

CONSTRUCTION NOTES

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS. SUFFICIENT EROSION CONTROL PRACTICES MUST BE INSTALLED AND MAINTAINED TO RETAIN SEDIMENT WITHIN THE BOUNDARIES OF THE SITE. GROUND COVER STABILIZATION SHALL BE IN ACCORDANCE WITH NECS PERMIT AND STABILIZATION CHART ABOVE. TEMPORARY GROUND COVER WILL BE INSTALLED ON ALL EXPOSED SLOPES IN 7 OR 14 DAYS. PERMANENT GROUND COVER WILL BE INSTALLED ON EXPOSED SLOPES WITHIN 18 WORKING DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.

NO DISTURBANCE TO TAKE PLACE INSIDE STREAM BUFFERS OR WETLANDS UNTIL ALL REQUIRED ACCO. 404 PERMITS, NCCDW 401 PERMITS, AND/OR CHATHAM BUFFER IMPACT AUTHORIZATION HAVE BEEN OBTAINED AND COPY OF PERMITS ON-SITE.

MAXIMUM GRADED SLOPE SHALL NOT EXCEED THREE (3) TO ONE (1).

TOTAL DISTURBED AREA= 16.1 ACRES

GROUND STABILIZATION *

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
Perimeter ditches, swales, ditches and slopes	7 days	None
High Quality Water (H2W) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days allowed
Slopes 3:1 or flatter	14 days	7-days for slopes greater than 5:1 and in length
All other areas with slopes flatter than 4:1	14 days	None (except for perimeter and H2W Zones)

* Extensions of time may be approved by the permitting authority based on weather or other site specific conditions that make compliance impracticable. (Section 13.2 (2)(b))

NCCDW SELF-INSPECTION PROGRAM

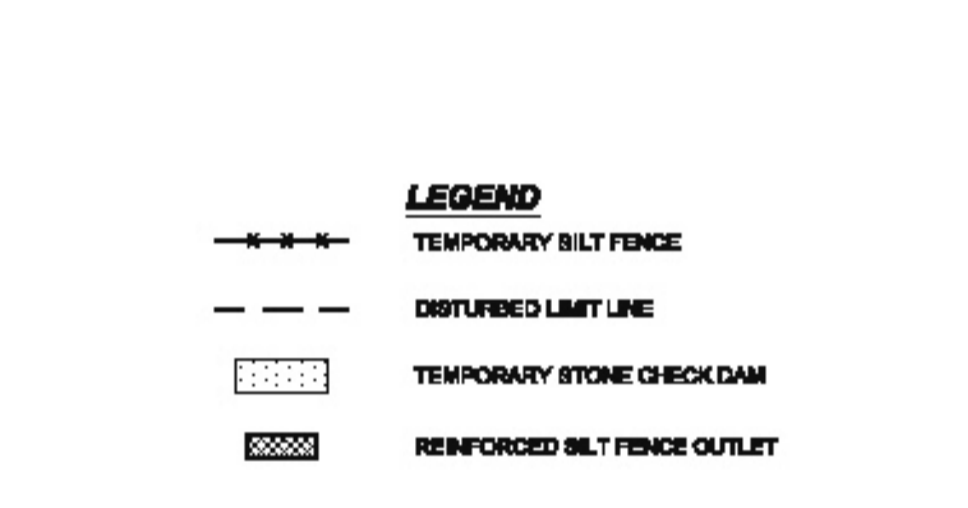
THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2008 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED.

RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TAKE EFFECT OCTOBER 1, 2010.

THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NCS PERMIT. THE NCS PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS SHOULD BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTROL LIMITS, PERMANENT GROUND COVER IS ESTABLISHED.

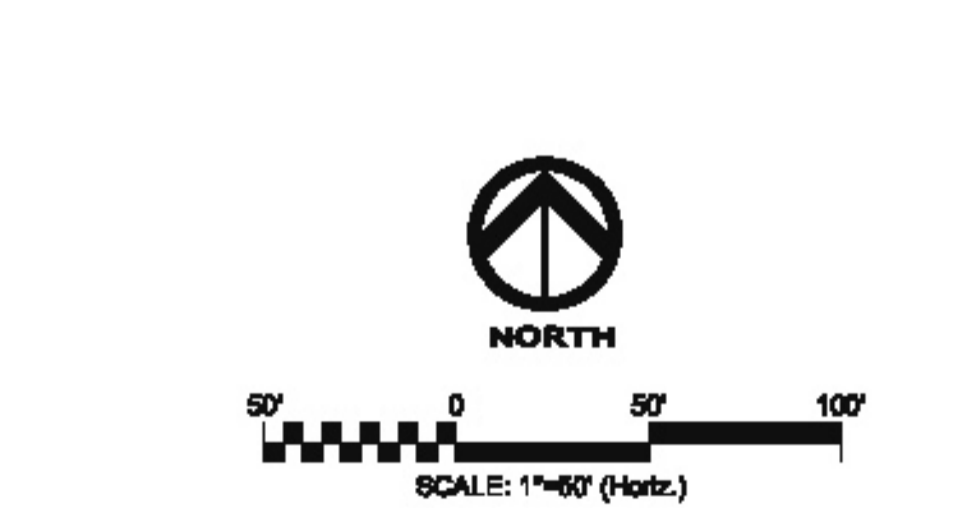
THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM THE LAND QUALITY WEBSITE.

<http://www.ncdwr.com/health/inspection>



GENERAL CONSTRUCTION NOTES

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-852-8945. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- THE SUBJECT PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA PER FEMA FIRM PANEL 2704, MAP NUMBER 570070001, DATED 08/2007.
- INSTREAM WORK SHALL BE PROHIBITED FROM MARCH 15 THROUGH JUNE 30 TO MINIMIZE IMPACTS TO SPRAWLING FISH.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC. PROFILE DATA FROM FIELD SURVEY. BACKGROUND TOPOGRAPHY FROM AERIAL MAPPING.
- FOR TYPICAL STREET SECTIONS, SEE SHEET 1A.
- ALL STREETS ARE PUBLIC.



STOP!
BEFORE YOU DIG CALL
THE NC ONE CALL CENTER
1-800-632-4949
IT'S THE LAW!

FINAL DESIGN
NOT RELEASED
FOR CONSTRUCTION

NO.	REVISIONS	DATE
1.		10/15/14

CE GROUP

307 GLENWOOD AVE. 220
RALEIGH, NC 27603
PHONE: 919-367-8780
FAX: 919-322-0332

www.cegroupinc.com

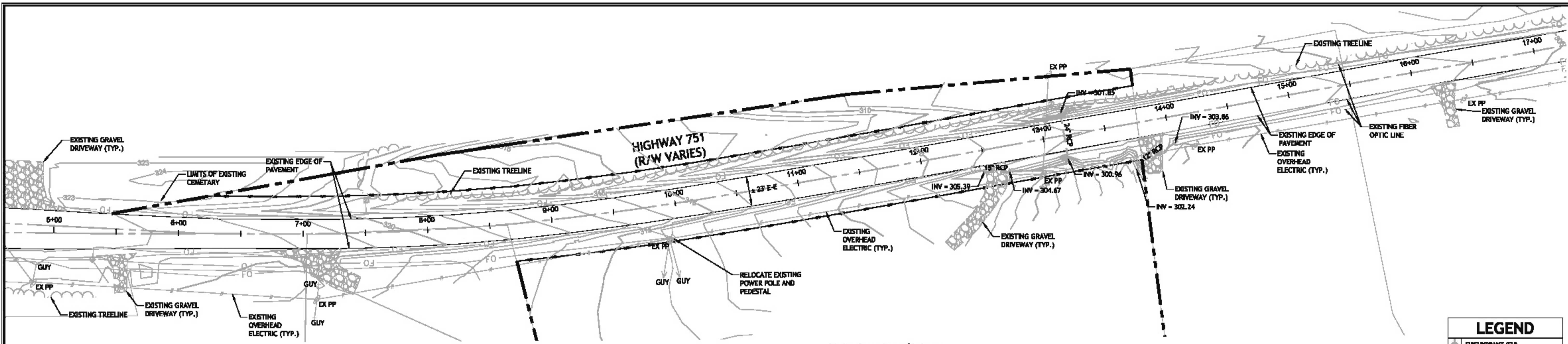
License # C-1739

CONSTRUCTION PLANS
CAROLINA CROSSINGS
EROSION CONTROL PLAN
CHATHAM COUNTY, NORTH CAROLINA

Date: August, 2014
Scale: 1" = 60'
Drawn: CPM
Checked: MPA
Project No. 127-170
Computer Desig. Name 127-170 Carolina Crossings Drive EG

Sheet No: **10** Of ___

MATCHLINE STA. 33+00
CONTINUE ON SHEET 5

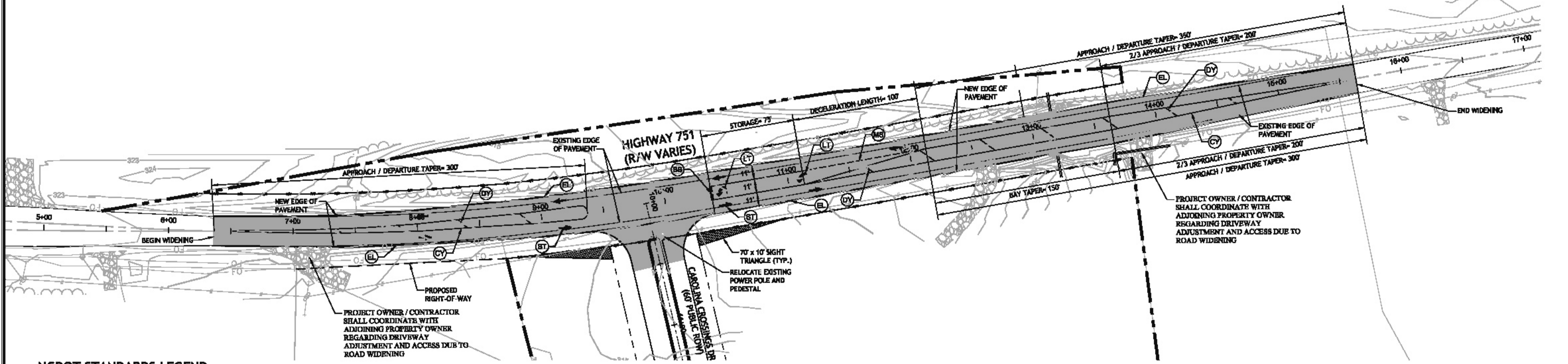
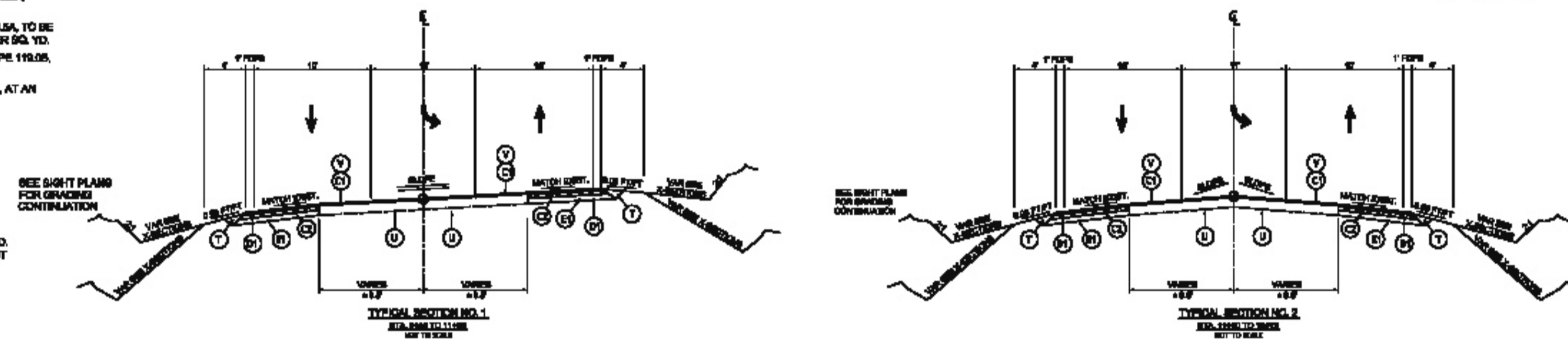


**Existing Conditions
Plan**
Scale: 1" = 40'

PAVEMENT SCHEDULE

- (1) PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SP18A, AT AN AVERAGE RATE OF 95 LBS. PER SQ. YD.
- (2) PROP. APPROX. 5.0" ASPHALT CONCRETE SURFACE COURSE, TYPE SP18A, TO BE INSTALLED IN TWO EQUAL LIFTS AT AN AVERAGE RATE OF 105 LBS. PER SQ. YD.
- (3) PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE SP18B, AT AN AVERAGE RATE OF 485 LBS. PER SQ. YD.
- (4) PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE SP18B, AT AN AVERAGE RATE OF 670 LBS. PER SQ. YD.
- (5) COMPACTED SAND MATERIAL.
- (6) EXISTING PAVEMENT
- (7) 1.5" MILLING

NOTES:
1. ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.
2. SEE SITE PLAN FOR CONTINUED GRADING INFORMATION ON THE EAST SIDE OF 751.

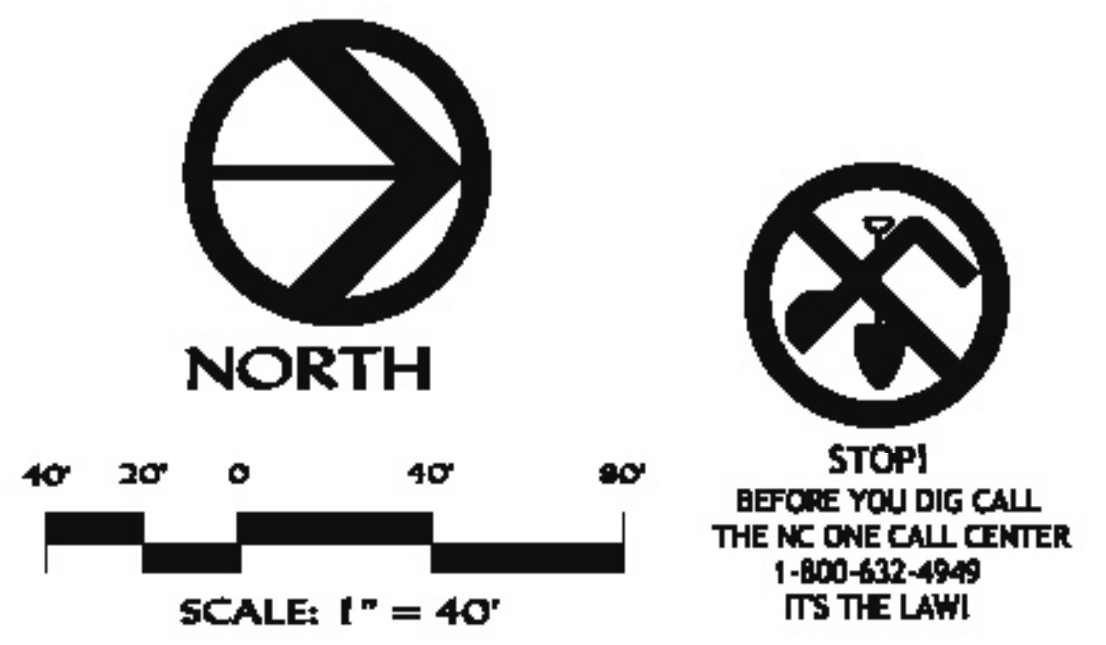


**Proposed Conditions
Plan**
Scale: 1" = 40'

- NCDOT STANDARDS LEGEND**
- (CY) 4" DOUBLE YELLOW CENTER LINE / STD. 1205.01
 - (DY) 8" YELLOW DIAGONAL LINE / STD. 1205.01
 - (EL) 4" WHITE EDGE LINE / STD. 1205.01
 - (MS) 4" WHITE MINI-SKIP (2) LINES / STD. 1205.01
 - (SB) 24" WHITE STOP BAR / STD. 1205.01
 - (LT) LEFT TURN ARROW / STDS. 1205.08 & 1205.05
 - (ST) STRAIGHT ARROW / STDS. 1205.08 & 1205.05

- LEGEND**
- [Hatched Box] DENOTES PROPOSED PAVEMENT WIDENING / ASPHALT

- GENERAL CONSTRUCTION NOTES**
- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4848 AND CHATHAM COUNTY UTILITIES. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
 - ALL WORK WITHIN THE N.C.D.O.T. RIGHT-OF-WAY SHALL CONFORM TO N.C.D.O.T. STANDARDS AND SPECIFICATIONS.



**FINAL DESIGN
NOT RELEASED
FOR CONSTRUCTION**

NO.	REV./DATE	REVISIONS	DATE
1.			

CE GROUP
301 GLENWOOD AVE. 220
RALEIGH, NC 27603
PHONE: 919-367-8780
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www.cegroupinc.com
License # C-1739



**CONSTRUCTION PLANS
CAROLINA CROSSINGS
ROAD WIDENING PLAN
CHATHAM COUNTY, NORTH CAROLINA**

Date:	August, 2014
Scale:	1" = 40'
Drawn:	JPD
Checked:	MFA
Project No.:	127-170
Computer Desig. Name:	127-170 11 Road Widening Plan

NO.	REVISIONS	DATE
2.	REVISED PER EROSION CONTROL COMMENTS	01/16/16
1.	REVISED PER EROSION CONTROL COMMENTS	10/13/14

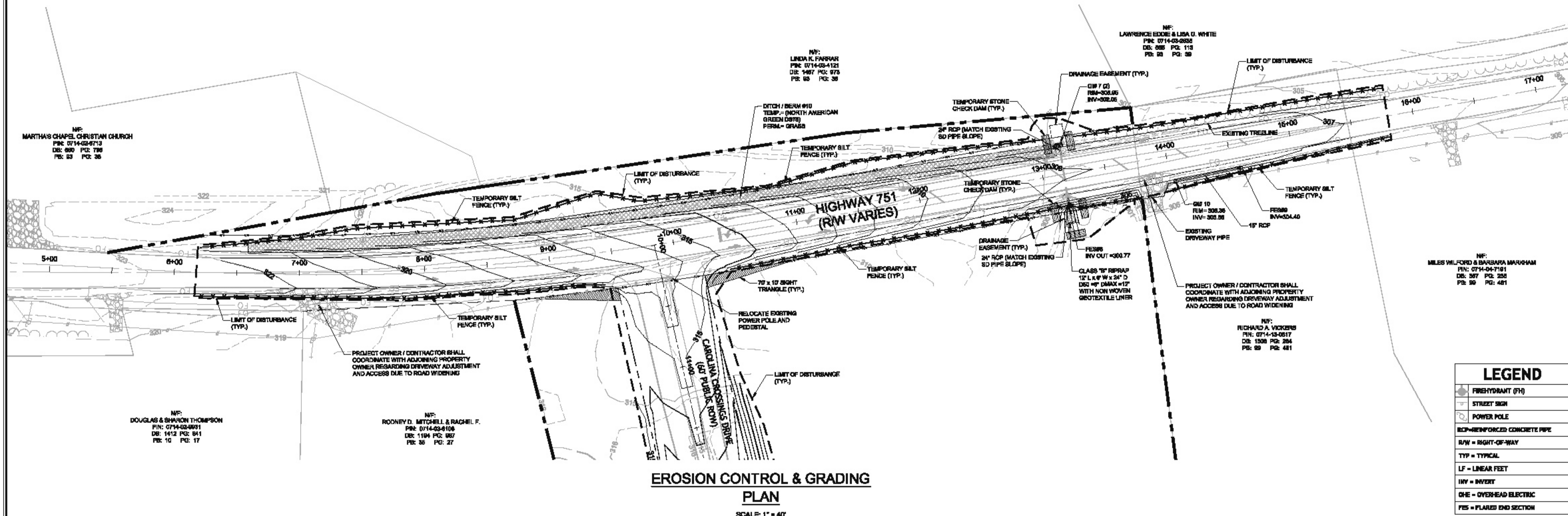


CE GROUP
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 www.cegroupinc.com
 License # C-1739



CONSTRUCTION PLANS
CAROLINA CROSSINGS
ROAD WIDENING / EC PLAN
 CHATHAM COUNTY, NORTH CAROLINA

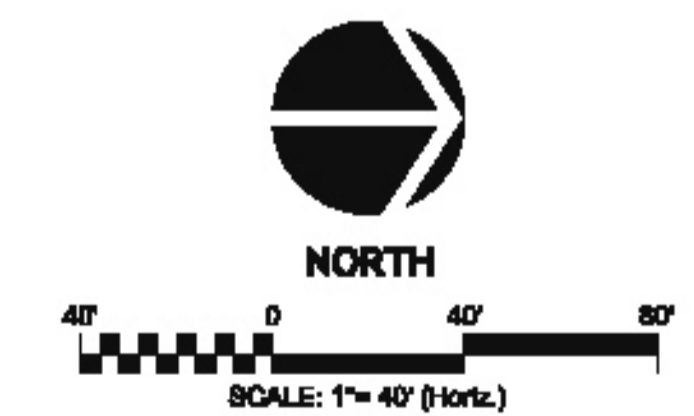
Date: August, 2014
 Scale: 1" = 40'
 Drawn: JPD
 Checked: MPA
 Project No: 127-170
 Computer Dwg. Name: 127-170 12 Road Widening Plan EC
 Sheet No: **12** Of ___



EROSION CONTROL & GRADING PLAN
 SCALE: 1" = 40'

LEGEND

	FIRE HYDRANT (FH)
	STREET SIGN
	POWER POLE
	RCP - REINFORCED CONCRETE PIPE
	R/W - RIGHT-OF-WAY
	TYP - TYPICAL
	LF - LINEAR FEET
	INV - INVERT
	OHE - OVERHEAD ELECTRIC
	FES - FLARED END SECTION



MP: MARTHA'S CHAPEL CHRISTIAN CHURCH
 PR: 0714-02-4713
 DR: 000 PG: 790
 PR: 00 PG: 36

MP: LINDA K. FARRAR
 PR: 0714-02-4121
 DR: 1487 PG: 976
 PR: 00 PG: 36

MP: LAWRENCE EDDIE & LISA G. WHITE
 PR: 0714-02-0000
 DR: 000 PG: 110
 PR: 00 PG: 36

MP: MILES WILFORD & BARBARA MARSHAM
 PR: 0714-04-7181
 DR: 307 PG: 208
 PR: 00 PG: 481

MP: DOUGLAS & SHARON THOMPSON
 PR: 0714-02-8991
 DR: 1412 PG: 941
 PR: 10 PG: 17

MP: RODNEY D. MITCHELL & RACHEL F.
 PR: 0714-02-6108
 DR: 1194 PG: 087
 PR: 30 PG: 27

GROUND STABILIZATION *

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
Perimeter (dikes, erosion, ditches and slopes)	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 2:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days allowed
Slopes 3:1 or flatter	14 days	7-days for slopes greater than 60-feet in length
All other areas with slopes flatter than 5:1	14 days	None (except for perimeters and HQW Zones)

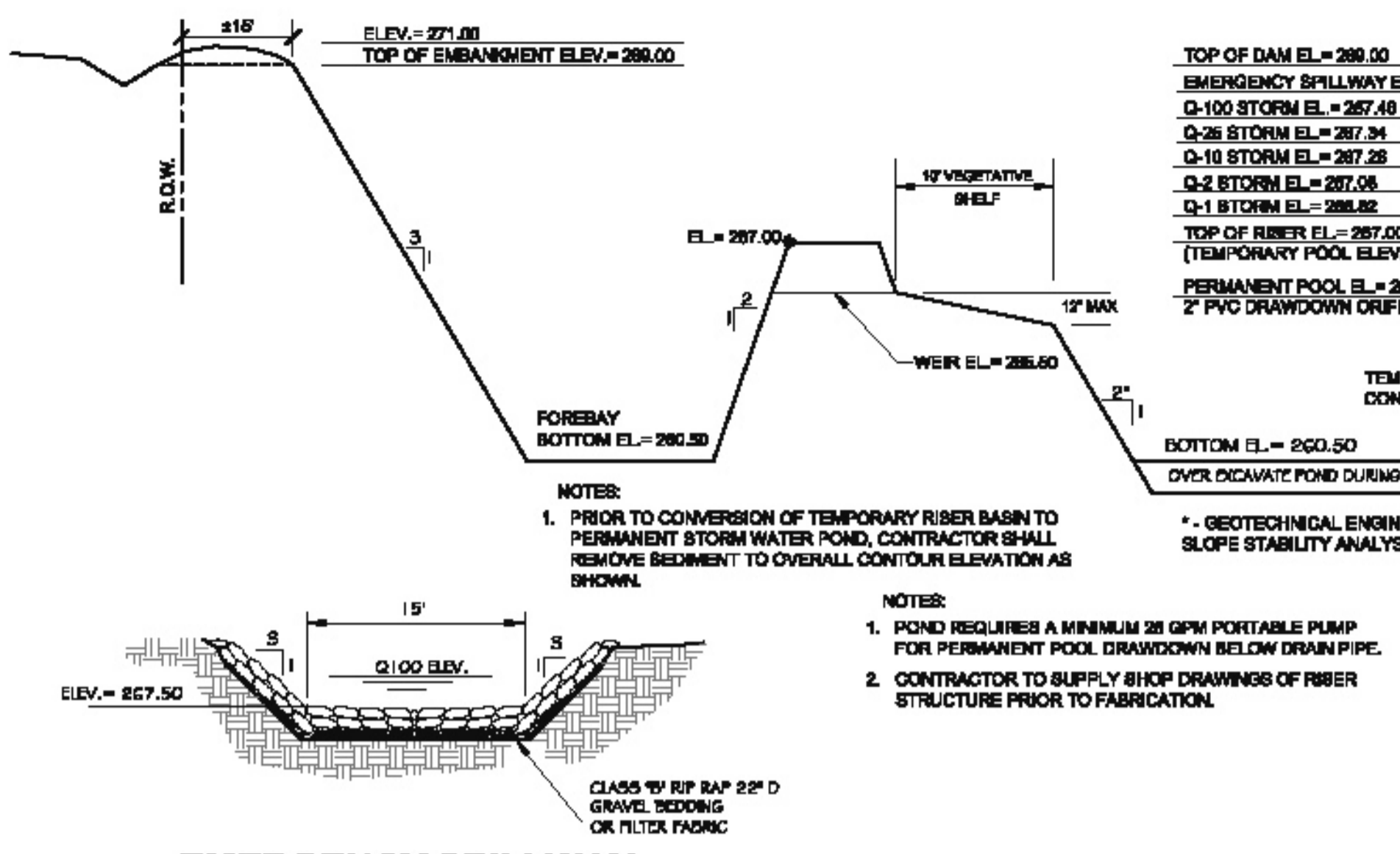
CONSTRUCTION NOTES
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 MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL EVENT. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
 NO DISTURBANCE TO TAKE PLACE INSIDE STREAM BUFFERS OR WETLANDS UNTIL ALL REQUIRED ACOE, 404 PERMITS, NCDWQ 401 PERMITS, AND / OR CHATHAM BUFFER IMPACT AUTHORIZATION HAVE BEEN OBTAINED AND COPY OF PERMITS ON-SITE.
 MAXIMUM GRADED SLOPE SHALL NOT EXCEED THREE (3) TO ONE (1).
TOTAL DISTURBED AREA= 10.1 ACRES

GENERAL CONSTRUCTION NOTES

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-632-4949. THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- THE SUBJECT PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA PER FEMA FIRM PANEL 5704, MAP NUMBER 570007400L, DATED 08/02/07.
- INSTREAM WORK SHALL BE PROHIBITED FROM MARCH 15 THROUGH JUNE 30 TO MINIMIZE IMPACTS TO SPAWNING FISH.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC. PROFILE DATA FROM FIELD SURVEY, BACKGROUND TOPOGRAPHY FROM AERIAL MAPPING.
- FOR TYPICAL STREET SECTIONS, SEE SHEET 16.
- ALL STREETS ARE PUBLIC.

NCDENR SELF-INSPECTION PROGRAM
 THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2009 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES IMPACT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED.
 RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TAKE EFFECT OCTOBER 1, 2010.
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 THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM THE LAND QUALITY WEB SITE.
<http://portal.ncdenr.org/web/ncdenr>

FINAL DESIGN
 NOT RELEASED
 FOR CONSTRUCTION



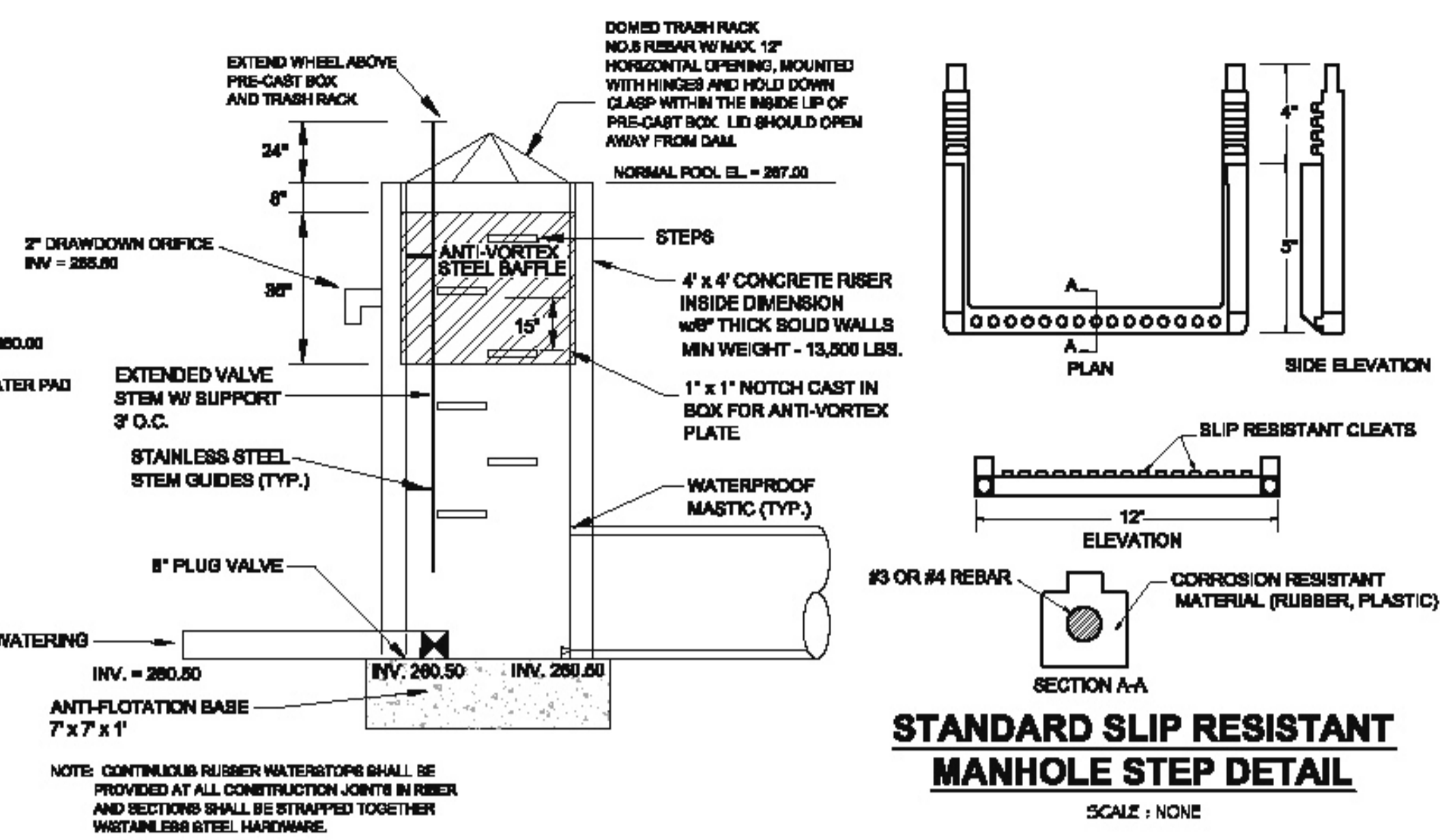
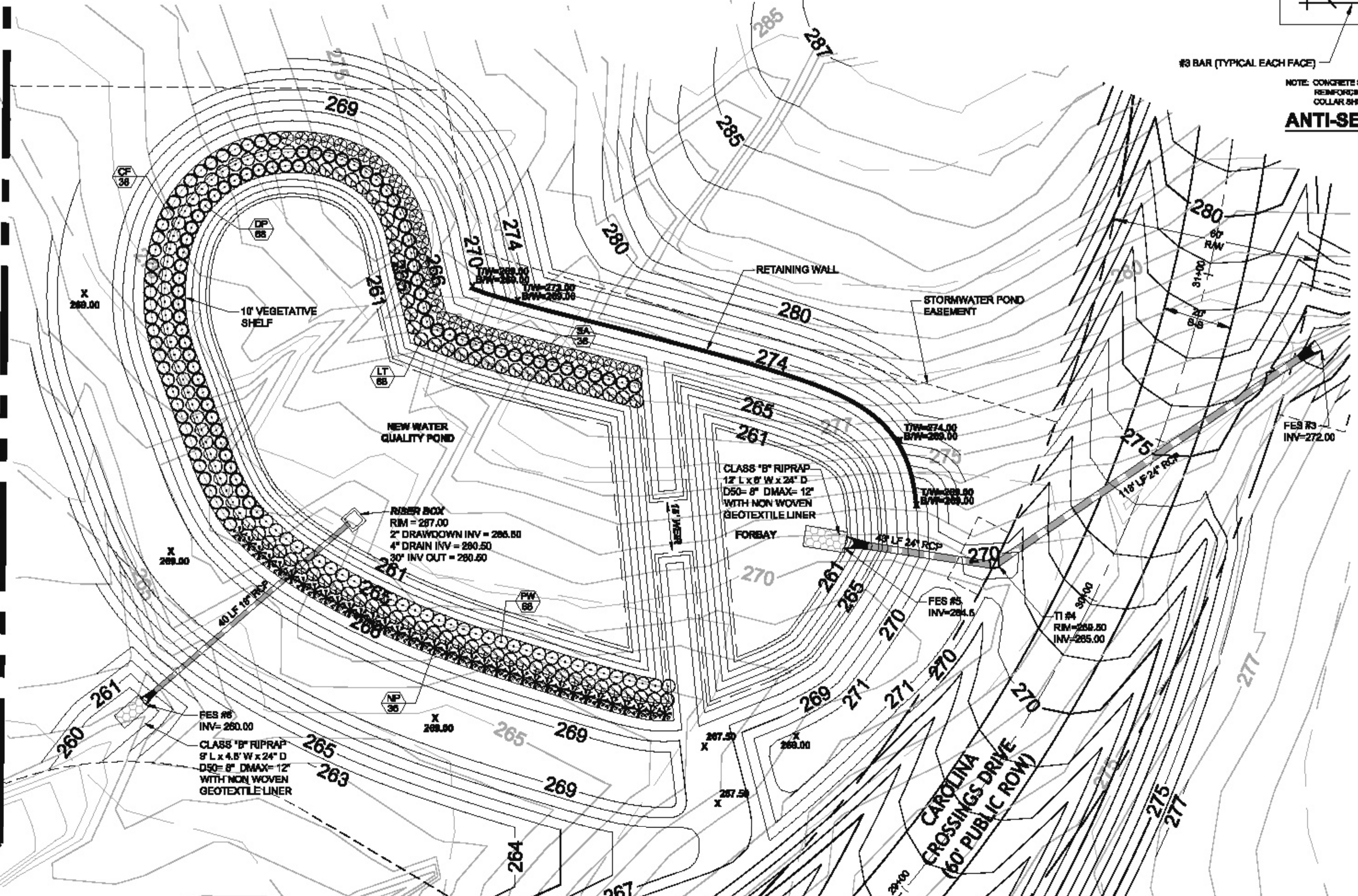
WET POND PROFILE
NT8

EMERGENCY SPILLWAY

PLANT LIST

SYM.	QUAN.	BOTANICAL NAME	COMMON NAME	HT.	ROOT	REMARKS
WETLAND PLANTINGS						
SA	36	HIBISCUS COCCINEUS 'ALBA'	WHITE ROSE MALLOW	-	4" cont.	3' O.C. Shallow Land
CF	36	LOBELIA CARDINALIS	CARDINAL FLOWER	-	4" cont.	3' O.C. Shallow Land
NP	36	SACCHARUM BALDWINI	NARROW PLUMEGRASS	-	4" cont.	3' O.C. Shallow Land
DP	66	BAGITTARIA LATIFOLIA	DUCK POTATO	-	4" cont.	3' O.C. Shallow Water
LT	66	BALURUS CERNULUS	LIZARD TAIL	-	4" cont.	3' O.C. Shallow Water
PW	66	PONTERDERIA CORDATA	PICKERELWEED	-	4" cont.	3' O.C. Shallow Water

PLANTING NOTES:
LANDSCAPE CONTRACTOR SHALL PROVIDE PLANT MATERIAL FROM LOCAL SOURCE TO ENSURE SURVIVABILITY. CONTRACTOR TO PROVIDE SOURCE OF PLANT MATERIAL AND LOCATION FOR APPROVAL PRIOR TO INSTALLATION OF MATERIAL.
LOCAL WETLAND NURSERY:
MELLOW MARSH FARM NURSERY - SILER CITY, NC
A MINIMUM TWO-YEAR WARRANTY PERIOD SHALL BE PROVIDED FOR PLANT SURVIVAL AND REPLACEMENT. AT THE END OF THE FIRST YEAR AND AGAIN AT THE END OF THE 2ND YEAR ALL PLANTS THAT DO NOT SURVIVE MUST BE REPLACED.

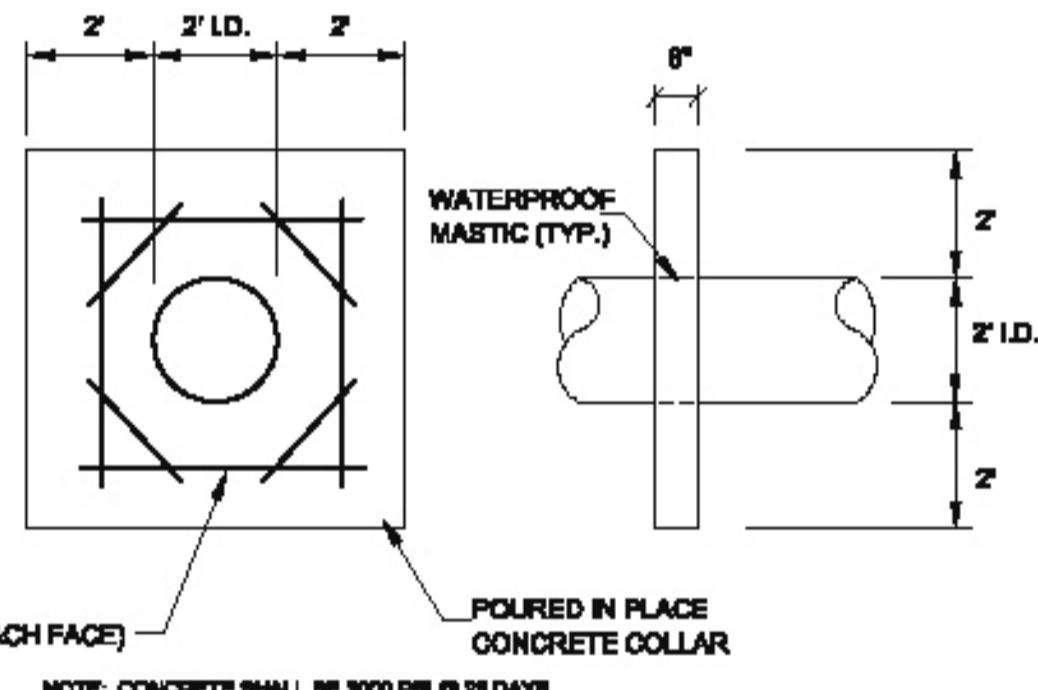


STANDARD SLIP RESISTANT MANHOLE STEP DETAIL
SCALE: NONE

RISER DETAIL
SCALE: NONE

DAM EMBANKMENT CONSTRUCTION NOTES

- CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 8" LIFT LAYERS WITH 5' FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2 FEET OVER THE PIPE AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 90% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF +0.5% TO -2.0% PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D998.
- ALL VISIBLE ORGANIC DEBRIS SUCH AS BRUSH AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTING TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 8% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3 INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTING.
- FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
- ANY FILL LAYER THAT IS SMOOTH OR UNROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARPED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
- SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
- FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSATURATED SOILS IN ADDITION TO THAT INDICATED ON THE PLANS. ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
- TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION UNDERCUTTING AND ROCK FOUNDATION PREPARATION (I.E. TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
- FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
- EARTHWORK COMPACTED WITHIN 3 FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINUTE SELF-PROPELLED ROLLERS.
- COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES UNTIL ADEQUATE CURING TIME HAS ELAPSED.
- TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 5-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEDED.



ANTI-SEEP COLLAR DETAIL
SCALE: NONE

WATER COURSE INFORMATION

UNNAMED TRIBUTARY TO LICK CREEK
WS-IVNSW
PROTECTED AREA
WATERBODY STREAM INDEX - 16-41-2.5-(1)
LAT = 35.799035252
LONG = 79.955272722

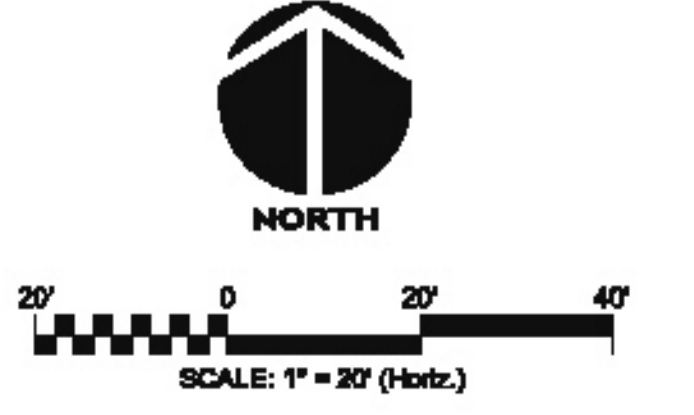
IMPERVIOUS LIMITATION PER LOT = 7,500 S.F.
TOTAL IMPERVIOUS AREA = 225,888 S.F. (7.08%)

GENERAL CONSTRUCTION NOTES

- EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY CONDITIONS, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, PRIOR TO EXCAVATING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- IF THE CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL AT 1-800-685-6868, THE CONTRACTOR SHALL CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- THE SUBJECT PROPERTY IS NOT LOCATED IN A FLOOD HAZARD AREA PER FEMA PANEL 2704, MAP NUMBER 270004020, DATED 08/07/07.
- WATERWORK SHALL BE PROHIBITED FROM MARCH 15 THROUGH JUNE 30 TO MINIMIZE IMPACTS TO SPAWNING FISH.
- TOPOGRAPHIC INFORMATION PROVIDED BY CE GROUP, INC. RALEIGH, NC. PROFILE DATA FROM FIELD SURVEY. BACKGROUND TOPOGRAPHY FROM AERIAL MAPPING.
- FOR TYPICAL STREET SECTIONS, SEE SHEET 18.
- ALL STREETS ARE PUBLIC.

STORMWATER MANAGEMENT CERTIFICATION

I, Mark Adreese, certify that the stormwater management facilities and practices will control and treat the runoff from the 1 year 1-hour storm event for the total drainage area of the structure, that the design and plans are sufficient to comply with the applicable standards and policies found in the NC DENR Stormwater BMP Design Manual, and that the design and plans ensure compliance with the County's Stormwater Ordinance.



FINAL DESIGN
NOT RELEASED FOR CONSTRUCTION

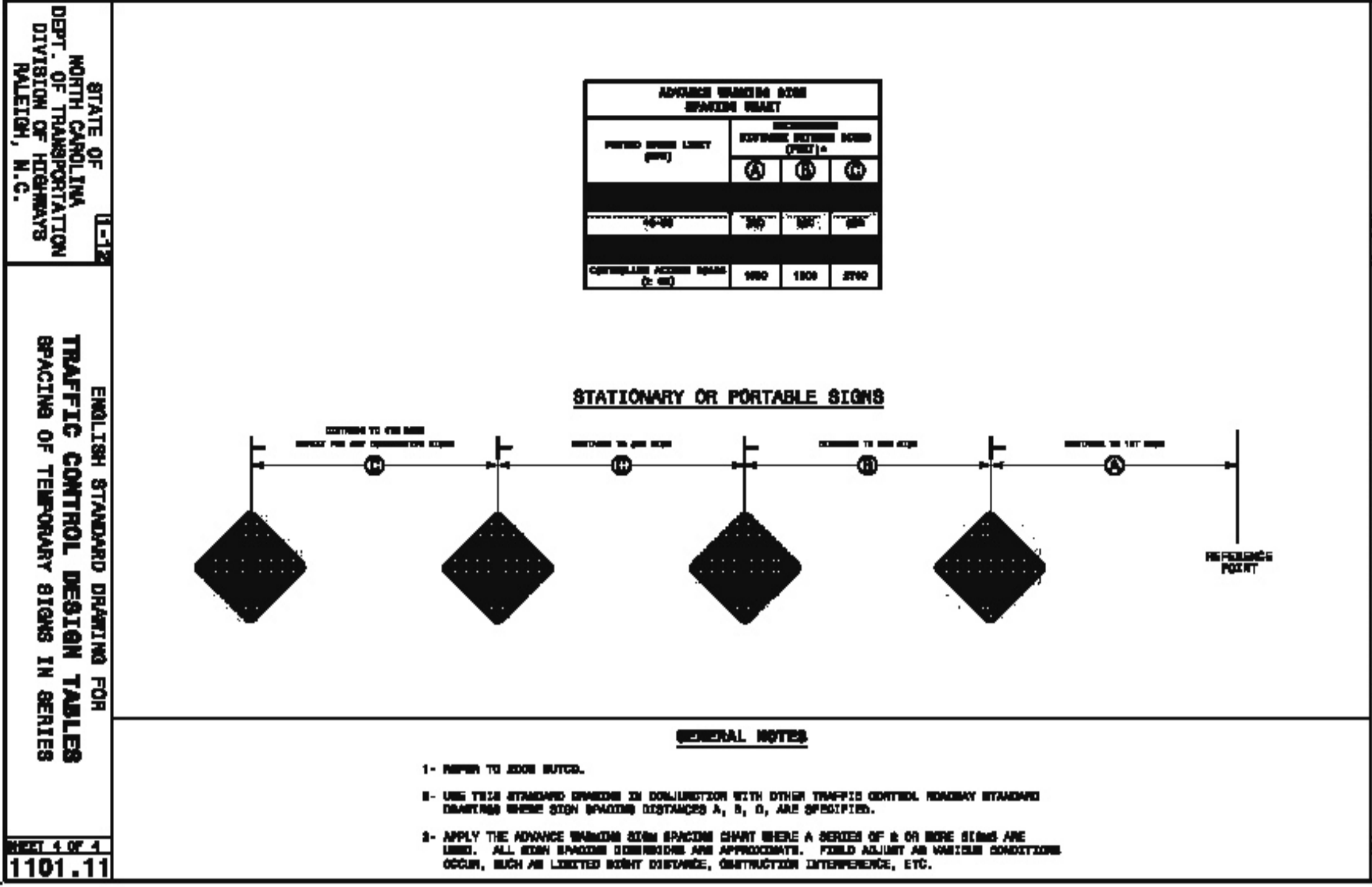
NO.	REVISIONS	COMMENTS	DATE
1.			10/18/14

CE GROUP
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PHONE: 919-367-8700
FAX: 919-322-0032
www.cegroupinc.com
License # C-1739



CONSTRUCTION PLANS
CAROLINA CROSSINGS
STORMWATER POND PLAN & DETAILS
CHATHAM COUNTY, NORTH CAROLINA

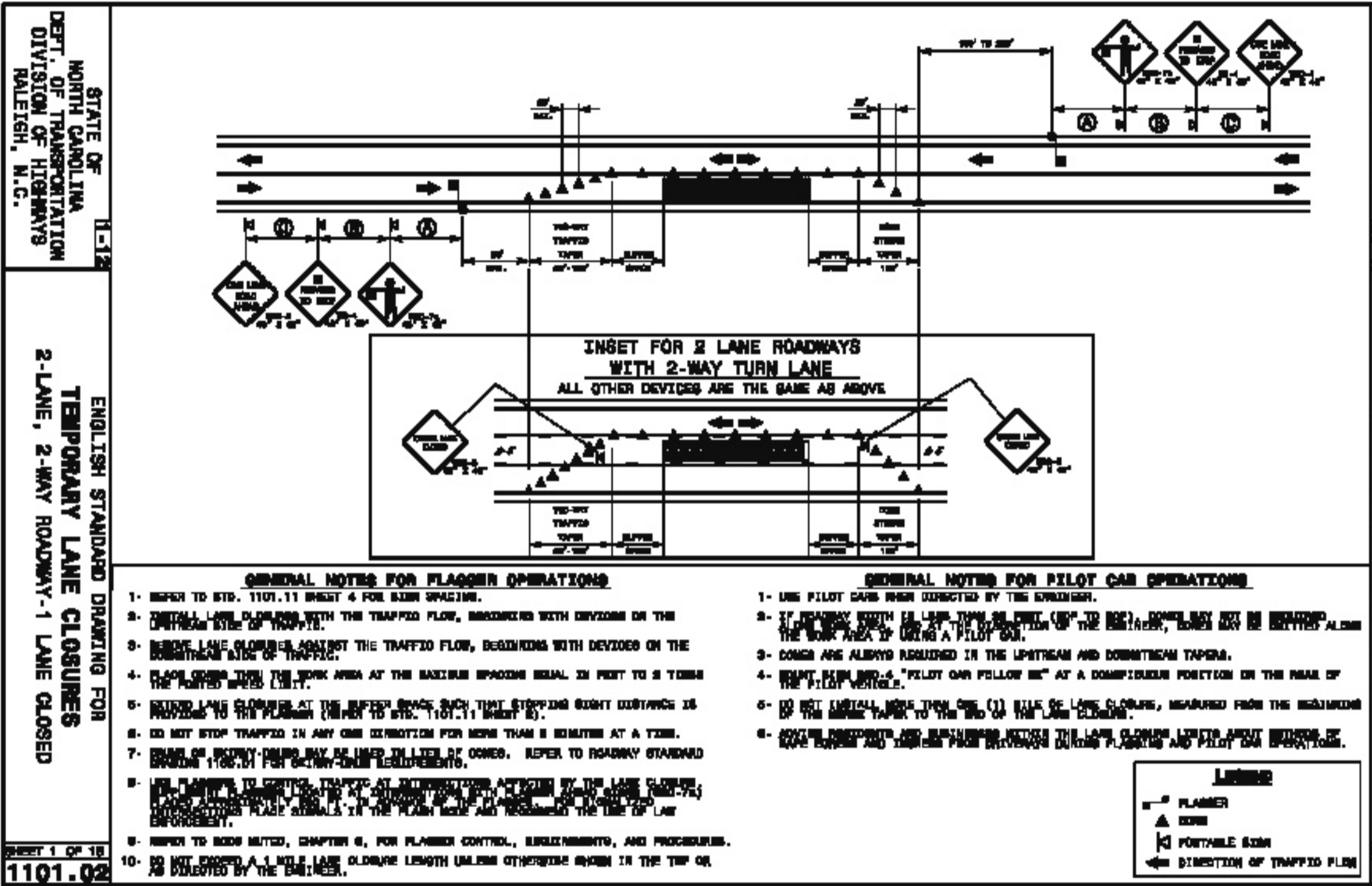
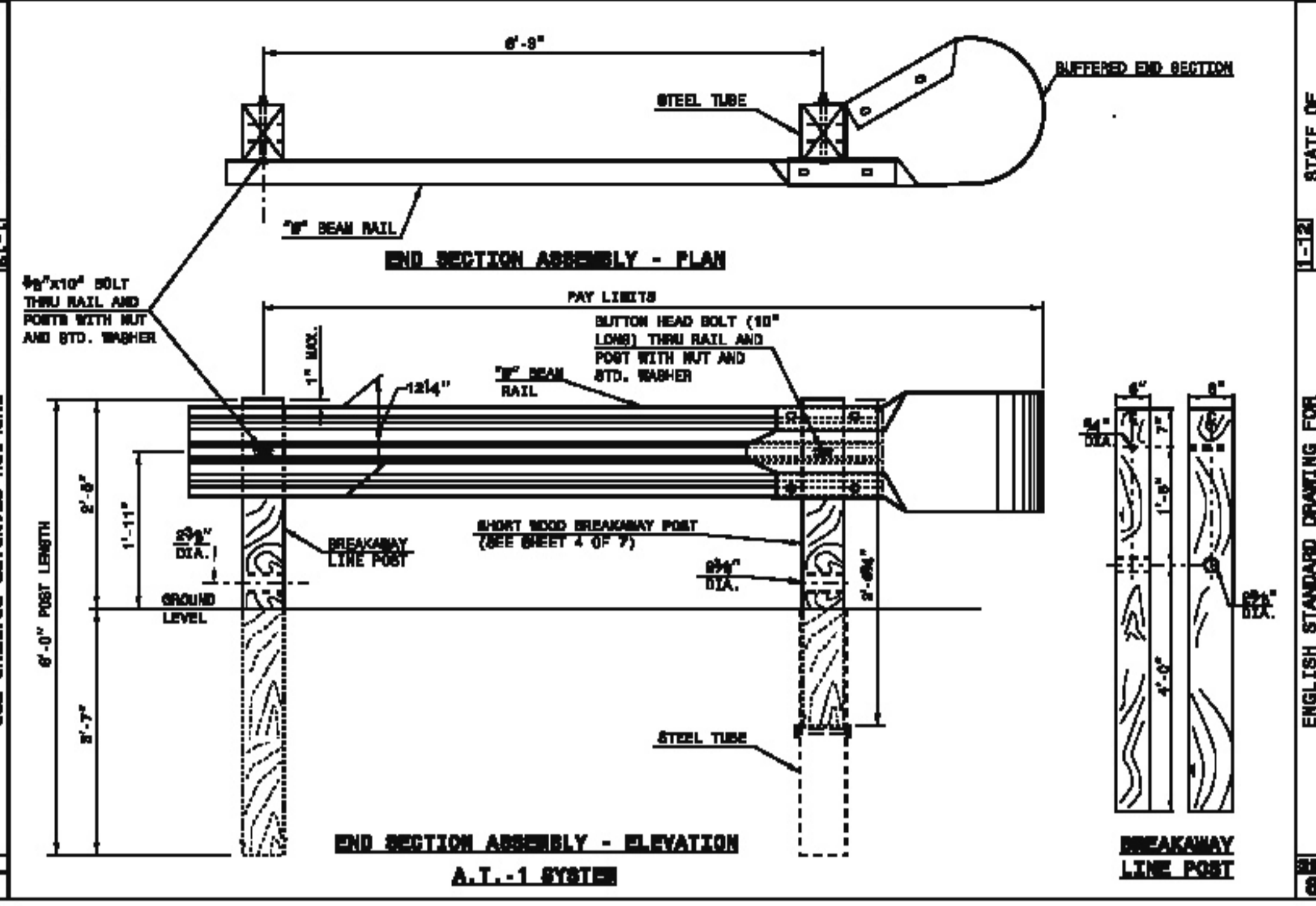
Date:	August, 2014
Scale:	1" = 20'
Drawn:	CPM
Checked:	MPA
Project No.:	127-170
Computer Dwg. Name:	127-170 13 Storm Plan
Sheet No.:	13



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

ENGLISH STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
SPACING OF TEMPORARY SIGNS IN SERIES

SHEET 4 OF 4
1101.11



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

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 18
1101.02

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSION IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTE APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

- DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.
- REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.01 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.01 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- DO NOT WORK SIMULTANEOUSLY WITHIN 16 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL.
- REFER TO NCDOT STD 1101.02 TEMPORARY LANE CLOSURES DETAIL ANY TIME THE ROAD IS UNDER FLAGGER CONTROL FOR SIGN PLACEMENT.
- PAVEMENT EDGE DROP OFF REQUIREMENTS
- BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:
BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.
BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.
BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER.
- DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W6-1) 300 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.
- SIGNING
- INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- INSTALL BLACK ON ORANGE "DIP" SIGNS (W6-2) AND/OR "BUMP" SIGNS (W6-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

- NOTIFY THE ENGINEER AND NCDOT TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

TRAFFIC CONTROL NOTES

- SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

- INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

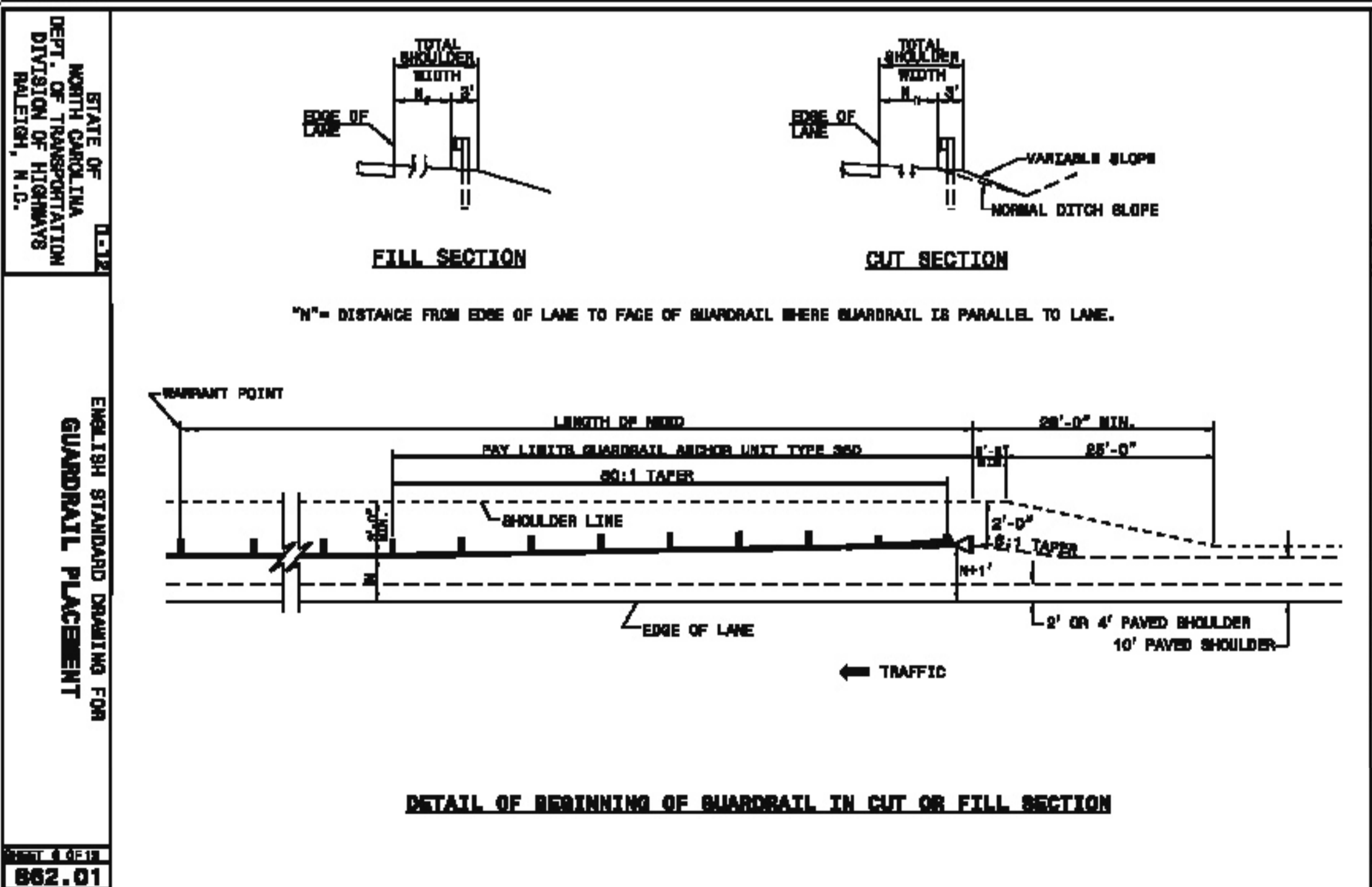
ROAD NAME	MARKING	MARKER	MARKER PLACEMENT
ALL	ALL	Thermoplastic	Painted/Installed

- PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- THE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TRAFFIC PATTERN ALTERATIONS

- STEP 1: INSTALL ALL ADVANCE WARNING SIGNS (ROAD WORK AHEAD, W21-4) THROUGHOUT PROJECT ONE WEEK PRIOR TO BEGINNING CONSTRUCTION USING NCDOT STD. 1101.01.
- STEP 2: INSTALL EROSION CONTROL DEVICES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE EROSION CONTROL PLAN ON SHEET 3.
- STEP 3: SAWCUT AND CONSTRUCT FULL DEPTH TURN LANE AND FINAL PAVEMENT MARKINGS ACCORDING TO SHEET RD-02. MAINTAIN ONE TRAVEL LANE OF TRAFFIC USING NCDOT STD. 1101.02. REESTABLISH TWO LANES OF TRAFFIC AFTER EACH WORK DAY APPLY DETAIL A AS NEEDED.

DETAIL A
N.T.S.



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RALEIGH, N. C.

ENGLISH STANDARD DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 4
882.01

19/12/14
NORTH CAROLINA
TRAFFIC CONTROL
SEAL
18894

CONSTRUCTION PLANS
CAROLINA CROSSINGS
TRAFFIC CONTROL DETAILS
CHATHAM COUNTY, NORTH CAROLINA

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Date: August, 2014
Scale: N/A
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Project No: 127-170
Computer Desig. Name: 127-170 14 Traffic Control Details
Sheet No: 14
Of: 14

NO.	REVISED PER	REVISIONS	DATE
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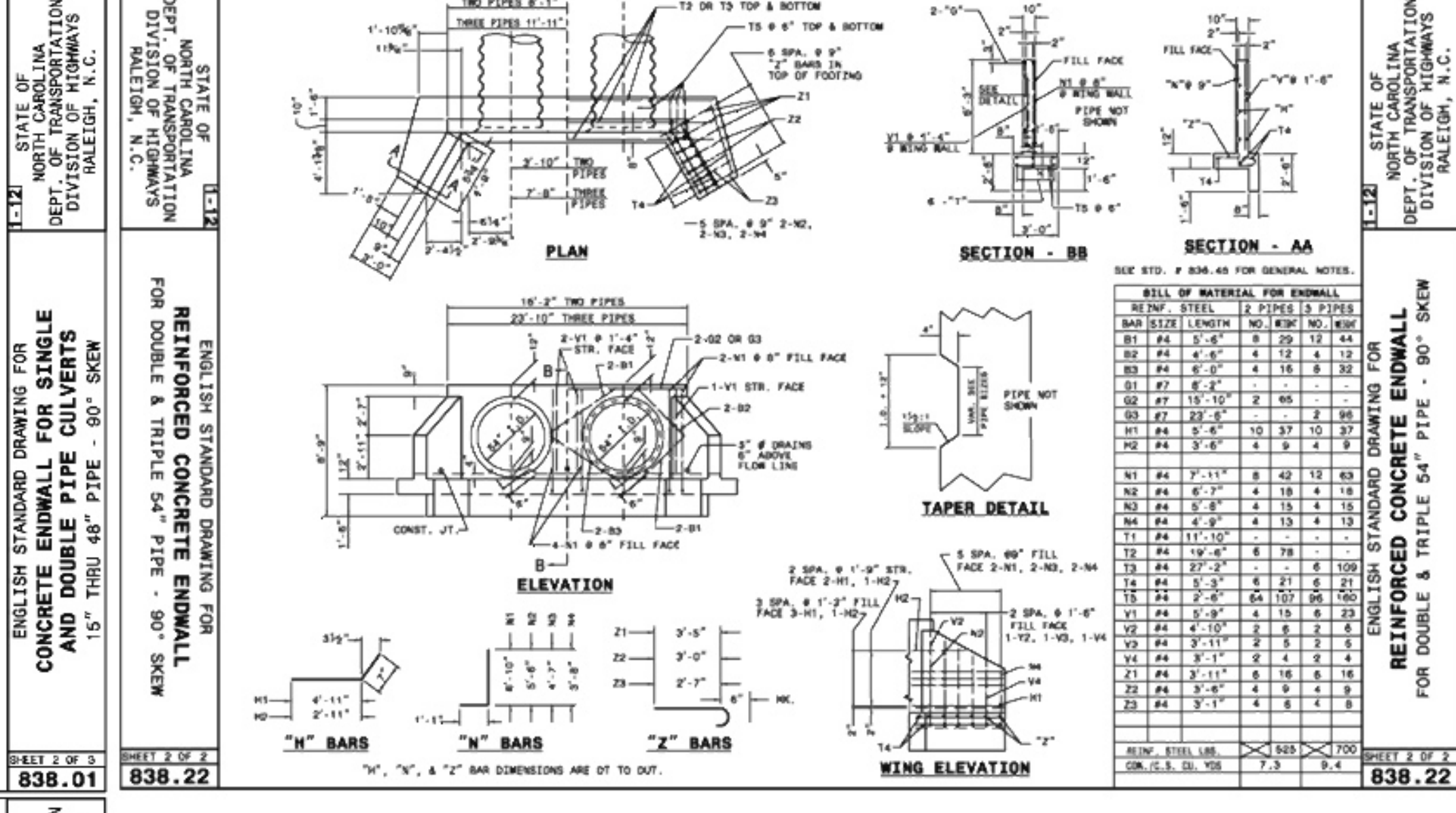
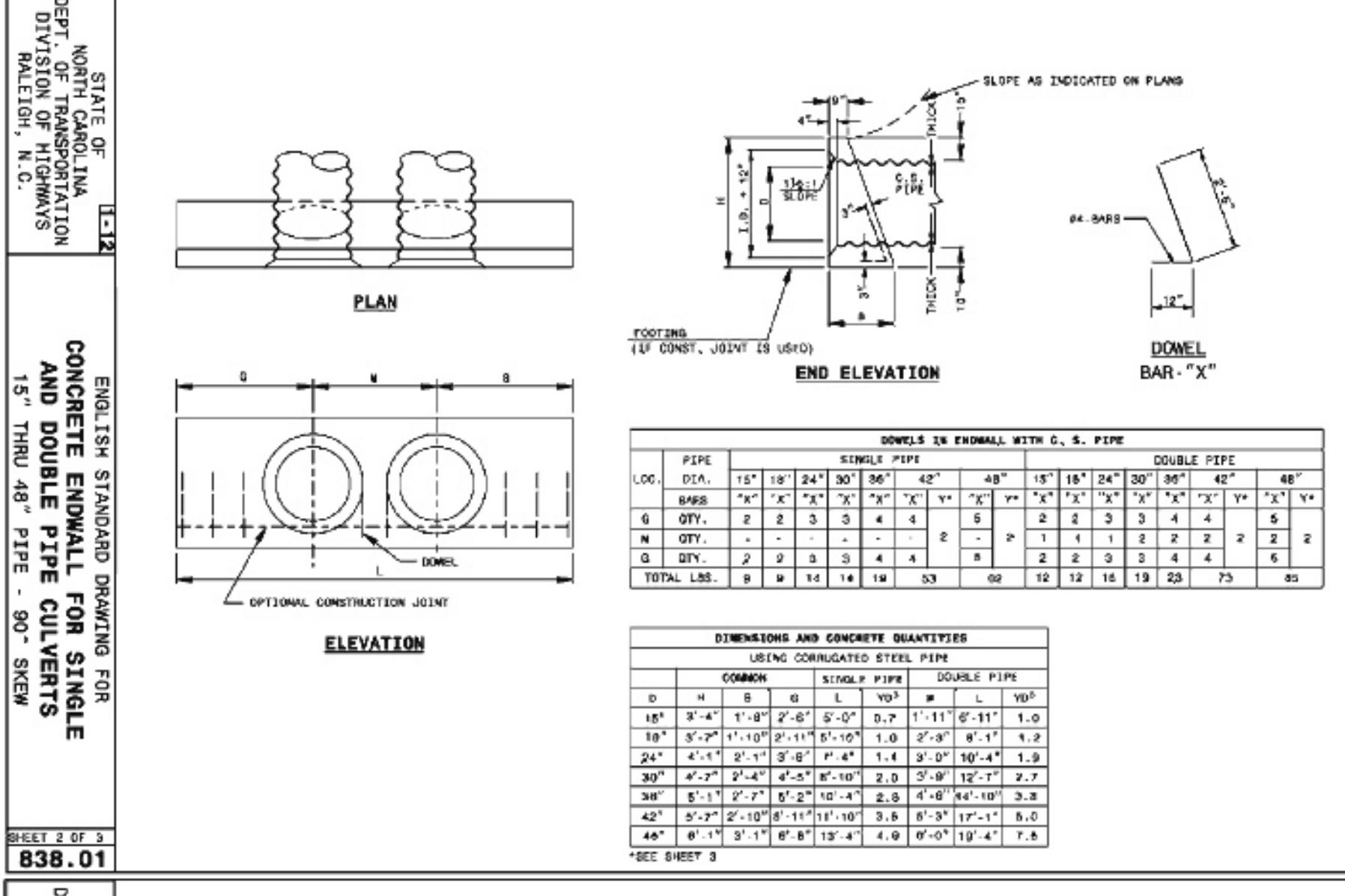
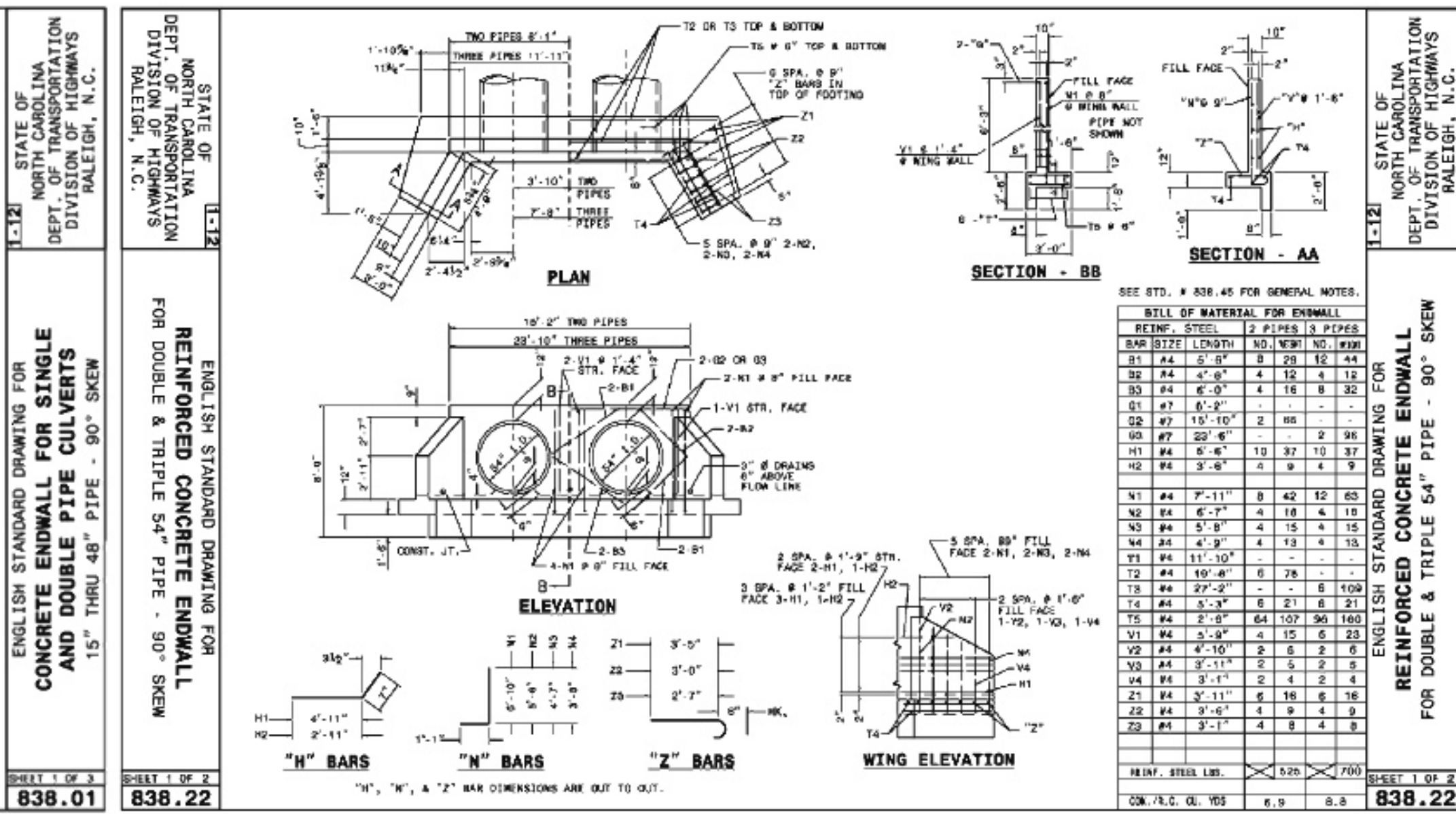
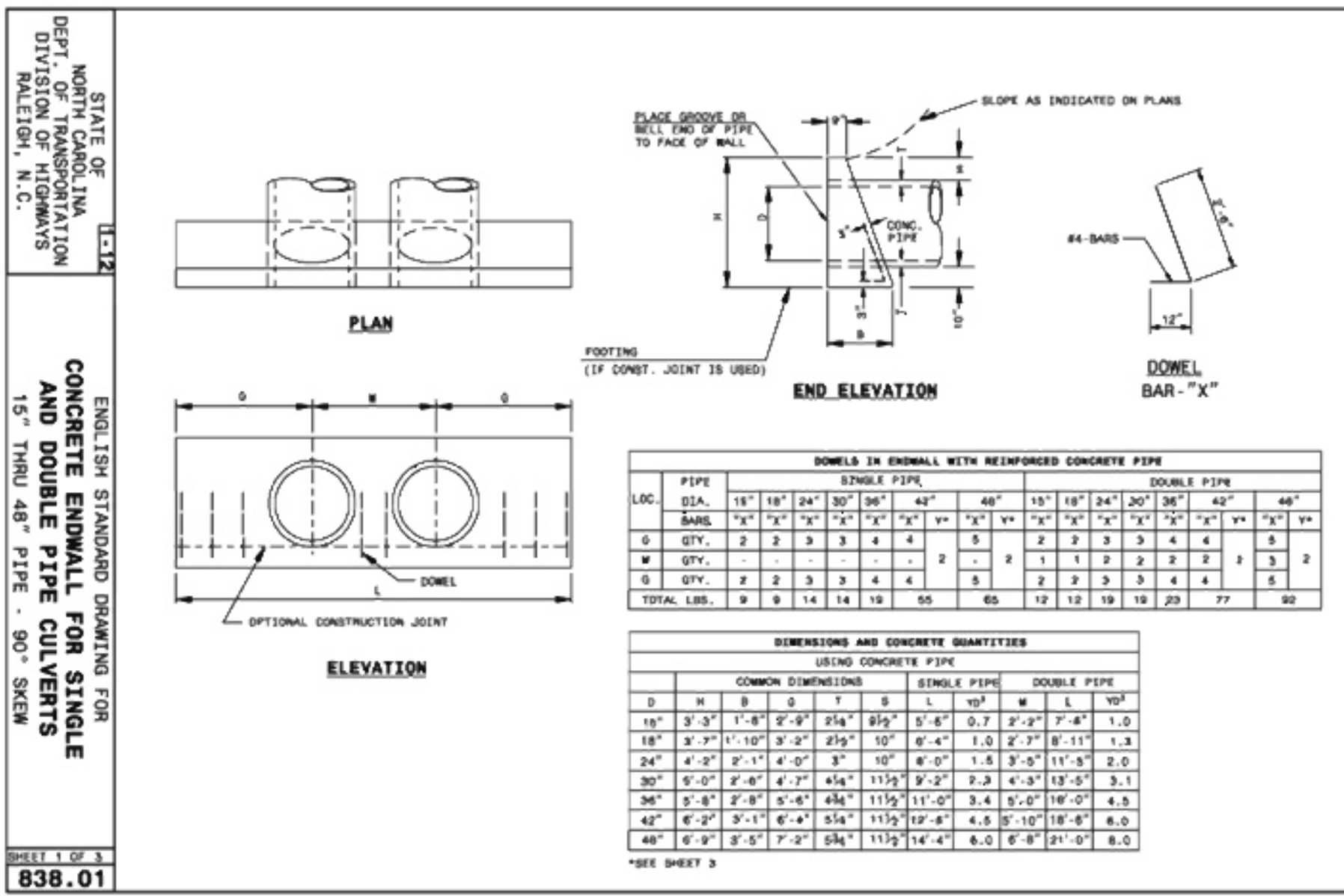
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CONSTRUCTION PLANS
CAROLINA CROSSINGS
TRAFFIC CONTROL DETAILS
CHATHAM COUNTY, NORTH CAROLINA

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Computer Desig. Name:	127-170 14 Traffic Control Details
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GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "V" 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.

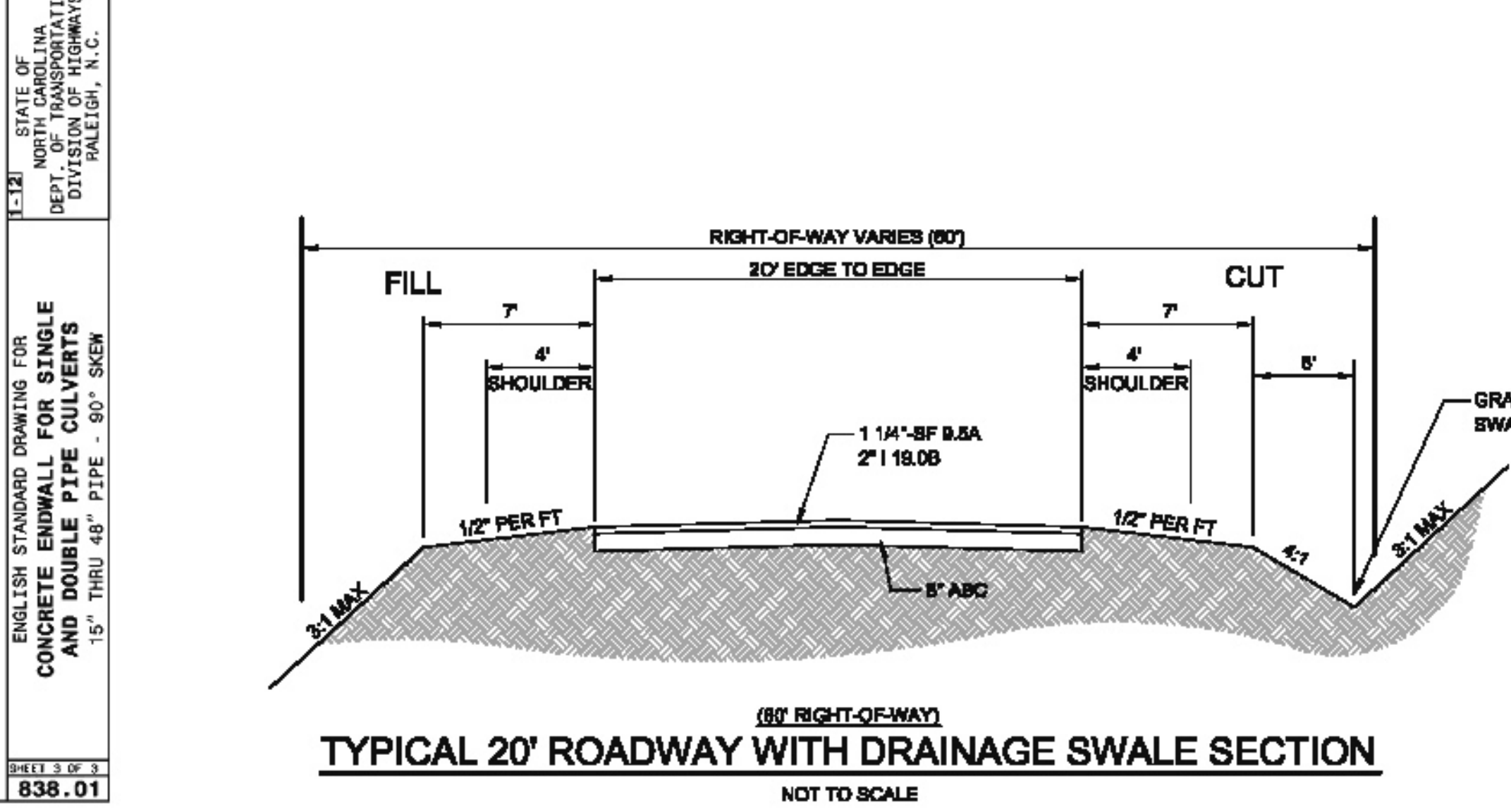
CONSTRUCT BOTTOM SLAB WITH FORMS.

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.

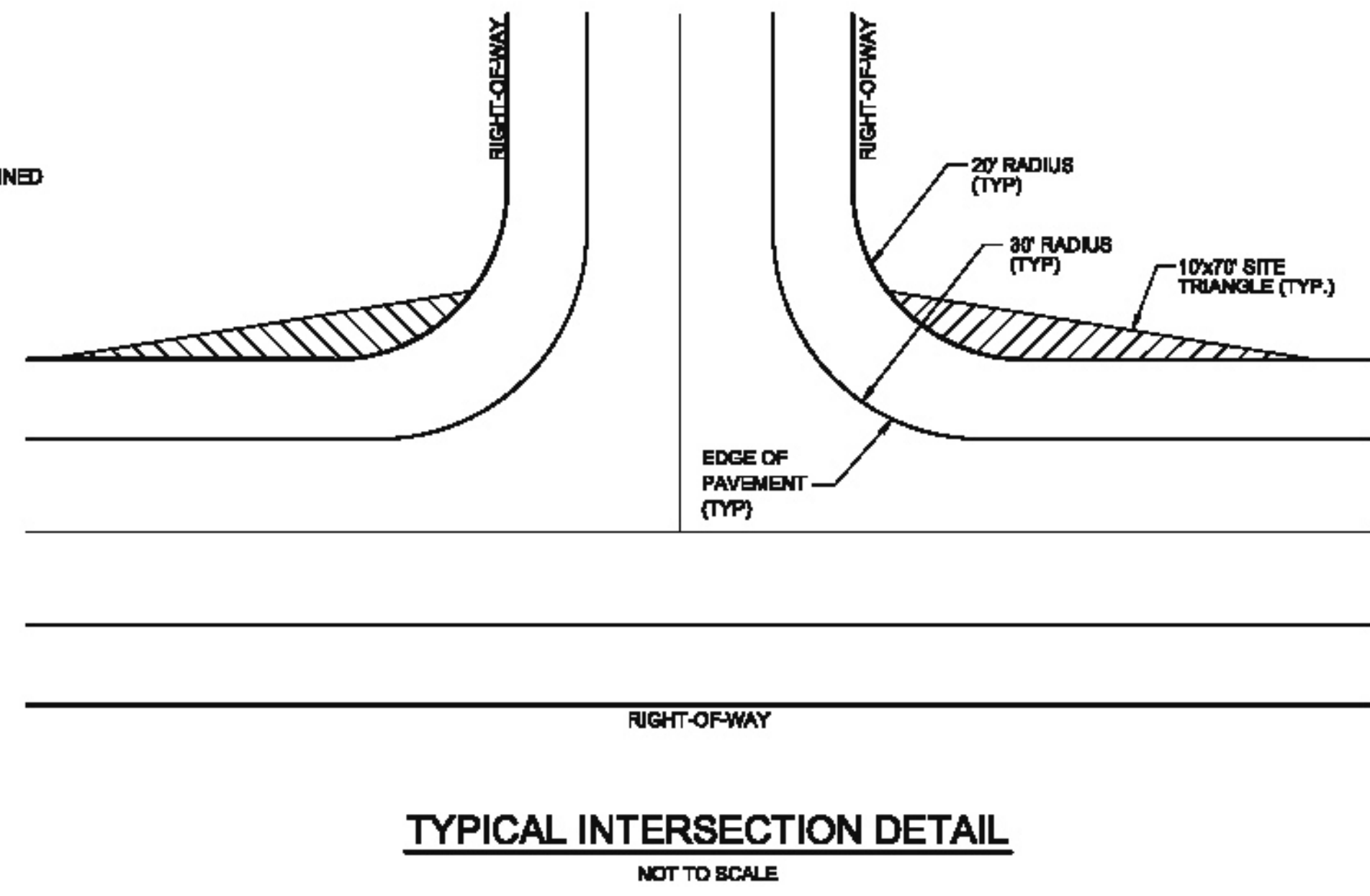
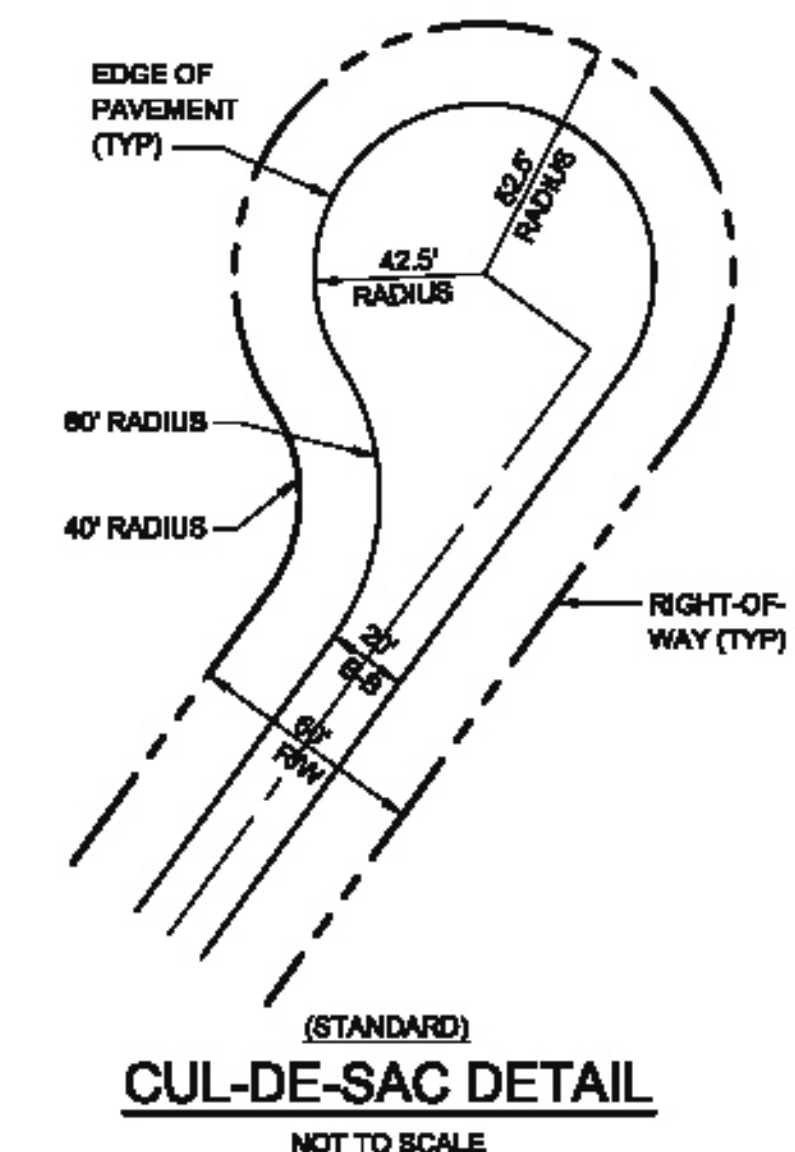
WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.



NOTES:

1 ALL SIDEWALK RAMP SHALL CONFORM TO N.C.D.O.T. STD. 846.BE.



NOTE: FINAL PAVEMENT SECTION WILL CONTAIN A TOTAL OF 3 1/4" OF ASPHALTIC CONCRETE PAVEMENT. ASPHALT SURFACES SHALL BE INSTALLED 1/4" BELOW FINISHED GRADE TO ALLOW FOR FINAL 1/4" TOP COURSE TO BE INSTALLED AT END OF PROJECT BY OWNER.



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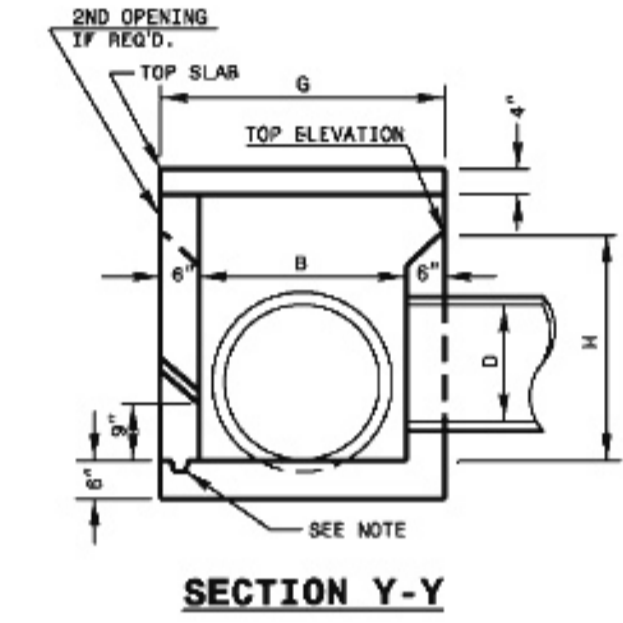
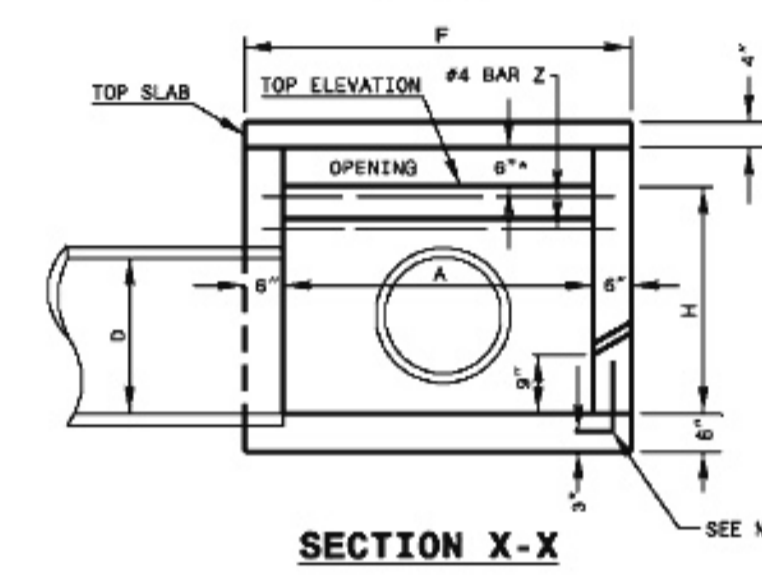
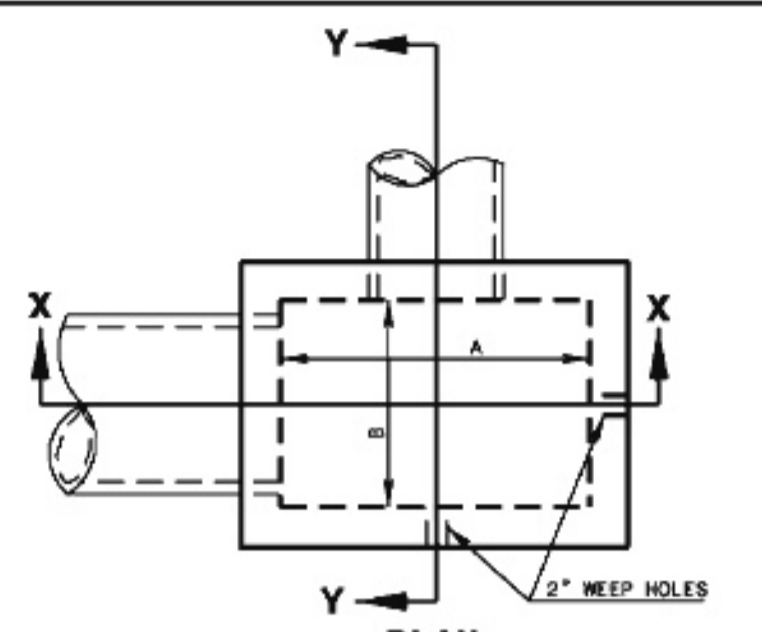
CONSTRUCTION PLANS
CAROLINA CROSSINGS
ROADWAY DETAILS
CHATHAM COUNTY, NORTH CAROLINA

Date: August, 2014
Scale: N/A
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Checked: MPA
Project No. 127-170
Computer Des. Name: 127-170 15 Roadway Details

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

ENGLISH STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
12" THRU 48" PIPE

SHEET 1 OF 2
840.04



NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.06.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" 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.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS WATCHING.
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 70M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.
* INCREASE THE SIZE OF THE 6" OPENING TO 8" MAX., AS DIRECTED BY THE ENGINEER BY ADDING 2" TO THE WALL HEIGHT ABOVE THE TOP ELEVATION. ADJUST QUANTITIES ACCORDINGLY.

MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN (BASED ON MIN. HEIGHT, H)													
PIPE	DIM'S OF BOX & PIPE			REINFORCING			TOP & BOT. SLAB			TOTAL QUANTITIES			
	D	A	B	NO.	LENGTH	NO.	LENGTH	F	G	TOP SLAB	BOT. SLAB	BOX & SLABS	DEDUCTION
12"	3'-6"	2'-3"	1'-10"	4	3'-0"	8	4'-3"	2	4'-3"	0.181	0.271	0.260	27
15"	3'-9"	2'-3"	2'-11"	4	3'-0"	8	4'-3"	2	4'-3"	0.181	0.271	0.250	27
18"	4'-0"	2'-6"	2'-4"	5	3'-5"	7	4'-9"	2	4'-9"	0.226	0.340	0.284	35
24"	4'-0"	2'-8"	2'-10"	5	3'-5"	7	4'-9"	2	4'-9"	0.226	0.340	0.284	35
30"	4'-0"	3'-0"	3'-4"	5	4'-3"	9	4'-9"	2	4'-9"	0.278	0.417	0.315	43
36"	4'-6"	4'-0"	3'-10"	5	4'-3"	10	5'-3"	2	5'-3"	0.340	0.510	0.382	51
42"	5'-0"	4'-6"	4'-4"	5	5'-3"	12	5'-9"	2	5'-9"	0.407	0.611	0.389	64
48"	5'-0"	5'-0"	4'-10"	5	5'-9"	13	5'-9"	2	5'-9"	0.444	0.666	0.407	68

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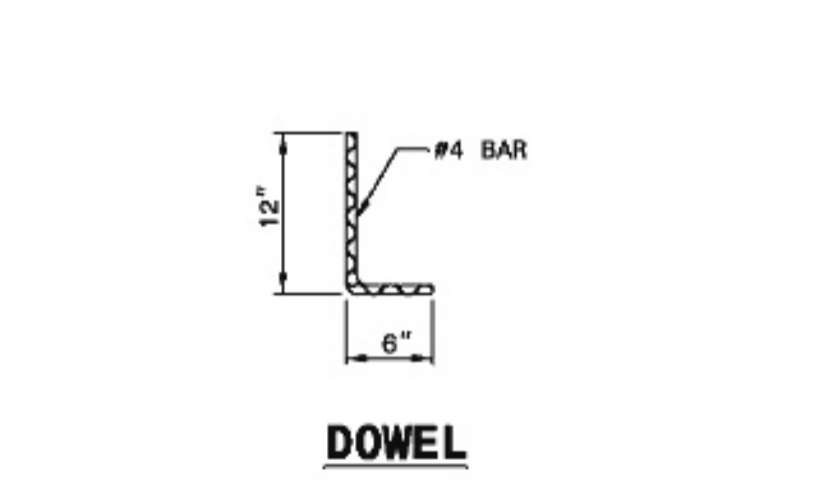
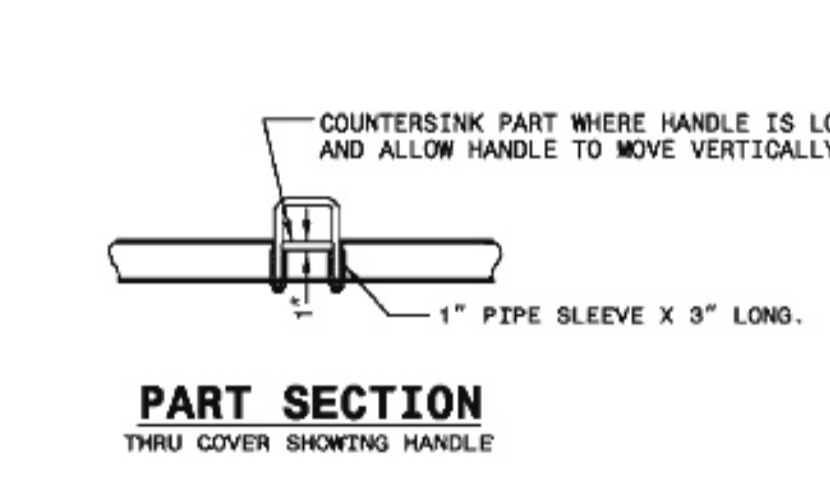
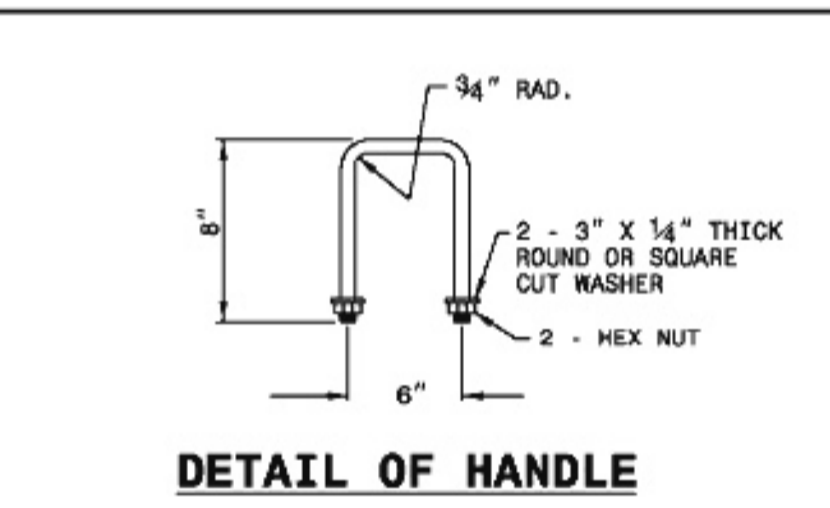
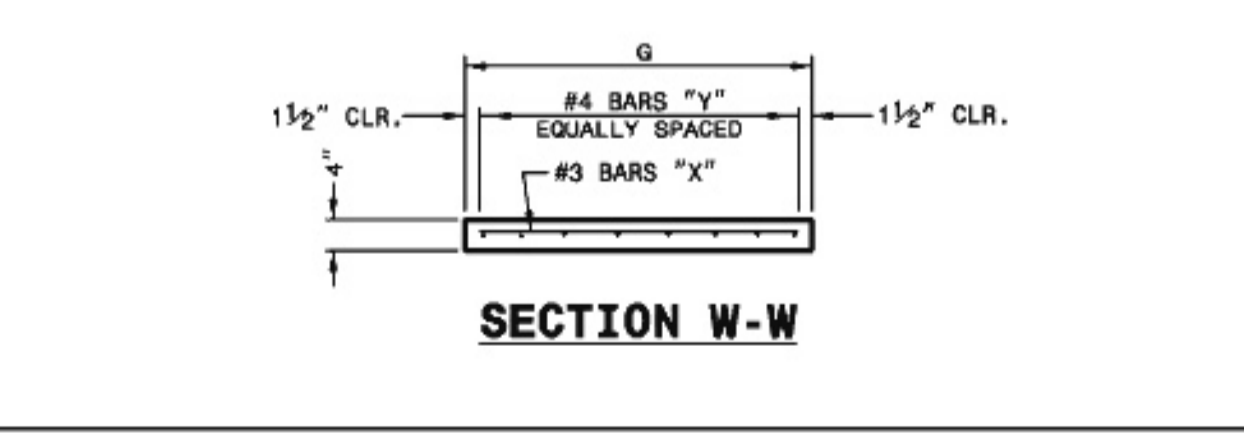
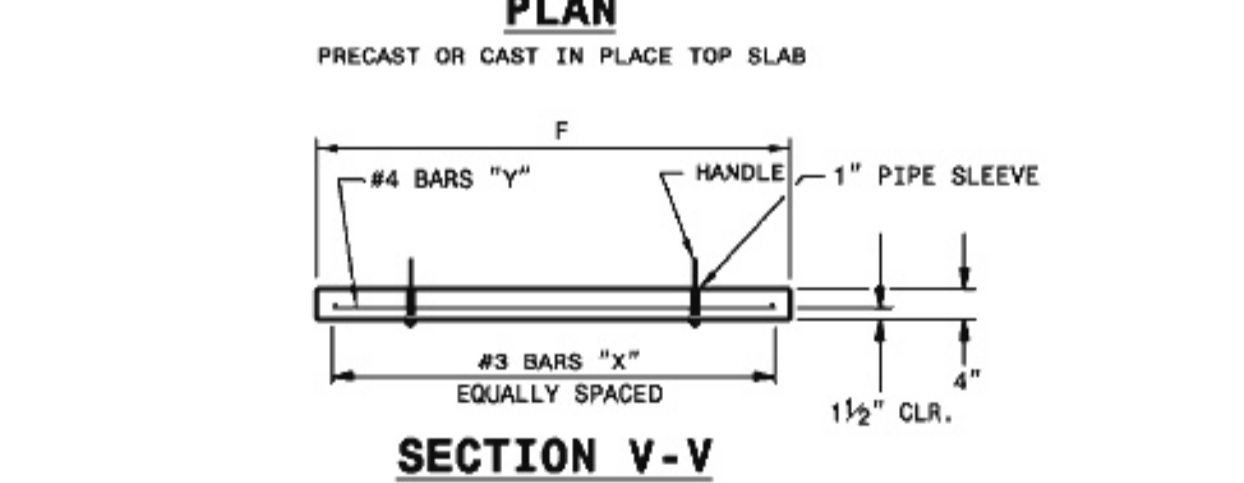
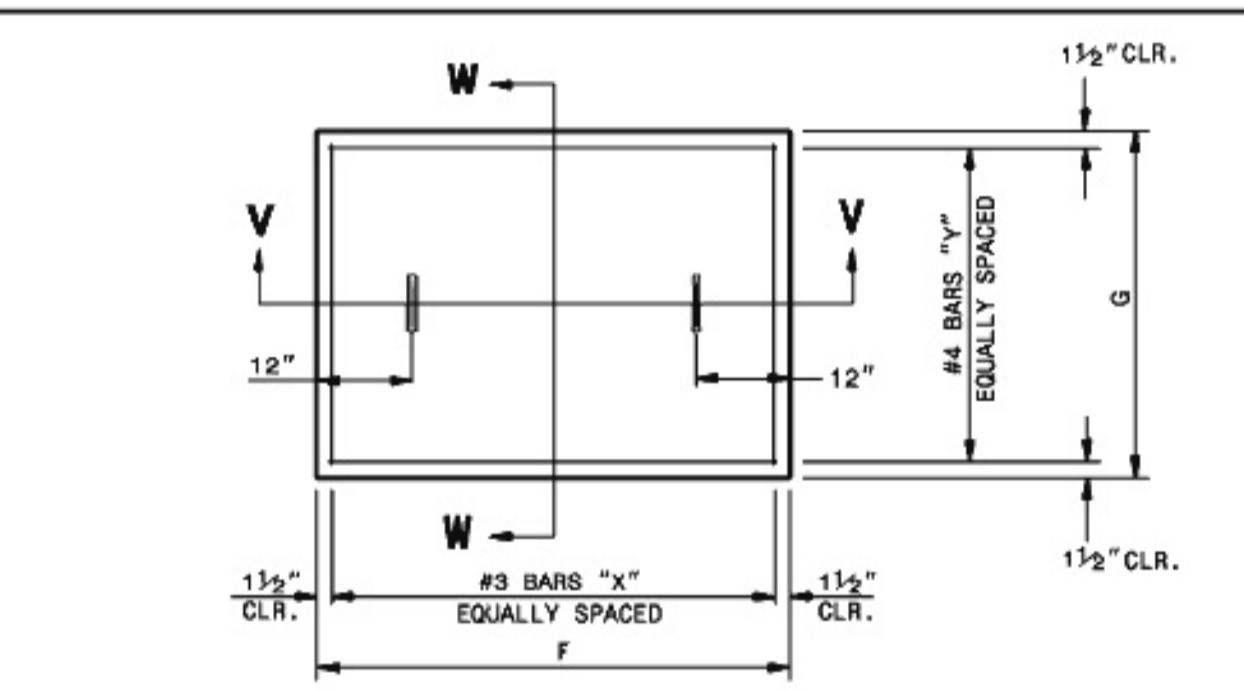
ENGLISH STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
12" THRU 48" PIPE

SHEET 1 OF 2
840.04

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

ENGLISH STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
12" THRU 48" PIPE

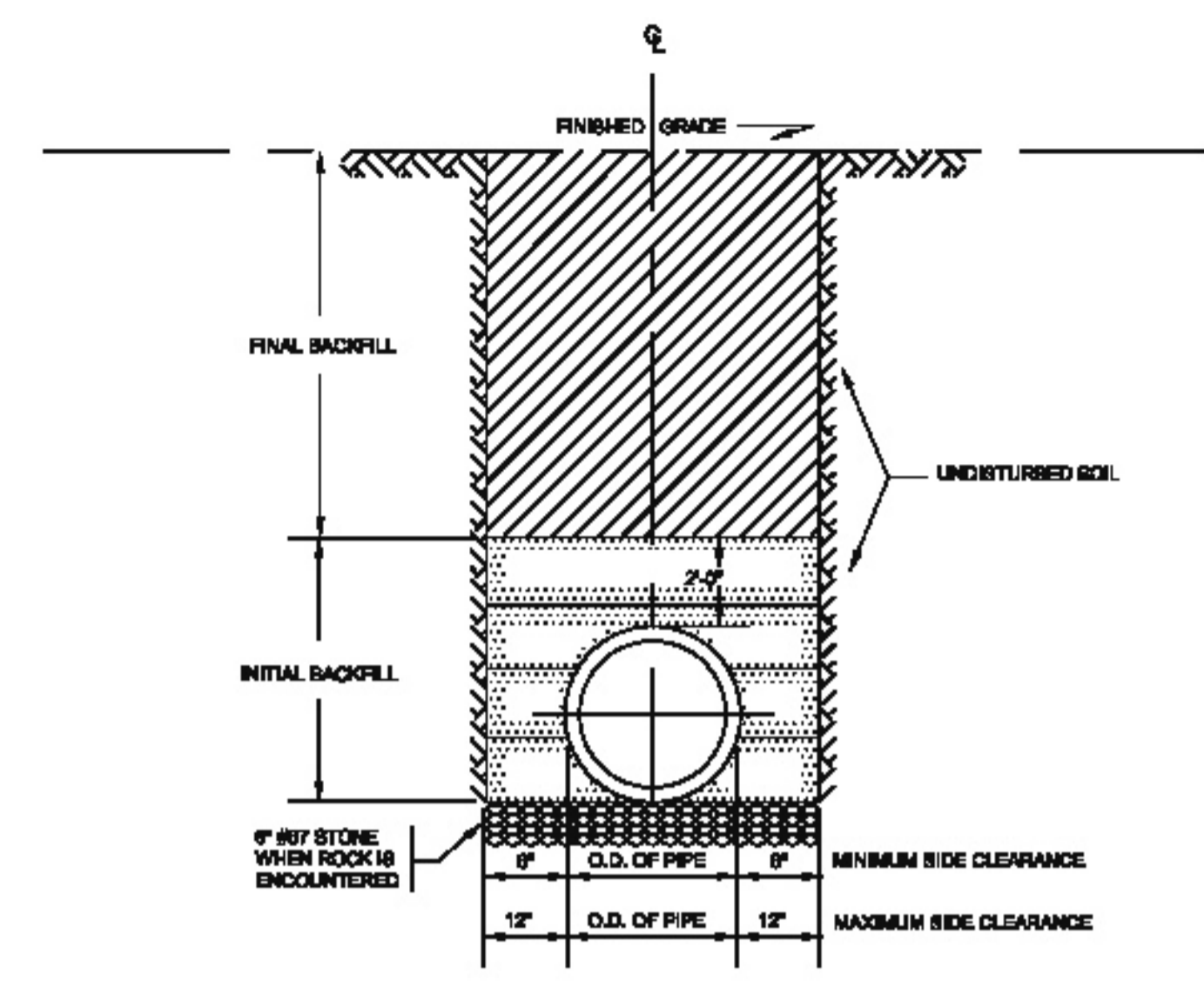
SHEET 2 OF 2
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ENGLISH STANDARD DRAWING FOR
CONCRETE OPEN THROAT CATCH BASIN
12" THRU 48" PIPE

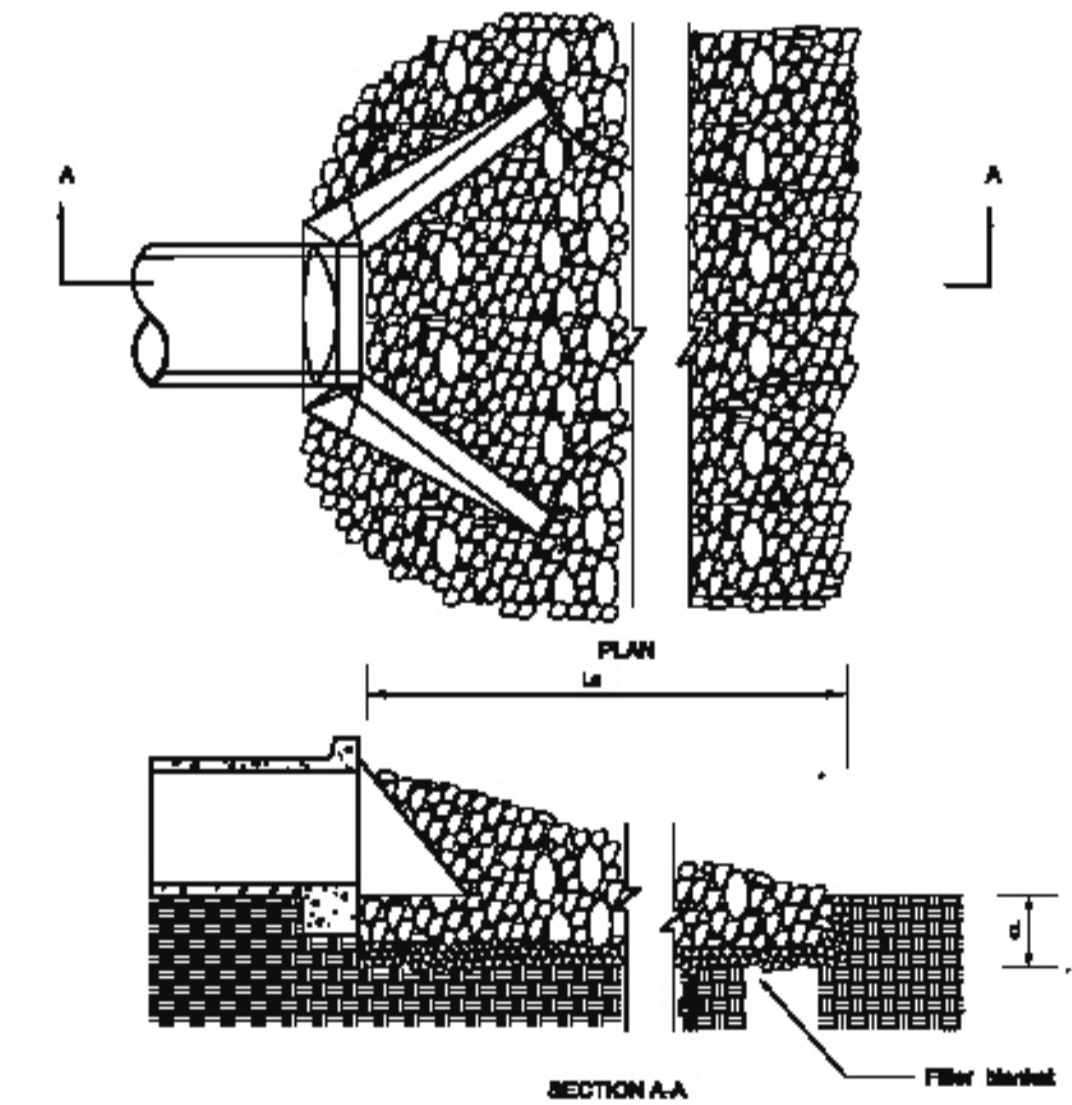
SHEET 2 OF 2
840.04



- NOTES:
- TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 - NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 - ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 - BACKFILL SHALL BE TAMPED IN 6" LAYERS IN TRAFFIC AREAS, 12" IN NON TRAFFIC AREAS.

TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR D.I.P., V.C.P., & R.C.P.

NOT TO SCALE



- NOTES:
- USE APPROPRIATE SCHEDULE FOR DIMENSIONS
- L_a is the length of the riprap apron.
 - d = 1.5 times the maximum stone diameter but not less than 1"
 - In well-defined channel extend the apron up the channel banks to an elevation of 1' above the maximum bankfull depth or to the top of the bank which ever is less.
 - A filter fabric or filter fabric should be installed between the riprap and soil bankface.

OUTLET PROTECTION FOR DEFINED CHANNEL

NOT TO SCALE



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CONSTRUCTION PLANS
CAROLINA CROSSINGS
STORM DRAINAGE DETAILS
CHATHAM COUNTY, NORTH CAROLINA

Date:	August, 2014
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Checked:	M/PA
Project No.:	127-170
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16
Of

CONSTRUCTION SEQUENCE

1. OBTAIN GRADING PERMIT / FINAL APPROVAL FROM CHATHAM COUNTY ENVIRONMENTAL HEALTH.
2. CONTACT THE CHATHAM COUNTY EROSION CONTROL SECTION AT 919-652-4200 TO SET UP A PRE-CONSTRUCTION MEETING PRIOR TO ANY LAND DISTURBANCE WORK PERFORMED.
3. INSTALL, IN ORDER OF THIS SEQUENCE, DELINEATE THE PROPOSED TRAPEZOIDAL DITCH LINE AND INSTALL ALL PROPOSED SILT FENCING THROUGHOUT THE ENTIRE PROJECT AREA ALONG WITH TEMPORARY CONSTRUCTION ENTRANCE.
CONTRACTOR SHALL INSTALL THE PERMANENT TRAP BASIN AND TEMPORARY SUMMER BASIN. CLEAR ONLY AS NECESSARY TO ACCESS THESE AREAS AND TO CONSTRUCT THESE DEVICES. ONCE THE PERVIOUS MEASURES ARE INSTALLED, CLEAR ONLY AS REQUIRED TO INSTALL TEMPORARY DIVERSION BERM/SWALES AND GRAVEL DIVERSION DIKES TO THESE SEDIMENT TRAPS / FIBER SUMMER BASIN BASINS AND OTHER TEMPORARY MEASURES AS SHOWN ON THE APPROVED PLAN. THE CONTRACTOR SHALL STABILIZE ALL DIVERSIONS, RISER BASINS, AND SUMMER BASINS IMMEDIATELY UPON THEIR CONSTRUCTION.
ALL MEASURES SHALL BE INSTALLED AND INSPECTED FOR COMPLIANCE PRIOR TO COMMENCEMENT OF ANY PROPOSED PAVING, CLEARING, OR EXCAVATION.
4. CALL FOR AN INSPECTION FOR COMPLIANCE PRIOR TO ANY ADDITIONAL CLEARING. OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY ENVIRONMENTAL INSPECTOR.
5. ONCE CERTIFICATE OF COMPLIANCE IS OBTAINED BEGIN CLEARING AND GRUBBING FOR DRAINAGE CROSSINGS. PLEASE SEE SPECIFIC SEQUENCE ON PAGE 8 & 9.
6. WETLAND CROSSINGS SHALL NOT BE INSTALLED UNTIL ALL REQUIRED AN AND-401 PERMITS HAVE BEEN OBTAINED. CONTRACTOR IS TO INSTALL THE TEMPORARY COPPER DAM WHEN THE WEATHER FORECAST CALLS FOR THREE CONSECUTIVE DAYS OR MORE OF DRY WEATHER. CONTRACTOR SHALL INSTALL COPPER DAM BY PASS PIPING FOR UTILITIES BY PASS PIPING PRIOR TO BEGINNING INSTALLATION OF HEADWALLS OR PERMANENT CULVERTS. THE PASS PIPING FOR UTILITIES SHALL REMAIN IN PLACE UNTIL HEADWALLS AND DRAINAGE PIPES ARE INSTALLED AND FUNCTIONAL.
7. ONCE STREAM CROSSINGS ARE COMPLETE BEGIN CLEARING AND GRUBBING OF REMAINING DISTURBED AREAS AS SHOWN ON APPROVED PLAN. BEGIN EXCAVATION OF HEADWALLS AND INSTALLATION OF SUBSURFACE DRAINAGE AND UTILITIES. INSTALL ADDITIONAL INLET PROTECTION DEVICES AS REQUIRED AND/OR SHOWN. ONCE SUBSURFACE DRAINAGE IS INSTALLED AND OPERATIONAL, TEMPORARY SUMMER BASIN 1 CAN BE REMOVED AND THE BASIN STABILIZED. SEED AND MULCH ALL DISTURBED AREAS WITHIN 18 MONTHS OF COMPLETION OF ANY PHASE OF CONSTRUCTION.
8. REQUEST FINAL APPROVAL BY ENVIRONMENTAL INSPECTOR. IF THE INSPECTOR IS SATISFIED WITH LITERARY PERMANENT GROUND COVER, BEGIN REMOVING TEMPORARY EROSION CONTROL MEASURES. REMOVE THE SEDIMENT TRAPS AND ALL UNSTABLE SEDIMENT. AFTER STABILIZATION HAS OCCURRED RESHAPEN SEDIMENT FROM RISER BASIN/WATER QUALITY POND AND CONVERT TO PERMANENT STRUCTURE.
CONTRACTOR TO REESTABLISH TEMPORARY DIVERSION CHANNELS AT THE END OF EACH DAY TO ENSURE DRAINAGE TO THE APPROPRIATE STRUCTURE.

Seedbed Preparation:

1. Chisel compacted areas and spread topsoil three inches deep over adverse soil conditions, if available.
2. Rip the entire area to six inches deep.
3. Remove all loose rock, roots, and other obstructions leaving surface reasonably smooth and uniform.
4. Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see plan).
5. Continue tillage until a well-pulverized, firm reasonably uniform seedbed is prepared four to six inches deep.
6. Based on a freshly prepared seedbed and cover seed lightly with seeding equipment or compact after seeding.
7. Mutch immediately after seeding and anchor mulch.
8. Inspect all seeded areas and make necessary repairs for reseeding within the planting season, if possible. If stand should be over 80% damaged.
9. Consult EFR Environmental Engineers on maintenance treatment and fertilization after permanent cover is established.

Lime:
Agricultural Limestone: 2 tons/acre (3 tons/acre in clay soils)
Fertilizer:
Superphosphate: 1,000 lbs/acre - 10-10-10
Muriatic: 600 lbs/acre - 30% analysis
Mutch:
Asphalt Emulsion at 300 gal/acre

Seeding Schedule

PERMANENT	Date	Type	Planting Rate
	Aug 15 - Nov 1	Tall Fescue	300 lbs/acre
	Nov 1 - Mar 1	Tall Fescue & Annual Ryegrass	300 lbs/acre
	Mar 1 - Apr 15	Tall Fescue	300 lbs/acre
	Apr 15 - Jun 30	Hulled Common Bermudagrass	25 lbs/acre
	Jul 1 - Aug 15	Tall Fescue AND Browntop Millet or Sorghum - Sudan Hybrid	125 lbs/acre (Tall Fescue); 25 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum - Sudan Hybrid)
TEMPORARY	Date	Type	Planting Rate
	Mar 1 - Jun 1	Sartone Leopeters (seeded) and use the following combinations:	60 lbs/acre (Sartone Leopeters);
	Mar 1 - Apr 15	Add Tall Fescue	120 lbs/acre
	Mar 1 - Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
	Jun 1 - Sept 1	Tall Fescue AND Browntop Millet or Sorghum - Sudan Hybrid	120 lbs/acre (Tall Fescue); 25 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum - Sudan Hybrid)
	Sept 1 - Mar 1	Sartone Leopeters (unseeded - unseeded) AND Tall Fescue	75 lbs/acre (Sartone Leopeters); 120 lbs/acre (Tall Fescue)
	Nov 1 - Mar 1	And Annual Ryegrass	25 lbs/acre

Consult EFR Environmental Engineer for additional information concerning other alternatives for vegetation of degraded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

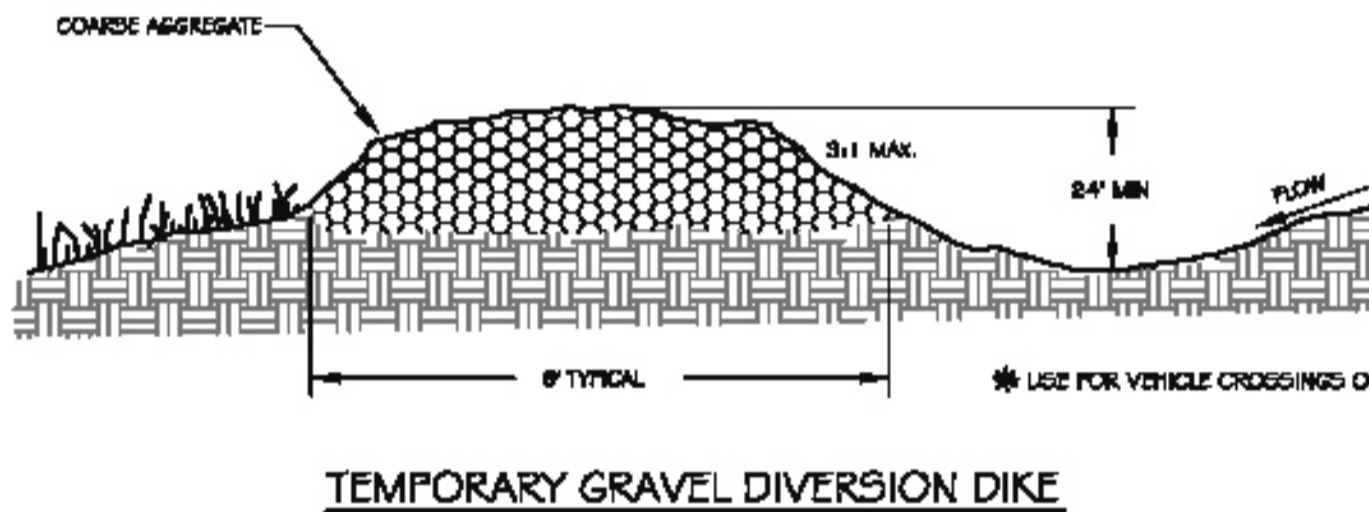
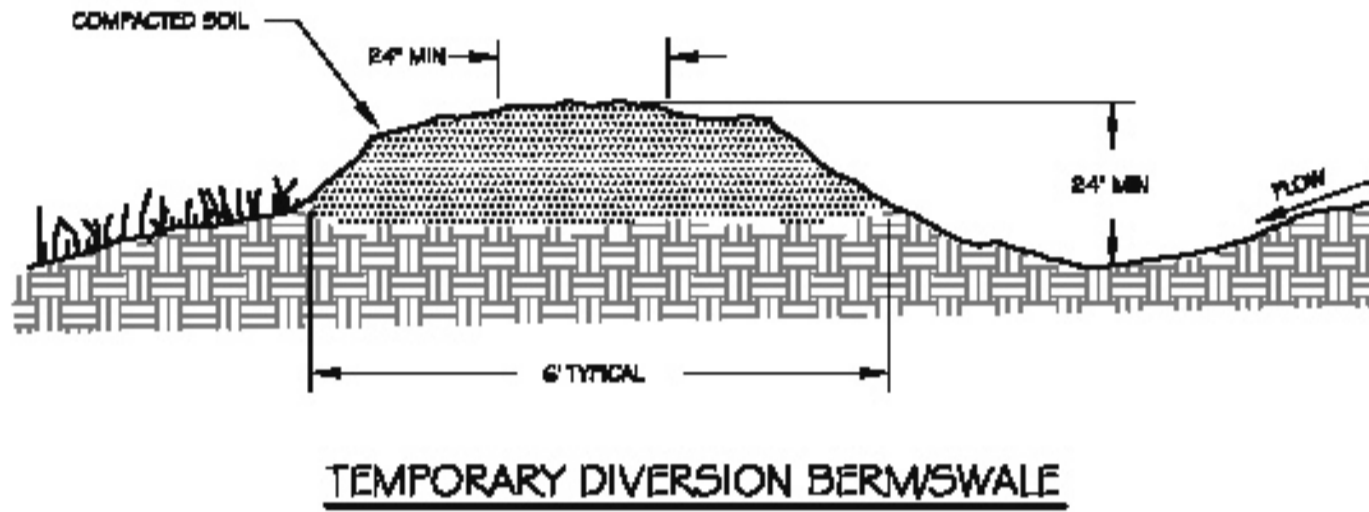
*** TEMPORARY: Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12" in height before mowing, otherwise disease may be spread.

NOTES:

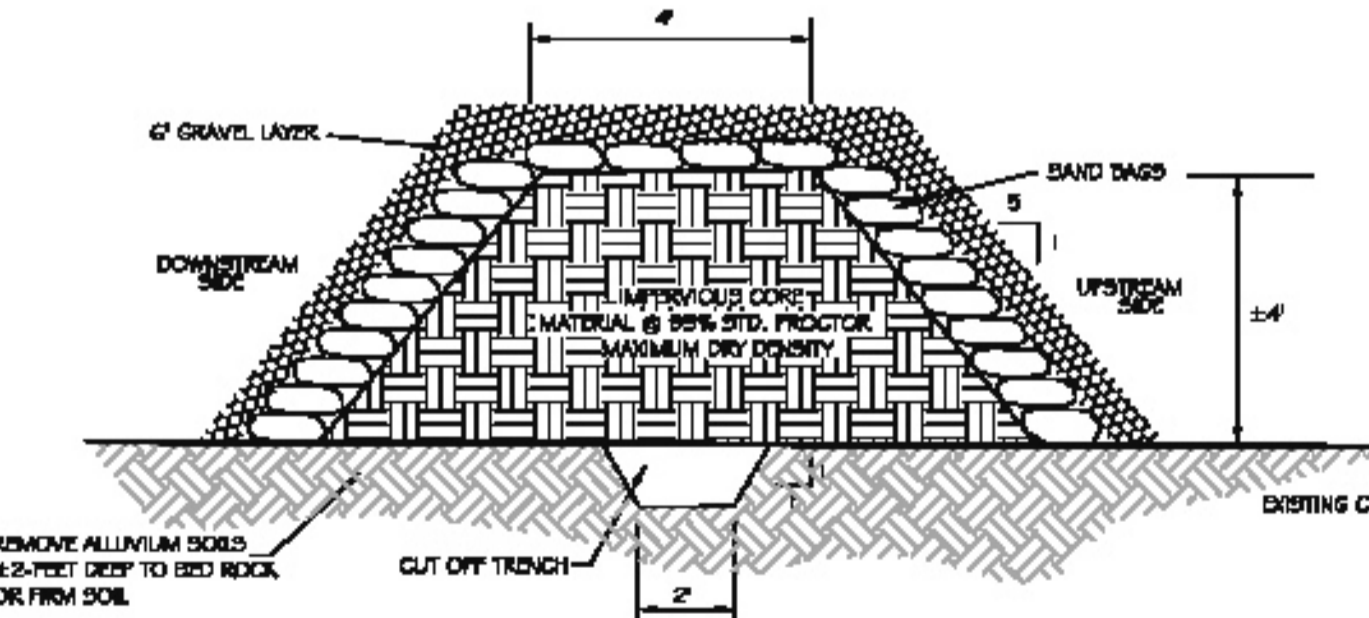
- a. GRAVEL PAD TO BE 20' x 50' AND 6" THICK MINIMUM
- b. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS IS TO BE PROVIDED.
- c. ENTRANCES SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES.
- d. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY. KEEP SOME HANDY.
- e. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY.

NOTES: APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED. PRESENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

TEMPORARY CONSTRUCTION ENTRANCE

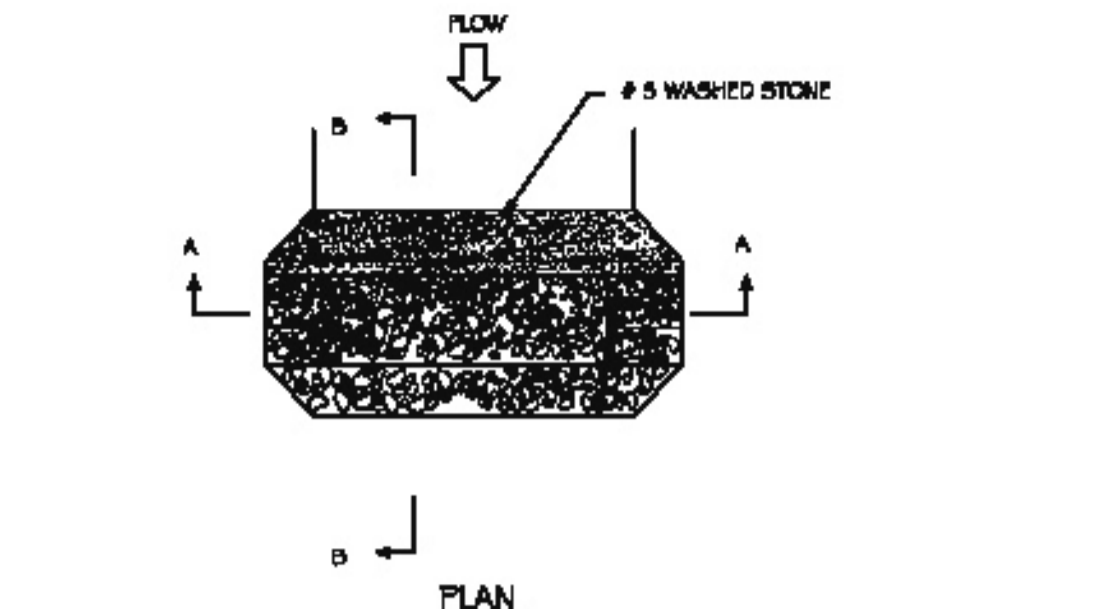
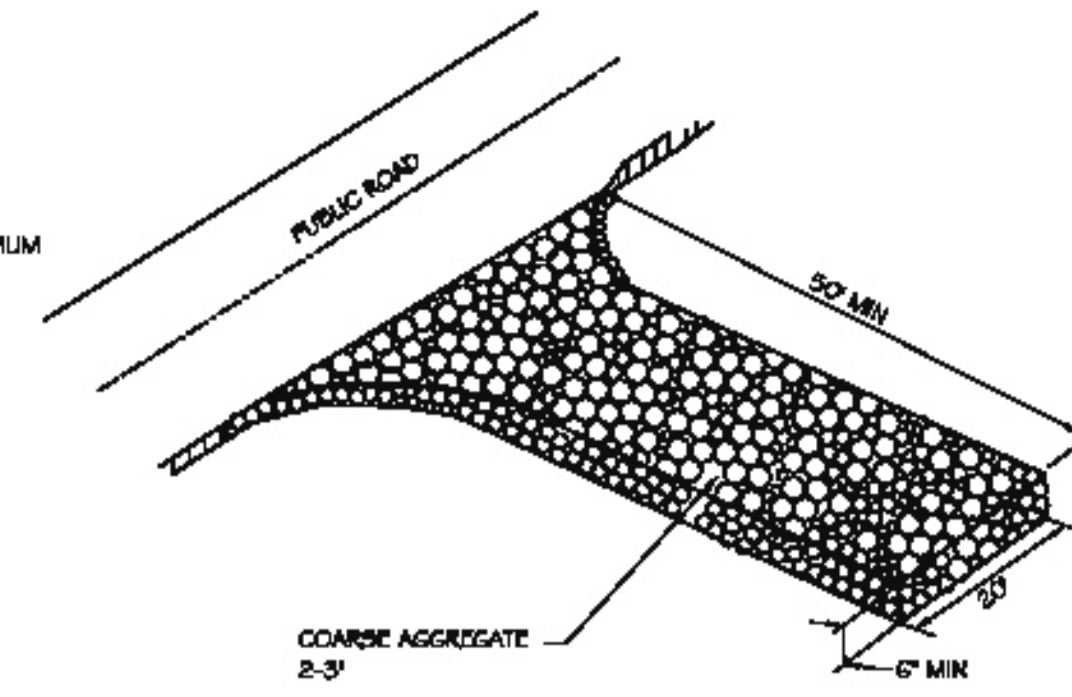


TEMPORARY GRAVEL DIVERSION DIKE

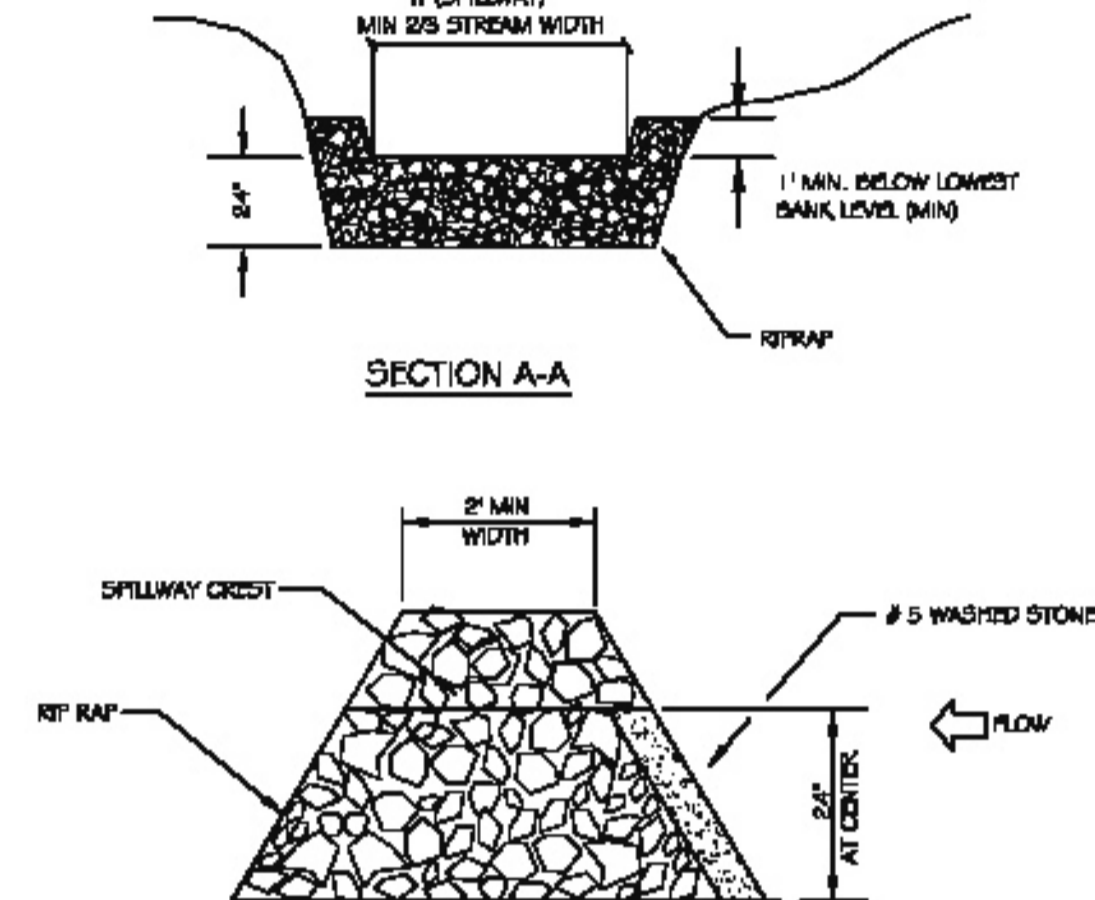


1. WORK IN CREEK SHALL BE PLANNED TO MINIMIZE THE NUMBER OF DAYS OF DISTURBANCE.
2. THE CONTRACTOR IS TO OBSERVE THE LOCAL WEATHER FORECASTS AND NOT BEGIN WORK IN THE CREEK UNLESS AT LEAST THREE DAYS WITHOUT RAIN IS ANTICIPATED.
3. ALL DISTURBED CREEK BED AND BANKS ARE TO BE STABILIZED PRIOR TO THE END OF EACH WORK DAY.

TEMPORARY COFFER DAM

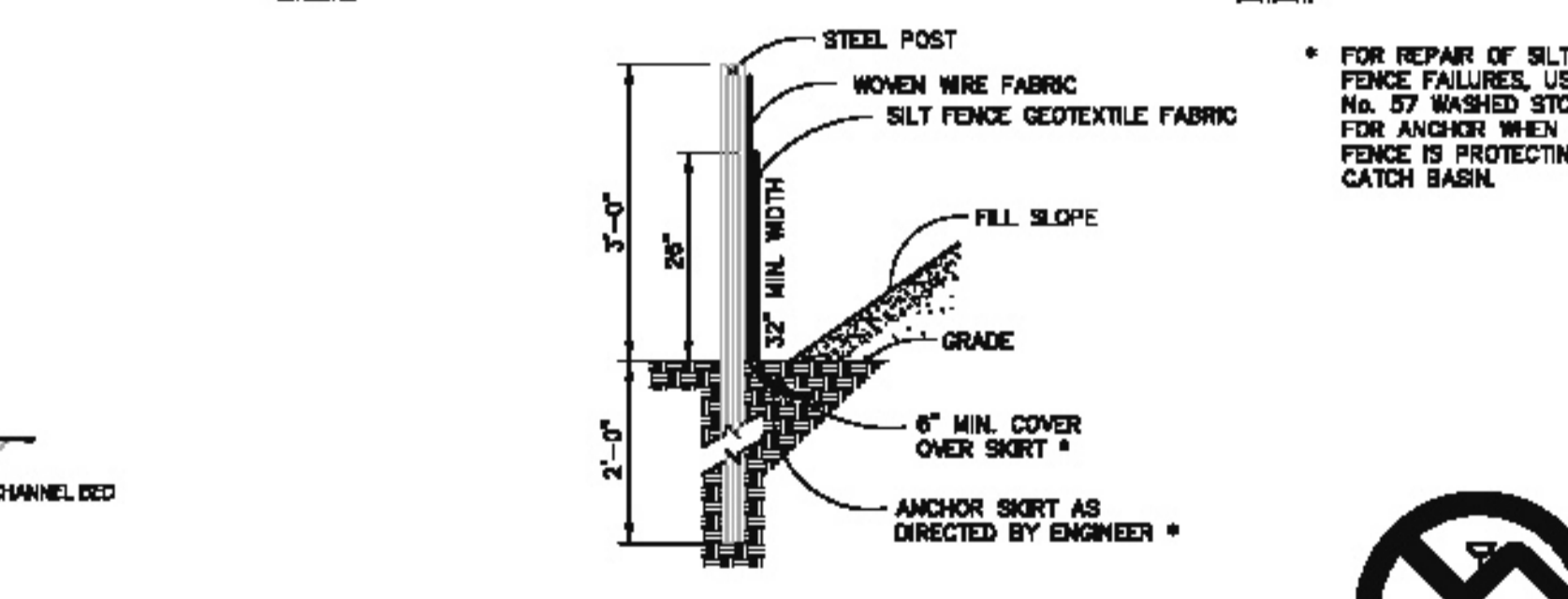
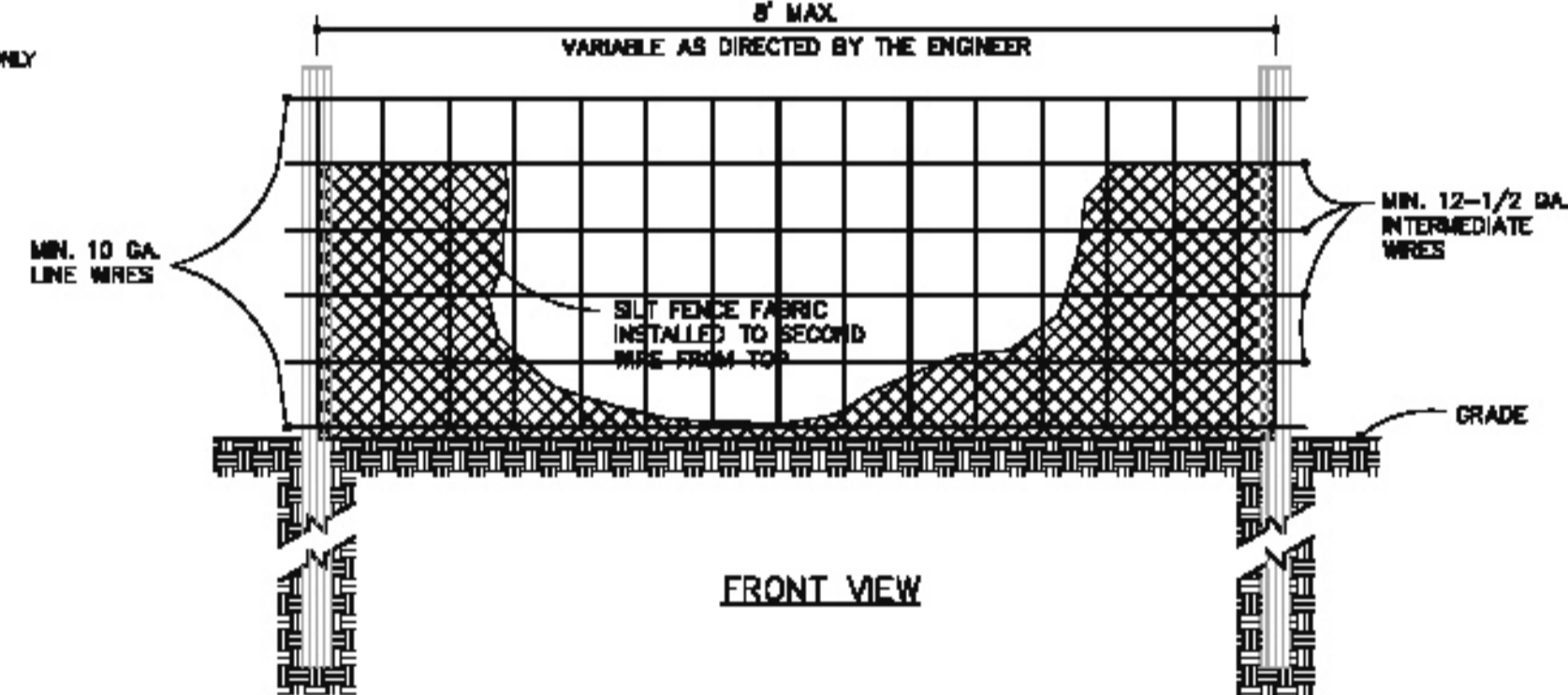


SECTION A-A



SECTION B-B

TEMPORARY STONE CHECK DAM



- NOTE:**
- USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW
 - END OF SILT FENCE NEEDS TO BE TURNED UPHILL.

STANDARD TEMPORARY SILTY FENCE



STOP!
BEFORE YOU DIG CALL THE NC ONE CALL CENTER 1-800-632-6949 IT'S THE LAW!

Installation

NOTE: Sediment fence captures sediment by backing up water to allow deposition. It is relatively ineffective for filtration because it clogs too rapidly. The sedimentation pool behind the fence is very effective and may reduce the need for expensive sediment basins and traps.

To use sediment fence effectively, provide access to the locations where sediment accumulates and provide reinforced, stabilized outlets for emergency overflow (Figure 6.62c). Sediment fence is most effective when used in conjunction with other practices such as perimeter dikes or diversions.

Location

Locate the fence at least 10 ft from the toe of steep slopes to provide sediment storage and access for cleanout (Figure 6.62b). The fence line should be nearly level through most of its length to impound a broad, temporary pool. Stabilized outlets are required for bypass flow, unless fence is designed to retain all runoff from the 10-yr storm (Figure 6.62c).

Construction

The fence line may run slightly off level (grade less than 1%) if it terminates in a level section with a stabilized outlet, diversion, basin, or sediment trap. There must be no gully along the fence or at the ends. Sediment fence should not be used as a diversion.
Dig a trench approximately 8 inches deep and 4 inches wide, or a V-trench, in the line of the fence as shown in Figure 6.62d.
Drive posts securely, at least 18 inches into the ground, on the downslope side of the trench. Space posts a maximum of 8 ft if fence is supported by wire, 6 ft if extra-strength fabric is used without support wire. Adjust spacing to place posts at low points along the fence line.
Fasten support wire fence to upslope side of posts, extending 6 inches into the trench as shown in Figure 6.62d.
Attach continuous length of fabric to upslope side of fence posts. Avoid joints, particularly at low points in the fence line. Where joints are necessary, fasten fabric securely to support posts and overlap to the next post.

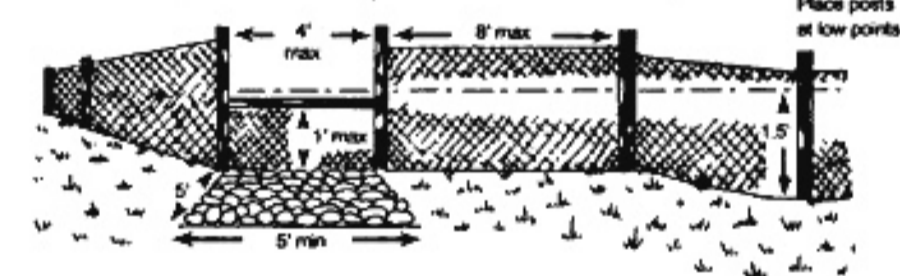


Figure 6.62a Perspective of reinforced, stabilized outlet for sediment fence.

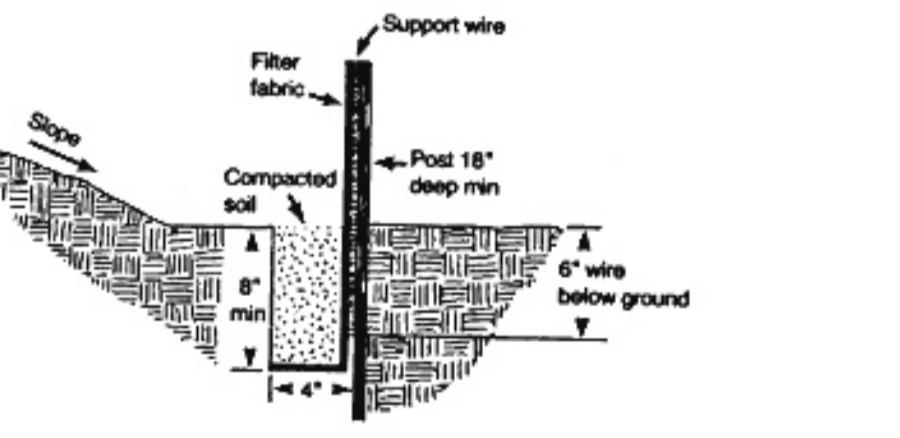


Figure 6.62d Detail of sediment fence installation.

REINFORCED SILTY FENCE OUTLET

FINAL DESIGN
NOT RELEASED FOR CONSTRUCTION

NO.	REVISIONS	DATE

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RALEIGH, NC 27603
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FAX: 919-322-0332
www.cegroupinc.com
License # C-1739



**CONSTRUCTION PLANS
CAROLINA CROSSINGS
EROSION CONTROL DETAILS
CHATHAM COUNTY, NORTH CAROLINA**

Date:	August, 2014
Scale:	N/A
Drawn:	JPD
Checked:	M/PA
Project No.:	127-170
Computer Dwg. Name:	127-170 17 EC Details

