

**BLOOMINGTON TRAFFIC COMMISSION
AGENDA**

January 24, 2024

**4:30 P.M. –In-person and Virtual Hybrid meeting
City Hall, Council Chambers**

Online link: <https://bloomington.zoom.us/j/6359441221>

Meeting ID: 635 944 1221

Passcode: COBPT

Dial in: +1 312 626 6799 US (Chicago)

- I. Call to Order**
- II. Approval of Minutes**
 - A. October 25, 2023
- III. Communications from Commission**
- IV. Public Comment***
 - A. Letter to Traffic Commission: Regarding Vehicles Running Red Lights
–Kaitlyn
- V. Reports from Staff**
- VI. Old Business***
- VII. New Business***
 - A. TC-24-01 Karst Farm Connector Trail Project – *Paul Satterly, Monroe County Highway Engineer*
- VIII. Traffic Inquiries:**
- IX. Adjournment:**

Next meeting – February 28, 2024 – City Council Chambers

**Action Requested/Public comment prior to any vote (limited to five minutes per speaker)*

Auxiliary aids for people with disabilities are available upon request with adequate notice. Please call (812) 349-3429 or e-mail human.rights@bloomington.in.gov.

The City is committed to providing equal access to information. However, despite our efforts, at times, portions of our board and commission packets are not accessible for some individuals. If you encounter difficulties accessing material in this packet, please contact Melissa Hirtzel at hirtzelm@bloomington.in.gov and provide your name, contact information, and a link to or description of the document or web page you are having problems with.

BLOOMINGTON TRAFFIC COMMISSION
Draft Minutes
October 25, 2023
5:00 P.M. –In-person and Virtual Hybrid meeting
City Hall, Council Chambers

I. Call to Order

In-person: Love, Alexander, Shadday, Ryterband, Moore, Cibor

II. Approval of Minutes

September 27, 2023 motion Ryterband, Second Alexander. Approved 6-0

III. Communications from Commission

A. Cibor gave an update on the 7-line stop sign amendment to Title 15, and the mayor's veto of the inclusion of additional stop intersections along the route. A new 180 day order was issued to maintain what is currently installed at Dunn St. Further discussion is expected.

B. Alexander gave an update on two items:

i. B-line closures and detour. Expressed a desire for the City to have a dedicated staff who could ensure that detours remain clear for travel.

ii. 17th side path project. Alexander expressed disappointment in the pedestrian experience at intersections along the path. Vehicles do not want to give pedestrians the right-of-way.

IV. Public Comment*

None

V. Old Business*

None

VI. New Business*

A. Feedback Requested from Boards and Commissions - Traffic Commission Letter

i. The Commission reviewed the drafted letter based on their previous discussion. Discussion ensued. Motion to forward the letter to the Special Committee on Council Processes Alexander, Second Ryterband. Approved 6-0.

VII. Reports from Staff (moved to the end of the meeting)

A. Staff Led: Advisory Transportation Commission Proposal

i. Presentation by Ryan Robling. Discussion ensued. No action required. Staff will bring updates if the proposal moves forward.

ii. Public Comment: Dave Askins – Offered a potential name for the proposed commission.

VIII. Traffic Inquiries:

None

IX. Adjournment: 5:39 pm

Hi Kathleen,

Erika Oliphant sent me your email. I was talking with her about some concerns I have regarding people running red lights and asked her who might be a good person to talk to. She also recommended that I might attend the next Bloomington Traffic Commission meeting. I have some thoughts about a public safety awareness campaign.

For a while now, I have been concerned that running red lights seems to have become more and more common. I often see this happen at the intersection of Walnut and Winslow. I see people speeding up to the red light to get through it. The other day I was behind a Jeep heading south on Walnut approaching the Winslow intersection. The light turned red before they passed the Burger King and they still sped up to get through. It's so extreme now that when I am at any intersection and the light has just turned green for me, I tend to look both ways because I have seen people run the red light past the point where others have a green light.

The most concerning incident that happened with me recently was turning left onto Walnut from Miller. I had my son in the car with me. We had been at a red light and when the light turned green I started to turn. Four cars heading south on Walnut then sped through their red light cutting us off.

These aren't the only locations where I've seen this happen. I feel like it's become a pervasive issue and I don't think it's unique to Bloomington. I've heard reports of an increase in traffic fatalities and a simultaneous decrease in traffic violations nationwide. One of the reasons for this that I've seen is regarding a decrease in the budgets for traffic police.

I definitely think that one of the reasons it keeps going on is that there are little to no consequences for it. If there is the ability for more traffic police at some of these intersections, that might help. If budgets are an issue, I'm wondering about cameras being a possibility. I think if people start getting tickets that will have an impact. I'm also wondering about a public safety campaign, possibly putting signs up at the intersections near the traffic light saying something to the effect of: Running Red Lights Can Kill. It sounds sort of corny to me but I think it would be beneficial to have some kind of message that might have an effect on people.

Thank you for your offer for me to reach out.

I really appreciate your time,

Kaitlyn



**TRAFFIC COMMISSION
STAFF REPORT**

Case #: TC-24-01
Date: January 2024

FROM: Ryan Robling, Planning Services Manager, Planning and Transportation Department

REGARDING: Karst Farm Connector Trail Project

Description and Purpose:

Please see included memo from Paul Satterly, Monroe County Highway Engineer.

Title 15 Changes:

Section 15.12.030, entitled "Signalized intersections." shall be amended by adding the following from Schedule D(1):

Add

Cross Street	Cross Street
Constitution Avenue	Liberty Drive

Recommendation: Staff recommends that Traffic Commission forward the Title 15 changes to Council with a positive recommendation.



MONROE COUNTY HIGHWAY DEPARTMENT

5900 W. FOSTER CURRY DRIVE
BLOOMINGTON, INDIANA 47403
PHONE: (812) 349-2555 FAX: (812) 349-2959
www.co.monroe.in.us

December 28, 2023

Andrew Cibor, P.E.
City Engineer
Engineering Department
Bloomington City Hall
401 N. Morton Street
Bloomington, Indiana 47404

Dear Mr. Cibor,

Monroe County is leading the design for the Karst Farm Connector Trail project. This project is federally funded through the MPO and involves both the County and the City. The letting is scheduled for January 18, 2024 and the project will be constructed in 2024.

The trail will start at the existing Karst Farm Greenway near the Gifford Road trail crossing, will run straight east along an existing farm field, continue east along the north side of the Lamplighter Mall trailer park, cross Curry Pike at Constitution Avenue, run along the north side of Constitution Avenue, and then run south along the east side of Liberty Drive to connect with the Bloomfield Trail at Bloomfield Road/SR 45. The trail on the east end of Constitution Avenue and on Liberty Drive will be within City limits.

The trail project will include the installation of two traffic signals to accommodate trail users and to improve the safety and level of service at these intersections. One signal will be located at the intersection of Curry Pike and Constitution Avenue and the other signal will be located at the intersection of Liberty Drive and Constitution Avenue. The Curry Pike traffic signal will be maintained by the County and the Liberty Drive traffic signal will be maintained by the City.

A traffic signal and turn lane warrant analysis was performed. The August 13, 2021 report determined that a traffic signal and a northbound left turn lane were warranted for the intersection of Liberty Drive and Constitution Avenue.

As attachments, we have included the traffic signal plan details, the plan and profile drawings of the trail within the City and the Traffic Analysis Memo with attachments.

The traffic signal will need to be approved by the Bloomington Traffic Commission. Please add this traffic signal to the January 24, 2024 Traffic Commission meeting agenda.

Please call me if you have any questions about this project, 812-349-2554.

Sincerely,

A handwritten signature in blue ink that reads "Paul B. Satterly". The signature is fluid and cursive, with the first name being the most prominent.

Paul B. Satterly
Monroe County Highway Engineer

Attachments

cc: Lisa Ridge, Monroe County Highway Director

Traffic Analysis Memo
Monroe Co., IN
Constitution Way & Curry Pike
Constitution Way & Liberty Drive

August 13th, 2021

Purpose and Need

The purpose of this study is to analyze traffic conditions at the intersections of **Constitution Way & Curry Pike** and **Constitution Way & Liberty Drive** to determine what intersection improvements would both improve vehicular traffic operations and serve pedestrians on the Karst Connector Trail. Monroe county has expressed a desire for a safe pedestrian crossing of Liberty Dr and Curry Pike, which are currently free flowing, so signaling the intersections will be considered.

The following analysis has been performed:

1. Signal warrants at each intersection
2. Capacity analysis at each intersection
3. Turn lane analysis at Liberty Dr

Traffic Data & Analyzed Scenarios

Existing traffic data was provided by the County and collected during non-school hours. The county estimated traffic to increase by 25% due to both the school traffic that wasn't collected, and anticipated near-term growth in employment for nearby businesses, resulting in the following scenarios:

- **Scenario 1, Existing Traffic** – Provided Traffic Volumes
- **Scenario 2, Estimated Peak Traffic** – Provided Traffic Volumes + School Traffic + Near Term Growth

The existing data and estimated peak data can be found in **Appendix 1**.

1. Signal Warrant

The Indiana Manual on Uniform Traffic Control Devices (IMUTCD) provides standards and guidelines for the installation and operation of traffic control signals along public roadways. The IMUTCD requires that a Traffic Signal Warrant Analysis be performed prior to the installation of a new traffic signal to determine if a traffic signal will improve traffic safety and capacity operations. For a signal to be warranted, thresholds for one of nine warrants must be met.

For both of the study intersections, Warrant 3: Peak Hour Vehicular Volume was met for the estimated peak traffic volumes. The results of this warrant analysis are included in **Appendix 2**.

2. Capacity Analysis

The most common methodology to analyze roadway network capacity is a level-of-service (LOS) analysis. The LOS is a report card grading system which measures how well the capacity of an intersection or roadway segment accommodates the traffic volume demand. The LOS for intersections is based on the delay (in seconds) that a typical vehicle would experience while waiting at the intersection. **Appendix 3** summarizes the range of delays as listed in the 2010 HCM that are associated with each LOS letter for signalized and unsignalized intersections.

The capacity analysis was performed with the recognized software program Synchro. **Appendix 3** summarizes the resulting LOS and vehicle delay of the midday and PM peak hour for each scenario. **Appendix 4** includes reports generated by Synchro, showing program inputs and outputs.

Liberty Drive

The PM peak hour at Liberty operates at unacceptable levels of service for both existing and estimated peak scenarios with the existing one-way stop configuration, but **with a signal, will operate at acceptable levels of service for both existing traffic and estimated peak traffic.**

Curry Pike

The PM peak hour at Liberty operates at acceptable levels of service as a two-way stop except for eastbound during the estimated peak volume for the PM peak hour. Both the existing PM peak hour and estimated midday peak hour, however, have average eastbound LOS and delays of D - 28-29 seconds, which is close to the unacceptable E – 35 seconds. **With a signal, the intersection will operate at acceptable levels of service for both existing traffic and estimated peak traffic scenarios.**

3. Turn Lane Analysis

Turn lane analysis was performed for the Liberty Dr signal. Turn lane warrants are provided in chapter 46 of the Indiana Design Manual (IDM) to determine when right or left-turn lanes should be provided.

Right-Turn Warrants:

Section 46-4.01(01) of the IDM provides the right-turn lane warrants. The first warrant uses IDM Figure 46-4A to chart the vehicles in the direction of the right turn against the right turn volume. The resulting graph shows the **eastbound right-turn lane “should be considered”** and the **southbound right-turn lane “may not be necessary.”** See **Appendix 5** for right-turn lane warrant analysis.

Simulating an eastbound right-turn lane in Synchro results in 95th percentile queue lengths of 33 ft for eastbound-left and 65 ft for eastbound-right using the estimated peak volumes. A minimal 100 ft eastbound right-turn lane with a 100 ft taper will be sufficient to handle most eastbound queues.



Left-Turn Warrants:

Section 46-4.01(02) of the IDM provides the left-turn lane warrants. The third warrant uses IDM Figure 46-4C, which utilizes volume parameters like opposing volume, advancing volume, speed, and percent left turns. Since the eastbound left-turn has no opposing volume, only the northbound left-turn was analyzed with this chart. The resulting analysis shows that a **northbound left-turn lane is warranted**. See **Appendix 6** for left-turn lane warrant analysis.

Simulating a northbound left-turn lane in Synchro results in 95th percentile queue length of 192 ft using the estimated peak volumes. A 200 ft northbound left-turn lane with a 100 ft taper will be sufficient to handle most northbound queues.

Sincerely,
Matthew Oyer, P.E.
Moyer@bfsengr.com
(765) 423-5602
Butler, Fairman and Seufert, Inc.

Appendices

- | | |
|---|------------|
| 1. Midday and PM Intersection Counts | (28 pages) |
| 2. Peak Hour Signal Warrant | (1 page) |
| 3. Capacity Analysis Parameters and Results | (2 page) |
| 4. Synchro Reports | (44 pages) |
| 5. Right-Turn Lane Warrant Analysis | (1 page) |
| 6. Left-Turn Lane Warrant Analysis | (1 page) |

PROJECT	DESIGNATION
1900405	1900405
CONTRACT	BRIDGE FILE
R-41886	N/A

INDIANA DEPARTMENT OF TRANSPORTATION



TRAIL PLANS KARST FARM GREENWAY CONNECTOR MONROE COUNTY

PROJECT NO. 1900405

P.E.
R/W
CONST.

GROSS LENGTH: 1.25 mi
NET LENGTH: 1.25 mi
MULTI-USE TRAIL BEGINNING AT KARST FARM GREENWAY AND ENDING AT SR 45, IN SECTIONS 1 & 12, TOWNSHIP 8 NORTH, RANGE 2 WEST, VAN BUREN TOWNSHIP, MONROE COUNTY, CITY OF BLOOMINGTON, INDIANA

PLAN 1"=20'
LONG- 1"=20'
TRANS- 1"=20'
PROFILE 1"=10'
HORIZ- 1"=10'
VERT- 1"=10'
MAX. GRADE: 6.99%

DESIGN DATA: KARST FARM GREENWAY CONNECTOR	
DESIGN SPEED	15 MPH
PROJECT DESIGN CRITERIA	IDM CHAPTER 53
FUNCTIONAL CLASSIFICATION	MULTI-USE TRAIL
RURAL/URBAN	URBAN
TERRAIN	ROLLING
ACCESS CONTROL	NONE

TRAFFIC DATA		LIBERTY DRIVE	
A.A.D.T. (2035)	814	V.P.D.	
A.A.D.T. (2042)	924	V.P.D.	
D.M.V. (2042)	50	V.P.H.	
DIRECTIONAL DISTRIBUTION	50 %		
TRUCKS	3 % A.A.D.T.		
	5 % D.M.V.		

DESIGN DATA	
DESIGN SPEED	15
PROJECT DESIGN CRITERIA	4R RECONSTRUCTION NON-FREEWAY
FUNCTIONAL CLASSIFICATION	LOCAL
RURAL/URBAN	URBAN (BUILT-UP)
TERRAIN	LEVEL
ACCESS CONTROL	NONE

MONROE COUNTY BOARD OF COMMISSIONERS

Penny Githers
PENNY GITHERS, PRESIDENT

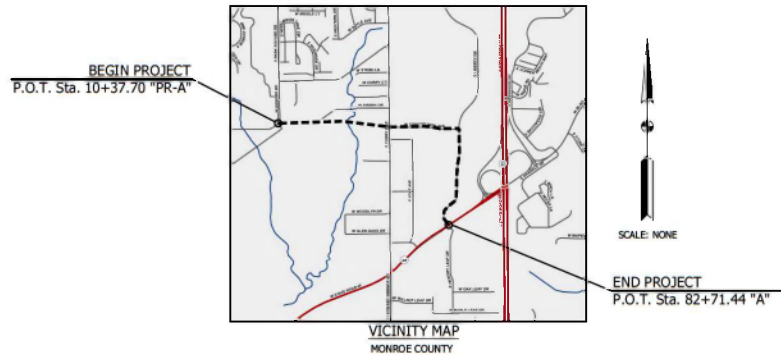
Walt Thomas
WALT THOMAS, VICE PRESIDENT

Elizabeth Lee Jones
ELIZABETH LEE JONES, MEMBER

ERC

Lisa Widdel
LISA WIDDEL, HIGHWAY DIRECTOR, ERC

Paul Satterly, P.E.
PAUL SATTERLY, P.E., COUNTY ENGINEER



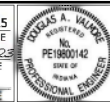
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES.
REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES.



CAUTION
LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED 2024 TO BE USED WITH THESE PLANS

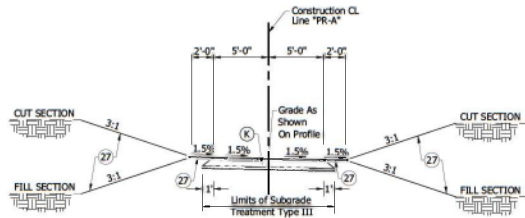
PLANS PREPARED BY: **Butler Fairman and Seufert Inc.** (317)713-4615
PHONE
CERTIFIED BY: *Jay Seufert* 9/5/2023 DATE
APPROVED FOR LETTING: _____ DATE
INDIANA DEPARTMENT OF TRANSPORTATION



BRIDGE FILE	
DESIGNATION	1900405
SURVEY BOOK	SHEET
ELECTRONIC 01	OF 106
CONTRACT R-41886	PROJECT 1900405

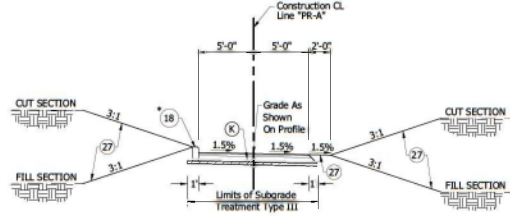
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TYPICAL TRAIL CROSS SECTION
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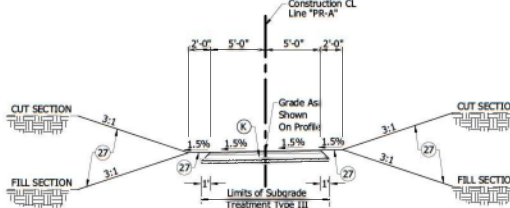
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Sta. 18+96.00 "PR-A" To Sta. 22+85.00 "PR-A"
Sta. 23+10.00 "PR-A" To Sta. 23+74.00 "PR-A"
Sta. 26+67.89 "PR-A" To Sta. 34+83.22 "PR-A"
Sta. 35+11.87 "PR-A" To Sta. 35+56.00 "PR-A"



TYPICAL TRAIL CROSS SECTION
LEFT TO RIGHT
Scale: 3/16" = 1'-0"

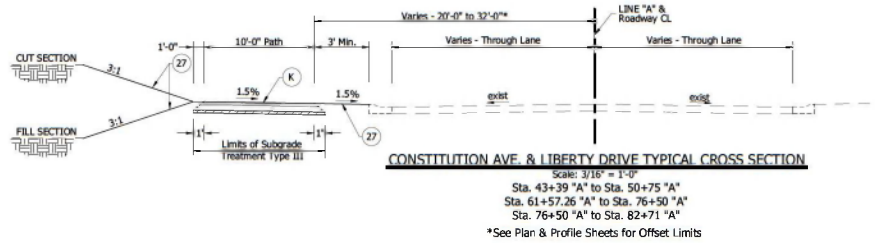
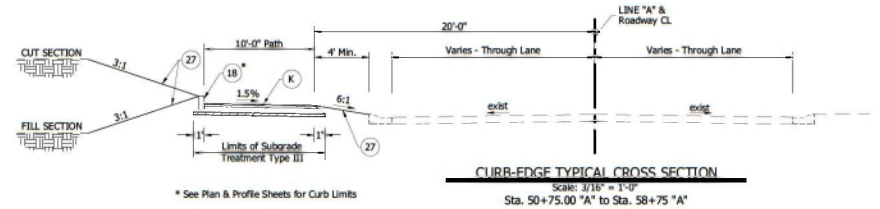
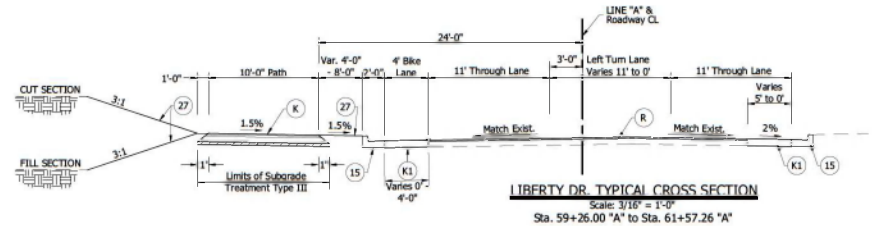
Sta. 22+85.00 "PR-A" To Sta. 23+10.00 "PR-A"

* See Plan & Profile Sheets for Curb Limits



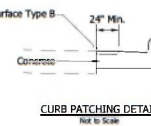
TYPICAL TRAIL CROSS SECTION
RIGHT TO LEFT
Scale: 3/16" = 1'-0"

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Sta. 23+74.00 "PR-A" To Sta. 25+27.89 "PR-A"

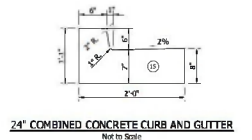


LEGEND

- (K) HMA for Sidewalk Consisting of:
165 #/sys HMA Surface, Type B on
275 #/sys HMA Intermediate, Type B on
6" Compacted Aggregate for Base, #53 on
Subgrade Treatment Type III
- (K1) HMA for Patching Consisting of:
165 #/sys HMA Surface, Type B, on
275 #/sys HMA Intermediate, Type B, on
660 #/sys HMA Base, Type B, on
Subgrade Treatment Type II
- (15) Combined Concrete Curb & Gutter
- (18) 8" Concrete Curb
- (27) Seed Mixture, "U"
- (R) HMA for Approaches Consisting of:
1 1/2" Milling &
165 #/sys HMA Surface, Type B



NOTE: Applies To All
Proposed Work
Adjacent To Existing
Pavement



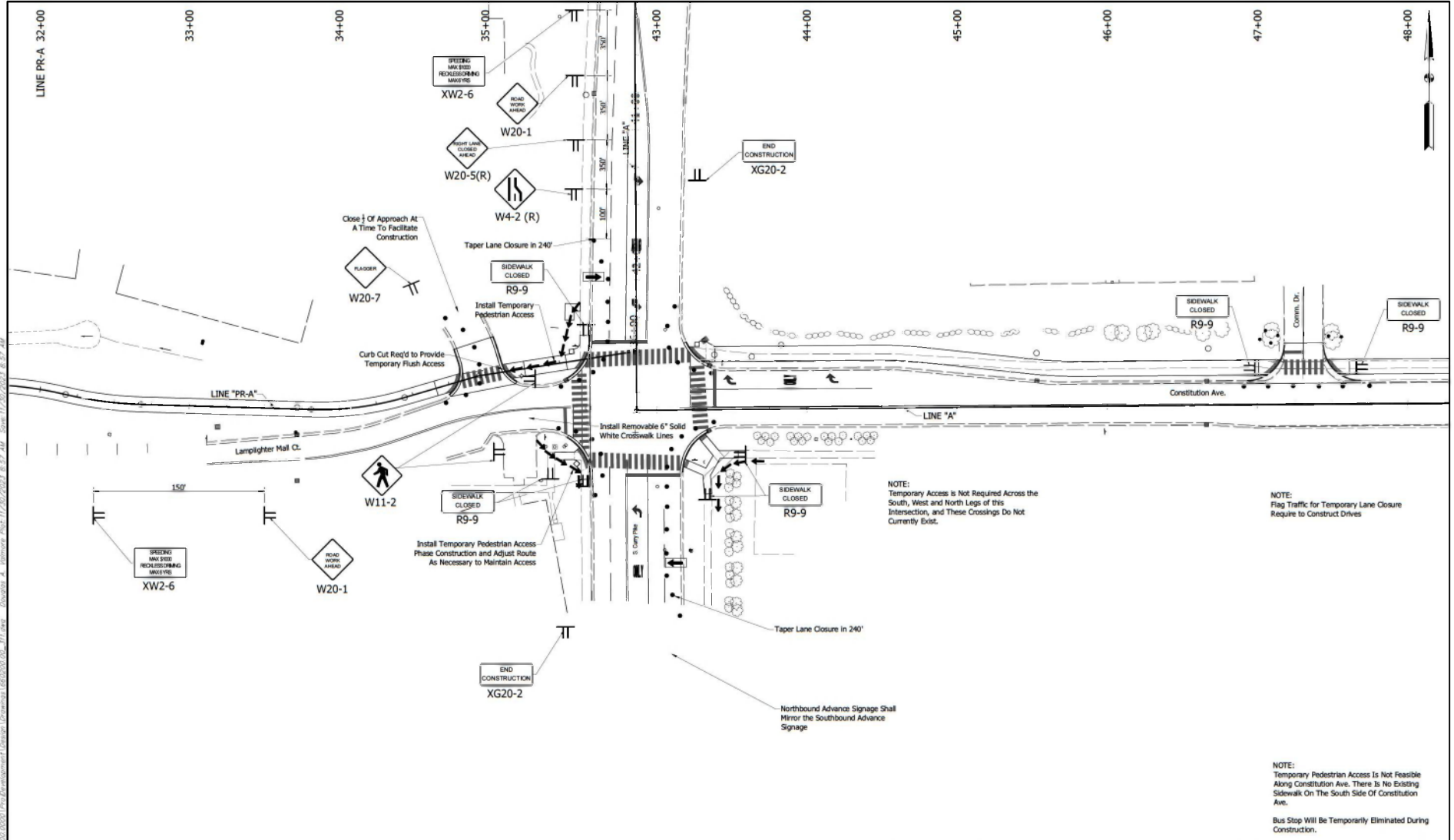
RECOMMENDED FOR APPROVAL: *Tobias A. Valdez* 9/5/2023
DATE

DESIGNED: DAV DRAWN: JZW
CHECKED: AM CHECKED: DAV

INDIANA
DEPARTMENT OF TRANSPORTATION
KARST FARM GREENWAY CONNECTOR
TYPICAL SECTIONS

HORIZONTAL SCALE	AS NOTED	BRIDGE FILE
VERTICAL SCALE	B/A	DESIGNATION
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ELECTRONIC	03	106
CONTRACT	R-4188	PROJECT
		1900405

EPS No. 00020-001



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LEGEND

•	CHANNELIZING DEVICE @ 3' SPA	→	FLASHING ARROW BOARD
TT	TRAFFIC SIGN		
→	TEMPORARY PEDESTRIAN ACCESS ROUTE		

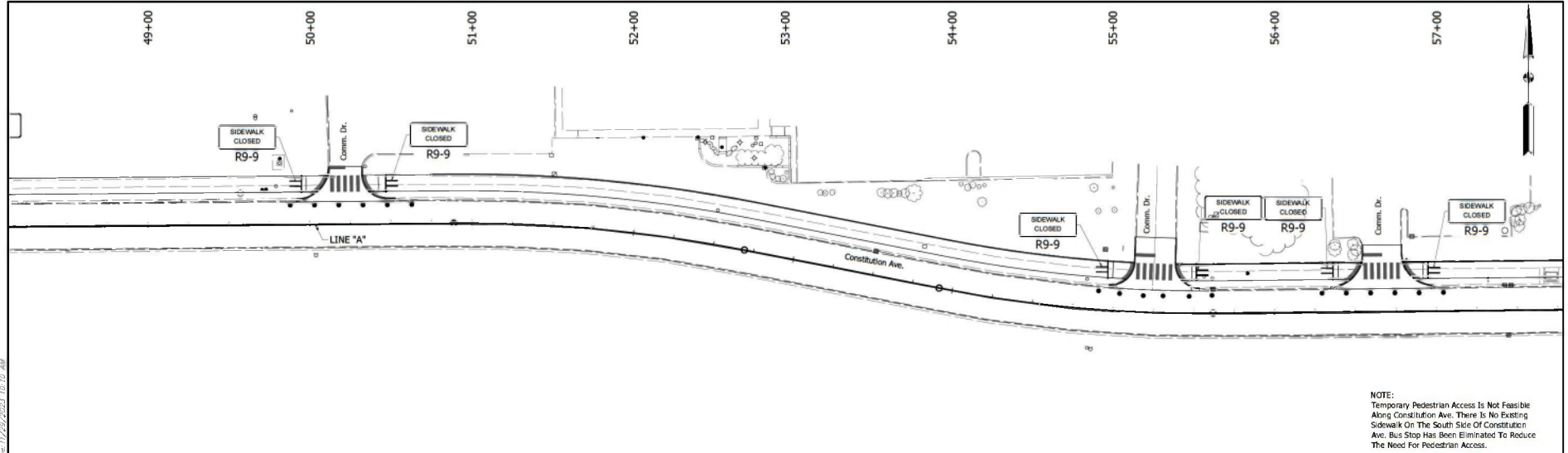
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	CHECKED: AM	CHECKED: DMV	

INDIANA
DEPARTMENT OF TRANSPORTATION

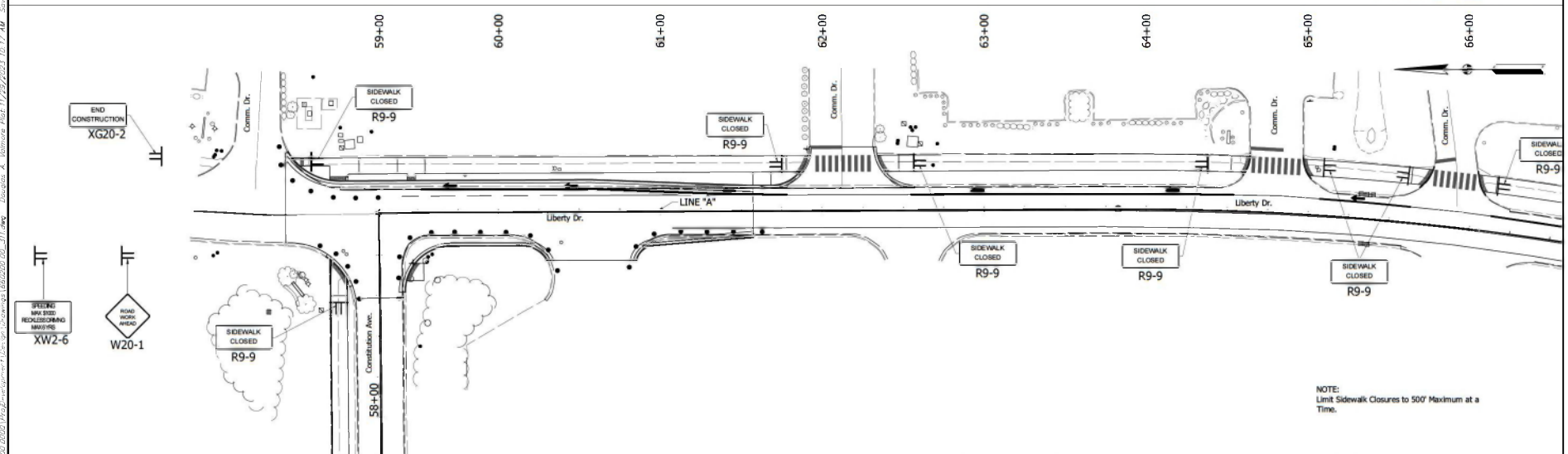
KARST FARM GREENWAY CONNECTOR
MAINTENANCE OF TRAFFIC

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NOTE:
Temporary Pedestrian Access Is Not Feasible Along Constitution Ave. There Is No Existing Sidewalk On The South Side Of Constitution Ave. Bus Stop Has Been Eliminated To Reduce The Need For Pedestrian Access.



NOTE:
Limit Sidewalk Closures to 500' Maximum at a Time.

- LEGEND**
- CHANNELIZING DEVICE @ 40' SPA
 - TT TRAFFIC SIGN
 - TEMPORARY PEDESTRIAN ACCESS ROUTE

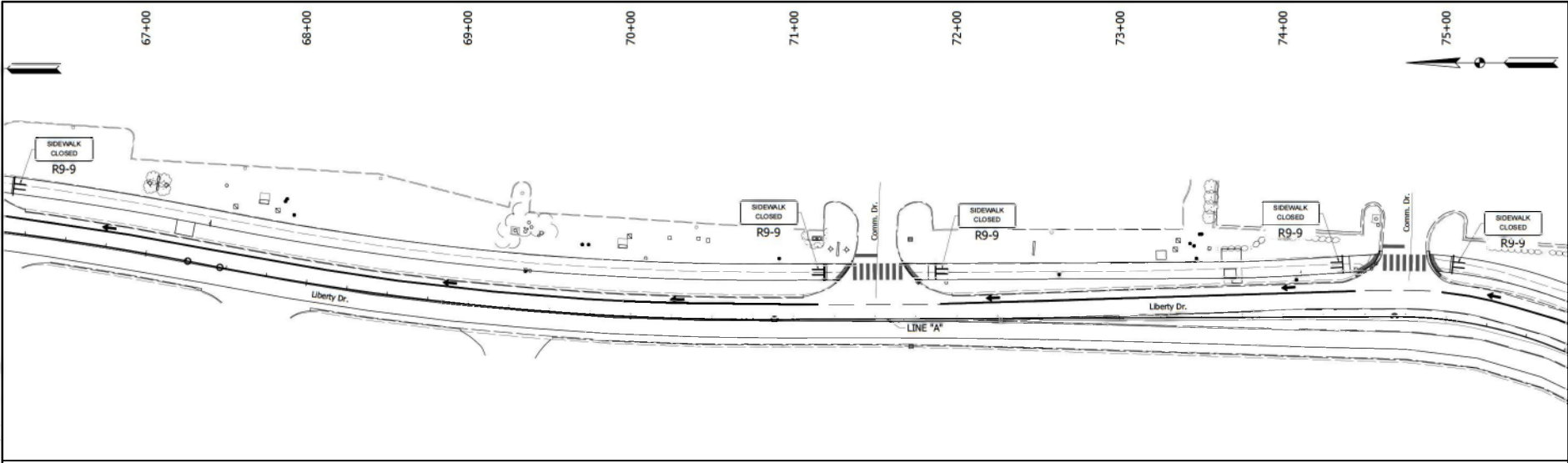
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	CHECKED: AM OBSERVED: DMV

INDIANA
DEPARTMENT OF TRANSPORTATION

KARST FARM GREENWAY CONNECTOR
MAINTENANCE OF TRAFFIC

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CONTRACT	PROJECT
8-41899	100246

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- LEGEND**
- CHANNELIZING DEVICE @ 40' SPA
 - TT TRAFFIC SIGN
 - TEMPORARY PEDESTRIAN ACCESS ROUTE



RECOMMENDED FOR APPROVAL: *Thomas A. Vanderhoff* 9/5/2023
 DESIGN ENGINEER DATE

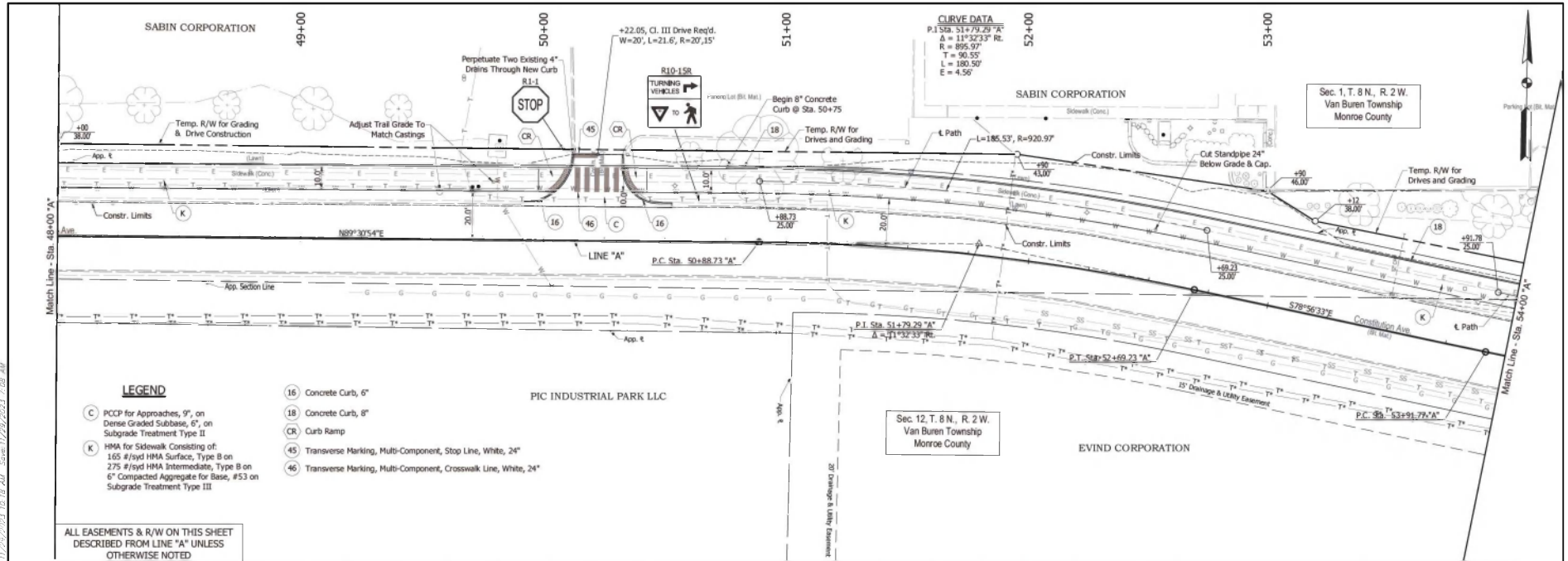
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 CHECKED: AM OBSERVED: DMV

INDIANA
 DEPARTMENT OF TRANSPORTATION

KARST FARM GREENWAY CONNECTOR
 MAINTENANCE OF TRAFFIC

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CONTRACT	PROJECT
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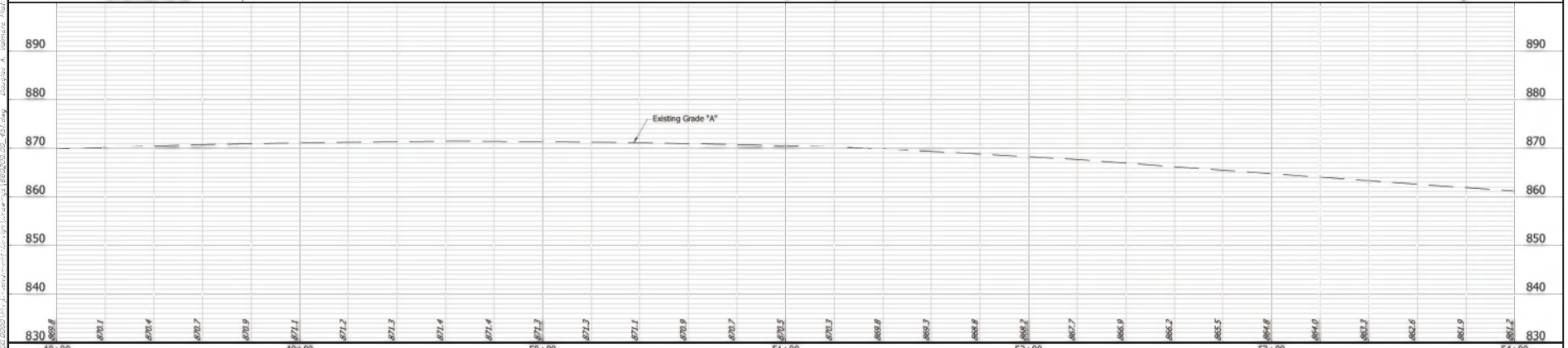
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LEGEND

- (C) PCCP for Approaches, 9", on Dense Graded Subbase, 6", on Subgrade Treatment Type II
- (K) HMA for Sidewalk Consisting of 165 #/yd HMA Surface, Type B on 275 #/yd HMA Intermediate, Type B on 6" Compacted Aggregate for Base, #53 on Subgrade Treatment Type III
- (16) Concrete Curb, 6"
- (18) Concrete Curb, 8"
- (CR) Curb Ramp
- (45) Transverse Marking, Multi-Component, Stop Line, White, 24"
- (46) Transverse Marking, Multi-Component, Crosswalk Line, White, 24"

ALL EASEMENTS & R/W ON THIS SHEET DESCRIBED FROM LINE "A" UNLESS OTHERWISE NOTED



	<p>INDIANA DEPARTMENT OF TRANSPORTATION</p> <p>KARST FARM GREENWAY CONNECTOR PLAN & PROFILE LINE "A"</p>	<p>HORIZONTAL SCALE 1" = 30'</p> <p>VERTICAL SCALE 1" = 10'</p> <p>SURVEY BOOK ELECTRONIC</p> <p>CONTRACT 6-41266</p>	<p>BRIDGE FILE</p> <p>DESIGNATION 1300426</p> <p>SHEET 101</p> <p>PROJECT 1300426</p>
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DESIGNED: DAV DRAWN: JOW

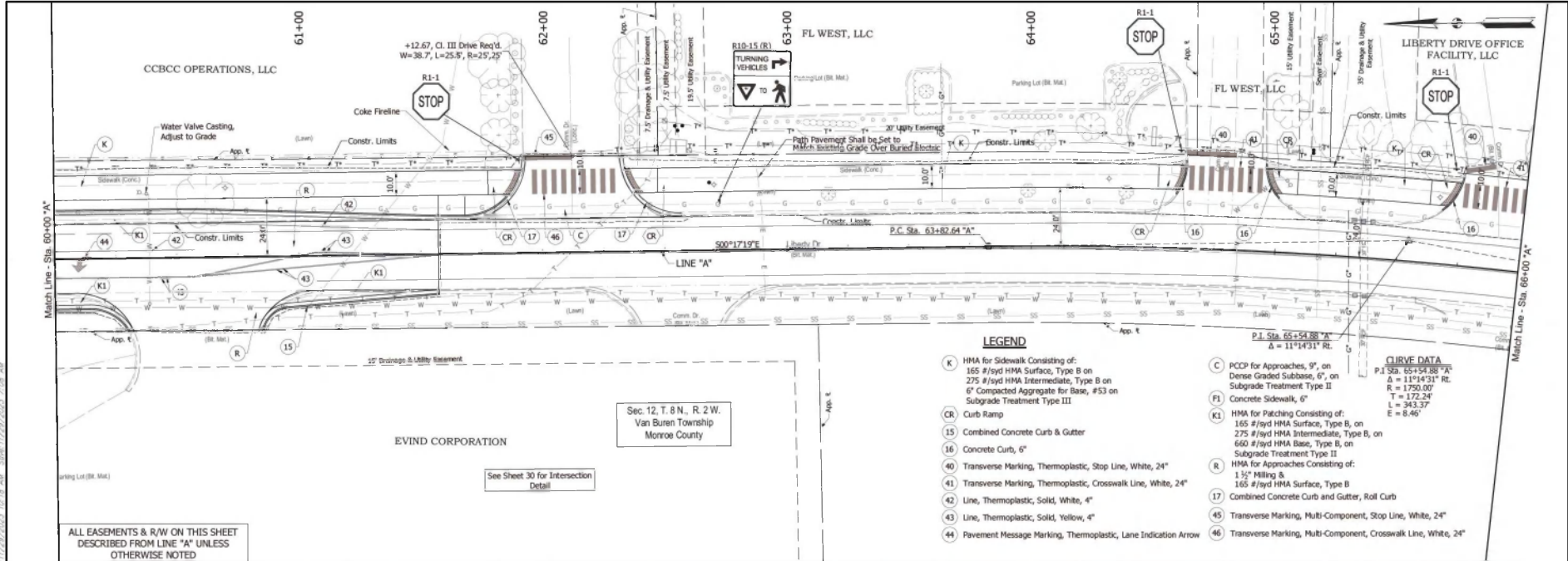
CHECKED: AH CHECKER: DAV

FOR APPROVAL: *[Signature]* DATE: 9/5/2023

DESIGN ENGINEER

INDIANA
DEPARTMENT OF TRANSPORTATION

I:\Projects\2023\166202020\166202020.dwg - 451.dwg - 09/05/2023 10:18 AM - Scale: 1/2"=30', 1/4"=60'



LEGEND

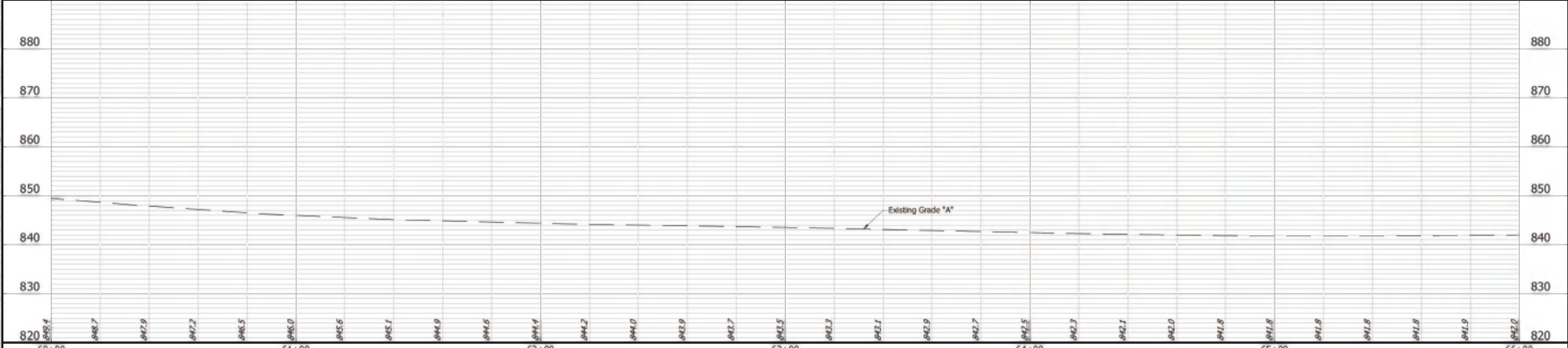
- K HMA for Sidewalk Consisting of:
165 #/yd HMA Surface, Type B on
275 #/yd HMA Intermediate, Type B on
6" Compacted Aggregate for Base, #53 on
Subgrade Treatment Type III
- CR Curb Ramp
- 15 Combined Concrete Curb & Gutter
- 16 Concrete Curb, 6"
- 40 Transverse Marking, Thermoplastic, Stop Line, White, 24"
- 41 Transverse Marking, Thermoplastic, Crosswalk Line, White, 24"
- 42 Line, Thermoplastic, Solid, White, 4"
- 43 Line, Thermoplastic, Solid, Yellow, 4"
- 44 Pavement Message Marking, Thermoplastic, Lane Indication Arrow
- C PCCP for Approaches, 9", on
Dense Graded Subbase, 6", on
Subgrade Treatment Type II
- PL Concrete Sidewalk, 6"
- KL HMA for Patching Consisting of:
165 #/yd HMA Surface, Type B, on
275 #/yd HMA Intermediate, Type B, on
660 #/yd HMA Base, Type B, on
Subgrade Treatment Type II
- R HMA for Approaches Consisting of:
1 1/2" Milling &
165 #/yd HMA Surface, Type B
- 17 Combined Concrete Curb & Gutter, Roll Curb
- 45 Transverse Marking, Multi-Component, Stop Line, White, 24"
- 46 Transverse Marking, Multi-Component, Crosswalk Line, White, 24"

CURVE DATA
 P.I. Sta. 65+54.88 "A"
 $\Delta = 11^{\circ}14'31"$ Rt.
 R = 1750.00'
 L = 172.24'
 E = 8.46'

ALL EASEMENTS & R/W ON THIS SHEET DESCRIBED FROM LINE "A" UNLESS OTHERWISE NOTED

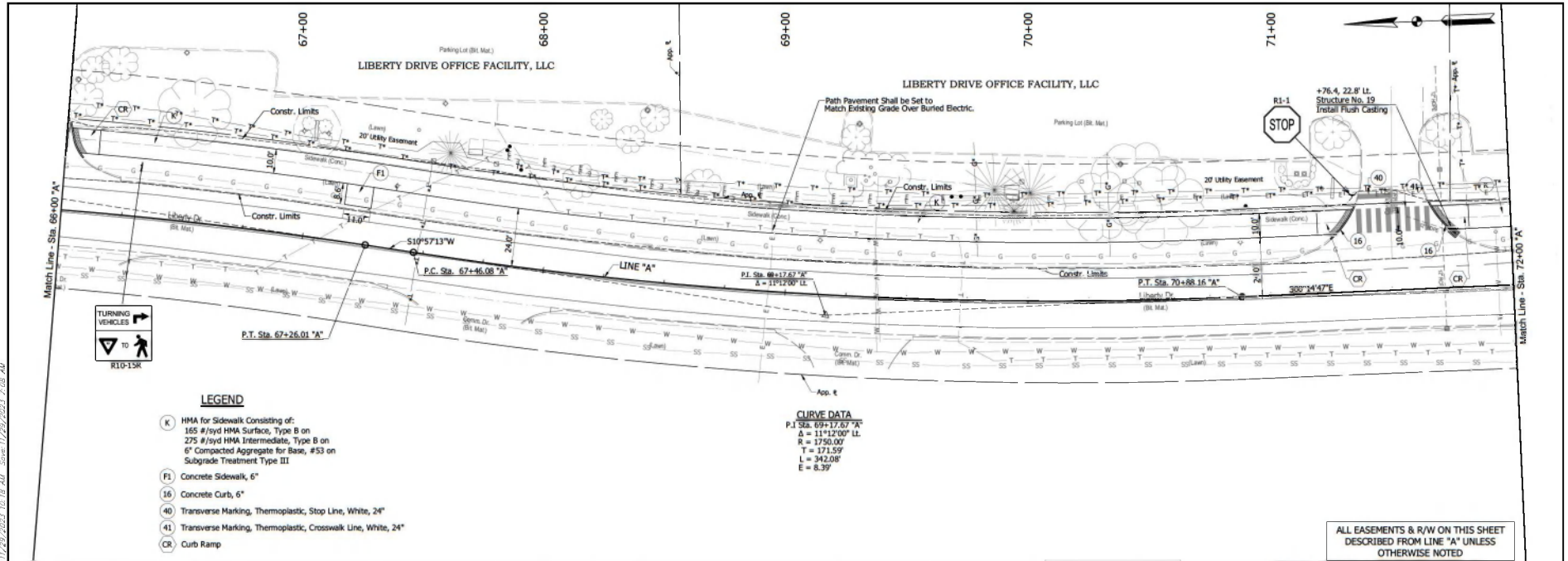
See Sheet 30 for Intersection Detail

Sec. 12, T. 8 N., R. 2 W.
 Van Buren Township
 Monroe County



	RECOMMENDED FOR APPROVAL: <i>Tom Vandenberg</i> 9/5/2023 DESIGN ENGINEER DATE DESIGNED: DAV DRAWN: JZW CHECKED: AH CHECKER: DAV	INDIANA DEPARTMENT OF TRANSPORTATION KARST FARM GREENWAY CONNECTOR PLAN & PROFILE LINE "A"	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>HORIZONTAL SCALE</td> <td>BRIDGE FILE</td> </tr> <tr> <td>1" = 30'</td> <td></td> </tr> <tr> <td>VERTICAL SCALE</td> <td>DESIGNATION</td> </tr> <tr> <td>1" = 10'</td> <td>130045</td> </tr> <tr> <td>SURVEY BOOK</td> <td>SHEET</td> </tr> <tr> <td>ELECTRONIC</td> <td>20 OF 106</td> </tr> <tr> <td>CONTRACT</td> <td>PROJECT</td> </tr> <tr> <td>6-4188</td> <td>130045</td> </tr> </table>	HORIZONTAL SCALE	BRIDGE FILE	1" = 30'		VERTICAL SCALE	DESIGNATION	1" = 10'	130045	SURVEY BOOK	SHEET	ELECTRONIC	20 OF 106	CONTRACT	PROJECT	6-4188	130045
HORIZONTAL SCALE	BRIDGE FILE																		
1" = 30'																			
VERTICAL SCALE	DESIGNATION																		
1" = 10'	130045																		
SURVEY BOOK	SHEET																		
ELECTRONIC	20 OF 106																		
CONTRACT	PROJECT																		
6-4188	130045																		

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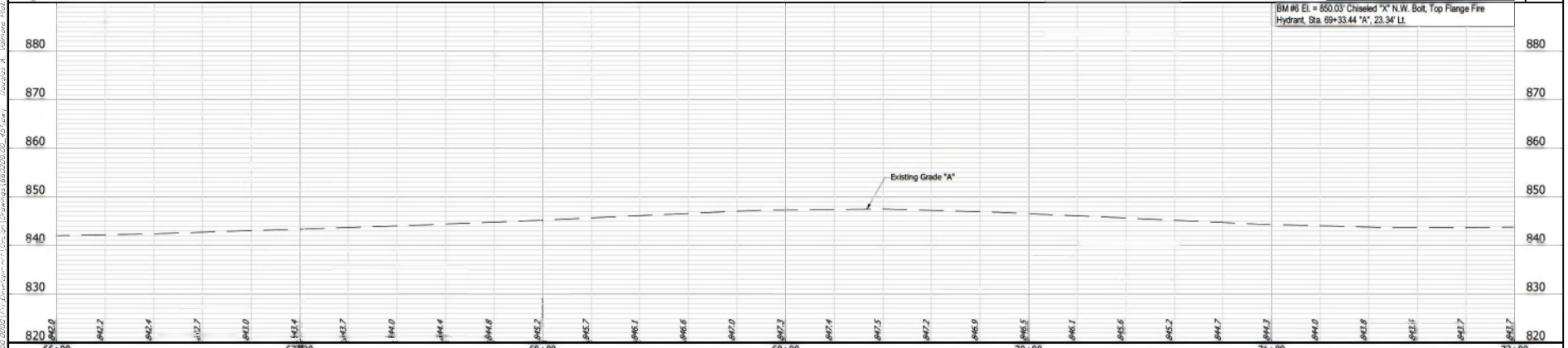


LEGEND

- (K) HMA for Sidewalk Consisting of:
 - 155 #1/2" HMA Surface, Type B on
 - 275 #1/2" HMA Intermediate, Type B on
 - 6" Compacted Aggregate for Base, #53 on
 - Subgrade Treatment Type III
- (F1) Concrete Sidewalk, 6"
- (16) Concrete Curb, 6"
- (40) Transverse Marking, Thermoplastic, Stop Line, White, 24"
- (41) Transverse Marking, Thermoplastic, Crosswalk Line, White, 24"
- (CR) Curb Ramp

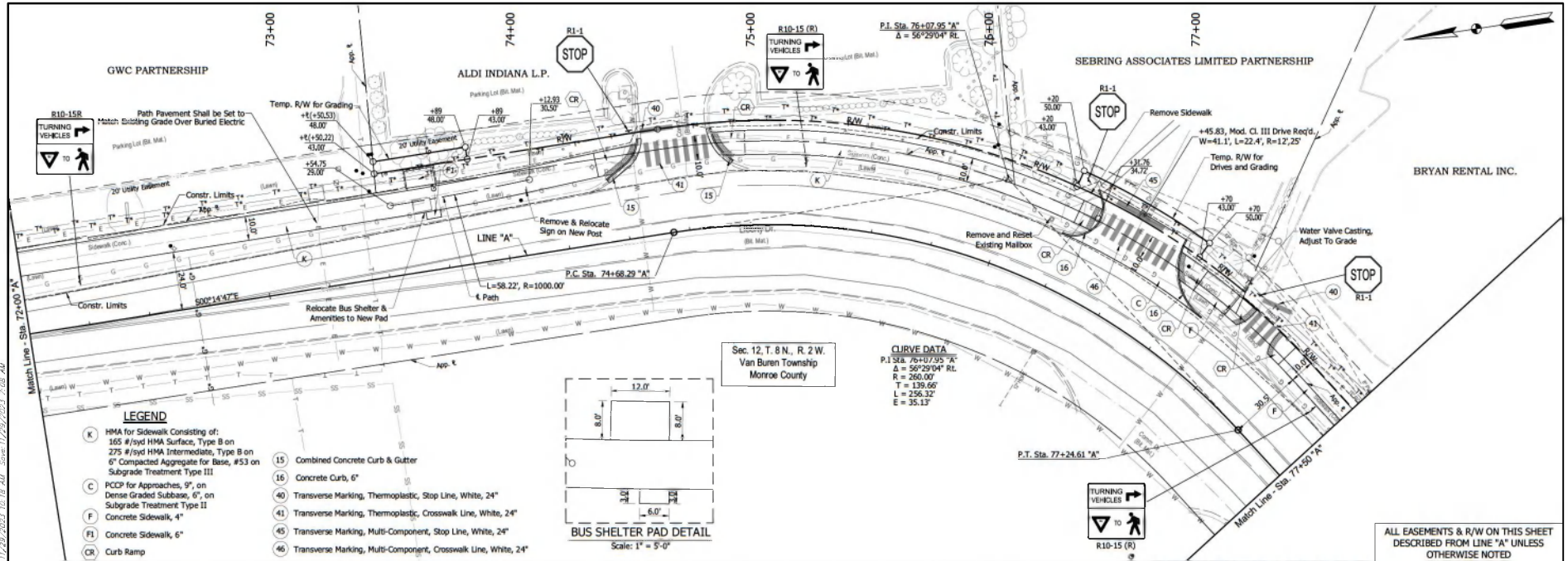
CURVE DATA
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 $\Delta = 111^{\circ}12'00"$ LT.
 $R = 1750.00'$
 $T = 171.59'$
 $L = 342.08'$
 $E = 8.39'$

ALL EASEMENTS & R/W ON THIS SHEET DESCRIBED FROM LINE "A" UNLESS OTHERWISE NOTED



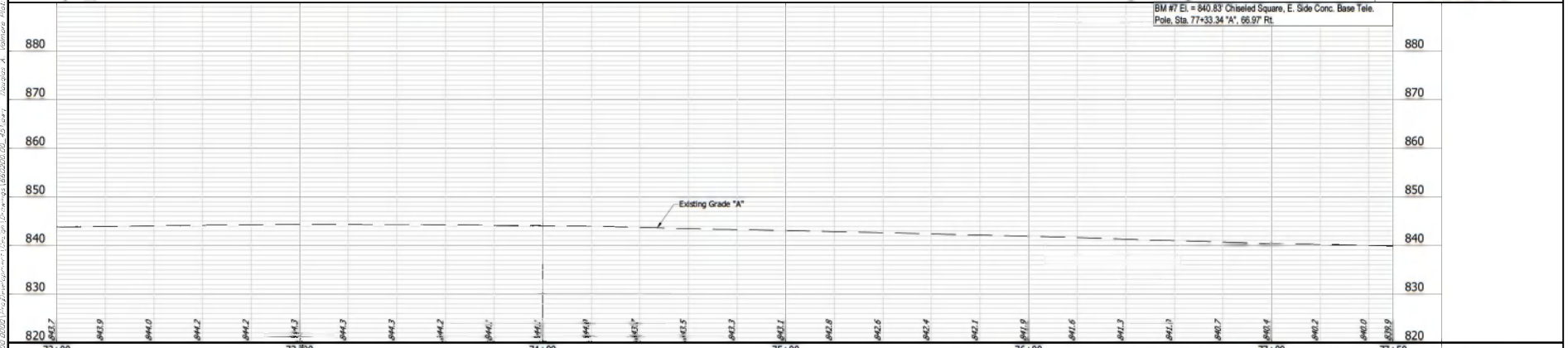
	<p>RECOMMENDED FOR APPROVAL: <i>Thomas A. Waldman</i> 9/5/2023 DATE</p> <p>DESIGNED: DWV DRAWN: JZW CHECKED: AHV CHECKED: DWV</p>	<p>INDIANA DEPARTMENT OF TRANSPORTATION</p> <p>KARST FARM GREENWAY CONNECTOR PLAN & PROFILE LINE "A"</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>HORIZONTAL SCALE</td> <td>BRIDGE FILE</td> </tr> <tr> <td>1" = 30'</td> <td></td> </tr> <tr> <td>VERTICAL SCALE</td> <td>DESIGNATION</td> </tr> <tr> <td>1" = 10'</td> <td>100046</td> </tr> <tr> <td>SURVEY BOOK</td> <td>SHEET</td> </tr> <tr> <td>ELECTRONIC</td> <td>21 OF 106</td> </tr> <tr> <td>CONTRACT</td> <td>PROJECT</td> </tr> <tr> <td>R-41898</td> <td>100046</td> </tr> </table>	HORIZONTAL SCALE	BRIDGE FILE	1" = 30'		VERTICAL SCALE	DESIGNATION	1" = 10'	100046	SURVEY BOOK	SHEET	ELECTRONIC	21 OF 106	CONTRACT	PROJECT	R-41898	100046
HORIZONTAL SCALE	BRIDGE FILE																		
1" = 30'																			
VERTICAL SCALE	DESIGNATION																		
1" = 10'	100046																		
SURVEY BOOK	SHEET																		
ELECTRONIC	21 OF 106																		
CONTRACT	PROJECT																		
R-41898	100046																		

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 User: A. Waldman Date: 9/5/2023 2:08 AM



- LEGEND**
- (K) HMA for Sidewalk Consisting of: 165 #/yd HMA Surface, Type B on 275 #/yd HMA Intermediate, Type B on 6" Compacted Aggregate for Base, #53 on Subgrade Treatment Type III
 - (C) PCCP for Approaches, 9", on Dense Graded Subbase, 6", on Subgrade Treatment Type II
 - (F) Concrete Sidewalk, 4"
 - (FI) Concrete Sidewalk, 6"
 - (CR) Curb Ramp
 - (15) Combined Concrete Curb & Gutter
 - (16) Concrete Curb, 6"
 - (40) Transverse Marking, Thermoplastic, Stop Line, White, 24"
 - (41) Transverse Marking, Thermoplastic, Crosswalk Line, White, 24"
 - (45) Transverse Marking, Multi-Component, Stop Line, White, 24"
 - (46) Transverse Marking, Multi-Component, Crosswalk Line, White, 24"

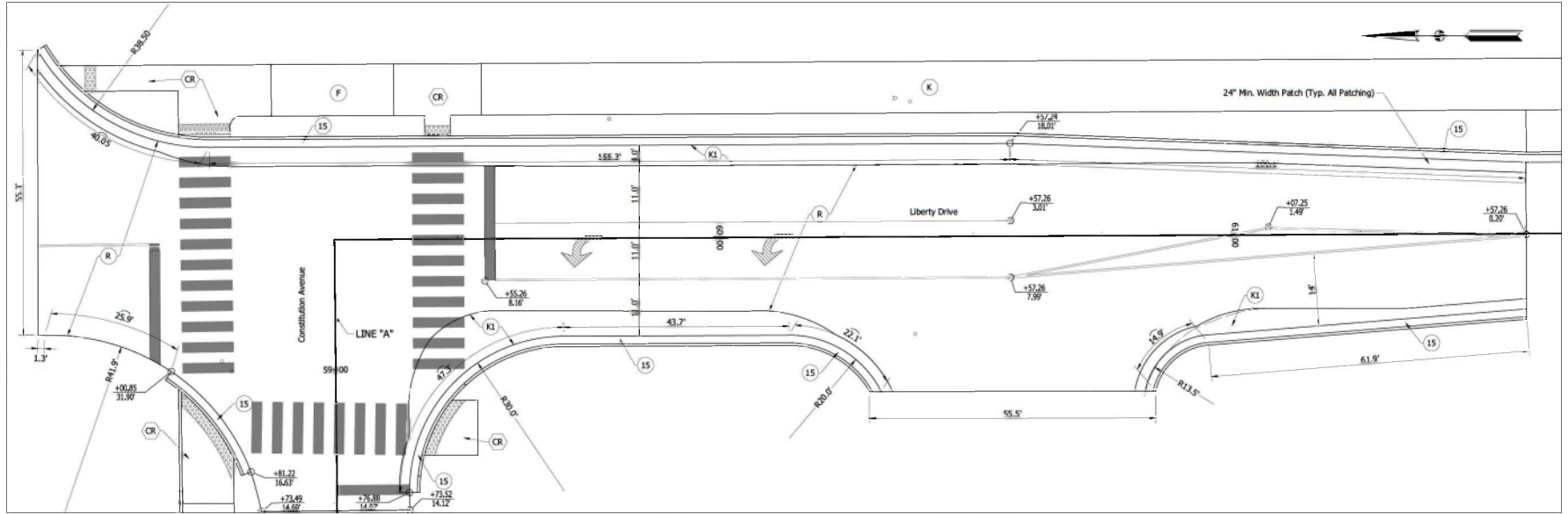
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		<p>RECOMMENDED FOR APPROVAL: <i>[Signature]</i> DATE: 9/5/2023</p> <p>DESIGNED BY: DMV DRAWN BY: JZW</p> <p>CHECKED BY: AM OBSERVED BY: DMV</p>	<p>INDIANA DEPARTMENT OF TRANSPORTATION</p> <p>KARST FARM GREENWAY CONNECTOR PLAN & PROFILE LINE "A"</p>	<table border="1"> <tr> <td>HORIZONTAL SCALE</td> <td>BRIDGE FILE</td> </tr> <tr> <td>1" = 30'</td> <td></td> </tr> <tr> <td>VERTICAL SCALE</td> <td>DESIGNATION</td> </tr> <tr> <td>1" = 10'</td> <td>1004HS</td> </tr> <tr> <td>SURVEY BOOK</td> <td>SHEET</td> </tr> <tr> <td>ELECTRONIC</td> <td>22 OF 106</td> </tr> <tr> <td>CONTRACT</td> <td>PROJECT</td> </tr> <tr> <td>6-41889</td> <td>1004HS</td> </tr> </table>	HORIZONTAL SCALE	BRIDGE FILE	1" = 30'		VERTICAL SCALE	DESIGNATION	1" = 10'	1004HS	SURVEY BOOK	SHEET	ELECTRONIC	22 OF 106	CONTRACT	PROJECT	6-41889	1004HS
HORIZONTAL SCALE	BRIDGE FILE																			
1" = 30'																				
VERTICAL SCALE	DESIGNATION																			
1" = 10'	1004HS																			
SURVEY BOOK	SHEET																			
ELECTRONIC	22 OF 106																			
CONTRACT	PROJECT																			
6-41889	1004HS																			

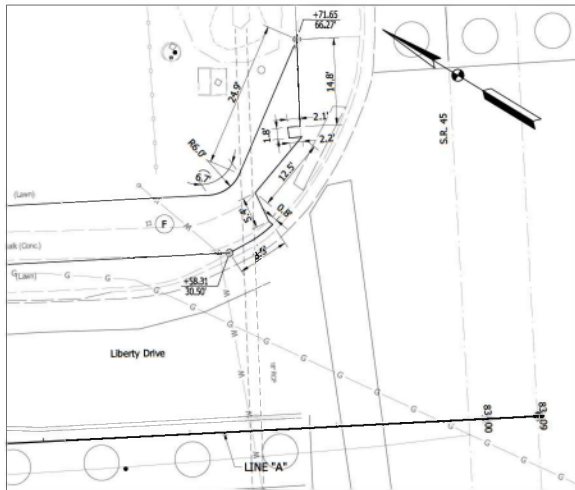
ALL EASEMENTS & R/W ON THIS SHEET DESCRIBED FROM LINE "A" UNLESS OTHERWISE NOTED

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CONSTITUTION AVE. @ LIBERTY DR. CONSTRUCTION DETAIL

Scale: 1" = 10'-0"

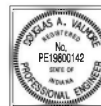


LIBERTY DRIVE @ S.R. 45 CONSTRUCTION DETAIL

Scale: 1" = 10'-0"

LEGEND

- (K) HMA for Sidewalk Consisting of:
165 #/syd HMA Surface, Type B on
275 #/syd HMA Intermediate, Type B on
6" Compacted Aggregate for Base, #53 on
Subgrade Treatment Type III
- (K1) HMA for Patching Consisting of:
165 #/syd HMA Surface, Type B, on
275 #/syd HMA Intermediate, Type B, on
660 #/syd HMA Base, Type B, on
Subgrade Treatment Type II
- (F1) Concrete Sidewalk, 6"
- (F) Concrete Sidewalk, 4"
- (R) HMA for Approaches Consisting of:
1 1/2" Milling &
365 #/syd HMA Surface, Type B
- (15) Combined Concrete Curb & Gutter
- (16) Concrete Curb, 6"
- (CR) Curb Ramp



RECOMMENDED FOR APPROVAL:	<i>Douglas A. Valdivia</i>	DATE: 9/5/2023
DESIGNED:	DW	DRAWN: JZW
CHECKED:	AM	CHECKED: DW

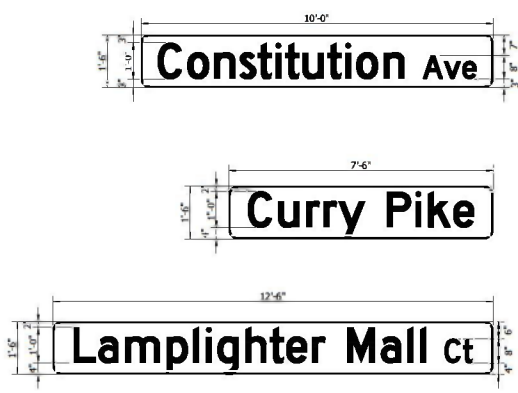
INDIANA
 DEPARTMENT OF TRANSPORTATION

 KARST FARM GREENWAY CONNECTOR
 CONSTRUCTION DETAILS

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	
VERTICAL SCALE	DESIGNATION
N/A	1900405
SURVEY BOOK	SHEET
ELECTRONIC	30
CONTRACT	PROJECT
R-4186	1900405

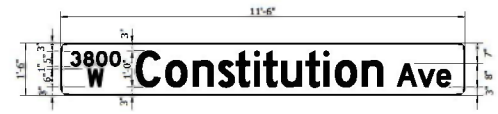
16602020.001

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SIGN NUMBER	DS-103
WIDTH x HEIGHT	10'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

Letters Shall Be Style "C"

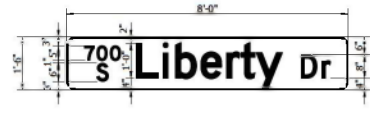


SIGN NUMBER	DS-103
WIDTH x HEIGHT	11'-6" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

Letters Shall Be Style "C"

SIGN NUMBER	DS-141
WIDTH x HEIGHT	7'-6" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

Letters Shall Be Style "C"



SIGN NUMBER	DS-103
WIDTH x HEIGHT	8'-0" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

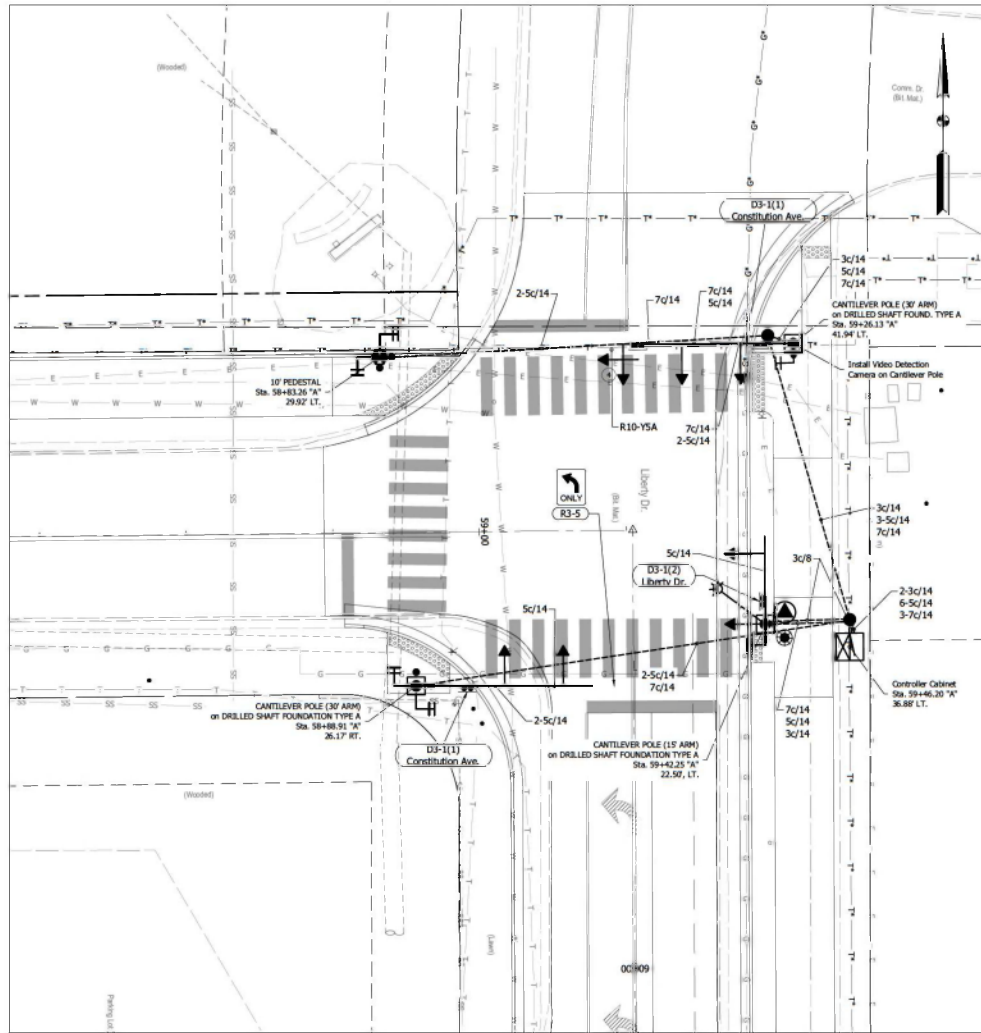
Letters Shall Be Style "C"

SIGN NUMBER	DS-105
WIDTH x HEIGHT	12'-6" x 1'-6"
BORDER WIDTH	0.5"
CORNER RADIUS	3"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: Green
LEGEND/BORDER	TYPE: Reflective COLOR: White/White

Letters Shall Be Style "C"

RECOMMENDED FOR APPROVAL:	DESIGN ENGINEER	DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE	
	DAV	9/5/2023		NA	DESIGNATION	
DESIGNED:	DAV	DRAWN:	JZW	NA	1900405	
CHECKED:	AH	CHECKED:	DAV	SURVEY BOOK	SHEET	
				ELECTRONIC	31	106
				CONTRACT	R-418S	PROJECT
						1900405

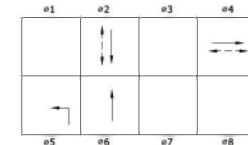
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CONSTITUTION AVENUE & LIBERTY DRIVE - SIGNAL DETAIL
 Scale: 1" = 10'-0"

**LEFT TURN
YIELD ON
FLASHING
YELLOW
ARROW**

SIGN NUMBER	R10-Y5A
WIDTH x HIGHT.	30" x 36"
BORDER WIDTH	0.50"
CORNER RADIUS	1.88"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective COLOR: White
LEGEND/BORDER	TYPE: Reflective COLOR: Black/Black



PHASE DIAGRAM

No Precedent
 All Signals Red Flash

LEGEND

- ← TRAFFIC SIGNAL HEAD, 3 FACE, 12"; RED, AMBER, GREEN, POLYCARBONATE, W/BACKPLATE AND TAPE
- ↔ TRAFFIC SIGNAL HEAD, 4 FACE, 12"; RED ARROW, AMBER ARROW, FLASHING AMBER ARROW, GREEN ARROW, POLYCARBONATE, W/BACKPLATE AND TAPE
- SIGNAL CANTILEVER POLE/ARM(S)
- COUNTDOWN PEDESTRIAN SIGNAL HEAD, 18" INTERNATIONAL SYMBOLS*
- COUNTDOWN PEDESTRIAN SIGNAL HEAD, 18" INTERNATIONAL SYMBOLS* AND ACCESSIBLE PEDESTRIAN PUSHBUTTON W/ R10-3c SIGN
- 18" SIGNAL PEDESTAL ON 24"x24"x36" FOUNDATION AND ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTON W/R10-3c SIGN
- ☑ TS2 ECONOLITE CONTROLLER AND "P-1" CABINET ON "P-1" FOUNDATION WITH AJ-500-085-02 SERIES GLANCE PRE-EMPT & PRIORITY VIDEO FIELD MONITORING UNIT (FMU2) SYSTEM, AND BATTERY BACKUP
- SIGNAL HANDHOLE, TYPE II
- 2" CONDUIT (SCH. 80 UNDER EXIST. PAVEMENT/SCH. 40 IN TRENCH)
- ⊙ SIGNAL SERVICE
- ⊙ LIGHTING SERVICE POINT
- ⊙ LUMINAIRE, ON 10' ARM

* PEDESTRIAN HEADS SHALL BE MOUNTED ON ONE-WAY SIDE-ON-POLE MOUNT W/UNIVERSAL HUB PLATES
 SIGNAL HEAD LAYOUT SHALL BE SUCH THAT THE HEAD DOES NOT CONFLICT WITH ADJACENT HEAD WHEN OPEN.

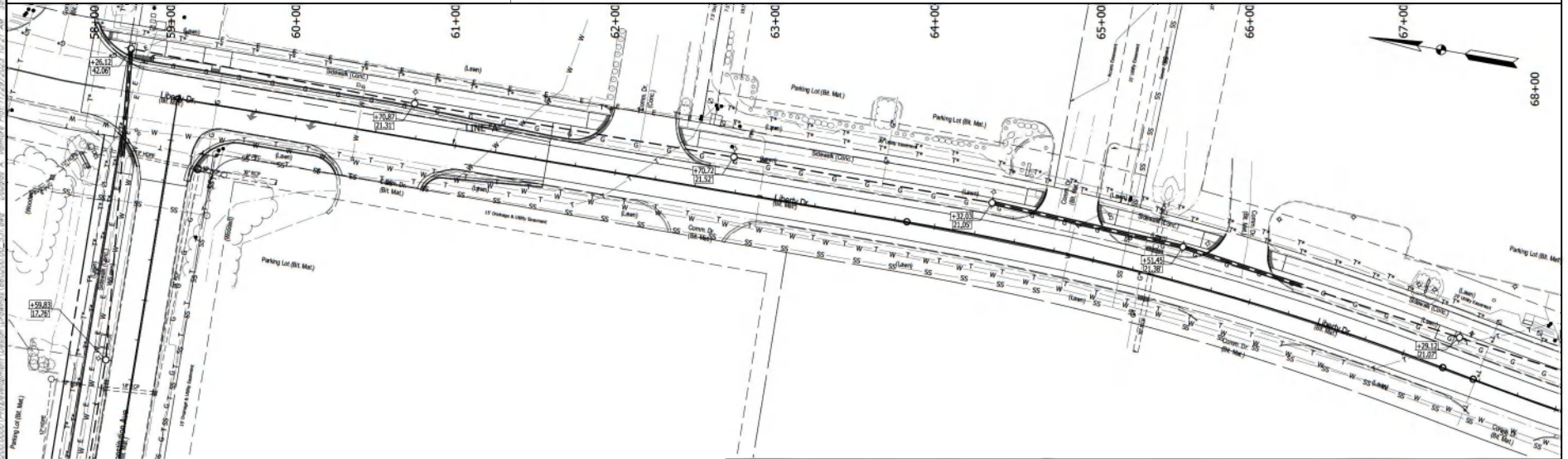
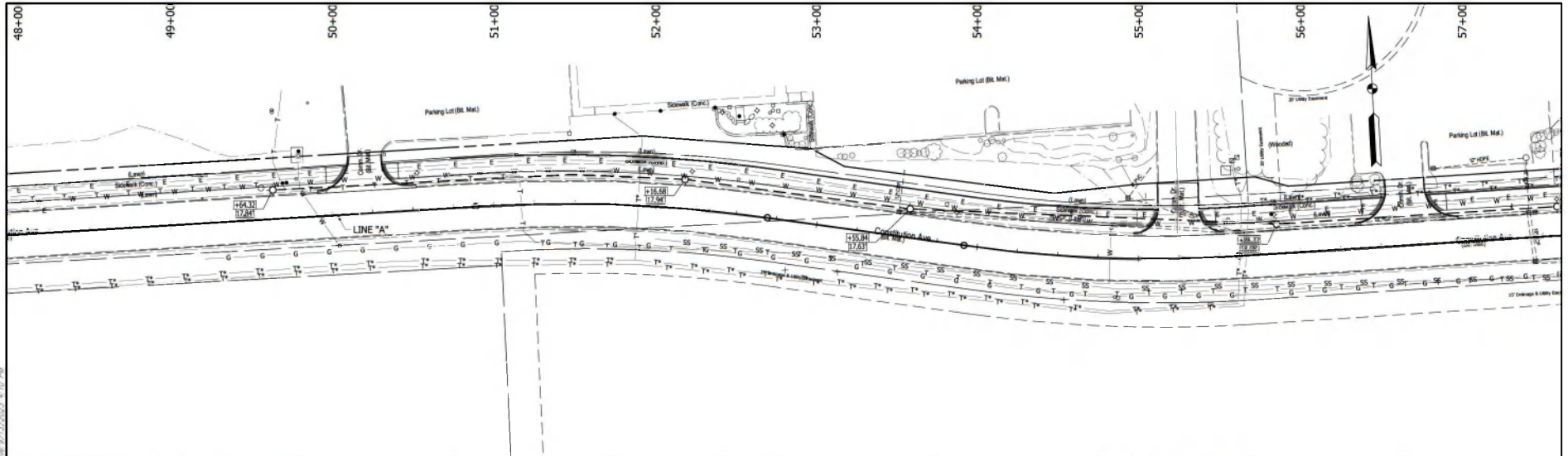


RECOMMENDED FOR APPROVAL:	<i>Thomas A. Vandenberg</i>	DATE	9/5/2023
DESIGNED:	DAV	DRAWN:	JDW
CHECKED:	AP	CHECKED:	DAV

INDIANA DEPARTMENT OF TRANSPORTATION
KARST FARM GREENWAY CONNECTOR SIGNAL DETAILS

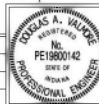
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VERTICAL SCALE	N/A	DESIGNATION	1900405
SURVEY BOOK		SHEET	106
ELECTRONIC	37	PROJECT	1900405
CONTRACT	R-4188		

6602020.DWG



SYMBOL LEGEND

	New Street Light (Supplied and Installed by Others)
	2" Sch. 40 PVC Conduit (By Contractor)
	2" Sch. 80 PVC Conduit (Trenchless Install by Contractor)



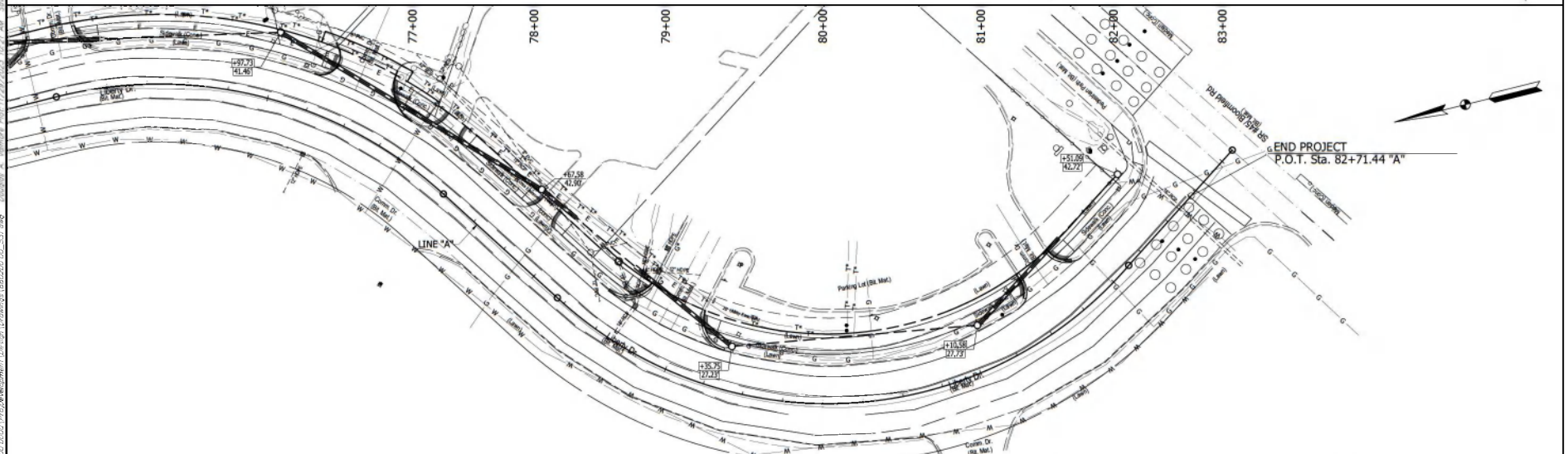
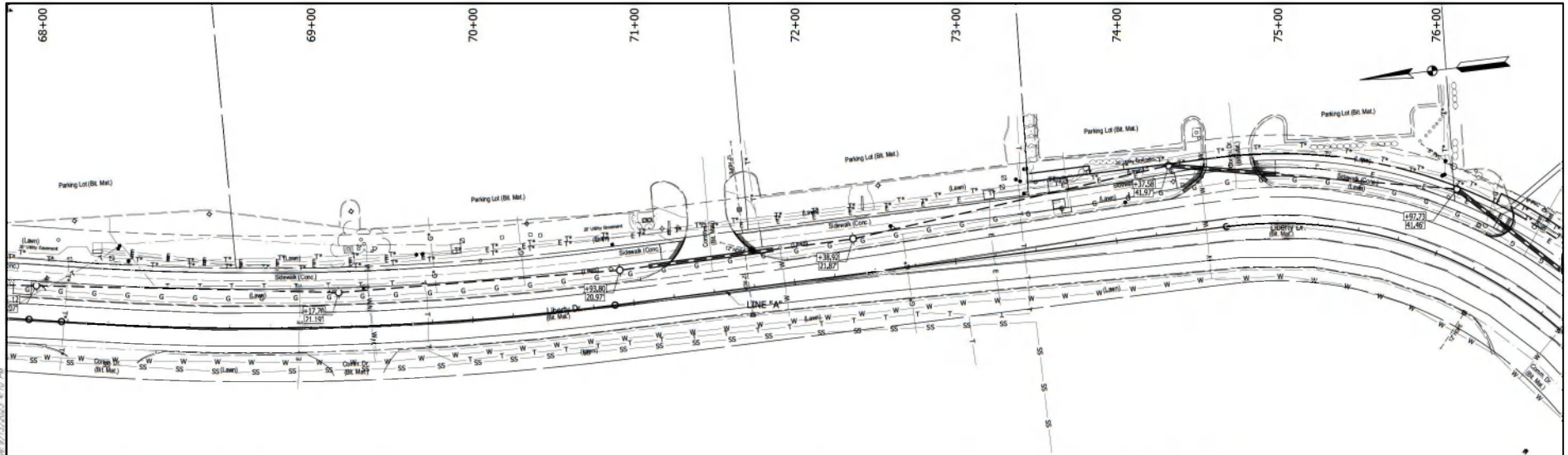
RECOMMENDED FOR APPROVAL: <i>Thomas A. Valdivia</i> 9/5/2023	
DESIGNED: DMV	DATE: 9/5/2023
CHECKED: AM	DESIGN ENGINEER: DMV

INDIANA
DEPARTMENT OF TRANSPORTATION

KARST FARM GREENWAY CONNECTOR
LIGHTING

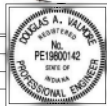
HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	
VERTICAL SCALE	DESIGNATION
1" = 5'	1900HS
SURVEY BOOK	SHEET
ELECTRONIC	38 OF 106
CONTRACT	PROJECT
6-41899	1900HS

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SYMBOL LEGEND

	New Street Light (Supplied and Installed by Others)		2" Sch. 40 PVC Conduit
	2" Sch. 80 PVC Conduit (Trenchless Install)		



RECOMMENDED FOR APPROVAL: *Thomas A. Valentin* 9/5/2023
 DESIGN ENGINEER DATE
 DESIGNED: DMV DRAWN: JZW
 CHECKED: AMT OBSERVED: DMV

INDIANA
 DEPARTMENT OF TRANSPORTATION
 KARST FARM GREENWAY CONNECTOR
 LIGHTING

HORIZONTAL SCALE	BRIDGE FILE
1" = 30'	
VERTICAL SCALE	DESIGNATION
N/A	1900HS
SURVEY BOOK	SHEET
ELECTRONIC	39 OF 106
CONTRACT	PROJECT
R-41889	1900HS

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