

PROJECT	DESIGNATION
1902840	1902840
CONTRACT	BRIDGE FILE
B-4275	57-0069 B

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
57-0069 B	Composite Prestressed Concrete Bulb-TEE Beam	1 Span: 96'-0" Skew: 0°	Elkhart River	20+80.07 Line "A"

PFC Plans  
December 14, 2021

APPROVED BY:  
NOBLE COUNTY BOARD OF COMMISSIONERS

Gary D. Leatherman, President \_\_\_\_\_ Date

Anita F. Hess, Vice-President \_\_\_\_\_ Date

David J. Dolezal, Member \_\_\_\_\_ Date

ATTEST BY:  
NOBLE COUNTY AUDITOR

Tonya L. Jones, County Auditor \_\_\_\_\_ Date

RECOMMENDED FOR APPROVAL BY:  
NOBLE COUNTY HIGHWAY DEPARTMENT

Zachary S. Smith, P.E., Noble County Engineer, Employee in Responsible Charge \_\_\_\_\_ Date

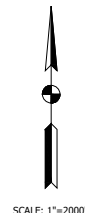
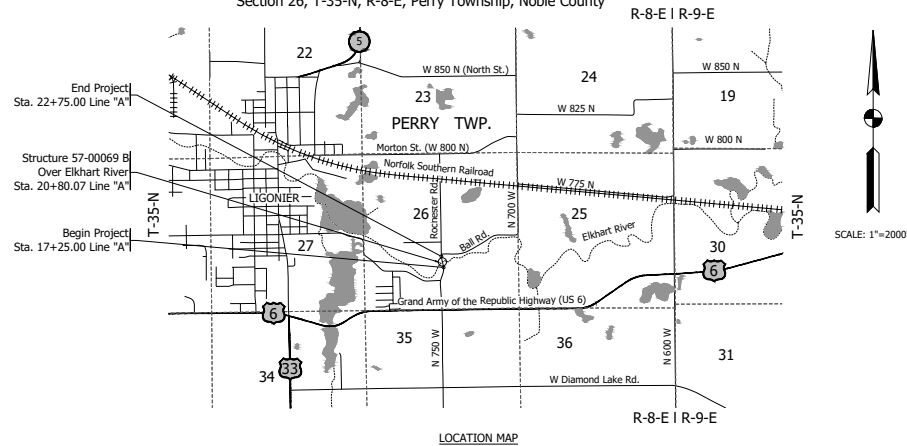
# INDIANA DEPARTMENT OF TRANSPORTATION



## BRIDGE PLANS FOR SPANS OVER 20 FEET

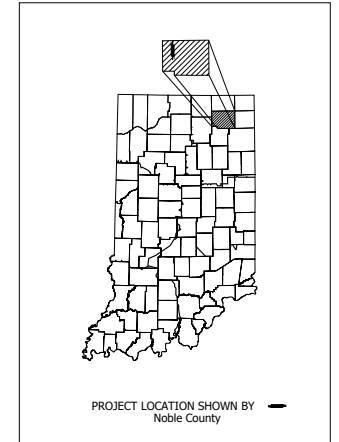
ROUTE: ROCHESTER ROAD AT: ELKHART RIVER  
PROJECT NO. 1902840 P.E.  
1902840 R/W  
1902840 CONST.

Bridge Replacement on IR 6320, Rochester Road over Elkhart River  
Located 0.32 Miles North of Grand Army of the Republic Highway (US 6)  
Section 26, T-35-N, R-8-E, Perry Township, Noble County



TRAFFIC DATA	
A.A.D.T. (2024)	720 V.P.D.
A.A.D.T. (2044)	1157 V.P.D.
D.H.V. (2044)	116 V.P.M.
DIRECTIONAL DISTRIBUTION	50 %
TRUCKS	10% A.A.D.T. 10% D.H.V.

DESIGN DATA	
DESIGN SPEED	30 M.P.H.
PROJECT DESIGN CRITERIA	3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	LOCAL STREET
RURAL/URBAN	URBAN (SUBURBAN)
TERRAIN	LEVEL
ACCESS CONTROL	NONE



LATITUDE: 41° 27' 24" LONGITUDE: 85° 34' 02"

BRIDGE LENGTH:	0.018	MI.
ROADWAY LENGTH:	0.086	MI.
TOTAL LENGTH:	0.104	MI.
MAX. GRADE:	1.80	%

HUC 12: 040500011802  
HUC 14: 04050001190010

PLANS PREPARED BY:	Lochmueller Group, Inc.	574-334-5460 PHONE NUMBER
CERTIFIED BY:	REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA NO. 10302082	_____/_____/_____ DATE
CERTIFIED BY:	REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA NO. 19800103	_____/_____/_____ DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	_____/_____/_____ DATE

INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2022  
TO BE USED WITH THESE PLANS

BRIDGE FILE	
57-0069 B	
DESIGNATION	
1902840	
SHEET	
SURVEY BOOK	1 of 19
CONTRACT	
8-4275	
PROJECT	
1902840	

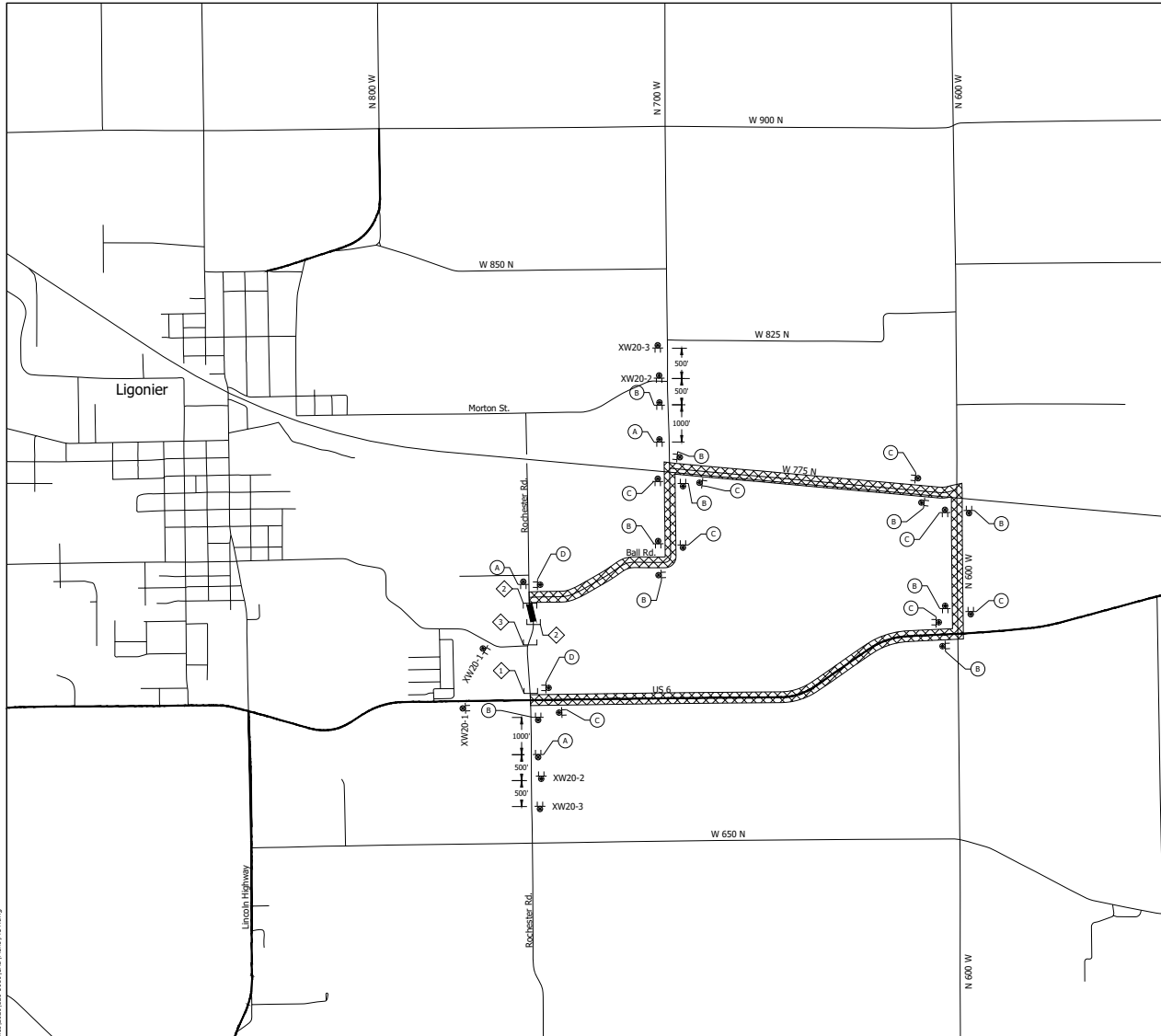


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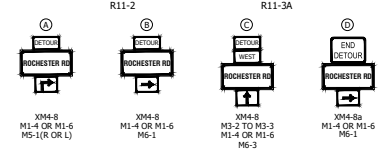
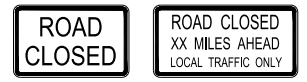
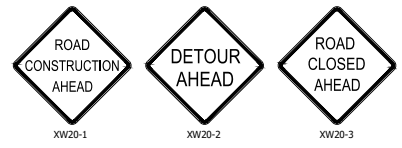


CONSTRUCTION SIGN SCHEDULE					
SIGN NO.	DESCRIPTION	SIZE (IN)	TYPE	QUANTITY	
R11-2	"ROAD CLOSED" SIGN	48 x 30	(1)	2	
R11-3A	"ROAD CLOSED XX MILES AHEAD" SIGN	60 x 30	(1)	1	
XM4-10 (L or R)	"DETOUR" SIGN	48 x 18	(1)	2	
XW20-1	"ROAD CONSTRUCTION AHEAD" SIGN	48 x 48	A	3	
XW20-2	"DETOUR AHEAD" SIGN	48 x 48	A	2	
XW20-3	"ROAD CLOSED AHEAD" SIGN	48 x 48	A	2	
				TOTAL TYPE "A" SIGNS	7

Detour Route Marker Assemblies: 23 Req'd  
 Road Closure Sign Assemblies: 4 Req'd  
 Type III-A Barricades: 48 Lft.  
 Type III-B Barricades: 24 Lft.

(1) Included with road closure sign assembly.

LEGEND



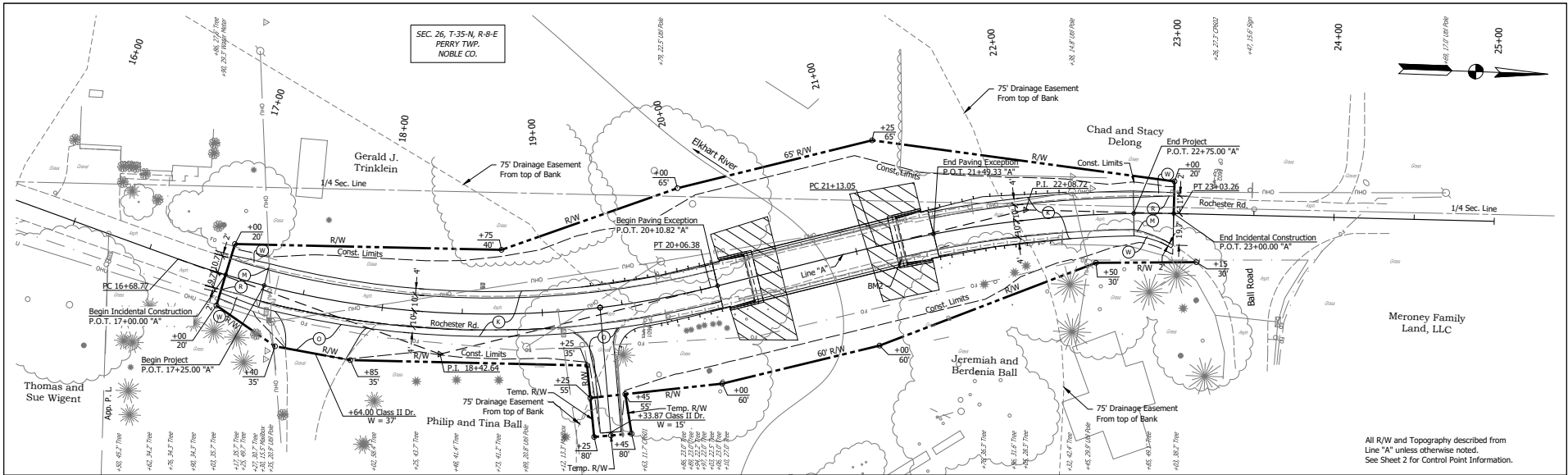
- ◆ ROAD CLOSURE SIGN ASSEMBLY W/ TYPE III-B BARRICADE (12 LFT.) AND R11-3A AND XM4-10 (L OR R)
- ◆ ROAD CLOSURE SIGN ASSEMBLY W/ TYPE III-A BARRICADE (24 LFT.) AND R11-2
- ◆ ROAD CLOSURE SIGN ASSEMBLY W/ TYPE III-B BARRICADE (12 LFT.)
- ▨ CONSTRUCTION ZONE
- ▩ DETOUR ROUTE

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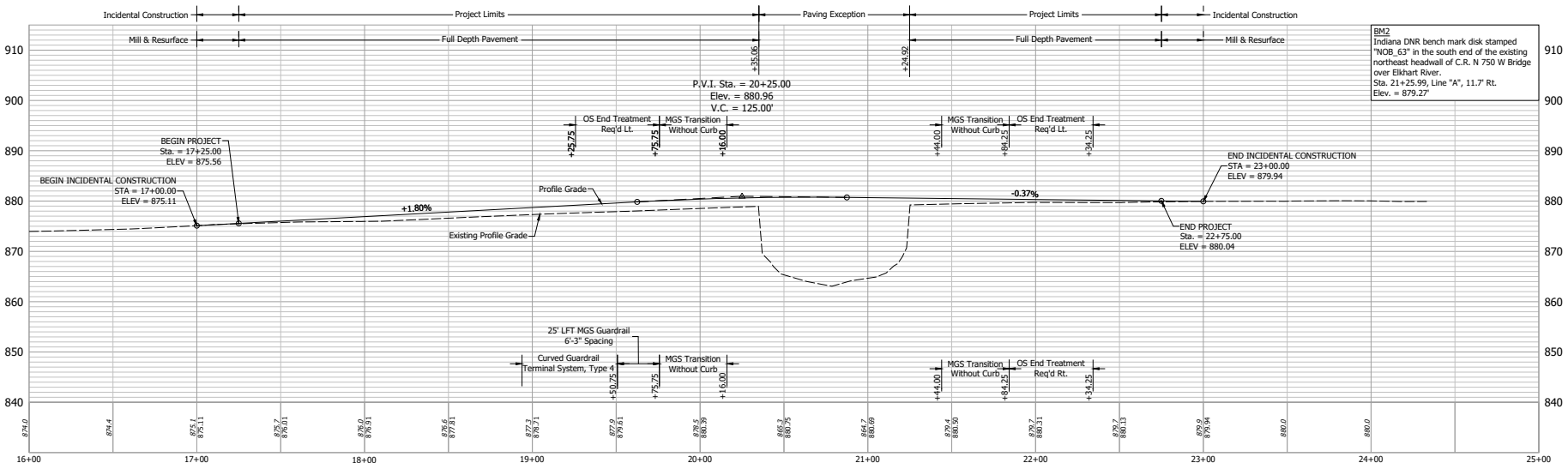
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DESIGNED: MDV	DRAWN: JMG	
CHECKED: BKA	CHECKED: BKA	

**INDIANA**  
**DEPARTMENT OF TRANSPORTATION**  
  
**MAINTENANCE OF TRAFFIC**

HORIZONTAL SCALE	BRIDGE FILE
1"=1000'	57-0069 B
VERTICAL SCALE	DESIGNATION
N/A	1902840
SURVEY BOOK	SHEET
ELECTRONIC	5   OF   19
CONTRACT	PROJECT
B-42775	1902840



All R/W and Topography described from Line "A" unless otherwise noted. See Sheet 2 for Control Point Information.



BM2  
Indiana DNR bench mark disk stamped "NOB 63" in the south end of the existing northeast headwall of C.R. N 750 W Bridge over Elkhart River.  
Sta. 21+25.99, Line "A", 11.7 Rt.  
Elev. = 879.27'

- (K) 165 LB/SYS QC/QA HMA, 3, 64, Surface 9.5mm on 275 LB/SYS QC/QA HMA, 3, 64, Intermediate 19.0mm on 6 IN Compacted Aggregate, No. 53 on Subgrade Treatment, Type ID
- (M) Milling, Asphalt, 1 1/2 in.
- (R) 165 LB/SYS QC/QA HMA, 3, 64, Surface 9.5mm
- (O) Compacted Aggregate, No. 53

- (W) 165 LB/SYS QC/QA HMA, 3, 64, Surface 9.5mm on Widening for HMA consisting of: 275 LB/SYS HMA, Type C, Intermediate on 6 IN Compacted Aggregate, No. 53 on Subgrade Treatment, Type ID

DESIGNED:	MEV	DRAWN:	MEV
CHECKED:	BAK	CHECKED:	BAK

INDIANA  
DEPARTMENT OF TRANSPORTATION  
  
PLAN AND PROFILE - LINE "A"

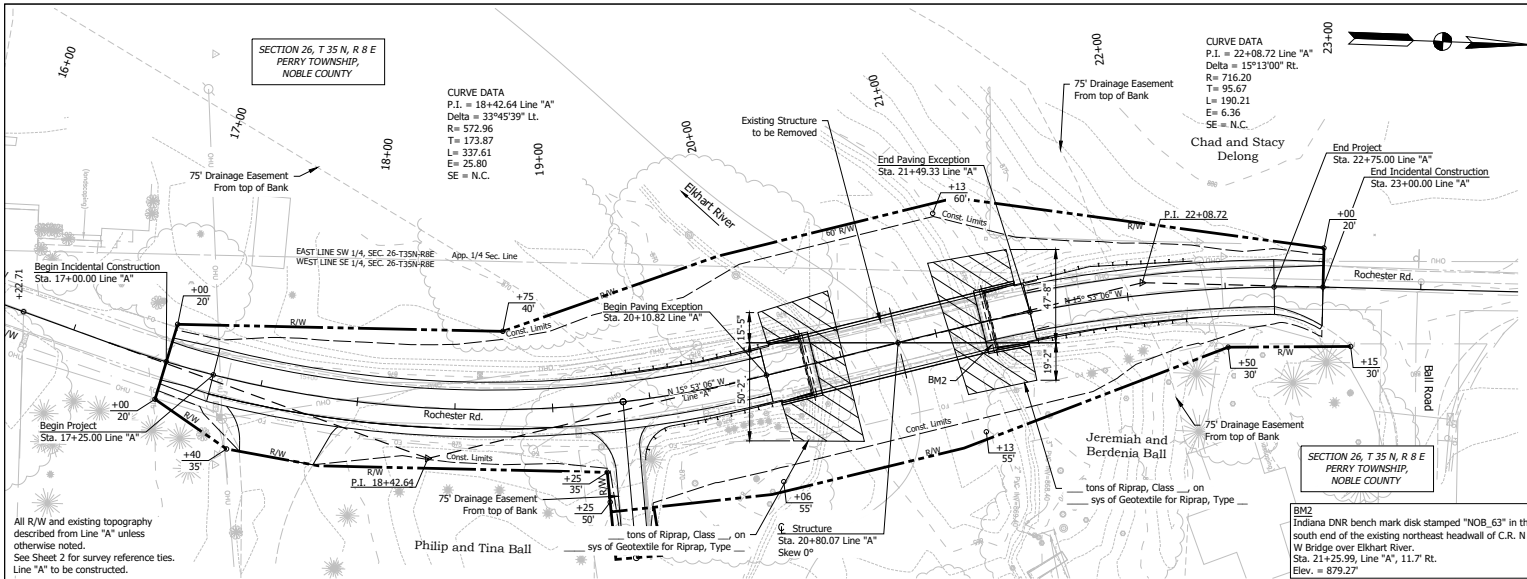
HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	57-0009 B
VERTICAL SCALE	DESIGNATION
1" = 10'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	6 of 19
CONTRACT	PROJECT
B-42775	1902840

Date: Nov 22, 2023, 11:23am User Name: mev  
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 Plot: I:\work\mst\production\1902840\1902840\1902840.dwg









All R/W and existing topography described from Line "A" unless otherwise noted. See Sheet 2 for survey reference ties. Line "A" to be constructed.

**EXISTING STRUCTURE**  
The existing structure, 57-00069, is a single span, adjacent prestressed concrete box beam, built in 1971, with a 86.2' span and 24.3' clear roadway. Existing structure to be removed.

**HYDRAULIC DATA**

Drainage Area	280.53 SQ. MI
Q100 Discharge	2,100.00 CFT./SEC.
Q100 Elevation	873.70 M.S.L.
Q100 Backwater	0.13 FT.
Q100 Velocity	3.14 FT./SEC.
Proposed Waterway Opening, Below Q100	705.39 SFT.
Minimum Low Structure Elevation	875.70 M.S.L.
Proposed Low Structure Elevation	876.00 M.S.L.
Skew	0°00'00"
Existing Waterway Opening	718.12 SFT.
Existing Low Structure Elevation	875.24 M.S.L.
Existing Backwater	0.13 FT.

**HYDRAULIC SCOUR DATA**

Q100 Discharge	2,100.00 CFT./SEC.
Q100 Elevation	873.70 M.S.L.
Q100 Scour Velocity	3.66 FT./SEC.
Q100 Contraction Scour Depth	6.48 FT.
Q100 Total Scour Depth	6.48 FT.
Q100 Low Scour Elevation	856.45 M.S.L.
Q500 Discharge	2,520.00 CFT./SEC.
Q500 Elevation	874.40 M.S.L.
Q500 Scour Velocity	3.99 FT./SEC.
Q500 Contraction Scour Depth	7.89 FT.
Q500 Total Scour Depth	7.89 FT.
Q500 Low Scour Elevation	855.04 M.S.L.

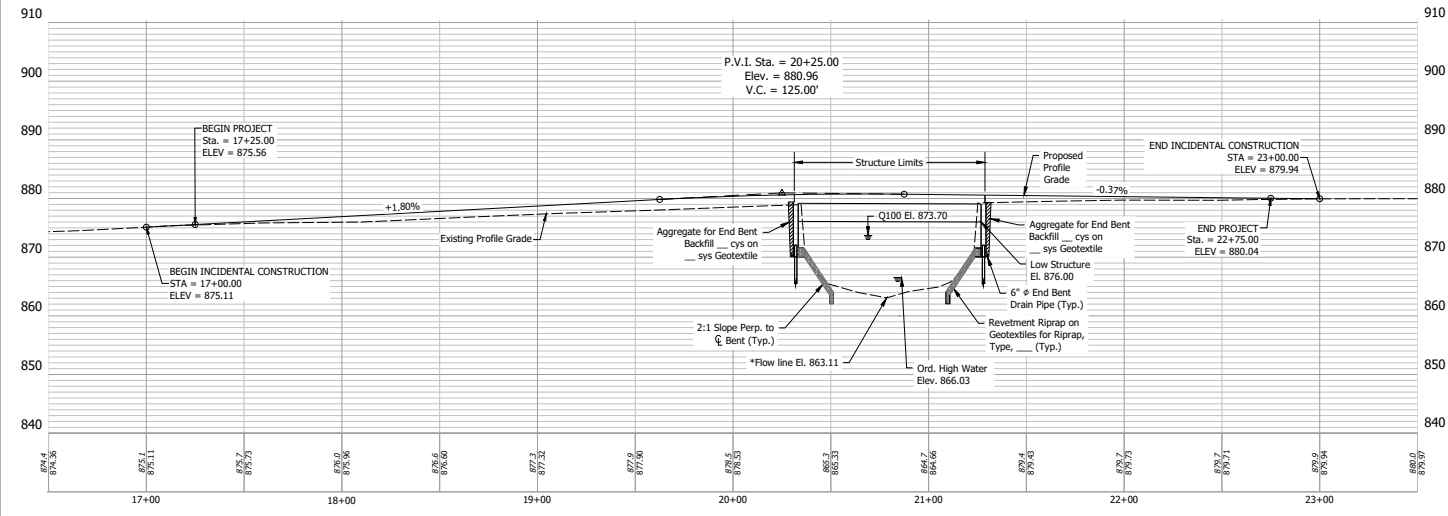
\*Flowline elevation shown is taken at the centerline alignment, Line "A". This elevation differs from 862.93 from the hydraulic calculations. The hydraulic calculations show the lowest elevation from the HEC-RAS model (which is downstream of the downstream face) to conservatively check for scour.

**EARTHWORK TABULATION**

FILL	___ cys
FILL + 15%	___ cys
COMMON EXCAVATION	___ cys
USABLE WATERWAY EXCAVATION	___ cys
BORROW	___ cys
TOTAL WATERWAY EXCAVATION	___ cys
EXCAVATION FOUNDATION UNCLASSIFIED	___ cys
BENCHING (Estimated)	___ cys

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

- NOTES**
- See Plan and Profile Sheet for approach work, incidental construction and additional details.
  - M.S.L. = Mean Sea Level
  - See Sheet 2 for utility owners and survey reference ties.



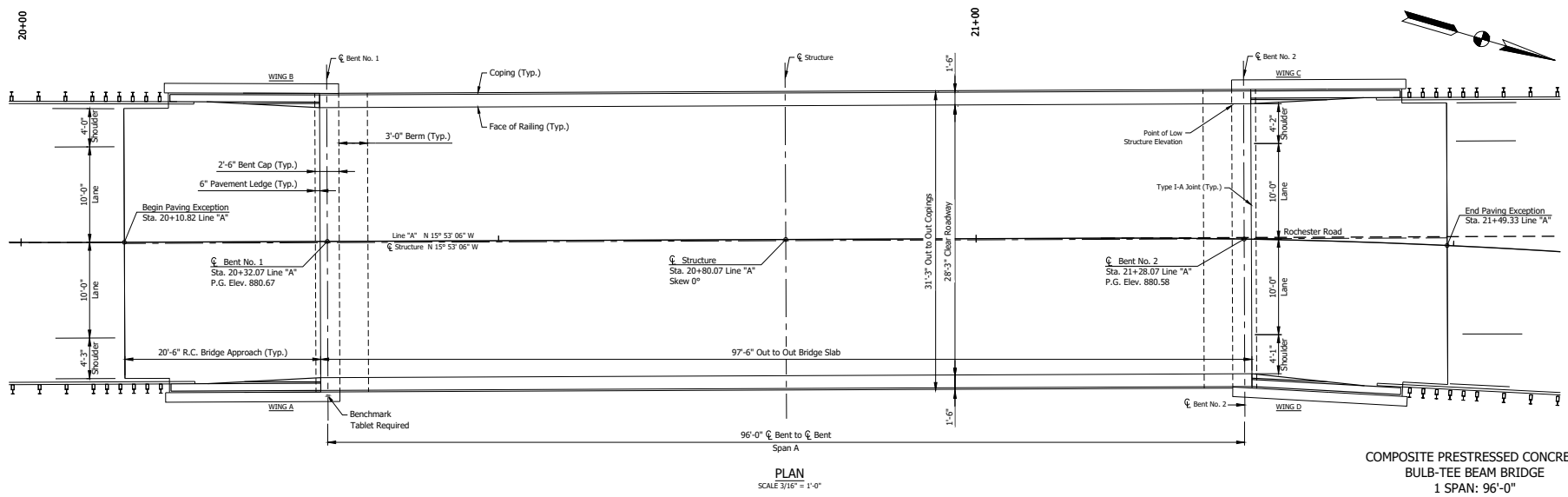
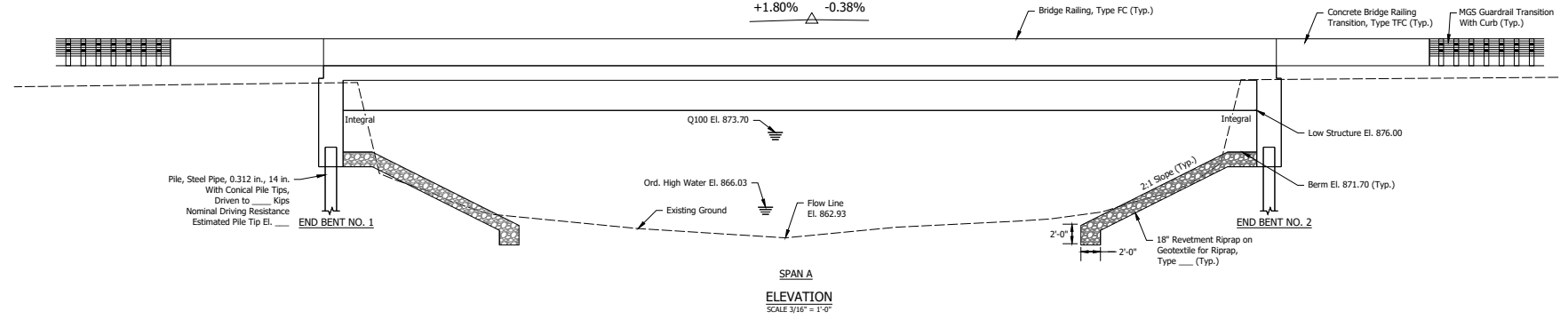
**COMPOSITE PRESTRESSED CONCRETE  
BULB-TEE BEAM BRIDGE**  
1 SPAN: 96'-0"  
28'-3" CLEAR ROADWAY; NO SKEW  
ROCHESTER ROAD OVER ELKHART RIVER  
NOBLE COUNTY

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CHECKED: EXG	CHECKED: NB		LAYOUT	VERTICAL SCALE	DESIGNATION
				1" = 10'	1902840
				SURVEY BOOK	SHEETS
				ELECTRONIC	9 of 19
				CONTRACT	PROJECT
				8-4275	1902840

### STRUCTURE TO BE BUILT ON A 125' VERTICAL CURVE

PVI Sta. 20+25.00  
PVI Elev. 880.96  
+1.80%    -0.38%



**COMPOSITE PRESTRESSED CONCRETE  
BULB-TEE BEAM BRIDGE  
1 SPAN: 96'-0"  
28'-3" CLEAR ROADWAY; NO SKEW  
ROCHESTER ROAD OVER ELKHART RIVER  
NOBLE COUNTY**

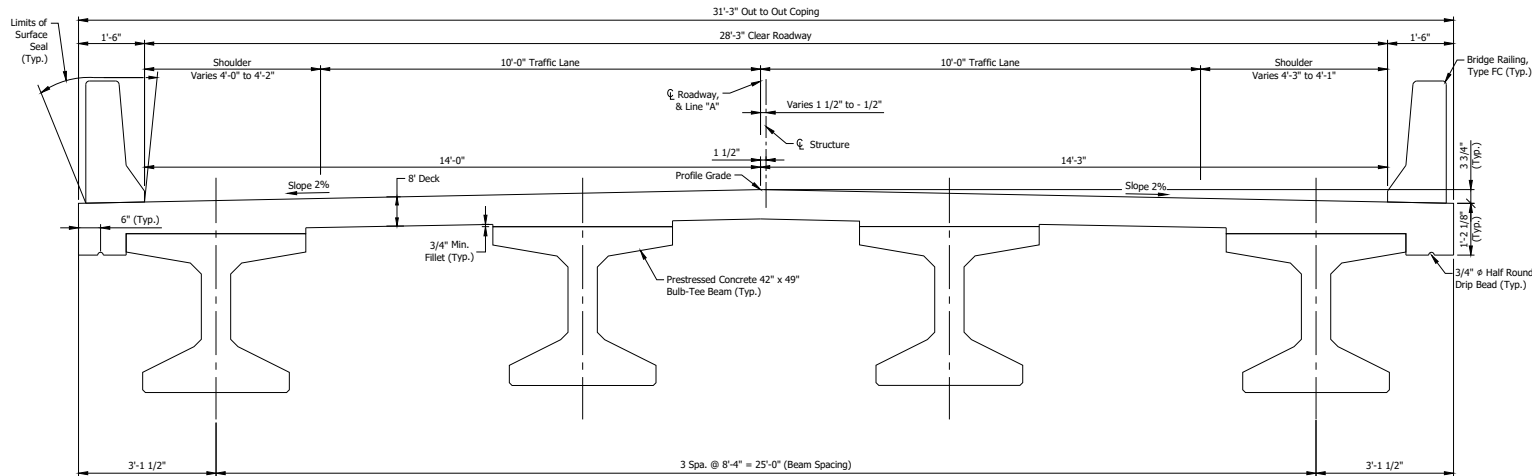
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NB	DRAWN: NCG	CHECKED: NB
CHECKED: EXG	CHECKED: NB	

INDIANA  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	S7-00099 B
VERTICAL SCALE	DESIGNATION
AS NOTED	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	10 of 19
CONTRACT	PROJECT
B-42775	1902840



**TYPICAL SECTION**  
Scale: 3/4" = 1'-0"

**GENERAL NOTES**

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

**DESIGN DATA**

Designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020, and subsequent interims.

**DEAD LOAD**

Actual weight plus 35 lb/ft<sup>2</sup> for future wearing surface and 15 lb/ft<sup>2</sup> for permanent metal deck forms.

**FLOOR SLAB**

Designed with a 7 1/2" structural depth plus 1/2" sacrificial wearing surface.

**DESIGN STRESSES**

**CONCRETE**

Class C f<sub>c</sub> = 4000 psi  
Class B f<sub>c</sub> = 3000 psi  
Class A f<sub>c</sub> = 3500 psi

**REINFORCING STEEL**

Grade 60 f<sub>y</sub> = 60,000 psi

**CONSTRUCTION LOADING**

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior girder. The finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

**DECK FALSEWORK LOADS**

Designed for 15 lb/ft<sup>2</sup> for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway.

**CONSTRUCTION LIVE LOAD**

Designed for 20 lb/ft<sup>2</sup> extending 2-ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine.

**FINISHING-MACHINE LOAD**

4500 lb distributed over 10 ft along the coping.

**WIND LOAD**

Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.

**SEISMIC DESIGN LOAD**

Seismic Design Category x  
Acceleration Coefficient xx  
Seismic Soil Profile Type Class x

**COMPOSITE PRESTRESSED CONCRETE  
BULB-TEE BEAM BRIDGE**  
1 SPAN: 96'-0"  
28'-3" CLEAR ROADWAY; NO SKEW  
ROCHESTER ROAD OVER ELKHART RIVER  
NOBLE COUNTY

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CHECKED: EXG	CHECKED: NB	

INDIANA DEPARTMENT OF TRANSPORTATION	
GENERAL PLAN	

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	S7-00059 B
VERTICAL SCALE	DESIGNATION
AS NOTED	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	11 of 19
CONTRACT	PROJECT
8-42775	1902840

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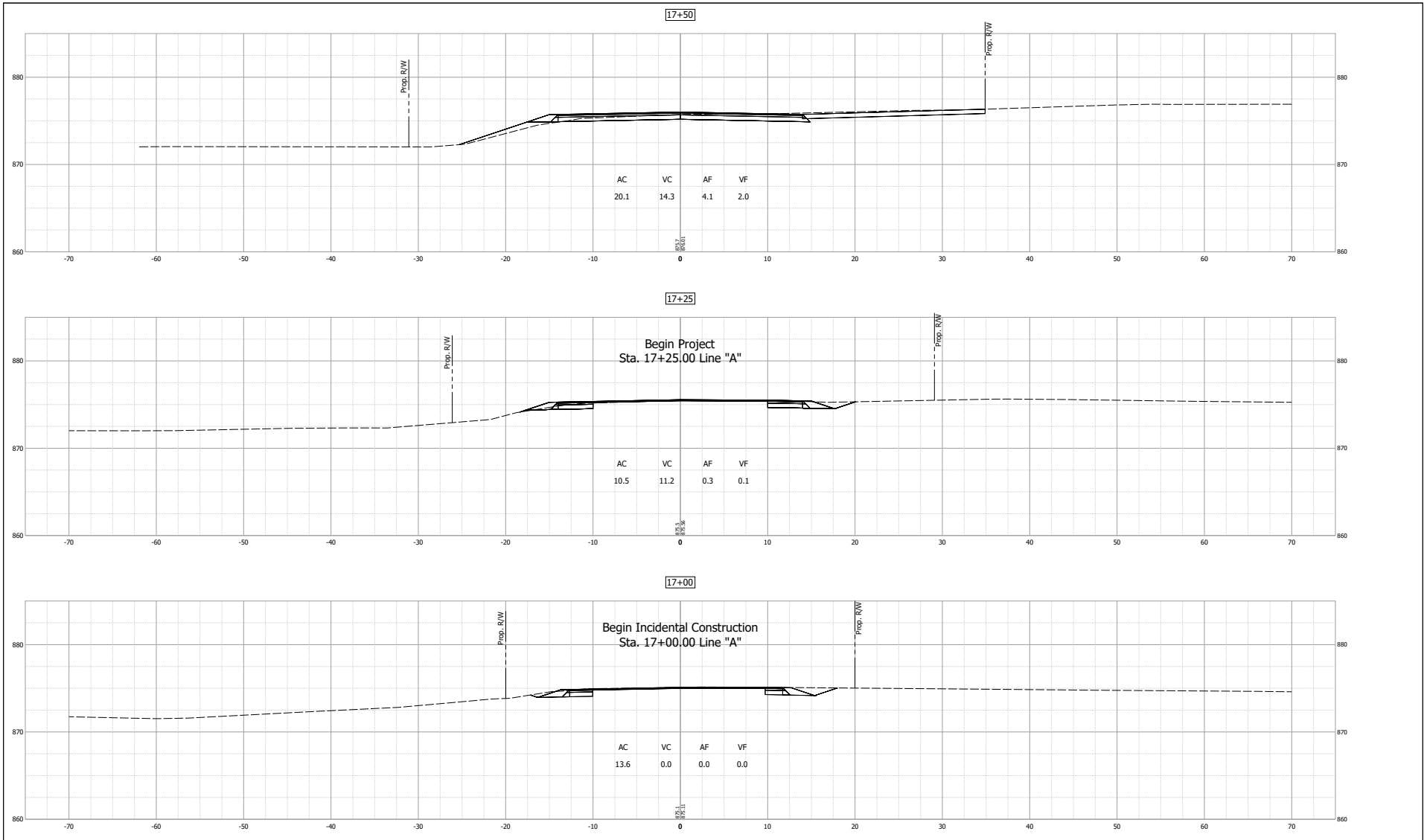
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	CLASS C SUPERSTR	CLASS C SUBSTR	CLASS A SUBSTR	CLASS B ABOVE FTG.	CLASS B IN FTG.														CONCRETE BULB-T BEAM, 36 IN. X 49 IN.	I-BEAM TYPE SIZE			PRODUCTION	RESTRIKE				
	CYS	CYS	CYS	CYS	CYS														LBS	LFT			EACH	EACH				
Superstructure																												
End Bent No. 1																												
End Bent No. 2																												
R. C. Bridge Approach (12") at End Bent No. 1																												
R. C. Bridge Approach (12") at End Bent No. 2																												
Railing, FC																												
TOTALS																												

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: NB	DRAWN: NCG	
CHECKED: EXG	CHECKED: NB	

INDIANA DEPARTMENT OF TRANSPORTATION	
BRIDGE SUMMARY	

HORIZONTAL SCALE	BRIDGE FILE
NONE	57-00069 B
VERTICAL SCALE	DESIGNATION
NONE	1902840
SURVEY BOOK	SHEET
ELECTRONIC	12 of 19
CONTRACT	PROJECT
8-42775	1902840





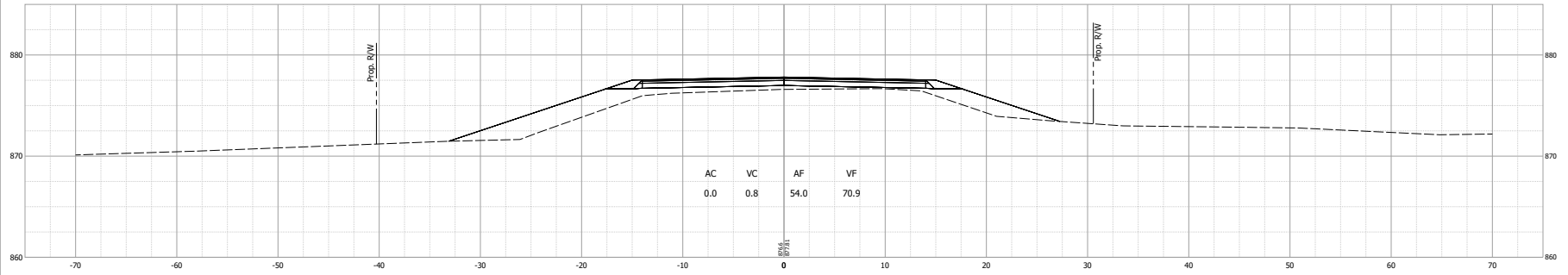
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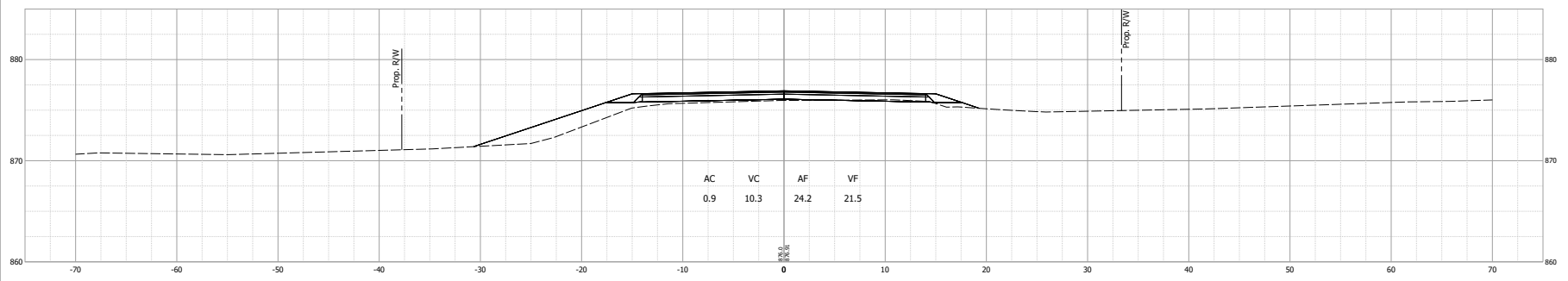
**INDIANA**  
**DEPARTMENT OF TRANSPORTATION**  
  
**CROSS SECTIONS - LINE "A"**

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
1" = 5'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	14 of 19
CONTRACT	PROJECT
B-42775	1902840

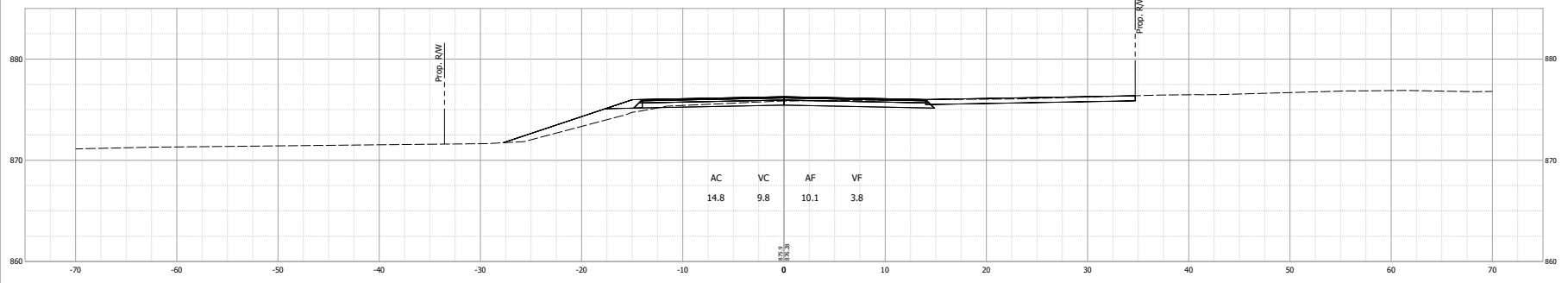
18+50



18+00



17+65



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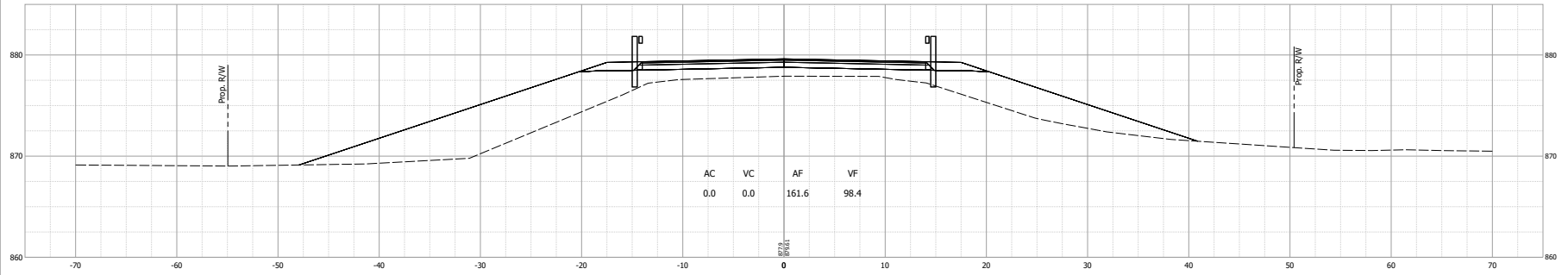
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DESIGNED: MDV	DRAWN: MDV		
CHECKED: BKA	CHECKED: BKA		

INDIANA  
DEPARTMENT OF TRANSPORTATION

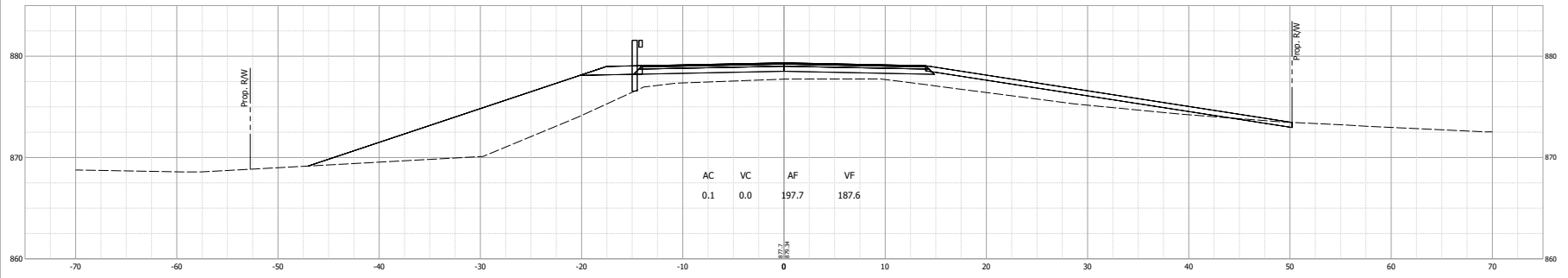
CROSS SECTIONS - LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
1" = 5'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	15 of 19
CONTRACT	PROJECT
B-42775	1902840

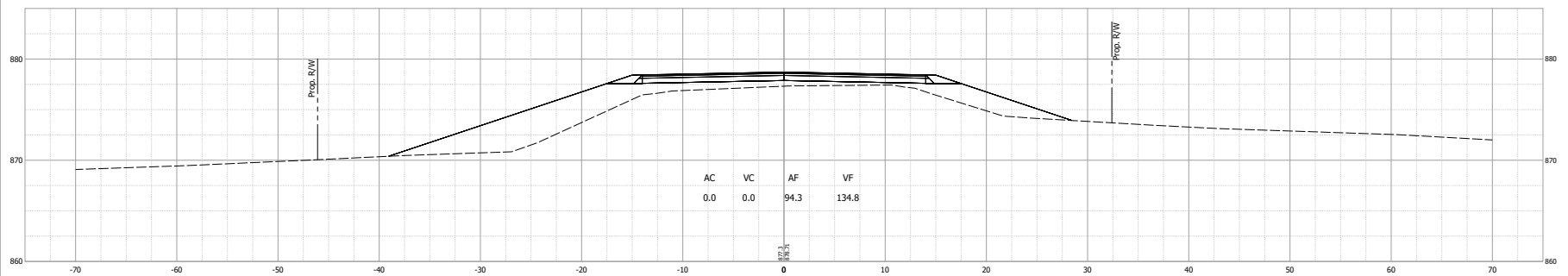
19+50



19+35



19+00



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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	05/20/12	DATE
DESIGNED: MEV	DRAWN: MEV		
CHECKED: BKA	CHECKED: BKA		

INDIANA  
DEPARTMENT OF TRANSPORTATION

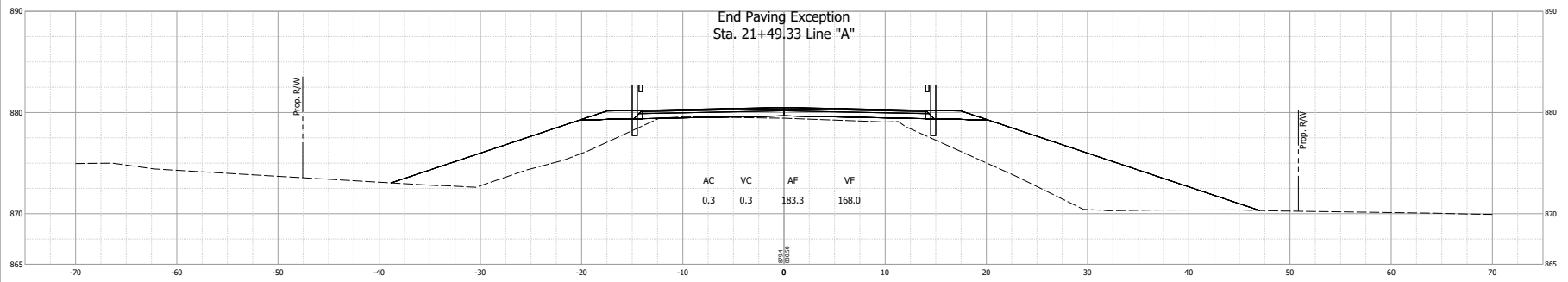
CROSS SECTIONS - LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
1" = 5'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	16 of 19
CONTRACT	PROJECT
B-42775	1902840



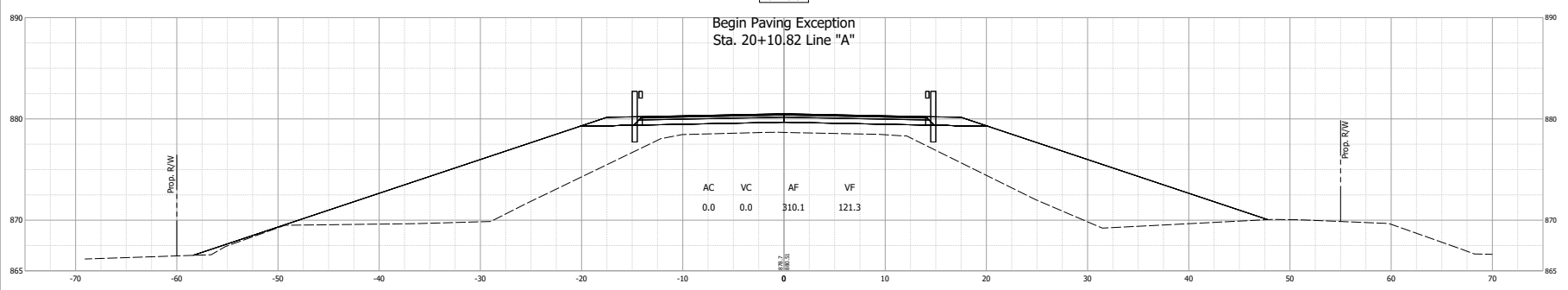
21+50

End Paving Exception  
Sta. 21+49.33 Line "A"

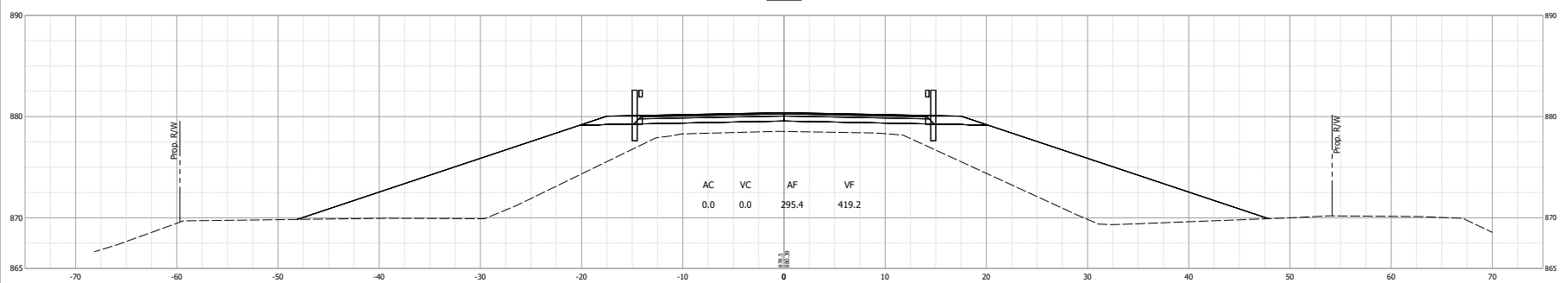


20+10.82

Begin Paving Exception  
Sta. 20+10.82 Line "A"



20+00



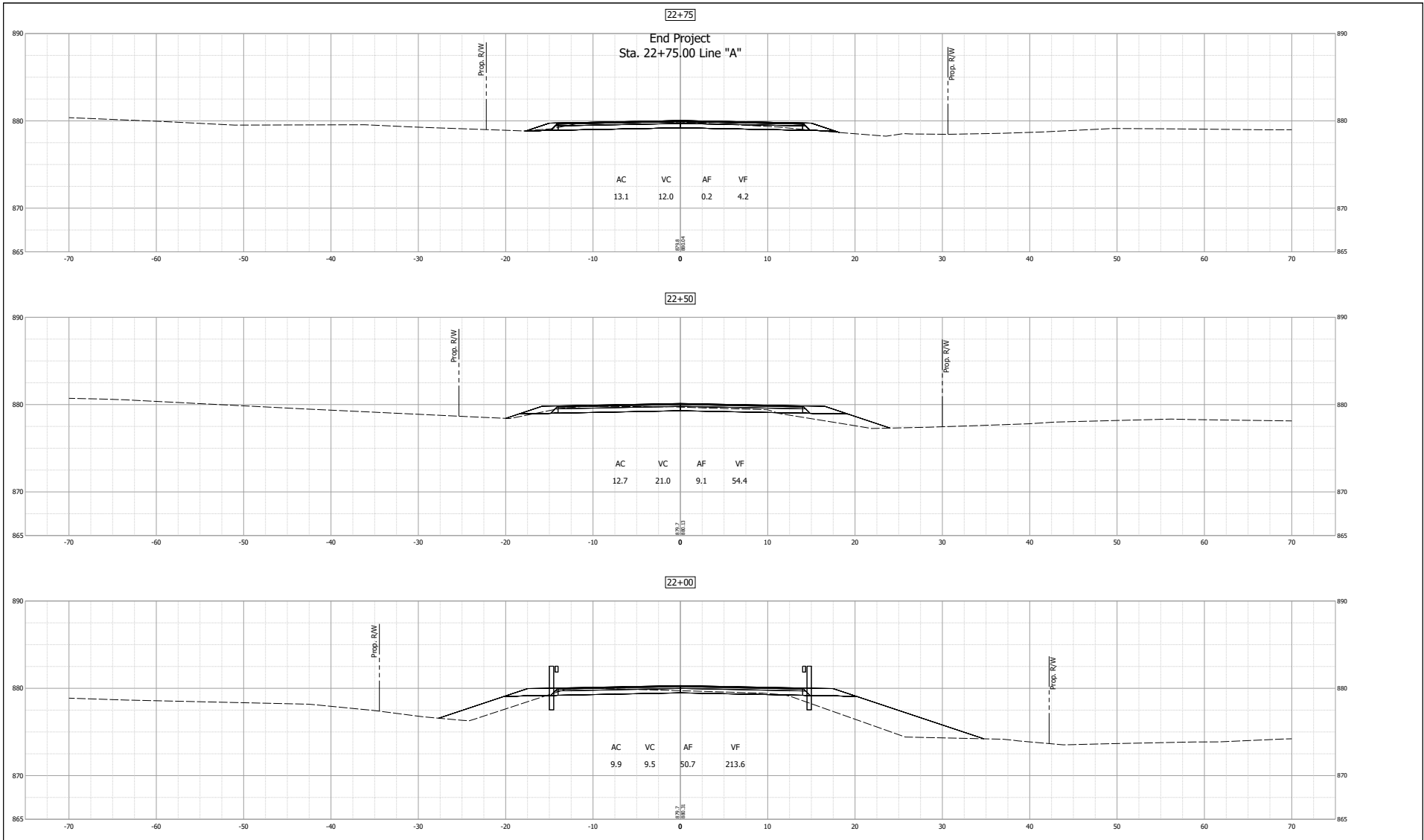
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	05/20/12	DATE
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CHECKED: BKA	CHECKED: BKA		

INDIANA  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS - LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
1" = 5'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	17 of 19
CONTRACT	PROJECT
B-42775	1902840



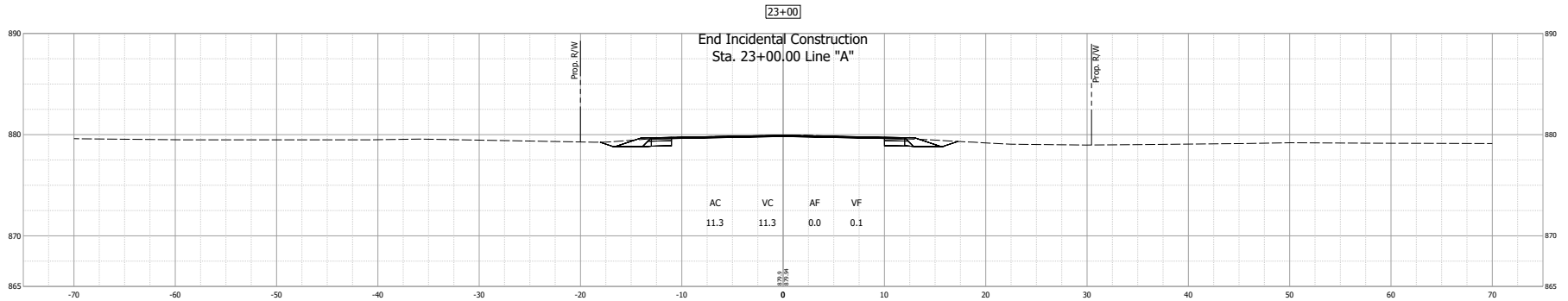
Date: May 22, 2012, 1:55pm User Name: mevw  
 File: \\sdc\mcr\prod\prod\1902840\1902840\CAD\New\Cross Sections.dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	05/20/12	DATE
DESIGNED: MEV	DRAWN: MEV		
CHECKED: BKA	CHECKED: BKA		

**INDIANA**  
**DEPARTMENT OF TRANSPORTATION**  
  
**CROSS SECTIONS - LINE "A"**

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
1" = 5'	1902840
SURVEY BOOK	SHEETS
ELECTRONIC	18 of 19
CONTRACT	PROJECT
B-42775	1902840

Date: May 22, 2012, 1:55pm File Name: mwp  
 File: \\hpc\acct\prod\prod\10000\10000\10000\CAD\New Cross Sections.dwg



23+00

End Incidental Construction  
Sta. 23+00.00 Line "A"

Prop. R/W

Prop. R/W

890

890

880

880

870

870

865

865

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	05/20/12	DATE
DESIGNED: MDV	DRAWN: MDV		
CHECKED: BKA	CHECKED: BKA		

INDIANA  
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS - LINE "A"

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1" = 5'	S7-00069 B
VERTICAL SCALE	DESIGNATION
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SURVEY BOOK	SHEETS
ELECTRONIC	19 of 19
CONTRACT	PROJECT
B-42775	1902840