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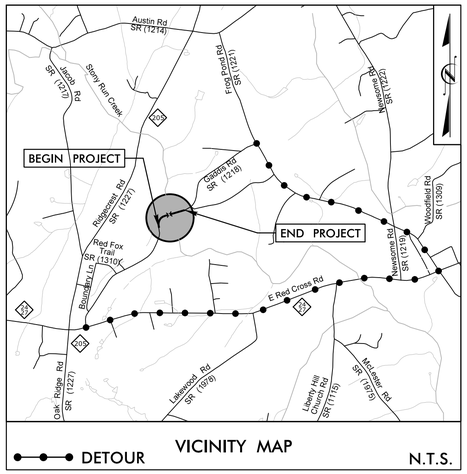
PROJECT WBS: 17BP.10.R.87

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



FINAL PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

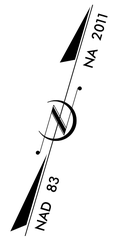
STANLY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.R.87	1	

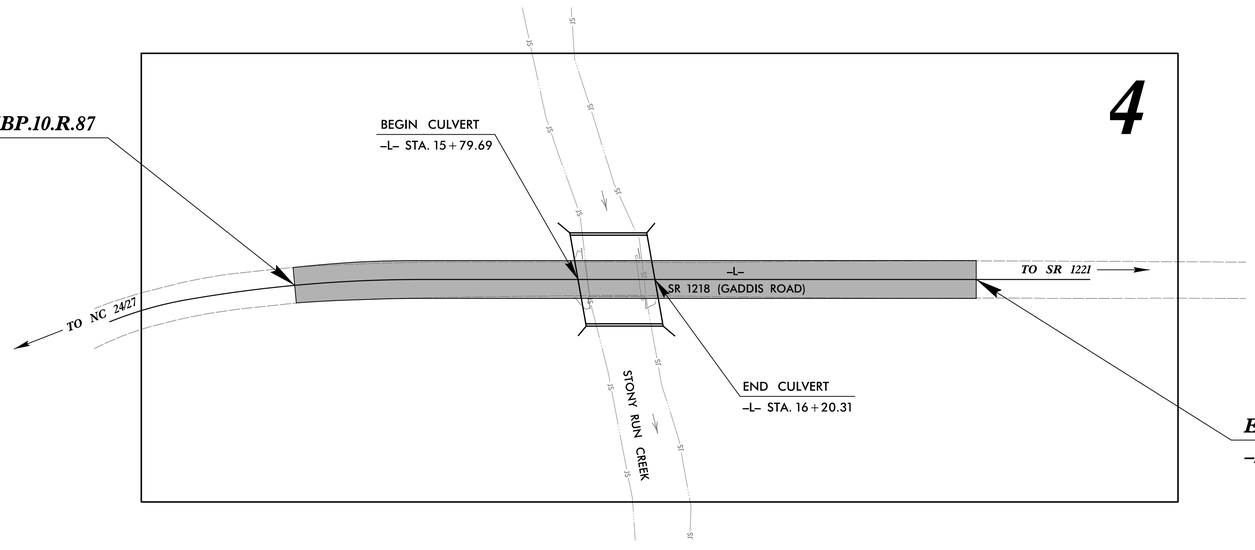
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.10.R.87		P.E.
17BP.10.R.87		R/W & UTILITIES
17BP.10.R.87		CONSTRUCTION

LOCATION: BRIDGE #156 OVER STONY RUN CREEK ON SR 1218 (GADDIS RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



BEGIN PROJECT WBS 17BP.10.R.87
–L– STA. 14+30.00



4

END PROJECT WBS 17BP.10.R.87
–L– STA. 17+90.00

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GRAPHIC SCALES

PLANS: 20 10 0 20 40

PROFILE (HORIZONTAL): 20 10 0 20 40

PROFILE (VERTICAL): 4 2 0 4 8

DESIGN DATA

ADT 2012 = 250
ADT 2025 = 500
DHV = N/A
D = N/A
T = 6%
V = 45 MPH

FUNC. CLASSIFICATION: LOCAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT WBS 17BP.10.R.87 = 0.060 MILES

LENGTH OF STRUCTURE PROJECT WBS 17BP.10.R.87 = 0.008 MILES

TOTAL LENGTH OF PROJECT WBS 17BP.10.R.87 = 0.068 MILES

NCDOT CONTACT: GARLAND HAYWOOD, PE
Division Bridge Manager

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 18, 2016

LETTING DATE:
JUNE 21, 2017

NIKKI T. HONEYCUTT, PE
PROJECT ENGINEER

MAAMOON K. ABDELAZIZ
PROJECT DESIGNER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 029388 ENGINEER EDWARD J. VANCE P.E.

DocuSigned by: Edward J. Vance
SIGNATURE: 5/16/2017

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER NIKKI T. HONEYCUTT P.E.

DocuSigned by: Nikki T. Honeycutt
SIGNATURE: 5/15/2017

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

5/15/2017
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STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 JOHNNY T. HONEYCUTT
5/15/2017

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
3	SUMMARIES AND TYPICAL SECTION SHEET
4	PLAN AND PROFILE SHEET
TMP-1	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1 THRU X-3	CROSS-SECTIONS
C-1 THRU C-5	CULVERT PLANS

GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-01-2012

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 II.

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.

RIGHT-OF-WAY MARKERS:

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

STANDARD DRAWINGS

2012 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2012

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.03	Temporary Road Closures
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance
1145.01	Barricades - Type III
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	Temporary Silt Fence
1607.01	Gravel Construction Entrance
1630.04	Stilling Basin For Pumped Effluent
1630.06	Special Stilling Basin
1631.01	Matting Installation
1633.01	Temporary Rock Silt Check Type A

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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

***S.U.E. = Subsurface Utility Engineering**

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	3

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 ENGINEER MICHAEL T. HONEYCUTT
5/15/2017

PAVEMENT DESIGN ENGINEER

PAVEMENT DESIGN PROVIDED BY NCDOT

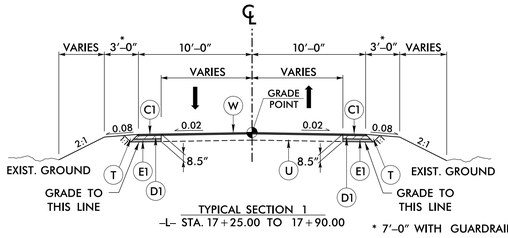
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EARTHWORK SUMMARY (IN CUBIC YARDS)

CHAIN	FROM STATION	TO STATION	SIDE	UNCL. EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
–L–	14+30.00	17+90.00	LT & RT	8		190	182	
TOTAL				8		190	182	
LOSS DUE TO CLEARING AND GRUBBING							106	
PROJECT TOTAL				8		190	288	
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS							14	
GRAND TOTAL				8		190	302	
SAY							350	

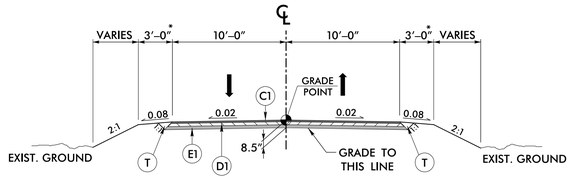
NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DRAINAGE DITCH EXCAVATION = 110 C.Y.



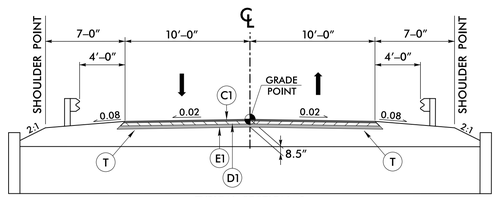
TYPICAL SECTION 1
–L– STA. 17+25.00 TO 17+90.00

* 7'–0" WITH GUARDRAIL

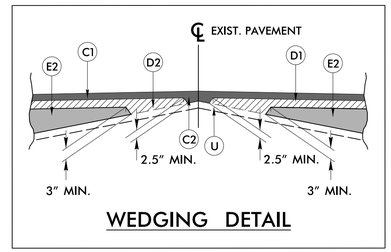


TYPICAL SECTION 2
–L– STA. 14+30.00 TO 15+79.69 (BEGIN CULVERT)
–L– STA. 16+20.31 (END CULVERT) TO 17+25.00

* 7'–0" WITH GUARDRAIL



TYPICAL SECTION 3
–L– STA. 15+79.69 (BEGIN CULVERT) TO 16+20.31 (END CULVERT)



WEDGING DETAIL

ALL PAVEMENT SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.0" IN DEPTH.
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 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 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3.0" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PAVEMENT WEDGING

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W*: APPROACH END	W*: TRAILING END	ANCHORS: XI MOD	ANCHORS: B–77	ANCHORS: GRAU 350	ANCHORS: M–350	ANCHORS: TYPE III	ANCHORS: CAT–1	ANCHORS: VI MOD	ANCHORS: BIC	ANCHORS: AT–1	IMPACT ATTENUATOR TYPE 350: EA	IMPACT ATTENUATOR TYPE 350: G	IMPACT ATTENUATOR TYPE 350: NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	14+97.27	16+97.25	LT	200.00			16+15.97	15+75.35	4.0 – 5.0	7.0 – 8.0	50.0	50.0	1.0	1.0			2													
–L–	15+02.75	17+02.73	RT	200.00			15+84.03	16+24.65	4.0 – 5.0	7.0 – 8.0	50.0	50.0	1.0	1.0			2													
TOTAL:				400.00													4													
TOTAL ANCHOR LENGTH:				200.00																										
TOTAL GUARDRAIL LENGTH:				200.00																										
SAY:				200.00																										

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PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	4

RW SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

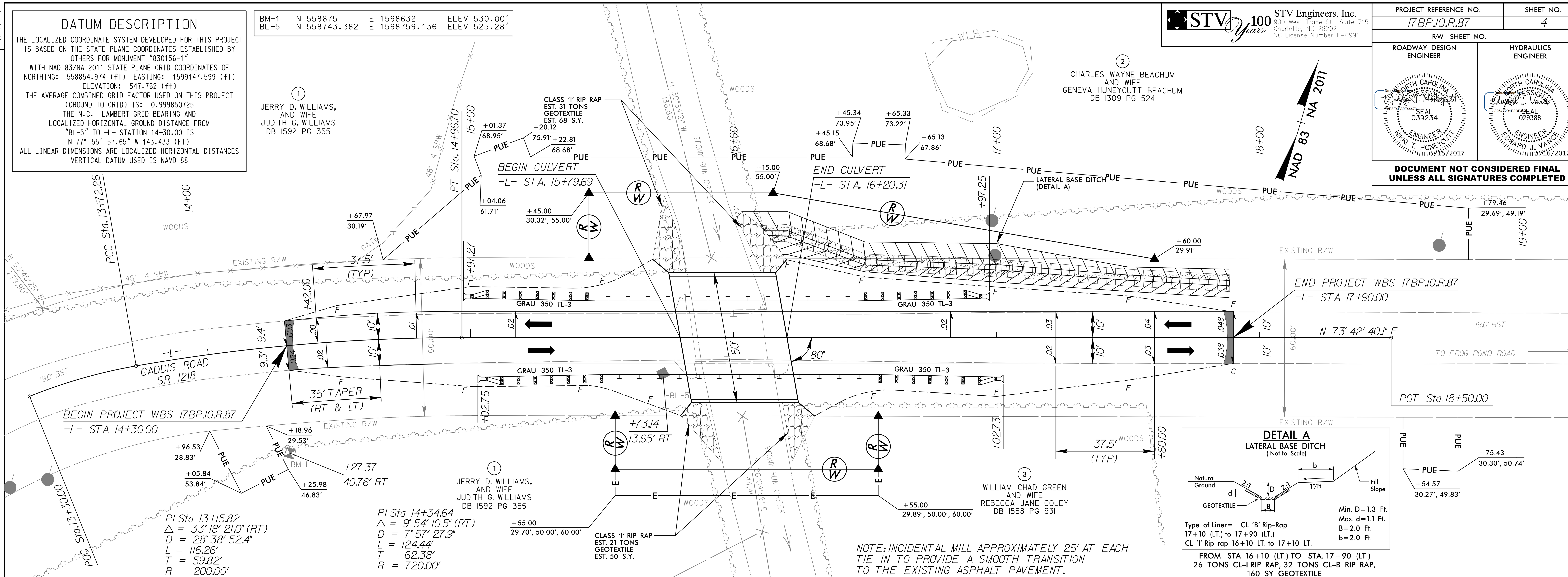
STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

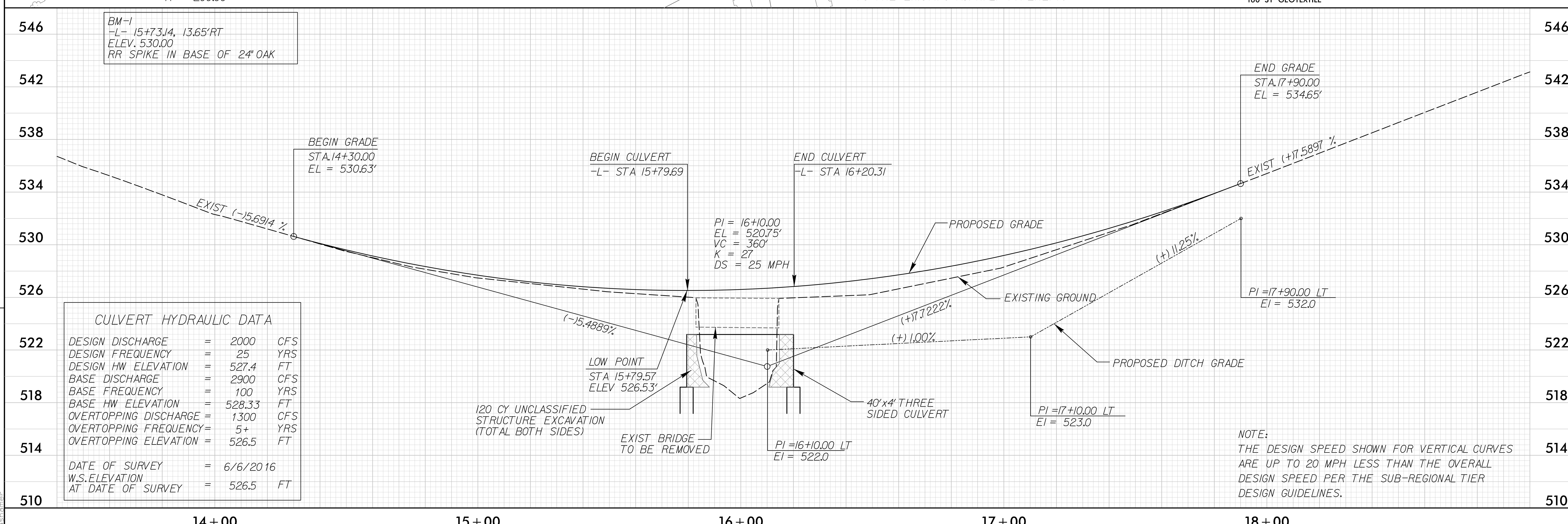
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "830156-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 558854.974 (ft) EASTING: 1599147.599 (ft)
ELEVATION: 547.762 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999850725
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-5" TO -L- STATION 14+30.00 IS
N 77° 55' 57.65" W 143.433 (FT)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BM-1	N 558675	E 1598632	ELEV 530.00'
BL-5	N 558743.382	E 1598759.136	ELEV 525.28'



BM-1
-L- 15+73.14, 13.65' RT
ELEV. 530.00
RR SPIKE IN BASE OF 24" OAK



CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	2000	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	527.4	FT
BASE DISCHARGE	=	2900	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	528.33	FT
OVERTOPPING DISCHARGE	=	1300	CFS
OVERTOPPING FREQUENCY	=	5+	YRS
OVERTOPPING ELEVATION	=	526.5	FT
DATE OF SURVEY		6/6/2016	
W.S.ELEVATION AT DATE OF SURVEY	=	526.5	FT

NOTE:
THE DESIGN SPEED SHOWN FOR VERTICAL CURVES ARE UP TO 20 MPH LESS THAN THE OVERALL DESIGN SPEED PER THE SUB-REGIONAL TIER DESIGN GUIDELINES.

REVISIONS

04/20/2017 - R/W REVISION (ERW) - PUE AT 14+18.96 WAS ADJUSTED TO TOUCH EXISTING ROW & CALLOUT CORRECTED FOR PUE AT 18+75.43

OFF-SITE DETOUR SIGNING AND ROAD CLOSURE SIGNING

PROJECT REFERENCE NO.	SHEET NO.
17BPJ0.R.87	TMP-1
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

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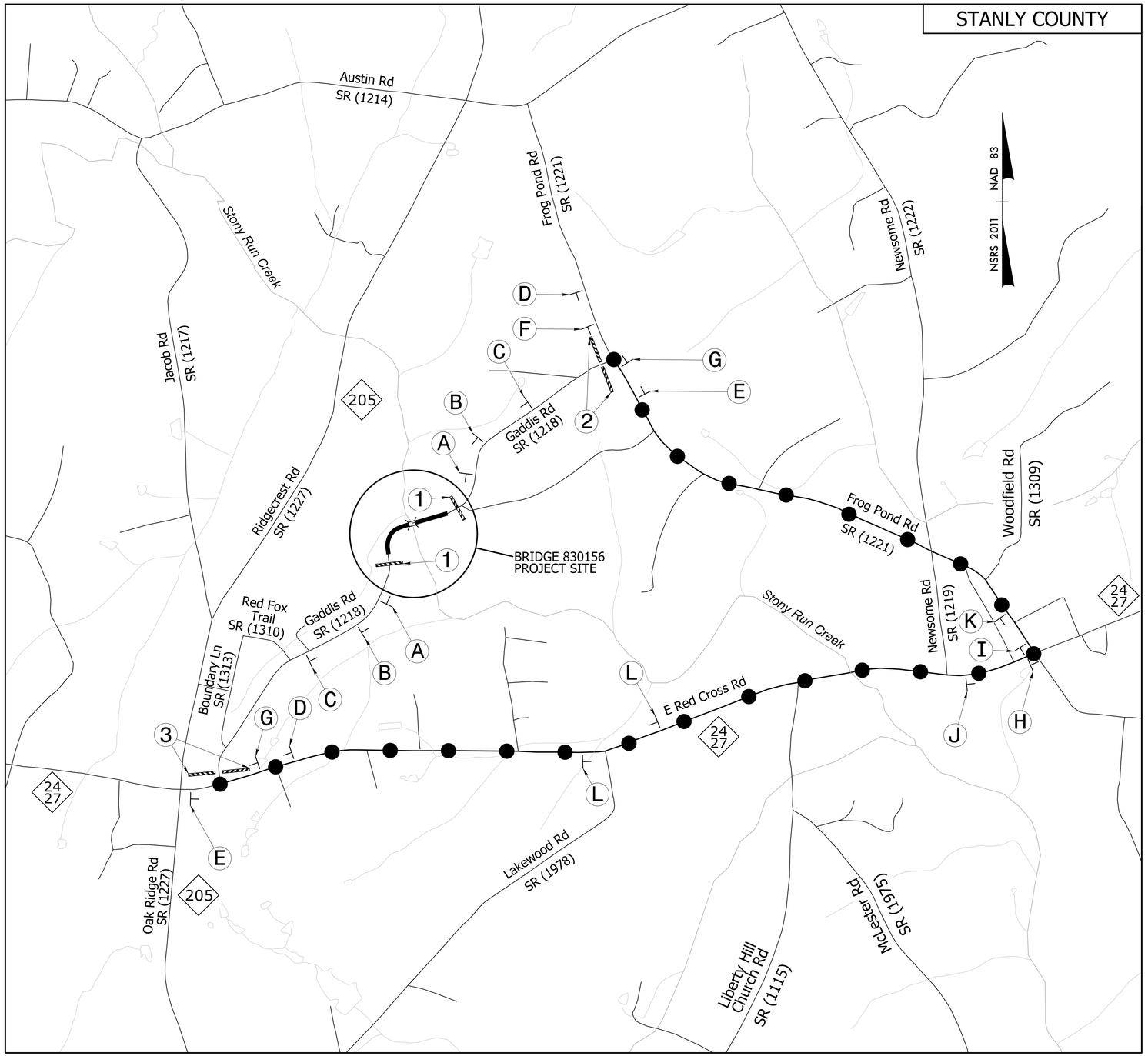
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 039234 NIKKI T HONG-VOUIT
6/15/2017



R11-2
48" X 30"
ROAD CLOSED
TYPE III BARRICADE(S)
1

R11-3
60" x 30"
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10L
48" x 18"
TYPE III BARRICADE
2

R11-3
60" x 30"
ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10R
48" x 18"
TYPE III BARRICADE
3

ROAD CLOSED 500 FT
W20-3
48" X 48"
A

ROAD CLOSED 1000 FT
W20-3
48" X 48"
B

ROAD CLOSED AHEAD
W20-3
48" X 48"
C

ROAD CLOSED AHEAD
W20-3
48" X 48"
NEXT RIGHT
SP-4R
42" X 12"
D

ROAD CLOSED AHEAD
W20-3
48" X 48"
NEXT LEFT
SP-4L
42" X 12"
E

Gaddis Rd
DETOUR AHEAD
W20-2
48" X 48"
F

Gaddis Rd
END DETOUR
M4-8 A
24" X 18"
G

Gaddis Rd
DETOUR
M4-8
24" X 12"
M6-1 L
21" X 15"
H

Gaddis Rd
DETOUR
M4-8
24" X 12"
M6-1 R
21" X 15"
I

Gaddis Rd
DETOUR
M4-8
24" X 12"
M5-1 L
21" X 15"
J

Gaddis Rd
DETOUR
M4-8
24" X 12"
M5-1 R
21" X 15"
K

Gaddis Rd
DETOUR
M4-8
24" X 12"
M6-3
21" X 15"
L

SEE ROADWAY STD DWG 1101.03, SHEET 1 OF 9 FOR ADVANCE WARNING AND BARRICADE PLACEMENT.

800 400 0 800 1600
Scale: 1" = 800'

5/15/2017
r:\Traffic\TrafficControl\TCP\17BPJ0R87_rdy_tmp01.dgn
wdshamer

WBS: 17BP.10.R.87

PROJECT NO.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17.BP.10.R.87	EC-1	8

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.10.R.87		P.E.
17BP.10.R.87		R/W & UTILITIES
17BP.10.R.87		CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

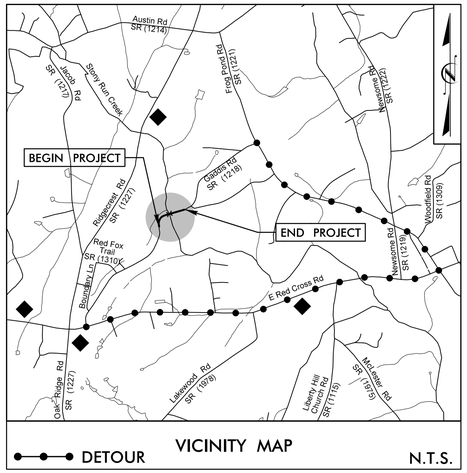
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

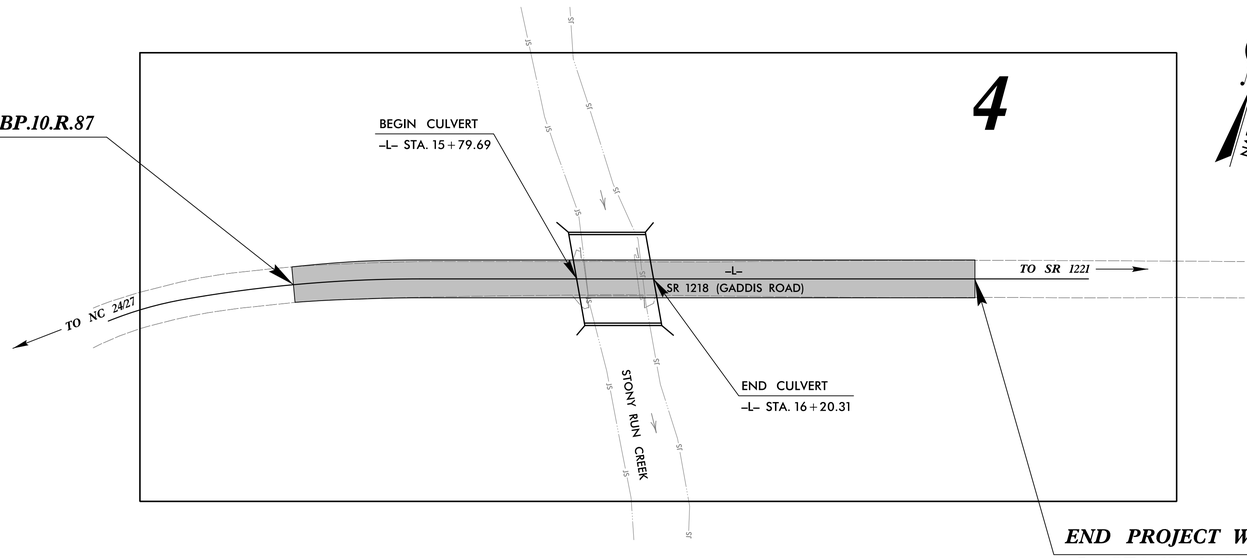
STANLY COUNTY

LOCATION: BRIDGE #156 OVER STONY RUN CREEK ON SR 1218 (GADDIS RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE

EROSION CONTROL PLANS





BEGIN PROJECT WBS 17BP.10.R.87
–L– STA. 14+30.00

END PROJECT WBS 17BP.10.R.87
–L– STA. 17+90.00

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	

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

GRAPHIC SCALE

10 0 20
PLANS

10 0 20
PROFILE (HORIZONTAL)

2 0 4
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:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2012 STANDARD SPECIFICATIONS

Designed by:

DAVIN MORRISON, P.E. ***3126***
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:

WES CHANDLER, E.I.

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		

5/15/2017
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PSHtsh

PROJECT REFERENCE NO.	SHEET NO.
17.BPJ0.R.87	EC-2
R/W SHEET NO.	

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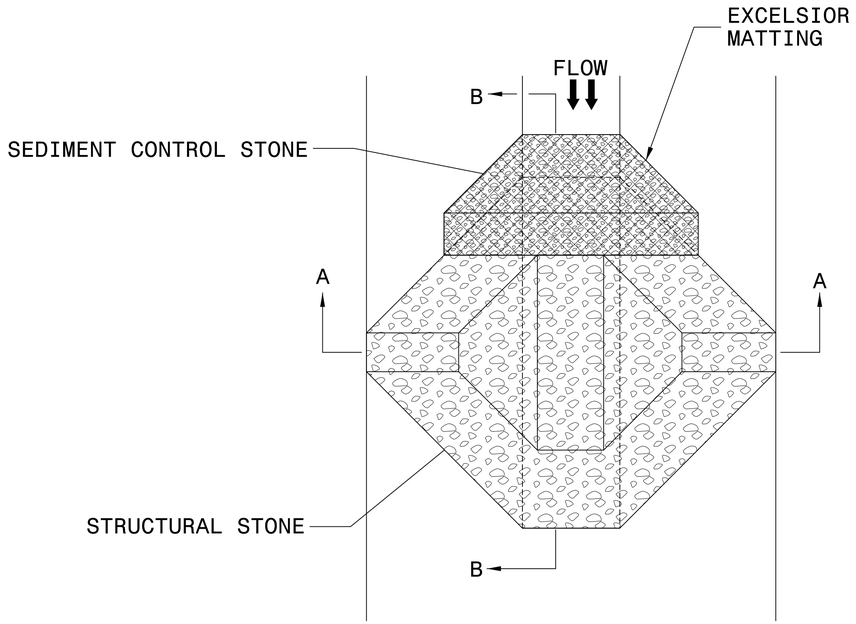
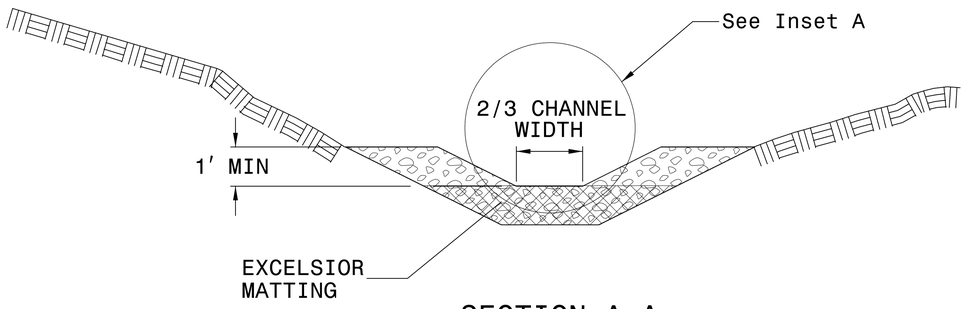
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

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



PLAN



SECTION A-A

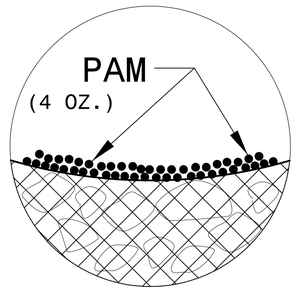
NOTES:

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

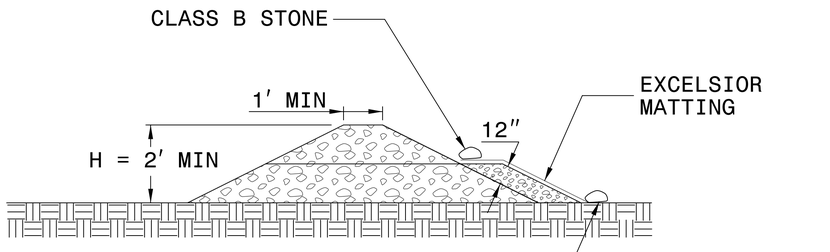
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BPJ0.R.87	EC-3
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	14+30	15+80	LT	85
4	-L-	16+20	17+90	LT	95
4	-L-	16+20	17+90	RT	95
			SUBTOTAL		275
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					725
				TOTAL	1000
				SAY	1000

PERMANENT SOIL REINFORCEMENT MATTING

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	GEO FOR DRAINAGE ESTIMATE (SY)

5/15/2017 R:\Hydraulics\CADD\PSHVEC\17BPJ0R87_hyd_psh_EC03.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BPJ0.R.87	EC-3A
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

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.

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity. Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

5/15/2017 R:\Hydraulics\CADD\PSHE\DV7BPJ0R87_hyd_psh_EC03A.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	EC-4/CONST.4
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

BRIDGE #830156

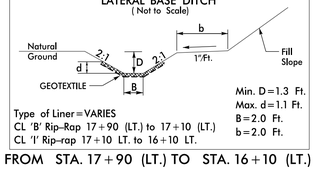
SCALE: 1"=20'

NAD 83 NA 2011

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

DETAIL A
LATERAL BASE DITCH
(Not to Scale)

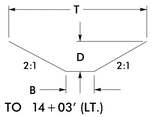


Type of Liner=VARIES
CL 'B' Rip-Rap 17+90 (LT.) to 17+10 (LT.)
CL 'I' Rip-rap 17+10 LT. to 16+10 LT.

FROM STA. 17+90 (LT.) TO STA. 16+10 (LT.)

EXIST. TYPICAL DITCH SECTION

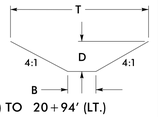
D=1.0'
B=0.0'
T=4.0'
GRASS LINED
STABLE
WELL VEGETATED



STA. 10+00' (LT.) TO 14+03' (LT.)

EXIST. TYPICAL DITCH SECTION

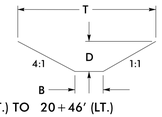
D=1.0'
B=0.0'
T=10.0'
GRASS LINED
STABLE
WELL VEGETATED



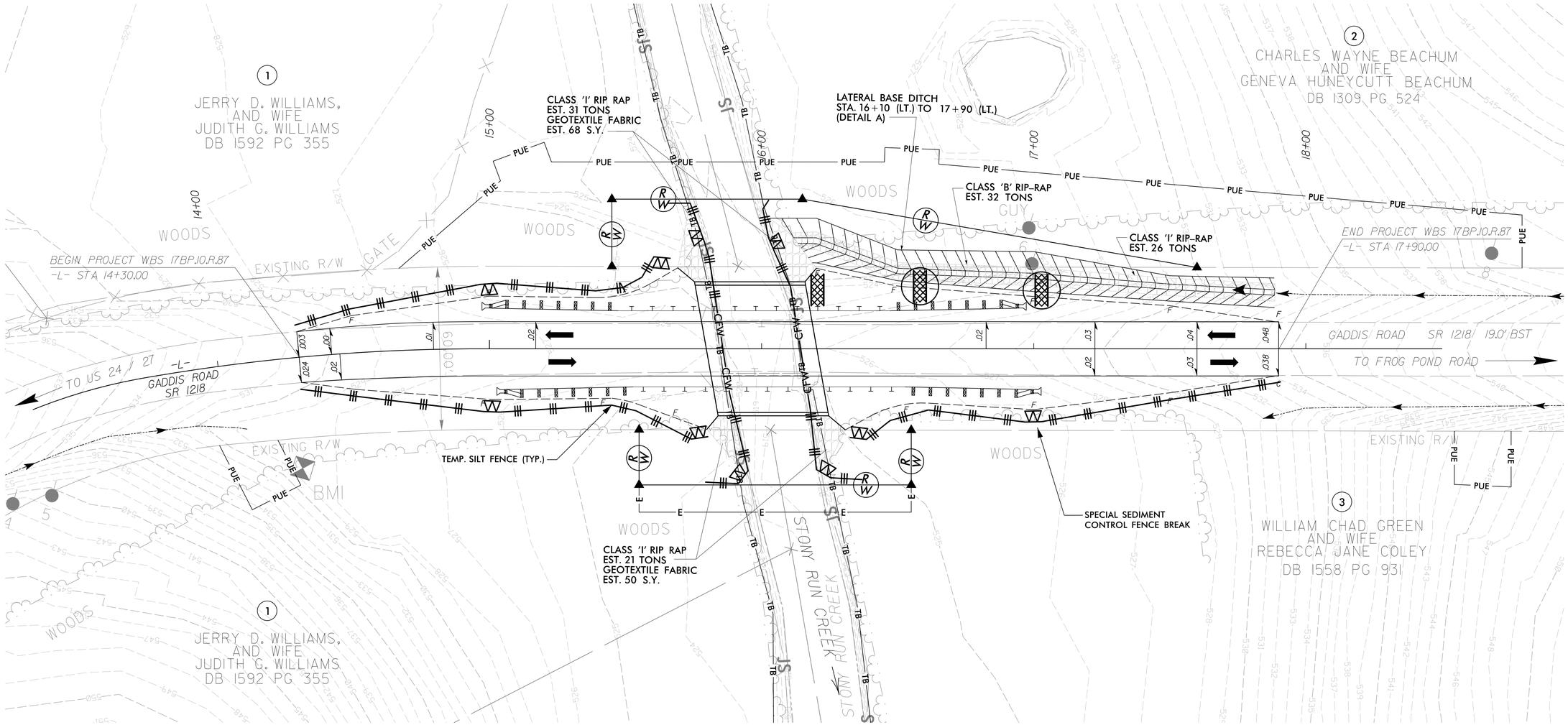
STA. 17+88' (LT.) TO 20+94' (LT.)

EXIST. TYPICAL DITCH SECTION

D=1.5'
B=0.0'
T=5.0'
GRASS LINED
STABLE
WELL VEGETATED



STA. 17+84' (LT.) TO 20+46' (LT.)



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

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

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

R:\Hydraulics\CADD\PSH\ECV7BP10R87_hyd_psh_EC04.dgn

5/15/2017

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	EC-5/CONST.4
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

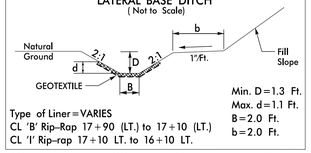
BRIDGE #830156

SCALE: 1"=20'

NAD 83 / NA 2011

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

DETAIL A
LATERAL BASE DITCH
(Not to Scale)

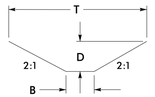


Min. D = 1.3 Ft.
Max. d = 1.1 Ft.
B = 2.0 Ft.
b = 2.0 Ft.

Type of Liner = VARIES
CL 'B' Rip-Rap 17+90 (LT.) to 17+10 (LT.)
CL 'I' Rip-rap 17+10 LT. to 16+10 LT.

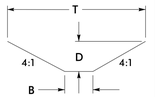
FROM STA. 17+90 (LT.) TO STA. 16+10 (LT.)

EXIST. TYPICAL DITCH SECTION
D = 1.0'
B = 0.0'
T = 4.0'
GRASS LINED
STABLE
WELL VEGETATED



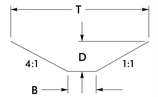
STA. 10+00' (LT.) TO 14+03' (LT.)

EXIST. TYPICAL DITCH SECTION
D = 1.0'
B = 0.0'
T = 10.0'
GRASS LINED
STABLE
WELL VEGETATED

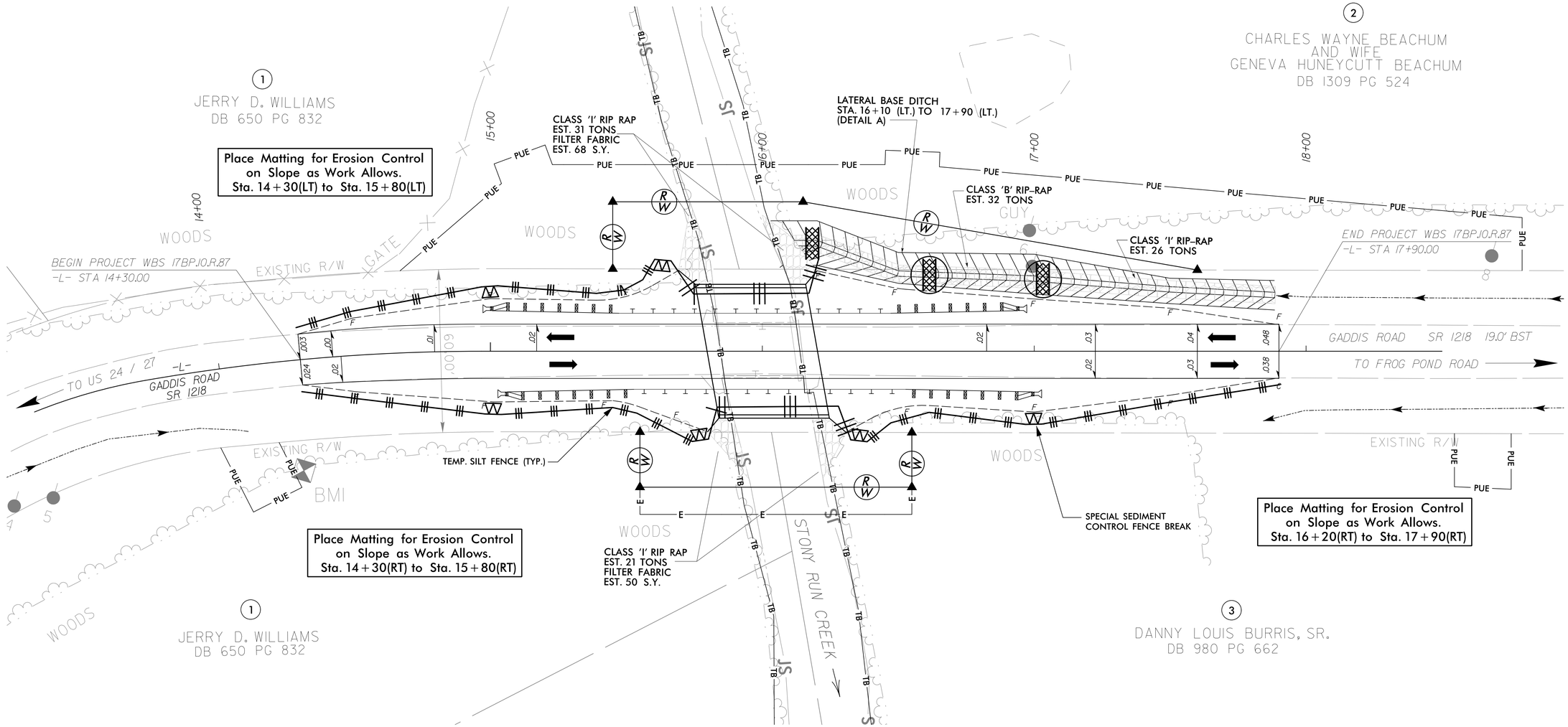


STA. 17+88' (LT.) TO 20+94' (LT.)

EXIST. TYPICAL DITCH SECTION
D = 1.5'
B = 0.0'
T = 5.0'
GRASS LINED
STABLE
WELL VEGETATED



STA. 17+84' (LT.) TO 20+46' (LT.)



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

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

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

R:\Hydraulics\CADD\PSH\ECV17BP10R87_hyd_psh_EC05.dgn

5/15/2017

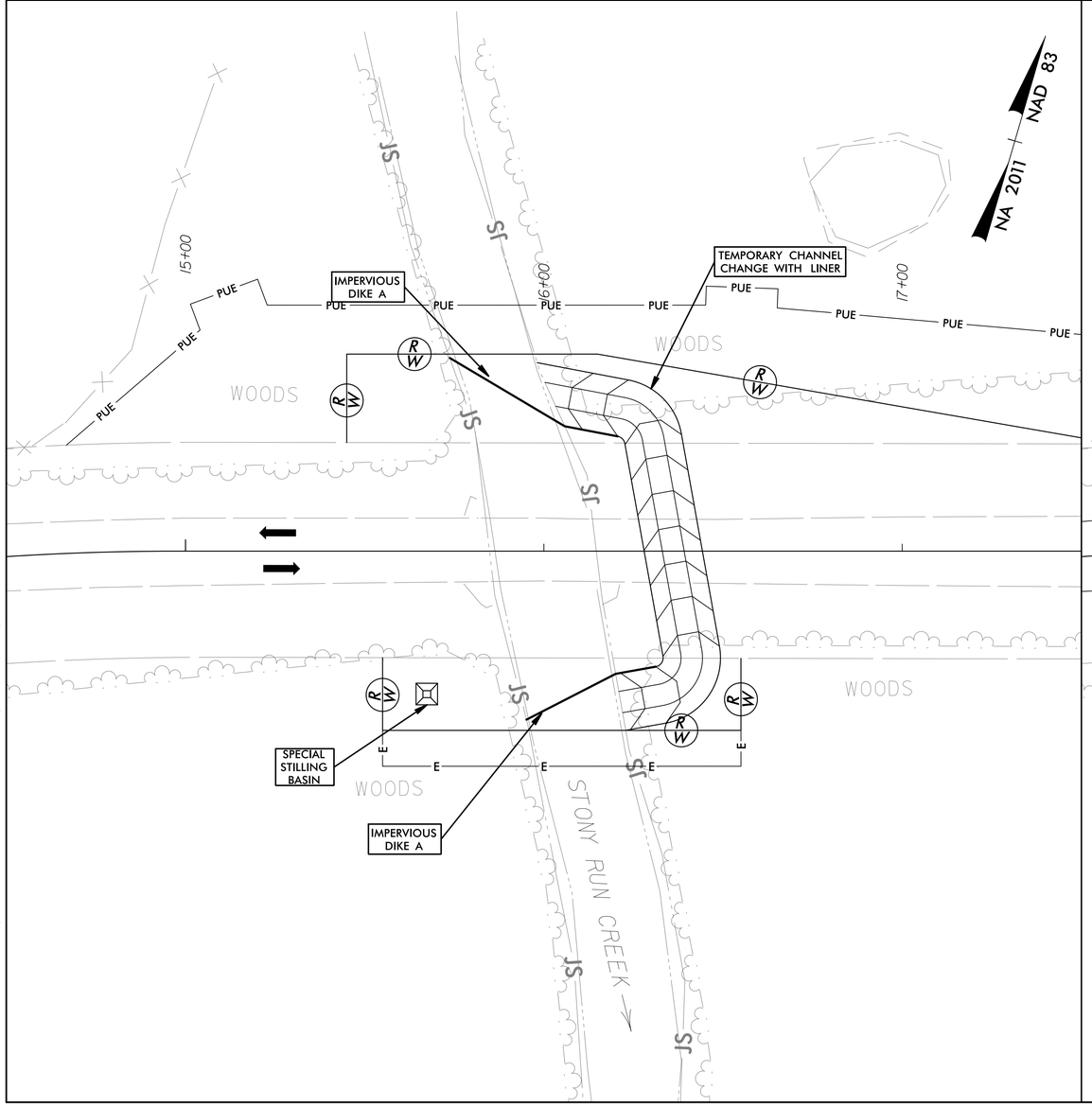
PROJECT REFERENCE NO.	SHEET NO.
17BPJ0.R.87	EC-6/CONST.4
R/W SHEET NO.	

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

CULVERT CONSTRUCTION SEQUENCE STA. 16+00 –L–

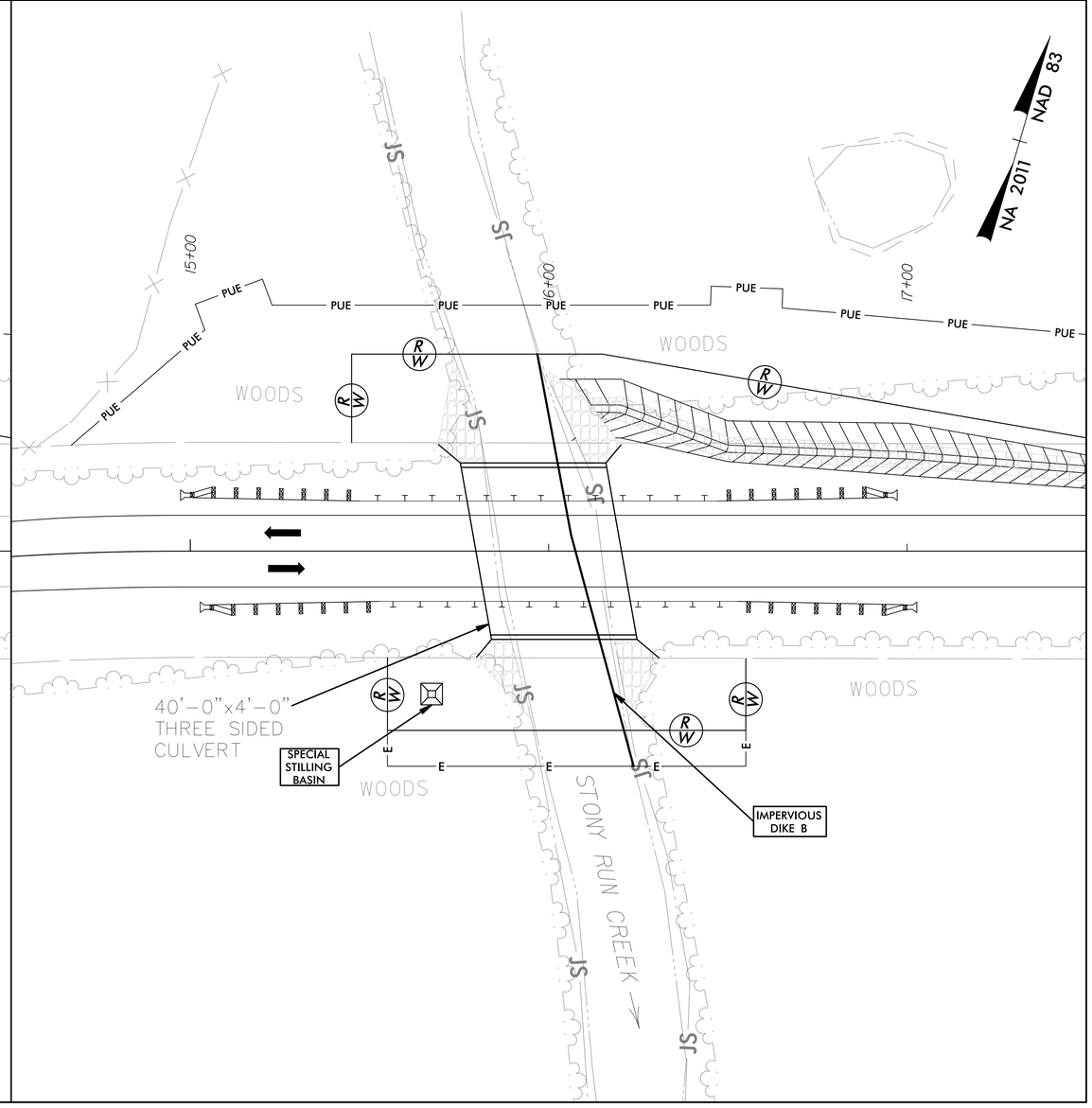
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKES (A) AND TEMP. CHANNEL CHANGE WITH LINER (6 FT BASE, 4 FT DEEP, 2:1 SIDE SLOPE).
3. EXCAVATE AND CONSTRUCT FOOTINGS.
4. CONSTRUCT PROPOSED 40'–0"x4'–0" THREE SIDED CULVERT.
5. CONSTRUCT THE WESTERN WING WALLS FOR THE PROPOSED CULVERT, AND ANY NECESSARY CHANNEL AND FLOODPLAIN IMPROVEMENTS.



PHASE II

6. REMOVE IMPERVIOUS DIKES (A) ALLOWING NORMAL FLOW THROUGH CULVERT, CONSTRUCT IMPERVIOUS DIKE (B)
7. REMOVE TEMPORARY CHANNEL CHANGE, CONSTRUCT THE EASTERN WING WALLS FOR THE PROPOSED CULVERT, AND ANY NECESSARY CHANNEL AND FLOODPLAIN IMPROVEMENTS.
8. COMPLETE DRAINAGE, INCLUDING INLET/OUTLET IMPROVEMENTS.
9. REMOVE IMPERVIOUS DIKE (B) AND ANY REMAINING SPECIAL STILLING BASIN(S), AND COMPLETE ROADWAY.



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5/15/2017

PROJECT WBS: 17BP.10.R.87

CONTRACT:

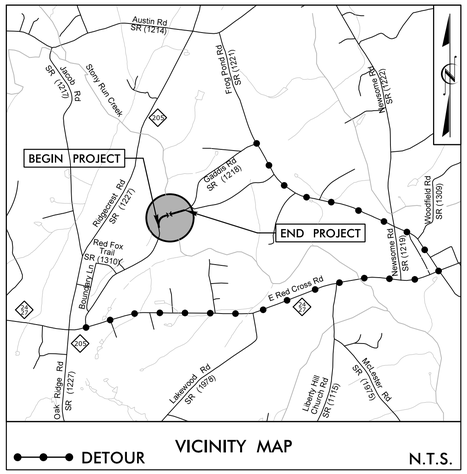
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
17BP.10.R.87	UO–1

UTILITIES BY OTHERS PLANS
STANLY COUNTY

LOCATION: BRIDGE #156 OVER STONY RUN CREEK ON SR 1218 (GADDIS RD)

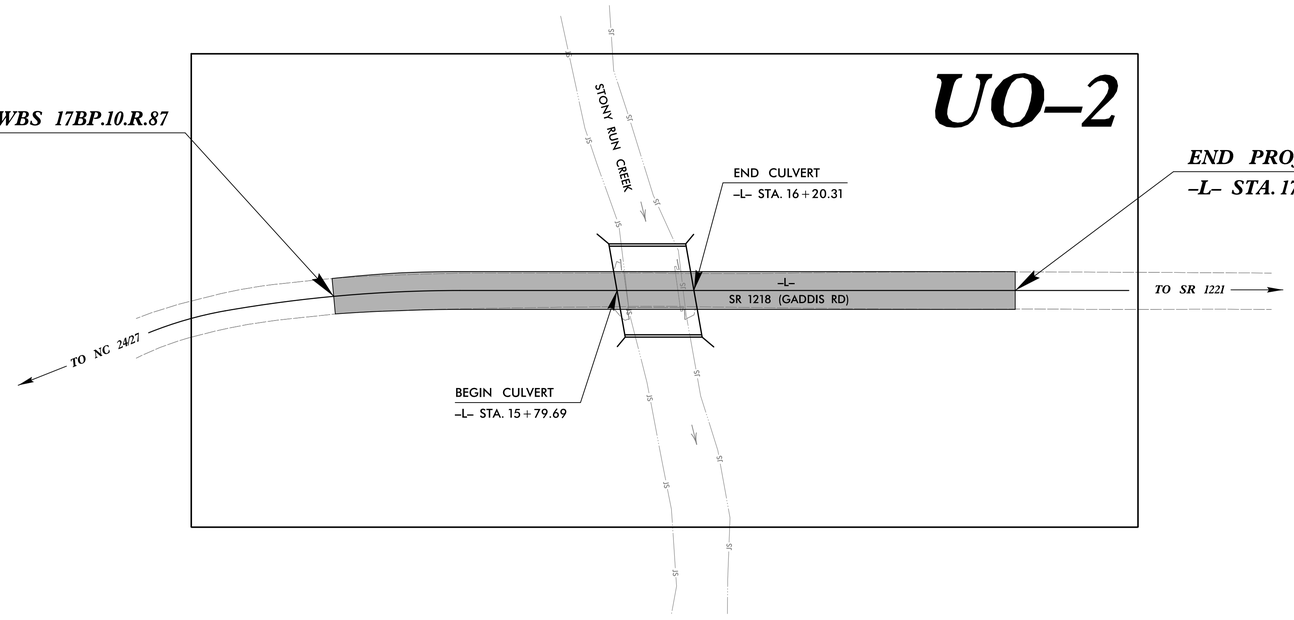
TYPE OF WORK: AERIAL POWER



UO–2

BEGIN PROJECT WBS 17BP.10.R.87
–L– STA. 14+30.00

END PROJECT WBS 17BP.10.R.87
–L– STA. 17+90.00



GRAPHIC SCALES

20 10 0 20 40
PLANS

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) POWER – UNION POWER COOPERATIVE

V&M
Vaughn & Melton
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488
NC License Number: F-1088

PREPARED FOR THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699–1591
PHONE (919) 250–4128
FAX (919) 250–4119

UTILITIES SECTION ENGINEER

UTILITIES SQUAD LEADER PROJECT ENGINEER

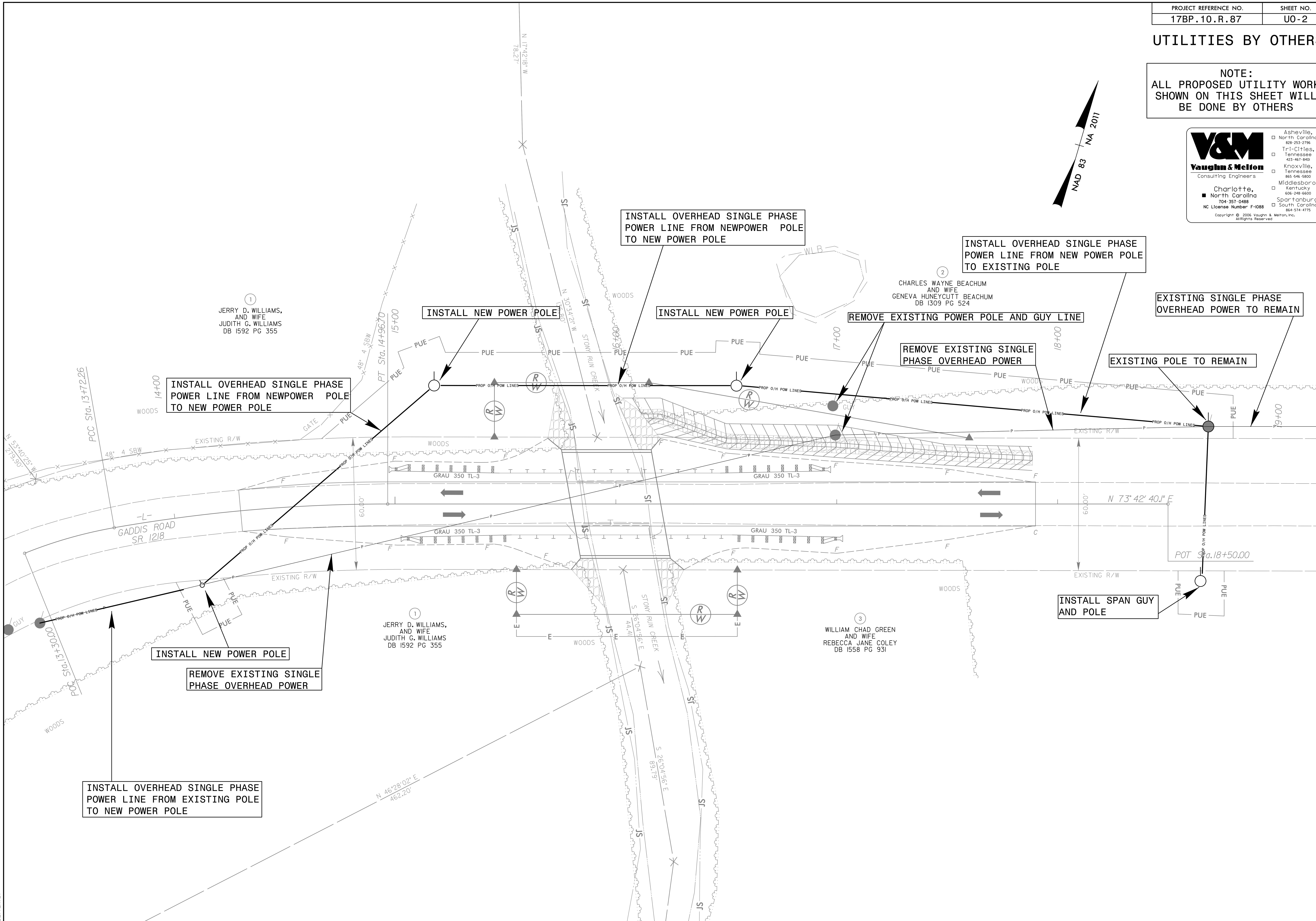
Reece Schuler, PE — *UTILITIES PROJECT DESIGNER*

5/15/2017
r:\Utilities\UBO Plans\17BP10R87_utl_UO1.dgn
washamer

PROJECT REFERENCE NO.	SHEET NO.
17BP.10.R.87	UO-2

UTILITIES BY OTHERS

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



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Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

5/15/2017 r:\Utilities\UBO Plans\17BP10R87_utl_U02.dgn washamer

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.10.R.87	X-1

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

530 525 520

526.69

2:1 EP 0.020 0.020 EP 2:1

526.42

15+50

535 530 525

527.69

2:1 EP 0.015 0.020 EP 2:1

527.48

15+00

535 530 525

529.61

2:1 EP 0.003 0.020 EP 2:1

529.49

14+50

535 530 525

EP 0.003 0.024 EP

530.63

14+30

BEGIN PROJECT

535 530 525

532.30

14+00

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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

5/15/2017
R:\Roadway\Xsc\17BP10R87_rdy_xpll.dgn
wshomer

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.10.R.87	X-2

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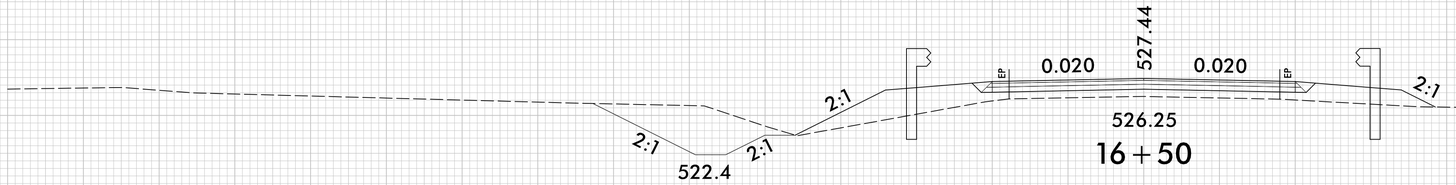
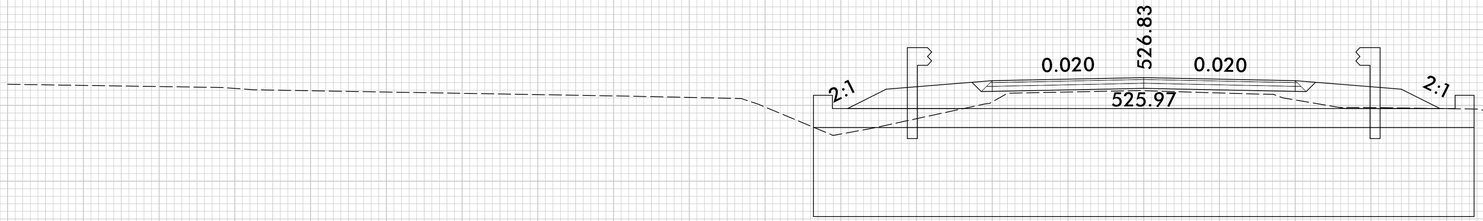


16 + 50



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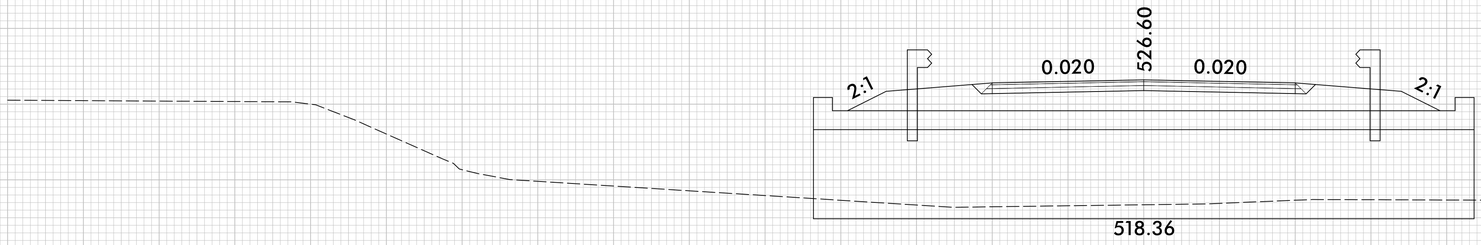
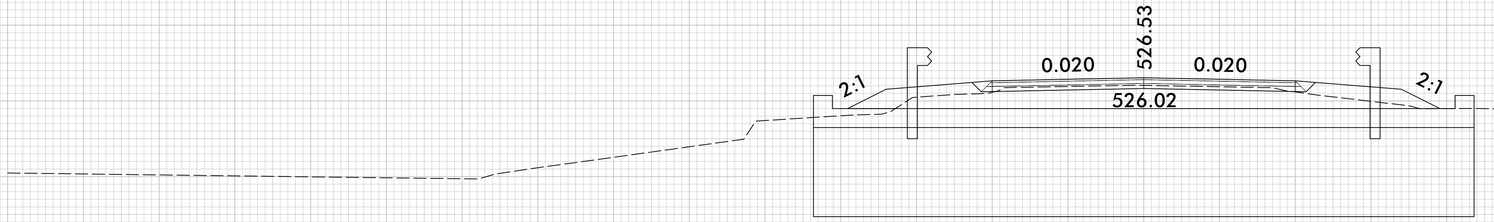


16 + 00



15 + 79.69
BEGIN CULVERT

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washingp

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	17BP.10.R.87	X-3

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

540
535
530

EP EP

535.41

18 + 00

535
530
525

EP 0.048 0.038 EP

534.65

17 + 90

END PROJECT

535
530
525

531.85

0.038 0.028

EP EP

2:1 2:1

531.61

2:1 2:1

527.5

17 + 50

535
530
525

529.19

0.025 0.020

EP EP

2:1 2:1

528.30

2:1 2:1

522.9

17 + 00

535
530
525
520

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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R:\Projects\dwg\Xsc\17BP10R87_rdy_xpl.L.dgn
wshomer