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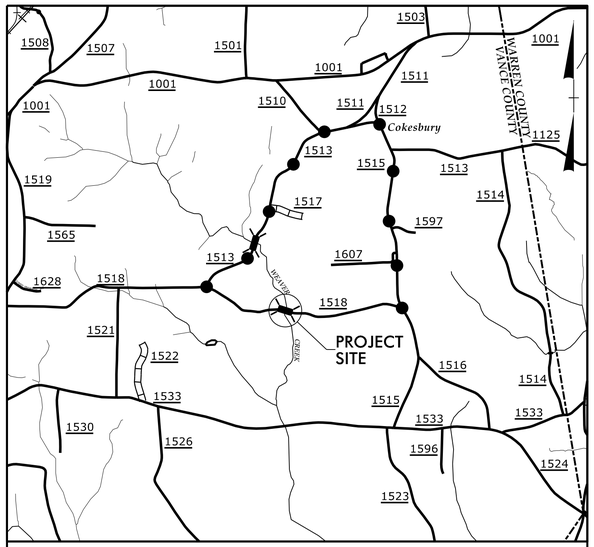
09/08/99

TIP PROJECT: 17BP.5.R.63

CONTRACT: DE00132



VICINITY MAP

OFF-SITE DETOUR

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

VANCE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.5.R.63	1	

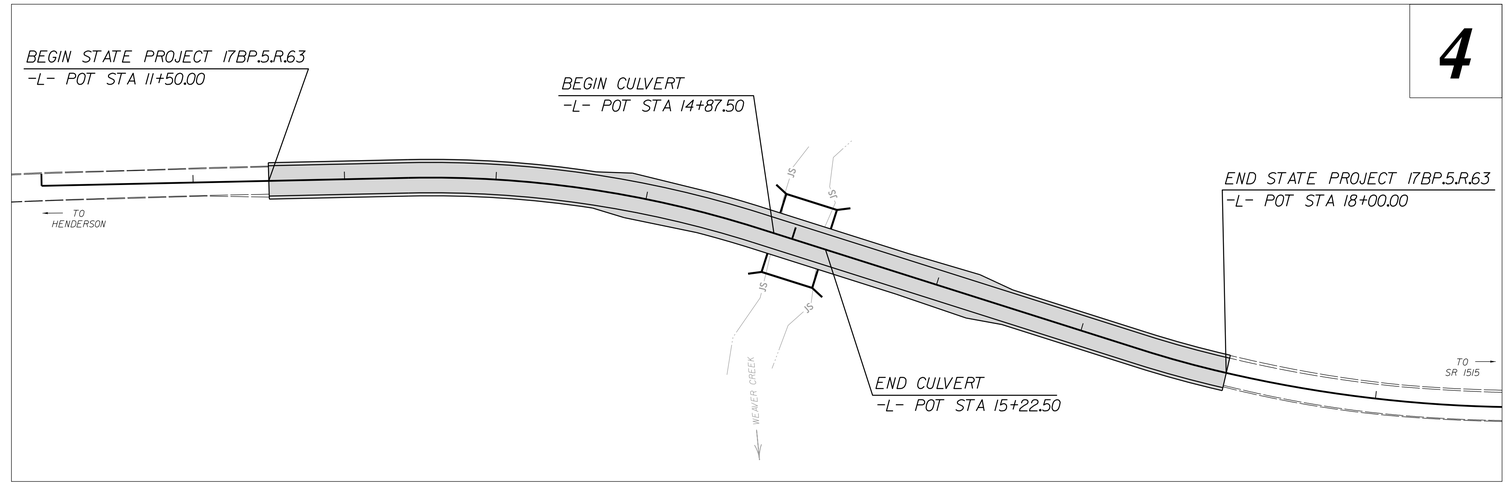
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.5.R.63	N/A	PE
17BP.5.R.63	N/A	ROW & UTIL
17BP.5.R.63	N/A	CONSTRUCTION

LOCATION: BRIDGE NO. 52 OVER WEAVER CREEK ON SR 1518 (STEWART FARM RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

NAD 83/
NA 2011

4



CLEARING ON THIS PROJECT SHALL BE TO LIMITS ESTABLISHED USING METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT = 300
V = 50 MPH
CLASS = MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 17BP.5.R.63	=	0.116 mi.
LENGTH STRUCTURES STATE PROJECT 17BP.5.R.63	=	0.007 mi.
TOTAL LENGTH STATE PROJECT 17BP.5.R.63	=	0.123 mi.

Prepared in the Offices of:

STEWART
421 FAYETTEVILLE ST, STE 400
RALEIGH, NC 27601
T 919.380.8750

NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway, Suite 101
Cary, NC 27518
(919) 557-0929
Firm License #: C-1051
www.stewart@ec.com
PROJECT #:B15001.01
ECOLOGICAL ENGINEERING

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 20, 2015

RIGHT OF WAY COMPLETE:

LETTING DATE:

ANDY YOUNG, PE
PROJECT ENGINEER

MICHAEL BURNS, EI
PROJECT DESIGN ENGINEER

LISA GILCHRIST, EI
NCDOT CONTACT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 14101 ENGINEER JOHN M. KAMPRATH

DocuSigned by: John M. Kamprath
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4/15/2016
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG

DocuSigned by: Andrew P. Young
EF21D93D0DGF4CF...
4/14/2016
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

4/12/2016
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 34407 ENGINEER ANDREW P. YOUNG

DocuSigned by: 5/10/2016
Andrew P. Young
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL DATA SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3B-1	ROADWAY SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC CONTROL PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-4	UTILITY BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-5	CROSS-SECTIONS
C-1 THRU C-3	CULVERT PLANS

EFF. 01-17-2012
REV. 10-30-2012

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	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
862.01	Guardrail Placement
862.02	Guardrail Installation
876.04	Drainage Ditches With Class 'B' Rip Rap

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

UTILITES:

UTILITY OWNERS ON THIS PROJECT ARE
VANCE COUNTY WATER DISTRICT
CENTURYLINK
ANY RELOCATION OF EXISTING UTILITES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON PLANS.

RIGHT-OF-WAY MARKERS:

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

5/10/2016
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USER:ayoung

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	1-B

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*)
- U/G Water Line LOS C (S.U.E*)
- U/G Water Line LOS D (S.U.E*)
- 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:

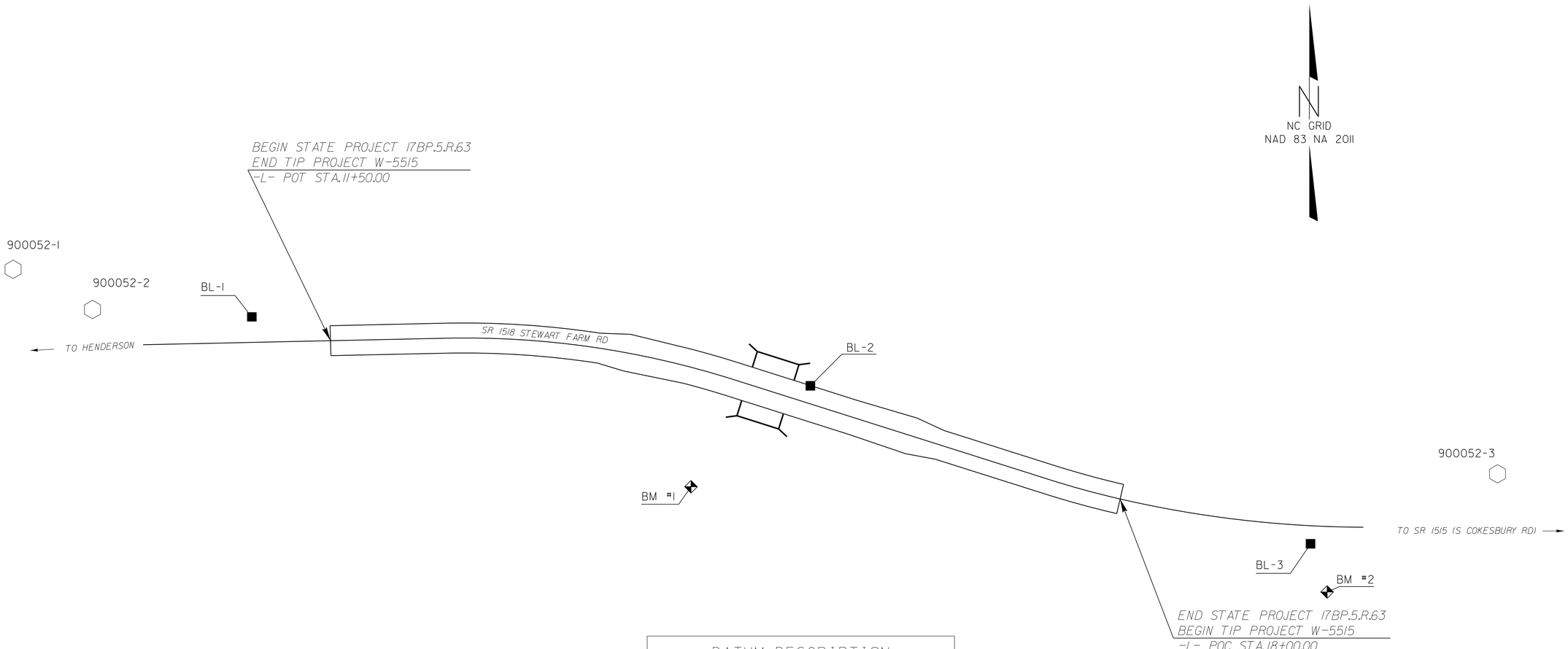
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

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.	SHEET NO.
17BP.5.R.63	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 90-0052



BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS1	900052-1	939710.0440	2198757.9070	449.11	OUTSIDE PROJECT LIMITS	
GPS2	900052-2	939182.8740	2199440.9130	439.02	OUTSIDE PROJECT LIMITS	
1	BL-1	939225.0390	2200782.9020	377.83	10+87.35	20.42 LT
2	BL-2	939169.7320	2201230.0030	366.18	15+36.15	13.65 LT
3	BL-3	939043.1990	2201630.4850	381.08	19+54.88	14.61 RT
GPS3	900052-3	939066.4170	2202003.2020	387.06	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

BM1 ELEVATION = 361.53
N 939089 E 2201135
L STATION 14+69.00 92 RIGHT
RRS IN 12" BIRCH

BM2 ELEVATION = 384.15
N 939005 E 2201644
L STATION 19+69.00 52 RIGHT
RRS IN 8" PINE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "900052-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 939182.874(ft) EASTING: 2199440.913(ft)
ELEVATION: 439.02(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00003420
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "900052-2" TO -L- STATION 11+50 IS
N 89°03'27.0" E 1,405.26'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID G12NC

NOTE: DRAWING NOT TO SCALE

NOTES:

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⬡ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

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4/14/2016
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PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG

DocuSigned by: Andrew P. Young
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4/14/2016

PAVEMENT DESIGN ENGINEER

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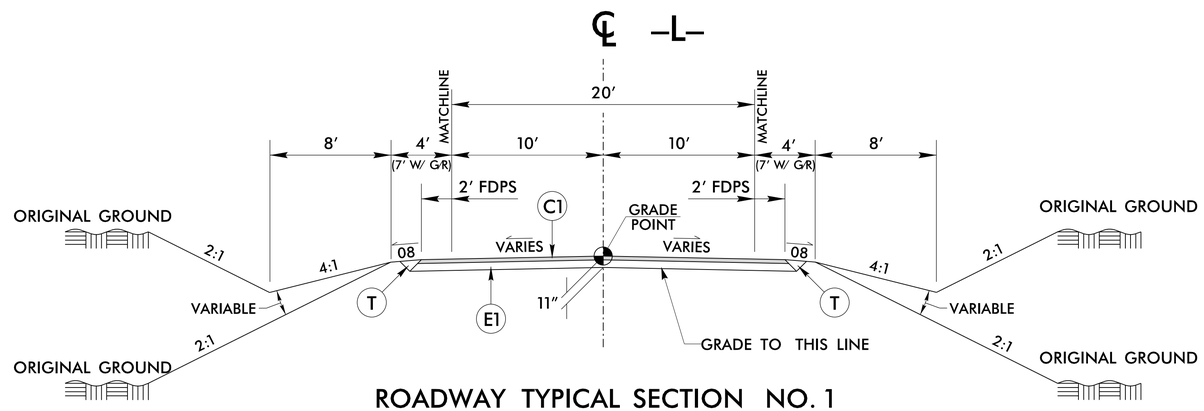
PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
T	EARTH MATERIAL

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

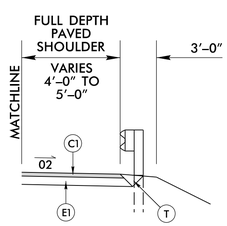


ROADWAY TYPICAL SECTION NO. 1

–L– STA. 11+50.00 TO –L– STA. 18+00.00

NOTES:

- GRADE POINT IS SET 1½" HIGHER THAN EXISTING TO TIE WITH PROJECT W-5515.
- COORDINATE CONSTRUCTION LIMITS WITH PROJECT W-5515.



DETAIL SHOWING PAVING TO THE FACE OF GUARDRAIL

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lisfrbaum

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	3B-1

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SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
11+50.00	18+00.00	310	1375	1065	
SUBTOTAL:		310	1375	1065	
PROJECT TOTALS:		310	1375	1065	
LOSS DUE TO CLEARING & GRUBBING		-70		70	
EST 5% TO REPLACE TOP SOIL ON BORROW PIT				57	
GRAND TOTALS:		240		1192	
SAY:		250		1250	

Undercut = 200 CY (Contingency)
Select Granular Material = 200 CY (Contingency)
Geotextile for Soil Stabilization = 200 SY (Contingency)

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	11+50.00	14+87.65	EXIST. ROAD	791			
-L-	15+23.60	18+00.00	EXIST. ROAD	615			
		TOTAL:		1,406			
		SAY:		1,420			

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED 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

GUARDRAIL SUMMARY

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	TYPE III	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC		G	NG				
-L-	13+86.25	16+23.75	LT	237.5			15+22.50	14+87.50	4'-0"	7'-0"	50	50	1	1			2												TL-3, NEST GUARDRAIL OVER CULVERT
-L-	13+86.25	16+23.75	RT	237.5			14+87.50	15+22.50	4'-0"	7'-0"	50	50	1	1			2												TL-3, NEST GUARDRAIL OVER CULVERT
			SUBTOTAL:	475																									
		NESTED GUARDRAIL:		50																									
			SUBTOTAL:	525																									
		LESS ANCHOR DEDUCTIONS:																											
		GRAU-350 TL-3 (4 @ 50')		-200													4												
			TOTAL:	325																									
			SAY:	325																									
	ADDITIONAL GUARDRAIL POSTS = 15 EA																												

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	4

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG
DocuSigned by: Andrew P. Young 4/14/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 14101 ENGINEER JOHN M. KAMPRATH
DocuSigned by: John M. Kamprath 4/15/2016

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Cary, NC 27518
(919) 557-0029

ECOLOGICAL ENGINEERING

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REVISIONS

8/17/99

PI Sta 13+60.12
△ = 18° 50' 10.6" (RT)
D = 8° 03' 30.5"
L = 233.74'
T = 117.94'
R = 711.00'
V_D = 45mph

PI Sta 17+70.51
△ = 4° 32' 51.1" (LT)
D = 7° 54' 10.3"
L = 57.54'
T = 28.79'
R = 725.00'
V_D = 45mph

PI Sta 18+98.23
△ = 12° 47' 13.6" (LT)
D = 6° 29' 14.3"
L = 197.11'
T = 98.97'
R = 883.20'

DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 2:1, d, b, 2:1 or Flatter, Front Ditch Slope, Geotextile
Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = Class B Rip-Rap

FROM STA. 11+50 TO STA. 14+00 LT.
FROM STA. 13+25 TO STA. 14+65 RT.
FROM STA. 17+00 TO STA. 18+00 RT.

DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground, 2:1, d, b, 2:1 or Flatter, Front Ditch Slope, Geotextile
Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = Class I Rip-Rap

FROM STA. 16+50 TO STA. 18+00 LT.

DETAIL 3
TOE PROTECTION
(Not to Scale)
Natural Ground, b, 2:1 or Flatter Fill Slope, d, Geotextile
d = 1 Ft.
b = 2 Ft.
Type of Liner = CLASS I Rip-Rap

FROM STA. 15+30 TO STA. 15+80 -L- RT

NAD 83/NA 2011

POT Sta. 10+00.00

BEGIN STATE PROJECT 17BP.5.R.63
END TIP PROJECT W-5515
-L- POT STA.11+50.00

SPECIAL CUT DITCH
SEE DETAIL 1
CLASS B RIP RAP
EST 130 TON
EST 395 SY GEOTEXTILE

TIE PROPOSED DITCH TO W-5515

CLASS B RIP RAP
5' x 10'
EST 2 TONS
EST 7 SY GEOTEXTILE

+49.79 30' LT
+49.72 40.03' LT
+98.00 24' (TYP.)
+35.11 40.62' LT
+25.04 55.14' LT
+25 40.14' LT
+74.09 55' LT
BL-1
EXISTING R/W
N 88° 45' 12.2" E
S 72° 24' 37.2" E
GRAU 350 TL-3
BZ 1
BZ 2
+50.21 30' RT
+50.28 39.97' RT
+35.66 39.38' RT
WOODS
SR 1518 STEWART FARM RD 21' BST
TO WOODSBROOK
N 81°33'52" E 105.97'
N 83°36'36" E 100.84'
S 86°40'22" W 118.88'
N 81°33'52" E 99.62'
N 83°36'36" E 99.01'
S 86°41'06" W 114.75'

SPECIAL CUT DITCH
SEE DETAIL 1
CLASS B RIP RAP
EST 75 TON
EST 220 SY GEOTEXTILE

+99.79 39.79' RT
+99.67 74.79' RT
CLASS B RIP RAP
5' x 10'
EST 2 TONS
EST 7 SY GEOTEXTILE
BM #1
+73.71 75' RT
WEAVER CREEK
PC Sta. 12+42.18
PT Sta. 14+75.93

CLASS B RIP RAP
5' x 10'
EST 2 TONS
EST 7 SY GEOTEXTILE
+99.89 40' RT 75' RT
TOE PROTECTION
SEE DETAIL 3
CLASS II RIP RAP
EST 110 TONS
EST 120 SY GEOTEXTILE

CLASS II RIP RAP
EST 43 TONS
EST 55 SY GEOTEXTILE

34'-11" x 10'-4" ABC
BL-2
+39.89 40' LT 55' LT
CLASS I RIP RAP
5' x 10'
EST 2 TONS
EST 8 SY GEOTEXTILE
+104.00 24' (TYP.)
+37.41 40' RT
SPECIAL CUT DITCH
SEE DETAIL 1
CLASS B RIP RAP
EST 55 TON
EST 160 SY GEOTEXTILE
+99.75 39.89' RT
+99.78 30' RT

PC Sta. 17+41.72
PCC Sta. 17+99.26
PT Sta. 19+96.37

+37.32 40' LT
SPECIAL CUT DITCH
SEE DETAIL 2
CLASS I RIP RAP
EST 80 TON
EST 235 SY GEOTEXTILE
+00.07 40.11' LT
+00.02 30' LT
TIE PROPOSED DITCH TO W-5515

EXISTING R/W
N 89°44'42" W 32.87'
N 89°26'06" W 130.29'
TO SR 1515 (S COKESBURY RD)
BL-3
BM #2
S 88°47'39" W 31.92'
EIP
N 89°26'06" W 130.29'
S 02°03'48" W 446.59'

END STATE PROJECT 17BP.5.R.63
BEGIN TIP PROJECT W-5515
-L- POC STA.18+00.00

TIE PROPOSED DITCH TO W-5515

1 AMANDA B PEGRAM DB 1225 PG 324
2 JAMES T & PATRICIA A ELLINGTON DB 514 PG 599
3 JAMES T & PATRICIA A ELLINGTON DB 725 PG 530 PB V PG 214
4 RUFUS R & DONNA J SUTTON DB 978 PG 212 PB W PG 709
5 STEPHEN H EUBANKS DB 1232 PG 899

CENTERLINE OF CREEK IS PROPERTY LINE
N 12°33'35" E 68.75'
N 34°38'00" W 19.05'
N 07°57'57" E 40.00'
N 07°58'52" W 60.35'
N 07°49'59" W 40.35'
N 07°40'07" W 29.88'
N 44°43'33" W 108.41'

FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS C-1 THRU C-2

4/18/2016
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PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG
DocuSigned by: Andrew P. Young 4/14/2016

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 14101 ENGINEER JOHN M. KAMPRATH
DocuSigned by: John M. Kamprath 4/15/2016

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Cary, NC 27518
(919) 557-0928

ECOLOGICAL ENGINEERING

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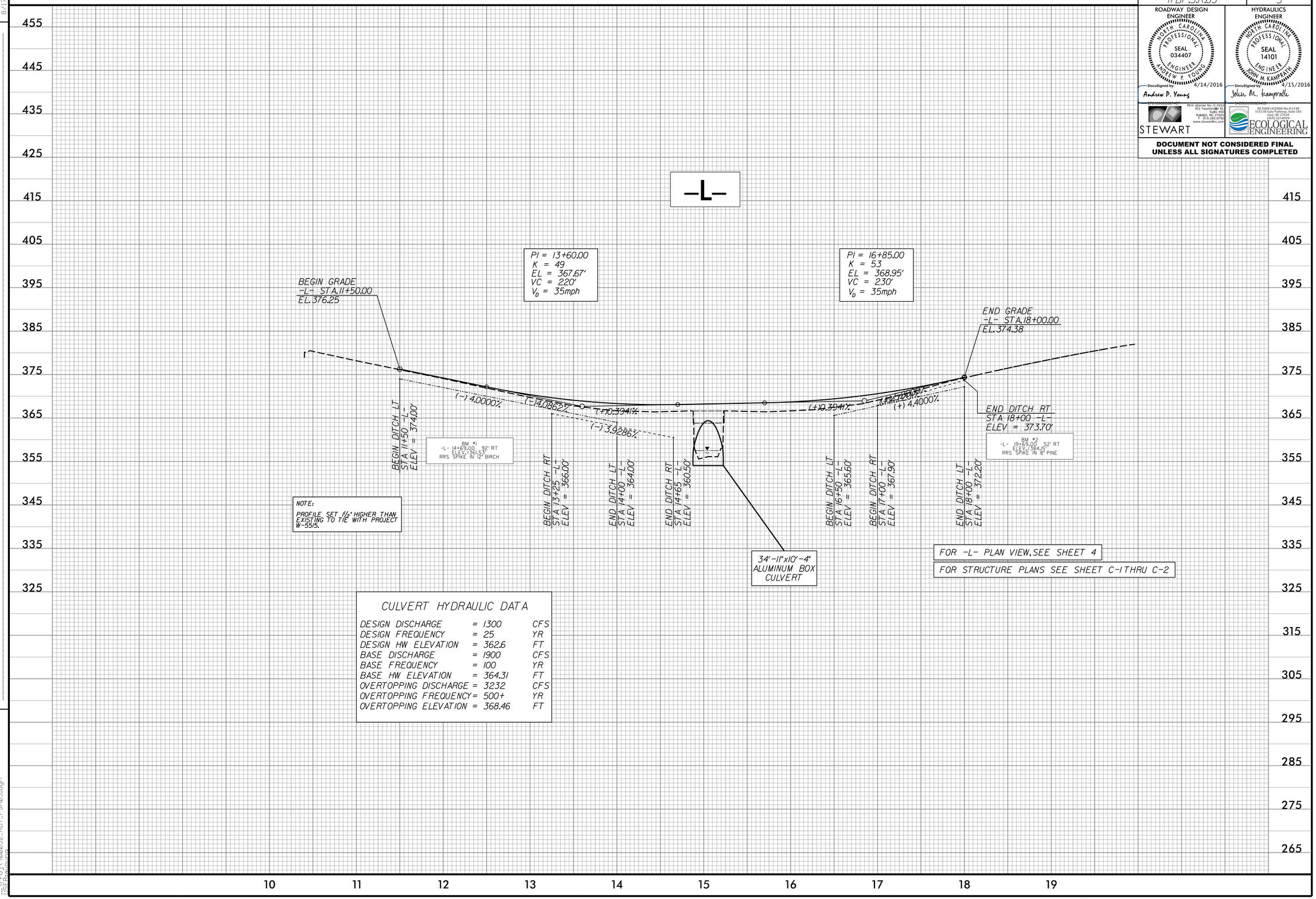
REVISIONS

8/17/99



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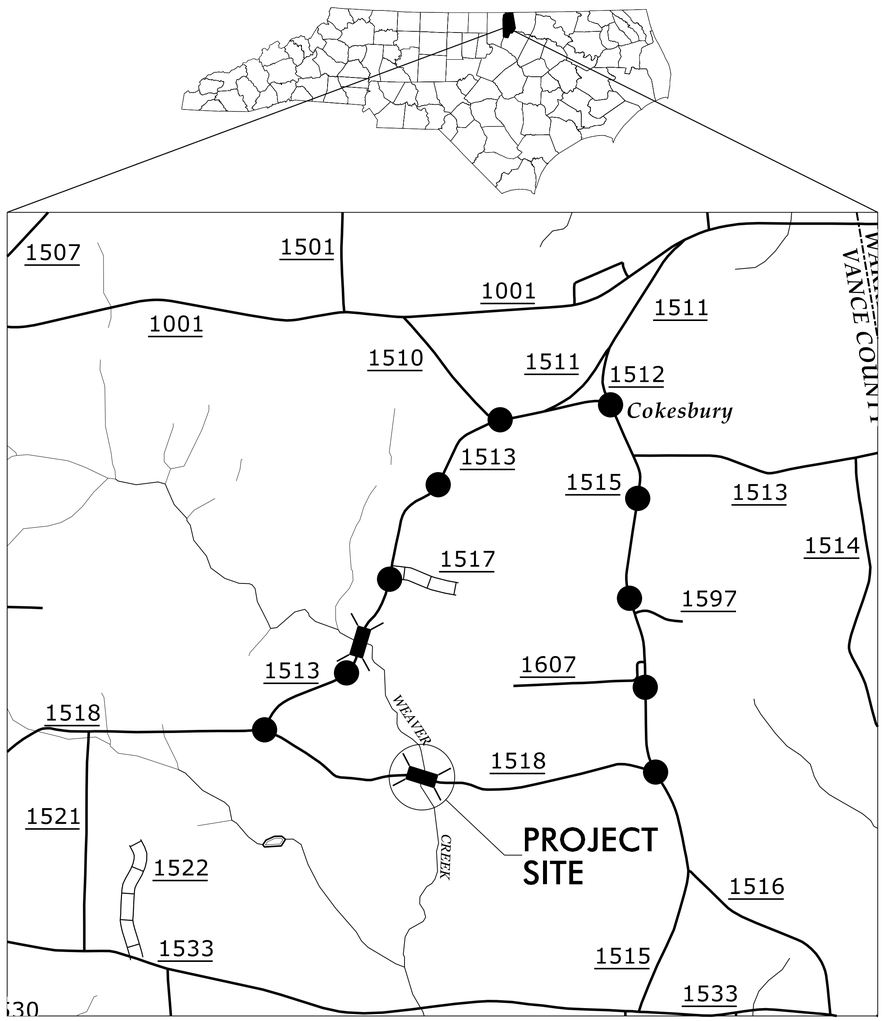
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

VANCE COUNTY



OFFSITE DETOUR ROUTE

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES, MANAGEMENT STRATEGIES, AND PHASING)
TMP-2	SPECIAL SIGN DESIGN
TMP-3	OFF-SITE DETOUR

SHEET NO.
TMP-1

TIP PROJECT: 17BP.5.R.63

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

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

ANDY YOUNG, PE — TRAFFIC CONTROL PROJECT ENGINEER
HANAN ASSFOURA, EI — TRAFFIC CONTROL DESIGN ENGINEER

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

PLANS PREPARED BY:

STEWART
421 FAYETTEVILLE ST, STE 400
RALEIGH, NC 27601
T 919.380.8750
Firm License #: C-1051
www.stewartinc.com
PROJECT #:811001

APPROVED: DocuSigned by: Andrew P. Young 4F7A1B09D0K2F4EF...
DATE: 4/14/2016

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034407 ANDREW P. YOUNG

4/12/2016
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PROJ. REFERENCE NO.	SHEET NO.
17BP.5.R.63	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED Andrew D. Young DATE: 4/14/2016
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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW D. YOUNG

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

ROADWAY STANDARD DRAWINGS & LEGEND

4/12/2016
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PROJ. REFERENCE NO.	SHEET NO.
B-5679	TMP-1B

GENERAL NOTES

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.

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

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLANS.

C) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

F) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

MANAGEMENT STRATEGIES

DURING CONSTRUCTION OF PROPOSED CULVERT OVER WEAVER CREEK, SR 1518 (STEWART FARM RD.) WILL BE CLOSED TO THROUGH TRAFFIC. THROUGH TRAFFIC ON SR 1518 (STEWART FARM RD.) WILL BE MAINTAINED USING AN OFFSITE DETOUR.

ACCESS TO ALL RESIDENCES AND BUSINESSES WITHIN THE PROJECT LIMITS MUST BE MAINTAINED AT ALL TIMES.

NOTIFY THE ENGINEER, VANCE COUNTY EMERGENCY SERVICES, AND VANCE COUNTY SCHOOLS OF ROAD CLOSURE THIRTY (30) CALENDAR DAYS PRIOR TO CONSTRUCTION.

PHASING

STEP 1:

USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE SR 1518 (STEWART FARM RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFFSITE.

STEP 2:

AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:
(SEE ROADWAY AND CULVERT PLANS).

1) REMOVE EXISTING STRUCTURE No. 52 AND CONSTRUCT THE PROPOSED CULVERT FROM -L- STA. 14+87.50 TO -L- STA 15+22.50.

2) CONSTRUCT THE PROPOSED ROADWAY UP TO AND INCLUDING THE FIRST LAYER OF SURFACE COURSE FROM -L- STA. 11+50.00 TO -L- STA 18+00.00.

3) USING THE PLAN SHEET PMP-01, PLACE TEMPORARY PAINT PAVEMENT MARKINGS FROM -L- STA. 11+50.00 TO -L- STA. 18+00.00 USING THE FOLLOWING
   PA - PAINT WHITE EDGE LINE (4") (2 APPLICATIONS)
   PI - PAINT YELLOW DOUBLE CENTER (4") (2 APPLICATIONS)
   AND TIE TO EXISTING PAVEMENT MARKINGS.

4) CONTRACTOR MAY OPEN SR 1518 (SEWART FARM RD.) AND REMOVE WORK ZONE SIGNAGE AS NEEDED.

STEP 3:

1) PLACE FINAL LAYER OF SURFACE COURSE FROM -L- STA. 11+50.00 TO -L- STA. 18+00.00.

2) USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS, FROM -L- STA. 11+50.00 TO -L- STA. 18+00.00 AND TIE TO EXISTING PAVEMENT MARKINGS.

3) OPEN ROADWAY TO TRAFFIC AND REMOVE ANY REMAINING WORK ZONE SIGNAGE.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW D. YOUNG

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

TRANSPORTATION OPERATIONS PLAN

7/26/2016
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PROJ. REFERENCE NO.	SHEET NO.
17BP.5.R.63	TMP-2

SIGN NUMBER: STEWART FARM RD
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 2′-6″
HEIGHT: 2′-0″
TOTAL AREA: 5.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

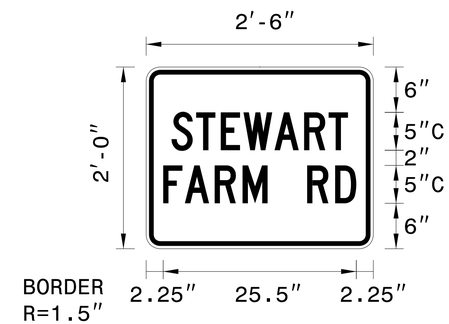
DESIGN BY: MSB
PROJECT ID: 17BP.5.R.63

CHECKED BY: ACY
DIV: 5

DATE: Jan 13, 2016

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B fluoresent orange retroreflective sheeting.



BORDER
R=1.5″
TH=0.63″
IN=0.38″

Panel Style: Traffic Control.ssi
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

										Series/Size Text Length
	S	T	E	W	A	R	T			C 2000
3.4	3.2	3.3	3	4.1	3.9	3.2	2.6	3.4		23.3
	F	A	R	M		R	D			C 2000
2.3	2.9	3.9	3.7	3.3	5.2	3.7	2.8	2.3		25.5

FILENAME: 900052_TC_TCP-02

NORTH CAROLINA D.O.T. SIGN DETAIL

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APPROVED: Andrew P. Young DATE: 4/14/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG

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

SPECIAL SIGN DESIGN

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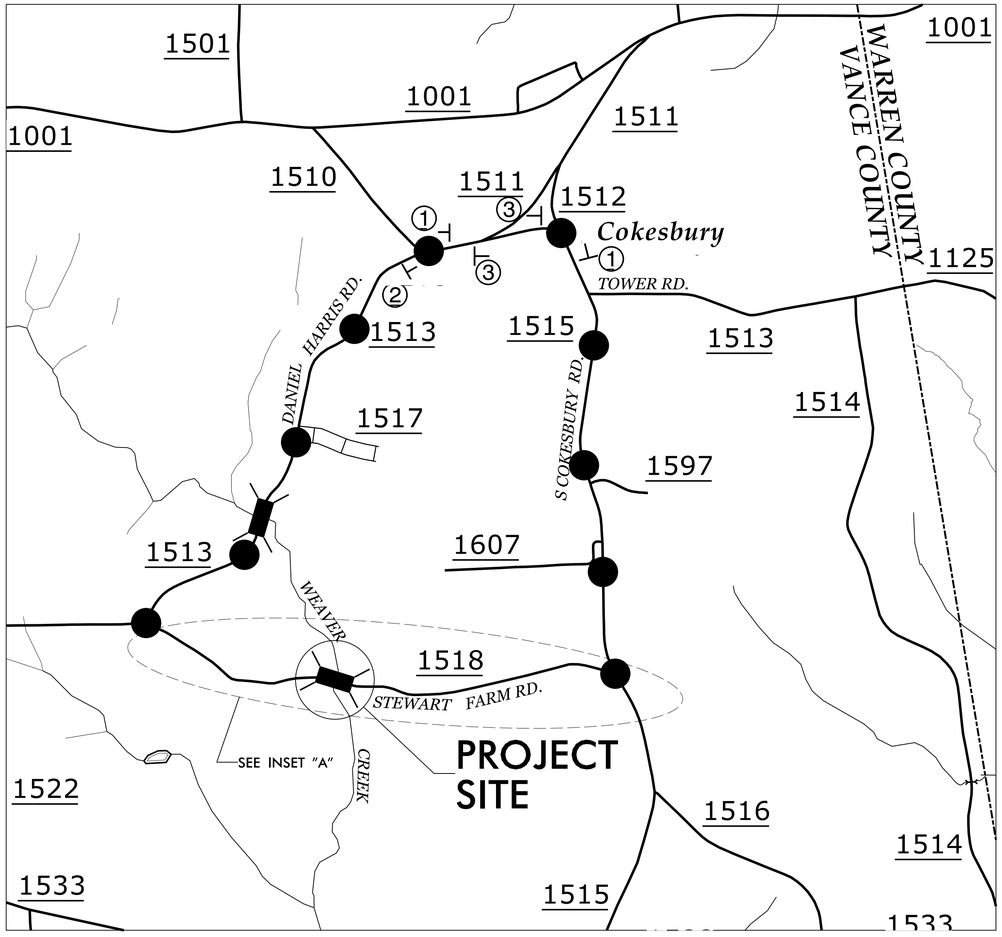
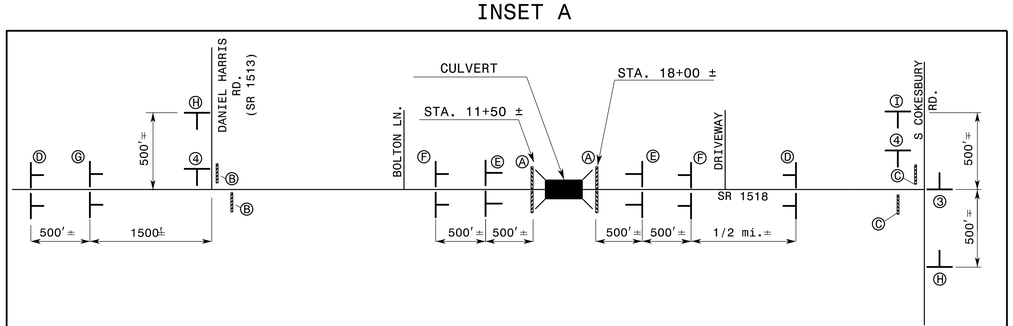
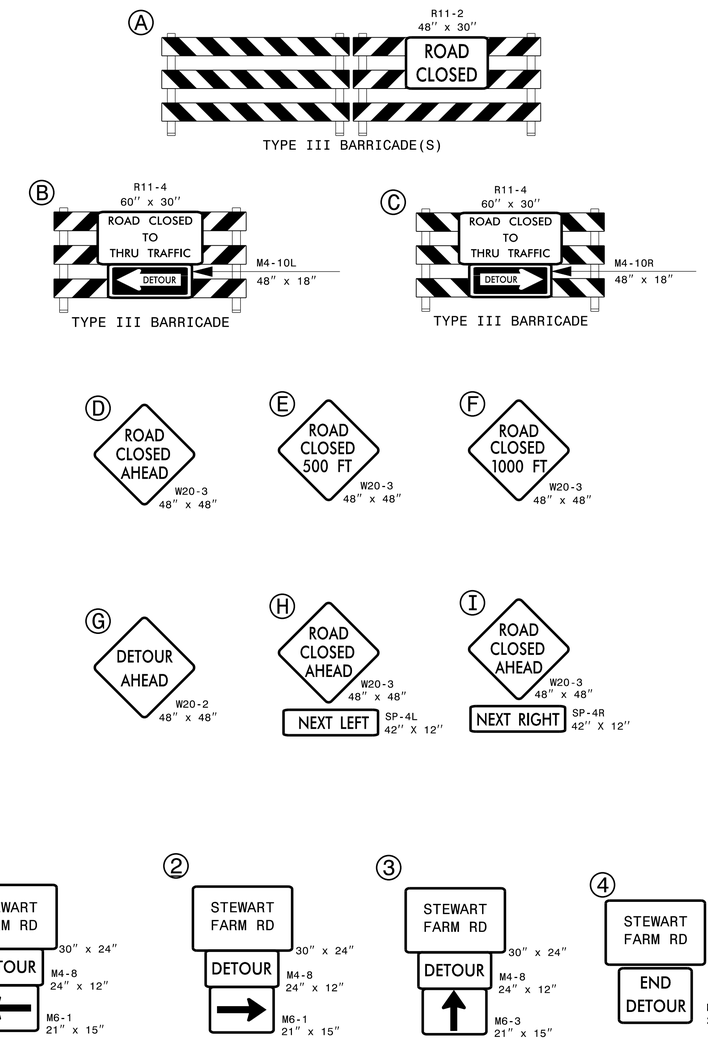
PROJ. REFERENCE NO.	SHEET NO.
17BP.5.R.63	TMP-3



INSET A



REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 OF 9 FOR APPLICABLE NOTES.



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APPROVED Andrew P. Young DATE: 4/14/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG

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

OFF-SITE DETOUR

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T.I.P.: 17BP.5.R.63

CONTRACT:

TIP NO.	SHEET NO.
17BP.5.R.63	PMP-1

APPROVED: DocuSigned by: Andrew P. Young EF21D93DD62F4EF...

DATE: 4/14/2016

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 034407 ENGINEER ANDREW P. YOUNG

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN

VANCE COUNTY

LOCATION: BRIDGE NO. 52 OVER WEAVER CREEK ON SR 1518 (STEWART FARM RD.)

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
TA	THERMOPLASTIC WHITE EDGELINE (4", 90 MIL)
TI	THERMOPLASTIC YELLOW DOUBLE CENTER (4", 120 MIL)
MA	YELLOW & YELLOW, PERMANENT RAISED PAVEMENT MARKERS

GENERAL NOTES

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

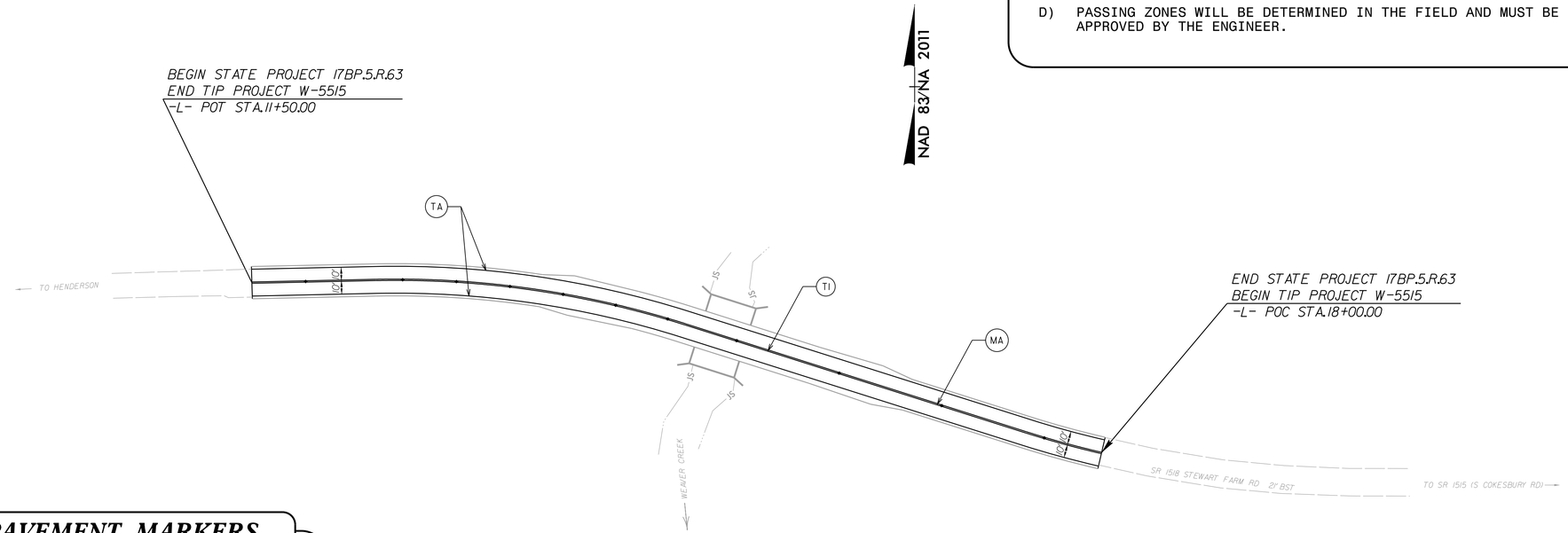
A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
STEWART FARM RD.	THERMOPLASTIC	RAISED

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.



RAISED PAVEMENT MARKERS

TYP. SPACING	BEGIN STA.	END STA.
80'	11+50 +/-	12+42 +/-
40'	12+42 +/-	14+75 +/-
80'	14+75 +/-	18+00 +/-

PLAN PREPARED BY: STEWART

ANDY YOUNG, PE — PROJECT ENGINEER

HANAN ASSFOURA, EI — PROJECT DESIGN ENGINEER

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USER:hayoung

TIP PROJECT: 17BP.5.R.63

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.5.R.63	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.5.R.63	N/A	PE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

VANCE COUNTY

LOCATION: BRIDGE NO. 52 OVER WEAVER CREEK ON SR 1518 (STEWART FARM RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

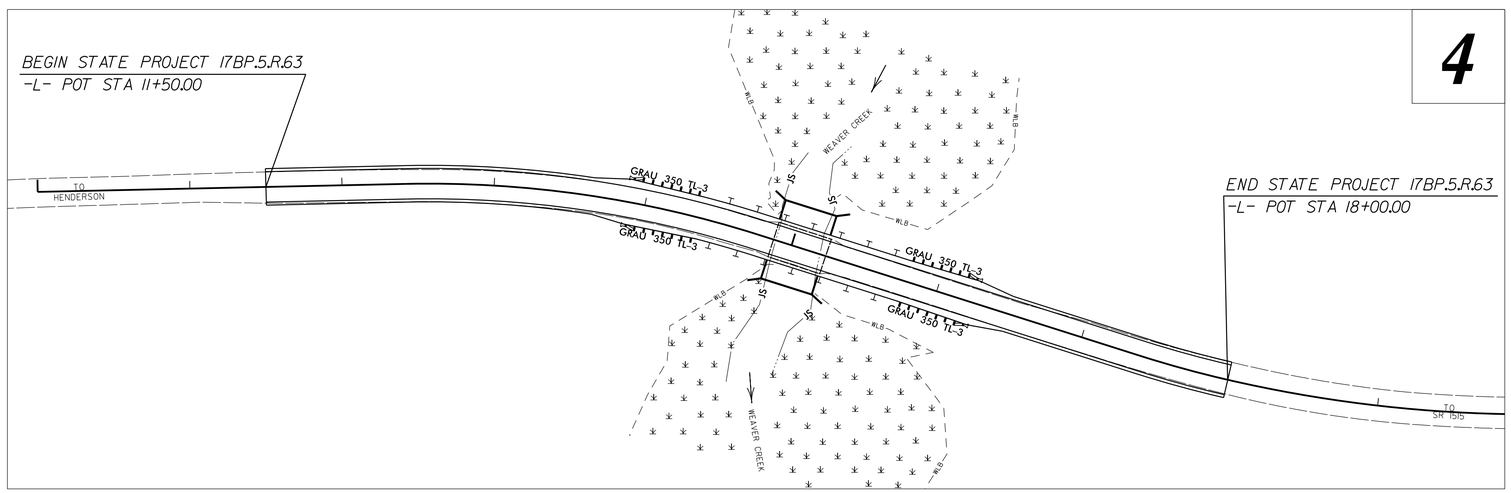
THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

NC GRID
NAD 83 NA 2011



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	EW CFW
	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	

GRAPHIC SCALE

25 0 50
PLANS

25 0 50
PROFILE (HORIZONTAL)

5 0 10
PROFILE (VERTICAL)

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

Prepared in the Office of:

ECOLOGICAL ENGINEERING
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Suite 101
Cary, NC 27518
(919) 557-0929

2012 STANDARD SPECIFICATIONS

Designed by:

BRANDON BARHAM ***3368***
NAME *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

Roadway Standard Drawings

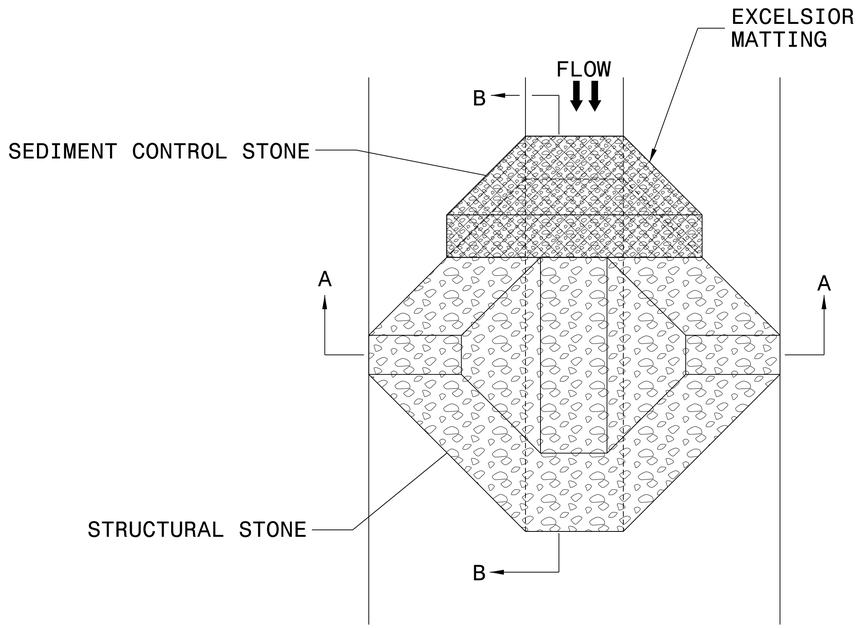
The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

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		

3/2/2016
USERNAME(gi)
pw:\\pwdesk01\pwdata\0202052\Reu_tsh.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	EC-02

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM) DETAIL



PLAN

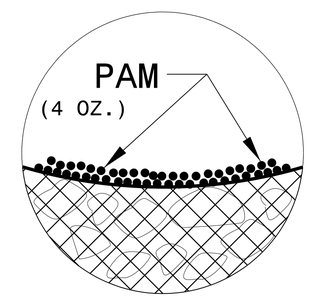
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

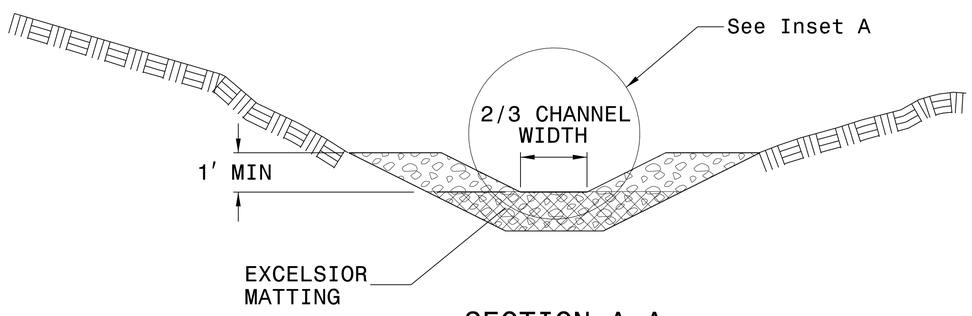
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

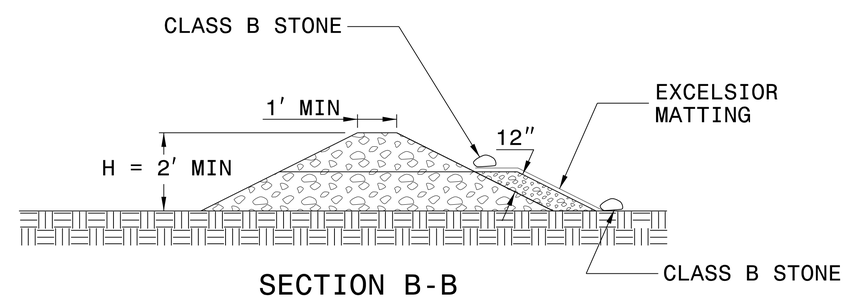
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	EC-03

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.

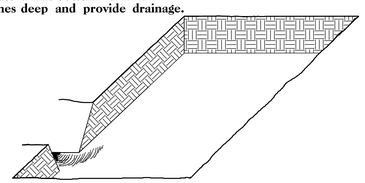
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	173P.5.R.63	EC-3A	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

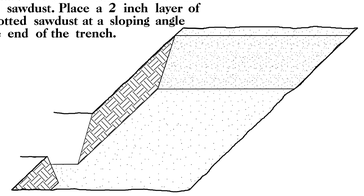
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

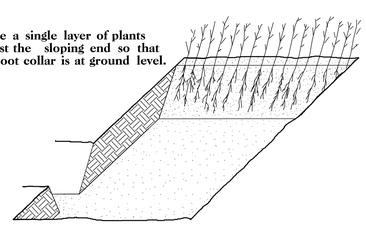
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



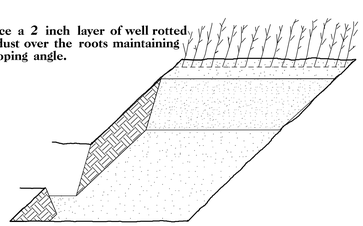
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

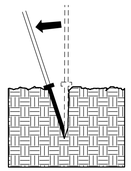


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

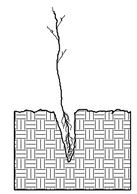


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

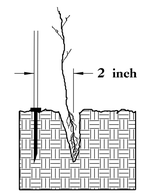
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



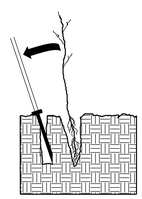
1. Insert planting bar as shown and pull handle toward planter.



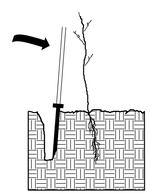
2. Remove planting bar and place seedling at correct depth.



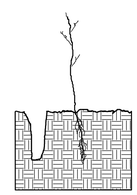
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in – 18 in BR
25%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in – 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in – 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in – 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	EC-04/CONST.04
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

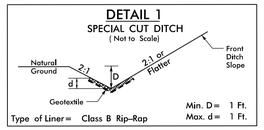
STEWART — Firm License No. C-1051, 421 Fayetteville St., Suite 400, Raleigh, NC 27601, T 919.380.8750, www.stewartinc.com

ECOLOGICAL ENGINEERING — NC FIRM LICENSE No F-1148, 1155 SE Cary Parkway, Suite 101, Cary, NC 27518, (919) 557-0929

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE:
USE IMPERVIOUS DIKE, NCDOT STANDARD BMP (INCIDENTAL TO CULVERT CONSTRUCTION) ALONG STREAM TO DEWATER AND ISOLATE ADJACENT WORK AREA.

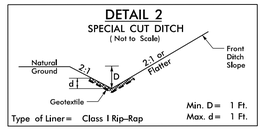
DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= Class B Rip-Rap

FROM STA. 11+50 TO STA. 14+00 LT.
FROM STA. 13+25 TO STA. 14+65 RT.
FROM STA. 17+00 TO STA. 18+00 RT.

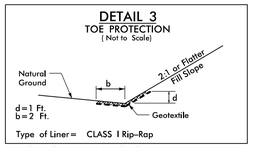
DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= Class I Rip-Rap

FROM STA. 16+50 TO STA. 18+00 LT.

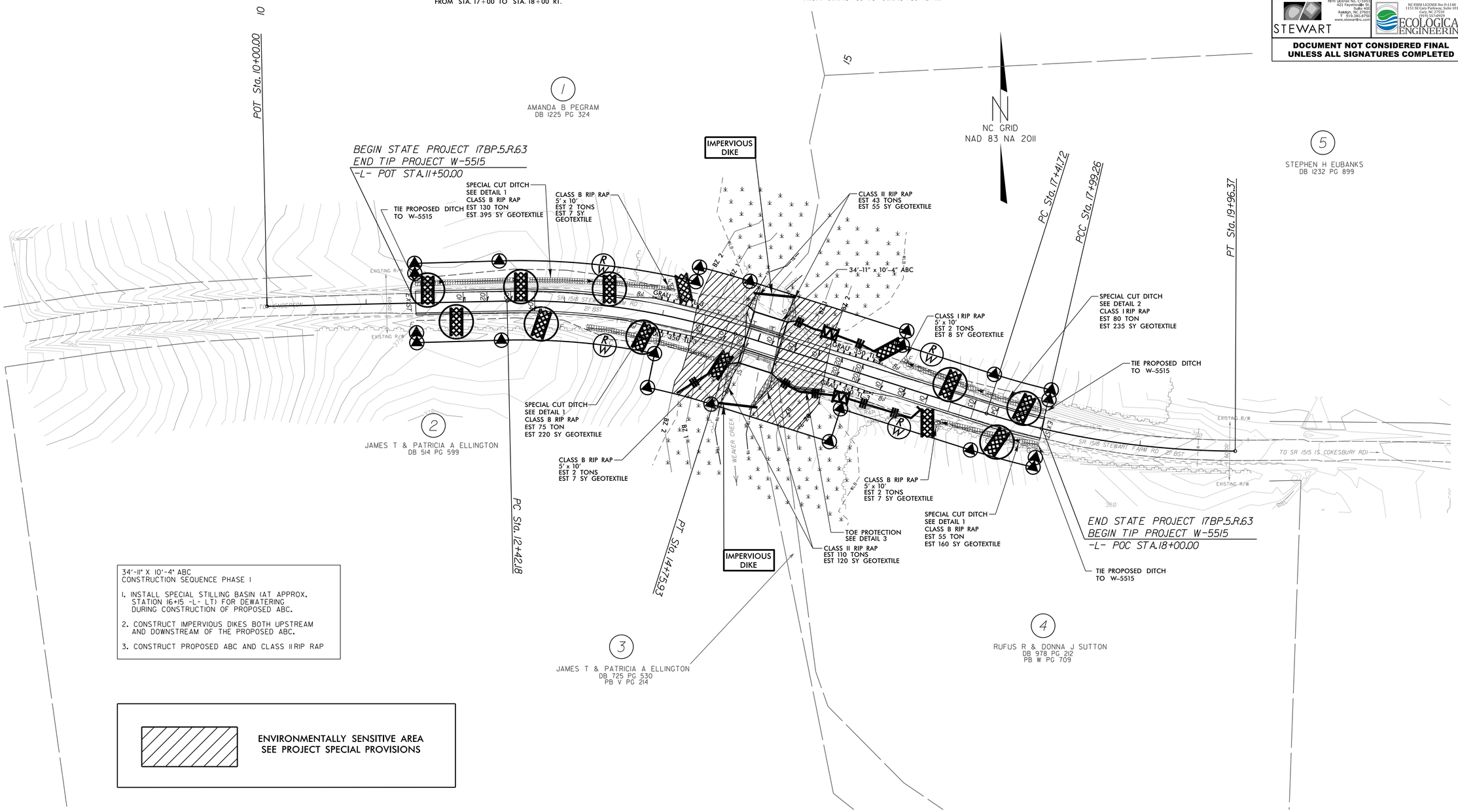
DETAIL 3
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=2 Ft.
Type of Liner= CLASS I Rip-Rap

FROM STA. 15+30 TO STA. 15+80 -L- RT

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



34'-11" X 10'-4" ABC
CONSTRUCTION SEQUENCE PHASE I

1. INSTALL SPECIAL STILLING BASIN (AT APPROX. STATION 16+15 -L- LT) FOR DEWATERING DURING CONSTRUCTION OF PROPOSED ABC.
2. CONSTRUCT IMPERVIOUS DIKES BOTH UPSTREAM AND DOWNSTREAM OF THE PROPOSED ABC.
3. CONSTRUCT PROPOSED ABC AND CLASS II RIP RAP

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS C-1 THRU C-2

REVISIONS

8/17/99

5/9/2016
-L- (Open) 9000052_Reu_CG_psh.dgn
USER: dsellers

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	EC-05/CONST.05
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STEWART
Firm License No. C-1051
421 Fayetteville St.
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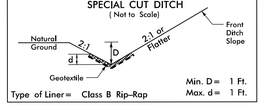
Raleigh, NC 27601
T 919.380.8750
www.stewartinc.com

ECOLOGICAL ENGINEERING
NC FIRM LICENSE No F-1148
1151 SE Cary Parkway, Suite 101
Cary, NC 27518
(919) 557-0929

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE:
USE IMPERVIOUS DIKE, NCDOT STANDARD BMP (INCIDENTAL TO CULVERT CONSTRUCTION) ALONG STREAM TO DEWATER AND ISOLATE ADJACENT WORK AREA.

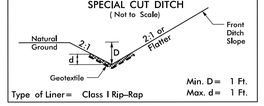
DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = Class B Rip-Rap

FROM STA. 11+50 TO STA. 14+00 LT.
FROM STA. 13+25 TO STA. 14+65 RT.
FROM STA. 17+00 TO STA. 18+00 RT.

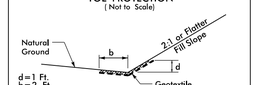
DETAIL 2
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = Class I Rip-Rap

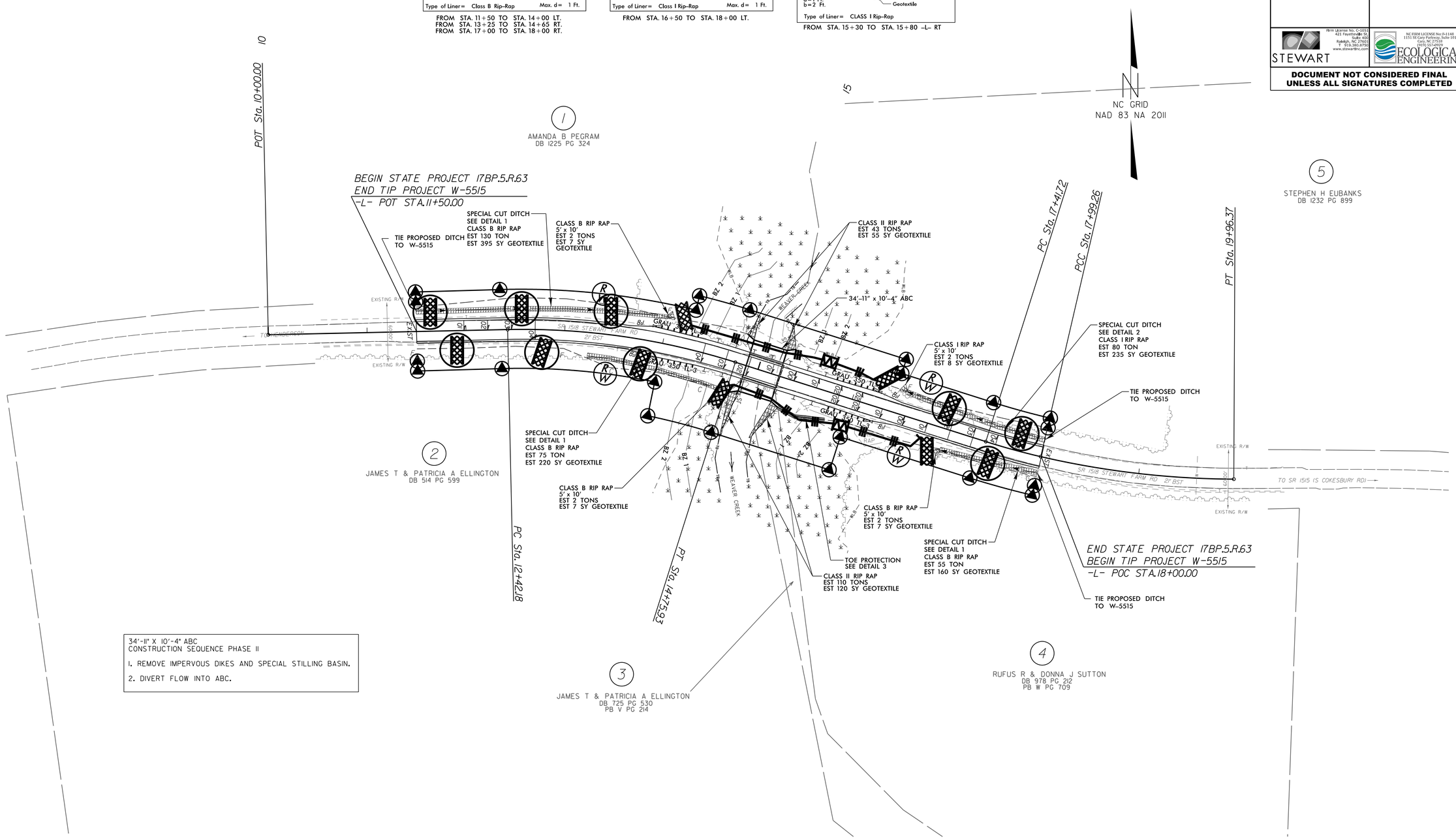
FROM STA. 16+50 TO STA. 18+00 LT.

DETAIL 3
TOE PROTECTION
(Not to Scale)



d = 1 Ft.
b = 2 Ft.
Type of Liner = CLASS I Rip-Rap

FROM STA. 15+30 TO STA. 15+80 -L- RT



34'-11" X 10'-4" ABC
CONSTRUCTION SEQUENCE PHASE II

1. REMOVE IMPERVOUS DIKES AND SPECIAL STILLING BASIN.
2. DIVERT FLOW INTO ABC.

FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS C-1 THRU C-2

REVISIONS

8/17/99

5/3/2016
17BP.5.R.63_Rev_FINAL_psh.dgn
USER: Rdefoulis

09/08/99

TIP PROJECT: 17BP.5.R.63

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.5.R.63	UO–1

UTILITIES BY OTHERS PLANS
VANCE COUNTY

LOCATION: BRIDGE NO. 52 OVER WEAVER CREEK ON SR 1518 (STEWART FARM RD.)

TYPE OF WORK: TELECOMMUNICATIONS RELOCATION

NAD 83/
NA 2011

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO–1	TITLE SHEET
UO–2	UTILITIES BY OTHERS PLAN SHEET

UTILITY OWNERS ON PROJECT

1. CENTURY LINK

PREPARED IN THE OFFICE OF:

STEWART
421 FAYETTEVILLE ST, STE 400
RALEIGH, NC 27601
T 919.380.8790
Firm License #: C-1051
www.stewartinc.com
PROJECT #:1811001

DAVID RUGGLES, PE — PROJECT ENGINEER
MICHAEL BURNS, EI — PROJECT DESIGN ENGINEER

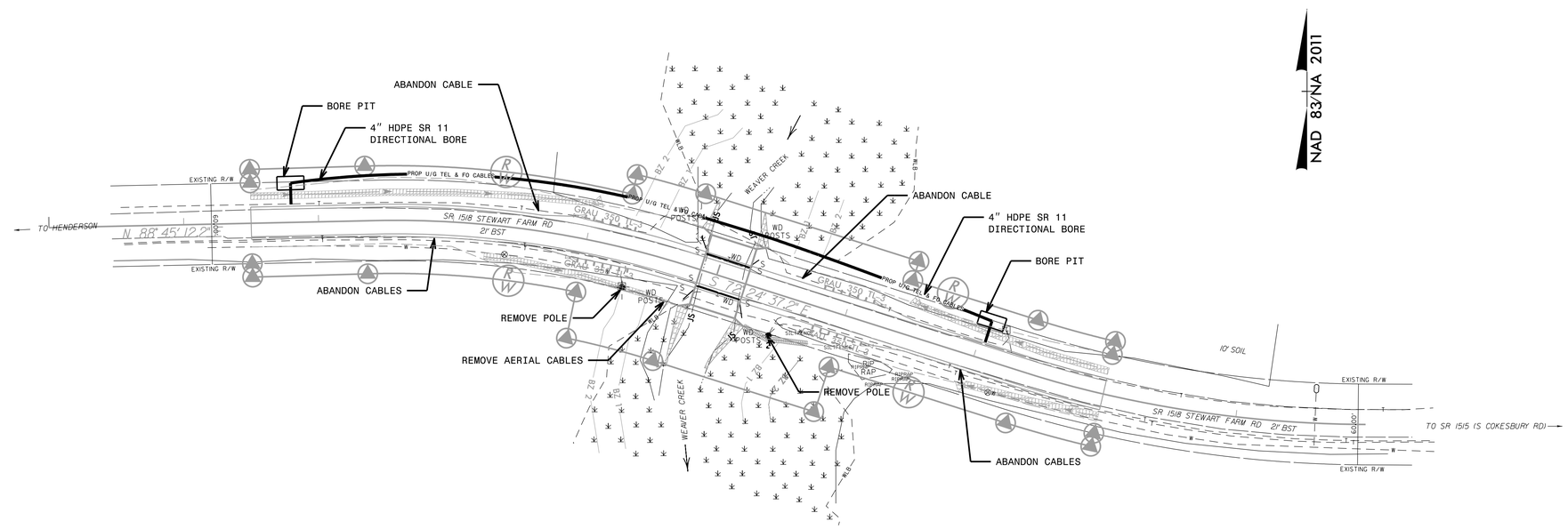
3/25/2016
I:\900052_utl_tsh.dgn
USER:nasstour-a

PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	UO-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Firm License No. C-1051
421 Fayetteville St.
Suite 400
Raleigh, NC 27601
T. 919.380.8750
www.stewartinc.com
STEWART



8/17/99

3/25/2016
50002_utl_psh02.dgn
USER:hbassford

09/08/99

TIP PROJECT: 17BP.5.R.63

CONTRACT:

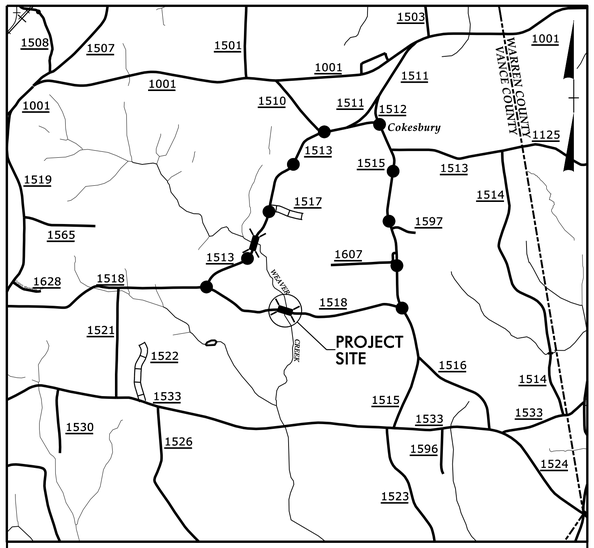
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.5.R.63	UO–3

UTILITIES BY OTHERS PLANS
VANCE COUNTY

LOCATION: BRIDGE NO. 52 OVER WEAVER CREEK ON SR 1518 (STEWART FARM RD.)

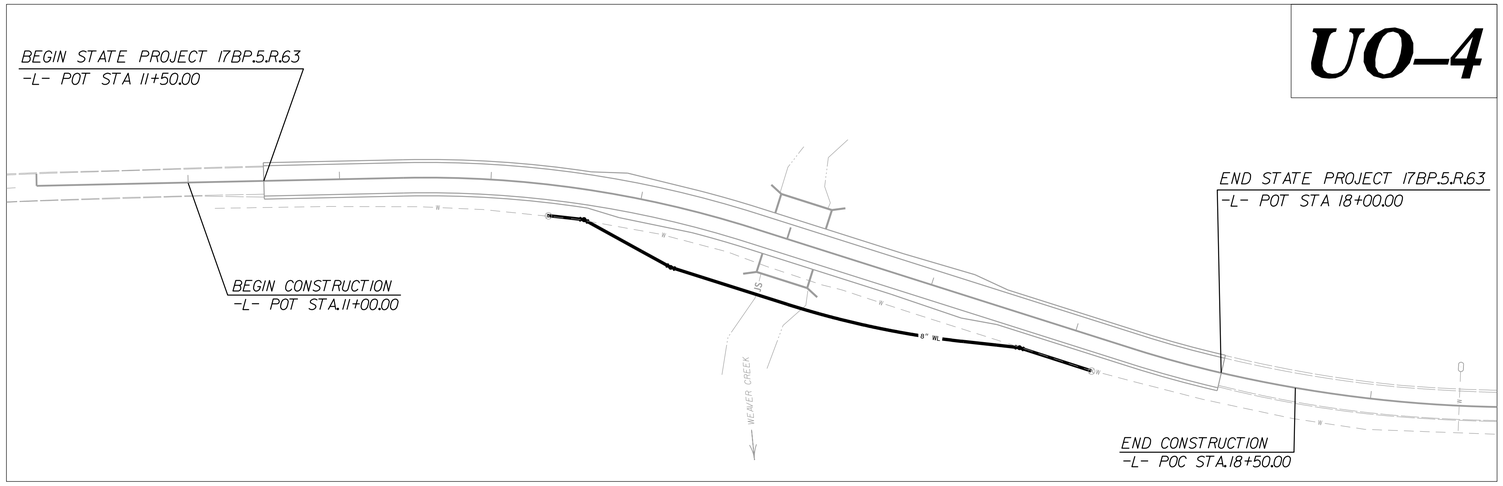
TYPE OF WORK: WATERLINE RELOCATION



VICINITY MAP

OFF-SITE DETOUR

NAD 83/
NA 2011



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC–1	TITLE SHEET
UC–2	SYMBOLOGY SHEET
UC–3A	DETAIL SHEET
UC–3B	DETAIL SHEET
UC–4	UTILITY CONSTRUCTION PLAN SHEET

UTILITY OWNERS ON PROJECT

1. VANCE COUNTY WATER DISTRICT

PREPARED IN THE OFFICE OF:

STEWART
421 FAYETTEVILLE ST, STE 400
RALEIGH, NC, 27601
T 919.380.8750
Firm License #: C-1051
www.stewartinc.com
PROJECT #: B11001

DAVID RUGGLES, PE — PROJECT ENGINEER
MICHAEL BURNS, EI — PROJECT DESIGN ENGINEER

5/10/2016
:\Proj\Water\900052_utl_tsh.dgn
USER:drugglesc

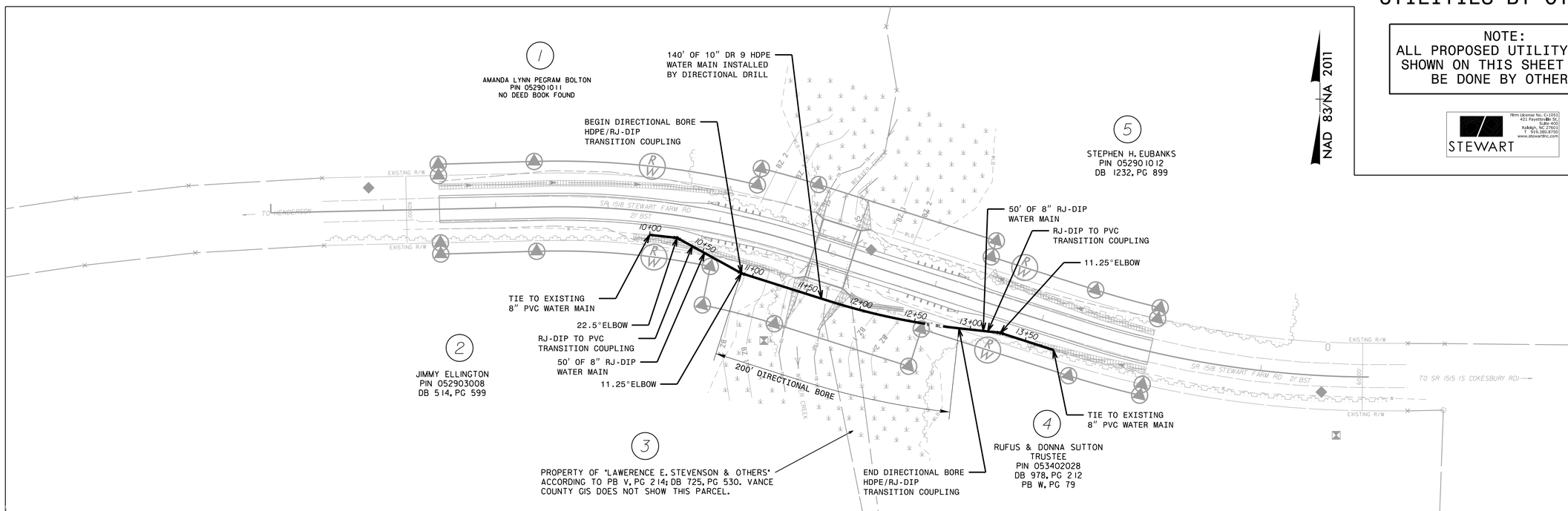
PROJECT REFERENCE NO.	SHEET NO.
17BP.5.R.63	UO-4

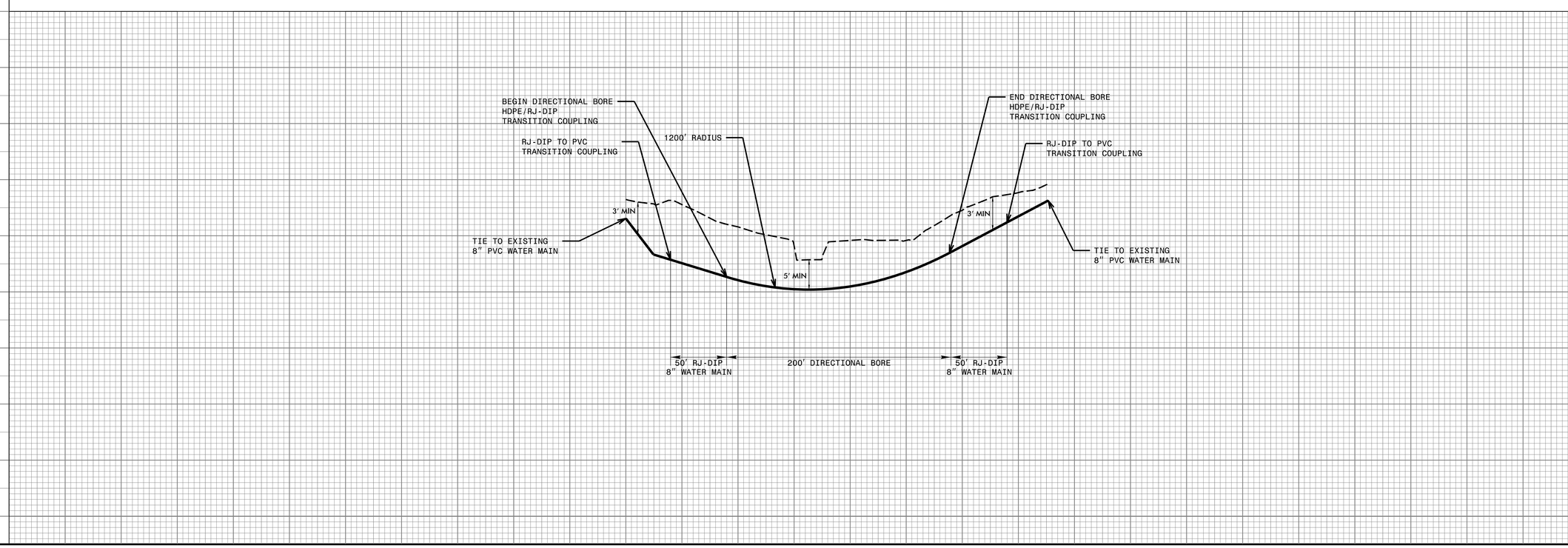
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

STEWART
Firm License No. C-1953
421 Fayetteville St.
Suite 400
Raleigh, NC 27601
T. 919.380.8750
www.stewartinc.com

NAD 83/NA 2011





REVISIONS

8/17/99

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jlsilliman

PROJ. REFERENCE NO.	SHEET NO.
17BP.5.R.63	X-1A

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+50.00	0	0
12+00.00	31	4
12+50.00	62	5
13+00.00	73	10
13+50.00	54	41
14+00.00	26	100
14+50.00	5	157
15+00.00	0	262
15+50.00	0	229
16+00.00	0	118
16+50.00	0	113
17+00.00	3	79
17+50.00	24	27
18+00.00	32	1

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED 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"

REVISIONS

8/17/99

4/12/2016
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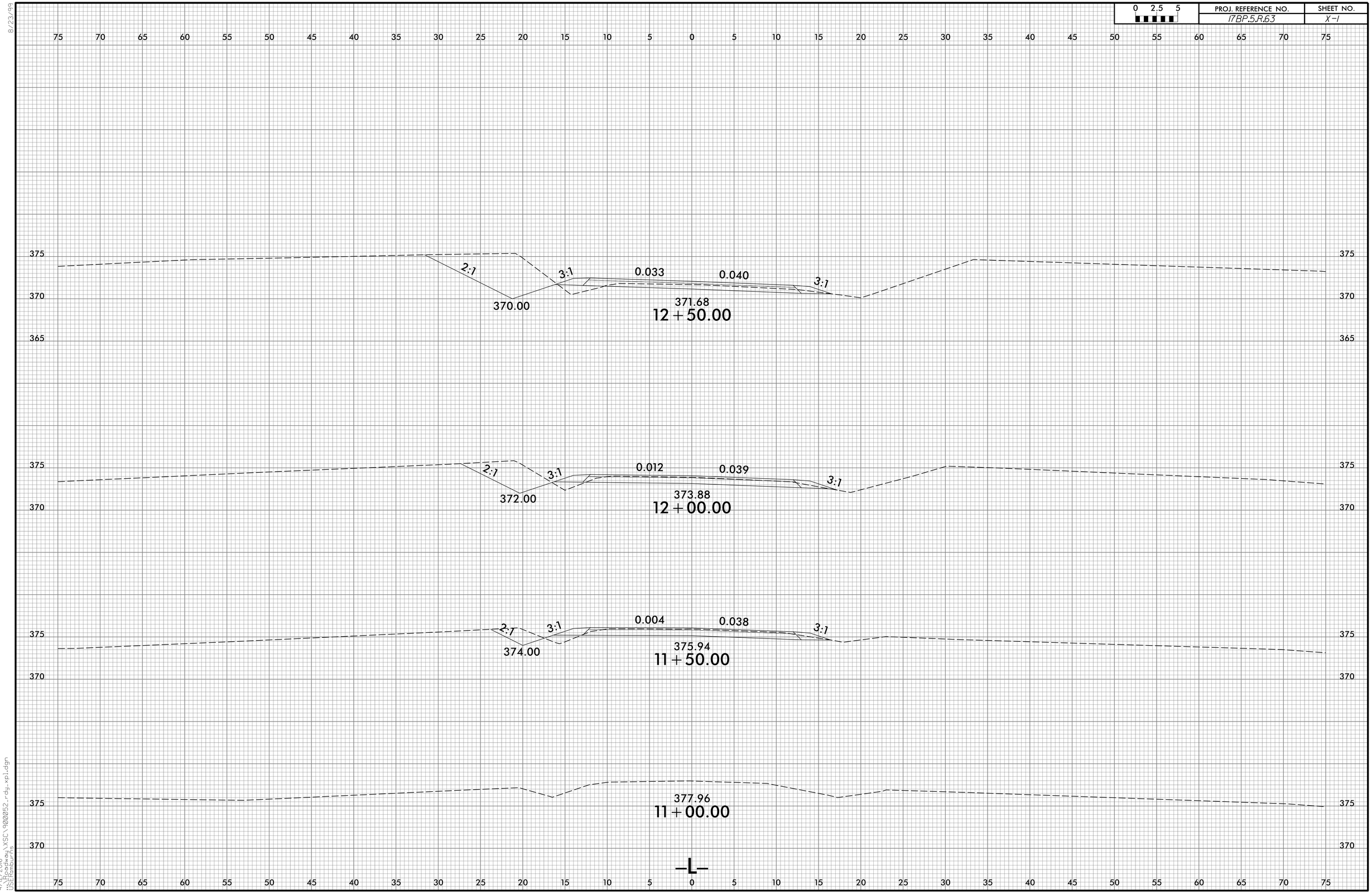

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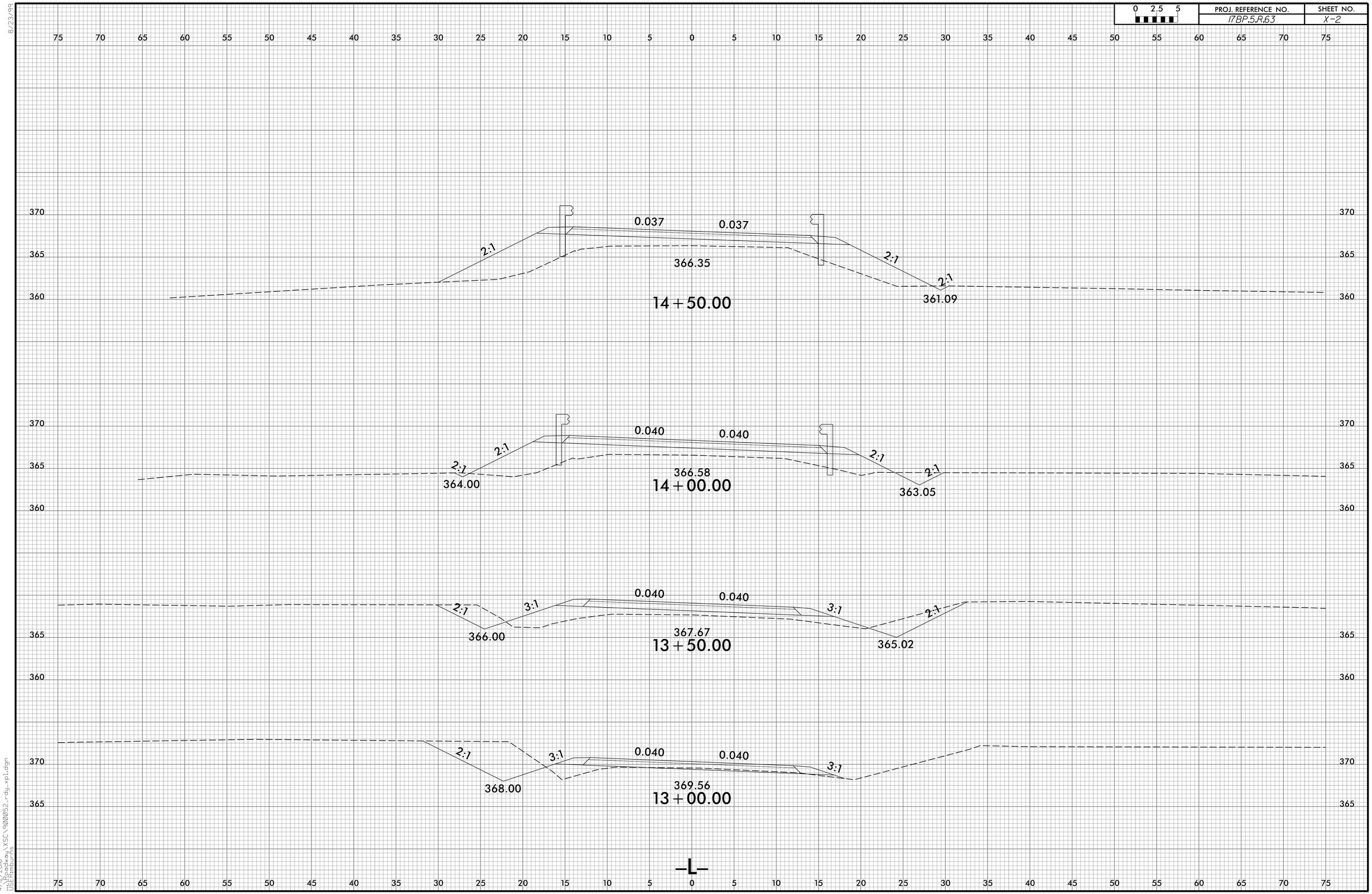

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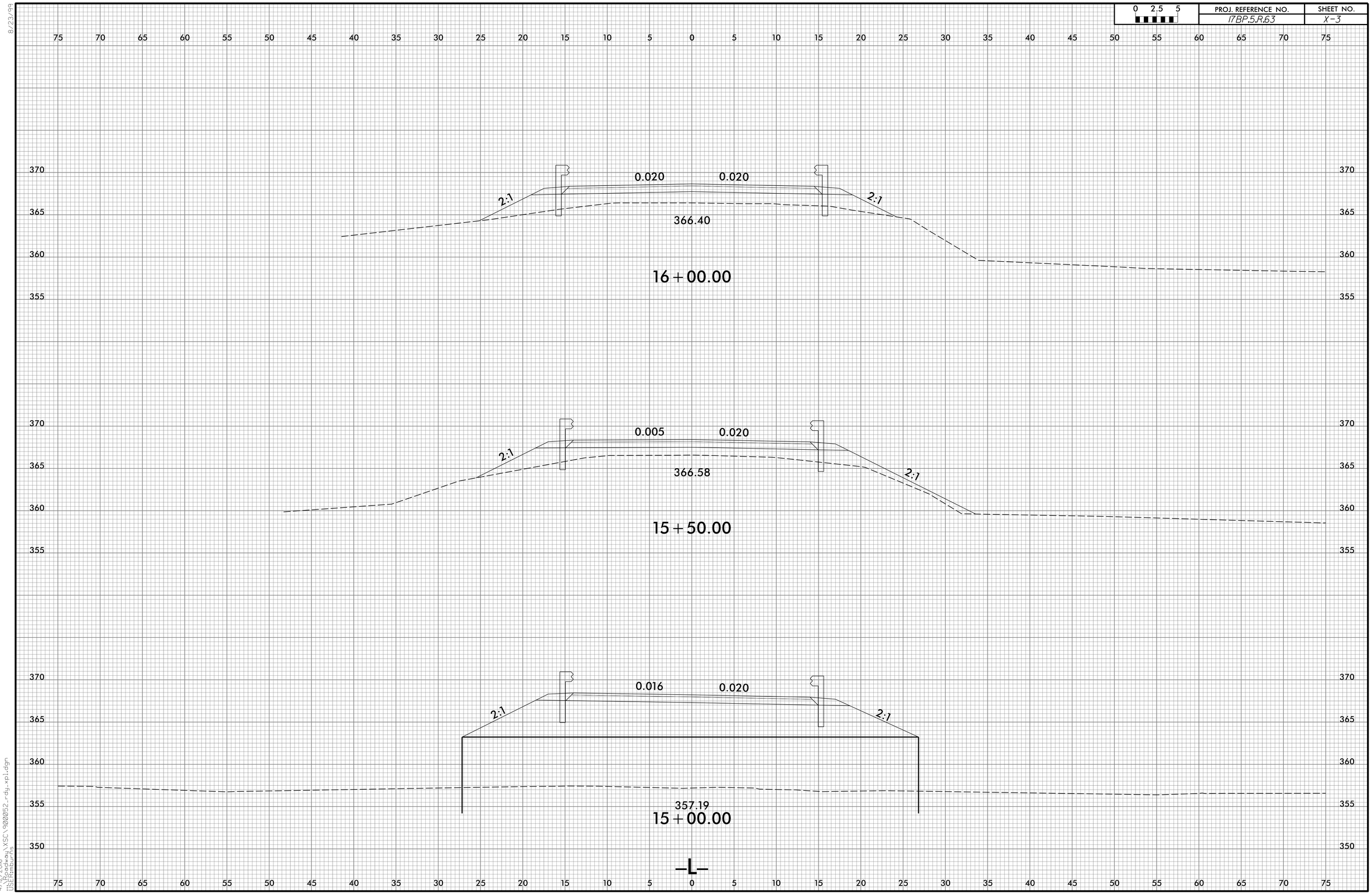

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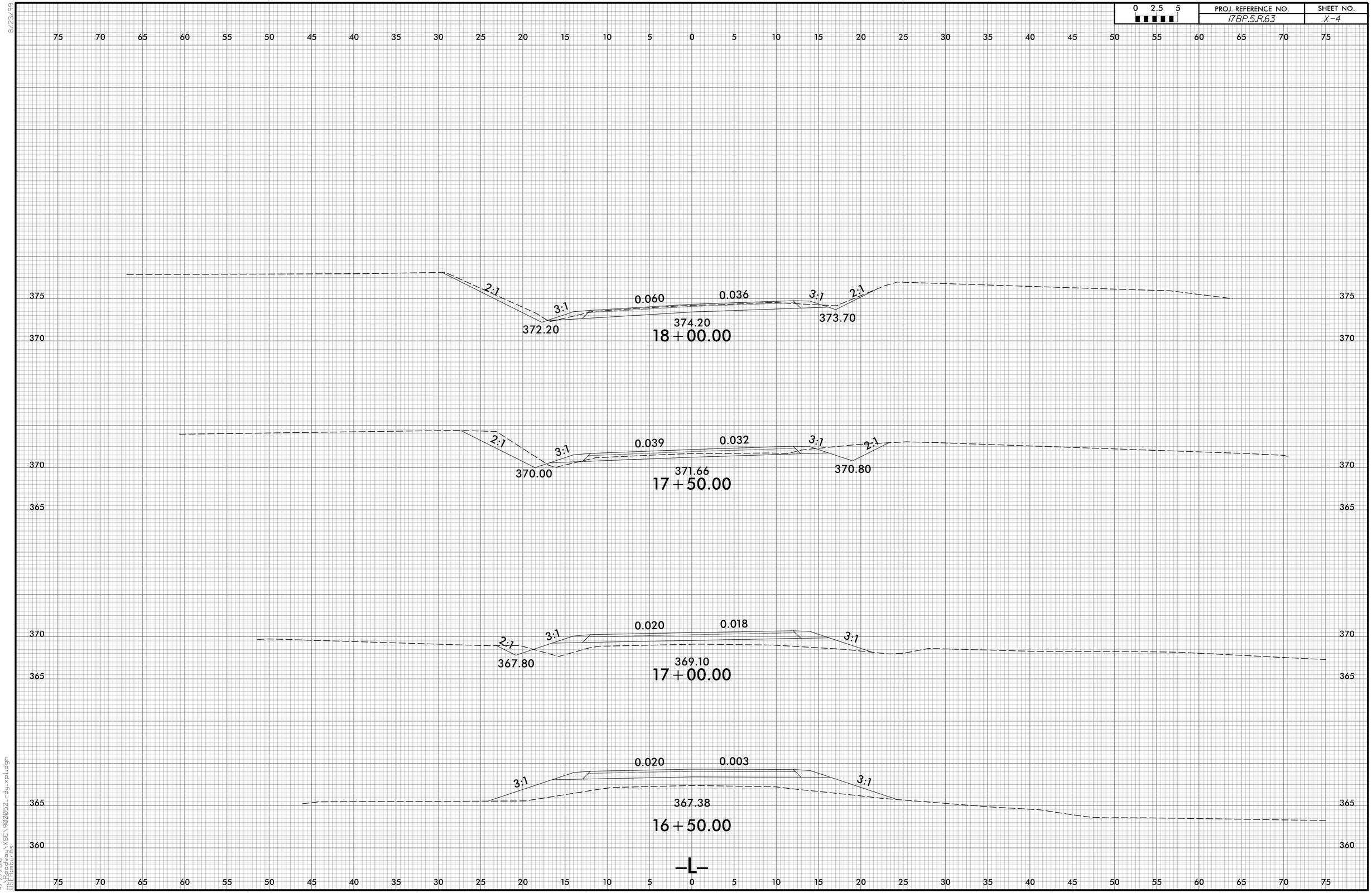

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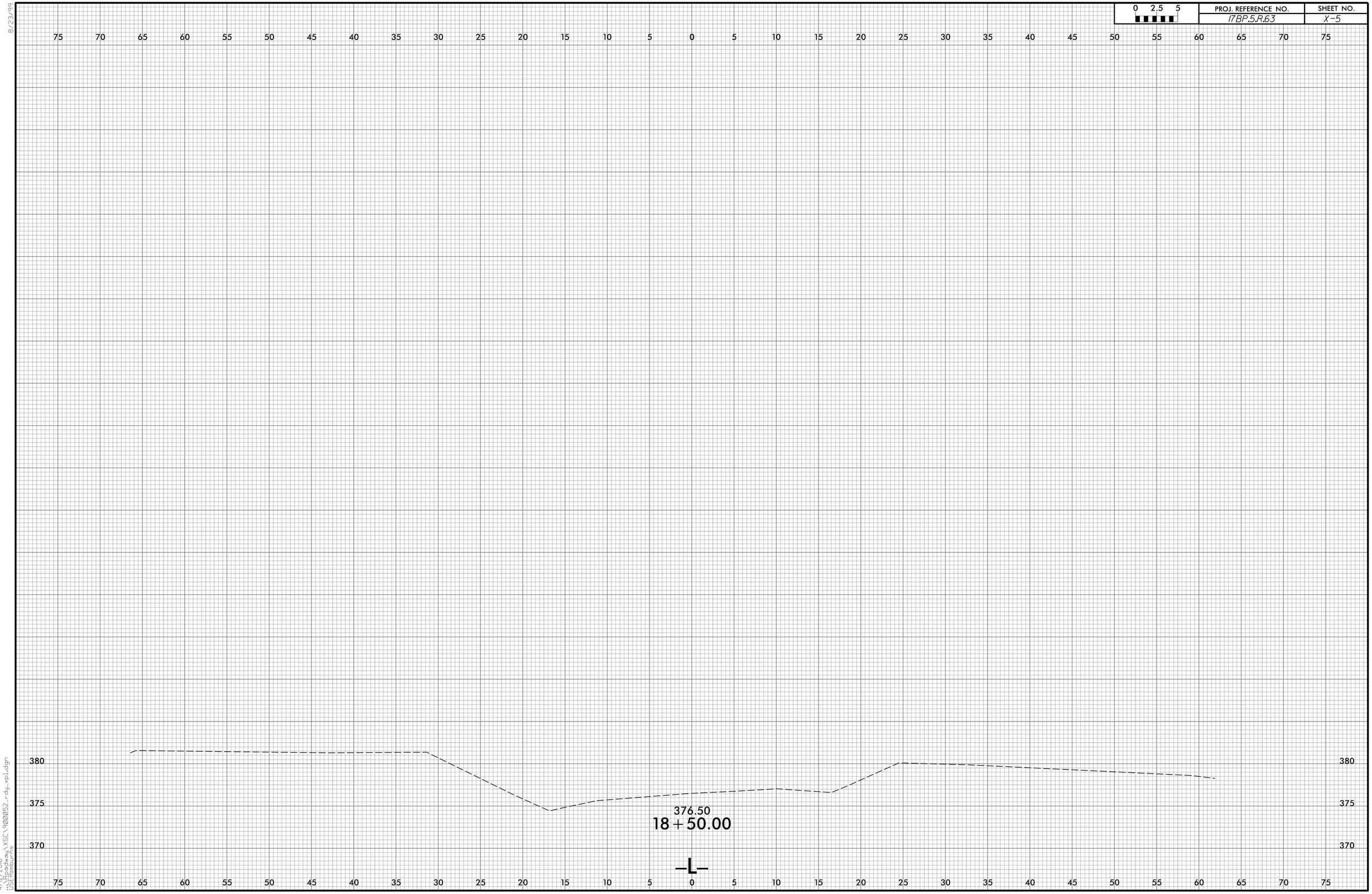

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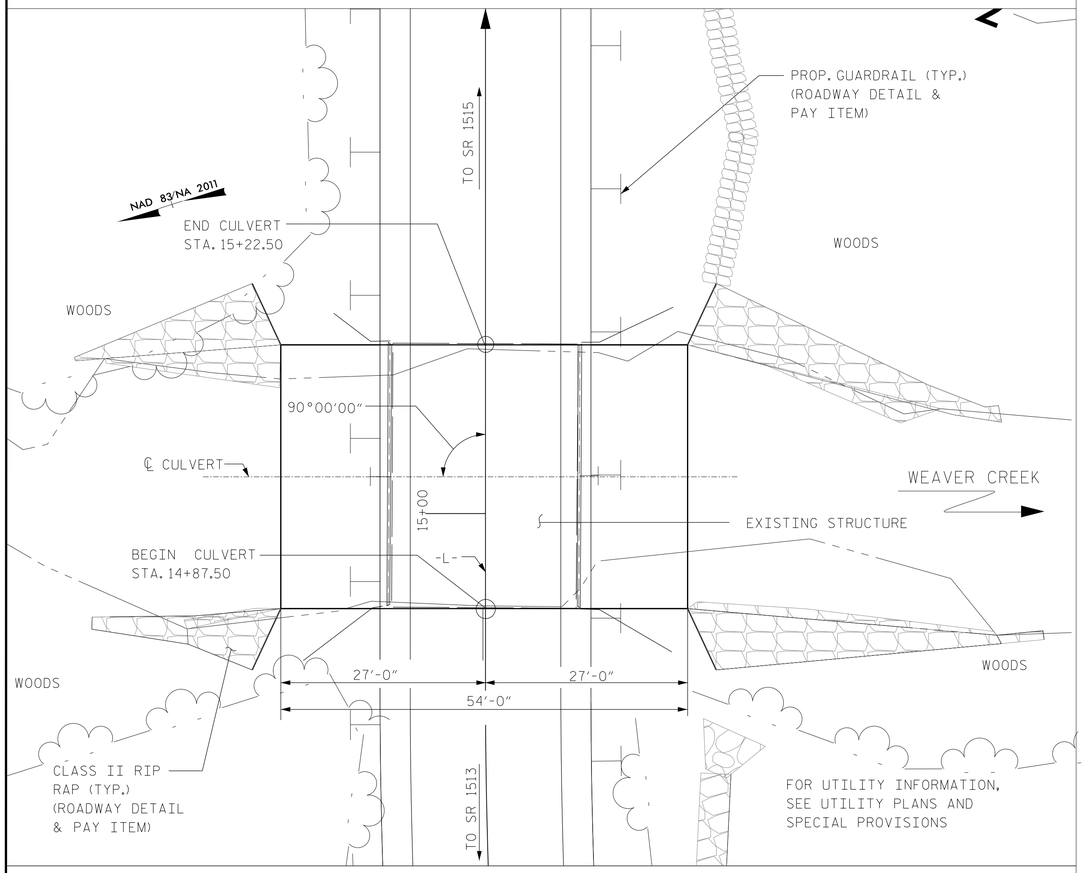
BENCH MARK BM#1: RR SPIKE IN 12" BIRCH 92.09' RT OF -L- STA. 14+68.62 EL. 361.53



LOCATION SKETCH

ROADWAY DATA

GRADE POINT ELEV. @ STA. 15+05.00 -L-	=368.24
BED ELEV. @ STA. 15+05.00 -L-	=354.05
ROADWAY SLOPES	=2.5:1

HYDROGRAPHIC DATA

DESIGN DISCHARGE	=1300 C.F.S.
FREQUENCY OF DESIGN FLOOD	=25 YR.
DESIGN HIGH WATER ELEVATION	=362.6 FT.
DRAINAGE AREA	=4.35 SQ.MI.
BASE DISCHARGE (Q100)	=1900 C.F.S.
BASE HIGH WATER ELEVATION	=364.31 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=3232 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=500+ YR.
OVERTOPPING FLOOD ELEVAION	=368.46 FT.*

* OVERTOPPING OCCURS AT APPROXIMATE STA. 15+00 -L-

TOTAL STRUCTURE QUANTITIES	
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
ALUMINUM BOX CULVERT	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	285 TONS
ASBESTOS ASSESSMENT	LUMP SUM

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL AT CULVERT CENTERLINE = 3.84 FT. BASED ON 2" ASSUMED ARCH THICKNESS. (1)

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING.

THE EXISTING STRUCTURE CONSISTING OF ONE SPAN @ 35'-6" WITH A TIMBER DECK ON STEEL GIRDER/FLOOR BEAM SYSTEM AND A CLEAR ROADWAY OF 24'-1" ON TIMBER CAPS AND TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED IN ITS ENTIRETY.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+05.00 -L-."

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JULY 2012.

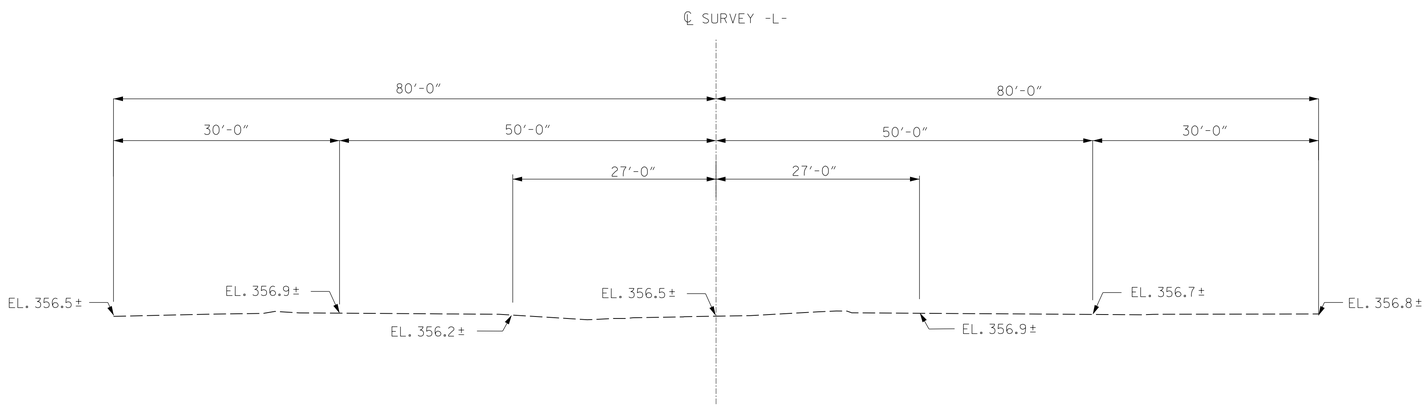
THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGN AND DETAILS THAT MEET THE REQUIREMENTS OF AASHTO SECTION 12, AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

GUARDRAIL POST LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER TO ENSURE ADEQUATE COVER FOR INSTALLATION.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.



PROFILE ALONG ℄ CULVERT

(1) MODIFY DESIGN FILL

PROJECT NO. 17BP.5.R.63

VANCE COUNTY

STATION: 15+05.00 -L-

SHEET 1 OF 3 REPLACE BRIDGE NO.52

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David Ruggles C462768DF412422...

5/25/2016

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

34'-11" X 10'-4"
ALUMINUM BOX CULVERT
90° SKEW

Firm License No. C-1051
421 Fayetteville St,
Suite 400
Raleigh, NC 27601
T 919.380.8750
www.stewartinc.com
STEWART

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1	HA	05-25-16	3			TOTAL SHEETS
2			4			3

DRAWN BY:	H.ASSFOURA	DATE :	12/15
CHECKED BY:	D. RUGGLES	DATE :	01/16
DESIGN ENGINEER OF RECORD:	D. RUGGLES	DATE :	01/16

5/25/2016
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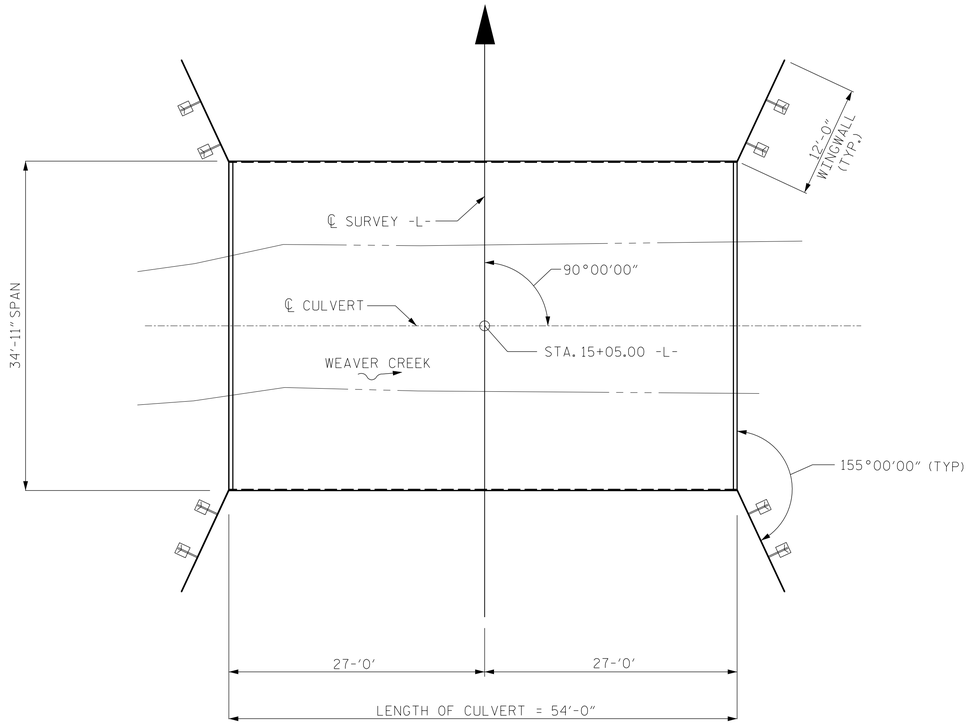
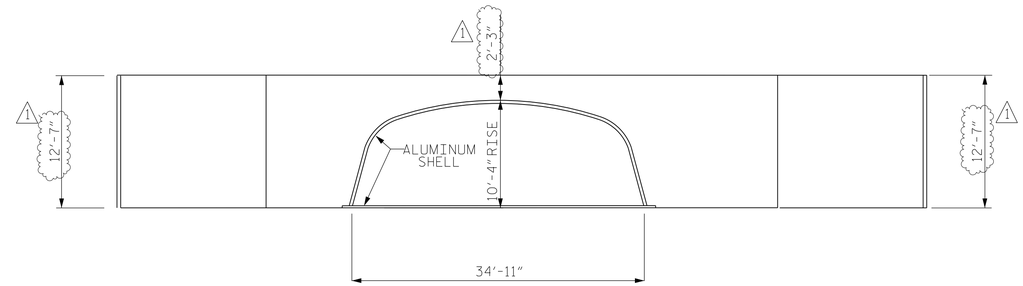
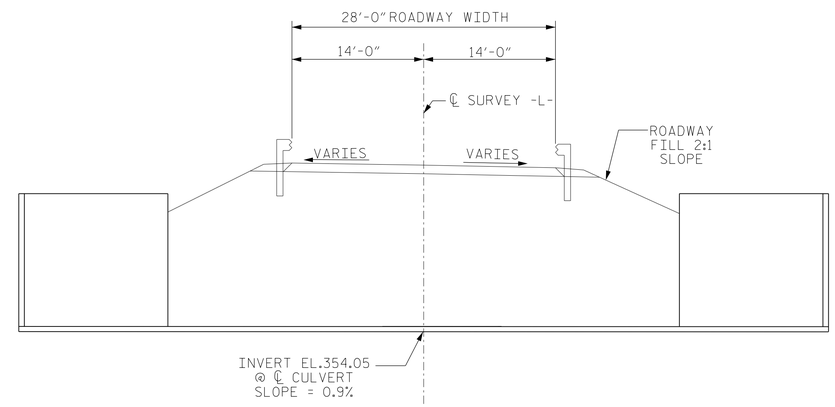


PLAN VIEW



END ELEVATION



CULVERT SECTION NORMAL TO ROADWAY

PROJECT NO. 17BP.5.R.63

VANCE COUNTY

STATION: 15+05.00 -L-

SHEET 2 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David Ruggles
C462768DF412422...
5/25/2016

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1 MODIFY HEADWALL HEIGHT

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

34'-11" X 10'-4"
ALUMINUM BOX CULVERT
90° SKEW

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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF	
STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION	
GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR	
UNTREATED - EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

PROJECT NO. 17BP.5.R.63

VANCE COUNTY

STATION: 15+05.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
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DRAWN BY: H. ASSFOURA	DATE : 03/16	
CHECKED BY: D. RUGGLES	DATE : 03/16	
DESIGN ENGINEER OF RECORD: D. RUGGLES	DATE : 03/16	

4/11/2016
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