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09_08/199

T.I.P PROJECT: B-5166

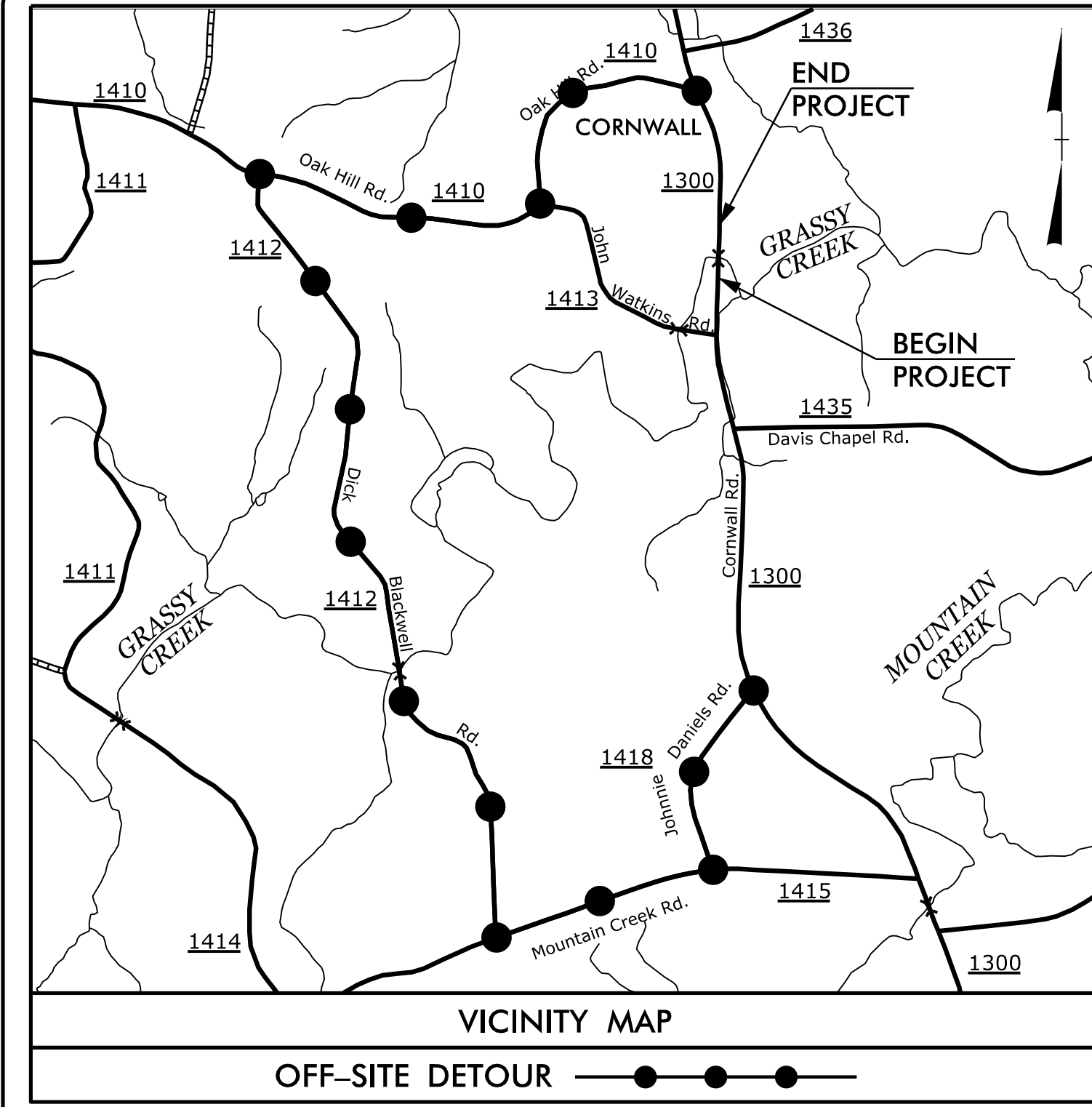
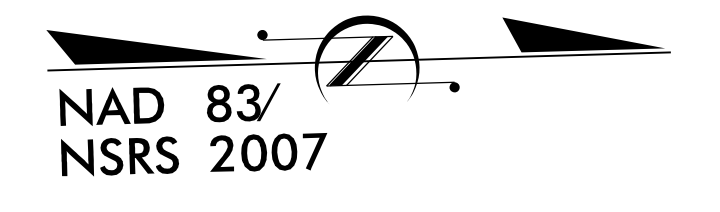
CONTRACT: C203902

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

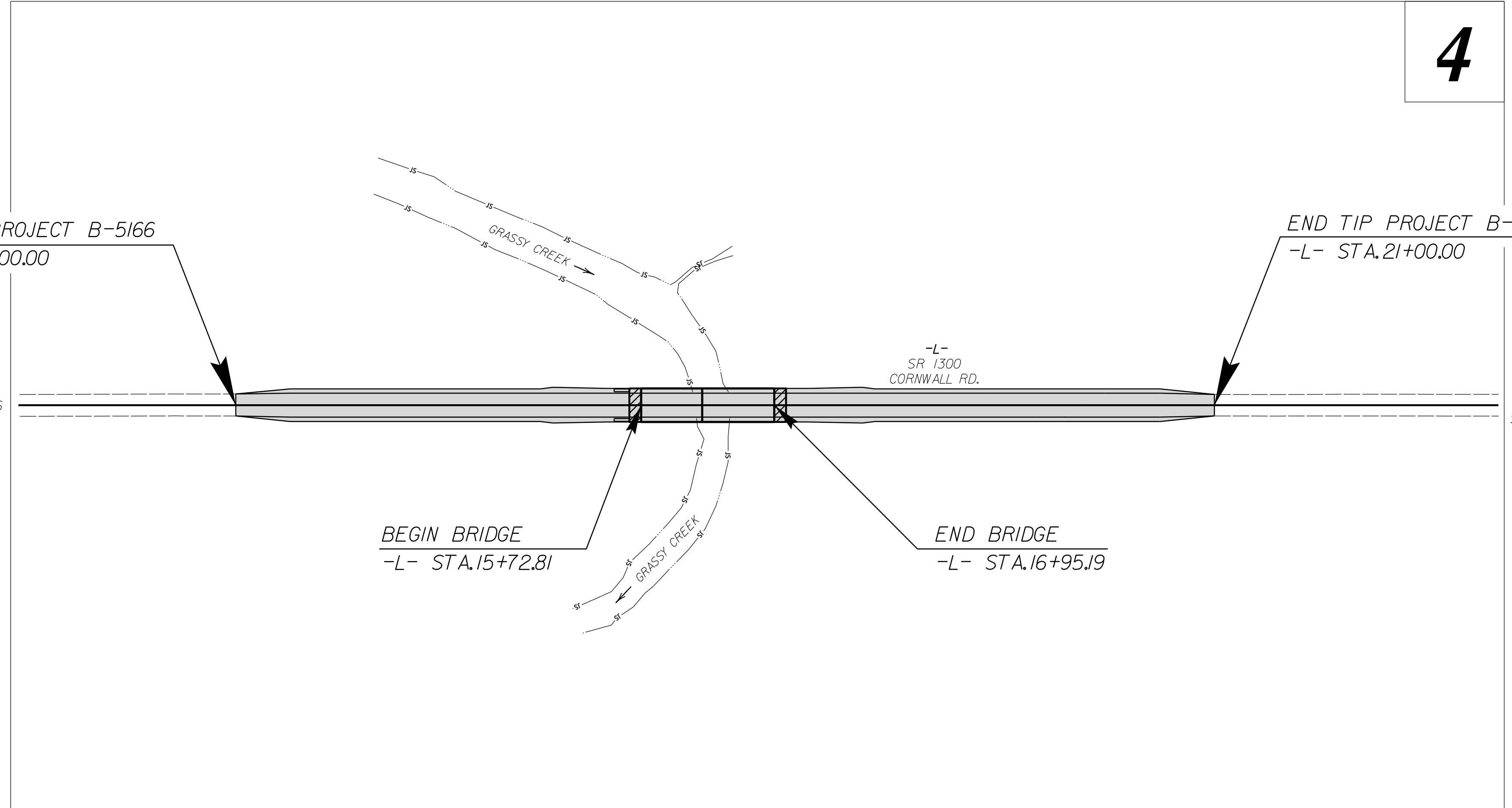
GRANVILLE COUNTY

**LOCATION: BRIDGE NO.138 OVER GRASSY CREEK
ON SR 1300 (CORNWALL RD.)**
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5166	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42342.1.1	BRSTP-1300(9)	PE	
42342.2.1		ROW & UTILITY	
42342.3.1		CONSTRUCTION	

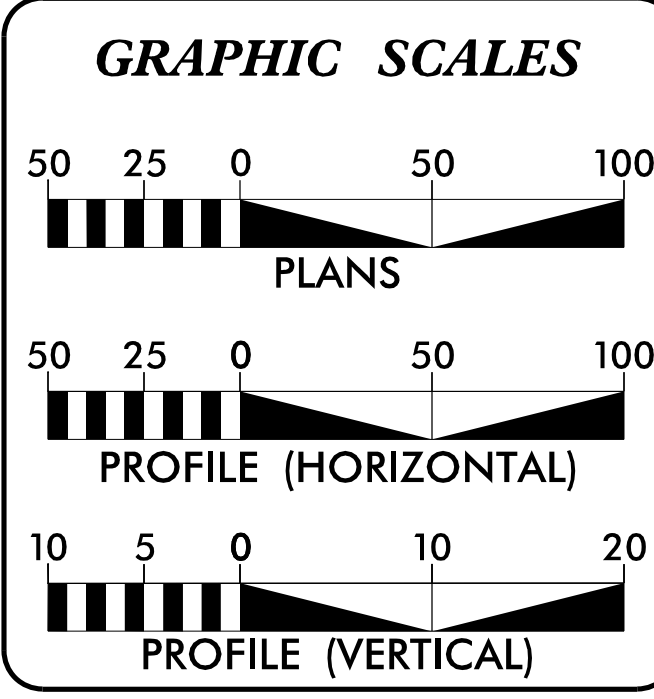


See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



4

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



DESIGN DATA
 2017 ADT = 1,146 VPD
 2037 ADT = 1,762 VPD
 DHV = 12%
 D = 65%
 T = 8% *
 V = 60 MPH
 * (TTST 4% + DUAL 4%)
 FUNC. CLASS. = RURAL MINOR COLLECTOR
 SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5166	=	0.147 mi.
LENGTH STRUCTURES TIP PROJECT B-5166	=	0.023 mi.
TOTAL LENGTH TIP PROJECT B-5166	=	0.170 mi.

Prepared in the Offices of:

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

ECOLOGICAL ENGINEERING
NC FIRM LICENSE No. F-1148
1151 SE Cary Parkway, Suite 101
Cary, NC 27518
(919) 557-4029

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 15, 2016

LETTING DATE:
APRIL 18, 2017

ANDY YOUNG, PE
PROJECT ENGINEER

MICHAEL BURNS, EI
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

DocuSigned by:
Frank F. Fleming
1/17/2017
P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Andrew P. Young
1/17/2017
P.E.

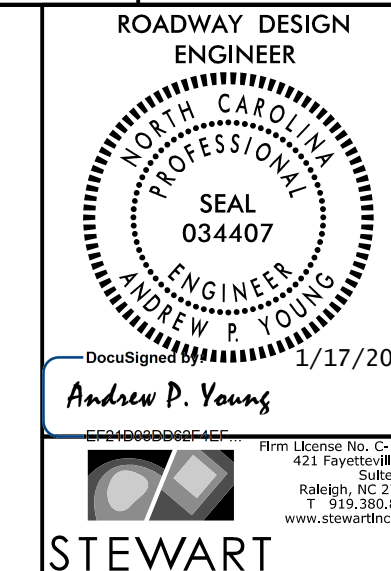


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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

PROJECT REFERENCE NO. B-5166	SHEET NO. 1-A
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SHEET NUMBER	SHEET	
1	TITLE SHEET	
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS	EFF. 01-17-2012 REV. 02-29-2016
1-B	CONVENTIONAL SYMBOLS	
1C-1	SURVEY CONTROL DATA SHEET	
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS	2012 ROADWAY ENGLISH STANDARD DRAWINGS
2C-1	GUARDRAIL ANCHOR UNIT DETAIL	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:
3B-1	ROADWAY SUMMARY	STD.NO. TITLE
3D-1	DRAINAGE SUMMARY	DIVISION 2 - EARTHWORK
4	PLAN SHEET	200.03 Method of Clearing - Method III
5	PROFILE SHEET	225.02 Guide for Grading Subgrade - Secondary and Local
TMP-1 THRU TMP-3	TRAFFIC CONTROL PLANS	225.04 Method of Obtaining Superelevation - Two Lane Pavement
EC-1 THRU EC-5	EROSION CONTROL PLANS	240.01 Guide for Berm Ditch Construction
SIGN-1 THRU SIGN-2	SIGNING PLANS	DIVISION 3 - PIPE CULVERTS
UD-1 THRU UD-4	UTILITY BY OTHERS PLANS	300.01 Method of Pipe Installation
X-1A	CROSS-SECTION SUMMARY SHEET	310.10 Driveway Pipe Construction
X-1 THRU X-7	CROSS-SECTIONS	DIVISION 4 - MAJOR STRUCTURES
S-1 THRU S-20	STRUCTURE PLANS	422.11 Bridge Approach Fills - Sub Regional Tier
		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
		840.00 Concrete Base Pad for Drainage Structures
		840.29 Frames and Narrow Slot Flat Grates
		840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
		840.46 Traffic Bearing Precast Drainage Structure
		846.01 Concrete Curb, Gutter and Curb & Gutter
		846.04 Drop Inlet Installation in Shoulder Berm Gutter
		862.01 Guardrail Placement
		862.02 Guardrail Installation
		876.01 Rip Rap in Channels
		876.02 Guide for Rip Rap at Pipe Outlets
		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

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

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.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

DUKE - Power (Distribution)
CENTURYLINK - Communications

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

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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	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
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	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW Marker	-----
Proposed Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
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	⊕
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	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	□
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	⊕
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	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□
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:

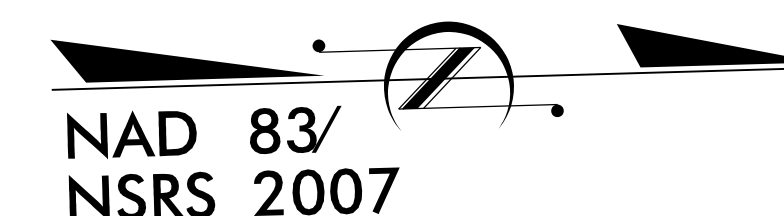
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line LOS B (S.U.E.*)	----- ?UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕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

04/06/15

SURVEY CONTROL SHEET B-5166

GRANVILLE COUNTY

BASELINE DATA POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	990187.4490	2098738.5150	387.19	OUTSIDE PROJECT LIMITS	
102	BL-102	991158.9330	2098769.1030	384.68	17+01.14	17.62 RT
103	BL-103	991904.9690	2098792.9060	415.25	OUTSIDE PROJECT LIMITS	



BENCHMARK DATA

.....

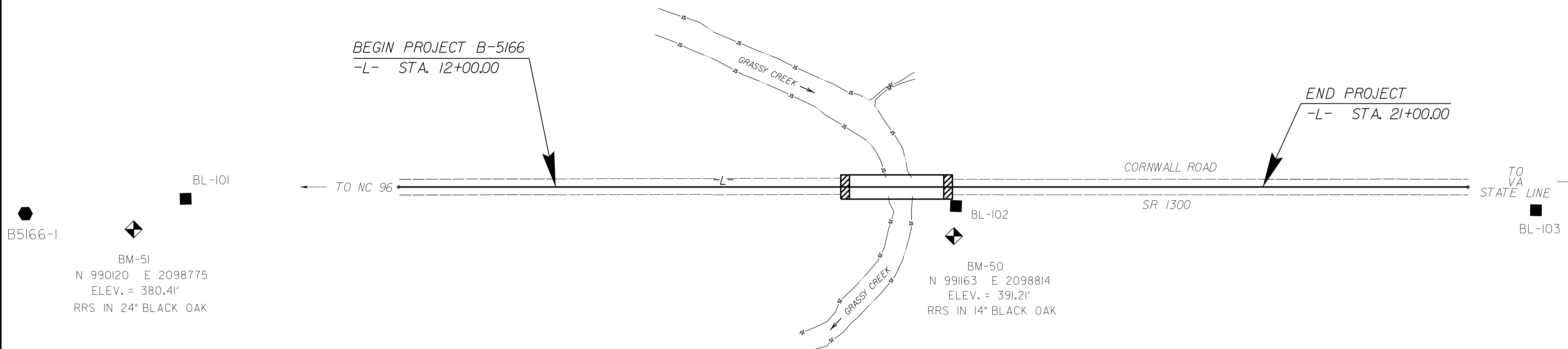
50 ELEVATION = 391.21
 N 991163 E 2098814
 L STATION 17+07.00 62 RIGHT
 RRS IN 14" BLACK OAK

.....

.....

51 ELEVATION = 380.41
 N 990120 E 2098775
 L STATION 10+00.00
 S 07°25'41" E DIST 341.20
 RRS IN 24" BLACK OAK

.....



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5166-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 989472.689(ft) EASTING: 2098745.373(ft) ELEVATION: (ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00008425

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-5166-1" TO -L- 12+00 IS
 N 0° 24' 06.4" E 1,185.85'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

ROW MARKER CONCRETE OR GRANITE -E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+00.00	-50.00	990659.9451	2098687.0784
L	12+00.00	-30.00	990659.3691	2098707.0701
L	12+00.00	30.00	990657.6410	2098767.0452
L	12+00.00	50.00	990657.0649	2098787.0369
L	21+00.00	50.00	991556.6916	2098812.9583
L	21+00.00	30.00	991557.2676	2098792.9666
L	21+00.00	-50.00	991559.5717	2098712.9998
L	21+00.00	-30.00	991558.9957	2098732.9915

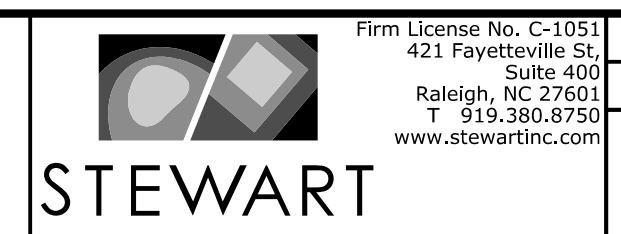
L

TYPE	STATION	NORTH	EAST
POT	10+00.00	990458.5880	2098731.2973
POT	23+61.26	991819.2833	2098770.5038

- NOTES:**
- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION](https://connect.ncdot.gov/resources/location)
- THE FILES TO BE FOUND ARE AS FOLLOWS:
 B5166_LS_CONTROL.TXT
- 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.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

GEIOD G03NC
 NOTE: DRAWING NOT TO SCALE

B:17/99

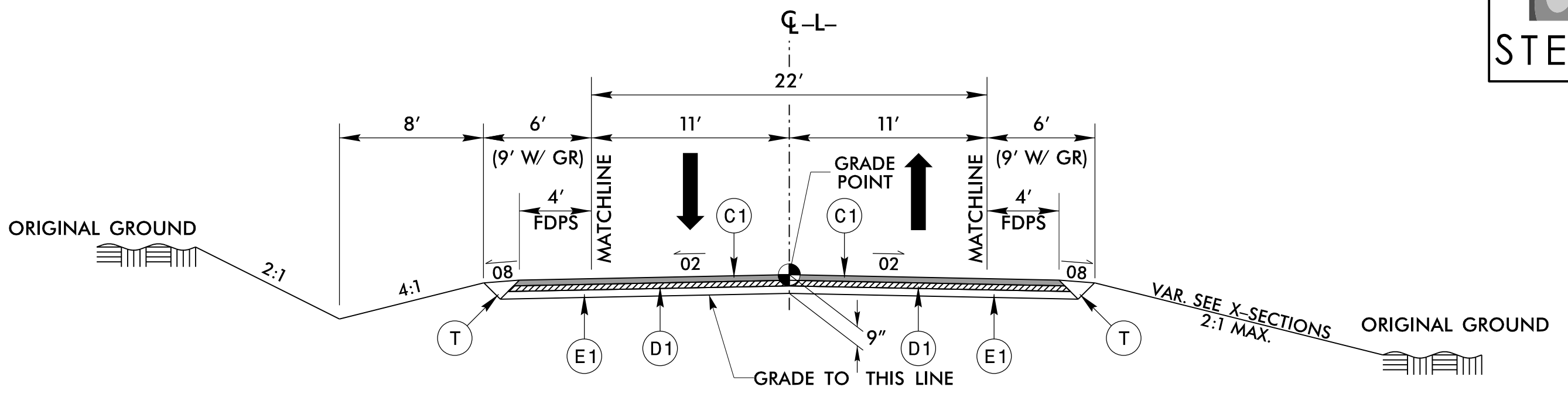


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www.stewartinc.com

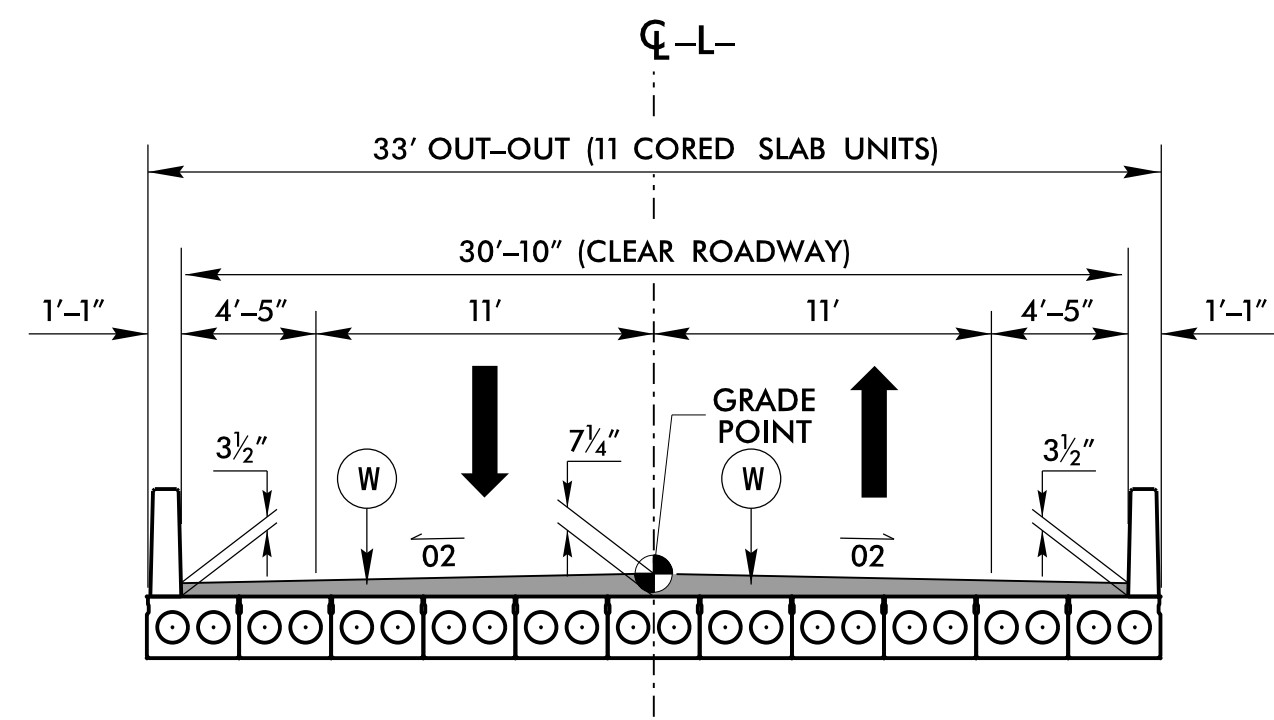
PROJECT REFERENCE NO. B-5166	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER ANDREW P. YOUNG SEAL 034407 1/27/2017	PAVEMENT DESIGN ENGINEER CLARK HARRISON SEAL 22896 1/30/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN)</i>	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 3½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
W	ASPHALT WEDGING (SEE DETAIL)

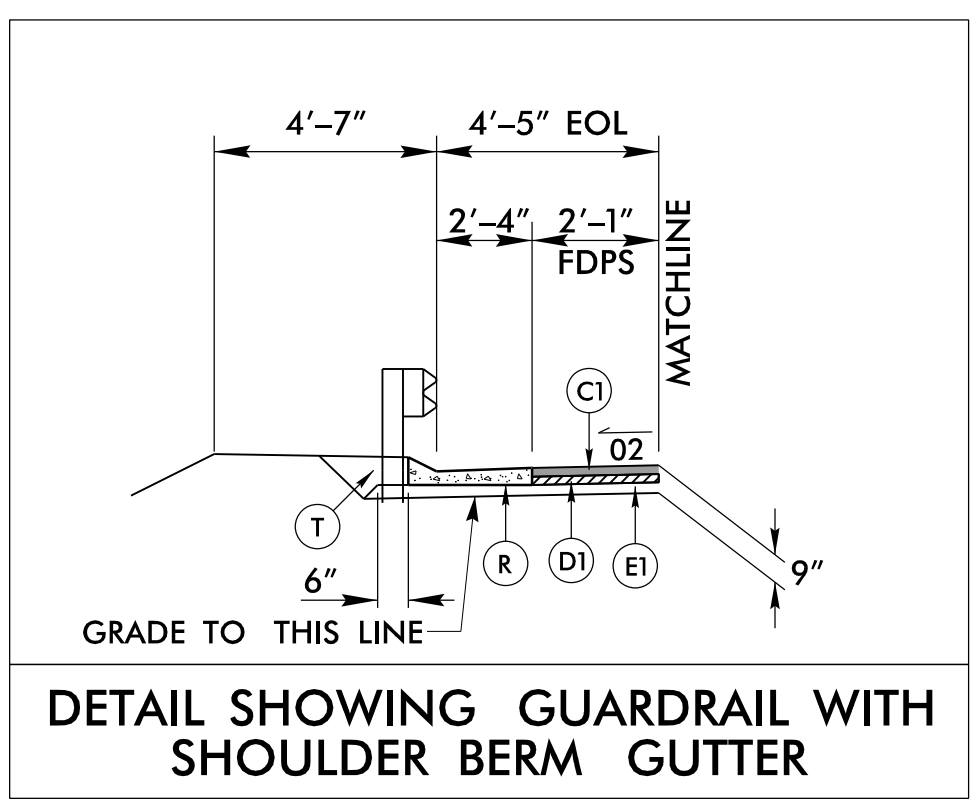
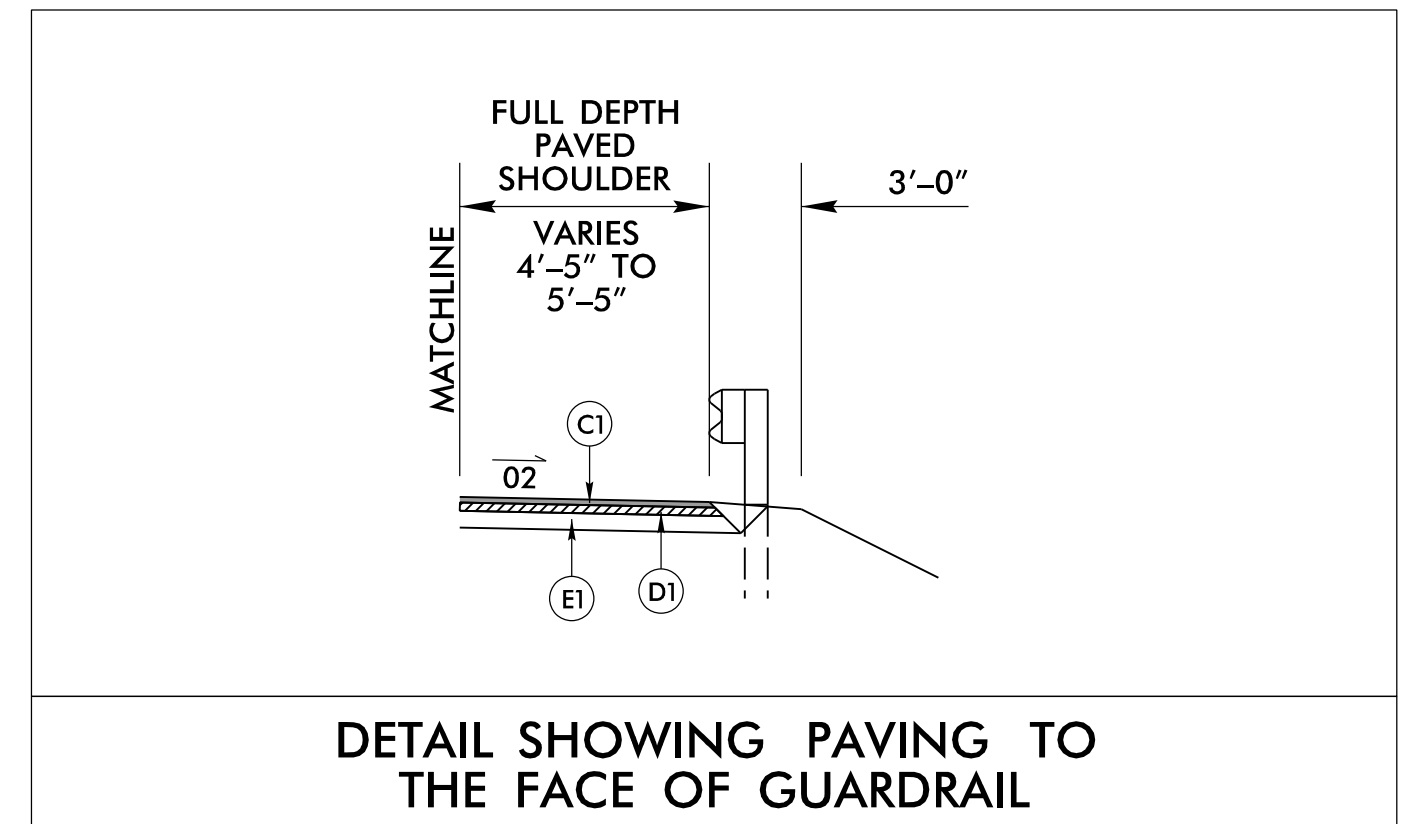
NOTE: PAVEMENT EDGE SLOPES ARE 1:1, UNLESS SHOWN OTHERWISE



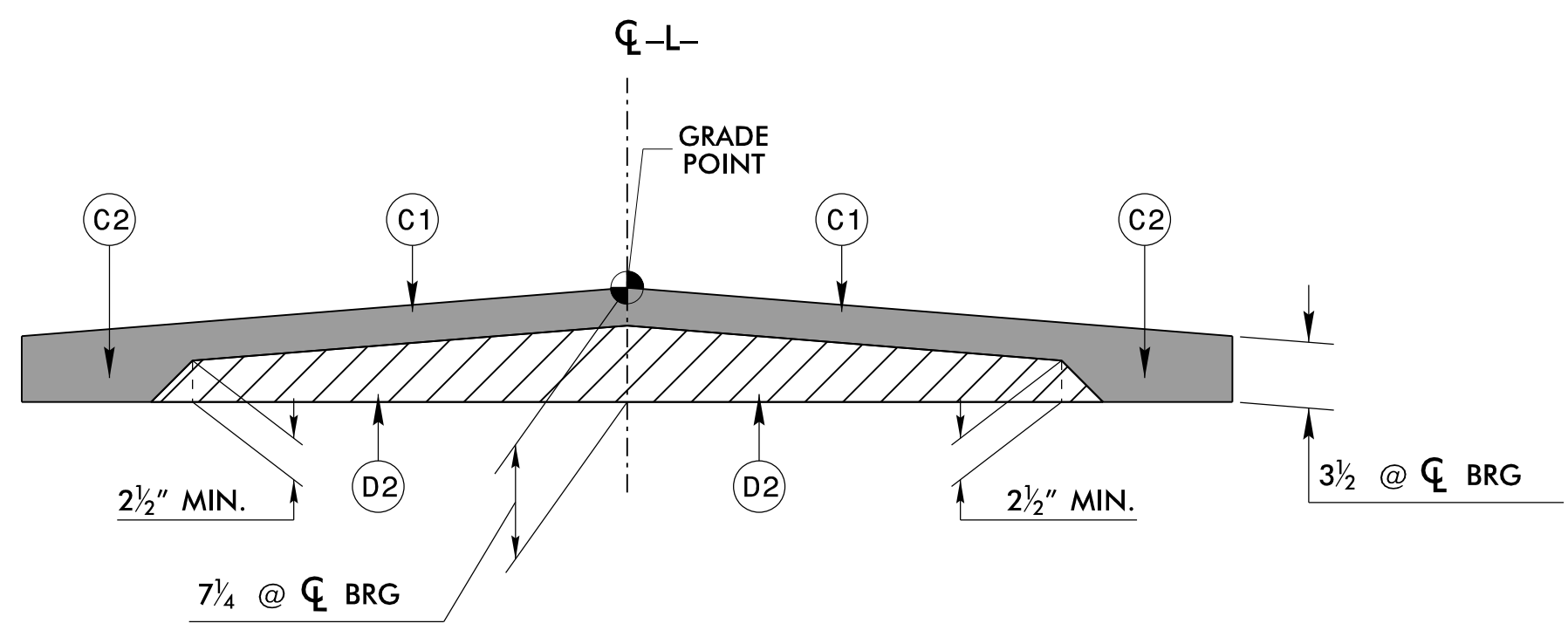
TYPICAL SECTION NO. 1
-L- STA. 12+00.00 TO -L- STA. 15+72.81 (BEGIN BRIDGE)
-L- STA. 16+95.19 (END BRIDGE) TO -L- STA. 21+00.00



TYPICAL SECTION NO. 2
-L- STA. 15+72.81 (BEGIN BRIDGE) TO -L- STA. 16+95.19 (END BRIDGE)
CORED SLAB BRIDGE
(SEE STRUCTURE PLANS)



USE SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 15+48.00 TO -L- STA. 15+61.94 (BEGIN APPROACH SLAB) (LEFT)
-L- STA. 15+48.00 TO -L- STA. 15+61.94 (BEGIN APPROACH SLAB) (RIGHT)



DETAIL SHOWING METHOD OF WEDGING ON BRIDGE
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 2
(SEE STRUCTURE PLANS)

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

8/17/99

REVISIONS

★ SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- STA. 12+00.00	-L- STA. 15+72.81 (BR)	109	559	450	
SUBTOTAL:		109	559	450	
-L- STA. 16+95.19 (BR)	-L- 21+00.00	1347	547		800
SUBTOTAL:		1347	547		800
WASTE IN LIEU OF BORROW:				-450	-450
PROJECT TOTALS:		1456	1106	0	350
GRAND TOTALS:		1456	1106		350
SAY:		1500			

UNDERCUT EXCAVATION = 200 CY (CONTINGENCY)
 SELECT GRANULAR MATERIAL = 200 CY (CONTINGENCY)
 GEOTEXTILE FOR SOIL STABILIZATION = 200 SY (CONTINGENCY)
 DDE = 40 CY

EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

★ PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	12+00.00	15+80.26	EXIST. ROAD	852.52			
-L-	16+86.98	21+00.00	EXIST. ROAD	917.74			
TOTAL:				1770.26			
SAY:				1780			

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LINE	Station	Station	LENGTH
-L- (LT)	15+48.00	15+61.94	13.94
-L- (RT)	15+48.00	15+61.94	13.94
TOTAL:			27.88
SAY:			30

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

GUARDRAIL SUMMARY

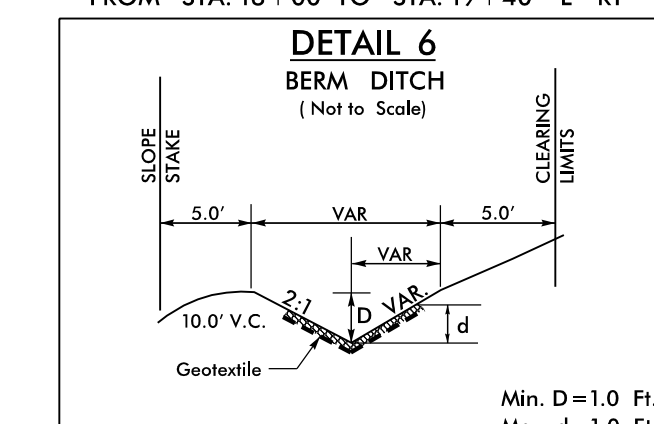
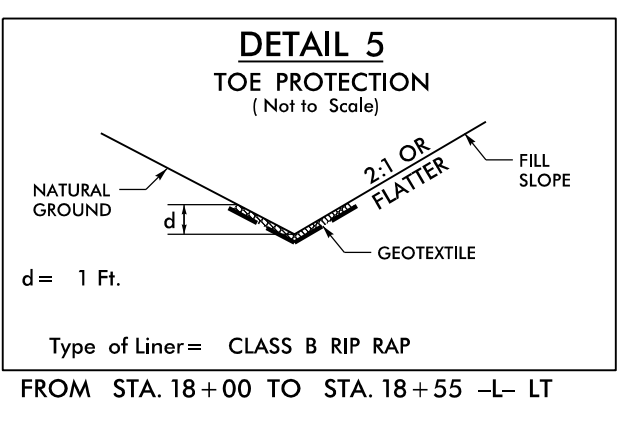
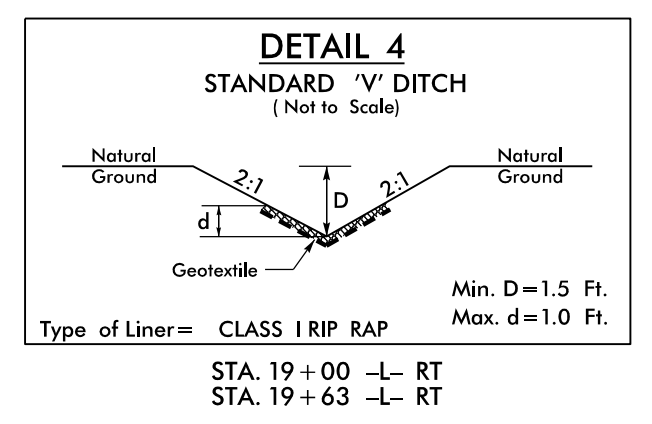
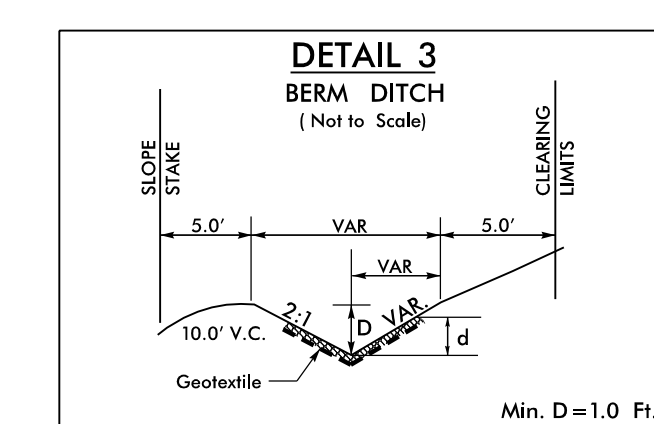
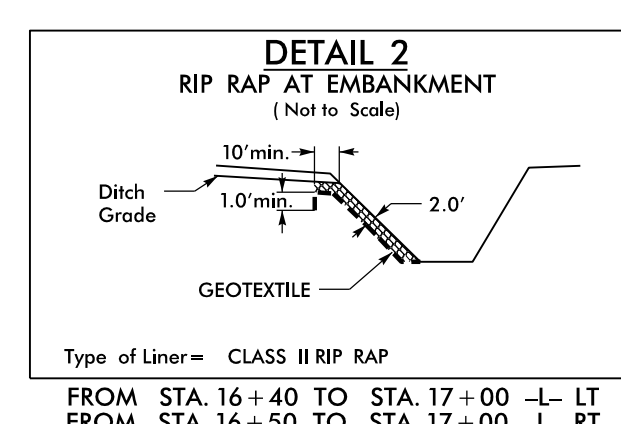
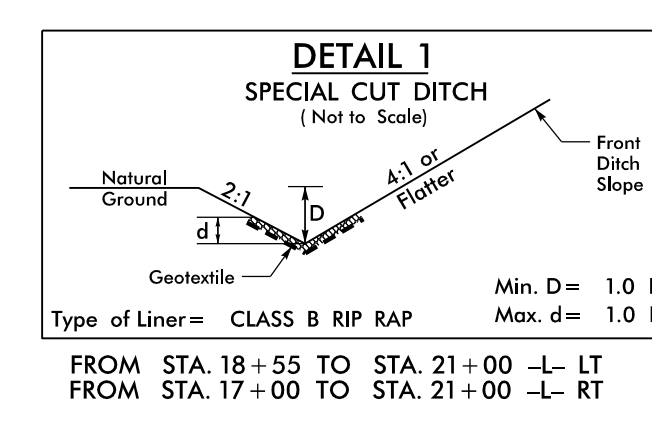
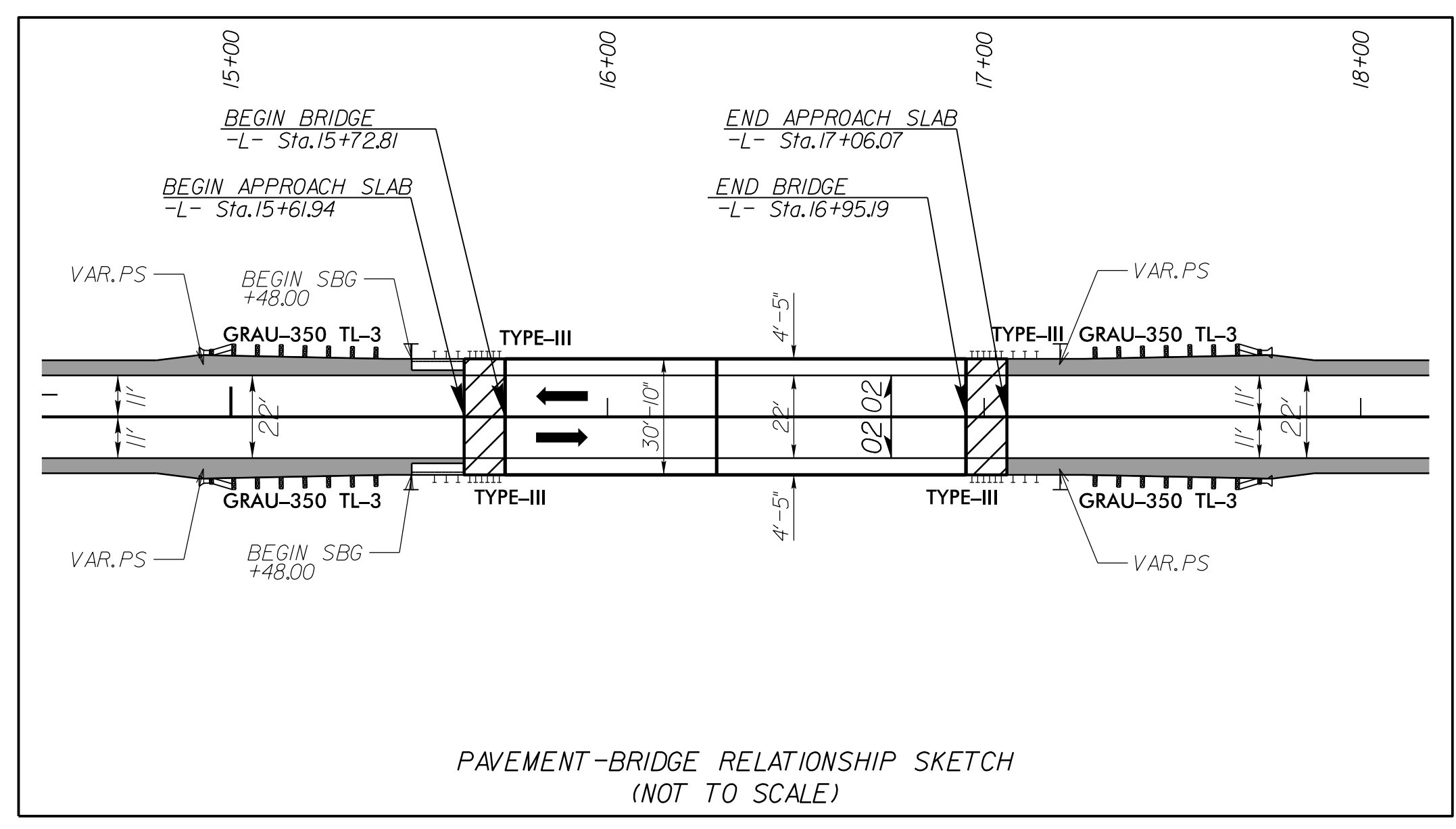
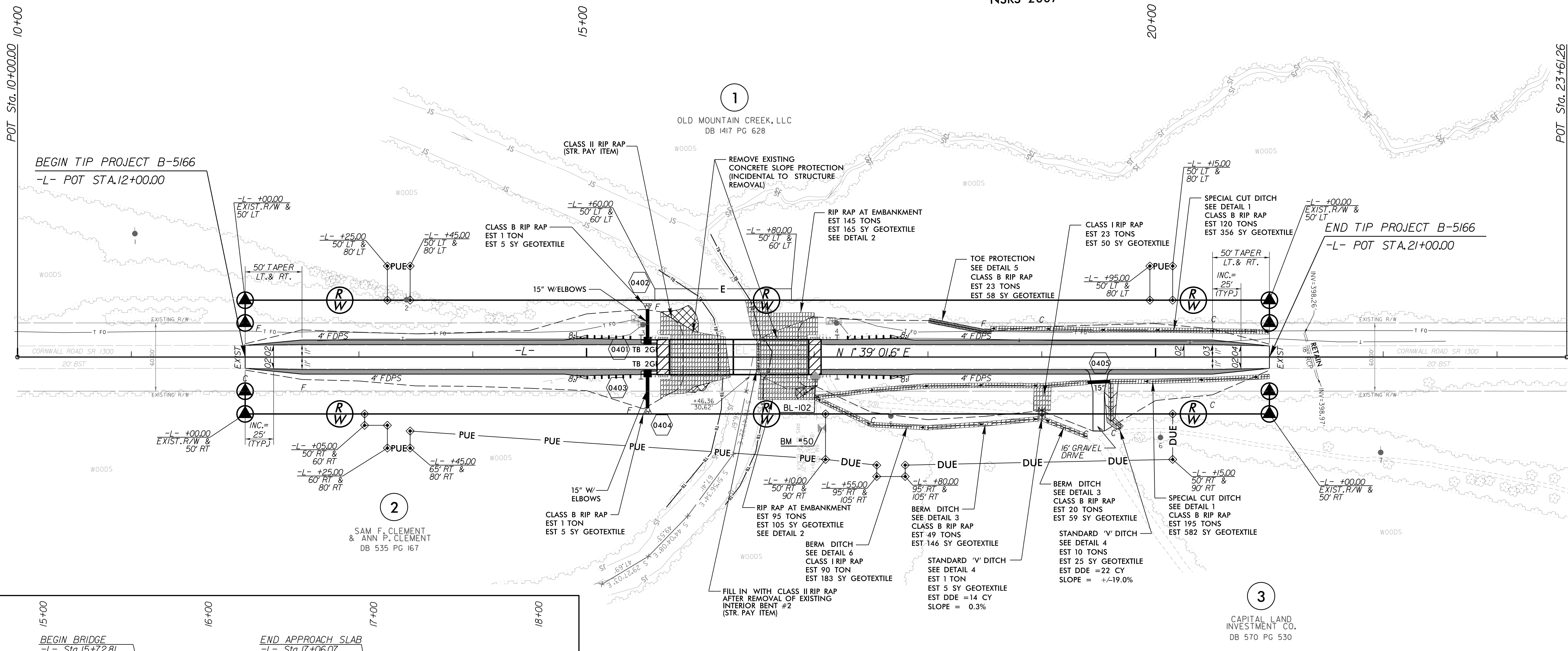
G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

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

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-	14+91.56	15+72.81 (BR)	LT	81.25				15+72.81	4'-5"	9'-0"		50		1															72'		TL-3		
-L-	14+91.56	15+72.81 (BR)	RT	81.25				15+72.81	4'-5"	9'-0"		50		1															121'		TL-3		
-L-	16+95.19 (BR)	17+76.44	LT	81.25				16+95.19	4'-5"	9'-0"		50		1															72'		TL-3		
-L-	16+95.19 (BR)	17+76.44	RT	81.25				16+95.19	4'-5"	9'-0"		50		1																72'		TL-3	
SUBTOTAL:				325																													
LESS ANCHOR DEDUCTIONS:																																	
TYPE III (4 @ 18.75')																																	
GRAU-350 TL-3 (4 @ 50')																																	
TOTAL:				50																													
SAY:				75																													
ADDITIONAL GUARDRAIL POSTS = 5EA																																	

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NAD 83
NSRS 2007



- END BENT EXCAVATION SEE STRUCTURE PLANS (STRUCTURE PAY ITEM)
- FOR -L- PROFILE, SEE SHEET 5
- PROPOSED PAVED SHOULDER
- ALL DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED ON PLANS
- FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-20

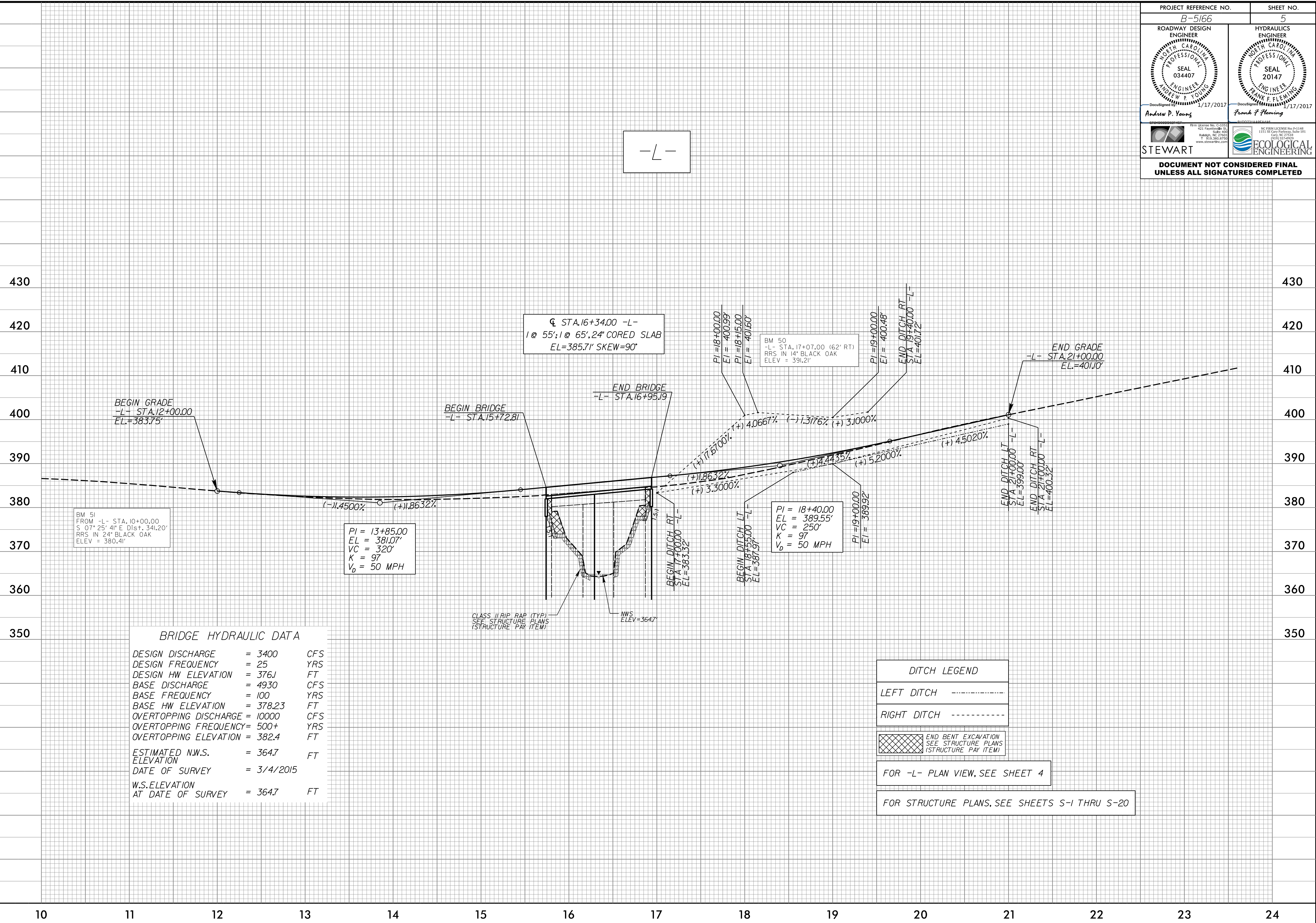
REVISIONS

8/17/99

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5/28/99

REVISIONS



BM 51
FROM -L- STA. 10+00.00
S 07° 25' 41" E Dist. 341.20'
RRS IN 24" BLACK OAK
ELEV = 380.41'

PI = 13+85.00
EL = 381.07'
VC = 320'
K = 97
V₀ = 50 MPH

CL STA. 16+34.00 -L-
1 @ 55'; 1 @ 65', 2" CORED SLAB
EL=385.71' SKEW=90°

PI = 18+00.00
EI = 400.99'
PI = 18+15.00
EI = 401.60'

BM 50
-L- STA. 17+07.00 (62' RT)
RRS IN 14" BLACK OAK
ELEV = 391.21'

PI = 19+00.00
EI = 400.48'
END DITCH RT
STA 19+40.00 -L-
EL=401.72'

END GRADE
-L- STA. 21+00.00
EL=401.10'

END DITCH LT
STA 21+00.00
EL=399.00'

END DITCH RT
STA 21+00.00
EL=400.32'

PI = 18+40.00
EL = 389.55'
VC = 250'
K = 97
V₀ = 50 MPH

PI = 19+00.00
EI = 389.92'

CLASS II RIP RAP (TYP)
SEE STRUCTURE PLANS
(STRUCTURE PAY ITEM)

NWS
ELEV=364.7

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 3400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 376.1	FT
BASE DISCHARGE	= 4930	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 378.23	FT
OVERTOPPING DISCHARGE	= 10000	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 382.4	FT
ESTIMATED N.W.S. ELEVATION	= 364.7	FT
DATE OF SURVEY	= 3/4/2015	
W.S. ELEVATION AT DATE OF SURVEY	= 364.7	FT

DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----
END BENT EXCAVATION	XXXXXX
SEE STRUCTURE PLANS	
(STRUCTURE PAY ITEM)	

FOR -L- PLAN VIEW, SEE SHEET 4

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-20

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