09/08/99

PROJECT: 17BP.2.C.6

CONTRACT: DB00313

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

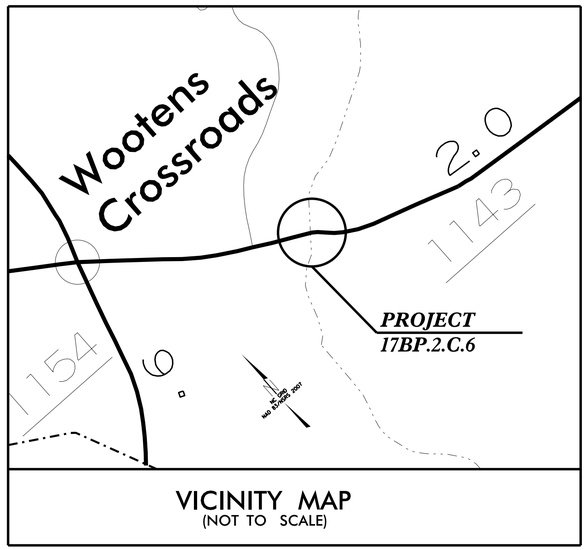
LENOIR COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.C.6	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

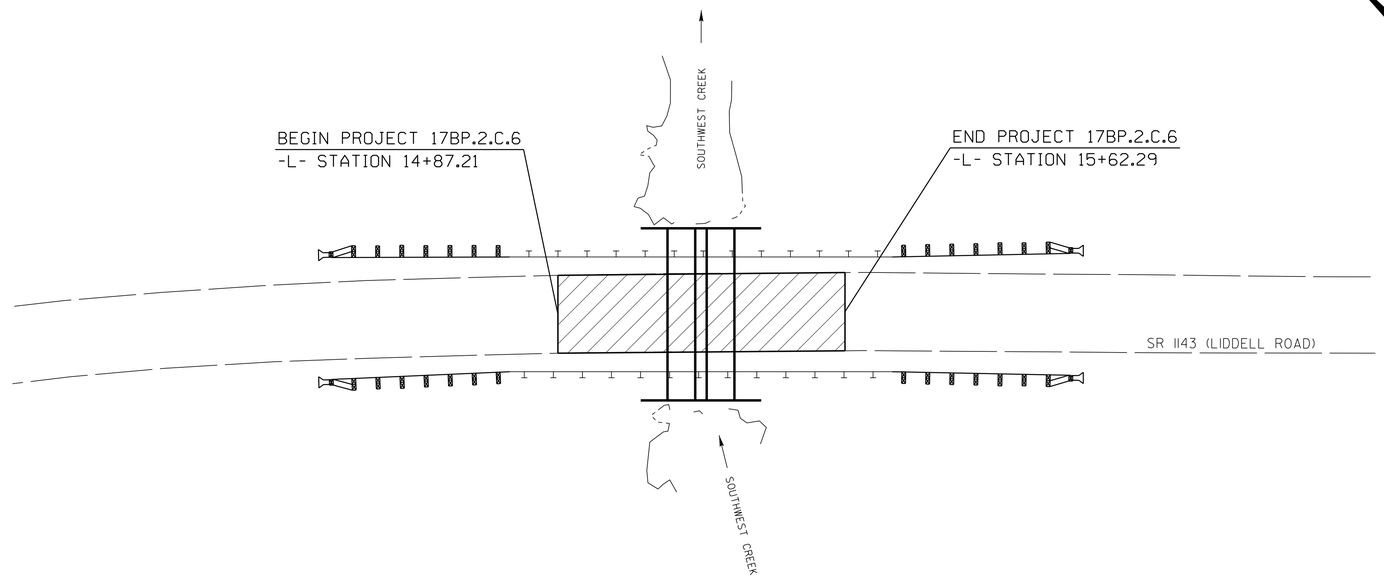
LOCATION: ***PIPE REPLACEMENT ON SR 1143 (LIDDELL ROAD)***
0.6 MILES EAST OF SR 1154 (BURNCOAT ROAD)
STRUCTURE NUMBER 53 2067

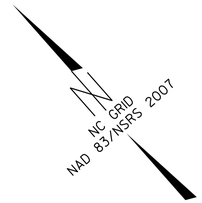
TYPE OF WORK: PIPE REPLACEMENT, PAVING AND GRADING



VICINITY MAP
(NOT TO SCALE)

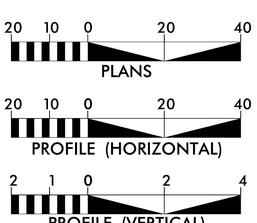
See Sheet 1-A For Index of Sheets





DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.2.C.6 = 0.014 mi

Prepared in the Office of:
DIVISION OF HIGHWAYS
1704 North Greene Street Greenville, NC 27835

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: SEPTEMBER 2016

WILLIAM C KINCANNON, PE
PROJECT ENGINEER

JOSH WILDER
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

DocuSigned by: William C Kincannon 9/8/2016 P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

DocuSigned by: William C Kincannon 9/8/2016 P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

08-SEP-2016 09:45
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_psh1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33793 WILLIAM C. KINCANNON DocuSigned by: William C Kincannon C4AEF7DCC0BD483... 9/8/2016	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33793 WILLIAM C. KINCANNON DocuSigned by: William C Kincannon C4AEF7DCC0BD483... 9/8/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DEEP RUN WATER CORP.
CONTACT MR JAMIE CANNON 252-568-3006.
CENTURY LINK

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation

REVISIONS

8/17/99

08-SEP-2016 08:10
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_psh1a.dgn
$$$$USERNAME$$$$

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) — W
- U/G Water Line LOS C (S.U.E.*) — W
- U/G Water Line LOS D (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

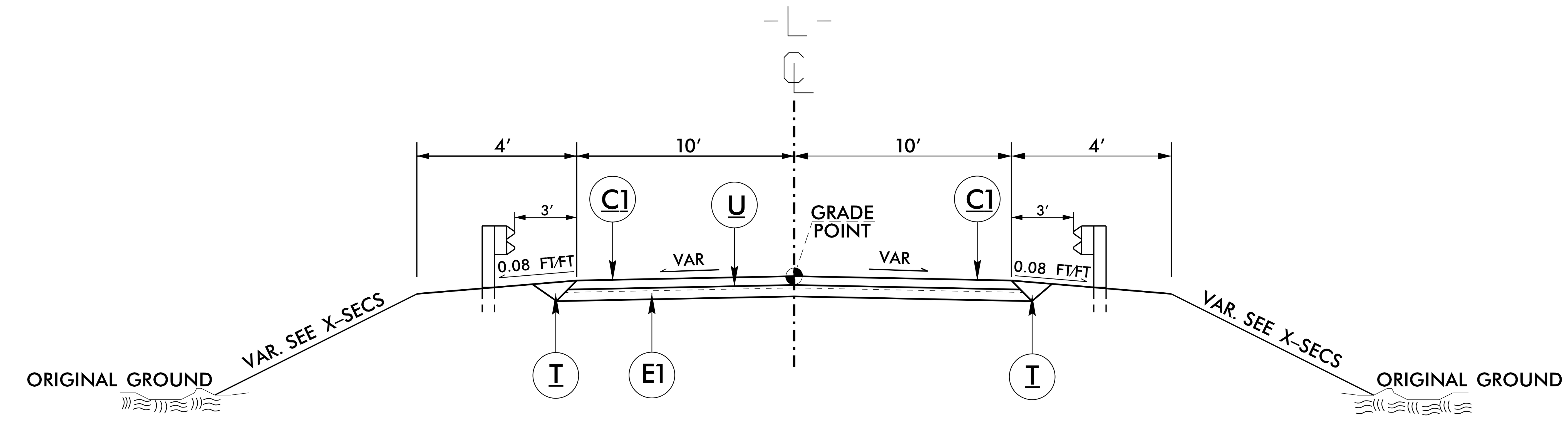
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO. 17BP.2.C.6 | SHEET NO. 2
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON 9/8/2016
NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON 9/8/2016
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

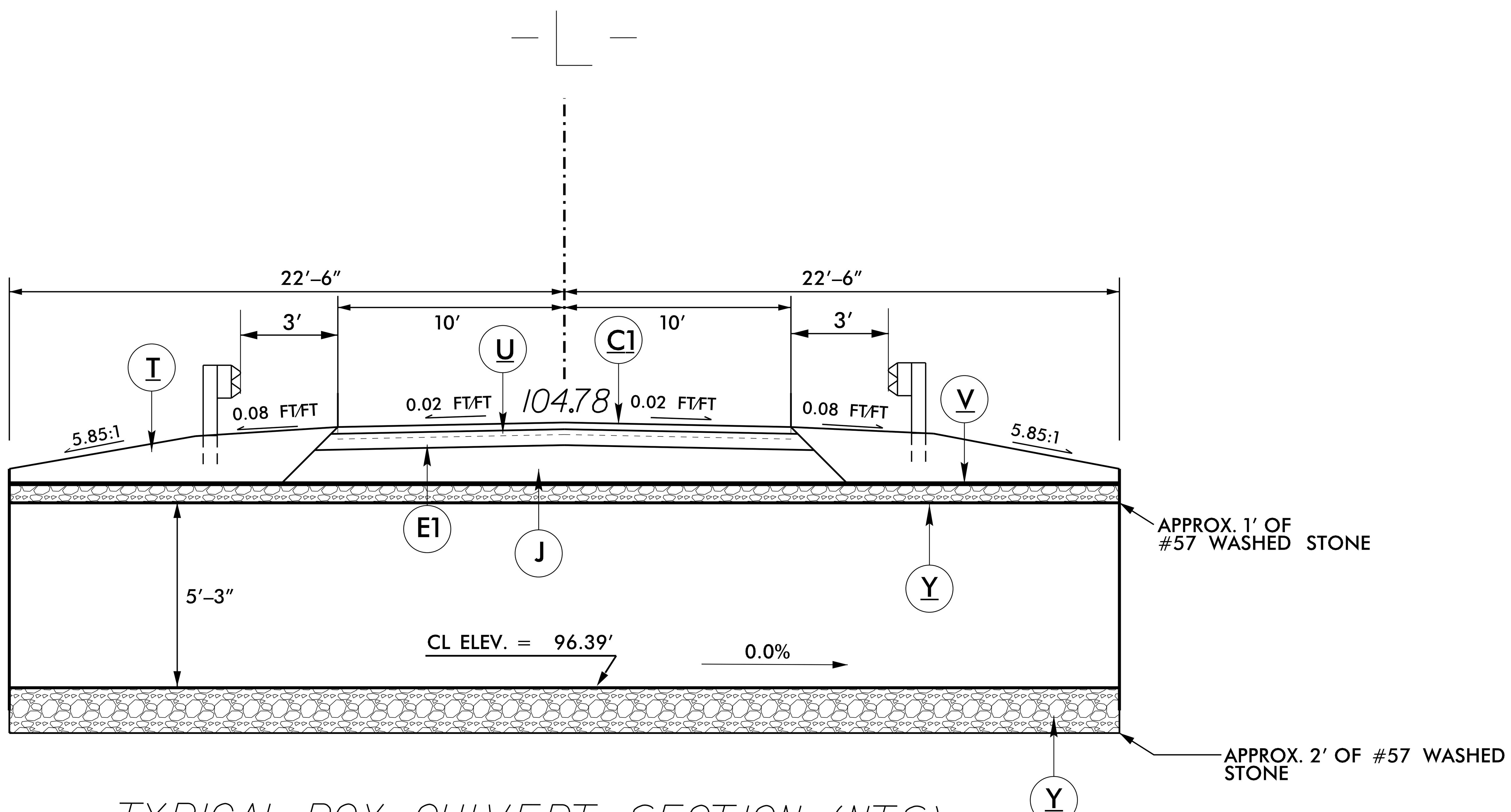
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD. IN EACH OF 2 LAYERS.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ.YD.
J	VARIABLE DEPTH AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	PAVEMENT REMOVAL.
V	FILTER FABRIC
Y	#57 WASHED STONE

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



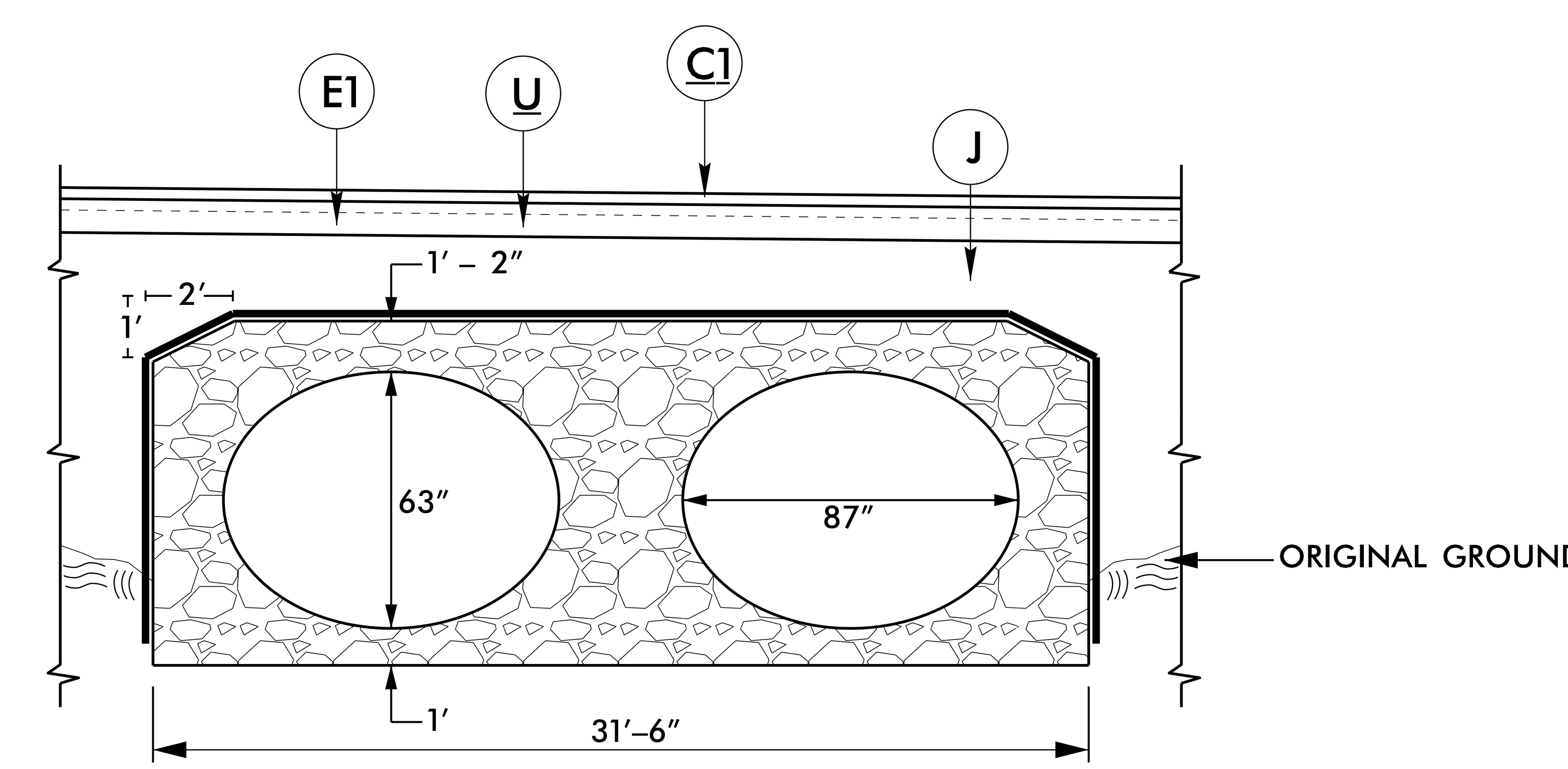
TYPICAL SECTION (NTS)

-L- STATION 14+87.21 - 15+62.29



TYPICAL BOX CULVERT SECTION (NTS)

-L- STATION 15+24.62



TYPICAL BOX CULVERT SECTION (NTS)

-L- STATION 15+24.62

REVISIONS

8/17/99

08-SEP-2016 10:40
G:\PROJECTS\LENOIR\LENDIR2067\Lenoir2067_psh2.dgn
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

SECT	QUANTITY	UNIT	ITEM DESCRIPTION
800	1	LS	MOBILIZATION
801	1	LS	CONSTRUCTION SURVEYING
226	1	LS	GRADING
226	100	CY	UNDERCUT EXCAVATION
520	200	TON	AGGREGATE BASE COURSE
610	35	TON	ASPHALT CONCRETE SURFACE COURSE,TYPE SF9.5A
620	50	TON	ASPHALT CONCRETE BASE COURSE,TYPE B25.0B
620	5	TON	ASPHALT BINDER FOR PLANT MIX,GRADE PG64-22
862	2	EA	STEEL BEAM GUARDRAIL OVER LOW FILL CULVERT (STD 862.01)
862	4	EA	GUARDRAIL ANCHOR UNITS,TYPE 350
876	245	SY	GEOTEXTILE FOR DRAINAGE
1005	200	TON	#57 STONE
1605	100	LF	TEMPORARY SILT FENCE
SP	100	LF	SAFETY FENCE (AS DIRECTED BY THE ENGINEER)
1615	0.5	ACRE	TEMPORARY MULCHING
1620	50	LB	SEED FOR TEMPORARY SEEDING
1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
1630	10	CY	SILT EXCAVATION
1632	260	SY	MATTING FOR EROSION CONTROL
1660	1	ACRE	SEEDING AND MULCHING
1661	50	LB	SEED FOR REPAIR SEEDING
1661	0.2	TON	FERTILIZER FOR REPAIR SEEDING
SP	3	EA	RESPONSE FOR EROSION CONTROL
SP	60	LF	COIR FIBER WATTLE
SP	1	LS	2 @ 45' - TWIN 87" - SPAN X 63" RISE,.10 GA,3"x1" CORRUGATED ALUMINUM ARCH PIPE -L- STA 15+24.62
SP	1	LS	RELOCATE EXISTING 6" WATER MAIN
SP	75	LF	IMPERVIOUS DIKE
SP	1	LS	DEWATERING

08-SEP-2016 09:48
c:\projects\17bp2c6\dgn\LENOIR2067\Lenoir2067_psh3.dgn
$$USERNAME$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC.

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	PIPE REMOVAL LIN.FT.		ALUMINUM BOX CULVERT: TWIN 87" SPAN X 63" RISE. 10 GA, 3" X 1" CORRUGATED ALUMINUM PIPE ARCH FULLY WELDED TO ALUMINUM STRUCTURAL PLATE HEADWALL WITH 2' WIDE BANDS & 2' WIDE FLAT GASKET
-L- 15+24.62	CL				96.39	96.39	0.0%										2 @ 45'
TOTALS																	2 @ 45'

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	BOX CULVERT EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 14+87.21 - 15+62.29	59		0	11	0	48
UNDERCUT (CONTINGENCY)			100	120	120	100
UNCLASSIFIED STRUCTURE EXCAVATION		892		1000	108	0
SUB TOTAL	59	892	100	1131	228	148
SAY	65	895	105	1135	230	150

PAVEMENT REMOVAL SUMMARY
IN SQUARE YARDS

LINE	STATION - STATION	LOCATION	REMOVAL (SY)
-L-	14+87.21 - 15+62.29	CL	170
TOTAL			170
SAY			175

NOTE:

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, UNCLASSIFIED STRUCTURE EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS TYPE 350									IMPACT ATTENUATOR TYPE 350 NO.	PERMITTED G	PERMITTED NG				REMARKS
-L-	14+25.33	16+24.62	LT	100			16+24.62	14+25.33	3	4	50	50	1	1	2															
-L-	14+23.89	16+24.62	RT	100			14+23.89	16+24.62	3	4	50	50	1	1	2															
	TOTAL			200											4															

REVISIONS

8/17/99

08-SEP-2016 09:51
G:\PROJECTS\LENOIR\LENDIR2067\Lenoir2067_psh3a.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C KINCANNON — DocuSigned by: William C Kincannon

9/8/2016

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

NC GRID NAD 83/2005 2007

PI Sta 12+91.11
Δ = 20° 29' 24.2" (RT)
D = 5° 32' 06.0"
L = 370.19'
T = 187.09'
R = 1,035.16'

① WILLIAM DOUGLAS & JACKIE HILL DB 1076 P 923

② SHELBA G HILL DB 1220 P 106

③ WILLIAM DOUGLAS HILL DB 1013 P 530

④ WILLIAM DOUGLAS HILL DB 1013 P 530

-L- PT Sta. 14+74.21

-L- POT Sta. 17+87.33

BZ 1

BZ 2

SOUTHWEST CREEK

30'

20'

CONTROL POINT 10
N 510158.6250
E 2371907.8350
ELEV 104.35

CONTROL POINT 2
N 510027.9660
E 2372056.3670
ELEV 105.07

S 48° 32' 30.2" E

SR 1143 (LIDDELL ROAD)

-L- STA 14+87.21

-L- STA 15+62.29

PROP 2 @ 45' - TWIN 87" - SPAN X 63" RISE,
10 GA, 3"X1" CORRUGATED ALUMINUM ARCH PIPE
-L- STA 15+24.62

-L- PROFILE

SCALE: 1"=20' HORIZ.
1"=4' VERT.

BEGIN GRADE
-L- STATION 14+87.21
ELEV 104.72

CL STATION 15+24.62
1 @ TWIN 87" SPAN X 67" RISE
10 GA 3"X1" ABC 45°
CL RDWY ELEVATION 104.78'
PIPE INVERT 96.39'
SLOPE 0%

END GRADE
-L- STATION 15+62.29
ELEV 104.85

104.72

104.85

(+)0.1729%

104.14

104.82

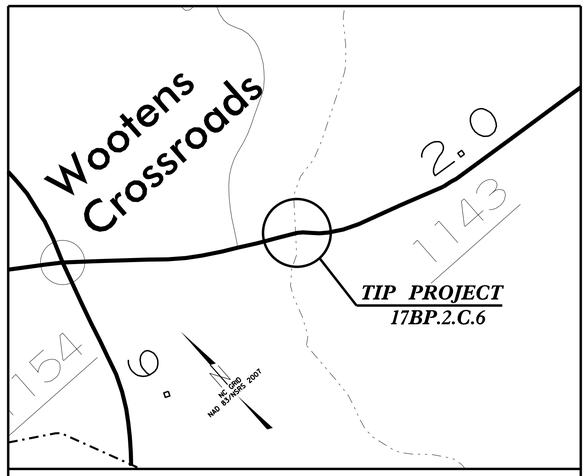
112 108 104 100 96 92 88 84

13 14 15 16 17

08-SEP-2016 10:55
C:\PROJECTS\ENGINEER\LENOIR2067\Lenoir2067.psl4.dgn
$$$$LICENSEUSER

09/08/99

TIP PROJECT: 17.BP.2.C.6



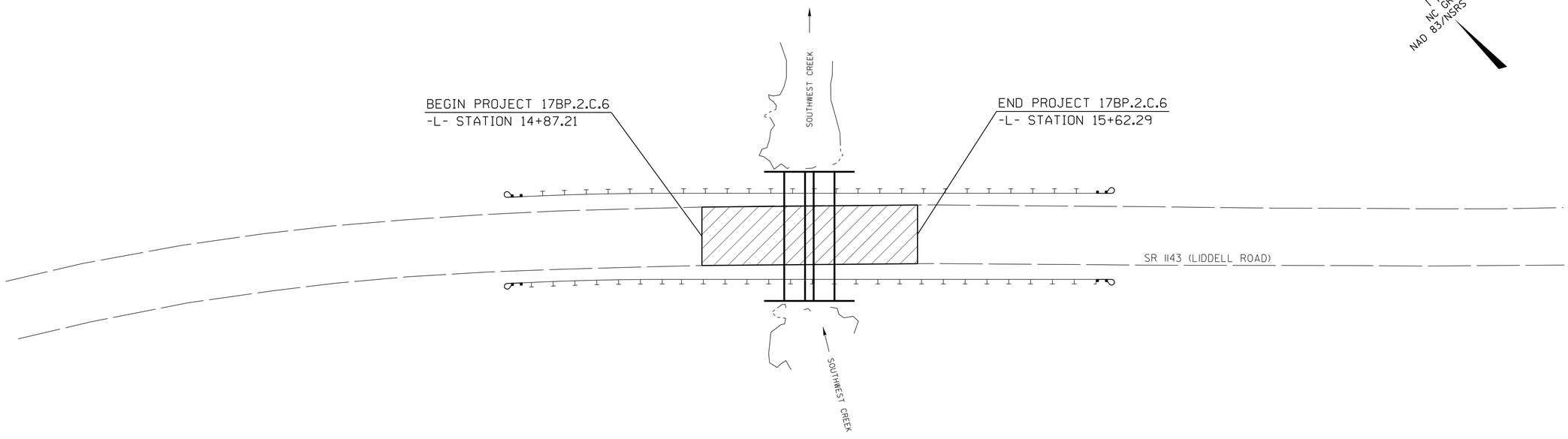
VICINITY MAP
(NOT TO SCALE)

T.I.P. NO.	SHEET NO.
17BP.2.C.6	UC 1

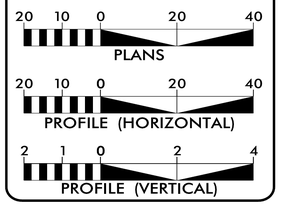
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
LENOIR COUNTY

LOCATION: PIPE REPLACEMENT ON SR 1143 (LIDDELL ROAD)
0.6 MILES EAST OF SR 1154 (BURN COAT ROAD)
TYPE OF WORK: WATER MAIN RELOCATION



GRAPHIC SCALES



INDEX OF SHEETS

WATER OWNER ON PROJECT

DEEP RUN WATER CORP – WATER

SEAL

DocuSigned by: William C Kincannon
NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON
7/12/2016

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DIVISION 2 – DDC

P.O. BOX 1587
GREENVILLE, NC 27835
PHONE (252) 439-2800
FAX (252) 830-3352

WILLIAM C. KINCANNON, P.E. — *UTILITIES ENGINEER*
JOSH WILDER — *UTILITIES PROJECT DESIGNER*

11-JUL-2016 13:18
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_ucl.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	UC 2
R/W SHEET NO.	

UTILITY ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

7/12/2016

UTILITY CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

WATER MAIN	QUANTITY	UNIT	ITEM DESCRIPTION
	40	LF	6" DI PIPE - PC 350 (AWWA C600)
	377	LF	8" HDPE PIPE - DR9 (AWWA C906)
	2	EA	6" GATE VALVE AND VALVE BOX
	2	EA	DI PIPE TO HDPE TRANSITION
	2	EA	CONCRETE THRUST COLLAR
	381	LF	REMOVE 6" UTILITY PIPE
	375	LF	TEMPORARY SILT FENCE
	0.5	ACRES	SEEDING AND MULCHING

REVISIONS

8/17/99

11-JUL-2016 13:18
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_uc2.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	UC 3
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON
Digitally signed by William C. Kincannon
DocuSigned by: William C. Kincannon 33793
7/12/2016

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON
Digitally signed by William C. Kincannon
DocuSigned by: William C. Kincannon 33793
7/12/2016

8/17/99

REVISIONS

NOTE:
MAINTAIN SERVICE TO THE RESIDENCE ON PARCEL 1 DURING CONSTRUCTION

NC GRID NAD 83/NSRS 2007

PI Sta 12+91.11
Δ = 20° 29' 24.2" (RT)
D = 5° 32' 06.0"
L = 370.19'
T = 187.09'
R = 1,035.16'

① WILLIAM DOUGLAS & JACKIE HILL DB 1076 P 923

② SHELBA G HILL DB 1220 P 106

③ WILLIAM DOUGLAS HILL DB 1013 P 530

④ WILLIAM DOUGLAS HILL DB 1013 P 530

-L- PT Sta. 14+74.21

-L- POT Sta. 17+87.33

BZ 1

BZ 2

SOUTHWEST CREEK

CONTROL POINT 10
N 510158.6250
E 2371907.8350
ELEV 104.35

CONTROL POINT 2
N 510027.9660
E 2372056.3670
ELEV 105.07

PROPOSED 377 LF OF 8" HDPE (AWWA C906) WATER MAIN BY DIRECTIONAL DRILL

EXISTING 381 LF OF 6" PVC TO BE ABANDONED AND REMOVED.

30'

20'

THRUST COLLAR

TIE TO EXISTING STATION 13+36.56

HDPE TO DIP TRANSITION

6" GATE VALVE

20' DIP RESTRAINED JOINT

-L- STA 14+87.21

-L- STA 15+62.29

S 48° 32' 30.2" E

SR 1143 (LIDDELL ROAD)

TIE TO EXISTING STATION 17+14.97

60'

20' 0' 20' 40' 60'
GRAPHIC SCALE

NOTE:
INSTALL WATER VALVES PRIOR TO DRILL TO MINIMIZE SERVICE INTERRUPTIONS

–WM– PROFILE
SCALE: 1" = 20' HORIZ
1" = 4' VERT.

112 108 104 100 96 92 88 84 80

13 14 15 16 17 18

-L- 13+81.65
HDD POINT
PULL SIDE
EXIT 15°

105.50

6"GV

-L- 13+36.56
TIE TO EXIST.

HDPE TO DIP TRANSITION

20' PROP. 6" RESTRAINED JOINT DIP PC 350 (AWWA C600)

LENGTH = 24'

-L- 14+04.36

RADIUS OF CURVATURE = 400'
LENGTH = 106'

-L- 15+09.08

8" HDPE WATER MAIN (AWWA C906)

-L- 15+45.66

10'

LENGTH = 37'

EXISTING GRADE ALONG PROPOSED WATER MAIN

-L- 16+50.38

-L- 16+71.65
HDD POINT
DRILL SIDE
ENTRY 15°

105.12

LENGTH = 22'

RADIUS OF CURVATURE = 400'
LENGTH = 106'

20' PROP. 6" RESTRAINED JOINT DIP PC 350 (AWWA C600)

-L- 17+14.97
TIE TO EXIST.

12-JUL-2016 08:44
J:\PROJECTS\17BP2C6\ROW\LENOIR2067\Lenoir2067_uc3.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	UC 4
R/W SHEET NO.	

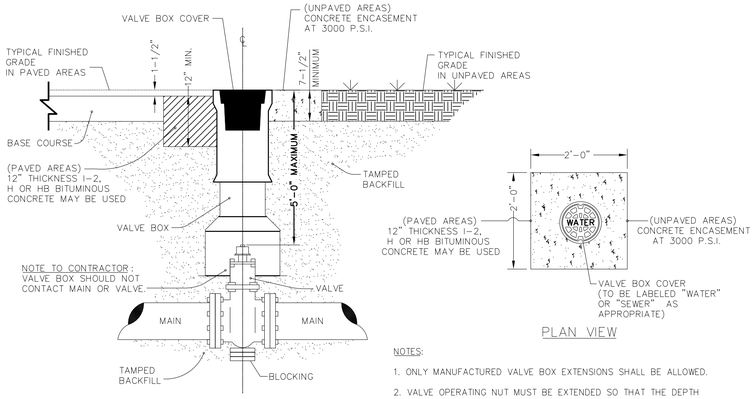
UTILITY ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33793 WILLIAM C. VINCANNON

DocuSigned by: William Vincannon

7/12/2016

UTILITY CONSTRUCTION
DETAILS SHEET

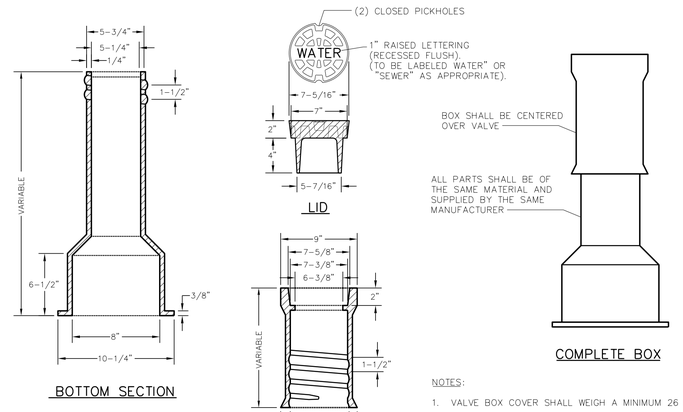


NOTES:

1. ONLY MANUFACTURED VALVE BOX EXTENSIONS SHALL BE ALLOWED.
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5' (ft.) FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

TYPICAL VALVE BOX

NTS

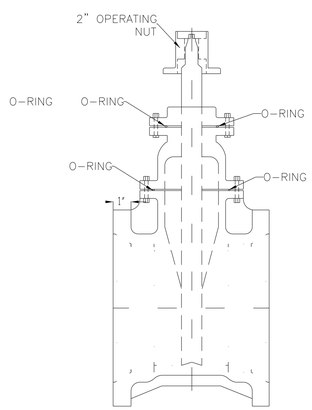


NOTES:

1. VALVE BOX COVER SHALL WEIGH A MINIMUM 26 lbs.
2. ENTIRE VALVE BOX ASSEMBLY & COVER SHALL BE CAST FROM CLASS 35 GRAY IRON.
3. ASSEMBLY SHALL BE DOMESTICALLY MADE AND MANUFACTURED IN THE U.S.A.

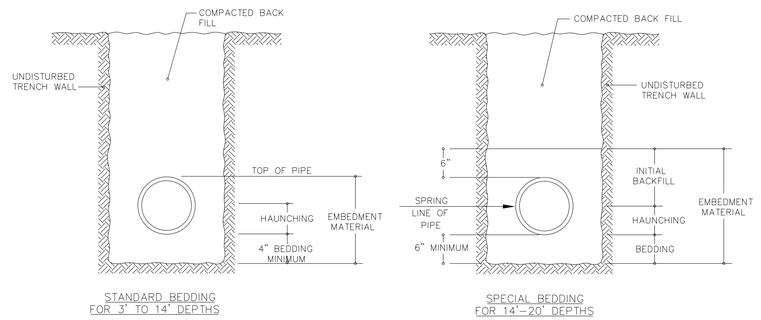
TYPICAL VALVE BOX

NTS



TYPICAL RESILIENT MECHANCIAL JOINT GATE VALVE DETAIL

NTS

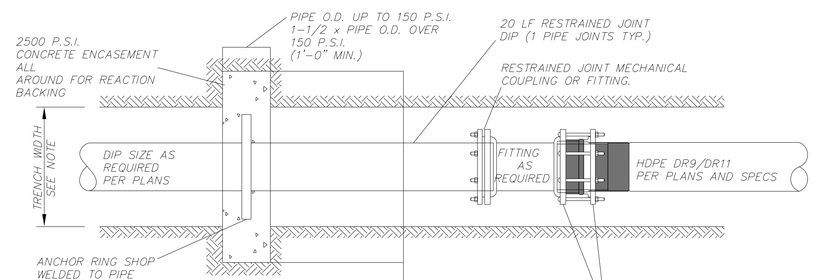


NOTES:

1. EMBEDMENT MATERIAL MUST BE CLASS I (NO. 67 OR NO. 78M WASHED STONE IS TYPICALLY USED).
2. EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY FOR CLASS I MATERIAL.
3. STANDARD BEDDING SHALL BE UTILIZED FOR ALL CASES WHERE TRENCH BOTTOMS ARE UNSTABLE DUE TO SOIL TYPE, OR MOISTURE CONDITIONS.

TYPICAL BEDDING FOR FLEXIBLE & SEMI-RIGID PIPE

NTS



ANCHOR RING DIMENSIONS		
NOMINAL PIPE SIZE	O.D. OF RINGS	THICKNESS
4" – 12"	PIPE O.D. + 6"	1/2"
16" – 24"	PIPE O.D. + 7"	3/4"
30" & 36"	PIPE O.D. + 8"	1"

TYPICAL DIP TO HDPE TRANSITION DETAIL WITH THRUST COLLAR

NTS

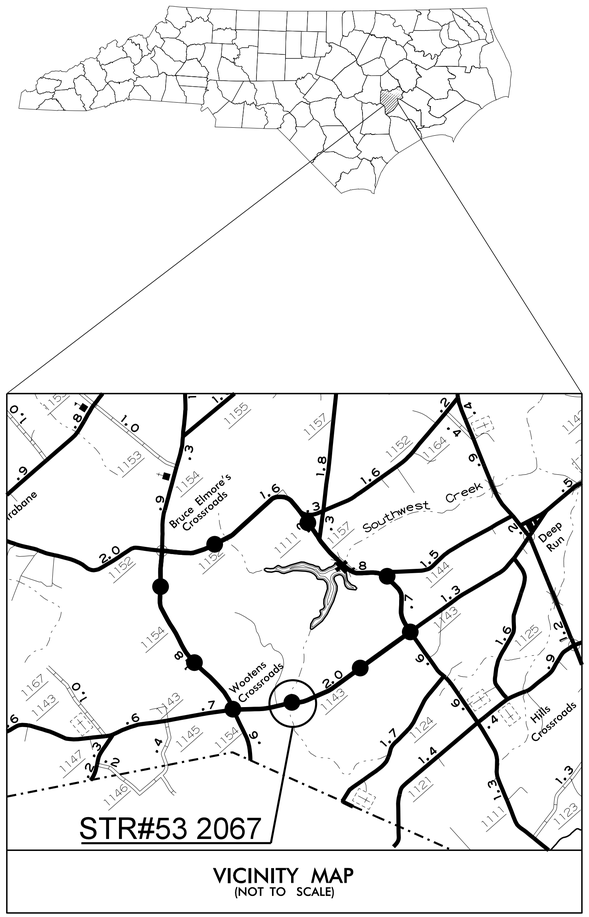
8/17/99

REVISIONS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

LENOIR COUNTY



VICINITY MAP
(NOT TO SCALE)

INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-HIGHWAY DESIGN BRANCH-N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03 (SHT. 1 OF 9)	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES (TYPE III)

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT.
- EXIST. PVMT.
- WORK AREA

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)

SHEET NO.
TMP-1

17BP.2.C.6

STATE PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
P.O. BOX 1587, GREENVILLE, NC 27835
105 PACTOLUS HWY. (NC 33), GREENVILLE, NC 27835
PHONE: (252) 830-3490 FAX: (252) 830-3352

W. C. KINCANNON, PE — TRAFFIC ENGINEER
W. C. KINCANNON, PE — TRAFFIC CONTROL PROJECT ENGINEER
JOSH WILDER — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
JOSH WILDER — TRAFFIC CONTROL DESIGN ENGINEER

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

APPROVED: DocuSigned by: William C Kincannon
DATE: 9/8/2016 C08D483...

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

08-SEP-2016 08:20
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_tmpl.dgn
$$$$USERNAME$$$$

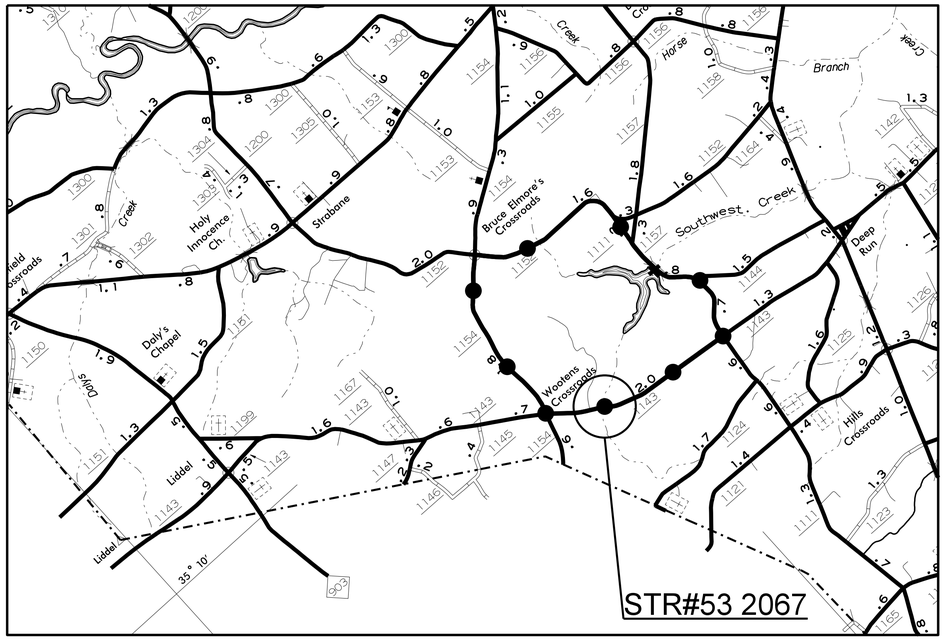
PROJ. REFERENCE NO.	SHEET NO.
17BP.2.C.6	TMP-2

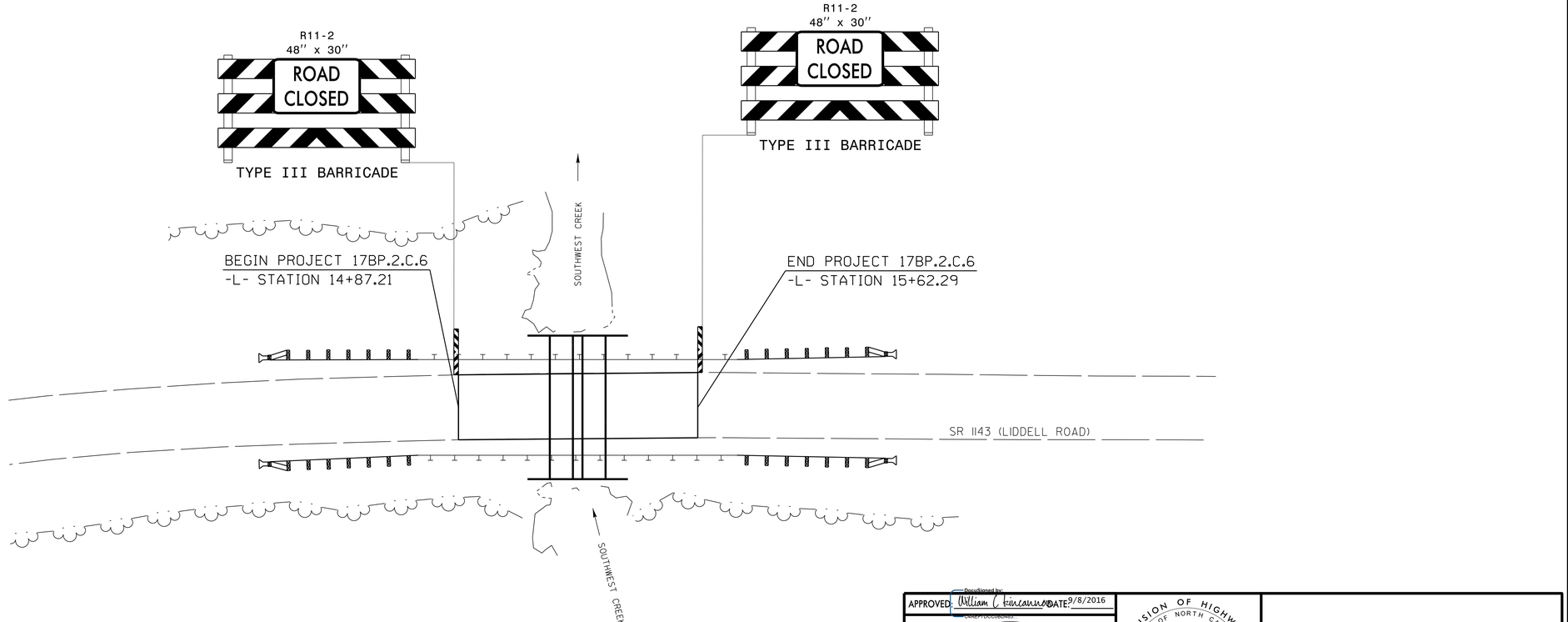
GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TMP-1.

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

STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND THE TYPE III BARRICADES AT THE PROJECT LIMITS.
STATE FORCES WILL INSTALL PAINT AND MARKERS ON THE FINISHED PROJECT.
CALL JIM EVANS AT 252-830-3493 FOR COORDINATION.





APPROVED: DocuSigned by: William C Kincannon DATE: 9/8/2016

SEAL

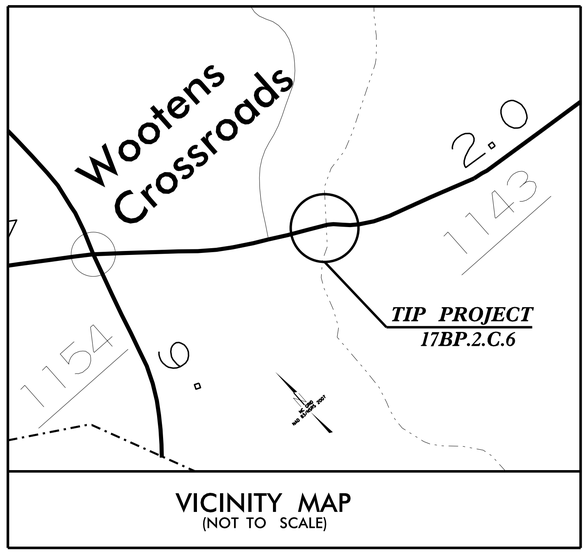
NORTH CAROLINA PROFESSIONAL SEAL 33793 ENGINEER WILLIAM C. KINCANNON

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

08-SEP-2016 08:21
G:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_tmp2.dgn
$$$$USERNAME$$$$

PROJECT: 17BP.2.C.6

TIP #

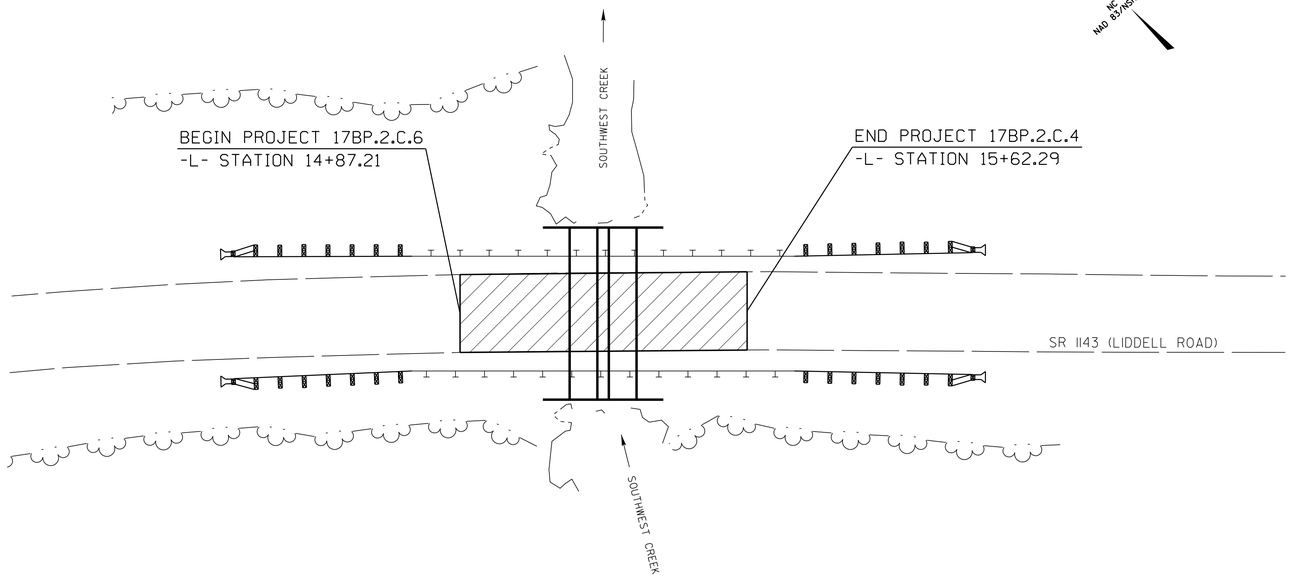


See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

LOCATION: PIPE REPLACEMENT ON SR 1143 (LIDDELL ROAD)
0.6 MILES EAST OF SR 1154 (BURNCOAT ROAD)
STRUCTURE NUMBER 53 2067



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.C.6	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

GRAPHIC SCALE

10 0 20

PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

2012 STANDARD SPECIFICATIONS

Prepared In the Office of:

DIVISION 2 DDC
1704 NORTH GREENE STREET
GREENVILLE, NC 27835

Josh Wilder
Level III
Certification #3332

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	EC 2

8/17/99

REVISIONS

PI Sta 12+91.11
Δ = 20° 29' 24.2" (RT)
D = 5° 32' 06.0"
L = 370.19'
T = 187.09'
R = 1,035.16'

① WILLIAM DOUGLAS & JACKIE HILL DB 1076 P 923

-L- PT Sta. 14+74.21

IMPERVIOUS DIKE

④ WILLIAM DOUGLAS HILL DB 1013 P 530

-L- POT Sta. 17+87.33

BZ 1 BZ 2

DIFFUSE FLOW THROUGH VEGETATED UPLANDS BEFORE ENTERING WETLANDS

CONTROL POINT 10
N 510158.6250
E 2371987.8350
ELEV 104.35

CONTROL POINT 2
N 510027.9660
E 2372056.3670
ELEV 105.07

SOUTHWEST CREEK

30' 20'

SILT BAG (Std.Dwg. 1630.06)

S 48° 32' 30.2" E

SR 1143 (LIDDELL ROAD)

PUMP(S)

DIFFUSER BARRELS

② SHELBA G HILL DB 1220 P 106

③ WILLIAM DOUGLAS HILL DB 1013 P 530

IMPERVIOUS DIKE

SOUTHWEST CREEK

20' 0' 20' 40' 60'

GRAPHIC SCALE

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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 ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle with Polyacrylamide	
SP	Wattle	
	Ditch Flow Line	

NOTE: THE CONTRACTOR SHALL INSTALL WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR AS DIRECTED BY THE ENGINEER.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

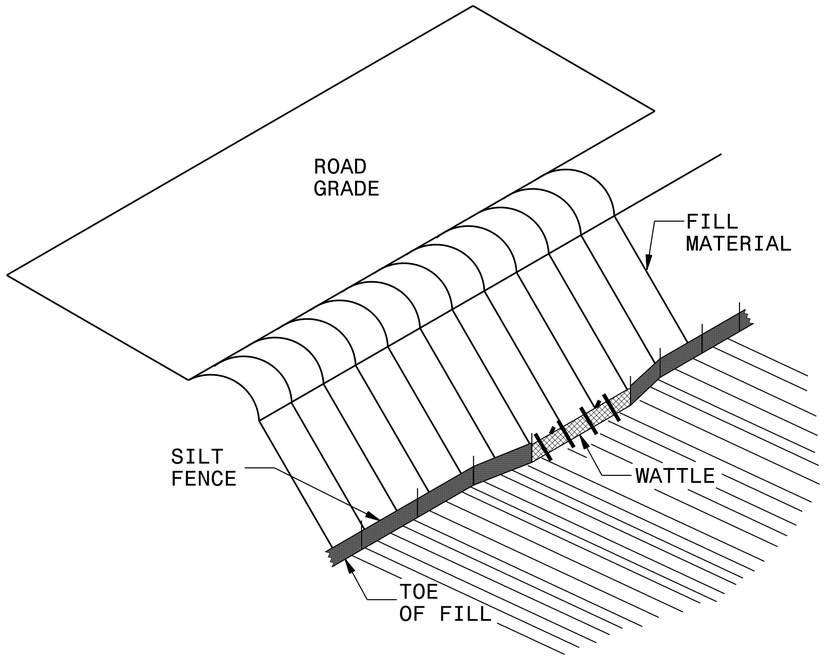
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

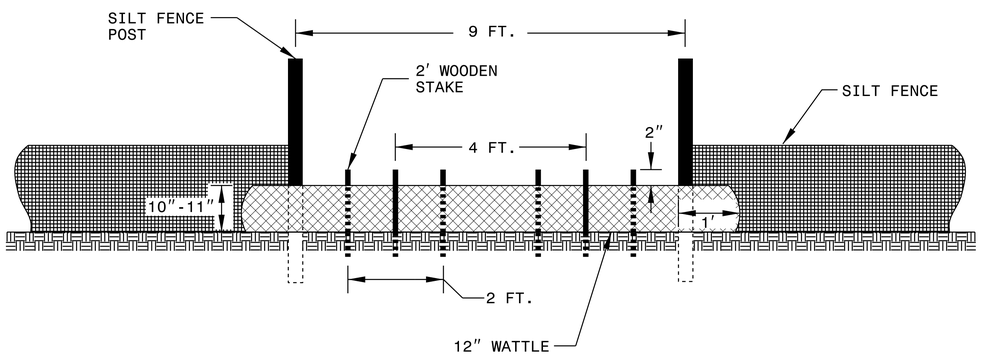
08-SEP-2016 08:26
R:\SCDOT\PROJECTS\17BP2C6\DGN\LEN01R2067\Lenoir2067_ec2.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	EC-3

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

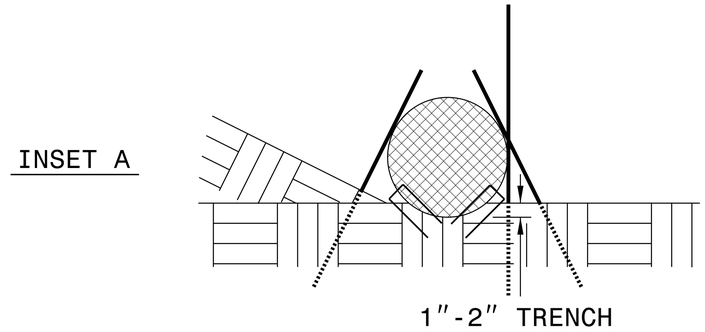
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

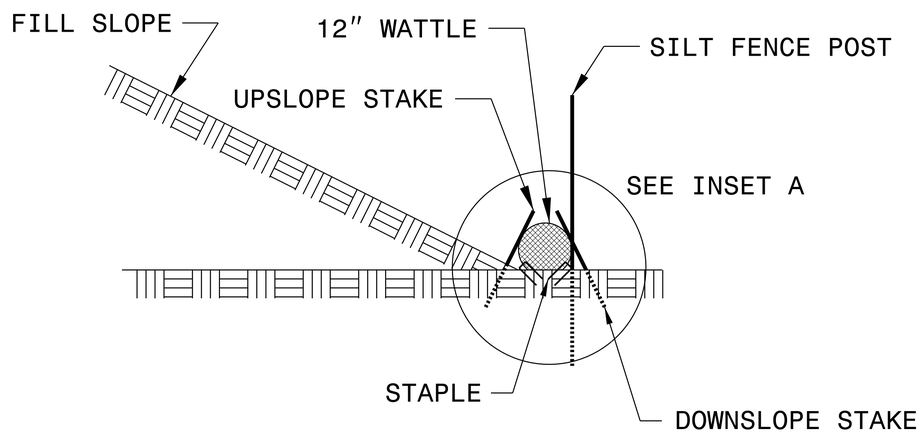
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.





SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.C.6	EC-4

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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 ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
I7.BP.2.C.6	X1A

NOTE: Approximate quantities only. Unclassified excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Removal of Existing Pavement and Breaking of Existing Pavement will be paid for at the contract Lump Sum price for "Grading".

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS–SETION SUMMARY

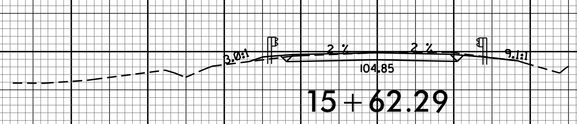
IN CUBIC YARDS

LOCATION (–L–)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT	STRUCTURE EXCAVATION
14+87.21	*0*	*0*	*0*	*0*
15+07.87	*16*	*0*	*3*	*169*
15+24.62	*13*	*0*	*3*	*275*
15+41.37	*13*	*0*	*3*	*276*
15+62.29	*17*	*0*	*2*	*172*

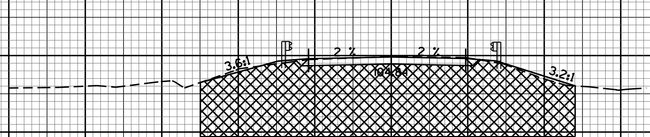
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

NOTE:
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, UNCLASSIFIED STRUCTURE EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

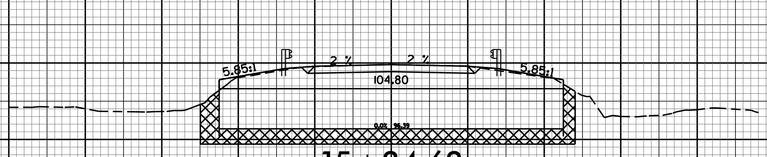
17-AUG-2016 10:03
C:\PROJECTS\LENOIR\LENOIR2067\Lenoir2067_x1a.dgn
$$$$USERNAME$$$$



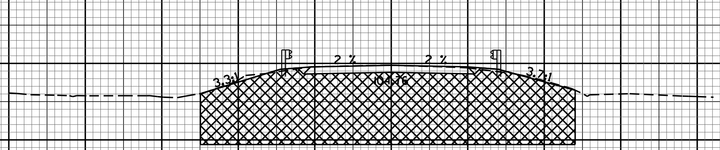
15 + 62.29



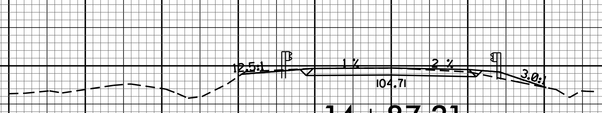
15 + 41.37



15 + 24.62



15 + 07.87



14 + 87.21

DENOTES STRUCTURE EXCAVATION

0 5 10

PROJ. REFERENCE NO. 17BP.2.C.6

SHEET NO. X-1