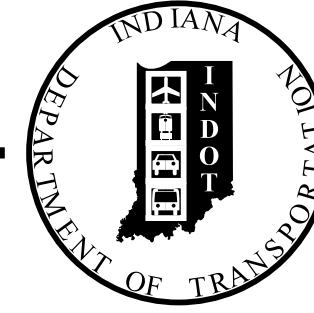


PROJECT	DESIGNATION
1801013	1801013
CONTRACT	BRIDGE FILE NO.
B-41448	

INDIANA DEPARTMENT OF TRANSPORTATION



SMALL STRUCTURE PLANS

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
CV 250-078-55.80	RC Box Culvert	1 Span @ 6'-0" Skew: 0°	South Fork Laughery Creek	16+95 "PR-A"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
1800269	Small Structure Replacement on SR 250, 4.37 mi E. of SR 129
1500551	Bridge Superstructure Replacement on SR 250 over Indian Creek, 2.94 mi. E. of SR 129

TRAFFIC DATA		
A.A.D.T. (2023)		1,036 V.P.D.
A.A.D.T. (2043)		1,108 V.P.D.
D.H.V (2043)		121 V.P.H.
DIRECTIONAL DISTRIBUTION		49.75 %
TRUCKS		7.88 % A.A.D.T. 10.91 % D.H.V.

DESIGN DATA	
DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	3R (Non-Freeway)
FUNCTIONAL CLASSIFICATION	Major Collector
RURAL/URBAN	Rural
TERRAIN	Level
ACCESS CONTROL	None

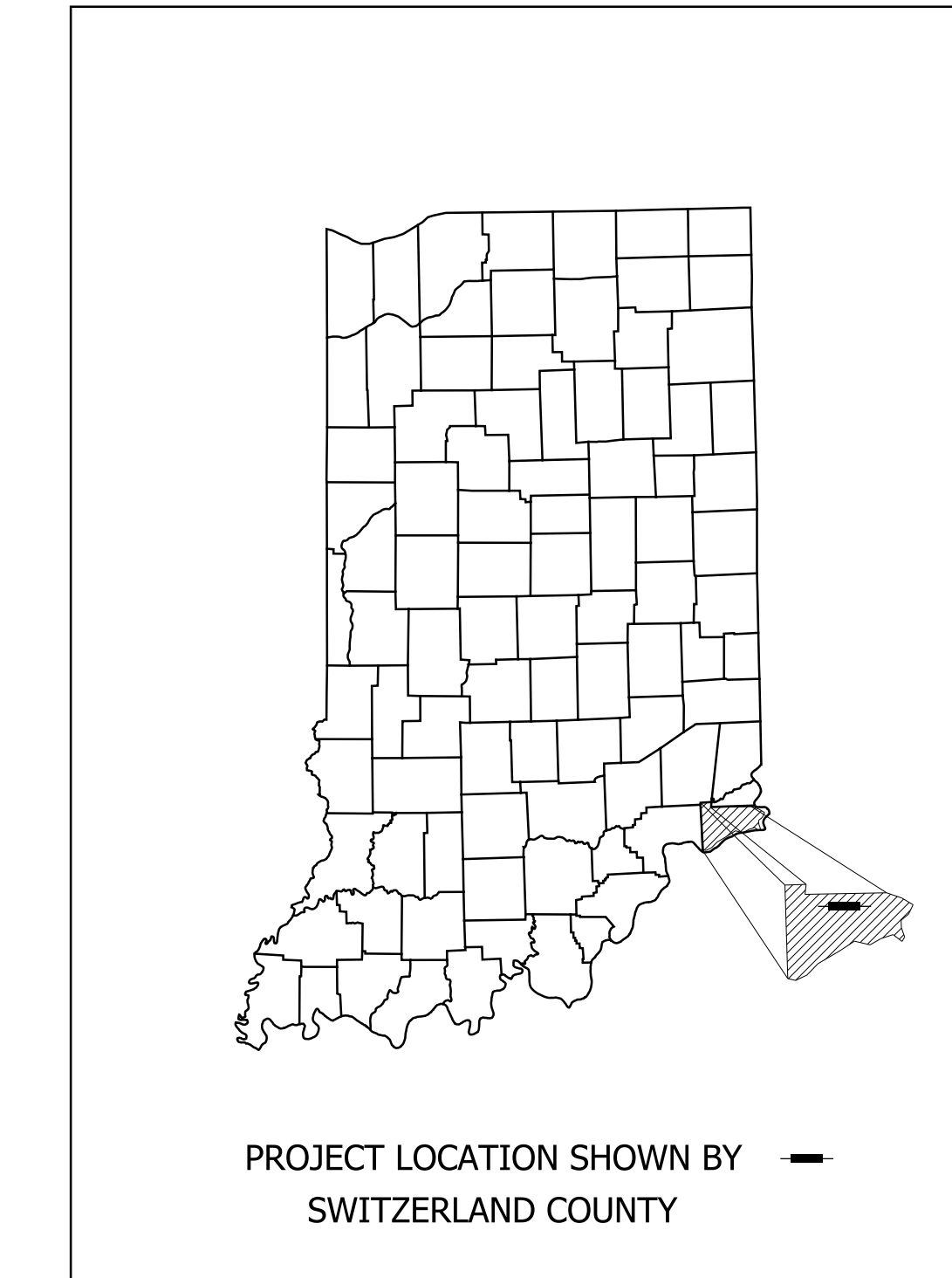
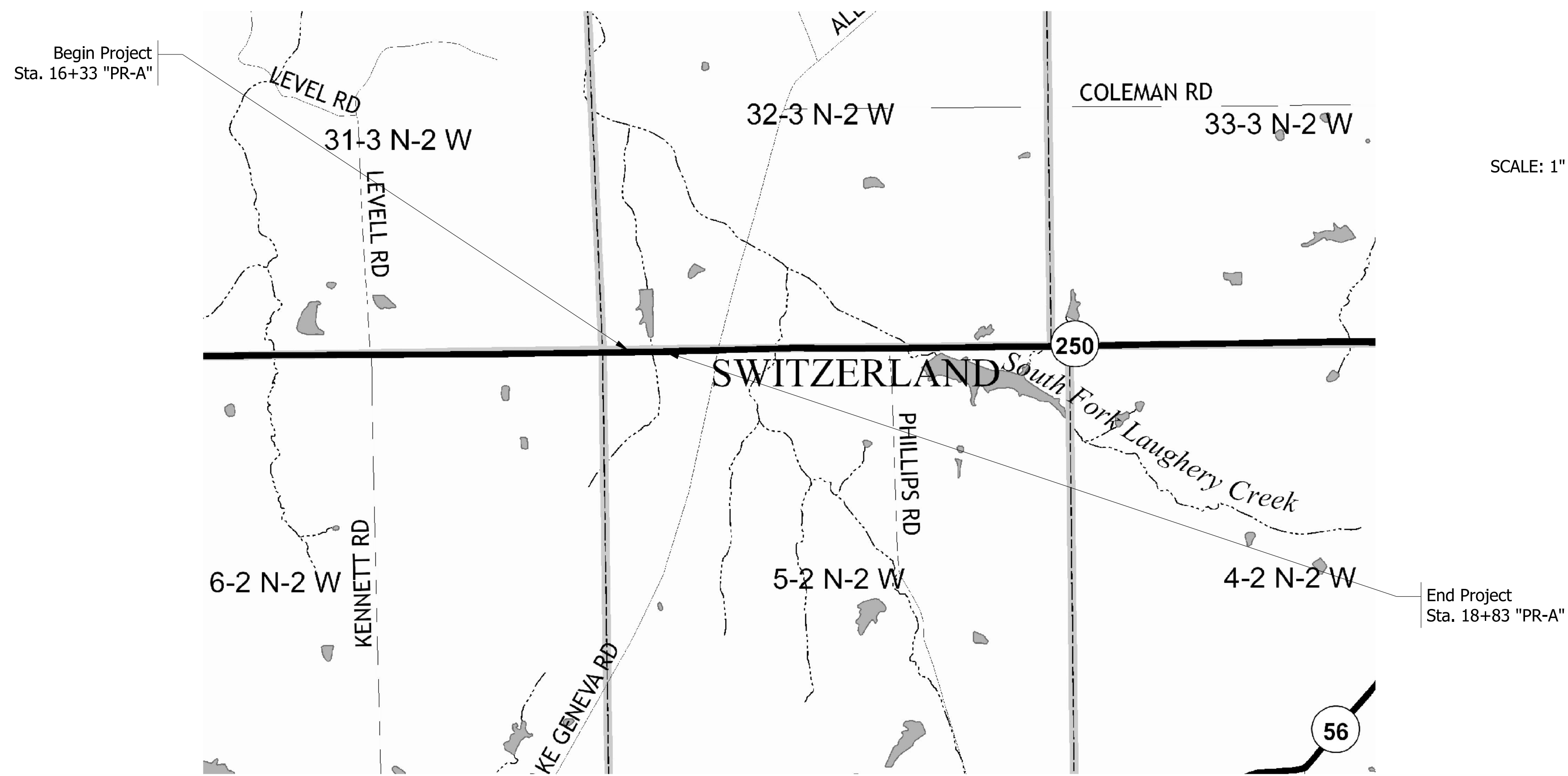
ROUTE: SR 250 AT: RP 55+80

PROJECT NO. 1801013 P.E.

 1801013 R/W

 1801013 CONST.

Small Structure Replacement on SR 250 over UNT South Fork Laughery Creek
 Located 9.11 Miles East of SR 129, at RP 55+80
 Section 32, T-3-N, R-2-W, & Section 5, T-2-N, R-2-W, Cotton Township, Switzerland County



LATITUDE: 38° 52' 23"	LONGITUDE: 85° 01' 22"
BRIDGE LENGTH: N/A	MI.
ROADWAY LENGTH: 0.08	MI.
TOTAL LENGTH: 0.08	MI.
MAX. GRADE: 6.87%	%
HUC: 050902030701	

INDIANA DEPARTMENT OF TRANSPORTATION
 STANDARD SPECIFICATIONS DATED 2020
 TO BE USED WITH THESE PLANS

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PLANS PREPARED BY: STRAND ASSOCIATES, INC. (812)372-9911
 629 WASHINGTON ST., COLUMBUS, IN 47201 PHONE NUMBER

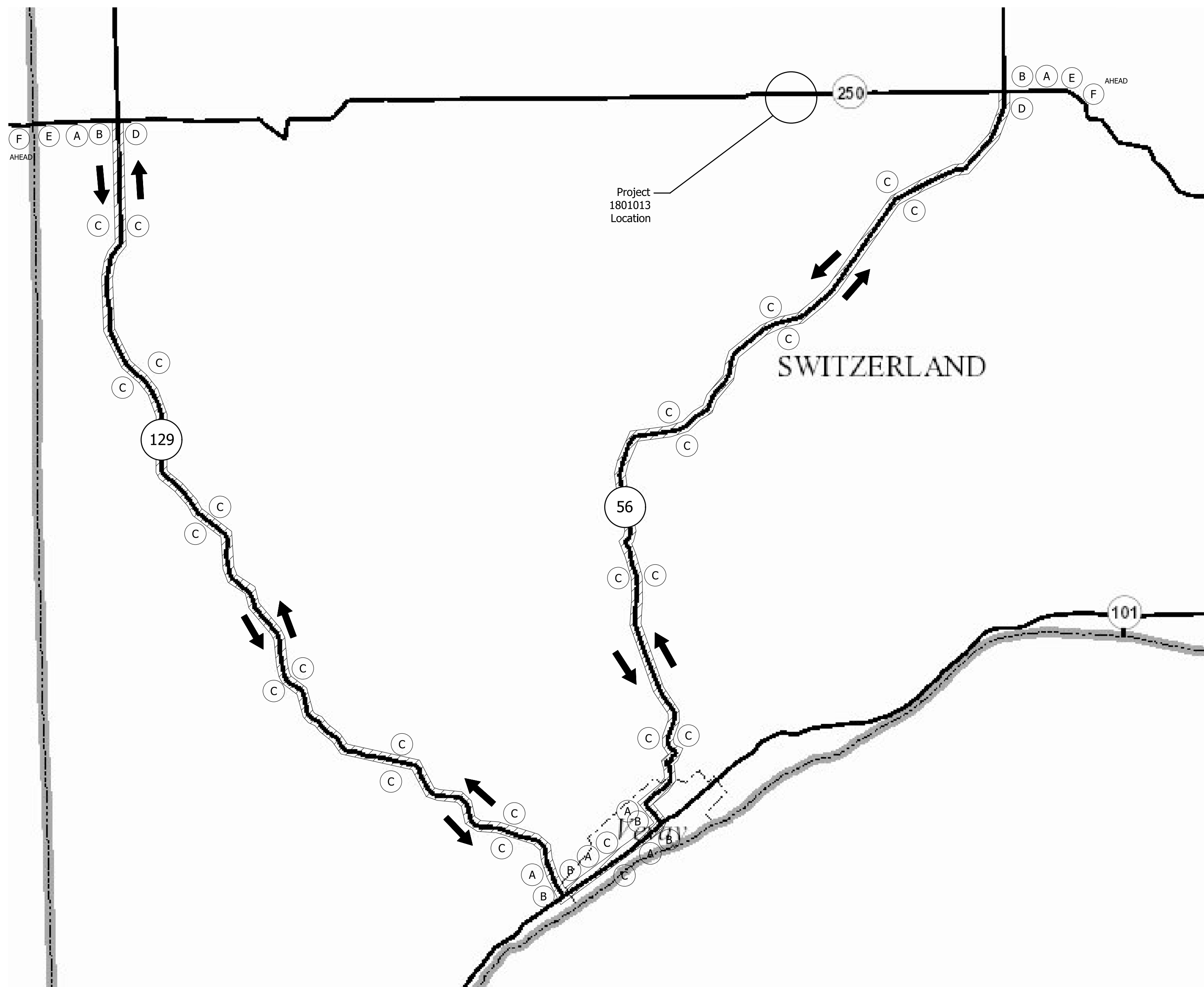
CERTIFIED BY: _____ DATE _____

APPROVED FOR LETTING: INDIANA DEPARTMENT OF TRANSPORTATION DATE _____

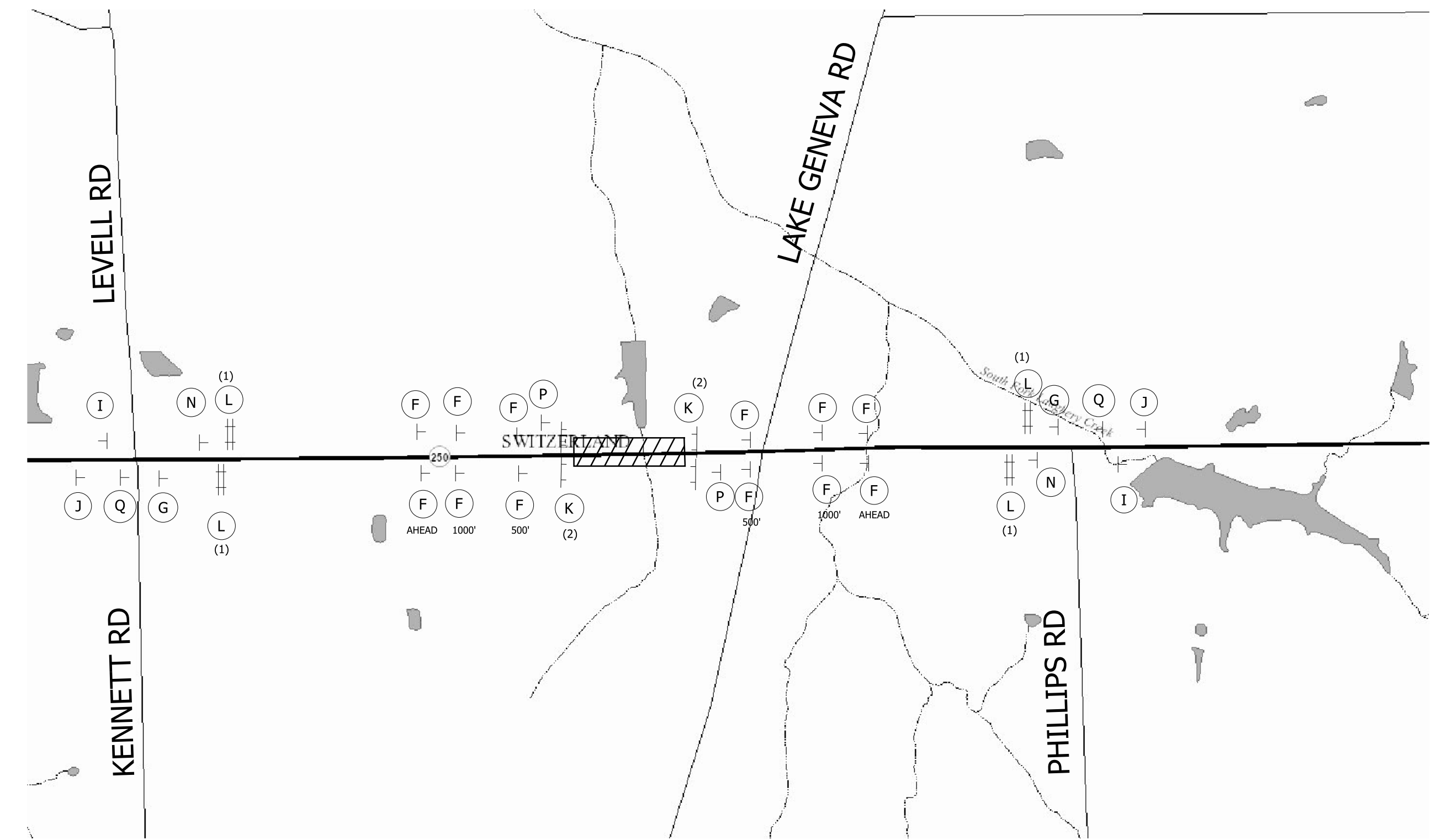
BRIDGE FILE NO.	
DESIGNATION	
1801013	
SURVEY BOOK	SHEETS
	1 of 16
CONTRACT	PROJECT
B-41448	1801013

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DETOUR MAP



PROJECT LOCATION MAP

Detour Route Marker Assemblies

A	DRMA (Advance Turn)	6	Ea.
B	DRMA (Directional)	6	Ea.
C	DRMA (Confirming)	24	Ea.
D	DRMA (End)	2	Ea.

Road Closure Sign Assemblies

N	RCSA (R11-4)	2	Ea.
P	RCSA (R11-2)	2	Ea.

Type A Construction Signs

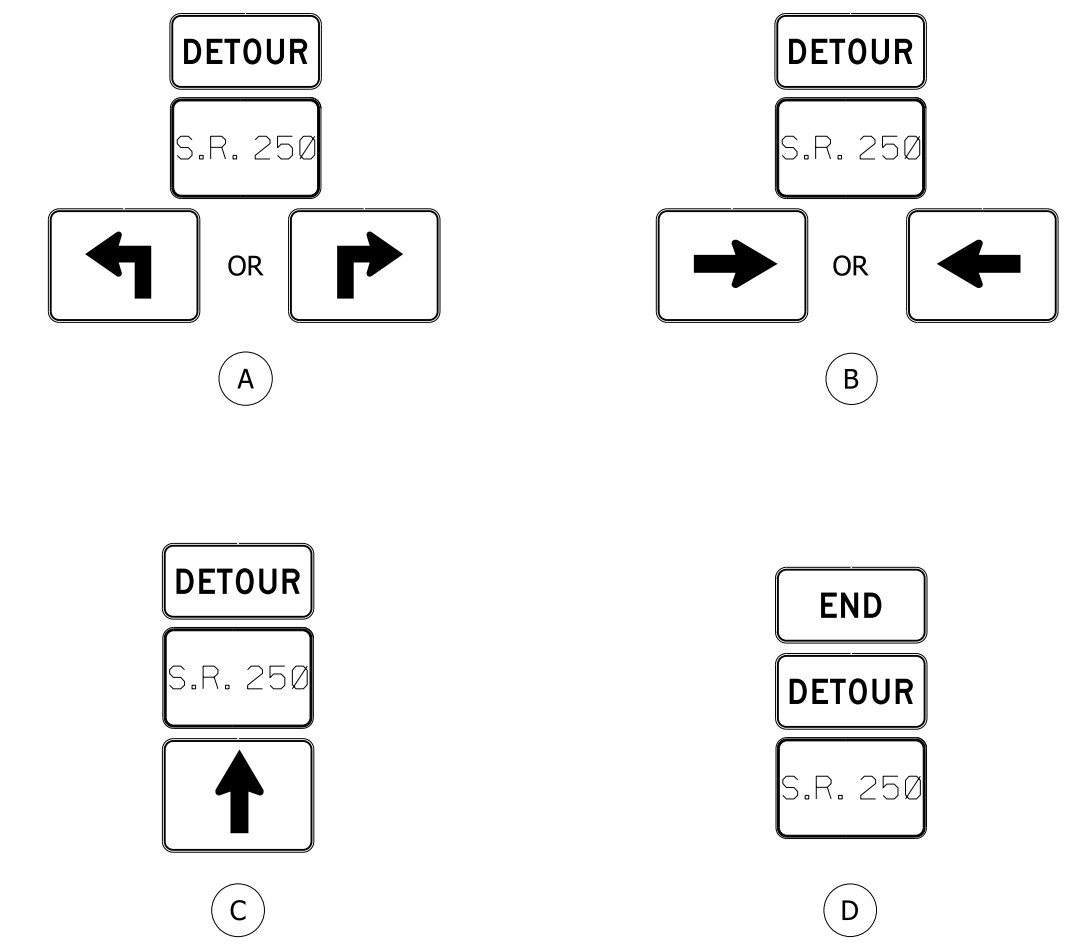
E	XW20-2 (Detour Ahead)	2	Ea.
F	XW20-3 (Road Closed _____)	14	Ea.
G	XG20-5 (Closure Date)	2	Ea.

Barricades

K	Barricade, Type III-A (No. of 12' Units)	-	Lft. (4)
L	Barricade, Type III-B (No. of 12' Units)	-	Lft. (4)

Type A Construction Signs

I	XG20-2 (End Construction)	2	Ea.
J	XW20-1 (Road Construction Ahead)	2	Ea.
Q	XW2-6-A Worksite Penalty Sign	2	Ea.



Legend

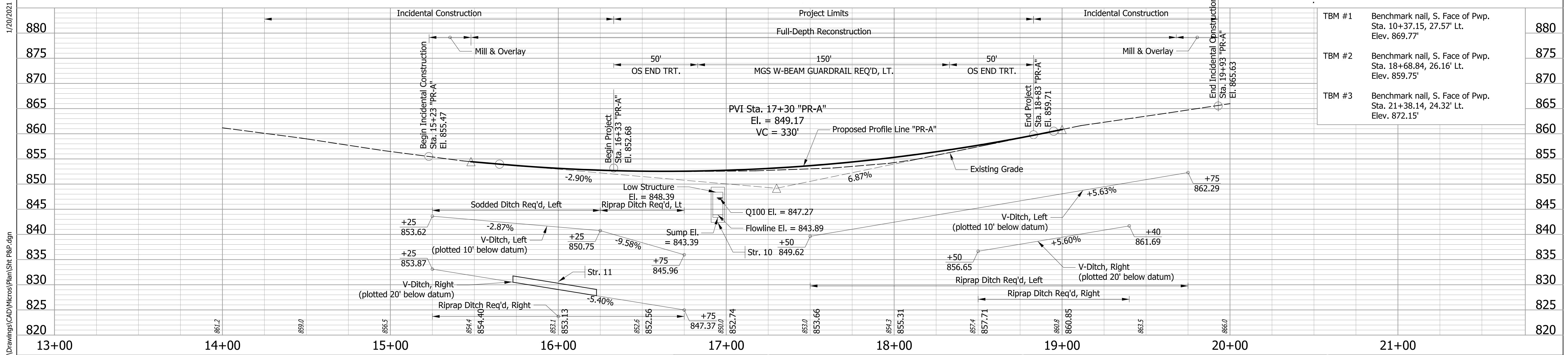
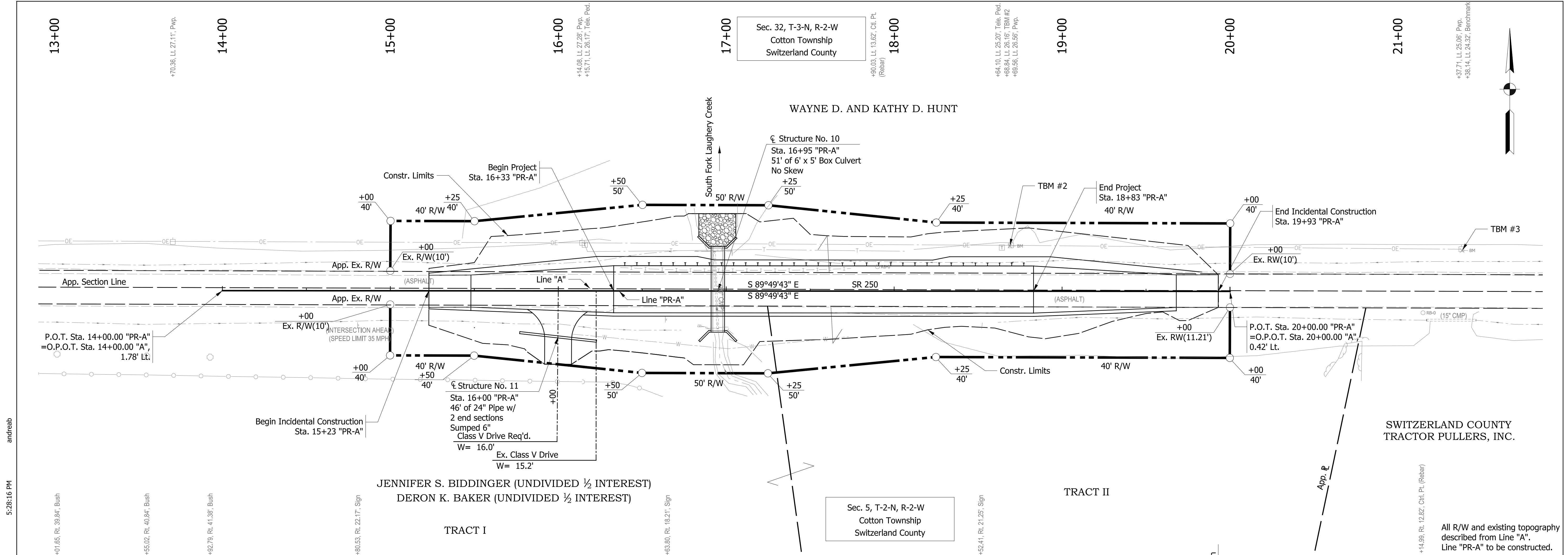
	Posted Detour Route		Construction Sign
	Traffic Flow Arrow		Barricade III-A
			Barricade III-B

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: ALB	DRAWN: ACB	
CHECKED: DEB	CHECKED: ALB	

INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
SR 250 OVER UNT S. FORK LAUGHERY

HORIZONTAL SCALE	BRIDGE FILE NO.
1" = 5000'	
VERTICAL SCALE	DESIGNATION NO.
NA	1801013
SURVEY BOOK NO.	SHEETS
	5 of 16
CONTRACT NO.	PROJECT NO.
B-41448	1801013



TBM #1	Benchmark nail, S. Face of Pwp. Sta. 10+37.15, 27.57' Lt. Elev. 869.77'	880
TBM #2	Benchmark nail, S. Face of Pwp. Sta. 18+68.84, 26.16' Lt. Elev. 859.75'	875
TBM #3	Benchmark nail, S. Face of Pwp. Sta. 21+38.14, 24.32' Lt. Elev. 872.15'	865

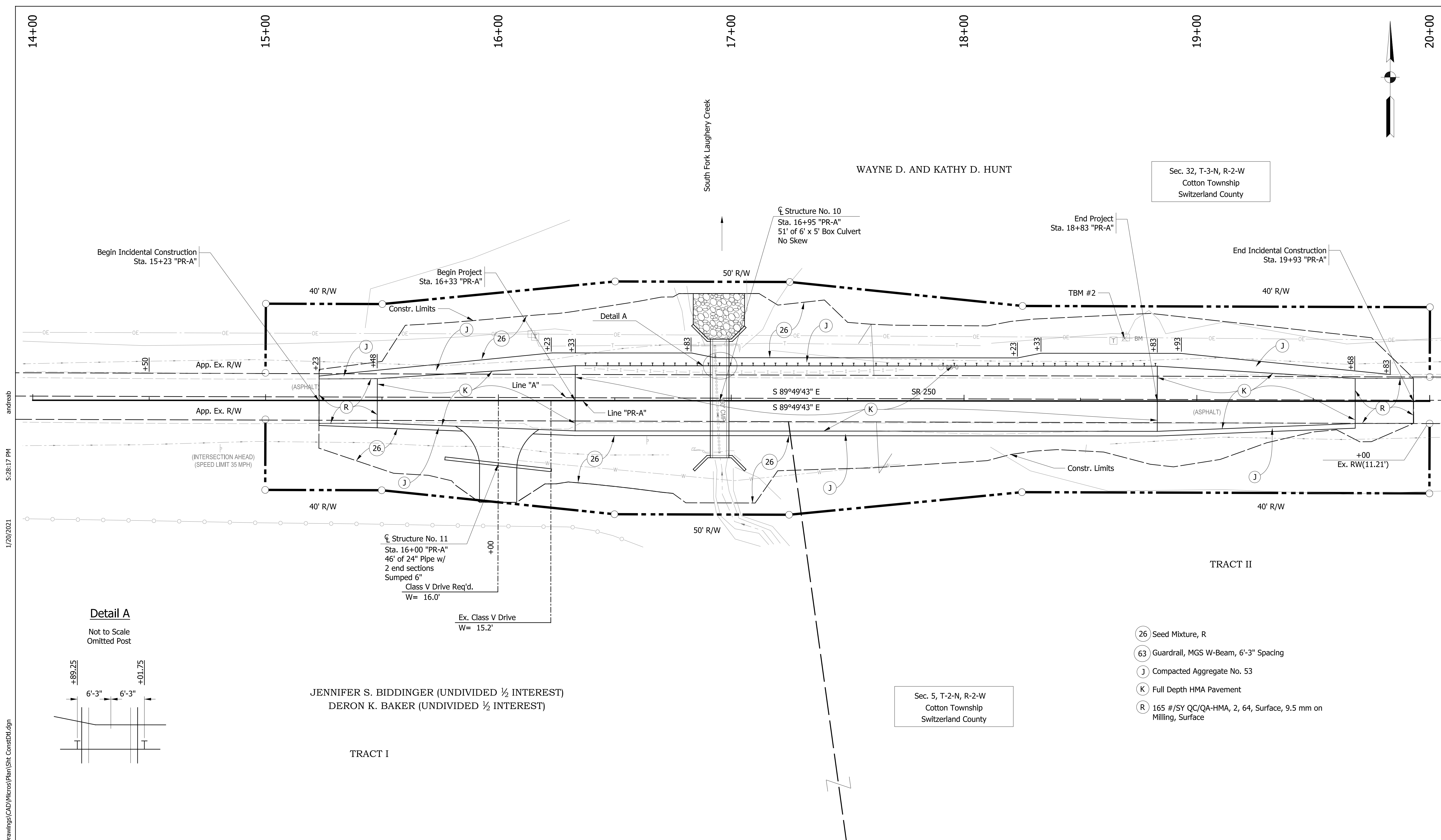
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: ALB	DRAWN: ACB	
CHECKED: DEB	CHECKED: ALB	

INDIANA DEPARTMENT OF TRANSPORTATION

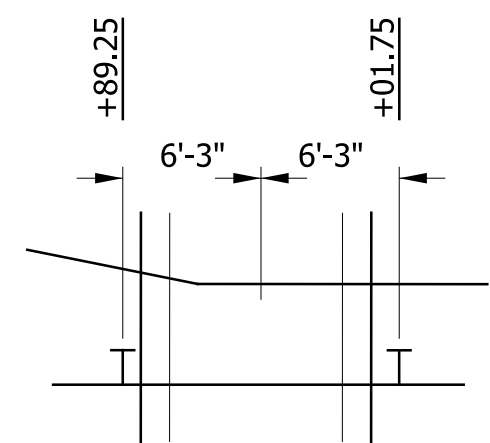
PLAN & PROFILE
LINE "PR-A"

HORIZONTAL SCALE	BRIDGE FILE NO.
1" = 30'	
VERTICAL SCALE	DESIGNATION NO.
1" = 10'	1801013
SURVEY BOOK NO.	SHEETS
	6 of 16
CONTRACT NO.	PROJECT NO.
B-41448	1801013

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Detail A
Not to Scale
Omitted Post



JENNIFER S. BIDDINGER (UNDIVIDED 1/2 INTEREST)
DERON K. BAKER (UNDIVIDED 1/2 INTEREST)

TRACT I

TRACT II

- (26) Seed Mixture, R
- (63) Guardrail, MGS W-Beam, 6'-3" Spacing
- (J) Compacted Aggregate No. 53
- (K) Full Depth HMA Pavement
- (R) 165 #/SY QC/QA-HMA, 2, 64, Surface, 9.5 mm on Milling, Surface

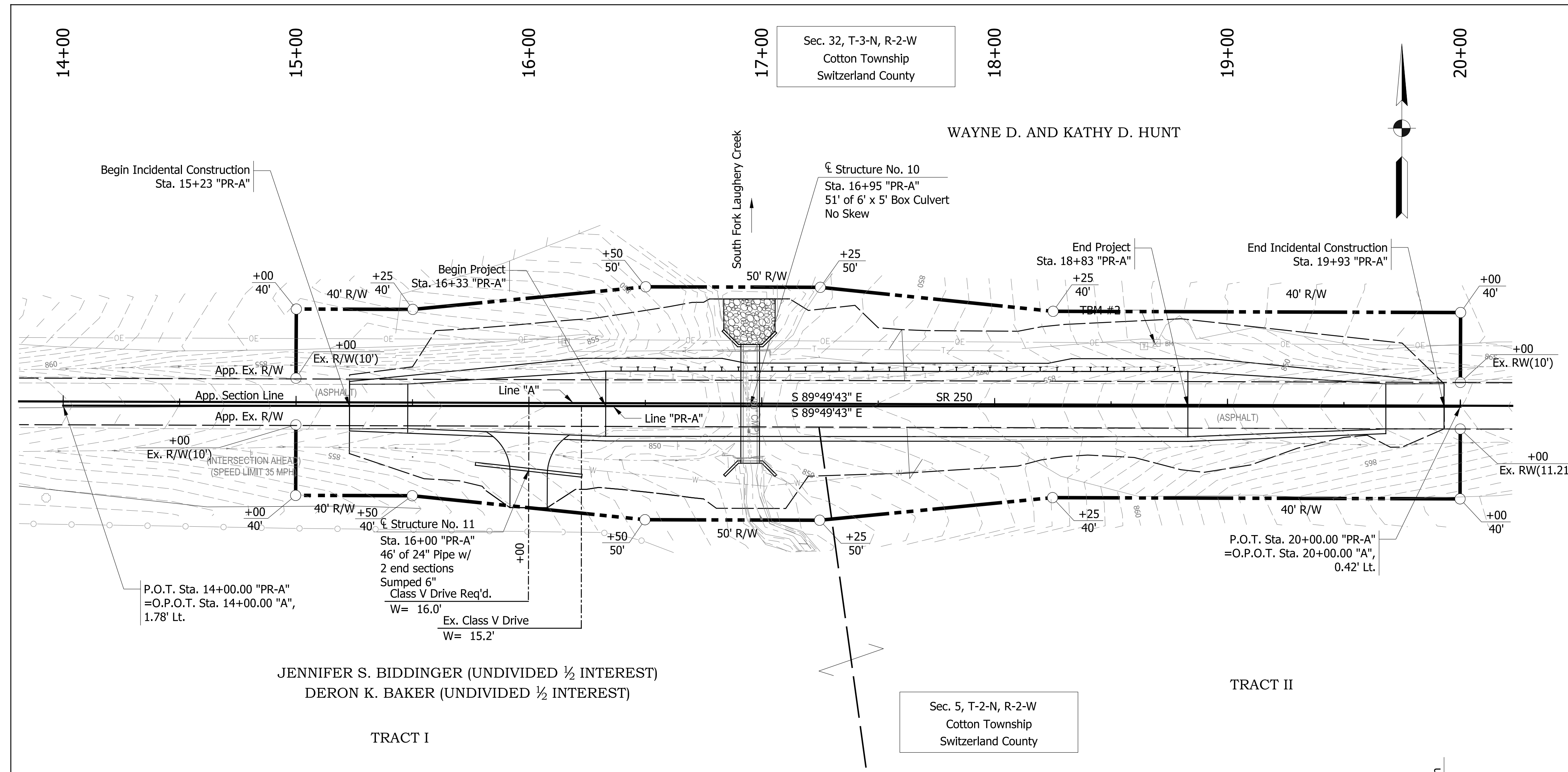
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RECOMMENDED FOR APPROVAL		DESIGN ENGINEER	DATE
DESIGNED: ALB	DRAWN: ACB		
CHECKED: DEB	CHECKED: ALB		

INDIANA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

HORIZONTAL SCALE 1" = 20'	BRIDGE FILE NO.
VERTICAL SCALE	DESIGNATION NO. 1801013
SURVEY BOOK NO.	SHEETS 7 of 16
CONTRACT NO. B-41448	PROJECT NO. 1801013



EXISTING STRUCTURE
 The existing culvert (CV 250-078-55.80) is a corrugated metal pipe that is of unknown age. The structure is approximately 4.25' in diameter and approximately 47 ft in length. Existing structure to be removed.

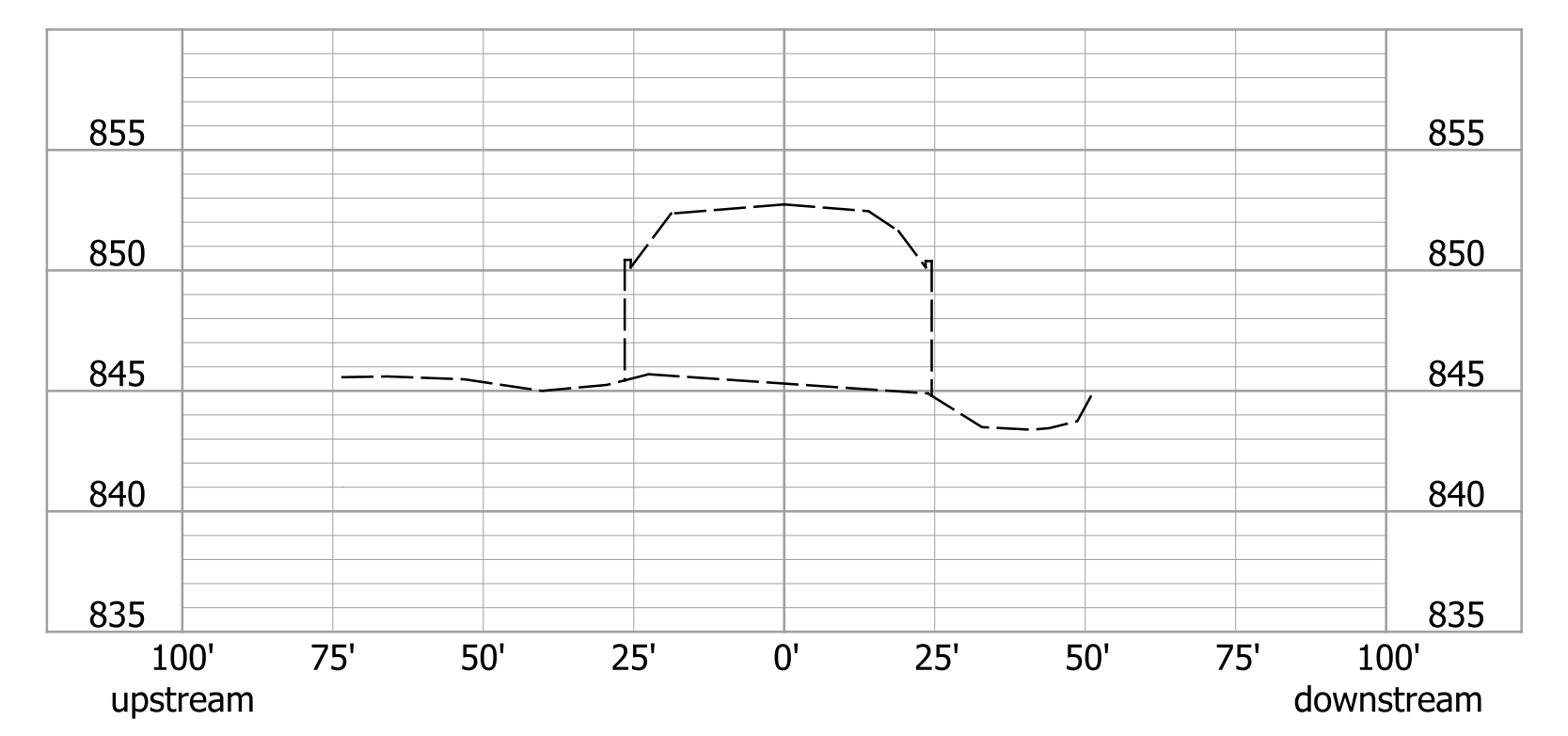
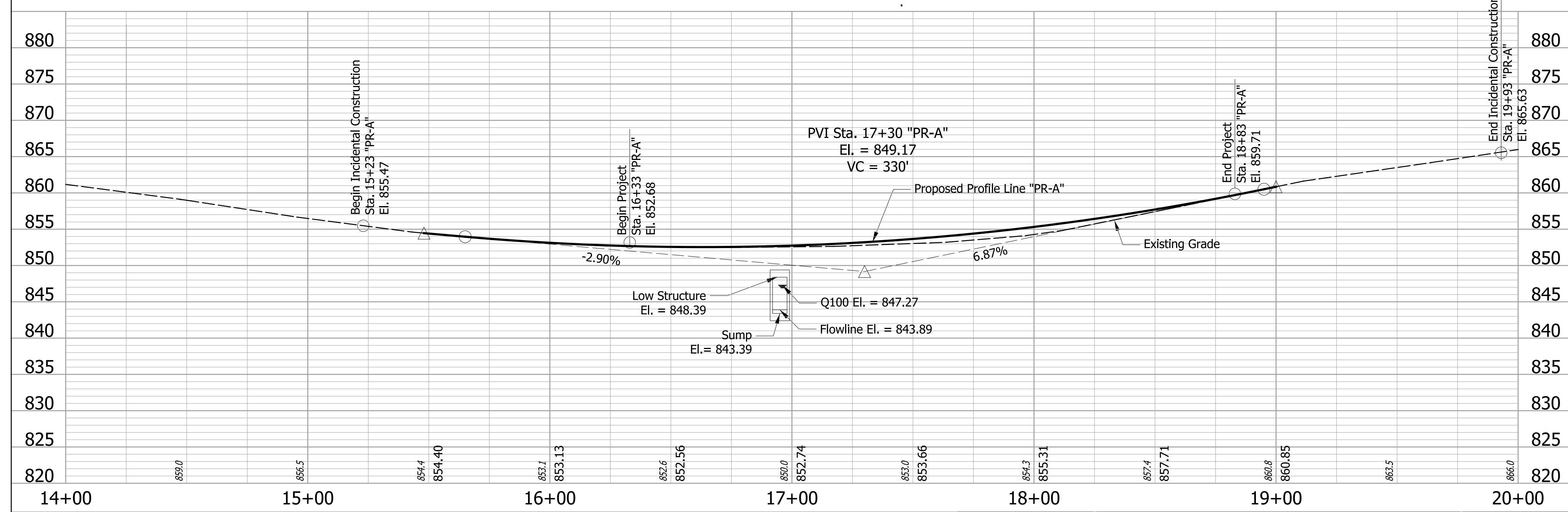
EARTHWORK TABULATION

Fill + 25%	766 cys
Usable Common Excavation	121 cys
Unusable Common Excavation	342 cys
Total Common Excavation	463 cys
Total Borrow	645 cys
Benching	158 cys

No direct payment for Benchng. Benchng will not be paid for as Common Excavation.

HYDRAULIC DATA

Drainage Area	=	0.17 sq. mi.
Q100 Discharge	=	128.7 cfs
Q100 Elevation	=	847.27 ft
2% EP Outlet Velocity		
Existing	=	10.00 fps
Proposed	=	9.12 fps
Backwater @ Q100		
Existing	=	2.64 ft
Proposed	=	1.45 ft



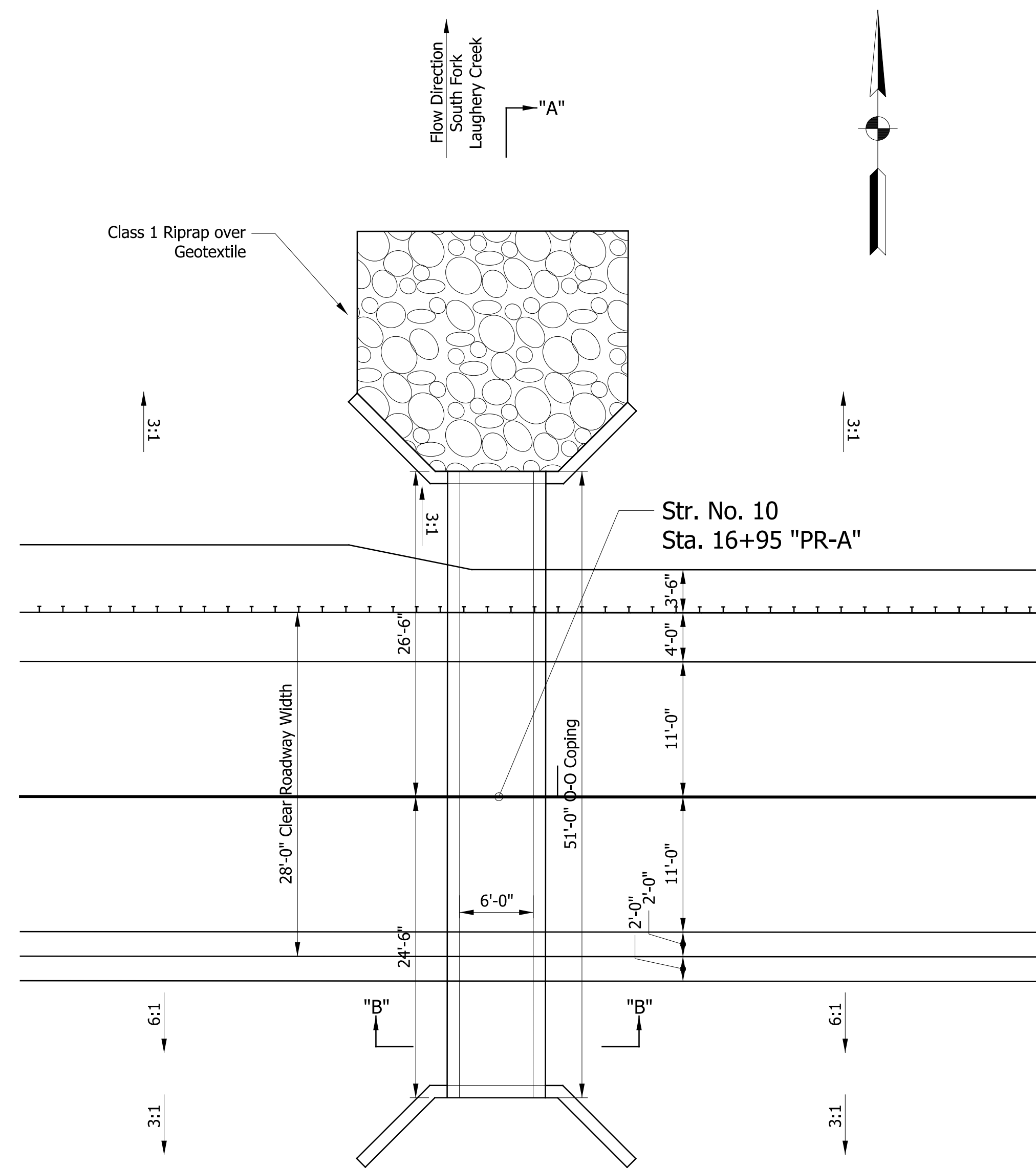
STREAM PROFILE
 H: 1"=20', V: 1" = 5'

REINFORCED CONCRETE BOX CULVERT
 SPAN: 6'-0"
 RISE: 5'-0", SUMP: 0'-6", CLEAR HEIGHT: 4'-6"
 LENGTH: 51'-0", SKEW: 0°
 SR 250 OVER SOUTH FORK LAUGHERY CREEK
 SWITZERLAND COUNTY

	RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION LAYOUT	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>HORIZONTAL SCALE</td> <td>BRIDGE FILE NO.</td> </tr> <tr> <td>1" = 30'</td> <td></td> </tr> <tr> <td>VERTICAL SCALE</td> <td>DESIGNATION NO.</td> </tr> <tr> <td></td> <td>1801013</td> </tr> <tr> <td>SURVEY BOOK NO.</td> <td>SHEETS</td> </tr> <tr> <td></td> <td>8 of 16</td> </tr> <tr> <td>CONTRACT NO.</td> <td>PROJECT NO.</td> </tr> <tr> <td>B-41448</td> <td>1801013</td> </tr> </table>	HORIZONTAL SCALE	BRIDGE FILE NO.	1" = 30'		VERTICAL SCALE	DESIGNATION NO.		1801013	SURVEY BOOK NO.	SHEETS		8 of 16	CONTRACT NO.	PROJECT NO.	B-41448	1801013
HORIZONTAL SCALE	BRIDGE FILE NO.																		
1" = 30'																			
VERTICAL SCALE	DESIGNATION NO.																		
	1801013																		
SURVEY BOOK NO.	SHEETS																		
	8 of 16																		
CONTRACT NO.	PROJECT NO.																		
B-41448	1801013																		
	DESIGNED: ALB CHECKED: DEB	DRAWN: ACB CHECKED: ALB																	

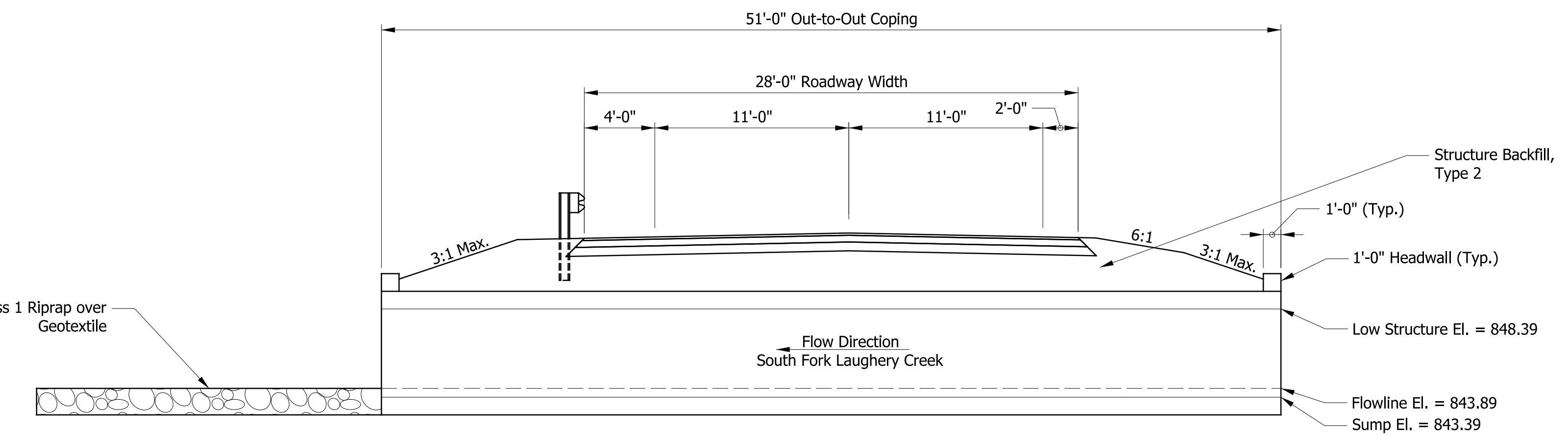
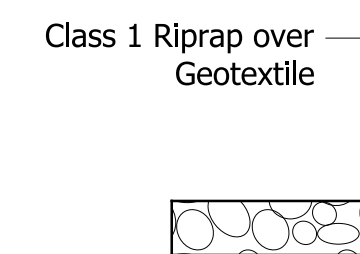
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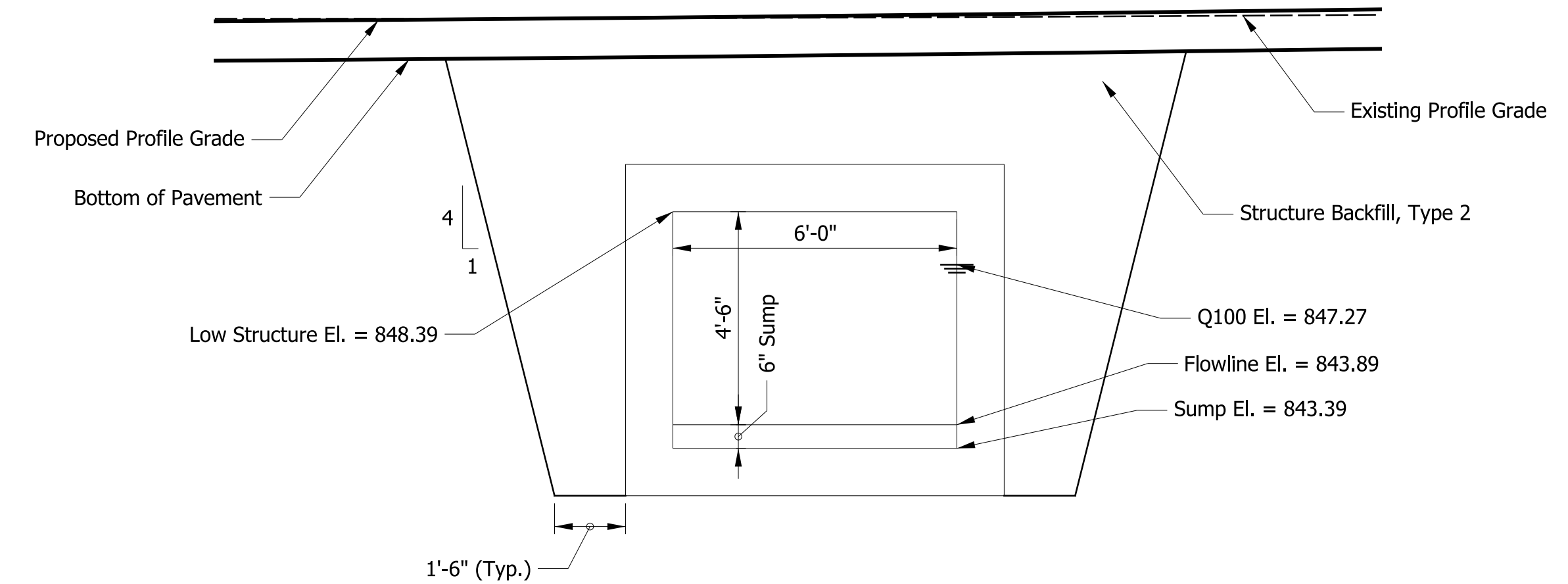
PLAN

Scale: 1/8" = 1'-0"



SECTION "A-A" (TRANSVERSE)

Scale: 3/16" = 1'-0"



SECTION "B-B" (LONGITUDINAL)

Scale: 3/8" = 1'-0"

GENERAL NOTES

- An alternate three-sided arch-top structure with a 6-ft perpendicular span and a 5-ft high opening may be substituted for the structure shown.
- Contractor shall verify the existing flowline elevation to set the appropriate sump depth.
- Manufacturer's dimensions for pre-cast structures (except opening size) shall override shown dimension.
- Waterproofing membrane shall be installed on the structure in accordance with the special provisions.
- If unsuitable materials are encountered at the base of excavation, the material shall be removed and replaced up to 12" with compacted aggregate No. 53 at the discretion of the Project Engineer.
- Footing shall be a minimum of 1'-6".
- Bottom of footing shall be a minimum of 4'-0" below the existing flowline.
- See Standard Drawing E 715-BKFL-01 for backfill trench elevation view.

DESIGN DATA

- Wingwalls and headwalls shall be designed in accordance with Standard Specification 714 for box culverts or 723 for three-sided structure.
- Live Load: Designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017.
- Dead Load: Dead load increased 35 psf for future wearing surface.

DESIGN STRENGTH	
Reinforcing Steel (Grade 60)	$f_y = 60,000$ psi
Class C Concrete	$f'_c = 4,000$ psi
Class B Concrete	$f'_c = 3,000$ psi
Class A Concrete	$f'_c = 3,500$ psi

FOUNDATION DESIGN	
Nominal Bearing Resistance (Q_n)	-- psf
Resistance factor (ϕ)	--
Factored Bearing Resistance (Q_r)	-- psf
Friction angle between wingwall and soil backfill (δ)	--°
Friction factor at base of foundation (f)	--
Angle of internal friction of foundation soil (ϕ)	--°

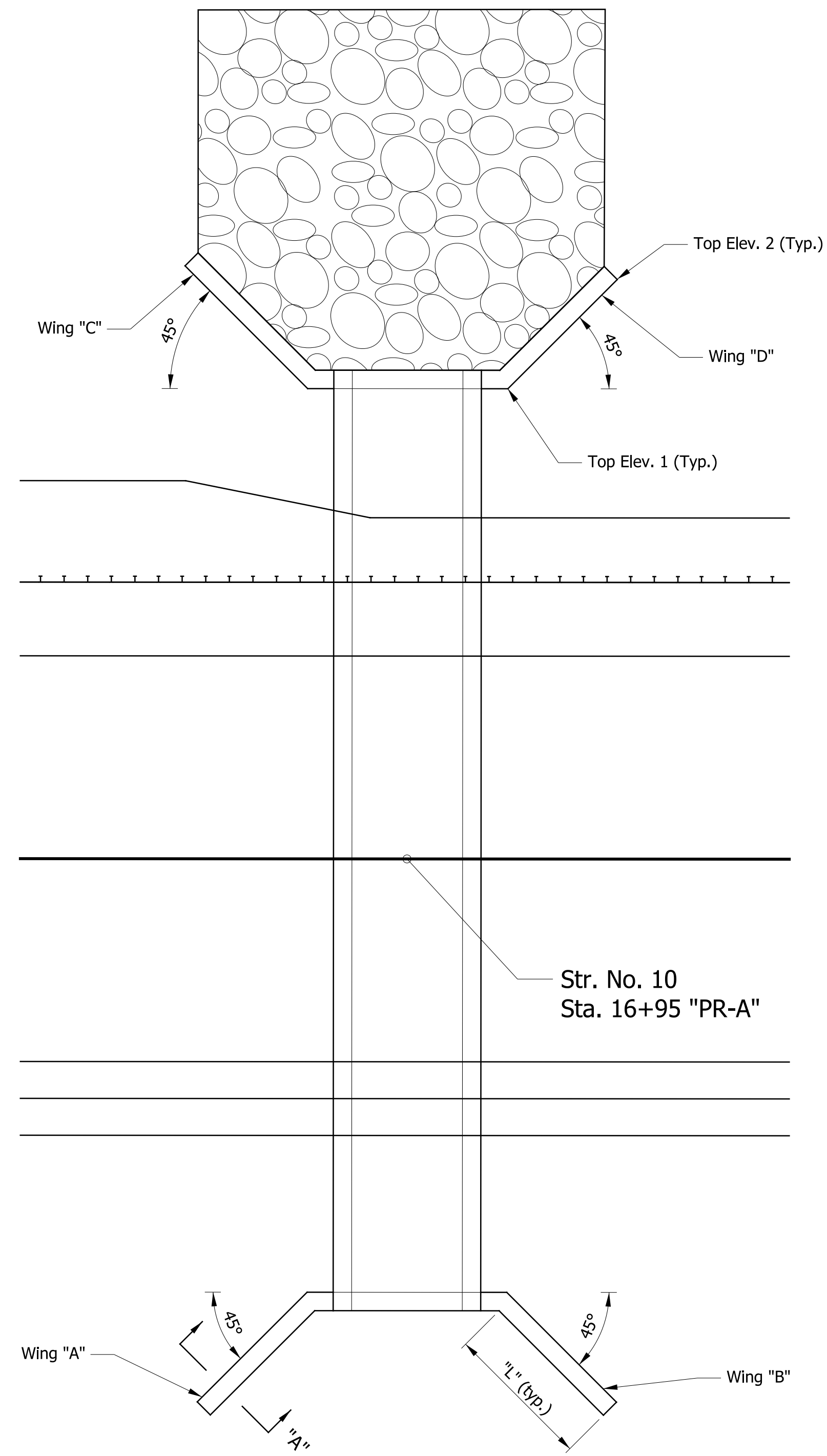
*This information is based on a minimum footing width of 3 feet.

REINFORCED CONCRETE BOX CULVERT
SPAN: 6'-0"
RISE: 5'-0", SUMP: 0'-6", CLEAR HEIGHT: 4'-6"
LENGTH: 51'-0", SKEW: 0°
SR 250 OVER SOUTH FORK LAUGHERY CREEK
SWITZERLAND COUNTY

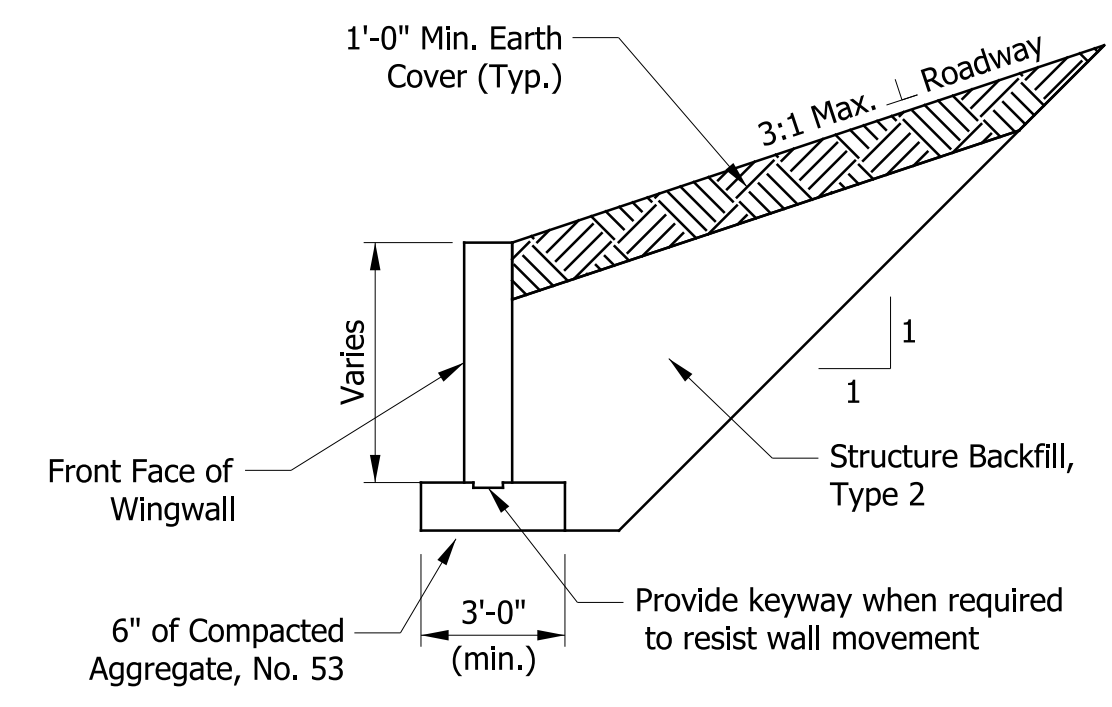
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE NO.
	DESIGNED: ALB	DRAWN: ACB		1/8" = 1'-0"	
CHECKED: DEB	CHECKED: ALB		STRUCTURE DETAILS	VERTICAL SCALE	DESIGNATION NO.
					1801013
				SURVEY BOOK NO.	SHEETS
				CONTRACT NO.	9 of 16
				B-41448	PROJECT NO.
					1801013

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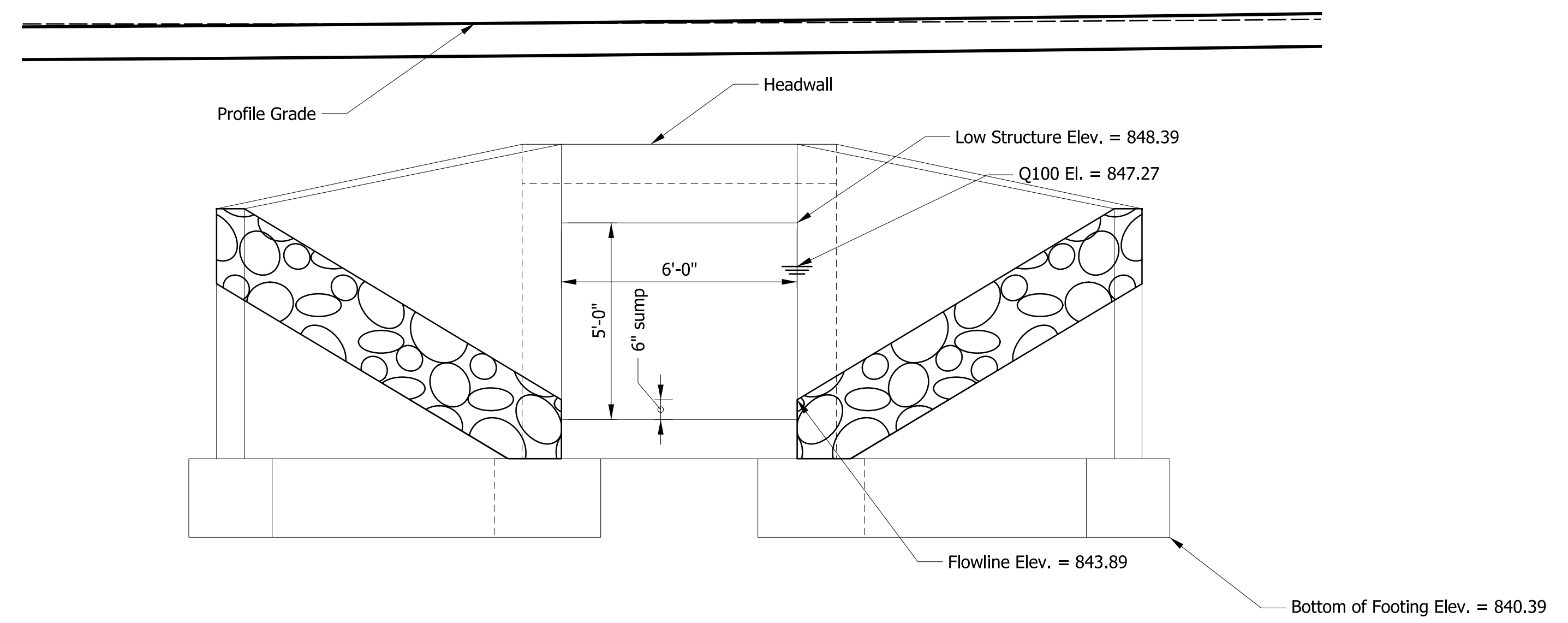


PLAN
Scale: 3/16" = 1'-0"



SECTION "A-A"
Not to Scale

WINGWALL TABLE				
WING	TOP ELEV 1	TOP ELEV 2	LENGTH "L"	AREA
"A"	850.39	848.25	8'	71.44 sft
"B"	850.39	848.25	8'	71.44 sft
"C"	850.39	848.50	9'	81.50 sft
"D"	850.39	484.25	8'	71.44 sft



ELEVATION
Scale: 3/8" = 1'-0"

RECOMMENDED FOR APPROVAL		DESIGN ENGINEER	DATE
DESIGNED: ALB	DRAWN: ACB		
CHECKED: DEB	CHECKED: ALB		

INDIANA DEPARTMENT OF TRANSPORTATION

WINGWALL DETAILS

HORIZONTAL SCALE	BRIDGE FILE NO.
3/16" = 1'-0"	
VERTICAL SCALE	DESIGNATION NO.
	1801013
SURVEY BOOK NO.	SHEETS
	10 of 16
CONTRACT NO.	PROJECT NO.
B-41448	1801013