UPPER LITTORAL SHELF (SHALLOW LAND ZONE)

NOTE

1. WETLAND PLANTS SHALL NOT BE PLANTED WITHIN 10 FEET OF OUTLET STRUCTURE.
2. DO NOT PLANT TREES WITHIN 50 FEET OF INLET OR OUTLET PIPES, SPILLWAYS OR FLOW SPREADERS. TREE SPECIES WITH WATER–SEEKING ROOTS SUCH AS WEEPING WILLOWS AND POPLARS, SHOULD BE AVOIDED WITHIN 50 FEET OF PIPES OR MANMADE STRUCTURES. EVERGREEN TREES WHICH PRODUCE RELATIVELY LITTLE LEAF–FALL ARE PREFERRED IN AREAS DRAINING TO DETENTION DEVICES. TREES SHOULD BE SET BACK SO THAT BRANCHES DO NOT EXTEND OVER THE PERMANENT POOL.



WET POND #4

SCALE: 1" = 50'

BLAKE FARM – SF-1 SUBDIVISION				
WET DETENTION POND #4 – LITTORAL SHELF – PLANT SCHEDULE				
AREAS:				
1. LOWER POND SHELF = 3930 SF SW / 200 x 50 = 982.50 (1000, 100 ea)				
2. UPPER POND SHELF = 4087 SF SL / 200 x 50 = 1021.75 (1050, 105 ea)				
SHALLOW WATER ZONE (0"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	100	2' o.c. in groups of 7–9
Southern Blue Flag Iris	Iris virginica	Large plugs	100	2' o.c. in groups of 7–9
Arrow arum	Peltandra virginica	Large plugs	100	2' o.c. in groups of 7–9
Pickerel weed	Pontederia cordata	Large plugs	100	2' o.c. in groups of 7–9
Lizard Tail	Saururus cernuus	Large plugs	100	2' o.c. in groups of 7–9
Bulltongue	Sagittaria lancifolia	Large plugs	100	2' o.c. in groups of 7–9
Duck Potato	Sagittaria latifolia	Large plugs	100	2' o.c. in groups of 7–9
Threesquare	Schoenoplectus americanus	Large plugs	100	2' o.c. in groups of 7–9
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	100	2' o.c. in groups of 7–9
Burreed	Sparganium americanum	Large plugs	100	2' o.c. in groups of 7–9
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	105	2' o.c. in groups of 7–9
Shallow Sedge	Carex lurida	Large plugs	105	2' o.c. in groups of 7–9
River Oats	Chasmanthium latifolium	Large plugs	105	2' o.c. in groups of 7–9
Beaked Panicgrass	Panicum anceps	Large plugs	105	2' o.c. in groups of 7–9
Swamp Milkweed	Asclepias incarnata	Large plugs	105	2' o.c. in groups of 7–9
Swamp Sunflower	Helianthus angustifolius	Large plugs	105	2' o.c. in groups of 7–9
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	105	2' o.c. in groups of 7–9
Rose Mallow	Hibiscus moscheutos	Large plugs	105	2' o.c. in groups of 7–9
Seashore Mallow	Kosteletzkya virginica	Large plugs	105	2' o.c. in groups of 7–9
New York Ironweed	Vernonia noveboracensis	Large plugs	105	2' o.c. in groups of 7–9

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURES HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD MOLLER RAM

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BLAKE FARM – EST. 1949 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND PLANTING DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

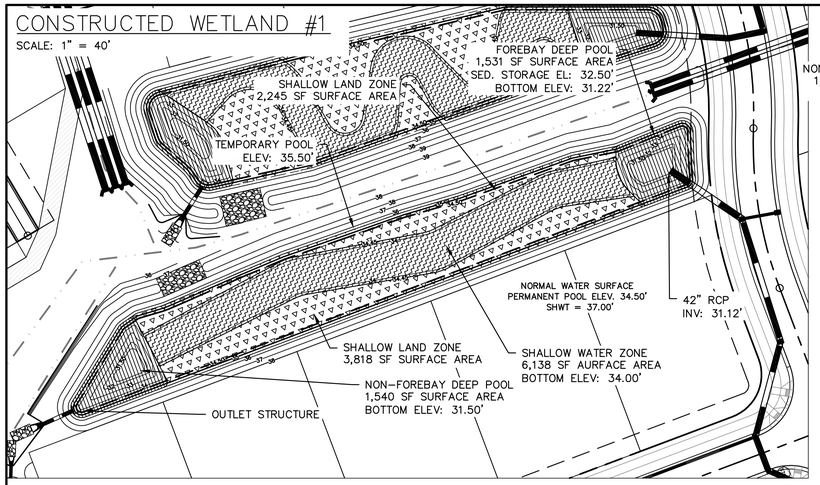
SCALE: HORIZONTAL: 1"=30' VERTICAL: N/A

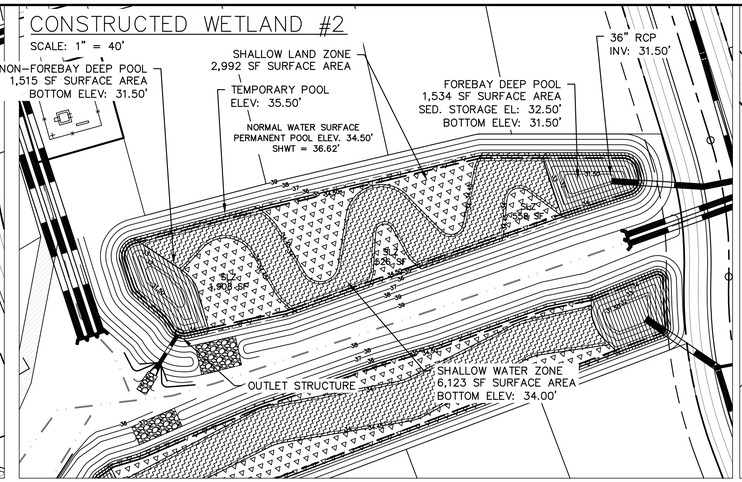
M&C FILE NUMBER: CN502

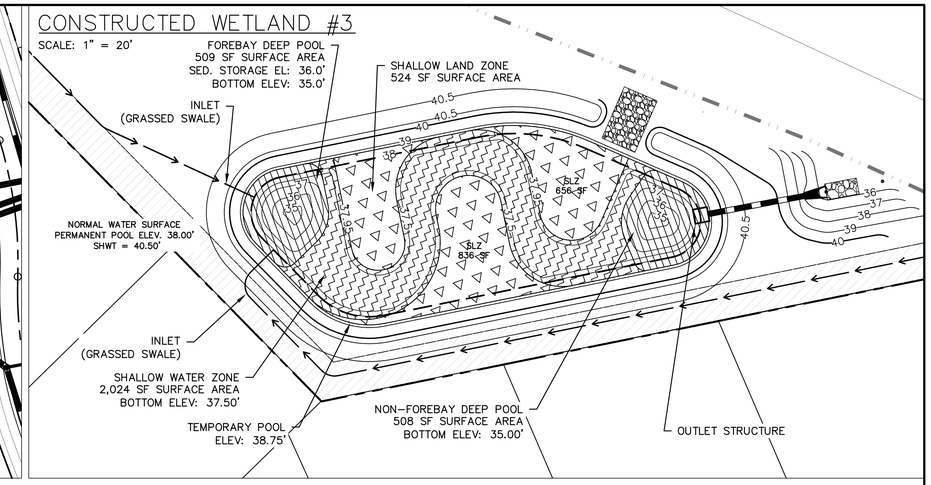
DRAWING NUMBER: 68A

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION: F







LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

SCALE: 1" = 20

0 10 20 40 60

N

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #1 PLANT SCHEDULE

AREAS:
1. 6138 SF SW / 200 x 50 = 1534.50 (1550, 155 ea)
2. 6059 SF SL / 200 x 50 = 1514.75 (1550, 155 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)

Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	155	2' o.c. in groups of 5–7
Southern Blue Flag Iris	Iris virginica	Large plugs	155	2' o.c. in groups of 5–7
Arrow arum	Peltandra virginica	Large plugs	155	2' o.c. in groups of 5–7
Pickerel weed	Pontederia cordata	Large plugs	155	2' o.c. in groups of 5–7
Lizard Tail	Saururus cernuus	Large plugs	155	2' o.c. in groups of 5–7
Bulltongue	Sagittaria lancifolia	Large plugs	155	2' o.c. in groups of 5–7
Duck Potato	Sagittaria latifolia	Large plugs	155	2' o.c. in groups of 5–7
Threesquare	Schoenoplectus americanus	Large plugs	155	2' o.c. in groups of 5–7
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	155	2' o.c. in groups of 5–7
Burreed	Sparganium americanum	Large plugs	155	2' o.c. in groups of 5–7

SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)

Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	155	2' o.c. in groups of 5–7
Shallow Sedge	Carex lurida	Large plugs	155	2' o.c. in groups of 5–7
River Oats	Chasmanthium latifolium	Large plugs	155	2' o.c. in groups of 5–7
Beaked Panicgrass	Panicum anceps	Large plugs	155	2' o.c. in groups of 5–7
Swamp Milkweed	Asclepias incarnata	Large plugs	155	2' o.c. in groups of 5–7
Swamp Sunflower	Helianthus angustifolius	Large plugs	155	2' o.c. in groups of 5–7
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	155	2' o.c. in groups of 5–7
Rose Mallow	Hibiscus moscheutus	Large plugs	155	2' o.c. in groups of 5–7
Seashore Mallow	Kosteletzkya virginica	Large plugs	155	2' o.c. in groups of 5–7
New York Ironweed	Vernonia noveboracensis	Large plugs	155	2' o.c. in groups of 5–7

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #2 PLANT SCHEDULE

AREAS:
1. 6123 SF SW / 200 x 50 = 1530.75 (1550, 155 ea)
2. 5985 SF SL / 200 x 50 = 1496.25 (1500, 150 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)

Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	155	2' o.c. in groups of 5–7
Southern Blue Flag Iris	Iris virginica	Large plugs	155	2' o.c. in groups of 5–7
Arrow arum	Peltandra virginica	Large plugs	155	2' o.c. in groups of 5–7
Pickerel weed	Pontederia cordata	Large plugs	155	2' o.c. in groups of 5–7
Lizard Tail	Saururus cernuus	Large plugs	155	2' o.c. in groups of 5–7
Bulltongue	Sagittaria lancifolia	Large plugs	155	2' o.c. in groups of 5–7
Duck Potato	Sagittaria latifolia	Large plugs	155	2' o.c. in groups of 5–7
Threesquare	Schoenoplectus americanus	Large plugs	155	2' o.c. in groups of 5–7
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	155	2' o.c. in groups of 5–7
Burreed	Sparganium americanum	Large plugs	155	2' o.c. in groups of 5–7

SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)

Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	150	2' o.c. in groups of 10
Shallow Sedge	Carex lurida	Large plugs	150	2' o.c. in groups of 10
River Oats	Chasmanthium latifolium	Large plugs	150	2' o.c. in groups of 10
Beaked Panicgrass	Panicum anceps	Large plugs	150	2' o.c. in groups of 10
Swamp Milkweed	Asclepias incarnata	Large plugs	150	2' o.c. in groups of 10
Swamp Sunflower	Helianthus angustifolius	Large plugs	150	2' o.c. in groups of 10
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	150	2' o.c. in groups of 10
Rose Mallow	Hibiscus moscheutus	Large plugs	150	2' o.c. in groups of 10
Seashore Mallow	Kosteletzkya virginica	Large plugs	150	2' o.c. in groups of 10
New York Ironweed	Vernonia noveboracensis	Large plugs	150	2' o.c. in groups of 10

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #3 PLANT SCHEDULE

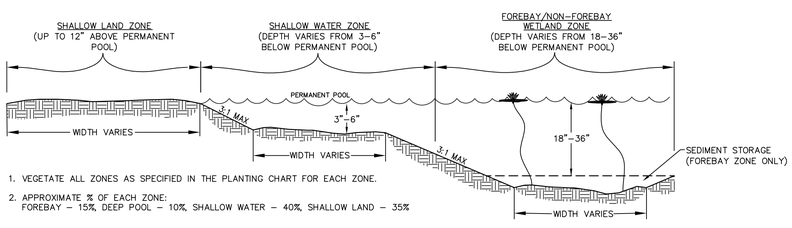
AREAS:
1. 2024 SF SW / 200 x 50 = 506.00 (550, 55 ea)
2. 2017 SF SL / 200 x 50 = 504.25 (550, 55 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)

Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	55	2' o.c. in groups of 6–8
Southern Blue Flag Iris	Iris virginica	Large plugs	55	2' o.c. in groups of 6–8
Arrow arum	Peltandra virginica	Large plugs	55	2' o.c. in groups of 6–8
Pickerel weed	Pontederia cordata	Large plugs	55	2' o.c. in groups of 6–8
Lizard Tail	Saururus cernuus	Large plugs	55	2' o.c. in groups of 6–8
Bulltongue	Sagittaria lancifolia	Large plugs	55	2' o.c. in groups of 6–8
Duck Potato	Sagittaria latifolia	Large plugs	55	2' o.c. in groups of 6–8
Threesquare	Schoenoplectus americanus	Large plugs	55	2' o.c. in groups of 6–8
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	55	2' o.c. in groups of 6–8
Burreed	Sparganium americanum	Large plugs	55	2' o.c. in groups of 6–8

SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)

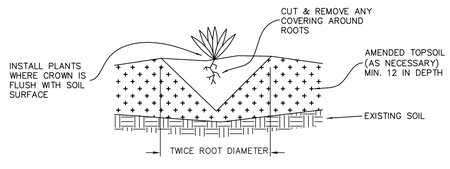
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	55	2' o.c. in groups of 6–8
Shallow Sedge	Carex lurida	Large plugs	55	2' o.c. in groups of 6–8
River Oats	Chasmanthium latifolium	Large plugs	55	2' o.c. in groups of 6–8
Beaked Panicgrass	Panicum anceps	Large plugs	55	2' o.c. in groups of 6–8
Swamp Milkweed	Asclepias incarnata	Large plugs	55	2' o.c. in groups of 6–8
Swamp Sunflower	Helianthus angustifolius	Large plugs	55	2' o.c. in groups of 6–8
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	55	2' o.c. in groups of 6–8
Rose Mallow	Hibiscus moscheutus	Large plugs	55	2' o.c. in groups of 6–8
Seashore Mallow	Kosteletzkya virginica	Large plugs	55	2' o.c. in groups of 6–8
New York Ironweed	Vernonia noveboracensis	Large plugs	55	2' o.c. in groups of 6–8



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



PLANTING DETAIL

NOT TO SCALE

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

GENERAL PLANTING NOTES:

PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS-
DO NOT USE FOR
CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM – EST 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PLANTING PLAN - CONSTRUCTED WETLANDS

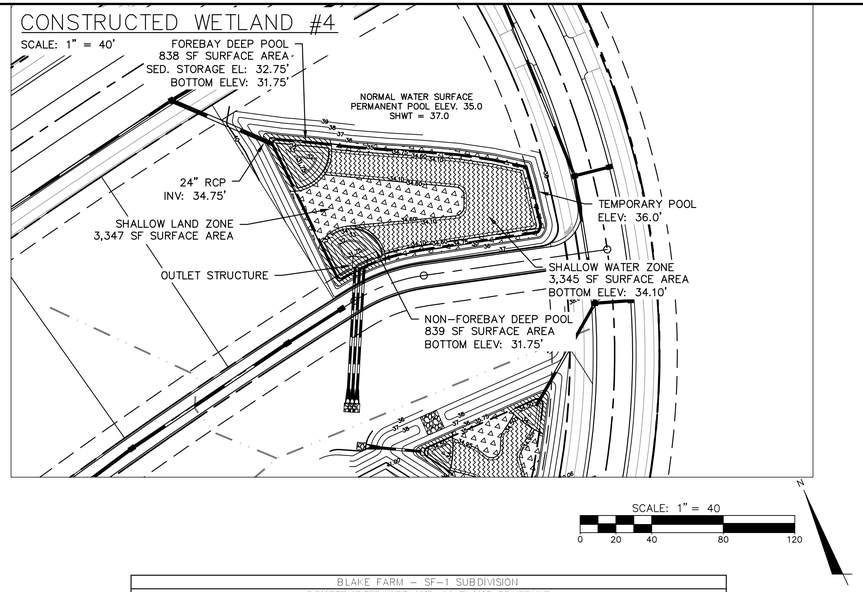
DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

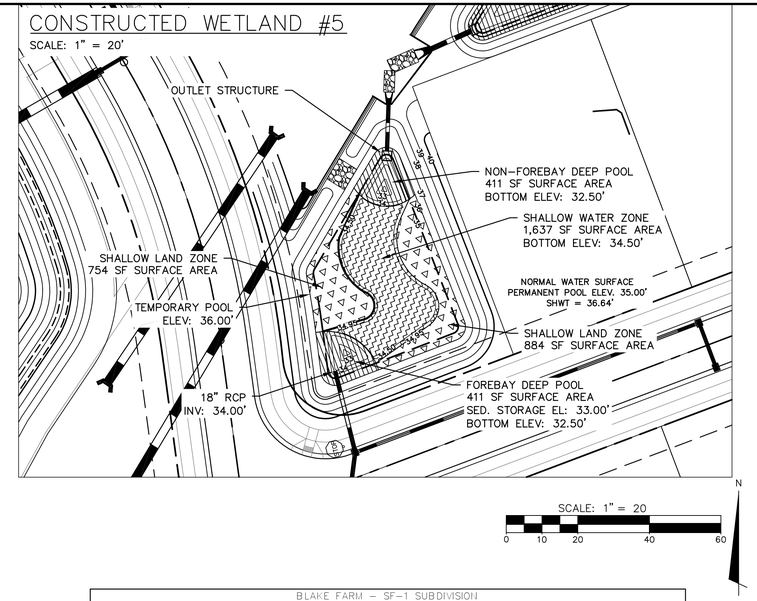
SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER: CN506
DRAWING NUMBER: 68B

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION

REVISION: F





LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #4 PLANT SCHEDULE

AREAS:
1. 3345 SF SW / 200 x 50 = 836.25 (850, 85 ea)
2. 3347 SF SL / 200 x 50 = 836.75 (850, 85 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)

Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	85	2' o.c. in groups of 5
Southern Blue Flag Iris	Iris virginica	Large plugs	85	2' o.c. in groups of 5
Arrow arum	Peltandra virginica	Large plugs	85	2' o.c. in groups of 5
Pickerel weed	Pontederia cordata	Large plugs	85	2' o.c. in groups of 5
Lizard Tail	Saururus cernuus	Large plugs	85	2' o.c. in groups of 5
Bulltongue	Sagittaria lancifolia	Large plugs	85	2' o.c. in groups of 5
Duck Potato	Sagittaria latifolia	Large plugs	85	2' o.c. in groups of 5
Threesquare	Schoenoplectus americanus	Large plugs	85	2' o.c. in groups of 5
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	85	2' o.c. in groups of 5
Burreed	Sparganium americanum	Large plugs	85	2' o.c. in groups of 5

SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)

Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	85	2' o.c. in groups of 5
Shallow Sedge	Carex lurida	Large plugs	85	2' o.c. in groups of 5
River Oats	Chasmanthium latifolium	Large plugs	85	2' o.c. in groups of 5
Beaked Panicgrass	Panicum anceps	Large plugs	85	2' o.c. in groups of 5
Swamp Milkweed	Asclepias incarnata	Large plugs	85	2' o.c. in groups of 5
Swamp Sunflower	Helianthus angustifolius	Large plugs	85	2' o.c. in groups of 5
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	85	2' o.c. in groups of 5
Rose Mallow	Hibiscus moscheutus	Large plugs	85	2' o.c. in groups of 5
Seashore Mallow	Kosteletzkya virginica	Large plugs	85	2' o.c. in groups of 5
New York Ironweed	Vernonia noveboracensis	Large plugs	85	2' o.c. in groups of 5

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #5 PLANT SCHEDULE

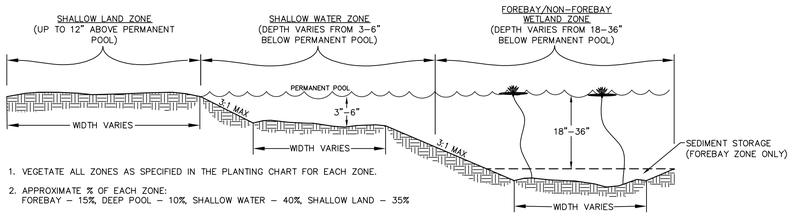
AREAS:
1. 1637 SF SW / 200 x 50 = 409.25 (450, 45 ea)
2. 1630 SF SL / 200 x 50 = 407.5 (450, 45 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)

Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	45	2' o.c. in groups of 5
Southern Blue Flag Iris	Iris virginica	Large plugs	45	2' o.c. in groups of 5
Arrow arum	Peltandra virginica	Large plugs	45	2' o.c. in groups of 5
Pickerel weed	Pontederia cordata	Large plugs	45	2' o.c. in groups of 5
Lizard Tail	Saururus cernuus	Large plugs	45	2' o.c. in groups of 5
Bulltongue	Sagittaria lancifolia	Large plugs	45	2' o.c. in groups of 5
Duck Potato	Sagittaria latifolia	Large plugs	45	2' o.c. in groups of 5
Threesquare	Schoenoplectus americanus	Large plugs	45	2' o.c. in groups of 5
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	45	2' o.c. in groups of 5
Burreed	Sparganium americanum	Large plugs	45	2' o.c. in groups of 5

SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)

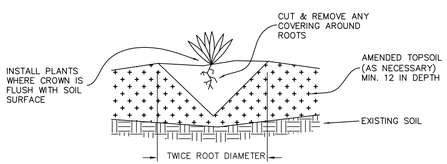
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	45	2' o.c. in groups of 5
Shallow Sedge	Carex lurida	Large plugs	45	2' o.c. in groups of 5
River Oats	Chasmanthium latifolium	Large plugs	45	2' o.c. in groups of 5
Beaked Panicgrass	Panicum anceps	Large plugs	45	2' o.c. in groups of 5
Swamp Milkweed	Asclepias incarnata	Large plugs	45	2' o.c. in groups of 5
Swamp Sunflower	Helianthus angustifolius	Large plugs	45	2' o.c. in groups of 5
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	45	2' o.c. in groups of 5
Rose Mallow	Hibiscus moscheutus	Large plugs	45	2' o.c. in groups of 5
Seashore Mallow	Kosteletzkya virginica	Large plugs	45	2' o.c. in groups of 5
New York Ironweed	Vernonia noveboracensis	Large plugs	45	2' o.c. in groups of 5



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



PLANTING DETAIL

NOT TO SCALE

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

GENERAL PLANTING NOTES:

PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PLANTING PLAN - CONSTRUCTED WETLANDS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

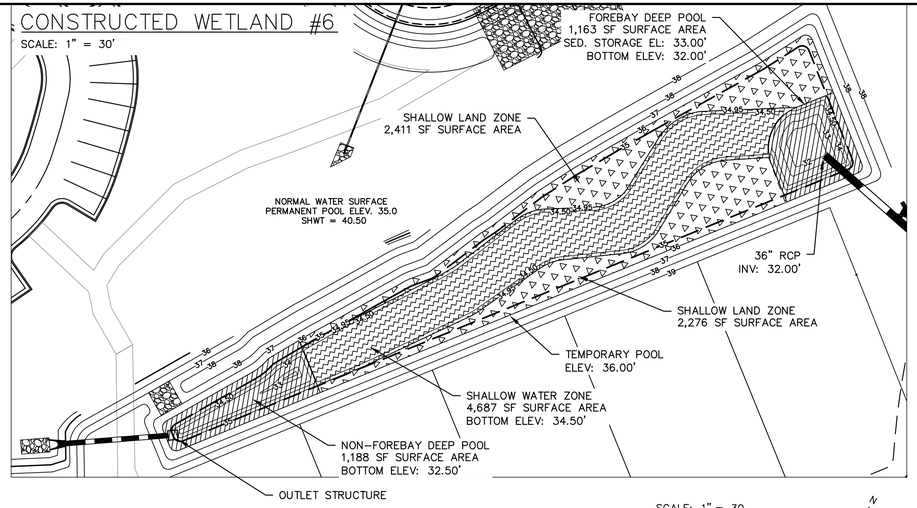
SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CN506A
DRAWING NUMBER 68C

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

CONSTRUCTED WETLAND #6

SCALE: 1" = 30'



SCALE: 1" = 30

0 15 30 60 90

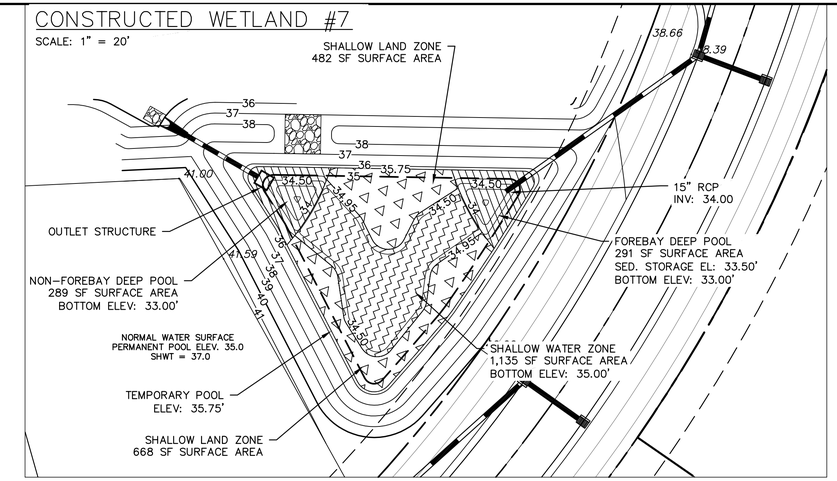
N

LEGEND	
	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

BLAKE FARM – SF-1 SUBDIVISION				
CONSTRUCTED WETLAND #6 PLANT SCHEDULE				
AREAS:				
1. 4687 SF SW / 200 x 50 = 1171.75 (1200, 120 ea)				
2. 4754 SF SL / 200 x 50 = 1188.50 (1200, 120 ea)				
SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	120	2' o.c. in groups of 5–7
Southern Blue Flag Iris	Iris virginica	Large plugs	120	2' o.c. in groups of 5–7
Arrow arum	Peltandra virginica	Large plugs	120	2' o.c. in groups of 5–7
Pickerel weed	Pontederia cordata	Large plugs	120	2' o.c. in groups of 5–7
Lizard Tail	Saururus cernuus	Large plugs	120	2' o.c. in groups of 5–7
Bulltongue	Sagittaria lancifolia	Large plugs	120	2' o.c. in groups of 5–7
Duck Potato	Sagittaria latifolia	Large plugs	120	2' o.c. in groups of 5–7
Threesquare	Schoenoplectus americanus	Large plugs	120	2' o.c. in groups of 5–7
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	120	2' o.c. in groups of 5–7
Burreed	Sparganium americanum	Large plugs	120	2' o.c. in groups of 5–7
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	120	2' o.c. in groups of 5–7
Shallow Sedge	Carex lurida	Large plugs	120	2' o.c. in groups of 5–7
River Oats	Chasmanthium latifolium	Large plugs	120	2' o.c. in groups of 5–7
Beaked Panicgrass	Panicum anceps	Large plugs	120	2' o.c. in groups of 5–7
Swamp Milkweed	Asclepias incarnata	Large plugs	120	2' o.c. in groups of 5–7
Swamp Sunflower	Helianthus angustifolius	Large plugs	120	2' o.c. in groups of 5–7
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	120	2' o.c. in groups of 5–7
Rose Mallow	Hibiscus moscheutos	Large plugs	120	2' o.c. in groups of 5–7
Seashore Mallow	Kosteletzkya virginica	Large plugs	120	2' o.c. in groups of 5–7
New York Ironweed	Vernonia noveboracensis	Large plugs	120	2' o.c. in groups of 5–7

CONSTRUCTED WETLAND #7

SCALE: 1" = 20'

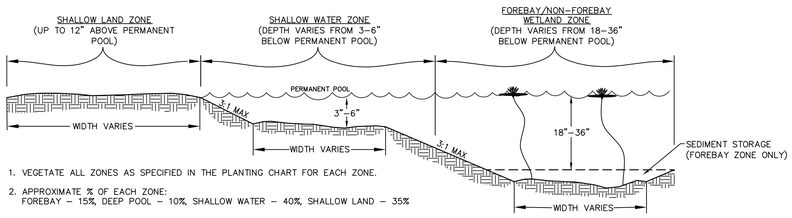


SCALE: 1" = 20

0 10 20 40 60

N

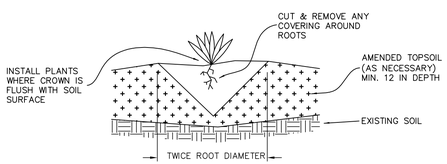
BLAKE FARM – SF-1 SUBDIVISION				
CONSTRUCTED WETLAND #7 PLANT SCHEDULE				
AREAS:				
1. 1135 SF SW / 200 x 50 = 283.75 (300, 30 ea)				
2. 1150 SF SL / 200 x 50 = 287.50 (300, 30 ea)				
SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	30	2' o.c. in groups of 5–8
Southern Blue Flag Iris	Iris virginica	Large plugs	30	2' o.c. in groups of 5–8
Arrow arum	Peltandra virginica	Large plugs	30	2' o.c. in groups of 5–8
Pickerel weed	Pontederia cordata	Large plugs	30	2' o.c. in groups of 5–8
Lizard Tail	Saururus cernuus	Large plugs	30	2' o.c. in groups of 5–8
Bulltongue	Sagittaria lancifolia	Large plugs	30	2' o.c. in groups of 5–8
Duck Potato	Sagittaria latifolia	Large plugs	30	2' o.c. in groups of 5–8
Threesquare	Schoenoplectus americanus	Large plugs	30	2' o.c. in groups of 5–8
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	30	2' o.c. in groups of 5–8
Burreed	Sparganium americanum	Large plugs	30	2' o.c. in groups of 5–8
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	30	2' o.c. in groups of 5–8
Shallow Sedge	Carex lurida	Large plugs	30	2' o.c. in groups of 5–8
River Oats	Chasmanthium latifolium	Large plugs	30	2' o.c. in groups of 5–8
Beaked Panicgrass	Panicum anceps	Large plugs	30	2' o.c. in groups of 5–8
Swamp Milkweed	Asclepias incarnata	Large plugs	30	2' o.c. in groups of 5–8
Swamp Sunflower	Helianthus angustifolius	Large plugs	30	2' o.c. in groups of 5–8
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	30	2' o.c. in groups of 5–8
Rose Mallow	Hibiscus moscheutos	Large plugs	30	2' o.c. in groups of 5–8
Seashore Mallow	Kosteletzkya virginica	Large plugs	30	2' o.c. in groups of 5–8
New York Ironweed	Vernonia noveboracensis	Large plugs	30	2' o.c. in groups of 5–8



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES

NOT TO SCALE



PLANTING DETAIL

NOT TO SCALE

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

GENERAL PLANTING NOTES:

PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PLANTING PLAN - CONSTRUCTED WETLANDS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER CN506B

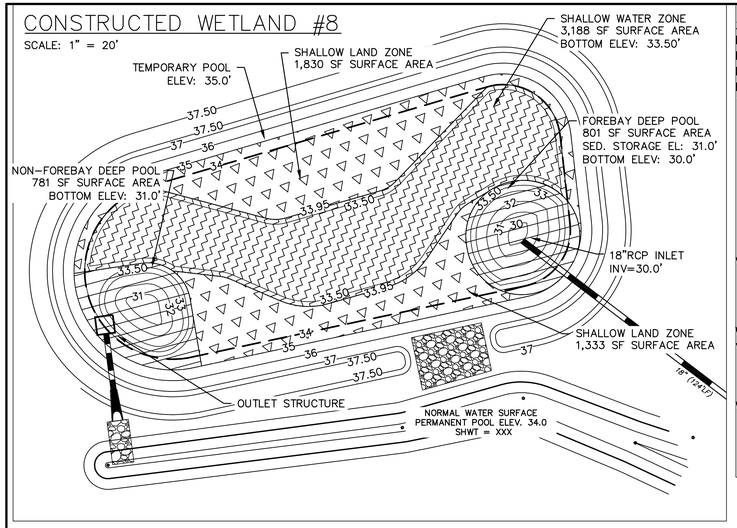
DRAWING NUMBER 68D

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

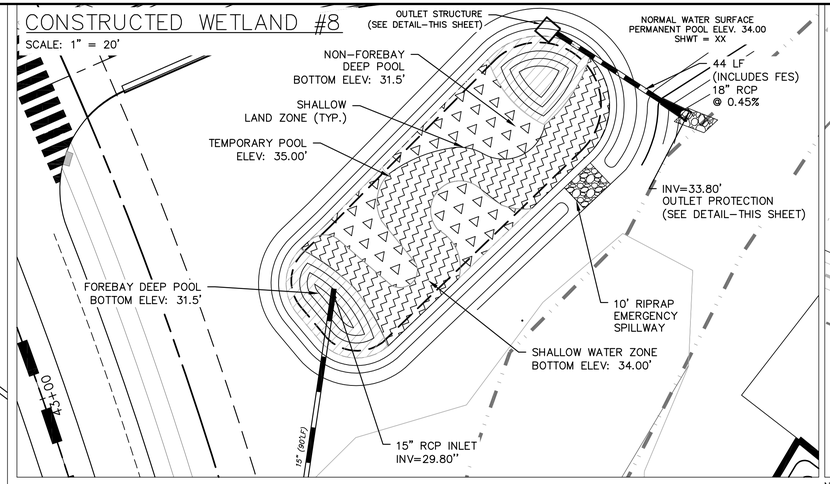
CONSTRUCTED WETLAND #8

SCALE: 1" = 20'



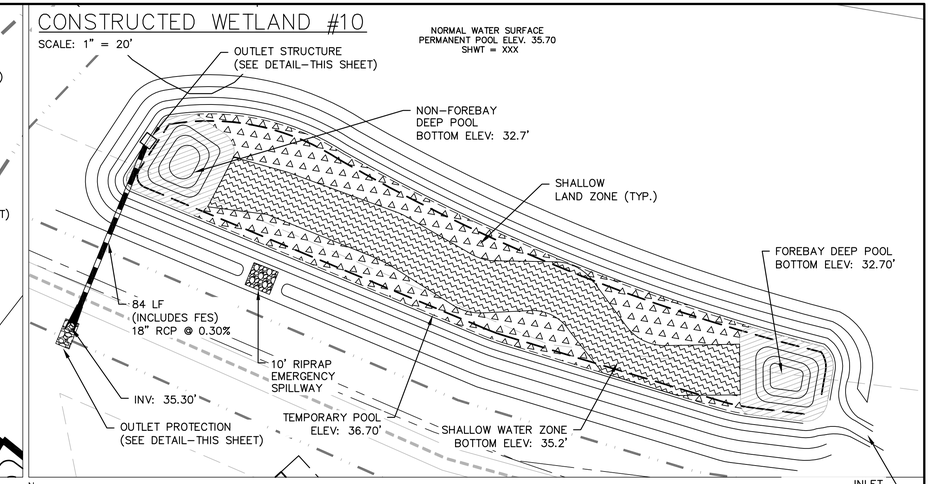
CONSTRUCTED WETLAND #8

SCALE: 1" = 20'



CONSTRUCTED WETLAND #10

SCALE: 1" = 20'



LEGEND	
▽ ▽ ▽ ▽	SHALLOW LAND ZONE
	SHALLOW WATER ZONE
	DEEP POOL AND FOREBAY ZONE

SCALE: 1" = 20

0 10 20 40 60

N

SCALE: 1" = 20

0 10 20 40 60

N

SCALE: 1" = 20

0 10 20 40 60

N

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #8 PLANT SCHEDULE

AREAS:
1. 3188 SF SW / 200 x 50 = 797.00 (800, 80 ea)
2. 3164 SF SL / 200 x 50 = 791.00 (800, 80 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	80	2' o.c. in groups of 5–7
Southern Blue Flag Iris	Iris virginica	Large plugs	80	2' o.c. in groups of 5–7
Arrow arum	Peltandra virginica	Large plugs	80	2' o.c. in groups of 5–7
Pickerel weed	Pontederia cordata	Large plugs	80	2' o.c. in groups of 5–7
Lizard Tail	Saururus cernuus	Large plugs	80	2' o.c. in groups of 5–7
Bulltongue	Sagittaria lancifolia	Large plugs	80	2' o.c. in groups of 5–7
Duck Potato	Sagittaria latifolia	Large plugs	80	2' o.c. in groups of 5–7
Threesquare	Schoenoplectus americanus	Large plugs	80	2' o.c. in groups of 5–7
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	80	2' o.c. in groups of 5–7
Burreed	Sparganium americanum	Large plugs	80	2' o.c. in groups of 5–7
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	80	2' o.c. in groups of 5–7
Shallow Sedge	Carex lurida	Large plugs	80	2' o.c. in groups of 5–7
River Oats	Chasmanthium latifolium	Large plugs	80	2' o.c. in groups of 5–7
Beaked Panicgrass	Panicum anceps	Large plugs	80	2' o.c. in groups of 5–7
Swamp Milkweed	Asclepias incarnata	Large plugs	80	2' o.c. in groups of 5–7
Swamp Sunflower	Helianthus angustifolius	Large plugs	80	2' o.c. in groups of 5–7
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	80	2' o.c. in groups of 5–7
Rose Mallow	Hibiscus moscheutos	Large plugs	80	2' o.c. in groups of 5–7
Seashore Mallow	Kosteletzkya virginica	Large plugs	80	2' o.c. in groups of 5–7
New York Ironweed	Vernonia noveboracensis	Large plugs	80	2' o.c. in groups of 5–7

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #9 PLANT SCHEDULE

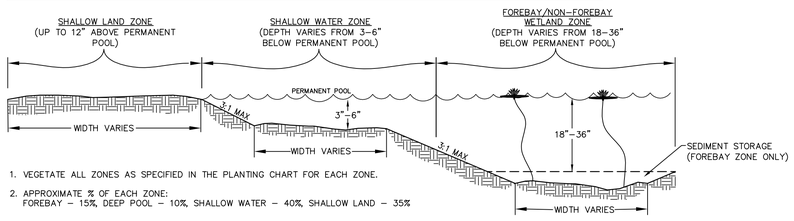
AREAS:
1. 1611 SF SW / 200 x 50 = 402.75 (450, 45 ea)
2. 1300 SF SL / 200 x 50 = 325.00 (350, 35 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	45	2' o.c. in groups of 10
Southern Blue Flag Iris	Iris virginica	Large plugs	45	2' o.c. in groups of 10
Arrow arum	Peltandra virginica	Large plugs	45	2' o.c. in groups of 10
Pickerel weed	Pontederia cordata	Large plugs	45	2' o.c. in groups of 10
Lizard Tail	Saururus cernuus	Large plugs	45	2' o.c. in groups of 10
Bulltongue	Sagittaria lancifolia	Large plugs	45	2' o.c. in groups of 10
Duck Potato	Sagittaria latifolia	Large plugs	45	2' o.c. in groups of 10
Threesquare	Schoenoplectus americanus	Large plugs	45	2' o.c. in groups of 10
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	45	2' o.c. in groups of 10
Burreed	Sparganium americanum	Large plugs	45	2' o.c. in groups of 10
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	35	2' o.c. in groups of 10
Shallow Sedge	Carex lurida	Large plugs	35	2' o.c. in groups of 10
River Oats	Chasmanthium latifolium	Large plugs	35	2' o.c. in groups of 10
Beaked Panicgrass	Panicum anceps	Large plugs	35	2' o.c. in groups of 10
Swamp Milkweed	Asclepias incarnata	Large plugs	35	2' o.c. in groups of 10
Swamp Sunflower	Helianthus angustifolius	Large plugs	35	2' o.c. in groups of 10
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	35	2' o.c. in groups of 10
Rose Mallow	Hibiscus moscheutos	Large plugs	35	2' o.c. in groups of 10
Seashore Mallow	Kosteletzkya virginica	Large plugs	35	2' o.c. in groups of 10
New York Ironweed	Vernonia noveboracensis	Large plugs	35	2' o.c. in groups of 10

BLAKE FARM – SF-1 SUBDIVISION
CONSTRUCTED WETLAND #10 PLANT SCHEDULE

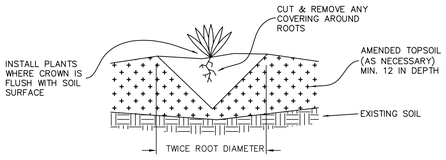
AREAS:
1. 4994 SF SW / 200 x 50 = 1248.50 (1250, 125 ea)
2. 4987 SF SL / 200 x 50 = 1246.75 (1250, 125 ea)

SHALLOW WATER ZONE (3"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Common Name	Botanical Name	Size	Quantity	Comments
Sawgrass	Cladium jamaicense	Large plugs	125	2' o.c. in groups of 6–8
Southern Blue Flag Iris	Iris virginica	Large plugs	125	2' o.c. in groups of 6–8
Arrow arum	Peltandra virginica	Large plugs	125	2' o.c. in groups of 6–8
Pickerel weed	Pontederia cordata	Large plugs	125	2' o.c. in groups of 6–8
Lizard Tail	Saururus cernuus	Large plugs	125	2' o.c. in groups of 6–8
Bulltongue	Sagittaria lancifolia	Large plugs	125	2' o.c. in groups of 6–8
Duck Potato	Sagittaria latifolia	Large plugs	125	2' o.c. in groups of 6–8
Threesquare	Schoenoplectus americanus	Large plugs	125	2' o.c. in groups of 6–8
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	125	2' o.c. in groups of 6–8
Burreed	Sparganium americanum	Large plugs	125	2' o.c. in groups of 6–8
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	125	2' o.c. in groups of 6–8
Shallow Sedge	Carex lurida	Large plugs	125	2' o.c. in groups of 6–8
River Oats	Chasmanthium latifolium	Large plugs	125	2' o.c. in groups of 6–8
Beaked Panicgrass	Panicum anceps	Large plugs	125	2' o.c. in groups of 6–8
Swamp Milkweed	Asclepias incarnata	Large plugs	125	2' o.c. in groups of 6–8
Swamp Sunflower	Helianthus angustifolius	Large plugs	125	2' o.c. in groups of 6–8
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	125	2' o.c. in groups of 6–8
Rose Mallow	Hibiscus moscheutos	Large plugs	125	2' o.c. in groups of 6–8
Seashore Mallow	Kosteletzkya virginica	Large plugs	125	2' o.c. in groups of 6–8
New York Ironweed	Vernonia noveboracensis	Large plugs	125	2' o.c. in groups of 6–8



1. VEGETATE ALL ZONES AS SPECIFIED IN THE PLANTING CHART FOR EACH ZONE.
2. APPROXIMATE % OF EACH ZONE:
   FOREBAY – 15%, DEEP POOL – 10%, SHALLOW WATER – 40%, SHALLOW LAND – 35%

CONSTRUCTED WETLAND ZONES
NOT TO SCALE



PLANTING DETAIL
NOT TO SCALE

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
BROWNTOP MILLET	1–2 LBS	JUNE – AUGUST	25 LBS 10–10–10

PERMANENT SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1–2 LBS.	APRIL – JUNE	25 LBS. 10–10–10
FESCUE, TALL (KENTUCKY 31)	5–7 LBS	JUNE – AUGUST FEB. – OCT.	25 LBS 10–10–10
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

GENERAL PLANTING NOTES:

PREVENT FROM COMPACTING TOPSOIL, TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.

PLANTS OF THE SAME SPECIES SHOULD BE PLANTED IN CLUSTERS, THESE CLUSTERS SHOULD CONTAIN 4–6 PLANTS OF THAT SPECIES.

ALL PLANTS SHOULD BE PLANTED IN THE SPECIFIED ZONE TO ENSURE SURVIVAL.

AVOID PLANTING INDIVIDUAL SPECIES IN LARGE GROUPS BY SPACING CLUSTERS A MIN. OF 5' APART.

ALL ZONES TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED

SEE PLANTING DETAIL FOR PLACEMENT OF PLANTS.

BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADAQUET TIME TO ESTABLISH BEFORE WINTER MONTHS.

FRESH PLANTS WILL BE OBTAINED FROM A NURSERY AND WILL BE STORED WITH ROOTS IN MOIST SOILS.

PLANTINGS WILL BE INSPECTED AND MAINTAINED. PLANTS WILL BE INSPECTED FOR WASHOUT. WASHED OUT PLANTS WILL BE REPLACED.

A SUITABLE STAND OF WETLAND PLANTS WILL BE ESTABLISHED WITHIN 8 MONTHS OF PLANTING. A 90% SURVIVAL RATE MEETS THIS OBJECTIVE. SUPPLEMENTAL PLANTINGS WILL BE PROVIDED AS NEEDED TO MEET THIS CRITERIA.

THE SPECIFIED PLANT MATERIALS MAY BE OBTAINED FROM ANY NURSERY, INCLUDING: COASTAL PLAIN CONSERVATION NURSERY, 3067 CONNERS DR. EDENTON, NC 27932. (252) 482–5707.

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELLOW).

CONTINUE TILLAGE UNTIL A WELL – PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.

SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

* APPLY: AGRICULTURAL LIMESTONE – 2 TONS/ACRE
FERTILIZER – 1000 LBS/ACRE (10–10–10)
SUPER PHOSPHATE – 500 LBS/ACRE (20%)
MULCH – 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR – ASPHALT EMULSION AT 450 GAL

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING.	05/18/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282

NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM – EST 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PLANTING PLAN - CONSTRUCTED WETLANDS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL:
VERTICAL:

M&C FILE NUMBER: CN506
DRAWING NUMBER: 68E

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

WET DETENTION POND NOTES

1) TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.

2) CONTRACTOR SHALL INSTALL EQUAL NUMBERS OF THE LISTED SUITABLE SPECIES FOR THE VEGETATED SHELF. GROUP SIMILAR SPECIES OF PLANTS TOGETHER, INSTALL PLANTS 24" O.C. IN A CHECKERBOARD PATTERN, AND NO PLANTS SHALL BE PLANTED WITHIN 10 FT OF THE OUTLET STRUCTURE. LISTED SUITABLE SPECIES FOR VEGETATED SHELF ARE: ARROW ARUM, BLUE FLAG IRIS, CANA LILY, AND PICKEREL WEED.

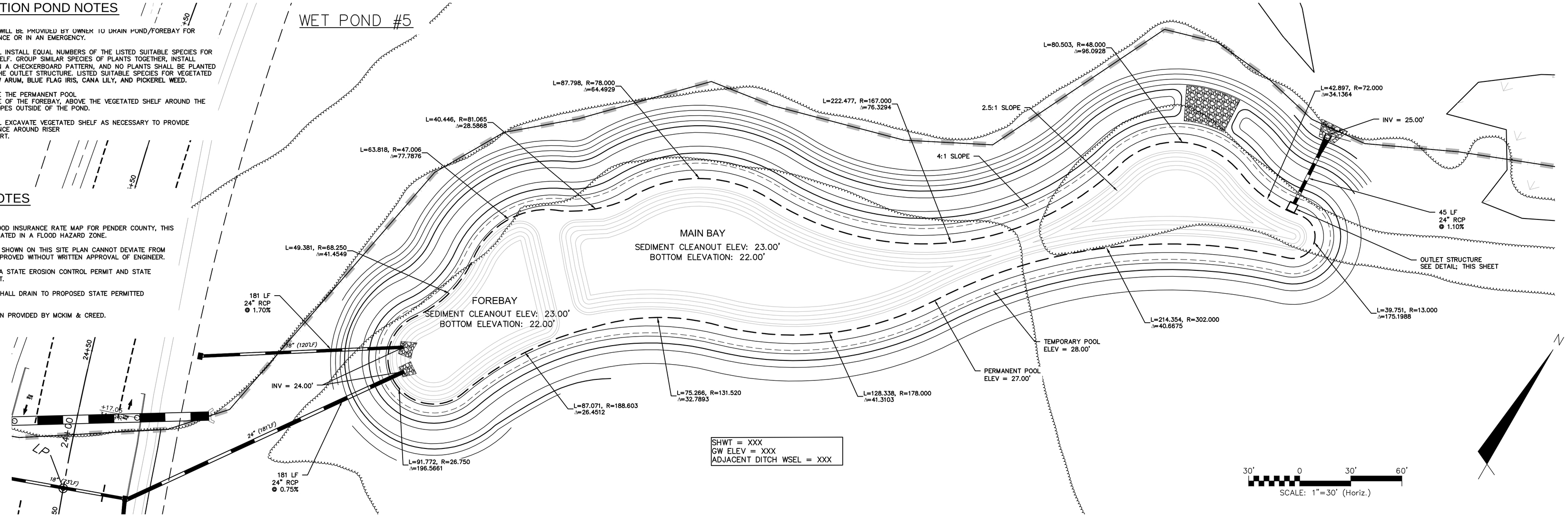
3) SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.

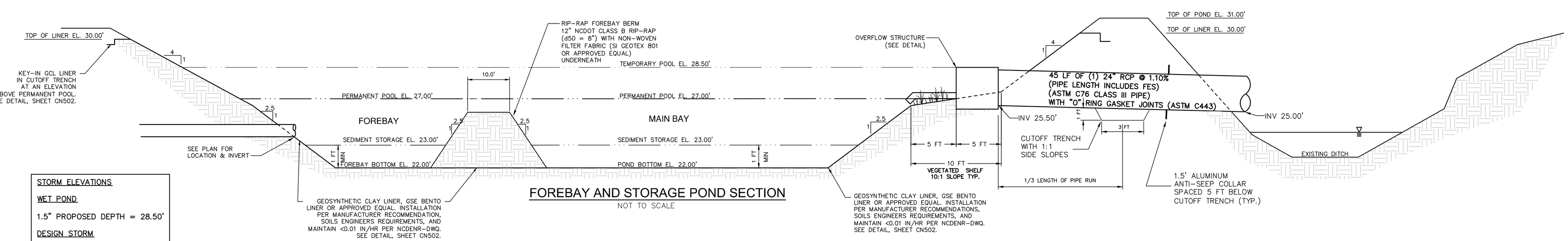
4) CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.

GENERAL NOTES

2. BASED ON FIRM FLOOD INSURANCE RATE MAP FOR PENDER COUNTY, THIS PARCEL IS NOT LOCATED IN A FLOOD HAZARD ZONE.
3. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
4. SITE WILL REQUIRE A STATE EROSION CONTROL PERMIT AND STATE STORMWATER PERMIT.
5. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED STATE PERMITTED STORMWATER POND.
6. SURVEY INFORMATION PROVIDED BY MCKIM & CREED.

WET POND #5

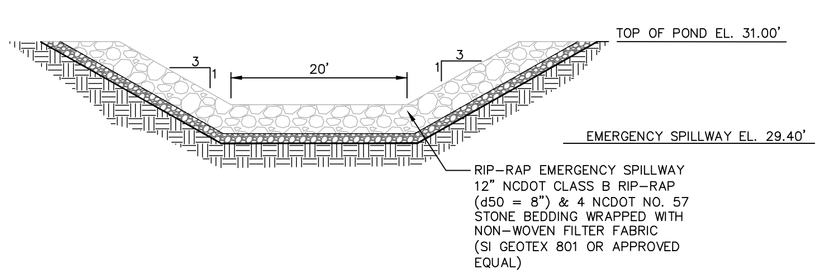




FOREBAY AND STORAGE POND SECTION

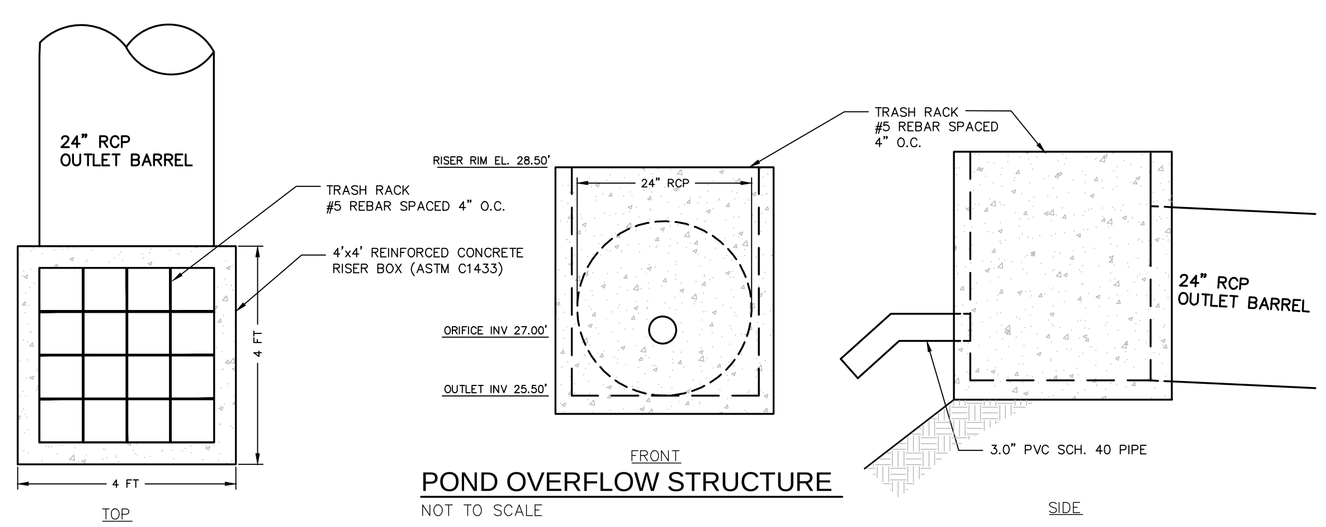
NOT TO SCALE

STORM ELEVATIONS
WET POND
1.5" PROPOSED DEPTH = 28.50'
DESIGN STORM
2-YEAR = 28.90'
10-YEAR = 29.80'
25-YEAR = 30.20'
100-YEAR = 30.60'



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

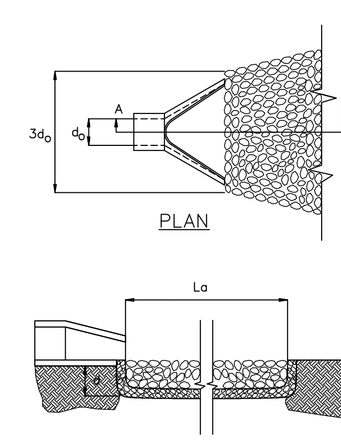


POND OVERFLOW STRUCTURE

NOT TO SCALE

OUTLET PIPE INTO FOREBAY OUTLET PROTECTION	
OUTLET PIPE DIA.	SEE PLAN
OUTLET FLOW RATE	
OUTLET VELOCITY	
MATERIAL	CLASS A
LENGTH	6'
WIDTH	5'
STONE DIA.	3"
THICKNESS	9"

POND OUTLET STRUCTURE PROTECTION	
OUTLET PIPE DIA.	24"
OUTLET FLOW RATE	25 CFS
OUTLET VELOCITY	8.4 FT/S
MATERIAL	CLASS B
LENGTH	12'
WIDTH	6'
STONE DIA.	6"
THICKNESS	22"



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL – DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

PIPE OUTLET PROTECTION

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/31/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	04/24/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS: DO NOT USE FOR CONSTRUCTION

SEAL

August 31, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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Wilmington, NC 28403
(910) 799-8755

BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND #5 DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER: CN507
DRAWING NUMBER: 68F

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

S:\6525\0001\80-Drawings\CN507_065250001.dwg, 9/3/2015 3:46:36 PM, cruntey

WET DETENTION POND NOTES

1) TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.

2) CONTRACTOR SHALL INSTALL EQUAL NUMBERS OF THE LISTED SUITABLE SPECIES FOR THE VEGETATED SHELF. GROUP SIMILAR SPECIES OF PLANTS TOGETHER, INSTALL PLANTS 24" O.C. IN A CHECKERBOARD PATTERN, AND NO PLANTS SHALL BE PLANTED WITHIN 10 FT OF THE OUTLET STRUCTURE. LISTED SUITABLE SPECIES FOR VEGETATED SHELF ARE: ARROW ARUM, BLUE FLAG IRIS, CANA LILY, AND PICKEREL WEED.

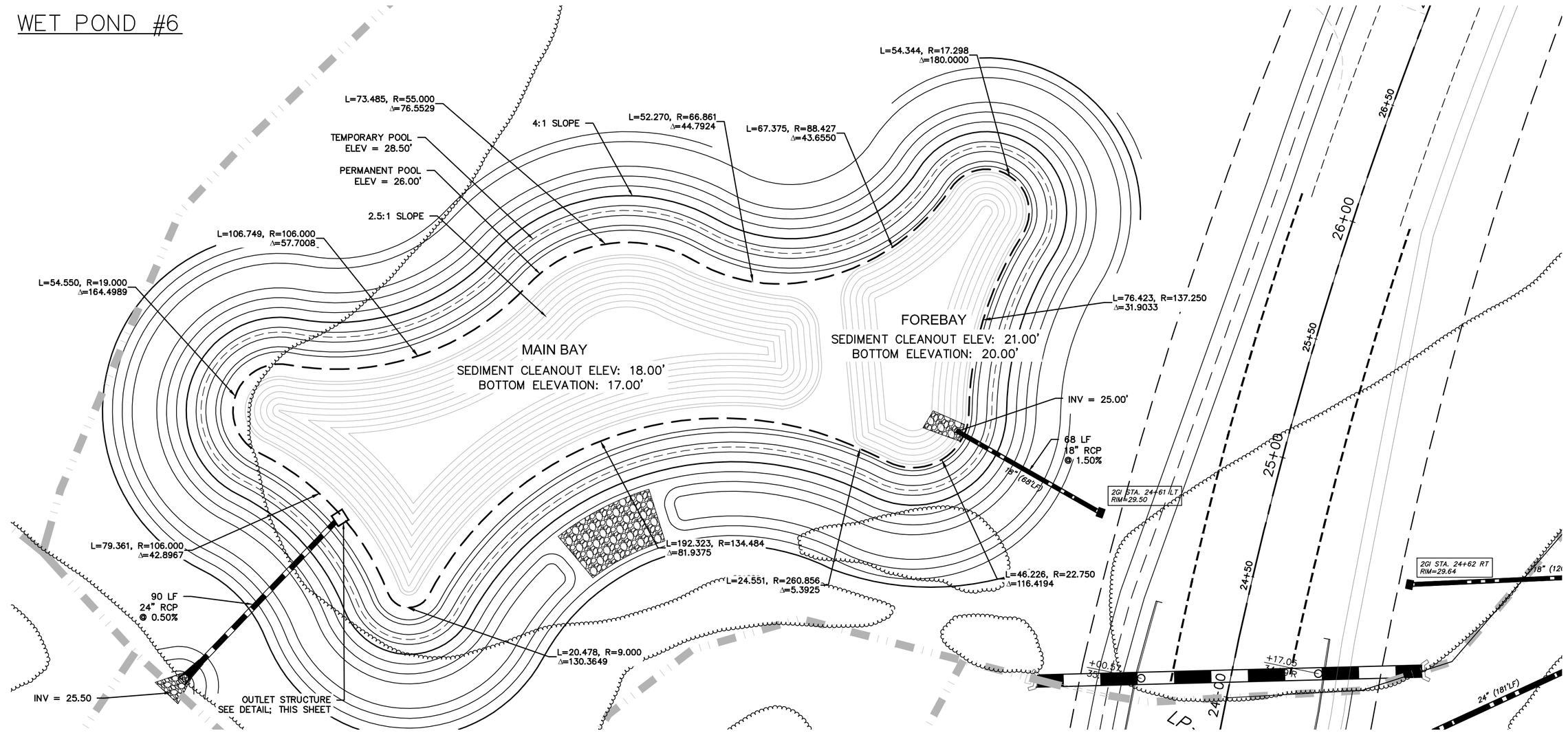
3) SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.

4) CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES.
2. BASED ON FIRM FLOOD INSURANCE RATE MAP FOR PENDER COUNTY, THIS PARCEL IS NOT LOCATED IN A FLOOD HAZARD ZONE.
3. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
4. SITE WILL REQUIRE A STATE EROSION CONTROL PERMIT AND STATE STORMWATER PERMIT.
5. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED STATE PERMITTED STORMWATER POND.
6. SURVEY INFORMATION PROVIDED BY MCKIM & CREED.

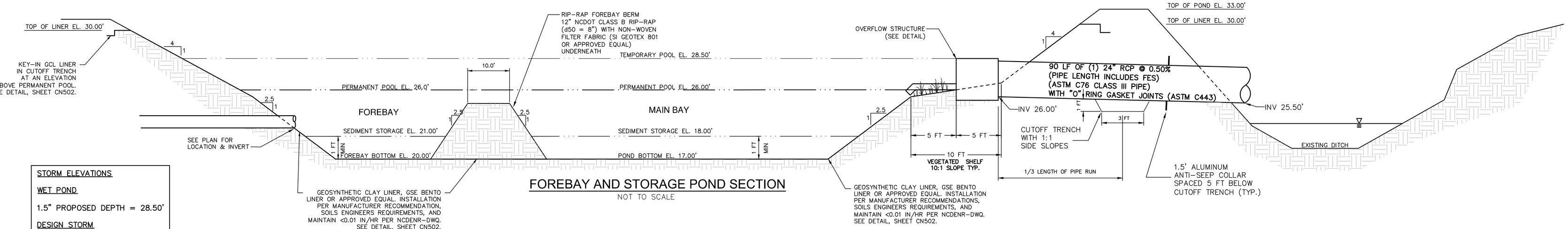
WET POND #6



N

30' 0 30' 60'
SCALE: 1"=30' (Horiz.)

SHWT = XXX
GW ELEV = XXX
ADJACENT DITCH WSEL = XXXX



FOREBAY AND STORAGE POND SECTION

NOT TO SCALE

STORM ELEVATIONS

WET POND

1.5" PROPOSED DEPTH = 28.50'

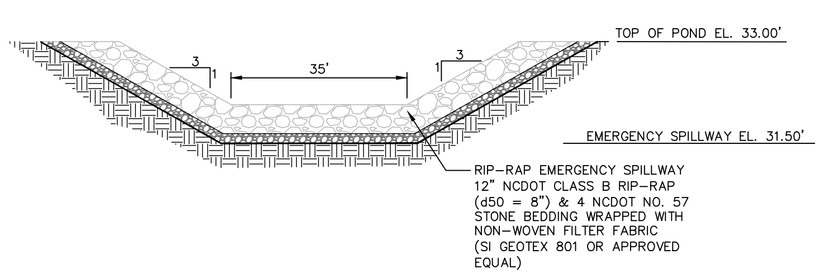
DESIGN STORM

2-YEAR = 29.30'

10-YEAR = 30.90'

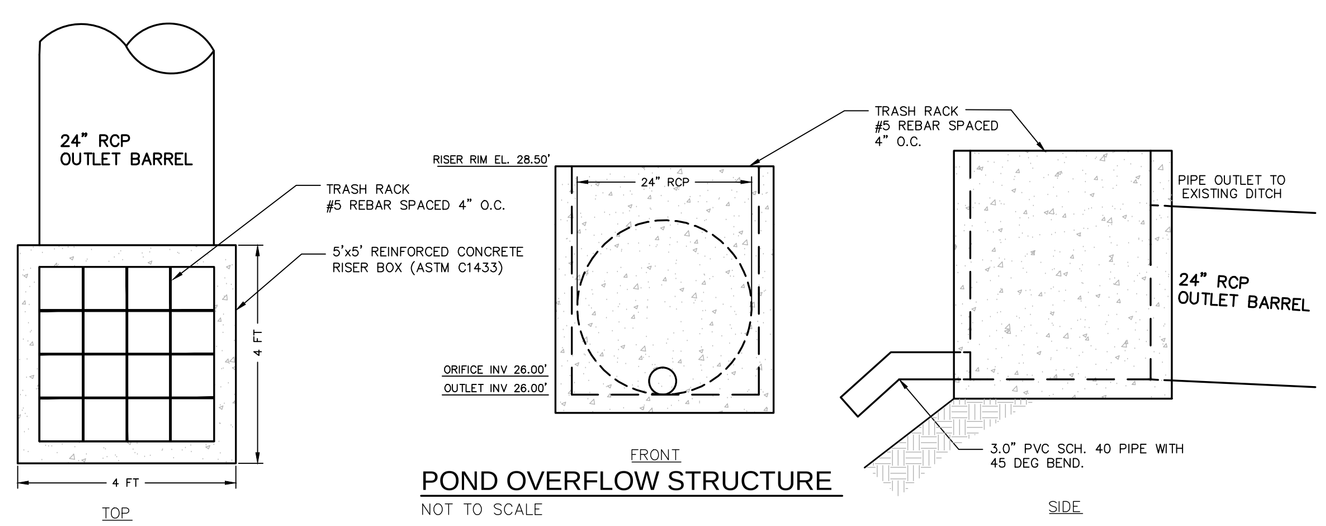
25-YEAR = 31.70'

100-YEAR = 32.30'



EMERGENCY SPILLWAY SECTION

NOT TO SCALE

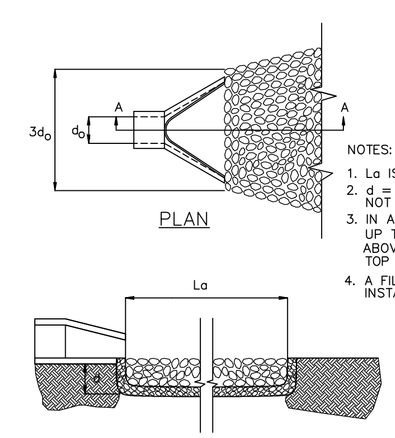


POND OVERFLOW STRUCTURE

NOT TO SCALE

OUTLET PIPE INTO FOREBAY OUTLET PROTECTION	
OUTLET PIPE DIA.	SEE PLAN
OUTLET FLOW RATE	
OUTLET VELOCITY	
MATERIAL	CLASS A
LENGTH	6'
WIDTH	5'
STONE DIA.	3"
THICKNESS	9"

POND OUTLET STRUCTURE PROTECTION	
OUTLET PIPE DIA.	24"
OUTLET FLOW RATE	17.2 CFS
OUTLET VELOCITY	5.6 FT/S
MATERIAL	CLASS B
LENGTH	12'
WIDTH	6'
STONE DIA.	6"
THICKNESS	22"



NOTES:

1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL – DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

PIPE OUTLET PROTECTION

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/31/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	04/24/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS
DO NOT USE FOR
CONSTRUCTION

SEAL

August 31, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER, II
Richard M. Collier

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BLAKE FARM
EST. 1546

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND #6 DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER: CN508
DRAWING NUMBER: 68G

STATUS: FINAL PLANS
NOT FOR CONSTRUCTION
REVISION: F

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WET POND #5

SCALE: 1" = 50'

TOPSOIL SPECIFICATIONS

TOPSOIL TO BE ADDED TO TOP OF CONSTRUCTED WETLAND SHELF IF NATIVE SOILS ARE NOT SUITABLE FOR GROWTH OF SELECTED PLANT SPECIES.

TOPSOIL SHALL BE WELL MIXED, FREE OF TRASH AND DEBRIS, UNCOMPACTED, AND VOID OF LARGE (>2 INCHES) AND WOODY MATERIAL (>3 INCHES).

TOPSOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:
SOIL TYPE: CLAY < 60%, SAND < 80%, SILT < 80%
ORGANIC CONTENT: 5–8%
P–I: 20<50
pH: 6.0–7.0

IN THE EVENT THAT SELECTED TOPSOIL DOES NOT MEET SPECIFICATION LISTED ABOVE, SOIL CAN BE AMENDED BY ADDITION OF APPROPRIATE MATERIALS.

UPON PLACEMENT OF TOPSOIL, AREA SHOULD BE LIGHTLY COMPACTED TO ENSURE STABILIZATION OF MATERIAL.

EXCESSIVE TRAFFICKING OF EQUIPMENT OVER CONSTRUCTED WETLAND PLANTING AREAS SHOULD BE AVOIDED.

MINIMUM DEPTH OF TOPSOIL SHOULD BE 12 INCHES.

LITTORAL SHELF LANDSCAPE NOTES

1. ALL PLANTS WITHIN THE SHALLOW WATER ZONE SHALL BE INSTALLED OPTIMALLY BETWEEN APRIL 15TH AND AUGUST 31ST OR SECONDARILY BETWEEN APRIL 1ST TO SEPTEMBER 30TH. INSTALLATION OF SHALLOW WATER PLANTS OUTSIDE OF THIS PERIOD ENTAILS SIGNIFICANT RISK OF FAILURE AND MAY ONLY BE PERFORMED UPON MUTUAL AGREEMENT BETWEEN THE INSTALLATION CONTRACTOR AND THE DESIGNER, OWNER OR OWNER'S REPRESENTATIVE.
2. ALL SHALLOW LAND AND SHALLOW WATER PLANTS, UNLESS OTHERWISE INDICATED, SHALL BE GROWN IN CONTAINERS OF 4.5 CUBIC INCHES OR GREATER CAPACITY ("LARGE PLUGS").
3. ALL PLANTS (OTHER THAN TURF GRASSES INSTALLED ON THE SIDE SLOPES) MUST BE NATIVE TO THE SAME PHYSIOGRAPHIC REGION AS THE STORMWATER POND. THE GENETIC ORIGIN ("PROVENANCE") OF THE PLANTS SHALL BE AS CLOSE AS FEASIBLE TO THE STORMWATER SITE. SPECIFIC PERMISSION SHOULD BE OBTAINED FROM THE DESIGNER, OWNER OR OWNER'S REPRESENTATIVE BEFORE INSTALLING PLANTS WITH A GENETIC PROVENANCE OF MORE THAN 200 MILES FROM THE POND SITE. EXCEPT FOR PROVENANCE, GENETIC DIVERSITY IS ENCOURAGED AND CULTIVARS SHOULD NOT BE UTILIZED.
4. THE INSTALLER MUST TAKE GREAT CARE TO ENSURE THAT PLANTS AWAITING INSTALLATION ARE KEPT MOIST AND SHADED AT ALL TIMES. UNDER NO CIRCUMSTANCES SHALL PLANT ROOTS BE ALLOWED TO DRY OUT DURING TRANSPORT, STORAGE OR INSTALLATION.
5. IF YOU ARE PLANTING DURING A DROUGHT AND YOUR PLANTING SHELVES ARE DRY, PREPARE 1) HYDROGEL TO INSTALL WITH EACH PLANT PLACED IN DRY SOIL 2) A SYSTEM FOR THE INITIAL WATERING–IN OF EACH PLANT PLACED IN DRY SOIL AND/OR 3) A TEMPORARY IRRIGATION SYSTEM TO KEEP THE SOIL MOIST FOR THE FIRST 6–8 WEEKS AFTER INSTALLATION.
6. EACH PLANTING AREA (SHALLOW LAND AND SHALLOW WATER) SHALL BE CLEARLY IDENTIFIED AND MARKED PRIOR TO INSTALLING PLANTS. VERTICAL DISTANCE FROM NORMAL POOL (PERMANENT POOL) SHALL BE THE PRIMARY MEANS OF LOCATING THE PLANTING AREAS.
7. ALL PLANTS INSTALLED IN THE SHALLOW WATER AND SHALLOW LAND ZONES SHALL BE LAID OUT IN LARGE DRIFTS OF A SINGLE PLANT SPECIES, UNLESS OTHERWISE SPECIFIED.
8. PLANTING HOLES OR SLITS FOR SPECIES INSTALLED IN SHALLOW LAND ZONES SHALL BE DEEP ENOUGH TO ALLOW THE CROWN OF THE PLANT TO BE AT GRADE LEVEL, WHILE ROOTS EXTEND VERTICALLY INTO THE SUBSTRATE WITHOUT KINKING. SOIL SHOULD NOT BE LOOSENED MORE THAN NECESSARY.
9. PLANTING HOLES OR SLITS FOR SPECIES INSTALLED IN SHALLOW LAND ZONES SHALL BE DEEP ENOUGH TO ALLOW THE CROWN OF THE PLANT TO BE AT GRADE LEVEL OR UP TO 2" BELOW GRADE LEVEL, WHILE ROOTS EXTEND VERTICALLY INTO THE SUBSTRATE WITHOUT KINKING. SOIL SHOULD NOT BE LOOSENED MORE THAN NECESSARY.
10. APPROXIMATELY 5 GRAMS OF AS BALANCED SLOW RELEASE FERTILIZER SHALL BE INSTALLED NEXT TO EACH LARGE PLUG. FERTILIZER MAY BE OMITTED IF 6 INCHES OF FERTILE TOPSOIL HAS BEEN APPLIED THROUGHOUT THE VEGETATED SHELVES.
11. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO ENSURE THAT THE SOIL IN EACH PLANTING AREA IS MOIST OR WET WHEN PLANTS ARE INSTALLED AND FOR 42 DAYS AFTER INSTALLATION.
12. A TWO–YEAR WARRANTY PERIOD IS REQUIRED FOR SURVIVAL AND REPLACEMENT OF PLANT MATERIALS. PLANTS THAT HAVE NOT SURVIVED MUST BE REPLACED. WARRANTY PROCEDURES INCLUDE PLANT REPLACEMENT, WEED CONTROL, ANIMAL/VANDAL DAMAGE AND WATERING.

BLAKE FARM – SF–1 SUBDIVISION
WET DETENTION POND #5 – LITTORAL SHELF – PLANT SCHEDULE

AREAS:
1. LOWER POND SHELF = 4672 SF SW / 200 x 50 = 1168 (1200, 120 ea)
2. UPPER POND SHELF = 4742 SF SL / 200 x 50 = 1185.5 (1200, 120 ea)

Common Name	Botanical Name	Size	Quantity	Comments
SHALLOW WATER ZONE (0"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Sawgrass	Cladium jamaicense	Large plugs	120	2 o.c. in groups of 7–9
Southern Blue Flag Iris	Iris virginica	Large plugs	120	2 o.c. in groups of 7–9
Arrow arum	Peltandra virginica	Large plugs	120	2 o.c. in groups of 7–9
Pickerel weed	Pontederia cordata	Large plugs	120	2 o.c. in groups of 7–9
Lizard Tail	Saururus cernuus	Large plugs	120	2 o.c. in groups of 7–9
Bulltongue	Sagittaria lancifolia	Large plugs	120	2 o.c. in groups of 7–9
Duck Potato	Sagittaria latifolia	Large plugs	120	2 o.c. in groups of 7–9
Threesquare	Schoenoplectus americanus	Large plugs	120	2 o.c. in groups of 7–9
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	120	2 o.c. in groups of 7–9
Burreed	Sparganium americanum	Large plugs	120	2 o.c. in groups of 7–9
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	120	2 o.c. in groups of 7–9
Shallow Sedge	Carex lurida	Large plugs	120	2 o.c. in groups of 7–9
River Oats	Chasmanthium latifolium	Large plugs	120	2 o.c. in groups of 7–9
Beaked Panicgrass	Panicum anceps	Large plugs	120	2 o.c. in groups of 7–9
Swamp Milkweed	Asclepias incarnata	Large plugs	120	2 o.c. in groups of 7–9
Swamp Sunflower	Helianthus angustifolius	Large plugs	120	2 o.c. in groups of 7–9
Scarlet Rose Mallow	Hibiscus coccineus	Large plugs	120	2 o.c. in groups of 7–9
Rose Mallow	Hibiscus moscheutus	Large plugs	120	2 o.c. in groups of 7–9
Seashore Mallow	Kosteletzkya virginica	Large plugs	120	2 o.c. in groups of 7–9
New York Ironweed	Vernonia noveboracensis	Large plugs	120	2 o.c. in groups of 7–9

PLANTING LEGEND

LOWER LITTORAL SHELF (SHALLOW WATER ZONE)

UPPER LITTORAL SHELF (SHALLOW LAND ZONE)

NOTE

1. WETLAND PLANTS SHALL NOT BE PLANTED WITHIN 10 FEET OF OUTLET STRUCTURE.
2. DO NOT PLANT TREES WITHIN 50 FEET OF INLET OR OUTLET PIPES, SPILLWAYS OR FLOW SPREADERS. TREE SPECIES WITH WATER–SEEKING ROOTS SUCH AS WEEPING WILLOWS AND POPLARS, SHOULD BE AVOIDED WITHIN 50 FEET OF PIPES OR MANMADE STRUCTURES. EVERGREEN TREES WHICH PRODUCE RELATIVELY LITTLE LEAF–FALL ARE PREFERRED IN AREAS DRAINING TO DETENTION DEVICES. TREES SHOULD BE SET BACK SO THAT BRANCHES DO NOT EXTEND OVER THE PERMANENT POOL.

WET POND #6

SCALE: 1" = 50'

BLAKE FARM – SF–1 SUBDIVISION
WET DETENTION POND #6 – LITTORAL SHELF – PLANT SCHEDULE

AREAS:
1. LOWER POND SHELF = 2858 SF SW / 200 x 50 = 714.50 (750, 75 ea)
2. UPPER POND SHELF = 2925 SF SL / 200 x 50 = 731.25 (750, 75 ea)

Common Name	Botanical Name	Size	Quantity	Comments
SHALLOW WATER ZONE (0"– 6" VERTICAL INCHES BELOW NORMAL WATER LEVEL)				
Sawgrass	Cladium jamaicense	Large plugs	75	2 o.c. in groups of 7–9
Southern Blue Flag Iris	Iris virginica	Large plugs	75	2 o.c. in groups of 7–9
Arrow arum	Peltandra virginica	Large plugs	75	2 o.c. in groups of 7–9
Pickerel weed	Pontederia cordata	Large plugs	75	2 o.c. in groups of 7–9
Lizard Tail	Saururus cernuus	Large plugs	75	2 o.c. in groups of 7–9
Bulltongue	Sagittaria lancifolia	Large plugs	75	2 o.c. in groups of 7–9
Duck Potato	Sagittaria latifolia	Large plugs	75	2 o.c. in groups of 7–9
Threesquare	Schoenoplectus americanus	Large plugs	75	2 o.c. in groups of 7–9
Softstem Bulrush	Schoenoplectus tabernaemontani	Large plugs	75	2 o.c. in groups of 7–9
Burreed	Sparganium americanum	Large plugs	75	2 o.c. in groups of 7–9
SHALLOW LAND ZONE (3"– 6" ABOVE PERMANENT POOL)				
Common Name	Botanical Name	Size	Quantity	Comments
Fringed Sedge	Carex crinita	Large plugs	75	2 o.c. in groups of 7–9
Shallow Sedge	Carex lurida	Large plugs	75	2 o.c. in groups of 7–9
River Oats	Chasmanthium latifolium	Large plugs	75	2 o.c. in groups of 7–9
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New York Ironweed	Vernonia noveboracensis	Large plugs	75	2 o.c. in groups of 7–9

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS, AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/31/15
E	REVISED PUBLIC SANITARY SEWER PER PLURB HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/15/14

REVISIONS

SEAL
FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 31, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM – EST. 1946 –

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

WET DETENTION POND PLANTING DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER CN505A
DRAWING NUMBER 68H

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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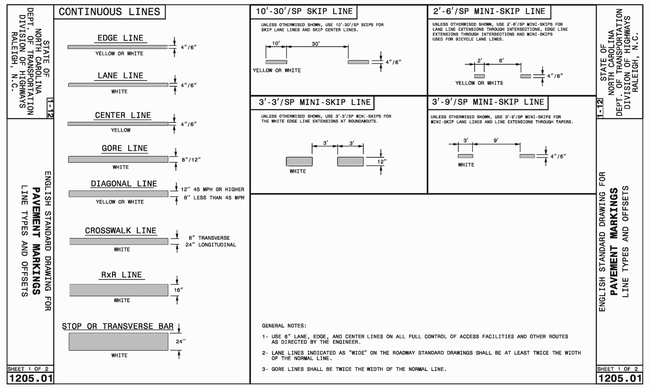

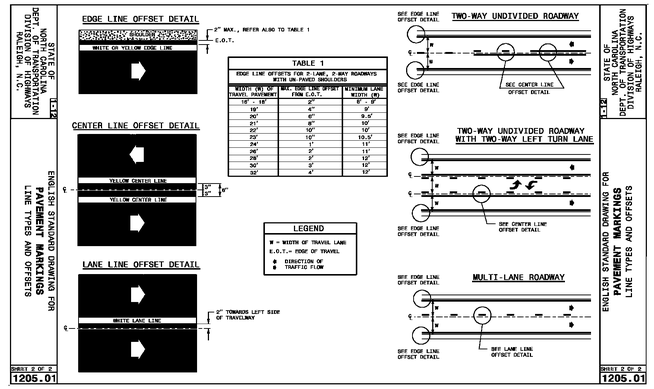

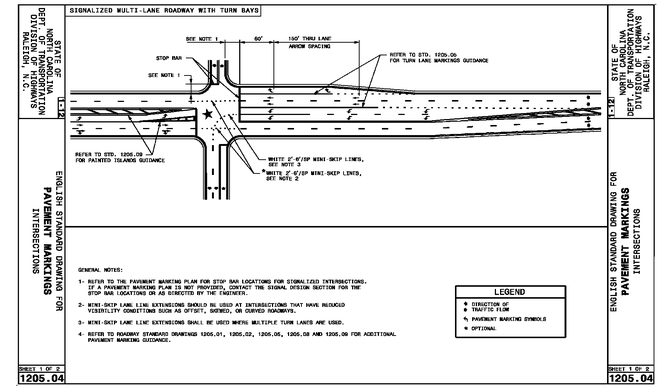

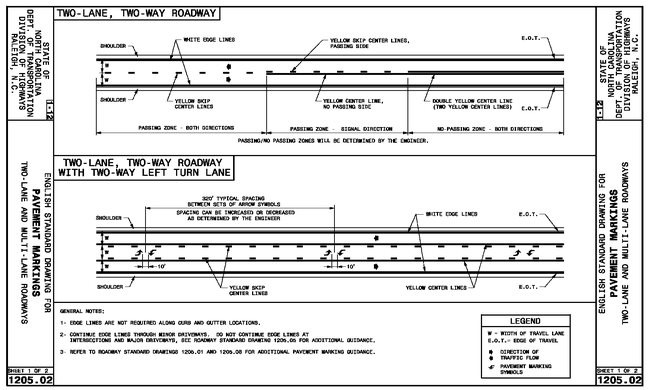

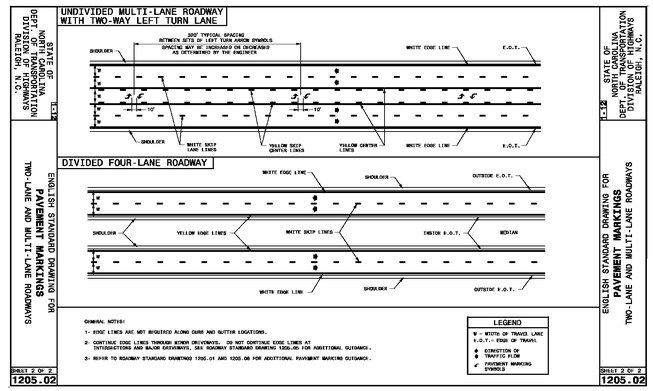

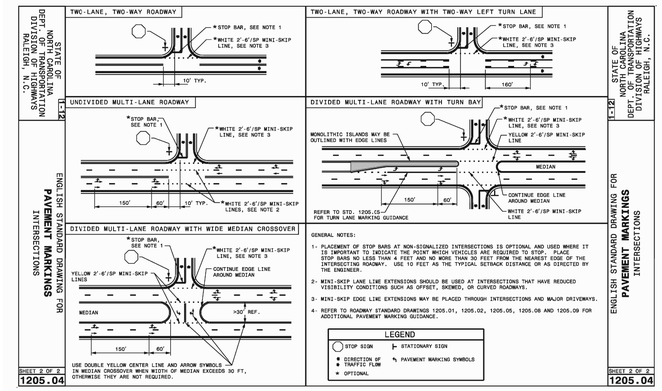

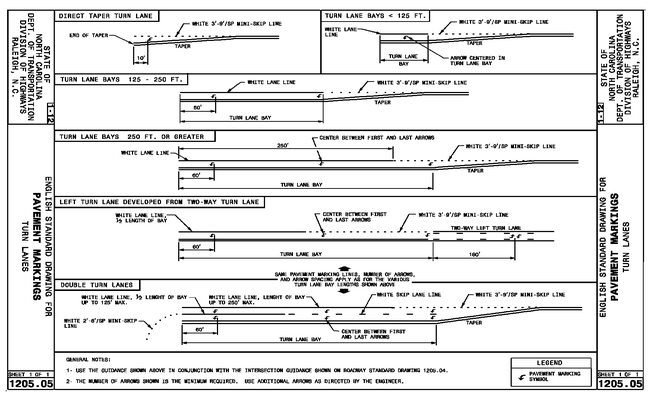

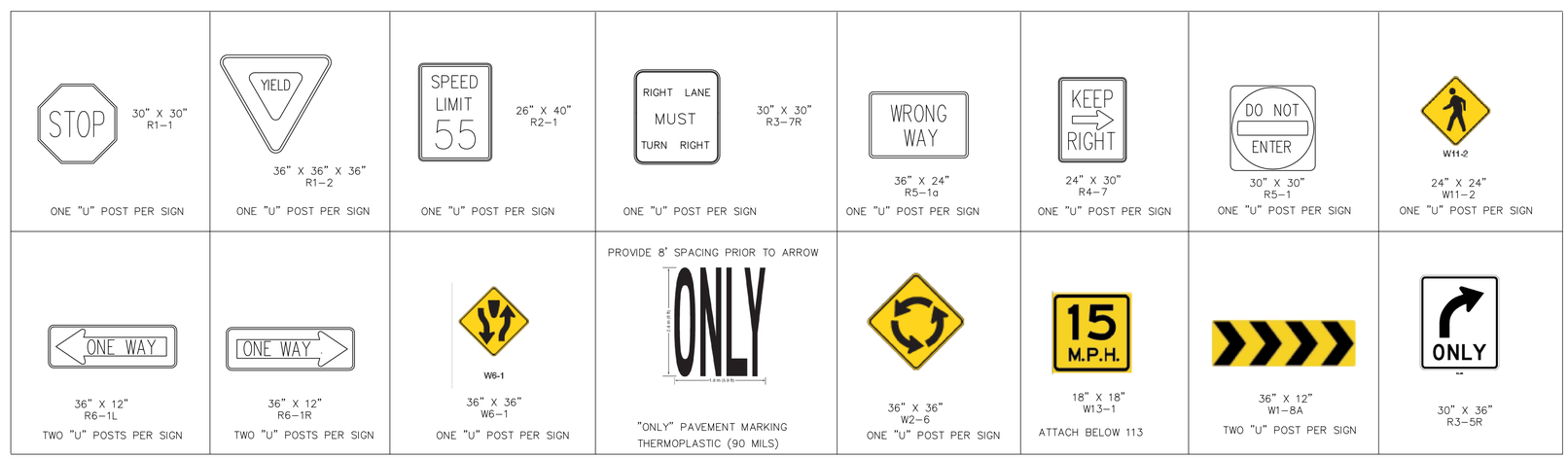

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURES HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PAVEMENT MARKING & TRAFFIC SIGN DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CP501
DRAWING NUMBER 69

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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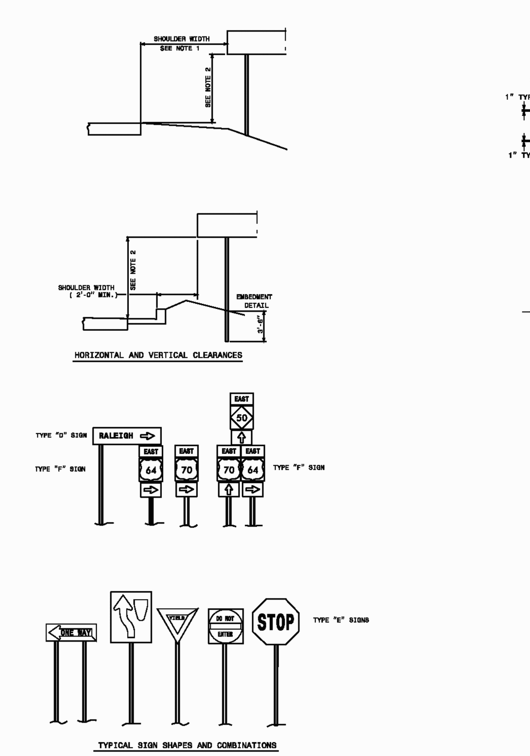
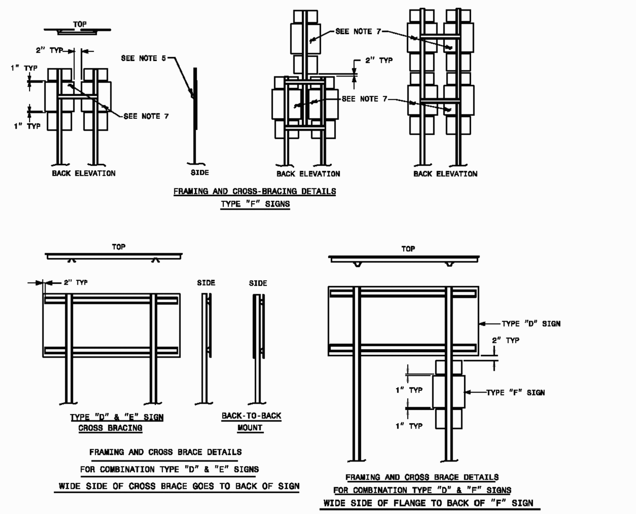
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **MOUNTING OF TYPE 'D','E' AND 'F' SIGNS ON 'U' CHANNEL POSTS**





NOTES:

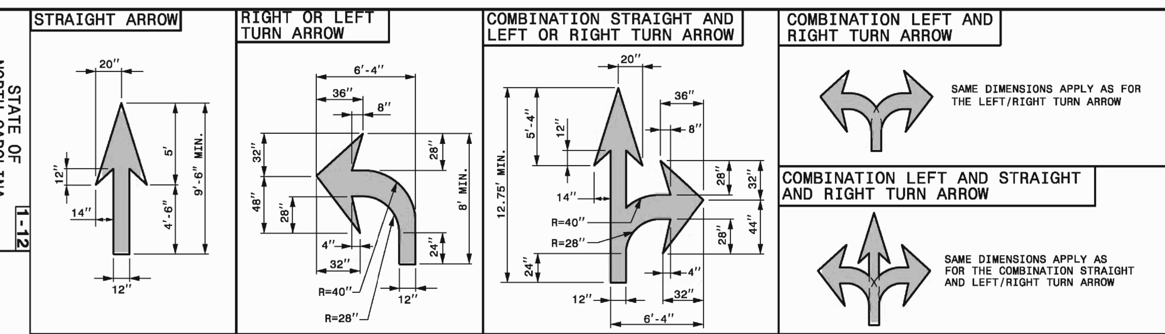
1. ERECT TYPE "D", "E", AND "F" SIGNS ON FREEWAYS WITH THE NEAR EDGE OF THE SIGN 20 FT. FROM THE TRAVEL LANE. ERECT ALL OTHER "D", "E", AND "F" SIGNS WITH THE NEAR EDGE OF THE SIGN AT THE EDGE OF THE SHOULDER BREAK (6 FT. MINIMUM CLEARANCE, 12 FT. DESIRABLE, FROM THE EDGE OF TRAVEL LANE), OR AS DIMENSIONED ON PLAN SHEETS.
2. ERECT TYPE "D", "E", AND "F" SIGNS WITH THE BOTTOM OF SIGN ASSEMBLY AT LEAST 7 FT. ABOVE THE EDGE OF THE TRAVEL LANE ON ROADS WITH 2 OR MORE LANES AND AT LEAST 5 FT. ON OTHER ROUTES. THE VERTICAL CLEARANCE IS 7 FT. WHERE REQUIRED FOR PEDESTRIAN TRAFFIC AND/OR PARKED VEHICLES.
3. THE VERTICAL DIMENSION BETWEEN MOUNTING HOLE CENTERS ON ALL TYPES "D", "E", AND "F" SIGNS IS 30" MAXIMUM. THE VERTICAL AND HORIZONTAL DIMENSIONS BETWEEN MOUNTING HOLES IS TO THE WHOLE INCH. EACH SIGN PANEL HAS A MINIMUM OF 2 BOLTS PER SUPPORT.
4. ATTACH SIGN W/ 5/16" HEX HEAD BOLT, NYLON WASHER, SHIM, FLAT WASHER, LOCK WASHER, HEX NUT NO BUCKLING OF THE SIGN WILL BE PERMITTED. SEE ASSEMBLY DETAIL SHEET# 2 OF 904.50.
5. FURNISH AND INSTALL CROSS-BRACING AS SHOWN IN DETAIL. PAINT ENDS OF CROSS BRACES W/ APPROVED. ZINC PAINT
6. INSTALL POST AND CROSS-BRACING WITH THE WIDE SIDE OF THE FLANGE TOWARD THE BACK OF SIGN(S) FOR COMBINATION TYPE "D" AND "F" SIGNS.
7. THE SHIELD HEIGHTS IN THESE ASSEMBLIES CAN NOT BE LARGER THAN 24".

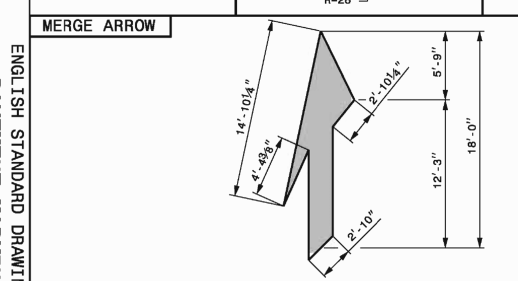
SHEET 1 OF 2 **904.50**

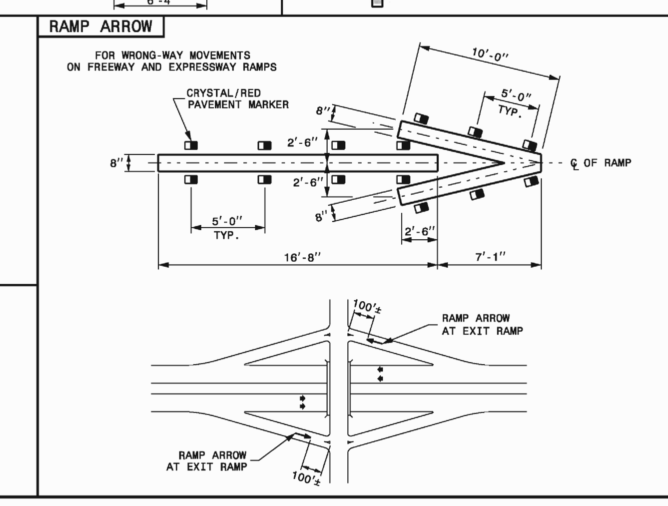
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **PAVEMENT MARKINGS** SYMBOLS AND WORD MESSAGES







GENERAL NOTES:

1- USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.
2- DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.
3- DO NOT PLACE PAVEMENT MARKING SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.
4- CONFORM ALL SYMBOLS TO THE FHWA "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", (REFER TO SHEETS 5 THRU 8). SYMBOL DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE, HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

SHEET 1 OF 7 **1205.08** / SHEET 1 OF 8 **1205.08**

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

1-12

ENGLISH STANDARD DRAWING FOR **RAISED PAVEMENT MARKERS** INTSTALLATION SPACING

GENERAL NOTES:

1- MARKERS ARE GENERALLY NOT REQUIRED ALONG EDGE LINES EXCEPT IF DESIGNATED IN THE PLANS OR DIRECTED BY THE ENGINEER. WHEN THEY ARE REQUIRED, SPACE THEM ON 20 FT. CENTERS, AND OFFSET 2 INCHES FROM THE EDGE LINE ON THE TRAFFIC SIDE.
2- PLACE CRYSTAL/RED MARKERS AT INTERSECTIONS AND INTERCHANGES WHERE WRONG-WAY MOVEMENTS ARE POSSIBLE. POSITION THE RED SIDE OF THE MARKER TO FACE "WRONG-WAY" TRAFFIC. WHEN USED, PLACE CRYSTAL/RED MARKERS ALONG THE ENTIRE LENGTH OF THE PROJECT.
3- DO NOT PLACE PAVEMENT MARKERS CLOSER THAN 3 INCHES TO A PAVEMENT CONSTRUCTION JOINT (AS FEASIBLE), EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTER LINES, AND ALONG YELLOW SKIP LINES ON TWO-LANE, TWO-WAY ROADWAYS WHERE PASSING IS ALLOWED IN BOTH DIRECTIONS.
4- DO NOT PLACE PAVEMENT MARKERS DIRECTLY ON PAVEMENT MARKING LINES.
5- PLACE PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTER LINES MID-WAY BETWEEN THE LINES. PROVIDE A GAP BETWEEN THE LINES AND THE MARKER TO REDUCE OVERSPRAYING THE MARKER DURING REPAINTING OPERATIONS.
6- MARKERS ARE NOT REQUIRED ALONG MINI-SKIP LINES IN TAPERS.

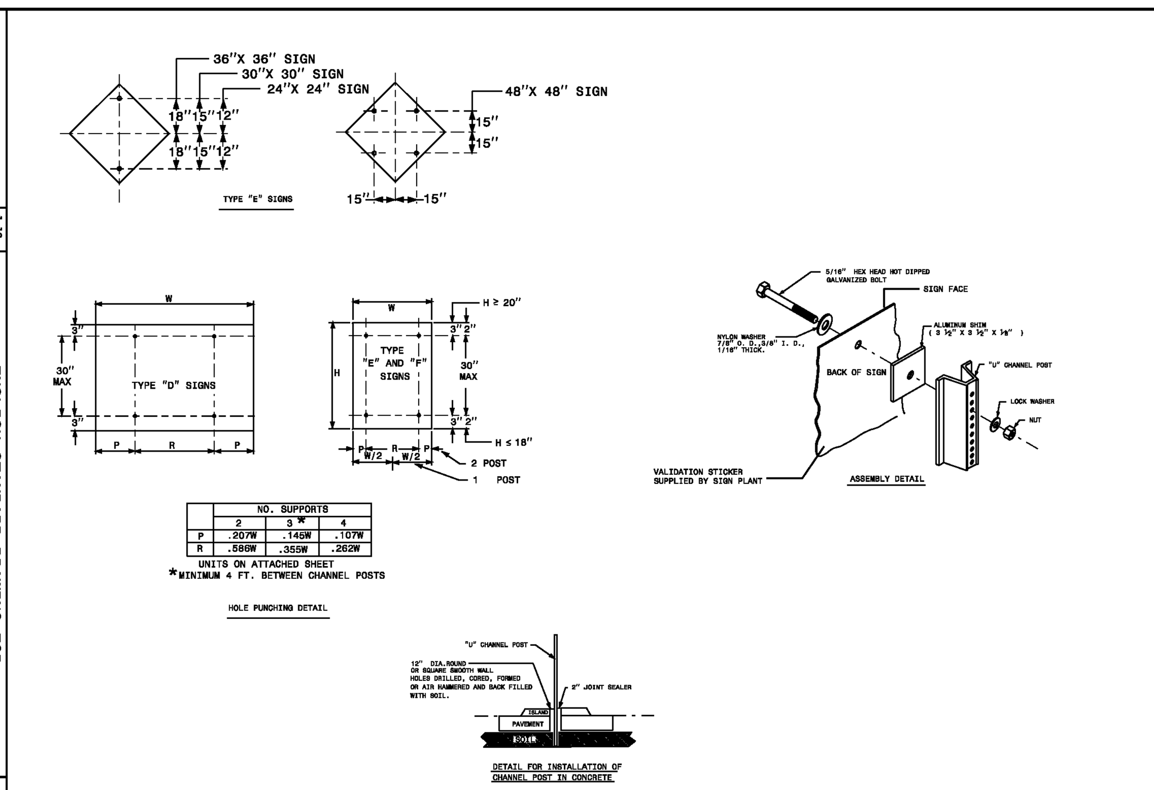
PAVEMENT MARKER SPACING CHART	
TYPE OF PAVEMENT MARKING	TYPICAL SPACING (FT)
SKIP LINES AND CENTER LINES ALONG THRU LANES-	
ALONG TANGENT SECTIONS AND HORIZONTAL CURVES LESS THAN 6°	80
HORIZONTAL CURVES ≥ 6°	40
TURN LANES-	
MINI-SKIP LINES	24
SKIP LINES	40
SOLID LINES	20
CENTER LINES	40
MINI-SKIP LINES AT LANE DROP APPROACHES	24
TWO-WAY RAMP CENTER LINES	40
GORE LINES	20
PAINTED ISLANDS-	
WHITE	20
YELLOW	40
RAISED MEDIAN ISLANDS	40
WRONG WAY RAMP ARROW	5
TAPERS	40
NARROW BRIDGES-	
EDGE LINE	20
CENTER LINE	40
ONE LANE BRIDGES-	
EDGE LINE	20
WORK ZONE APPLICATIONS	
2-LANE, 2-WAY ON-SITE DIVERSION	20 FT. FOR CENTER LINE
ALL OTHER DIVERSIONS	½ NORMAL SPACING

SHEET 1 OF 3 **1250.01**

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

1-12

ENGLISH STANDARD DRAWING FOR **MOUNTING OF TYPE 'D','E' AND 'F' SIGNS ON 'U' CHANNEL POSTS**



	NO. SUPPORTS		
	2	3*	4
P	.207W	.145W	.107W
R	.586W	.355W	.262W

UNITS ON ATTACHED SHEET
*MINIMUM 4 FT. BETWEEN CHANNEL POSTS

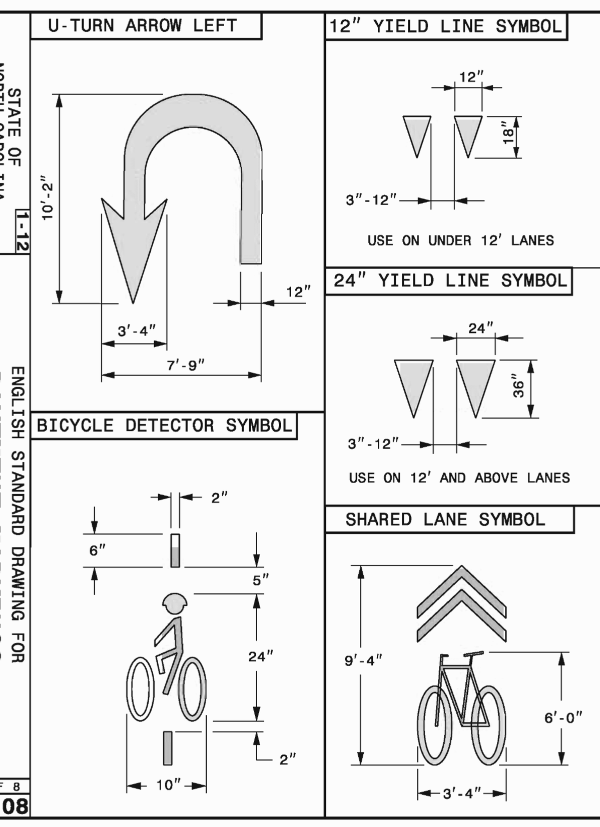
HOLE PUNCHING DETAIL

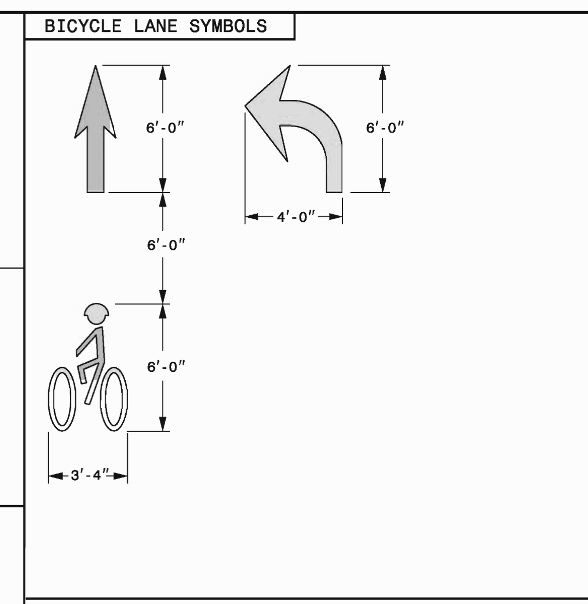
SHEET 2 OF 2 **904.50**

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

1-12

ENGLISH STANDARD DRAWING FOR **PAVEMENT MARKINGS** SYMBOLS AND WORD MESSAGES





GENERAL NOTES:

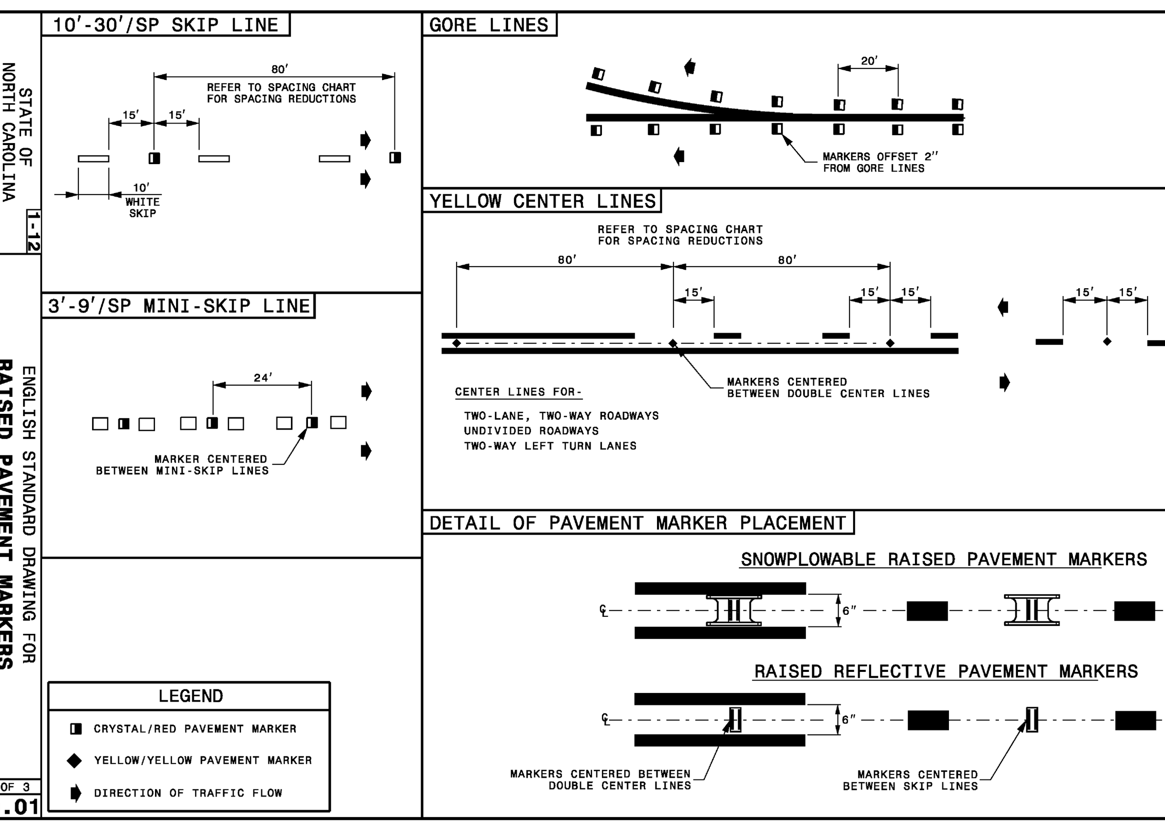
1- USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.
2- DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.
3- DO NOT PLACE PAVEMENT MARKING SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.
4- CONFORM ALL SYMBOLS TO THE FHWA "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", (REFER TO SHEETS 5 THRU 8). SYMBOL DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE, HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

SHEET 2 OF 8 **1205.08**

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

1-12

ENGLISH STANDARD DRAWING FOR **RAISED PAVEMENT MARKERS** INSTALLATION SPACING



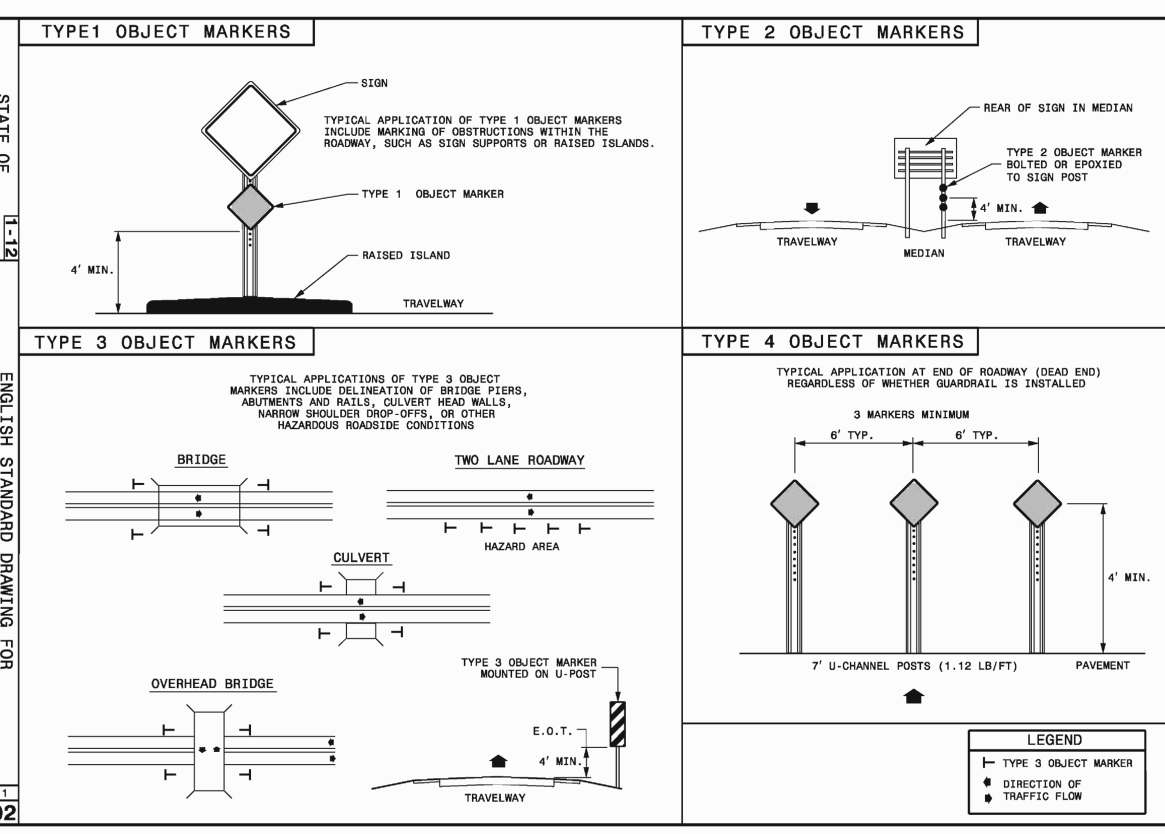
LEGEND
- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

SHEET 2 OF 3 **1250.01**

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

1-12

ENGLISH STANDARD DRAWING FOR **OBJECT MARKERS** INSTALLATION



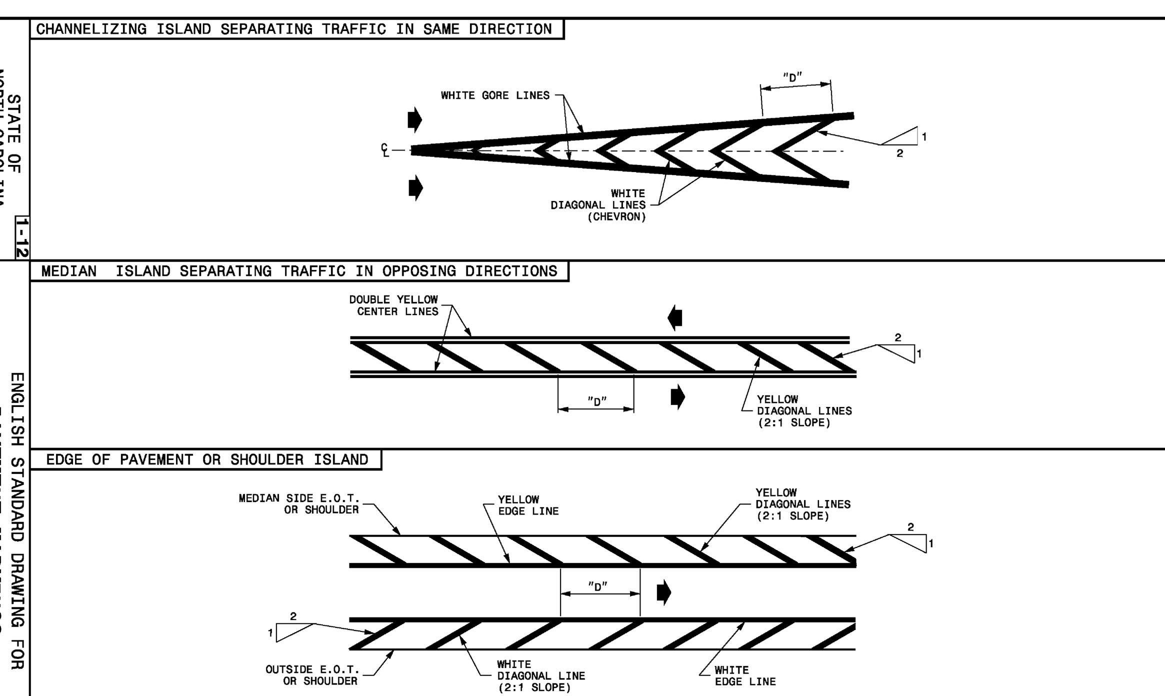
LEGEND
- TYPE 3 OBJECT MARKER
- DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1 **1264.02**

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

1-12

ENGLISH STANDARD DRAWING FOR **PAVEMENT MARKINGS** PAINTED ISLANDS



GENERAL NOTES:

1- "D" = SPACING OF DIAGONAL LINES (TYPICALLY EQUAL IN FEET TO THE POSTED SPEED LIMIT).
2- INCREASE SPACING OF DIAGONALS TO 200' OR MORE ON INTERSTATE ROADWAYS.
3- ADJUST SPACING OF DIAGONALS DEPENDING ON THE LENGTH OF THE ISLAND. SPACING MAY BE ADJUSTED AS DETERMINED BY THE ENGINEER.

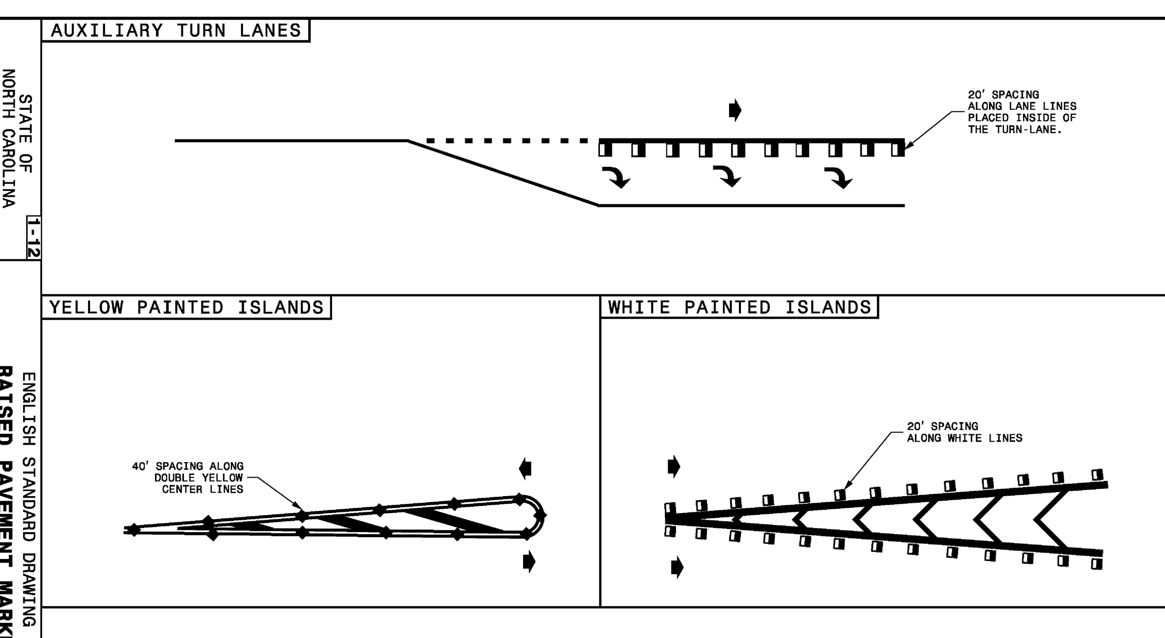
LEGEND
E.O.T.= EDGE OF TRAVEL
- DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1 **1205.09**

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

1-12

ENGLISH STANDARD DRAWING FOR **RAISED PAVEMENT MARKERS** INSTALLATION SPACING



LEGEND
- DIRECTION OF TRAFFIC FLOW
- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- PAVEMENT MARKING SYMBOL

SHEET 3 OF 3 **1250.01**

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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BLAKE FARM
– EST 1946 –

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

PAVEMENT MARKING & TRAFFIC SIGN DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CP502
DRAWING NUMBER 70

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

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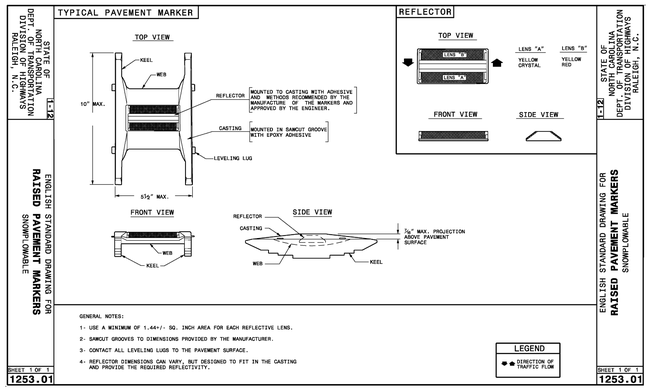
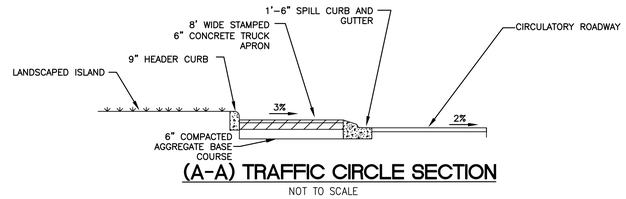
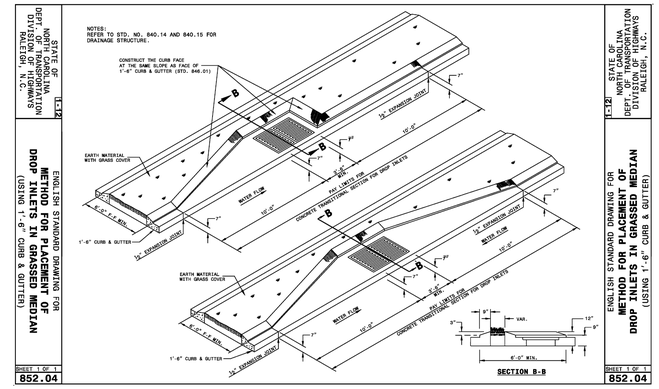
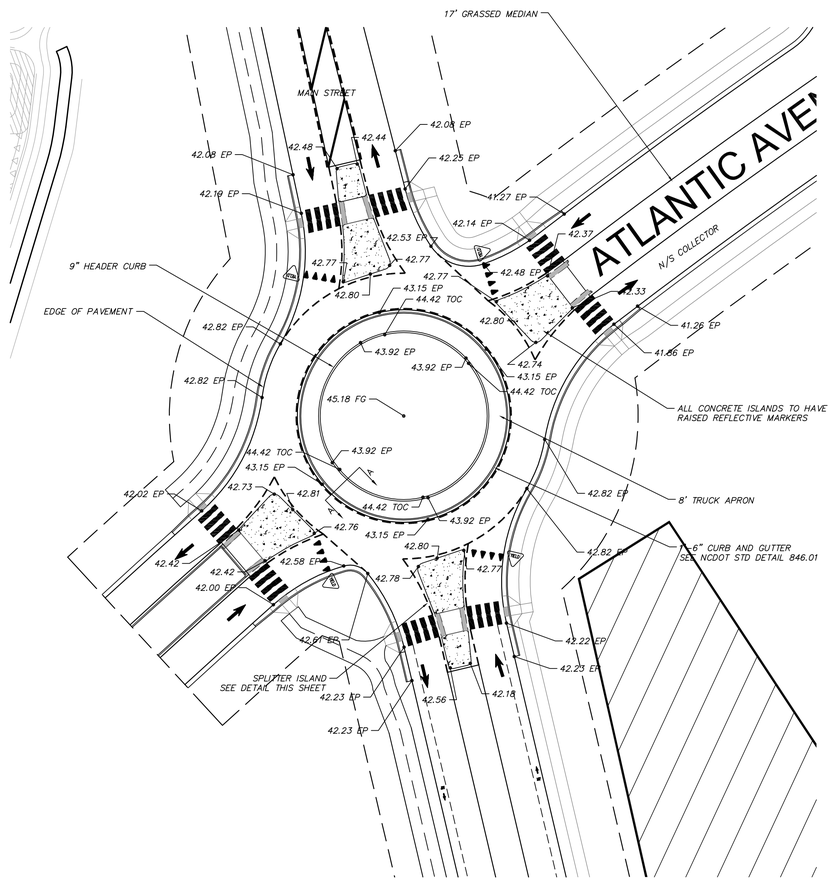




(A-A) TRAFFIC CIRCLE SECTION

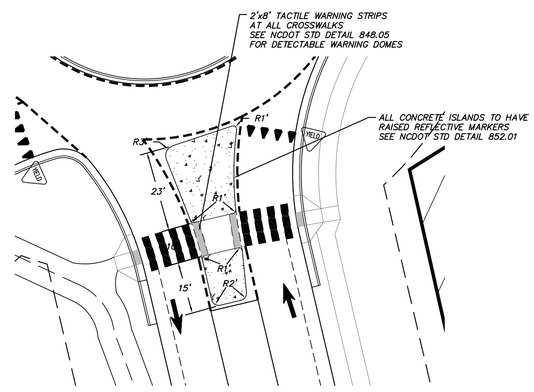
NOT TO SCALE





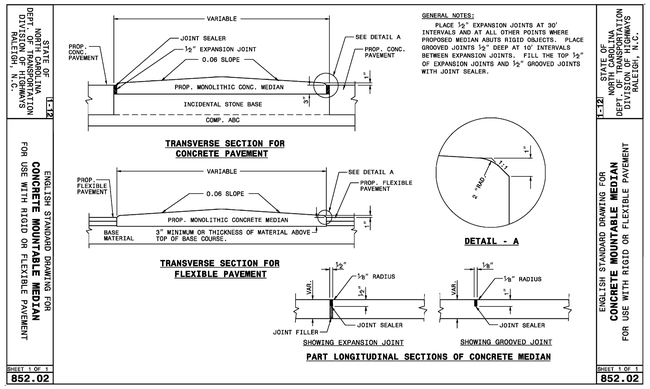
MAIN STREET AND N/S COLLECTOR CONNECTION ROUNDABOUT PLAN

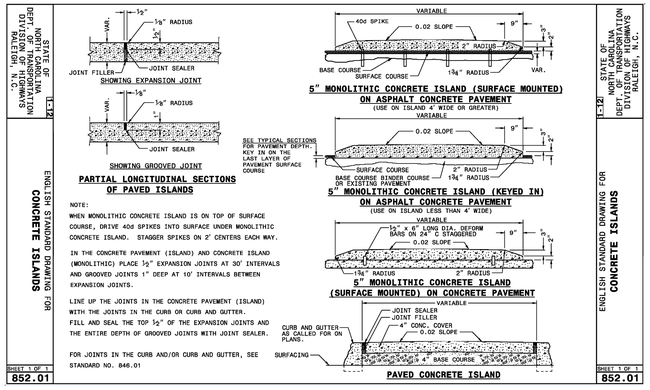
NOT TO SCALE



SPLITTER ISLANDS

NOT TO SCALE





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR-DWQ: NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLER

Richard M. Coller

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROUNDABOUT DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

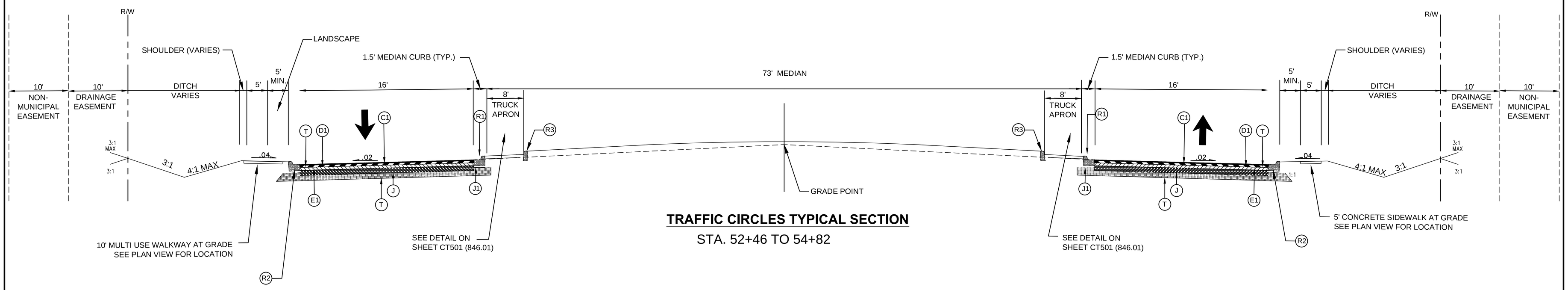
SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CT501
DRAWING NUMBER 71

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CT501_065250001.dwg, 9/17/2015 4:38:46 PM, rcoller

	PAVEMENT SCHEDULE
C1	2" ASPHALT CONCRETE SURFACE COARSE, TYPE S9.5B AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D1	2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I 19.0 B AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
E1	3.0" ASPHALT CONCRETE BASE COURSE, TYPE B 25.0B AT A RATE OF 342 LBS. PER SQ. YD.
J	8.0" AGGREGATE BASE COURSE
J1	6" AGGREGATE BASE COURSE TO BE INSTALLED UNDER ALL CURB AND GUTTER
R1	1'-6" MEDIAN CURB AND GUTTER (846.01)
R2	2'6-6" CONCRETE CURB AND GUTTER (846.01)
R3	9"X12" CONCRETE CURB (846.01)
T	EARTH MATERIAL - SUBGRADE SOILS



TRAFFIC CIRCLES TYPICAL SECTION

STA. 52+46 TO 54+82

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT, NCDENR-DWQ, NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
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REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROUNDABOUT SECTION

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CT502

DRAWING NUMBER 72

STATUS: FINAL PLANS NOT FOR CONSTRUCTION

REVISION F

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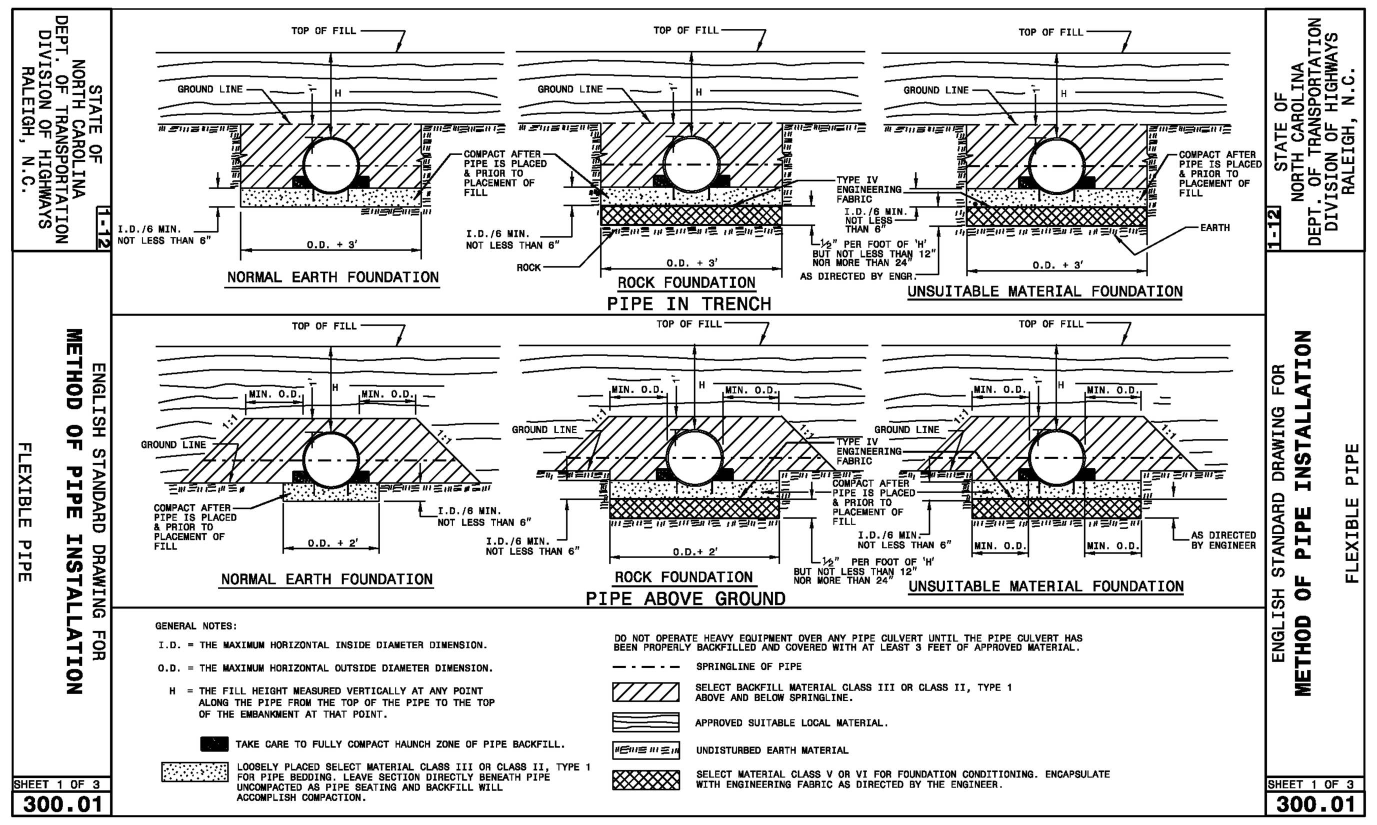
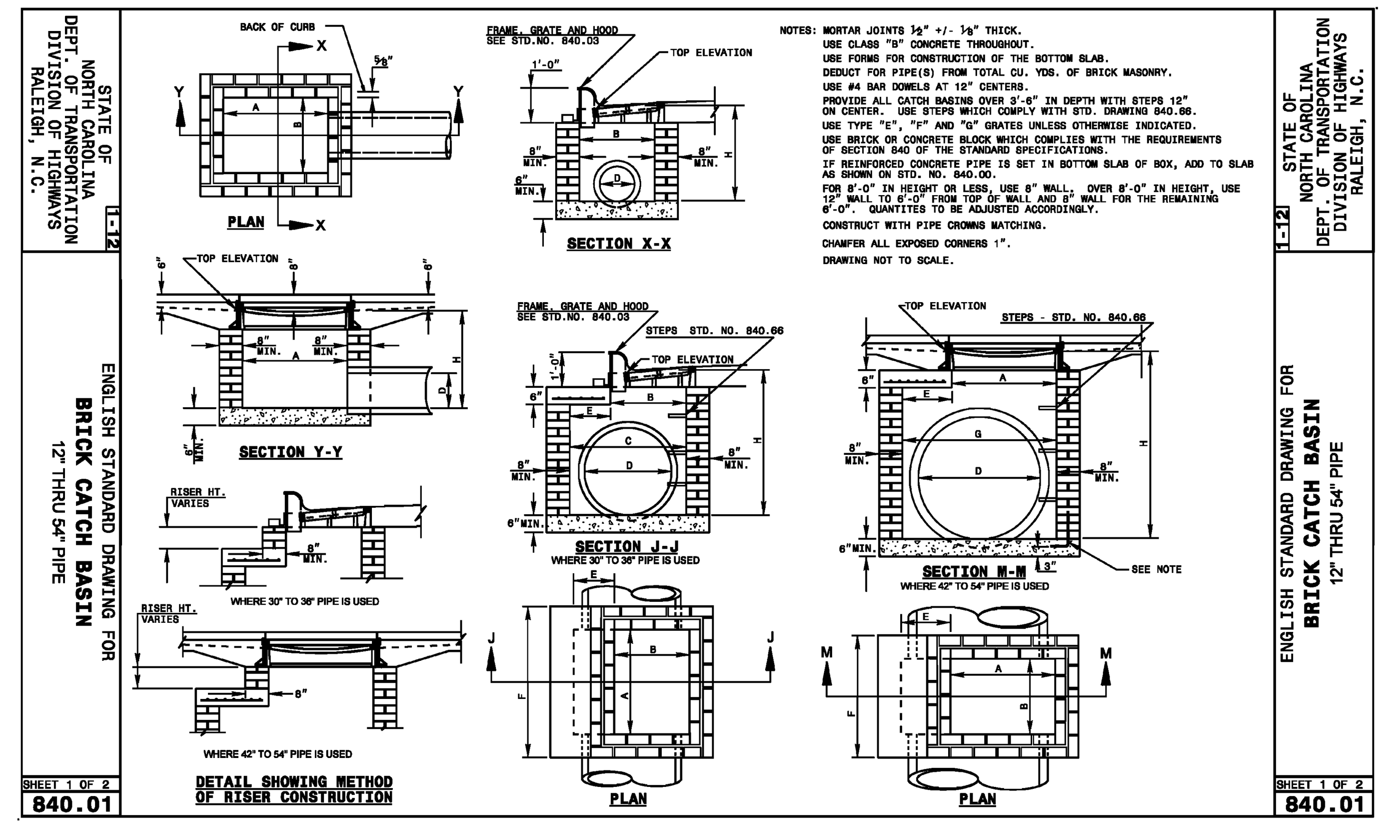
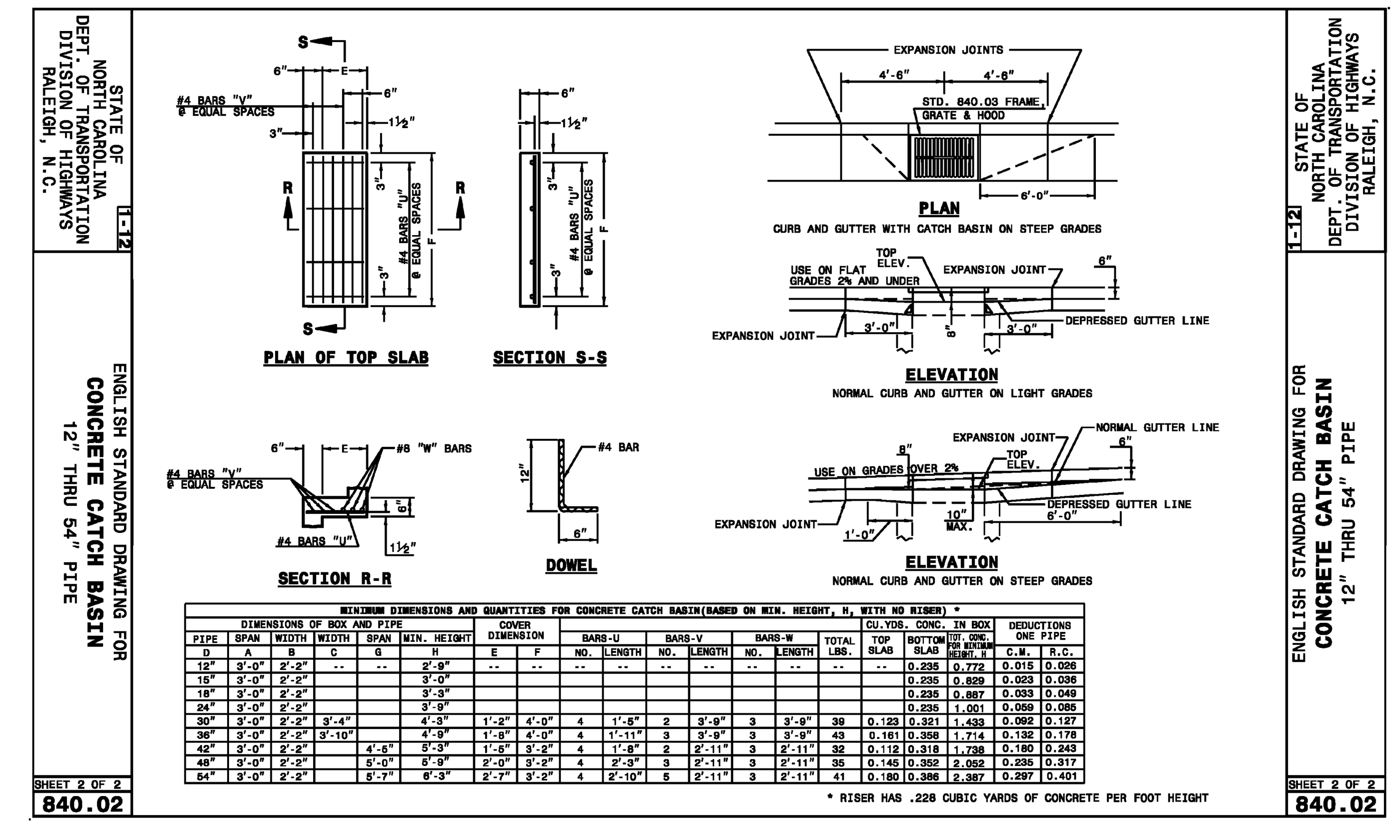
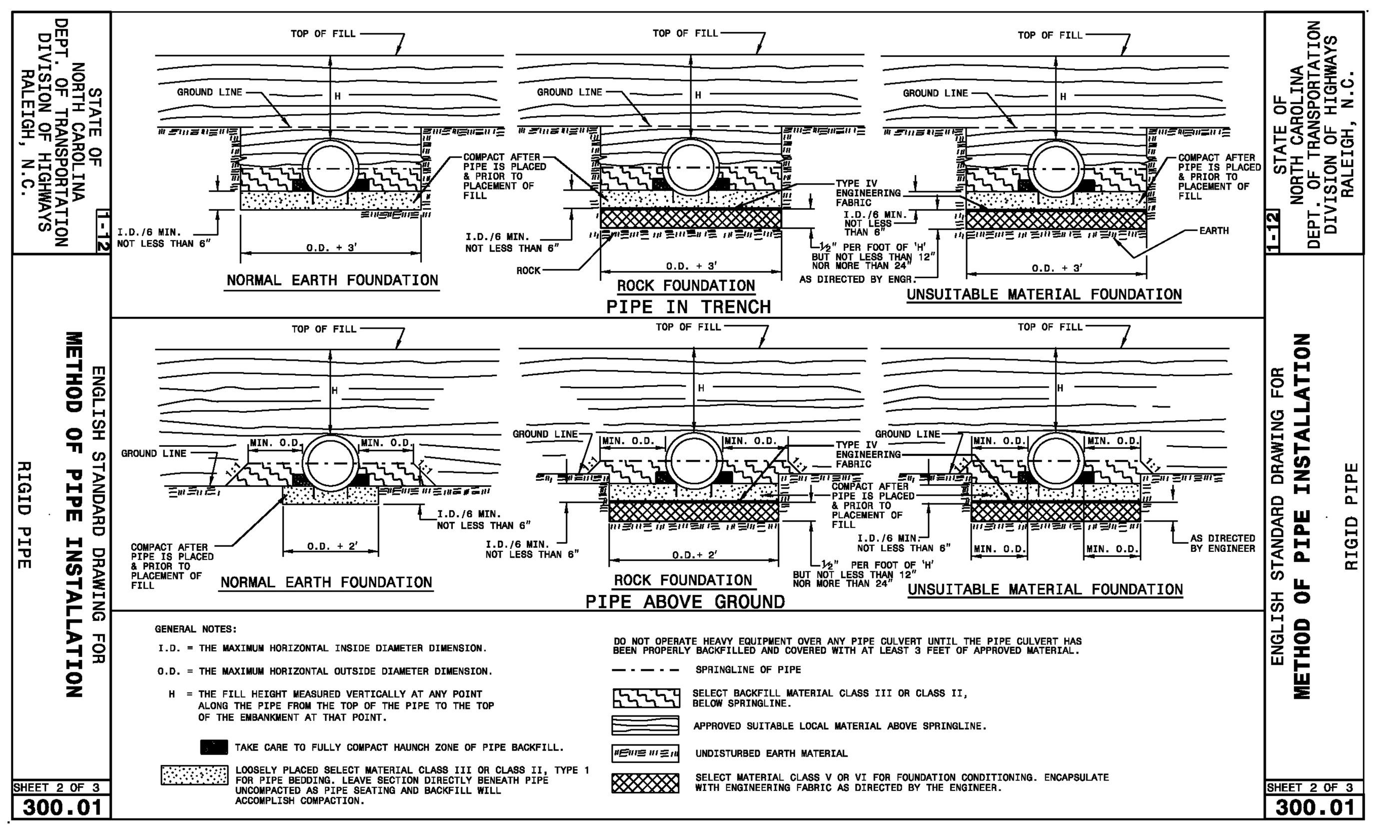
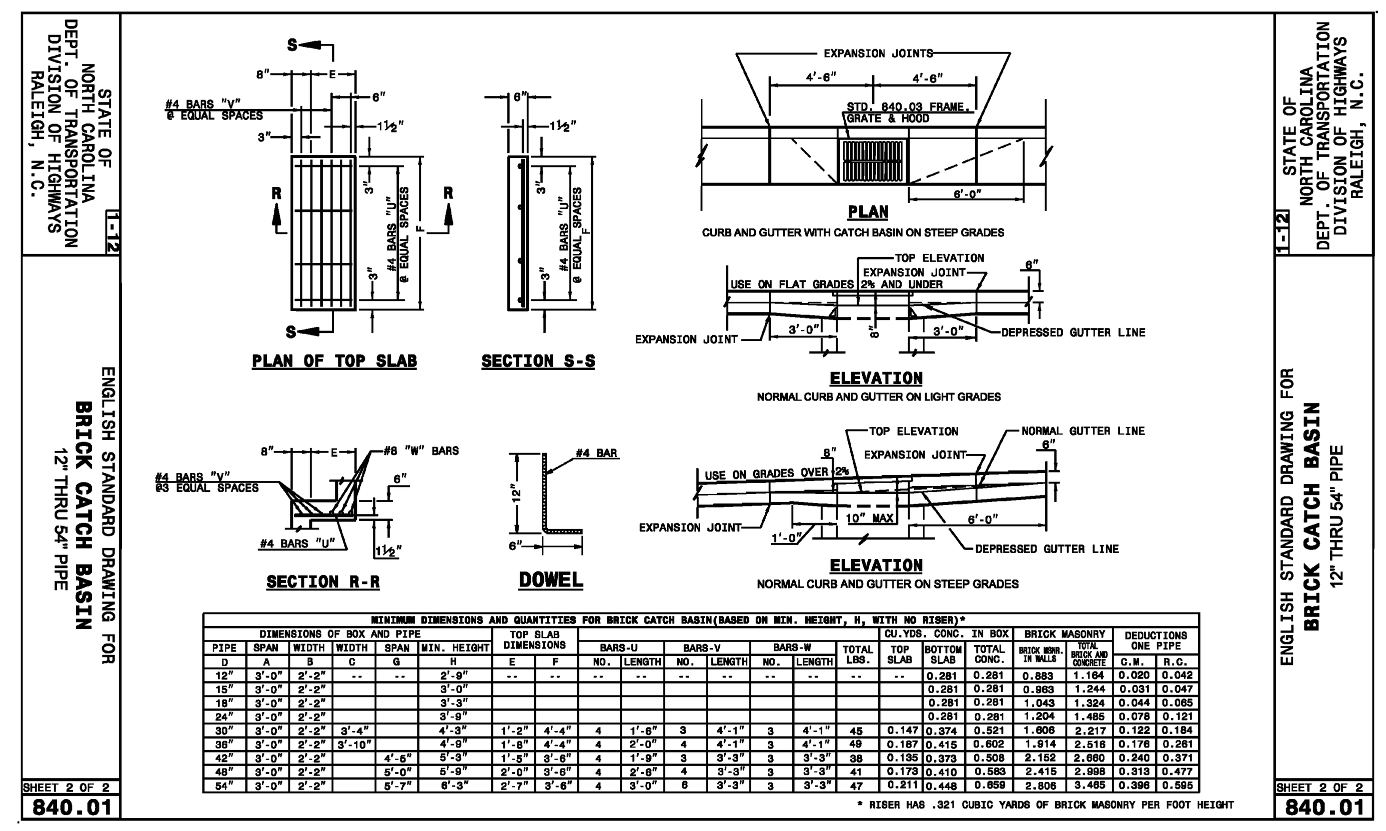
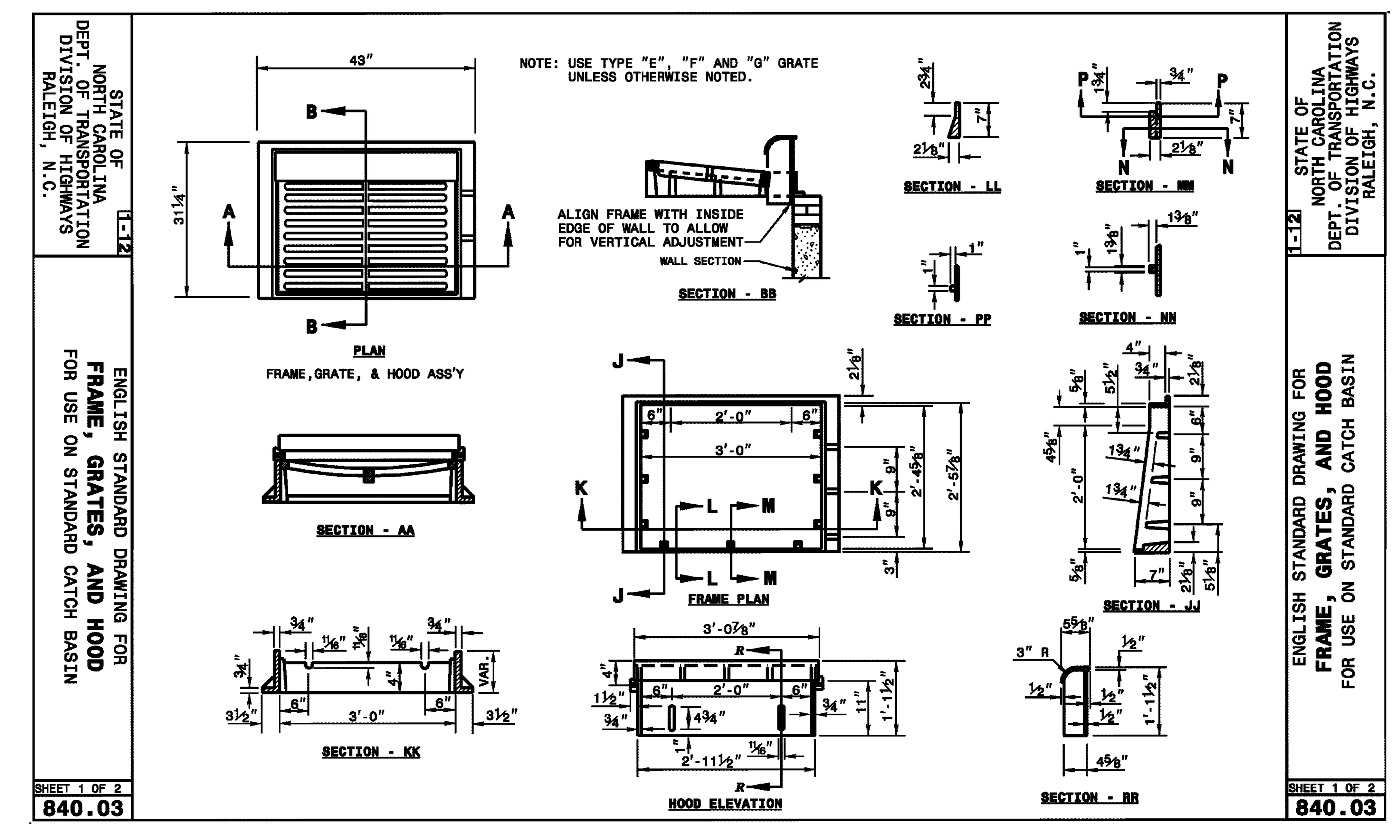












FLEXIBLE PIPE

Round Corrugated Steel Pipe
2 2/3 x ½ corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet) (Ga) 16	14	12	10	8
12	12	204	256			
15	12	162	204			
18	12	135	169	239		
21	12	115	145	204		
24	12	100	126	178		
30	12	79	100	142		
36	12	65	83	117	152	
42	12	55	70	100	130	160
48	12	48	61	87	113	139
54	12		54	77	100	123
60	12			69	90	111
66	12				81	100
72	12				74	91
78	12					81
84	12					69

Round Corrugated Aluminum Pipe
2 2/3 x ½ corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet) (Ga) 16	14	12	10	8
12	12	123	155	218	281	344
15	12	98	123	174	224	275
18	12	81	102	144	187	228
21	12	69	87	123	160	195
24	12	60	76	108	139	171
27	12		67	95	123	151
30	12		60	85	111	136
36	12		50	71	92	113
42	12			60	78	96
48	12			52	68	84
54	12			46	50	74
60	12				50	62
66	12					51
72	12					41

HDPE - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 60"
* (Maximum fill) 20' for pipe diameters ≤ 24"
17' for pipe diameters ≥ 30" and ≤ 60"

PVC - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 36"
* (Maximum fill) 30' for pipe diameters ≥ 12" and ≤ 36"

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

CSP - AASHTO M36
CAAP - AASHTO M196
HDPE - AASHTO M294
PVC - ASTM F949 or AASHTO M304

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

RIGID PIPE

RCP - * (Minimum fill) 1' for Class IV & CLASS V
2' for Class III & Class II

* (Maximum fill) 10' - Class II pipe
20' - Class III pipe
30' - Class IV pipe
40' - Class V pipe

(For fills > 40' & < 80' use LRFD Direct Design Method)

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

RCP - AASHTO M170

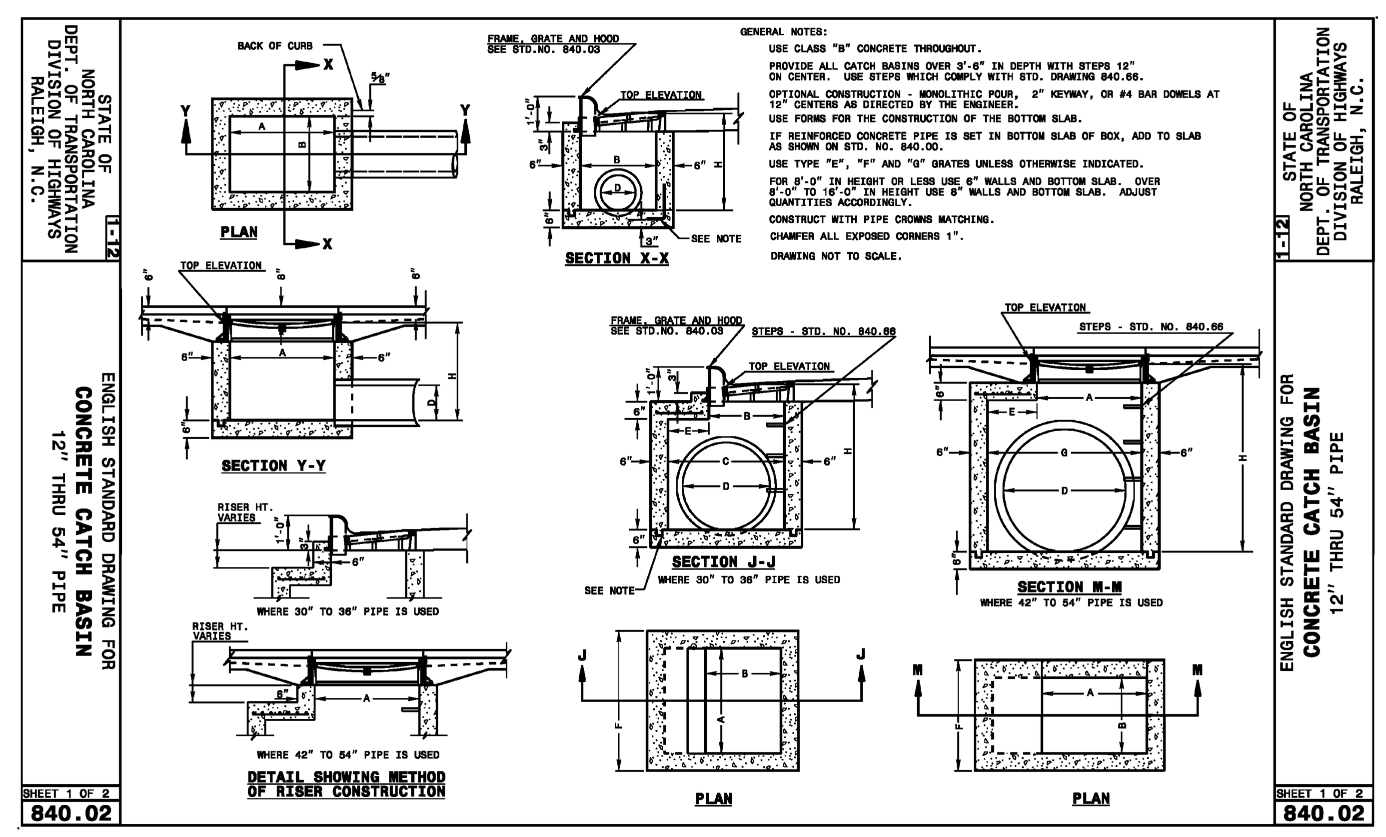
NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

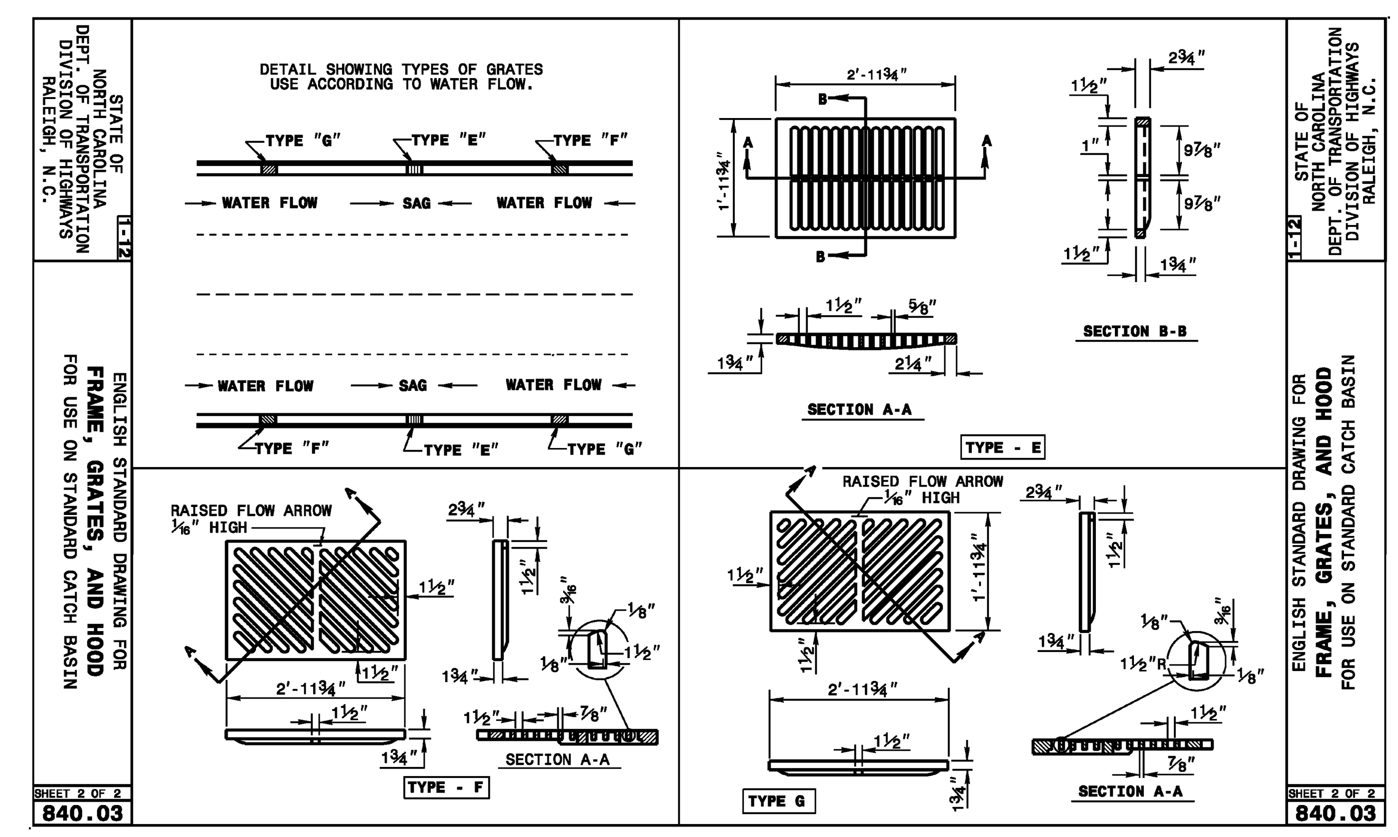
1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
FILL HEIGHT TABLES

SHEET 3 OF 3 300.01





REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL	08/19/15
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REVISIONS

SEAL
FINAL PLANS- DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER
Richard M. Collier

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BLAKE FARM — EST 1946 —

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROADWAY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

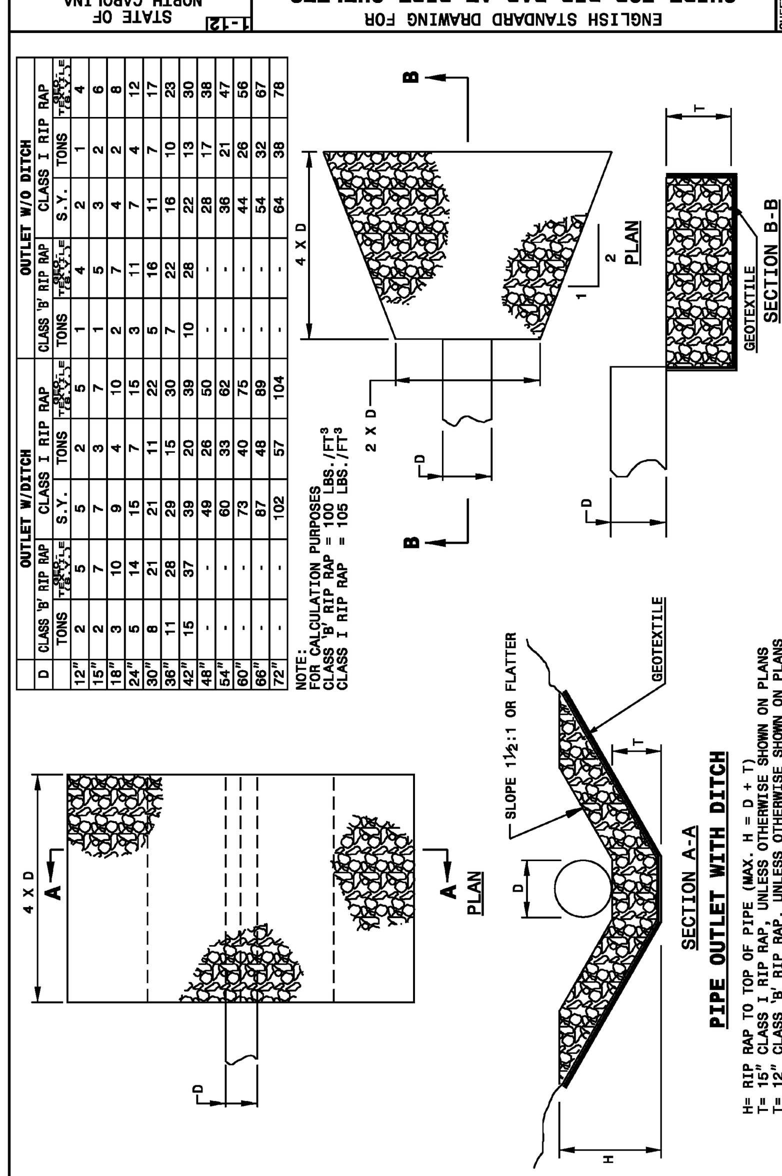
SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CT503
DRAWING NUMBER 73

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION F

S:\6525\0001\80-Drawings\CT503_06525000l.dwg, 9/1/2015 4:45:55 PM, rcollier

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR GUIDE FOR RIP RAP AT PIPE OUTLETS SHEET 1 OF 1 876.02



	OUTLET W/DITCH					OUTLET W/O DITCH				
D	CLASS 'B' RIP RAP TONS	GEOTEXTILE	CLASS I RIP RAP S.Y.	TONS	GEOTEXTILE	CLASS 'B' RIP RAP TONS	GEOTEXTILE	CLASS I RIP RAP S.Y.	TONS	GEOTEXTILE
12"	2	5	5	2	5	1	4	2	1	4
15"	2	7	7	3	7	1	5	3	2	6
18"	3	10	9	4	10	2	7	4	2	8
24"	5	14	15	7	15	3	11	7	4	12
30"	8	21	21	11	22	5	16	11	7	17
36"	11	28	29	15	30	7	22	16	10	23
42"	15	37	39	20	39	10	28	22	13	30
48"	-	-	49	26	50	-	-	28	17	38
54"	-	-	60	33	62	-	-	36	21	47
60"	-	-	73	40	75	-	-	44	26	56
66"	-	-	87	48	89	-	-	54	32	67
72"	-	-	102	57	104	-	-	64	38	78

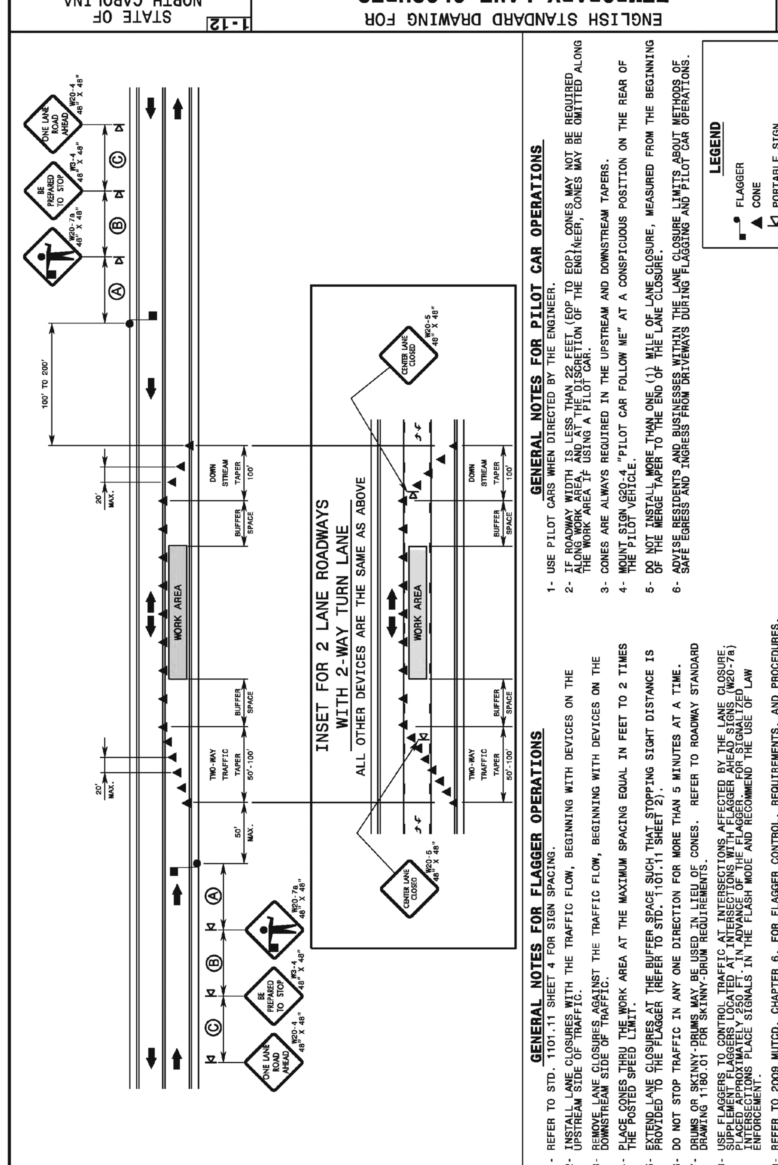
NOTE:
FOR CALCULATION PURPOSES
CLASS 'B' RIP RAP = 100 LBS./FT³
CLASS I RIP RAP = 105 LBS./FT³

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
GUIDE FOR RIP RAP AT PIPE OUTLETS

SHEET 1 OF 1
876.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR TEMPORARY LANE CLOSURES 2-LANE, 2-WAY ROADWAY-1 LANE CLOSED SHEET 1 OF 15 1101.02



GENERAL NOTES FOR FLAGGER OPERATIONS

1- REFER TO STD. 1101.11 SHEET 4 FOR SIGN SPACING.
2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
7- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS.
8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
9- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
4- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

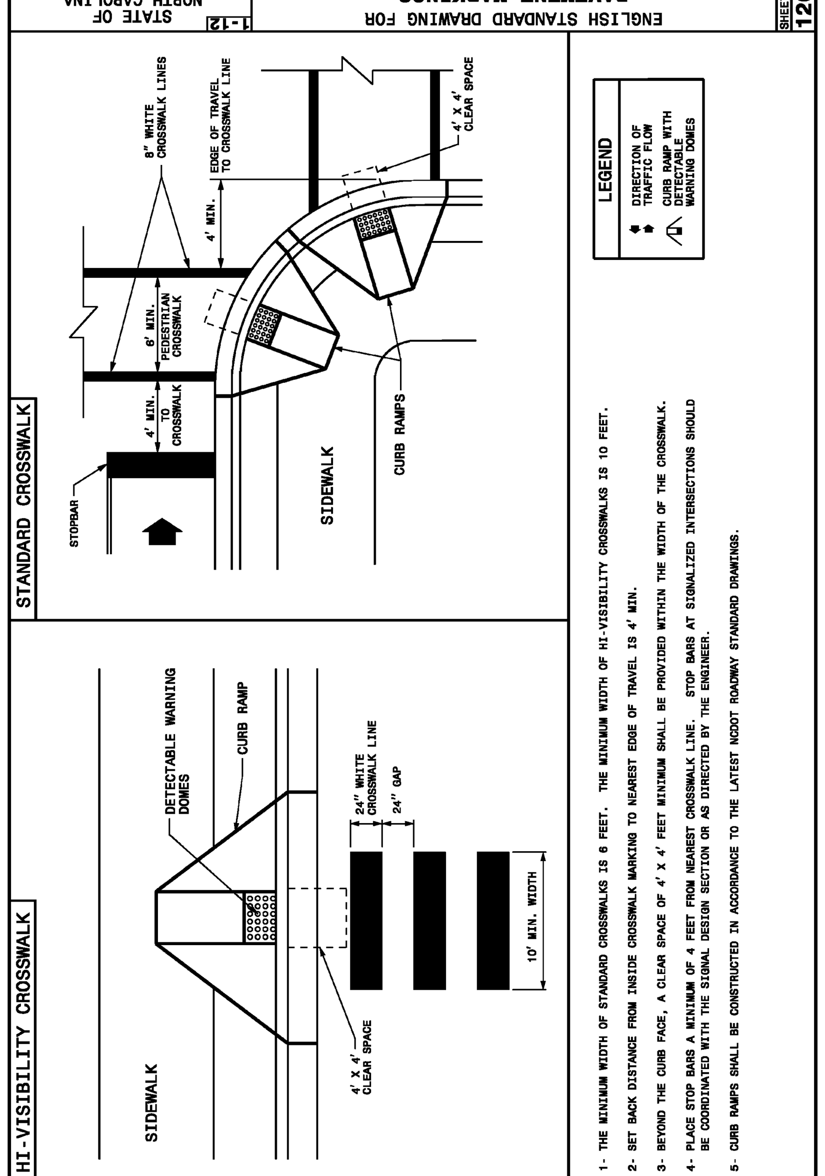
LEGEND
FLAGGER
CONE
PORTABLE SIGN
DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 15
1101.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS PEDESTRIAN CROSSWALKS SHEET 1 OF 1 1205.07



1- THE MINIMUM WIDTH OF STANDARD CROSSWALKS IS 6 FEET. THE MINIMUM WIDTH OF HI-VISIBILITY CROSSWALKS IS 10 FEET.
2- SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.
3- BEYOND THE CURB FACE, A CLEAR SPACE OF 4' X 4' FEET MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE CROSSWALK.
4- PLACE STOP BARS A MINIMUM OF 4 FEET FROM NEAREST CROSSWALK LINE. STOP BARS AT SIGNALIZED INTERSECTIONS SHOULD BE COORDINATED WITH THE SIGNAL DESIGN SECTION OR AS DIRECTED BY THE ENGINEER.
5- CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS.

STATE OF NORTH CAROLINA
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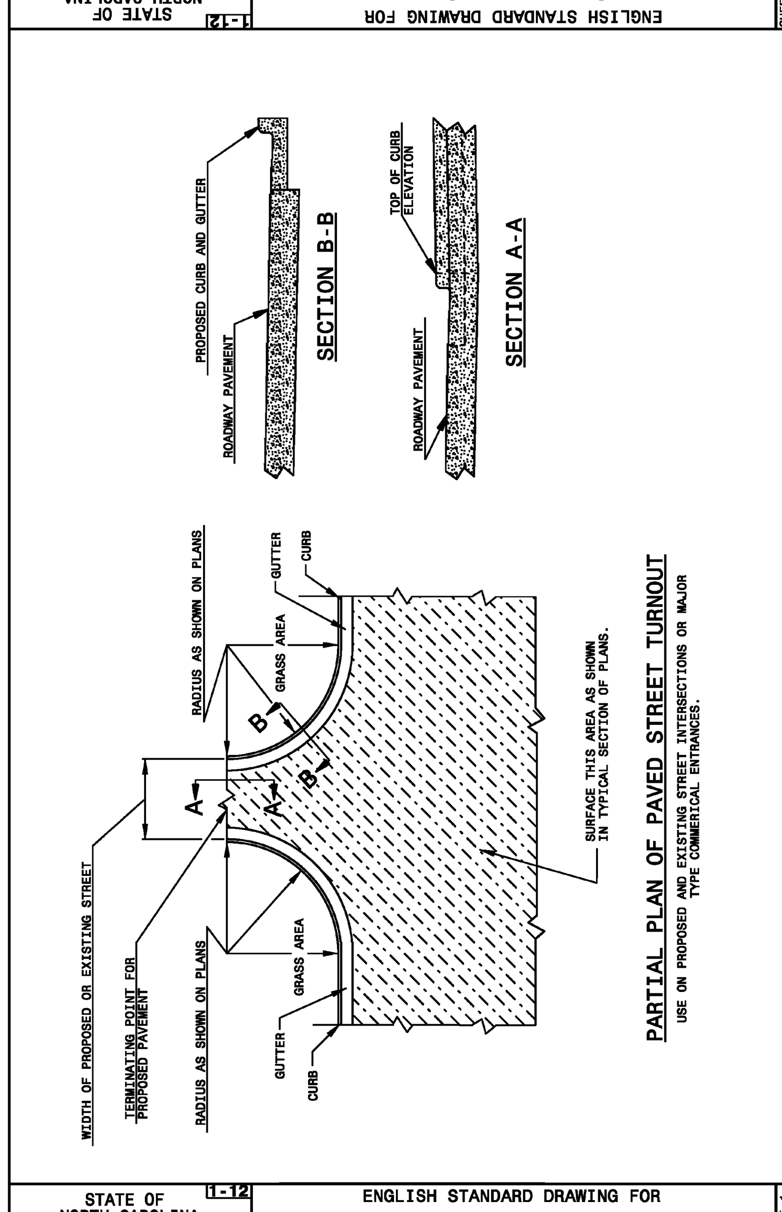
ENGLISH STANDARD DRAWING FOR
PAVEMENT MARKINGS
PEDESTRIAN CROSSWALKS

SHEET 1 OF 1
1205.07

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR STREET TURNOUT SHEET 1 OF 1 848.04

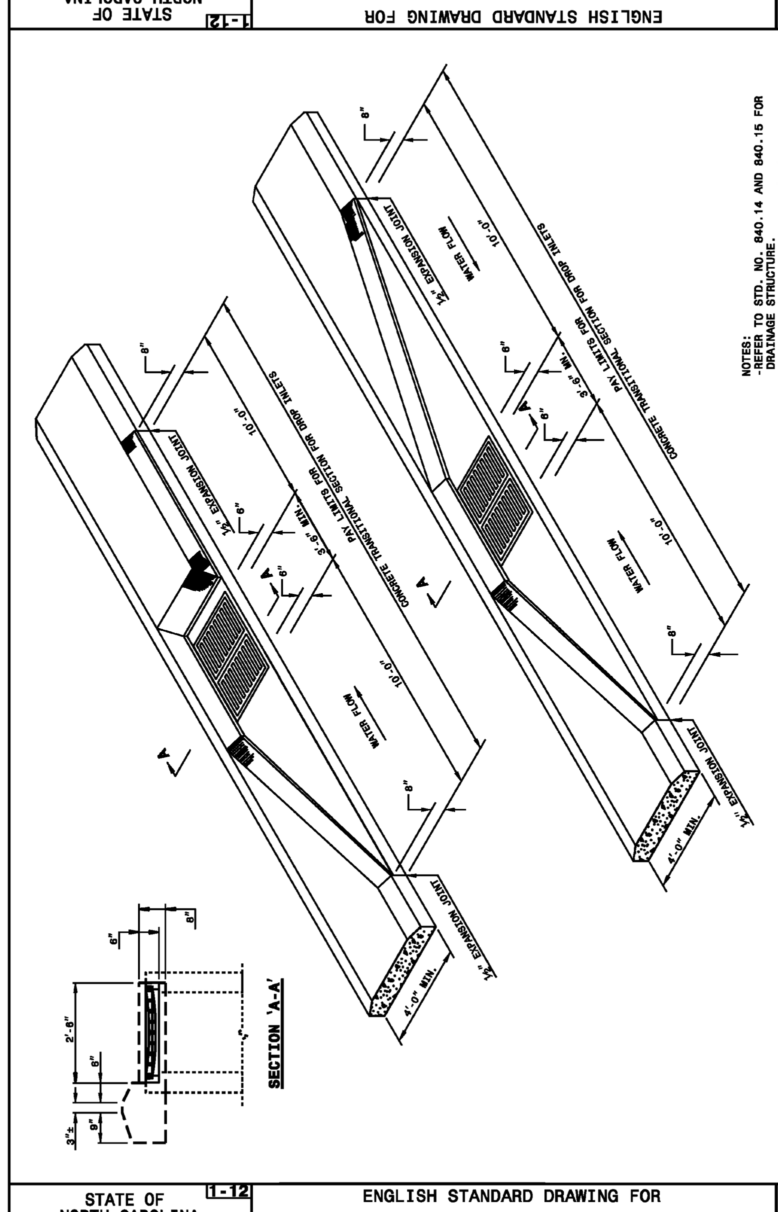


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
STREET TURNOUT

SHEET 1 OF 1
848.04

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS SHEET 1 OF 1 852.06

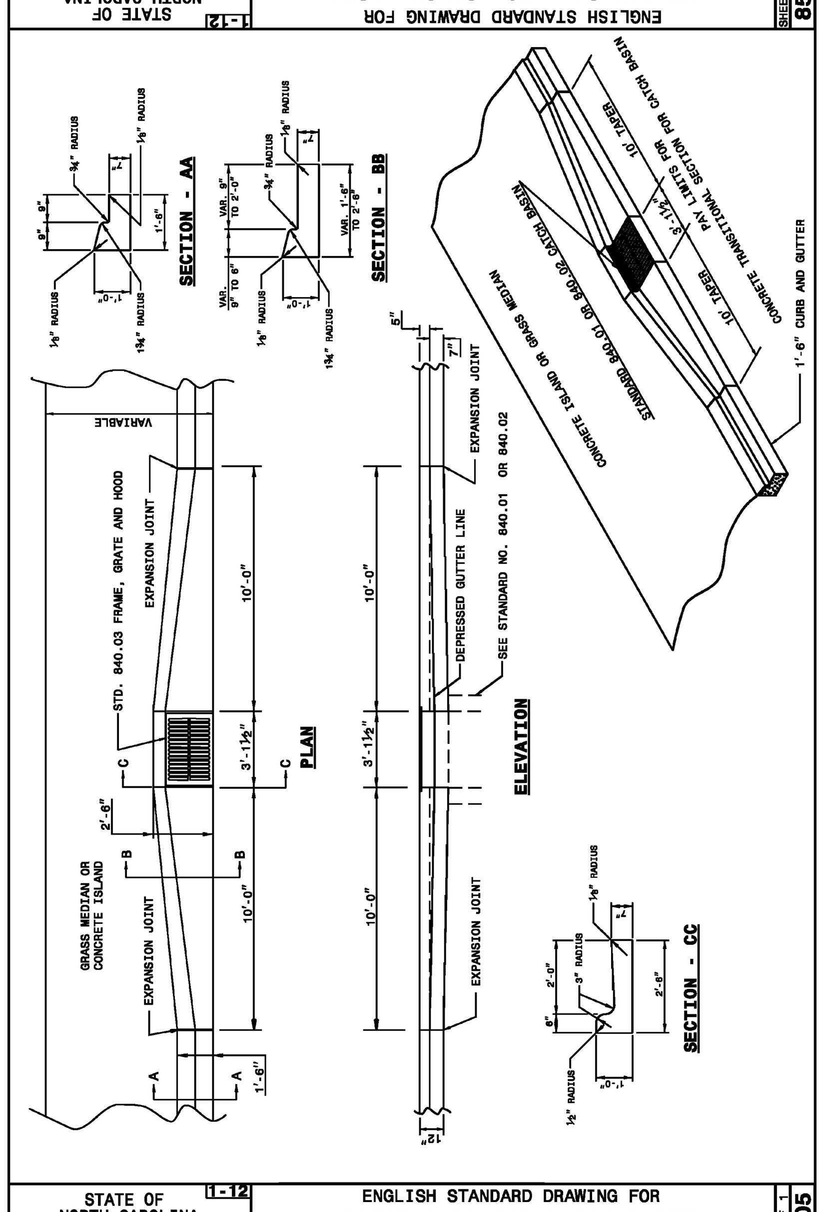


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS

SHEET 1 OF 1
852.06

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR MEDIAN CURB FOR CATCH BASIN (FOR USE WITH 1'-6" CURB AND GUTTER) SHEET 1 OF 1 852.05

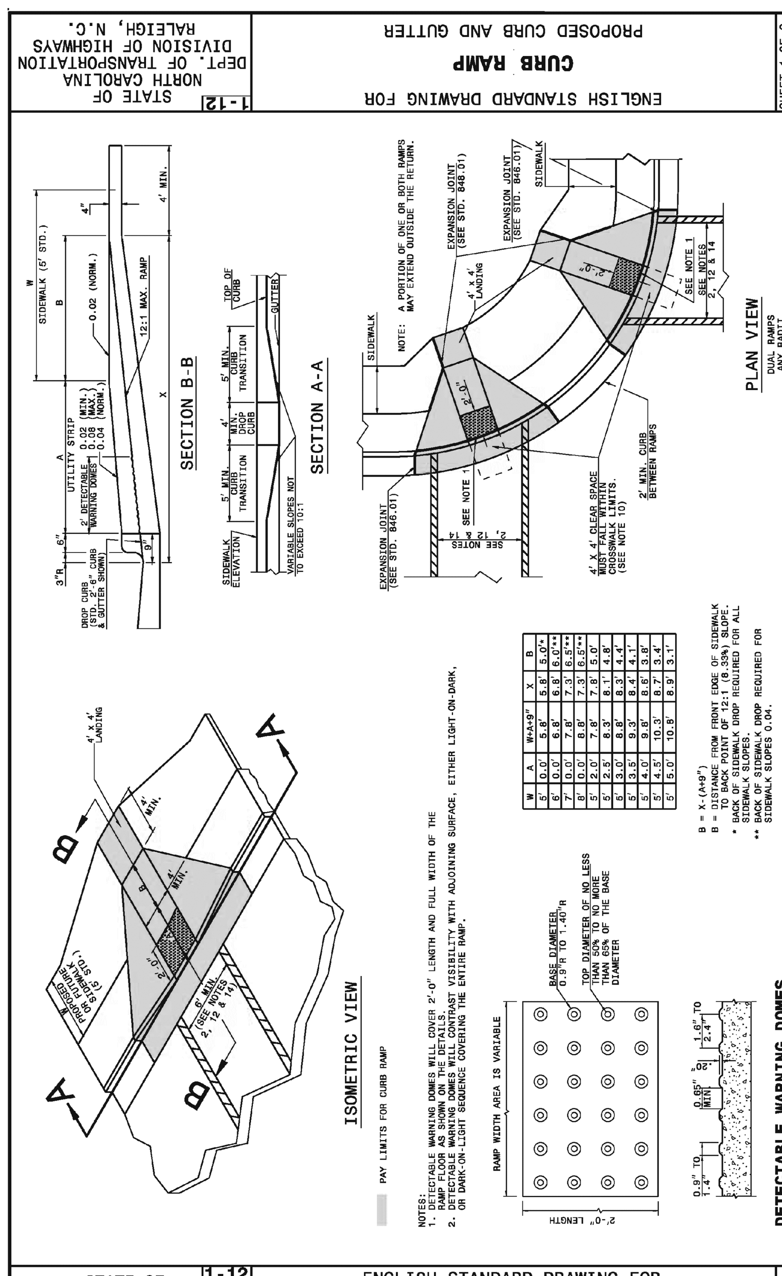


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
MEDIAN CURB FOR CATCH BASIN
(FOR USE WITH 1'-6" CURB AND GUTTER)

SHEET 1 OF 1
852.05

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CURB RAMP PROPOSED CURB AND GUTTER SHEET 1 OF 3 848.05



NOTES:
1. DETECTABLE WARNING DOMES WILL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
2. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.

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

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

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
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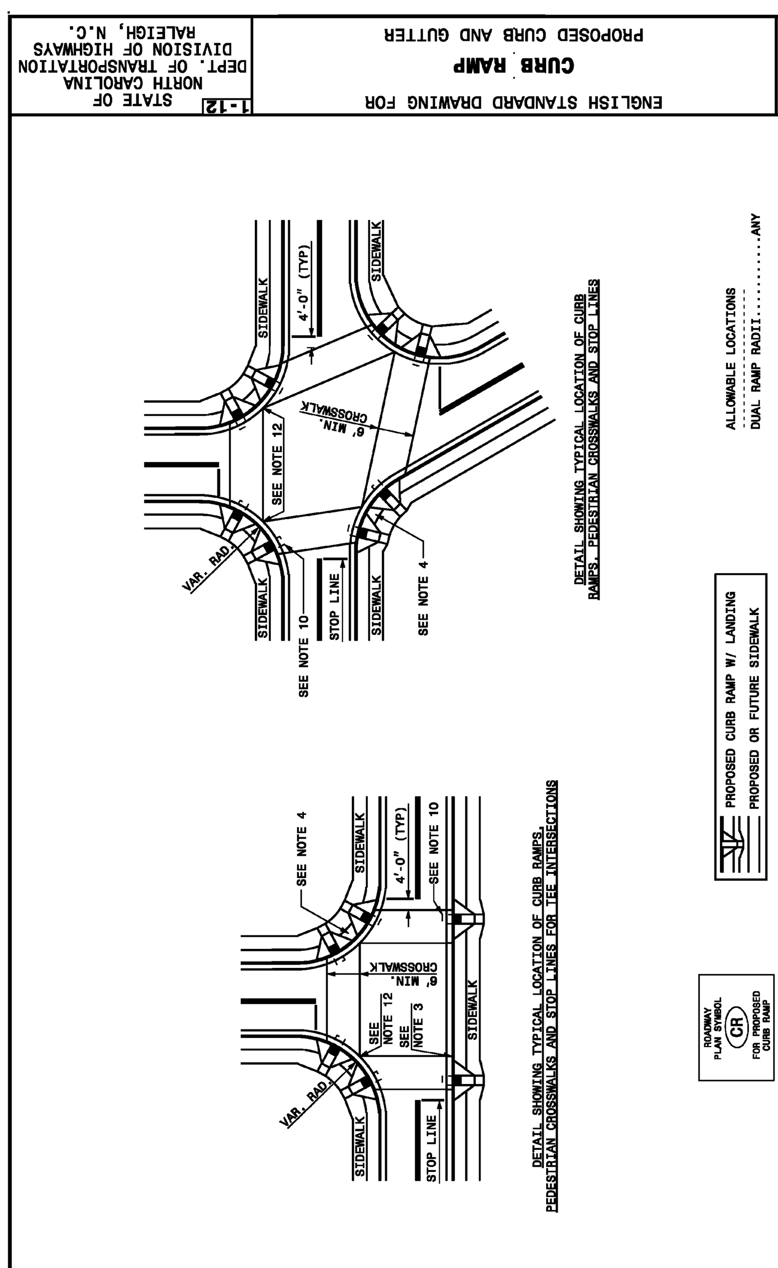
ENGLISH STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 1 OF 3
848.05

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CURB RAMP PROPOSED CURB AND GUTTER SHEET 2 OF 3 848.05



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 2 OF 3
848.05

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CURB RAMPS NOTES SHEET 3 OF 3 848.05

NOTES:
1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'X5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-12

ENGLISH STANDARD DRAWING FOR
CURB RAMPS
NOTES

SHEET 3 OF 3
848.05

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

SEAL
FINAL PLANS - NOT FOR USE FOR CONSTRUCTION
DO NOT USE FOR CONSTRUCTION

August 24, 2015
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22574 RICHARD M. COLLIER
Richard M. Collier

McKIM&CREED
243 North Front Street
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Phone: (910)343-1048, Fax: (910)251-8282
NC LIC. No. F-1222
www.mckimcreed.com

Trask Land CO INC
1202 Eastwood Road
Wilmington, NC 28403
(910) 799-8755

BLAKE FARM
EST 1946

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROADWAY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER: CT504
DRAWING NUMBER: 74

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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

1-12

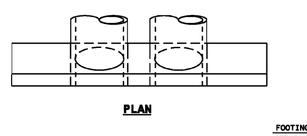
ENGLISH STANDARD DRAWING FOR

CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

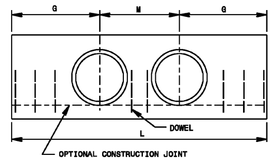
15" THRU 48" PIPE - 90° SKEW

SHEET 1 OF 3

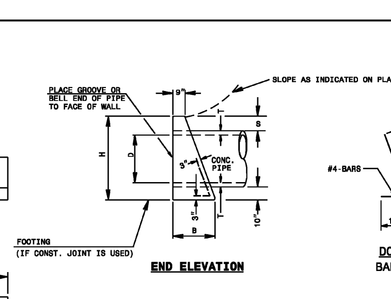
838.01



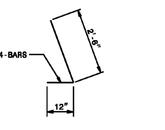
PLAN



ELEVATION



END ELEVATION



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

DIMENSIONS AND CONCRETE QUANTITIES										
USING CONCRETE PIPE										
COMMON DIMENSIONS								SINGLE PIPE	DOUBLE PIPE	
D	H	S	G	T	S	L	YD^3	M	L	YD^3
15"	3'-5"	1'-8"	2'-9"	5¾"	9½"	5'-8"	0.7	2'-2"	7'-8"	1.0
18"	3'-7"	1'-10"	3'-0"	6½"	10"	6'-4"	1.0	2'-7"	8'-11"	1.3
24"	4'-3"	2'-1"	4'-0"	8"	10"	8'-0"	1.6	3'-5"	11'-3"	2.0
30"	5'-0"	2'-8"	4'-7"	9¾"	11½"	9'-3"	2.3	4'-3"	13'-5"	3.1
36"	5'-8"	3'-5"	5'-6"	11¾"	11½"	11'-0"	3.4	5'-0"	15'-0"	4.5
42"	6'-2"	3'-11"	6'-4"	13¾"	11½"	12'-8"	4.5	5'-10"	16'-6"	6.0
48"	6'-8"	3'-3"	7'-2"	15¾"	11½"	14'-4"	6.0	6'-8"	21'-0"	8.0

*SEE SHEET 3

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

1-12

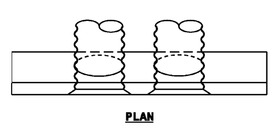
ENGLISH STANDARD DRAWING FOR

CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

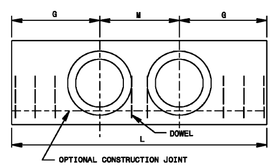
15" THRU 48" PIPE - 90° SKEW

SHEET 1 OF 3

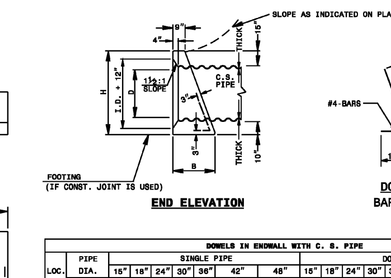
838.01



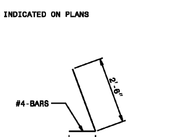
PLAN



ELEVATION



END ELEVATION



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

DIMENSIONS AND CONCRETE QUANTITIES										
USING CORRUGATED STEEL PIPE										
COMMON								SINGLE PIPE	DOUBLE PIPE	
D	H	S	G	T	S	L	YD^3	M	L	YD^3
15"	3'-4"	1'-8"	2'-6"	5'-0"	0.7	1'-11"	8'-11"	1'-10"	8'-11"	1.0
18"	3'-3"	1'-10"	2'-11"	5'-10"	1.0	2'-3"	8'-11"	2'-3"	8'-11"	1.2
24"	4'-1"	2'-4"	3'-8"	7'-4"	1.4	3'-0"	10'-4"	3'-0"	10'-4"	1.9
30"	4'-2"	2'-4"	4'-5"	8'-10"	2.0	3'-9"	12'-7"	3'-9"	12'-7"	2.7
36"	5'-1"	2'-7"	5'-2"	10'-4"	2.6	4'-8"	14'-10"	4'-8"	14'-10"	3.8
42"	5'-7"	2'-10"	6'-11"	13'-10"	3.8	5'-9"	17'-11"	5'-9"	17'-11"	5.0
48"	6'-1"	3'-1"	6'-8"	13'-4"	4.8	6'-0"	19'-4"	7'-3"	19'-4"	7.5

*SEE SHEET 3

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

1-12

ENGLISH STANDARD DRAWING FOR

CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

15" THRU 48" PIPE - 90° SKEW

SHEET 2 OF 3

838.01

GENERAL NOTES:

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

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

CONSTRUCT BOTTOM SLAB WITH FORMS.

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

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

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

USE CLASS "B" CONCRETE.

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

1-12

ENGLISH STANDARD DRAWING FOR

CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

15" THRU 48" PIPE - 90° SKEW

SHEET 3 OF 3

838.01

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

1-12

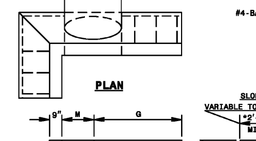
ENGLISH STANDARD DRAWING FOR

CONCRETE "L" ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

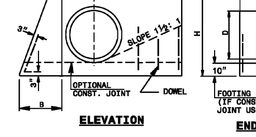
15" THRU 48" PIPE

SHEET 1 OF 1

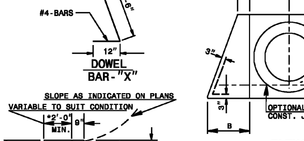
838.05

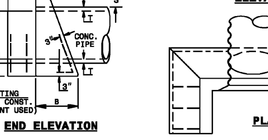


PLAN

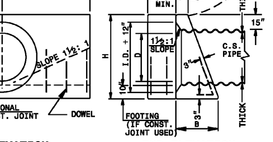


ELEVATION





END ELEVATION



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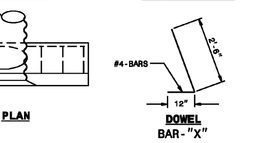
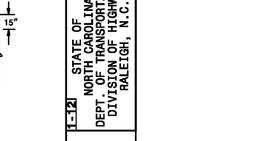


END ELEVATION



GENERAL NOTES:
- CHAMFER ALL CORNERS 1". USE CLASS "B" CONCRETE.
- PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.
- CONSTRUCT BOTTOM SLAB WITH FORMS.
- WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.
- DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

DIMENSIONS AND CONCRETE QUANTITIES															
	R.C.P. DIMENSIONS AND VOLUMES								C.S.P. DIMENSIONS AND VOLUMES						
D	H	S	G	W	S	T	YD^3	H	S	G	W	YD^3
15"	3'-3"	1'-8"	2'-9"	7"	10½"	5¾"	1.0	3'-4"	1'-8"	2'-5"	1'-3"	1.0
18"	3'-7"	1'-10"	2'-11"	1'-0"	10"	6½"	1.3	3'-7"	1'-10"	2'-9"	1'-6"	1.3
24"	4'-2"	2'-1"	3'-9"	1'-6"	10"	8"	1.8	4'-1"	2'-1"	3'-4"	1'-9"	1.8
30"	4'-9"	2'-5"	4'-6"	1'-10"	10"	9¾"	2.5	4'-7"	2'-4"	4'-3"	2'-0"	2.4
36"	5'-5"	2'-9"	5'-3"	2'-2"	9½"	11¾"	3.6	5'-1"	2'-7"	5'-0"	2'-3"	3.1
42"	6'-0"	3'-0"	6'-7"	2'-6"	9½"	13¾"	4.8	5'-7"	2'-10"	5'-8"	2'-6"	4.0
48"	6'-7"	3'-4"	7'-5"	2'-9"	9½"	15¾"	6.0	6'-1"	3'-1"	6'-8"	2'-9"	5.1

REINFORCING QUANTITIES										
DIA.	15"	18"	24"	30"	36"	42" C.S.	42" R.C.	48" C.S.	48" R.C.	
BARS	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"X"	"Y"
QTY.	3	3	6	6	7	7	8	7	8	2
LBS.	12	12	14	14	18	47	49	52	55	

*QUANTITIES BASED ON 2'-0"

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

1-12

ENGLISH STANDARD DRAWING FOR

CONCRETE "L" ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS

15" THRU 48" PIPE

SHEET 1 OF 1

838.05

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

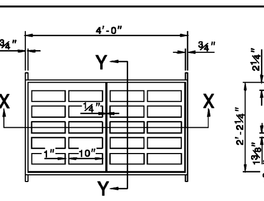
1-12

ENGLISH STANDARD DRAWING FOR

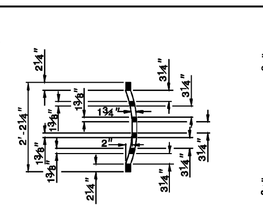
FRAMES AND WIDE SLOT SAG GRATES

SHEET 1 OF 1

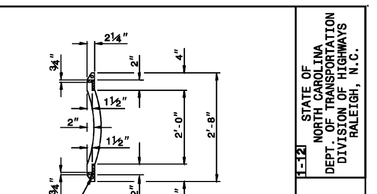
840.22



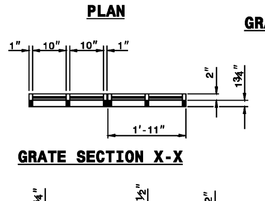
PLAN



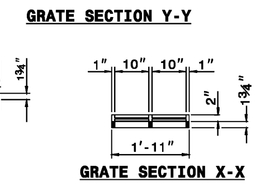
GRATE SECTION Y-Y



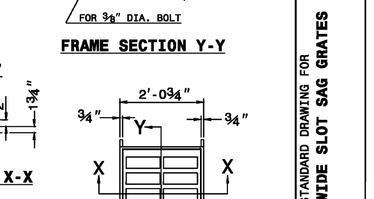
FRAME SECTION Y-Y



GRATE SECTION X-X



GRATE SECTION X-X



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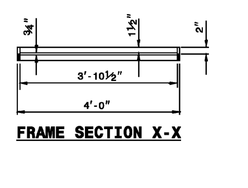
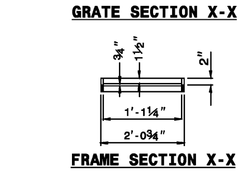


FRAME SECTION X-X



FRAME SECTION X-X

NOTE:
SEE STD. DWG. 840.25
FOR FRAME ANCHORAGE.

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

1-12

ENGLISH STANDARD DRAWING FOR

FRAMES AND WIDE SLOT SAG GRATES

SHEET 1 OF 1

840.22

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

1-12

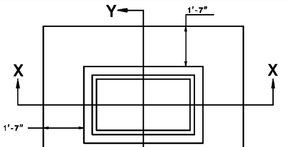
ENGLISH STANDARD DRAWING FOR

CONCRETE GRATED DROP INLET TYPE 'D'

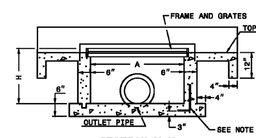
12" THRU 36" PIPE

SHEET 1 OF 1

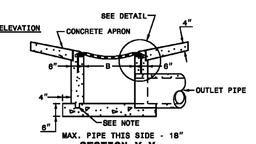
840.19



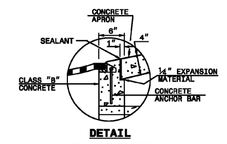
PLAN



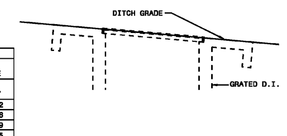
SECTION X-X

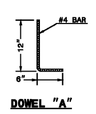


SECTION Y-Y



DETAIL
(APRON SUPPORT NOTCH)





DOWEL "A"

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR. 3" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
CONSTRUCT WITH PIPE GROMMS MATCHING.
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 10 FEET.
USE STANDARD FRAMES AND GRATES 840.02 (SHOWN), 840.24(SHOWN), 840.20, 840.29, AND 840.35.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET									
PIPE	SPAN	WIDTH	HEIGHT	CUBIC YARDS OF CONCRETE IN BOX				DEDUCTIONS FOR ONE PIPE	
D	A	B	H	BOTTOM SLAB	H PER FT. OF HT.	H MIN. TOTAL	TOTAL	C.S.	R.C.
12"	3'-5"	2'-0"	1'-8"	0.350	0.247	0.391	0.793	0.020	0.032
15"	3'-8"	2'-0"	1'-11"	0.350	0.247	0.453	0.815	0.023	0.036
18"	3'-8"	2'-0"	2'-2"	0.350	0.247	0.515	0.877	0.033	0.049
24"	3'-8"	2'-0"	2'-8"	0.350	0.247	0.668	1.001	0.059	0.085
30"	3'-8"	2'-0"	3'-2"	0.350	0.247	0.792	1.144	0.092	0.127
36"	3'-8"	2'-0"	3'-8"	0.350	0.247	0.906	1.288	0.132	0.178

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

1-12

ENGLISH STANDARD DRAWING FOR

CONCRETE GRATED DROP INLET TYPE 'D'

12" THRU 36" PIPE

SHEET 1 OF 1

840.19

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

1-12

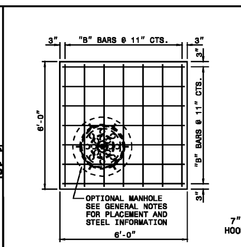
ENGLISH STANDARD DRAWING FOR

TRAFFIC BEARING JUNCTION BOX

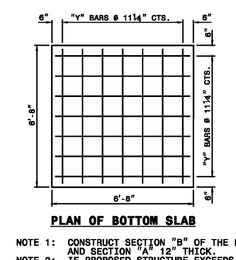
FOR USE WITH PIPES 42" AND UNDER

SHEET 1 OF 2

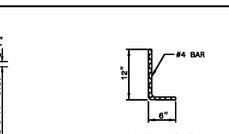
840.34



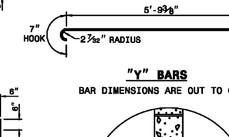
PLAN OF TOP SLAB



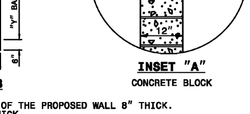
PLAN OF BOTTOM SLAB



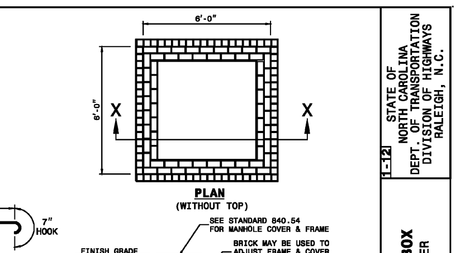
DOWEL "C"



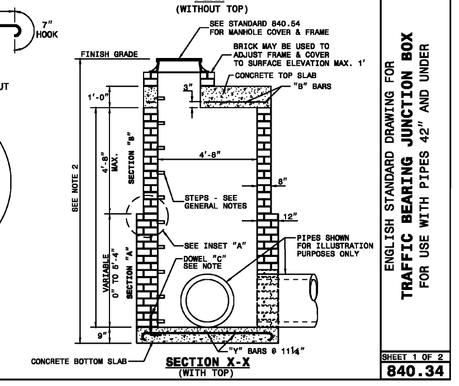
"Y" BARS
BAR DIMENSIONS ARE CUT TO OUT



INSET "A"
CONCRETE BLOCK



PLAN
(WITHOUT TOP)



NOTE 1: CONSTRUCT SECTION "B" OF THE PROPOSED WALL 8" THICK.
NOTE 2: ADJUSTMENTS TO THE HEIGHT OF SECTION "B" MAY BE MADE TO ACCOMODATE 15"-0" VERTICAL HEIGHT A
NOTE 3: DESIGN WILL BE REQUIRED FOR APPROVAL.
USE SINGLE MAT REINFORCING STEEL.
EXCEPT DOUBLE MAT STEEL MAY BE USED IN LIEU OF HOOK BARS IN BASE SLAB.

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

1-12

ENGLISH STANDARD DRAWING FOR

TRAFFIC BEARING JUNCTION BOX

FOR USE WITH PIPES 42" AND UNDER

SHEET 1 OF 2

840.34

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

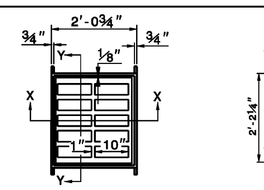
1-12

ENGLISH STANDARD DRAWING FOR

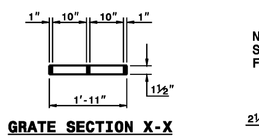
FRAMES AND WIDE SLOT FLAT GRATES

SHEET 1 OF 1

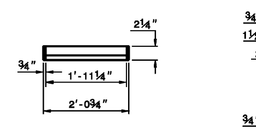
840.20



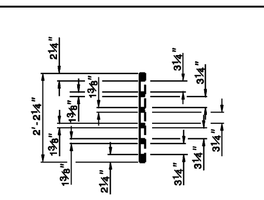
PLAN



GRATE SECTION X-X

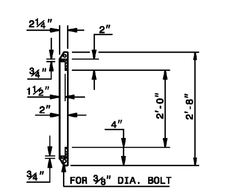


FRAME SECTION X-X

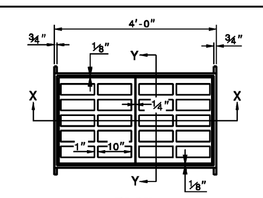


GRATE SECTION Y-Y

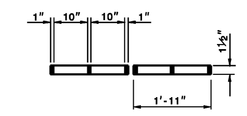
NOTE:
SEE STD. DWG. 840.25
FOR FRAME ANCHORAGE.



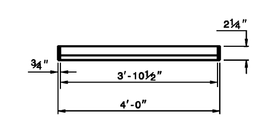
FRAME SECTION Y-Y



PLAN



GRATE SECTION X-X



FRAME SECTION X-X

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

1-12

ENGLISH STANDARD DRAWING FOR

FRAMES AND WIDE SLOT FLAT GRATES

SHEET 1 OF 1

840.20

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

1-12

ENGLISH STANDARD DRAWING FOR

TRAFFIC BEARING JUNCTION BOX

FOR USE WITH PIPES 42" AND UNDER

SHEET 2 OF 2

840.34

GENERAL NOTES:

USE STANDARD OR JUMBO BRICK FOR WALL CONSTRUCTION. SOLID CONCRETE BRICK OR BLOCK ARE OPTIONAL WALL CONSTRUCTION MATERIAL

PRECAST UNITS MADE OF CLASS "AA" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONTRUCTION. SUBMIT DESIGN OF PRECAST UNITS FOR APPROVAL PRIOR TO CONSTRUCTION.

INCLUDE ALL ADJUSTMENTS TO WALLS, SLABS OR REINFORCING MATERIAL IN THE UNIT PRICE BID FOR EACH UNIT.

INSTALL OPTIONAL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT ON-HOLD ALL REBAR CROSSING THE OPENING TO ALLOW OF MINIMUM CONCRETE COVERAGE. ENCLOSE THE OPENING WITH 1 BARS TIED TO TO THE REBAR MAT AND SET SO A MINIMUM OF 3" CONCRETE COVER IS ATTAINED. REFERENCE STD. NO. 840.54 FOR MANHOLE INFORMATION.

PROVIDE JUNCTION BOXES WITH MANHOLES OVER 3'-6" IN DEPTH WITH STEPS PLACED ON 12" CENTERS. REFERENCE STD. NO. 840.66.

SPACE DOWEL "C" BARS AT A MAXIMUM OF 12" CENTERS.

MAXIMUM DEPTH OF THIS UNIT AS SHOWN IS 12'.

CONSTRUCT THE JUNCTION BOX IN ACCORDANCE WITH SECTIONS 830, 832, 834 AND 840 OF THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL				
BAR	QTY.	SIZE	LENGTH	WEIGHT
A	8	#9	9'-0"	80.3
B	14	#9	5'-4"	50.1
C	14	#5	5'-4"	29.5
D	14	#5	16'-11½"	101.5
STEEL TOTAL WEIGHT				217.4
CU. YDS. CLASS "AA" CONC.				2.8
CU. YDS. BRICK/FT. HT. (8")				0.53
CU. YDS. BRICK/FT. HT. (12")				0.64

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

1-12

ENGLISH STANDARD DRAWING FOR

TRAFFIC BEARING JUNCTION BOX

FOR USE WITH PIPES 42" AND UNDER

SHEET 2 OF 2

840.34

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT: NCDENR/DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/18/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS- DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

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BLAKE FARM

BLAKE FARM SF-1 SUBDIVISION
TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROADWAY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

MAC FILE NUMBER: CT505
DRAWING NUMBER: 75

STATUS: FINAL PLANS NOT FOR CONSTRUCTION
REVISION: F

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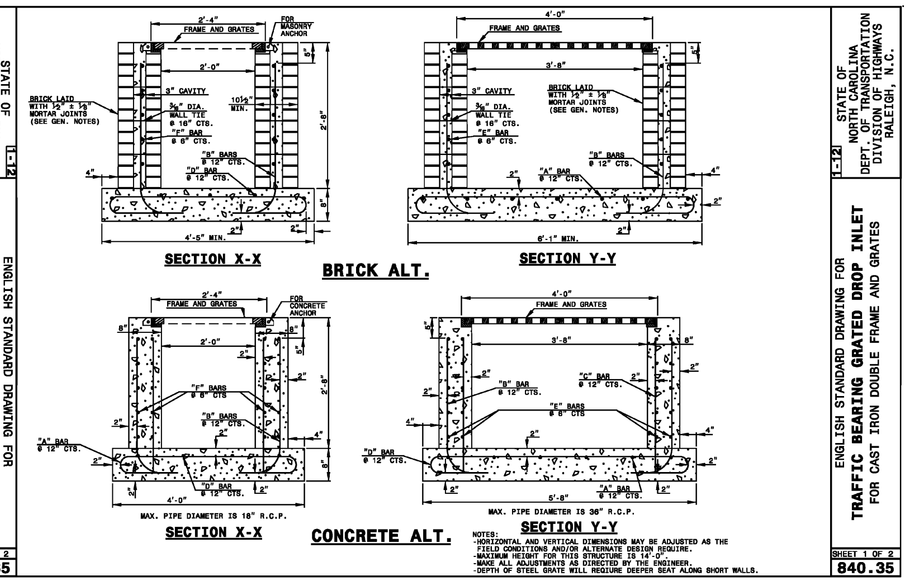
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

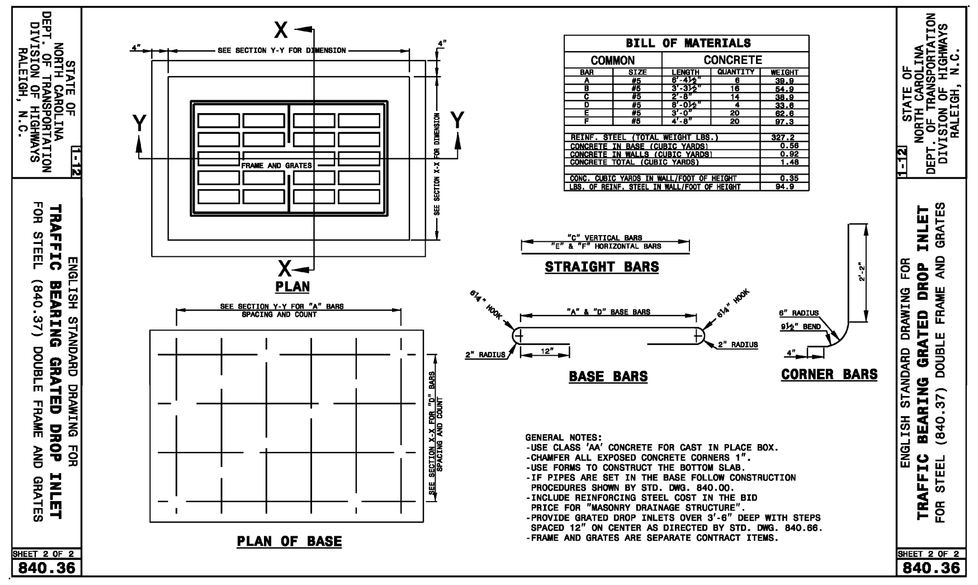
ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING GRATED DROP INLET FOR CAST IRON DOUBLE FRAME AND GRATES



SHEET 1 OF 2 — 840.35

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING GRATED DROP INLET FOR STEEL (840.37) DOUBLE FRAME AND GRATES



BILL OF MATERIALS

COMMON				CONCRETE	
BAR	SIZE	LENGTH	WEIGHT		
A	#5	2'-10"	7.4		
B	#5	2'-10"	7.4		
C	#5	2'-10"	7.4		
D	#5	4'-9"	20.7		
E	#5	4'-9"	20		
TOTAL BITEM (TOTAL WEIGHT LBS.)			302.5		
CONCRETE IN BASE (CUBIC YARDS)			0.56		
CONCRETE IN WALLS (CUBIC YARDS)			0.92		
CONCRETE TOTAL (CUBIC YARDS)			1.48		
CONC. BLOCK VOID IN WALLS(CUBIC FEET)			7.5		
LBS. OF BRICK BITEM IN WALL(POUNDS OF BRICK)			84.9		

GENERAL NOTES:
-USE CLASS 'AA' CONCRETE FOR CAST IN PLACE BOX.
-CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
-INCLUDE REINFORCING STEEL COST IN THE BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
-PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.06.
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

SHEET 2 OF 2 — 840.36

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

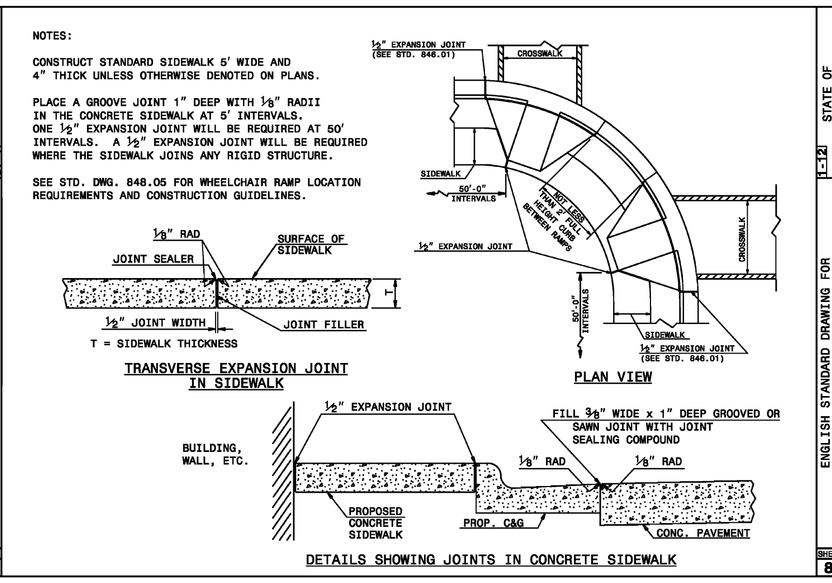
ENGLISH STANDARD DRAWING FOR CONCRETE SIDEWALK

NOTES:

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

PLACE A GROOVE JOINT 1" DEEP WITH 1½" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE ½" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A ½" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

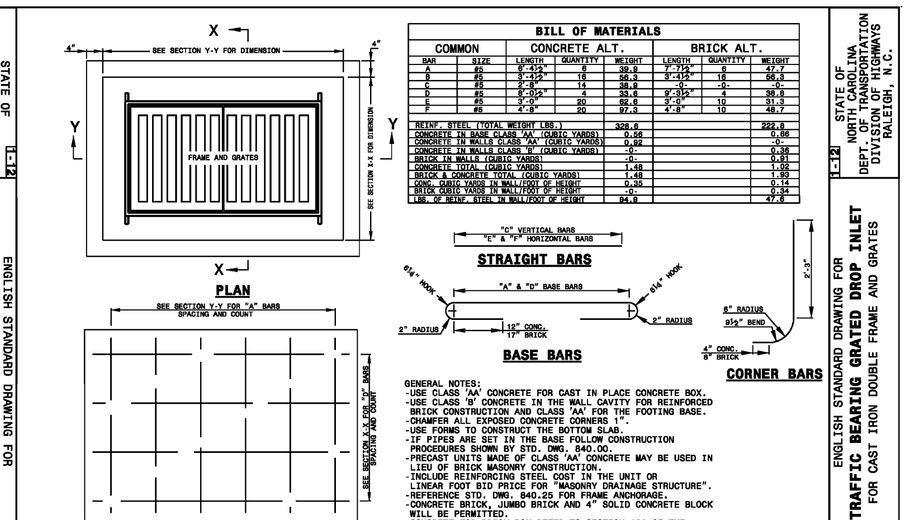
SEE STD. DWG. 848.05 FOR WHEELCHAIR RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



SHEET 1 OF 1 — 848.01

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING GRATED DROP INLET FOR CAST IRON DOUBLE FRAME AND GRATES



BILL OF MATERIALS

COMMON				CONCRETE ALT.		BRICK ALT.	
BAR	SIZE	LENGTH	QUANTITY	WEIGHT	LENGTH	QUANTITY	WEIGHT
A	#5	2'-10"	7	18.5	2'-10"	7	18.5
B	#5	2'-10"	14	36.9	2'-10"	14	36.9
C	#5	2'-10"	7	18.5	2'-10"	7	18.5
D	#5	2'-10"	4	10.5	2'-10"	4	10.5
E	#5	4'-9"	20	62.6	4'-9"	10	31.3
F	#5	4'-9"	20	62.6	4'-9"	10	31.3
G	#5	4'-9"	20	62.6	4'-9"	10	31.3
H	#5	4'-9"	20	62.6	4'-9"	10	31.3
TOTAL BITEM (TOTAL WEIGHT LBS.)				326.5			222.9
CONCRETE IN BOX (CUBIC YARDS)				0.56			0.56
CONCRETE IN WALLS CLASS "AA" (CUBIC YARDS)				0.92			0.0
CONCRETE IN WALLS CLASS "B" (CUBIC YARDS)				0.0			0.36
BRICK IN WALLS (CUBIC YARDS)				0.0			0.61
CONCRETE TOTAL (CUBIC YARDS)				1.48			1.03
BRICK & CONCRETE TOTAL (CUBIC YARDS)				1.48			1.03
BRICK VOID VOLUME IN WALLS(CU. FT.)				0.38			0.14
BRICK VOID VOLUME IN WALLS(PERCENT)				0.0			0.14
LBS. OF BRICK BITEM IN WALL(POUNDS OF BRICK)				84.9			47.6

GENERAL NOTES:
-USE CLASS 'AA' CONCRETE FOR CAST IN PLACE CONCRETE BOX.
-USE CLASS 'B' CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS 'AA' FOR THE FOOTING BASE.
-CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
-PRECAST UNITS MADE OF CLASS "AA" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.
-INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
-CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.
-CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.
-PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.06.
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

SHEET 3 OF 2 — 840.35

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

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4', 5' AND 6' DIAMETER 12" THRU 48" PIPE

GENERAL NOTES

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

FABRICATE, ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.

ASSEMBLE RISERS ON GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

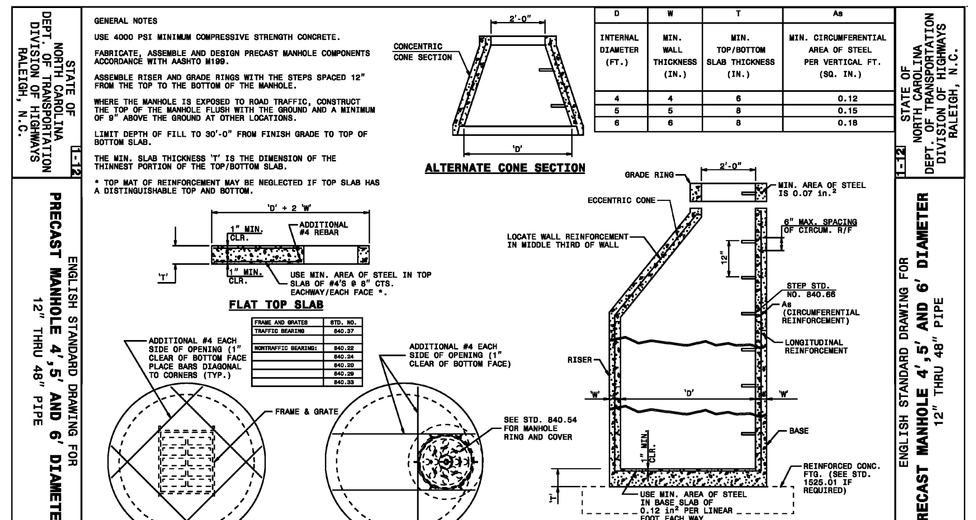
WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE 0.05' ABOVE THE GROUND AND A MINIMUM OF 0.1' ABOVE THE GROUND AT OTHER LOCATIONS.

LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.

THE MIN. SLAB THICKNESS 'T' IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.

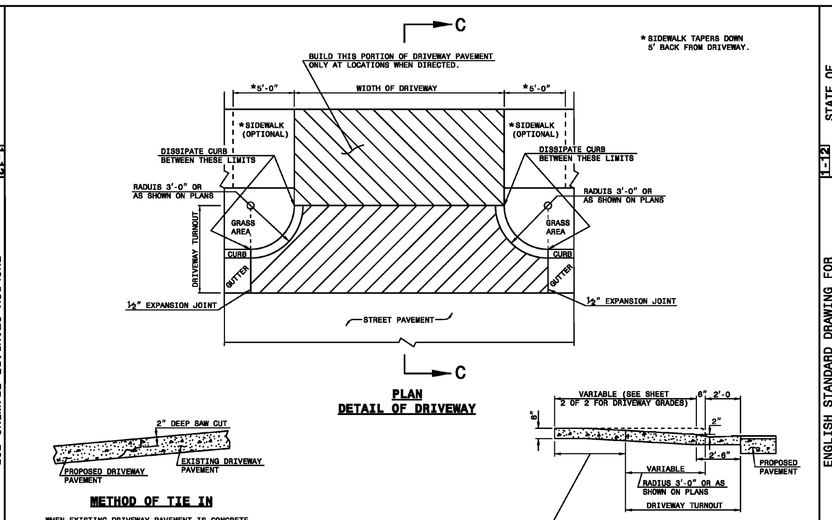
D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
4	4	8	0.12
5	5	8	0.15
6	6	8	0.18



SHEET 1 OF 1 — 840.52

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

ENGLISH STANDARD DRAWING FOR DRIVEWAY TURNOUT RADIUS TYPE

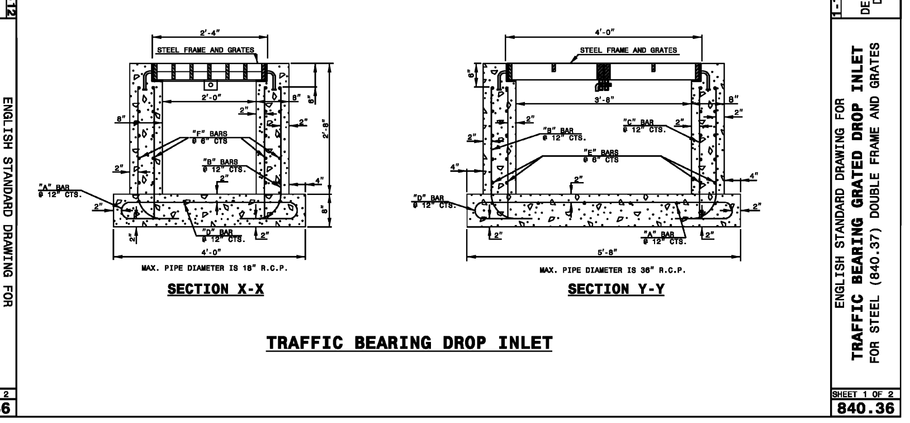


SHEET 1 OF 2 — 848.02

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING GRATED DROP INLET FOR STEEL (840.37) DOUBLE FRAME AND GRATES

NOTES:
-HORIZONTAL AND VERTICAL DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGN REQUIRE.
-MAXIMUM HEIGHT FOR THIS STRUCTURE IS 14'-0".
-MAKE ALL ADJUSTMENTS AS DIRECTED BY THE ENGINEER.
-ANCHOR STEEL FRAME AND GRATES IN ACCORDANCE WITH DETAILS SHOWN.
-NO BRICK RISERS ARE PERMITTED ON ANY PART OF THIS DRAINAGE STRUCTURE.

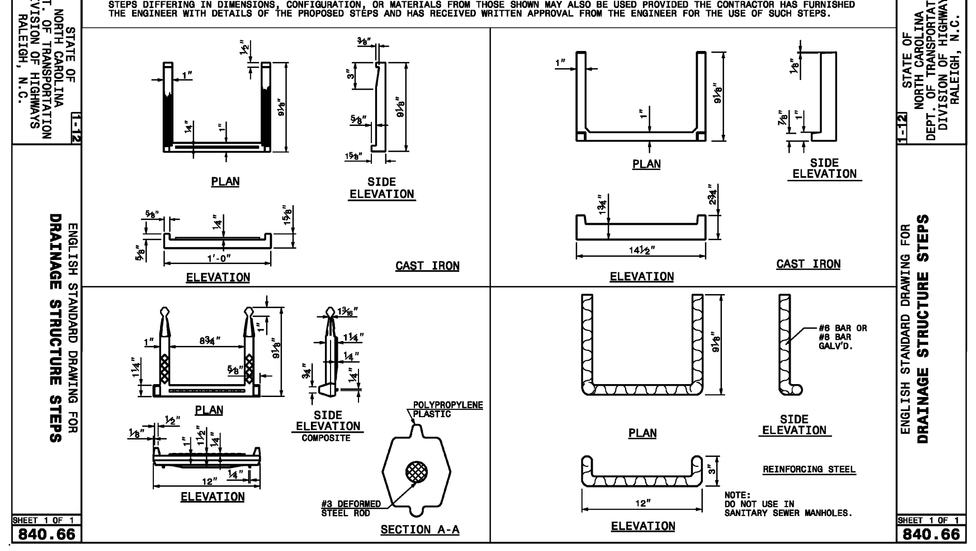


SHEET 1 OF 2 — 840.36

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

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

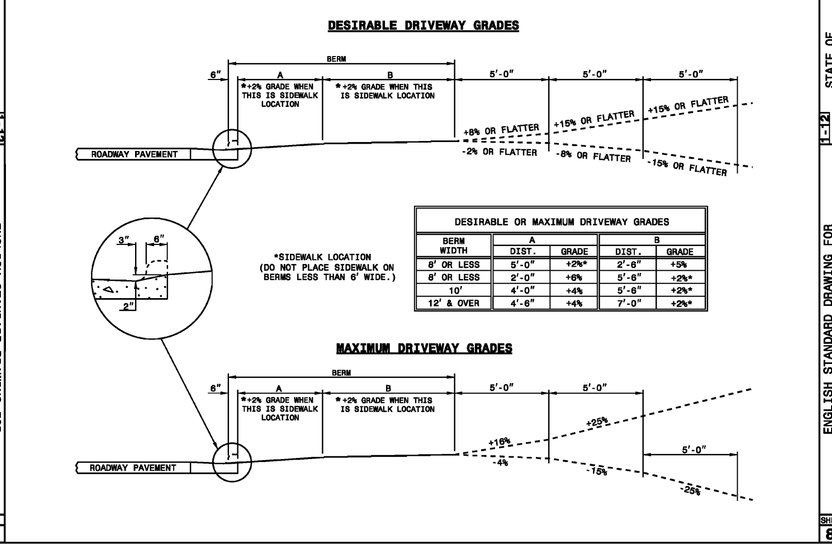
NOTES:
INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.



SHEET 1 OF 1 — 840.66

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

ENGLISH STANDARD DRAWING FOR DRIVEWAY TURNOUT DRIVEWAY GRADES



DESIRABLE OR MAXIMUM DRIVEWAY GRADES

BERM WIDTH	A DIST.	A GRADE	B DIST.	B GRADE
8' OR LESS	5'-0"	+2%*	2'-8"	+5%
8' OR LESS	2'-0"	+8%	5'-8"	+2%*
10'	4'-0"	+4%	5'-8"	+2%*
12' & OVER	4'-8"	+4%	7'-0"	+2%*

SHEET 2 OF 2 — 848.02

REV.NO.	DESCRIPTIONS	DATE
F	PRELIMINARY PLAT; NCDENR-DWQ; NCDOT DISTRICT AND HYDRAULICS; AND PENDER COUNTY UTILITIES RESUBMITTAL.	08/19/15
E	REVISED PUBLIC SANITARY SEWER PER PLURIS HAMPSTEAD, LLC REVIEW COMMENTS.	06/30/15
D	RESPONSE SUBMITTAL BASED ON APRIL 8, 2015 PRELIMINARY PLAT TRC MEETING	05/15/15
C	ISSUED FOR PERMITTING	01/21/15
B	PRELIMINARY PLAT PENDER CO. REVIEW	10/10/14
A	75% CONSTRUCTION DOCUMENTS TO TLC FOR REVIEW	08/11/14

REVISIONS

FINAL PLANS - DO NOT USE FOR CONSTRUCTION

SEAL

August 24, 2015

NORTH CAROLINA PROFESSIONAL SEAL 22574 ENGINEER RICHARD M. COLLIER

Richard M. Collier

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(910) 799-8755

BLAKE FARM — EST. 1946

BLAKE FARM SF-1 SUBDIVISION

TOPSAIL TOWNSHIP
PENDER COUNTY NORTH CAROLINA

ROADWAY DETAILS

DATE:	15 MAY 2015
MCE PROJ. #	6525-0001
DRAWN	CDN
DESIGNED	RAC
CHECKED	RAM
PROJ. MGR.	RAM

SCALE — HORIZONTAL: N/A — VERTICAL: N/A

M&C FILE NUMBER: CT506

DRAWING NUMBER: 76

STATUS: FINAL PLANS NOT FOR CONSTRUCTION — REVISION: F

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