173. Looking east along the north side (WB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

174. Looking west along the north side (WB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

175. Looking west along the north side of SR 32 at the CR 900 W. intersection. Photo taken October 7, 2020.

176. Looking east along the north side (WB lane) of SR 32 at the surrounding landscape towards the CR 900 W intersection. Photo taken July 6, 2021.

177. Looking north at Structure No. 110 located along the south side of SR 32. No stream or wetland features were observed. This structure will be replaced as part of this project. Photo taken October 8, 2020.

178. Looking east just east of Structure No. 110 along the north side (WB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

179. Looking south at Structure No. 110 located on the north side of SR 32. No stream or wetland features were observed. Photo taken July 6, 2021.

180. Looking north from just north of Structure No. 110 at the surrounding landscape which consists of farm field. Photo taken July 6, 2021.

181. Looking west just west of Structure No. 110 along the north side (WB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

182. Looking east along the south side (EB lane) of SR 32 at the surrounding landscape just east of CR 950 W. Photo taken October 8, 2020.

183. Looking east along the north side (WB lane) of SR 32 at the surrounding landscape. This photo also denotes the end of the second WB passing lane. Photo taken October 7, 2020.

184. Looking east at the surrounding landscape along the south side (EB lane) of SR 32. Photo taken October 8, 2020.

185. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. This photo also denotes the end of the first EB passing lane. Photo taken October 8, 2020.

186. Looking southwest at Structure No. 104 that is partially buried. No stream or wetland features were observed. This structure will be replaced as part of this project. Photo taken October 7, 2020.

187. Looking east along the south side (EB lane) of SR 32 just east of the CR 1075 W. intersection and Structure No. 104. Photo taken October 8, 2020.

188. Looking north at Structure No. 104 located on the south side of SR 32 that conveys drainage underneath SR 32 just east of CR 1075 W. Photo taken October 7, 2020.

189. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape and across CR 1075 W. Photo taken July 6, 2021.

190. Looking south down the east side of CR 1075 W. just south of SR 32 at the surrounding landscape. Photo taken July 6, 2020.

191. Looking northwest from the west side of CR 1075 W. Structure No. 103 can be seen in the background. Photo taken October 8, 2020.

192. Looking north at Structure No. 103 along the south side of SR 32. No stream or wetland features were observed. This structure will be replaced as part of this project. Photo taken October 7, 2020.

193. Looking south at Structure No. 103 located on the north side of SR 32. No stream or wetlands were observed. Photo taken July 6, 2021.

194. Looking west along the south side (EB lane) of SR 32 from a residential drive at the surrounding landscape. Photo taken October 8, 2020.

195. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken October 8, 2020.

196. Looking east along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

197. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

198. Looking east along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

199. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

200. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken October 8, 2020.

201. Looking east along the south side (EB lane) of SR 32 just east of Structure No. 102 at the surrounding landscape. Photo taken July 6, 2021.

202. Looking north at Structure No. 102 located on the south side of SR 32. No stream or wetlands were found. This structure will be replaced as part of this project. Photo taken July 6, 2021.

203. Looking west along the south side (EB lane) of SR 32 just west of Structure No. 102 at the surrounding landscape. Photo taken July 6, 2021.

204. Looking south at Structure No. 102 located on the north side of SR 32. No stream or wetlands were found. Photo taken October 7, 2021.

205. Looking east along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken October 8, 2020.

206. Looking west along the south side (EB lane) of SR 32 at the surrounding landscape. Photo taken October 8, 2020.

207. Looking northeast at Structure No. 101 located on the south side of SR 32. No stream or wetlands were observed. This structure will be replaced as part of this project. Photo taken October 8, 2020.

208. Looking south at Structure No. 101 located on the north side of SR 32. No stream or wetlands were found. Photo taken July 6, 2021.

209. Looking east along the south side (EB lane) of SR 32 at the surrounding landscape. This photo also denotes the beginning of the first EB passing lane. Photo taken July 6, 2021.

210. Looking east along the north side (WB lane) of SR 32 at the surrounding landscape. Photo taken July 6, 2021.

PROJECT	DESIGNATION
1800060	1800060
CONTRACT	BRIDGE FILE
R-42253	N/A

CULVERT ASSETS		
DES. NO.	CULVERT ASSET ID	WORK TYPE
2201187	CV 032-006-49.04	Small Structure Replacement
2201188	CV 032-006-49.65	Small Structure Replacement
2201189	CV 032-006-51.06	Small Structure Replacement
2201190	CV 032-006-51.79	Small Structure Replacement
2201191	CV 032-006-51.88	Small Structure Replacement
2201192	CV 032-006-53.02	Small Structure Replacement
2201193	CV 032-006-53.38	Small Structure Replacement
2201194	CV 032-006-53.63	Small Structure Replacement

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
2201187	CV 032-006-49.04 - 3' x 2' Box, Small Structure Replacement
2201188	CV 032-006-49.65 - 4' x 3' Box, Small Structure Replacement
2201189	CV 032-006-51.06 - 4' x 2' Box, Small Structure Replacement
2201190	CV 032-006-51.79 - 5' x 3' Box, Small Structure Replacement
2201191	CV 032-006-51.88 - 5' x 3' Box, Small Structure Replacement
2201192	CV 032-006-53.02 - 8' x 4' Box, Small Structure Replacement
2201193	CV 032-006-53.38 - 10' x 5' Box, Small Structure Replacement
2201194	CV 032-006-53.63 - 7' x 4' Box, Small Structure Replacement

INDIANA DEPARTMENT OF TRANSPORTATION

ROAD PLANS

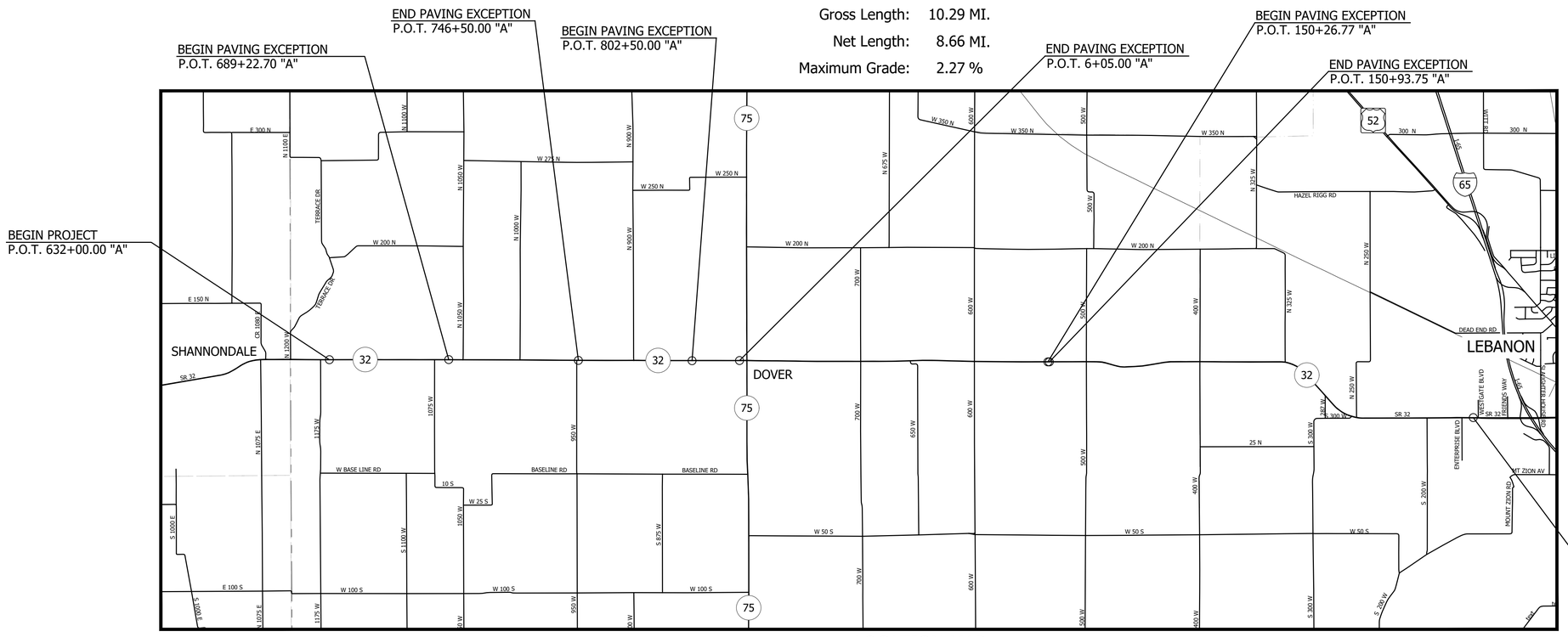
S.R. 32 PASSING LANE

PROJECT NO. 1800060 P.E.
PROJECT NO. 1800060 R/W
PROJECT NO. 1800060 CONST.

NOTE TO REVIEWER:
TOPOGRAPHIC SURVEY WAS PERFORMED BY TWO SEPARATE SURVEYORS, TO REDUCE COSTS, THE GAP WAS CREATED. HOWEVER TEMPORARY BENCH MARKS WERE ESTABLISHED TO LOCATE BOTH STATION RANGES.

Minor Structural Overlay with added Passing Lanes along S.R. 32, Located from (RP 48+74) 3.69 miles West of S.R. 75 to (RP 59+00) 0.5 miles West of I-65, in Sections 25, 26, 27, 28, 29, & 30, Township 19 North, Range 2 West, and Sections 28, 29 and 30, Township 19 N, Range 1 West, in Jefferson Township, Boone County, Indiana.

Gross Length: 10.29 MI.
Net Length: 8.66 MI.
Maximum Grade: 2.27 %



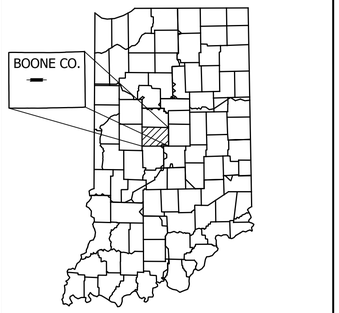
LOCATION MAP
BOONE COUNTY, INDIANA

TRAFFIC DATA S.R. 32 (PASSING LANES)		
A.A.D.T.	(2024)	7,725 V.P.D.
A.A.D.T.	(2044)	8,561 V.P.D.
D.H.V	(2044)	756 V.P.H.
DIRECTIONAL DISTRIBUTION		48.72 %
TRUCKS		22.86 % A.A.D.T.
		16.04 % D.H.V.

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

TRAFFIC DATA S.R. 32 (OVERLAY)		
A.A.D.T.	(2024)	9,595 V.P.D.
A.A.D.T.	(2044)	10,825 V.P.D.
D.H.V	(2044)	987 V.P.H.
DIRECTIONAL DISTRIBUTION		49.09 %
TRUCKS		23.22 % A.A.D.T.
		16.20 % D.H.V.

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



PROJECT LOCATION SHOWN BY

BEGIN: LATITUDE: 40° 03' 17" N LONGITUDE: 86° 41' 20" W

END: LATITUDE: 40° 03' 14" N LONGITUDE: 86° 31' 49" W

HUC: 051201100301
HUC: 051201100403
HUC: 051201100402
HUC: 051201100401

SCALE: 1" = 3000'

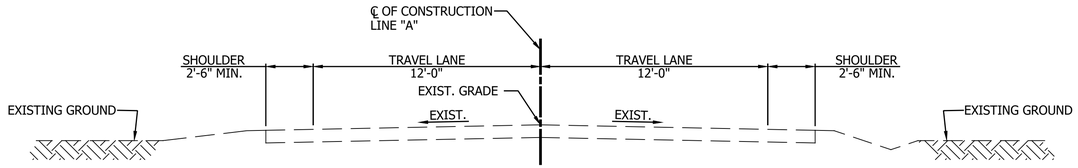
INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2022
TO BE USED WITH THESE PLANS.

RQAW
INTENTIONAL INNOVATION
8770 NORTH ST., STE. 110
FISHERS, IN 46038
P: 317.588.1798
F: 317.588.1799
WWW.RQAW.COM

PLANS PREPARED BY: RQAW Corporation 317-588-1798
PHONE NUMBER
CERTIFIED BY: DATE
APPROVED FOR LETTING: INDIANA DEPARTMENT OF TRANSPORTATION DATE

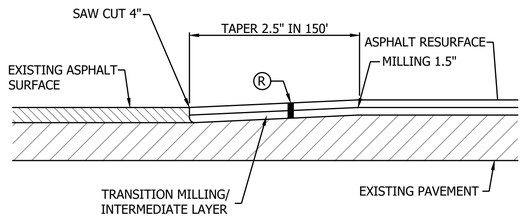
DESIGNATION	
1800060	
SURVEY BOOK	SHEET
	1 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 7/12/11 - 10:31 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-900-165-1 SR 32 PASSING LANES\5 ACAD\01 TITLE\RD-TITLESR32 PASS.DWG

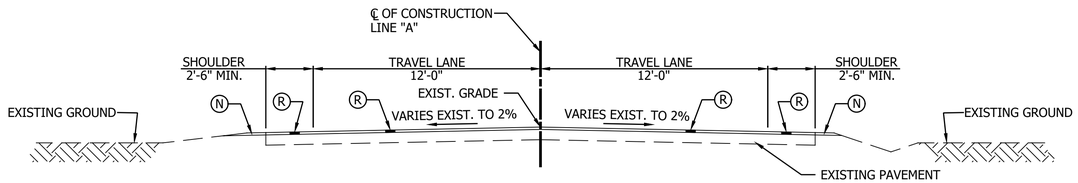


EXISTING S.R. 32 TYPICAL SECTION

STA. 632+00.00 TO STA. 686+22.00 "A"
STA. 748+00.00 TO STA. 801+00.00 "A"
STA. 7+55.00 TO STA. 358+28.74 "A"



TYPICAL FEATHERING DETAIL



S.R. 32 TYPICAL SECTION - INCIDENTAL CONSTRUCTION

STA. 630+50.00 TO STA. 632+00.00 "A"
STA. 686+22.00 TO STA. 689+22.70 "A"
STA. 746+50.00 TO STA. 748+00.00 "A"
STA. 801+00.00 TO STA. 802+50.00 "A"
STA. 6+05.00 TO STA. 7+55.00 "A"

LEGEND

(K) 165 lb/SYS QC/QA HMA Pavement, 3, 70, Surface 9.5 mm on
275 lb/SYS QC/QA HMA Pavement, 3, 70, Intermediate 19 mm on
880 lb/SYS QC/QA HMA Pavement, 3, 64, Base 19 mm (2 Lifts) on
6 in. Compacted Aggregate, No. 53 on
Geotextile for Pavement, Type 1B on
Subgrade Treatment, Type XX

(R) Mill Profile 1.5"
165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm on
275 lb/SYS QC/QA HMA 3, 70, Intermediate 19 mm

(R1) Mill Profile 1.5"
165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm

(N) Compacted Aggregate, No. 53

(27) Seed Mixture, R

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

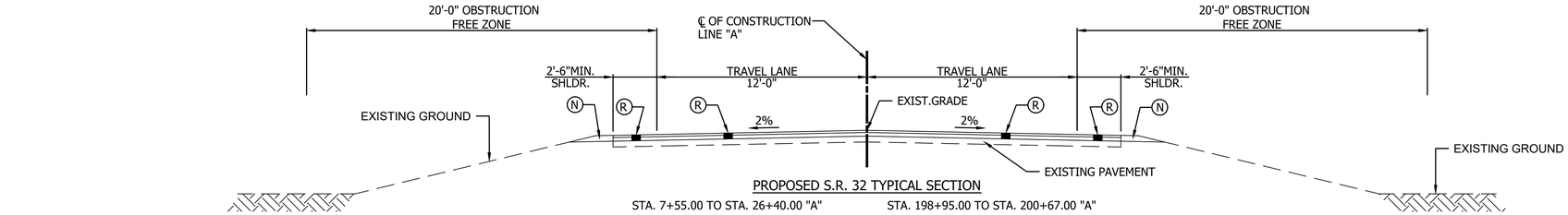
DESIGNED: KRU DRAWN: KRU
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS
SR 32

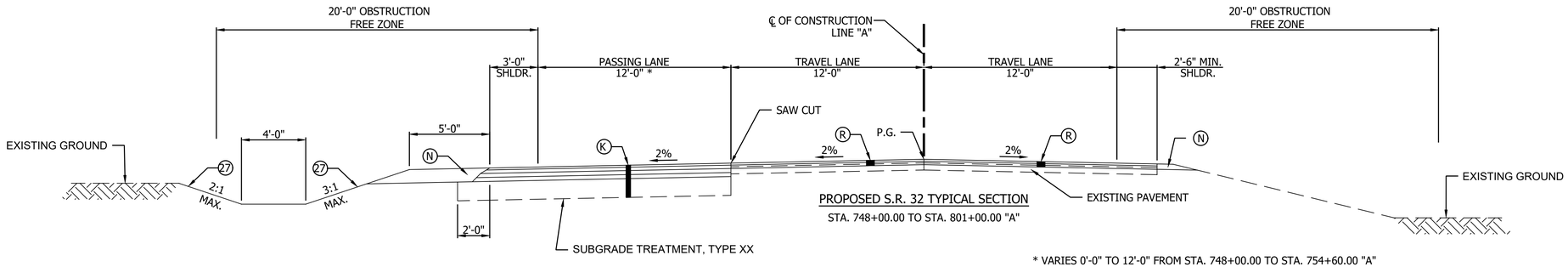
HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	3 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 7/12/11 - 3:30 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\03 TYPICAL\RD-TYPICAL-SR 32 PASS.DWG



PROPOSED S.R. 32 TYPICAL SECTION

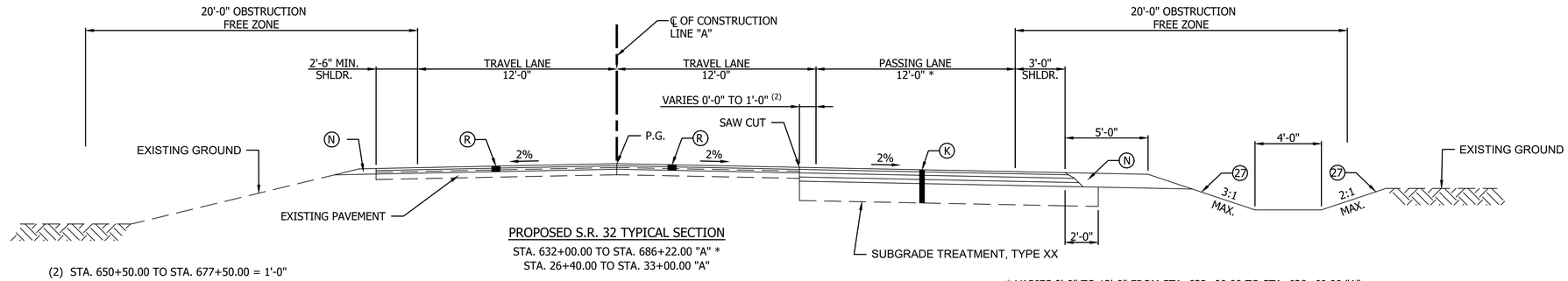
STA. 7+55.00 TO STA. 26+40.00 "A"
STA. 33+00.00 TO STA. 84+60.00 "A"
STA. 84+60.00 TO STA. 171+10.00 "A"
STA. 188+42.00 TO P.C. 190+87.00 "A"
STA. 198+95.00 TO STA. 200+67.00 "A"
STA. 212+63.00 TO STA. 254+70.00 "A"
STA. 276+23.00 TO STA. 289+94.00 "A"
STA. 309+47.00 TO STA. 327+45.00 "A"



PROPOSED S.R. 32 TYPICAL SECTION

STA. 748+00.00 TO STA. 801+00.00 "A"

* VARIES 0'-0" TO 12'-0" FROM STA. 748+00.00 TO STA. 754+60.00 "A"
* VARIES 12'-0" TO 0'-0" FROM STA. 794+40.00 TO STA. 801+00.00 "A"

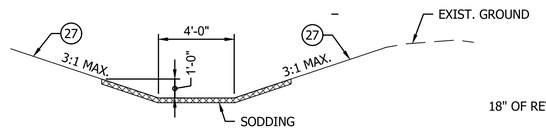


PROPOSED S.R. 32 TYPICAL SECTION

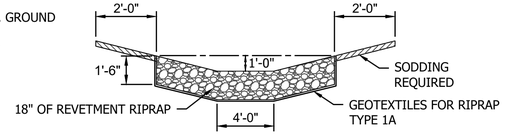
STA. 632+00.00 TO STA. 686+22.00 "A" *
STA. 26+40.00 TO STA. 33+00.00 "A"

(2) STA. 650+50.00 TO STA. 677+50.00 = 1'-0"

* VARIES 0'-0" TO 12'-0" FROM STA. 632+00.00 TO STA. 638+60.00 "A"
* VARIES 12'-0" TO 0'-0" FROM STA. 681+00.00 TO STA. 686+22.00 "A"
* VARIES 0'-0" TO 12'-0" FROM STA. 26+40.00 TO STA. 33+00.00 "A"
* VARIES 12'-0" TO 0'-0" FROM STA. 78+00.00 TO STA. 84+60.00 "A"



DITCH SODDING DETAIL
NOT TO SCALE



RIRAP DITCH DETAIL
NOT TO SCALE

LEGEND

(K) 165 lb/SYS QC/QA HMA Pavement, 3, 70, Surface 9.5 mm on 275 lb/SYS QC/QA HMA Pavement, 3, 70, Intermediate 19 mm on 880 lb/SYS QC/QA HMA Pavement, 3, 64, Base 19 mm (2 Lifts) on 6 in. Compacted Aggregate, No. 53 on Geotextile for Pavement, Type 1B on Subgrade Treatment, Type XX

(R) Mill Profile 1.5" 165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm on 275 lb/SYS QC/QA HMA 3, 70, Intermediate 19 mm

(R1) Mill Profile 1.5" 165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm

(N) Compacted Aggregate, No. 53

(27) Seed Mixture, R

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KRU DRAWN: KRU

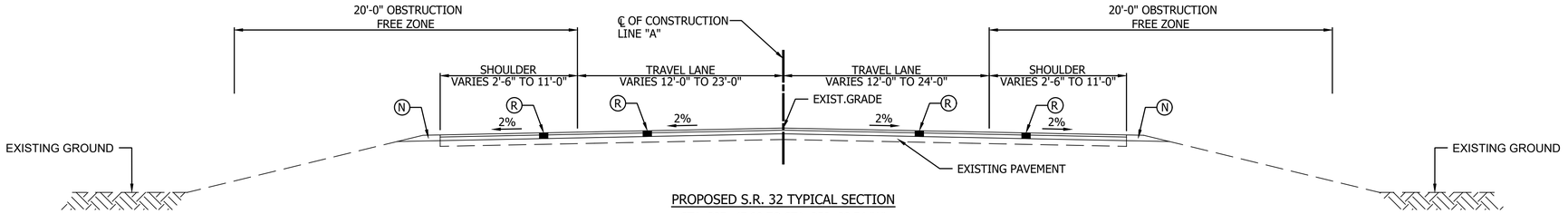
CHECKED: RDS CHECKED: RDS

INDIANA DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS SR 32

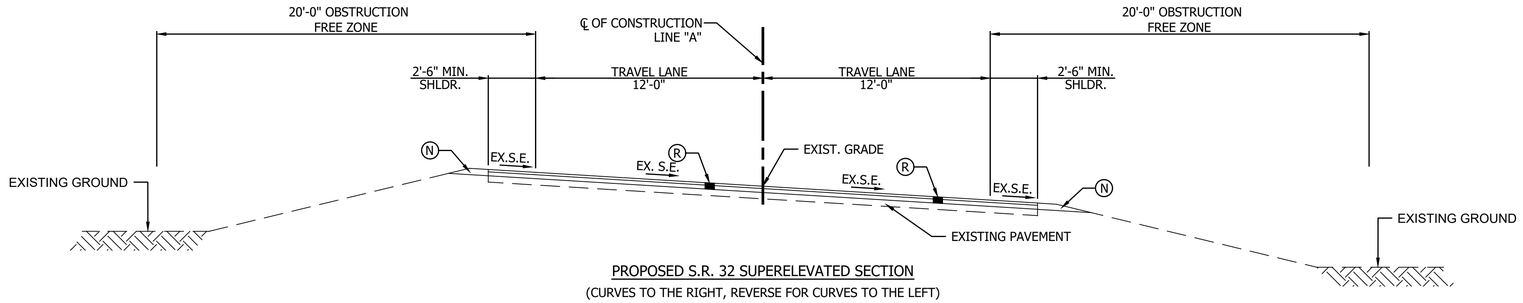
HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	4 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 7/12/11 - 3:30 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\03 TYPICAL\RD-TYPICAL-SR 32 PASS.DWG



PROPOSED S.R. 32 TYPICAL SECTION

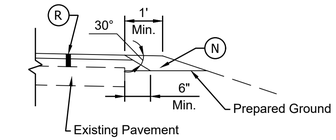
STA. 327+47.00 TO STA. 358+28.74 "A"

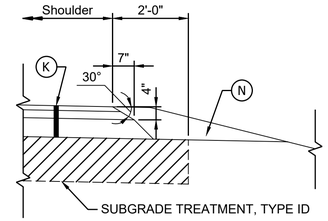


PROPOSED S.R. 32 SUPERELEVATED SECTION

(CURVES TO THE RIGHT, REVERSE FOR CURVES TO THE LEFT)

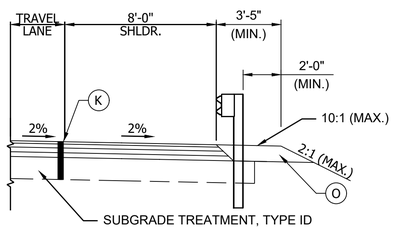
STA. 171+10.00 TO STA. 188+42.00 "A"
STA. 190+87.00 TO STA. 198+95.00 "A"
STA. 200+67.00 TO STA. 212+63.00 "A"
STA. 254+70.00 TO STA. 276+23.00 "A"
STA. 289+94.00 TO STA. 309+47.00 "A"





SAFETY EDGE DETAIL -
REQUIRED FOR HMA PAVEMENT

NOTE: Safety Edge not required at locations of Guardrail
NOT TO SCALE



GUARDRAIL TYPICAL SECTION

SCALE: 1/4" = 1'

STA. 40+43.41 TO STA. 42+20.74 "A"
STA. 59+96.73 TO STA. 61+73.86 "A"
STA. 72+43.20 TO STA. 73+14.27 "A"

NOTE:
CONTRACTOR SHALL RAISE EXISTING GRADE 2.5" THROUGHOUT THE PROJECT. PROPOSED PROFILE SHOWN ON SHEET NUMBERS 30 TO 68 IS FOR INFORMATION ONLY.

LEGEND

(K) 165 lb/SYS QC/QA HMA Pavement, 3, 70, Surface 9.5 mm on
275 lb/SYS QC/QA HMA Pavement, 3, 70, Intermediate 19 mm on
880 lb/SYS QC/QA HMA Pavement, 3, 64, Base 19 mm (2 Lifts) on
6 in. Compacted Aggregate, No. 53 on
Geotextile for Pavement, Type 1B on
Subgrade Treatment, Type XX

(R) Mill Profile 1.5"
165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm on
275 lb/SYS QC/QA HMA 3, 70, Intermediate 19 mm

(R1) Mill Profile 1.5"
165 lb/SYS QC/QA HMA 3, 70, Surface 9.5 mm

(N) Compacted Aggregate, No. 53

(27) Seed Mixture, R

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KRU DRAWN: KRU

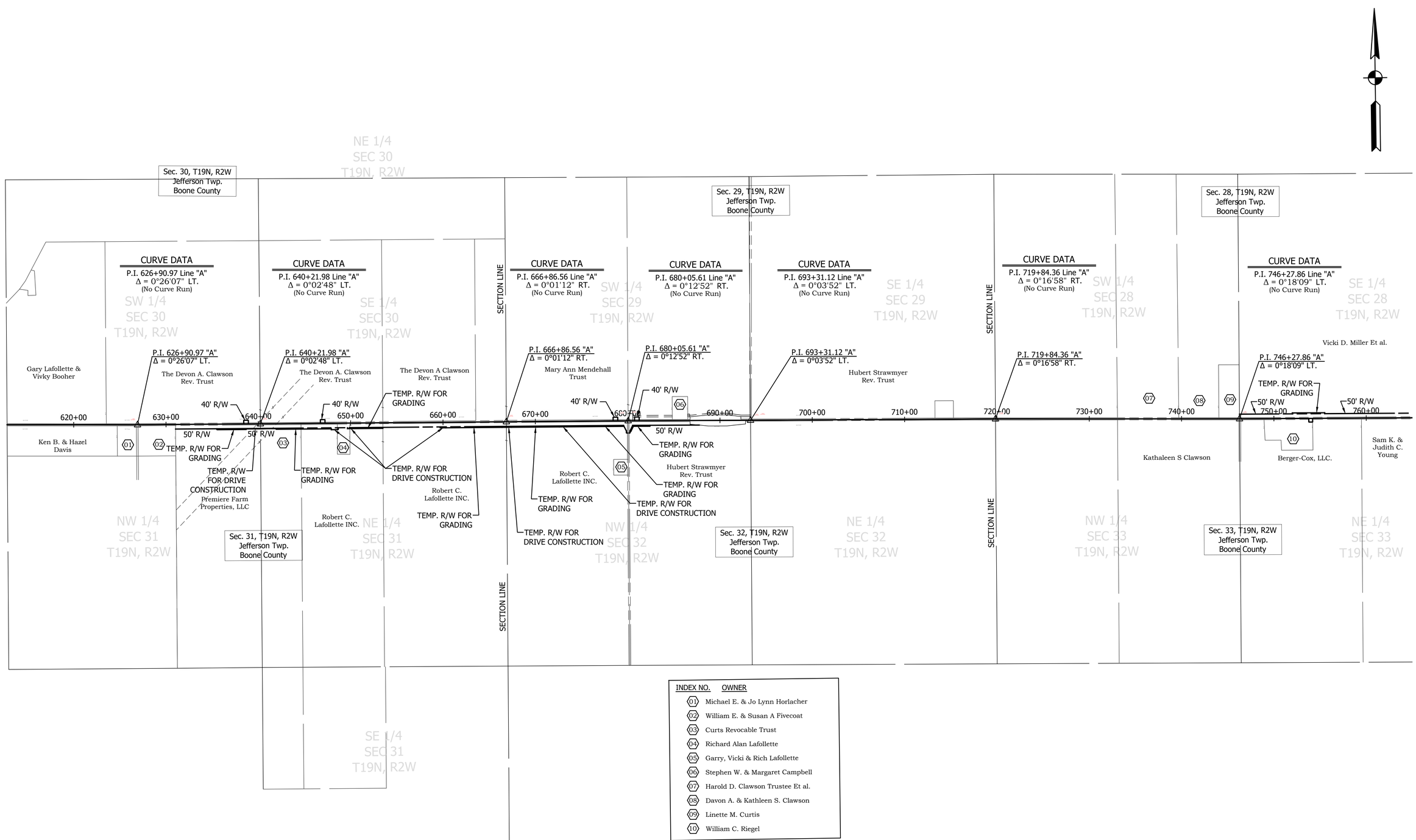
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS
SR 32

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	5 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 7/12/11 - 3:30 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\03 TYPICAL\RD-TYPICAL-SR 32 PASS.DWG



PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/13/23 - 9:39 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165\1 SR 32 PASSING LANES\5 ACAD\04 PLAT 1\SHT PLAT1 SR 32_01.DWG

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: KRU DRAWN: KRU
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 500'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	6 of 172
CONTRACT	PROJECT
R-42253	1800060

INDEX NO.	OWNER
11	Christopher D. Kearby
12	Forrest & Jennifer Bopp
13	Dennis E. & Deborah J. Sanders
14	Dylan T. & Chelsea I. Market
15	Kristi A. Uhler & Julie Musgrave
16	James R. & Anna E. Nichols
17	Amanda K. Shockley
18	JL Food Mart, INC
19	Charles R. & Huetta M. Acton
20	Jim & Renee M. Good
21	State Bank of Lizton
22	Mathew David Covault
23	Dover Christian Chruch
24	Central Indiana Health Association. INC
25	Michael J. & Cheri A. Stieber
26	Dover Christian Church
27	Dover Cemetery
28	Charles E. & Shirley Jean Behrens
29	Ryan J. & Jamie J. Venis
30	Mitchell & Vivian A. Norman
31	Joseph N. & Vaughnie M. Slipher
32	Richard Timmons Living Trust Undivided ½ Interest & Sue Timmons Living Trust Undivided ½ interest
33	Lindsey M. Norman
34	Chad R. & Michelle A. Timmons
35	Richard Timmons Living Trust Undivided ½ Interest & Sue Timmons Living Trust Undivided ½ interest
39	William James & Jane Crews Taylor
36	Richard Timmons Living Trust Undivided ½ Interest & Sue Timmons Living Trust Undivided ½ interest
37	Chad Ray & Michelle Ann Timmons
38	Anthony & Dawn LaForest
39	William James & Jane Crews Taylor

RECOMMENDED FOR APPROVAL ____ DESIGN ENGINEER DATE

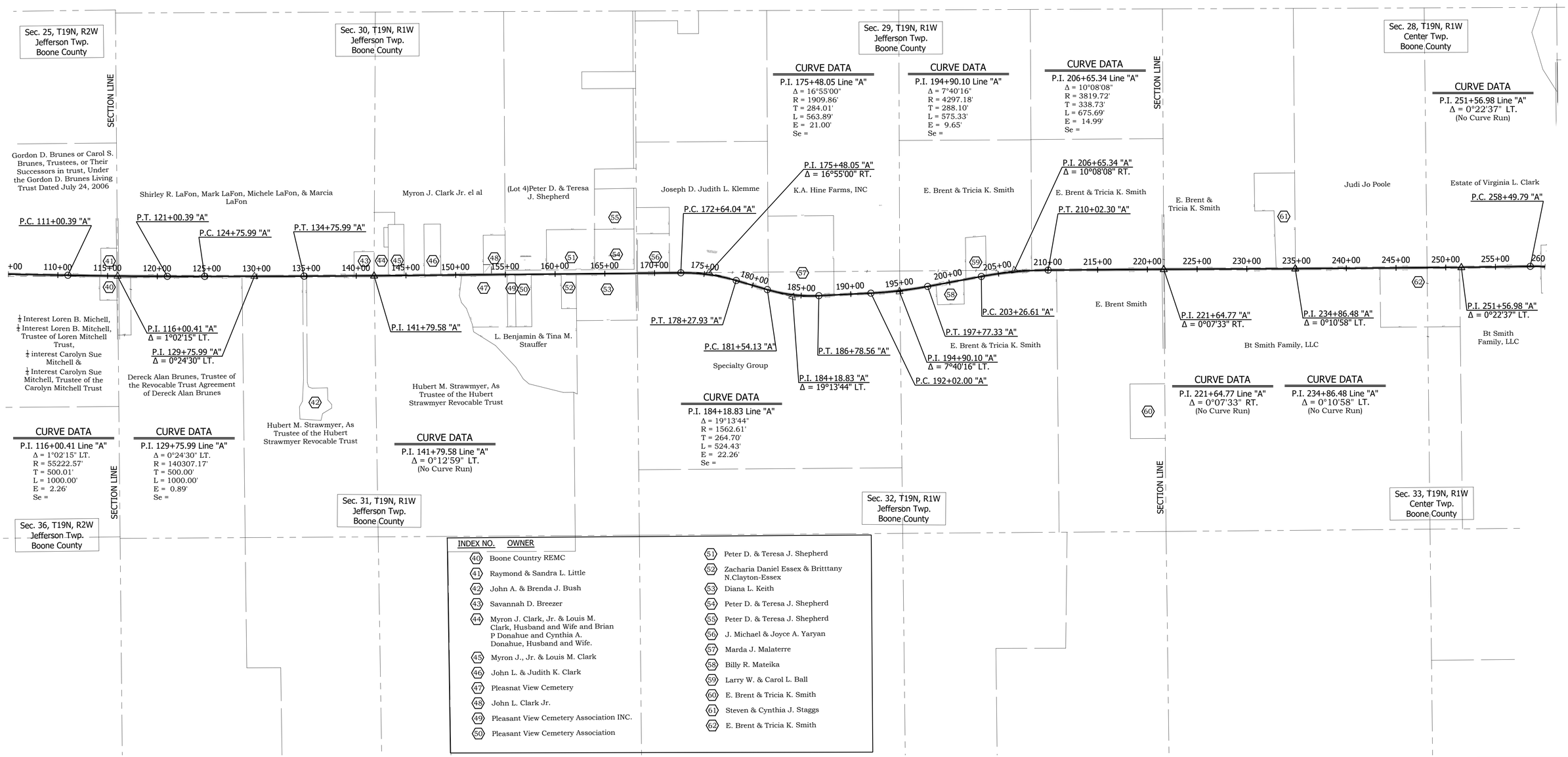
DESIGNED: KRU DRAWN: KRU
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 500'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	7 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23 EDIT DATE: 3/13/23 - 9:39 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\04 PLAT 1\SHT PLAT1 SR 32_01.DWG
PLOT SCALE: 1:1



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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

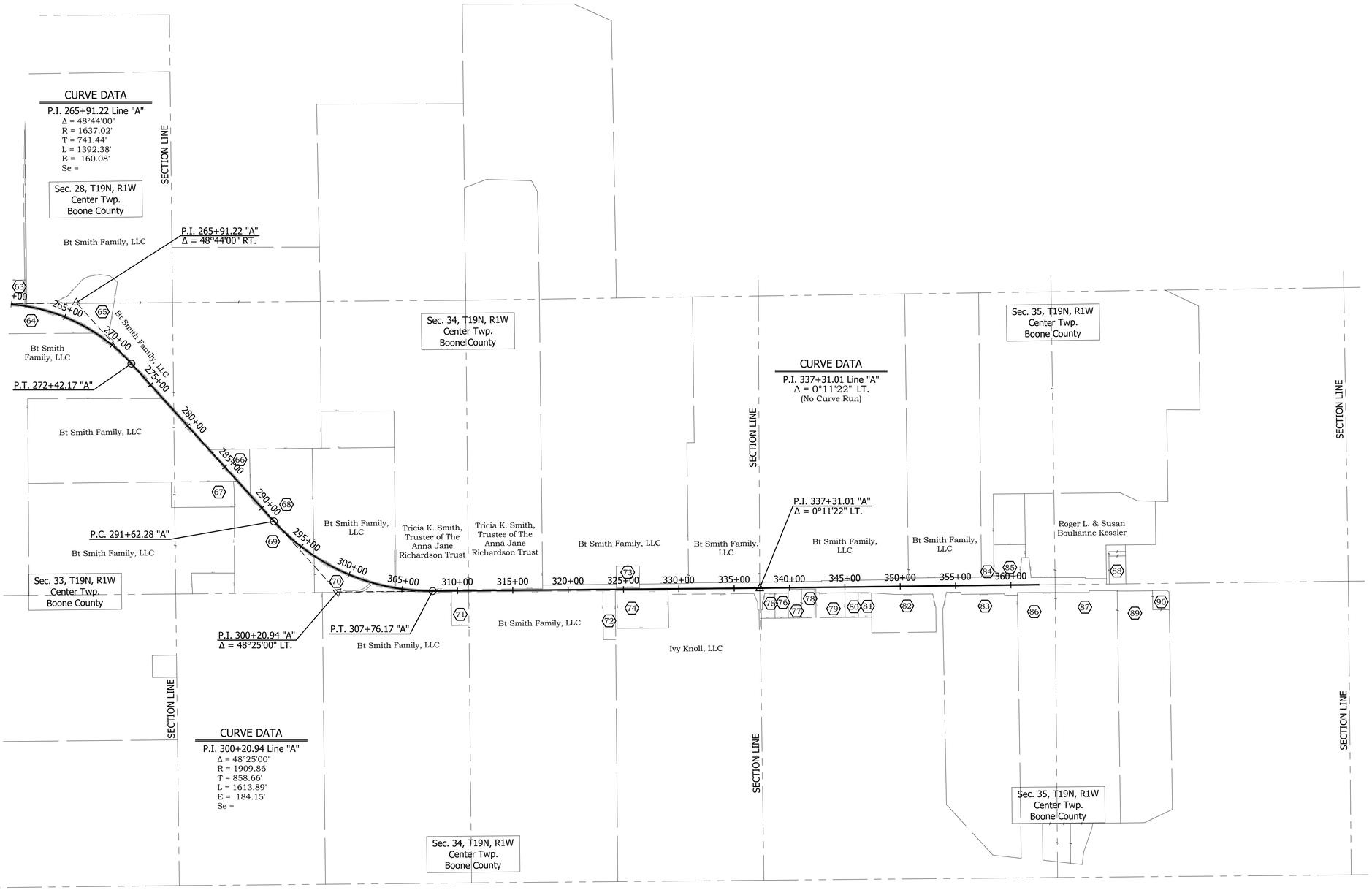
DESIGNED: KRU DRAWN: KRU

CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 500'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	8 of 172
CONTRACT	PROJECT
R-42253	1800060



INDEX NO.	OWNER
63	Duretta Frederick
64	Jeffrey L. Avery
65	Timothy S. & Jana K. Secrist
66	E. Brent & Tricia K. Smith
67	Brent A. & Louise A. Knecht
68	Bt Smith Family, LLC
69	Anne Cleary, Caroline Miller, & Susannah Myers Beachboard
70	Anne Cleary, Caroline Miller, & Susannah Myers Beachboard
71	Yvonne C. & John E. Agnew
72	Tracy S. Blankenship
73	Ray C. Land & Vicky Barrickman
74	Richard L. & Judy Diann Lowe
75	Mellissa Savage
76	Thatcher Constructions INC.
77	Jeffrey A & Susan McAfee
78	Jeffrey A & Susan McAfee
79	Trudie A. O'Brien
80	John J. & Rebecca J. Bowman
81	Michael Kent McGuire
82	North Enterprise, LLC
83	TTS Real Estate LP
84	Susan R, Jones & Jennifer E. Jones
85	Ash Development, LLC
86	Lex Lebanon, L.P.
87	Lex Lebanon L.P.
88	Arc Cafeusa001, LLC
89	Lex Lebanon L.P.
90	Lex Lebanon L.P.

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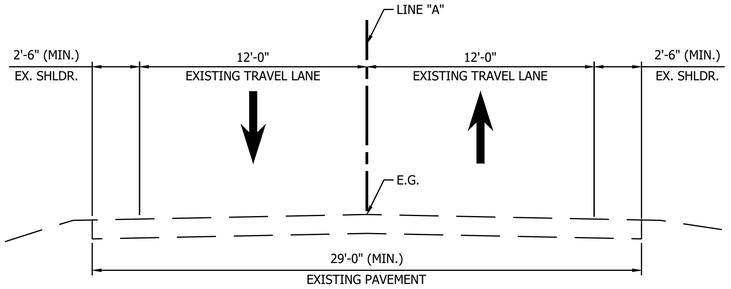
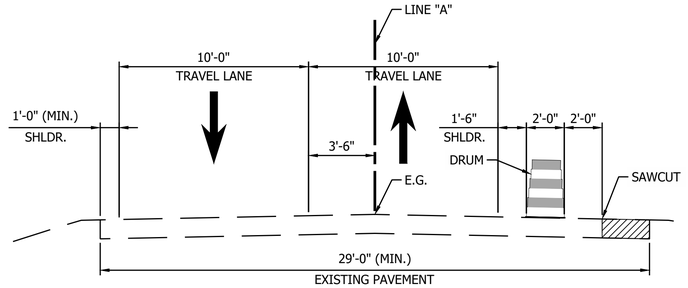
INDIANA
DEPARTMENT OF TRANSPORTATION

PLAT 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 500'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	9 of 172
CONTRACT	PROJECT
R-42253	1800060

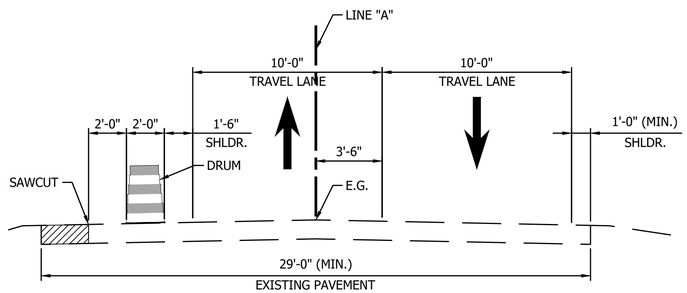


EXISTING TYPICAL SECTION



TYPICAL SECTION

STA. 748+00.00 TO STA. 801+00.00 "A"



TYPICAL SECTION

STA. 632+00.00 TO STA. 686+22.00 "A"
STA. 26+40.11 TO STA. 84+59.89 "A"

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND

Area of Construction

Shoulder Strengthening

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

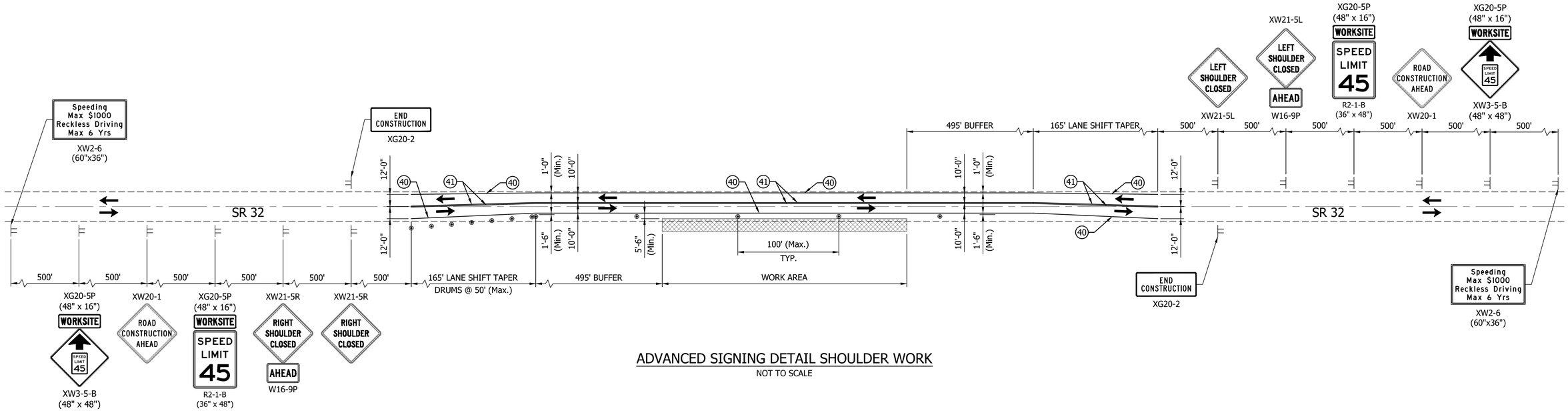
DESIGNED: YZ DRAWN: MRM

CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE I
S.R. 32

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	1800060
SURVEY BOOK	SHEET
	10 of 172
CONTRACT	PROJECT
R-42253	1800060



ADVANCED SIGNING DETAIL SHOULDER WORK

NOT TO SCALE

MAINTENANCE OF TRAFFIC SUMMARY TABLE

	Phase I	Phase II	Quantity
CONSTRUCTION SIGN, TYPE A	4 Each	10 EACH	11 EACH
CONSTRUCTION SIGN, TYPE B	3 Each	10 EACH	11 EACH
TEMPORARY TRAFFIC BARRIER	-	6430 LFT	6430 LFT
ENERGY ABSORBING TERMINAL, CZ, TL-2	-	2 EACH	2 EACH
TEMPORORAY PAVEMENT MARKING, REMOVABLE, 4 IN. (WHITE)	-	49796 LFT	49796 LFT
TEMPORORAY PAVEMENT MARKING, REMOVABLE, 4 IN. (YELLOW)	-	50236 LFT	50236 LFT
LINE, REMOVE	-	50236 LFT	50236 LFT
LIQUID ASPHALT SEALANT	24670 LFT	-	24670 LFT
JOINT ADHESIVE, SURFACE	24670 LFT	-	24670 LFT
ASHPHALT FOR TACK COAT	3 TON	-	3 TON
QC/QA-HMA, 3, 70, SURFACE, 9.5 MM	905 TON	-	905 TON
MILLING, ASPHALT, 2 IN.	8224 SYS	-	8224 SYS

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND

- Traffic Flow Direction
- Channelizing Device - Drum
- Construction Sign
- Construction Area
- (40) Temp. Pavement Markings, Removable, 4" (Solid, White)
- (41) Temp. Pavement Markings, Removable, 4" (Solid, Yellow)

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ | DRAWN: MRM | CHECKED: RDS | CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

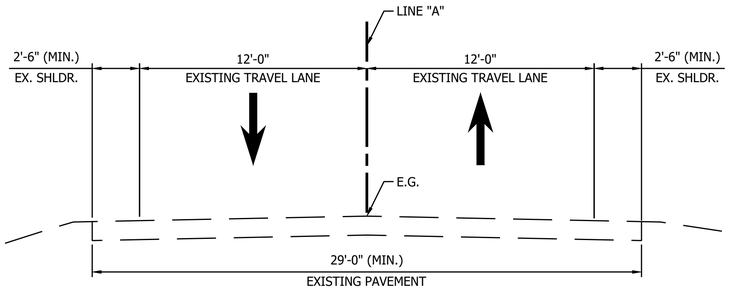
PHASE I

PHASE I TYPICAL ADVANCED SIGNING

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	11 of 172
CONTRACT	PROJECT
R-42253	1800060

PHASE II NOTES:

1. CONSTRUCT THE FULL DEPTH PAVEMENT AS SHOWN TO THE TOP OF THE BASE LAYER AS SHOWN ON TYPICALS PLUS ADDITIONAL BASE LAYER TO MATCH THE EXISTING GRADE.
2. CONSTRUCT HMA WEDGE AT EDGE OF DROP OFF AS NEEDED.
3. INSTALL SECTIONS OF SMALL STRUCTURE OR CROSSING CULVERT UNDER FULL DEPTH PAVEMENT



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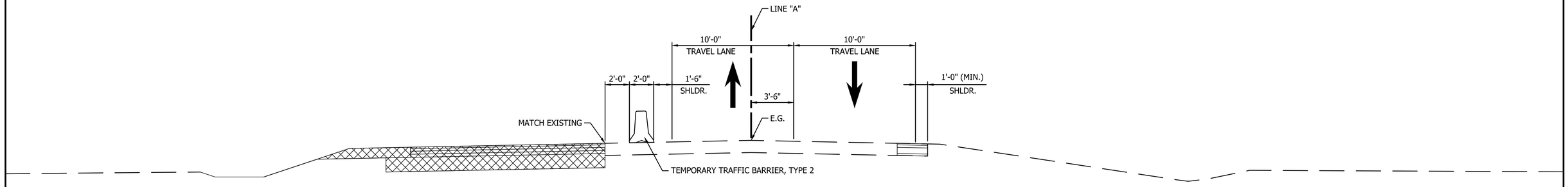

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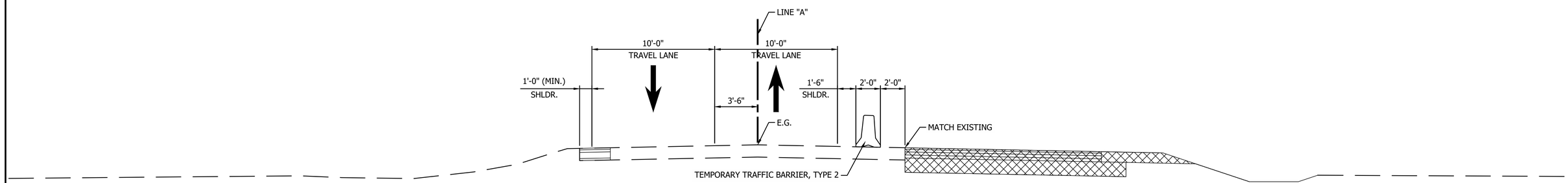


TYPICAL SECTION

STA. 632+00.00 TO STA. 686+22.00 "A"
STA. 26+40.11 TO STA. 84+59.89 "A"

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND

Area of Construction

Shoulder Strengthening

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

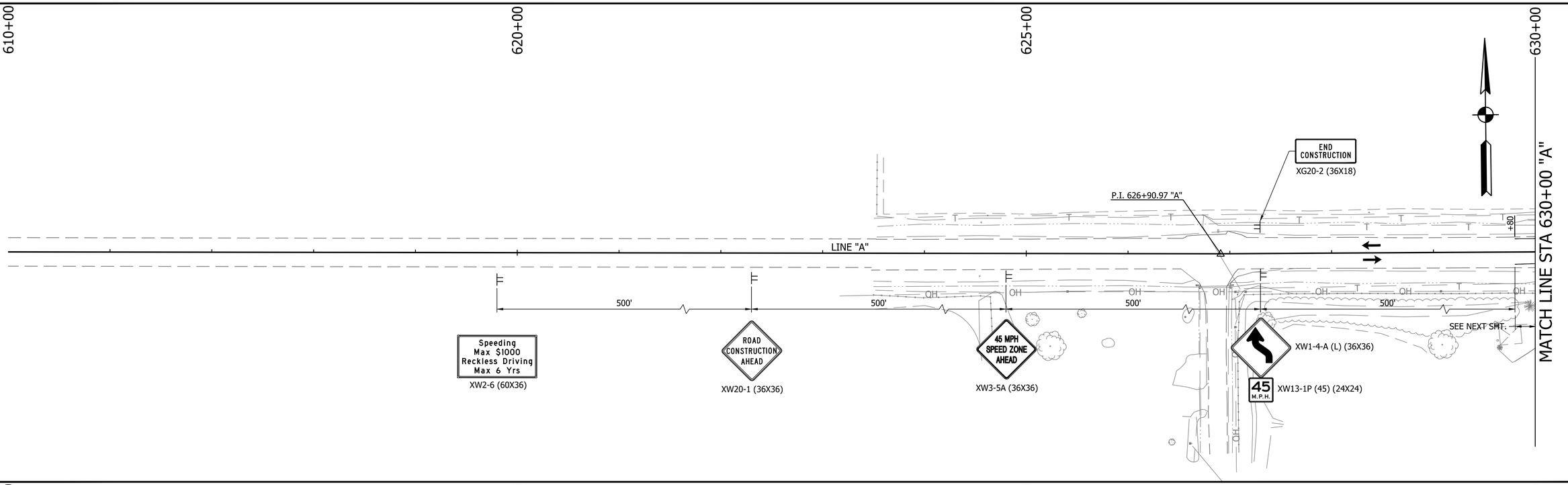
DESIGNED: YZ DRAWN: MRM

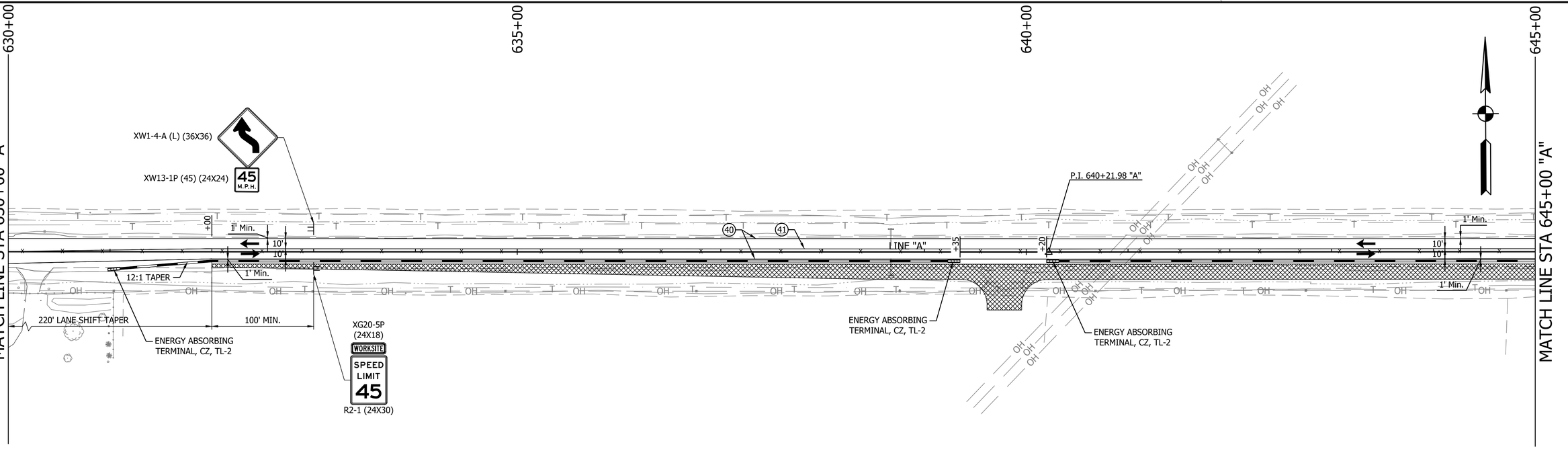
CHECKED: RDS CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE II
S.R. 32

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	1800060
SURVEY BOOK	SHEET
	12 of 172
CONTRACT	PROJECT
R-42253	1800060





LEGEND

- AREA OF CONSTRUCTION
- TEMP. CONCRETE BARRIER
- TYPE III BARICADE
- TRAFFIC FLOW
- X STRIPING REMOVAL
- (40) TEMP. PAVEMENT MARKINGS, SOLID WHITE, 4"
- (41) TEMP. PAVEMENT MARKINGS, SOLID YELLOW 4"

WORK ZONE DESIGN SPEED = 45 MPH

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ | DRAWN: MRM

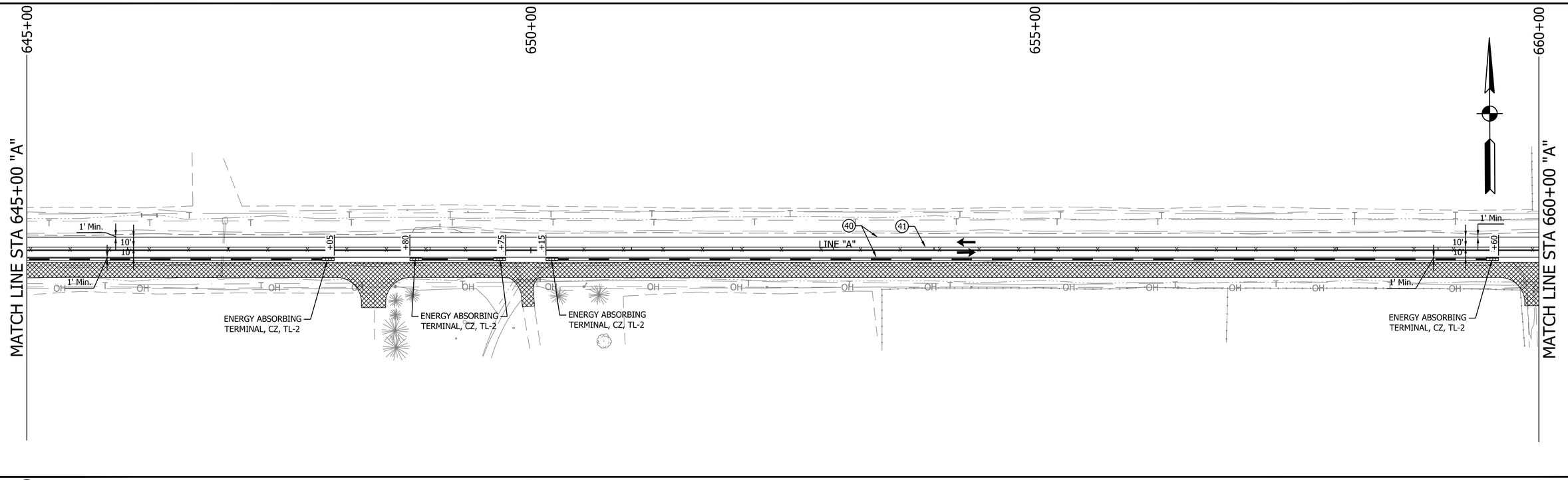
CHECKED: RDS | CHECKED: YZ

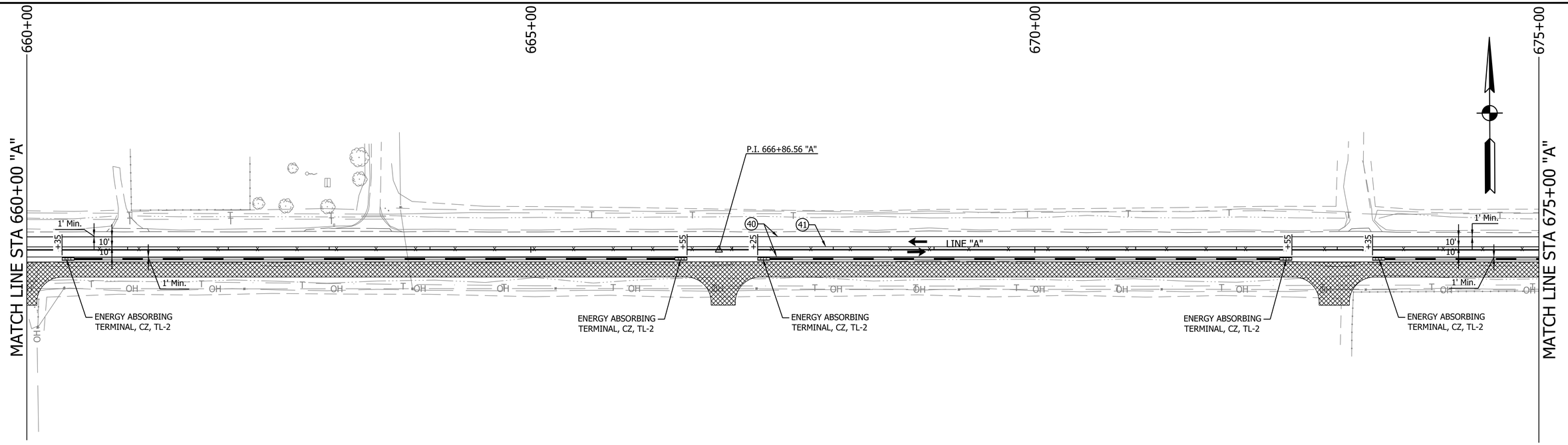
INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	13 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/23/23 - 1:44 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\05 MOT\ND_MOT_SR 32 APL_DET_PH 1.DWG





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INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

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1" = 50'	
VERTICAL SCALE	DESIGNATION
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SURVEY BOOK	SHEET
	14 of 172
CONTRACT	PROJECT
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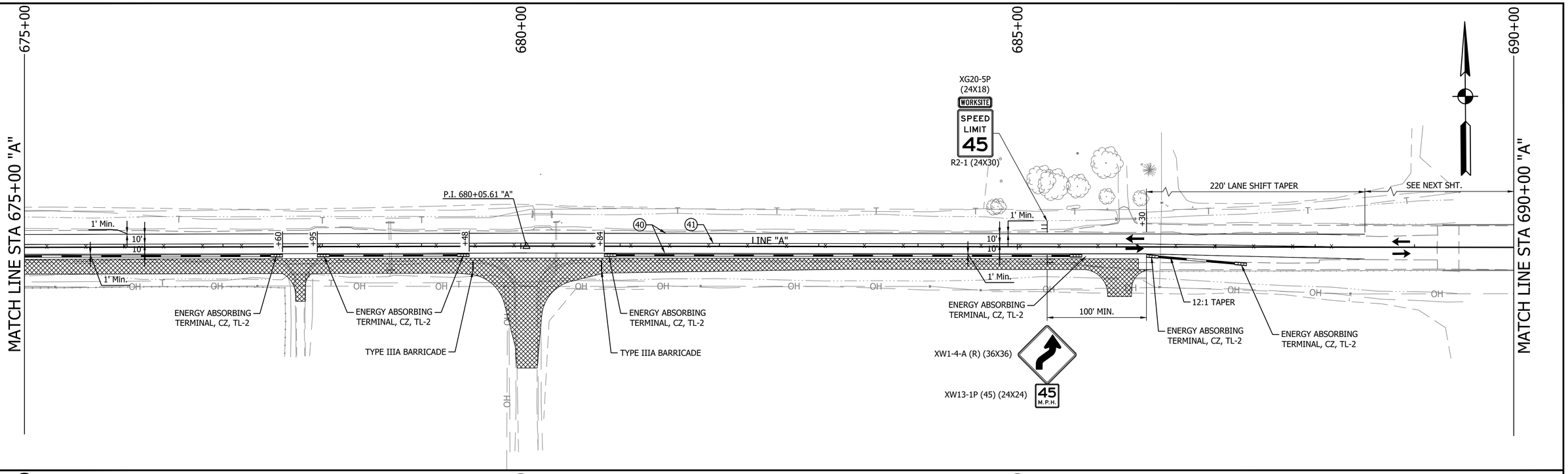

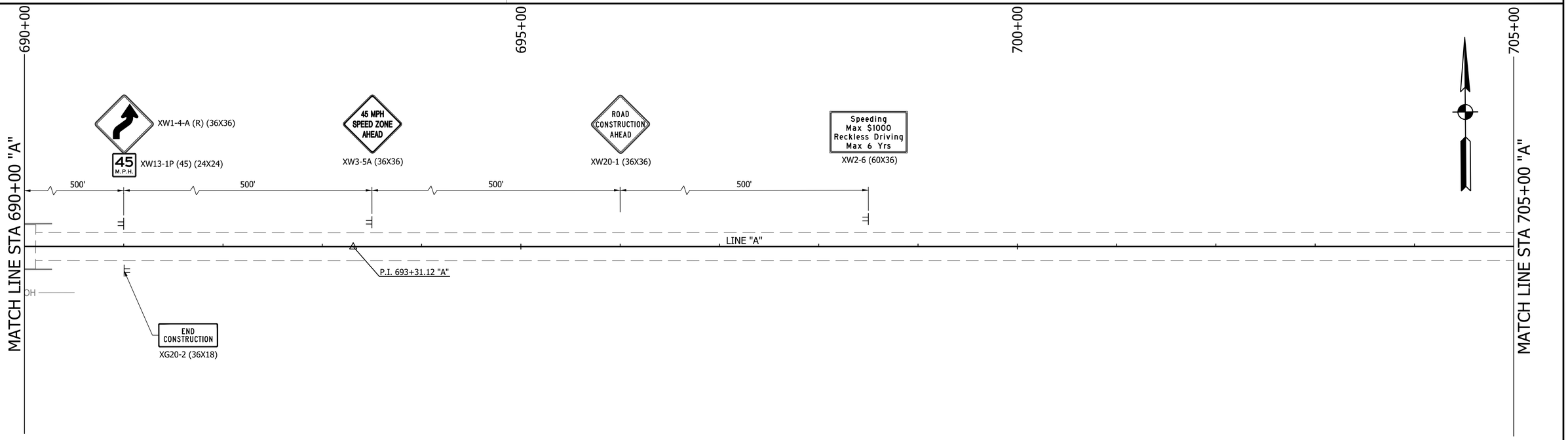

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INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	15 of 172
CONTRACT	PROJECT
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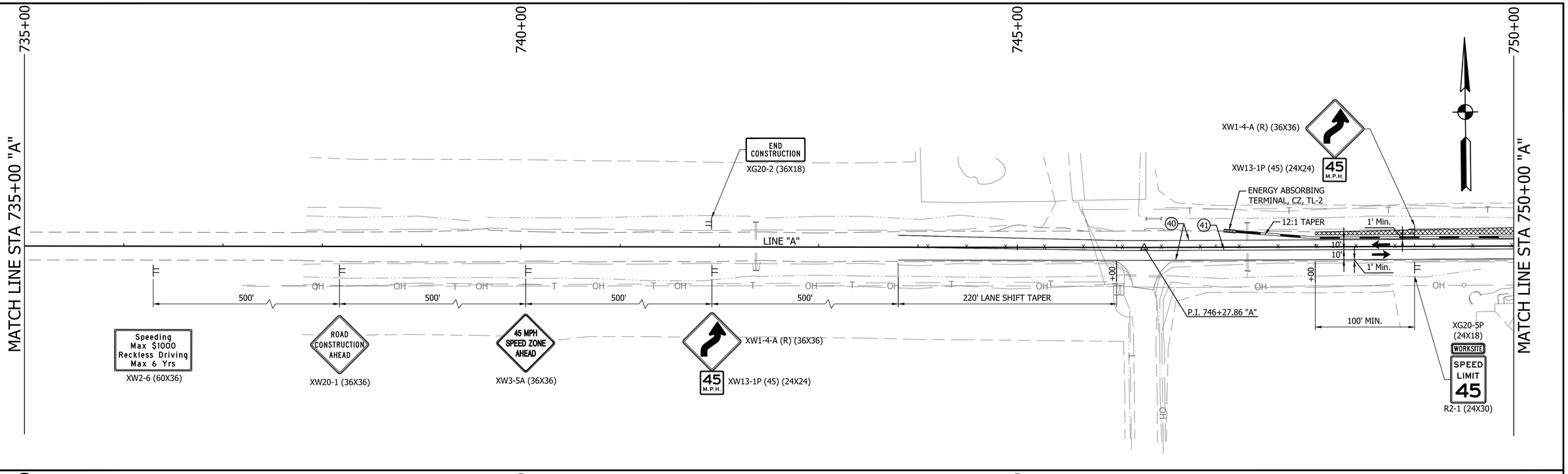

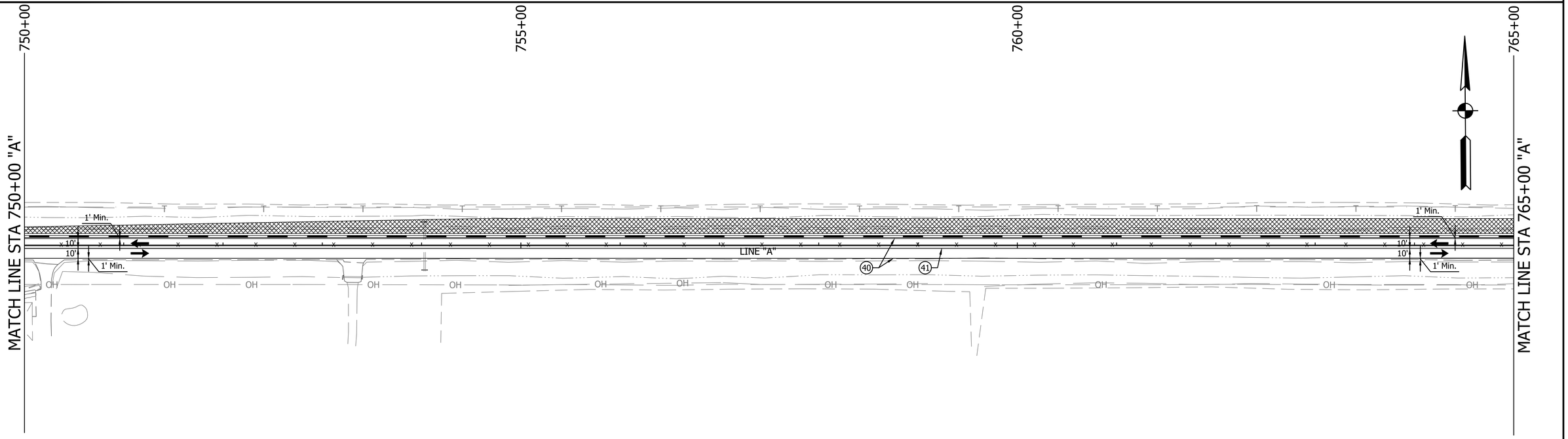

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INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

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1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	16 of 172
CONTRACT	PROJECT
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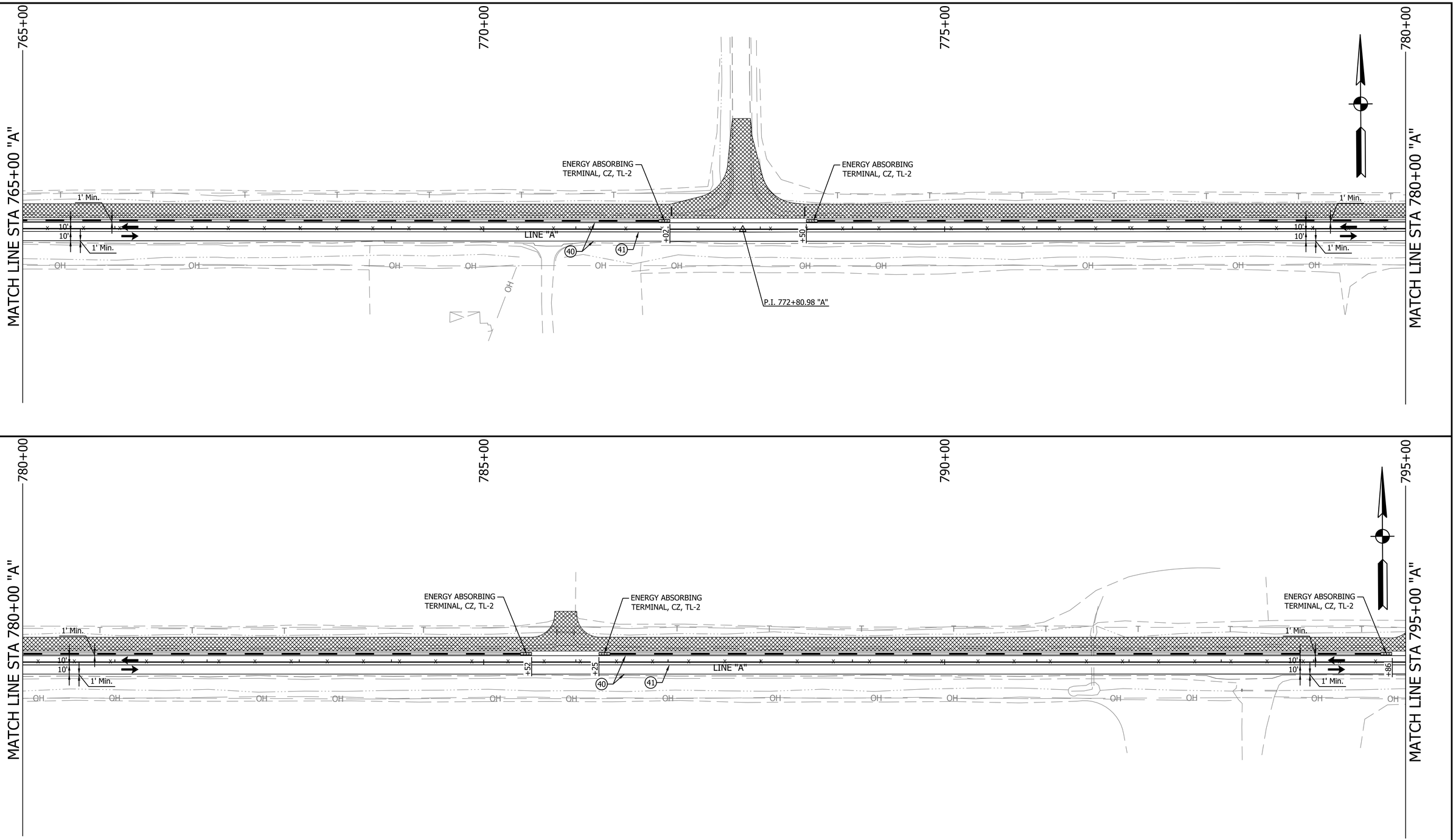

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WORK ZONE DESIGN SPEED = 45 MPH

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

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INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

HORIZONTAL SCALE	BRIDGE FILE
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SURVEY BOOK	SHEET
	17 of 172
CONTRACT	PROJECT
R-42253	1800060

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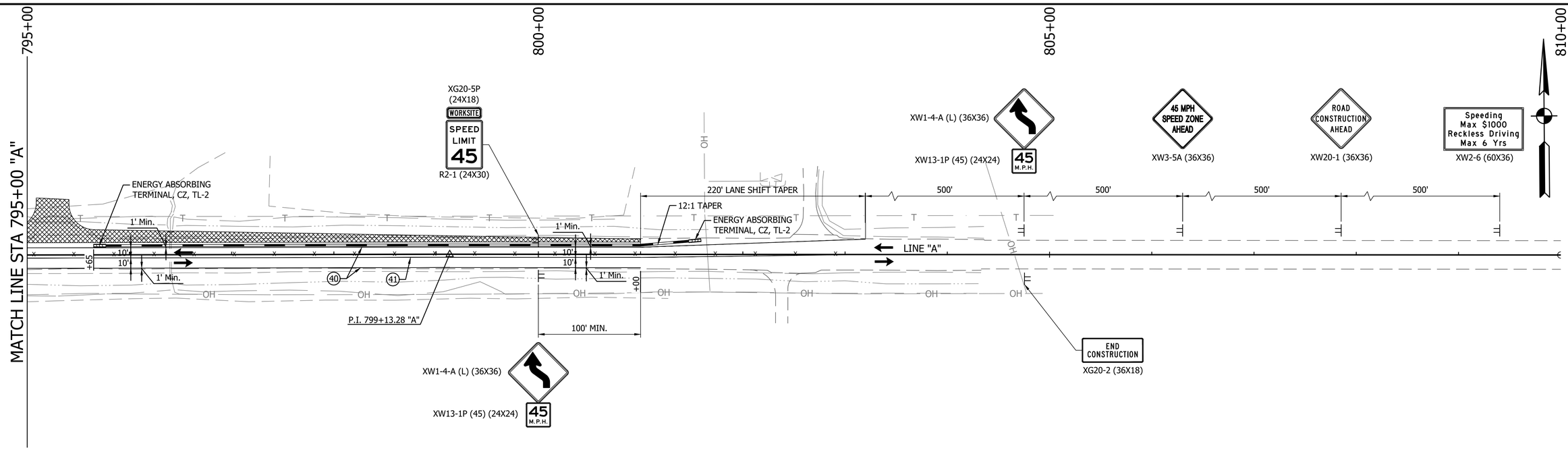

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INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

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1" = 50'	
VERTICAL SCALE	DESIGNATION
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SURVEY BOOK	SHEET
	18 of 172
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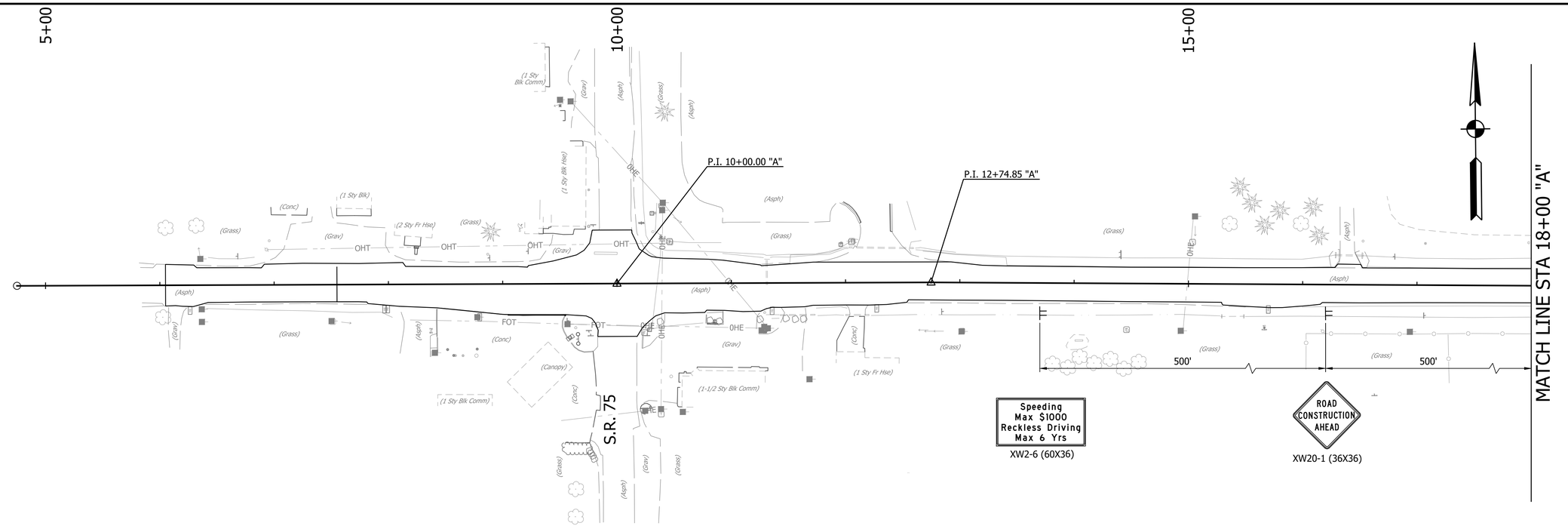

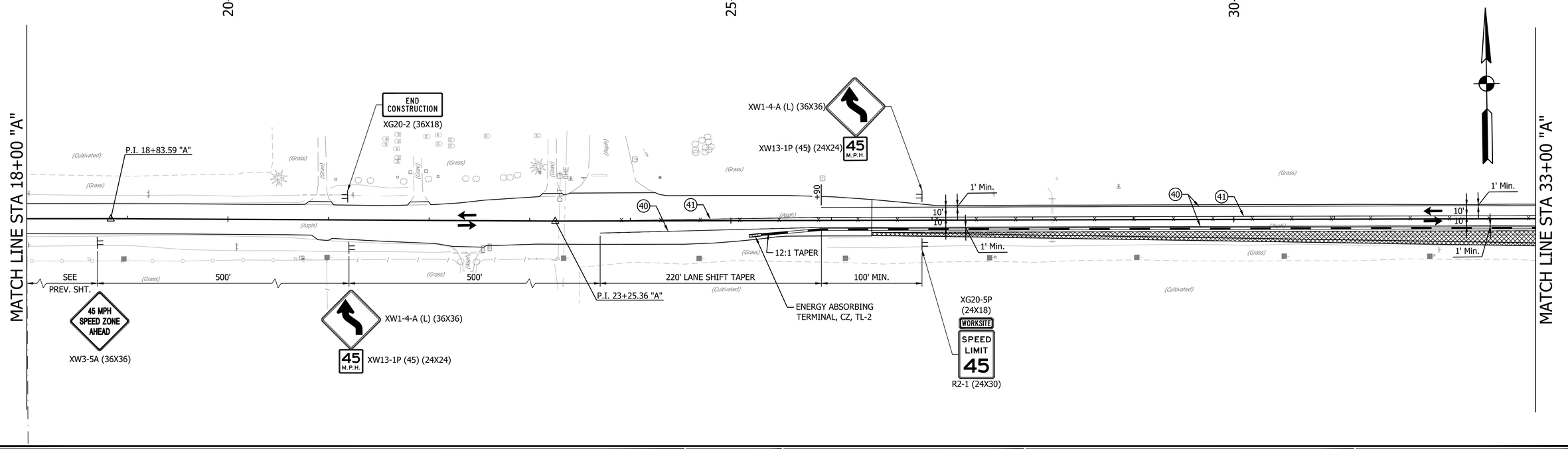

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INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE II

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	19 of 172
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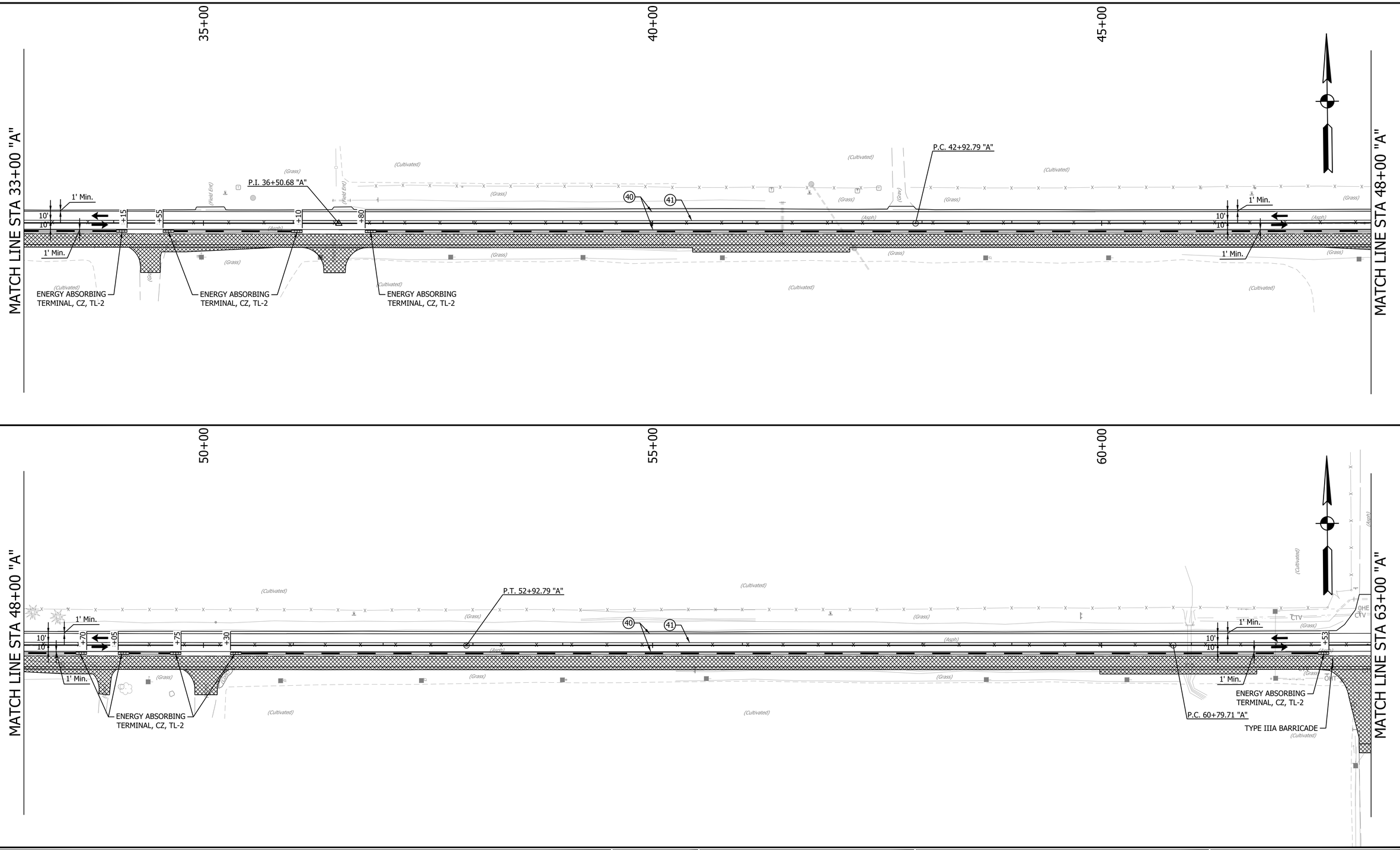

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INDIANA
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC
PHASE II

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	20 of 172
CONTRACT	PROJECT
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65+00

70+00

75+00

MATCH LINE STA 63+00 "A"

MATCH LINE STA 78+00 "A"

C.R. 700W

(Cultivated)

(Grass)

(Asph)

CTV

OHE

1' Min.

10'

+79

+80

+10

P.T. 70+79.71 "A"

40

41

ENERGY ABSORBING TERMINAL, CZ, TL-2

TYPE IIIA BARRICADE

1 Sty Fr/Brk Hse

80+00

85+00

90+00

MATCH LINE STA 78+00 "A"

MATCH LINE STA 93+00 "A"

C.R. 650W

XG20-5P (24X18)

WORKSITE

SPEED LIMIT 45

R2-1 (24X30)

P.C. 79+15.32 "A"

100' MIN.

+05

+55

+60

12:1 TAPER

P.T. 84+04.63 "A"

OHT

XW1-4-A (R) (36X36)

45 M.P.H.

XW13-1P (45) (24X24)

220' LANE SHIFT TAPER

500'

P.C. 88+67.81 "A"

45 MPH SPEED ZONE AHEAD

XW3-5A (36X36)

ROAD CONSTRUCTION AHEAD

XW20-1 (36X36)

Speeding Max $1000 Reckless Driving Max 6 Yrs

XW2-6 (60X36)

(Weeds/Brush)

END CONSTRUCTION

XG20-2 (36X18)

LEGEND

- AREA OF CONSTRUCTION
- TEMP. CONCRETE BARRIER
- TYPE III BARICADE
- TRAFFIC FLOW
- X STRIPING REMOVAL
- (40) TEMP. PAVEMENT MARKINGS, SOLID WHITE, 4"
- (41) TEMP. PAVEMENT MARKINGS, SOLID YELLOW 4"

WORK ZONE DESIGN SPEED = 45 MPH

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MRM

CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC PHASE II

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	21 of 172
CONTRACT	PROJECT
R-42253	1800060

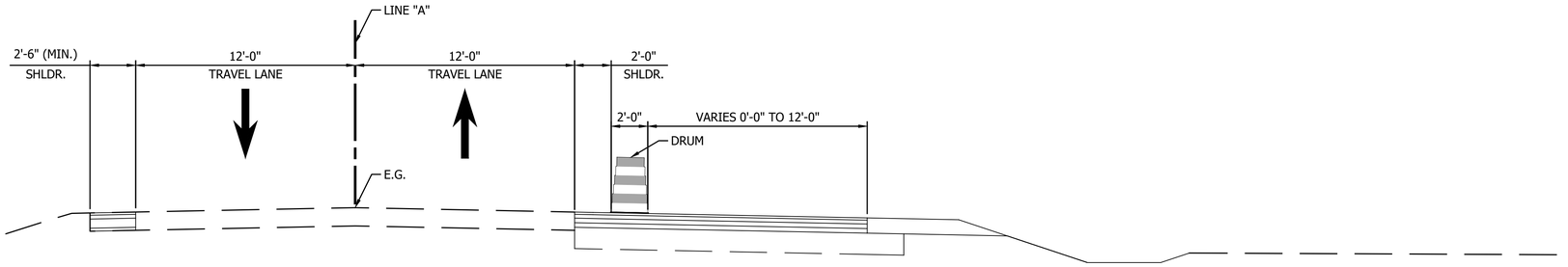
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 1:40 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\05 MOT\RD_MOT_SR 32 AML_DET_PH 1A.DWG

PHASE III NOTES:

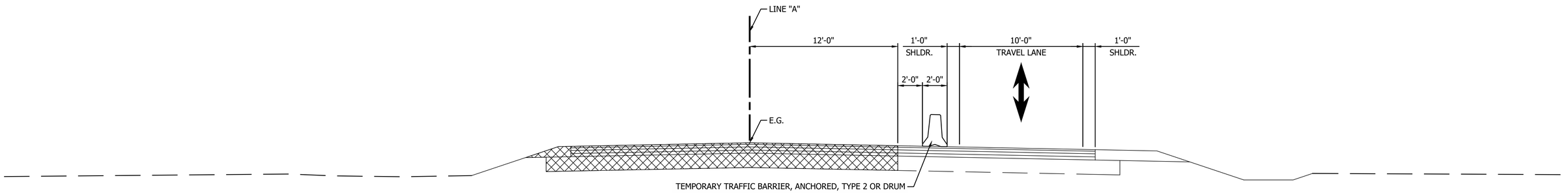
1. PROPOSED PASSING LANE PAVEMENT CONSTRUCTED IN PHASE II SHALL BE CLOSED TO THROUGH TRAFFIC AT ALL TIME AND SHALL ONLY BE UTILIZED FOR MAINTENANCE OF TRAFFIC FOR STRUCTURE INSTALLATION AND PATCHING.
2. INSTALL THE SECTIONS OF STR. NO. 101, 104, AND 120 AND PATCHING UNDER EXISTING PAVEMENT UTILIZING LANE CLOSURE WITH FLAGGERS.
3. INSTALL THE SECTIONS OF STR. NO. 102, 103, 110, 111, 112, 121, 122, AND 123 UNDER EXISTING PAVEMENT UTILIZING LANE CLOSURE WITH TEMPORARY SIGNALS.
4. ONLY ONE SMALL STRUCTURE OR CROSSING CULVERT UNDER EXISTING PAVEMENT SHALL BE CONSTRUCTED AT A TIME.
5. CONSTRUCT THE FULL DEPTH PAVEMENT FOR STRUCTURES AND PATCHING TO MATCH THE EXISTING GRADE.

PHASE IV NOTES:

1. PROFILE MILL SR 32 UPON COMPLETION OF INSTALLING ALL THE SMALL STRUCTURES, CROSSING CULVERTS, AND PATCHING.
2. APPLY ALL SURFACE AND INTERMEDIATE PAVEMENT LAYERS TO ACHIEVE THE FINAL GRADE.
3. THIS WORKS SHALL BE COMPLETED UNDER A MOVING OPERATION AND UTILIZED FLAGGERS.
4. APPLY FINAL PAVEMENT MARKINGS AND INSTALL ALL RAISED PAVEMENT MARKERS UNDER FLAGGING OPERATION.



TYPICAL SECTION
STA. 632+00.00 TO STA. 686+22.00 "A"
STA. 26+40.11 TO STA. 84+59.89 "A"



TYPICAL SECTION - LANE CLOSURE WITH FLAGGERS OR TEMPORARY SIGNALS
STA. 632+00.00 TO STA. 686+22.00 "A"
STA. 26+40.11 TO STA. 84+59.89 "A"

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND
Area of Construction
Shoulder Strengthening

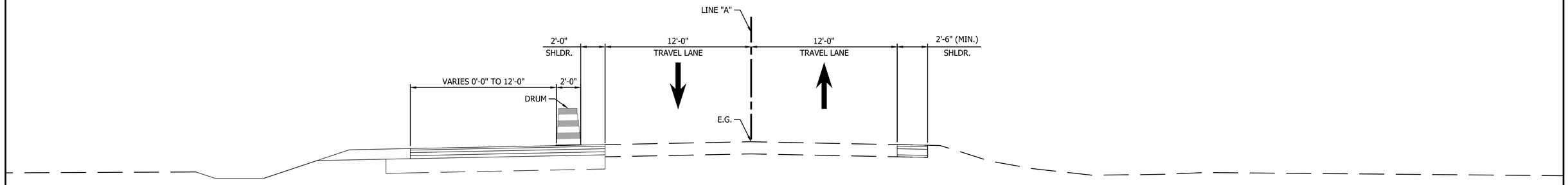
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MRM
CHECKED: RDS CHECKED: YZ

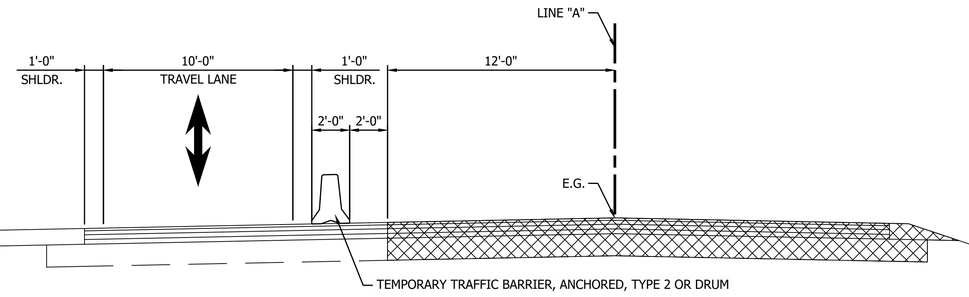
INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE III
S.R. 32

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	22 of 172
CONTRACT	PROJECT
R-42253	1800060



TYPICAL SECTION INCIDENTAL CONSTRUCTION AREA
STA. 748+00.00 TO STA. 801+00.00 "A"



TYPICAL SECTION CONSTRUCTION AREA - LANE CLOSURE WITH FLAGGERS OR TEMPORARY SIGNALS
STA. 748+00.00 TO STA. 801+00.00 "A"

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND
Area of Construction
Shoulder Strengthening

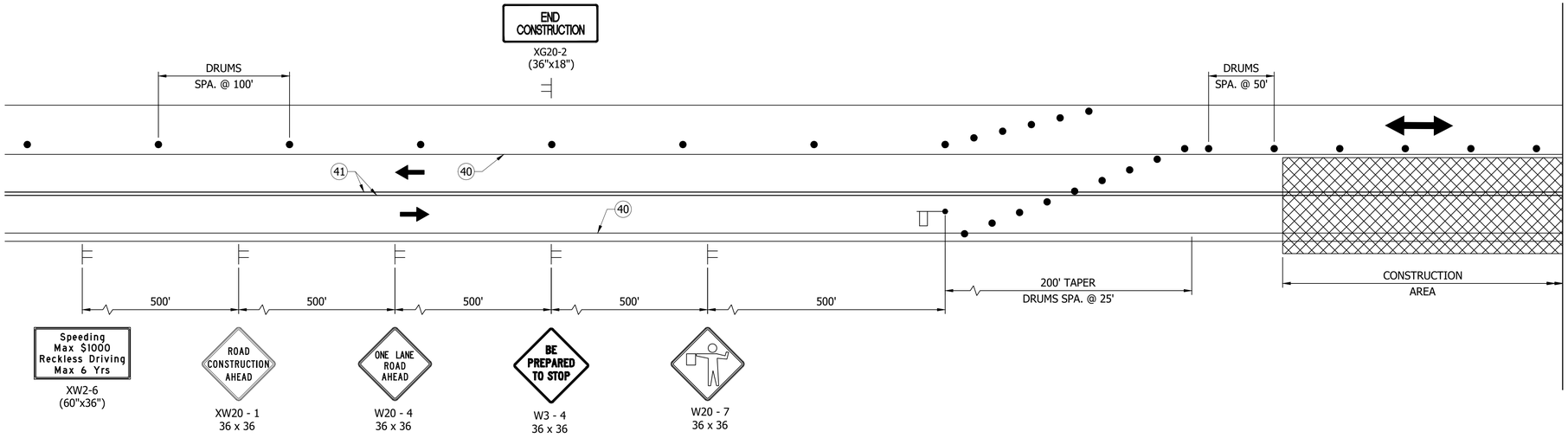
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MRM
CHECKED: RDS CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

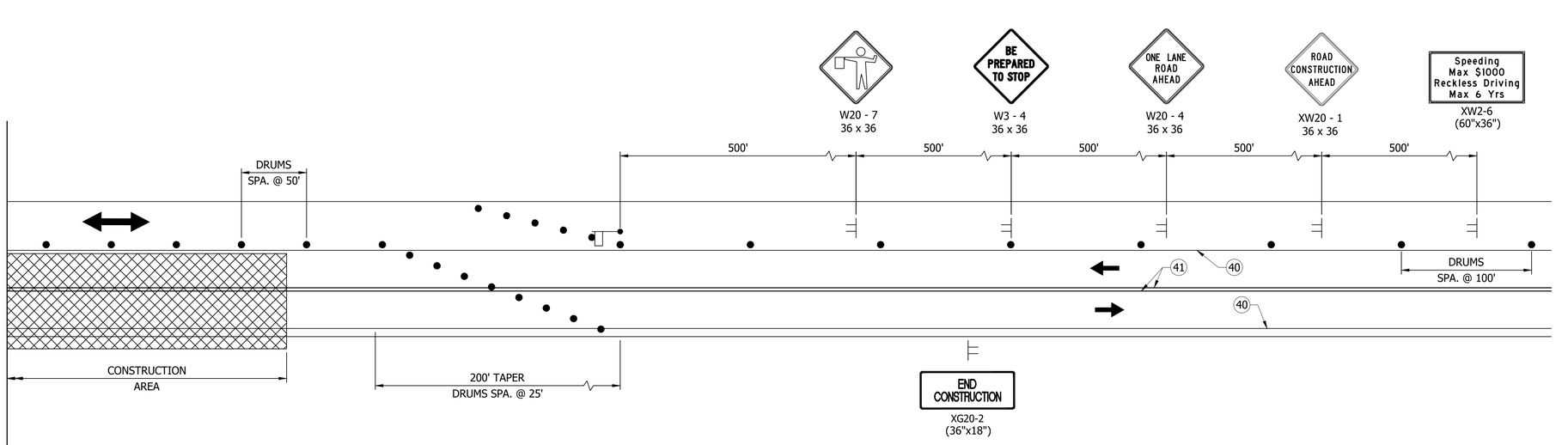
MAINTENANCE OF TRAFFIC - PHASE III
S.R. 32

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	23 of 172
CONTRACT	PROJECT
R-42253	1800060



FLAGGER AND ADVANCED SIGNING TYPICAL DETAIL

NOT TO SCALE



FLAGGER AND ADVANCED SIGNING TYPICAL DETAIL

NOT TO SCALE

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND

- Area of Construction
- Shoulder Strengthening
- Detection Zone
- Temporary Concrete Barrier, Anchored, Type 2
- (32) CZ Impact Attenuator TL-3
- (40) Temp. Pavement Markings, Removable, 4" (Solid, White)
- (41) Temp. Pavement Markings, Removable, 4" (Solid, Yellow)
- (42) Temp. Pavement Markings, Removable, 24" (Solid, White)
- Construction Sign
- Drum
- Flagger

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

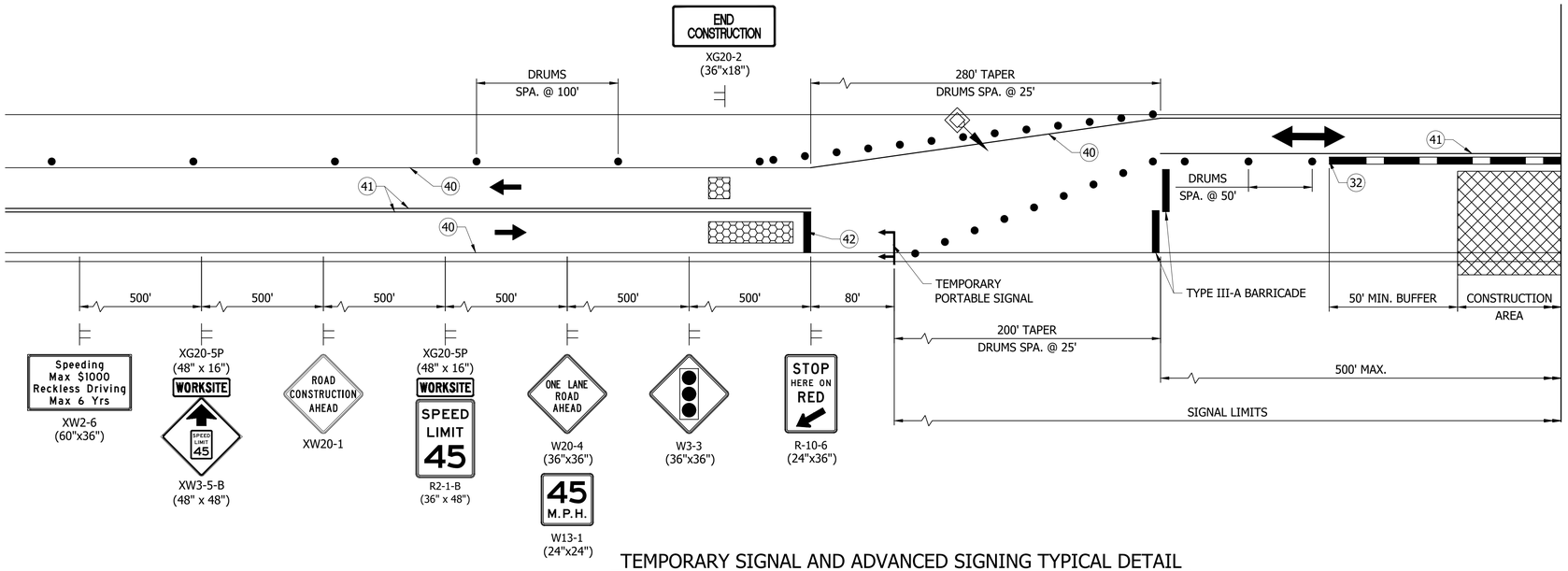
DESIGNED: YZ DRAWN: MRM

CHECKED: RDS CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

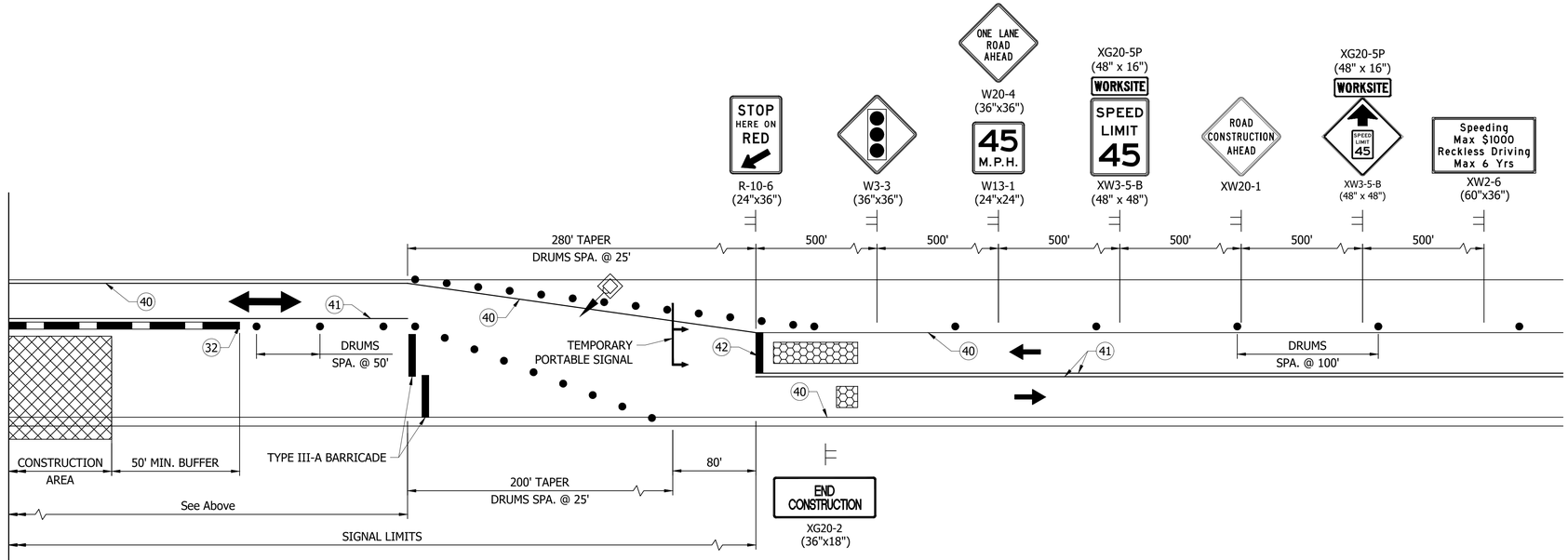
MAINTENANCE OF TRAFFIC - PHASE III
FLAGGER OPERATIONS

HORIZONTAL SCALE	BRIDGE FILE
NOT TO SCALE	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	24 of 172
CONTRACT	PROJECT
R-42253	1800060



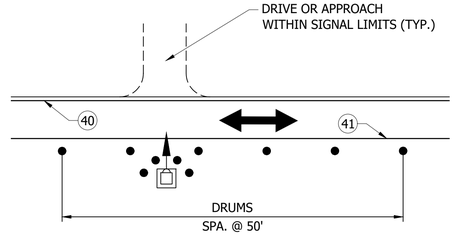
TEMPORARY SIGNAL AND ADVANCED SIGNING TYPICAL DETAIL

NOT TO SCALE



TEMPORARY SIGNAL AND ADVANCED SIGNING TYPICAL DETAIL

NOT TO SCALE



DRIVE OR APPROACH WITHIN SIGNAL LIMITS DETAIL

NOT TO SCALE

[1] Video Detection System W/Driveway Assistance Device and Two Signs: R10-11 "NO TURN ON RED" (18" x 24") & "YIELD IN DIRECTION OF FLASHING RED ARROW AFTER STOP" (30" x 30")

WORK ZONE DESIGN SPEED = 45 MPH

LEGEND

- Area of Construction
- Shoulder Strengthening
- Detection Zone
- Temporary Concrete Barrier, Anchored, Type 2
- (32) CZ Impact Attenuator TL-3
- (40) Temp. Pavement Markings, Removable, 4" (Solid, White)
- (41) Temp. Pavement Markings, Removable, 4" (Solid, Yellow)
- (42) Temp. Pavement Markings, Removable, 24" (Solid, White)
- Driveway Assistance Device (DAD) [1]
- Construction Sign
- Drum

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MRM

CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - PHASE III
TEMPORARY SIGNAL OPERATIONS

HORIZONTAL SCALE	BRIDGE FILE
NOT TO SCALE	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	25 of 172
CONTRACT	PROJECT
R-42253	1800060

615+00
620+00
630+00
640+00
650+00
660+00
670+00
680+00

CURVE DATA
P.I. 626+90.97 Line "A"
Δ = 0°26'07" LT.
(No Curve Run)

CURVE DATA
P.I. 640+21.98 Line "A"
Δ = 0°02'48" LT.
(No Curve Run)

CURVE DATA
P.I. 666+86.56 Line "A"
Δ = 0°01'12" RT.
(No Curve Run)

CURVE DATA
P.I. 680+05.61 Line "A"
Δ = 0°12'52" RT.
(No Curve Run)

BEGIN PROJECT
P.O.T. 632+00.00 "A"

BEGIN INCIDENTAL CONSTRUCTION
P.O.T. 630+50.00 "A"

Sec. 30, T19N, R2W
Jefferson Twp.
Boone County

℄ Str. No. 102
Des. No. 2201187
CV 032-006-49.04
Sta. 646+94.68

SECTION LINE

Sec. 29, T19N, R2W
Jefferson Twp.
Boone County

END CONSTRUCTION
P.O.T. 686+22.00 "A"

P.I. 626+90.97 "A"
Δ = 0°26'07" RT.

P.I. 640+21.98 "A"
Δ = 0°02'48" LT.

P.I. 666+86.56 "A"
Δ = 0°01'12" RT.

P.I. 680+05.61 "A"
Δ = 0°12'52" RT.

LINE "A"
S89°13'27"E

LINE "A"
S89°39'35"E

LINE "A"
S89°42'23"E

LINE "A"
S89°41'10"E

LINE "A"
S89°28'19"E

MATCHLINE STA. 687+80 "A"

See Sheet 30 | See Sheet 31 | See Sheet 32 | See Sheet 33 | See Sheet 34

C.R. 1175 W.

1/4 SECTION LINE

SECTION LINE

℄ Str. No. 103
Des. No. 2201188
CV 032-006-49.65
Sta. 678+68.46

C.R. 1075 W.

Sec. 31, T19N, R2W
Jefferson Twp.
Boone County

Sec. 32, T19N, R2W
Jefferson Twp.
Boone County

690+00
700+00
710+00
720+00
730+00
740+00
750+00
760+00

CURVE DATA
P.I. 693+31.12 Line "A"
Δ = 0°03'52" LT.
(No Curve Run)

CURVE DATA
P.I. 719+84.36 Line "A"
Δ = 0°16'58" RT.
(No Curve Run)

CURVE DATA
P.I. 746+27.86 Line "A"
Δ = 0°18'09" LT.
(No Curve Run)

Sec. 29, T19N, R2W
Jefferson Twp.
Boone County

BEGIN PAVING EXCEPTION
END INCIDENTAL CONSTRUCTION
P.O.T. 689+22.70 "A"

BEGIN CONSTRUCTION
P.O.T. 748+00.00 "A"

END PAVING EXCEPTION
BEGIN INCIDENTAL CONSTRUCTION
P.O.T. 746+50.00 "A"

℄ Str. No. 110
Des. No. 2201189
CV 032-006-51.06
Sta. 754+03.08

MATCHLINE STA. 687+80 "A"

1/4 SECTION LINE

P.I. 693+31.12 "A"
Δ = 0°03'52" LT.

SECTION LINE

P.I. 719+84.36 "A"
Δ = 0°16'58" RT.

P.I. 746+27.86 "A"
Δ = 0°18'09" LT.

LINE "A"
S89°28'19"E

LINE "A"
S89°32'11"E

LINE "A"
S89°15'13"E

LINE "A"
S89°33'22"E

UNT to Little Sugar Creek

MATCHLINE STA. 762+80 "A"

See Sheet 34 | See Sheet 35 | See Sheet 36

1/4 SECTION LINE

SECTION LINE

C.R. 950 W.

Sec. 32, T19N, R2W
Jefferson Twp.
Boone County

Sec. 33, T19N, R2W
Jefferson Twp.
Boone County

Approach Milling and HMA Overlay
Structural Overlay (See Typical Sections)

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

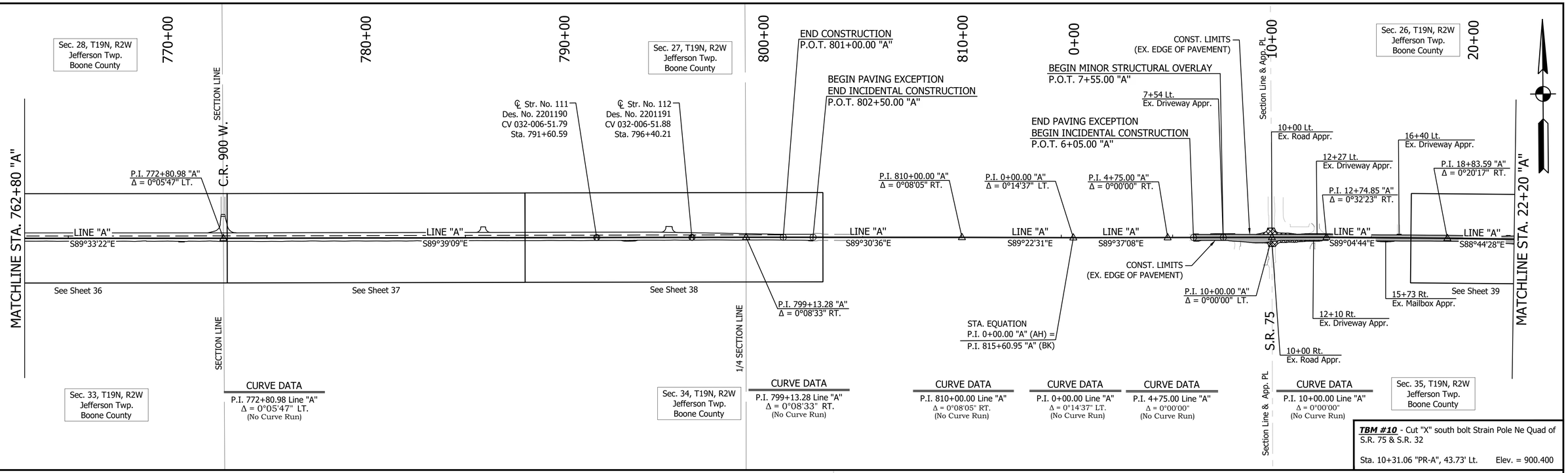
DESIGNED: ROP
DRAWN: MRM
CHECKED: YZ
CHECKED: YZ

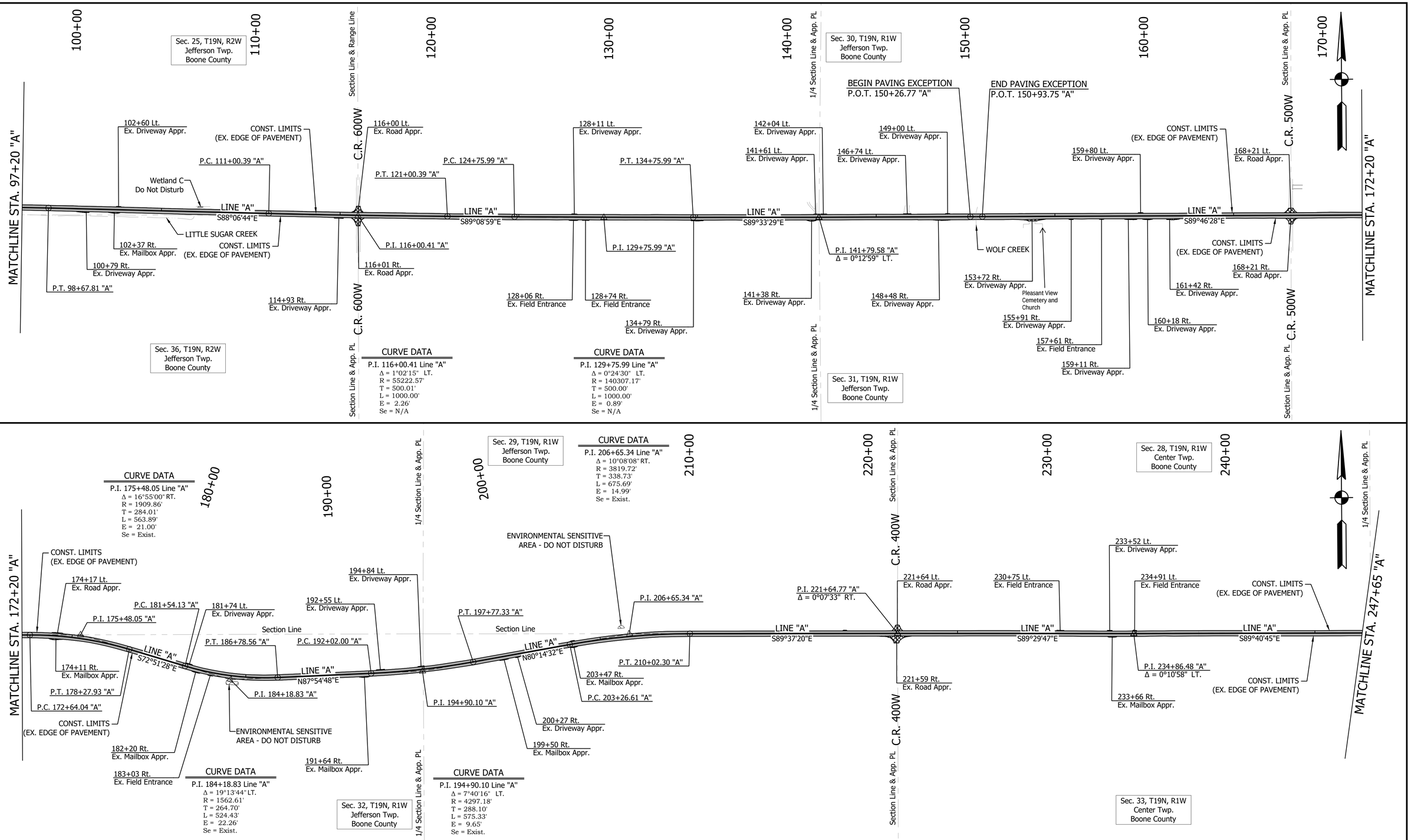
INDIANA
DEPARTMENT OF TRANSPORTATION

STRIP PLAN
STA. 612+50.00 TO 762+80.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1"=250'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	26 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 4/1/23 - 7:03 PM EDITED BY: YZHU DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_SHT_PLAN STRIP.DWG


MATCHLINE STA. 762+80 "A"
770+00
780+00
790+00
800+00
810+00
0+00
10+00
20+00
Sec. 28, T19N, R2W
Jefferson Twp.
Boone County
Sec. 27, T19N, R2W
Jefferson Twp.
Boone County
Sec. 26, T19N, R2W
Jefferson Twp.
Boone County
SECTION LINE
C.R. 900 W.
P.I. 772+80.98 "A"
Δ = 0°05'47" LT.
℄ Str. No. 111
Des. No. 2201190
CV 032-006-51.79
Sta. 791+60.59
℄ Str. No. 112
Des. No. 2201191
CV 032-006-51.88
Sta. 796+40.21
END CONSTRUCTION
P.O.T. 801+00.00 "A"
BEGIN PAVING EXCEPTION
END INCIDENTAL CONSTRUCTION
P.O.T. 802+50.00 "A"
P.I. 810+00.00 "A"
Δ = 0°08'05" RT.
P.I. 0+00.00 "A"
Δ = 0°14'37" LT.
P.I. 4+75.00 "A"
Δ = 0°00'00" RT.
CONST. LIMITS
(EX. EDGE OF PAVEMENT)
BEGIN MINOR STRUCTURAL OVERLAY
P.O.T. 7+55.00 "A"
7+54 Lt.
Ex. Driveway Appr.
END PAVING EXCEPTION
BEGIN INCIDENTAL CONSTRUCTION
P.O.T. 6+05.00 "A"
Section Line & App. PL
10+00 Lt.
Ex. Road Appr.
12+27 Lt.
Ex. Driveway Appr.
16+40 Lt.
Ex. Driveway Appr.
P.I. 18+83.59 "A"
Δ = 0°20'17" RT.
P.I. 12+74.85 "A"
Δ = 0°32'23" RT.
LINE "A"
S89°33'22"E
LINE "A"
S89°39'09"E
LINE "A"
S89°30'36"E
LINE "A"
S89°22'31"E
LINE "A"
S89°37'08"E
LINE "A"
S89°04'44"E
LINE "A"
S88°44'28"E
See Sheet 36
See Sheet 37
See Sheet 38
See Sheet 39
P.I. 799+13.28 "A"
Δ = 0°08'33" RT.
STA. EQUATION
P.I. 0+00.00 "A" (AH) =
P.I. 815+60.95 "A" (BK)
P.I. 10+00.00 "A"
Δ = 0°00'00" LT.
15+73 Rt.
Ex. Mailbox Appr.
12+10 Rt.
Ex. Driveway Appr.
10+00 Rt.
Ex. Road Appr.
S.R. 75
Section Line & App. PL
MATCHLINE STA. 22+20 "A"
1/4 SECTION LINE
Sec. 33, T19N, R2W
Jefferson Twp.
Boone County
Sec. 34, T19N, R2W
Jefferson Twp.
Boone County
Sec. 35, T19N, R2W
Jefferson Twp.
Boone County
CURVE DATA
P.I. 772+80.98 Line "A"
Δ = 0°05'47" LT.
(No Curve Run)
CURVE DATA
P.I. 799+13.28 Line "A"
Δ = 0°08'33" RT.
(No Curve Run)
CURVE DATA
P.I. 810+00.00 Line "A"
Δ = 0°08'05" RT.
(No Curve Run)
CURVE DATA
P.I. 0+00.00 Line "A"
Δ = 0°14'37" LT.
(No Curve Run)
CURVE DATA
P.I. 4+75.00 Line "A"
Δ = 0°00'00"
(No Curve Run)
CURVE DATA
P.I. 10+00.00 Line "A"
Δ = 0°00'00"
(No Curve Run)
TBM #10 - Cut "X" south bolt Strain Pole Ne Quad of S.R. 75 & S.R. 32
Sta. 10+31.06 "PR-A", 43.73' Lt. Elev. = 900.400
30+00
40+00
50+00
60+00
70+00
80+00
90+00
Sec. 26, T19N, R2W
Jefferson Twp.
Boone County
Sec. 25, T19N, R2W
Jefferson Twp.
Boone County
Sec. 35, T19N, R2W
Jefferson Twp.
Boone County
Sec. 36, T19N, R2W
Jefferson Twp.
Boone County
1/4 Section Line & App. PL
Section Line
C.R. 700W
C.R. 650W
END MINOR STRUCTURAL OVERLAY
BEGIN CONSTRUCTION
P.O.T. 26+40.11 "A"
BEGIN MINOR STRUCTURL OVERLAY
END CONSTRUCTION
P.O.T. 84+59.89 "A"
CONST. LIMITS
(EX. EDGE OF PAVEMENT)
P.I. 23+25.36 "A"
Δ = 0°27'00" LT.
P.I. 36+50.68 "A"
Δ = 0°04'41" LT.
P.C. 42+92.79 "A"
P.T. 52+92.79 "A"
P.C. 60+79.71 "A"
P.T. 70+79.71 "A"
P.C. 79+15.32 "A"
P.T. 84+04.63 "A"
P.I. 93+68.00 "A"
LINE "A"
S89°11'27"E
LINE "A"
S89°16'08"E
LINE "A"
S89°30'37"E
LINE "A"
N89°51'22"E
LINE "A"
N88°01'17"E
See Sheet 39
See Sheet 40
See Sheet 41
See Sheet 42
See Sheet 43
P.I. 47+92.80 "A"
P.I. 65+79.71 "A"
P.I. 81+60.00 "A"
P.C. 88+67.81 "A"
LITTLE SUGAR CREEK
℄ Str. No. 121
Des. No. 2201192
CV 032-006-53.02
Sta. 41+44.58
℄ Str. No. 122
Des. No. 2201193
CV 032-006-53.38
Sta. 60+97.72
℄ Str. No. 123
Des. No. 2201194
CV 032-006-53.63
Sta. 73+41.23
MATCHLINE STA. 97+20 "A"
CURVE DATA
P.I. 93+68.00 Line "A"
Δ = 3°52'00" RT.
R = 14818.29'
T = 500.19'
L = 1000.00'
E = 8.44'
Se = N/A
CURVE DATA
P.I. 23+25.36 Line "A"
Δ = 0°27'00" LT.
(No Curve Run)
CURVE DATA
P.I. 36+50.68 Line "A"
Δ = 0°04'41" LT.
(No Curve Run)
CURVE DATA
P.I. 47+92.80 Line "A"
Δ = 0°14'29" LT.
R = 237273.04'
T = 500.00'
L = 1000.00'
E = 0.53'
Se = N/A
CURVE DATA
P.I. 65+79.71 Line "A"
Δ = 0°38'00" LT.
R = 90452.91'
T = 500.01'
L = 1000.00'
E = 1.38'
Se = N/A
CURVE DATA
P.I. 81+60.00 Line "A"
Δ = 1°50'06" LT.
R = 15278.87'
T = 244.67'
L = 489.30'
E = 1.96'
Se = N/A
Approach Milling and HMA Overlay
Structural Overlay (See Typical Sections)
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE
DESIGNED: ROP
DRAWN: MRM
CHECKED: YZ
CHECKED: YZ
INDIANA
DEPARTMENT OF TRANSPORTATION
STRIP PLAN
STA. 762+80.00 TO 97+20.00 LINE "A"
HORIZONTAL SCALE 1"=250'
BRIDGE FILE
VERTICAL SCALE N/A
DESIGNATION 1800060
SURVEY BOOK
SHEET 27 of 172
CONTRACT R-42253
PROJECT 1800060
PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 4/1/23 - 7:03 PM EDITED BY: YZHU DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_SHT_PLAN STRIP.DWG



Approach Milling and HMA Overlay

Structural Overlay (See Typical Sections)

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: MRM

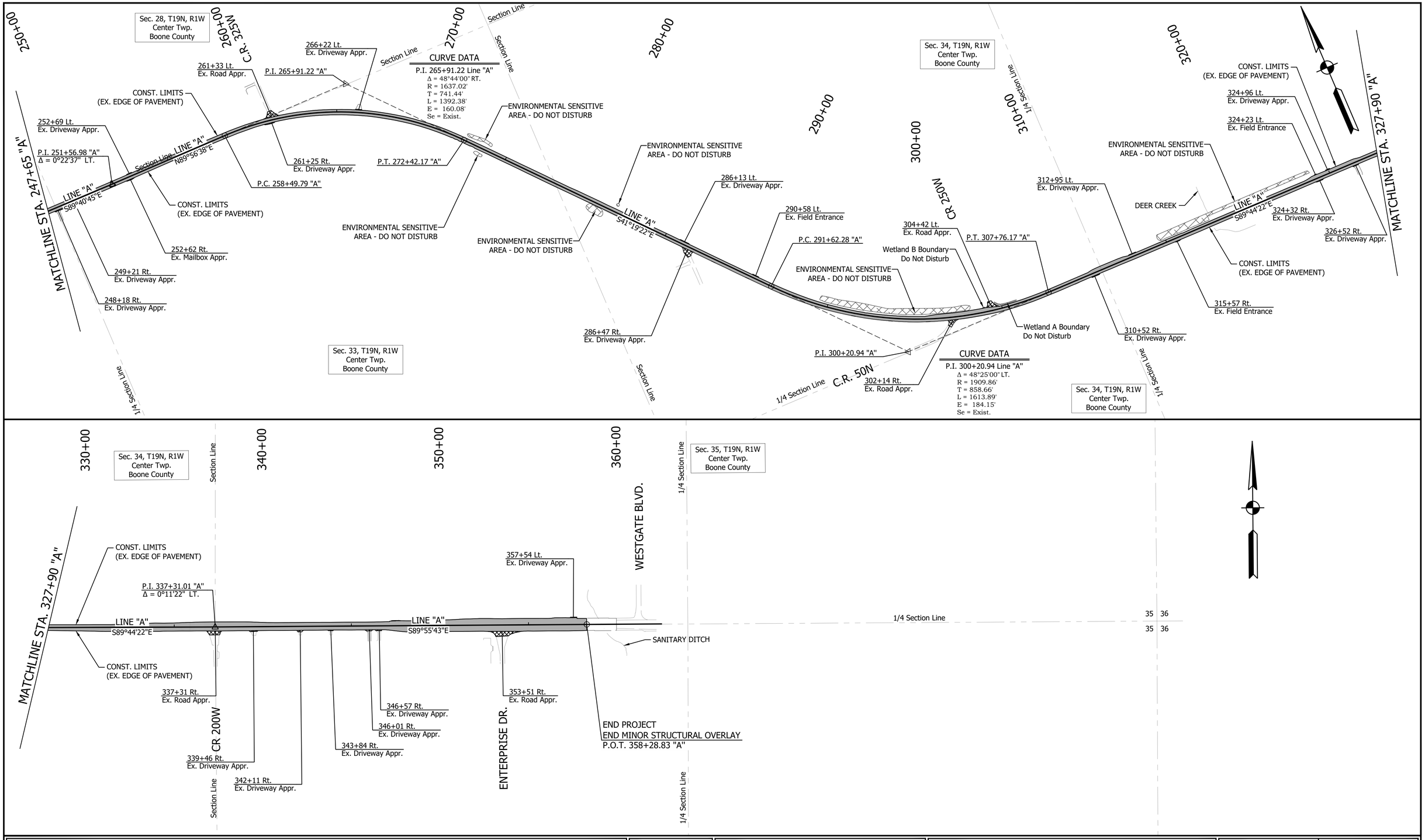
CHECKED: YZ CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

STRIP PLAN
STA. 97+20.00 TO 247+65.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1"=250'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	28 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 4/1/23 - 7:03 PM EDITED BY: YZHU DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_SHT_PLAN STRIP.DWG



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: MRM

CHECKED: YZ CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

STRIP PLAN
STA. 247+65.00 TO 362+50.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1"=250'	
VERTICAL SCALE	DESIGNATION
N/A	1800060
SURVEY BOOK	SHEET
	29 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 4/1/23 - 7:03 PM EDITED BY: YZHU DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_SHT_PLAN STRIP.DWG

LEGEND	
(D) HMA for Approaches	HMA for Structure Installation, Type B
(K) Full Depth Pavement (See Typical Sections)	
(R) Structural Overlay (See Typical Sections)	Approach Milling and HMA Overlay
(R1) HMA Overlay (See Typical Sections)	

CONTROL POINT 100: NORTH 283848.931, EAST 733997.833, STA. 626+85.74, 37.8 LT. "A" — CONTROL POINT CAPPED REBAR SET

CONTROL POINT 101: NORTH 283844.662, EAST 734600.694, STA. 632+88.90, 37.2 LT. "A" — CONTROL POINT CAPPED REBAR SET

RECOMMENDED FOR APPROVAL ______ DESIGN ENGINEER ______ DATE

DESIGNED: ROP — DRAWN: KRU

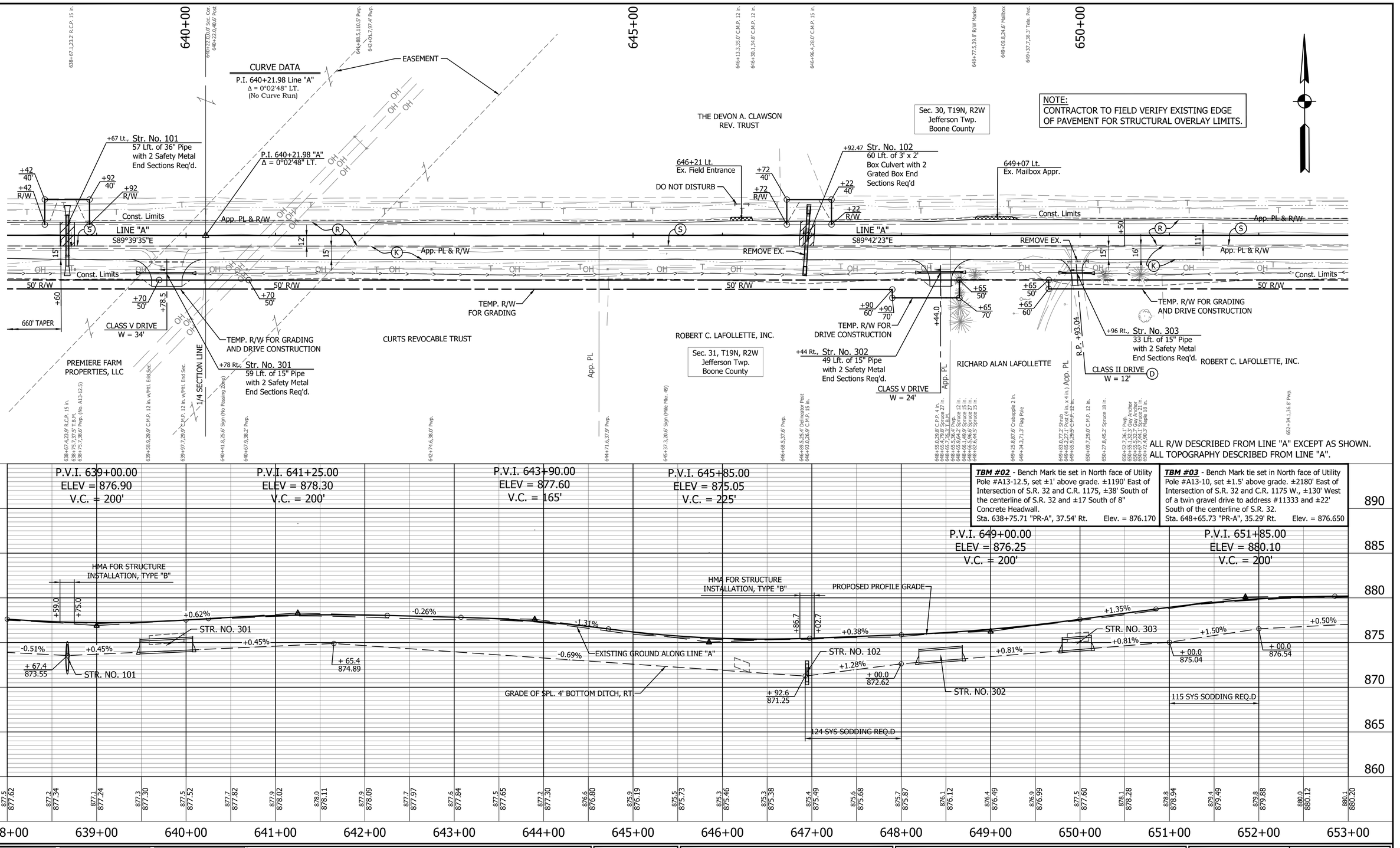
CHECKED: RDS — CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 632+00.00 TO 638+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	30 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23 PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG



TBM #02 - Bench Mark tie set in North face of Utility Pole #A13-12.5, set ±1' above grade. ±1190' East of Intersection of S.R. 32 and C.R. 1175, ±38' South of the centerline of S.R. 32 and ±17 South of 8" Concrete Headwall.
Sta. 638+75.71 "PR-A", 37.54' Rt. Elev. = 876.170

TBM #03 - Bench Mark tie set in North face of Utility Pole #A13-10, set ±1.5' above grade. ±2180' East of Intersection of S.R. 32 and C.R. 1175 W., ±130' West of a twin gravel drive to address #11333 and ±22' South of the centerline of S.R. 32.
Sta. 648+65.73 "PR-A", 35.29' Rt. Elev. = 876.650

102 NORTH 283764.317 EAST 735263.234
STA. 639+51.91, 39.2 Rt. "A"
CONTROL POINT CAPPED REBAR SET

103 NORTH 283838.566 EAST 735756.739
STA. 644+44.99, 37.6 Lt. "A"
CONTROL POINT CAPPED REBAR SET

104 NORTH 283838.507 EAST 736179.980
STA. 648+68.23, 39.7 Lt. "A"
CONTROL POINT CAPPED REBAR SET

LEGEND
- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 638+00.00 TO 653+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	31 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG

655+00

660+00

665+00

Sec. 30, T19N, R2W
Jefferson Twp.
Boone County

THE DEVON A. CLAWSON
REV. TRUST

MARY ANN MENDENHALL
TRUST

NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING EDGE OF PAVEMENT FOR STRUCTURAL OVERLAY LIMITS.

CURVE DATA
P.I. 666+86.56 Line "A"
Δ = 0°01'12" RT.
(No Curve Run)

P.I. 666+86.56 "A"
Δ = 0°01'12" RT.

661+00 Lt.
Ex. Driveway Appr.

663+44 Lt.
Ex. Driveway Appr.

App. PL

SECTION LINE

DO NOT DISTURB

App. PL & R/W
Const. Limits
16'
11'
App. PL & R/W
Const. Limits
50' R/W

LINE "A"
S89°42'23"E

LINE "A"
S89°41'10"E

REMOVE EX.

+P.L.
60'
TEMP. R/W
FOR GRADING

+70
50'
+70
60'
+98.0

CLASS V DRIVE
W = 24'

TEMP. R/W FOR GRADING
AND DRIVE CONSTRUCTION

ROBERT C. LAFOLLETTE, INC.

+99 Rt., Str. No. 304
49 Lft. of 15" Pipe
with 2 Safety Metal
End Sections Req'd.

Sec. 31, T19N, R2W
Jefferson Twp.
Boone County

+50
50'
+90.9
+50
50'

TEMP. R/W FOR GRADING
AND DRIVE CONSTRUCTION

CLASS V DRIVE
W = 24'

ALL R/W DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.
ALL TOPOGRAPHY DESCRIBED FROM LINE "A".

TBM #04 - Bench Mark tie set in North face of Utility Pole #A13-6, set ±1.5' above grade. ±1970' West of Intersection of S.R. 32 and C.R. 1075 W., ±300' West of a drive to address #11080 and ±40' South of the centerline of S.R. 32.
Sta. 660+37.27 "PR-A", 37.31' Rt. Elev. = 876.690

P.V.I. 654+15.00
ELEV = 880.30
V.C. = 165'

P.V.I. 656+25.00
ELEV = 878.10
V.C. = 200'

P.V.I. 660+25.00
ELEV = 877.85
V.C. = 200'

P.V.I. 662+25.00
ELEV = 878.35
V.C. = 200'

P.V.I. 665+75.00
ELEV = 877.00
V.C. = 200'

PROPOSED PROFILE GRADE

EXISTING GROUND ALONG LINE "A"

+0.09%
-1.05%
-0.06%
+0.25%
-0.39%
-0.08%
+0.50%
-0.79%
-0.20%
-0.20%
-0.23%

+ 45.1
877.27

+ 50.0
874.87

GRADE OF SPL. 4' BOTTOM DITCH, RT.

STR. NO. 304

+ 00.0
872.97

890
885
880
875
870
865
860

880.1 880.20 | 880.2 880.23 | 880.1 880.13 | 879.7 879.86 | 879.2 879.41 | 878.7 878.90 | 878.4 878.50 | 878.1 878.22 | 877.9 878.07 | 877.8 878.02 | 877.8 877.99 | 877.8 877.96 | 877.8 877.93 | 877.8 877.90 | 877.8 877.91 | 877.7 877.96 | 877.9 878.04 | 878.0 878.15 | 878.1 878.20 | 878.1 878.16 | 877.9 878.05 | 877.8 877.87 | 877.6 877.68 | 877.3 877.48 | 877.1 877.29 | 877.0 877.14 | 876.9 877.02 | 876.9 876.94 | 876.8 876.90 | 876.7 876.84 | 876.5 876.72

653+00 654+00 655+00 656+00 657+00 658+00 659+00 660+00 661+00 662+00 663+00 664+00 665+00 666+00 667+00 668+00

105 NORTH 283760.119
EAST 736654.353
STA. 653+43.00, 36.2 RT. "A"
CONTROL POINT
CAPPED REBAR SET

106 NORTH 283758.341
EAST 737294.496
STA. 659+83.14, 34.7 RT. "A"
CONTROL POINT
CAPPED REBAR SET

107 NORTH 283747.797
EAST 737766.116
STA. 664+54.81, 42.9 RT. "A"
CONTROL POINT
CAPPED REBAR SET

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU

CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 653+00.00 TO 668+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
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CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG

670+00

675+00

680+00

673+22 Lt.
Ex. Field Entrance

MARY ANN MENDENHALL
TRUST

Sec. 29, T19N, R2W
Jefferson Twp.
Boone County

NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING EDGE
OF PAVEMENT FOR STRUCTURAL OVERLAY LIMITS.

CURVE DATA
P.I. 680+05.61 Line "A"
Δ = 0°12'52"
(No Curve Run)

P.I. 680+05.61 "A"
Δ = 0°12'52" RT.

+69.16 Str. No. 103
56 Lft. of 4' x 3'
Box Culvert with 2
Grated Box End
Sections Req'd

680+22 Lt.
Ex. Field Entrance

DO NOT DISTURB

+00 Rt., Str. No. 104
65 Lft. of 36" Pipe
with 2 Safety Metal
End Sections Req'd.

App. PL & R/W
Const. Limits
LINE "A"
S89°41'10"E
App. PL & R/W
Const. Limits
50' R/W
TEMP. R/W FOR GRADING
AND DRIVE CONSTRUCTION
+60 60'
TEMP. R/W FOR
DRIVE CONSTRUCTION
+40 60'
CLASS V DRIVE
W = 30'
+97.0
+99 Rt., Str. No. 305
57 Lft. of 15" Pipe
with 2 Safety Metal
End Sections Req'd.
ROBERT C. LAFOLLETTE, INC.
TEMP. R/W FOR GRADING
AND DRIVE CONSTRUCTION
+50
REMOVE EX.
+78.0
D MOD. CLASS II DRIVE
W = 10'
+79 Rt., Str. No. 306
32 Lft. of 15" Pipe
with 2 Safety Metal
End Sections Req'd.
+43 40'
+93 40'
40' R/W
+43 R/W
+93 R/W
REMOVE EX.
89°50'53"
+75 40'
+25 40'
40' R/W
+75 R/W
+25 R/W
Const. Limits
App. PL & R/W
LINE "A"
S89°28'19"E
App. PL & R/W
Const. Limits
50' R/W
230' TAPER
+40 50'
+40 60'
+55 50'
+60 60'
+85 110'
+85 133'
+P.L. 133'
+05.6
CR. 1075 W.
+00
+61 60'
+55 50'
+26 110'
+26 133'
+P.L. 133'
+35 114'
TEMP. R/W FOR GRADING
REMOVE 13 LFT. ABANDON
AND GROUT AND FILL 37 LFT.
HUBERT STRAWMYER REV. TRUST
PUBLIC ROAD APPROACH

669+24.7 39.4° Pvp.
671+25.8 39.2° Pvp.
673+28.2 39.5° Pvp.
675+30.9 39.9° Pvp.
677+34.4 39.5° Pvp.
677+66.7 27.2° C.M.P. 15 in.
677+86.9 29.0° C.M.P. 15 in.
677+87.0 27.4° C.M.P. 15 in.
678+64.8 24.4° Delineator Post
678+69.0 24.4° C.M.P. 24 in.
679+83.3 45.6° Pvp.
679+86.2 45.6° Pvp.
679+87.1 62.0° Guy Anchor
680+32.3 46.4° Sign (Street)
680+34.0 43.0° Sign (Street)
680+35.7 24.8° C.M.P. 15 in. (Buried)
681+81.0 40.0° Pvp.

ALL R/W DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.
ALL TOPOGRAPHY DESCRIBED FROM LINE "A".

P.V.I. 668+25.00
ELEV = 876.80
V.C. = 250'

P.V.I. 670+50.00
ELEV = 875.50
V.C. = 200'

P.V.I. 673+00.00
ELEV = 874.90
V.C. = 165'

P.V.I. 675+50.00
ELEV = 874.20
V.C. = 200'

P.V.I. 677+40.00
ELEV = 874.70
V.C. = 165'

P.V.I. 680+15.00
ELEV = 874.59
V.C. = 300'

P.V.I. 682+70.00
ELEV = 877.10
V.C. = 165'

TBM #05 - Cut "x" in south end of an easternmost 12" wide concrete headwall under a field entrance. Located at the NE Intersection of S.R. 32 and C.R. 1075 W. ±30' North of the centerline of S.R. 32.

Sta. 680+31.03 "PR-A", 30.75' Lt. Elev. = 873.650

890 885 880 875 870 865 860

PROPOSED PROFILE GRADE
EXISTING GROUND ALONG LINE "A"
-0.24%
-0.28%
+0.26%
-0.04%
+0.98%
-0.23%
-0.23%
-0.23%
-0.23%
-0.90%
+0.85%
+2.24%
+0.31%
HMA FOR STRUCTURE
INSTALLATION, TYPE "B"
HMA FOR STRUCTURE
INSTALLATION, TYPE "B"
+60.5
+76.5
+91.9
+07.9
STR. NO. 305
STR. NO. 306
STR. NO. 103
STR. NO. 104
GRADE OF SPL. 4' BOTTOM DITCH, RT.
+ 69.2
870.04
+ 00.0
871.15
+ 00.0
870.25
+ 50.0
873.61
173 SYS SODDING REQUIRED

876.5 876.72 | 876.4 876.56 | 876.2 876.34 | 876.0 876.08 | 875.7 875.81 | 875.4 875.58 | 875.3 875.40 | 875.2 875.26 | 874.9 875.14 | 874.9 875.02 | 874.8 874.89 | 874.6 874.76 | 874.5 874.62 | 874.5 874.48 | 874.2 874.37 | 874.2 874.34 | 874.2 874.37 | 874.3 874.46 | 874.3 874.58 | 874.4 874.65 | 874.4 874.67 | 874.2 874.66 | 874.1 874.66 | 874.1 874.74 | 874.5 874.91 | 874.8 875.16 | 875.1 875.50 | 875.6 875.92 | 876.2 876.41 | 876.7 876.77 | 876.8 876.97

668+00 669+00 670+00 671+00 672+00 673+00 674+00 675+00 676+00 677+00 678+00 679+00 680+00 681+00 682+00 683+00

108 NORTH 283749.985
EAST 738295.014
STA. 669+83.70, 37.9 RT. "A"
CONTROL POINT
CAPPED REBAR SET

109 NORTH 283766.073
EAST 738850.171
STA. 675+38.76, 18.7 RT. "A"
CONTROL POINT
CAPPED REBAR SET

110 NORTH 283748.046
EAST 739328.741
STA. 680+17.55, 34.1 RT. "A"
CONTROL POINT
MAG SPIKE SET

LEGEND
- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

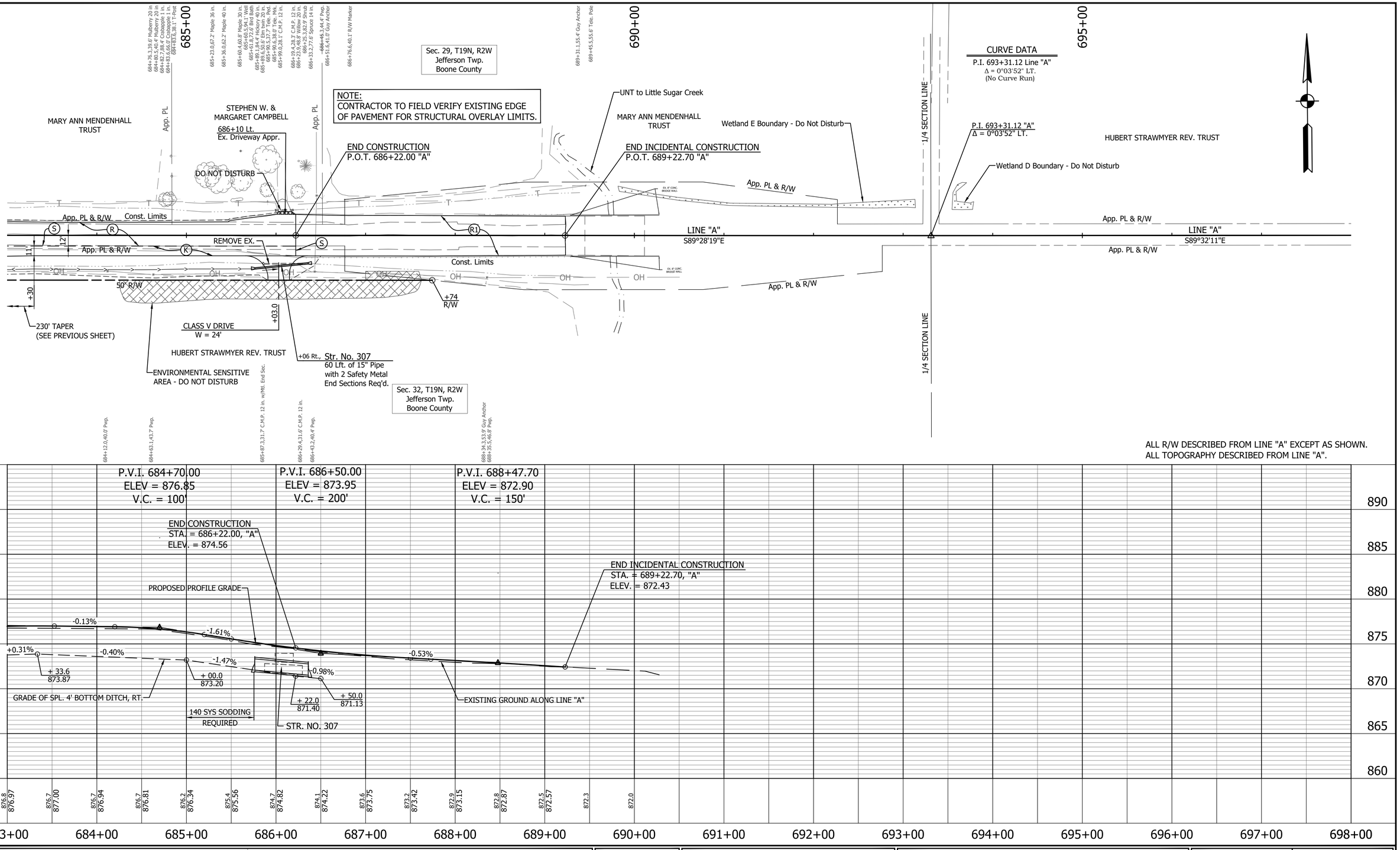
DESIGNED: ROP DRAWN: KRU
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 668+00.00 TO 683+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	33 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG



LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: ROP DRAWN: KRU

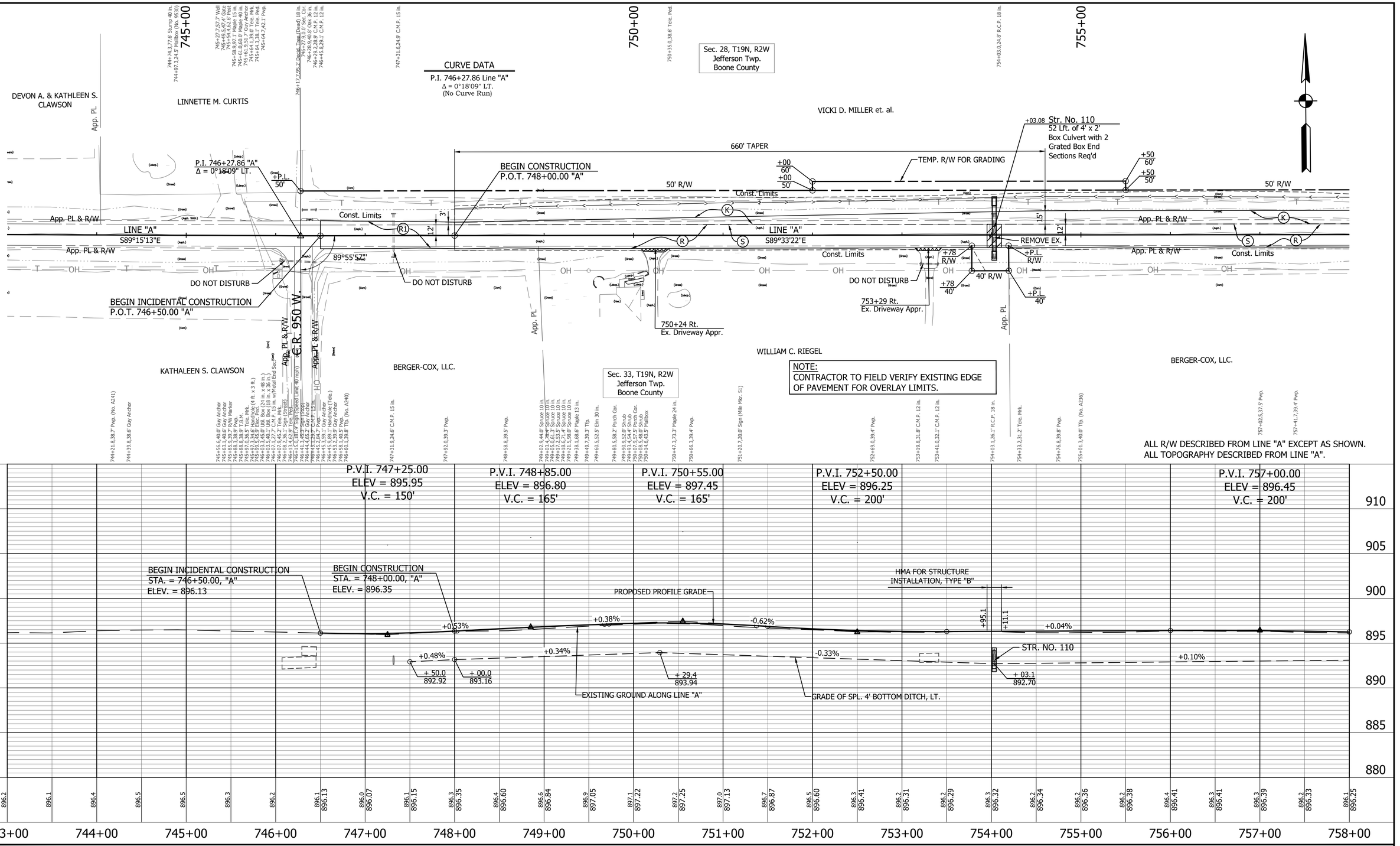
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 683+00.00 TO 698+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	34 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG



111	112	113
NORTH 283684.487 EAST 745921.267 STA. 746+10.52, 29.9 RT. "A" MAG NAIL & TACK ON UTIL. POLE #A240.5 S.R. 32 EX. EDGE PVMNT. MAG NAIL & TACK ON UTIL. POLE #A240 CONTROL POINT MAG SPIKE SET	NORTH 283747.935 EAST 746537.469 STA. 752+26.05, 38.5 LT. "A" EX. EDGE PVMNT. S.R. 32 EX. SGN. "MILE MARKER 51" MAG NAIL & TACK ON UTIL. POLE #A237 CONTROL POINT CAPPED REBAR SET	NORTH 283744.526 EAST 747005.766 STA. 756+94.36, 38.7 LT. "A" EX. EDGE PVMNT. S.R. 32 MAG NAIL & TACK ON UTIL. POLE #A235 MAG NAIL & TACK ON UTIL. POLE #A230 CONTROL POINT CAPPED REBAR SET

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU

CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 743+00.00 TO 758+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	35 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
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760+00 765+00 770+00

763+736.39.0' Tele. Ped.

Sec. 28, T19N, R2W
Jefferson Twp.
Boone County

VICKI D. MILLER et. al.

CURVE DATA
P.I. 772+80.98 Line "A"
Δ = 0°05'47" LT.
(No Curve Run)

771+98.5,39.5' Delineator Post
771+98.8,38.8' Tele. Ped.

772+63.1,46.0' Sign
772+81.0,0.0' Sec. Cor.

App. PL & R/W
SECTION LINE
C.R. 900 W
App. PL & R/W

+P.I.
130'

PUBLIC ROAD APPROACH

+60
130'

+60
110'

+80.16

+30
50'

+R/W
60'

+50
60'

+50
50'

TEMP. R/W FOR GRADING

50' R/W

Const. Limits

15'

12'

K

R

S

App. PL & R/W

LINE "A"
S89°33'22"E

89°40'42"

770+70 Rt.
Ex. Driveway Appr.

P.I. 772+80.98 "A"
Δ = 0°05'47" LT.

SECTION LINE

App. PL

OH

759+25.3,39.4' Pvgs.
759+57.5,83.8' Riser Pipe 6 in.
759+83.4,39.6' Pvgs.
761+45.7,39.6' Pvgs.
762+20.3,39.0' Pvgs.
762+20.3,38.1' T.B.M.
763+68.2,39.9' Pvgs.
765+90.9,39.7' Pvgs.
767+41.5,39.6' Pvgs.
768+13.9,39.5' Pvgs.
769+44.5,71.9' Oak 23 in.
769+45.5,83.3' Cedar 12 in.
769+63.6,90.1' Hsc. Cor.
769+95.8,89.9' Hsc. Cor.
770+35.9,40.2' Pvgs.
770+40.0,39.6' Pvgs.
772+55.8,39.5' Pvgs.
772+60.5,39.3' TPc

BERGER-COX, LLC.

SAM K. & JUDITH C.
YOUNG

Sec. 33, T19N, R2W
Jefferson Twp.
Boone County

NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING EDGE OF PAVEMENT FOR OVERLAY LIMITS.

ALL R/W DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.
ALL TOPOGRAPHY DESCRIBED FROM LINE "A".

P.V.I. 759+50.00
ELEV = 895.95
V.C. = 300'

P.V.I. 762+50.00
ELEV = 896.40
V.C. = 200'

P.V.I. 764+55.00
ELEV = 896.20
V.C. = 200'

P.V.I. 766+45.00
ELEV = 896.80
V.C. = 165'

P.V.I. 768+30.00
ELEV = 897.65
V.C. = 200'

P.V.I. 770+15.00
ELEV = 899.05
V.C. = 165'

910 905 900 895 890 885 880

PROPOSED PROFILE GRADE

+0.15%
-0.10%
+0.32%
+0.46%
+0.76%
+0.42%
+0.10%
+0.40%

EXISTING GROUND ALONG LINE "A"

GRADE OF SPL. 4' BOTTOM DITCH, LT.

+ 00.0
893.50

+ 00.0
893.68

GRADE OF SPL. 4' BOTTOM DITCH, LT.

896.1 896.25 | 896.1 896.16 | 896.0 896.11 | 895.9 896.08 | 896.0 896.08 | 896.1 896.11 | 896.1 896.18 | 896.1 896.25 | 896.1 896.31 | 896.3 896.34 | 896.2 896.34 | 896.2 896.30 | 896.2 896.27 | 896.2 896.30 | 896.3 896.37 | 896.5 896.50 | 896.6 896.66 | 896.8 896.85 | 897.0 897.06 | 897.2 897.29 | 897.4 897.55 | 897.6 897.85 | 898.0 898.19 | 898.5 898.55 | 898.8 898.89 | 899.0 899.17 | 899.1 899.40 | 899.3 899.61 | 899.4 899.81 | 899.7 899.98 | 900.0 900.11

758+00 759+00 760+00 761+00 762+00 763+00 764+00 765+00 766+00 767+00 768+00 769+00 770+00 771+00 772+00 773+00

(114) NORTH 283664.719
EAST 747507.224
STA. 761+96.33, 37.1 RT. "A"
EX. EDGE PVMNT.
S.R. 32
23.99'
MAG NAIL W FACE UTIL. POLE
BNDRY. MRK. N FACE UTIL. POLE #A234
CONTROL POINT
CAPPED REBAR SET

(115) NORTH 283659.428
EAST 748027.393
STA. 747+16.62, 38.5 RT. "A"
EX. EDGE PVMNT.
S.R. 32
MAG NAIL N FACE UTIL. POLE #A232
W FACE UTIL. POLE #A232
CONTROL POINT
CAPPED REBAR SET

(116) NORTH 283719.791
EAST 748564.661
STA. 772+53.40, 26.0 LT. "A"
EX. SIGN "STOP"
CNTR. EX. TEL. POLE
EX. EDGE PVMNT.
S.R. 32
MAG NAIL N FACE UTIL. POLE
CONTROL POINT
CAPPED REBAR SET

LEGEND
(D) HMA for Approaches
(K) Full Depth Pavement (See Typical Sections)
(R) Structural Overlay (See Typical Sections)
(R1) HMA Overlay (See Typical Sections)
HMA for Structure Installation, Type B
Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

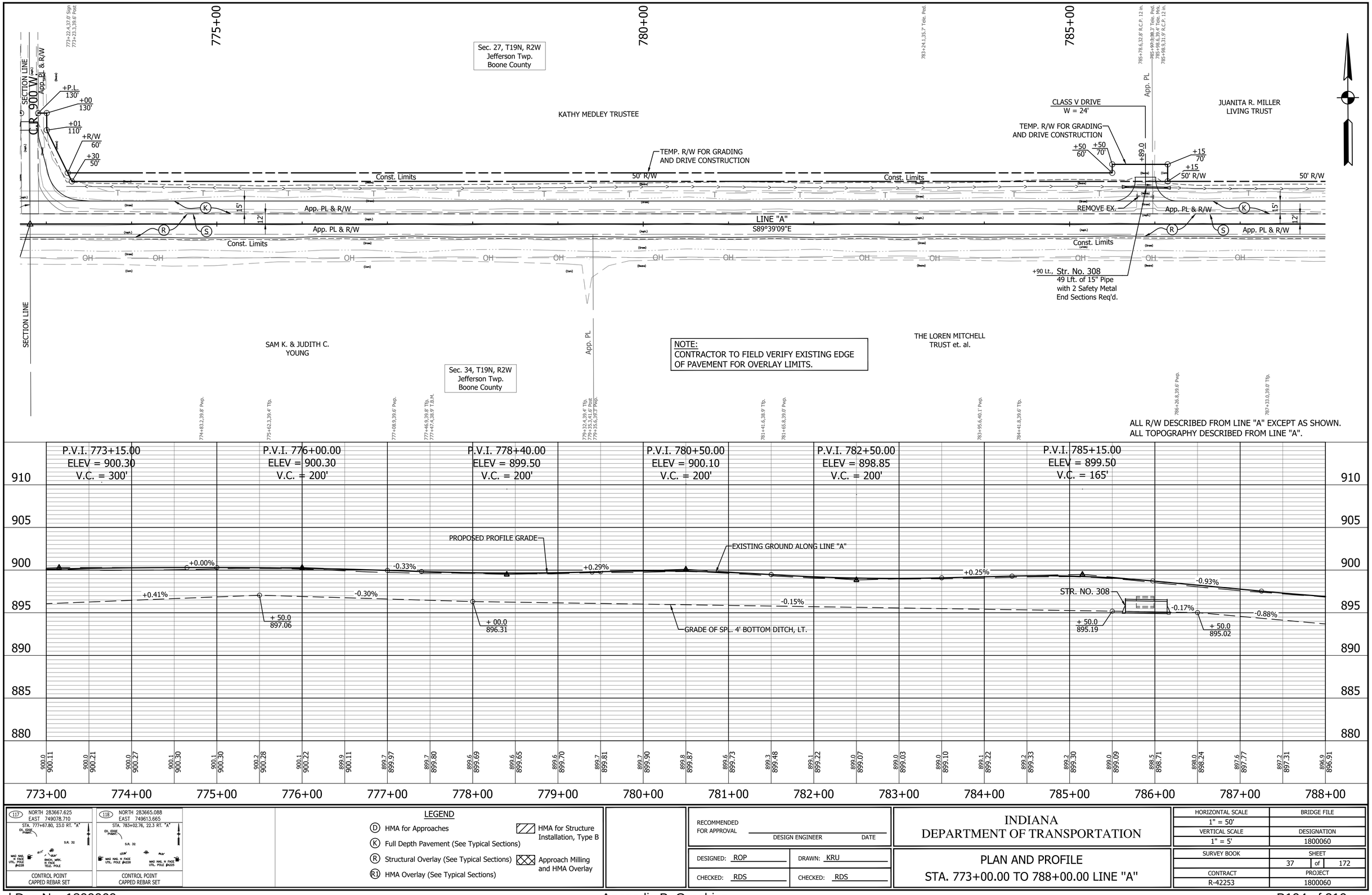
DESIGNED: ROP
DRAWN: KRU
CHECKED: RDS
CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 758+00.00 TO 773+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	36 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG



117	NORTH 283667.625 EAST 749078.710
	STA. 777+67.80, 23.0 RT. "A"
	CONTROL POINT CAPPED REBAR SET

118	NORTH 283665.088 EAST 749613.665
	STA. 783+02.76, 22.3 RT. "A"
	CONTROL POINT CAPPED REBAR SET

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU

CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 773+00.00 TO 788+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	37 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG

CONTROL POINT CAPPED REBAR SET (119) NORTH 283645.237 EAST 750137.126 STA. 788+26.34, 39.0 RT. "A"

CONTROL POINT CAPPED REBAR SET (120) NORTH 283659.499 EAST 750681.928 STA. 793+71.04, 21.4 RT. "A"

CONTROL POINT CAPPED REBAR SET (121) NORTH 283644.144 EAST 751238.275 STA. 799+27.55, 33.3 RT. "A"

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL ______ DESIGN ENGINEER ______ DATE

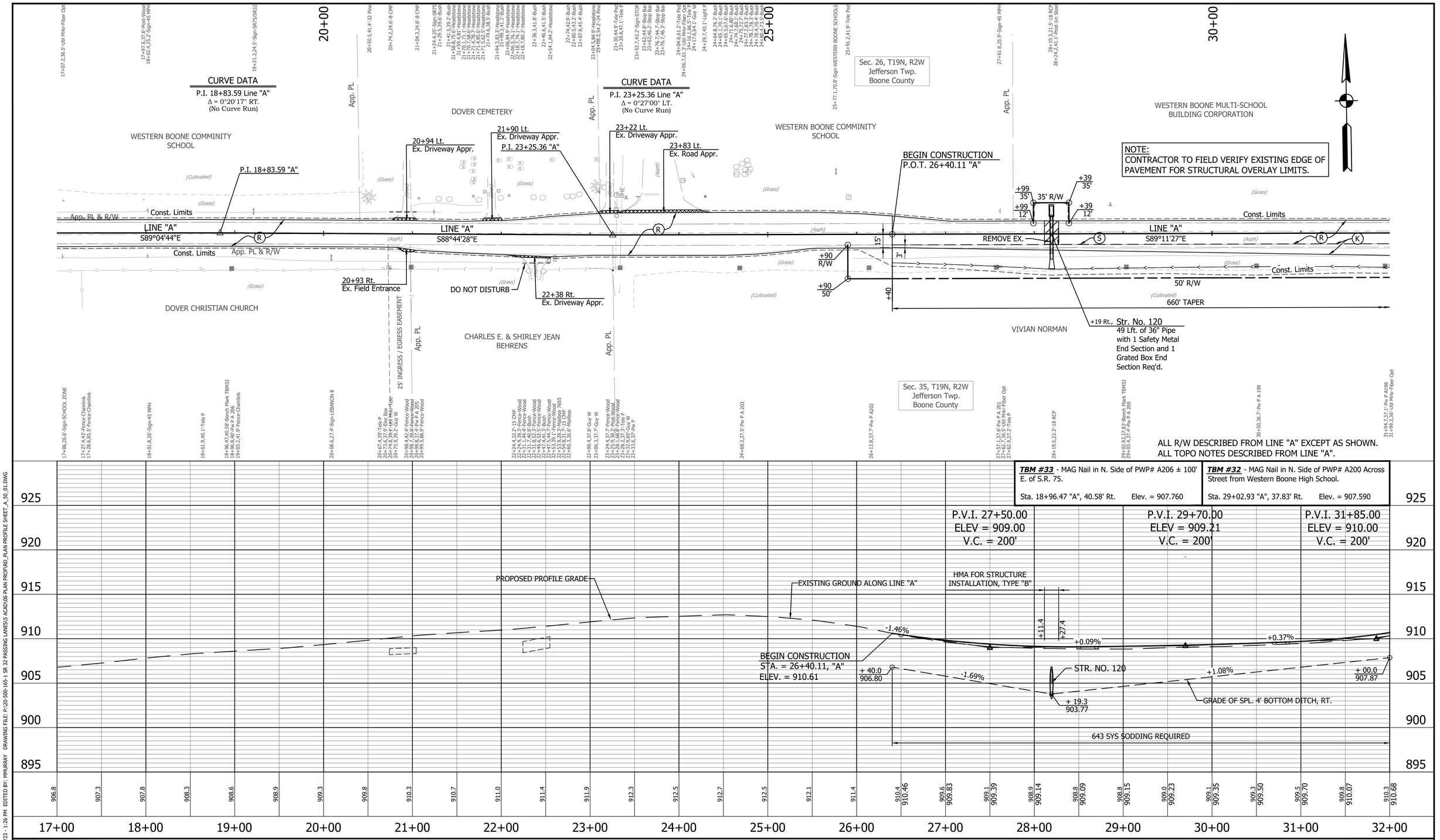
DESIGNED: ROP | DRAWN: KRU
CHECKED: RDS | CHECKED: RDS

INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 788+00.00 TO 803+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	38 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23 PLOT SCALE: 1:1 EDIT DATE: 3/29/23 - 2:02 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PP SHT_AW_50_01.DWG



158 NORTH 283676.3848 EAST 755213.1265
MAG Nail Set 3" up in PWP Nut
E Side of Telephone Pedestal
S Side of Wood Post
CAPPED Rebar Set
W Side of "STOP" Sign Post
23+40.86 "A", 42.38' Lt.

157 NORTH 283659.3750 EAST 755757.7236
E Side of "STEEL" Sign Post
E Side of "45 MPH" Sign Post
E End of 10" Concrete Headwall
CAPPED Rebar Set
N Side of Fiber Optic Marker
28+85.65 "A", 33.07' Lt.

LEGEND
- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

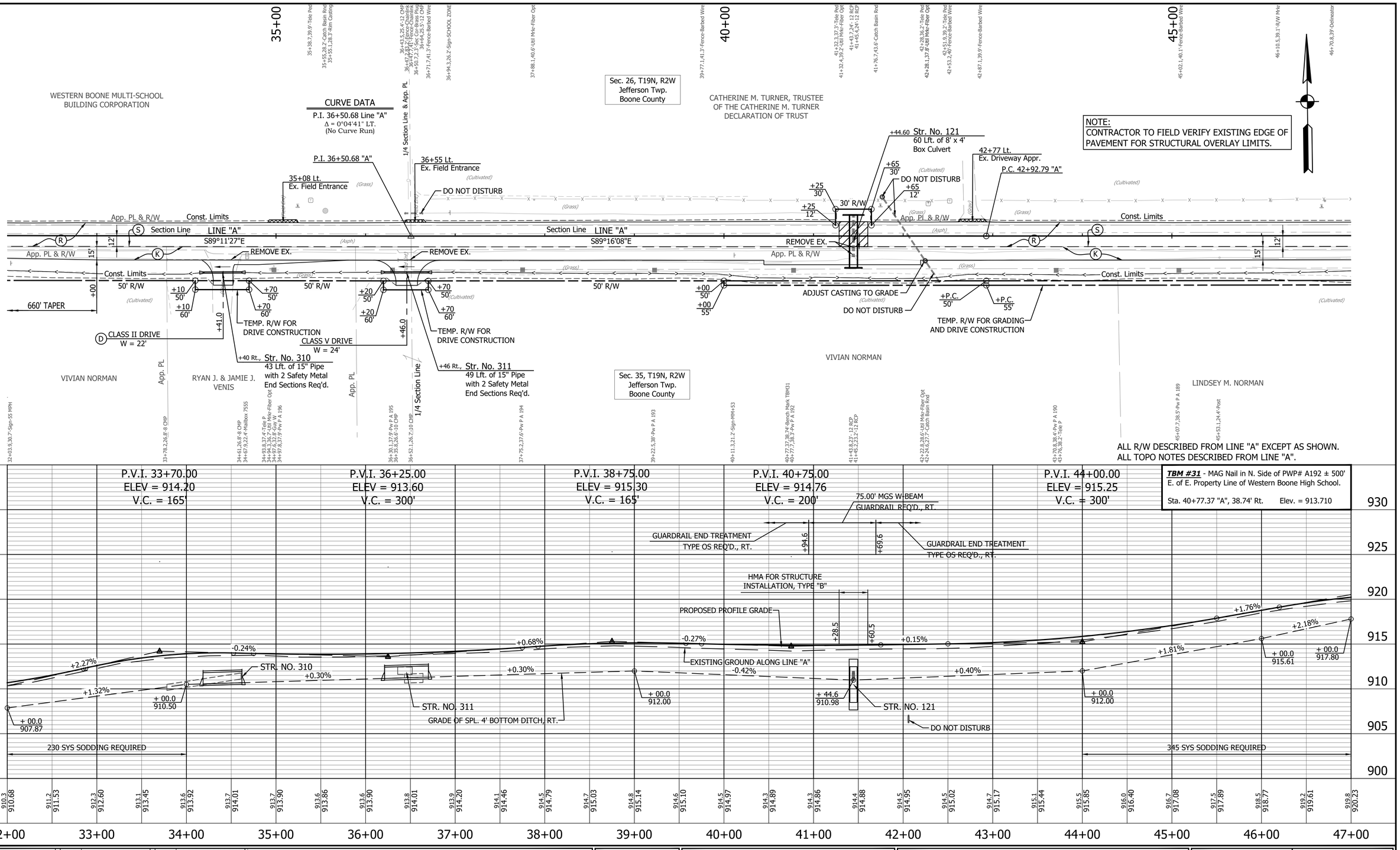
DESIGNED: ROP DRAWN: KRU
CHECKED: RDS CHECKED: RDS

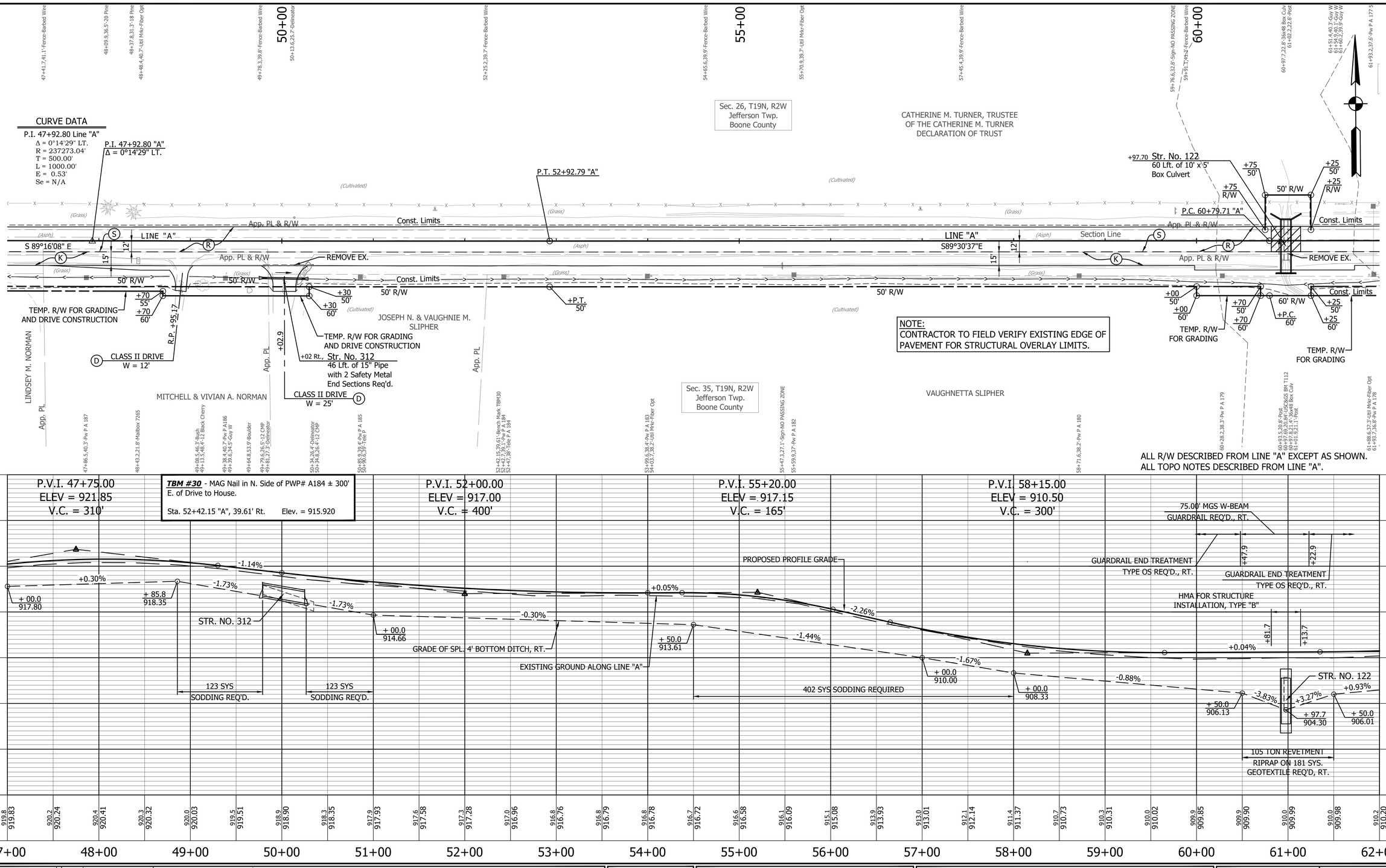
INDIANA DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 17+00.00 TO 32+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	39 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/28/23 - 1:26 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PLAN PROFILE SHEET_A_50_01.DWG


35+00
40+00
45+00
WESTERN BOONE MULTI-SCHOOL BUILDING CORPORATION
CURVE DATA
P.I. 36+50.68 Line "A"
Δ = 0°04'41" LT.
(No Curve Run)
Sec. 26, T19N, R2W
Jefferson Twp.
Boone County
CATHERINE M. TURNER, TRUSTEE OF THE CATHERINE M. TURNER DECLARATION OF TRUST
NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING EDGE OF PAVEMENT FOR STRUCTURAL OVERLAY LIMITS.
P.I. 36+50.68 "A"
1/4 Section Line & App. PL
35+08 Lt.
Ex. Field Entrance
36+55 Lt.
Ex. Field Entrance
DO NOT DISTURB
+44.60 Str. No. 121
60 Lft. of 8' x 4'
Box Culvert
42+77 Lt.
Ex. Driveway Appr.
P.C. 42+92.79 "A"
30' R/W
App. PL & R/W
Const. Limits
Section Line
LINE "A"
S89°11'27"E
S89°16'08"E
REMOVE EX.
50' R/W
660' TAPER
CLASS II DRIVE
W = 22'
CLASS V DRIVE
W = 24'
TEMP. R/W FOR DRIVE CONSTRUCTION
TEMP. R/W FOR GRADING AND DRIVE CONSTRUCTION
ADJUST CASTING TO GRADE
+40 Rt., Str. No. 310
43 Lft. of 15" Pipe
with 2 Safety Metal
End Sections Req'd.
+46 Rt., Str. No. 311
49 Lft. of 15" Pipe
with 2 Safety Metal
End Sections Req'd.
VIVIAN NORMAN
RYAN J. & JAMIE J. VENIS
LINDSEY M. NORMAN
Sec. 35, T19N, R2W
Jefferson Twp.
Boone County
(Cultivated)
(Grass)
(Asph)
ALL R/W DESCRIBED FROM LINE "A" EXCEPT AS SHOWN.
ALL TOPO NOTES DESCRIBED FROM LINE "A".
P.V.I. 33+70.00
ELEV = 914.20
V.C. = 165'
P.V.I. 36+25.00
ELEV = 913.60
V.C. = 300'
P.V.I. 38+75.00
ELEV = 915.30
V.C. = 165'
P.V.I. 40+75.00
ELEV = 914.76
V.C. = 200'
P.V.I. 44+00.00
ELEV = 915.25
V.C. = 300'
TBM #31 - MAG Nail in N. Side of PWP# A192 ± 500' E. of E. Property Line of Western Boone High School.
Sta. 40+77.37 "A", 38.74' Rt. Elev. = 913.710
75.00' MGS W-BEAM GUARDRAIL REQ'D., RT.
GUARDRAIL END TREATMENT TYPE OS REQ'D., RT.
HMA FOR STRUCTURE INSTALLATION, TYPE "B"
PROPOSED PROFILE GRADE
EXISTING GROUND ALONG LINE "A"
STR. NO. 310
STR. NO. 311
STR. NO. 121
GRADE OF SPL. 4' BOTTOM DITCH, RT.
230 SYS SODDING REQUIRED
345 SYS SODDING REQUIRED
+2.27%
-0.24%
+0.30%
+0.68%
+0.30%
-0.27%
-0.42%
+0.15%
+0.40%
+1.32%
+1.76%
+2.18%
+1.81%
+ 00.0 907.87
+ 00.0 910.50
+ 00.0 912.00
+ 44.6 910.98
+ 00.0 912.00
+ 00.0 915.61
+ 00.0 917.80
156 NORTH 283650.9464 EAST 756396.2198
35+24.20 "A", 33.65' Lt.
155 NORTH 283643.0930 EAST 757046.6999
41+74.77 "A", 34.27' Lt.
154 NORTH 283635.6968 EAST 757539.0808
46+67.26 "A", 32.87' Lt.
LEGEND
Ⓓ HMA for Approaches
Ⓚ Full Depth Pavement (See Typical Sections)
Ⓡ Structural Overlay (See Typical Sections)
Ⓡ1 HMA Overlay (See Typical Sections)
HMA for Structure Installation, Type B
Approach Milling and HMA Overlay
RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE
DESIGNED: ROP
DRAWN: KRU
CHECKED: RDS
CHECKED: RDS
INDIANA DEPARTMENT OF TRANSPORTATION
PLAN AND PROFILE
STA. 32+00.00 TO 47+00.00 LINE "A"
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'
SURVEY BOOK
BRIDGE FILE
DESIGNATION 1800060
SHEET 40 of 172
CONTRACT R-42253
PROJECT 1800060
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/28/23 - 1:26 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PLAN PROFILE SHEET_A_50_01.DWG



153 NORTH 283633.0181
EAST 758039.2902

51+67.54 "A", 35.25' Lt.

152 NORTH 283628.7220
EAST 758569.8758

56+98.16 "A", 35.52' Lt.

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU

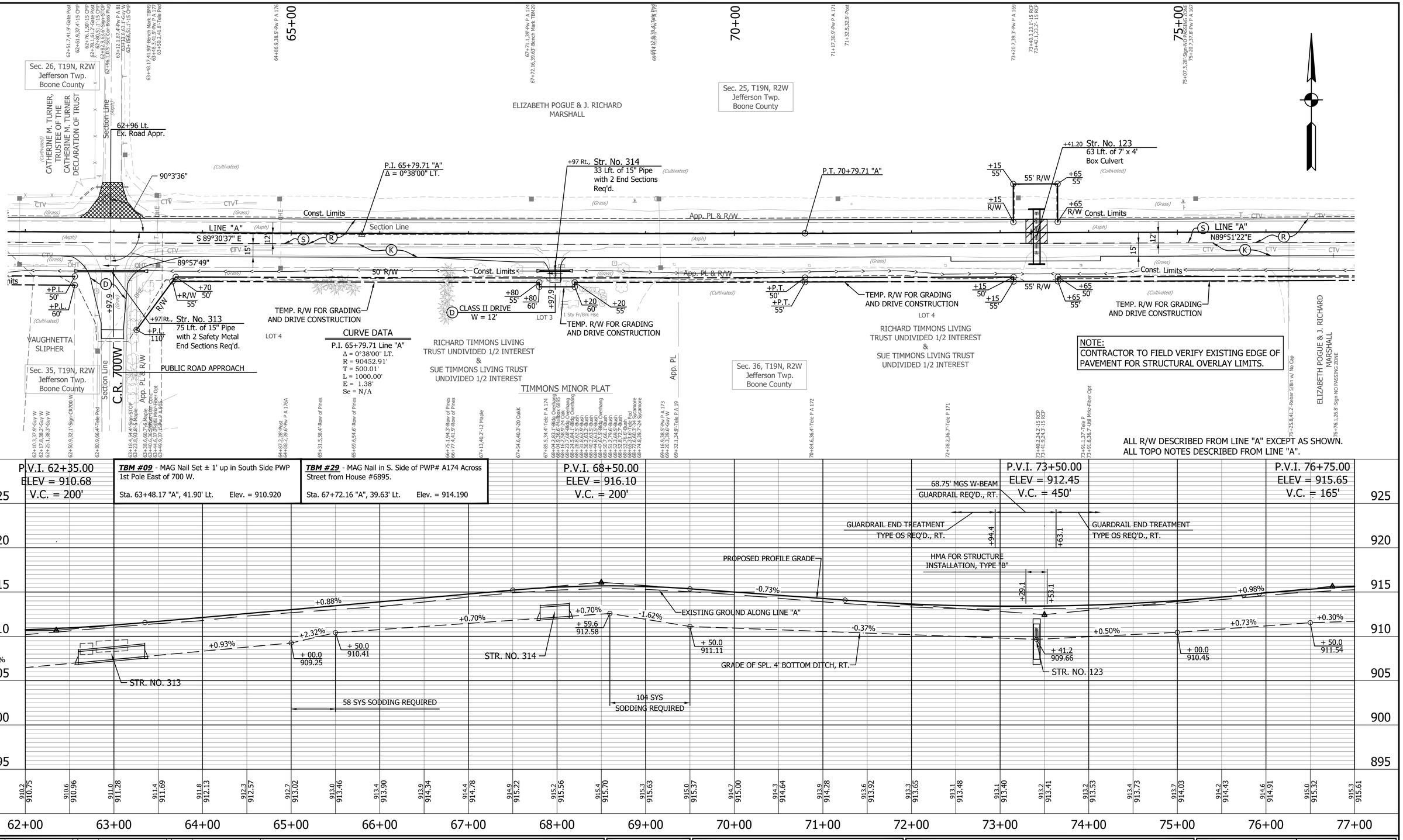
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 47+00.00 TO 62+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	41 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/28/23 - 1:26 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PLAN PROFILE SHEET_A_50_01.DWG



151	NORTH 283549.1467
	EAST 759138.4791

62+67.34 "A", 39.38' Rt.

150	NORTH 283623.7120
	EAST 759759.1121

68+87.74 "A", 37.07' Lt.

149	NORTH 283622.8214
	EAST 760378.0371

75+06.74 "A", 34.83' Lt

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: ROP DRAWN: KRU

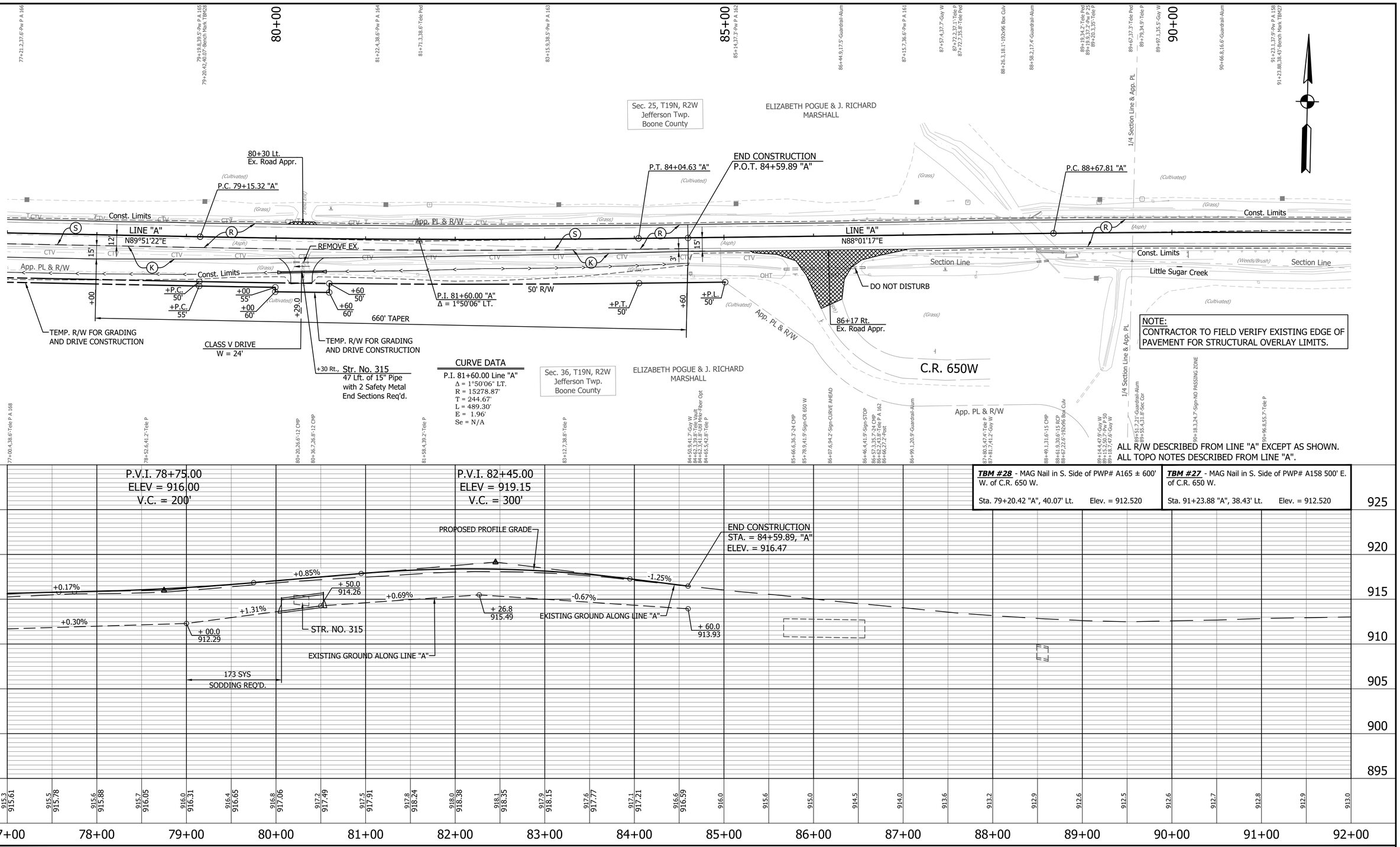
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 62+00.00 TO 77+00.00 LINE "A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	42 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/28/23 - 1:26 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PLAN PROFILE SHEET_A_50_01.DWG



TBM #28 - MAG Nail in S. Side of PWP# A165 ± 600' W. of C.R. 650 W.
Sta. 79+20.42 "A", 40.07' Lt. Elev. = 912.520

TBM #27 - MAG Nail in S. Side of PWP# A158 500' E. of C.R. 650 W.
Sta. 91+23.88 "A", 38.43' Lt. Elev. = 912.520

148	NORTH 283623.9000
	EAST 760931.9653

80+60.99 "A", 33.83' Lt.

147	NORTH 283571.2707
	EAST 761619.0270

87+46.62 "A", 38.64' Rt.

LEGEND

- (D) HMA for Approaches
- (K) Full Depth Pavement (See Typical Sections)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- HMA for Structure Installation, Type B
- Approach Milling and HMA Overlay

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ROP DRAWN: KRU

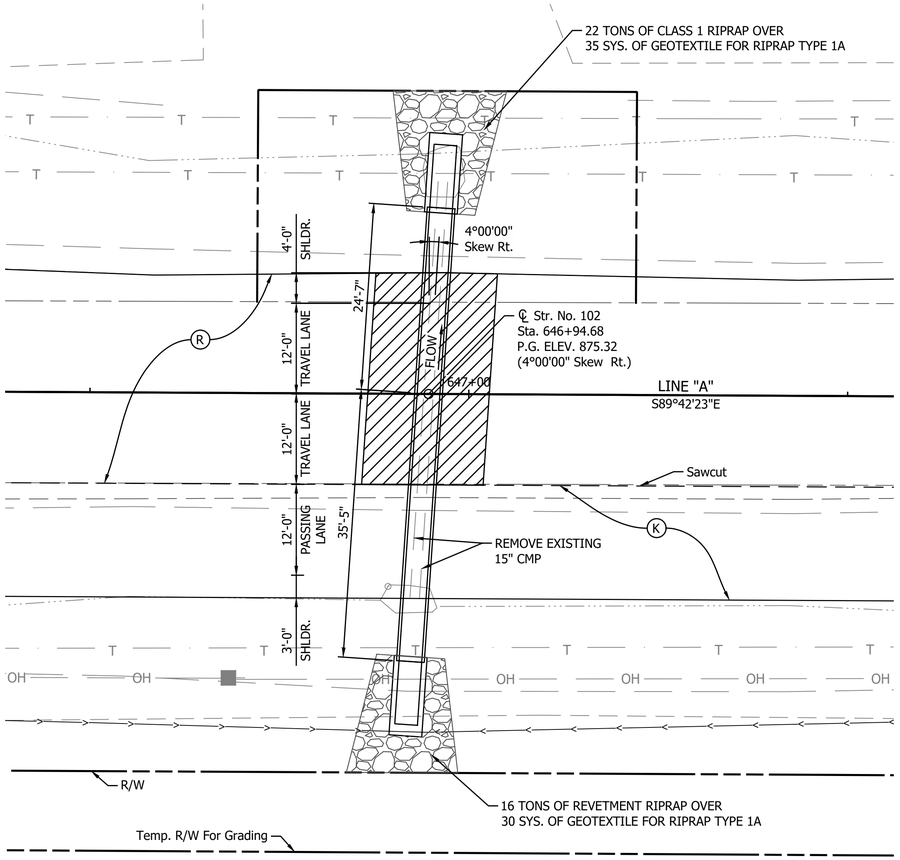
CHECKED: RDS CHECKED: RDS

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
STA. 77+00.00 TO 92+00.00 LINE "A"

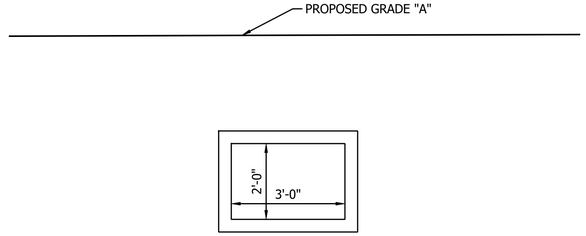
HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1800060
SURVEY BOOK	SHEET
	43 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/28/23 - 1:26 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\06 PLAN PROF\RD_PLAN PROFILE SHEET_A_50_01.DWG



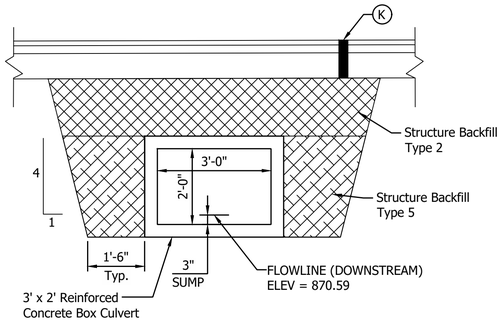
PLAN

SCALE: 1" = 10'



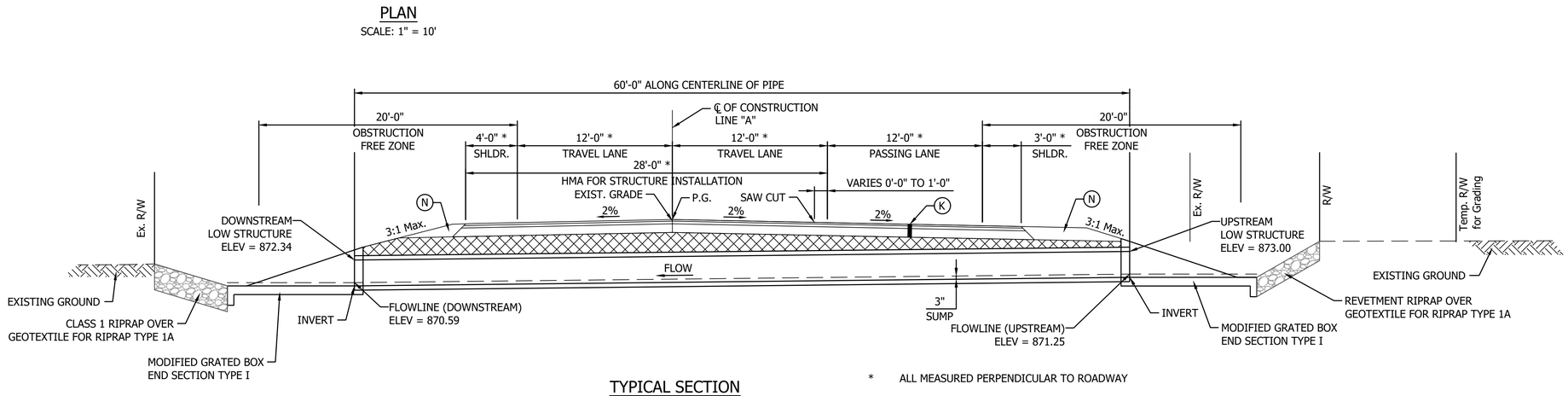
ELEVATION

SCALE: 1" = 2'



STRUCTURE BACKFILL AT CULVERT

SCALE: 1" = 2'



TYPICAL SECTION

SCALE: 1" = 5'

* ALL MEASURED PERPENDICULAR TO ROADWAY

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	15.98	ac.
Q100 Discharge	=	36.02	cfs
Q50 Discharge	=	30.72	cfs
Headwater Elevation @ Q100	=	875.09	ft
Backwater @ Q100	=	2.57	ft
Water Surface Elevation @ Q100	=	871.35	ft
Outlet Velocity @ Q50	=	7.78	ft/s
Natural Channel Velocity @ Q50	=	1.91	ft/s
Existing Q100 Discharge	=	36.02	cfs
Existing Headwater Elevation @ Q100	=	875.50	ft
Existing Backwater @ Q100	=	3.11	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 3'-0"
Rise: 2'-0"
Skew: 04°00'00" (RT)
SR 32 Over UNT To Little Sugar Creek, Boone County, Indiana.
CV 032-006-49.04

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate

HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

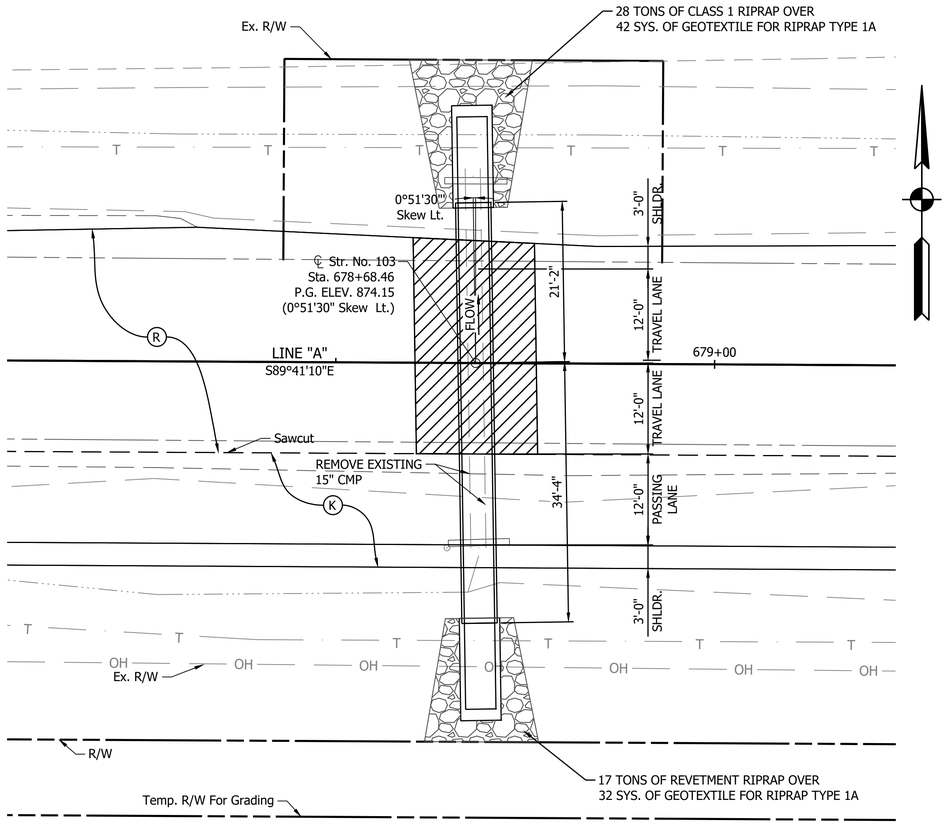
DESIGNED: YZ | DRAWN: MR | CHECKED: RDS | CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

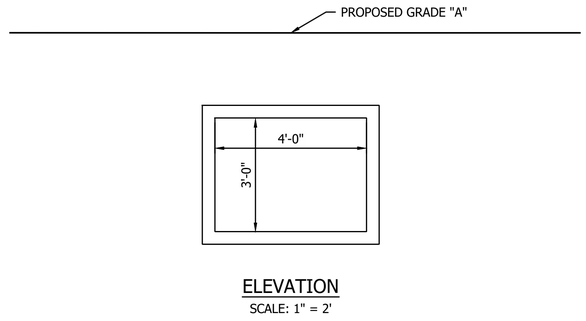
GENERAL PLAN
STRUCTURE 102 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201187
SURVEY BOOK	SHEET
	44 of 172
CONTRACT	PROJECT
R-42253	1800060

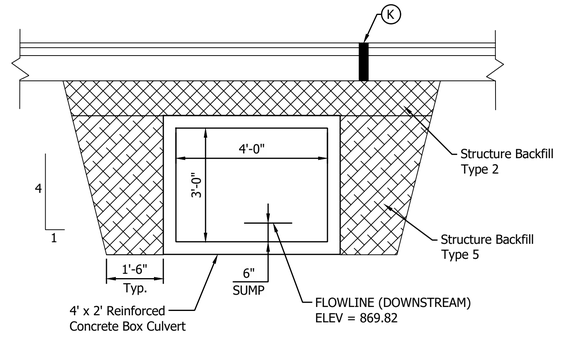
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/15/23 - 4:40 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 102.DWG



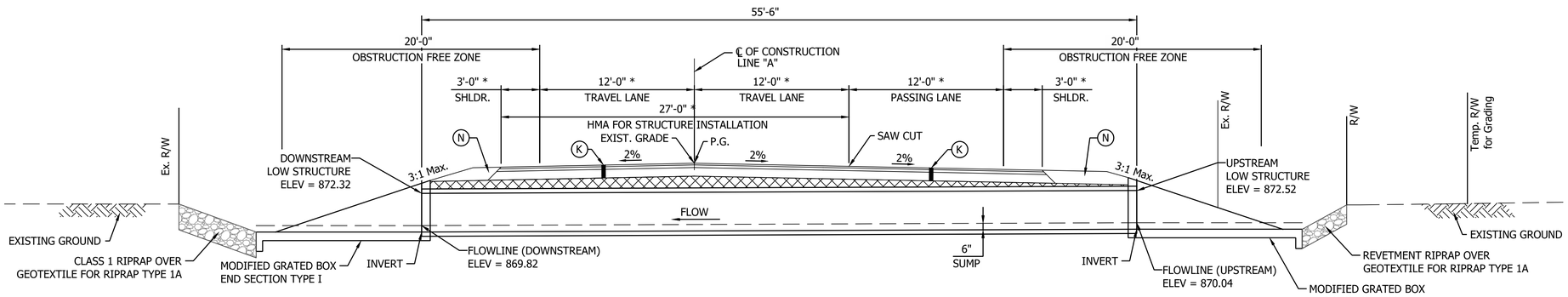
PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 2'



STRUCTURE BACKFILL AT CULVERT
SCALE: 1" = 2'



TYPICAL SECTION
SCALE: 1" = 5'

* ALL MEASURED PERPENDICULAR TO ROADWAY

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	32.61	ac.
Q100 Discharge	=	60.92	cfs
Q50 Discharge	=	51.30	cfs
Headwater Elevation @ Q100	=	873.57	ft
Backwater @ Q100	=	3.00	ft
Water Surface Elevation @ Q100	=	870.35	ft
Outlet Velocity @ Q50	=	7.45	ft/s
Natural Channel Velocity @ Q50	=	1.66	ft/s
Existing Q100 Discharge	=	60.92	cfs
Existing Headwater Elevation @ Q100	=	874.36	ft
Existing Backwater @ Q100	=	3.83	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 4'-0"
Rise: 2'-0"
Skew: 00°51'30" (Rt)
SR 32 Over UNT To Little Sugar Creek, Boone County, Indiana.
CV 032-006-49.65

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate
- HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: YZ DRAWN: MR

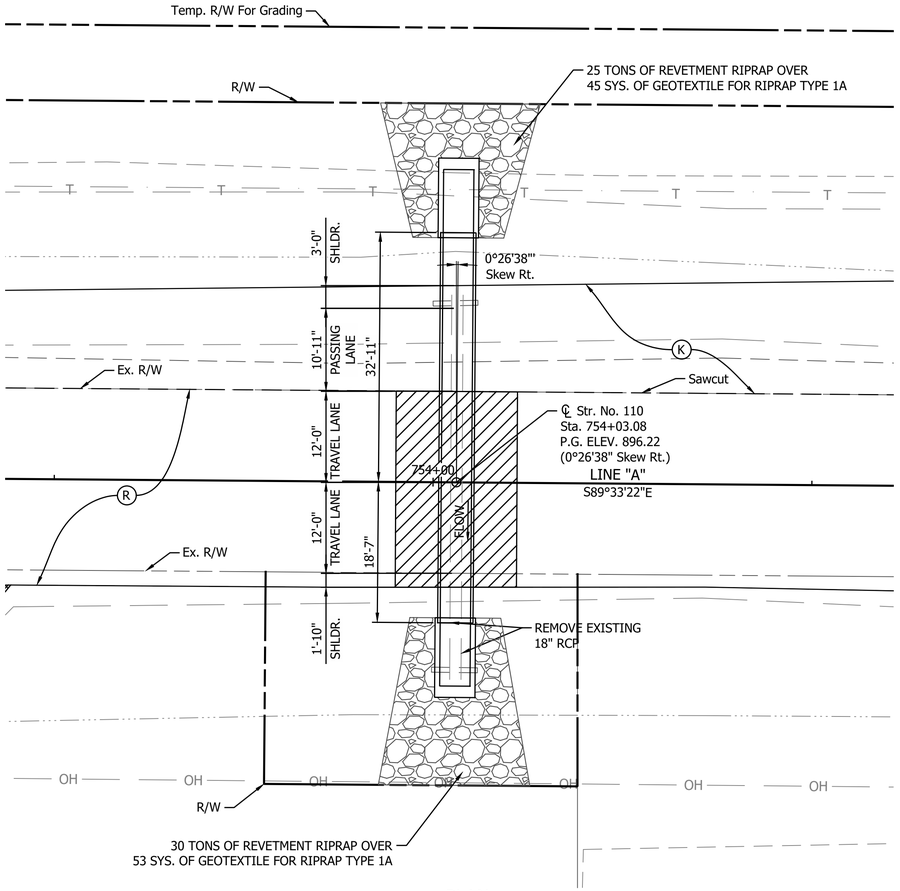
CHECKED: RDS CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

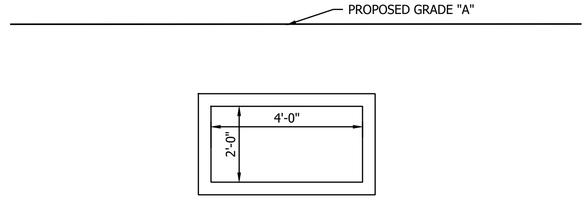
GENERAL PLAN
STRUCTURE 103 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201188
SURVEY BOOK	SHEET
	45 of 172
CONTRACT	PROJECT
R-42253	1800060

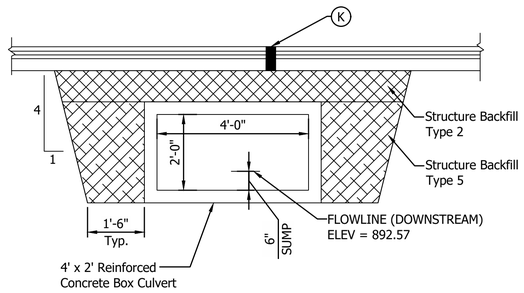
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/15/23 - 3:04 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 103.DWG



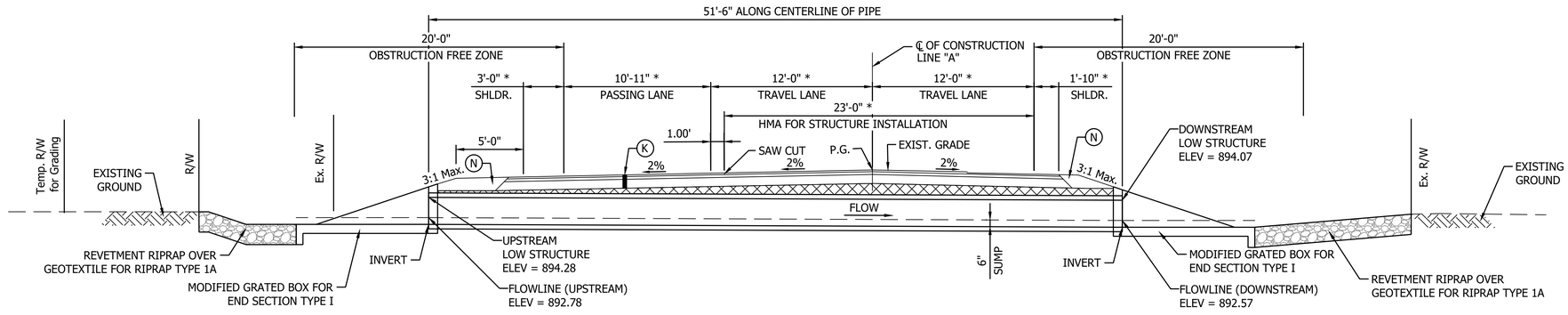
PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 2'



STRUCTURE BACKFILL AT CULVERT
SCALE: 1" = 2'



* ALL MEASURED PERPENDICULAR TO ROADWAY

TYPICAL SECTION
SCALE: 1" = 5'

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	16.33	ac.
Q100 Discharge	=	34.82	cfs
Q50 Discharge	=	29.57	cfs
Headwater Elevation @ Q100	=	895.67	ft
Backwater @ Q100	=	2.42	ft
Water Surface Elevation @ Q100	=	893.00	ft
Outlet Velocity @ Q50	=	6.49	ft/s
Natural Channel Velocity @ Q50	=	1.40	ft/s
Existing Q100 Discharge	=	34.82	cfs
Existing Headwater Elevation @ Q100	=	896.34	ft
Existing Backwater @ Q100	=	3.13	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 4'-0"
Rise: 2'-0"
Skew: 0°26'38" (RT)
SR 32 Over UNT To Little Sugar Creek, Boone County, Indiana.
CV 032-006-51.06,

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate

HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MR

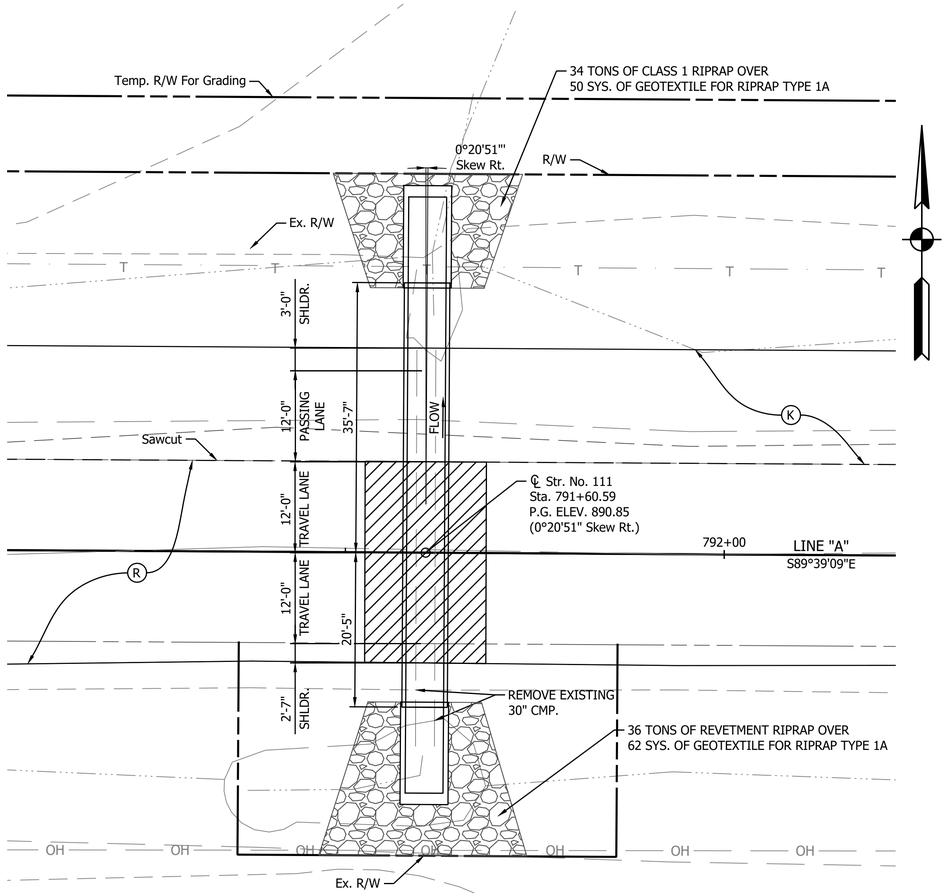
CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE 110 BOX CULVERT

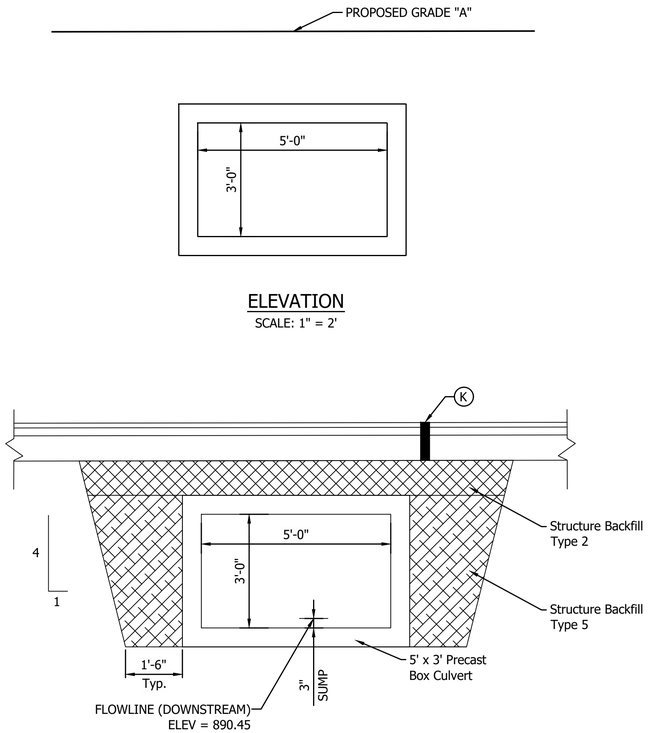
HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201189
SURVEY BOOK	SHEET
	46 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/15/23 - 3:24 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 110.DWG



PLAN

SCALE: 1" = 10'

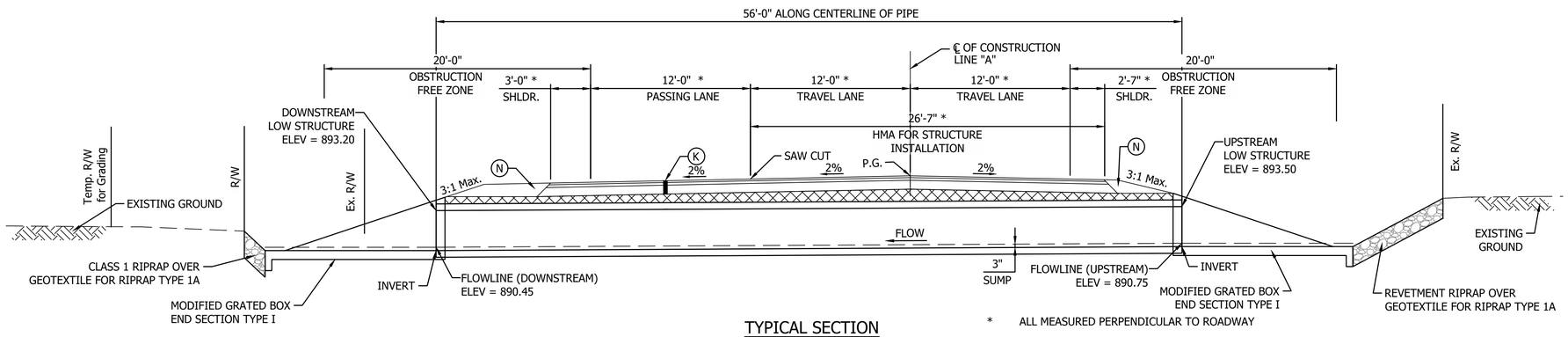


ELEVATION

SCALE: 1" = 2'

STRUCTURE BACKFILL AT CULVERT

SCALE: 1" = 2'



TYPICAL SECTION

SCALE: 1" = 5'

* ALL MEASURED PERPENDICULAR TO ROADWAY

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	70.27 ac.
Q100 Discharge	=	105.37 cfs
Q50 Discharge	=	87.73 cfs
Headwater Elevation @ Q100	=	895.45 ft
Backwater @ Q100	=	2.12 ft
Water Surface Elevation @ Q100	=	892.53 ft
Outlet Velocity @ Q50	=	9.00 ft/s
Natural Channel Velocity @ Q50	=	1.67 ft/s
Existing Q100 Discharge	=	105.37 cfs
Existing Headwater Elevation @ Q100	=	895.98 ft
Existing Backwater @ Q100	=	2.65 ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 5'-0"
Rise: 3'-0"
Skew: 0°20'51" (Rt)
SR 32 Over UNIT To Sugar Creek, Boone County, Indiana.
CV 032-006-51.79

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate

HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: YZ | DRAWN: MR

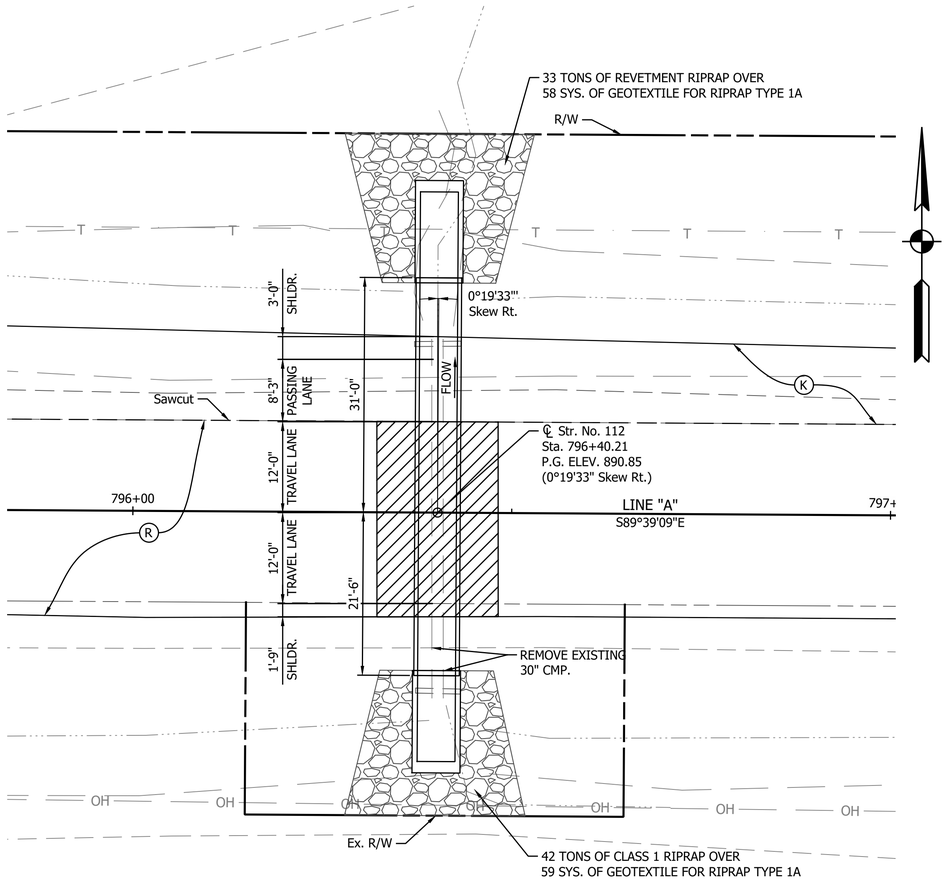
CHECKED: RDS | CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE 111 BOX CULVERT

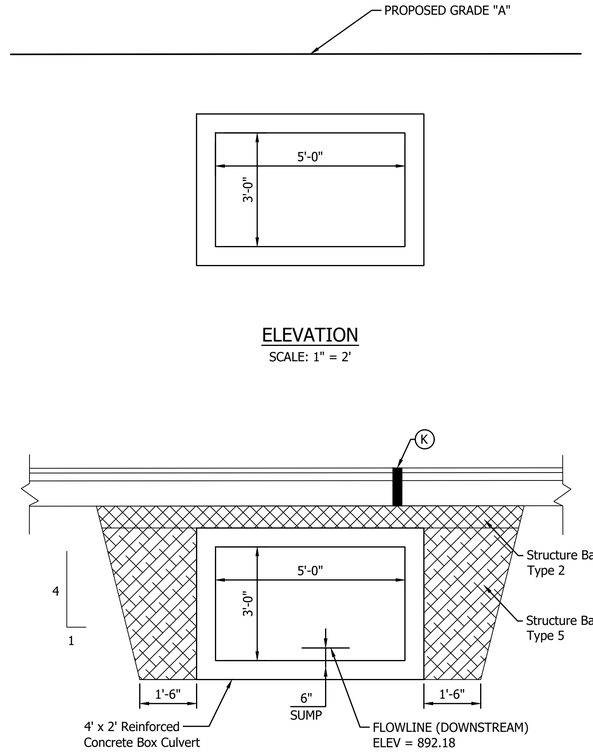
HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201190
SURVEY BOOK	SHEET
	47 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/15/23 - 3:23 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 111.DWG



PLAN

SCALE: 1" = 10'

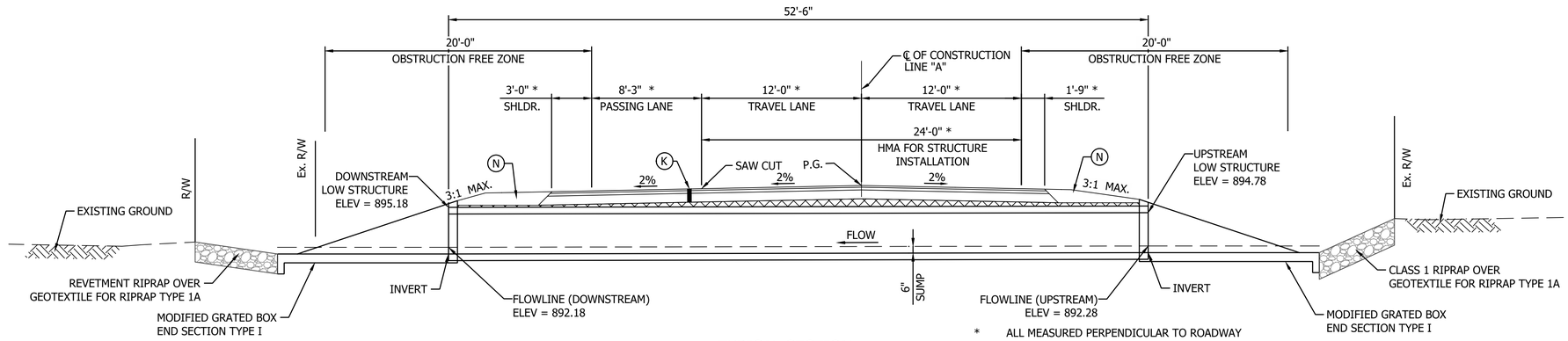


ELEVATION

SCALE: 1" = 2'

STRUCTURE BACKFILL AT CULVERT

SCALE: 1" = 2'



* ALL MEASURED PERPENDICULAR TO ROADWAY

TYPICAL SECTION

SCALE: 1" = 5'

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	41.43	ac.
Q100 Discharge	=	53.06	cfs
Q50 Discharge	=	44.15	cfs
Headwater Elevation @ Q100	=	895.45	ft
Backwater @ Q100	=	0.83	ft
Water Surface Elevation @ Q100	=	893.46	ft
Outlet Velocity @ Q50	=	6.89	ft/s
Natural Channel Velocity @ Q50	=	1.67	ft/s
Existing Q100 Discharge	=	53.06	cfs
Existing Headwater Elevation @ Q100	=	895.98	ft
Existing Backwater @ Q100	=	1.36	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 5'-0"
Rise: 3'-0"
Skew: 0°19'33" (Rt)
SR 32 Over UNIT To Sugar Creek, Boone County, Indiana.
CV 032-006-51.88

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate

HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MR

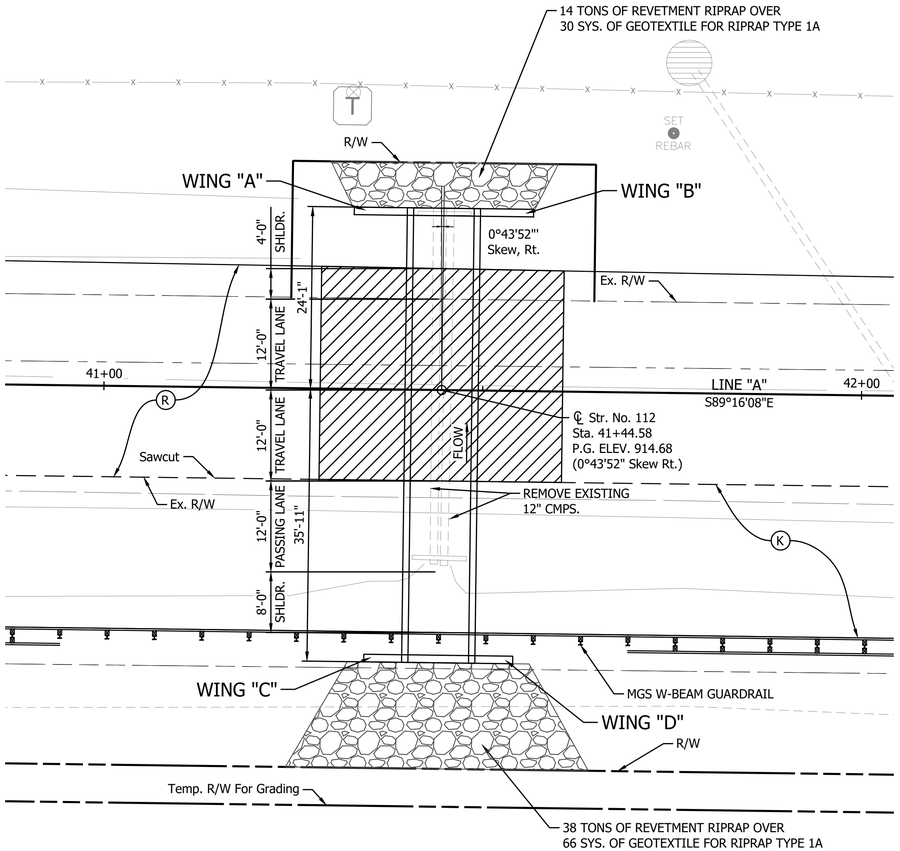
CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

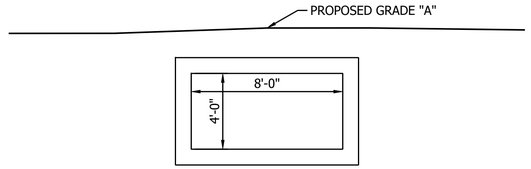
GENERAL PLAN
STRUCTURE 112 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201191
SURVEY BOOK	SHEET
	48 of 172
CONTRACT	PROJECT
R-42253	1800060

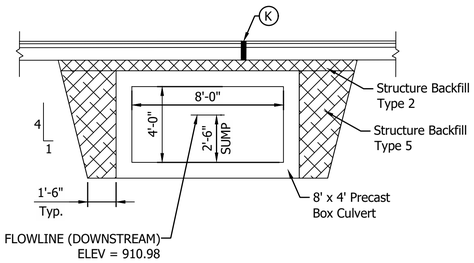
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/15/23 - 3:23 PM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 112.DWG



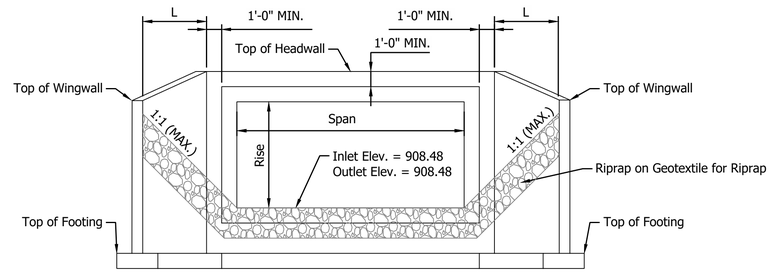
PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1/4" = 1'



STRUCTURE BACKFILL AT CULVERT
SCALE: 1/4" = 1'

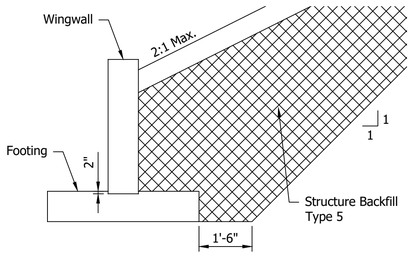


TYPICAL WINGWALL ELEVATION DETAIL
NOT TO SCALE

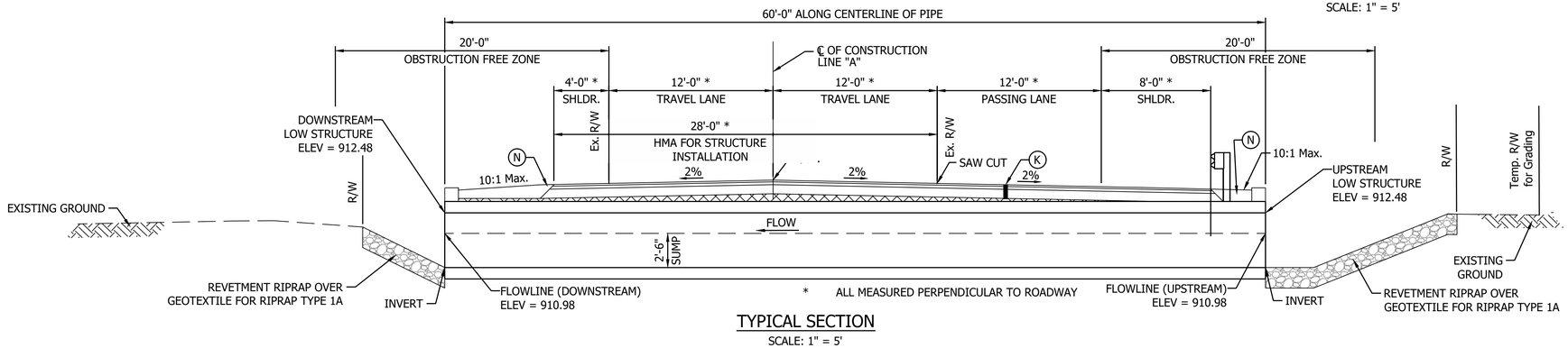
WINGWALL TABLE			
Wing	"L"	Top of Wall Elevation	Area of Wingwall
A	7 FT	XXX.XX	XXX.X FT^2
B	7 FT	XXX.XX	XXX.X FT^2
C	5 FT	XXX.XX	XXX.X FT^2
D	5 FT	XXX.XX	XXX.X FT^2
		TOTAL WING AREA ***	XXX.X FT^2

*** ASSUMES DOWNSTREAM BOTTOM WING AT ELEV. XXX.XX (X" BELOW TOP OF FOOTING)
ASSUMES UPSTREAM BOTTOM WING AT ELEV. XXX.XX (X" BELOW TOP OF FOOTING)
ESTIMATED QUANTITY OF HEADWALLS = XX FT^2

NOTE TO REVIEWER:
WINGWALLS AND HEADWALLS WILL BE DESIGNED PRIOR TO THE STAGE 3 SUBMITTAL.



TYPICAL EXCAVATION STRUCTURE BACKFILL LIMIT AT WINGWALLS
SCALE: 1" = 5'



TYPICAL SECTION
SCALE: 1" = 5'

SOIL PARAMETERS FOR WINGWALL DESIGN	
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Factored Bearing Resistance (psf)
0.XX	Resistance Factor (φ)
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Nominal Bearing Resistance (psf)
XX	Friction Angle between Wingwall and Structure Backfill (Type II) (δ)
0.X	Friction Factor between Footing and Foundation Soil
XX	Cohesion of Foundation Soil (psf)
XX	Adhesion of Foundation Soil (psf)
XX	Internal Friction Angle of Foundation Soil (Øb)
XXX	Estimated Unit Weight of Structure Backfill, moist/saturated (pcf)

*Varies depending on width of foundation (B). Interpolation between provided values is permitted

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	39.84	ac.
Q100 Discharge	=	69.12	cfs
Q50 Discharge	=	57.85	cfs
Headwater Elevation @ Q100	=	914.22	ft
Backwater @ Q100	=	2.66	ft
Water Surface Elevation @ Q100	=	911.56	ft
Outlet Velocity @ Q50	=	6.34	ft/s
Natural Channel Velocity @ Q50	=	1.39	ft/s
Existing Q100 Discharge	=	69.12	cfs
Existing Headwater Elevation @ Q100	=	914.60	ft
Existing Backwater @ Q100	=	3.04	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 8'-0"
Rise: 4'-0"
Skew: 0°43'52" (Rt)
SR 32 Over UNT To Sugar Creek, Boone County, Indiana.
CV 032-006-53.02

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate

HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

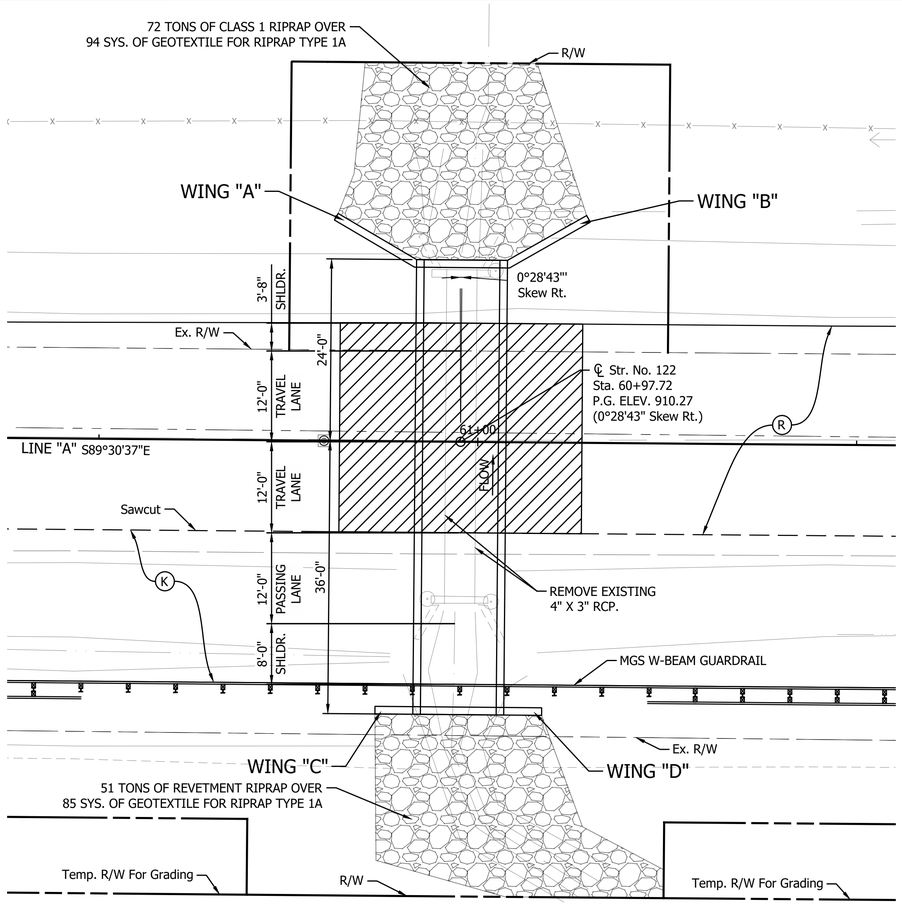
DESIGNED: YZ | DRAWN: MR
CHECKED: RDS | CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

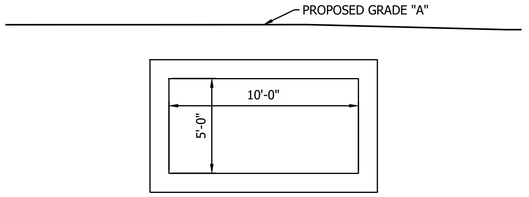
GENERAL PLAN
STRUCTURE 121 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201192
SURVEY BOOK	SHEET
	49 of 172
CONTRACT	PROJECT
R-42253	1800060

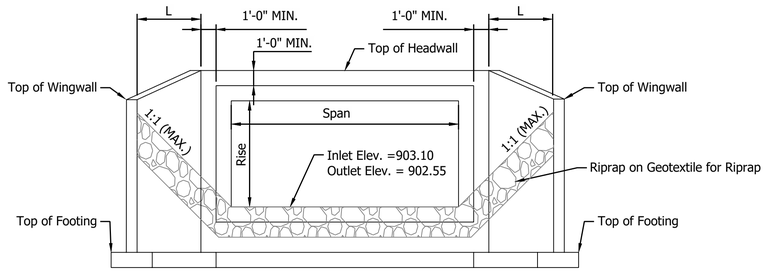
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/27/23 - 11:37 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 121.DWG



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1/4" = 1'

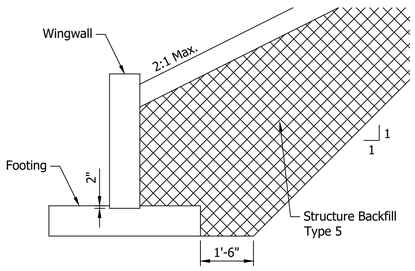


TYPICAL WINGWALL ELEVATION DETAIL
NOT TO SCALE

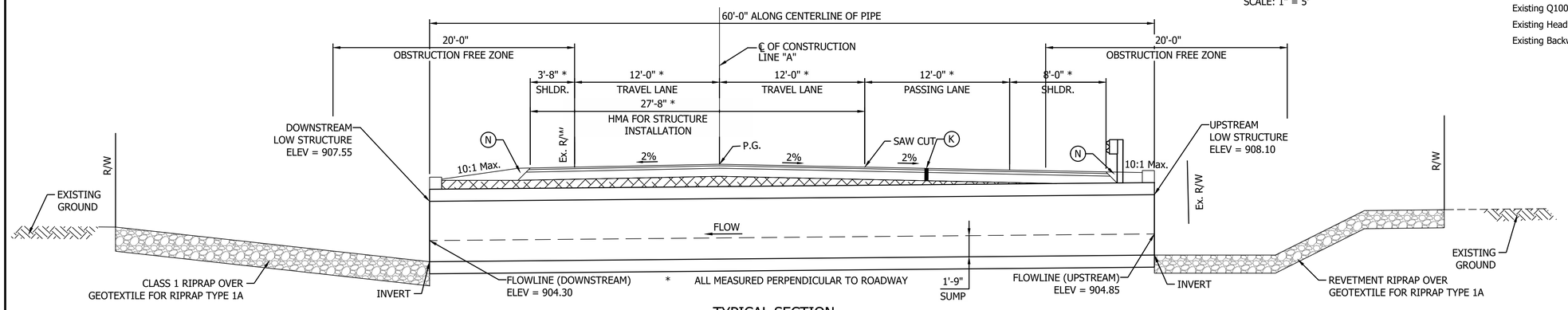
WINGWALL TABLE			
Wing	"L"	Top of Wall Elevation	Area of Wingwall
A	12 FT	XXX.XX	XXX.X FT^2
B	12 FT	XXX.XX	XXX.X FT^2
C	5 FT	XXX.XX	XXX.X FT^2
D	5 FT	XXX.XX	XXX.X FT^2
		TOTAL WING AREA ***	XXX.X FT^2

*** ASSUMES DOWNSTREAM BOTTOM WING AT ELEV. XXX.XX
(X" BELOW TOP OF FOOTING)
ASSUMES UPSTREAM BOTTOM WING AT ELEV. XXX.XX
(X" BELOW TOP OF FOOTING)
ESTIMATED QUANTITY OF HEADWALLS = XX FT^2

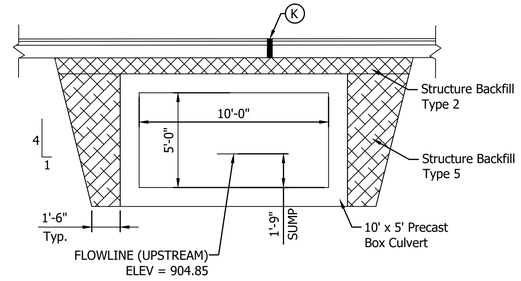
NOTE TO REVIEWER:
WINGWALLS AND HEADWALLS
WILL BE DESIGNED PRIOR TO
THE STAGE 3 SUBMITTAL.



TYPICAL EXCAVATION STRUCTURE BACKFILL LIMIT AT WINGWALLS
SCALE: 1" = 5'



TYPICAL SECTION
SCALE: 1" = 5'



STRUCTURE BACKFILL AT CULVERT
SCALE: 1/4" = 1'

SOIL PARAMETERS FOR WINGWALL DESIGN	
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Factored Bearing Resistance (psf)
0.XX	Resistance Factor (φ)
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Nominal Bearing Resistance (psf)
XX	Friction Angle between Wingwall and Structure Backfill (Type II) (δ)
0.X	Friction Factor between Footing and Foundation Soil
XX	Cohesion of Foundation Soil (psf)
XX	Adhesion of Foundation Soil (psf)
XX	Internal Friction Angle of Foundation Soil (Øb)
XXX	Estimated Unit Weight of Structure Backfill, moist/saturated (pcf)

*Varies depending on width of foundation (B). Interpolation between provided values is permitted

DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	285.13	ac.
Q100 Discharge	=	269.13	cfs
Q50 Discharge	=	225.76	cfs
Headwater Elevation @ Q100	=	909.79	ft
Backwater @ Q100	=	3.00	ft
Water Surface Elevation @ Q100	=	906.24	ft
Outlet Velocity @ Q50	=	9.13	ft/s
Natural Channel Velocity @ Q50	=	1.71	ft/s
Existing Q100 Discharge	=	269.13	cfs
Existing Headwater Elevation @ Q100	=	910.32	ft
Existing Backwater @ Q100	=	3.64	ft

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 10'-0"
Rise: 5'-0"
Skew: 0°28'43" (Rt)
SR 32 Over UNT To Little Sugar Creek, Boone County, Indiana.
CV 032-006-53.38

LEGEND

- (K) Full Depth Pavement (see typical section)
- (R) Structural Overlay (See Typical Sections)
- (R1) HMA Overlay (See Typical Sections)
- (N) Compacted Aggregate
- HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

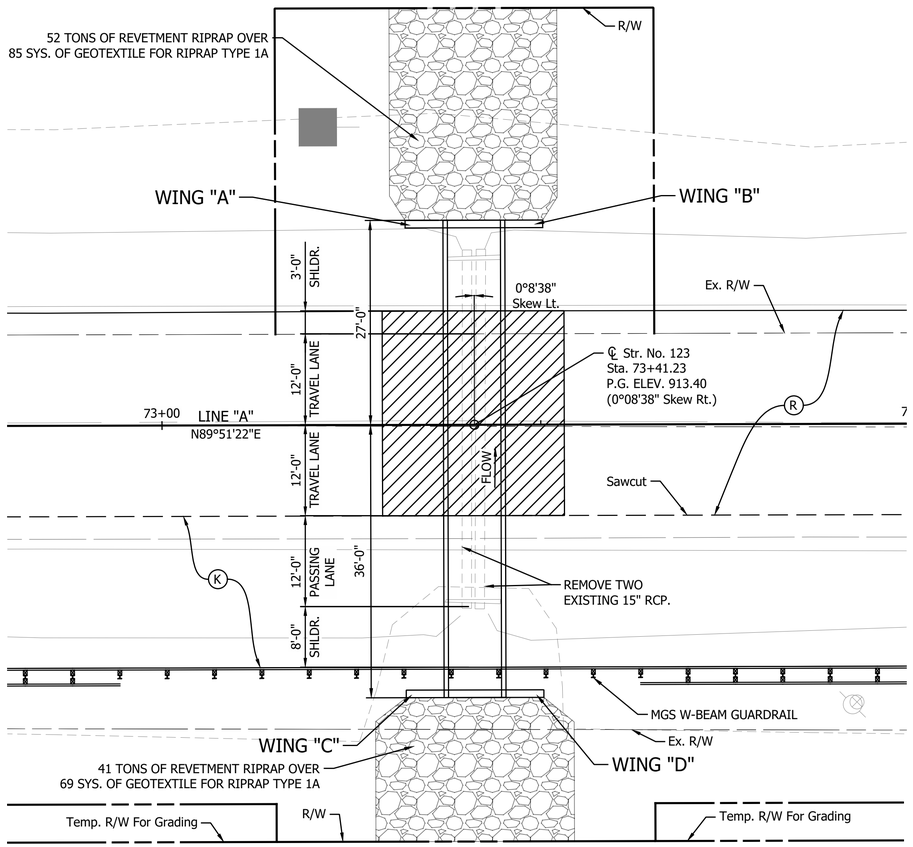
DESIGNED: YZ | DRAWN: MR | CHECKED: RDS | CHECKED: YZ

INDIANA
DEPARTMENT OF TRANSPORTATION

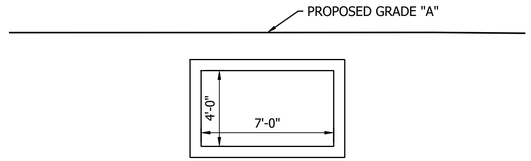
GENERAL PLAN
STRUCTURE 122 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201193
SURVEY BOOK	SHEET
	50 of 172
CONTRACT	PROJECT
R-42253	1800060

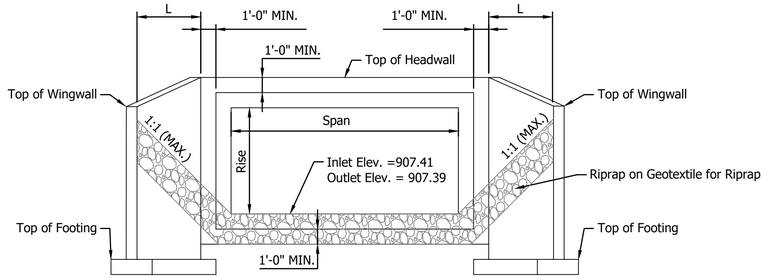
PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/27/23 - 11:35 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\ND-GP-CULVERTS 122.DWG



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1/4" = 1'

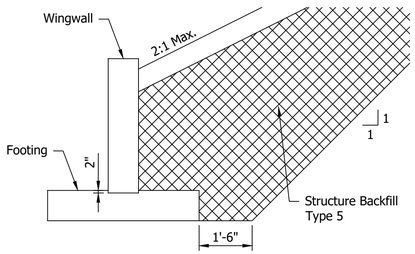


TYPICAL WINGWALL ELEVATION DETAIL
NOT TO SCALE

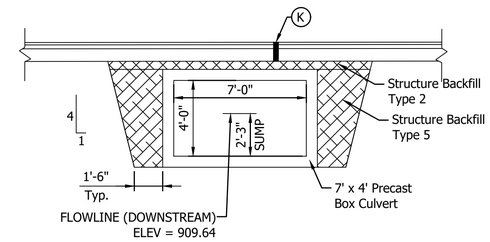
WINGWALL TABLE			
Wing	"L"	Top of Wall Elevation	Area of Wingwall
A	5 FT	XXX.XX	XXX.X FT^2
B	5 FT	XXX.XX	XXX.X FT^2
C	5 FT	XXX.XX	XXX.X FT^2
D	5 FT	XXX.XX	XXX.X FT^2
		TOTAL WING AREA ***	XXX.X FT^2

*** ASSUMES DOWNSTREAM BOTTOM WING AT ELEV. XXX.XX
(X" BELOW TOP OF FOOTING)
ASSUMES UPSTREAM BOTTOM WING AT ELEV. XXX.XX
(X" BELOW TOP OF FOOTING)
ESTIMATED QUANTITY OF HEADWALLS = XX FT^2

NOTE TO REVIEWER:
WINGWALLS AND HEADWALLS
WILL BE DESIGNED PRIOR TO
THE STAGE 3 SUBMITTAL.



TYPICAL EXCAVATION STRUCTURE BACKFILL LIMIT AT WINGWALLS
SCALE: 1" = 5'



STRUCTURE BACKFILL AT CULVERT
SCALE: 1/4" = 1'

SOIL PARAMETERS FOR WINGWALL DESIGN	
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Factored Bearing Resistance (psf)
0.XX	Resistance Factor (φ)
X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft) X,XXX (B = X ft)	Nominal Bearing Resistance (psf)
XX	Friction Angle between Wingwall and Structure Backfill (Type II) (δ)
0.X	Friction Factor between Footing and Foundation Soil
XX	Cohesion of Foundation Soil (psf)
XX	Adhesion of Foundation Soil (psf)
XX	Internal Friction Angle of Foundation Soil (Øb)
XXX	Estimated Unit Weight of Structure Backfill, moist/saturated (pcf)

*Varies depending on width of foundation (B). Interpolation between provided values is permitted

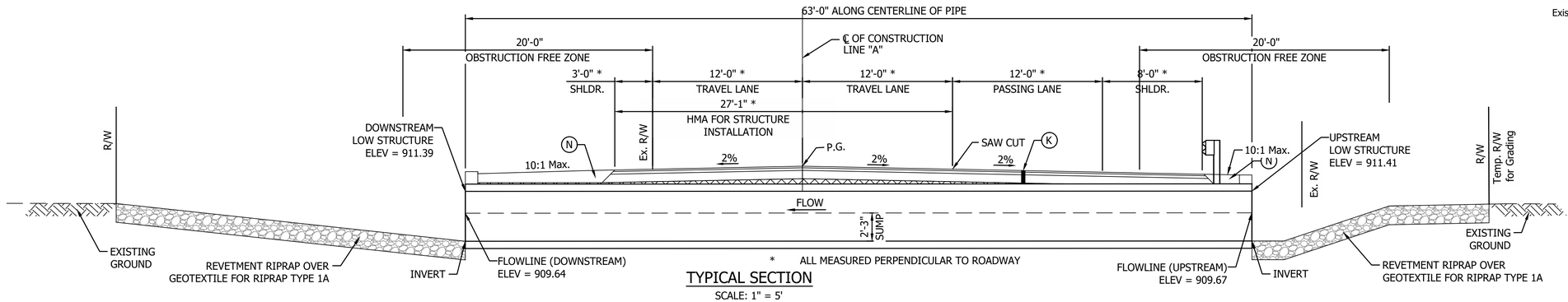
DESIGN DATA

Structure shall be designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, Ninth Edition, 2020 and subsequent interim.

Dead Load increased 35 PSF for Fure Wearing Surface

HYDRAULIC DATA

Drainage Area	=	26.28	ac.
Q100 Discharge	=	61.51	cfs
Q50 Discharge	=	50.28	cfs
Headwater Elevation @ Q100	=	912.48	ft
Backwater @ Q100	=	2.24	ft
Water Surface Elevation @ Q100	=	910.22	ft
Outlet Velocity @ Q50	=	6.19	ft/s
Natural Channel Velocity @ Q50	=	0.79	ft/s
Existing Q100 Discharge	=	61.51	cfs
Existing Headwater Elevation @ Q100	=	913.34	ft
Existing Backwater @ Q100	=	3.13	ft



* ALL MEASURED PERPENDICULAR TO ROADWAY

TYPICAL SECTION
SCALE: 1" = 5'

NOTES:

Contractor Shall Verify Existing Flowline Elevation to set the Appropriate Sump Depth.

Reinforcement in the Box Culvert Shall be Epoxy Coated.

Contractor Shall Provide a XXft Undercut (XXX Cys) and Replace the Soil with XX in of Compacted Aggregate, No. 53 (XXX Tons) on top of XX in of Compacted Aggregate, No. 5 (XXX Cys) on top of Geotextiles, Type 2B (XXX Sys)

REINFORCED CONCRETE BOX STRUCTURE

Span: 7'-0"
Rise: 4'-0"
Skew: 0°8'38" (Lt)
SR 32 Over UNT To Sugar Creek, Boone County, Indiana.
CV 032-006-53.63

(K) Full Depth Pavement (see typical section)
(R) Structural Overlay (See Typical Sections)
(R1) HMA Overlay (See Typical Sections)
(N) Compacted Aggregate

LEGEND
HMA for Structure Installation, Type B

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: YZ DRAWN: MR
CHECKED: RDS CHECKED: YZ

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE 123 BOX CULVERT

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
AS NOTED	2201194
SURVEY BOOK	SHEET
	51 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 3/31/23
PLOT SCALE: 1:1 EDIT DATE: 3/27/23 - 11:31 AM EDITED BY: MMURRAY DRAWING FILE: P:\20-500-165-1 SR 32 PASSING LANES\5 ACAD\103 GENERAL PLAN\RD-GP-CULVERTS 123.DWG

STRUCTURE DATA

STRUCTURE NUMBER	LOCATION					SIZE	DESCRIPTION		LENGTH	VIDEO INSPECTION LENGTH	SKEW	COVER		INVERT		TOP OF CASTING	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE 5	STRUCTURE BACKFILL TYPE 2	UNDERCUT				GEOTEXTILE FOR RIPRAP TYPE 1A	REVETMENT RIPRAP	CLASS 1 RIPRAP	SCOUR PROTECTION				PRESENT STRUCTURE, REMOVE	END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	CULVERT ASSET ID	REMARKS (* FIELD VERIFY INVERT)
	STATION	LEFT	RIGHT	CROSS	OFFSET	SIZE	PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE (*WATER QUALITY REQ'D)	LENGTH	VIDEO INSPECTION LENGTH	SKEW	COVER MIN	COVER MAX	UP STREAM	DOWN STREAM	TOP OF CASTING	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE 5	STRUCTURE BACKFILL TYPE 2	EXCAVATION	COMPACTED AGGREGATE #5 ? IN.	COMPACTED AGGREGATE #53 ? IN.		GEOTEXTILE FOR RIPRAP TYPE 1A	REVETMENT RIPRAP	CLASS 1 RIPRAP	SUMP DEPTH	GEOTEXTILE FOR RIPRAP TYPE 1A	RIPRAP		PRESENT STRUCTURE, REMOVE	END SECTION	TYPE	SLOPE	EA.	TYPE	SLOPE	EA.			
					FT	IN.			LFT	LFT		FT	FT	ELEV.	ELEV.	ELEV.	YRS				CYS	CYS	CYS	CYS	CYS	SYS	CYS	TON	TON	IN.	SYS.	TYPE	TONS	LFT	EACH									
	LINE "A"																																											
101	638+67.3			X		36	1	Pipe Culvert	57		0° 00' 00"	0.1	0.6	871.80	871.80		75	Non-AB	7	1		28.6					25.0	12.0		18.0									4:1	2		CLV-9033	
102	646+94.7			X		36 x 24	1	Concrete Box*	60		4° 00' 00"	0.0	0.4	870.50	869.84		75	AB	7	1	22.8	1.5					35.0		22.0	3.0	30.0	Rev.	16.0			1*	3:1	2					CV 032-006-49.04	DES. 2201187
103	678+68.5			X		48 x 36	1	Concrete Box*	56		0° 51' 30"	0.0	0.4	870.04	869.82		75	AB	7	1	22.5	2.1					42.0		28.0	6.0	32.0	Rev.	17.0			1*	3:1	2					CV 032-006-49.65	DES. 2201188
104	681+00.0			X		36	1	Pipe Culvert	65		0° 00' 00"	0.1	0.9	870.00	869.25		75	Non-AB	7	1		35.0					25.0	12.0									4:1	2		CLV-9011	
110	754+03.1			X		48 x 24	1	Concrete Box*	52		0° 26' 38"	0.0	0.0	891.28	891.07		75	AB	7	1	22.1	0.2					53.0	30.0		6.0	45.0	Rev.	25.0			1*	3:1	2					CV 032-006-51.06	DES. 2201189
111	791+60.6			X		60 x 36	1	Concrete Box*	56		0° 20' 51"	0.0	0.1	889.50	889.20		75	AB	7	1	38.5	0.5					50.0		34.0	3.0	62.0	Rev.	36.0			1*	3:1	2					CV 032-006-51.79	DES. 2201190
112	796+40.2			X		60 x 36	1	Concrete Box*	53		0° 19' 33"	0.0	0.0	890.78	890.68		75	AB	7	1	34.4						58.0	33.0		6.0	59.0	Rev.	42.0			1*	3:1	2					CV 032-006-51.88	DES. 2201191
120	28+19.3			X		36	1	Pipe Culvert	49		0° 00' 00"	0.4	0.7	903.57	903.52		75	Non-AB	7	1		27.9					25.0	12.0		19.0						1	3:1	1					CLV-8739	
121	41+44.6			X		96 x 48	1	Concrete Box*	60		0° 43' 52"	0.0	0.0	908.48	908.48		75	AB	7	1	54.7						30.0	14.0		30.0	66.0	Rev.	38.0									CV 032-006-53.02	DES. 2201192
122	60+97.7			X		120 x 60	1	Concrete Box*	60		0° 28' 43"	0.0	0.0	903.10	902.55		75	AB	7	1	69.0						94.0		72.0	21.0	85.0	Rev.	51.0	45.0								CV 032-006-53.38	DES. 2201193
123	73+41.2			X		84 x 48	1	Concrete Box*	63		4° 00' 00"	0.0	0.0	907.41	907.39		75	AB	7	1	48.5						69.0	41.0		27.0	85.0	Rev.	52.0									CV 032-006-53.63	DES. 2201194

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA
DEPARTMENT OF TRANSPORTATION

SHT TABLE-STRUCTURE DATA - 1

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	55 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 3/10/23 - 12:37 PM EDITED BY: MMURRAY DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\09 TABLES\SHT TABLE-STRUCTURE DATA.DWG

STRUCTURE DATA

STRUCTURE NUMBER	LOCATION					SIZE	DESCRIPTION		LENGTH	VIDEO INSPECTION LENGTH	SKEW	COVER		INVERT		TOP OF CASTING	SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL TYPE 5	STRUCTURE BACKFILL TYPE 2	UNDERCUT				GEOTEXTILE FOR RIPRAP TYPE 1A	REVETMENT RIPRAP	CLASS 1 RIPRAP	SCOUR PROTECTION				PRESENT STRUCTURE, REMOVE	END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	CULVERT ASSET ID	REMARKS (* FIELD VERIFY INVERT)
	STATION	LEFT	RIGHT	CROSS	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE (*WATER QUALITY REQ'D)				MIN	MAX	UP STREAM	DOWN STREAM								EXCAVATION	COMPACTED AGGREGATE #5	COMPACTED AGGREGATE #53					SUMP DEPTH	GEOTEXTILE FOR RIPRAP TYPE 1A	RIPRAP				END SECTION	TYPE	SLOPE	EA.	TYPE	SLOPE	EA.			
					FT	IN.			LFT	LFT		FT	FT	ELEV.	ELEV.	ELEV.	YRS				CYS	CYS	CYS	? IN. CYS	? IN. CYS	SYS	CYS	TON	TON	IN.	SYS.	TYPE	TONS	LFT	EACH									
	LINE "A"																																											
301	639+78.0		X		42.3	15	3	Pipe Culvert	59			0.4	0.7	874.18	873.92		75	Non-AB	7	2		5.3																				4:1	2			
302	648+44.0		X		41.4	15	3	Pipe Culvert	49			0.5	0.7	873.17	872.78		75	Non-AB	7	2		4.3																				4:1	2			
303	649+96.0		X		42.4	15	3	Pipe Culvert	33			0.9	1.0	874.33	874.07		75	Non-AB	7	2		2.8																				4:1	2			
304	659+99.0		X		43.1	15	3	Pipe Culvert	49			0.4	0.4	874.22	874.12		75	Non-AB	7	2		4.3																				4:1	2			
305	672+99.0		X		42.7	15	3	Pipe Culvert	57			0.1	0.1	871.42	871.29		75	Non-AB	7	2		5.0																				4:1	2			
306	677+79.0		X		45.2	15	3	Pipe Culvert	32			0.7	0.8	870.29	870.21		75	Non-AB	7	2		2.7																				4:1	2			
307	686+06.0		X		36.9	15	3	Pipe Culvert	60			0.0	0.6	872.08	871.52		75	Non-AB	7	2		5.4																				4:1	2			
308	785+90.0	X			43.5	15	3	Pipe Culvert	49			0.6	0.7	895.16	895.08		75	Non-AB	7	2		4.3																				4:1	2			
309	795+24.0	X			41.5	24	3	Pipe Culvert	56			1.1	1.2	891.46	891.33		75	Non-AB	7	2		8.8																				4:1	2			
310	34+40.0		X		40.7	15	3	Pipe Culvert	43			0.1	0.2	910.69	910.56		75	Non-AB	7	2		3.6																				4:1	2			
311	36+46.0		X		40.4	15	3	Pipe Culvert	49			0.3	0.4	911.31	911.16		75	Non-AB	7	2		4.3																				4:1	2			
312	50+02.0		X		40.4	15	3	Pipe Culvert	46			1.4	1.5	916.75	915.95		75	Non-AB	7	2		4.2																				4:1	2			
313	62+97.0		X		43.7	15	1	Pipe Culvert	75			1.7	2.5	907.72	907.03		75	Non-AB	7	1		27.0																				4:1	2			
314	67+97.0		X		41.9	15	3	Pipe Culvert	33			0.1	0.0	912.26	912.03		75	Non-AB	7	2		2.6																				4:1	2			
315	80+30.0		X		36.8	15	3	Pipe Culvert	47			0.3	0.5	914.28	913.96		75	Non-AB	7	2		4.1																				4:1	2			
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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

INDIANA DEPARTMENT OF TRANSPORTATION

SHT TABLE-STRUCTURE DATA - 2

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	DESIGNATION
	1800060
SURVEY BOOK	SHEET
	56 of 172
CONTRACT	PROJECT
R-42253	1800060

PRINT DATE: 4/1/23
PLOT SCALE: 1:1 EDIT DATE: 3/10/23 - 12:37 PM EDITED BY: MMURRAY DRAWING FILE: \\RQAWFP1\PROJECTS\20-500-165-1 SR 32 PASSING LANES\5 ACAD\09 TABLES\SHT TABLE-STRUCTURE DATA.DWG

Categorical Exclusion

Appendix C

Early Coordination

INDIANA DEPARTMENT OF TRANSPORTATION

Crawfordsville District
41 West 300 North
Crawfordsville, Indiana 47933

PHONE: (855) 463-6848
FAX: (765) 364-9226

Eric Holcomb, Governor
Joe McGuinness, Commissioner

June 15, 2021

Example Early Coordination Letter

Re: Agencies Early Coordination
Des. Numbers 1800060 & 1900361
SR 32: Roadway Improvement Project
Boone County, Indiana

Dear «Position»,

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) Crawfordsville District propose to proceed with a roadway improvement project located on State Road (SR) 32 from 3.69 miles W. of SR 75 to 0.5 miles W. of I-65 in Boone County, Indiana. The FHWA is providing funds and is designated as the lead Federal agency. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. **Please use the above Des. Numbers and project description in your reply.** We will incorporate your comments into a study of the project's environmental impacts.

This project is located on SR 32 and would extend from 3.69 miles W. of SR 75 to 0.5 miles W. of I-65 for a total length of approximately 10.62 miles. The project is further described as being within Jefferson and Center Townships within Sections 27, 28, 29, 30, 33, 34, and 35 of Township 19 North, Range 1 West, and Sections 25 and 26 of Township 19 North, Range 2 West, respectively. Specifically, the project is located within Shannondale, Hazelrigg, and Lebanon U.S. Geological Survey (USGS) Quadrangles. The primary land use within the project area consists of agricultural and residential properties. In addition, there are small fragmented stands of trees throughout the project area that would be considered suitable summer habitat for bat species. Furthermore, two cemeteries (Dover Cemetery and Pleasant View Cemetery), the Western Boone Junior-Senior High School, and a Marathon gas station are located adjacent to the project area as well. See Appendix A for project area maps and photographs.

SR 32 is classified as a Rural Minor Arterial roadway and is not part of the National Highway System (NHS) but is part of the National Truck Network (NTN) as it serves as a connector route between Interstate (I)-65 and I-74. Within the project area, SR 32 consists of two 12 foot wide travel lanes with a 3 foot wide usable shoulder (2 foot paved). As the project is located within a rural area, there are no pedestrian facilities present such as, sidewalks, Americans with Disabilities Act (ADA) curb ramps, crosswalks, etc.

The preferred alternative involves a functional Hot Mix Asphalt (HMA) minor structural overlay and the addition of 4 passing lanes (2 eastbound (EB) and 2 westbound (WB) that would each be approximately 1 mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to 2.47 mi W of I-65. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately 4 miles of added passing lanes. This project would perpetuate existing drainage where possible and there are several locations where the ditches are no longer defined. Proposed ditches would be developed in these areas during the design process. Also, new ditches would need to be established and would be required within the passing lane areas. The proposed cross section for SR 32 within the HMA overlay portion would include two 12 foot wide travel lanes with 3 foot wide paved shoulders. In the 4 areas where the passing lanes would be installed, the cross section would include three 12 foot wide travel lanes with 3 foot paved shoulders. In addition, all small structures within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement.

The existing right-of-way is considered to be at the centerline of the existing pavement. Additional right-of-way is anticipated to be necessary, but further investigation on the exact amount of permanent right-of-way to be acquired is needed. However, it is anticipated that approximately 85 parcels would be impacted. New permanent right-of-way needed is expected to be approximately 57 acres. Temporary right-of-way is not anticipated to be required at this time.

The draft need for this project stems from Level of Service (LOS) which is predicted to drop from a LOS C to a LOS D by year 2044. There are six levels of service ranging from A to F. LOS A represents the best operating conditions from the traveler's perspective and LOS F the worst. In addition, there is a need to correct the deteriorating pavement condition which is currently exhibiting signs of wheel rutting, longitudinal cracking, and large amounts of crack sealing is present. Also, there are several areas where the roadside ditches are no longer defined, which if left unmaintained would lead to ponding. The draft purpose of this project is to maintain the LOS C for the year 2044. In addition, the purpose is to also restore the rideability of the pavement, and to provide improved roadside drainage.

The Maintenance of Traffic (MOT) plan for this project is proposed to consist of phased construction to limit the impact to commuters during the passing lane construction. After the passing lanes are constructed, the HMA overlay can be constructed by utilizing flagging operations. Two-way traffic is anticipated to be maintained along SR 32. In addition, access to all properties would be maintained at all times during construction. Construction is anticipated to begin in the Fall of 2023.

To identify potential environmental concerns within the project vicinity, a Red Flag Investigation was performed for a 0.5-mile radius of the project area by RQAW. The Red Flag Investigation noted:

- Two religious facilities
- One recreational facility
- Two cemeteries
- One trail
- One National Wetlands Inventory (NWI) mapped wetland and NWI line
- Eight stream segments
- One petroleum well
- One underground storage tank
- One Leaking underground storage tank
- Two National Pollutant Discharge Elimination System (NPDES) facilities and one NPDES pipe.

RQAW performed site visits on October 07 and 08, 2020 to identify any ecological resources present. Several streams and wetlands exist within/adjacent to the project area. RQAW is currently preparing a *Waters of the U.S. Report* documenting these resources.

The project is expected to qualify for the application of the U.S. Fish and Wildlife Service (USFWS) range-wide programmatic informal consultation process for the Indiana bat and northern long-eared bat. Project information will be submitted through the USFWS Information for Planning and Consultation (IPaC) separately.

Coordination will occur with INDOT Cultural Resources Office (CRO) to evaluate the project area for archaeological and historic resources and for Section 106 compliance. The results of this investigation will be forwarded to the State Historic Preservation Officer (SHPO) for review and concurrence as appropriate.

If we do not receive your **response within 30 calendar days** from the date of this letter, it will be assumed your agency feels there will be no adverse effects incurred because of the project. However, if you feel an extension to the response time is necessary, a reasonable amount may be granted upon request. If a questionnaire follows this letter, please complete. If you have any questions regarding this matter, please contact Harlan Ford of the Environmental Department at RQAW, at 317.588.1798 or at hford@rqaw.com, or the INDOT Project Manager, Melissa Patton, at 765.361.5697 or at mpatton@indot.in.gov. Thank you in advance for your input.

In an effort to reduce the file size of this letter, preliminary plans and some photographs have been omitted. Photos included are indicative of the entire project area. Please contact Harlan Ford (contact information above) to request a copy of preliminary plans or additional photographs if desired.

Please note that since ECL's were sent out that the project design has been refined. This project will require approximately 4.10 acres of permanent right-of-way and 2.01 acres of temporary right-of-way. Additionally, 9.21 acres of ROW will be re-acquired as part of this project.

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A State that Works

Lastly, the scope has been reduced from 4 passing lanes to 3 passing lanes. (Two EB and 1 WB).

Sincerely,

Harlan Ford
Environmental Scientist
RQAW Corporation

Appendices:

- ~~Appendix A: Project Maps and Photographs~~ **Project Maps and Photographs have been removed and included in Appendix B to avoid duplication.**

Cc:

- INDOT Crawfordsville District (electronic coordination)
- Federal Highway Administration (electronic coordination)
- Natural Resources Conservation Service (electronic coordination)
- Indiana Geological and Water Survey (electronic coordination)
- IDNR Division of Fish and Wildlife (electronic coordination)
- IDEM (electronic coordination)
- USACE (electronic coordination)
- USFWS (electronic coordination)
- Local Floodplain Administrator (electronic coordination)
- Indianapolis Metropolitan Planning Organization (electronic coordination)
- U.S. Department of Housing and Urban Development (electronic coordination)
- National Park Service, Midwest Regional Office (electronic coordination)
- Local Floodplain Administrator (electronic coordination)
- Boone County Surveyor (electronic coordination)
- Boone County Area Plan Commission (electronic coordination)
- Boone County Highway Department (electronic coordination)
- Boone County Soil and Water (electronic coordination)
- Boone County Commissioners Office (electronic coordination)
- Boone County Council (electronic coordination)
- MS4 Coordinator (electronic coordination)
- Pleasant View Church
- Dover Christian Church
- Western Boone Junior-Senior High School
- IDNR Oil and Gas Division

Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 North Senate Avenue - Indianapolis, IN 46204
(800) 451-6027 - (317) 232-8603 - www.idem.IN.gov

INDOT Crawfordsville District
Melissa Patton
41 W. 300 N.
Crawfordsville , IN 47933

RQAW
Harlan Ford
8770 North St., Suite 110
Fishers , IN 46038

Date

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: This project is located on SR 32 and would extend from 3.69 miles W. of SR 75 to 0.5 miles W. of I-65 for a total length of approximately 10.62 miles. The project is further described as being within Jefferson and Center Townships within Sections 27, 28, 29, 30, 33, 34, and 35 of Township 19 North, Range 1 West, and Sections 25 and 26 of Township 19 North, Range 2 West, respectively. Specifically, the project is located within Shannondale, Hazelrigg, and Lebanon U.S. Geological Survey (USGS) Quadrangles. The primary land use within the project area consists of agricultural and residential properties. In addition, there are small fragmented stands of trees throughout the project area that would be considered suitable summer habitat for bat species. The preferred alternative involves a functional Hot Mix Asphalt (HMA) minor structural overlay and the addition of 4 passing lanes (2 eastbound (EB) and 2 westbound (WB) that would each be approximately 1 mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to 2.47 mi W of I-65. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately 4 miles of added passing lanes. This project would perpetuate existing drainage where possible and there are several locations where the ditches are no longer defined. Proposed ditches would be developed in these areas during the design process. Also, new ditches would need to be established and would be required within the passing lane areas. The proposed cross section for SR 32 within the HMA overlay portion would include two 12 foot wide travel lanes with 3 foot wide paved shoulders. In the 4 areas where the passing lanes would be installed, the cross section would include three 12 foot wide travel lanes with 3 foot paved shoulders. In addition, all small structures within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement. The existing right-of-way is considered to be at the centerline of the existing pavement. Additional right-of-way is anticipated to be necessary, but further investigation on the exact amount of permanent right-of-way to be acquired is needed. However, it is anticipated that approximately 85 parcels would be impacted. New permanent right-of-way needed is expected to be approximately 57 acres. Temporary right-of-way is not anticipated to be required at this time.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter; found at: http://www.in.gov/idem/5283.htm (http://www.in.gov/idem/5283.htm).

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of wetlands. Thus, as a project owner or sponsor, it is your responsibility to ensure that no wetlands are disturbed without the proper permit. Although you may initially refer to the U.S. Fish and Wildlife Service National Wetland Inventory maps as a means of identifying potential areas of concern, please be mindful that those maps do not depict jurisdictional wetlands regulated by the USACE or the Department of Environmental Management.

A valid jurisdictional wetlands determination can only be made by the USACE, using the 1987 Wetland Delineation Manual.

USACE recommends that you have a consultant check to determine whether your project will abut, or lie within, a wetland area. To view a list of consultants that have requested to be included on a list posted by the USACE on their Web site, see USACE Permits and Public Notices (http://www.lrl.usace.army.mil/orf/default.asp) (http://www.lrl.usace.army.mil/orf /default.asp (http://www.lrl.usace.army.mil/orf/default.asp)) and then click on "Information" from the menu on the right-hand side of that page. Their "Consultant List" is the fourth entry down on the "Information" page. Please note that the USACE posts all consultants that request to appear on the list, and that inclusion of any particular consultant on the list does not represent an endorsement of that consultant by the USACE, or by IDEM.

Much of northern Indiana (Newton, Lake, Porter, LaPorte, St. Joseph, Elkhart, LaGrange, Steuben, and Dekalb counties; large portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and lesser portions of Benton, White, Pulaski, Kosciusko, and Wells counties) is served by the USACE District Office in Detroit (313-226-6812). The central and southern portions of the state (large portions of Benton, White, Pulaski, Kosciosko, and Wells counties; smaller portions of Jasper, Starke, Marshall , Noble, Allen, and Adams counties; and all other Indiana counties located in north-central, central, and southern Indiana) are served by the USACE Louisville District Office (502-315-6733).

Additional information on contacting these U.S. Army Corps of Engineers (USACE) District Offices, government agencies with jurisdiction over wetlands, and other water quality issues, can be found at http://www.in.gov/idem/4396.htm (http://www.in.gov/idem/4396.htm). IDEM recommends that impacts to wetlands and other water resources be avoided to the fullest extent.

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: http://www.in.gov/idem/4384.htm (http://www.in.gov/idem/4384.htm).

3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana . A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill materials into isolated wetlands. To learn more about isolated wetlands, contact the OWQ Wetlands Program at 317-233-8488.

4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: http://www.in.gov/idem/4384.htm (http://www.in.gov/idem/4384.htm) for the appropriate staff contact to further discuss your project.

5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the follow statutes:
    - IC 14-26-2 Lakes Preservation Act 312 IAC 11
    - IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
    - IC 14-28-1 Flood Control Act 310 IAC 6-1
    - IC 14-29-1 Navigable Waterways Act 312 IAC 6
    - IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
    - IC 14-29-4 Construction of Channels Act No related code

    For information on these Indiana (statutory) Code and Indiana Administrative Code citations, see the DNR Web site at: http://www.in.gov/dnr/water/9451.htm (http://www.in.gov/dnr/water/9451.htm) . Contact the DNR Division of Water at 317-232-4160 for further information.

    The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

6. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality – Watershed Planning Branch (317/233-1864) regarding the need for of a Rule 5 Storm Water Runoff Permit. Visit the following Web page
    - http://www.in.gov/idem/4902.htm (http://www.in.gov/idem/4902.htm)

    To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (http://www.in.gov/idem/4917.htm#constreq (http://www.in.gov/idem/4917.htm#constreq)), and as described in 327 IAC 15-5-6.5 (http://www.in.gov/legislative/iac/T03270/A00150 [PDF] (http://www.in.gov/legislative/iac/T03270/A00150.PDF), pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (http://www.in.gov/isda/soil/contacts/map.html (http://www.in.gov/isda/soil/contacts/map.html)).

Upon receipt of the construction plan, personnel of the SWCD or the Indiana Department of Environmental Management will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI) submittal. Once construction begins, staff of the SWCD or Indiana Department of Environmental Management will perform inspections of activities at the site for compliance with the regulation.

Please be mindful that approximately 149 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements. All of these MS4 areas will eventually take responsibility for Construction Plan review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: http://www.in.gov/idem/4900.htm (http://www.in.gov/idem/4900.htm).

If your project is located in an IDEM-approved MS4 area, please contact the local MS4 program about meeting their storm water requirements. Once the MS4 approves the plan, the NOI can be submitted to IDEM.

Regardless of the size of your project, or which agency you work with to meet storm water requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize the impacts associated with storm water runoff. The use of appropriate planning and site development and appropriate storm water quality measures are recommended to prevent soil from leaving the construction site during active land disturbance and for post construction water quality concerns. Information and assistance regarding storm water related to construction activities are available from the Soil and Water Conservation District (SWCD) offices in each county or from IDEM.

7. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.
8. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.
9. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.
10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

AIR QUALITY

The above-noted project should be designed to minimize any impact on ambient air quality in, or near, the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. Regarding open burning, and disposing of organic debris generated by land clearing activities; some types of open burning are allowed (http://www.in.gov/idem/4148.htm (http://www.in.gov/idem/4148.htm)) under specific conditions. You also can seek an open burning variance from IDEM.

   However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes (such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.

   Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. For example, wetting the area with water, constructing wind barriers, or treating dusty areas with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked onto paved roads from unpaved areas should be minimized.

   Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus Histoplasma capsulatum, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

2. The U.S. EPA and the Surgeon General recommend that people not have long-term exposure to radon at levels above 4 pCi/L. (For a county-by-county map of predicted radon levels in Indiana, visit: http://www.in.gov/idem/4145.htm (http://www.in.gov/idem/4145.htm).)

The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf (http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf).) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

To learn more about radon, radon risks, and ways to reduce exposure visit: http://www.in.gov/isdh/regsvcs/radhealth/radon.htm (http://www.in.gov/isdh/regsvcs/radhealth/radon.htm), http://www.in.gov/idem/4145.htm (http://www.in.gov/idem/4145.htm), or http://www.epa.gov/radon/index.html (http://www.epa.gov/radon/index.html).

3. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

   If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

   For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

   However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at http://www.in.gov/icpr/webfile/formsdiv/44593.pdf (http://www.in.gov/icpr/webfile/formsdiv/44593.pdf).

   Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of $150 per project; projects below these amounts will be billed a fee of $50 per project. All notification remitters will be billed on a quarterly basis.

   For more information about IDEM policy regarding asbestos removal and disposal, visit: http://www.in.gov/idem/4983.htm (http://www.in.gov/idem/4983.htm).

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978 , or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: http://www.in.gov/isdh/19131.htm (http://www.in.gov/isdh/19131.htm).

5. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2 , Asphalt Paving Rule (http://www.ai.org/legislative/iac/T03260/A00080.PDF (http://www.ai.org/legislative/iac/T03260/A00080.PDF)).

6. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: www.ai.org/legislative/iac/t03260/a00020.pdf (http://www.ai.org/legislative/iac/t03260/a00020.pdf).) New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.

7. For more information on air permits visit: http://www.in.gov/idem/4223.htm (http://www.in.gov/idem/4223.htm), or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178 or OAMPROD atdem.state.in.us.

LAND QUALITY

In order to maintain compliance with all applicable laws regarding contamination and/or proper waste disposal, IDEM recommends that:

1. If the site is found to contain any areas used to dispose of solid or hazardous waste, you need to contact the Office of Land Quality (OLQ)at 317-308-3103.
2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit http://www.in.gov/idem/4998.htm (http://www.in.gov/idem/4998.htm).
3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.
4. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.
5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding the management of asbestos wastes (Asbestos removal is addressed above, under Air Quality).
6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: http://www.in.gov/idem/4999.htm (http://www.in.gov/idem/4999.htm).

FINAL REMARKS

Should you need to obtain any environmental permits in association with this proposed project, please be mindful that IC 13-15-8 requires that you notify all adjoining property owners and/or occupants within ten days your submittal of each permit application. However, if you are seeking multiple permits, you can still meet the notification requirement with a single notice if all required permit applications are submitted with the same ten day period.

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that is it the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at http://www.in.gov/idem/5284.htm (http://www.in.gov/idem/5284.htm), is used.

Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

Project Description

This project is located on SR 32 and would extend from 3.69 miles W. of SR 75 to 0.5 miles W. of I-65 for a total length of approximately 10.62 miles. The project is further described as being within Jefferson and Center Townships within Sections 27, 28, 29, 30, 33, 34, and 35 of Township 19 North, Range 1 West, and Sections 25 and 26 of Township 19 North, Range 2 West, respectively. Specifically, the project is located within Shannondale, Hazelrigg, and Lebanon U.S. Geological Survey (USGS) Quadrangles. The primary land use within the project area consists of agricultural and residential properties. In addition, there are small fragmented stands of trees throughout the project area that would be considered suitable summer habitat for bat species. The preferred alternative involves a functional Hot Mix Asphalt (HMA) minor structural overlay and the addition of 4 passing lanes (2 eastbound (EB) and 2 westbound (WB) that would each be approximately 1 mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to 2.47 mi W of I-65. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately 4 miles of added passing lanes. This project would perpetuate existing drainage where possible and there are several locations where the ditches are no longer defined. Proposed ditches would be developed in these areas during the design process. Also, new ditches would need to be established and would be required within the passing lane areas. The proposed cross section for SR 32 within the HMA overlay portion would include two 12 foot wide travel lanes with 3 foot wide paved shoulders. In the 4 areas where the passing lanes would be installed, the cross section would include three 12 foot wide travel lanes with 3 foot paved shoulders. In addition, all small structures within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement. The existing right-of-way is considered to be at the centerline of the existing pavement. Additional right-of-way is anticipated to be necessary, but further investigation on the exact amount of permanent right-of-way to be acquired is needed. However, it is anticipated that approximately 85 parcels would be impacted. New permanent right-of-way needed is expected to be approximately 57 acres. Temporary right-of-way is not anticipated to be required at this time.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and

further, that I must obtain any required permits.

Date: 06/15/2021

Signature of the INDOT
Project Engineer or Other Responsible Agent Melissa Patton

Melissa Patton

Date: 6-15-21

Signature of the
For Hire Consultant

Harlan Ford

INDIANA
GEOLOGICAL SURVEY

Organization and Project Information

Project ID:	1800060 & 1900361
Des. ID:	1800060 & 1900361
Project Title:	SR 32: Roadway Improvement Project
Name of Organization:	RQAW Corporation
Requested by:	Harlan Ford

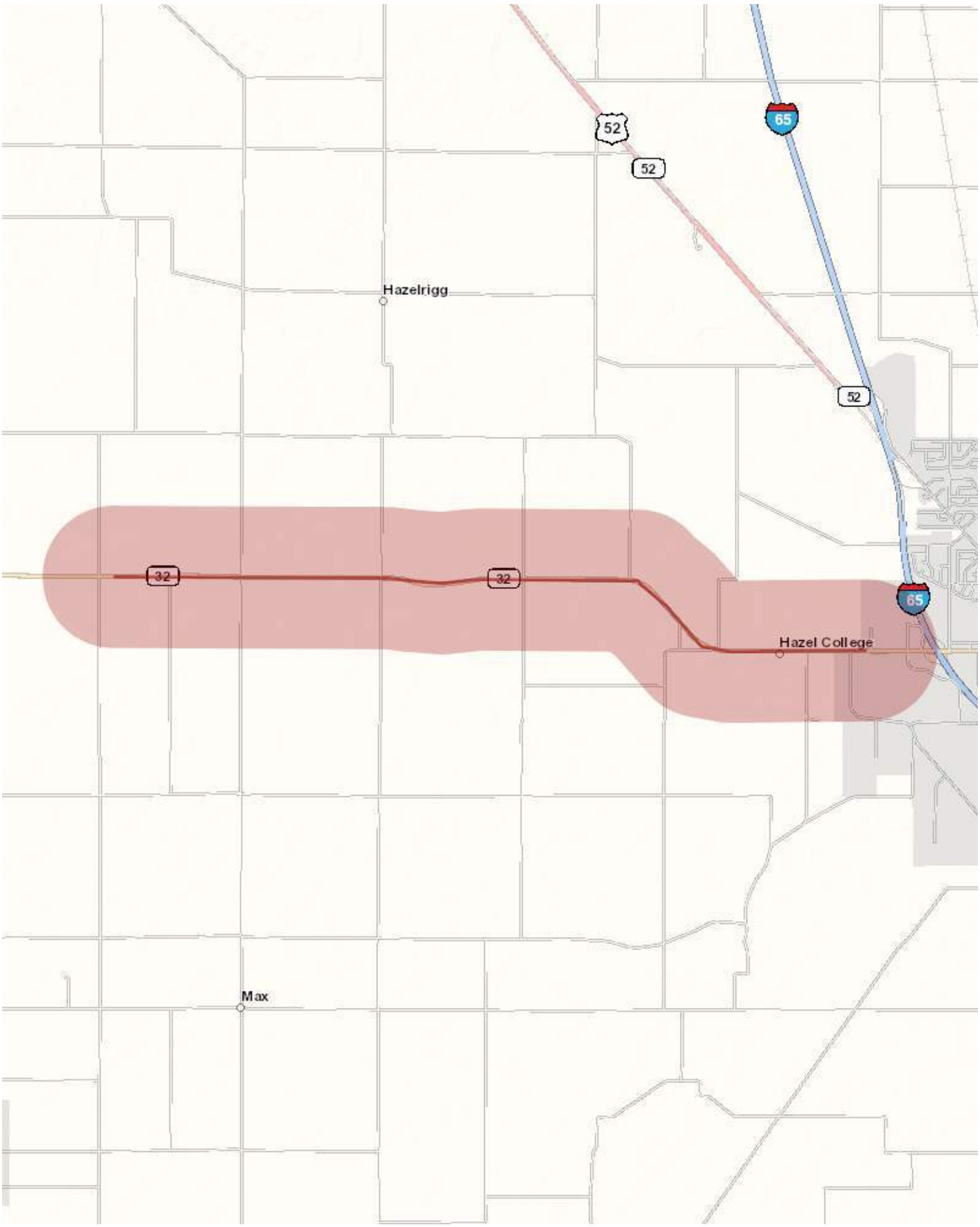
Environmental Assessment Report

1. Geological Hazards:
   - Moderate liquefaction potential
   - 1% Annual Chance Flood Hazard
2. Mineral Resources:
   - Bedrock Resource: Moderate Potential
   - Sand and Gravel Resource: Low Potential
3. Active or abandoned mineral resources extraction sites:
   - Petroleum Exploration Wells

*All map layers from Indiana Map (maps.indiana.edu)

This information was furnished by Indiana Geological Survey
Address: 420 N. Walnut St., Bloomington, IN 47404
Email: IGSEnvir@indiana.edu
Phone: 812 855-7428

Date: June 15, 2021



Metadata:

- https://maps.indiana.edu/metadata/Geology/Petroleum_Wells.html
- https://maps.indiana.edu/metadata/Geology/Seismic_Earthquake_Liquefaction_Potential.html
- https://maps.indiana.edu/metadata/Geology/Industrial_Minerals_Sand_Gravel_Resources.html
- https://maps.indiana.edu/metadata/Hydrology/Floodplains_FIRM.html
- https://maps.indiana.edu/metadata/Geology/Bedrock_Geology.html

USDA
United States Department of Agriculture

Natural Resources Conservation Service
Indiana State Office
6013 Lakeside Boulevard
Indianapolis, IN 46278
317-290-3200

June 23, 2021

Harlan Ford
RQAW Corporation
8770 North Street, Suite 110
Fishers, Indiana 46038

Dear Mr. Ford:

The proposed project to proceed with roadway improvements along State Road 32 in Boone County, Indiana (Des No. 1800060 & 1900361), as referred to in your letter received on June 15, 2021, will cause a conversion of prime farmland.

The attached packet of information is for your use completing Parts VI and VII of the AD-1106. After completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need additional information, please contact John Allen at 317-295-5859.

Sincerely,

RICHARD NEILSON
Digitally signed by RICHARD NEILSON
Date: 2021.06.24 14:08:06 -04'00'

RICK NEILSON
State Soil Scientist

Enclosures

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request June 15, 2021	
Name of Project DES1800060 & 1900361_SR32 Road Im		Federal Agency Involved FHWA	
Proposed Land Use Roadway		County and State Boone County, Indiana	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 6/15/2021	Person Completing Form: JRA
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated	Average Farm Size 367 ac
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 253706 % 94	Amount of Farmland As Defined in FPPA Acres: 247283 % 91	
Name of Land Evaluation System Used LESA	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 6/23/2021	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	4.78			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	41.43			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	41.43			
B. Total Acres Statewide Important or Local Important Farmland	0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.016			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	40			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	92			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	13			
2. Perimeter In Non-urban Use	(10)	8			
3. Percent Of Site Being Farmed	(20)	15			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	0			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	5			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	2			
10. On-Farm Investments	(20)	10			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	53	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	92	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	53	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	145	0	0	0

Site Selected: A	Date Of Selection 3-1-22	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Meets the purpose and need of the project and will have minimal impacts on farmland.

Name of Federal agency representative completing this form: Harlan Ford	Date: 3-1-22

(See Instructions on reverse side) **Form AD-1006 (03-02)**

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-23785 **Request Received:** June 15, 2021

Requestor:
RQAW Environmental
Harlan Ford
8770 North Street, Suite 110
Fishers, IN 46038

Project: SR 32 roadway improvements, from 3.69 miles west of SR 75 to 0.5 mile west of I-65; Des #1800060 & 1900361

County/Site info: Boone

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: This proposal may require the formal approval of our agency pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of a stream or other flowing waterbody which has a drainage area greater than one square mile, unless it qualifies for a bridge exemption (see enclosure) or qualifies under the INDOT and IDNR Memorandum of Understanding for Maintenance Activity Exemption, dated March 1997. Please include a copy of this letter with the permit application, if required.

Natural Heritage Database: The Natural Heritage Program's data have been checked.
To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

Fish & Wildlife Comments: Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) HMA Overlay:
This portion of the proposed project is generally not problematic. It will generally stay within the existing roadway footprint. HMA does contain polycyclic aromatic hydrocarbons (PAHs) which are known to have negative impacts on aquatic organisms. Care should be taken to avoid migration of PAHs into waterways to the greatest extent possible.

2) Proposed Passing Lanes:
The passing lanes will account for approximately 4 miles of new roadway. However, the passing lanes appear to be proposed primarily in areas that have been previously disturbed either through agricultural or rural residential development.

3) Stormwater Management & Drainage:
The Division of Fish & Wildlife recommends considering a more sustainable approach to stormwater management. The traditional model of stormwater management aims to drain runoff as quickly as possible with the help of channels and pipes, which increases peak flows and costs of stormwater management. This type of solution only transfers flood problems from one section of a basin to another section. A more sustainable approach should aim to rebuild the natural water cycle by using storage techniques

Attachments: A - Bridge Exemption Criteria

(retention basins, constructed wetlands, raingardens, etc.) and recharging groundwater using infiltration techniques (infiltration basins or trenches, pervious pavement, etc.). The following links give a good overview of traditional and sustainable stormwater management systems and their pros and cons for consideration during the design of the proposed project:
https://www.epa.gov/greeningepa/epa-facility-stormwater-management;
https://www.epa.gov/greeningepa/stormwater-management-practices-epa-facilities

Contaminated road runoff can significantly impact the aquatic environment through increased turbidity and release of sediment into the stream, which can be harmful to fish and other aquatic organisms, their eggs, and their food supply. Where possible, road runoff should be directed to riprap turnouts and sediment filtration prior to entering a stream to reduce impacts to aquatic species.

4) Stream Crossing Replacement/Modification:
The Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6" (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2') below the stream bed elevation. Sumping is not required for bridges or three-sided culverts. Crossings must span the entire channel width (a minimum of 1.2 times the ordinary high water mark width) and must maintain the natural stream substrate within the structure (natural stream substrate must be replaced in sumped box and pipe culverts up to the existing flowline). Scour protection at the inlet and outlet must not extend above the existing flowline elevation. Stream depth, channel width and water velocities in the crossing structure during low-flow conditions must approximate those in the natural stream channel.

The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions. Upgrading wildlife passage for replacement/rehabilitated structures is recommended whenever possible to improve wildlife/vehicle safety. White-tailed deer passage must be incorporated into all new structures. Minimum structure dimensions for white-tailed deer passage are 20 feet of width clearance (overall span of the structure) and 8 feet of height clearance measured from the OHWM. Bank lines must be restored within structures to allow for wildlife passage above the ordinary high water mark. All wildlife passage designs must include a smooth level pathway a minimum of 1-2 feet in width composed of natural substrate (soil, sand, gravel, etc.) or compacted aggregate fill over riprap (#2, #53, #73, etc.) tied into existing elevations both upstream and downstream. There are a number of techniques and materials for incorporating wildlife passage into the design of a crossing structure if restoring bank lines is not an option. Coordination with the Regional Environmental Biologist to address wildlife passage issues before submitting a permit application, if required, is encouraged to avoid delays in the permitting process.

The following links are good resources to consider in the design of stream crossing structures to maintain fish and wildlife passage:
http://www.fs.fed.us/wildlifecrossings/library/,
https://roadecology.ucdavis.edu/files/content/projects/DOT-FHWA_Wildlife_Crossing_Structures_Handbook.pdf, https://www.fs.fed.us/biology/nsaec/fishxing/aop_pdfs.html,
https://www.fhwa.dot.gov/engineering/hydraulics/pubs/11008/hif11008.pdf.

5) Bank Stabilization:
Some form of bank stabilization is almost always needed with the construction, repair, replacement, or modification of a stream channel or crossing structure. For streambank

Attachments: A - Bridge Exemption Criteria

stabilization and erosion control, regrading to a stable slope (2:1 or shallower) and establishing native vegetation along the banks are typically the most effective techniques. A variety of methods to accomplish this include: planting plugs, whips, container stock, seeding, and live stakes. In addition to vegetation establishment, some additional level of bioengineered bank stabilization may be needed under certain circumstances (inability to regrade to a stable slope, flow velocities that exceed the limits of vegetation alone, etc.). Combining vegetation with any of the following bank stabilization methods can provide additional bank protection while not compromising benefits to fish, wildlife, and botanical resources: geotextiles (erosion control blankets and/or turf reinforcement mats that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles), vegetated geogrids or soil lifts, fiber rolls, glacial stone, or riprap. Information about bioengineering techniques can be found at the following link to a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: http://directives.sc.egov.usda.gov/17553.wba.

Riprap or other hard bank stabilization materials should be used only at the toe of the sideslopes up to the ordinary high water mark (OHWM) with the exception of areas directly under bridges for instance. The banks above the OHWM should be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion.

6) Riparian Habitat:
We recommend a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur. The DNR's Habitat Mitigation Guidelines (and plant lists) can be found online at: http://iac.iga.in.gov/iac/20200527-IR-312200284NRA.xml.pdf.

Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:
1. Revegetate all bare and disturbed areas that are not currently mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in currently mowed areas only. A native herbaceous seed mixture must include at least 5 species of grasses and sedges and 5 species of wildflowers.
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written

Attachments: A - Bridge Exemption Criteria

approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds.
6. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
7. Do not use broken concrete as riprap.
8. Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap.
9. Minimize the movement of resuspended bottom sediment from the immediate project area.
10. Do not deposit or allow demolition/construction materials or debris to fall or otherwise enter the waterway.
11. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
12. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

Christie L. Stanifer **Date:** July 14, 2021

Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife

Attachments: A - Bridge Exemption Criteria

From: McWilliams, Robin
To: Harlan Ford
Subject: [EXT] Re: [EXTERNAL] Early Coordination Letter for Des No."s 1800060 & 1900361: SR 32 Roadway Improvement Project in Boone County, Indiana
Date: Monday, June 21, 2021 4:41:44 PM
Attachments: image012.png
image013.png
image014.png
image015.png
image016.png
image017.png

Dear Harlan,

This responds to your recent letter requesting our comments on the aforementioned project.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The project is within the range of the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) and should follow the new Indiana bat/northern long-eared bat programmatic consultation process, if applicable (*i.e.* a federal transportation nexus is established). The Service has 14 days after a "Not Likely to Adversely Affect" determination letter is generated to review the project and provide additional comments or request additional information; if you do not receive a response from us within 14 days, we have no additional comments.

Wetland and stream impacts may require permits from the U.S. Army Corps of Engineers, the Indiana Department of Environmental Management's Water Quality Certification program, and the Indiana Department of Natural Resources. Wetland impacts should be avoided, and any unavoidable impacts should be compensated for in accordance with agency mitigation guidelines.

Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no other comments on the project as currently proposed. However, should new information arise pertaining to project plans or a revised species list be published, it will be necessary for the Federal agency to reinitiate consultation. Standard recommendations are provided below.

We appreciate the opportunity to comment at this early stage of project planning. If you have any questions about our recommendations, please contact me at robin_mcwilliams@fws.gov or you may call 812-334-4261 x. 207.

Sincerely,
Robin McWilliams Munson

Standard Recommendations:

1. Do not clear trees or understory vegetation outside the construction zone boundaries. (**This restriction is not related to the "tree clearing" restriction for potential Indiana Bat habitat.)**
2. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottom culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community.
3. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure.
4. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.
5. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications.
6. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High-Water Mark during this time unless the machinery is within the caissons or on the cofferdams.
7. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing

Robin McWilliams Munson
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 46142
812-334-4261

Mon-Tues 8-3:30p
Wed-Thurs 8:30-3p Telework

Kylie Rothschild

From: Laymon, Makinna <MLaymon2@indot.IN.gov>
Sent: Wednesday, March 3, 2021 1:23 PM
To: Kylie Rothschild
Cc: Khan, Asfahan
Subject: [EXT] FW: Indiana and Northern Long-eared Bat Check for the Passing Lane/Minor Structure Overlay Project located in Boone County (DES 1800060)
Attachments: SR 32 Passing Lanes_Topo.pdf; SR 32 Passing Lanes_WaterResources.pdf

Good Afternoon,
A review of the USFWS GIS database for Indiana bat and Northern long-eared bat roosting, hibernacula and capture sites was conducted for Des No. 1800060 on 3/3/2021. There are no documented sites within a half mile the project area. The USFWS Information for Planning and Conservation (IPaC) website must be consulted and a new project created to obtain an official species list and complete the questionnaire for the project to determine the applicability of the programmatic consultation. If needed, the IPaC generated documents must be forwarded to the USFWS for verification.
Thank you,

Makinna Laymon
Environmental Manager 2, Capital Program Management Division
41 West 300 North
Crawfordsville, IN 47933
Cell: (317) 694-0630
Email: MLaymon2@indot.in.gov

From: Khan, Asfahan <akhan@indot.IN.gov>
Sent: Wednesday, March 3, 2021 12:05 PM
To: Laymon, Makinna <MLaymon2@indot.IN.gov>
Subject: FW: Indiana and Northern Long-eared Bat Check for the Passing Lane/Minor Structure Overlay Project located in Boone County (DES 1800060)

Coping with COVID-19:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (open 24/7)
- **Anthem NurseLine:** Call 800-337-4770 or visit the Anthem NurseLine online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP)**: Available to ALL state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

In Reply Refer To: January 18, 2023
Project Code: 2022-0011611
Project Name: SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - http://www.fws.gov/midwest/endangered/section7/

s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process. For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of

Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
(812) 334-4261

Project Summary

Project Code: 2022-0011611
Project Name: SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)
Project Type: Road/Hwy - Maintenance/Modification
Project Description: This project is located on SR 32 and would extend from 3.69 miles west of SR 75 to 0.5 miles west of I-65 for a total length of approximately 10.62 miles. The scope of work to be included with this project would involve a functional Hot Mix Asphalt (HMA) minor structural overlay and the addition of 4 passing lanes (2 eastbound (EB) and 2 westbound (WB)) that would each be approximately 1 mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to 2.47 mi W of I-65. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately 4 miles of added passing lanes (each approximately one mile in length). This project would perpetuate existing drainage where possible and there are several locations where the ditches are no longer defined. Proposed ditches would be developed in these areas during the design process. Also, new ditches would need to be established and would be required within the passing lane areas. The proposed cross section for SR 32 within the HMA overlay portion would include two 12 foot wide travel lanes with 3 foot wide paved shoulders. In the 4 areas where the passing lanes would be installed, the cross section would include three 12 foot wide travel lanes with 3 foot paved shoulders. In addition, all small structures (23 total) within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement. The gas station on the southwest corner of SR 32 and SR 75 intersection has very little access control and does not have a defined exit or entrance. This project proposes to remove the existing concrete pavement from 80 feet West of SR 75 to 40 feet West of SR 75 and install raised concrete island connecting to the existing southwest corner island (Des No. 2101655). The width of the island should go from the edge of the gas station's concrete entrance to approximately the end of INDOT's right-of-way (approximately 6 feet). The height of the concrete island will be 6 inches. A secondary consideration is placing a concrete island on top of existing concrete pavement and anchoring into the pavement. All work will take place within approximately 80 feet of the existing pavement surface. Permanent right-of-way needed is expected to be approximately 50 acres and temporary right-of-way needed is anticipated to be approximately 8 acres. The Maintenance of Traffic (MOT) plan for this project is proposed to consist of phased construction to limit the impact to commuters during the passing lane construction. After the passing lanes are constructed, the

Please note that since IPaC was completed that the project design has been refined. This project will require approximately 4.10 acres of permanent right-of-way and 2.01 acres of temporary right-of-way. Additionally, 9.21 acres of ROW will be re-acquired as part of this project.

Lastly, the scope has been reduced from 4 passing lanes to 3 passing lanes. (Two EB and 1 WB).

HMA overlay can be constructed by utilizing flagging operations. Two-way traffic is anticipated to be maintained along SR 32. Suitable summer habitat is located adjacent to the project area. A review of the USFWS Database by the INDOT Crawfordsville District on March 3, 2021, did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. Per the field visits conducted on October 7-8, 2020, July 6, 2021, and August 26, 2021 by RQAW, no bats, or evidence of bats, were seen or heard at any of the 23 small structures and/or bridges. Refer to attached structure assessment forms for more details. Up to approximately 0.80 acres of tree clearing/trimming is anticipated for this project. All tree clearing will occur during the inactive bat season, and no tree clearing will occur beyond 100 feet from the existing pavement. The dominant tree species to be cleared includes white pine (Pinus strobus), silver maple (Acer saccharinum), white oak (Quercus alba), and black walnut (Juglans nigra). Temporary lighting may be utilized during construction. The project will not involve the replacement or installation of permanent lighting. Construction is anticipated to begin in the Fall of 2023.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.0544656,-86.63918525,14z

Counties: Boone County, Indiana

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

NAME	BREEDING SEASON
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 21 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Henslow's Sparrow *Ammodramus henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

NAME	BREEDING SEASON
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

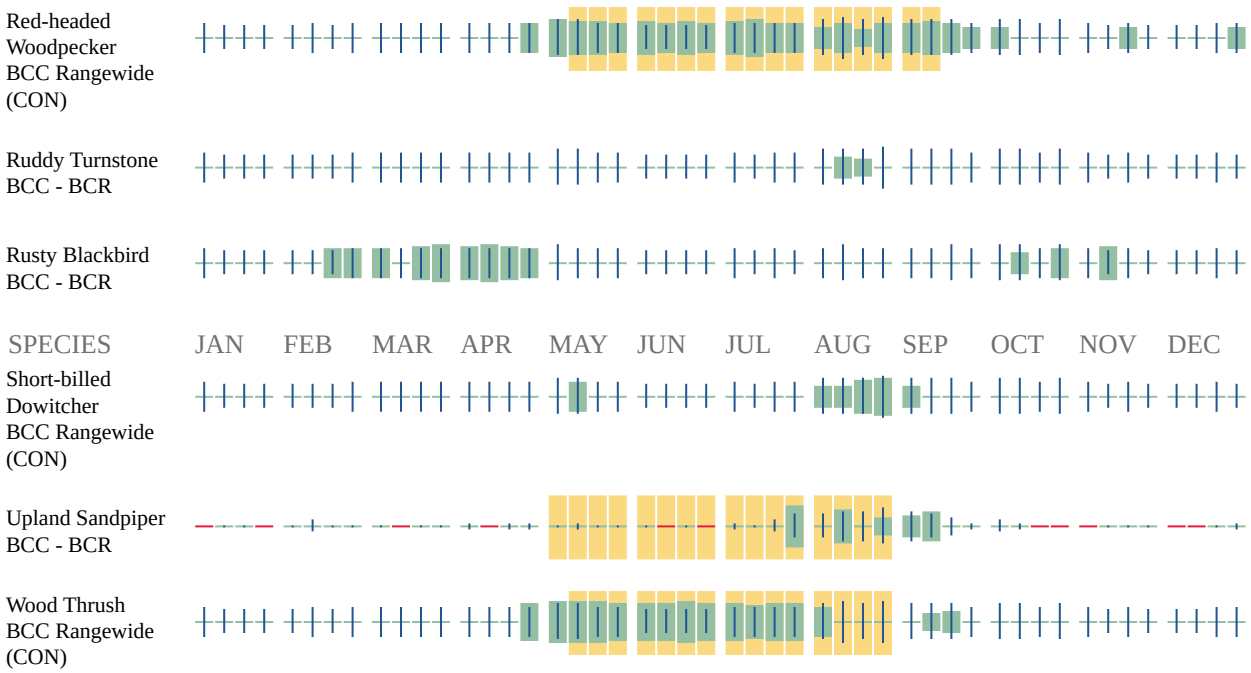
Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R5UBH
- R2UBH
- R4SBC

IPaC User Contact Information

Agency: RQAW
Name: Harlan Ford
Address: 8770 North St., Suite 110
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State: IN
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Email hford@rqaw.com
Phone: 4234585979

Lead Agency Contact Information

Lead Agency: Indiana Department of Transportation

Cameron Fraser

From: Neild, Benjamin <BNeild@indot.IN.gov>
Sent: Wednesday, February 23, 2022 1:30 PM
To: Cameron Fraser
Cc: Harlan Ford; Kurtz, Randy
Subject: [EXT] RE: [EXT] RE: [EXT] FW: SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)

Good afternoon, INDOT has reviewed the determination key and has completed the verification process to forward the project to USFWS for review.
Thanks
Ben

Benjamin Neild
Environmental Manager 2, Capital Program Management Division
41 West 300 North
Crawfordsville, IN 47933
Phone: (765) 361-5259
Email: bneild@indot.in.gov

From: Cameron Fraser <cfraser@rqaw.com>
Sent: Wednesday, February 23, 2022 11:40 AM
To: Neild, Benjamin <BNeild@indot.IN.gov>
Cc: Harlan Ford <hford@rqaw.com>; Kurtz, Randy <RKurtz@indot.IN.gov>
Subject: RE: [EXT] RE: [EXT] FW: SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)

Good Morning,

I have completed the recommended changes to the IPaC determination key for the above referenced project and received a finding of may affect but not likely to adversely affect. Some recent changes have occurred with the project, so I updated the project description with the following new information:

1. Added Des Number 2101655 and work description.
2. Updated the ROW amounts (Permanent ROW is now 50 acres / Temporary ROW is now 8 acres).
3. Updated the tree clearing amounts/information (0.80 acres of tree clearing required).
4. Added some language explaining the number of structures (23 total) that were inspected for this project.

Please let me know if you have any questions or concerns regarding the key.

Thank you,

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Indiana Ecological Services Field Office
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: February 23, 2022
Project code: 2022-0011611
Project Name: SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)

Subject: Concurrence verification letter for the 'SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances,

Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

SR 32 Roadway Improvements Project in Boone County (DES 1800060, 1900361, and 2101655)

Description

This project is located on SR 32 and would extend from 3.69 miles west of SR 75 to 0.5 miles west of I-65 for a total length of approximately 10.62 miles. The scope of work to be included with this project would involve a functional Hot Mix Asphalt (HMA) minor structural overlay and the addition of 4 passing lanes (2 eastbound (EB) and 2 westbound (WB)) that would each be approximately 1 mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to 2.47 mi W of I-65. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately 4 miles of added passing lanes (each approximately one mile in length). This project would perpetuate existing drainage where possible and there are several locations where the ditches are no longer defined. Proposed ditches would be developed in these areas during the design process. Also, new ditches would need to be established and would be required within the passing lane areas. The proposed cross section for SR 32 within the HMA overlay portion would include two 12 foot wide travel lanes with 3 foot wide paved shoulders. In the 4 areas where the passing lanes would be installed, the cross section would include three 12 foot wide travel lanes with 3 foot paved shoulders. In addition, all small structures (23 total) within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement. The gas station on the southwest corner of SR 32 and SR 75 intersection has very little access control and does not have a defined exit or entrance. This project proposes to remove the existing concrete pavement from 80 feet West of SR 75 to 40 feet West of SR 75 and install raised concrete island connecting to the existing southwest corner island (Des No. 2101655). The width of the island should go from the edge of the gas station's concrete entrance to approximately the end of INDOT's right-of-way (approximately 6 feet). The height of the concrete island will be 6 inches. A secondary consideration is placing a concrete island on top of existing concrete pavement and anchoring into the pavement. All work will take place within approximately 80 feet of the existing pavement surface. Permanent right-of-way needed is expected to be approximately 50 acres and temporary right-of-way needed is anticipated to be approximately 8 acres. The Maintenance of Traffic (MOT) plan for this project is proposed to consist of phased construction to limit the impact to commuters during the passing lane construction. After the passing lanes are constructed, the HMA overlay can be constructed by utilizing flagging operations. Two-way traffic is anticipated to be maintained along SR 32. Suitable summer habitat is located adjacent to the project area. A review of the USFWS Database by the INDOT Crawfordsville District on March 3, 2021, did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. Per the field visits conducted on October 7-8, 2020, July 6, 2021, and August 26, 2021 by RQAW, no bats, or evidence of bats, were seen or heard at any of the 23 small structures and/or bridges. Refer to attached structure assessment forms for more details. Up to approximately 0.80 acres of tree clearing/trimming is anticipated for this project. All tree clearing will occur during the inactive bat season, and no tree clearing will occur beyond 100 feet from the existing pavement. The dominant tree species to be cleared includes white pine (Pinus strobus), silver maple (Acer saccharinum), white oak (Quercus alba), and black walnut (Juglans nigra). Temporary lighting may be utilized during construction. The project will not involve the replacement or installation of permanent lighting. Construction is anticipated to begin in the Fall of 2023.

Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   Yes

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answered
   Yes

3. Which Federal Agency is the lead for the action?

   A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/ rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located **within** a karst area?

   No

8. Is there *any* suitable[1] summer habitat for Indiana Bat or NLEB **within** the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   Yes

9. Will the project remove *any* suitable summer habitat[1] and/or remove/trim any existing trees **within** suitable summer habitat?

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   Yes

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?

    No

11. Have presence/probable absence (P/A) summer surveys[1][2] been conducted[3][4] **within** the suitable habitat located within your project action area?

    [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

    [2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernacula) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

    [3] For projects within the range of either the Indiana bat or NLEB in which suitable habitat is present, and no bat surveys have been conducted, the transportation agency will assume presence of the appropriate species. This assumption of presence should be based upon the presence of suitable habitat and the capability of bats to occupy it because of their mobility.

    [4] Negative presence/probable absence survey results obtained using the summer survey guidance are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

    No

12. Does the project include activities **within documented Indiana bat habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

13. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors?

    Yes

14. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors occur[1]?

    [1] Coordinate with the local Service Field Office for appropriate dates.

    B) During the inactive season

15. Does the project include activities **within documented NLEB habitat**[1][2]?

    [1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    [2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

    No

16. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors?

    Yes

17. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors occur?

    B) During the inactive season

18. Will *any* tree trimming or removal occur **within** 100 feet of existing road/rail surfaces?

    Yes

19. Will *any* tree trimming or removal occur **between** 100-300 feet of existing road/rail surfaces?

    No

20. Are *all* trees that are being removed clearly demarcated?

    Yes

21. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?

    No

22. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    No

23. Does the project include slash pile burning?

    No

24. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

25. Is there *any* suitable habitat[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    Yes

26. Has a bridge assessment[1] been conducted **within** the last 24 months[2] to determine if the bridge is being used by bats?

    [1] See User Guide Appendix D for bridge/structure assessment guidance

    [2] Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that bridge/structure in subsequent years.

    Yes

    SUBMITTED DOCUMENTS

    - *Structure Assessments Combined.pdf https://ipac.ecosphere.fws.gov/project/YBP46OYNGZASRPUCCVMUJFEAQQ/projectDocuments/104137323*

27. Did the bridge assessment detect *any* signs of Indiana bats and/or NLEBs roosting in/under the bridge (bats, guano, etc.)[1]?

    [1] If bridge assessment detects signs of *any* species of bats, coordination with the local FWS office is needed to identify potential threatened or endangered bat species. Additional studies may be undertaken to try to identify which bat species may be utilizing the bridge prior to allowing *any* work to proceed.

    Note: There is a small chance bridge assessments for bat occupancy do not detect bats. Should a small number of bats be observed roosting on a bridge just prior to or during construction, such that take is likely to occur or does occur in the form of harassment, injury or death, the PBO requires the action agency to report the take. Report all unanticipated take within 2 working days of the incident to the USFWS. Construction activities may continue without delay provided the take is reported to the USFWS and is limited to 5 bats per project.

    No

28. Will the bridge removal, replacement, and/or maintenance activities include installing new or replacing existing **permanent** lighting?

    No

29. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    No

30. Will the project involve the use of **temporary** lighting *during* the active season?

    Yes

31. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting will be used?

    Yes

32. Will the project install new or replace existing **permanent** lighting?

    No

33. Does the project include percussives or other activities (**not including tree removal/ trimming or bridge/structure work**) that will increase noise levels above existing traffic/ background levels?

    No

34. Are *all* project activities that are **not associated with** habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

35. Will the project raise the road profile **above the tree canopy**?

    No

36. Are the project activities that are not associated with habitat removal, tree removal/ trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives consistent with a No Effect determination in this key?

    Automatically answered
    Yes, other project activities are limited to actions that DO NOT cause any additional stressors to the bat species as described in the BA/BO

37. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because the tree removal/trimming that occurs outside of the Indiana bat's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.

38. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

    Automatically answered
    Yes, because the tree removal/trimming that occurs outside of the NLEB's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.

39. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

    Automatically answered
    Yes, because the bridge has been assessed using the criteria documented in the BA and no signs of bats were detected

40. **General AMM 1**
    Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

    Yes

41. **Tree Removal AMM 1**
    Can *all* phases/aspects of the project (e.g., temporary work areas, alignments) be modified, to the extent practicable, to avoid tree removal[1] in excess of what is required to implement the project safely?

    Note: Tree Removal AMM 1 is a minimization measure, the full implementation of which may not always be practicable. Projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented and LAA as long as Tree Removal AMMs 3, 5, 6, and 7 are implemented.

    [1] The word “trees” as used in the AMMs refers to trees that are suitable habitat for each species within their range. See the USFWS’ current summer survey guidance for our latest definitions of suitable habitat.

    Yes

42. **Tree Removal AMM 3**
    Can tree removal be limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits)?

    Yes

43. **Tree Removal AMM 4**
    Can the project avoid cutting down/removal of *all* (1) **documented**[1] Indiana bat or NLEB roosts[2] (that are still suitable for roosting), (2) trees **within** 0.25 miles of roosts, and (3) documented foraging habitat any time of year?

    [1] The word documented means habitat where bats have actually been captured and/or tracked.

    [2] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

    Yes

44. **Lighting AMM 1**
    Will *all* **temporary** lighting be directed away from suitable habitat during the active season?

    Yes

Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

   No

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

   Yes

3. How many acres[1] of trees are proposed for removal between 0-100 feet of the existing road/rail surface?

   [1] If described as number of trees, multiply by 0.09 to convert to acreage and enter that number.

   0.80

4. Please describe the proposed bridge work:

   all small structures (23 total) within the limits of the 4 passing lane locations will be evaluated during the design phase for replacement.

5. Please state the timing of all proposed bridge work:

   Fall of 2023

6. Please enter the date of the bridge assessment:

   July 6, 2021

Avoidance And Minimization Measures (AMMs)

This determination key result includes the committment to implement the following Avoidance and Minimization Measures (AMMs):

LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

TREE REMOVAL AMM 2

Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/ rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed.

TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

TREE REMOVAL AMM 4

Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or
documented foraging habitat any time of year.

GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal.

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on April 22, 2021. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPaC User Contact Information

Name: Benjamin Neild
Address: 41 W. 300 N.
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State: IN
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Email bneild@indot.in.gov
Phone: 7653615259

From: Kurtz, Randy <RKurtz@indot.IN.gov>
Sent: Thursday, October 27, 2022 8:15 AM
To: Harlan Ford; Neild, Benjamin
Subject: [EXT] RE: SR 32 Passing Lanes (Lead Des No. 1800060)

****** Please use caution this is an externally originating email. ******
Do not click on links or open attachments unless you recognize the sender and know the contents are safe.

I wouldn't think you need to resubmit the IPaC for that reason unless the pipes will remove crazy amounts of trees. Ben, if you can think of a reason why, then please jump in. Otherwise, I'd say, IPaC is fine.

Randy "Zane" Kurtz
Environmental Section Manager
Capital Program Management Division
41 West 300 North
Crawfordsville, IN 47933
Office: (765)361-5232
Email: rkurtz@indot.in.gov

From: Harlan Ford <hford@rqaw.com>
Sent: Wednesday, October 26, 2022 3:08 PM
To: Kurtz, Randy <RKurtz@indot.IN.gov>; Neild, Benjamin <BNeild@indot.IN.gov>
Subject: SR 32 Passing Lanes (Lead Des No. 1800060)

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

Hey Zane/Ben,

We have recently learned that this project will include replacing or installing new drive pipes (20 total) within the limits of the passing lane locations. This drive pipes were not included in the IPaC structure inspection table. I wanted to reach out to see if we needed to resubmit IPaC to include these additional drive pipes? If you think so, then can I get one of you to invalidate the concurrence verification letter so that I can update IPaC? See below for the list of drive pipes that have been added to this project. I have highlighted the new drive pipes that will be installed, and we will not include these in IPaC since no pipe currently exists. Additionally, some of the unnamed structures previously included in the inspection table now have CV numbers and associated Des No's. due to their proposed sizes.

Name on Plan	Ex Pipe	Proposed Size

301	12" CMP	15
302	no pipe	15
303	12" CMP	15
304	12" CMP	15
305	no pipe	15
306	15" CMP	15
307	12" CMP	15
308	12" RCP	15
309	15" CMP	15
310	8" CMP	15
311	10" CMP	15
312	12" CMP	15
313	no pipe	15
314	no pipe	15
315	12" CMP	15
~~316~~	~~12" CMP~~	~~15~~
~~317~~	~~15" CMP~~	~~15~~
~~318~~	~~15" CMP~~	~~15~~
~~319~~	~~15" CMP~~	~~15~~
~~320~~	~~no pipe~~	~~15~~

Structures 316-320 have been removed from scope of work with removal of far east passing lane.

Let me know if either of you would like to discuss further.

Thanks,

HARLAN FORD
ENVIRONMENTAL SCIENTIST
O: 423.458.5979
8770 North St., Ste. 110, Fishers, IN 46038
www.rqaw.com

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021;4:30pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000305 (CV 032-006-49.90)	**Structure Coordinates** (latitude and longitude) 40.05464, -86.66734	**Structure Height** (approximate) 4ft.	**Structure Length** 43ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ⊙ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ⊙ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

4 sided 8' x 4' box

Crossings Traversed (check all that apply)

- ☐ Bare ground
- ☐ Rip-rap
- ☐ Flowing water
- ☐ Standing water
- ☐ Seasonal water
- ☒ Open vegetation
- ☐ Closed vegetation
- ☐ Railroad
- ☐ Road/trail - Type:
- ☐ Other:

Surrounding Habitat (check all that apply)

- ☒ Agricultural
- ☐ Commercial
- ☐ Residential-urban
- ☒ Residential-rural
- ☐ Woodland/forested
- ☐ Grassland
- ☐ Ranching
- ☐ Riparian/wetland
- ☐ Mixed use
- ☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Spaces between concrete end walls and the bridge deck	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All guiderails	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 4:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000453 (CV 032-006-50.00)	**Structure Coordinates** (latitude and longitude) 40.05463, -86.66480	**Structure Height** (approximate) 3.5ft.	**Structure Length** 46ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ◉ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

4 sided 5' X3.5' box

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☐ Rip-rap	☐ Closed vegetation
☐ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☐ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Spaces between concrete end walls and the bridge deck	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 3:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000329 (CV 032-006-53.38)	**Structure Coordinates** (latitude and longitude) 40.05423, -86.60195	**Structure Height** (approximate) 3ft.	**Structure Length** 42ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ⊙ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ⊙ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

4 sided 5' x3' box

Crossings Traversed (check all that apply)

- ☐ Bare ground
- ☐ Rip-rap
- ☐ Flowing water
- ☐ Standing water
- ☐ Seasonal water
- ☒ Open vegetation
- ☐ Closed vegetation
- ☐ Railroad
- ☐ Road/trail - Type:
- ☐ Other:

Surrounding Habitat (check all that apply)

- ☒ Agricultural
- ☐ Commercial
- ☐ Residential-urban
- ☒ Residential-rural
- ☐ Woodland/forested
- ☐ Grassland
- ☐ Ranching
- ☐ Riparian/wetland
- ☐ Mixed use
- ☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Spaces between concrete end walls and the bridge deck	☒ Not present .	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All guiderails	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 2:30pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000305 (CV 032-006-53.90)	**Structure Coordinates** (latitude and longitude) 40.05429, -86.59214	**Structure Height** (approximate) 8.4ft.	**Structure Length** 50ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ◉ Other: Concrete slab top culvert

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes: 17' long concrete slabtop

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☒ Rip-rap	☐ Closed vegetation
☒ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☒ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present; Even-though this is a culvert it does have a slap top with spaces at concrete end walls.	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 2:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000454 (CV 032-006-54.25)	**Structure Coordinates** (latitude and longitude) 40.05423, -86.58552	**Structure Height** (approximate) 6.6ft.	**Structure Length** 42ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ◉ Other: Concrete slab top culvert

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

12' long concrete slabtop

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☒ Rip-rap	☐ Closed vegetation
☐ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☒ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☒ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present; Even-though this is a culvert it does have a slap top with spaces at concrete end walls.	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 1:30pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000305 (CV 032-006-54.47)	**Structure Coordinates** (latitude and longitude) 40.05414, -86.58137	**Structure Height** (approximate) 3ft.	**Structure Length** 41ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ⊙ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Creosote Evidence

- ○ Yes ⊙ No
- ○ Unknown

Notes:

4 sided 6' x 3' box culvert

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☐ Rip-rap	☐ Closed vegetation
☐ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☐ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Spaces between concrete end walls and the bridge deck	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All guiderails	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 12:30pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID 93000484 (CV 032-006-57.29)	**Structure Coordinates** (latitude and longitude) 40.05348, -86.52867	**Structure Height** (approximate) 3ft.	**Structure Length** 54ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ○ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ⊙ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☐ Concrete
☐ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ⊙ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☒ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

4 sided 4' x 3' box culvert

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☐ Rip-rap	☐ Closed vegetation
☐ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☐ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Spaces between concrete end walls and the bridge deck	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All guiderails	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ All expansion joints	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

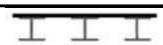
Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 3:30pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID	**Structure Coordinates (latitude and longitude)**	**Structure Height (approximate)**	**Structure Length**
010530(032-06-06712)	40.05439, -86.62283	10ft.	65ft.

Structure Type (check one)

Bridge Construction Style

○ Cast-in-place		◉ Pre-stressed Girder	
○ Flat Slab/Box		○ Steel I-beam	
○ Truss		○ Covered	
○ Parallel Box Beam		○ Other:	

Culvert Type

- ○ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☐ None	☒ Concrete
☒ Concrete	☒ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Culvert Material

- ☐ Metal
- ☐ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Creosote Evidence

- ○ Yes ◉ No
- ○ Unknown

Notes:

Crossings Traversed (check all that apply)

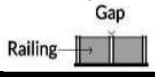
☐ Bare ground	☒ Open vegetation
☒ Rip-rap	☐ Closed vegetation
☒ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☒ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Crack between concrete railings on top of the bridge deck 	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Vertical surfaces on concrete I-beams	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All expansion joints	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature: 

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 12:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID	**Structure Coordinates (latitude and longitude)**	**Structure Height (approximate)**	**Structure Length**
010550 (032-06-08498)	40.04660, -86.49880	12ft.	87ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ◉ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☒ None	☒ Concrete
☒ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☐ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

Crossings Traversed (check all that apply)

- ☐ Bare ground
- ☒ Rip-rap
- ☒ Flowing water
- ☐ Standing water
- ☐ Seasonal water
- ☒ Open vegetation
- ☐ Closed vegetation
- ☐ Railroad
- ☐ Road/trail - Type:
- ☐ Other:

Surrounding Habitat (check all that apply)

- ☒ Agricultural
- ☒ Commercial
- ☐ Residential-urban
- ☐ Residential-rural
- ☐ Woodland/forested
- ☐ Grassland
- ☐ Ranching
- ☐ Riparian/wetland
- ☐ Mixed use
- ☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All expansion joints	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 5:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID	**Structure Coordinates (latitude and longitude)**	**Structure Height (approximate)**	**Structure Length**
010520(032-06-06711 A)	40.05463, -86.66828	10ft.	67ft.

Structure Type (check one)

Bridge Construction Style

- ○ Cast-in-place
- ◉ Flat Slab/Box
- ○ Truss (Side View)
- ○ Parallel Box Beam
- ○ Pre-stressed Girder
- ○ Steel I-beam
- ○ Covered
- ○ Other:

Culvert Type

- ○ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☒ None	☒ Concrete
☒ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☐ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

Crossings Traversed (check all that apply)

☐ Bare ground	☒ Open vegetation
☒ Rip-rap	☐ Closed vegetation
☒ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☒ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	**Assessment Notes**	**Evidence of Bats** (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Crack between concrete railings on top of the bridge deck (Gap / Railing)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Weep holes, scupper drains, and inlets/pipes	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All expansion joints	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

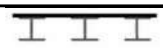
Signature:

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
July 6, 2021; 1:00pm	1800060 & 1900361	SR 32	Boone
Federal Structure ID	**Structure Coordinates (latitude and longitude)**	**Structure Height (approximate)**	**Structure Length**
010540 (032-06-00583 C)	40.05405, -86.56955	10ft.	26ft.

Structure Type (check one)

Bridge Construction Style

○ Cast-in-place		○ Pre-stressed Girder	
◉ Flat Slab/Box		○ Steel I-beam	
○ Truss		○ Covered	
○ Parallel Box Beam		○ Other:	

Culvert Type

- ○ Box
- ○ Pipe/Round
- ○ Other:

Other Structure

- ○

Structure Material (check all that apply)

Deck Material	*Beam Material*	*End/Back Wall Material*
☐ Metal	☒ None	☒ Concrete
☒ Concrete	☐ Concrete	☐ Timber
☐ Timber	☐ Steel	☐ Stone/Masonry
☐ Open grid	☐ Timber	☐ Other:
☐ Other:	☐ Other:	

Creosote Evidence

- ○ Yes ◉ No
- ○ Unknown

Culvert Material

- ☐ Metal
- ☐ Concrete
- ☐ Plastic
- ☐ Stone/Masonry
- ☐ Other:

Notes:

Crossings Traversed (check all that apply)

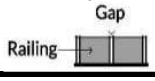
☐ Bare ground	☒ Open vegetation
☒ Rip-rap	☐ Closed vegetation
☒ Flowing water	☐ Railroad
☐ Standing water	☐ Road/trail - Type:
☐ Seasonal water	☐ Other:

Surrounding Habitat (check all that apply)

☒ Agricultural	☐ Grassland
☐ Commercial	☐ Ranching
☐ Residential-urban	☒ Riparian/wetland
☒ Residential-rural	☐ Mixed use
☐ Woodland/forested	☐ Other:

Areas Assessed (check all that apply)

Check all areas that apply. If an area is not present in the structure, check the "not present" box.
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.

Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)
☒ All crevices and cracks: **Bridges/culverts:** rough surfaces or imperfections in concrete **Other structures:** soffits, rafters, attic areas	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Concrete surfaces (open roosting on concrete)	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between concrete end walls and the bridge deck	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Crack between concrete railings on top of the bridge deck 	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☐ Vertical surfaces on concrete I-beams	☒ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Spaces between walls, ceiling joists	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ Weep holes, scupper drains, and inlets/pipes	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All guiderails	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species
☒ All expansion joints	☐ Not present	☐ Visual - live # dead # ☐ Guano ☐ Staining ☐ Audible ☐ Odor ☐ Photos ☐ Species

Name: Harlan Ford

Signature:

No.	Structure Number	Location	Waterbody	Inspection Date	Existing Structure	Length (ft)	Work Type	Evidence of bats?
1	Unnammed	638+67.23	N/A	7/6/2021	1.25' Concrete pipe	47.15	Replacement	**No**
2	Unnammed	646+94.68	N/A	7/6/2021	1.25' CMP	55.07	Replacement	**No**
3	Unnammed	678+68.46	N/A	7/6/2021	2' CMP	40.1	Replacement	**No**
4	Unnammed	680+35.56	N/A	7/6/2021	1.25' CMP	49.5	Replacement	**No**
5	Unnammed	754+03.08	N/A	7/6/2021	1.5' Concrete pipe	50.8	Replacement	**No**
6	Unnammed	791+60.59	N/A	7/6/2021	2.5' CMP	53	Replacement	**No**
7	Unnammed	796+40.21	N/A	7/6/2021	1.5' Concrete pipe	42.45	Replacement	**No**
8	Unnammed	28+19.41	N/A	7/6/2021	1.5' Concrete pipe	43.7	Replacement	**No**
9	Unnammed	41+44.54	N/A	7/6/2021	2' X 1' CMP	47	Replacement	**No**
10	Unnammed	73+41.09	N/A	7/6/2021	2' x 1.25' Concrete pipe	47.3	Replacement	**No**
11	Unnammed	242+77.31	N/A	7/6/2021	2' x 1.5' CMP	46.96	Replacement	**No**
12	Unnammed	257+75.21	N/A	7/6/2021	2' x 1.5 Concrete Pipe	47.15	Replacement	**No**

Categorical Exclusion

Appendix D

Section 106 of the National Historic Preservation Act (NHPA)

Minor Projects PA Project Assessment Form

Date: 10/18/2021 ***UPDATE:** 6/9/2022 ****UPDATE:** 12/16/2022 3/29/2023, RQAW

Project Designation Number: 1800060 (lead) & 1900361

Route Number: SR 32

Project Description: Auxiliary/Passing Lanes Project from 3.69 miles west of SR 75 to 2.47 miles west of I-65 and HMA Overlay, Minor Structural from 0.05 mile west of SR 75 to 0.5 mile west of I-65

The Federal Highway Administration (FHWA) and Indiana Department of Transportation (INDOT), propose to proceed with auxiliary lanes (passing lanes) and minor structural overlay project on SR 32, starting approximately 3.69 miles west of SR 75 junction to approximately 0.5 mile west of I-65 in Boone County, Indiana.

three (3)

1

The preferred alternative involves a functional hot mix asphalt (HMA) minor structural overlay and the addition of ~~four (4)~~ passing lanes [2 eastbound (EB) and ~~2~~ westbound (WB)] that would each be approximately one mile long. The HMA overlay portion of the project (Des No. 1900361) would be located on SR 32 from 0.05 mi W of SR 75 to 0.5 mi W of I-65 and the added passing lanes portion of this project (Des No. 1800060) would be located on SR 32 from 3.69 mi W of SR 75 to ~~2.47 mi W of I-65~~. In total, the proposed improvements would involve 6.62 miles of mill and resurface and approximately ~~4~~ miles of added passing lanes.

1.41 mi E of SR 75

3

three (3)

The proposed cross-section for SR 32 within the HMA overlay portion would include two 12-foot-wide travel lanes with 3-foot-wide paved shoulders. In the ~~four (4)~~ areas where the passing lanes would be installed, the cross-section would include three 12-foot-wide travel lanes with 3-foot paved shoulders.

three (3)

The ~~four (4)~~ passing lanes will be constructed at the following various locations along SR 32: 1) Passing Lane 1 (eastbound) starts approximately 0.57 mile east of County Road (CR) 1175 West and extends to 0.10 mile west of CR 1050 West; 2) Passing Lane 2 (westbound) starts approximately 0.53 mile east of CR 1000 West and extends to approximately 0.50 mile west of SR 75; 3) Passing Lane 3 (eastbound) starts approximately 0.30 mile east of SR 75 and extends to 0.40 mile east of CR 700 West; ~~and 4) Passing Lane 4 (westbound) starts approximately 0.34 mile west of CR 400 West and extends to 0.08 mile west of CR 325 West~~.

three

This project would perpetuate the existing drainage where possible and there are several locations where the ditches are no longer defined. The extent of proposed ditch regrading is being developed during the design process. Also, new ditches need to be established and are required within the passing lane areas. In addition, the small structures within the limits of the ~~four~~ passing lane locations are being evaluated for replacement during the design phase, including an INDOT small structure, Culvert Number CV 032-006-53.38. Please see the table below for a list of these small structures.

Please note that the numbering system for structures and some proposed sizes has changed since MPPA Approval. Please refer to the Bridges and Small Structures section of this CE document for an updated list of structures.

Str. Nos. have changed from:

10 to 101
11 to 102
12 to 103
13 to 104
14 to 110
15 to 111
16 to 112
17 to 120
18 to 121
19 to 122
20 to 123

Feature Crossed	Str. No.	INDOT Culvert Number	Existing Size/Type	Proposed Size/Type/Notes
SR 32	10		15” Concrete Pipe	30” Concrete Pipe
SR 32	11		15” CMP	3’x3’ RCB
SR 32	12		24” CMP	4’x3’ RCB
SR 32	13		15” Concrete Pipe	18” CMP
SR 32	14		18” Concrete Pipe	4’x3’ RCB
SR 32	15		30” CMP	5’x3’ RCB

SR 32	16		18” Concrete Pipe	7’x3’ RCB
SR 32	17		18” Concrete Pipe	3’x3’ RCB
SR 32	18		Dual 12” Concrete Pipes	14’x4’ RCB
SR 32	19	CV 032-006-53.38	5’x3’ RCB Culvert	17’x4’ RCB
SR 32	20		Dual 15” Concrete Pipes	10’x5’ RCB
~~SR 32~~	~~21~~	-	~~Dual 18” Concrete Pipes~~	~~13’x4’ RCB~~
~~SR 32~~	~~22~~	-	~~Dual 18” Concrete Pipes~~	~~8’x3’ RCB~~

These two small structure replacements are removed the project.

The existing right-of-way is considered to be at the centerline of the existing pavement. Additional right-of-way is anticipated to be necessary, but further investigation on the exact amount of right-of-way to be acquired is needed.

*On 4/26/2022, INDOT-CRO was informed that there had been some scope changes and right-of-way-modifications for this project. Ditch regrading is no longer proposed. However, new ditches will still be established where passings lanes are constructed. Some additional proposed right-of-way areas occur outside of the original archaeology survey area so an addendum to the Phase Ia Archaeological Reconnaissance was completed; see below for details. Categories B-3 and B-9 of the Minor Projects PA still apply.

**On 10/27/2022, INDOT-CRO was informed of addition work that will be completed as part of the project. In addition to the small structure replacements previously documented, the pipes underneath residential driveways and field entrances will also be installed or replaced within the passing lane limits of the project:

Structure No. on Plans	**Existing Drive Pipe Size**	**Proposed Pipe Size**
301	12" CMP	15"
302	no existing pipe	15"
303	12" CMP	15"
304	12" CMP	15"
305	no existing pipe	15"
306	Two 15" CMPs	15"
307	12" CMP	15"
308	12" RCP	15"
309	15" CMP	15"
310	8" CMP	15"
311	10" CMP	15"
312	12" CMP	15"
313	no existing pipe	15"
314	no existing pipe	15"
315	12" CMP	15"
~~316~~	~~12" CMP~~	~~15"~~
~~317~~	~~15" CMP~~	~~15"~~

These five drive pipes are removed the project.

~~318~~	~~15" CMP~~	~~15"~~
~~319~~	~~15" CMP~~	~~15"~~
~~320~~	~~no existing pipe~~	~~15"~~

This scope of work is covered by previous reviews. Categories B-3 and B-9 of the Minor Projects PA still apply.

Feature crossed (if applicable):

City/Township: Jefferson and Center townships **County:** Boone County

Information reviewed (please check all that apply):

☑ General project location map ☑ USGS map ☑ Aerial photograph ☑ Interim Report
☑ Written description of project area ☑ General project area photos ☑ Soil survey data
☐ Previously completed historic property reports ☑ Previously completed archaeology reports
☑ Bridge Inspection Information ☑ SHAARD ☑ SHAARD GIS ☑ Streetview Imagery

Other (please specify): Indiana Historic Building, Bridges, and Cemeteries Map (IHBBCM); County GIS data (accessed via http://50.73.115.85/boone/map.phtml); *Residential Planning and Development in Indiana, 1940-1973*; Bridge Inspection Application System (BIAS); project information provided by RQAW dated 8/24/2021 and on file at INDOT-CRO;

Travis, Sidney
2021 A Phase Ia Archaeological Reconnaissance for the Proposed State Road 32 Improvements Near Lebanon in Boone County, Indiana (INDOT Des Nos. 1800060 And 1900361). Cultural Resource Analysts, Inc. Submitted to RQAW Corporation.

2022 An Addendum to the Phase Ia Archaeological Reconnaissance for the Proposed State Road 32 Improvements Project near Lebanon in Boone County, Indiana (INDOT Des. Nos. 1800060 and 1900361). Cultural Resource Analysts, Inc. Submitted to RQAW Corporation. Report on file at INDOT-CRO.

Please specify all applicable categories and condition(s) (applicable conditions are highlighted):

A-4. Roadway work associated with surface replacement, reconstruction, rehabilitation, or resurfacing projects, including overlays, shoulder treatments, pavement repair, seal coating, pavement grinding, and pavement marking within previously disturbed soils where replacement, repair, or installation of curbs, curb ramps or sidewalks will not be required.

B-3. Construction of added travel, turning, or auxiliary lanes (e.g., bicycle, truck climbing, acceleration and deceleration lanes) and shoulder widening under the following conditions ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]***:

Condition A (Archaeological Resources)
One of the two conditions listed below must be met *(EITHER Condition i or Condition ii must be satisfied):*
i. Work occurs in previously disturbed soils; *OR*

ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE**.**

Condition B (Above-Ground Resources)
Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

B-9. Installation, replacement, repair, lining, or extension of culverts and other drainage structures under the conditions listed below ***[BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied]***:

Condition A (Archaeological Resources)
One of the two conditions listed below must be met *(EITHER Condition i or Condition ii must be satisfied)*:

i. Work occurs in previously disturbed soils; *OR*
ii. Work occurs in undisturbed soils and an archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register-listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE**.**

Condition B (Above-Ground Resources)
One of the conditions below must be met *(EITHER Condition i or Condition ii must be satisfied)*:

i. Work does not involve installation of a new culvert and other drainage structure, and there are no impacts to unusual features, including but not limited to historic brick or stone sidewalks, curbs or curb ramps, stepped or elevated sidewalks and retaining walls, under one of the following conditions *(Condition a, Condition b, or Condition c must be satisfied)*:
    a. The structure exhibits no wood, stone, or brick structures or parts therein; *OR*
    b. The structure exhibits only modern wood, stone, or brick structures or parts therein; *OR*
    c. The structure exhibits non-modern wood, stone, or brick structures or parts therein and the following conditions are met *(BOTH Condition 1 AND Condition 2 must be met):*
        1. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; *AND*
        2. The structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. Under this condition, a qualified professional (meeting the Secretary of Interior's Professional Qualification standards [48 Federal Register (FR) 44716]) must prepare an analysis and justification that the structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. This documentation must be reviewed and approved by INDOT Cultural Resources Office.
ii. Work involves the installation of a new culvert and other drainage structures AND/OR there may be impacts to unusual features, including historic brick or stone sidewalks, curbs or curb ramps, stepped or elevated sidewalks and retaining walls, under the following conditions *(BOTH Condition a and Condition b must be satisfied)*:

a. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource; *AND*
b. The subject structure exhibits one of the characteristics described below *(Condition 1, Condition 2 or Condition 3 must be satisfied)*.
    1. The structure exhibits no wood, stone, or brick structures or parts therein; *OR*
    2. The structure exhibits only modern wood, stone, or brick structures or parts therein; *OR*
    3. The structure exhibits non-modern wood, stone, or brick structures or parts therein but lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. Under this condition, a qualified professional (meeting the Secretary of Interior's Professional Qualification standards [48 Federal Register (FR) 44716]) must prepare an analysis and justification that the structure lacks sufficient integrity and/or a context that suggests it might have engineering or historical significance. This documentation must be reviewed and approved by INDOT Cultural Resources Office.

Are there any commitments associated with this project? If yes, please explain and include in the Additional Comments Section below. yes ☐ no ☒

Does the project result in a de minimis impact to a Section 4(f) protected historic resource? If yes, please explain in the Additional Comments Section below. yes ☐ no ☒

Additional comments:

Above-ground Resources
An INDOT-Cultural Resources Office (CRO) historian who meets the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61 first performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Boone County. No listed resources are present within 0.25 mile of the project areas, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The Indiana Historic Sites and Structures Inventory (IHSSI) and National Register information for Boone County are available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBCM). All sites were reviewed through the IHBBCM, which contains the most recently updated SHAARD information. The following IHSSI resources are recorded within 0.25 mile of the project areas:

Center Township
IHSSI #011-269-25020 (School; 2955 W CR 50 N; c. 1920; "contributing")
IHSSI #011-269-25019 (Farm; SR 32; c. 1850; demolished)
IHSSI #011-269-25018 (Farm; SR 32; c. 1850; demolished)

Jefferson Township
IHSSI #011-269-20022 (Lane Farm; 4725 SR 32; c. 1890; demolished)
IHSSI #011-269-20021 (Farm; 5140 W SR 32; c. 1890; demolished)
IHSSI #011-269-20028 (Farm; SR 75; c. 1890; "contributing")
IHSSI #011-269-20018 (Jefferson Township School; SR 32; 1926; demolished)
IHSSI #011-582-20017 (Farm; SR 32; c. 1900; "contributing")
IHSSI #011-582-20014 (Farm; SR 32; c. 1890/c. 1910; "contributing")

According to the IHSSI rating system, generally properties rated "contributing" do not possess the level of historical or architectural significance necessary to be considered individually National Register eligible, although they would contribute to a historic district. If they retain material integrity, properties rated "notable" might possess the necessary level of significance after further research. Properties rated

"outstanding" usually possess the necessary level of significance to be considered National Register eligible if they retain material integrity. Historic districts identified in the IHSSI are usually considered eligible for the National Register.

Passing Lane 1 (eastbound) from 0.57 mile E of CR 1175 W to 0.10 mile W of CR 1050 W
This portion of the project will occur in a rural area with agricultural fields and scattered residential properties present. Within 0.25 mile of the project area, there are six (6) above-ground properties present, including IHSSI #011-582-20014 (Farm; "contributing"), that will be 50 years old or older by the time of project letting in 2023. The other five (5) properties date to the mid-twentieth century. None of these properties appear to meet the *Residential Planning and Development in Indiana, 1940-1973* requirements to be individually eligible to the National Register.

Passing Lane 2 (westbound) from 0.53 mile E of CR 1000 W to 0.50 mile W of SR 75
This portion of the project will occur in a rural area with agricultural fields and scattered residential properties present. There are six (6) above-ground properties present, including IHSSI #011-582-20017 (Farm; "contributing"), that will be 50 years old or older by the time of project letting in 2023 within 0.25 mile of the project area. One property, a ranch house with agricultural outbuildings, dates to the mid-twentieth century. It does not meet the *Residential Planning and Development in Indiana, 1940-1973* requirements to be individually eligible to the National Register. The other four properties appear to date to the early twentieth century. All of the properties display alterations, including additions and replacement windows and siding. For the purposes of this determination, these four early twentieth-century properties do not retain the material integrity necessary to be considered potentially eligible to the National Register.

Passing Lane 3 (eastbound) from 0.30 mile E of SR 75 to 0.40 mile E of CR 700 W
The western end of this portion of the project is within a small unincorporated community, but the rest of the passing lane will be constructed in a rural area with agricultural fields and scattered residential properties present. Within 0.25 mile of the project, seven (7) properties will be 50 years old or older by project letting in 2023. Three (3) of the properties appear date to the mid-twentieth century, three (3) date approximately to the early twentieth century, and one property appears to date to the late nineteenth/early twentieth century. They mostly consist of residential houses, some with agricultural outbuildings, but one property is a church building and one is a single barn. The church, one of the three mid-century properties, was altered in the late twentieth century or twenty-first century. It does not possess the material integrity to be considered eligible to the National Register. Neither of the other two (2) mid-twentieth century properties appear to meet the *Residential Planning and Development in Indiana, 1940-1973* requirements to be individually eligible to the National Register. The barn appears to date to the early twentieth century, but it is not associated with another property; the barn is not considered individually eligible to the National Register. Both of the other early-twentieth century residential properties and the late nineteenth-century/early twentieth-century residential property are highly altered by additions and replacement windows and siding. In addition, they do not appear to be good examples of a particular style or type. For the purposes of this determination, the properties do not appear to retain the material integrity or possess the cultural significance necessary to be considered eligible to the National Register.

Passing Lane 4 (westbound) from 0.34 mile W of CR 400 W to 0.08 mile W of CR 325 W
This portion of the project will occur in a rural area with agricultural fields and scattered residential properties present. There eight (8) above-ground properties that will be 50 years old or older by the time of project letting in 2023. Three (3) properties date to the mid-twentieth century, four (4) properties date to the early twentieth century, and one property dates to the late nineteenth century. All of the properties are residential houses and most also have associated agricultural outbuildings present. The three mid-twentieth-century properties do not appear to meet the *Residential Planning and Development in Indiana, 1940-1973* requirements to be individually eligible to the National Register. All of these properties have been highly altered with large additions and replacement windows and siding. In addition, they do not appear to be good examples of a particular style or type. There is no evidence that any of the early

twentieth-century properties or the late nineteenth-century property possess the material integrity and/or cultural significance necessary to be considered eligible to the National Register for the purposes of this determination.

The CV 032-006-53.38 structure is a four-sided reinforced concrete box culvert constructed in 1946. Based on an examination of BIAS reports and photos provided by RQAW, the structure exhibits no wood, stone, or brick structures or parts therein. In addition, there is no evidence to suggest that it possesses historical or engineering significance.

The other 12 structures consist of corrugated metal pipes and concrete pipes. These culverts do not appear in the Bridge Inspection Application System (BIAS) since they are functionally classified as pipes due to their small size of less than four feet in diameter. Based on an examination of photos and descriptions of the structures provided by RQAW, the structures exhibit no wood, stone, or brick structures or parts therein. In addition, there is no evidence to suggest that they possess historical or engineering significance.

Based on the available information, as summarized above, no above-ground concerns exist as long as the project scope does not change.

Archaeological Resources

An INDOT Cultural Resources Office (CRO) archaeologist, who met the Secretary of the Interior's Professional Qualification Standards as per 36 CFR Part 61, reviewed and concurred with the archaeological investigation submitted by CRA, Inc. (Travis 2021). The archaeological records review revealed that there were no previously recorded archaeological sites and only one previously conducted archaeological investigation within the survey area.

The archaeological reconnaissance documented nine previously unrecorded archaeological sites. Two sites (12Bo596 and 12Bo599) are low density historic artifact scatters. Three sites (12Bo597, 12Bo598, and 12Bo600) were multicomponent and comprised of historic artifact scatters and prehistoric isolated finds. Sites 12Bo601 and 12Bo602 are prehistoric isolated finds. Sites 12Bo603 and 12Bo604 are low density lithic scatters that have no identifiable components associated with them. The portions of all nine sites (12Bo596─12Bo604) investigated did not demonstrate the ability to provide important information to the history or prehistory of the area, and no further archaeological work is recommended within the survey area.

***4/26/22 UPDATE**: An addendum Phase Ia survey was conducted to cover additional areas of proposed R/W that were added to the project following the original Phase Ia survey. Twenty small areas totaling approximately 0.85 ac were investigated through a combination of systematic shovel probing (n=28), pedestrian survey, and visual inspection of previously disturbed areas. The location of site 12Bo602 was revisited and no evidence of the site was observed. No archaeological sites were recorded as a result of the survey, and no additional investigation is recommended (Travis 2022).

****10/27/22 UPDATE:** The additional pipe locations are within the previously investigated areas (Travis 2021, 2022). Structure No. 307 is located in the ditch adjacent to site 12BO604, which was previously found to be ineligible for the National Register (Travis 2021), and its replacement is unlikely to impact the site. According to SHAARD, DHPA concurred on June 12, 2022, that no additional investigation within the surveyed portion of the site is necessary.

Therefore, there are no archaeological concerns as long as the project scope does not change.

Accidental Discovery: If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, construction within 100 feet of the find will be stopped and the INDOT Cultural Resources Office and the Division of Historic Preservation and Archaeology will be notified immediately.

INDOT Cultural Resources staff reviewer(s): Kelyn Alexander, David Moffatt (2021), Matt Coon (2022)

****Be sure to attach this form to the National Environmental Policy Act documentation for this project. Also, the NEPA documentation shall reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.*

Contract Publication Series 20-232

A PHASE IA ARCHAEOLOGICAL RECONNAISSANCE FOR THE PROPOSED STATE ROAD 32 IMPROVEMENTS NEAR LEBANON IN BOONE COUNTY, INDIANA (INDOT DES NOS. 1800060 AND 1900361)

by
Sidney Travis, M.A.

Prepared for

RQAW Corporation

Prepared by

cra
cultural resource analysts, inc

Kentucky | West Virginia | Wyoming
Indiana | Louisiana | Tennessee | Virginia

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A PHASE IA ARCHAEOLOGICAL RECONNAISSANCE FOR THE PROPOSED STATE ROAD 32 IMPROVEMENTS NEAR LEBANON IN BOONE COUNTY, INDIANA (INDOT DES NOS. 1800060 AND 1900361)

By

Sidney Travis, M.A.
with contributions by Aaron Harth and Andrew Martin

Prepared for

Kyle Boot
RQAW Corporation
3770 North Street, Suite 110
Phone: (317) 588-1762
Email: kboot@rqaw.com

Prepared by

Cultural Resource Analysts, Inc.
201 NW 4th Street, Suite 204
Evansville, Indiana 47708
E-mail: amartin@crai-ky.com
Phone: (812) 253-3009
Fax: (812) 253-3010
CRA Project No.: I20R007

Andrew V. Martin, RPA 61710
Principal Investigator

October 14, 2021

Lead Agency: Indiana Department of Transportation
INDOT DES. Nos.: 1800060 and 1900361
Indiana State Museum Accession No.: 71.19.1814

VI. CONCLUSIONS AND RECOMMENDATIONS

Between June 7 and 10 2021, CRA Inc., personnel conducted a phase Ia archaeological reconnaissance survey for a proposed roadway improvement project along State Road 32 in Boone County, Indiana (INDOT Des. Nos. 1800060 and 1900361). The survey was conducted at the request of RQAW Corporation. The survey area encompassed approximately 42.5 ha (105.0 acres). Survey methods consisted of screened shovel testing, visual inspection of areas with obvious disturbance, and pedestrian survey in agricultural fields.

Prior to conducting this survey, an archaeological records review was completed using the Indiana DHPA's SHAARD. The records review revealed that there were no previously recorded archaeological sites and one previously conducted archaeological investigation within the survey area. The previous investigation was reinvestigated as part of the current survey.

The current survey located nine previously unrecorded archaeological sites (12Bo596─12Bo604) (Table 5). Two sites (12Bo596 and 12Bo599) are low density historic artifact scatters likely associated with non-extant mapped structures. Three sites (12Bo597, 12Bo598, and 12Bo600) were multicomponent comprised of historic artifact scatters associated with non-extant mapped structures and prehistoric isolated finds. The prehistoric isolates associated with Sites 12Bo597 and 12Bo598 are non-diagnostic flakes. The prehistoric isolate at Site 12Bo600 is a biface dating to the terminal Late Archaic period. Sites 12Bo601 and 12Bo602 are prehistoric isolated finds. Site 12Bo601 is a biface dating to the terminal Late Archaic, while Site 12Bo602 is a non-diagnostic flake. Sites 12Bo603 and 12Bo604 are low density lithic scatters that have no identifiable components associated with them. There is a high likelihood that all nine sites extend outside of the survey area, thus their NRHP eligibilities could not be fully assessed. However, the portion of all nine sites (12Bo596─12Bo604) investigated did not demonstrate the ability to provide important information to the history or prehistory of the area, and no further archaeological work is recommended at the sites within the survey area.

There also were two cemeteries identified within 30.48 m of the survey area. The Dover Cemetery was established in 1878 and the Pleasant View Cemetery was established in 1836. Current proposed construction plans limit ground disturbances by both cemeteries to the ROW for regrading purposes. However, the exact regrading limits are not currently available, thus cemetery development plans may be necessary.

Note that a principal investigator or field archaeologist cannot grant or withhold clearance to a project. Although the decision to grant or withhold clearance is reached, at least in part, on the recommendations made by the field investigator, clearance may be obtained only through an administrative decision made by the lead agency in consultation with the State Historic Preservation Officer (Indiana DHPA). This decision is made, in part, based on the recommendations made by the field investigator.

INDIANA ARCHAEOLOGICAL SHORT REPORT

State Form 54566 (R2 / 11-20)

INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF HISTORIC PRESERVATION AND ARCHAEOLOGY
402 West Washington Street, Room W274
Indianapolis, Indiana 46204-2739
Telephone Number: (317) 232-1646
Fax Number: (317) 232-0693
E-mail: dhpa@dnr.IN.gov

Where applicable, the use of this form is recommended but not required by the Division of Historic Preservation and Archaeology (DHPA).

Name(s) of author(s)	Date *(month, day, year)*
Sidney Travis, MA	June 9, 2022

Title of project
An Addendum to the Phase Ia Archaeological Reconnaissance for the Proposed State Road 32 Improvements Project near Lebanon in Boone County, Indiana (INDOT Des. Nos. 1800060 and 1900361)

This document is being used to report on the results of:
☐ Records check only ☐ Records check and Phase Ia archaeological reconnaissance
☒ An addendum to a previous archaeological report. *For an addendum, provide the following information.*

Name(s) of author(s) of previous report
Sidney Travis

Title of previous report
A Phase Ia Archaeological Reconnaissance for the Proposed State Road 32 Improvements Project near Lebanon in Boone County, Indiana (INDOT Des. Nos. 1800060 and 1900361)

Date of previous report *(month, day, year)*	DHPA number
10/14/2021	N/A

PROJECT OVERVIEW

Description of project
The Indiana Department of Transportation (INDOT) is proposing to conduct multiple improvements to State Road (SR) 32 west of Lebanon in Boone County, Indiana (Figures 1 and 2). The initial survey area for the added travel lanes and HMA overlay project was conducted in 2020 (Travis 2021). Since the original survey, additional areas of proposed right-of-way (ROW) have been added, and this addendum survey was conducted to cover areas that have not been previously investigated. The addendum survey area encompasses approximately 0.34 ha (0.85 acres) of agricultural fields, residential lawns, and ROW (Figure 3).

INDOT designation number(s)	Project number	DHPA number	DHPA plan number
1800060 and 1900361	CRA Project No. I220109; CRA Publication Series No. 22-113	N/A	N/A

Prepared for: *(Company / Institution / Agency)*
RQAW Corporation

Name of contact
Kyle Boot

Address *(number and street, city, state, and ZIP code)*
8770 North Street, Suite 110, Fishers, Indiana 46038

Telephone number	E-mail address
(317) 588-1762	kboot@rqaw.com

Name of principal investigator
Lisa Kelley

Name of company / institution
Cultural Resource Analysts, Inc.

Address *(number and street, city, state, and ZIP code)*
201 NW Fourth Street, Suite 204, Evansville, Indiana 47708

Telephone number	E-mail address
(812) 253-3009	amartin@crai-ky.com

Signature of principal investigator *(Required)*	Date *(month, day, year)*
Lisa Kelley	June 9, 2022

PROJECT LOCATION

County	USGS 7.5' series topographic quadrangle	Civil township
Boone	Shannondale and Hazelrigg	Center and Jefferson

Legal Location

Grid alignment
NW

1/4	1/4	1/4	1/4	Section	Township	Range

RECOMMENDATIONS

Records check *(Check all that apply.)*

- ☐ No archaeological investigation is recommended before the project is allowed to proceed because the records check has determined that the project area does not have the potential to contain archaeological resources.
- ☐ A Phase Ia archaeological reconnaissance is recommended.
- ☐ A cemetery development plan may be required under Indiana Code 14-21-1-26.5 because project ground disturbance will be within 100 feet of a cemetery.

Phase Ia archaeological reconnaissance *(Check all that apply.)*

- ☒ It is recommended that the project be allowed to proceed as planned because the Phase Ia archaeological reconnaissance has located no archaeological sites within the project area and/or previously recorded sites that were investigated warrant no additional investigation.
- ☐ It is recommended that Phase Ic archaeological subsurface reconnaissance be conducted before the project is allowed to proceed. The Phase Ia archaeological reconnaissance has determined that the project area includes landforms which have the potential to contain buried archaeological deposits.

Other recommendations / commitments

The survey did not locate any archaeological materials associated with Site 12Bo602, newly recorded archaeological sites, or the potential for intact buried archaeological deposits. Therefore, it is unlikely that intact archaeological deposits are located within the survey area, and no further archaeological work is recommended.

Pursuant to IC-14-21-1, if any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646.

REQUIRED ATTACHMENTS

- ☒ Figure showing project location within Indiana
- ☒ USGS topographic map showing the project area *(1:24,000 scale)*
- ☒ Aerial photograph showing the project area, land use and survey methods
- ☒ Photographs of the project area, including, if applicable, photographs documenting disturbances
- ☐ Project plans *(if available)*

Other attachments

Figures 1–9; Tables 1 and 2

References cited *(See short report instructions for required references to be consulted.)*

See attachments.

Comments

No additional comments.

CURATION

Location of project documentation

Survey notes and photographs will be retained at the office of CRA in Evansville, Indiana.

From: Kyle J. Boot
Sent: Wednesday, March 29, 2023 11:24 AM
To: Coon, Matthew
Cc: Branigin, Susan; Harlan Ford; Dylan Sievers; Hannah Kopf; Joe Dabkowski; Alexander, Kelyn
Subject: RE: SR 32 Auxiliary Lanes and Structural Overlay, Des. No. 1800060 & 1900361, Addendum MPPA Category A-4, B-3, and B-9 – additional driveway pipes

Hello Matt,

I want to let you know that we've learned a portion of the proposed scope for the above-referenced project will be removed/not constructed. The fourth (farthest east) passing lane will not be constructed and that area will receive an HMA overlay to match the adjacent HMA overlay scope. Please see the following link for the marked-up MPPA determination form in ProjectWise showing the revisions to the project description. Minor Projects PA determination form_B-3_B-9_1800060_1900361_update_2023-03-29.pdf

Due to the reduction in scope, this information is provided to your office for your records and consistency. This email correspondence and marked-up MPPA determination form will be included in the CE document.

Thank you,
Kyle

Kyle Boot, MSHP
Lead Architectural Historian

RQAW | DCCM
317-588-1762 p | 317-410-0845 c

From: Coon, Matthew <mcoon@indot.IN.gov>
Sent: Tuesday, January 17, 2023 3:15 PM
To: Kyle J. Boot <KBoot@rqaw.com>
Cc: Branigin, Susan <SBranigin@indot.IN.gov>; Harlan Ford <hford@rqaw.com>; Dylan Sievers <dsievers@rqaw.com>; Hannah Kopf <hkopf@rqaw.com>; Joseph Dabkowski <jdabkowski@rqaw.com>; Alexander, Kelyn <KAlexander3@indot.IN.gov>
Subject: RE: SR 32 Auxiliary Lanes and Structural Overlay, Des. No. 1800060 & 1900361, Addendum MPPA Category A-4, B-3, and B-9 – additional driveway pipes

Categorical Exclusion

Appendix E

Red Flag and Hazardous Materials

INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758-ES
Indianapolis, Indiana 46204

PHONE: (855) 463-6848
(855) INDOT4U

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Date: December 20, 2021

To: Site Assessment & Management (SAM)
Environmental Policy Office - Environmental Services Division (ESD)
Indiana Department of Transportation
100 N Senate Avenue, Room N758-ES
Indianapolis, IN 46204

From: Cameron Fraser
RQAW Corporation
8770 North Street; Suite 110
Fishers, Indiana 46038
cfraser@rqaw.com

Please note that the scope has been reduced from 4 passing lanes to 3 passing lanes. (Two EB and 1 WB).

Re: RED FLAG INVESTIGATION (Part 1 of 2)
Des. Number 1800060 and 1900361, State Project
Passing Lanes and Minor Structural Overlay
State Road (SR) 32, from 3.69 Miles West of SR 75 to 0.5 Mile West of Interstate (I)-65
Boone County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The Federal Highway Administration (FHWA) and Indiana Department of Transportation (INDOT), Crawfordsville District propose to proceed with a passing lanes and minor structural overlay project on SR 32 from 3.69 miles west of SR 75 to 0.5 mile west of I-65 in Boone County, Indiana. The proposed project will involve a Hot Mix Asphalt (HMA) Minor Structural Overlay on SR 32, from 0.05 mile west of the SR 75 junction to 0.5 mile west of I-65 (approximately 6.62 miles in length). Four (4) passing lanes (auxiliary lanes) will be constructed at various locations along SR 32, approximately 1.00 mile in length each. Passing Lane 1 (eastbound) starts approximately 0.57 mile east of County Road (CR) 1175 West and extends to 0.10 mile west of CR 1050 West. Passing Lane 2 (westbound) starts approximately 0.53 mile east of CR 1000 West and extends to approximately 0.50 mile west of SR 75. Passing Lane 3 (eastbound) starts approximately 0.30 mile east of SR 75 and extends to 0.40 mile east of CR 700 West. Passing Lane 4 (westbound) starts approximately 0.34 mile west of CR 400 West and extends to 0.08 mile east of CR 325 West. Drainage ditch areas will require regrading along the entire length of the project area. New ditches will be established in the passing lane areas. Multiple drainage pipes including two (2) INDOT small structures, Culvert Number (CV) 032-006-53.38 and CV 032-006-57.29, are within the passing lane limits and will be replaced.

This RFI will cover the four (4) passing lane sections, including the two (2) small structure replacements, only. The ditch regarding portion of this project will receive a limited resource evaluation, completed in a separate Limited RFI (Part 2 of 2). The HMA overlay is covered under the Programmatic Categorical Exclusion (PCE) dated February 2, 2012. Therefore, resource evaluation of this work is not necessary.

Bridge Work Included in Project: Yes ☐ No ☒ Structure #(s)_____

If this is a bridge project, is the bridge Historical? Yes ☐ No ☐ , Select ☐ Non-Select ☐

(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).

Culvert Work Included in Project: Yes ☒ No ☐ Structure #(s) CV 032-006-53.38 and CV 032-006-57.29

Proposed right of way: Temporary ☒ # Acres To Be Determined (TBD), Permanent ☒ # Acres TBD, Not Applicable ☐

Type of excavation: The passing lanes work will require excavation to a depth of approximately 2 feet below ground surface (bgs). The replacement of the two (2) small structures will require excavation to a depth of 8 feet bgs.

Maintenance of traffic (MOT): The added passing lanes and culvert replacements will include phased construction to limit the impact on commuters.

Work in waterway: Yes ☒ No ☐ Below ordinary high water mark: Yes ☒ No ☐

State Project: ☒ LPA: ☐

Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:

Religious Facilities	**2***	Recreational Facilities	**1**
Airports[1]	**N/A**	Pipelines	**3**
Cemeteries	**2**	Railroads	**N/A**
Hospitals	**N/A**	Trails	**1**
Schools	**1**	Managed Lands	**N/A**

[1]In order to complete the required airport review, a review of public airports within 3.8 miles (20,000 feet) is required.

Explanation:

Religious Facilities: *Two (2) religious facilities, one (1) mapped and one (1) unmapped, are located within the 0.5 mile search radius. The nearest religious facility, Pleasant View Church (unmapped), is located approximately 0.21 mile west of the Passing Lane 3 project area in the southeast quadrant of the SR 32 and SR 75 intersection. No impact is expected.

Recreational Facilities: One (1) recreational facility is located within the 0.5 mile search radius. The recreational facility, Western Boone Junior-Senior High School, is located adjacent to the north of the Passing Lane 3 project area in the northeast quadrant of the SR 32 and SR 75 intersection. Coordination with Western Boone Junior-Senior High School will occur.

Pipelines: Three (3) pipeline segments are located within the 0.5 mile search radius. The nearest pipeline segment is located approximately 0.75 mile east of the Passing Lane 4 project area. No impact is expected.

Cemeteries: Two (2) cemeteries are located within the 0.5 mile search radius. The nearest cemetery, Dover Cemetery, is located approximately 0.05 mile west of the Passing Lane 3 project area, in the northeast quadrant of the SR 32 and SR 75 intersection. A Cemetery Development Plan may be required if this project is within 100 feet of the cemetery. Coordination with INDOT Cultural Resources will occur.

Trails: One (1) trail segment is located within the 0.5 mile search radius. The trail segment, Thorntown south to Jamestown, is located approximately 0.30 mile west of the Passing Lane 3 project area, at the SR 32 and SR 75 intersection. No impact is expected.

Schools: One (1) school is located within the 0.5 mile search radius. The school, Western Boone Junior-Senior High School, is located adjacent to the north of the Passing Lane 3 project area, in the northeast quadrant of the SR 32 and SR 75 intersection. Coordination with Western Boone Junior-Senior High School will occur.

WATER RESOURCES TABLE AND SUMMARY

Water Resources Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
NWI - Points	**1**	Canal Routes - Historic	**N/A**
Karst Springs	**N/A**	NWI - Wetlands	**48**
Canal Structures – Historic	**N/A**	Lakes	**4**
NPS NRI Listed	**N/A**	Floodplain - DFIRM	**8**
NWI-Lines	**4**	Cave Entrance Density	**N/A**
IDEM 303d Listed Streams and Lakes (Impaired)	**N/A**	Sinkhole Areas	**N/A**
Rivers and Streams	**28**	Sinking-Stream Basins	**N/A**

If unmapped water features are identified that might impact the project area, direct coordination with INDOT ESD Ecology and Waterway Permitting will occur.

Explanation:

Due to the presence of the two (2) culverts and various drainage pipes, there is a potential for unmapped water features within the project area. Coordination with INDOT ESD Ecology and Waterway Permitting will occur.

National Wetlands Inventory (NWI)-Points: One (1) NWI-point is located within the 0.5 mile search radius. The NWI-point is located approximately 0.28 mile southeast of the Passing Lane 4 project area. No impact is expected.

NWI-Wetlands: Forty-eight (48) NWI-wetland polygons are located within the 0.5 mile search radius. Three (3) NWI-wetland polygons are located adjacent to the Passing Lane project areas; one (1) NWI-wetland polygon is located adjacent to the south of the Passing Lane 1 project area, and two (2) NWI-wetland polygons are located adjacent to the south of the Passing Lane 3 project area. A Waters of the US Report will be prepared and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

Lakes: Four (4) lake polygons are located within the 0.5 mile search radius. The nearest lake polygon is located approximately 0.19 mile north of the Passing Lane 3 project area. No impact is expected.

Floodplain – Digital Flood Insurance Rate Map (DFIRM): Eight (8) floodplain-DFIRM polygons are located within the 0.5 mile search radius. The nearest floodplain-DFIRM polygon is located approximately 0.27 mile east of the Passing Lane 2 Project area. No impact is expected.

NWI-Lines: Four (4) NWI-line segments are located within the 0.5 mile search radius. The nearest NWI-line is located approximately 0.06 mile east of the Passing Lane 3 project area. No impact is expected.

Rivers and Streams: Twenty-eight (28) stream segments are located within the 0.5 mile search radius. Three (3) stream segments are located adjacent to the Passing Lane project areas; One (1) stream segment is located adjacent to the east

of the Passing Lane 1 project area, and two (2) stream segments are located adjacent to the Passing Lane 3 project area (one (1) to the east and one (1) to the west). A Waters of the US Report will be prepared and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	**9**	Mineral Resources	**N/A**
Mines – Surface	**N/A**	Mines – Underground	**N/A**

Explanation:

Petroleum Wells: Nine (9) petroleum wells are located within the 0.5 mile search radius. One (1) petroleum well (presumed plugged) is located adjacent to the north of the Passing Lane 4 project area. Coordination with Indiana Department of Natural Resources (IDNR) Oil and Gas Division will occur.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Superfund	**N/A**	Manufactured Gas Plant Sites	**N/A**
RCRA Generator/ TSD	**N/A**	Open Dump Waste Sites	**N/A**
RCRA Corrective Action Sites	**N/A**	Restricted Waste Sites	**N/A**
State Cleanup Sites	**2**	Waste Transfer Stations	**N/A**
Septage Waste Sites	**N/A**	Tire Waste Sites	**N/A**
Underground Storage Tank (UST) Sites	**6**	Confined Feeding Operations (CFO)	**N/A**
Voluntary Remediation Program	**1**	Brownfields	**N/A**
Construction Demolition Waste	**N/A**	Institutional Controls	**1**
Solid Waste Landfill	**N/A**	NPDES Facilities	**8**
Infectious/Medical Waste Sites	**N/A**	NPDES Pipe Locations	**1**
Leaking Underground Storage Tank (LUST) Sites	**5**	Notice of Contamination Sites	**N/A**

Unless otherwise noted, site specific details presented in this section were obtained from documents reviewed on the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC).

Explanation:

State Cleanup: Two (2) State Cleanup sites are located within the 0.5 mile search radius. The nearest State Cleanup site is located approximately 1.8 miles southeast of the Passing Lane 4 project area. No impact is expected.