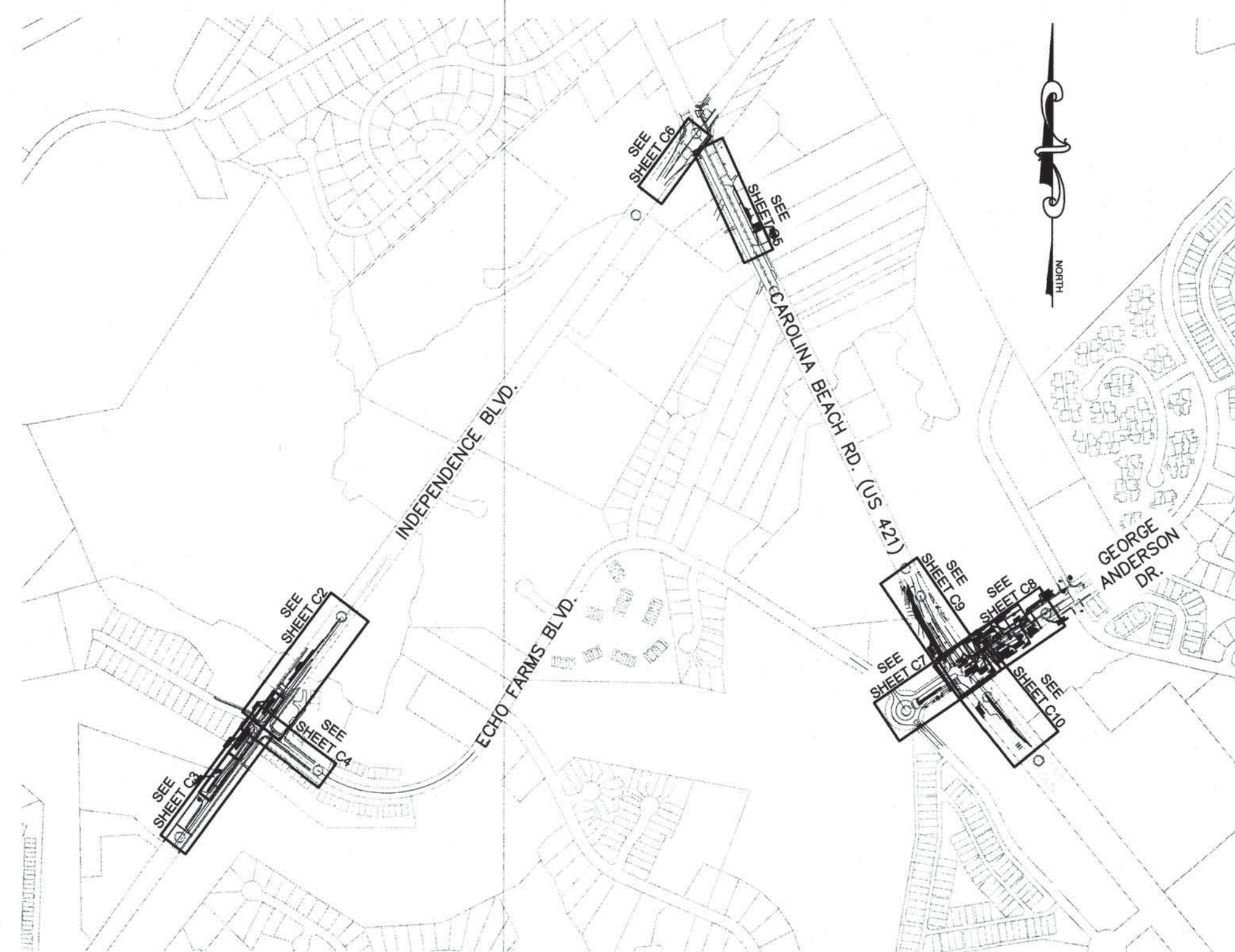


WOODLANDS ROAD IMPROVEMENTS FOR INDEPENDENCE BLVD., ECHO FARMS RD., CAROLINA BEACH RD. (US 421), AND GEORGE ANDERSON DR. WILMINGTON, NC

TYPE OF WORK: ROAD WIDENING (PAVING, DRAINAGE, AND
PAVEMENT MARKINGS)



INDEX MAP
SCALE 1"=500'

LIST OF APPLICABLE NCDOT STANDARD DRAWINGS:

- (NCDOT STANDARDS ARE AVAILABLE ON THE NCDOT WEBSITE)
- 200.02 METHOD OF CLEARING - METHOD II
 - 225.02 GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
 - 300.01 METHOD OF PIPE INSTALLATION 'A'
 - 654.01 PAVEMENT REPAIRS
 - 840.00 CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
 - 840.01 BRICK CATCH BASIN - 12" THRU 54" PIPE
 - 840.02 CONCRETE CATCH BASIN - 12" THRU 54" PIPE
 - 840.03 FRAME, GRATES AND HOOD - FOR USE ON STANDARD CATCH BASIN
 - 840.04 CONCRETE CATCH BASIN WITH SINGLE AND MULTIPLE PIPES - 12" THRU 48" PIPE
 - 840.05 BRICK CATCH BASIN WITH SINGLE AND MULTIPLE PIPES - 12" THRU 48" PIPE
 - 840.34 BRICK JUNCTION BOX - 12" THRU 66" PIPE
 - 840.45 PRECAST DRAINAGE STRUCTURE
 - 840.46 TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
 - 840.54 MANHOLE FRAME AND COVER
 - 840.66 DRAINAGE STRUCTURE STEPS
 - 840.71 CONCRETE AND BRICK PIPE PLUG
 - 840.72 PIPE COLLAR
 - 846.01 CONCRETE CURB, GUTTER AND CURB & GUTTER
 - 848.01 CONCRETE SIDEWALK
 - 848.02 DRIVEWAY TURNOUT - RADIUS TYPE
 - 848.04 STREET TURNOUT
 - 848.05 WHEELCHAIR RAMP - CURB CUT
 - 848.06 WHEELCHAIR RAMP - RETROFITTING OF EXISTING CURB
 - 852.06 METHOD FOR PLACEMENT OF DROP INLETS IN CONCRETE ISLANDS
 - 904.50 MOUNTING OF TYPE 'D', 'E' AND 'F' SIGNS ON 'U' CHANNEL POSTS
 - 1205.01 PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
 - 1205.02 PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
 - 1205.04 PAVEMENT MARKINGS - INTERSECTIONS
 - 1205.05 PAVEMENT MARKINGS - TURN LANES
 - 1205.06 PAVEMENT MARKINGS - THRU LANE DROPS
 - 1205.07 PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
 - 1205.08 PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
 - 1205.09 PAVEMENT MARKINGS - PAINTED ISLANDS
 - 1250.01 PAVEMENT MARKER SPACING
 - 1251.01 RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
 - 1253.01 SNOWPLOWABLE RAISED PAVEMENT MARKERS
 - 1605.01 TEMPORARY SILT FENCE

LIST OF APPLICABLE CITY OF WILMINGTON STANDARD DRAWINGS:

- (CITY OF WILMINGTON STANDARD DETAILS ARE AVAILABLE ON THE CITY WEBSITE)
- SD 1-04 TYPICAL ROAD REBUILD
 - SD 1-05 PAVEMENT REPAIRS
 - SD 1-07 PIPE TRENCH
 - SD 3-03 RESIDENTIAL DRIVEWAY
 - SD 3-09 INTERSECTION LAYOUT
 - SD 3-10 SIDEWALK
 - SD 3-11 CURBING
 - SD 8-18 DRIVEWAY RIGHT TURN LANE WITH CURB
 - SD 8-20 LEFT TURN LANE WIDENING
 - SD 8-22 LEFT TURN LANES
 - SD 11-01 PAVEMENT MARKINGS LINE TYPES
 - SD 11-02 PAVEMENT MARKING OFFSETS
 - SD 11-03 GUIDELINES FOR PAVEMENT MARKINGS AND SYMBOLS
 - SD 11-04 PAVEMENT MARKINGS NON-SIGNAL INTERSECTIONS
 - SD 11-06 PAVEMENT MARKINGS SIGNALLED INTERSECTIONS
 - SD 11-09 PAVEMENT MARKINGS TURN LANES
 - SD 11-10 PAVEMENT MARKINGS TURN LANES
 - SD 15-03 STREET & TRAFFIC SIGNS

NOTES

THE CITY ENGINEERING DEPARTMENT PREFERS THE USE OF NCDOT ROADWAY STAND DRAWINGS FOR PUBLIC DRAINAGE INFRASTRUCTURE WITHIN CITY STREETS.

- SD 1-17 FLARED END SECTION
- SD 2-01 CATCH BASIN
- SD 2-15 PIPE OUTLET PROTECTION
- SD 2-24 PRECAST DRAINAGE BOX SOLID
- SD 2-24a PRECAST DRAINAGE STRUCTURE SOLID BOX GENERAL NOTES

**CALL 811 (3) WORKING
DAYS BEFORE YOU DIG.**

SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2019 NORRIS & TUNSTALL			

COVER SHEET
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CN4000
CRANFORD, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8289
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASHLITTLE RIVER RD., NW
SUITE 11
WILMINGTON, NC 28401
PHONE (910) 343-5653

UTILITY CONTACTS:

CITY OF WILMINGTON
PUBLIC SERVICE ENGINEERING DIVISION
CITY OF WILMINGTON
2012 OPERATIONS CENTER DR.
WILMINGTON, NC 28412
(910) 341-4693
CONTACT: DENISE FREUND, PE
CONSTRUCTION PROJECT MANAGER
DENISE.FREUND@WILMINGTONNC.GOV

UTILITIES (WATER & SEWER)
CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DR.
WILMINGTON, NC 28403
(910) 332-6620
CONTACT: MATT TRIBETT, PE
ENGINEERING MANAGER

ELECTRIC
DUKE ENERGY
5700 HOLLY SHELTER RD.
CASTLE HAYNE, NC 28429
(919) 602-4304
CONTACT: KEVIN LEATHERWOOD
KEVIN.LEATHERWOOD@DUKE-ENERGY.COM

NATURAL GAS
PIEDMONT NATURAL GAS
P.O. BOX 4489
WILMINGTON, NC 28406
(910) 251-2818
CONTACT: CARL PAQUET
COMMERCIAL ENERGY SPECIALIST
CARL.PAQUET@PIEDMONTNG.COM

COMMUNICATION
AT&T
102 N. 4TH STREET
WILMINGTON, NC 28401
(910) 341-0741
CONTACT: STEVE DAYVAULT
SD8094@ATT.NET

CABLE TV
SPECTRUM CABLE
(910) 332-7800

NCDOT
DISTRICT OFFICE
300 DIVISION DR.
WILMINGTON, NC 28401
(910) 251-2655
CONTACT: BEN HUGHES, PE
DISTRICT ENGINEER
BHUGHES@NCDOT.GOV

SURVEYOR:

SURVEY PROVIDED BY:
BATEMAN CIVIL SURVEY CO.
THE MILFORD BUILDING
406 NORTH THIRD STREET
WILMINGTON, NC 28401
(910) 772-9113

SITE DATA:

TOTAL DISTURBED AREA = 1.79 AC / 78,113 SF
TOTAL NEW IMPERVIOUS AREA = 18,403 SF

SHEET INDEX:

- C0 - COVER SHEET
- C1 - TYPICAL CROSS SECTIONS
- C2 - INDEPENDENCE BLVD. NORTH OF ECHO FARMS BLVD.
- C3 - INDEPENDENCE BLVD. SOUTH OF ECHO FARMS BLVD.
- C4 - ECHO FARMS BLVD. @ INDEPENDENCE BLVD.
- C5 - CAROLINA BEACH ROAD @ INDEPENDENCE BLVD.
- C6 - INDEPENDENCE BLVD. @ CAROLINA BEACH RD.
- C7 - ECHO FARMS BLVD. @ CAROLINA BEACH RD.
- C8 - GEORGE ANDERSON DR. @ CAROLINA BEACH RD.
- C9 - CAROLINA BEACH RD. NORTH OF ECHO FARMS BLVD.
- C10 - CAROLINA BEACH RD. SOUTH OF ECHO FARMS BLVD.
- C11 - DETAILS

Approved Construction Plan	
Name	Date
Planning: <i>[Signature]</i>	1/22/20
Traffic: <i>[Signature]</i>	1-22-20
Fire: <i>[Signature]</i>	1/22/20
Public Services • Engineering Division APPROVED STORMWATER MANAGEMENT PLAN Date: 1/23/20 permit # 2018021242 Signed: <i>[Signature]</i>	

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

18100

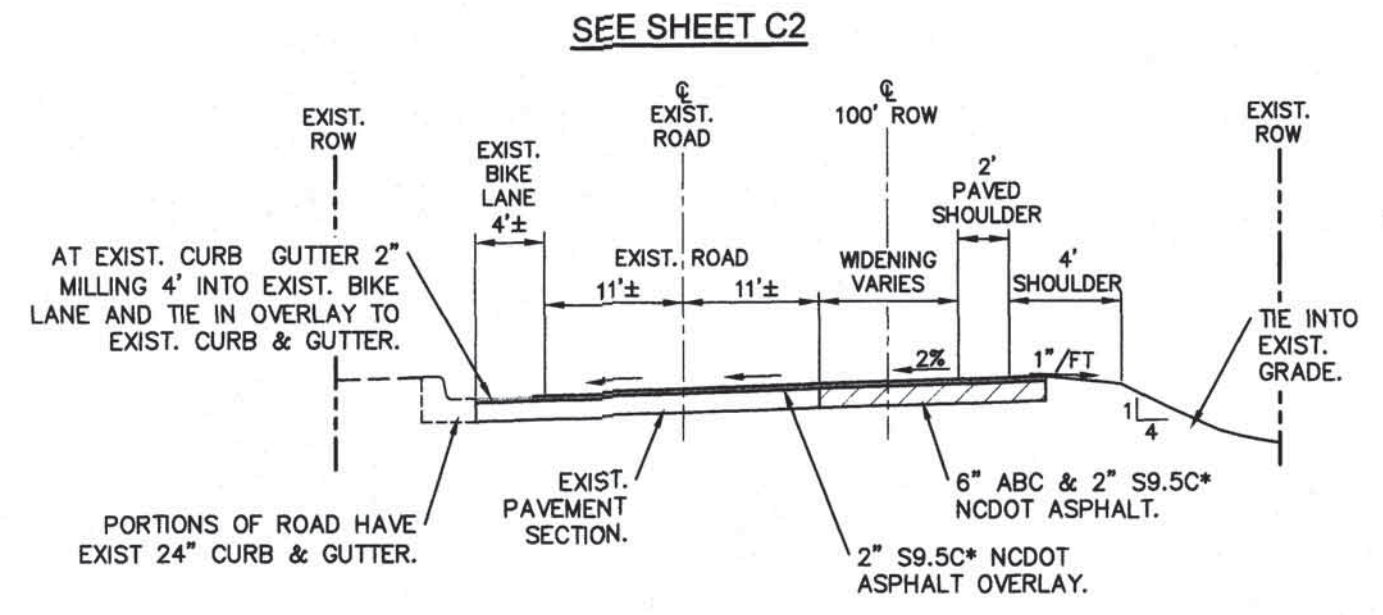
DES. JST
CKD. TJC
DRWN. SLF

DATE: 05/21/19



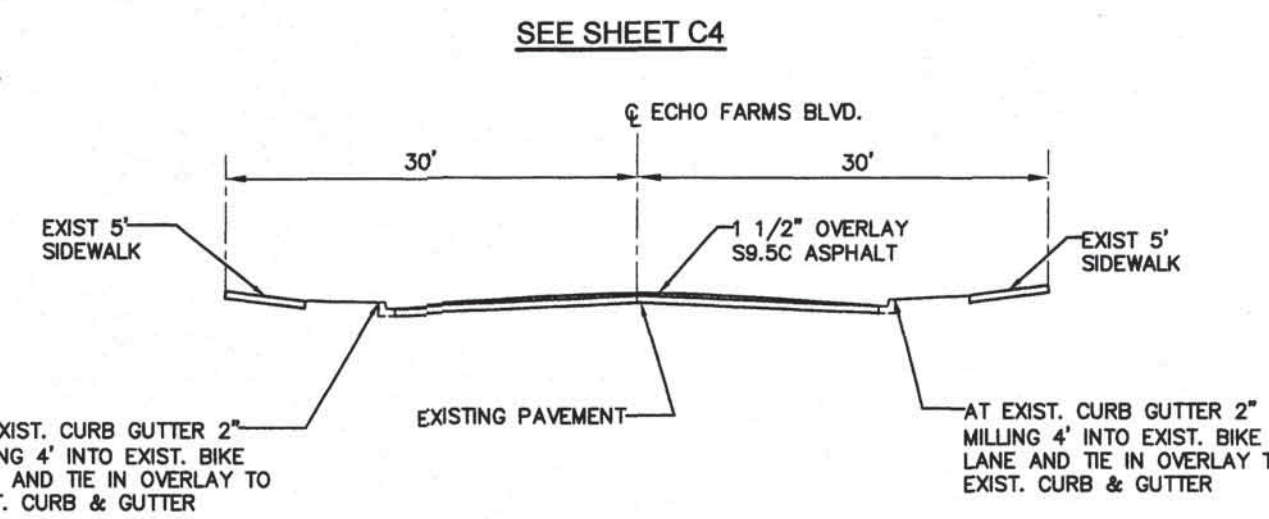
C0

SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
© 2019 NORRIS & TUNSTALL			

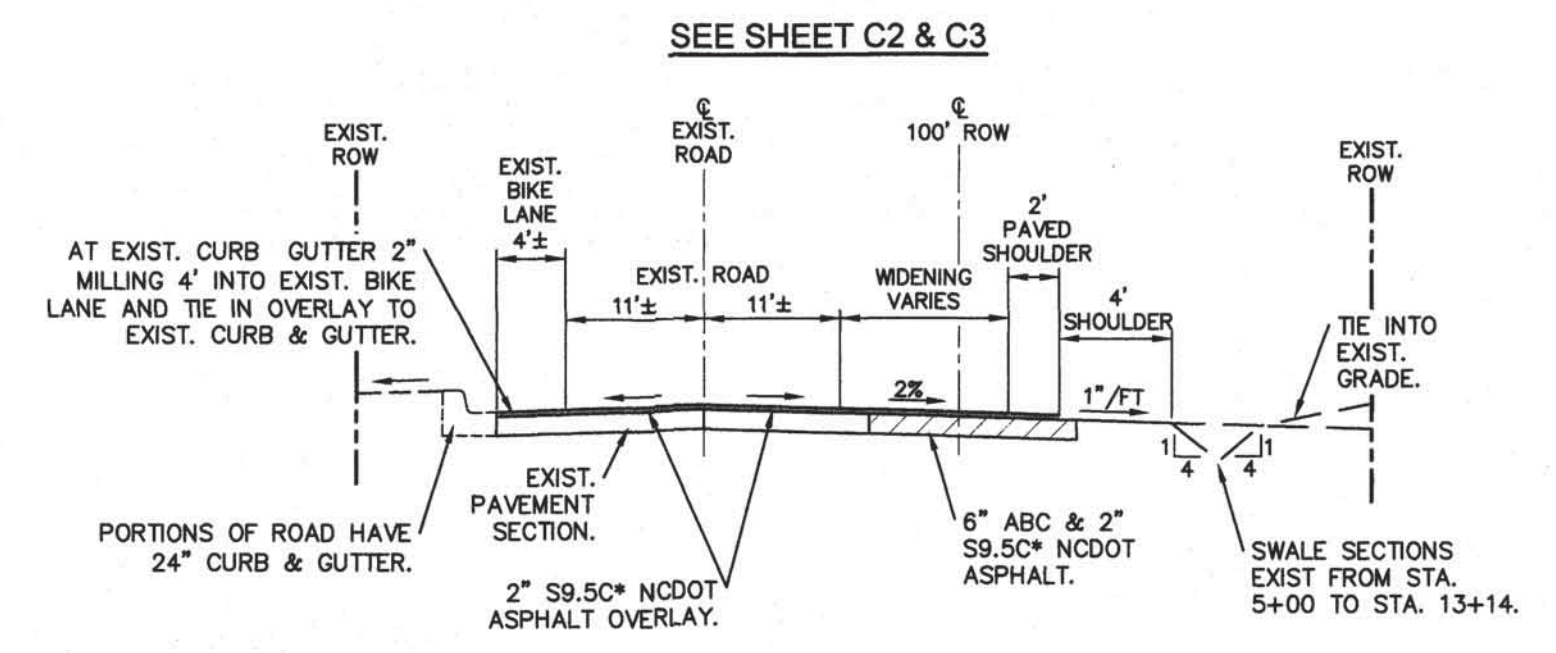


SOUTH BOUND INDEPENDENCE BLVD.
TYPICAL CROSS SECTION
STA. 0+08 TO 3+50±
N.T.S.

*NOTE: IF S9.5C ASPHALT MIX IS NOT AVAILABLE THEN C9.5B ASPHALT MIX IS ACCEPTABLE (TYP.)

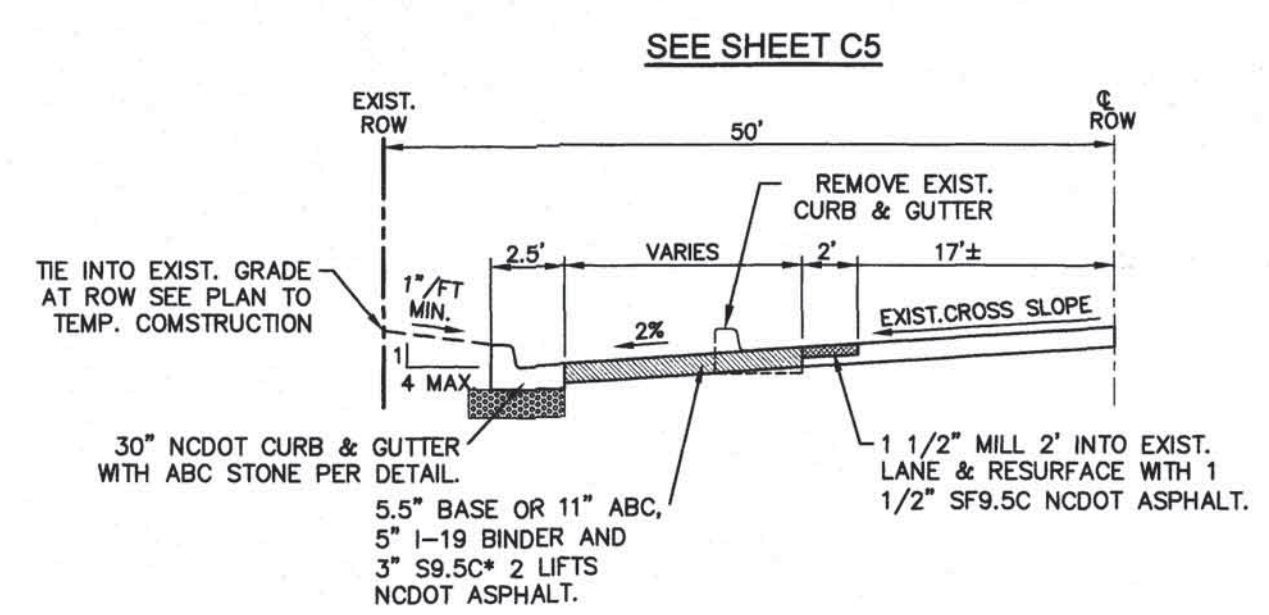


ECHO FARM BLVD @ INDEPENDENCE BLVD.
TYPICAL CROSS SECTION

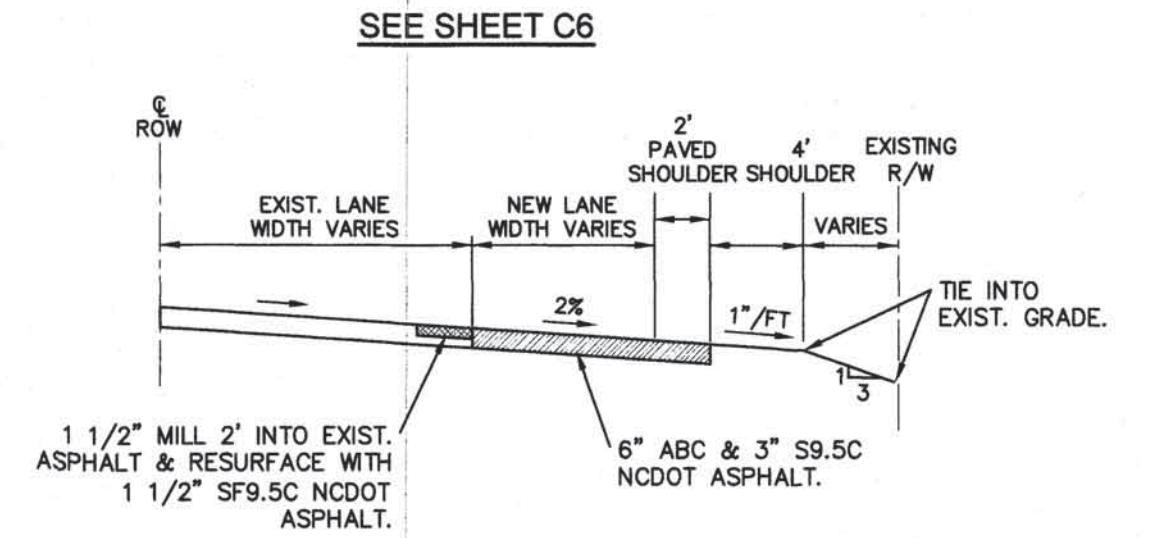


SOUTH BOUND INDEPENDENCE BLVD.
TYPICAL CROSS SECTION
STA. 3+50± TO 13+45
N.T.S.

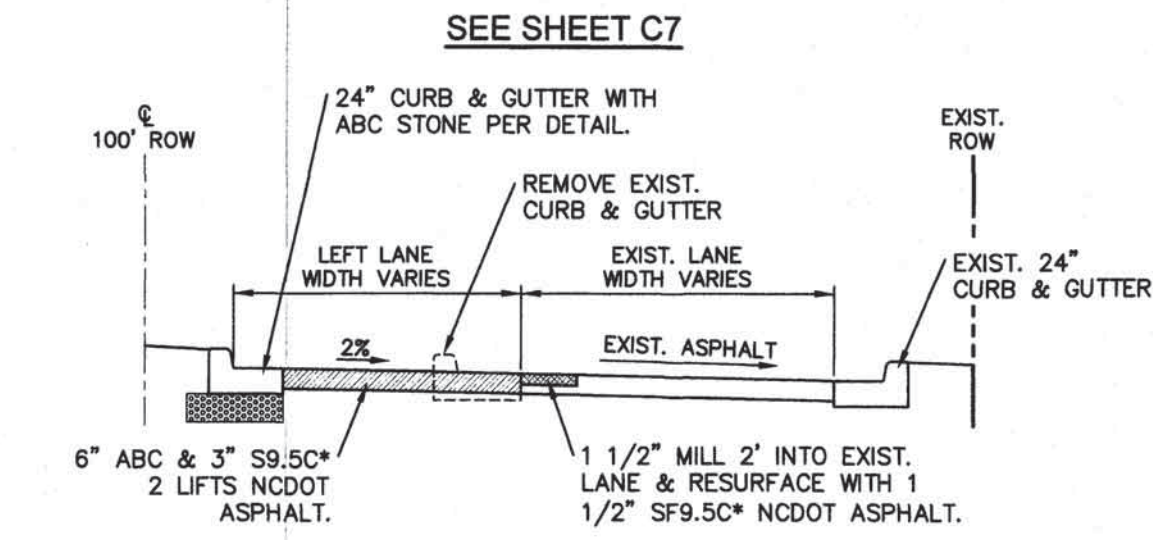
*NOTE: IF S9.5C ASPHALT MIX IS NOT AVAILABLE THEN C9.5B ASPHALT MIX IS ACCEPTABLE (TYP.)



NORTH BOUND CAROLINA BEACH RD. @ INDEPENDENCE BLVD.
TYPICAL CROSS SECTION
STA. 3+35 TO 4+45
N.T.S.

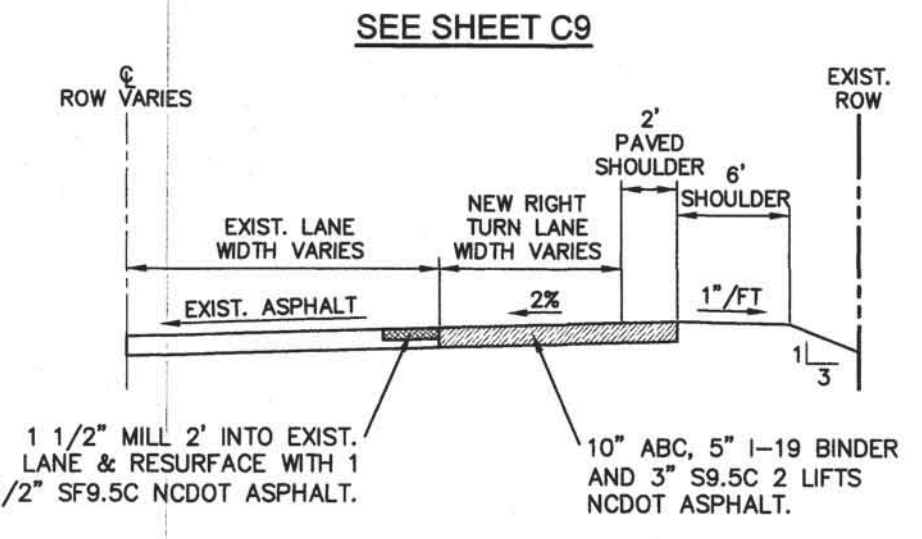


NORTH BOUND INDEPENDENCE BLVD. @ CAROLINA BEACH RD.
TYPICAL CROSS SECTION
STA. 1+53± TO 2+14±
N.T.S.

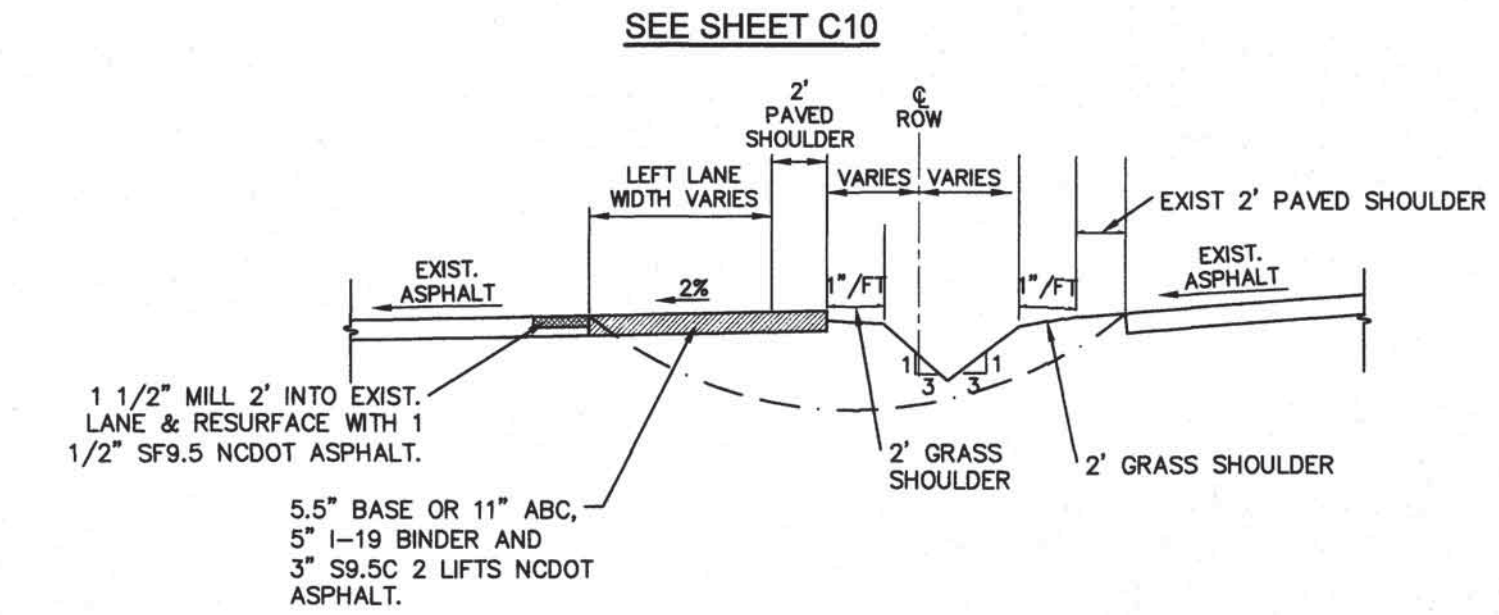


EAST BOUND ECHO FARMS RD. @ CAROLINA BEACH RD.
TYPICAL CROSS SECTION
STA. 1+59 TO STA. 2+84±
N.T.S.

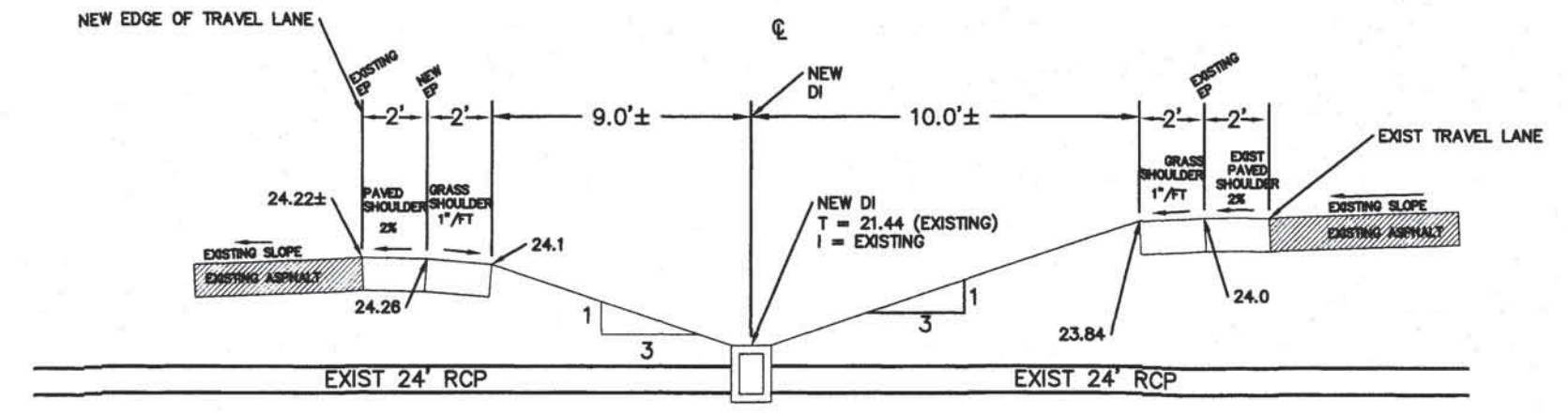
*NOTE: IF S9.5C ASPHALT MIX IS NOT AVAILABLE THEN C9.5B ASPHALT MIX IS ACCEPTABLE (TYP.)



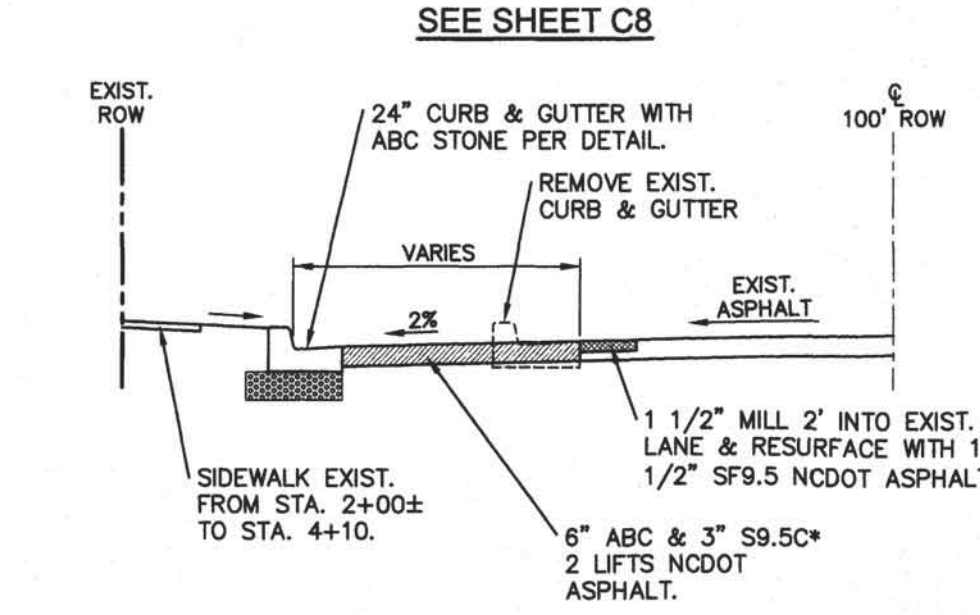
SOUTH BOUND CAROLINA BEACH RD.
TYPICAL CROSS SECTION
STA. 1+00 TO 5+00±
N.T.S.



NORTH BOUND CAROLINA BEACH RD.
TYPICAL CROSS SECTION
STA. 7+79± TO 10+95
N.T.S.

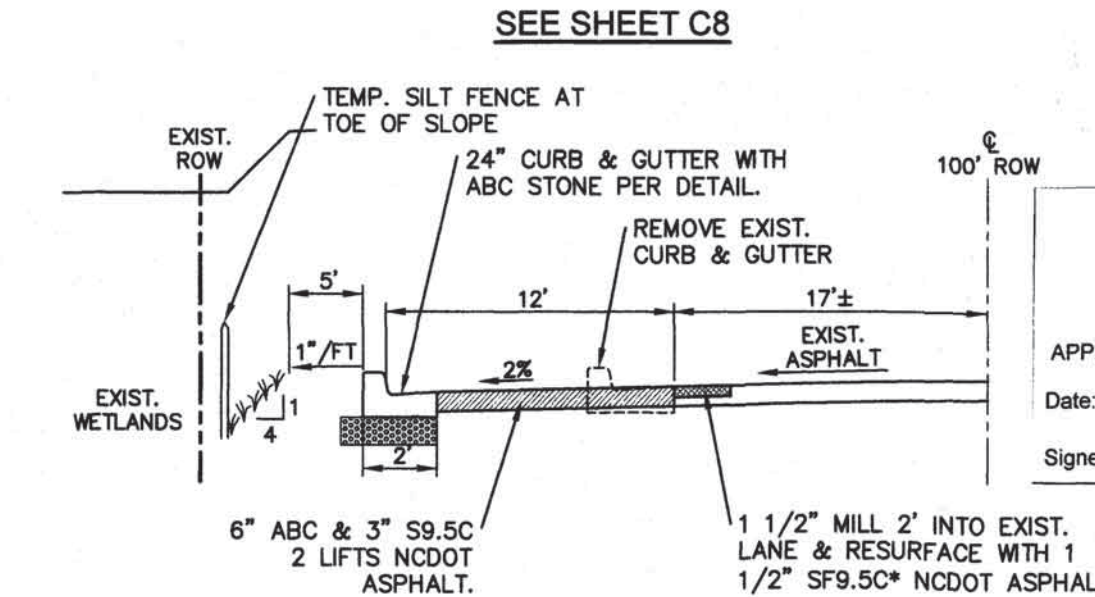


NORTH BOUND CAROLINA BEACH RD.
STA. 8+78±
N.T.S.



WEST BOUND GEORGE ANDERSON DR.
TYPICAL CROSS SECTION
STA. 1+80 TO 4+10
N.T.S.

*NOTE: IF S9.5C ASPHALT MIX IS NOT AVAILABLE THEN C9.5B ASPHALT MIX IS ACCEPTABLE (TYP.)



WEST BOUND GEORGE ANDERSON DR.
TYPICAL CROSS SECTION
STA. 0+85 TO 1+80
N.T.S.

*NOTE: IF S9.5C ASPHALT MIX IS NOT AVAILABLE THEN C9.5B ASPH. MIX IS ACCEPTABLE (TYP.)

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

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 1/23/20
Permit # 2018027
Signed: *[Signature]*

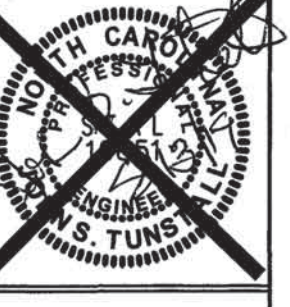
Approved Construction Plan
Name: *[Signature]* Date: 1/22/20
Planning: *[Signature]*
Traffic: *[Signature]*
Fire: *[Signature]*

TYPICAL CROSS SECTIONS
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CH4000
CRANBURY, NJ 08512
ATTN: MATTHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 386-8289
BESTAPLETON@MATRIXCOMPANIES.COM

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

18100
DES. JST
CHK. TJC
DRWN. SLF
DATE: 05/21/19



C1

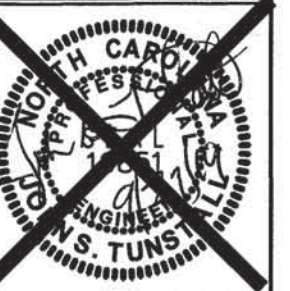
SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2019 NORRIS & TUNSTALL			

TYPICAL CROSS SECTIONS
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

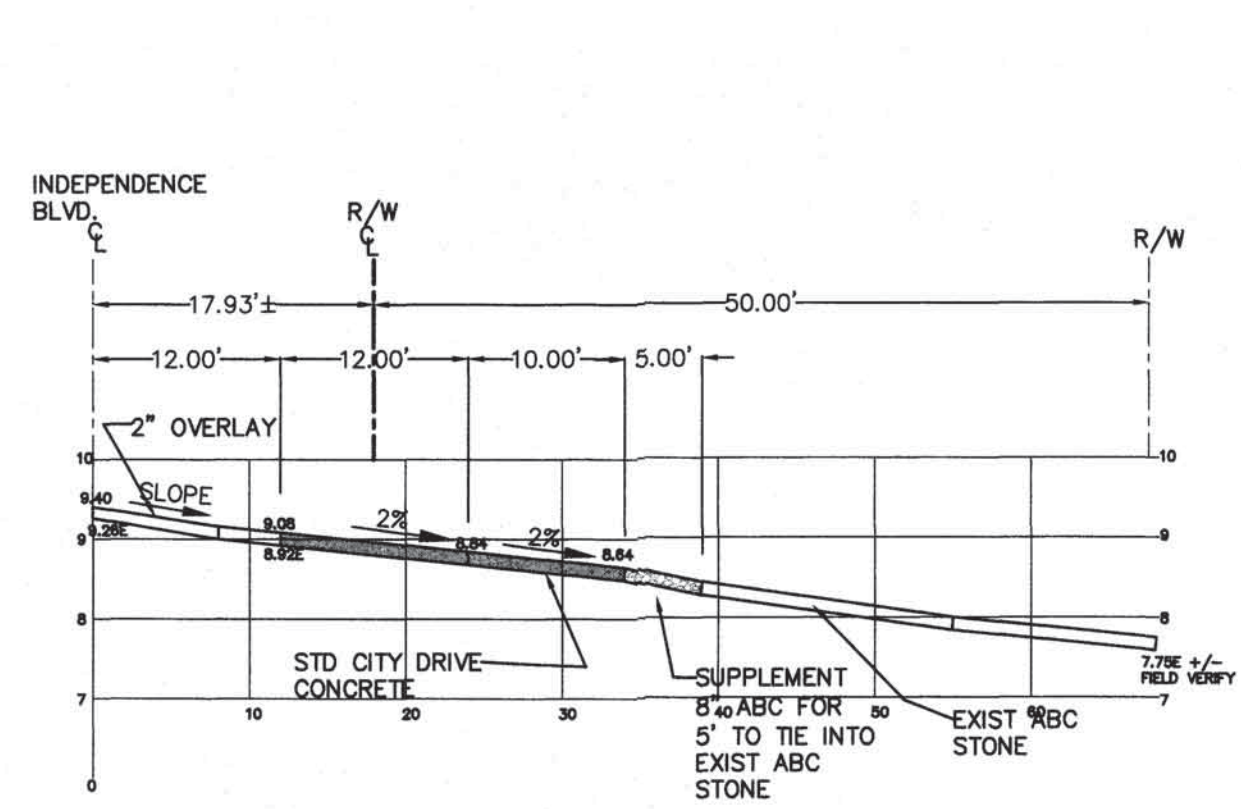
OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSYTH DR., CN4000
CRANBURY, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8289
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1900 EASTWOOD ROAD,
WILMINGTON, NC 28401
PHONE (910) 343-9653
1429 ASH-LITTLE RIVER RD., NW
SH, NC 28620
PHONE (710) 287-5900

18100
DES. JST
CHKD. TJC
DRWN. SLF
DATE: 9/25/19

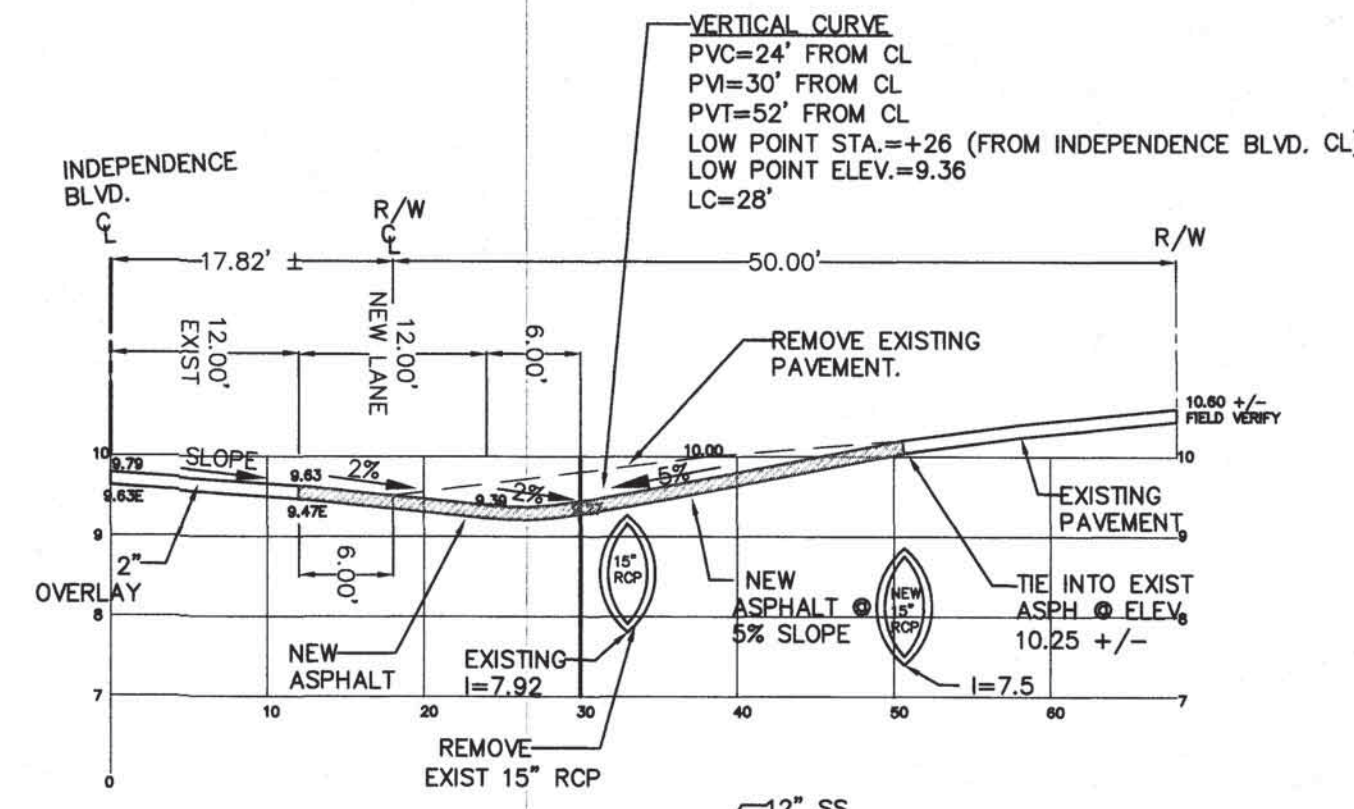


C1.1



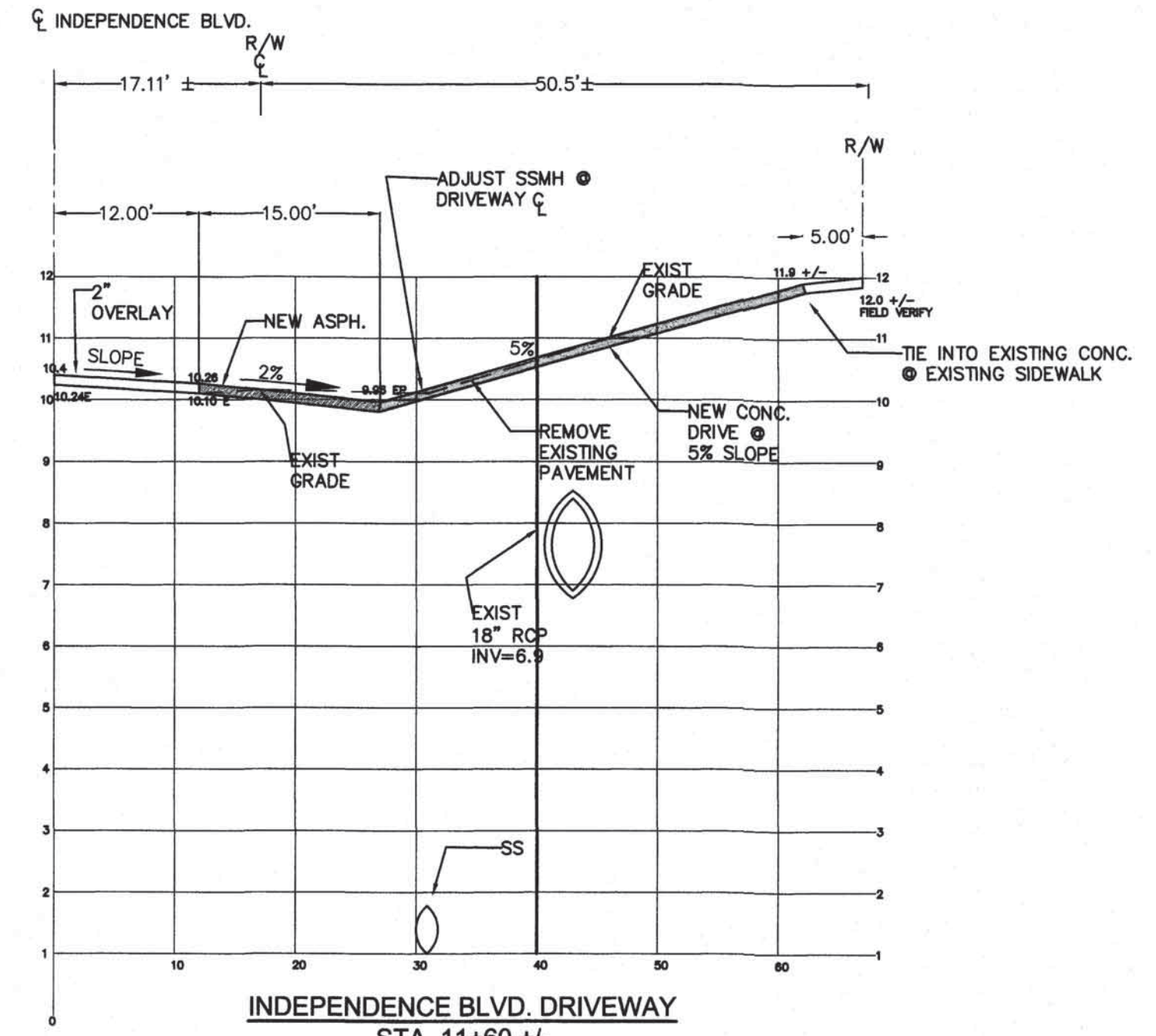
STA 4+70 INDEPENDENCE PUMP STATION 36
DRIVEWAY PROFILE

HORIZ. SCALE 1"=10'
VERT. SCALE 1"=2'



STA 7+00 INDEPENDENCE BLVD.
EAST BOUND ECHO FARMS BLVD.
PROFILE

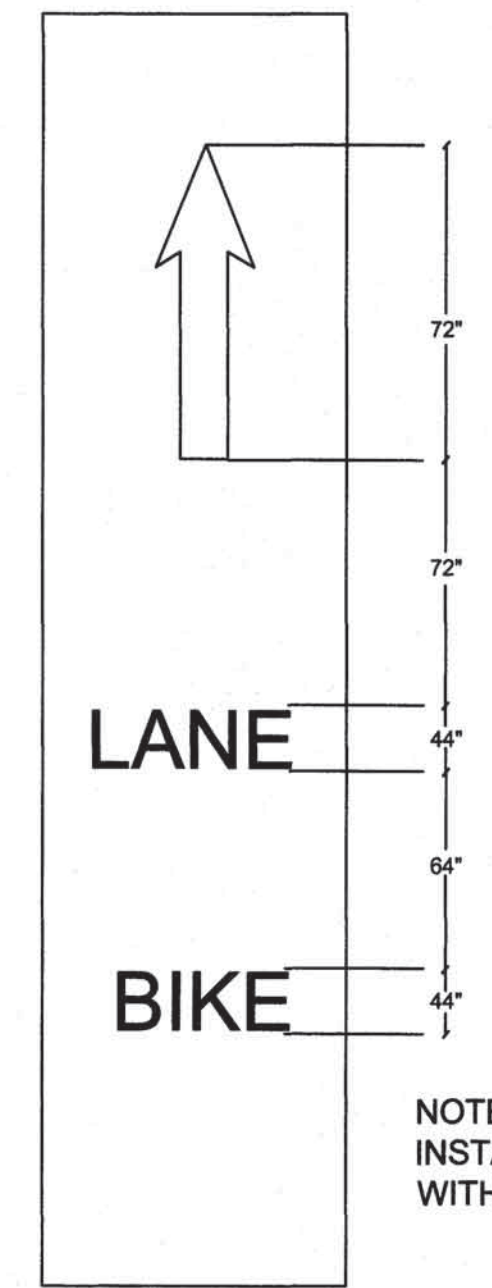
HORIZ. SCALE 1"=10'
VERT. SCALE 1"=2'



INDEPENDENCE BLVD. DRIVEWAY
STA. 11+60 +/-

HORIZ. SCALE 1"=10'
VERT. SCALE 1"=2'

SEE SHEET C2



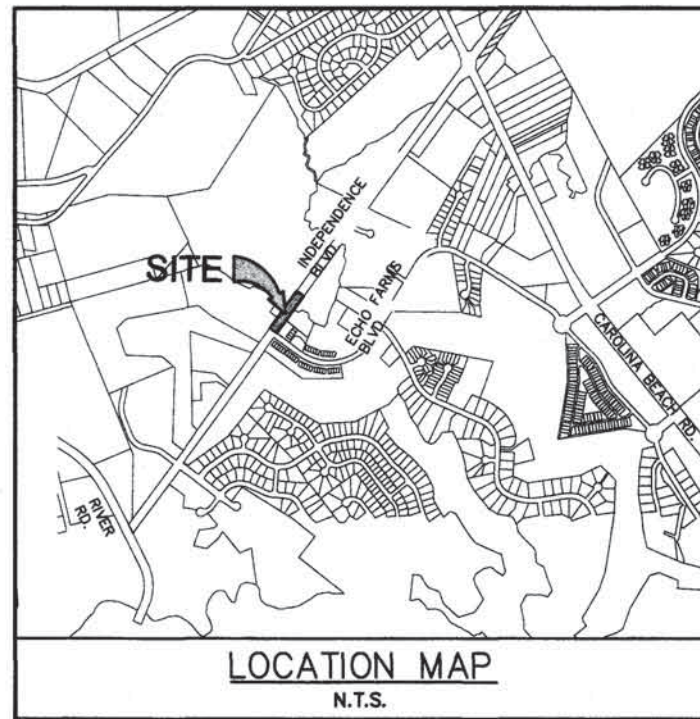
BIKE LANE MARKINGS
FHWA DOT
(NOT DRAWN TO SCALE)

NOTE: BIKE LANE MARKINGS SHALL BE
INSTALLED EVERY 250' CONSISTENT
WITH EXISTING BIKE LANE MARKINGS.

*WHEN THE RIGHT THROUGH LANE IS DROPPED TO BECOME A RIGHT TURN ONLY
LANE, THE BICYCLE LANE MARKINGS SHOULD
STOP AT LEAST 100 FEET BEFORE THE BEGINNING OF THE RIGHT-TURN LANE.
THROUGH BICYCLE LANE MARKINGS SHOULD RESUME TO
THE LEFT OF THE RIGHT TURN ONLY LANE.

Approved Construction Plan		WILMINGTON NORTH CAROLINA	
Planning	Name: [Signature] Date: 1/21/20	Public Services • Engineering Division	APPROVED STORMWATER MANAGEMENT PLAN
Traffic	Name: [Signature] Date: 1-22-20		Date: 1/23/2020 Permit # 20180271 R2
Fire	Name: [Signature] Date: 1/22/20		Signed: [Signature]

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



LEGEND:

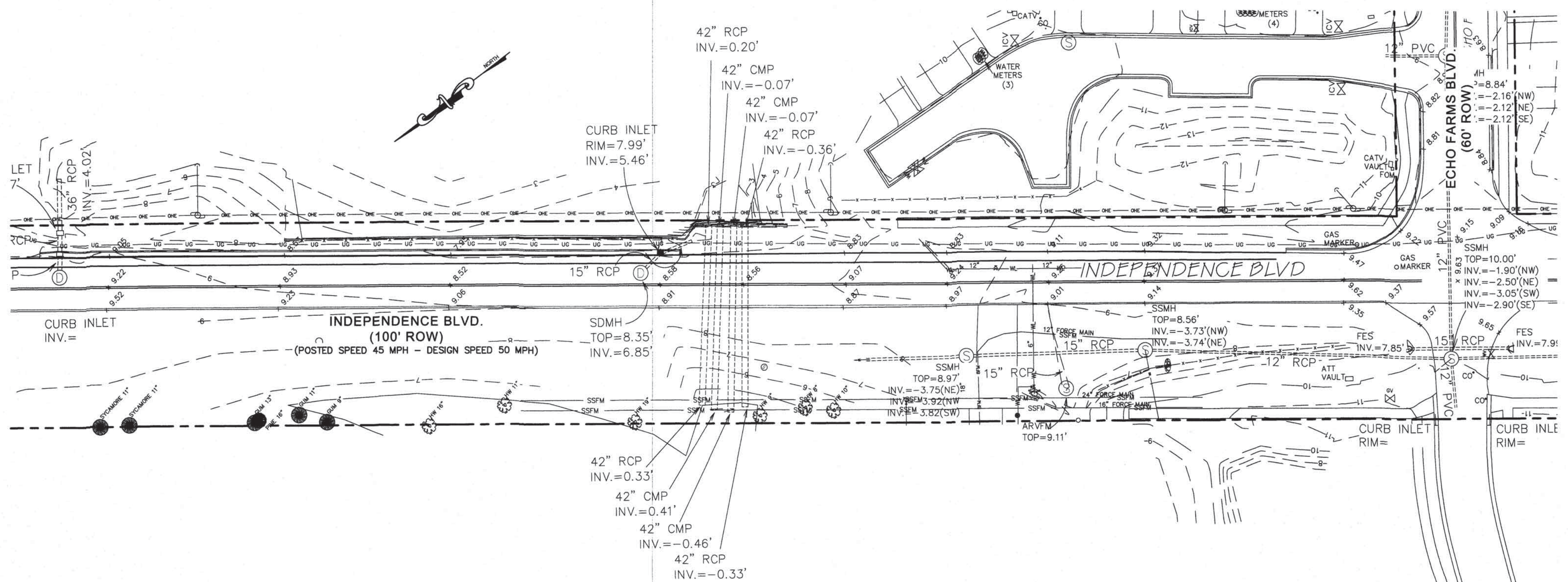
- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- WATER VALVE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOD
- STORM DRAIN PIPE
- MINI SKIPS

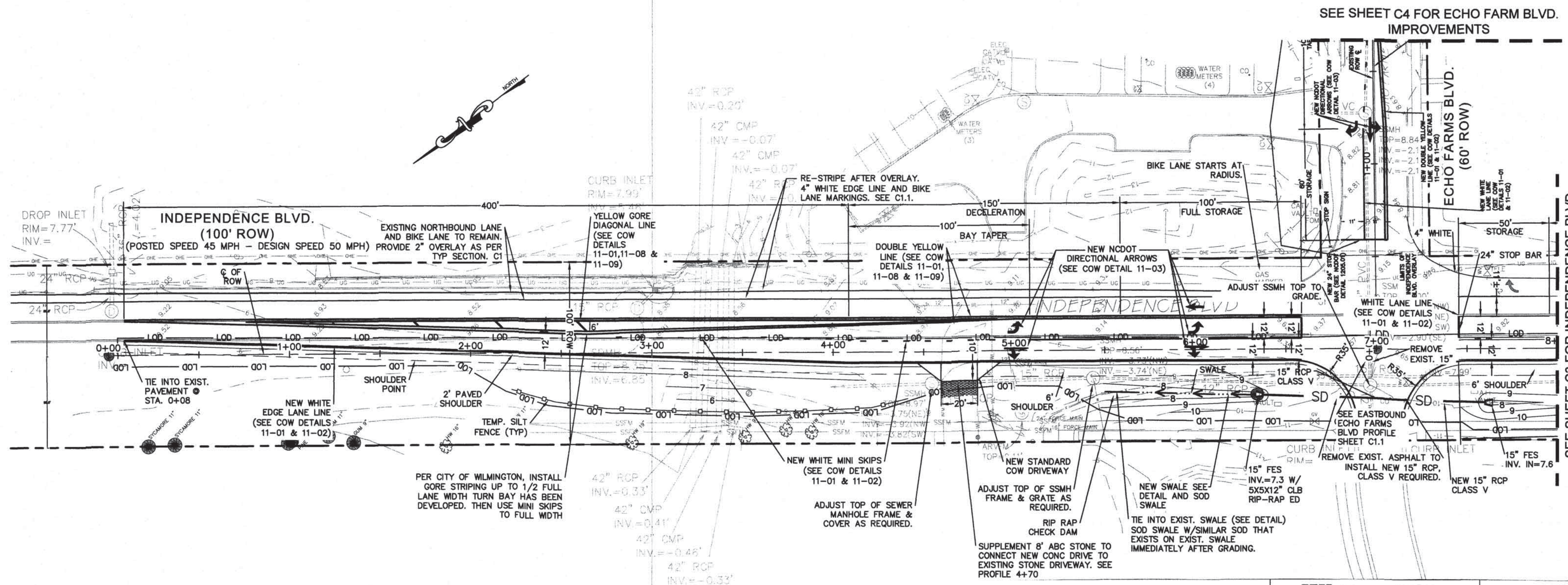
NOTES:

1. INDEPENDENCE BLVD. AND ECHO FARMS BLVD. ARE CITY OF WILMINGTON STREETS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
2. TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
3. PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
5. ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES



EXISTING CONDITIONS - INDEPENDENCE BLVD. NORTH OF ECHO FARMS BLVD.

SCALE: 1"=30'

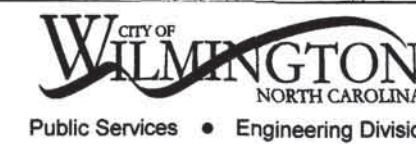


PROPOSED A-SYMMETRICAL LAYOUT - INDEPENDENCE BLVD. NORTH OF ECHO FARMS BLVD

SCALE: 1"=30'

Approved Construction Plan

Name: _____ Date: 1/22/20
 Planning: _____
 Traffic: _____
 Fire: _____



APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 Permit # 20180217R2

Signed: _____

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

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

ECHO FARMS BLVD. & INDEPENDENCE BLVD. WOODLANDS ROAD IMPROVEMENTS WILMINGTON, NC

©2019 NORRIS & TUNSTALL

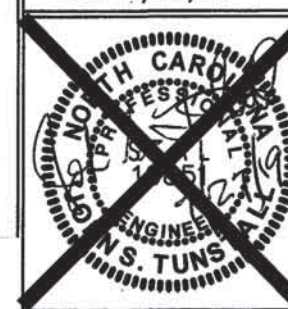
OWNER / DEVELOPER:
 MATRIX DEVELOPMENT GROUP
 1000 W. 10TH ST., SUITE 100
 WILMINGTON, NC 28401
 PHONE: (732) 407-4815
 FAX: (609) 395-8289
 BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.

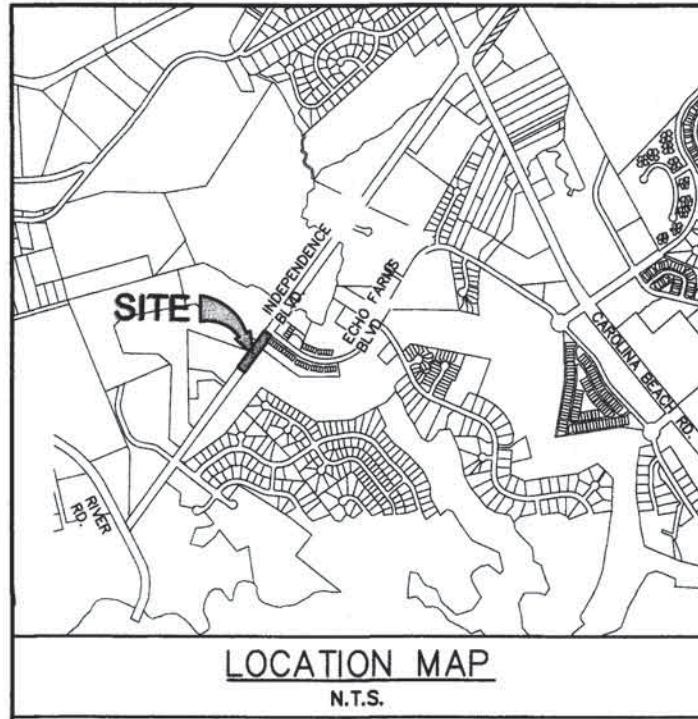
1429 ASH-LITTLE RIVER RD. NW
 ASH, NC 28420
 PHONE (910) 343-9653

18100
 DES. JUST
 CD. TJC
 DRWN. SLF

DATE: 6/25/19



C2



SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2018 NORRIS & TUNSTALL			

LEGEND:

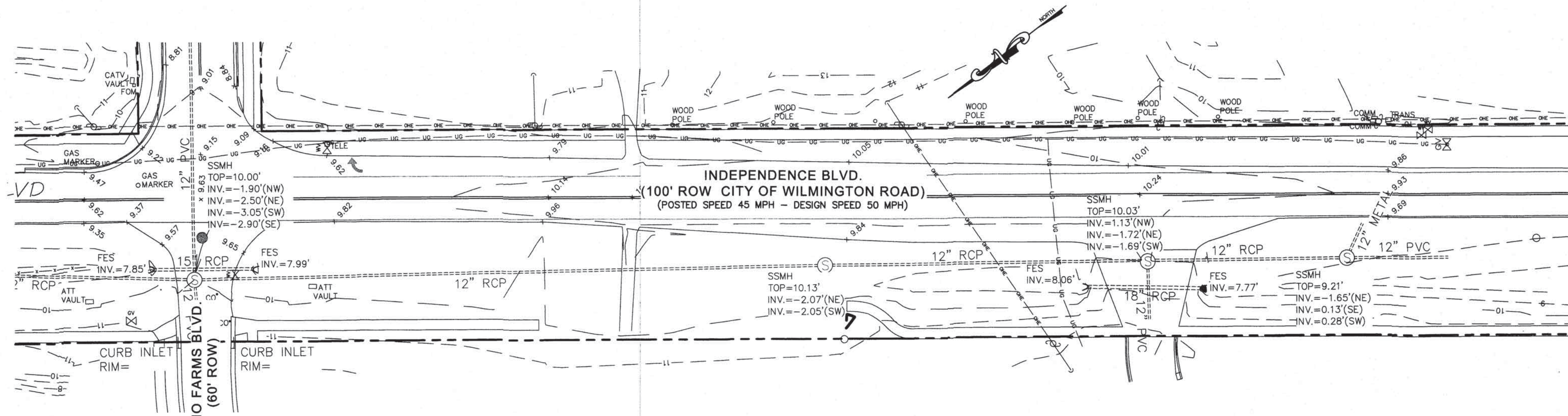
- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- WATER VALVE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOD
- STORM DRAIN PIPE
- MINI SKIPS

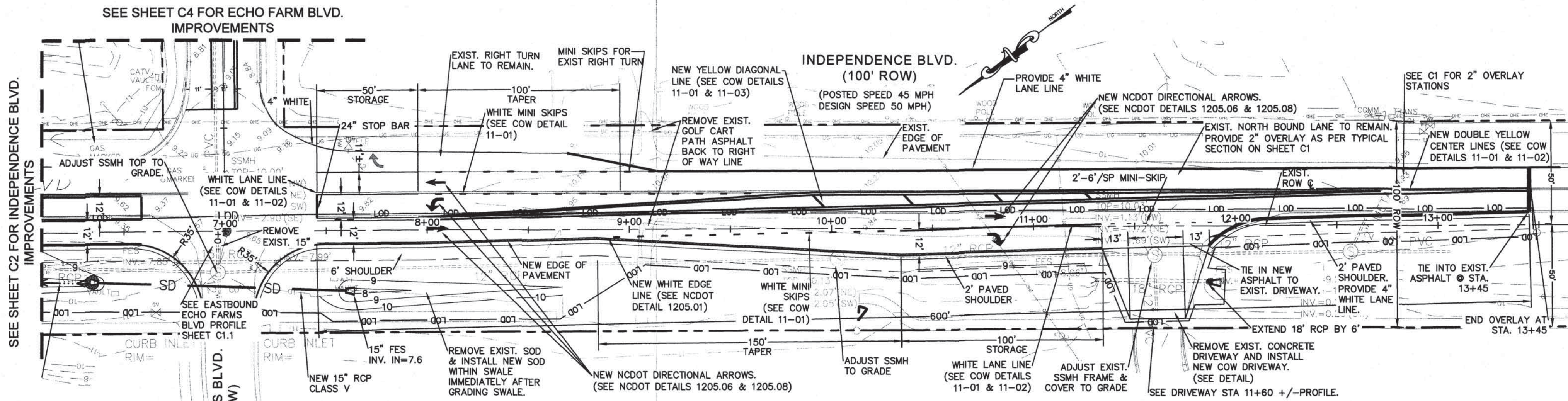
NOTES:

- INDEPENDENCE BLVD. AND ECHO FARMS BLVD. ARE CITY OF WILMINGTON STREETS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
- TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
- PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
- ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES



EXISTING CONDITIONS - INDEPENDENCE BLVD. SOUTH OF ECHO FARMS BLVD.

SCALE: 1"=30'



PROPOSED A-SYMMETRICAL LAYOUT - INDEPENDENCE BLVD. SOUTH OF ECHO FARMS BLVD.

SCALE: 1"=30'

SCALE: 1" = 30'



ECHO FARMS BLVD. & INDEPENDENCE BLVD. WOODLANDS ROAD IMPROVEMENTS WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CM4000
CRANFORD, NJ 08812
PHONE: (732) 395-1815
FAX: (800) 395-8288
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASHLITTLE RIVER RD., NW
SUITE 11
WILMINGTON, NC 28401
PHONE (910) 343-9653

18100

DES. JUST
CHKD. TJC
DRWN. SLF

DATE: 9/25/19



C3

Approved Construction Plan

Name: *[Signature]* Date: 1/22/20

Planning: *[Signature]* 1/22/20

Traffic: *[Signature]* 1/22/20

Fire: *[Signature]* 1/22/20

City of WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

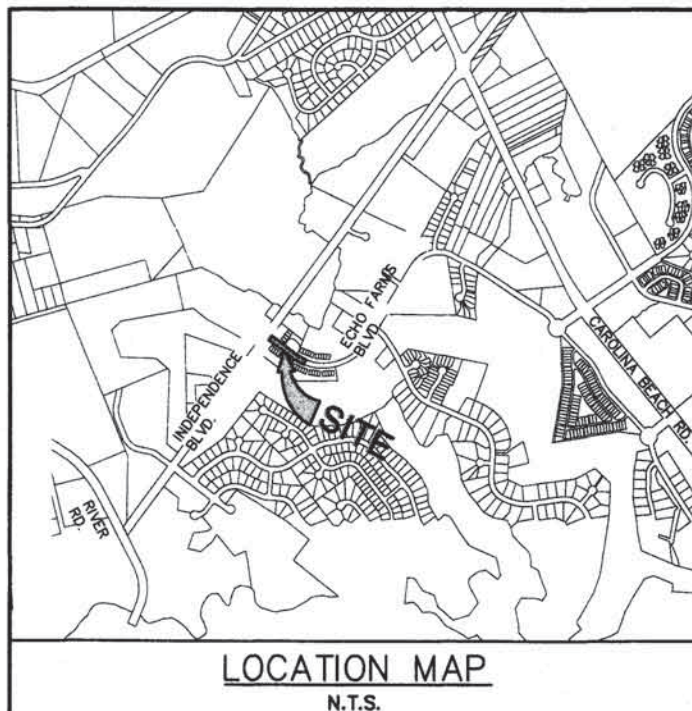
APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 Permit # 2018027 R2

Signed: *[Signature]*

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

SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
© 2018 NORRIS & TUNSTALL			



LEGEND:

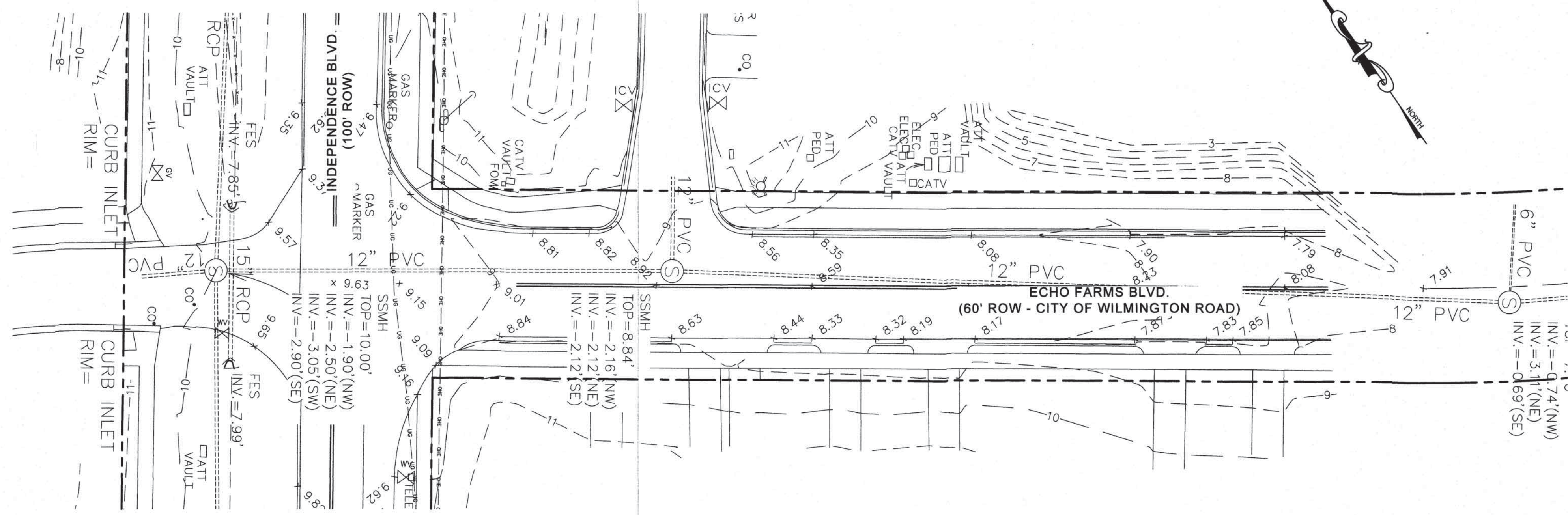
- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- WATER VALVE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOG
- STORM DRAIN PIPE
- MINI SKIPS

NOTES:

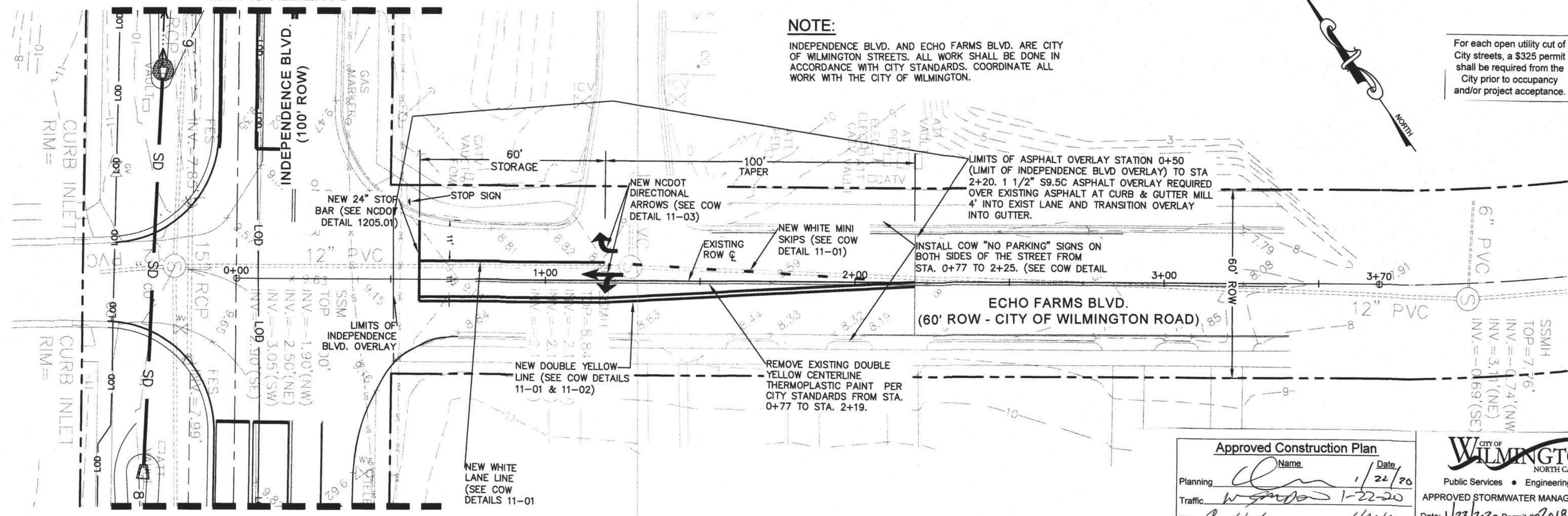
- INDEPENDENCE BLVD. AND ECHO FARMS BLVD. ARE CITY OF WILMINGTON STREETS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
- TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
- PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
- ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES



EXISTING CONDITIONS - ECHO FARMS BLVD.

SCALE: 1"=20'

SEE SHEET C2 FOR INDEPENDENCE BLVD. NORTH IMPROVEMENTS



PROPOSED ROAD IMPROVEMENTS - ECHO FARMS BLVD.

SCALE: 1"=20'

SEE SHEET C3 FOR INDEPENDENCE BLVD. SOUTH IMPROVEMENTS

NOTE:

INDEPENDENCE BLVD. AND ECHO FARMS BLVD. ARE CITY OF WILMINGTON STREETS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.

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

Approved Construction Plan

Name: _____ Date: 1/22/20

Planning: _____ Date: 1-22-20

Traffic: _____ Date: 1-22-20

Fire: _____ Date: 1/22/20

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 Permit # 20180270 R2

Signed: _____



ECHO FARMS BLVD. & INDEPENDENCE BLVD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CN4000
CRANFORD, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4613
FAX: (609) 395-9289
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

1429 ASHLITTLE RIVER RD., NW
WILMINGTON, NC 28401
PHONE (910) 343-5900

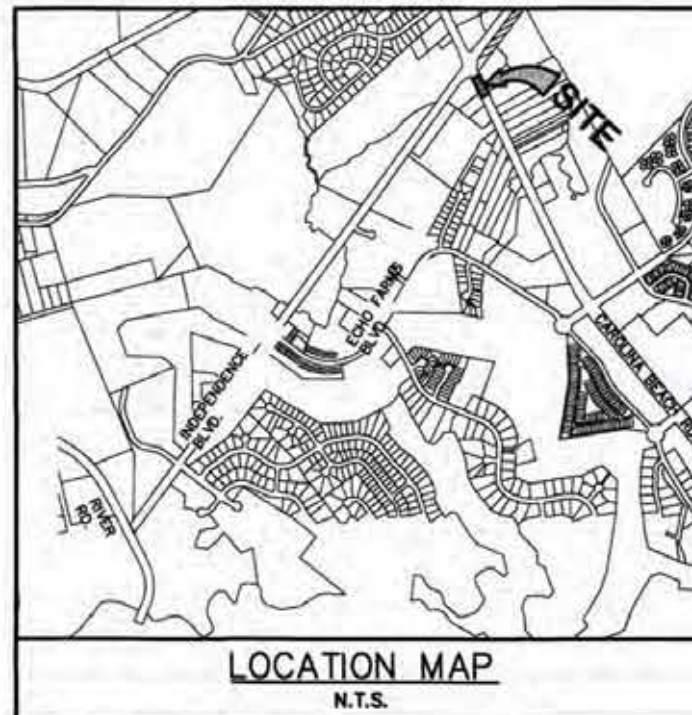
18100

DES. JST
CKD. TJC
DRWN. SLF

DATE: 05/21/19



C4



LEGEND:

- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- ⊕ FIRE HYDRANT
- ⊖ BACK FLOW PREVENTER
- ⊙ SANITARY SEWER MANHOLE
- ⊙ SANITARY SEWER CLEANOUT
- ⊙ STORM DRAINAGE MANHOLE
- ⊙ CURB INLET
- ⊙ DROP INLET
- ⊙ WATER METER
- ⊙ WATER VALVE
- ⊙ GAS VALVE
- ⊙ IRRIGATION CONTROL VALVE
- ⊙ ELECTRIC PEDESTAL
- ⊙ TELEPHONE PEDESTAL
- ⊙ CABLE TV PEDESTAL
- ⊙ FIBER OPTIC MARKER
- ⊙ BURIED CABLE MARKER
- ⊙ LIGHT POLE
- ⊙ SPOT LIGHT
- ⊙ POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- ⊙ FES
- ⊙ CURB INLET W/ EROSION CONTROL
- ⊙ DROP INLET W/ EROSION CONTROL
- ⊙ JUNCTION BOX
- ⊙ CENTER LINE
- ⊙ R/W LINE
- ⊙ SILT FENCE LINE
- ⊙ LOD
- ⊙ STORM DRAIN PIPE
- ⊙ MINI SKIPS

NOTES:

- CAROLINA BEACH ROAD IS A NCDOT HIGHWAY.
- PRIOR TO ANY WORK WITHIN NCDOT RIGHT OF WAY, A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH NCDOT.
- TRAFFIC CONTROL PLANS BY A NC REGISTERED ENGINEER MAYBE REQUIRED BY NCDOT.

SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2018 NORRIS & TUNSTALL			

Approved Construction Plan

Planning: *[Signature]* Date: 1/22/20

Traffic: *[Signature]* 1-22-20

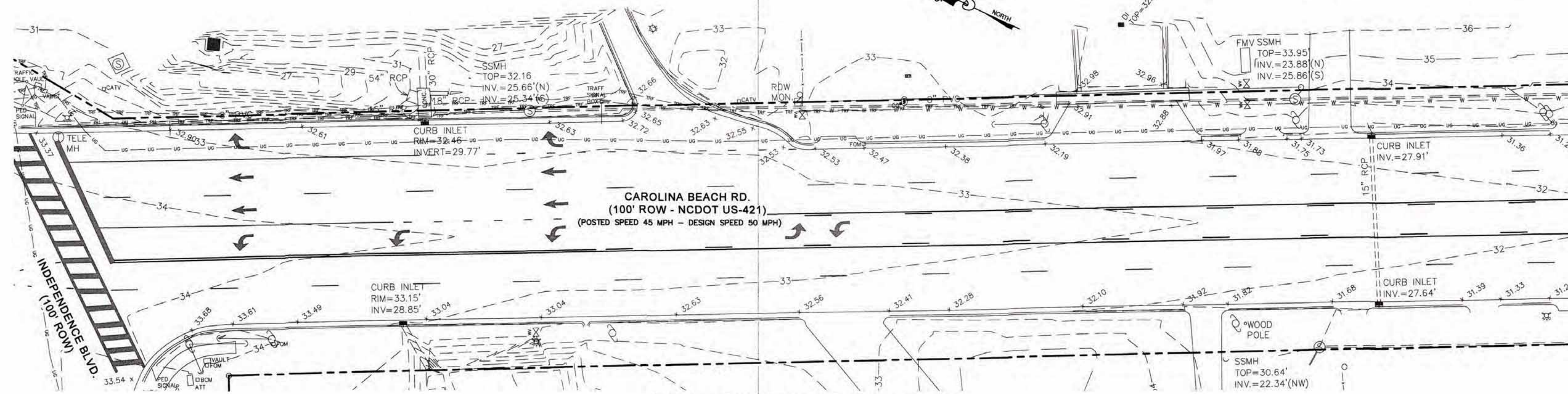
Fire: *[Signature]* 1/22/20

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

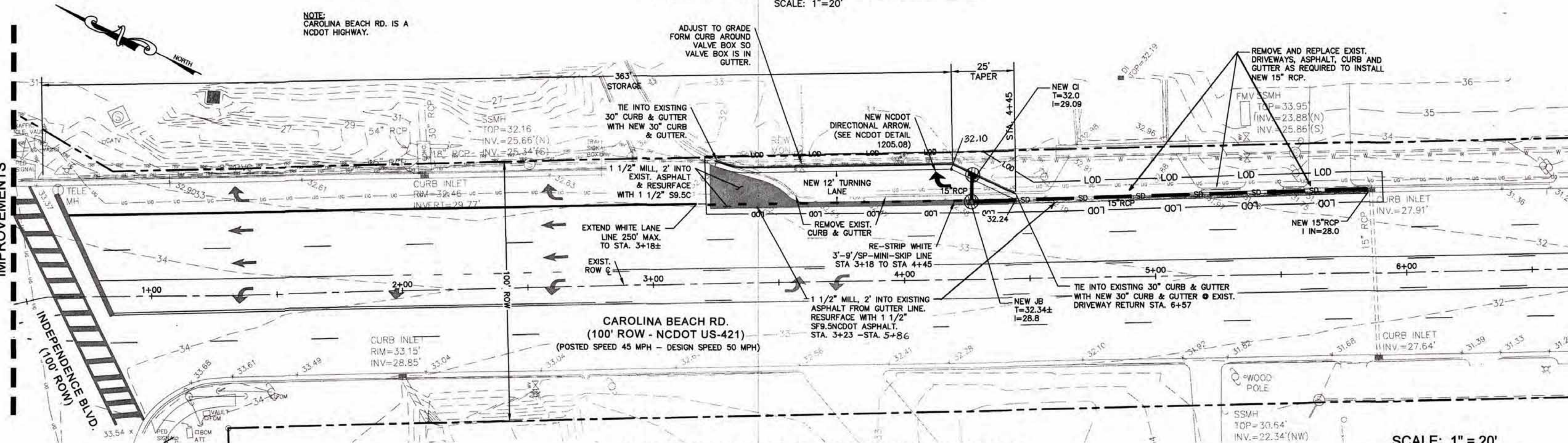
APPROVED STORMWATER MANAGEMENT PLAN
Date: 1/23/2020 Permit # 101802120 R2

Signed: *[Signature]*

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



SEE SHEET C6 FOR INDEPENDENCE BLVD. IMPROVEMENTS



CAROLINA BEACH RD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CM4000
CRANFURY, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-6289
BSTAPLET@MATRIXCOMPANIES.COM

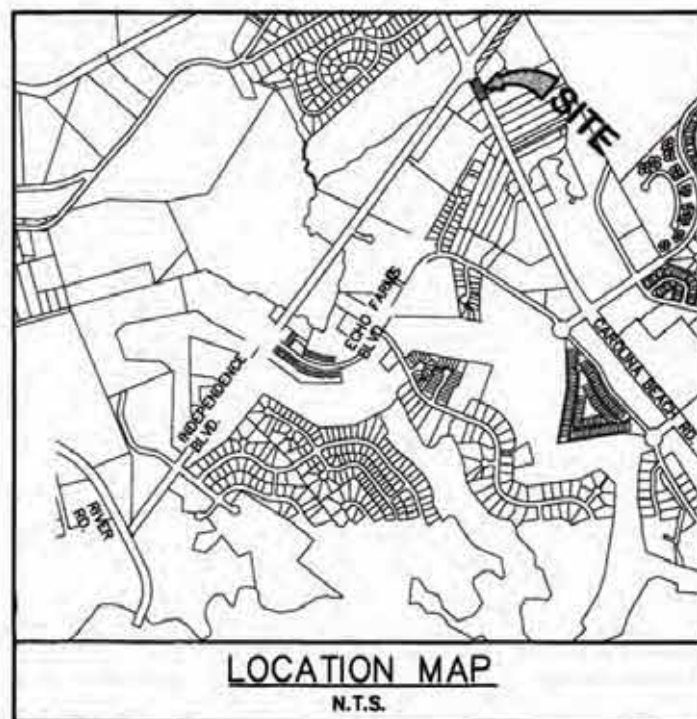
NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASHLITTLE RIVER RD. NW
SUITE 111
WILMINGTON, NC 28401
PHONE (910) 343-9653

DES. JST
CKD. TJC
DRWN. SLF

DATE: 10/01/19



C5



SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
©2018 NORRIS & TUNSTALL			

Approved Construction Plan

Name: *[Signature]* Date: 1/21/20

Planning: *[Signature]* 1-22-20

Traffic: *[Signature]*

Fire: *[Signature]* 1/21/20

City of WILMINGTON, NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 Permit: 20180210A R2

Signed: *[Signature]*

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

LEGEND:

- EXISTING IRON SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

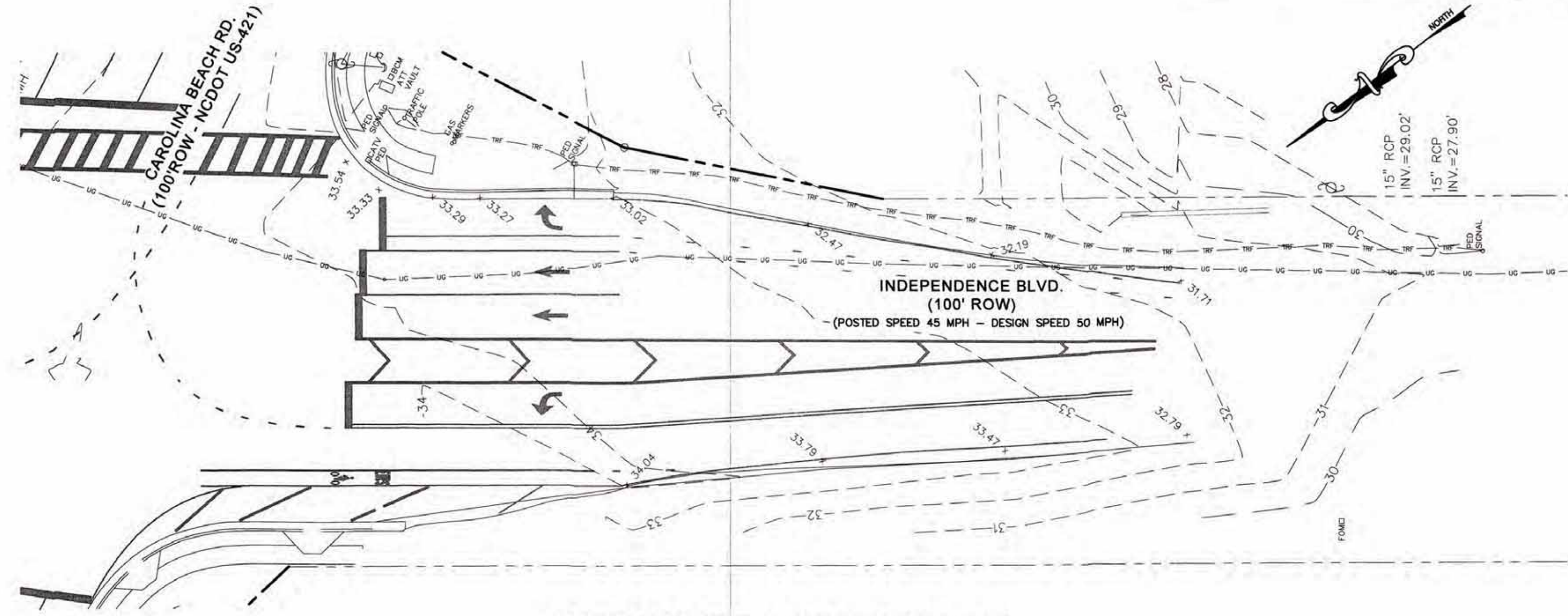
LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOD
- STORM DRAIN PIPE
- MINI SKIPS

NOTES:

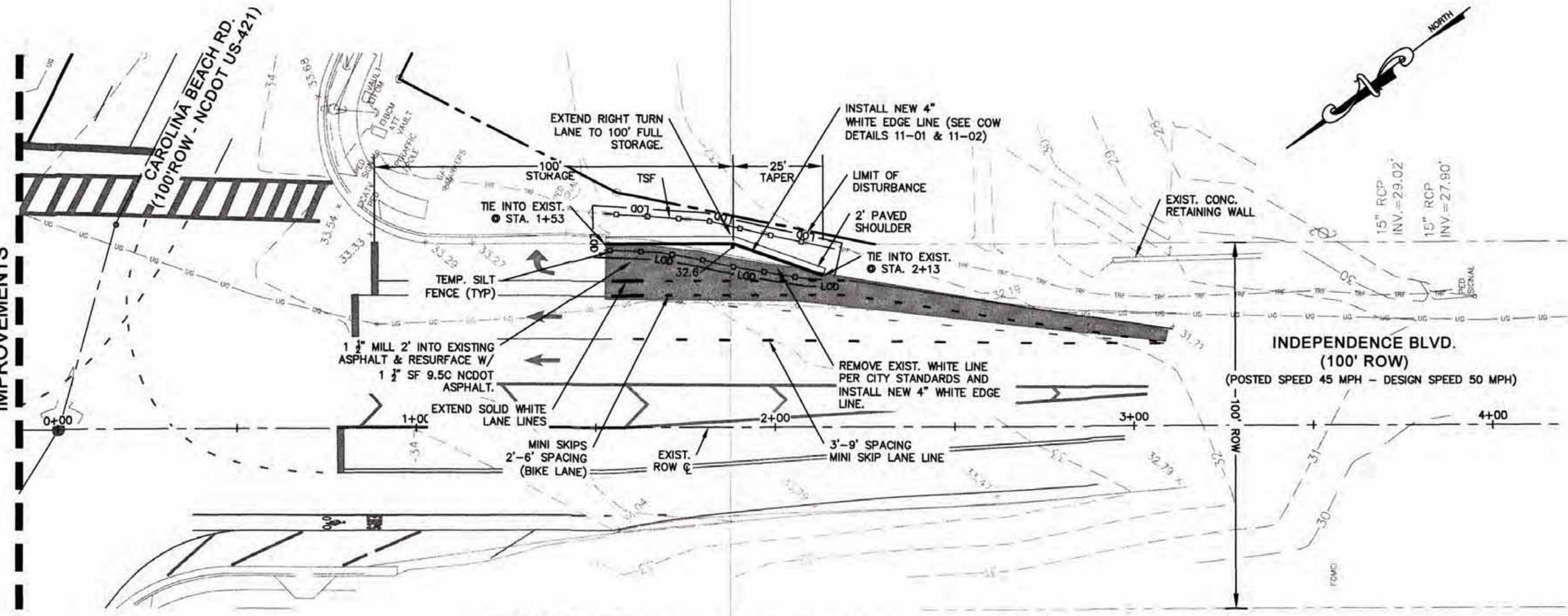
1. INDEPENDENCE BLVD. IS A CITY OF WILMINGTON STREET. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
2. TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
3. PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
5. ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES

SEE SHEET C5 FOR INDEPENDENCE BLVD. IMPROVEMENTS



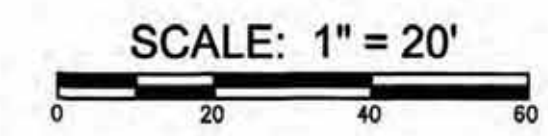
EXISTING CONDITIONS - INDEPENDENCE BLVD.

SCALE: 1"=20'



PROPOSED ROAD IMPROVEMENTS - INDEPENDENCE BLVD.

SCALE: 1"=20'



INDEPENDENCE BLVD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

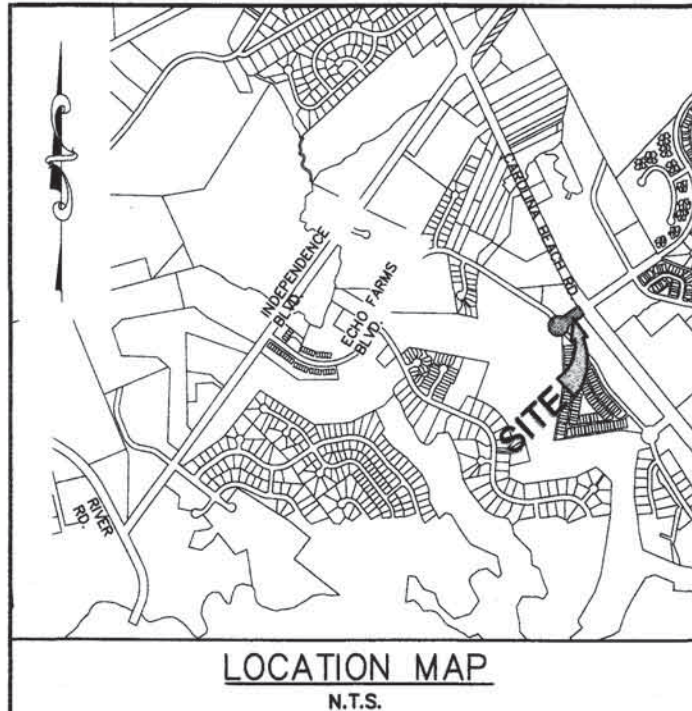
OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR. C#4000
CRANFORD, NJ 08512
ATTN: MATTHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8288
BESTAPLETON@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28420
WILMINGTON, NC 28401
PHONE (910) 287-5900
PHONE (910) 343-9653

18100
DES. JUST
CD. TJC
DRWL. SLF
DATE: 9/25/19



C6



LEGEND:

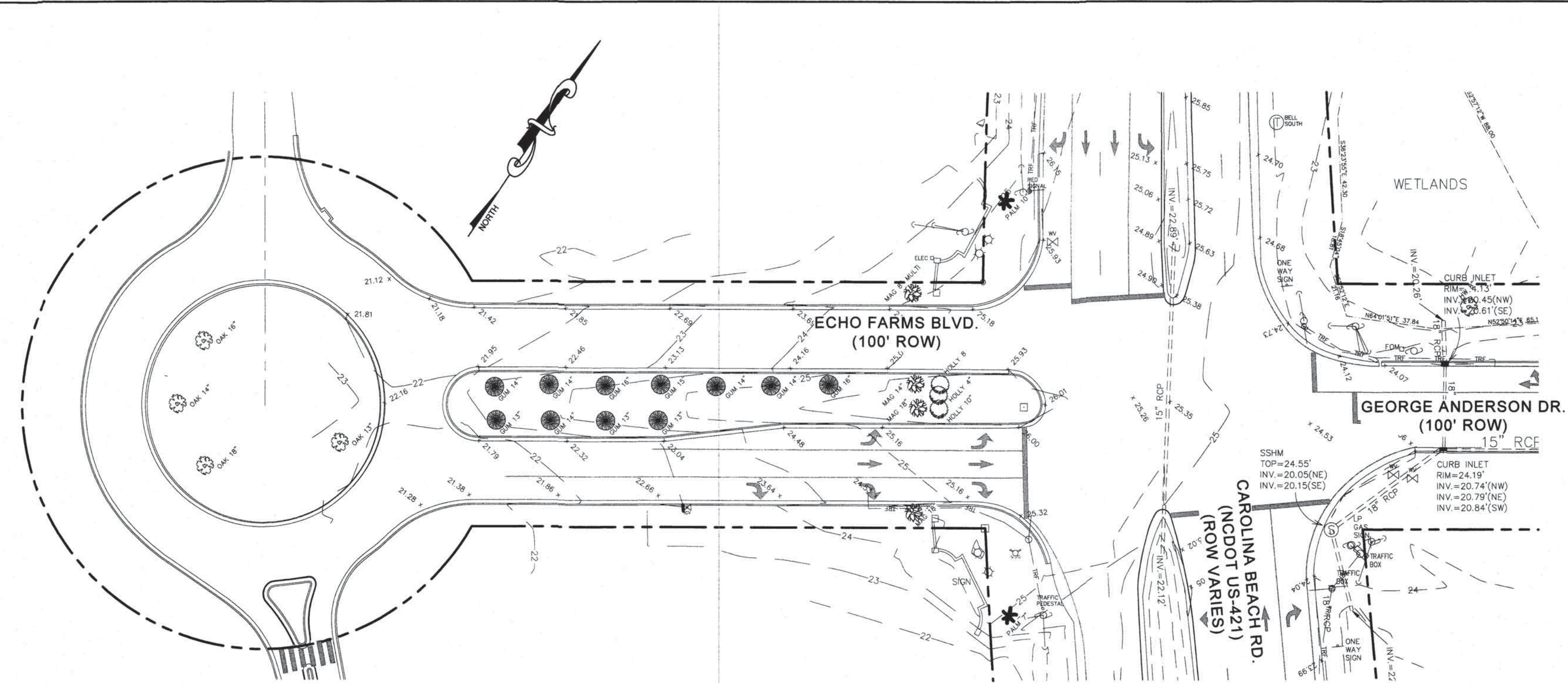
- EXISTING IRON SET IRON
- CONIC MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- WATER VALVE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOD
- STORM DRAIN PIPE
- MINI SKIPS
- TREE TO BE REMOVED
- TREE RELOCATION

NOTES:

1. INDEPENDENCE BLVD. AND ECHO FARMS BLVD. ARE CITY OF WILMINGTON STREETS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
2. TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
3. PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
5. ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES



**EXISTING CONDITIONS
ECHO FARMS BLVD. & GEORGE ANDERSON DR. INTERSECTION**

SCALE: 1"=30'

Approved Construction Plan

Name: [Signature] Date: 1/22/20

Planning: [Signature] Date: 1-22-20

Traffic: [Signature] Date: 1-22-20

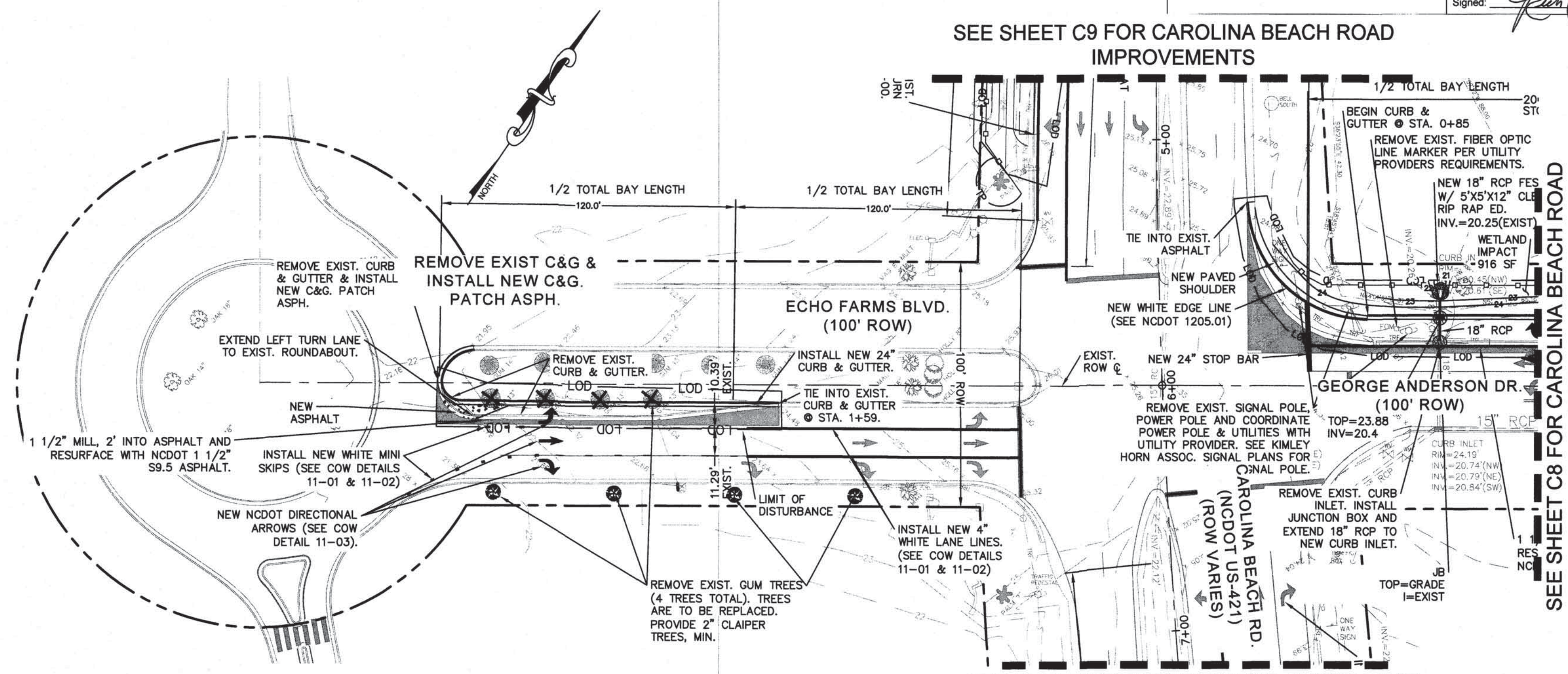
Fire: [Signature] Date: 1-22-20

City of Wilmington, North Carolina
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN
Date: 1/23/2020 Permit # 20180210R2

Signed: [Signature]

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



**PROPOSED ROAD IMPROVEMENT
ECHO FARMS BLVD. & GEORGE ANDERSON DR. INTERSECTION**

SCALE: 1"=30'



SEE SHEET C9 FOR CAROLINA BEACH ROAD IMPROVEMENTS

SEE SHEET C10 FOR CAROLINA BEACH ROAD IMPROVEMENTS

SEE SHEET C8 FOR CAROLINA BEACH ROAD IMPROVEMENTS

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

©2018 NORRIS & TUNSTALL

**ECHO FARMS BLVD. &
CAROLINA BEACH RD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC**

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CN4000
CRANBURY, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8288
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

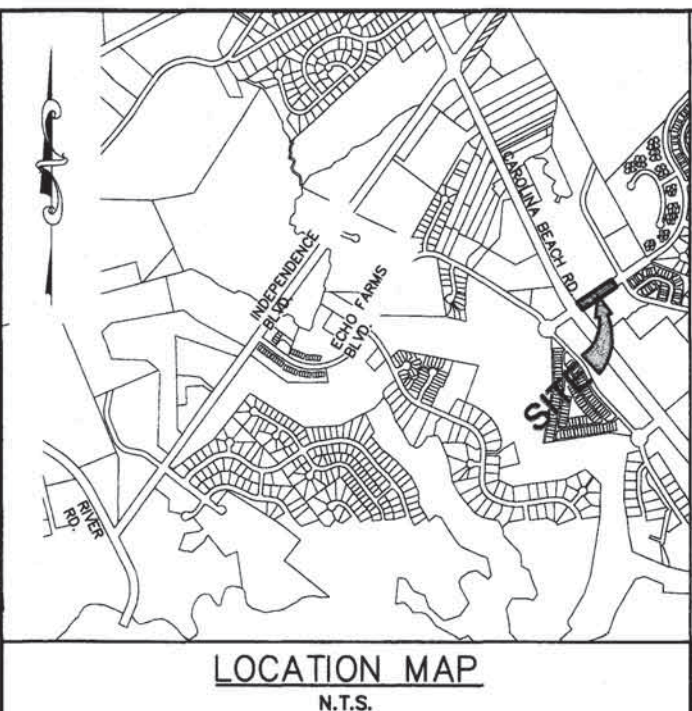
1429 ASH-LITTLE RIVER RD., NW
ASH, NC 28620
PHONE (910) 281-5900

1900 EASTWOOD ROAD,
WILMINGTON, NC 28401
PHONE (910) 343-9653

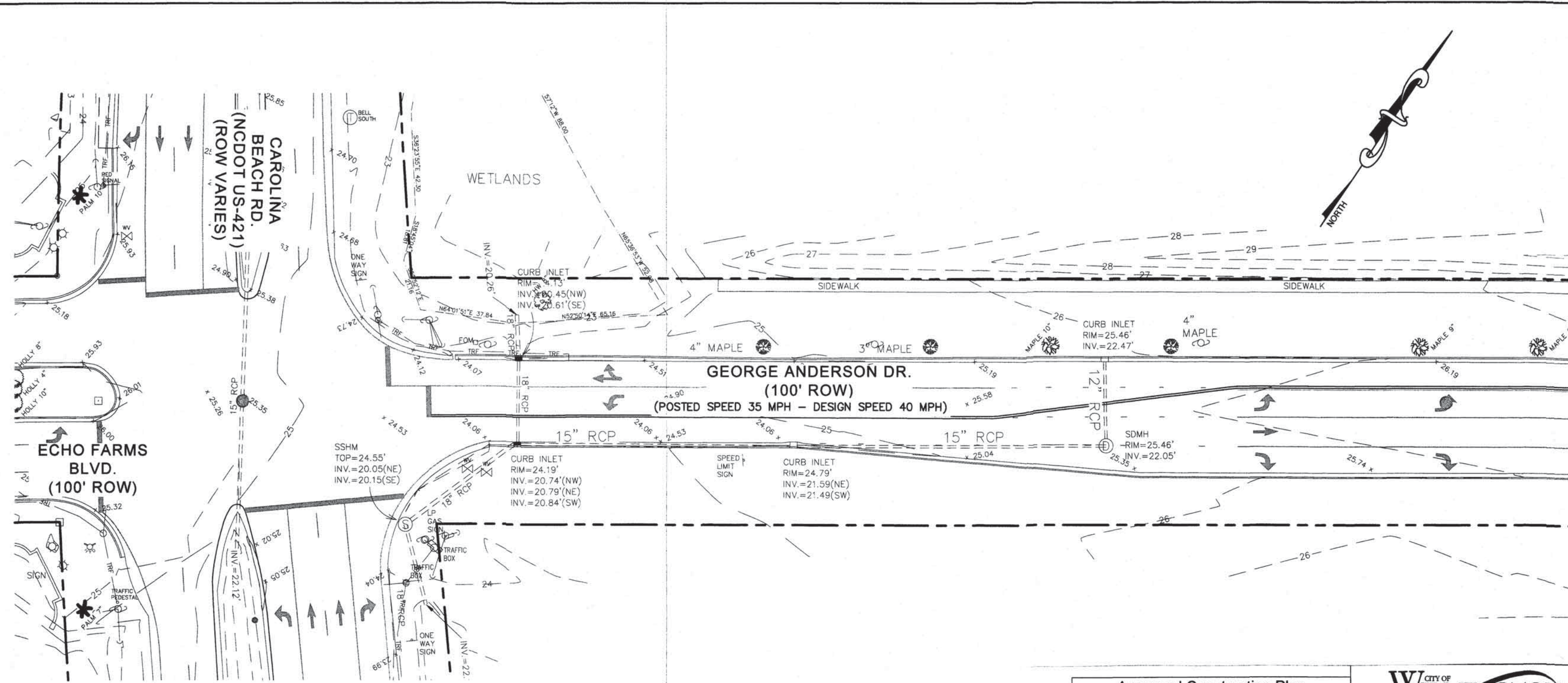
18100
DES. JST
CKD. TJC
DRWN. SLF
DATE: 9/25/19



C7



- LEGEND:**
- EXISTING IRON
 - SET IRON
 - CONC. MONUMENT
 - FIRE HYDRANT
 - BACK FLOW PREVENTER
 - SANITARY SEWER MANHOLE
 - SANITARY SEWER CLEANOUT
 - STORM DRAINAGE MANHOLE
 - CURB INLET
 - DROP INLET
 - WATER METER
 - WATER VALVE
 - GAS VALVE
 - IRRIGATION CONTROL VALVE
 - ELECTRIC PEDESTAL
 - TELEPHONE PEDESTAL
 - CABLE TV PEDESTAL
 - FIBER OPTIC MARKER
 - BURIED CABLE MARKER
 - LIGHT POLE
 - SPOT LIGHT
 - POWER POLE W/GUY
 - CENTER LINE
 - R/W LINE
 - ADJACENT PROPERTY LINE
 - EASEMENT LINE
 - SUBJECT TRACT BOUNDARY LINE
 - FENCE LINE
 - STORM DRAIN
 - UNDERGROUND GAS LINE
 - UNDERGROUND TRAFFIC SIGNAL LINE



**EXISTING CONDITIONS
GEORGE ANDERSON DR.**
SCALE: 1" = 30'

Approved Construction Plan

Name: *[Signature]* Date: 1/22/20

Planning: *[Signature]* 1/22/20

Traffic: *[Signature]* 1/22/20

Fire: *[Signature]* 1/22/20

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 1/23/2020 Permit # 1918027 R2
Signed: *[Signature]*

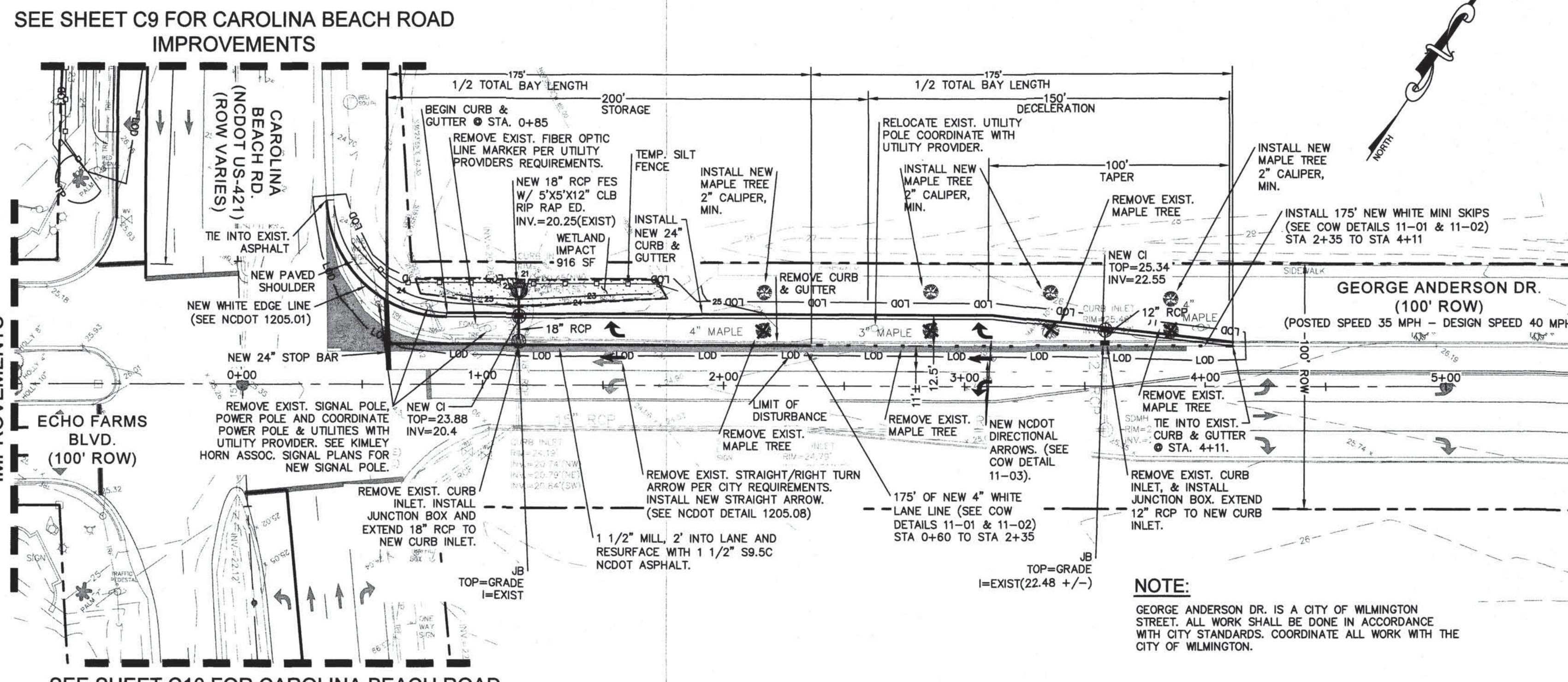
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

GEORGE ANDERSON DR.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
1000 EASTWOOD ROAD, SUITE 11
WILMINGTON, NC 28401
PHONE: (732) 407-4813
FAX: (609) 395-8269
BSTAPLET@MATRIXCOMPANIES.COM

- LEGEND: PROPOSED**
- FES
 - CURB INLET W/ EROSION CONTROL
 - DROP INLET W/ EROSION CONTROL
 - JUNCTION BOX
 - CENTER LINE
 - R/W LINE
 - SILT FENCE LINE
 - LOD
 - STORM DRAIN PIPE
 - MINI SKIPS



**PROPOSED ROAD IMPROVEMENT
WEST BOUND GEORGE ANDERSON DR.**
SCALE: 1" = 30'

NOTE:
GEORGE ANDERSON DR. IS A CITY OF WILMINGTON STREET. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.



- NOTES:**
- GEORGE ANDERSON DR. IS A CITY OF WILMINGTON STREET. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
 - TRAFFIC CONTROL PLAN SHALL BE PREPARED BY LICENSED NC ENGINEER AND PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CITY OF WILMINGTON RIGHT OF WAY PERMIT PRIOR TO ANY WORK IN CITY RIGHT OF WAY.
 - PRE-CONSTRUCTION MEETING WITH CITY OF WILMINGTON ENGINEERING TRAFFIC DEPARTMENT WILL BE REQUIRED PRIOR TO ANY CONSTRUCTION.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY STANDARDS. COORDINATE ALL WORK WITH THE CITY OF WILMINGTON.
 - ADJUST ALL UTILITY (WATER, SEWER & STORMWATER) VALVE BOXES & MANHOLES AS REQUIRED FOR ASPH. OVERLAY, NEW ASPH OR W/IN SHOULDER & SLOPES

SEE SHEET C7 FOR ECHO FARMS BLVD. IMPROVEMENTS

SEE SHEET C9 FOR CAROLINA BEACH ROAD IMPROVEMENTS

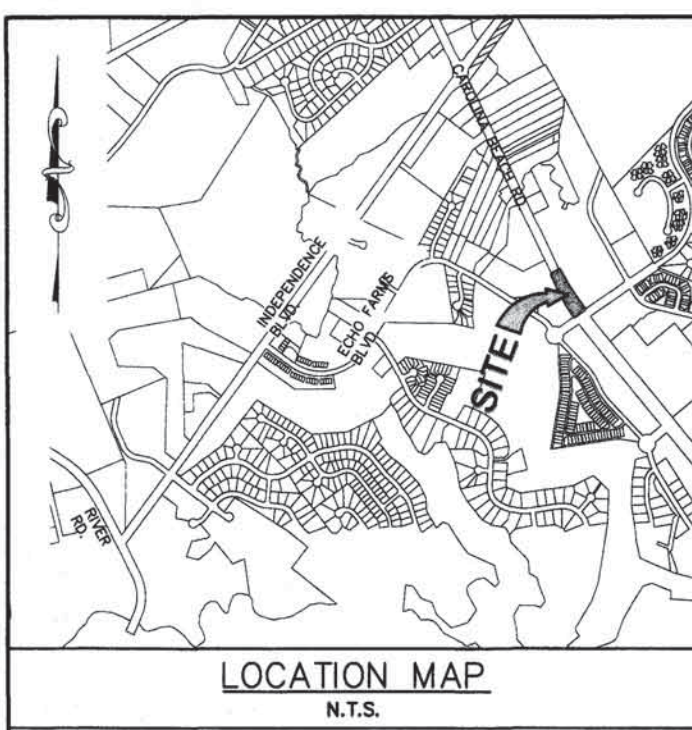
SEE SHEET C10 FOR CAROLINA BEACH ROAD IMPROVEMENTS

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1429 ASH-LITTLE RIVER RD NW
SUITE 11
WILMINGTON, NC 28401
PHONE (910) 343-9633

18100
DES. JST
CHK. TJC
DRWN. SLF
DATE: 9/25/19



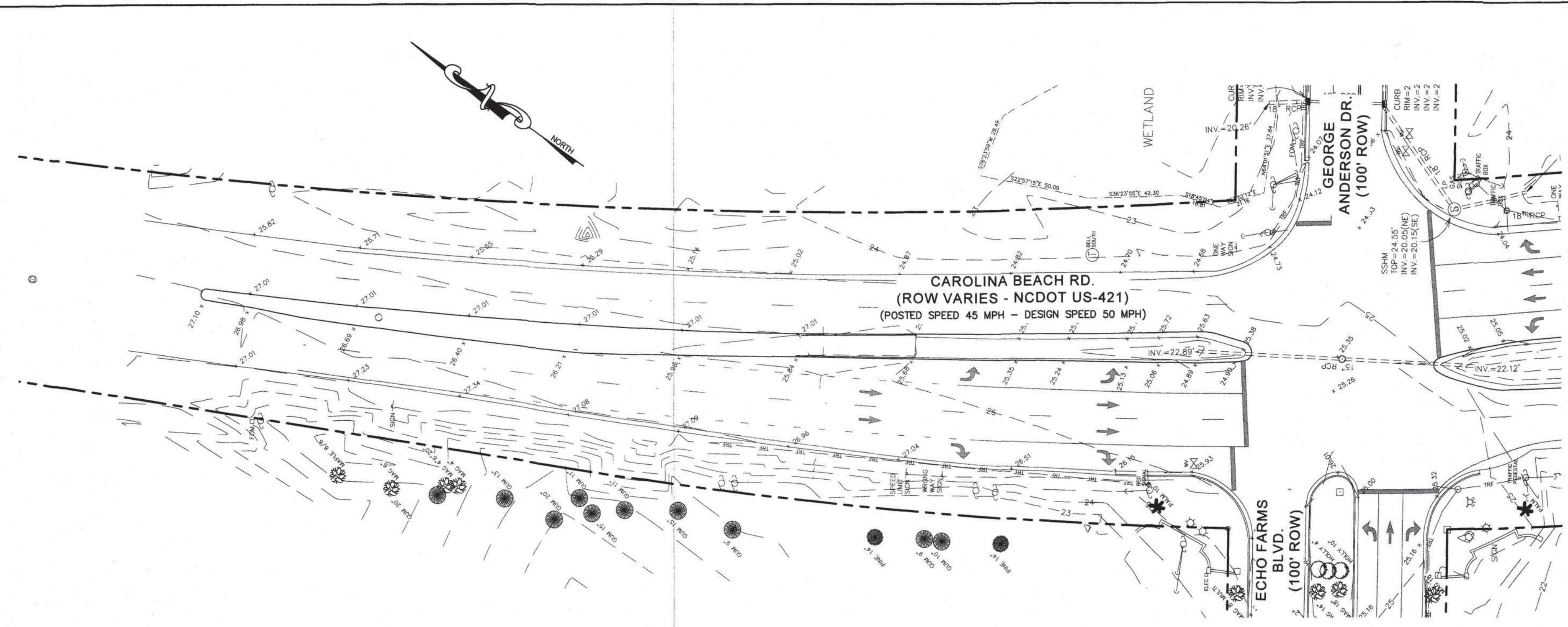
C8



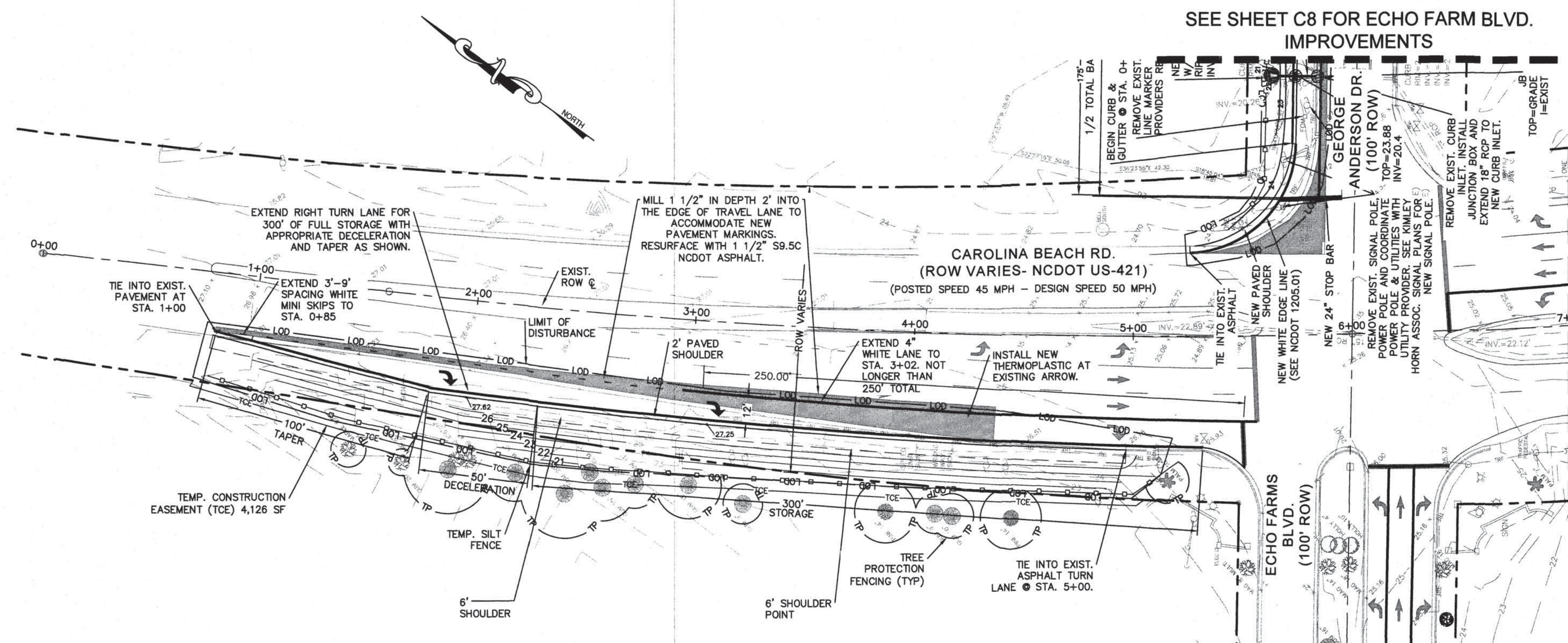
- LEGEND:**
- EXISTING IRON
 - SET IRON
 - CONC. MONUMENT
 - FIRE HYDRANT
 - BACK FLOW PREVENTER
 - SANITARY SEWER MANHOLE
 - SANITARY SEWER CLEANOUT
 - STORM DRAINAGE MANHOLE
 - CURB INLET
 - DROP INLET
 - WATER METER
 - WATER VALVE
 - GAS VALVE
 - IRRIGATION CONTROL VALVE
 - ELECTRIC PEDESTAL
 - TELEPHONE PEDESTAL
 - CABLE TV PEDESTAL
 - FIBER OPTIC MARKER
 - BURIED CABLE MARKER
 - LIGHT POLE
 - SPOT LIGHT
 - POWER POLE W/GUY
 - CENTER LINE
 - R/W LINE
 - ADJACENT PROPERTY LINE
 - EASEMENT LINE
 - SUBJECT TRACT BOUNDARY LINE
 - FENCE LINE
 - STORM DRAIN
 - UNDERGROUND GAS LINE
 - UNDERGROUND TRAFFIC SIGNAL LINE

- LEGEND: PROPOSED**
- FES
 - CURB INLET W/ EROSION CONTROL
 - DROP INLET W/ EROSION CONTROL
 - JUNCTION BOX
 - CENTER LINE
 - R/W LINE
 - SILT FENCE LINE
 - LOD
 - STORM DRAIN PIPE
 - MINI SKIPS

- NOTES:**
- CAROLINA BEACH ROAD IS A NCDOT HIGHWAY.
 - PRIOR TO ANY WORK WITHIN NCDOT RIGHT OF WAY, A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH NCDOT.
 - TRAFFIC CONTROL PLANS BY A NC REGISTERED ENGINEER MAYBE REQUIRED BY NCDOT.



**EXISTING CONDITIONS
CAROLINA BEACH RD.**
SCALE: 1"=30'



**PROPOSED ROAD IMPROVEMENT
CAROLINA BEACH RD.**
SCALE: 1"=30'

SEE SHEET C8 FOR ECHO FARM BLVD. IMPROVEMENTS

SEE SHEET C7 FOR ECHO FARM BLVD. IMPROVEMENTS

SEE SHEET C10 FOR CAROLINA BEACH RD. IMPROVEMENTS

Approved Construction Plan

Name: _____ Date: 1/22/20

Planning: _____ Traffic: _____ Fire: _____

CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 permit # 20180270 R2

Signed: *Rich Christensen*

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



SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

**CAROLINA BEACH RD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC**

© 2018 NORRIS & TUNSTALL

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CM4000
CRANFORD, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8289
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

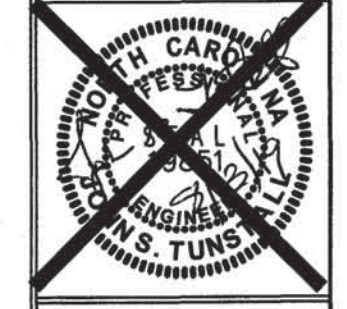
1900 EASTWOOD ROAD,
WILMINGTON, NC 28401
PHONE (910) 343-9653

1429 ASH-LITTLE RIVER RD., NW
SHEPHERDSTOWN, WV 26043
PHONE (710) 267-5900

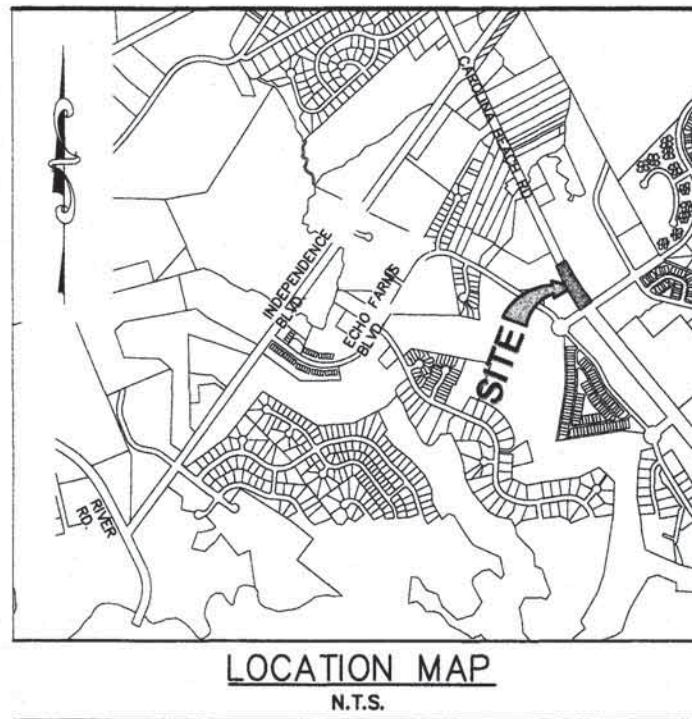
18100

DES. JST
CKD. TJC
DRWN. SLF

DATE: 05/21/19



C9



LEGEND:

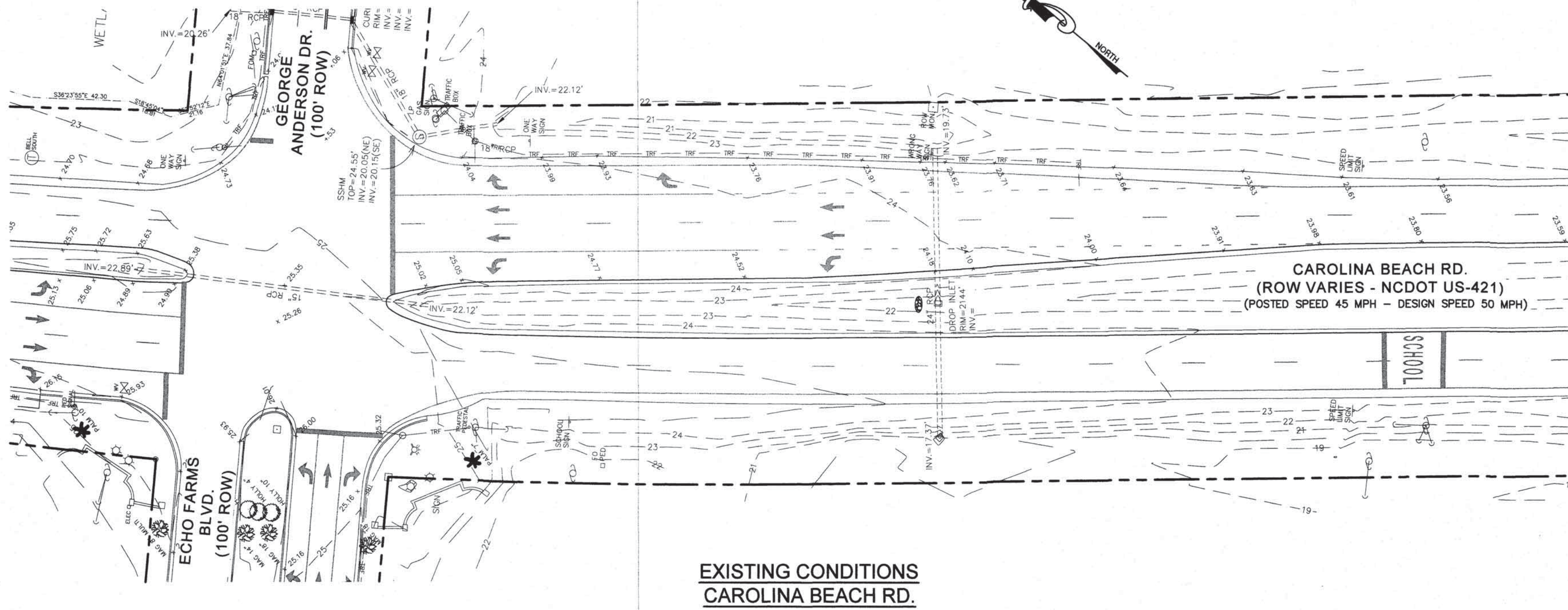
- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- STORM DRAINAGE MANHOLE
- CURB INLET
- DROP INLET
- WATER METER
- WATER VALVE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- FIBER OPTIC MARKER
- BURIED CABLE MARKER
- LIGHT POLE
- SPOT LIGHT
- POWER POLE W/GUY
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SUBJECT TRACT BOUNDARY LINE
- FENCE LINE
- STORM DRAIN
- UNDERGROUND GAS LINE
- UNDERGROUND TRAFFIC SIGNAL LINE

LEGEND: PROPOSED

- FES
- CURB INLET W/ EROSION CONTROL
- DROP INLET W/ EROSION CONTROL
- JUNCTION BOX
- CENTER LINE
- R/W LINE
- SILT FENCE LINE
- LOD
- STORM DRAIN PIPE
- MINI SKIPS

NOTES:

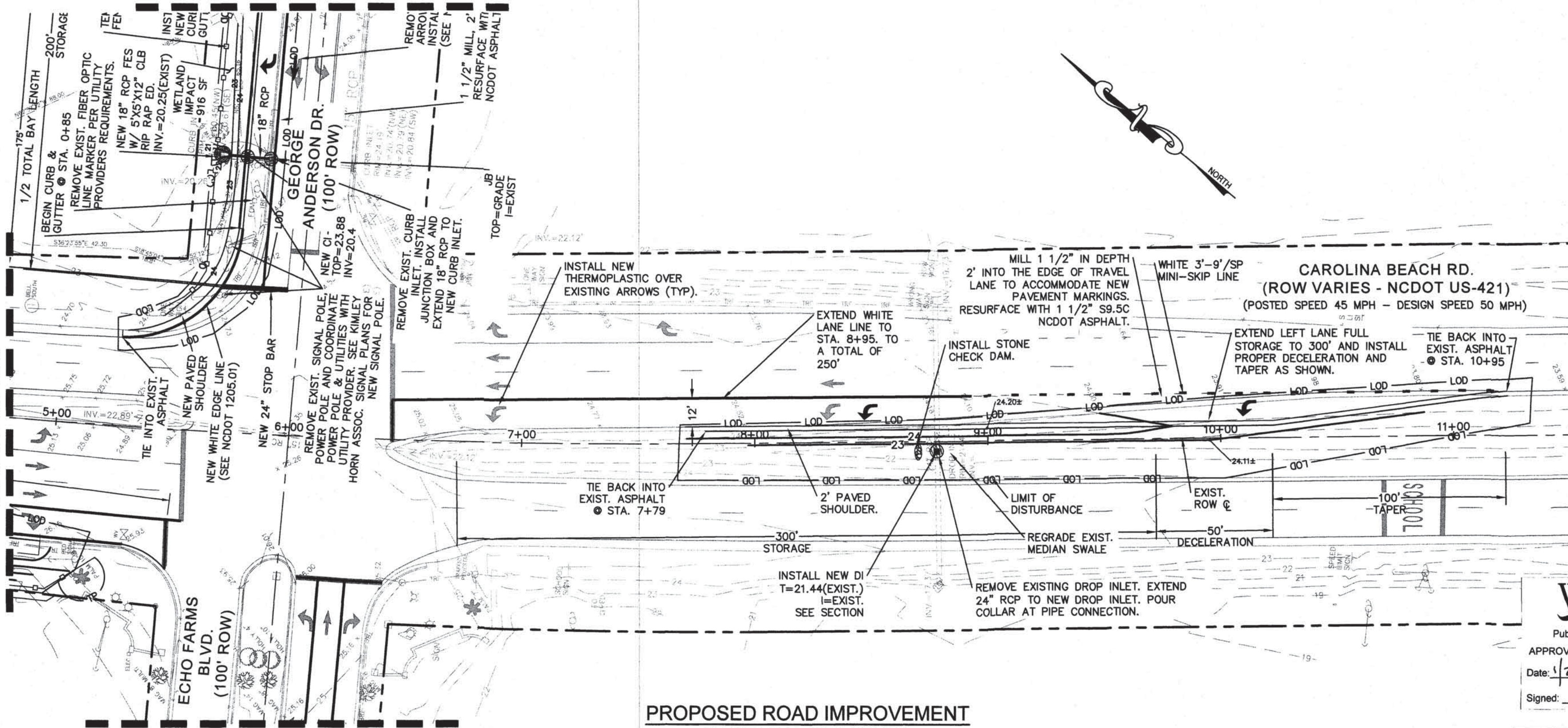
1. CAROLINA BEACH ROAD IS A NCDOT HIGHWAY.
2. PRIOR TO ANY WORK WITHIN NCDOT RIGHT OF WAY, A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH NCDOT.
3. TRAFFIC CONTROL PLANS BY A NC REGISTERED ENGINEER MAYBE REQUIRED BY NCDOT.



SEE SHEET C8 FOR GEORGE ANDERSON DR. IMPROVEMENTS

**EXISTING CONDITIONS
CAROLINA BEACH RD.**
SCALE: 1"=30'

SEE SHEET C9 FOR CAROLINA BEACH RD. IMPROVEMENTS

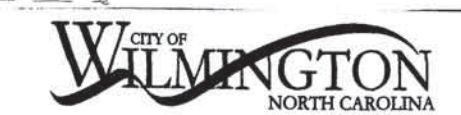


SEE SHEET C7 FOR ECHO FARM BLVD. IMPROVEMENTS

**PROPOSED ROAD IMPROVEMENT
CAROLINA BEACH RD.**
SCALE: 1"=30'



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



APPROVED STORMWATER MANAGEMENT PLAN
Date: 1/23/2020 Permit # 1018017 R2
Signed: Rich Christensen

Approved Construction Plan
Name: _____ Date: 1/22/20
Planning: _____
Traffic: _____
Fire: _____

SYMBOL	DATE	DESCRIPTION	BY
		REVISIONS	

©2018 NORRIS & TUNSTALL

**CAROLINA BEACH RD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC**

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR. CN4000
CRANFURY, NJ 08512
ATTN: MATTHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 395-8289
BSTAPLET@MATRIXCOMPANIES.COM

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

18100
DES. JST
CKD. TJC
DRWN. SLF
DATE: 05/21/19



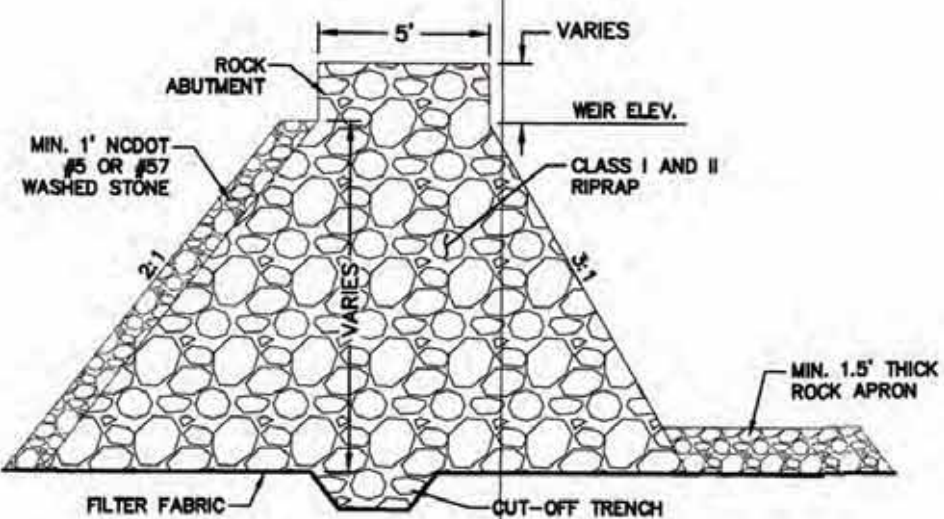
C10

SITE WORK NOTES:

- THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS.
- CONTRACTOR SHALL COORDINATE WORK WITH NCDOT AND LOCAL CITY RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC CONTROL AND CONNECTION TO EXISTING STREETS.
- CLEARING AND GRUBBING: SEE SPECIFICATIONS.
- STRIPPING: SEE SPECIFICATIONS.
- MUCKING: SEE SPECIFICATIONS.
- DISPOSAL: SEE SPECIFICATIONS.
- BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF-SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS.
- FILL AND COMPACTION: SEE SPECIFICATIONS.
- LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION.
- EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY BATEMAN CIVIL SURVEY COMPANY, AND PROVIDED BY OWNER.
- THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES AND AUTHORITIES.
- ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT STANDARDS.
- WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE.
- CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK CONDITION.
- REINFC. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR "RAM NECK". INSTALL PER MANUFACTURER'S REQUIREMENTS.

EROSION CONTROL NOTES AND MAINTENANCE PLAN:

- 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.
- ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY 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 OR ROADWAYS.
- SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHTNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATLIES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
- DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
- 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 8 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC WITHOUT WIRE BACKING. STAKE SPACING WILL BE 6 FEET MAX. WITH STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF-FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
- LAND QUALITY REQUIRES: ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED, ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN, TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.



TEMPORARY ROCK DAM DETAIL

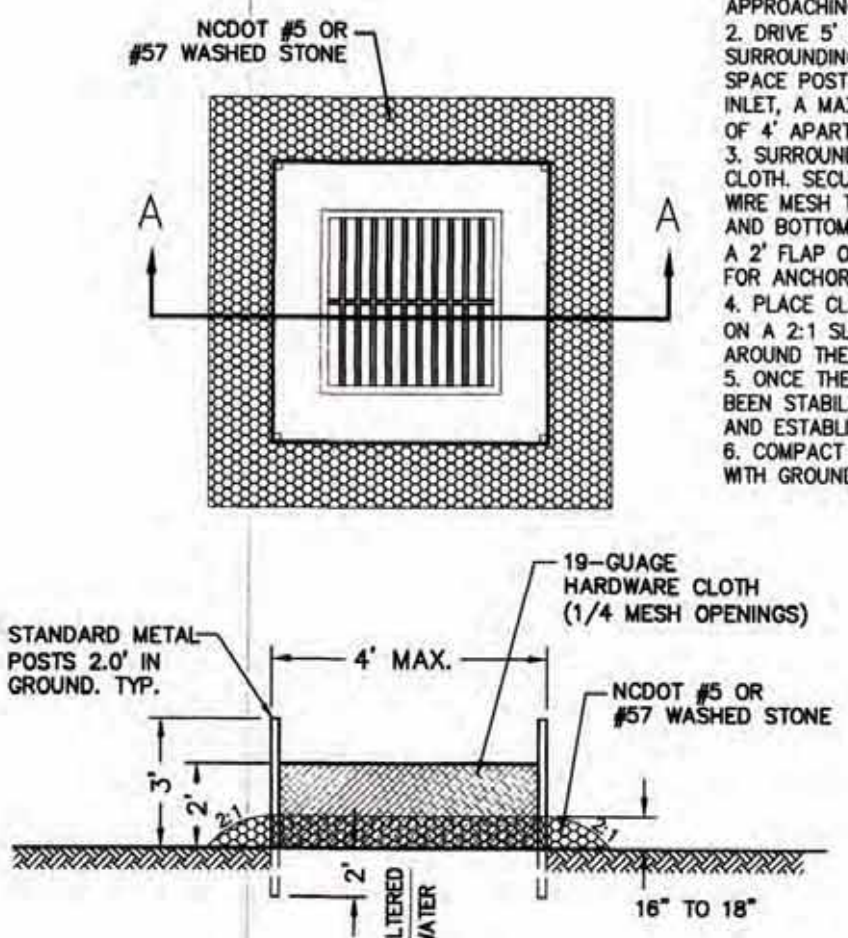
TEMPORARY SEEDING RECOMMENDATIONS FOR FALL		
SEEDING MIXTURE		
SPECIES	RATE (lb/acre)	(lb/1000 sf)
RYE (GRAIN)	120	2.75
SEEDING DATES: MOUNTAINS - AUG. 15 - DEC. 15 COASTAL PLAIN AND PIEDMONT - AUG. 15 - DEC. 15		
SOIL AMENDMENTS: FOLLOW SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER.		
MULCH: APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		
MAINTENANCE: REPAIR AND REFERTILIZE DAMAGE AREAS IMMEDIATELY. TOP DRESS WITH 50 lb/acre OF NITROGEN IN MARCH, IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.		
TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER		
SEEDING MIXTURE		
SPECIES	RATE (lb/acre)	(lb/1000 sf)
GERMAN MILLET	40	0.92
IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 lb/acre.		
SEEDING DATES: MOUNTAINS - MAY 15 - AUG. 15 PIEDMONT - MAY 1 - AUG. 15 COASTAL PLAIN - APR. 15 - AUG. 15		
SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.		
MULCH: APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		
MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.		
TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING		
SEEDING MIXTURE		
SPECIES	RATE (lb/acre)	(lb/1000 sf)
RYE (GRAIN)	120	2.75
ANNUAL LESPEDEZA	50	1.15
SEEDING DATES: MOUNTAINS - ABOVE 2,500 FEET: FEB. 15 - MAY 15 BELOW 2,500 FEET: FEB. 1 - MAY 1 PIEDMONT - MAY 1 - MAY 1 COASTAL PLAIN - DEC. 1 - APRIL 15		
SOIL AMENDMENTS: FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.		
MULCH: APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		
MAINTENANCE: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.		

PERMANENT SEEDING RECOMMENDATIONS FOR FALL AND EARLY SPRING		
SEEDING MIXTURE		
SPECIES	RATE (lb/acre)	(lb/1000 sf)
TALL FOLIAGE PENSACOLA BAHIAGRASS	80	1.84
SERICEA LESPEDEZA	30	0.69
KOBE LESPEDEZA	10	0.23
SEEDING NOTES: 1. FROM SEPT. 1 THRU MAR. 1, USE UNSCARIFIED SERICEA SEED. 2. ON POORLY DRAINED SITES OMIT SERICEA AND INCREASE KOBE TO 30 lbs/acre. 3. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE TO 40 lbs/acre.		
NURSE PLANTS: BETWEEN APR. 15 AND AUG. 15, ADD 10 lbs/acre GERMAN MILLET OR 15 lbs/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG. 15 ADD 25 lbs/acre RYE (GRAIN).		
SEEDING DATES: BEST EARLY SPRING: FEB. 15 - MAR. 20 FALL: SEPT. 1 - SEPT. 30 POSSIBLE EARLY SPRING: FEB. 15 - APR. 30 FALL: SEPT. 1 - OCT. 31		
SOIL AMENDMENTS: APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000-5,000 lbs/acre (68.9-114.8 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE (USE THE LOWER RATE ON SANDY SOILS) AND 1,000 lbs/acre (22.9 lbs/1,000 sf) 10-10-10 FERTILIZER.		
MULCH: APPLY 4,000 lb/acre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		
MAINTENANCE: IF GROWTH IS LESS THAN FULLY ADEQUATE, REFERTILIZE IN THE SECOND YEAR, ACCORDING TO SOIL TESTS OR TOPDRESS WITH 500 lbs/acre (11.5 lbs/1,000 sf) 10-10-10 FERTILIZER. MOW AS NEEDED WHEN SERICEA IS OMITTED FROM THE MIXTURE. RESEED, FERTILIZE, AND MULCH DAMAGED AREAS IMMEDIATELY.		
PERMANENT SEEDING RECOMMENDATIONS FOR LATE SPRING AND EARLY SUMMER		
SEEDING MIXTURE		
SPECIES	RATE (lb/acre)	(lb/1000 sf)
PENSACOLA BAHIAGRASS	50	1.15
SERICEA LESPEDEZA	30	0.69
COMMON BERMUDA	10	0.23
GERMAN MILLET	10	0.23
SEEDING NOTES: 1. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA. 2. USE COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 lbs/acre CENTIPEDEGRASS.		
SEEDING DATES: APRIL 1 - JULY 15		
SOIL AMENDMENTS: APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000 lbs/acre (68.9 lbs/1,000 sf) GROUND AGRICULTURAL LIMESTONE AND 500 lbs/acre (11.5 lbs/1,000 sf) 10-10-10 FERTILIZER.		
MULCH: APPLY 4,000 lb/acre (91.8 lbs/1,000 sf) GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING, OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		
MAINTENANCE: REFERTILIZE THE FOLLOWING APRIL WITH 50 lbs/acre (1.15 lbs/1,000 sf) NITROGEN AT AS GROWTH REQUIRES. MOW ONLY ONCE A YEAR, WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS NEEDED.		

ROCK DAM NOTES:

- CLEAR THE AREAS UNDER THE EMBANKMENT AND STRIP OF ROOTS AND OTHER OBJECTIONABLE MATERIAL. DELAY CLEANING THE RESERVOIR AREA UNTIL THE DAM IS IN PLACE.
- COVER THE FOUNDATION AREA INCLUDING THE ABUTMENTS WITH EXTRA-STRENGTH FILTER FABRIC BEFORE BACKFILLING WITH ROCK. IF A CUTOFF TRENCH IS REQUIRED, EXCAVATE AT CENTERLINE OF DAM, EXTENDING ALL THE WAY UP THE EARTH ABUTMENTS. APPLY FILTER FABRIC UNDER THE ROCKFILL EMBANKMENT FROM THE UPSTREAM EDGE OF THE DAM TO THE DOWNSTREAM EDGE OF THE APRON. OVERLAP ALL MATERIAL A MINIMUM OF 1 FOOT AT ALL JOINTS, WITH THE UPSTREAM STRIP LAY OVER THE DOWNSTREAM STRIP.
- CONSTRUCT THE EMBANKMENT WITH WELL-GRADED ROCK AND GRAVEL TO THE SIZE AND DIMENSIONS SHOWN ON THE DRAWINGS. IT IS IMPORTANT THAT ROCK ABUTMENTS BE AT LEAST 3 FEET HIGHER THAN THE SPILLWAY CREST AND AT LEAST 1 FOOT HIGHER THAN THE DAM, ALL THE WAY TO THE DOWNSTREAM TOE, TO PREVENT SCOUR AND EROSION AT THE ABUTMENTS.
- SEDIMENT-LADEN WATER FROM THE CONSTRUCTION SITE SHOULD BE DIVERTED INTO THE BASIN RESERVOIR AT THE FURTHEST AREA FROM THE DAM.
- CONSTRUCT THE ROCK DAM BEFORE THE BASIN AREA IS CLEARED TO MINIMIZE SEDIMENT YIELD FROM CONSTRUCTION OF THE BASIN. IMMEDIATELY STABILIZE ALL AREAS DISTURBED DURING THE CONSTRUCTION OF THE DAM EXCEPT THE SEDIMENT POOL. (REFERENCE: SURFACE STABILIZATION).
- SAFETY - SEDIMENT BASINS SHOULD BE CONSIDERED DANGEROUS BECAUSE THEY ATTRACT CHILDREN. STEEP SIDE SLOPES SHOULD BE AVOIDED. FENCES WITH WARNING SIGNS MAY BE NEEDED IF TRAFFICING IS LIKELY. ALL STATE AND LOCAL REQUIREMENTS MUST BE FOLLOWED.

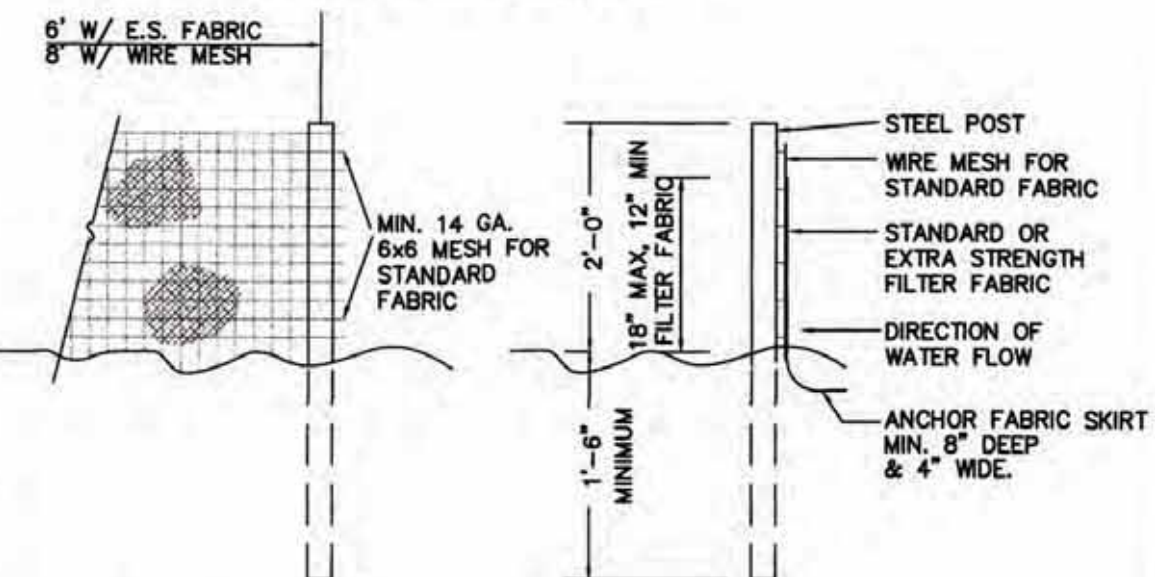
MAINTENANCE:
CHECK SEDIMENT BASINS AFTER EACH RAINFALL. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHICH SEDIMENT ACCUMULATES TO ABOUT ONE-HALF THE DESIGN VOLUME. SEDIMENT SHOULD BE PLACED ABOVE THE BASIN AND ADEQUATELY STABILIZED.
CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL AND REPAIR IMMEDIATELY.
REMOVE THE STRUCTURE AND ANY UNSTABLE SEDIMENT IMMEDIATELY AFTER THE CONSTRUCTION SITE HAS BEEN PERMANENTLY STABILIZED. SMOOTH THE BASIN SITE TO BLEND WITH THE SURROUNDING AREA AND GRADE. ALL TRAILS AND SIGNET SHOULD BE REMOVED FROM THE BASIN PRIOR TO DAM REMOVAL. SEDIMENT SHOULD BE PLACED IN DESIGNATED DISPOSAL AREAS AND NOT ALLOWED TO FLOW INTO STREAMS OR DRAINAGE AREAS DURING STRUCTURE REMOVAL.



HARDWARE CLOTH AND GRAVEL INLET PROTECTION

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

- BUILDING WASTES HANDLING
 - NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS
 - DEDICATED AREA FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO ALTERNATIVE IS AVAILABLE.
 - EARTHEN MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVE IS AVAILABLE.
 - CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.
- INSPECTIONS
 - SAME WEEKLY INSPECTION REQUIREMENTS
 - SAME RAIN GAUGE AND INSPECTIONS AFTER 0.5" RAIN EVENT
 - INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS"
 - RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST
 - ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBSTITUTED UNDER CERTAIN CONDITIONS
- SEDIMENT BASINS
 - OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN ONE ACRE
 - USE ONLY DWQ APPROVED FLOCCULANTS



- NOTES:
- SYN. FENCE FABRIC SHALL BE MIN. OF 30" IN WIDTH WITH 30 LB/IN TENSILE STRENGTH FOR STANDARD FABRIC AND 50 LB/IN FOR EXTRA STRENGTH.
 - FABRIC SHALL BE CONTINUOUS LENGTH. IF JOINTS ARE NECESSARY, LAP FABRIC POST TO POST.
 - STEEL POST SHALL BE MIN 4' IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

TEMPORARY SILT FENCE

- CONSTRUCTION SEQUENCE:**
- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
 - DRIVE 5' STEEL POST 2' INTO THE GROUND SURROUNDING THE INLET. SPACE POST EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4' APART.
 - SURROUND THE POST WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POST AT THE TOP, MIDDLE AND BOTTOM. PLACING A 2' FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
 - PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" TO 18" AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
 - ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
 - COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

- MAINTENANCE:**
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REMOVE SEDIMENT WHEN ACCUMULATION REACHES HALF THE DEPTH OF ROCK. REPLACE STONE WITH CLEANER STONE WHEN NO LONGER DRAINS AS DESIGNED.

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

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 1/23/2020 Permit: 180121 A R 2

Signed: *[Signature]*

SYMBOL	DATE	DESCRIPTION	BY

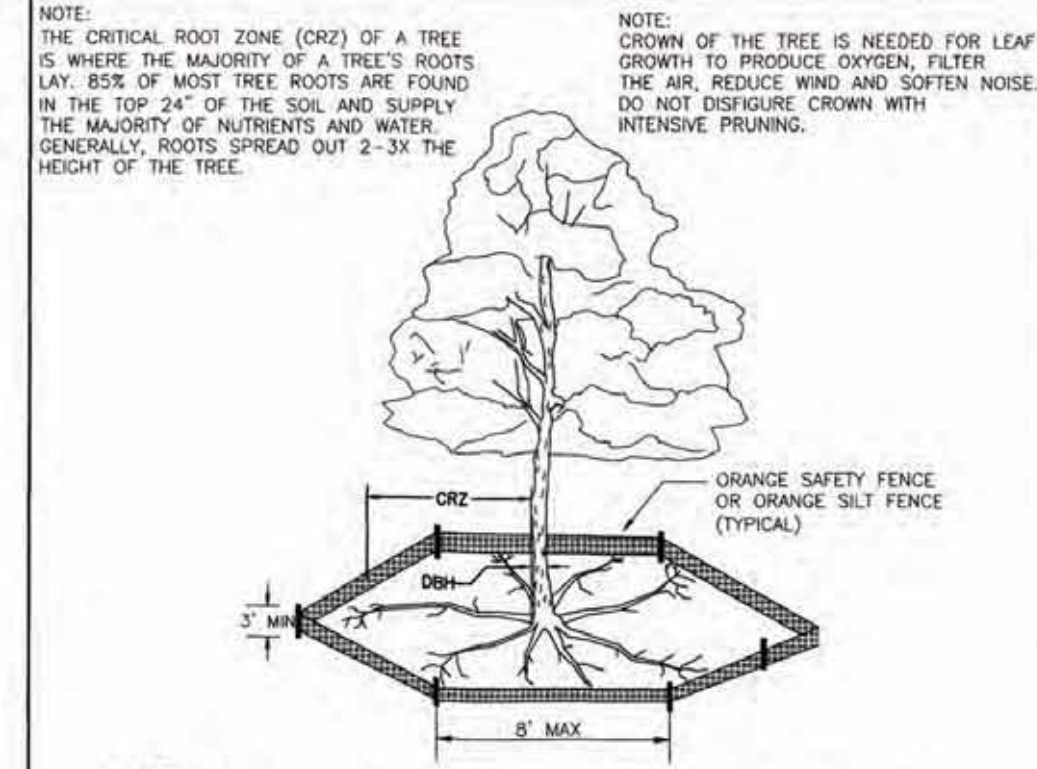
REVISIONS
©2019 NORRIS & TUNSTALL

Approved Construction Plan

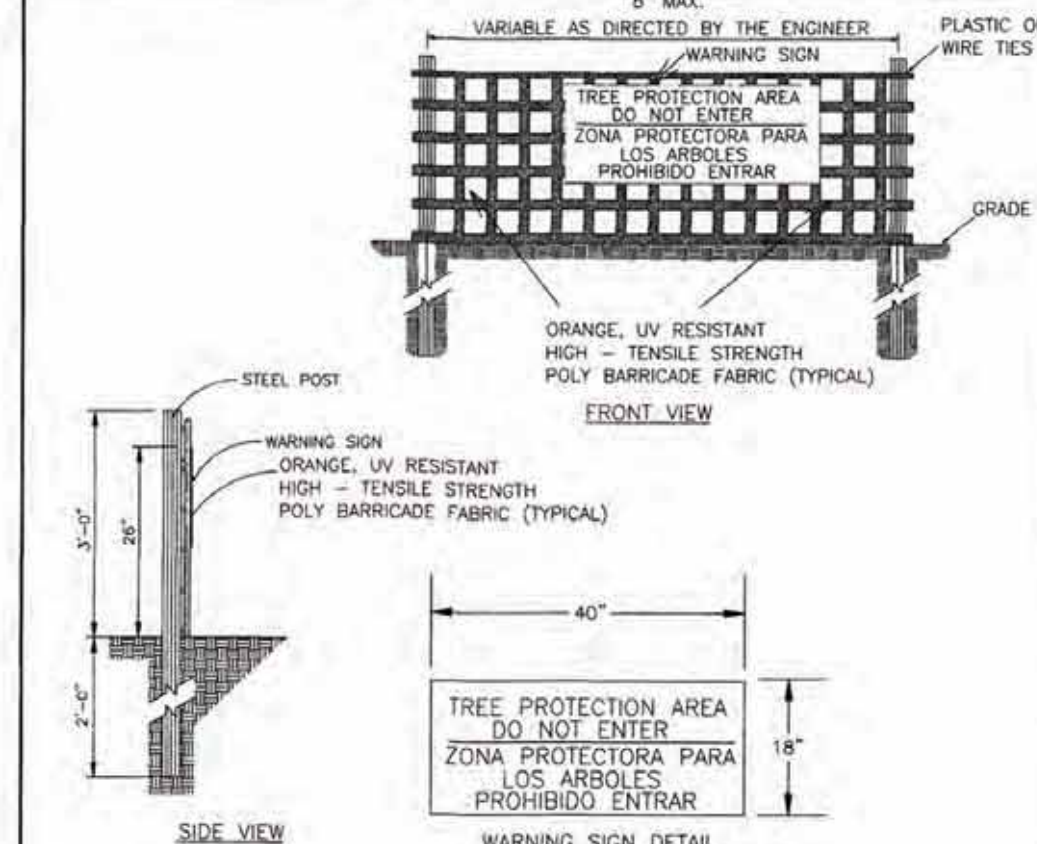
Planning: *[Signature]* 1/23/20
Traffic: *[Signature]* 1/22/20
Fire: *[Signature]* 1/23/20

NPDES-SPECIFIC PLAN SHEET NOTES

- THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCD010000.
- THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCD010000 ONLY.
- THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCD010000.
- THE COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE CITY CODE.



- NOTE: THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.
- NOTE: CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.
- NOTE: CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH). CRZ IS 8' MAX. CRZ MAX 12' MIN. FILTER FABRIC IS 1'-6" MINIMUM. 18" MAX. 12" MIN. ANCHOR FABRIC SKIRT MIN. 8" DEEP & 4" WIDE.
- NOTES:
- PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 - CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER. CRZ LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 - FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.



- NOTES:
- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
 - WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
 - SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
 - ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT THE ENTIRE PROJECT.
 - TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
 - ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

TREE PROTECTION DETAIL

DETAILS AND NOTES
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
 MATRIX DEVELOPMENT GROUP
 FORSGATE DR., CM4000
 GRANBURG, NJ 08512
 ATTN: MATTHIAS LINDEN & BILL STAPLETON
 PHONE: (732) 407-4813
 FAX: (732) 586-5289
 EMAIL: BSTALL@MATRXCORPORATION.COM

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 1429 ASH-LITTLE RIVER RD. NW
 SUITE 11
 WILMINGTON, NC 28403
 PHONE: (910) 287-5900

DES: JST
 CWD: TJC
 DRWL: SLF

DATE: 05/21/19

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

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

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

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

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

- PAINT AND OTHER LIQUID WASTE**
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
 - Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
 - Containment must be labeled, sized and placed appropriately for the needs of site.
 - Containment must be sealed, and placed appropriately for the needs of site.
 - Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

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

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

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

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

- HAZARDOUS AND TOXIC WASTE**
- Create designated hazardous waste collection areas on-site.
 - Place hazardous waste containers under cover or in secondary containment.
 - Do not store hazardous chemicals, drums or bagged materials directly on the ground.



NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	1. Daily rainfall amounts. 2. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use an amber rain-sensing device approved by the Division.
(2) EESC Measures	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the measures inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Indication of whether the measures were operating properly. 5. Description of maintenance needed for the measures. 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outlets (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the discharge outlets inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of indicators of stormwater pollution such as oil, grease, floating or suspended solids or discoloration. 5. Indication of visible sediment leaving the site. 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If stable sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits. 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Storms or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(j) of the permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading/installation of perimeter EESC measures, clearing and grubbing, stabilization of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover. 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

The approved EESC plan as well as any approved deviation shall be kept on the site. The approved EESC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the EESC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each EESC Measure has been installed	Initial and date each EESC Measure on a copy of the approved EESC Plan or complete, date and sign an inspection report that lists each EESC Measure shown on the approved EESC Plan. This documentation is required upon the initial installation of the EESC Measures or if the EESC Measures are modified after initial installation.
(b) A phase of grading has been completed	Initial and date a copy of the approved EESC Plan or complete, date and sign an inspection report to indicate completion of the phase.
(c) Ground cover is located and installed in accordance with the approved EESC Plan	Initial and date a copy of the approved EESC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all EESC Measures have been performed	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to EESC Measures	Initial and date a copy of the approved EESC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the EESC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This general permit as well as the certificate of coverage, after it is received.
- Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

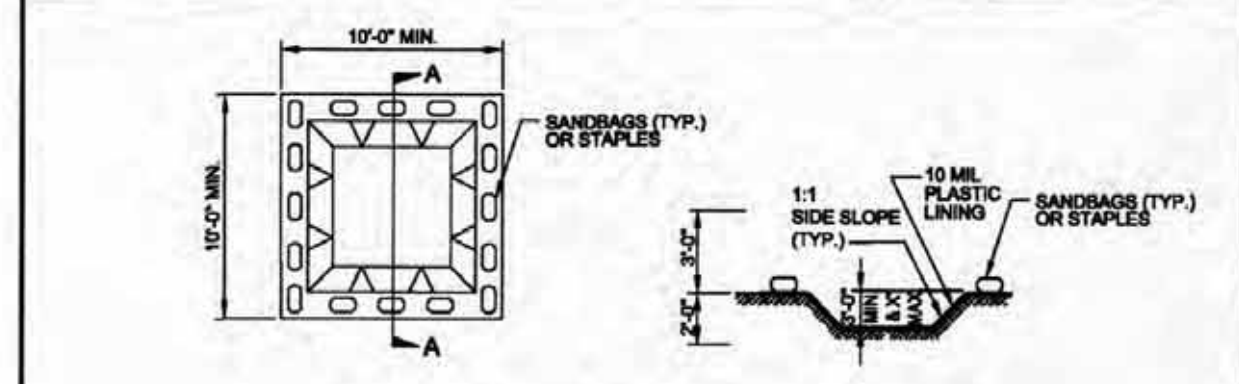
- Visible sediment deposition in a stream or wetland.
- Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	• Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• A report of least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(n)(7)]	• Within 24 hours, an oral or electronic notification. • Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(n)(6)] • Division staff may waive the requirement for a written report on a case-by-case basis.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



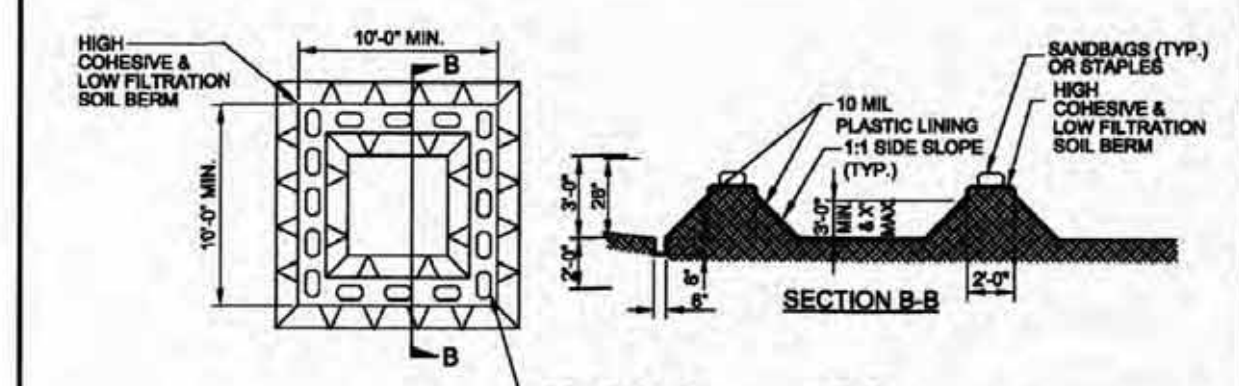
SECTION A-A

NOTES:

- ACTUAL LOCATION DETERMINED IN FIELD
- THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
- CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE



SECTION B-B

NOTES:

- ACTUAL LOCATION DETERMINED IN FIELD
- THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
- CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 04/01/19

SYMBOL	DATE	DESCRIPTION	BY
--------	------	-------------	----

REVISIONS
©2019 NORRIS & TUNSTALL

DETAILS AND NOTES
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CM4000
CRANFURY, NJ 08512
ATTN: MATHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 385-5289
BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.
1000 EASTWOOD ROAD,
SUITE 111
WILMINGTON, NC 28401
PHONE: (910) 343-9553

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

18100
DES: JST
CKD: TJC
DRWN: SLF

DATE: 10/01/19



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

C12

Approved Construction Plan

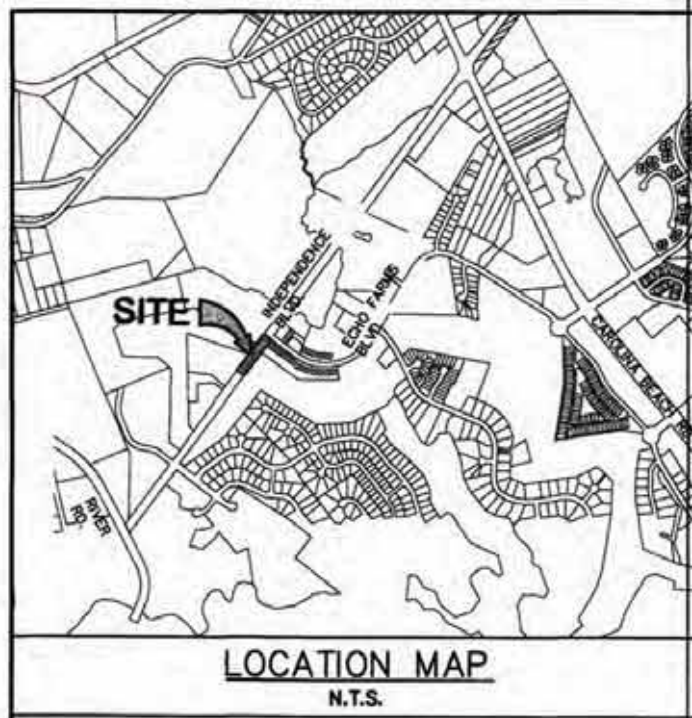
Planning	_____	Date	12/27/20
Traffic	_____	_____	_____
Fire	_____	_____	1/20/20

APPROVED STORMWATER MANAGEMENT PLAN

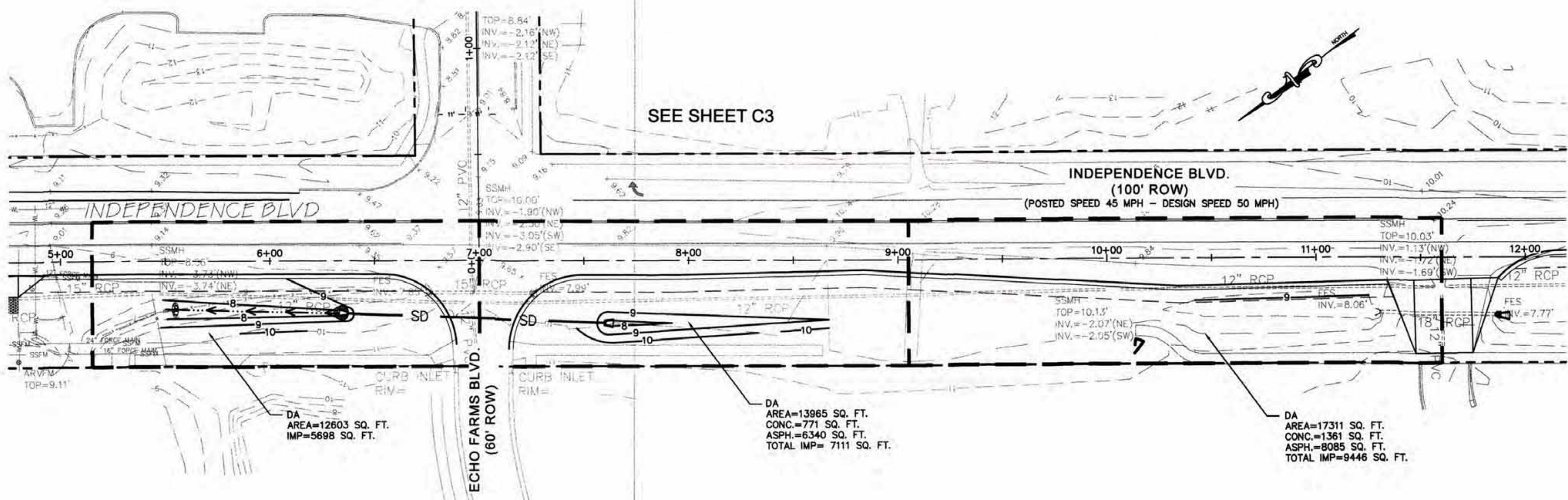
Date: 1/23/2020 Permit # 20180012R-2

Signed: *Rich Christensen*

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



SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
© 2018 NORRIS & TUNSTALL			



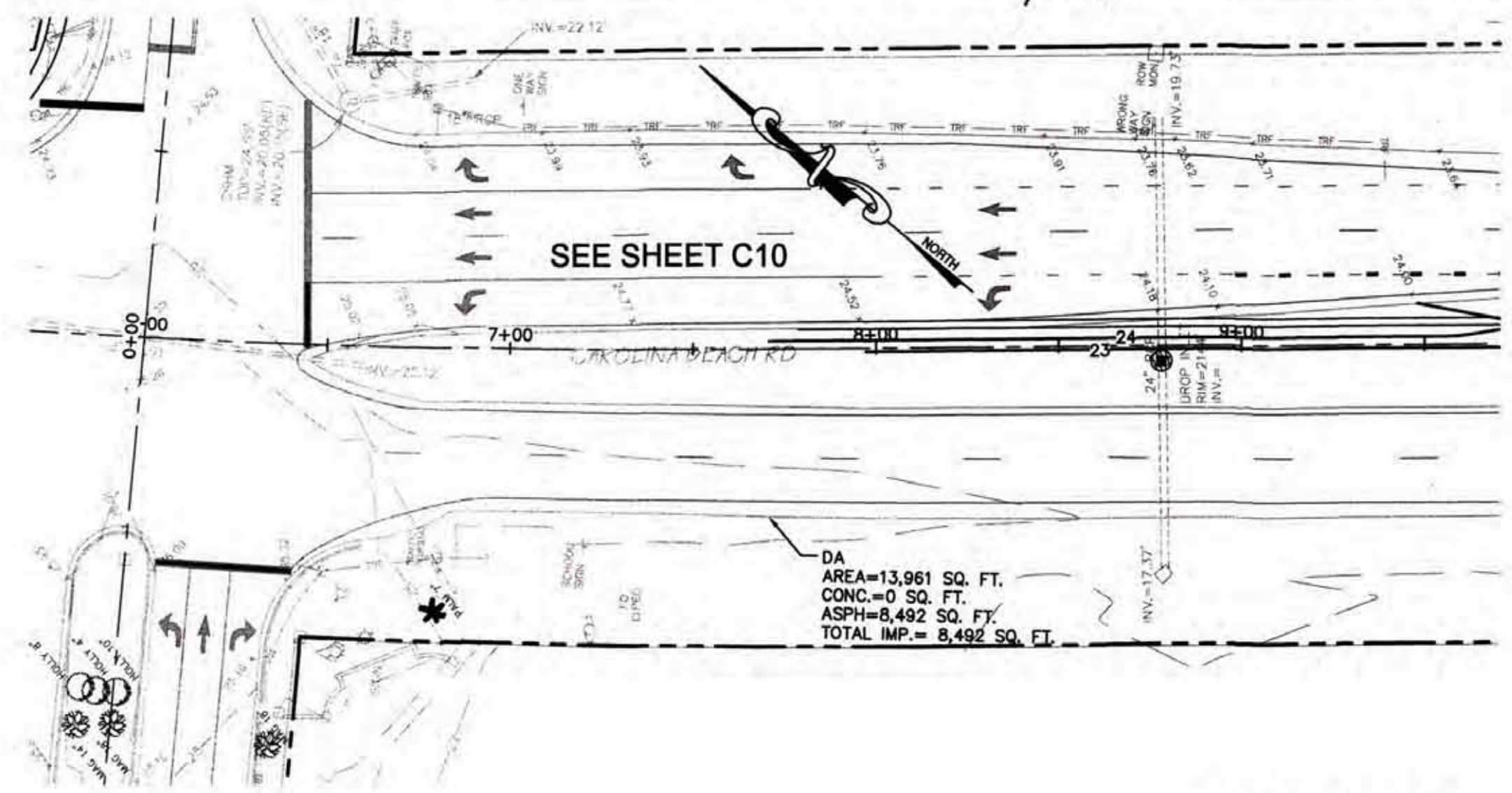
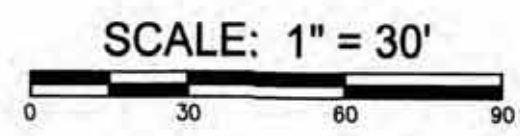
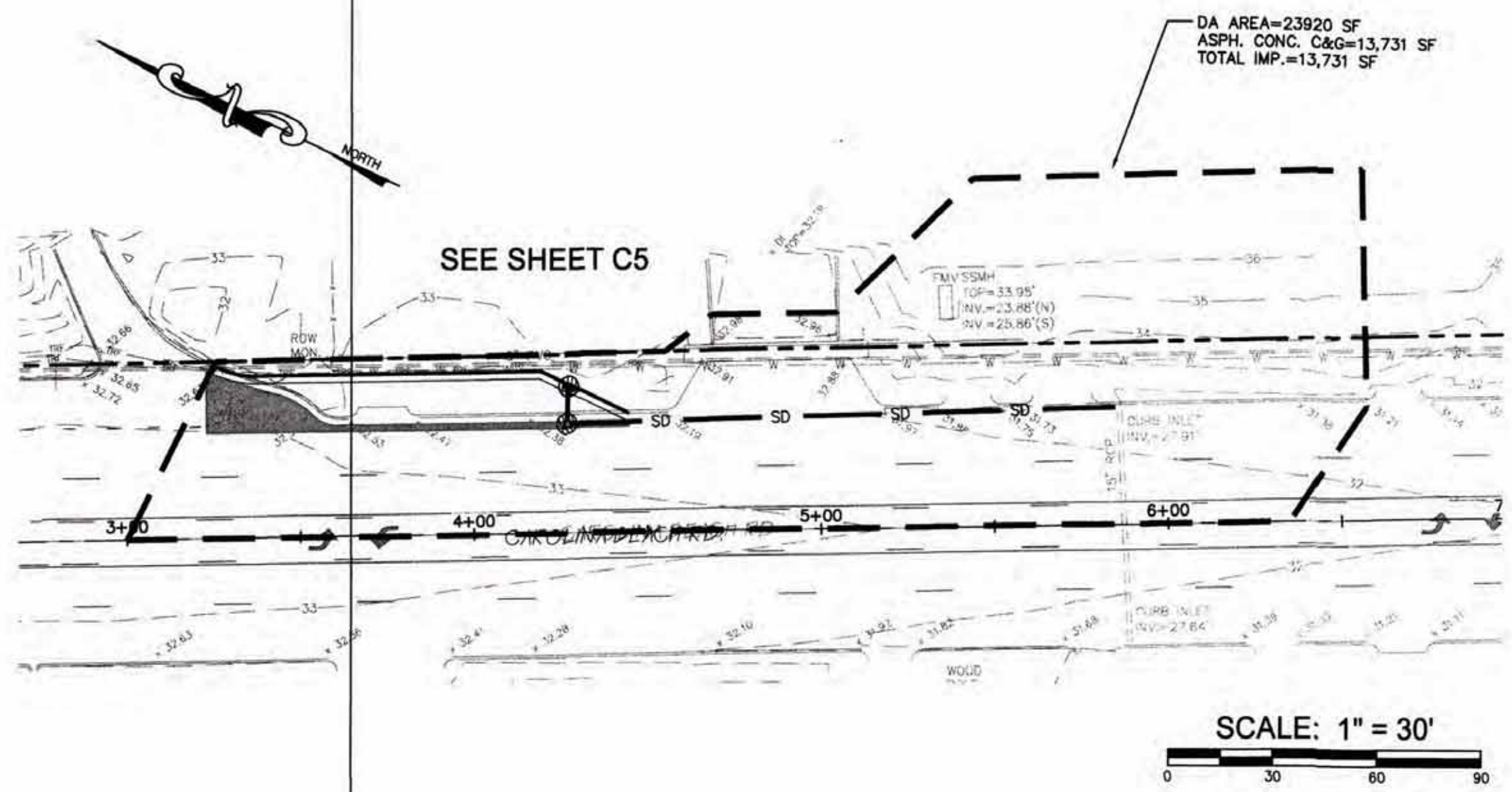
DA AREA=12603 SQ. FT.
IMP=5698 SQ. FT.

DA AREA=13965 SQ. FT.
CONC.=771 SQ. FT.
ASPH.=6340 SQ. FT.
TOTAL IMP= 7111 SQ. FT.

DA AREA=17311 SQ. FT.
CONC.=1361 SQ. FT.
ASPH.=8085 SQ. FT.
TOTAL IMP=9446 SQ. FT.



Approved Construction Plan		 Public Services • Engineering Division APPROVED STORMWATER MANAGEMENT PLAN Date: 1/23/20 Permit # 2018027 R2 Signed: <i>[Signature]</i>	For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.
Planning	<i>[Signature]</i> 1/24/20		
Traffic	<i>[Signature]</i> 1-22-20		
Fire	<i>[Signature]</i> 1/24/20		



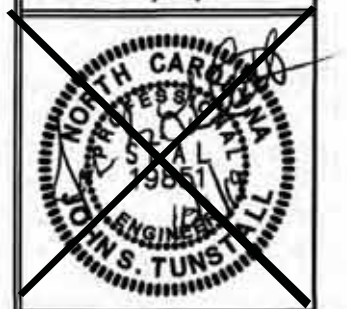
DA AREA=13,961 SQ. FT.
CONC.=0 SQ. FT.
ASPH.=8,492 SQ. FT.
TOTAL IMP.= 8,492 SQ. FT.

DRAINAGE AREA PLAN
ECHO FARMS BLVD. & INDEPENDENCE BLVD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

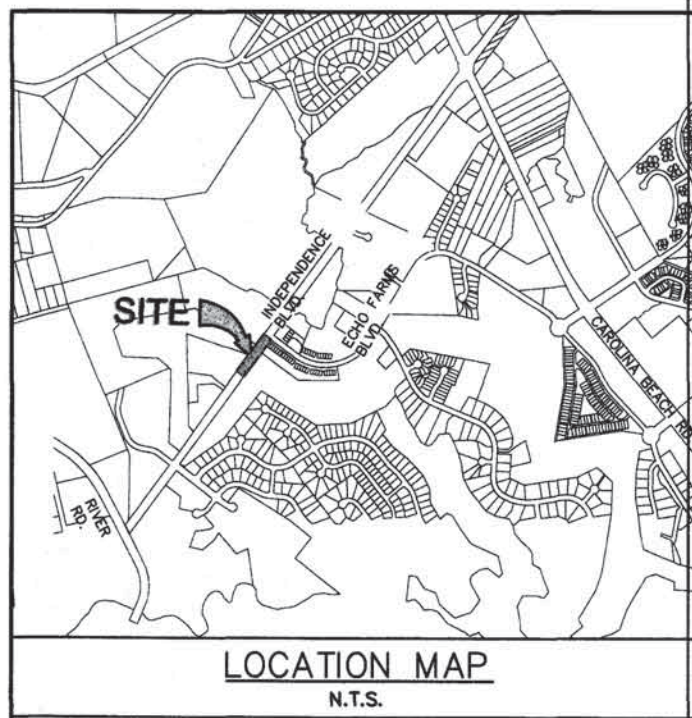
OWNER / DEVELOPER:
 MATRIX DEVELOPMENT GROUP
 FORSGATE DR. CM4000
 CRANFORD, NJ 08512
 ATTN: MATTHIAS LINDEN & BILL STAPLETON
 FAX: (908) 526-8968
 BSTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
 CONSULTING ENGINEERS P.C.
 1429 ASH-LITTLE RIVER RD. NW
 ASHL, NC 28420
 WILMINGTON, NC 28401
 PHONE (910) 287-5900
 1000 EASTWOOD ROAD,
 SUITE 11
 WILMINGTON, NC 28401
 PHONE (910) 343-9653

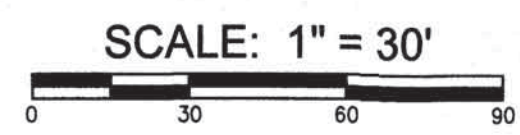
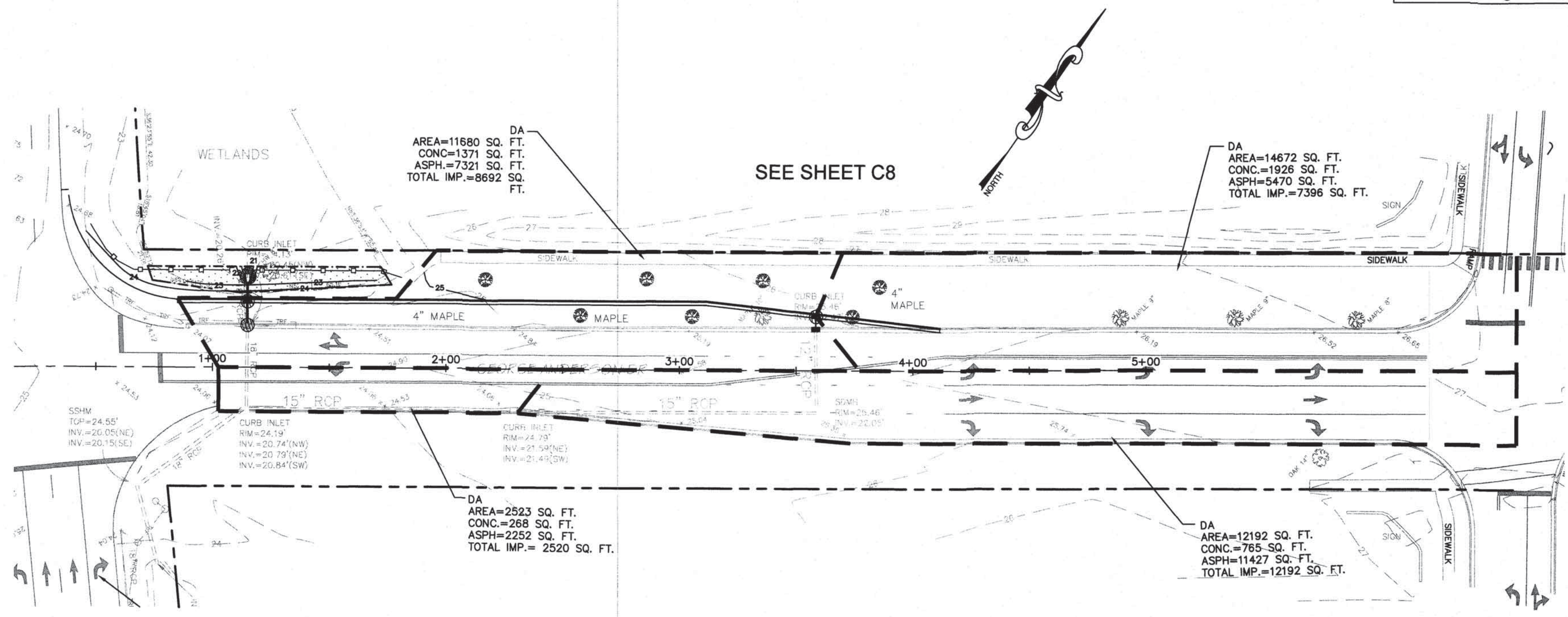
18100
 DES. JST
 CKD. TJC
 DRWN. SLF
 DATE: 10/01/19



C13



SYMBOL	DATE	DESCRIPTION	BY
REVISIONS			
© 2018 NORRIS & TUNSTALL			



Approved Construction Plan

Name: *Clara* Date: *1/22/20*

Planning: *W. Swindon* 1-22-20

Traffic: *C. Wiles* 1/22/20

Fire: *C. Wiles* 1/22/20

CITY OF WILMINGTON
NORTH CAROLINA

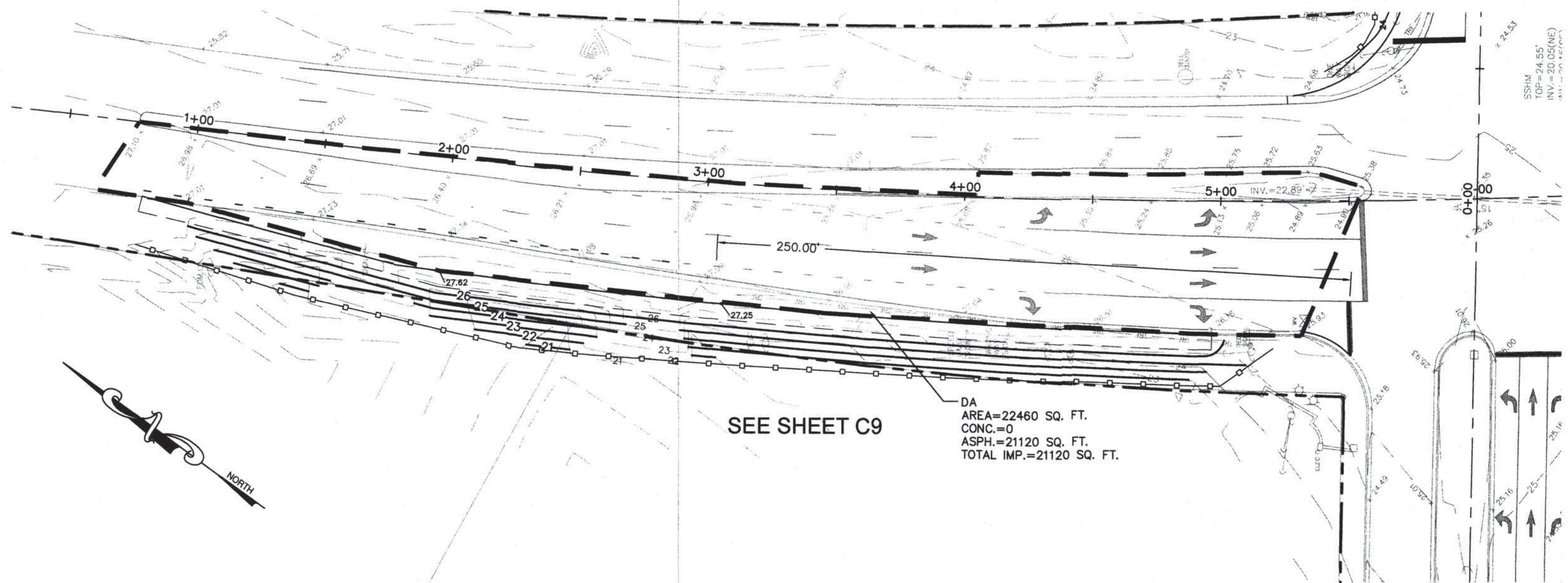
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: *1/22/2020* Permit # *2018021 R2*

Signed: *Rich Christman*

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



DRAINAGE AREA PLAN
ECHO FARMS BLVD. & INDEPENDENCE BLVD.
WOODLANDS ROAD IMPROVEMENTS
WILMINGTON, NC

OWNER / DEVELOPER:
MATRIX DEVELOPMENT GROUP
FORSGATE DR., CM4000
CRANBURY, NJ 08512
ATTN: MATTHIAS LINDEN & BILL STAPLETON
PHONE: (732) 407-4813
FAX: (609) 386-6288
ESTAPLET@MATRIXCOMPANIES.COM

NORRIS & TUNSTALL
CONSULTING ENGINEERS P.C.

1429 ASH-LITTLE RIVER RD. NW
ASH, NC 28400
PHONE (910) 287-5900

1900 EASTWOOD ROAD,
SUITE 11
WILMINGTON, NC 28401
PHONE (910) 343-9653

18100

DES. JST
CHK. TJC
DRWN. SLF

DATE: 10/01/19



C14