

PROJECT	DESIGNATION
1700103	1700103
CONTRACT	BRIDGE FILE
B-42245	421-91-10323


STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
421-91-10323	Composite Prestressed Concrete Bulb-Tee Beam Bridge	1 Span: 96'-0" Skew: 0°	Hoagland Ditch	784+00.15 Line "A"

KIN PROJECT INFORMATION					
DESIGNATION	PROJECT DESCRIPTION				
	Work Type	Route	Location	Feature Crossed	County
1700044	Small Structure Pipe Lining	US 231	2.34 mi N of SR 14	Comer Ditch	Jasper County
1700046	Small Structure Pipe Lining	US 231	0.87 mi N of SR 110	Schatzley Ditch	Jasper County
1700103 (LEAD)	Bridge Replacement, Concrete	US 421	3.50 mi S of SR 16	Hoagland Ditch	White County
1700123	Small Structure - New	SR 14	1.50 mi E of US 231	UNT to Oliver Ditch	Jasper County
1701329	Small Structure Replacement	SR 49	4.60 mi S of SR 10	Barnard Ditch	Jasper County
1701475	Small Structure Replacement	US 231	at CR 400N	Bruner Ditch	Jasper County
1701493	Small Structure Replacement	SR 114	2.09 mi W of Jct of US 421	Rosendall Ditch	Jasper County
1701506	Small Structure Replacement	SR 14	0.73 mi E of US 231	Jungels-Lakin Ditch	Jasper County
1701508	Small Structure Replacement	SR 14	1.07 mi W of US 231	Lakin, Ross Ditch	Jasper County
1701512	Small Structure Replacement	SR 114	1.09 mi E of Jct of US 231	School House Ditch	Jasper County

Stage 2
March 24, 2020

ADDITIONAL RIGHT-OF-WAY
REQUIRED FOR THIS PROJECT

INDIANA DEPARTMENT OF TRANSPORTATION



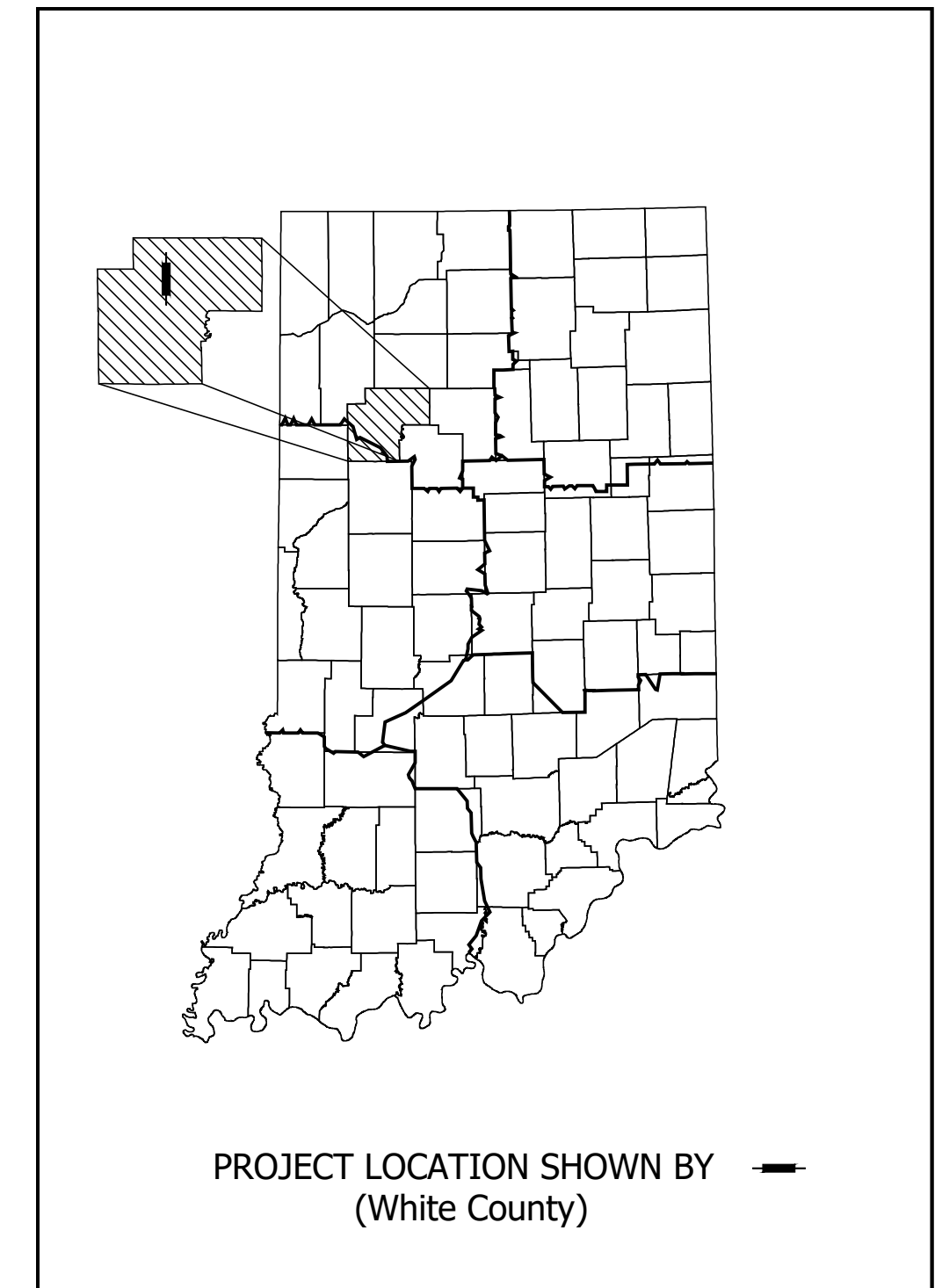
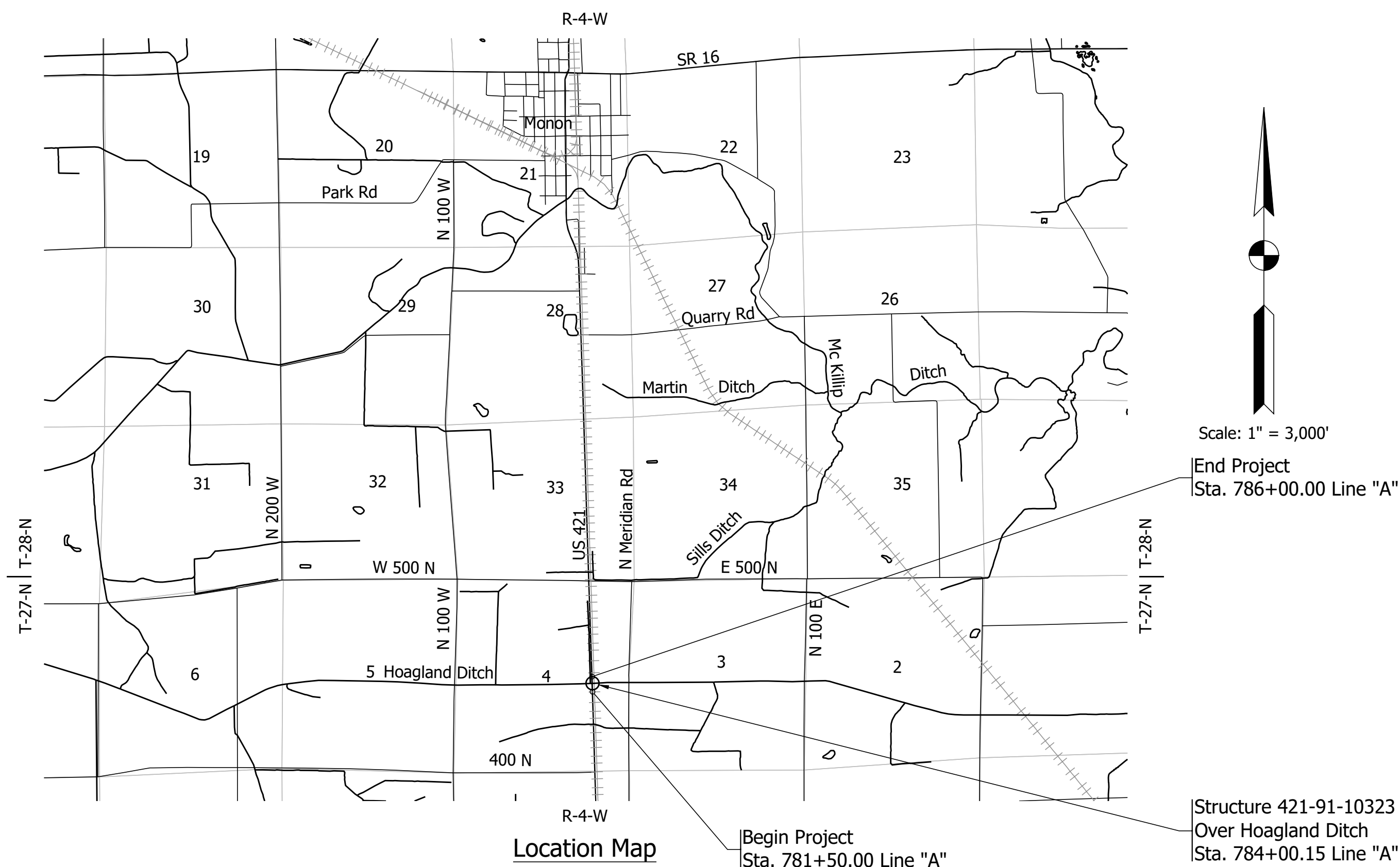
BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: US 421 AT: RP 172+23

PROJECT NO. 1700103 P.E
1700103 R/W
1700103 CONST.

Bridge Replacement, Concrete, on US 421 over Hoagland Ditch
Located 3.50 Miles South of SR 16
Section 4, T-27-N, R-4-W, Honey Creek Township, White County



LATITUDE: 40° 49' 01" LONGITUDE: -86° 52' 34"

BRIDGE LENGTH:	0.018	MI.
ROADWAY LENGTH:	0.069	MI.
TOTAL LENGTH:	0.087	MI.
MAX. GRADE:	0.26	%

HUC 12: 051201061205
HUC 14: 05120106120080

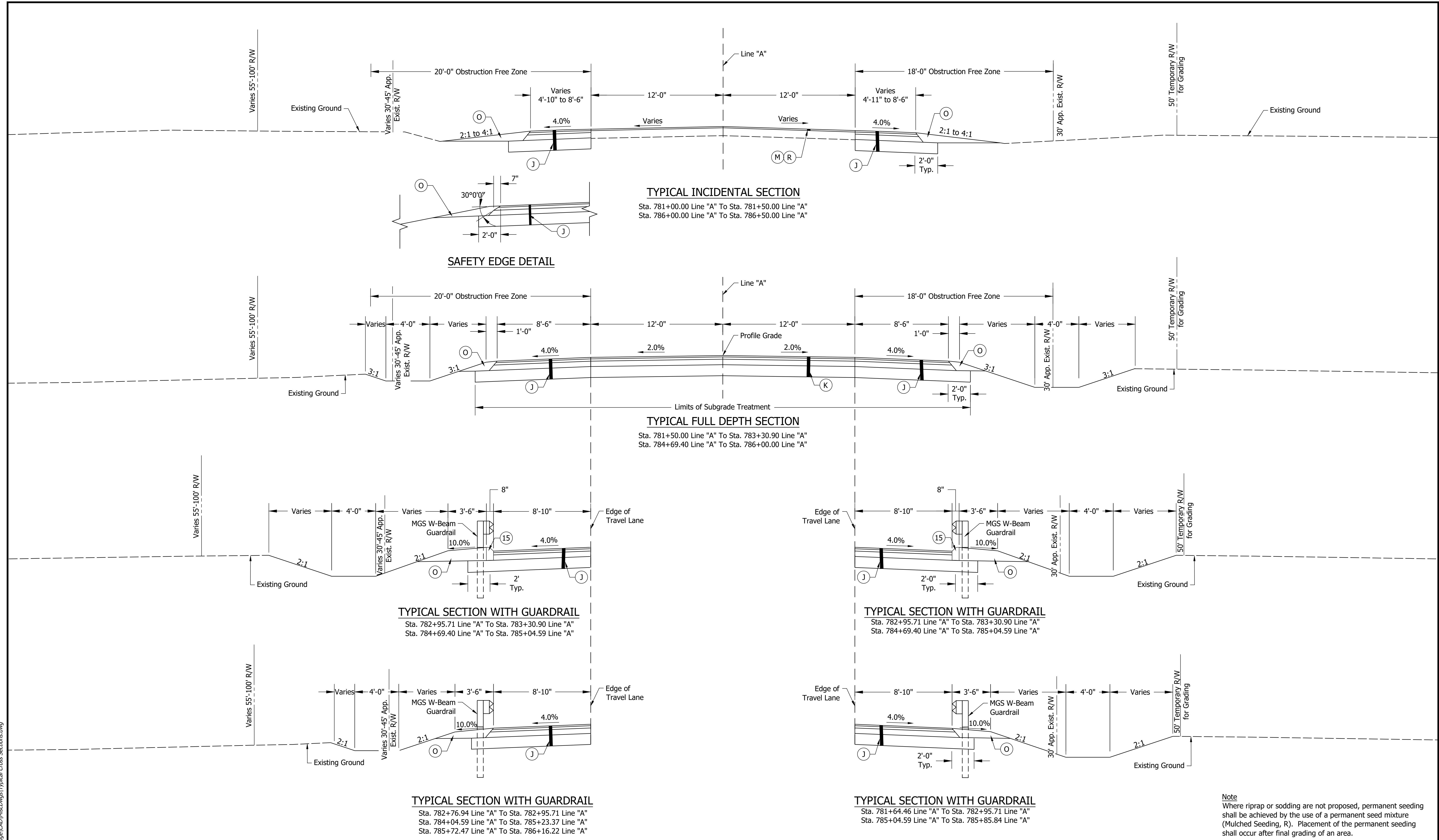
INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2020
TO BE USED WITH THESE PLANS



PLANS PREPARED BY:	Lochmueller Group, Inc.	(574) 334-5460 PHONE NUMBER
CERTIFIED BY:	_____	DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	
421-91-10323	
DESIGNATION	
1700103	
SURVEY BOOK	SHEET
ELECTRONIC	1 of 16
CONTRACT	PROJECT
B-42245	1700103

Date: Mar 24, 2020, 9:30am, User Name: MCooper, File: S:_2017\17-43232_L_BD\Bridges\CAD\Misc\Drawings\Title_Sheet.dwg



Note
Where riprap or sodding are not proposed, permanent seeding shall be achieved by the use of a permanent seed mixture (Mulched Seeding, R). Placement of the permanent seeding shall occur after final grading of an area.

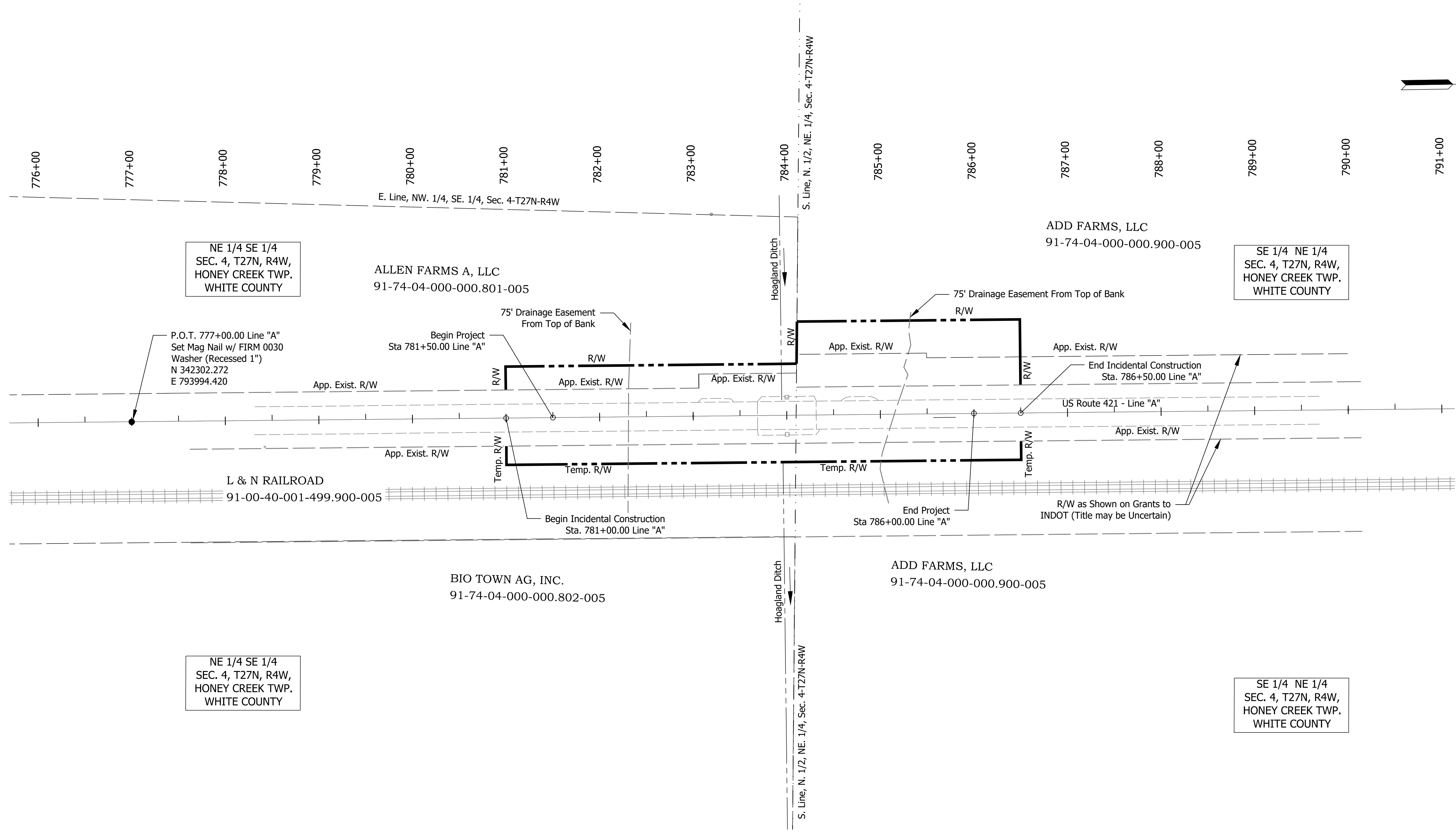
(J)	Pavement Section will be determined upon completion of Geotechnical Report	(O)	Compacted Aggregate, No. 53
(K)	Pavement Section will be determined upon completion of Geotechnical Report	(M)	Milling, Asphalt, 1 1/2"
		(R)	165 LB/SYS QC/QA HMA, 3, 64, Surface, 9.5mm
		(15)	Curb, Concrete, Type B

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MDV	DRAWN: MDV	
CHECKED: JAM	CHECKED: JAM	

INDIANA DEPARTMENT OF TRANSPORTATION	
TYPICAL CROSS SECTIONS	

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	421-91-10323
VERTICAL SCALE	DESIGNATION
1/4" = 1'-0"	1700103
SURVEY BOOK	SHEET
ELECTRONIC	3 of 16
CONTRACT	PROJECT
B-42245	1700103

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Date: Mar 24, 2020, 11:46am User Name: MGeer
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MDV	DRAWN: NG	
CHECKED: JAW	CHECKED: EJG	

INDIANA
 DEPARTMENT OF TRANSPORTATION

 PLAT NO. 1

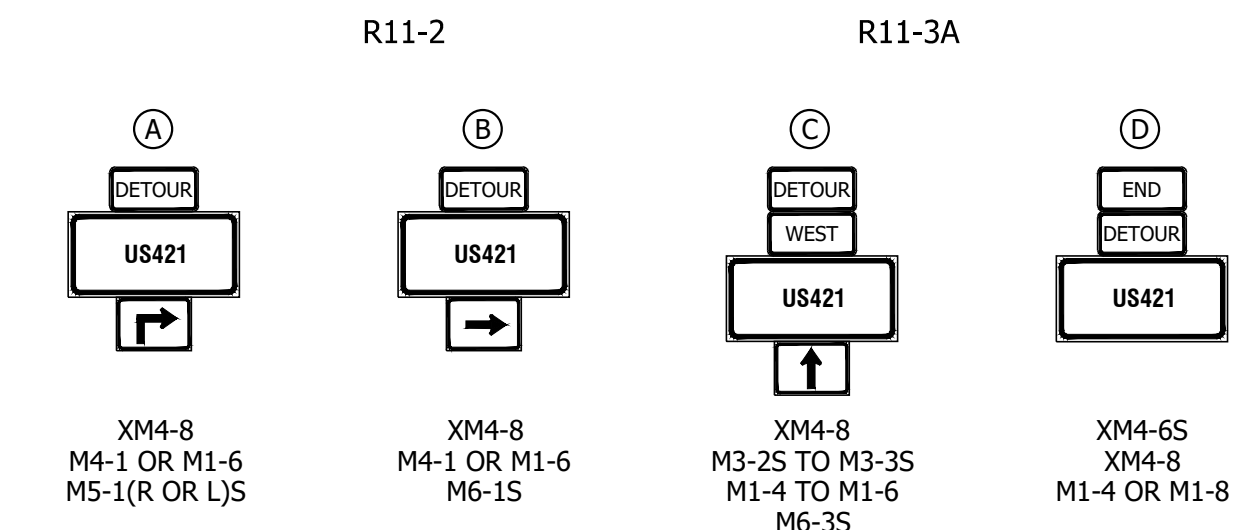
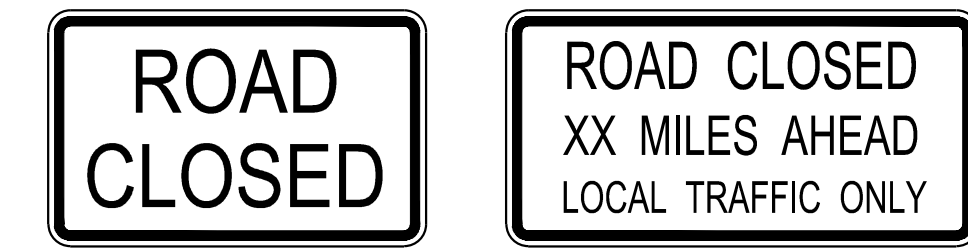
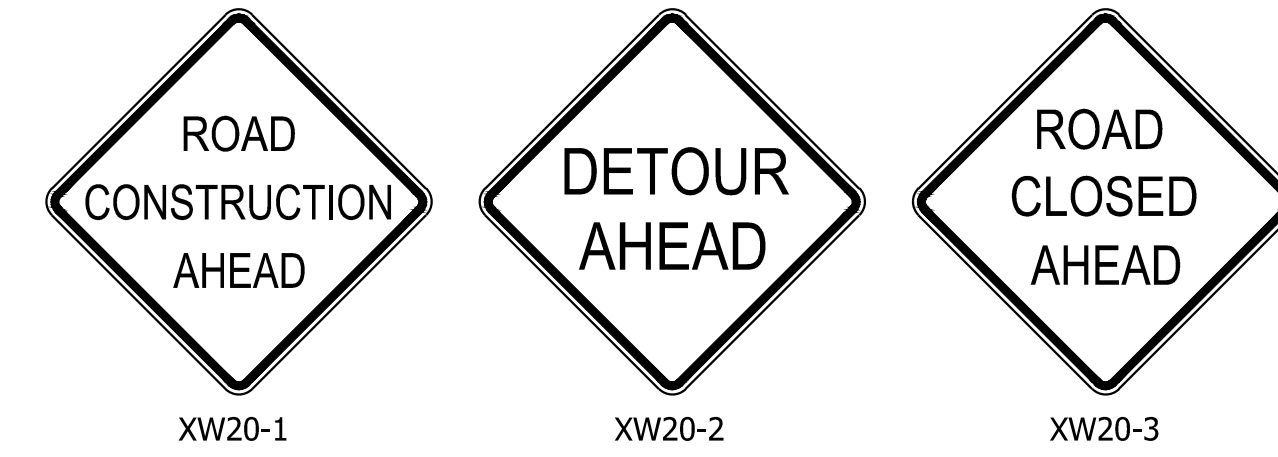
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1" = 60'	421-91-10323
VERTICAL SCALE	DESIGNATION
N/A	1700103
SURVEY BOOK	SHEET
ELECTRONIC	4 of 16
CONTRACT	PROJECT
B-42245	1700103

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)	4
XM4-10 (L or R)	"DETOUR" SIGN	48 x 18	(1)	2
XW20-1	"ROAD CONSTRUCTION AHEAD" SIGN	48 x 48	A	2
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				6

Detour Route Marker Assemblies: 36 Req'd
 Road Closure Sign Assemblies: 6 Req'd
 Type III-A Barricades: 48 LFT
 Type III-B Barricades: 48 LFT

(1) Included with road closure sign assembly.

LEGEND
 Details Not to Scale

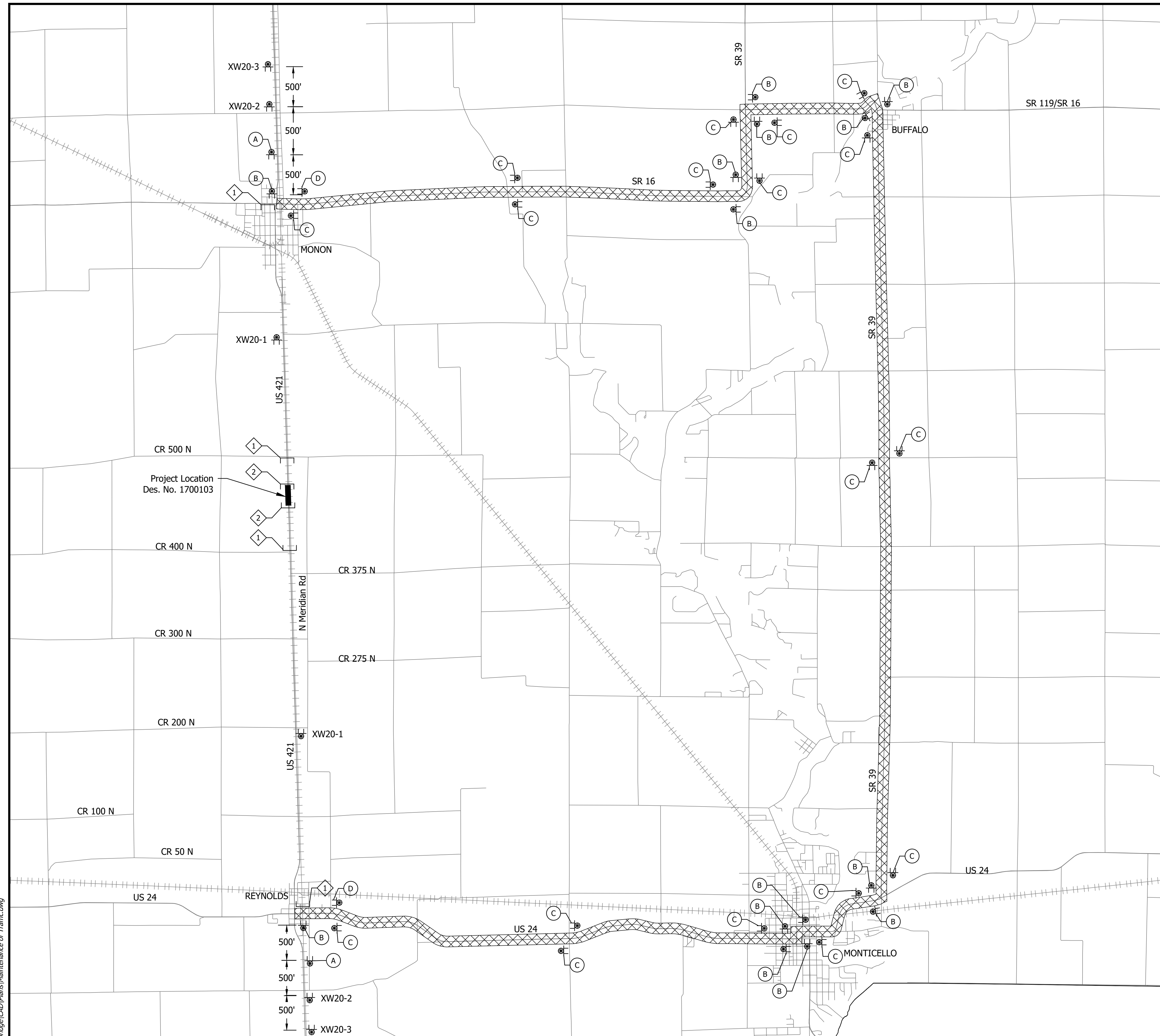


- ① ROAD CLOSURE SIGN ASSEMBLY W/ TYPE III-B BARRICADE (12 LFT) AND R11-3A AND XM4-10 (L OR R)
- ② ROAD CLOSURE SIGN ASSEMBLY W/ TYPE III-A BARRICADE (24 LFT) AND R11-2

- CONSTRUCTION ZONE
- ▨ DETOUR ROUTE

GENERAL NOTES

- All maintenance of traffic devices, signs and pavement markings shall conform to the latest edition of the Indiana MUTCD.
- See INDOT Std. Drwg. 801-TCDD-01 for sign spacing requirements and additional notes.
- See INDOT Std. Drwg. 801-TCLG-01 for standard notes.
- The cost of R11-2, R11-4 and XM4-10 (R or L) shall be included in the cost of the road closure sign assembly.
- Type B construction warning lights shall be used with all signs located on barricades. Type A construction warning lights shall be used on all other construction signs.



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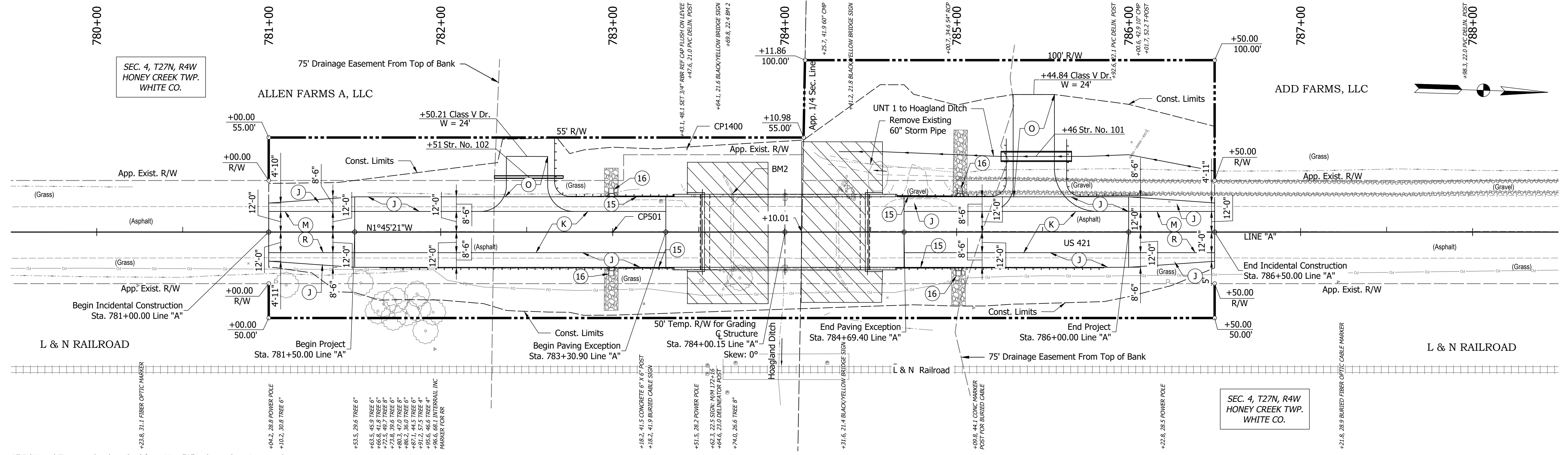
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DESIGNED: _____ MDV	DRAWN: _____ MDV	
CHECKED: _____ JAW	CHECKED: _____ JAW	

INDIANA
DEPARTMENT OF TRANSPORTATION

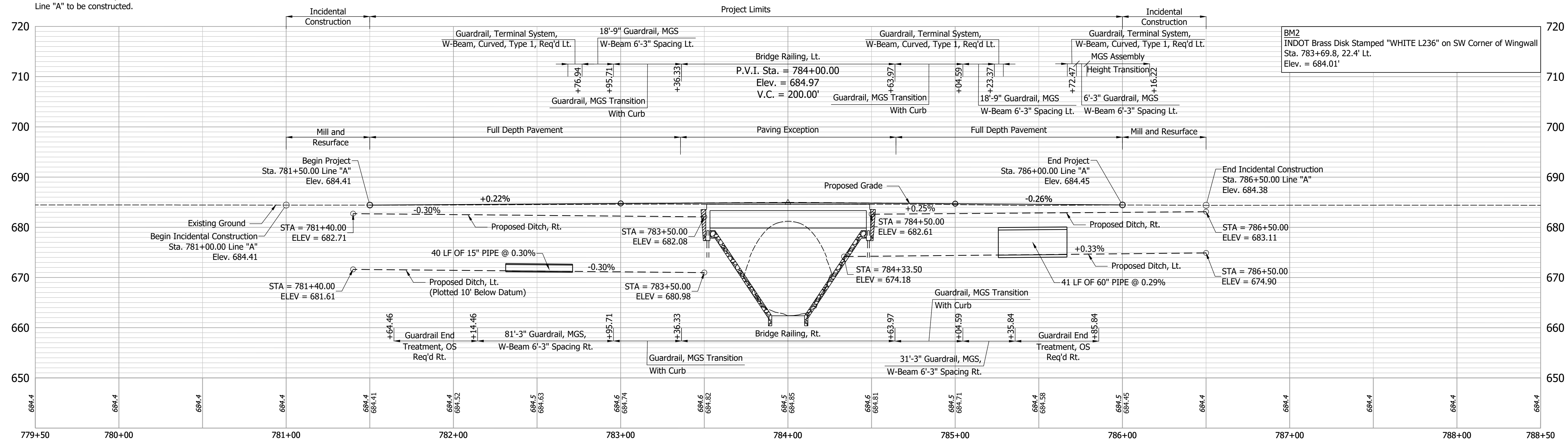
MAINTENANCE OF TRAFFIC

HORIZONTAL SCALE	BRIDGE FILE
1" = 1000'	421-91-10323
VERTICAL SCALE	DESIGNATION
N/A	1700103
SURVEY BOOK	SHEET
ELECTRONIC	5 of 16
CONTRACT	PROJECT
B-42245	1700103

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



- (J) Pavement Section will be determined upon completion of Geotechnical Report
- (M) Milling, Asphalt, 1 1/2"
- (R) 165 LB/SYS QC/QA HMA, 3, 64, Surface, 9.5mm
- (O) Compacted Aggregate, No. 53
- (K) Pavement Section will be determined upon completion of Geotechnical Report
- (15) Curb, Concrete, Type B
- (16) Curb, Turnout

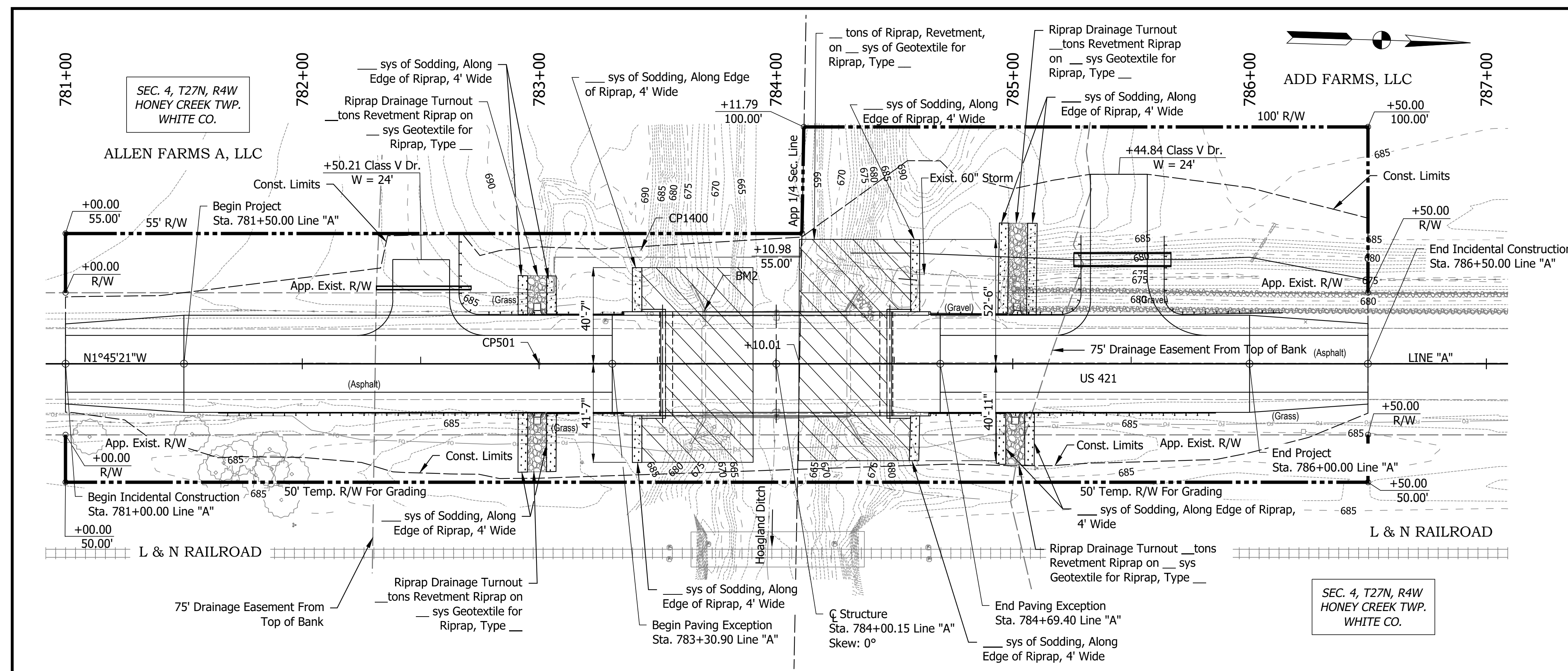
- (16) Curb, Turnout

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MDV	DRAWN: MDV/NG	
CHECKED: JAW	CHECKED: JAW	

INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 10'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	6 of 16
CONTRACT	PROJECT
B-42245	1700103



EXISTING STRUCTURE

The existing structure, 421-91-00889 A, is a single span reinforced concrete filled arch bridge, built in 1929 and widened in 1960, with a 60' span and 41' clear roadway. Existing structure to be removed.

HYDRAULIC DATA

Drainage Area	71.74 SQ. MI.
Q100 Discharge	2,200.00 CFT./SEC.
Q100 Elevation	676.97 M.S.L.
Q100 Backwater	0.00 FT.
Q100 Velocity	3.17 FT./SEC.
Proposed Waterway Opening, Below Q100	694.60 SFT.
Low Structure Elevation	680.04 M.S.L.
Skew	0°00'00"
Existing Waterway Opening	545.70 SFT.
Existing Low Structure Elevation	681.08 M.S.L.
Existing Backwater	0.11 FT.

HYDRAULIC SCOUR DATA

Q100 Discharge	2,200.00 CFT./SEC.
Q100 Elevation	676.97 M.S.L.
Q100 Scour Velocity	3.87 FT./SEC.
Q100 Contraction Scour Depth	1.09 FT.
Q100 Total Scour Depth	1.09 FT.
Q100 Low Scour Elevation	661.28 M.S.L.
Q500 Discharge	2,860 CFT./SEC.
Q500 Elevation	679.00 M.S.L.
Q500 Scour Velocity	4.10 FT./SEC.
Q500 Contraction Scour Depth	1.06 FT.
Q500 Total Scour Depth	1.06 FT.
Q500 Low Scour Elevation	661.31 M.S.L.

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

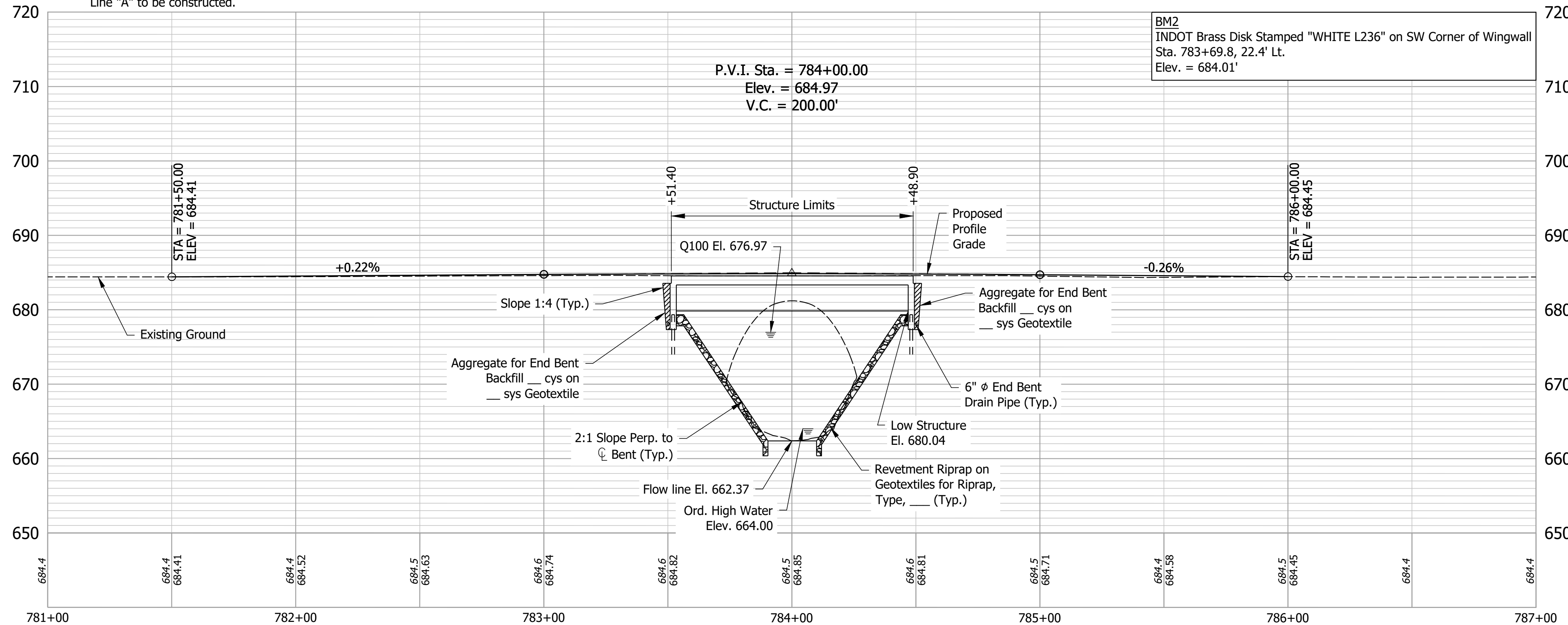
No direct payment for Benching. Benching will not be paid for as Common Excavation.

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"
41'-0" CLEAR ROADWAY; NO SKEW
US 421 OVER HOAGLAND DITCH
WHITE COUNTY**

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.



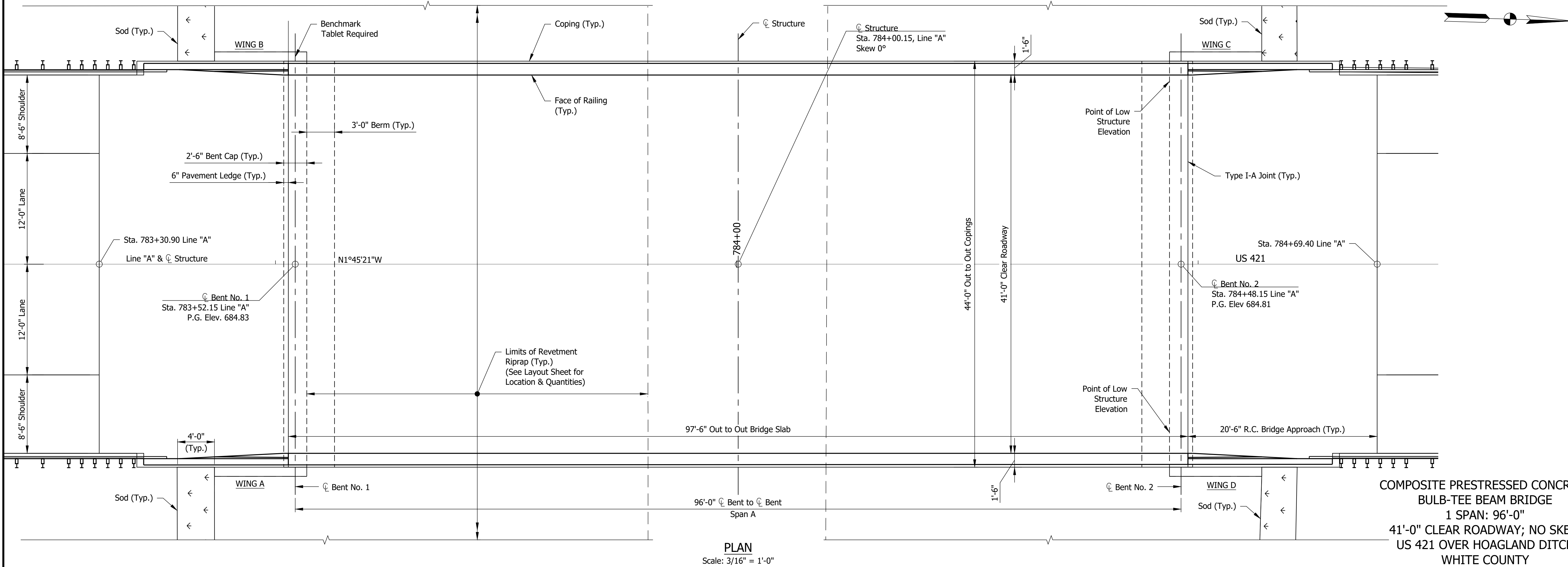
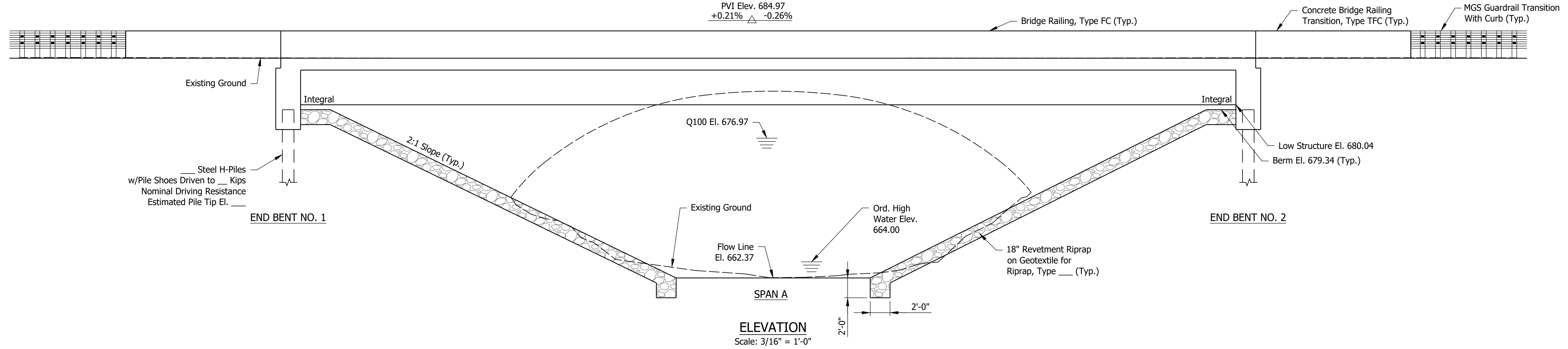
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DESIGNED: E J G	DRAWN: D J G / N G	
CHECKED: A C S	CHECKED: E J G	

INDIANA DEPARTMENT OF TRANSPORTATION	
LAYOUT	

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 10'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	7 of 16
CONTRACT	PROJECT
B-42245	1700103

STRUCTURE TO BE BUILT ON A 200' VERTICAL CURVE

PVI Sta. 784+00.00
 PVI Elev. 684.97
 +0.21% -0.26%



COMPOSITE PRESTRESSED CONCRETE
 BULB-TEE BEAM BRIDGE
 1 SPAN: 96'-0"
 41'-0" CLEAR ROADWAY; NO SKEW
 US 421 OVER HOAGLAND DITCH
 WHITE COUNTY

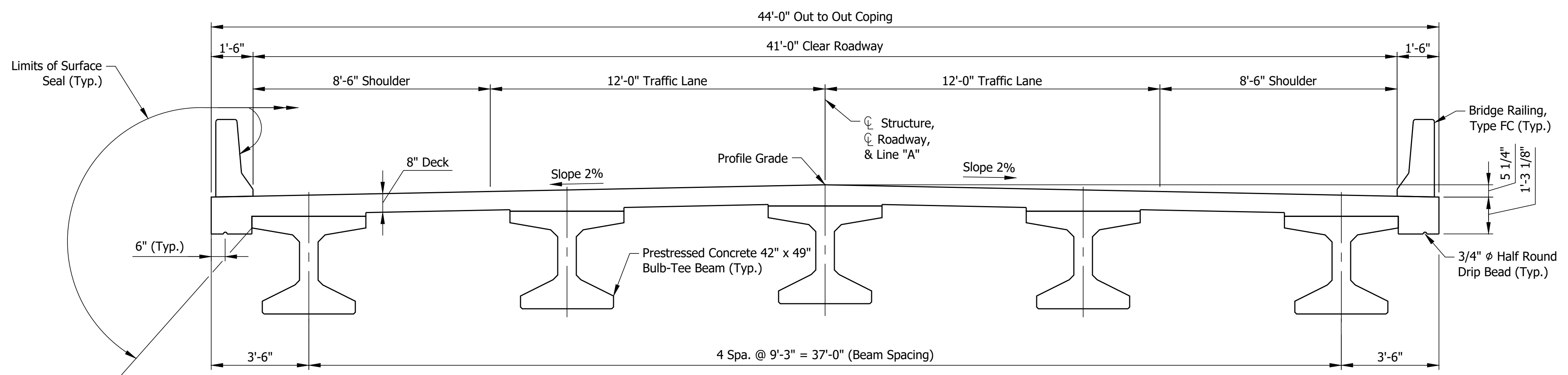
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DESIGNED: EJG	DRAWN: DJG/NG	
CHECKED: ACS	CHECKED: EJG	

INDIANA
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
As Noted	421-91-10323
VERTICAL SCALE	DESIGNATION
As Noted	1700103
SURVEY BOOK	SHEET
ELECTRONIC	8 of 16
CONTRACT	PROJECT
B-42245	1700103

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TYPICAL SECTION
Scale: 3/8" = 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, Eighth Edition, 2017, and subsequent interims.

DEAD LOAD

Actual weight plus 35 lb/ft² for future wearing surface and 15 lb/ft² 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_c = 4000 psi
Class B f_c = 3000 psi
Class A f_c = 3500 psi

REINFORCING STEEL

Grade 60 f_y = 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/ft² for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway.

CONSTRUCTION LIVE LOAD

Designed for 20 lb/ft² 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.

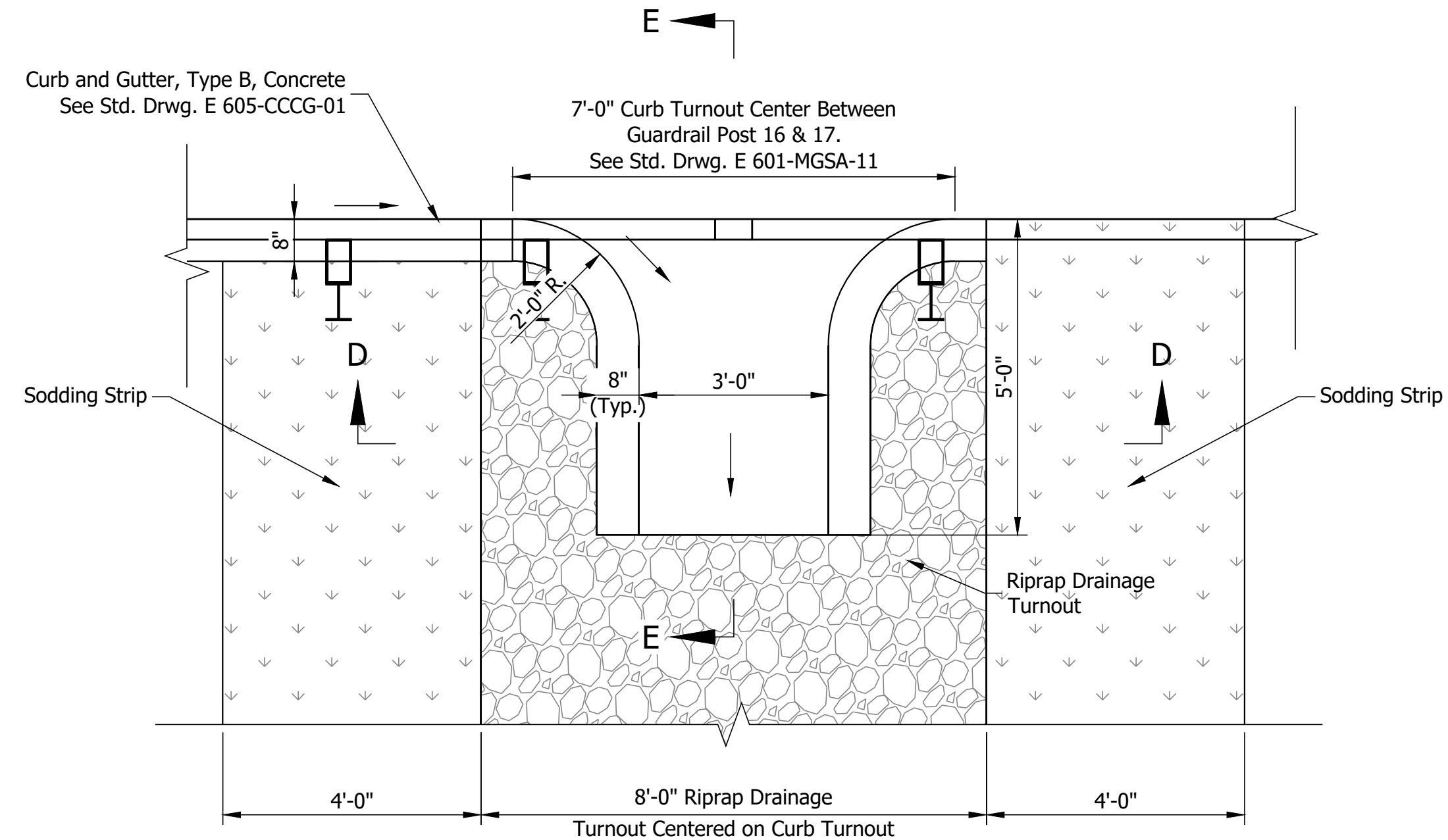
SEISMIC DESIGN LOAD

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

COMPOSITE PRESTRESSED CONCRETE
BULB-TEE BEAM BRIDGE
1 SPAN: 96'-0"
41'-0" CLEAR ROADWAY; NO SKEW
US 421 OVER HOAGLAND DITCH
WHITE COUNTY

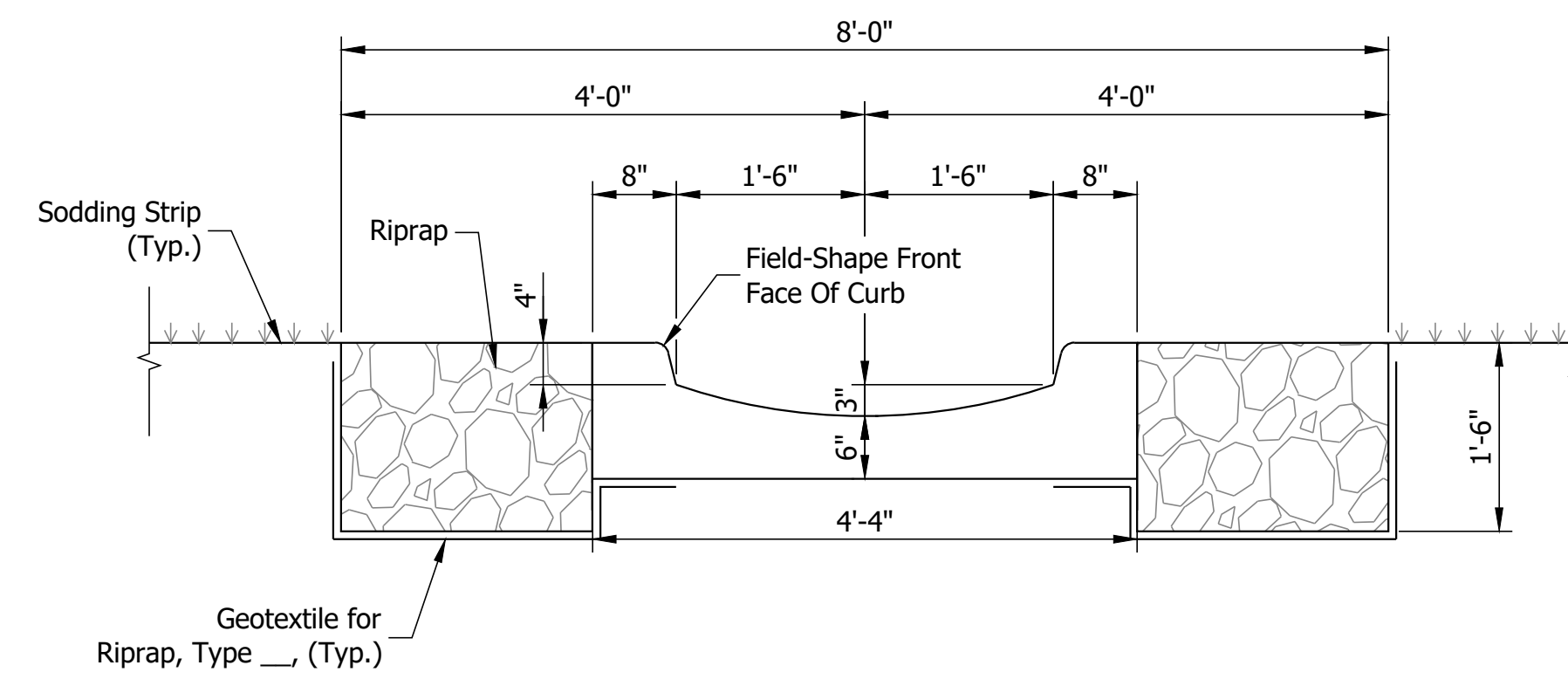
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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
			As Noted	421-91-10323
DESIGNED: EJG DRAWN: DJG/ NG	GENERAL PLAN		VERTICAL SCALE	DESIGNATION
CHECKED: ACS CHECKED: EJG			As Noted	1700103
			SURVEY BOOK	SHEET
			ELECTRONIC	9 of 16
			CONTRACT	PROJECT
			B-42245	1700103

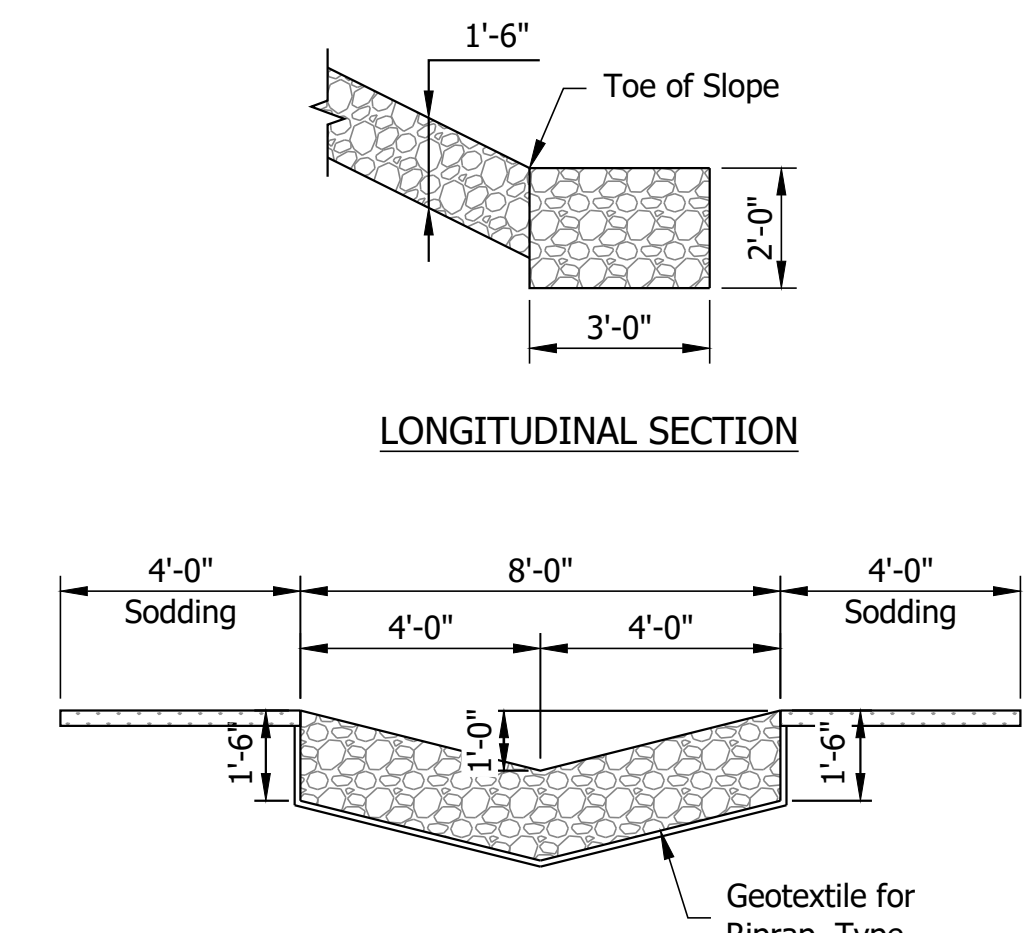


CURB TURNOUT - PLAN
SCALE: 1/2"=1'-0"

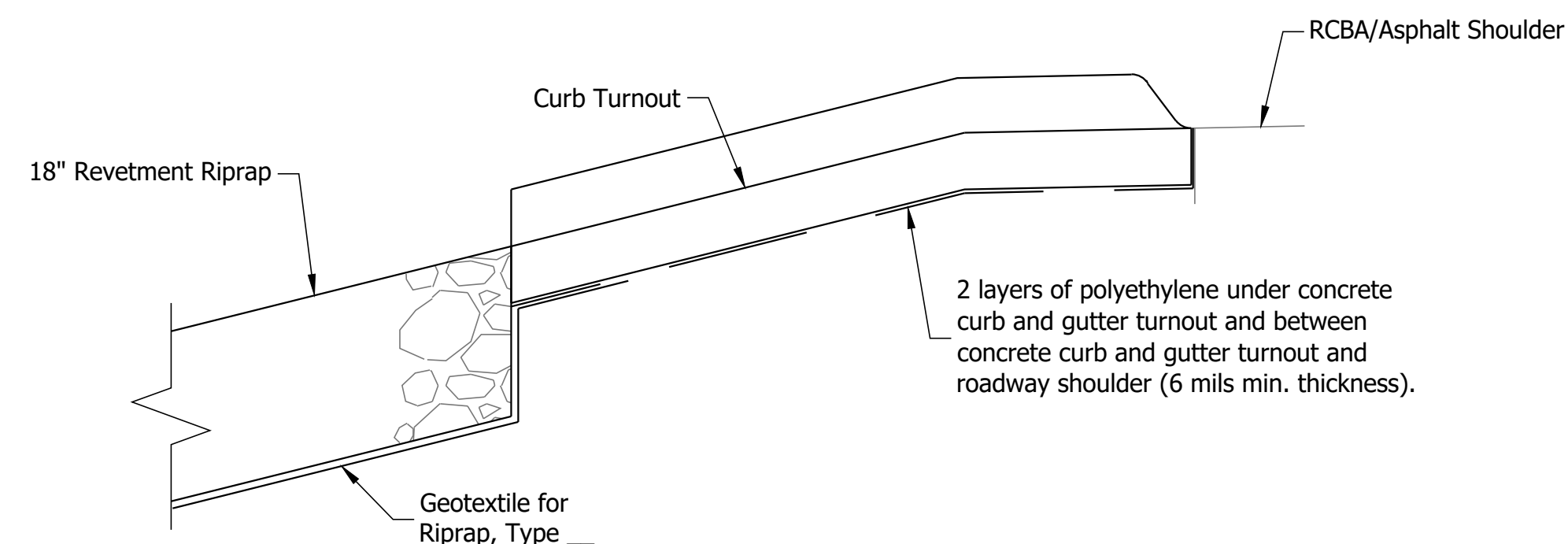
Note:
For additional details see Std.
Drwg. E 605-CTCG-01.



SECTION D-D
SCALE: 3/4"=1'-0"



RIPRAP TURNOUT DETAILS
Not to Scale



SECTION E-E
SCALE: 3/4"=1'-0"

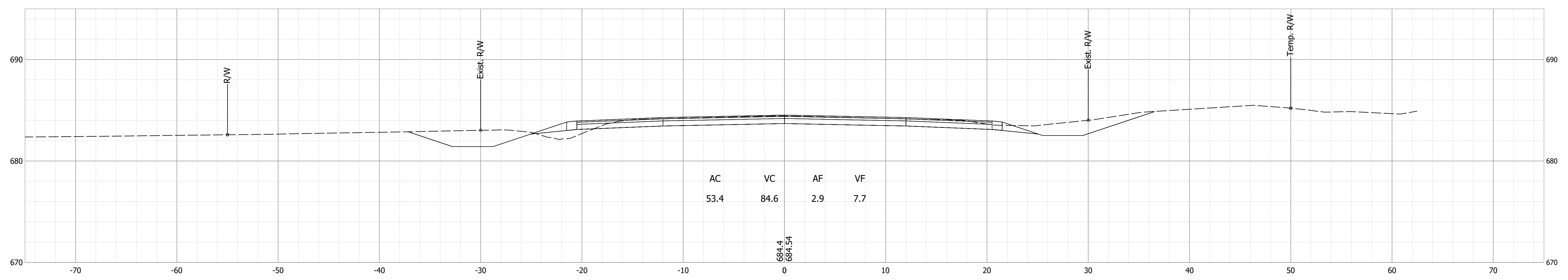
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CHECKED: ACS	CHECKED: EJG	

INDIANA DEPARTMENT OF TRANSPORTATION	
DRAINAGE TURNOUT DETAILS	

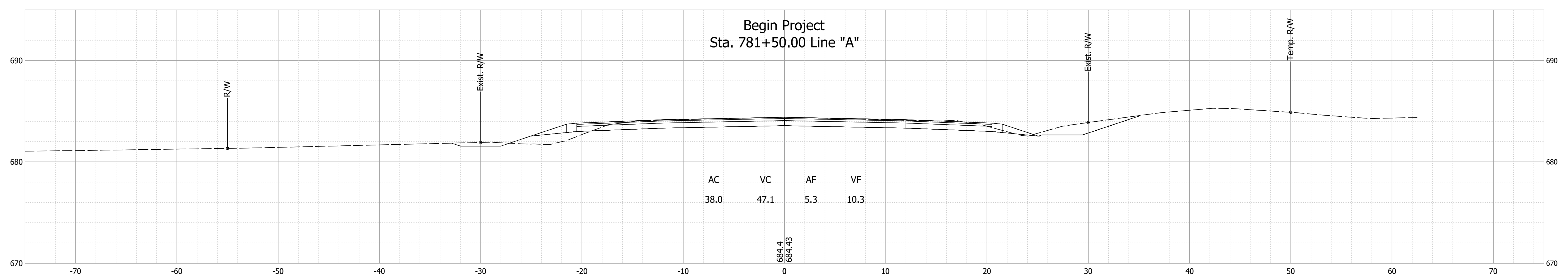
HORIZONTAL SCALE	BRIDGE FILE
As Noted	421-91-10323
VERTICAL SCALE	DESIGNATION
As Noted	1700103
SURVEY BOOK	SHEET
ELECTRONIC	10 of 16
CONTRACT	PROJECT
B-42245	1700103

782+00



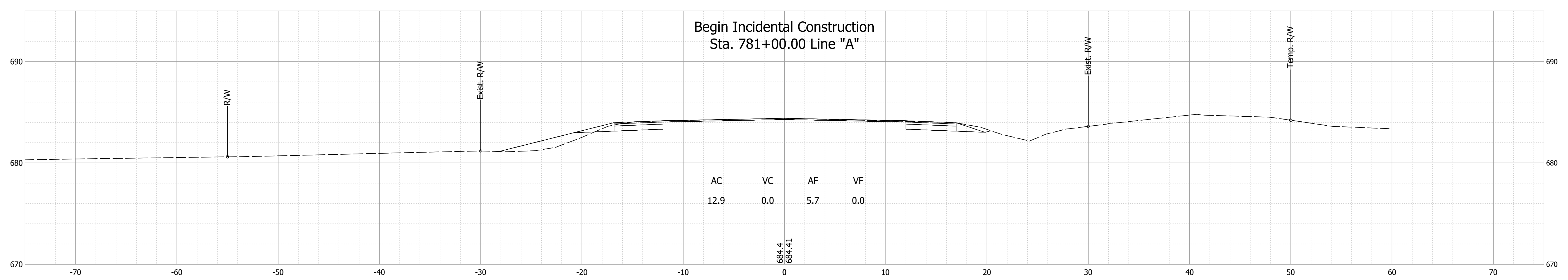
781+50

Begin Project
Sta. 781+50.00 Line "A"



781+00

Begin Incidental Construction
Sta. 781+00.00 Line "A"



Date: Mar 06, 2020, 3:56pm User Name: MGreer
File: S:_2017\17-0372\B0\Bridg\CAD\Plans\Section Sheet - (4).dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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CHECKED: JAW	CHECKED: JAW	

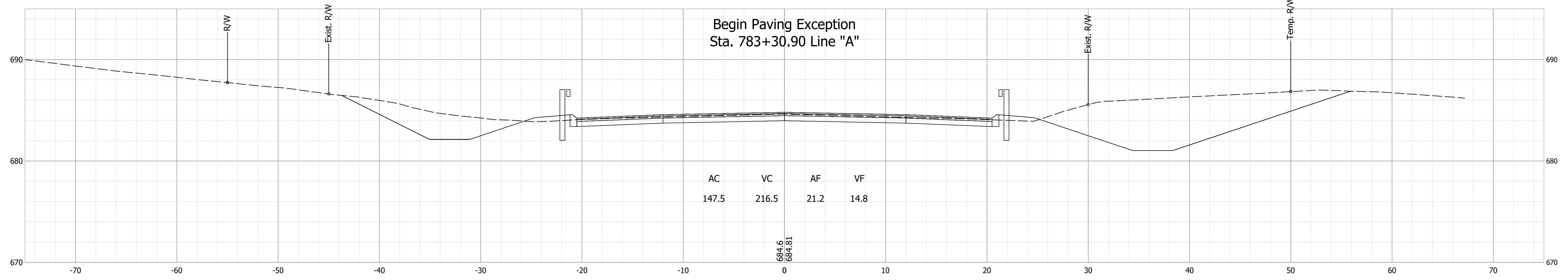
INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

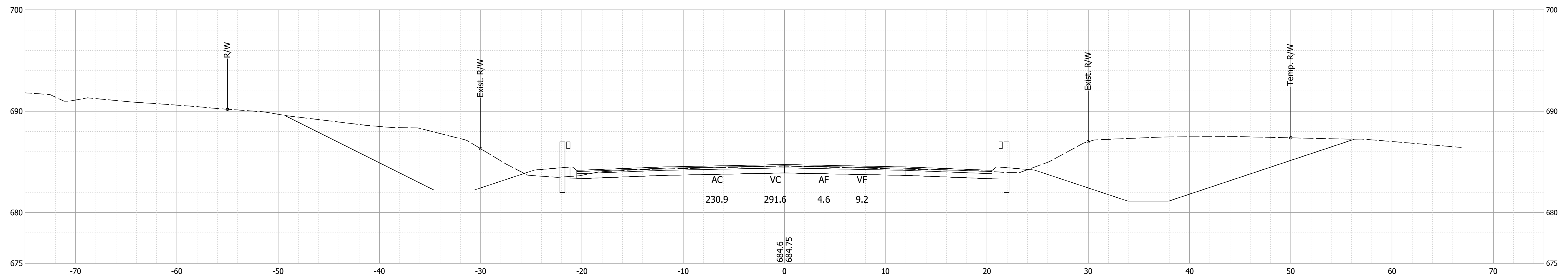
HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 5'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	13 of 16
CONTRACT	PROJECT
B-42245	1700103

783+30.90

Begin Paving Exception
Sta. 783+30.90 Line "A"

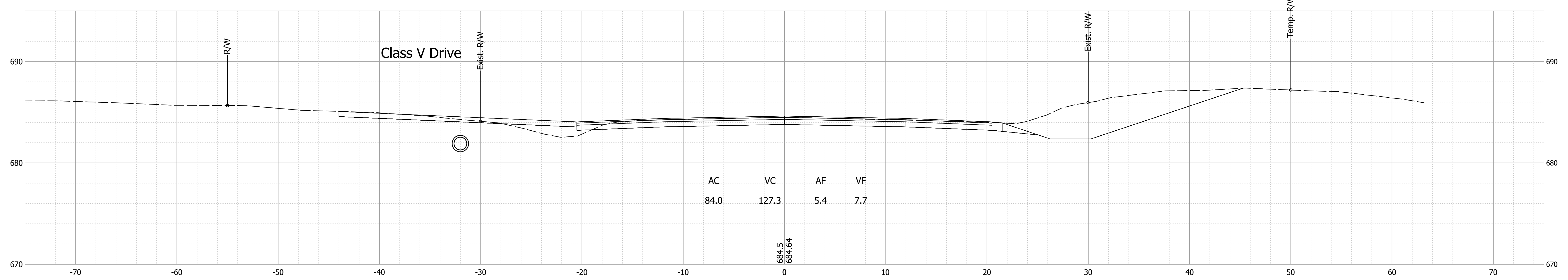


783+00



782+50

Class V Drive



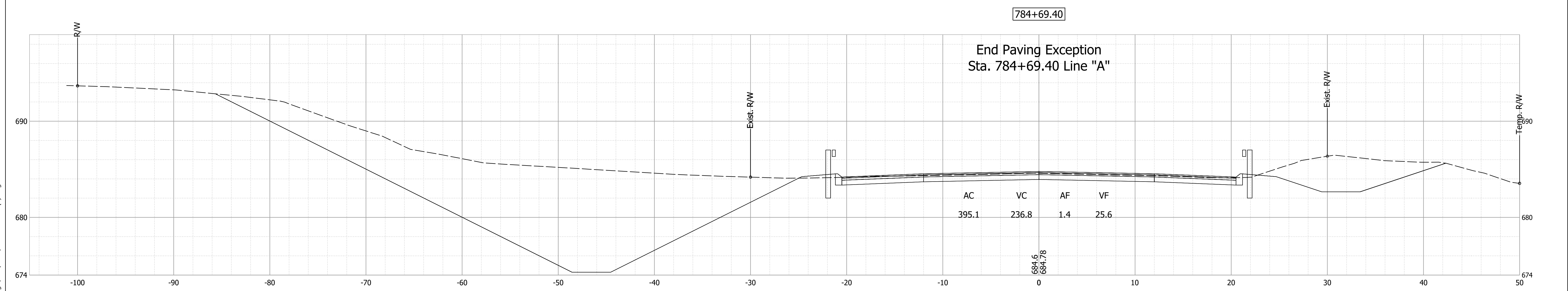
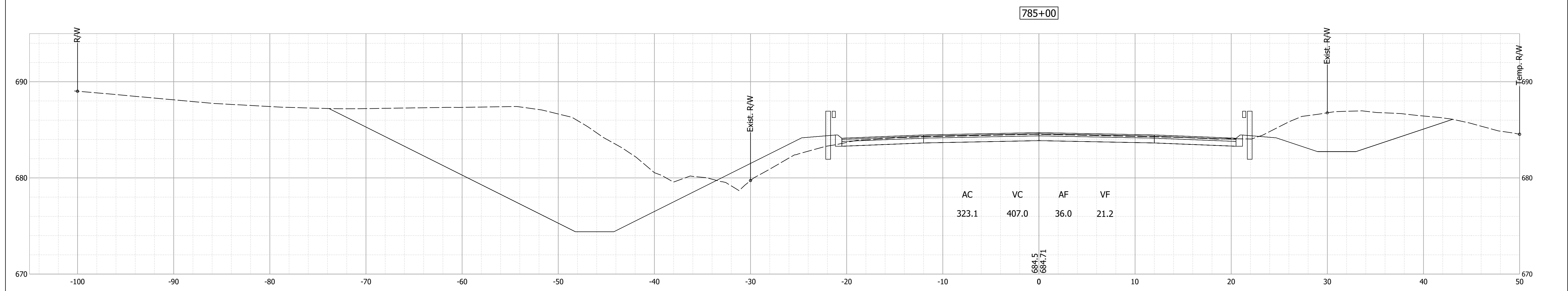
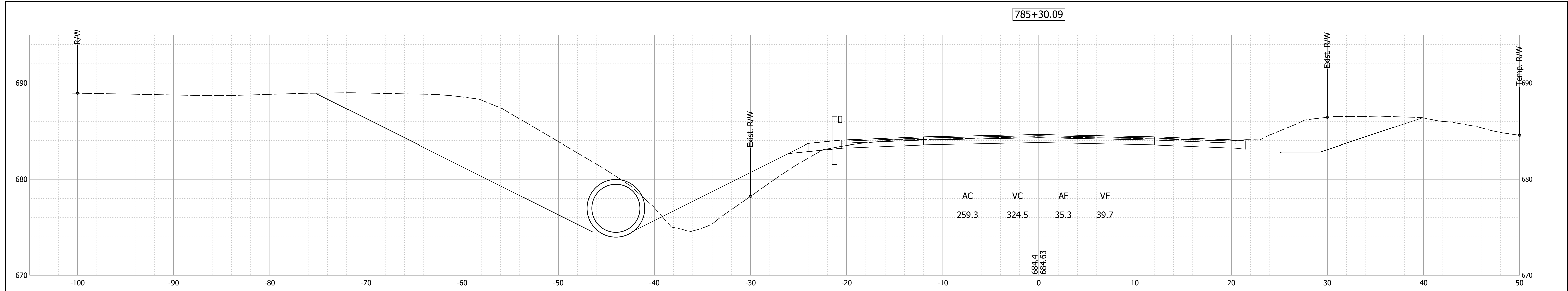
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MDV	DRAWN: MDV	
CHECKED: JAW	CHECKED: JAW	

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 5'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	14 of 16
CONTRACT	PROJECT
B-42245	1700103



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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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CHECKED: JAW	CHECKED: JAW	

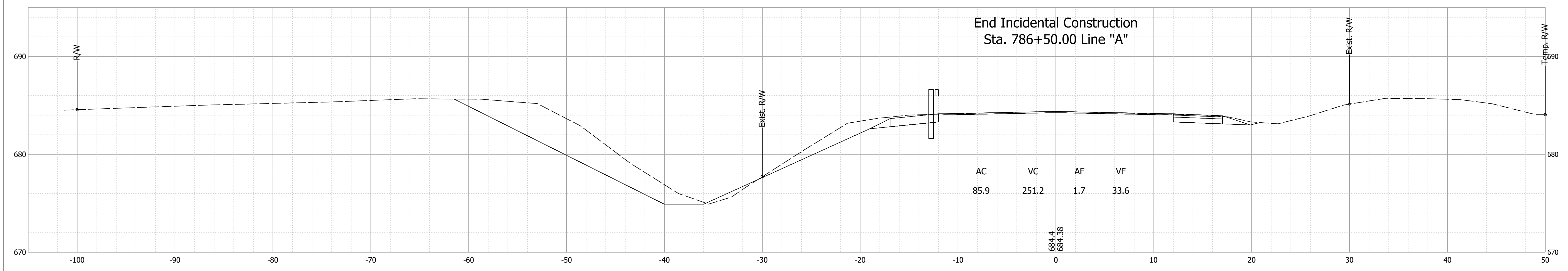
INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 5'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	15 of 16
CONTRACT	PROJECT
B-42245	1700103

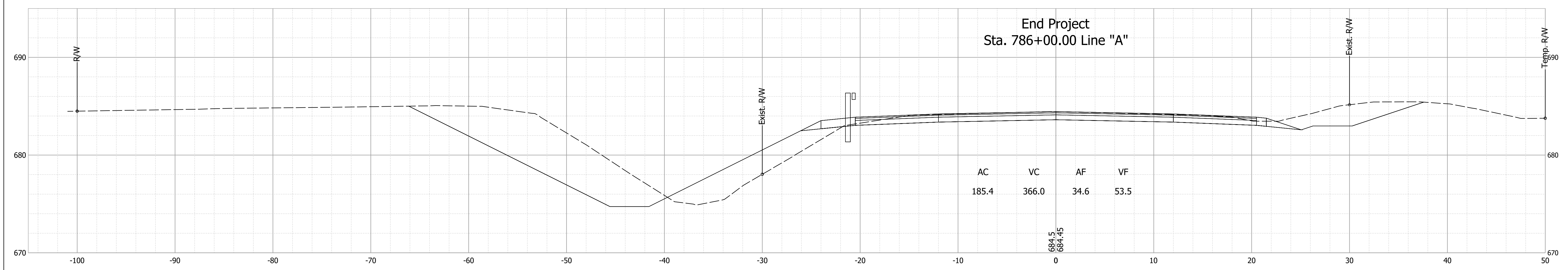
786+50

End Incidental Construction
Sta. 786+50.00 Line "A"



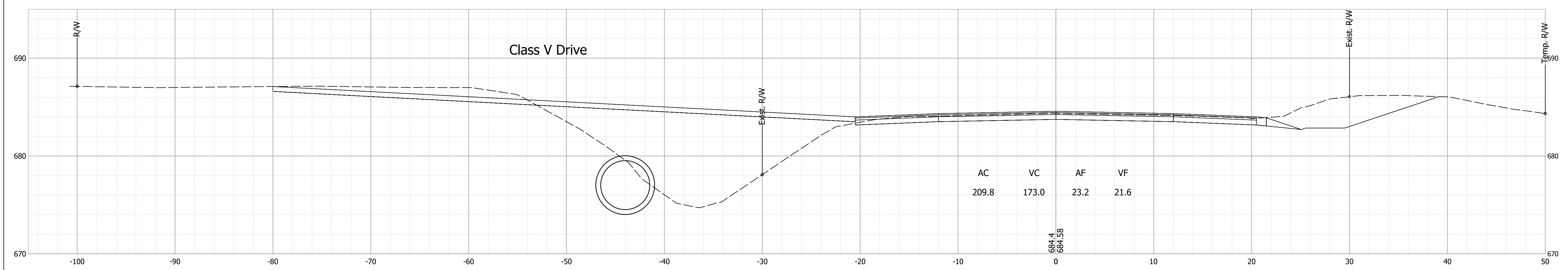
786+00

End Project
Sta. 786+00.00 Line "A"



785+50

Class V Drive



Date: Mar 05, 2020, 5:10pm, User Name: MCooper, File: S:\L\2017\217-42245\BDD\Bridges\CAD\Plans\Section Sheet - (4).dwg

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MDV	DRAWN: MDV	
CHECKED: JAW	CHECKED: JAW	

INDIANA
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	421-91-10323
VERTICAL SCALE	DESIGNATION
1" = 5'	1700103
SURVEY BOOK	SHEET
ELECTRONIC	16 of 16
CONTRACT	PROJECT
B-42245	1700103