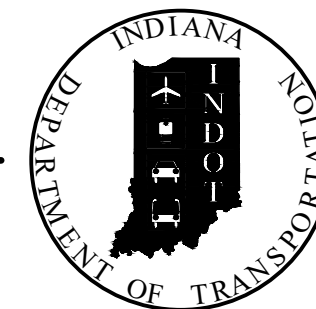


PROJECT	DESIGNATION
1700001	1700001
CONTRACT	BRIDGE FILE
B-40422	CV 056-078-158.30

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
CV 056-078-158.30	PRECAST CONCRETE 3-SIDED STRUCTURE	SINGLE SPAN: 12'-0" SKEW: 25° RT.	UNNAMED TRIBUTARY TO OHIO RIVER	☐ Structure Sta.12+00.00 "A"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
1500021	BRIDGE REPLACEMENT FOR STRUCTURE 056-39-10261 (PARENT)
1701500	BRIDGE REHABILITATION FOR STRUCTURE 156-78-03115A
1700001	SMALL STRUCTURE REPLACEMENT FOR STRUCTURE CV 056-078-158.30

# INDIANA DEPARTMENT OF TRANSPORTATION



## ROAD PLANS

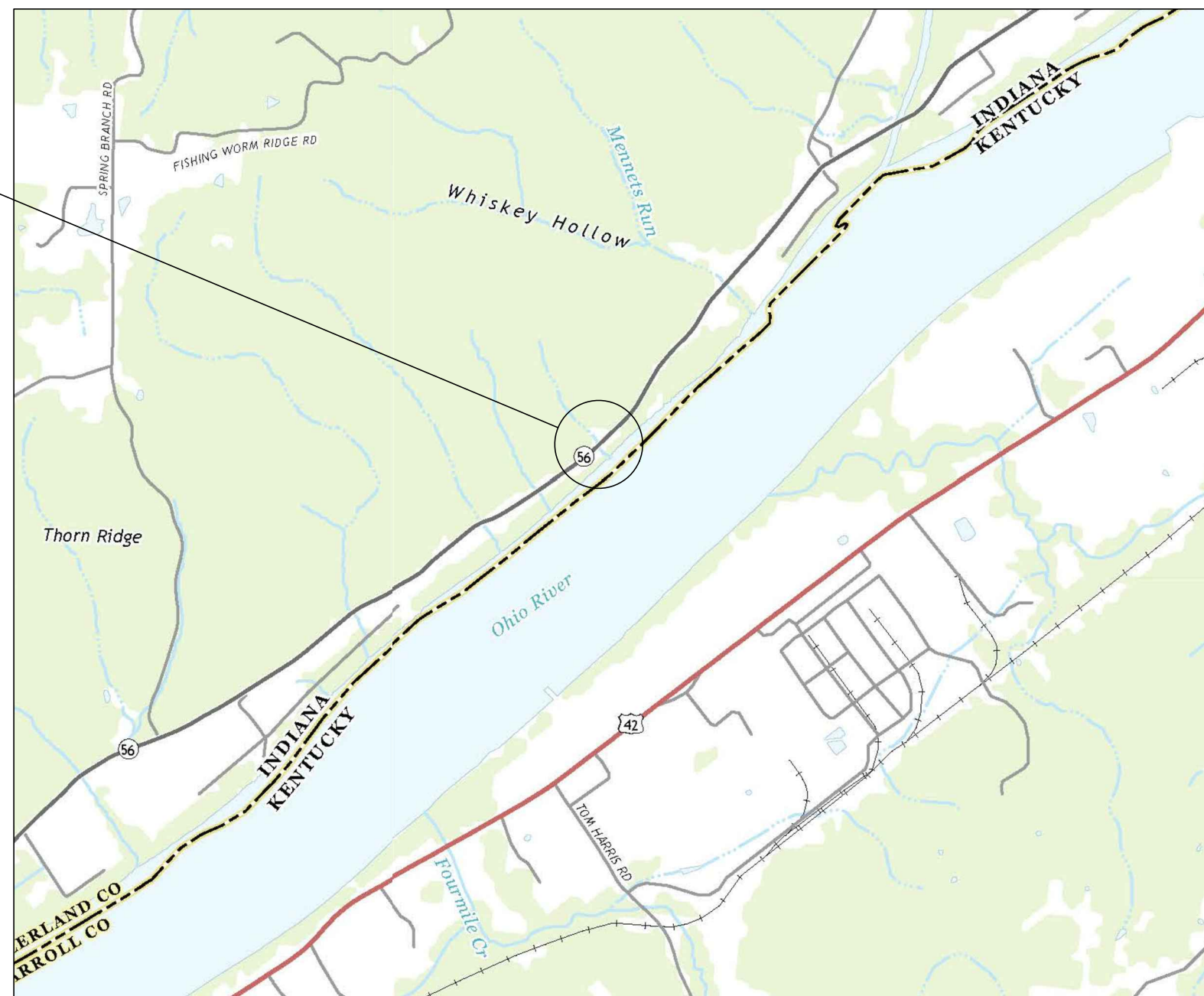
### SMALL STRUCTURE REPLACEMENT

ROUTE: SR 56 OVER UNNAMED TRIBUTARY TO OHIO RIVER AT: RP 158+30

PROJECT NO. 1700001 P.E.  
1700001 R/W  
1700001 CONST.

Small Structure Replacement on SR 56 over Unnamed Tributary to Ohio River  
Located 16.12 Miles East of US 421 in  
Section 28, T-2N, R-3W, Craig Township, Switzerland County, Indiana

PROJECT LOCATION  
Begin Project-Sta.11+25.00 "A"  
End Project-Sta.13+00.00"A"



LOCATION MAP  
SCALE: 1:24000

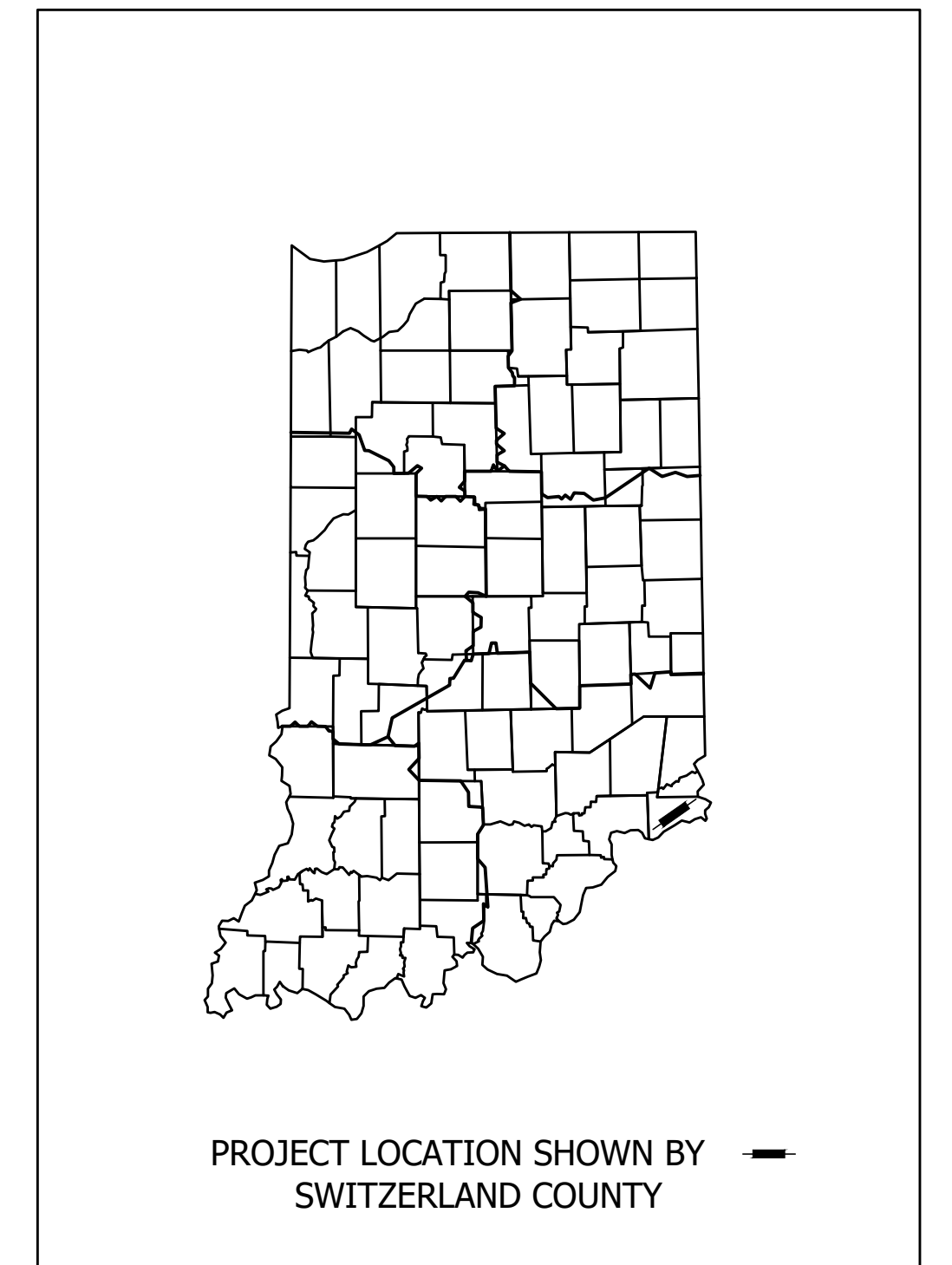


#### TRAFFIC DATA

A.A.D.T. (2022)	2414 V.P.D.
A.A.D.T. (2042)	2838 V.P.D.
D.H.V (2042)	290 V.P.H.
DIRECTIONAL DISTRIBUTION	49.16 %
TRUCKS	10.00 % A.A.D.T. 10.20 % D.H.V.

#### DESIGN DATA

DESIGN SPEED	55 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	RURAL MINOR ARTERIAL
RURAL/URBAN	RURAL
TERRAIN	LEVEL
ACCESS CONTROL	NONE



LATITUDE: 38°42'59" N LONGITUDE: 85°6'55" W

BRIDGE LENGTH: 0.000 MI.  
ROADWAY LENGTH: 0.033 MI.  
TOTAL LENGTH: 0.033 MI.  
MAX. GRADE: 2.95 %

HUC #05090203210030

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

PLANS PREPARED BY:



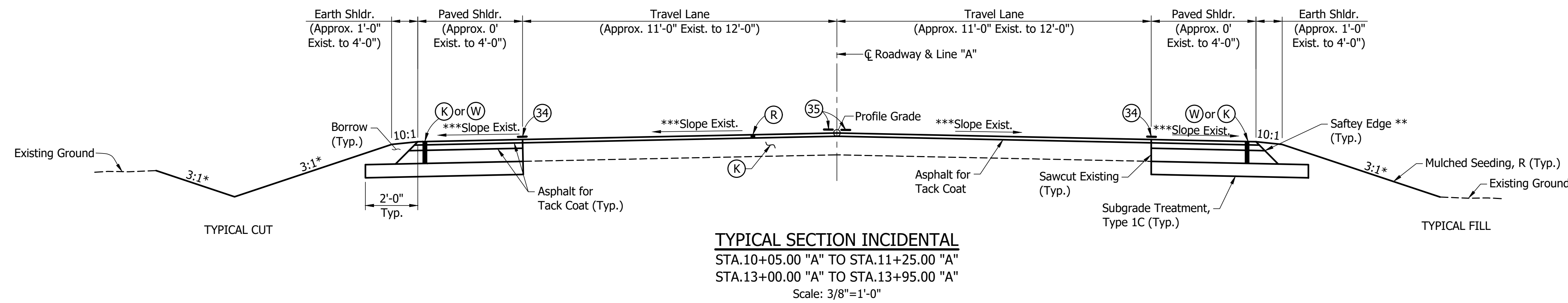
PLANS PREPARED BY: BEAM, LONGEST & NEFF, LLC (317)849-5832  
PHONE NUMBER

CERTIFIED BY: \_\_\_\_\_ DATE

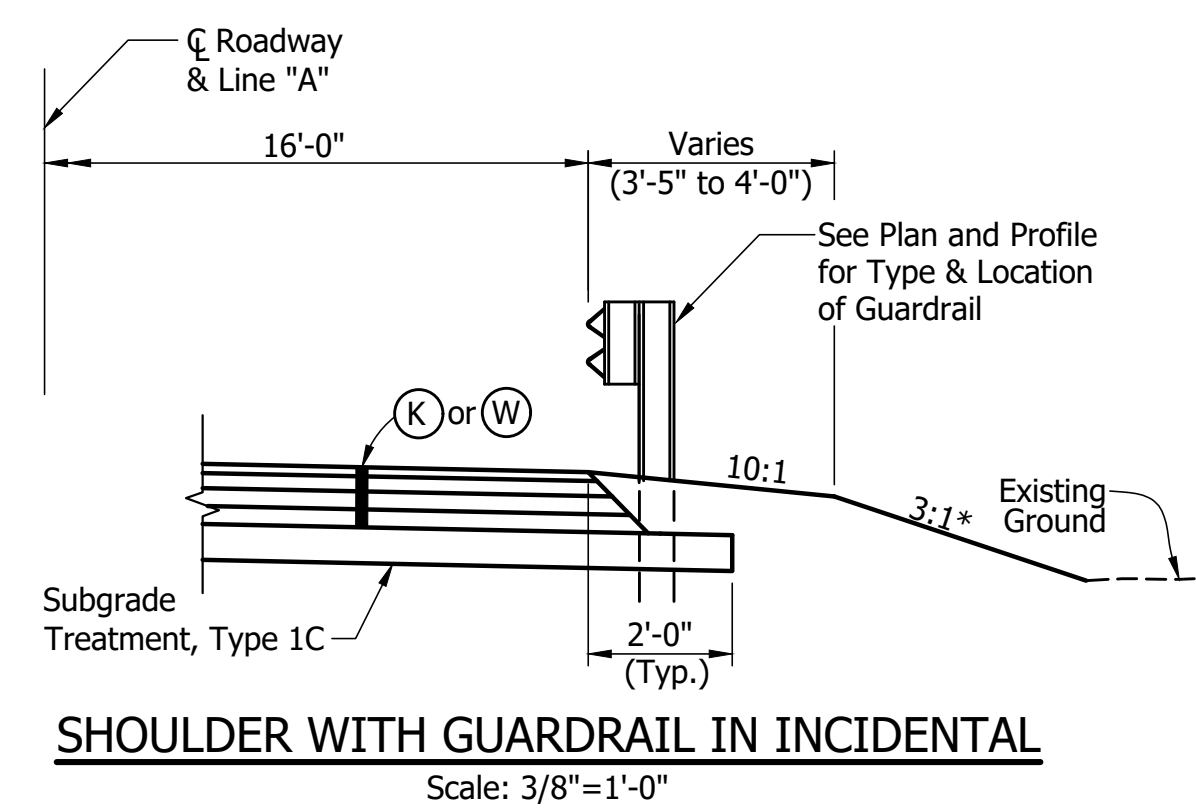
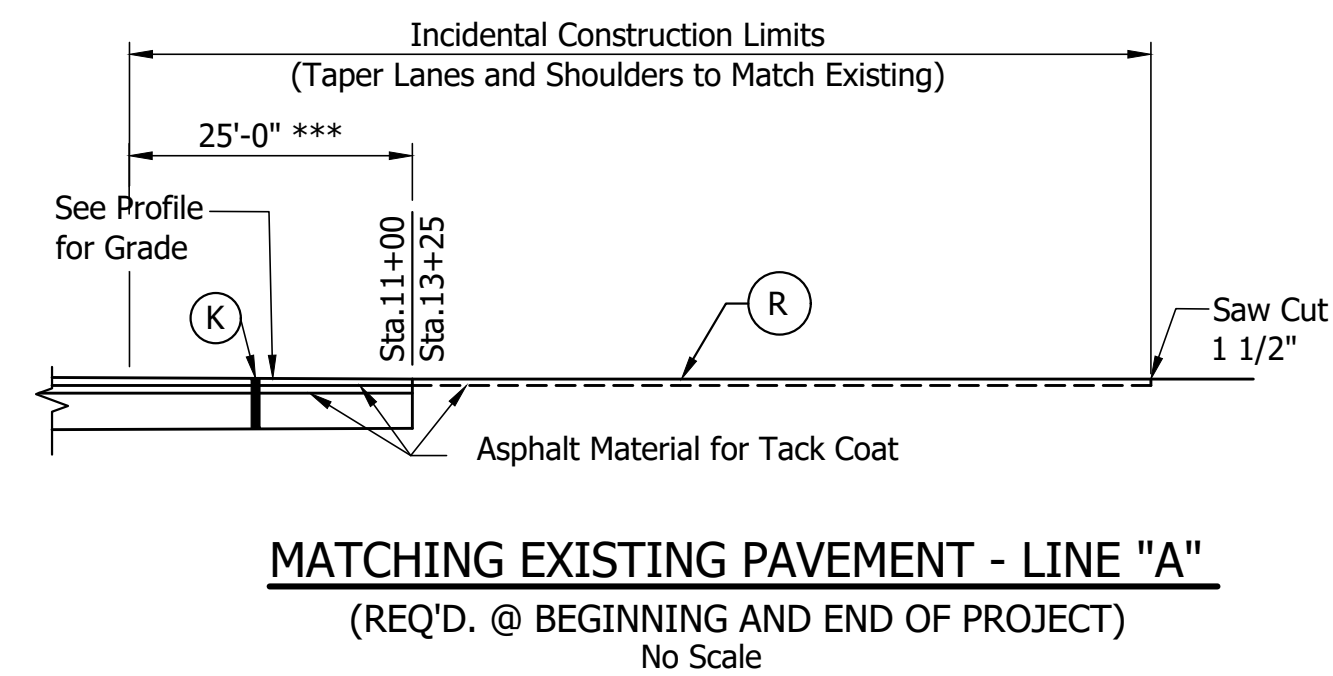
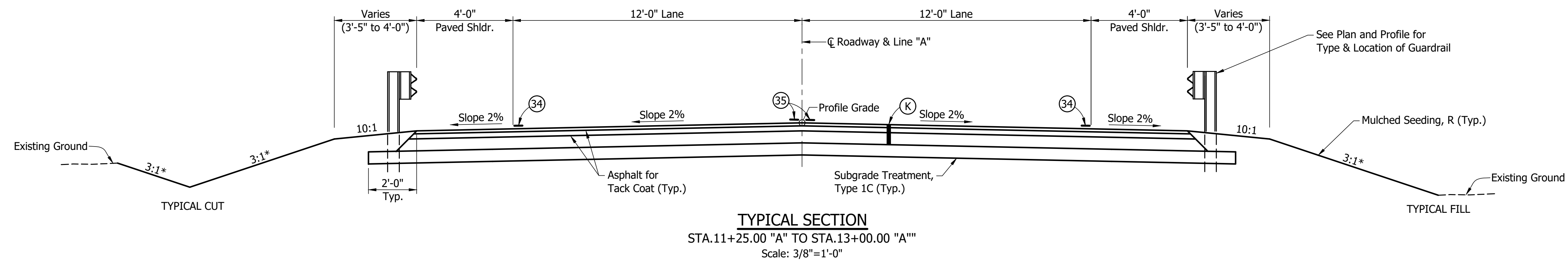
APPROVED FOR LETTING: \_\_\_\_\_ DATE  
INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE FILE	
CV 056-078-158.30	
DESIGNATION	
1700001	
DRAWING NO.	SHEETS
1	of 24
CONTRACT	PROJECT
B-40422	1700001





- LEGEND**
- (K) 165#/Syd QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/Syd QC/QA-HMA, 2, 70, Intermediate, 19.0 mm on 880#/Syd QC/QA-HMA, 2, 70, Base, 25.0 mm
  - (R) Milling Asphalt, 1 1/2"
  - (34) Line, Paint, Solid, White, 4"
  - (35) Line, Paint, Solid, Yellow, 4"
  - (W) Widening w/ HMA, Type C  
 165#/Syd QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/Syd QC/QA-HMA, 2, 70, Intermediate, 19.0 mm on 880#/Syd QC/QA-HMA, 2, 70, Base, 25.0 mm on



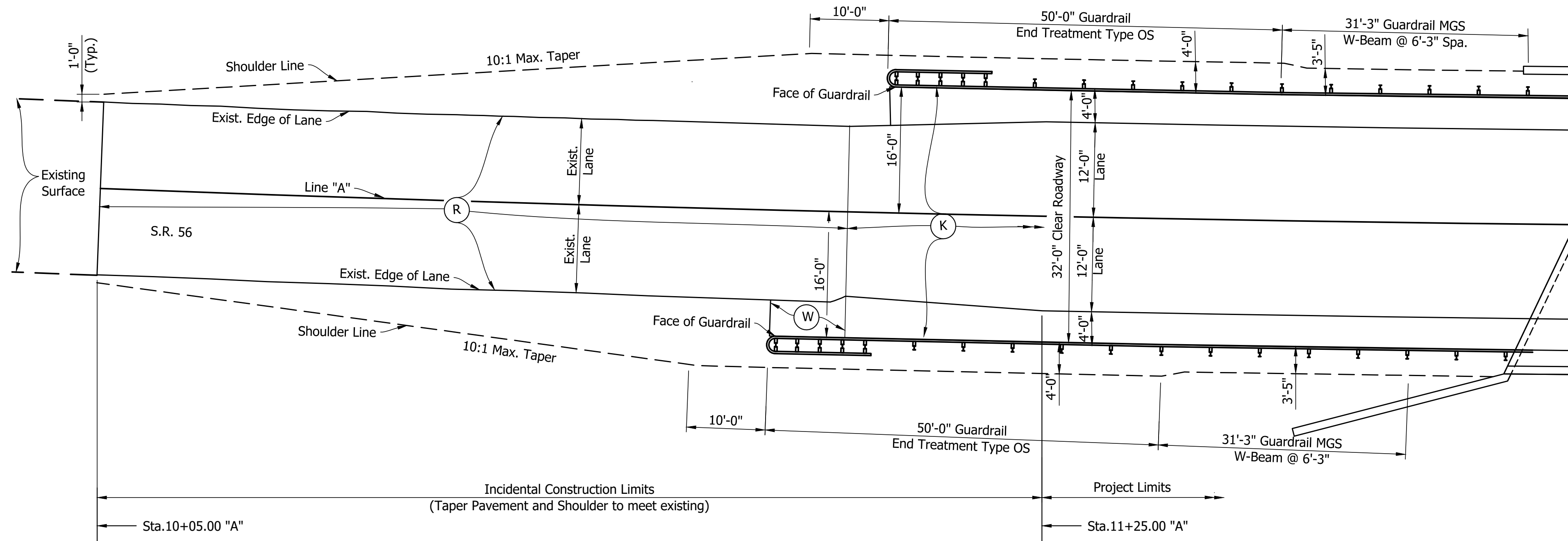
Notes:  
 The pavement safety edge is not required in locations of guardrail; however, the Contractor has the option to construct the pavement safety edge within these limits if they choose.  
 For Plan & Profile, see Sht.8.  
 \* See Cross Sections for Slopes  
 \*\* Safety Edge (30°) applicable to Surface and Intermediate layers only.  
 \*\*\* Transition proposed 2% cross-slopes to match existing cross-slopes within Full-Depth Pavement limits.

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

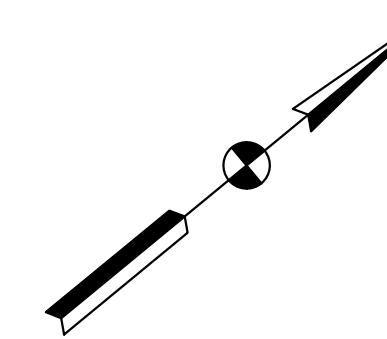
INDIANA  
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

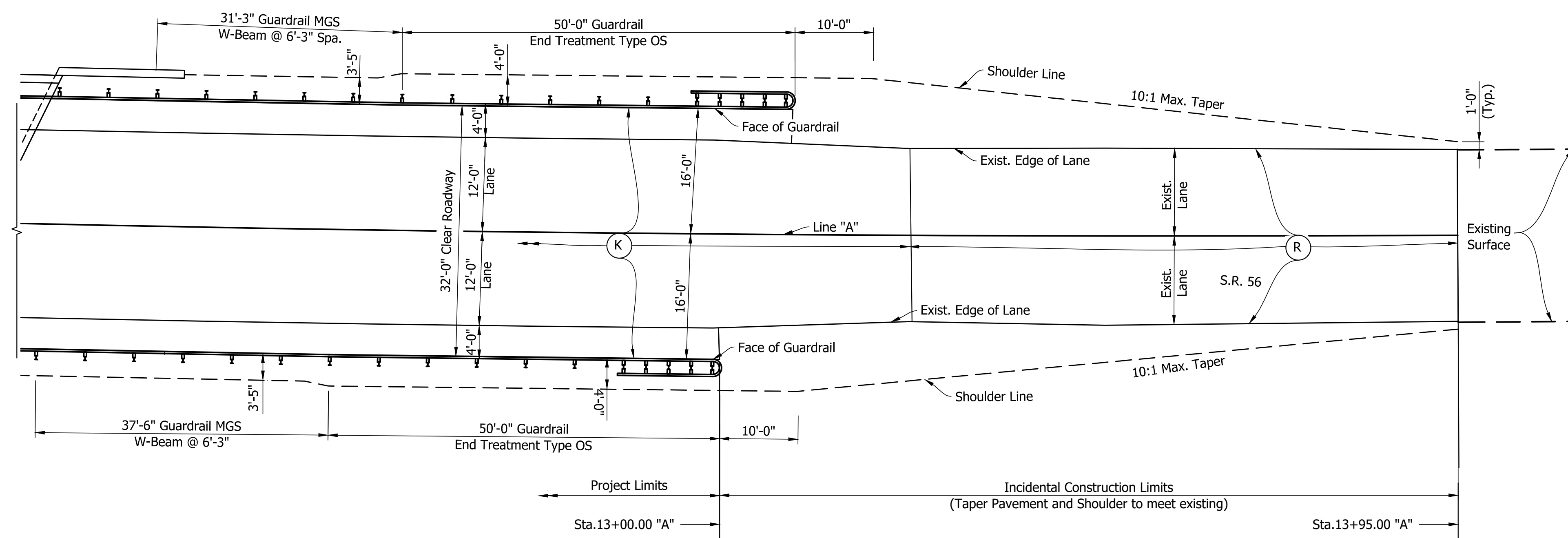
HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	CV 056-078-158.30
VERTICAL SCALE	DESIGNATION
AS NOTED	1700001
DRAWING NO.	SHEETS
	3 of 24
CONTRACT	PROJECT
B-40422	1700001



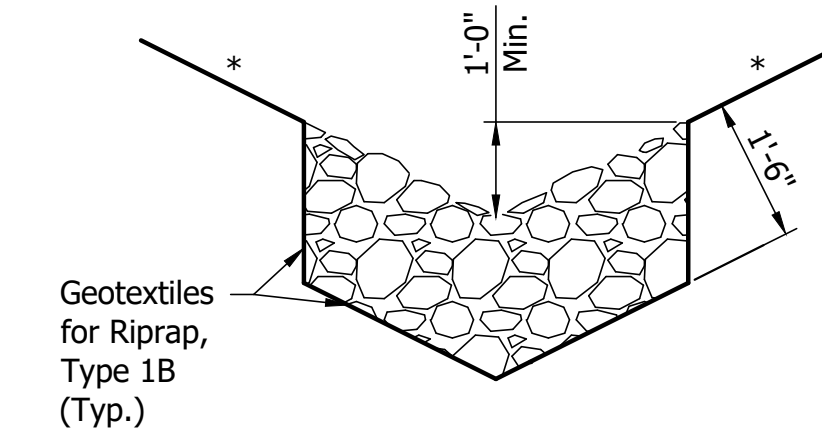
**SHOULDER AND GUARDRAIL DETAILS**  
(REQ'D. @ BEGIN OF PROJECT)  
Scale: 1" = 10'-0"



- LEGEND**
- (K) 165#/Syd QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/Syd QC/QA-HMA, 2, 70, Intermediate, 19.0 mm on 880#/Syd QC/QA-HMA, 2, 70, Base, 25.0 mm
  - (R) Milling Asphalt, 1 1/2" 165#/Syd QC/QA-HMA, 3, 70, Surface, 9.5 mm
  - (W) Widening w/ HMA, Type C 165#/Syd QC/QA-HMA, 3, 70, Surface, 9.5 mm on 275#/Syd QC/QA-HMA, 2, 70, Intermediate, 19.0 mm on 880#/Syd QC/QA-HMA, 2, 70, Base, 25.0 mm



**SHOULDER AND GUARDRAIL DETAILS**  
(REQ'D. @ END OF PROJECT)  
Scale: 1" = 10'-0"



**TYP. REVETMENT RIPRAP SIDE DITCH (R.R.S.D.)**  
Scale: 1/2" = 1'-0"

Notes:  
For Plan & Profile, see Sht.8.  
\*See Cross Sections for Slopes

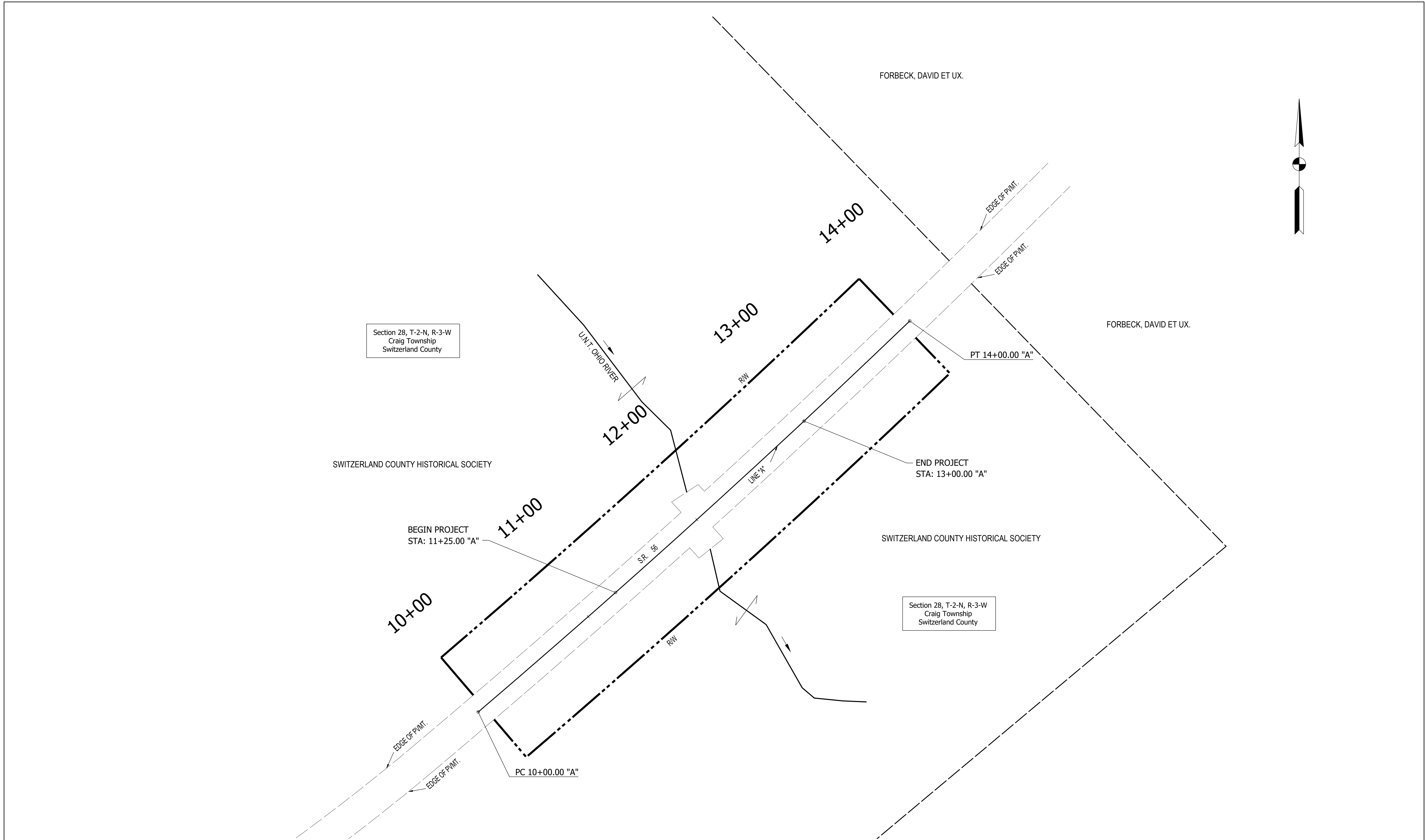
RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

INDIANA  
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	CV 056-078-158.30
VERTICAL SCALE	DESIGNATION
AS NOTED	1700001
DRAWING NO.	SHEETS
	4 of 24
CONTRACT	PROJECT
B-40422	1700001





mnoe | p:\180087 - seymour district des. no. 1700001 sr 56 unnamed ditch\02bridge\04plans\180087 - sht plat no.1.dwg | layout1 | 1/7/2021 4:11:54 PM ||

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

**INDIANA**  
**DEPARTMENT OF TRANSPORTATION**

**PLAT NO.1**

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE N/A	DESIGNATION 1700001
DRAWING NO.	SHEETS
	5 of 24
CONTRACT B-40422	PROJECT 1700001

SIGN NUMBER	IMUTCD CODE	SIGN MESSAGE	POST DESIGN		SIGN SIZE	SIGN COLOR		BORDER WIDTH	MARGIN WIDTH	LETTER HEIGHT SERIES - LINE 1	LETTER HEIGHT SERIES - LINE 2	LETTER HEIGHT SERIES - LINE 3	LETTER HEIGHT SERIES - LINE 4	WORD OR LINE	PCT	CORNER RADIUS	NO. OF POSTS	
			4'X4' WOOD	STEEL		BACKGROUND	COPY										1	2
9		SR 56 Closed Eastbound	*	B	60 x 36	Orange	Black	1/2	3/8	5 - Series C	5 - Series C						2 1/4	X
10		SR 56 Closed Westbound	*	B	60 x 36	Orange	Black	1/2	3/8	5 - Series C	5 - Series C						2 1/4	X

\* Wood Post permitted.

Notes:

- ① Spacing between letters of this word or line shall be reduced by this percentage as shown in the FHWA document, *Standard Highway Signs*.

See Standard Drawing E 801-TCSN-01 for additional general notes.

All dimensions are in inches.

**LEGEND**

- (A) Barricade Type III-A & Road Closure Sign Assembly
- (B) Barricade Type III-B
- (C) Barricade Type III-B & Road Closure Sign Assembly
- (D) Detour Route Marker Assembly
  1. Advance Turn
  2. Directional
  3. Confirming
  4. End
- Construction Sign and Support

**CONSTRUCTION SIGNS TYPE "A"**

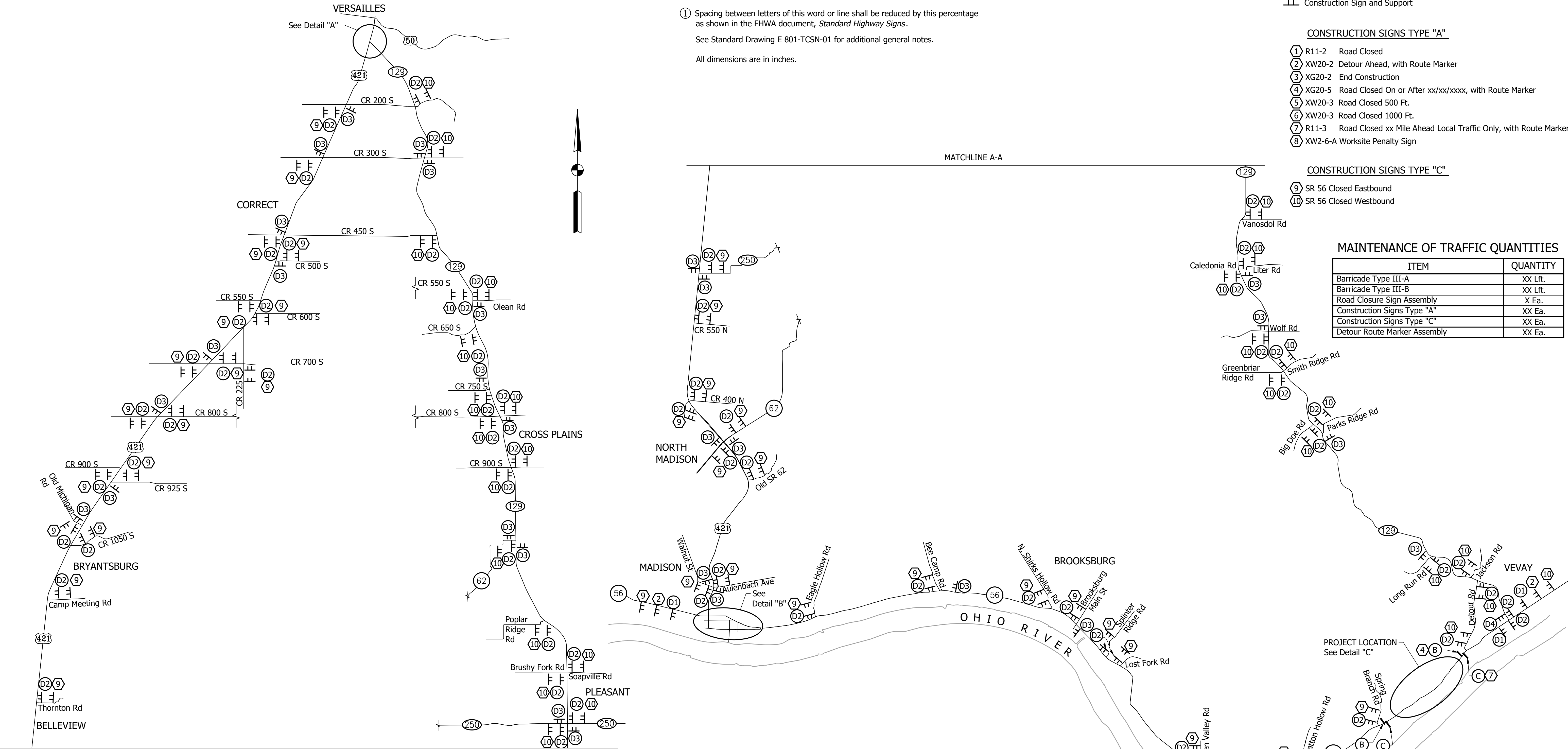
- ① R11-2 Road Closed
- ② XW20-2 Detour Ahead, with Route Marker
- ③ XG20-2 End Construction
- ④ XG20-5 Road Closed On or After xx/xx/xxxx, with Route Marker
- ⑤ XW20-3 Road Closed 500 Ft.
- ⑥ XW20-3 Road Closed 1000 Ft.
- ⑦ R11-3 Road Closed xx Mile Ahead Local Traffic Only, with Route Marker
- ⑧ XW2-6-A Worksite Penalty Sign

**CONSTRUCTION SIGNS TYPE "C"**

- ⑨ SR 56 Closed Eastbound
- ⑩ SR 56 Closed Westbound

**MAINTENANCE OF TRAFFIC QUANTITIES**

ITEM	QUANTITY
Barricade Type III-A	XX Lft.
Barricade Type III-B	XX Lft.
Road Closure Sign Assembly	X Ea.
Construction Signs Type "A"	XX Ea.
Construction Signs Type "C"	XX Ea.
Detour Route Marker Assembly	XX Ea.



**DETOUR ROUTE MAP**  
NO SCALE

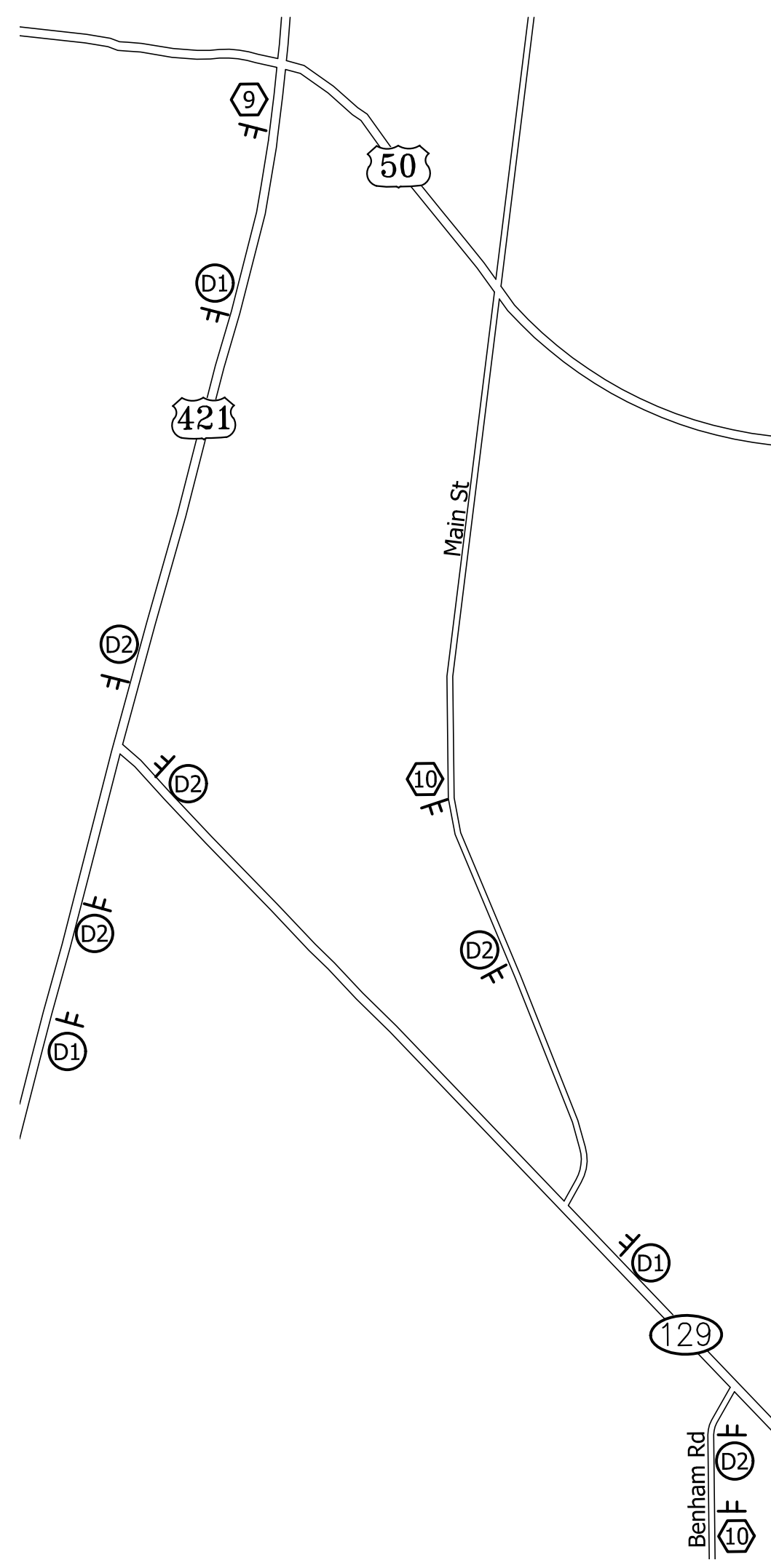
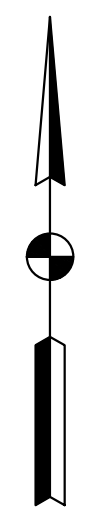
Note:  
For Details "A", "B", & "C", see Sht. 7.

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

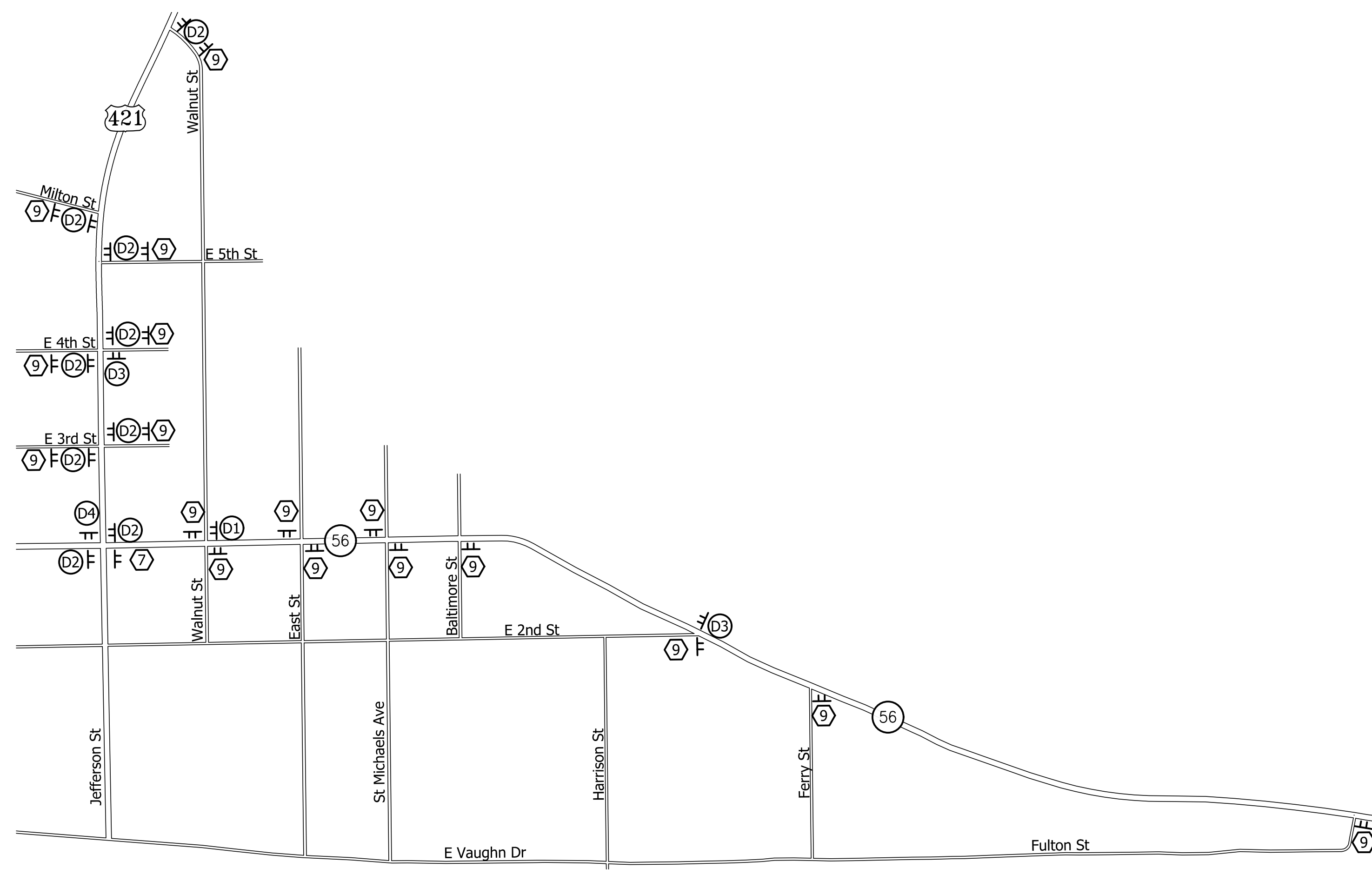
INDIANA  
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

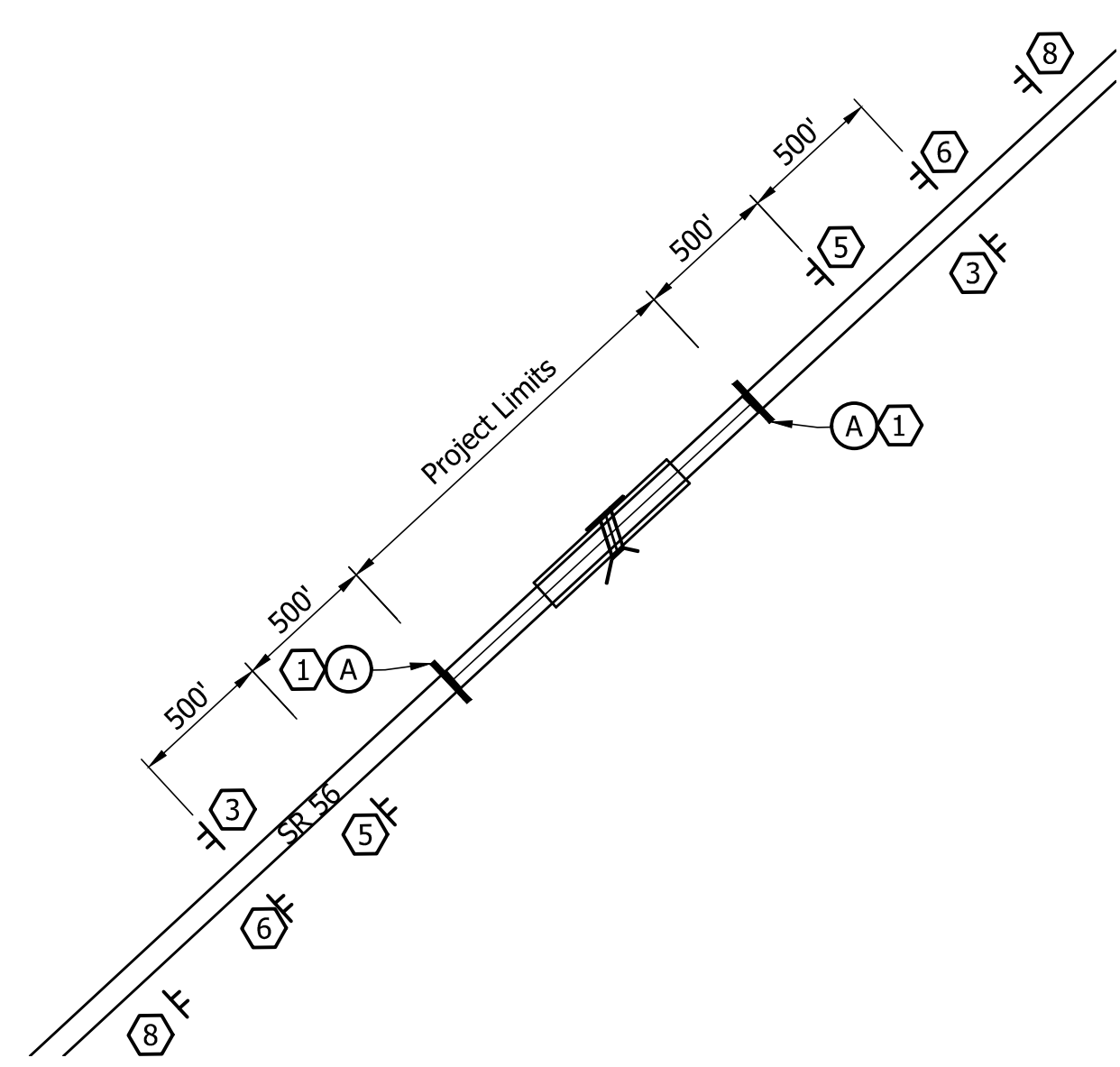
HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	CV 056-078-158.30
VERTICAL SCALE	DESIGNATION
AS NOTED	1700001
DRAWING NO.	SHEETS
	6 of 24
CONTRACT	PROJECT
B-40422	1700001



**DETAIL "A"**  
NO SCALE



**DETAIL "B"**  
NO SCALE



**DETAIL "C"**  
NO SCALE

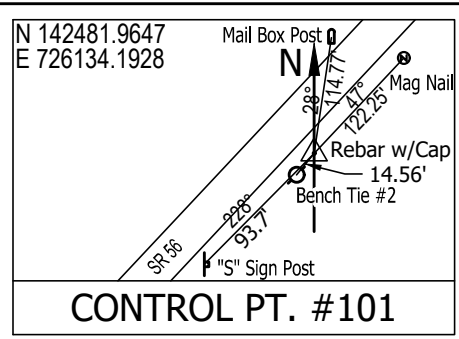
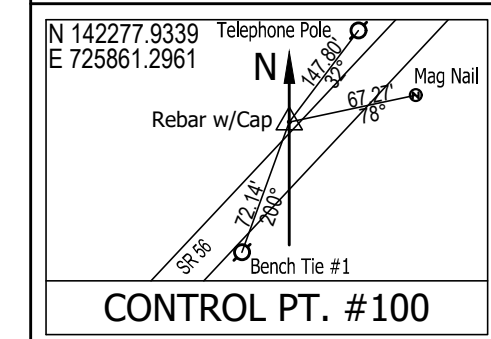
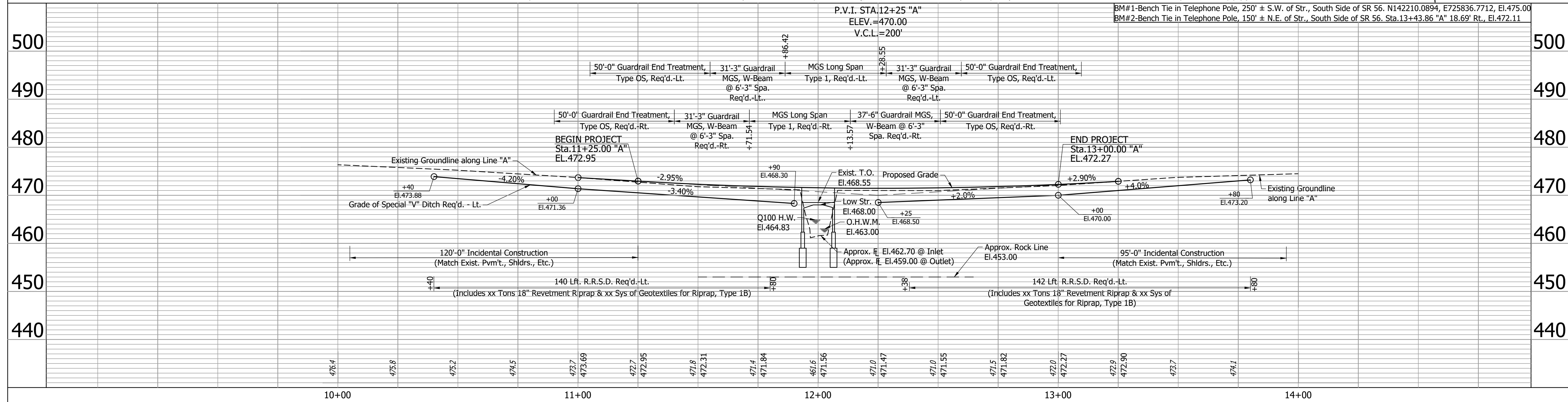
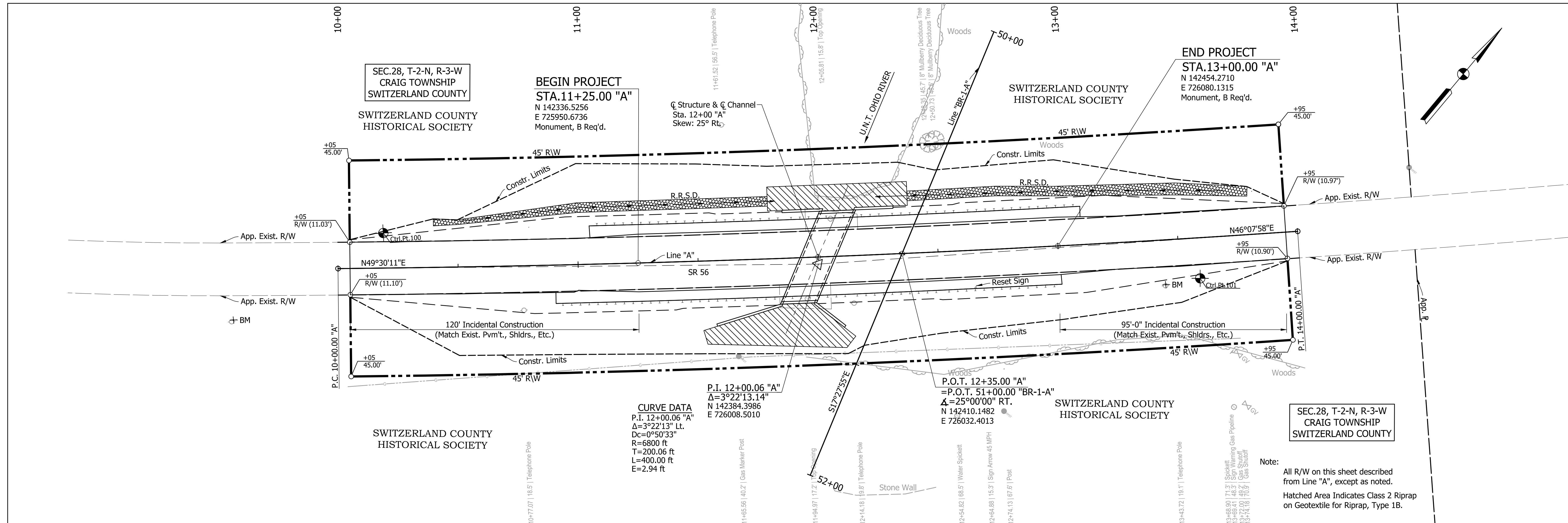
Notes:  
For Locations of Details "A", "B", & "C", see Sht. 6.  
For Legend, see Sht. 6.

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

INDIANA  
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	CV 056-078-158.30
VERTICAL SCALE	DESIGNATION
AS NOTED	1700001
DRAWING NO.	SHEETS
	7 of 24
CONTRACT	PROJECT
B-40422	1700001



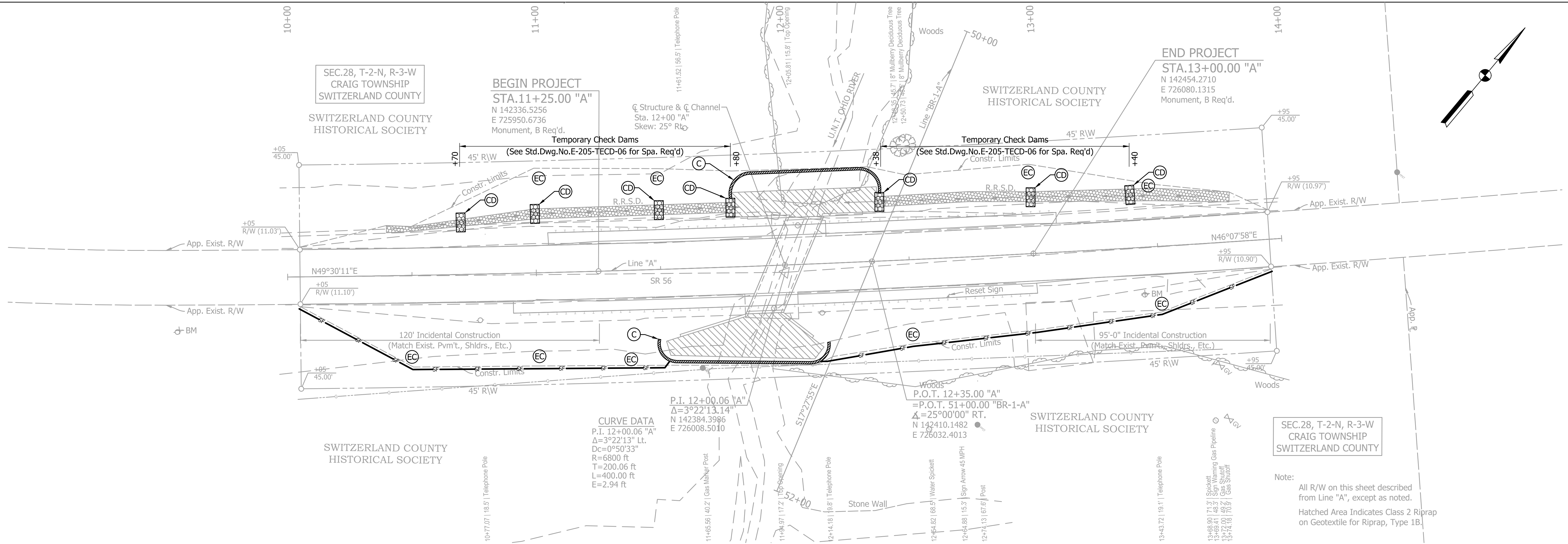
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: GLB	DRAWN: MEN	
CHECKED: TSW	CHECKED: GLB	

**INDIANA DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE LINE "A"**

HORIZONTAL SCALE 1"=20'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS 8 of 24
CONTRACT B-40422	PROJECT 1700001





SEC.28, T-2-N, R-3-W  
CRAIG TOWNSHIP  
SWITZERLAND COUNTY

Note:  
All R/W on this sheet described from Line "A", except as noted.  
Hatched Area Indicates Class 2 Riprap on Geotextile for Riprap, Type 1B.

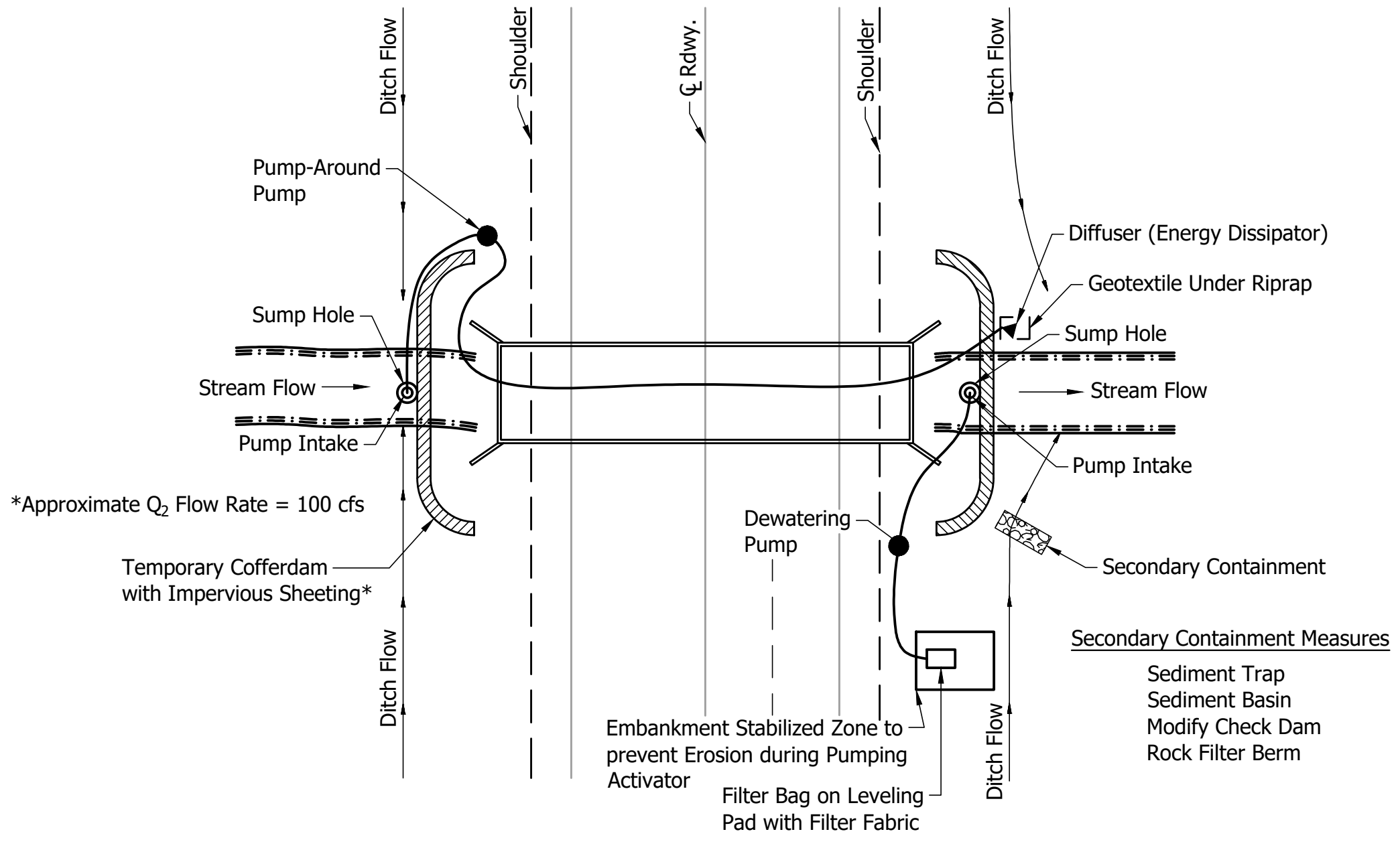
**LEGEND**

- SF— Temporary Silt Fence
- (C) Temporary Cofferdam with Impervious Sheeting
- (CD) Temporary Check Dam
- (EC) Manufactured Surface Protection Product/Erosion Control Blanket (All slopes Steeper than 3:1)  
Install on Rdwy Embankment side slopes at:  
Sta.10+05 "A" Rt. to Sta.13+95 "A" Rt.  
Sta.10+60 "A" Lt. to Sta.13+80 "A" Lt.

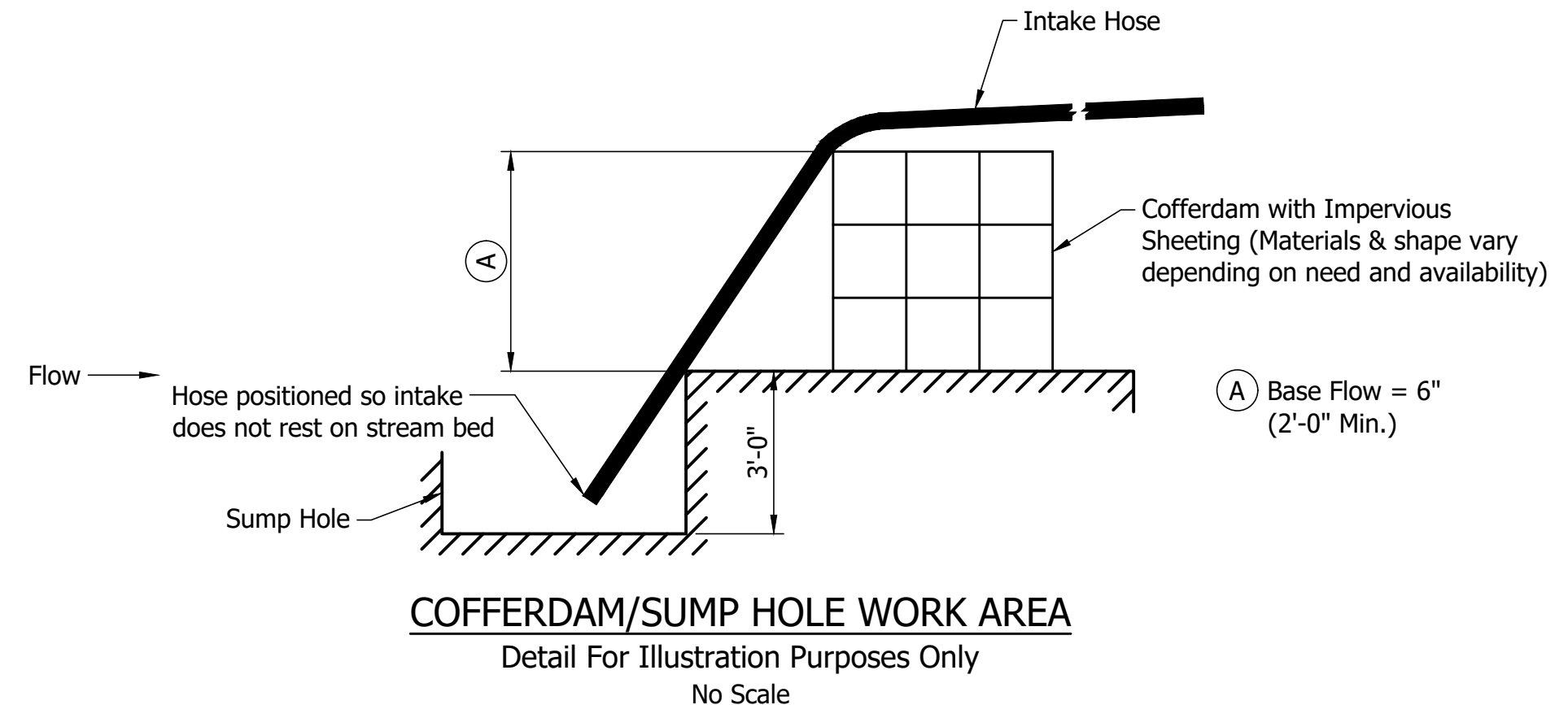
Note:  
Temporary Check Dams shall be one of the following:  
1. Temporary Check Dam, Traversable  
2. Temporary Check Dam, Revetment Riprap  
3. Temporary Check Dam, Modified

Temporary Check Dam, Traversable shall only be used when a check dam is required to be placed within 23' from the edge of the MOT or Design travel lane.

For Temporary Check Dam Details, see Std.Dwgs.E205-TECD-06-08



**PUMP AROUND AND DEWATERING DETAILS**  
Detail For Illustration Purposes Only  
No Scale

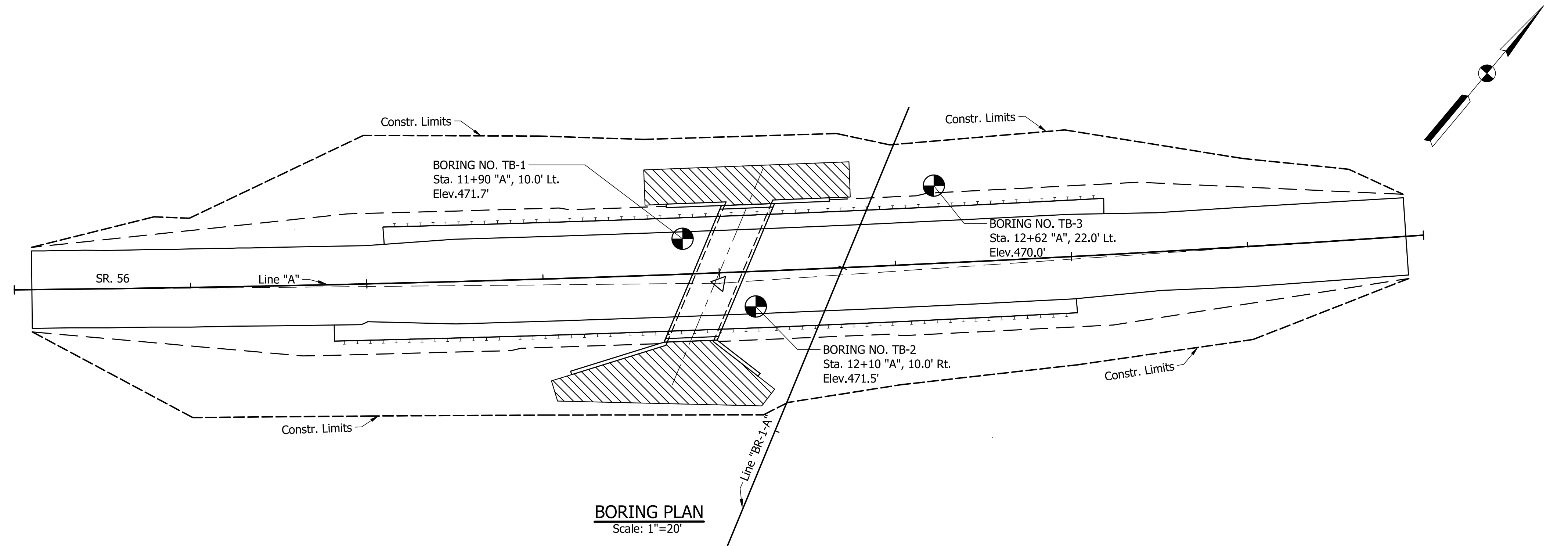


**COFFERDAM/SUMP HOLE WORK AREA**  
Detail For Illustration Purposes Only  
No Scale

RECOMMENDED FOR APPROVAL _____ DESIGNED: GLB CHECKED: TSW	DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION  EROSION CONTROL PLAN LINE "A"	HORIZONTAL SCALE 1"=20'	BRIDGE FILE CV 056-078-158.30
	DRAWN: MEN CHECKED: GLB		VERTICAL SCALE 1"=5'	DESIGNATION 1700001
		DRAWING NO. B-40422	SHEETS 9 of 24 PROJECT 1700001	

# BORING NO. TB-1

TEST BORING RECORD													
CLIENT : Beam, Longest and Neff, LLC			BORING NO. : TB-1			SHEET : 1 OF 1							
PROJECT : Small Structure Replacement			DATE STARTED : 03-04-20			DATE COMPLETED : 03-05-20							
ROUTE NO. : SR 56 COUNTY : Switzerland			DESIGNER : 1700001			PROJECT NO. : 1700001			CTL PROJECT NO. : 19050002IND				
LOCATION : SR 56, 16.12 miles E of US 241			Boring Elevation : 471.7 feet			Boring Depth : 30.0 feet			Boring Method : HSA, RC				
DESIGNER : 1700001			Latitude : 38.71647			Station : 11+90			Hammer : Automatic				
			Longitude : -85.115195			Offset : 10.0 feet Lt			Hammer Efficiency : 90.7				
			Line : 'A'			Casing Diameter : 3.25" I.D.			Driller/Inspector : JS/DW				
			Core Size : 2" NO			Weather : Sunny							
GROUNDWATER: <input type="checkbox"/> Encountered at Dry <input checked="" type="checkbox"/> At completion 5.3 feet <input type="checkbox"/> 5.0 feet After 24 hours <input type="checkbox"/> Caved in at 15.5 feet													
Stratum Elevation	Sample Depth	SOIL/MATERIAL DESCRIPTION	Stratum Depth	Sample Number	SPT per 6"	SPT per 12"	Recovery (%)	Moisture Content (%)	Total Unit Weight (pcf)	Unclassified Compression (psf)	LL	PL	PI
470.7		ASPHALT CONCRETE (12") (Visual)	1.0										
470.2		SAND AND GRAVEL BASE (6") (Visual)	1.5										
	2.5			SS-1	11	22	67	11.6					
	5.0	Grayish Brown, Slightly Moist, Very Shff, SILTY LOAM with Some Gravel (FILL) (Visual) A-4			11								
	7.5			SS-2	13	21	44	23.0					
	10.0				8								
	12.5			SS-3	6	12	18	6					
	15.0				6								
	17.5			SS-4	6	13	44	30.3			34	18	16
	20.0				7								
	22.5	Brown, Moist, Shff, CLAY LOAM A-6, As Lab 3		SS-5	7	13	6	23.6					
	25.0				5								
	27.5			RC-1	13	27	100	8.0					
	30.0				41								
	32.5	Gray, Highly Weathered, Very Soft, SHALE		RC-2				88					
	35.0												
	37.5	Gray, Highly Weathered to Moderately Weathered, Very Soft to Soft, SHALE											
	40.0												
	42.5												
	45.0												
441.7	30.0	Bottom of Boring at 30.0 feet	30.0										
Boring backfilled in accordance with INDOT requirements and pavement restored with concrete patch.													
CTL Engineering, Inc. Phone: 317-295-8650			BORING METHOD HSA - Hollow Stem Auger SFA - Solid Flight Auger RC - Rock Coring MD - Mud Drilling WD - Wash Drilling HA - Hand Auger			SAMPLING METHOD SS - Split Spoon Sample ST - Shelby Tube Sample CR - Rock Core Sample BS - Bag Sample AC - Auger Cuttings SBS - Subbase Sample			ABBREVIATIONS * - Hand Penetrometer LL - Liquid Limit PL - Plastic Limit PI - Plasticity Index DCP - Dynamic Cone Penetrometer Test				



STANDARD PENETRATION TEST:  
 Driving 2" O.D. Split-Barrel Sampler 18" with a 140 lb. Hammer falling 30".  
 Blow counts indicate number of blows per 6" interval. First 6" for setting  
 Sampler.

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
		SOIL BORINGS		AS NOTED	CV 056-078-158.30
DESIGNED: GLB	DRAWN: ACA	DRAWING NO.		AS NOTED	DESIGNATION
CHECKED: TSW	CHECKED: GLB	10 of 24		1700001	1700001
		CONTRACT		PROJECT	
		B-40422		1700001	

# BORING NO. TB-2

# BORING NO. TB-3

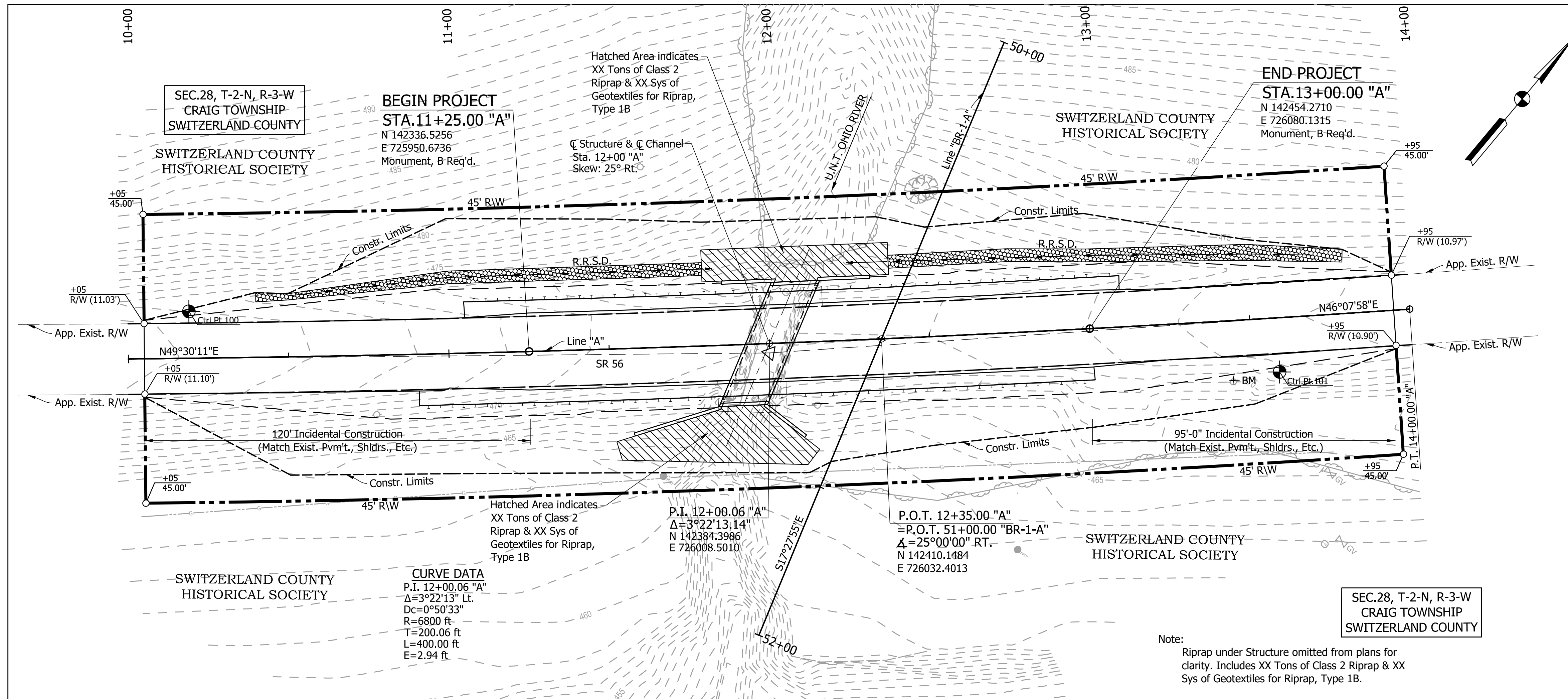
TEST BORING RECORD											
CLIENT : Beam, Longest and Neff, LLC			BORING NO. : TB-2			SHEET : 1 OF 1			DATE STARTED : 03-04-20		
PROJECT : Small Structure Replacement			SHEET : 1 OF 1			DATE COMPLETED : 03-05-20			LOCATION : SR 56, 16.12 miles E of US 241		
ROUTE NO. : SR 56			COUNTY : Switzerland			DATE COMPLETED : 03-05-20			DES NO. : 1700001		
LOCATION : SR 56, 16.12 miles E of US 241			DATE COMPLETED : 03-05-20			PROJECT NO. : 1700001			CTL PROJECT NO. : 19050002IND		
Boring Elevation : 471.5 Feet			Boring Depth : 22.5 feet			Boring Method : HSA			Hammer : Automatic		
Latitude : 38.716485			Station : 12+10			Rig Type : CME 550 ATV			Hammer Efficiency : 90.7		
Longitude : -85.11509			Offset : 10.0 feet RI			Driller/Inspector : JS/DW			Temperature : 40° F		
Line : 'A'			Casing Diameter : 3.25" I.D.			Weather : Sunny			Core Size : ---		
GROUNDWATER: Encountered at 18.5 feet At completion 14.8 feet 8.5 feet After 24 hours Caved in at 13.5 feet											
Station Elevation	Sample Depth	SOIL/MATERIAL DESCRIPTION	Station Depth	Sample Number	SPT per 6"	SPT per 12"	Recovery (%)	Moisture Content (%)	Total Unit Weight (pcf)	Unconfined Compression (pcf)	Afterberg Limits
470.5		ASPHALT CONCRETE (12") (Visual)	1.0								
469.5	2.5	SAND AND GRAVEL BASE (12") (Visual)	2.0	SS-1	6	10	100	11.0			
	5.0			SS-2	6	0					
	7.5			SS-3	7	13	78	22.0			27 15 13
	10.0	Brown, Moist, Medium Shiff to Very Shiff, SANDY LOAM A-6, Lab 2		SS-4	7	11	18	100	16.0		
	12.5										
	15.0			SS-5	19	13	24	44	14.6		
	17.5										
	20.0	Gray, Highly Weathered, Very Soft, SHALE	18.5	SS-6	6	8	10	100	14.5		
	22.5	Gray, Highly Weathered, Very Soft, SHALE	22.5	SS-7	12	15	35	100	15.1		
	25.0	Bottom of Boring at 22.5 feet									
	27.5	Boring backfilled in accordance with INDOT requirements and pavement restored with concrete patch.									
	30.0										
	32.5										
	35.0										
	37.5										
	40.0										
	42.5										
	45.0										
CTL Engineering, Inc. Phone: 317-295-8650			BORING METHOD HSA - Hollow Stem Auger SFA - Solid Flight Auger RC - Rock Coring MD - Mud Drilling WD - Wash Drilling HA - Hand Auger			SAMPLING METHOD SS - Split Spoon Sample ST - Shelby Tube Sample CR - Rock Core Sample BS - Bag Sample AC - Auger Cuttings SBS - Subbase Sample			ABBREVIATIONS * - Hand Penetrometer LL - Liquid Limit PL - Plastic Limit PI - Plasticity Index DCP - Dynamic Cone Penetrometer Test		

TEST BORING RECORD											
CLIENT : Beam, Longest and Neff, LLC			BORING NO. : TB-3			SHEET : 1 OF 1			DATE STARTED : 03-05-20		
PROJECT : Small Structure Replacement			SHEET : 1 OF 1			DATE COMPLETED : 03-05-20			LOCATION : SR 56, 16.12 miles E of US 241		
ROUTE NO. : SR 56			COUNTY : Switzerland			DATE COMPLETED : 03-05-20			DES NO. : 1700001		
LOCATION : SR 56, 16.12 miles E of US 241			DATE COMPLETED : 03-05-20			PROJECT NO. : 1700001			CTL PROJECT NO. : 19050002IND		
Boring Elevation : 470.0 Feet			Boring Depth : 15.0 feet			Boring Method : HSA			Hammer : Automatic		
Latitude : 38.716555			Station : 12+62			Rig Type : CME 550 ATV			Hammer Efficiency : 90.7		
Longitude : -85.115119			Offset : 22.0 feet LI			Driller/Inspector : JS/DW			Temperature : 40° F		
Line : 'A'			Casing Diameter : 3.25" I.D.			Weather : Sunny			Core Size : ---		
GROUNDWATER: Encountered at Dry At completion Dry Dry After 4 hours Caved in at 10.2 feet											
Station Elevation	Sample Depth	SOIL/MATERIAL DESCRIPTION	Station Depth	Sample Number	SPT per 6"	SPT per 12"	Recovery (%)	Moisture Content (%)	Total Unit Weight (pcf)	Unconfined Compression (pcf)	Afterberg Limits
	2.5			SS-1	4	10	100	25.7			
	5.0	Brown, Moist, Shiff to Very Shiff, SANDY LOAM A-6, As Lab 2		SS-2	5	11	6				
	7.5			SS-3	9	20	33	27.0			
	10.0			SS-4	8	19	100	19.3			35 18 17
	12.5	Light Brown, Moist, Very Shiff, CLAY LOAM A-6, Lab 3									
	15.0	Gray, Moist, Shiff, SILTY CLAY LOAM A-6, Lab 4		SS-5	6	9	67	25.0			34 19 15
	17.5	Bottom of Boring at 15.0 feet									
	20.0	Boring backfilled in accordance with INDOT requirements.									
CTL Engineering, Inc. Phone: 317-295-8650			BORING METHOD HSA - Hollow Stem Auger SFA - Solid Flight Auger RC - Rock Coring MD - Mud Drilling WD - Wash Drilling HA - Hand Auger			SAMPLING METHOD SS - Split Spoon Sample ST - Shelby Tube Sample CR - Rock Core Sample BS - Bag Sample AC - Auger Cuttings SBS - Subbase Sample			ABBREVIATIONS * - Hand Penetrometer LL - Liquid Limit PL - Plastic Limit PI - Plasticity Index DCP - Dynamic Cone Penetrometer Test		

STANDARD PENETRATION TEST:  
 Driving 2" O.D. Split-Barrel Sampler 18" with a 140 lb. Hammer falling 30".  
 Blow counts indicate number of blows per 6" interval. First 6" for setting Sampler.

Note:  
 For Soil Boring Plan, see Sht.10

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
			N/A	CV 056-078-158.30
DESIGNED: GLB DRAWN: ACA	SOIL BORINGS		VERTICAL SCALE	DESIGNATION
			N/A	1700001
CHECKED: TSW CHECKED: GLB			DRAWING NO.	SHEETS
			CONTRACT	PROJECT
			B-40422	1700001



**EXISTING STRUCTURE**  
 Existing Structure is a Single Span Reinforced Concrete Slab widened with precast concrete channel beams (10'-0") with a 31'-6" Clear Roadway. (To Be Removed)

**EARTHWORK SUMMARY**

Common Excavation	xxx Cys
Usable Common Excavation	xxx Cys
Fill + 20%	xxx Cys
Waterway Excavation	xx Cys
Usable Waterway Excavation (50%)	xx Cys
Borrow	xx Cys

The estimated quantities for Benching are xxx Cys for Cut and xxx Cys for Fill and are not included in the Earthwork Summary.

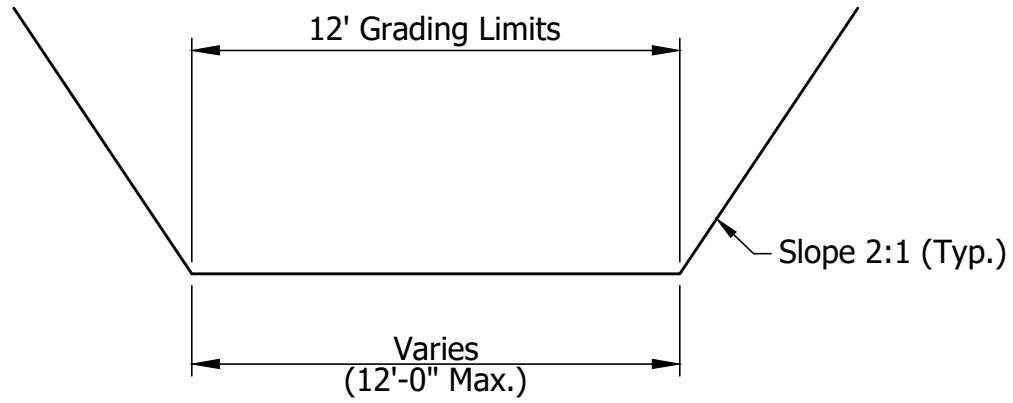
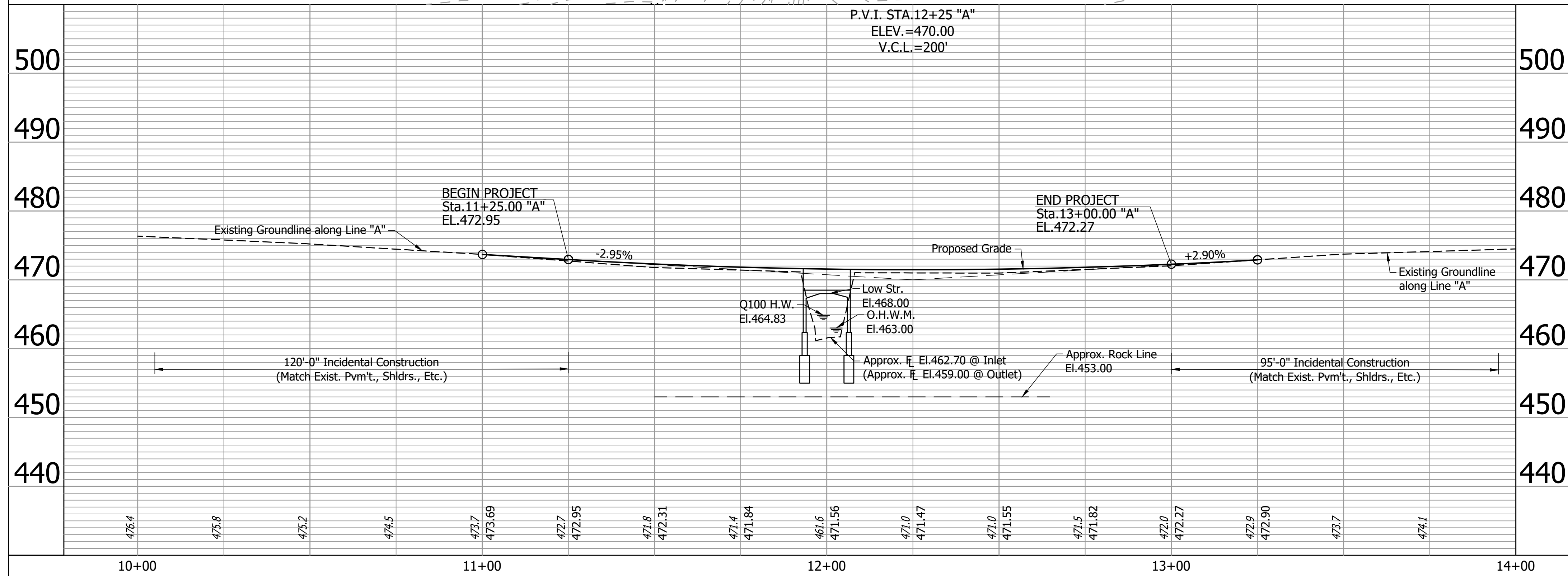
**HYDRAULIC DATA**

Drainage Area	0.063 Sq Mi
Design Discharge, Q100	119 cfs
Design Discharge, Q25	103 cfs
High Water Elevation, Q100	El.464.83
Existing Small Structure	
Waterway Area	
Net Area thru Str.	57.7 Sft
Gross Area thru Str.	57.7 Sft
Area over Road	0.0 Sft
Velocity thru Str.	12.46 ft/sec
Backwater, Q100	1.40 ft
Low Structure Elevation	El.468.55

**Proposed Culvert**

Waterway Area	
Net Area thru Culvert	58.3 Sft
Provided Gross Area thru Culvert	58.3 Sft
Area over Road	0 Sft
Velocity thru Culvert, Q100	9.59 ft/sec
Backwater, Q100	1.00 ft
Proposed Low Structure Elevation	El.468.00
Skew	25° Rt.
Flowline Elevation (@ Upstream Coping)	El.462.70
Flowline Elevation (@ Downstream Coping)	El.459.00

Note:  
 Riprap under Structure omitted from plans for clarity. Includes XX Tons of Class 2 Riprap & XX Sys of Geotextiles for Riprap, Type 1B.

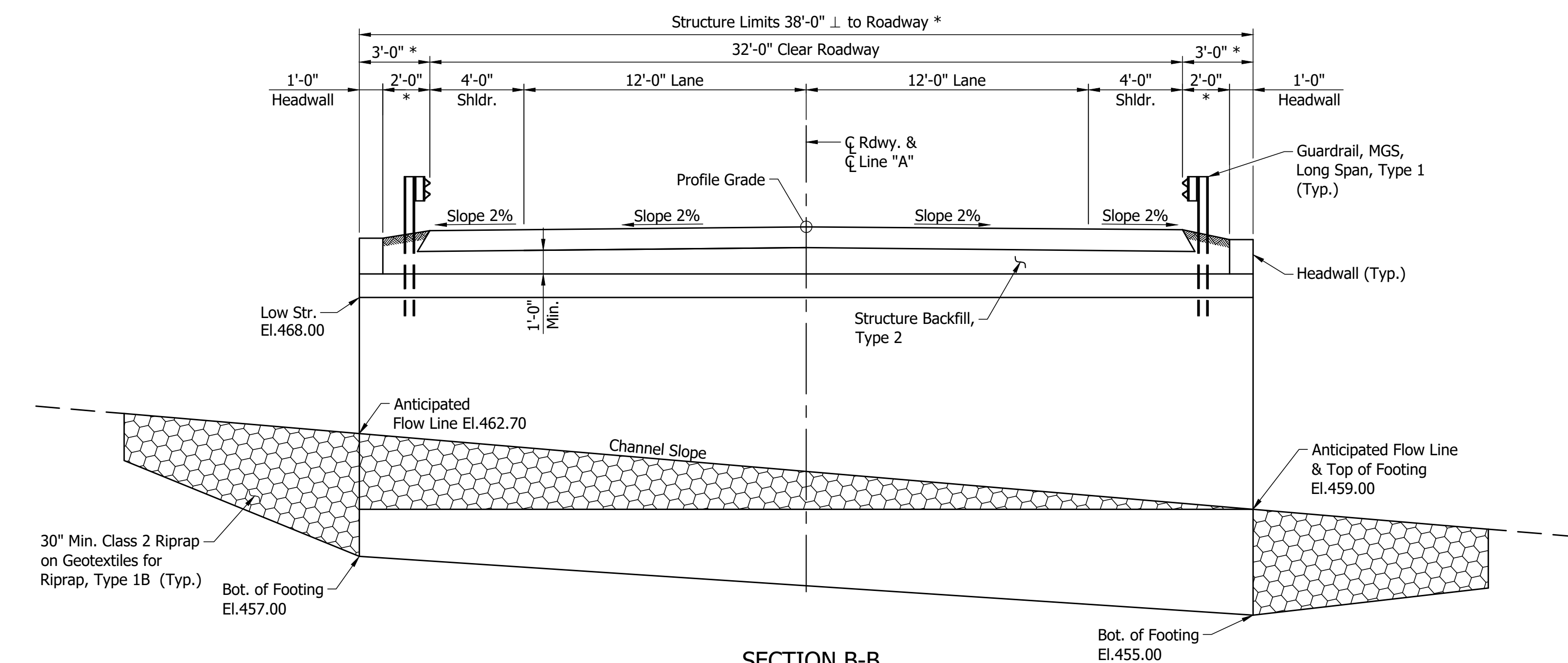
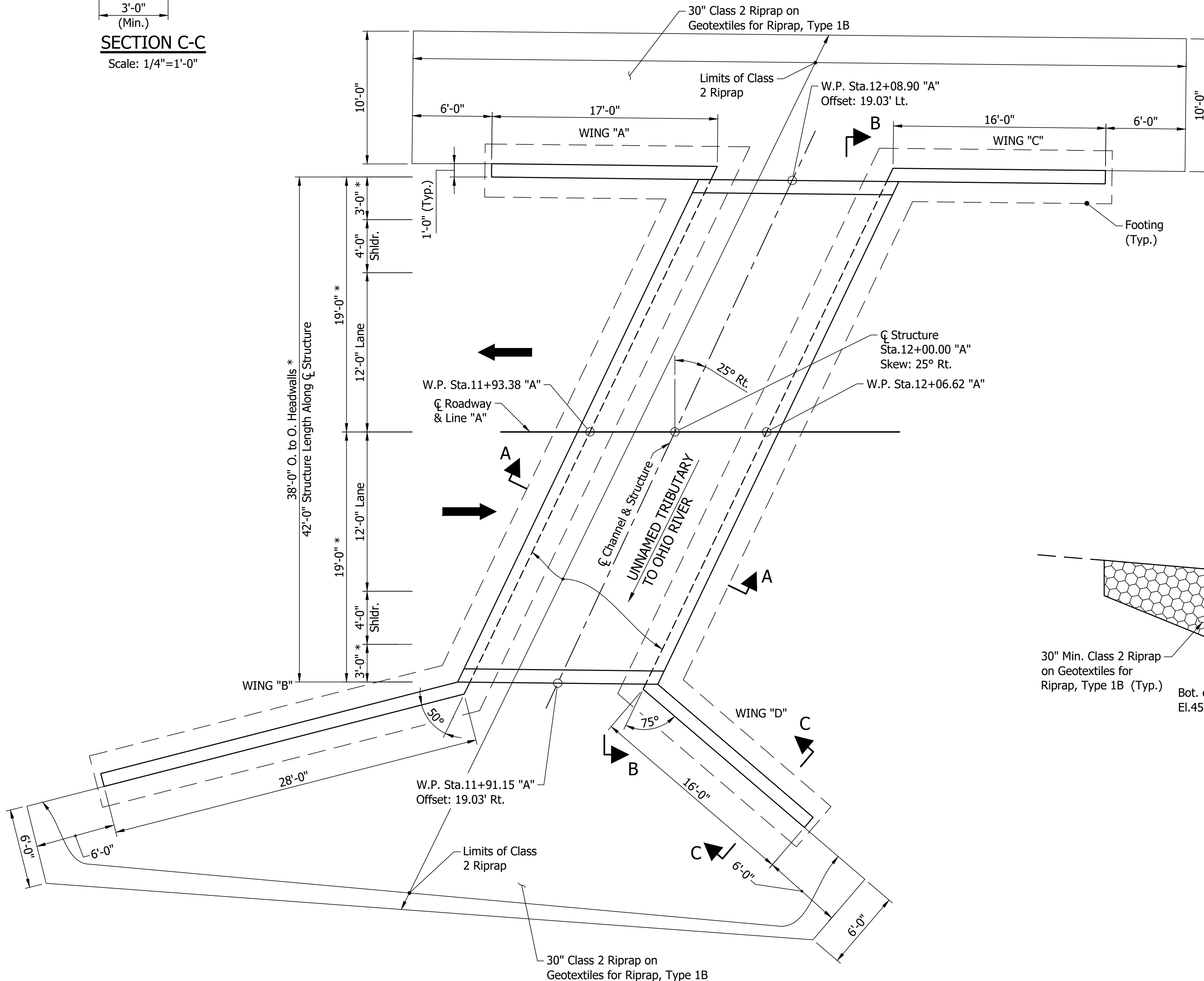
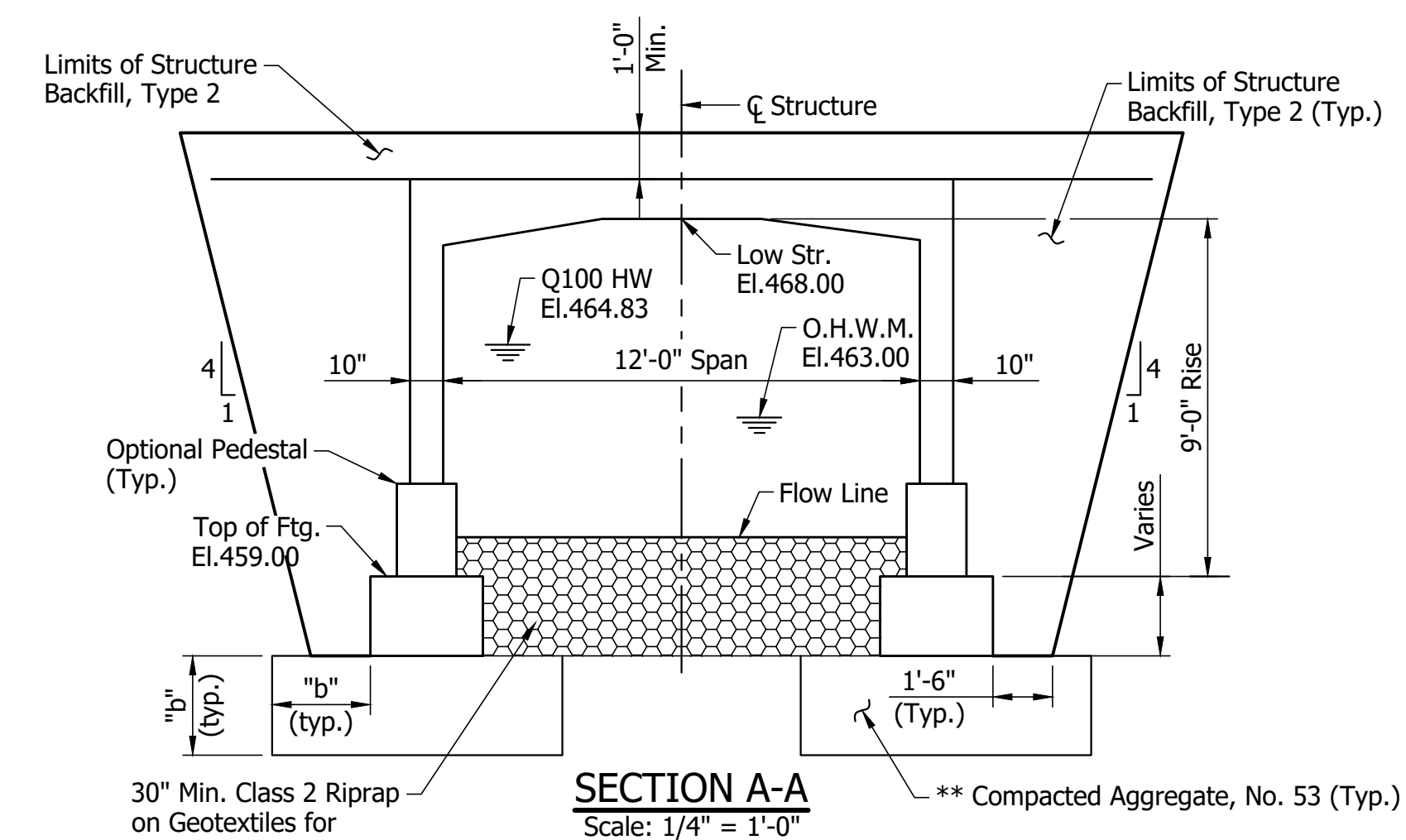
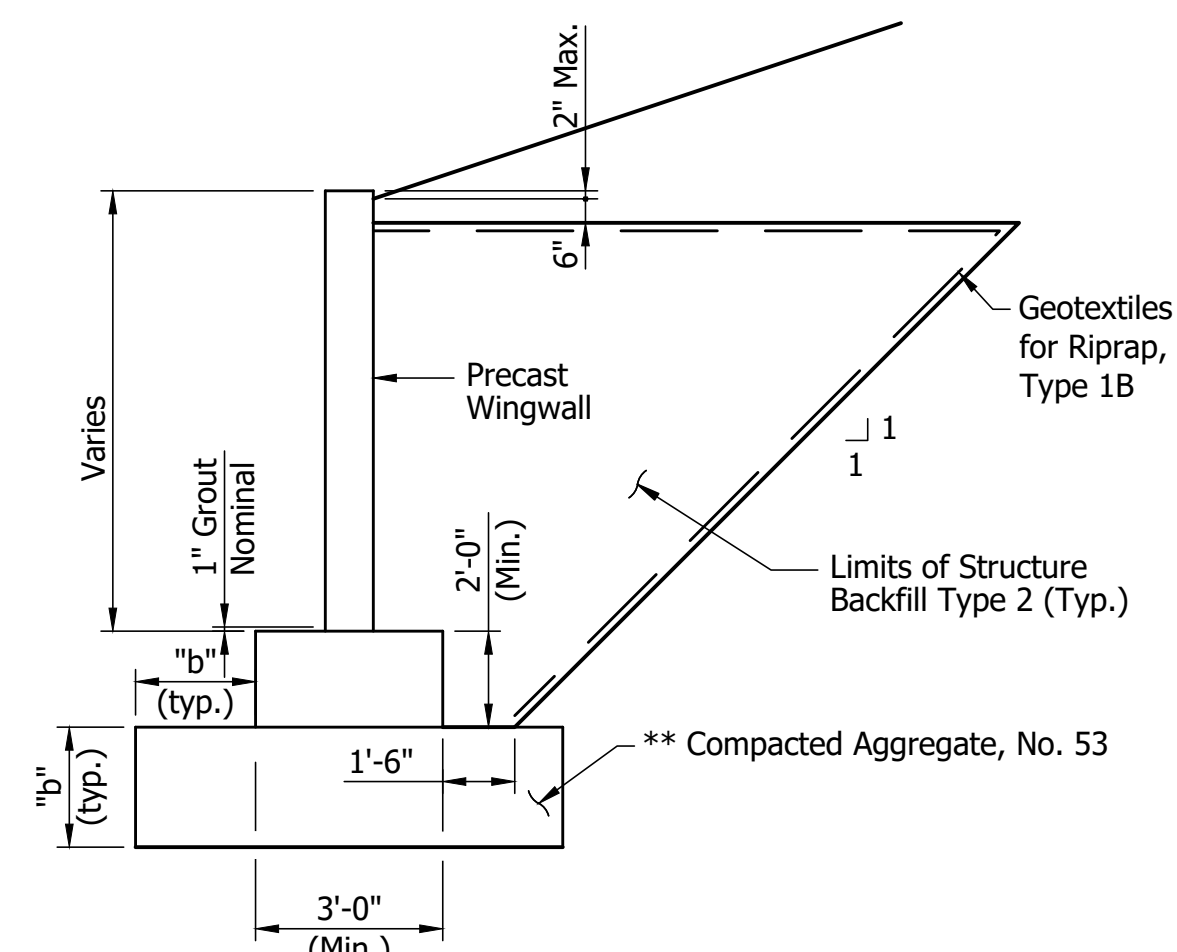


**TYPICAL CHANNEL SECTION**  
 No Scale

**PRECAST CONCRETE 3-SIDED STRUCTURE**  
 1 SPAN: 12'-0" RISE 9'-0"  
 32'-0" CLEAR ROADWAY SKEW: 25° Rt.  
 SR 56 OVER UNNAMED TRIBUTARY TO OHIO RIVER  
 SWITZERLAND COUNTY

DESIGNED: GLB	DRAWN: NW	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1"=20'	BRIDGE FILE CV 056-078-158.30
CHECKED: TSW	CHECKED: GLB		VERTICAL SCALE 1"=5'	DESIGNATION 1700001
		LAYOUT LINE "A"	DRAWING NO. C1 of C3	SHEETS 12 of 24
			CONTRACT B-40422	PROJECT 1700001





Note:  
 \* For General Notes and Elevations, see Sht.C3.  
 \* Measurement varies slightly due to horizontal curve.  
 \*\* The Contractor shall excavate the soft or wet soils below the proposed footings and replace the unsuitable material with Compacted Aggregate No. 53. If the depth of this over excavation "b" exceed 18 inches, contact the INDOT Office of Geotechnical Services.

**PRECAST CONCRETE 3-SIDED STRUCTURE**  
 1 SPAN: 12'-0" RISE 9'-0"  
 32'-0" CLEAR ROADWAY SKEW: 25° Rt.  
 SR 56 OVER UNNAMED TRIBUTARY TO OHIO RIVER  
 SWITZERLAND COUNTY

RECOMMENDED FOR APPROVAL _____ DESIGNED: GLB CHECKED: TSW	DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION  GENERAL PLAN	HORIZONTAL SCALE AS NOTED	BRIDGE FILE CV 056-078-158.30
	DRAWN: NW CHECKED: GLB		VERTICAL SCALE AS NOTED	DESIGNATION 1700001
			DRAWING NO. C2 of C3	SHEETS 13 of 24
			CONTRACT B-40422	PROJECT 1700001

**GENERAL NOTES**

Reinforcing steel covering shall be 2 1/2" in top and 1" minimum in the bottom of the floor slabs, 3" in footings, except bottom steel which shall be 4", and 2" in all other parts unless noted.

Alternate Cast-in-place Wingwalls may be substituted for the precast wingwall shown in Section C-C.

Reinforcing in Precast Structure shall be epoxy coated.

The exterior precast unit shall be mechanically fastened to the adjacent unit at both ends of the structure. Mechanically fastening detail shall be provided by Precast Manufacturer.

The exposed faces of headwalls to be sealed in accordance with Article 702.21 of Specifications. (Estimated Quantity = xxx Sft.)

A three-sided arch-topped or true-arch structure will not be permitted at this location.

WINGWALL INFORMATION		
	AREAS	LENGTH
Wing "A"	208.3 Sft.	17'-0"
Wing "B"	297.5 Sft.	28'-0"
Wing "C"	192.0 Sft.	16'-0"
Wing "D"	156.0 Sft.	16'-0"

**DESIGN DATA**

**LIVE LOAD:** Designed for HL-93 loading in accordance with AASHTO LRFD Bridge Design Specifications, Eighth Edition, 2017.

**DEAD LOAD:** Actual weight plus 35 psf (composite) for future wearing surface.

**DESIGN STRENGTHS:** To be in accordance with AASHTO LRFD Bridge Design Specification, Eighth Edition, 2017.

**CONCRETE:**

Class "C":  $f'_c=4000$  psi  
 Class "B":  $f'_c=3000$  psi  
 Class "A":  $f'_c=3500$  psi

**REINFORCING STEEL:**

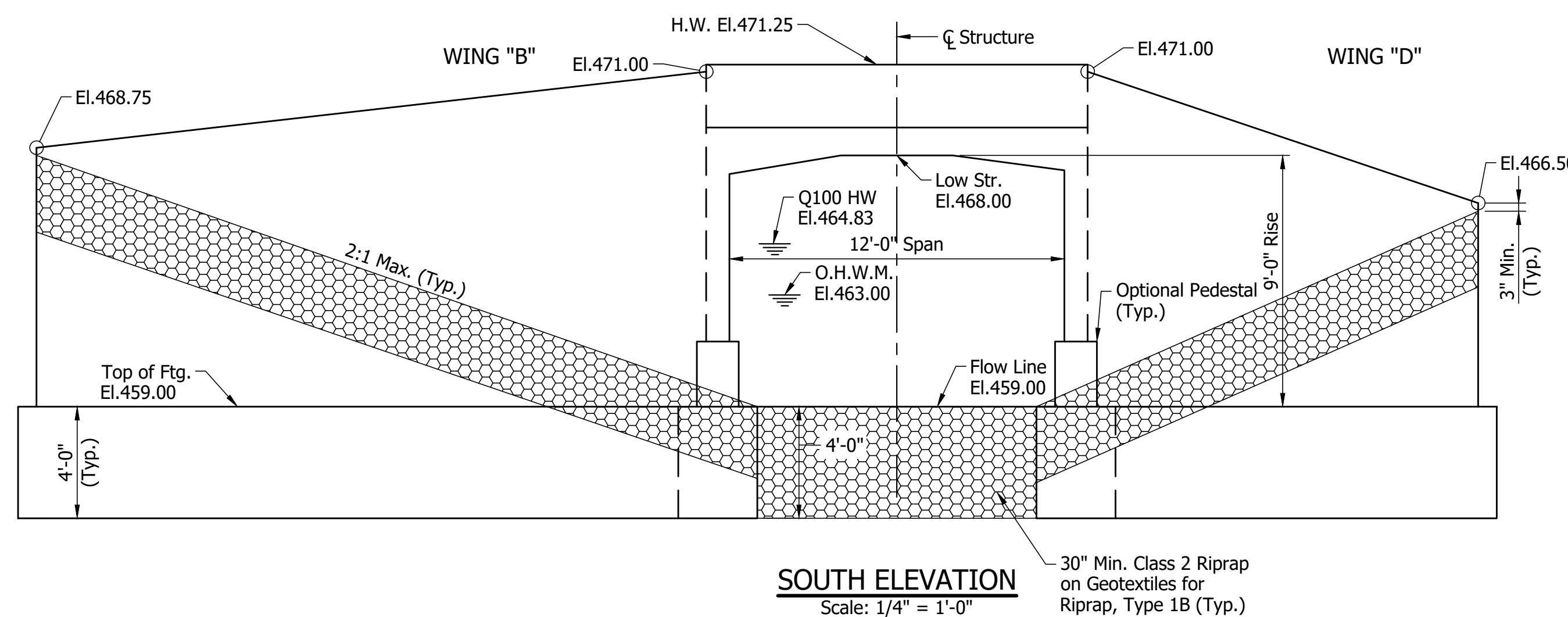
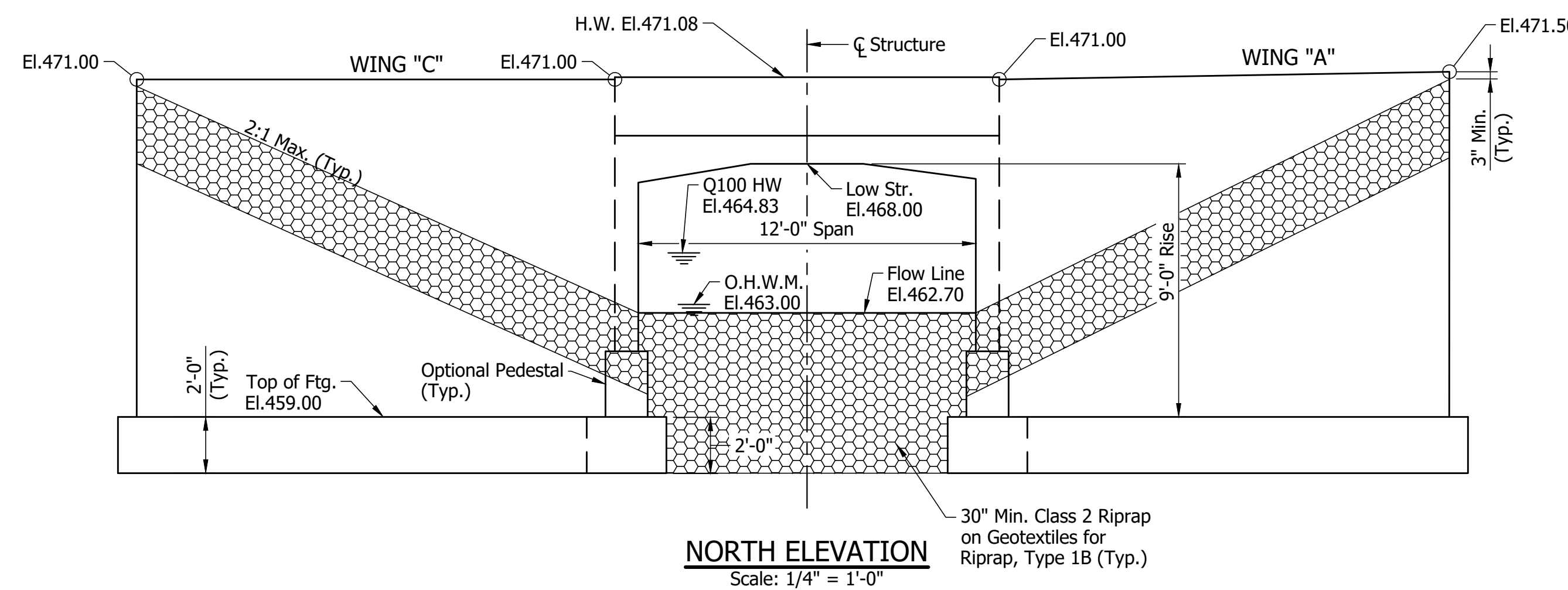
Grade 60:  $f_y=60,000$  psi

**SEISMIC DATA**

AASHTO Guide Design Specifications for LRFD Seismic Bridge Design, Second Edition, 2011 and Interims through 2015.

Seismic Zone 1  
 $S_1=0.083g$   
 Site Class D  
 $F_v=2.40$

SOIL PARAMETERS FOR SPREAD FOOTING DESIGN	
PARAMETERS	ESTIMATED VALUE
Minimum Bottom of Footing Elevations	458.7 (inlet) 455.0 (outlet)
Minimum Footing Width, feet	3.0
Nominal Bearing Resistance ( $q_n$ ), psf (Service Limit)	See Table
Bearing Resistance Factor ( $\phi_b$ ) (Strength Limit)	0.45
Nominal Soil Bearing Resistance, psf (Strength Limit)	See Table
Friction Angle of Soil ( $\phi$ ), degrees	0
Friction Angle Between Footing and Foundation soil ( $\delta$ ), degrees	0
Friction Factor, ( $\tan\delta$ )	0
Nominal Cohesion of Foundation Soil (C), psf	1,500
Nominal Adhesion between Foundation Soil and Concrete ( $C_A$ ), psf	1,000
Friction Angle of Backfill Material, degrees	30
Friction Angle Between Wall and Backfill ( $\delta_r$ ), degrees	20
Total Unit Weight of Foundation Soil, pcf	150
Unit Weight of Backfill Material, pcf	125



SHALLOW FOUNDATION BEARING RESISTANCE				
FOOTING WIDTH (FEET)	SERVICE LIMIT STATE		STRENGTH LIMIT STATE	
	At 1.0-inch settlement	At 0.5-inch settlement	Nominal	Factored
2	5,650	2,950	6,448	2,900
3	4,150	2,200	6,448	2,900
4	3,500	1,850	6,448	2,900
5	3,150	1,650	6,448	2,900
6	2,950	1,550	6,448	2,900
7	2,850	1,500	6,448	2,900

Note:  
 For General Plan and Sections, see Sht.C2.

**PRECAST CONCRETE 3-SIDED STRUCTURE**  
 1 SPAN: 12'-0" RISE 9'-0"  
 32'-0" CLEAR ROADWAY SKEW: 25° Rt.  
 SR 56 OVER UNNAMED TRIBUTARY TO OHIO RIVER  
 SWITZERLAND COUNTY

RECOMMENDED FOR APPROVAL _____ DESIGNED: GLB CHECKED: TSW	DESIGN ENGINEER _____ DATE _____ DRAWN: NW CHECKED: GLB	INDIANA DEPARTMENT OF TRANSPORTATION  GENERAL PLAN	HORIZONTAL SCALE AS NOTED	BRIDGE FILE CV 056-078-158.30
			VERTICAL SCALE AS NOTED	DESIGNATION 1700001
		DRAWING NO. C3 of C3	SHEETS 14 of 24	
			CONTRACT B-40422	PROJECT 1700001

### PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH LFT	LENGTH LFT	RADI FT	DISTANCE BEYOND R/W LINE LFT	SURFACE BEYOND R/W LINE			GRADE	EXCAVATION	CLEAR ZONE AT DRIVE LFT	HMA FOR APPROACHES				QC/QA HMA FOR ROADS				PCCP FOR APPROACHES, 9" SYS	ASPHALT MATERIAL FOR		COMPACTED AGGREGATE FOR BASE NO. 53		COMPACTED AGGREGATE FOR SURFACE NO. 73		MILLING APPROACH SYS	JOINT ADHESIVE, SURFACE LFT	JOINT ADHESIVE, INTERMEDIATE LFT	LIQUID ASPHALT SEALANT LFT	SUBGRADE TREATMENT TYPE IA SYS	SUBGRADE TREATMENT TYPE IIA SYS	SUBGRADE TREATMENT TYPE IIA (UNDIST.) SYS	COMBINED CURB & GUTTER, TYPE C LFT	CURB, CONCRETE, MODIFIED LFT	CONCRETE SIDEWALK, 4" SYS	CURB RAMP, CONCRETE, G SYS	REMARKS													
						COMPACTED AGGREGATE NO. 73 SYS	HMA FOR APPR., TYPE B SYS	PCCP SYS				SURFACE TYPE B LBS PER SYD	INTERMD TYPE LBS PER SYD	BASE TYPE LBS PER SYD	HMA 2.64, SURFACE, 9.5 mm LBS PER SYD	HMA 2.64, INTERMD, 19.0 mm LBS PER SYD	HMA 2.64, BASE, 25.0 mm LBS PER SYD	PRIME COAT SYS	TACK COAT SYS		DEPTH 3" TONS	DEPTH 3" TONS																													
						TOTALS																																													

### STRUCTURE DATA

STRUCTURE NUMBER	LOCATION		SIZE IN.	PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE	LENGTH LFT	SKEW FT	FLOW LINE		SERVICE LIFE YR	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE	REVETMENT RIPRAP TONS	PIPE CASING, STEEL, 20 IN. LFT	GEOTEXTILES PIPE END SECTION EA.	GRATED BOX END SECTION EA.	SAFETY METAL END SECTION EA.	CONNECT TO STR.	REMARKS
	STATION	LEFT CROSS RIGHT						UP STREAM ELEV.	DOWN STREAM ELEV.												
	LEFT CROSS RIGHT	COVER						UP STREAM ELEV.	DOWN STREAM ELEV.												
TOTALS																					

### SHEET SIGN SUMMARY

STATION	CODE	DESCRIPTION	SIZE	ENCAPS. LENS		ENCLOSED LENS	POST LENGTH			POST PAY LENGTH		SIGN, GROUND MOUNTED, RESET
				0.08"	0.10"		1	2	3	A	SQ.	
TOTAL												

### PAVEMENT MARKING TABLE

LT/RT	LOCATION STATION	4 in., THERMO, SOLID WHITE EDGE LINE	4 in., THERMO, SOLID YELLOW CENTERLINE	TRANSVERSE MARKING, THERMO, CROSSWALK, 6 in.	4 in., MULTICOMPONENT, SOLID, YELLOW CENTERLINE	TRANSVERSE MARKING, THERMO, STOP LINE, 24 in.
TOTALS						

### PAVED SIDE DITCH, RIPRAP DITCH AND SODDING SUMMARY TABLE

LOCATION		LEFT MEDIAN RIGHT	ACTUAL LENGTH	PAVEMENT SIDE DITCH				RIPRAP DITCH			SODDING					NURSERY SODDING FOR LAWNS	
FROM STATION	TO STATION			TOTAL EQUIVALENT PAY LENGTHS				RIPRAP REVETMENT TONS	RIPRAP UNIFORM TONS	GEOTEXTILES SYS	FOR PAVED SIDE DITCHES SYS	FOR DITCHES SYS	FOR MEDIAN SYS	FOR SHOULDER BREAK SYS	SODDING AT BRIDGE CONE SYS		TOTAL SODDING SYS
				CUT OFF WALLS (8 FT EQUIV. LENGTH EACH)	LFT	LFT	LFT										
TOTALS																	

### R/W MARKER SUMMARY

LT./RT.	STATION	OFFSET (ft)	NO. REQ'D.	FLUSH MOUNT
TOTAL				

### MAILBOX APPROACHES

LT./RT.	C BOX STATION	DESCRIPTION	WIDTH, W (FT)	ASSEMBLY REQ'D		
				SINGLE	DOUBLE	TRIPLE
TOTAL						

### GUARDRAIL SUMMARY TABLE

LOCATION		LEFT MEDIAN LEFT MEDIAN RIGHT RIGHT	W-BEAM GUARDRAIL LENGTH						GUARDRAIL FLARE RATE	GUARDRAIL TRANSITION TYPE TGB	GUARDRAIL TRANSITION TYPE	GUARDRAIL END TREATMENT TYPE OS	CURVED W-BEAM GUARDRAIL SYSTEM				REMARKS		
FROM STATION	TO STATION		STANDARD POST AT 6 FT 3 IN. SPA.	STANDARD POST AT 3 FT 1.5 IN. SPA.	DOUBLE FACED AT 6 FT 3 IN. SPA.	DOUBLE FACED AT 3 FT 1.5 IN. SPA.	SHOP CURVED AT ____ FT. SPA.	NESTING GUARDRAIL					TERMINAL SYSTEM	CONNECTOR SYSTEM	GUARDRAIL REMOVE	GUARDRAIL RESET		IMPACT ATTENUATOR TYPE CR-1, WI, TL-2	IMPACT ATTENUATOR TYPE
			LFT	LFT	LFT	LFT	LFT	EACH					TYPE	EACH	TYPE	EACH		LFT	LFT
TOTALS																			

### REVISIONS

DATE	ITEM

RECOMMENDED FOR APPROVAL \_\_\_\_\_

DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

DESIGNED: GLB

DRAWN: NW

CHECKED: TSW

CHECKED: GLB

**INDIANA  
DEPARTMENT OF TRANSPORTATION**

**ROAD SUMMARY OF QUANTITIES**

HORIZONTAL SCALE \_\_\_\_\_ BRIDGE FILE \_\_\_\_\_

NONE CV 056-078-158.30

VERTICAL SCALE \_\_\_\_\_ DESIGNATION \_\_\_\_\_

NONE 1700001

DRAWING NO. \_\_\_\_\_ SHEETS \_\_\_\_\_

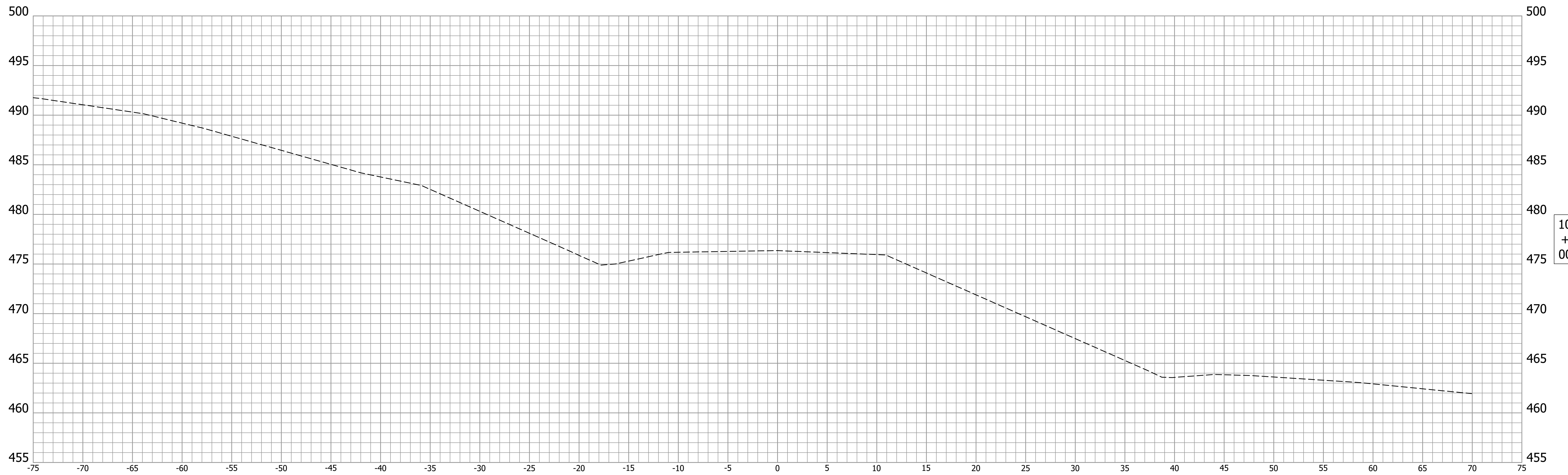
15 of 24

CONTRACT \_\_\_\_\_ PROJECT \_\_\_\_\_

B-40422 1700001







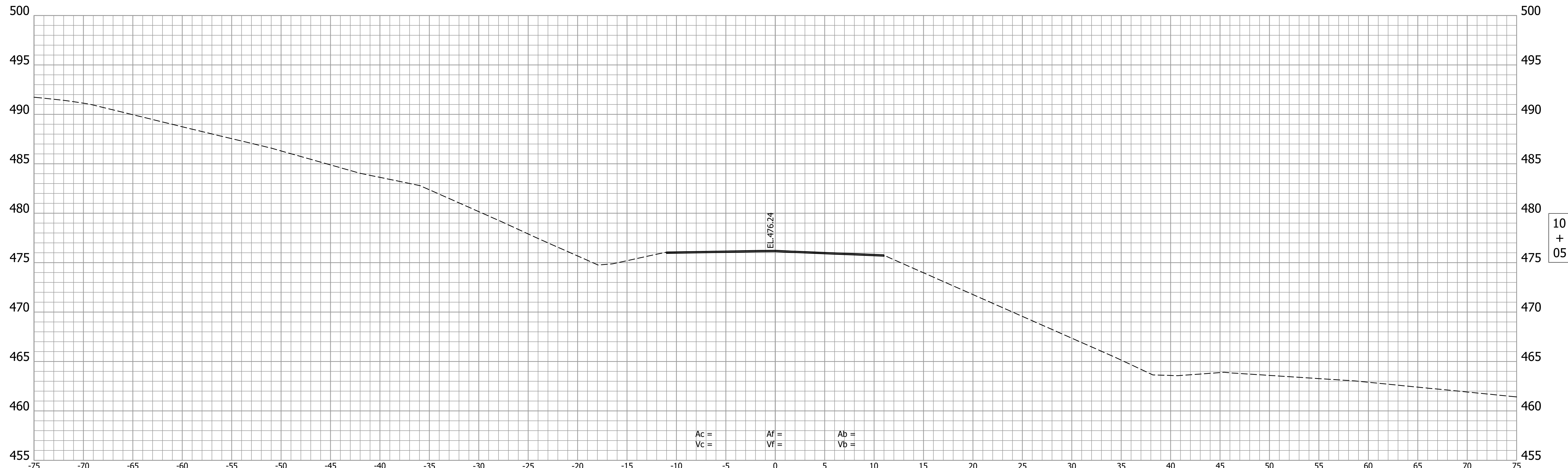
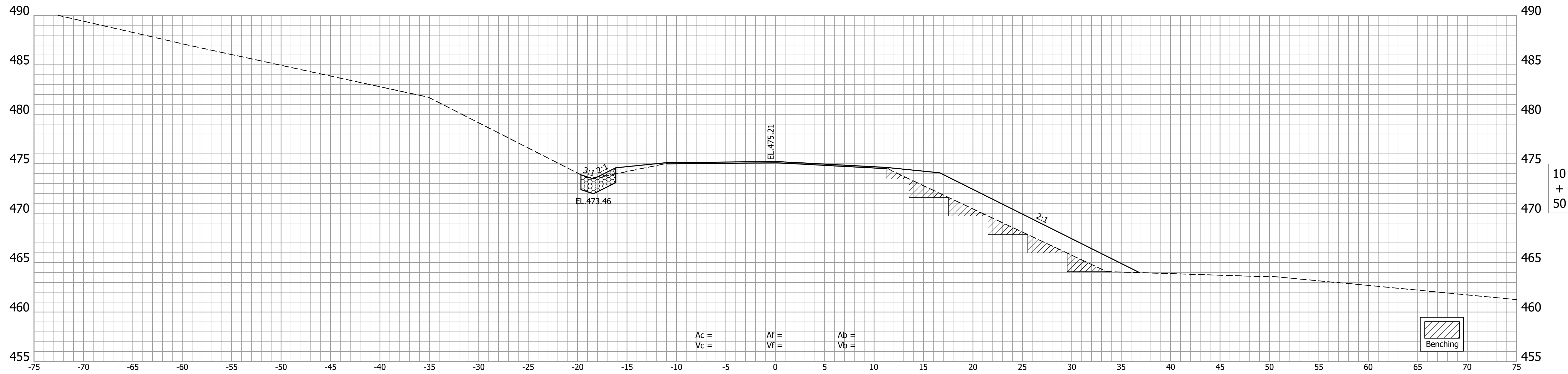
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RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

INDIANA  
DEPARTMENT OF TRANSPORTATION

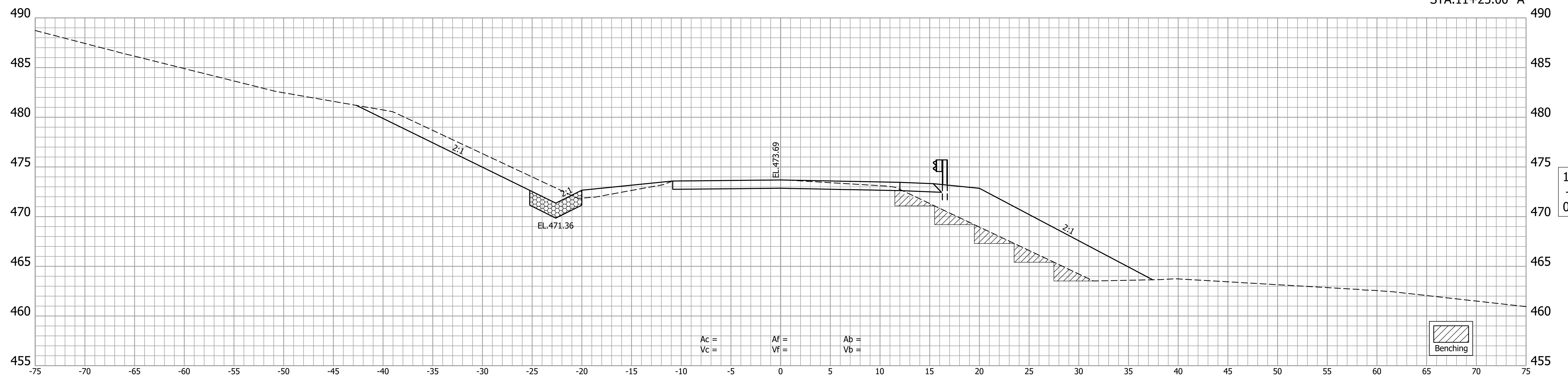
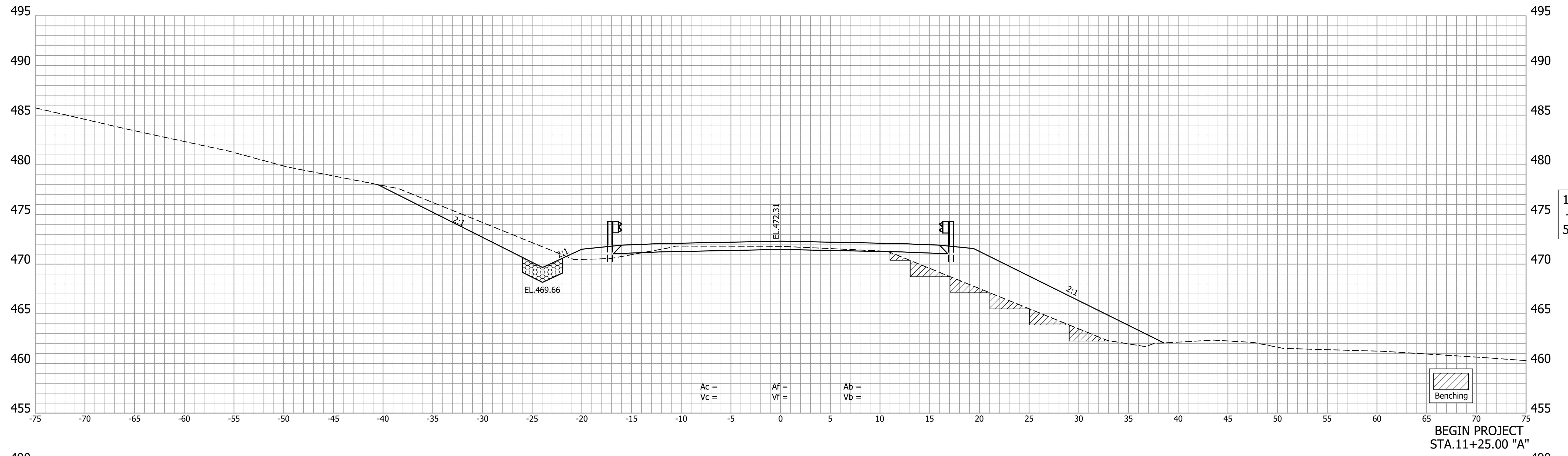
CROSS SECTIONS  
LINE "A"

HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS 17 of 24
CONTRACT B-40422	PROJECT 1700001



BEGIN INCIDENTAL CONSTRUCTION  
STA. 10+05.00 "A"

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
			1"=5'	CV 056-078-158.30
DESIGNED: GLB	DRAWN: NW	CROSS SECTIONS LINE "A"	VERTICAL SCALE	DESIGNATION
CHECKED: TSW	CHECKED: GLB		1"=5'	1700001
			DRAWING NO.	SHEETS
			CONTRACT	18 of 24
			B-40422	PROJECT
				1700001



Ac =  
Vc =

Af =  
Vf =

Ab =  
Vb =

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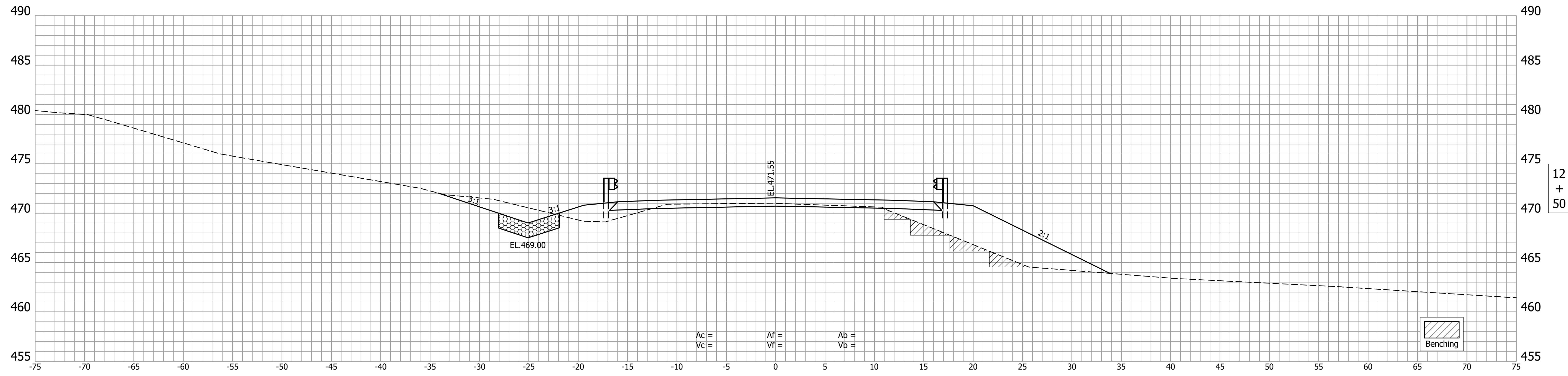
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: GLB	DRAWN: NW	
CHECKED: TSW	CHECKED: GLB	

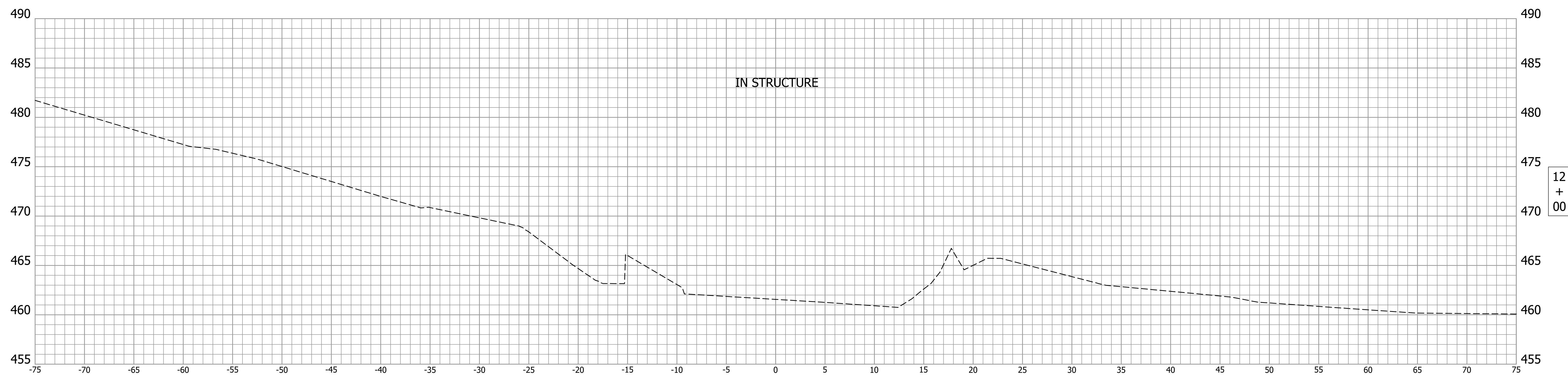
INDIANA  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
LINE "A"

HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS 19 of 24
CONTRACT B-40422	PROJECT 1700001



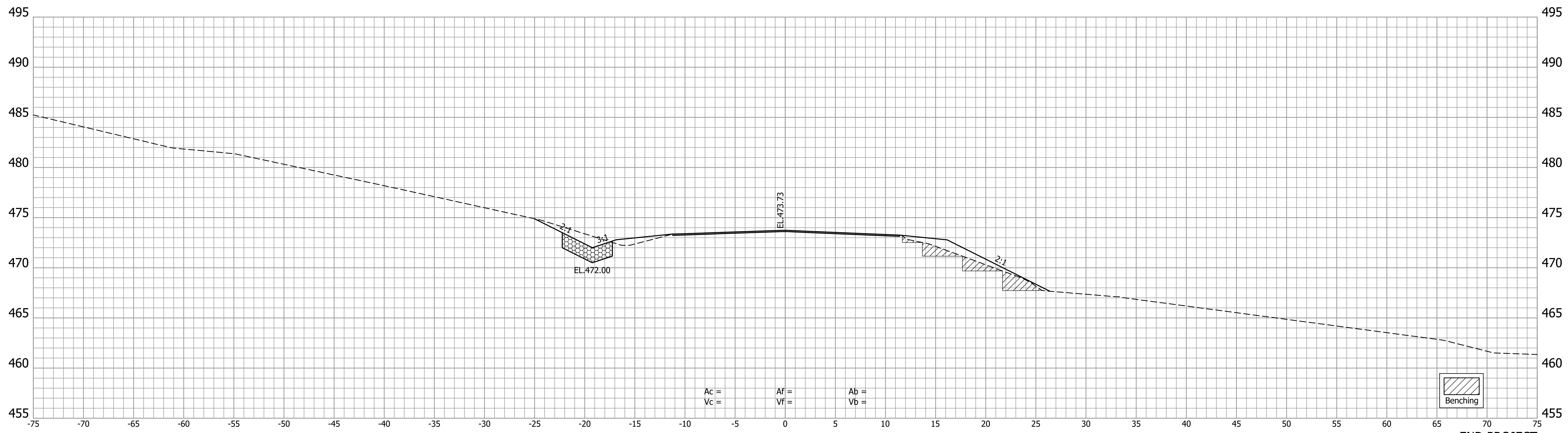
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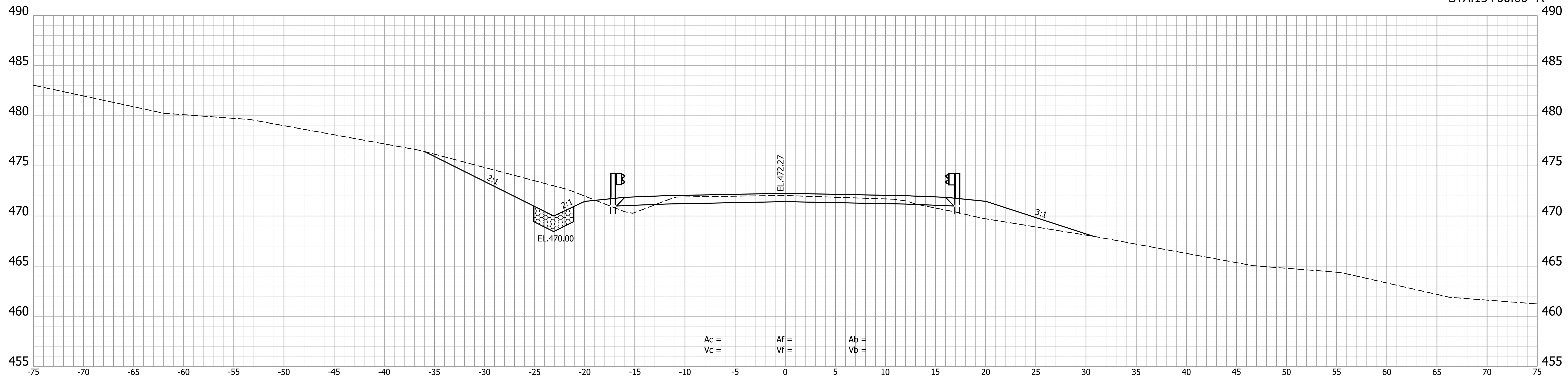
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	DESIGNED: GLB _____ DRAWN: NW _____ CHECKED: TSW _____ CHECKED: GLB _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
		CROSS SECTIONS LINE "A"		VERTICAL SCALE 1"=5'	DESIGNATION 1700001
				DRAWING NO. B-40422	SHEETS 20 of 24 PROJECT 1700001





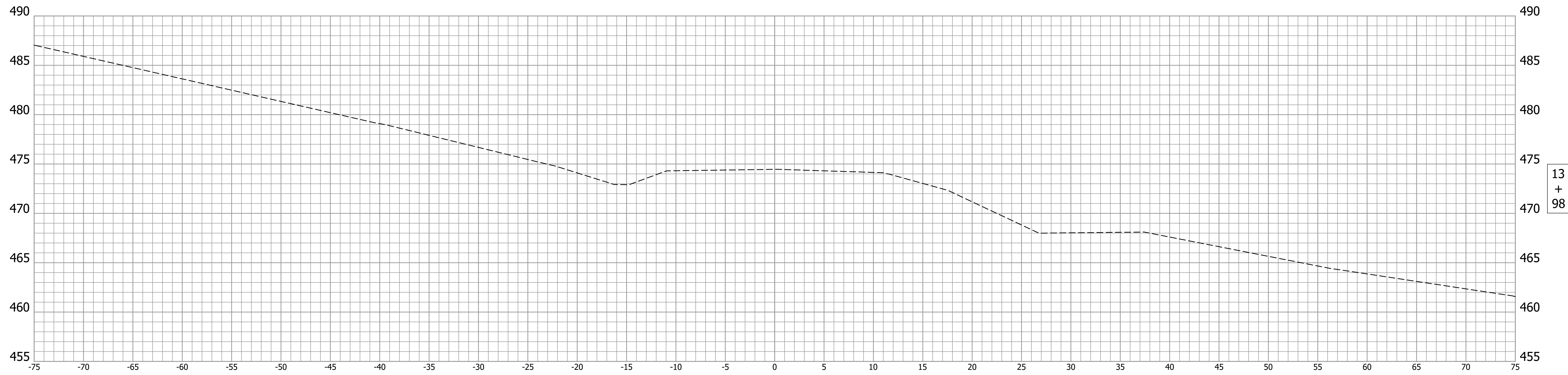
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END PROJECT  
STA.13+00.00 "A"

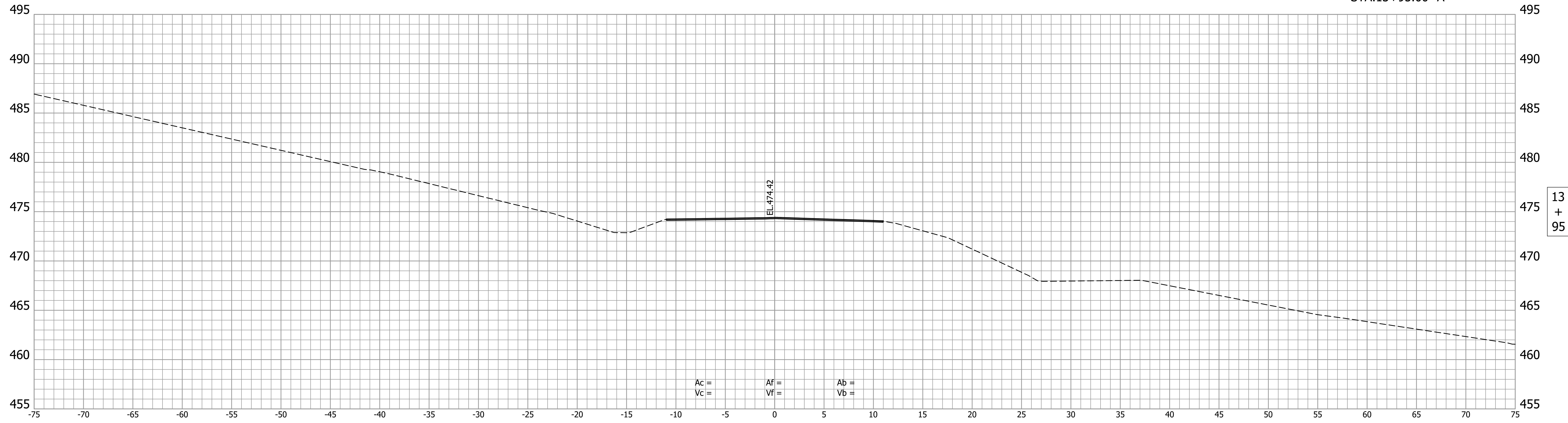


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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
			VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DESIGNED: GLB _____ DRAWN: NW _____	CROSS SECTIONS LINE "A"	DRAWING NO.	SHEETS 21 of 24	
CHECKED: TSW _____ CHECKED: GLB _____		CONTRACT B-40422	PROJECT 1700001	



END INCIDENTAL CONSTRUCTION  
STA.13+95.00 "A"



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Vc =

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Vf =

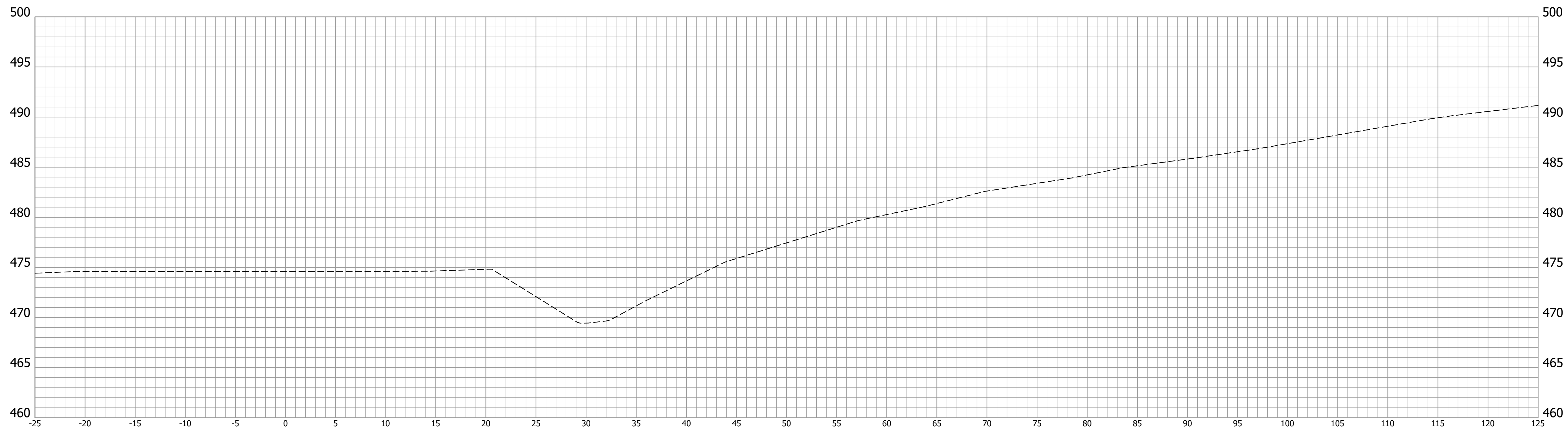
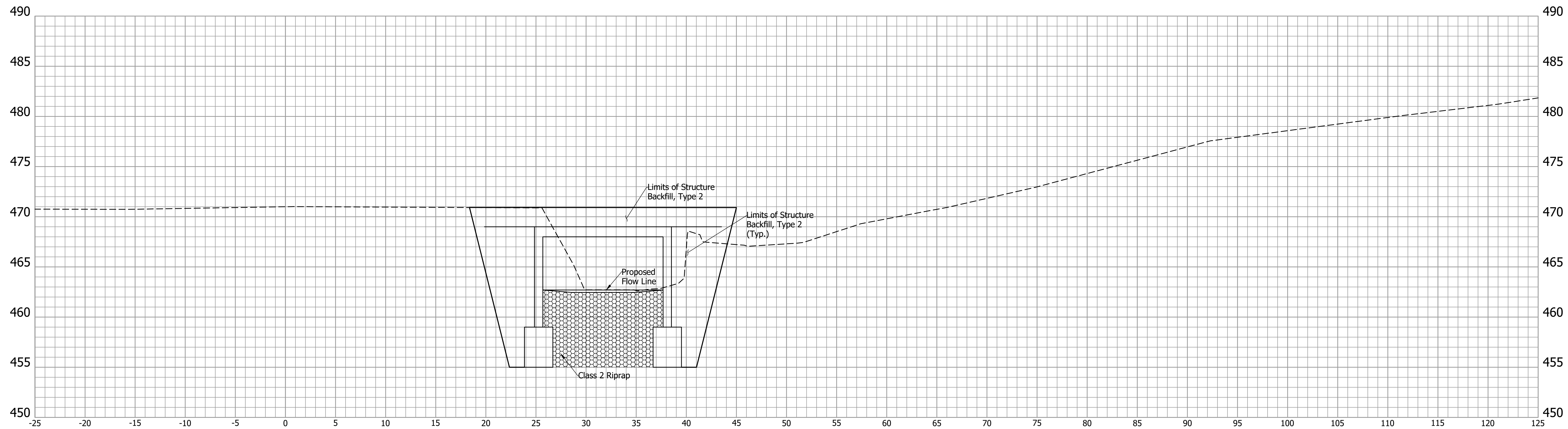
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Vb =

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

**INDIANA  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
LINE "A"**

HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS 22 of 24
CONTRACT B-40422	PROJECT 1700001

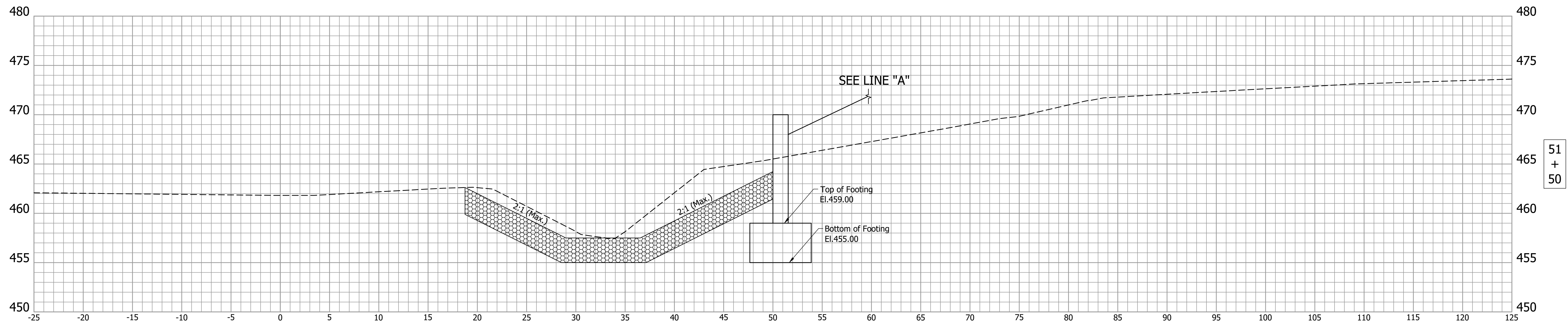
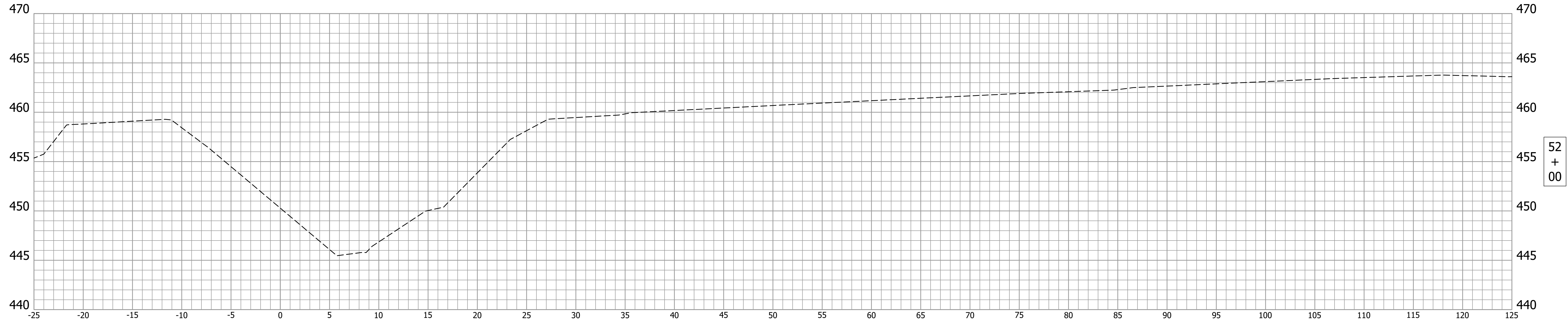


RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

INDIANA  
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS  
LINE "BR-1-A"**

HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS
	23 of 24
CONTRACT B-40422	PROJECT 1700001



RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: GLB _____	DRAWN: NW _____	
CHECKED: TSW _____	CHECKED: GLB _____	

INDIANA  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
LINE "BR-1-A"

HORIZONTAL SCALE 1"=5'	BRIDGE FILE CV 056-078-158.30
VERTICAL SCALE 1"=5'	DESIGNATION 1700001
DRAWING NO.	SHEETS
	24 of 24
CONTRACT B-40422	PROJECT 1700001