

SOUTH COUNTY LINE ROAD SCOPING REPORT

I-69 (SR 37) to SR 135 (S Meridian Street)

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1. Project Purpose and Need

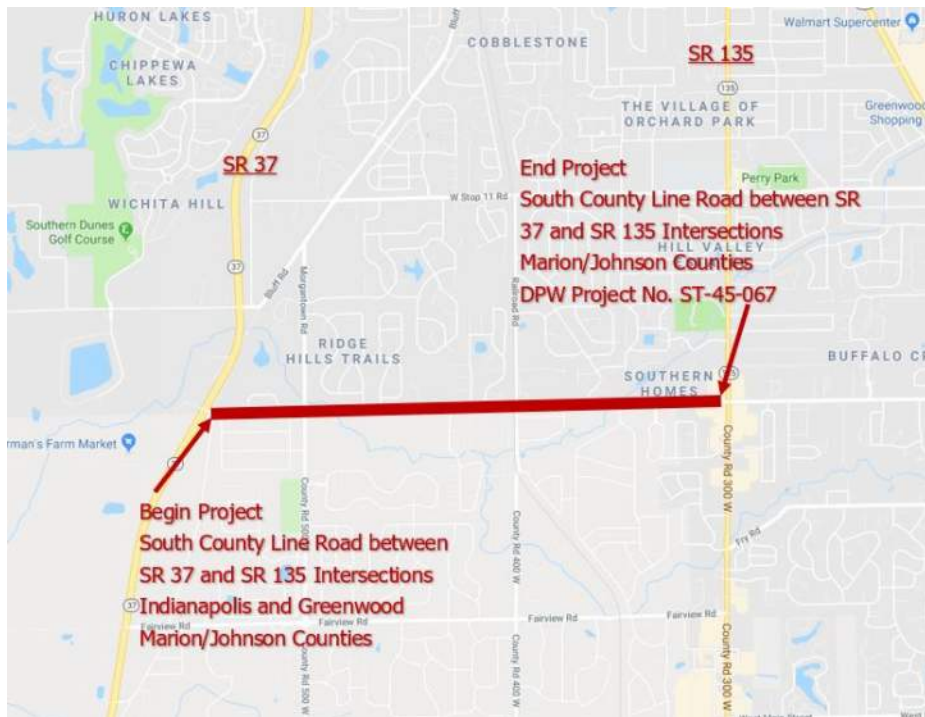
This report defines the proposed scope of a project to add travel lanes to South County Line Road between SR 37 and SR 135 within the City of Indianapolis, Indiana. This project is identified as a planned expansion in the 2016 Marion County Thoroughfare Plan, as part of an effort to improve east-west road capacity in the southern part of the county. The portion of the project between SR 37 and Morgantown Road is identified as a priority planned expansion, as this segment is experiencing the fastest growth. The upgrade of SR 37 to I-69 is currently under design and will be constructed to include a new interchange at County Line Road by 2025. Forecast traffic demand along County Line Road will exceed the capacity of its existing two-lane configuration within the time frame analyzed for this study.

2. Study Area

2.1 Project Location

County Line Road is an east-west arterial located at the southern border of Marion County and northern border of Johnson County. The 2.5-mile segment of County Line Road studied for this project is between SR 37 (future I-69) and SR 135 (S Meridian Street). The project segment is located in White River Township in Johnson County and Perry Township in Marion County.

Figure 1. Project Area Map



2.2 Existing Conditions of County Line Road

County Line road is a two-lane primary arterial with current traffic volumes ranging from 5,600 vehicles per day near SR 37 to 12,000 vehicles per day closer to SR 135. Most of the project corridor is residential with some businesses near the two State Routes of 37 and 135 intersections. The road expands to 5 lanes (2 lanes each direction with a turning lane to Meridian Street) between SR 135 and South Illinois Street. This section also has sidewalks along with a curb and gutter. There are shoulders on both sides of the road between South Illinois Street and Royal Meadow Drive. Recent traffic counts in this 5-lane section are 18,300 vehicles per day.

The current posted speed on County Line road is 30 mph from SR 37 to Morgantown Road, and 40 mph from Morgantown Road to SR 135. Most of the project area has existing homes on the North and South sides of the project, with some businesses near either end of the project limits by SR 37 and SR 135.

There are two major intersections along County Line Road in the segment being studied. One intersection is at Railroad Road/Peterman Road. The name of this crossing road is Railroad Road in Marion County and Peterman Road in Johnson County. This intersection is controlled by a 4-way stop sign, with a single approach lane from all four directions. The Indiana Rail Road has a single-track rail line immediately adjacent to Railroad Road/Peterman Road, with an at-grade crossing of County Line Road less than 50 feet west of the intersection. The crossing has overhead flashers but no gates.

The second major intersection is at Morgantown Road. This intersection is controlled by a traffic signal and has left turn lanes in all directions. There is a steep hill on County Line Road just west of this intersection, with an existing roadway grade of approximately 9 percent.

There are two existing bridges on County Line Road in the study corridor. One bridge goes over Pleasant Run Creek (approximately 100 feet in length), which lies approximately 650 feet east of the Morgantown Road intersection. The other bridge runs over Buffalo Creek (approximately 150 feet in length), located just west of Leisure lane on County Line Road. The Flood Plains for both are shown in Appendix G-5 and G-6. A bridge carrying Morgantown Road over Pleasant Run Creek is approximately 200 feet north of County Line Road and was recently reconstructed.

Existing Drainage in the area is collected by curb and gutter, along with shallow ditches on both sides of County Line Road. There are also ditches that run on both sides of the railroad track near the intersection with Railroad Road. There are cross culverts near Pleasant Run Creek and at Buffalo

Creek, and at the railroad intersection area. Please see Appendix G-4 for more details at these areas. There is a curb and gutter with inlets and a trunk system between SR 135 and just west of South Illinois Street and at Morgantown Road.

3. Environmental Conditions – Red Flag Investigation

An environmental Red Flag Investigation (RFI) was conducted to provide a general overview of the environmental conditions of the project area, highlight areas that may need additional environmental work or coordination, highlight areas that may need to be avoided (e.g., Superfund sites, wetland mitigation sites, or similar), and assist in prioritizing projects. One (1) recreation facility is located adjacent to the project area. Coordination with Carefree Club Inc would occur. One (1) private airport is located within the 0.5 mile search radius. Hillenburg airport is located approximately 0.3 miles northwest of the project area. Coordination with the Hillenburg airport owner will occur. One wetland is located adjacent to the project area at the intersection of Classic View Dr and County Line Rd. Two (2) stream segments, Buffalo Creek and Pleasant Run Creek, flow through the project area. The project area is located within floodplains (coordination only). See Appendix B for the complete RFI report.

4. Utilities

The anticipated project area falls along a dividing line for service areas for many utility companies. The north side of County Line Road is primarily served by Citizens/CEG for natural gas, water, and sanitary sewer. The south side is served by Vectren (Centerpoint) gas, and where properties have water and sanitary services, they are served by Johnson County.

Electric distribution lines are located along the north side of County Line Road and along the west side of Railroad Road. Along the project corridor, cable, telecom, and fiber lines are underbuilt on IP&L's electric poles. Further survey and utility coordination will be required to determine the full impacts to underground cable and fiber facilities.

Enterprise Products owns and maintains a transmission pipeline crossing County Line Road approximately 2,800 feet east of Railroad Road.

Approximate costs for utility relocation have been developed for this report. Making some preliminary assumptions on which utilities are reimbursable, the approximate reimbursable cost is \$1.3 Million.

Prior to the acquisition of right of way, consideration should be made to accommodate utilities within the right of way outside the anticipated construction limits to allow utilities to relocate prior to construction and to minimize the need for utility companies to acquire easements, as doing so may impact the project schedule if the project development timeline is compressed or accelerated.

See Appendix C for supporting information regarding utilities.

5. Railroad Coordination

The Indiana Rail Road Company owns and maintains a rail line adjacent Railroad Road and Peterman Road. This single-track rail line has an at-grade crossing (DOT crossing #292261E) with County Line Road immediately west of the its intersection with Railroad Road/Peterman Road. The crossing has overhead flashers but no crossing gates.

The widening of County Line Road will necessitate a reconstruction of the pavement surface at the grade crossing, the relocation (or replacement) of the existing gantry/flashing indicators, and potentially the installation of new automatic gates. The approximate cost for the railroad work at this location is \$450,000. This assumes that the existing gantry and signal indicators will need to be replaced and that gate arms will be installed.

Railroad coordination will be required for successful completion of this work and sufficient schedule considerations should be made to ensure this work does not impact the project construction or relocation of utilities. The Federal Railroad Administration (FRA) records for this crossing can be found in Appendix D.

6. Related Projects

There are several INDOT and DPW projects either recently completed, under construction, or scheduled to start in the near future that may have an effect on County Line Road regarding traffic flow patterns.

- DES 1700158: Intersection improvement at SR 135 & County Line road to add capacity and reduce backups at the intersection.
- DES 1401717: Bridge rehabilitation on Morgantown Road over Pleasant Run Creek that includes widening, and superstructure replacement (recently completed).

- DES 0300382: I-69 Section 6 – SR 39 to I-465. Martinsville to Indianapolis. This project will upgrade existing SR 37 to I-69 and include a roundabout interchange at County Line Road. See attached Plan and Profile Sheets (Appendix F).

7. Traffic

7.1 Traffic Forecast

Forecast information provided by the Indianapolis Metropolitan Planning Organization (MPO) from the Indianapolis Regional Travel Demand Model provided the basis for traffic forecasts developed for the County Line Road added travel lanes project. MPO travel demand output for the following model scenarios were evaluated for this scoping report:

- 2020 Existing plus Committed scenario. This reflects 2020 traffic demand on the existing road network, with new projects expected to open by 2020.
- 2025 No Build scenario. This reflects 2025 traffic demand on the existing network, with funded projects that are expected to open by 2025. This includes the upgrade of SR 37 to I-69 from Martinsville to I-465, with an interchange at County Line Road. The extension of AmeriPLEX Parkway from SR 67 to the White River, which is currently under development by the City of Indianapolis, is also included in this scenario.
- 2025 Build scenario. This modifies the 2025 No Build scenario by widening County Line Road to provide 4 travel lanes from I-69 to Morgantown Road.
- 2045 No Build scenario. This reflects 2045 traffic demand on the existing network, with funded projects that are expected to open by 2045.
- 2045 Build scenario. This modifies the 2045 No Build scenario by widening County Line Road to provide 4 travel lanes from I-69 to SR 135.

Table 1 provides a comparison of average daily traffic volume forecasts on the road segments included in this study for the various scenarios. Historic count data available from the INDOT Traffic Count Database System is included in the table. 2045 volume forecasts for the I-69 Section 6 Refined Preferred Alternative, as provided in the I-69 Section 6 Environmental Impact Statement (EIS)¹ are also provided for comparison. The I-69 Section 6 EIS forecast reflects widening of County Line Road

¹ Final Environmental Impact Statement, I-69 Section 6, Martinsville to Indianapolis, Federal Highway Administration and Indiana Department of Transportation, February 2018. Available at: <https://www.in.gov/indot/projects/i69/2515.htm>

from I-69 to Morgantown Road. Peterman Road/Railroad Road is not included in the travel demand model network provided by the Indianapolis MPO, so forecasts are not available. Traffic demand growth rates were assumed to be similar to those on Morgantown Road.

Table 1. Average Daily Travel Volume Counts and Forecasts (veh/day)

	County Line Road	County Line Road	County Line Road	Morgantown Road	Morgantown Road	Peterman Road
	SR 37 to Morgantown	Morgantown to Railroad	Railroad to SR 135	County Line to Fairview	County Line to Bluff	County Line to Stop 11
Historic Count and Year	5,577 (2014)	NA	12,041 (2014)	8,095 (2019)	5,488 (2019)	5,618 (2019)
2020 E+C MPO Forecast	15,700	8,700	9,800	23,000	11,000	NA
2025 No Build MPO Forecast	17,000	11,400	11,500	19,000	12,900	NA
2045 No Build MPO Forecast	24,300	13,600	13,100	25,400	20,200	NA
2045 I-69 EIS Forecast*	22,300	14,900	NA	14,200	NA	NA
2025 Build MPO Forecast	21,000	11,700	11,700	12,500	21,400	NA
2045 Build MPO Forecast	32,400	26,900	28,000	26,400	19,600	NA

*The I-69 Section 6 EIS included widening of County Line Road between I-69 and Morgantown Road.

Peak hour turning movements Traffic forecasts were developed for the 2025 and 2045 Build conditions based on September 2019 peak period turning movement counts and the travel demand forecasting provided by the Indianapolis MPO. Travel demand model outputs for the future Build scenarios were compared to the output for the 2020 Existing plus Committed scenario to determine volume growth by road segment and direction. This growth was applied to the recent turning movement counts and adjustments were made to assure reasonable balance along County Line Road. As stated above, traffic demand growth rates on Railroad Road/Peterman Road were assumed to be similar to those on Morgantown Road, since it was not included in the MPO travel demand model. Existing and forecast peak hour turning movement volumes are shown for the intersection of County Line Road and Morgantown Road in **Table 2** and for County Line Road and Railroad Road/Peterman Road in **Table 3**.

Table 2. Existing and Forecast Peak Hour Volumes at County Line Road & Morgantown Road (veh/day)

AM Peak Hour		Morgantown Rd Northbound			Morgantown Rd Southbound			County Line Rd Eastbound			County Line Rd Westbound		
		L	T	R	R	T	L	L	T	R	R	T	L
2019 Count	Total	100	355	89	7	60	28	14	242	28	27	200	40
	Truck	-	-	1	-	-	3	1	7	2	1	10	-
2025 Forecast	Total	109	355	99	10	84	42	18	392	36	50	372	75
	Truck	-	-	2	-	-	5	2	12	3	2	18	1
2045 Forecast	Total	139	414	174	17	125	82	37	1,140	73	108	844	157
	Truck	-	-	2	-	-	10	3	24	5	4	39	4
PM Peak Hour		Morgantown Rd Northbound			Morgantown Rd Southbound			County Line Rd Eastbound			County Line Rd Westbound		
		L	T	R	R	T	L	L	T	R	R	T	L
2019 Count	Total	24	134	69	44	475	50	19	276	80	27	298	90
	Truck	1	1	-	-	1	-	-	1	-	-	1	-
2025 Forecast	Total	28	145	85	53	501	64	23	421	89	36	402	114
	Truck	2	1	-	-	1	-	-	2	-	-	2	-
2045 Forecast	Total	52	230	204	102	581	155	39	964	115	70	1,212	177
	Truck	2	2	-	-	2	-	-	4	-	-	5	-

Table 3. Existing and Forecast Peak Hour Volumes at County Line Road & Railroad Road/Peterman Road (veh/day)

AM Peak Hour		Peterman Rd Northbound			Railroad Rd Southbound			County Line Rd Eastbound			County Line Rd Westbound		
		L	T	R	R	T	L	L	T	R	R	T	L
2019 Count	Total	23	165	217	26	68	83	31	368	13	31	195	31
	Truck	-	-	-	1	-	-	1	11	-	-	11	-
2025 Forecast	Total	28	165	221	42	95	118	45	542	19	37	352	37
	Truck	-	-	-	1	-	-	2	18	-	-	16	1
2045 Forecast	Total	42	192	237	73	141	210	141	1,321	58	103	877	101
	Truck	-	-	-	3	-	-	4	59	-	-	43	2
PM Peak Hour		Peterman Rd Northbound			Railroad Rd Southbound			County Line Rd Eastbound			County Line Rd Westbound		
		L	T	R	R	T	L	L	T	R	R	T	L
2019 Count	Total	68	102	109	88	188	68	25	293	22	37	325	67
	Truck	1	1	1	-	1	-	-	-	1	-	2	-
2025 Forecast	Total	75	105	113	105	204	77	35	412	30	42	471	75
	Truck	2	1	1	-	1	-	-	-	1	-	3	-
2045 Forecast	Total	190	152	246	270	253	172	69	1,037	52	97	1,201	147
	Truck	4	2	3	-	2	-	-	-	3	-	12	-

7.2 Traffic Analysis

Typical Section Requirements

The through lane requirements for County Line Road were verified by comparing 2045 average daily traffic forecasts to the service volume thresholds for a signalized arterial. The maximum volume that can be served with acceptable LOS D on County Line Road in its existing two-lane configuration is estimated to be 12,750 vehicles per day, based on generalized service volume estimated developed by the Florida Department of Transportation and shown in **Appendix E**.² The 2045 No Build scenario demand estimated for each segment of County Line Road exceeds 12,750 vehicles per day, as shown in Table 1, and a two-lane arterial will therefore provide insufficient capacity. An arterial with four travel lanes and turn lanes at intersections will provide sufficient capacity to serve the 2045 Build scenario volumes. Due to the number of driveway and street intersections along County Line Road, a two-way center left turn lane is recommended for safety and capacity.

It is noted that forecast demand on Morgantown Road and Railroad/Peterman Road also exceed the maximum acceptable two-lane arterial volumes, and these roads may require additional travel lanes in the future.

Intersection Traffic Control

A traffic signal was installed at the intersection of County Line Road and Morgantown Road in 2014. While no formal signal warrant analysis was conducted for this scoping study, MPO daily traffic forecasts indicate that the volumes at the intersection would continue to meet Indiana MUTCD traffic signal warrants under either the 2025 No Build or 2025 Build scenario.³ A traffic signal is preferred over a roundabout at this intersection due to the steep grade on the west approach and the Pleasant Run Creek crossings on the north and each approaches that would increase the cost of widening on these approaches.

The intersection of County Line Road and Railroad Road/Peterman Road is currently controlled by an all-way stop. The City of Indianapolis does not propose to include this segment of County Line Road in the first phase of the added travel lanes project that would open to traffic in 2025. Examination of existing daily counts and MPO forecasts indicate that this intersection is likely to warrant a traffic

² 2012 Generalized Service Volume Tables, Florida Department of Transportation Systems Planning Office, December 2012. Available at: <https://www.fdot.gov/planning>

³ Indiana Manual on Uniform Traffic Control Devices, 2011 Edition. Table 4C-2.

signal by the 2045 design year, so a signal was assumed for purposes of determining intersection lane configuration and turn lane lengths. Opening year traffic control at this intersection will need to be confirmed once a schedule for widening this segment of County Line Road has been determined.

A traffic signal is preferred over a roundabout at the intersection of County Line Road and Railroad Road/Peterman Road due to the railroad immediately adjacent to the intersection. If a roundabout is constructed at this location, it is recommended that the roundabout be moved either to the east so that the railroad crosses only the west approach or to the west so that the railroad bisects the roundabout.

Intersection Lane Configuration and Level of Service

Intersection turn lane recommendations are based on design year capacity analysis and the warrants in Section 46-4.0 of the Indiana Design Manual Turn.

County Line Road is an arterial and is forecast to experience a significant increase in traffic after construction of I-69. Therefore, left and right turn lanes are recommended on County Line Road in both directions at its intersections with both Morgantown Road and Railroad Road/Peterman Road.

Left and right turn lane recommendations for the Morgantown Road and Railroad Road/Peterman Road approaches to County Line Road were developed based on design year capacity analysis. Both a left turn lane and a right turn lane are recommended for all approaches, as they are needed for capacity. Each of these movements has a forecast demand of more than 100 vehicles per hour in the AM peak hour and/or PM peak hour during the 2045 design year.

Capacity analysis was conducted for the intersections of County Line Road with Morgantown Road and with Railroad Road/Peterman Road using Synchro 10 traffic analysis software. Both the 2045 AM and PM peak hour build forecasts were evaluated. Analysis output reports are provided in Appendix E.

Turn lane storage lengths were determined based on the queue lengths observed from microsimulation of the 2045 AM and PM peak hour traffic with optimized signal timing. Five 60-minute simulation runs were conducted for each peak hour using SimTraffic microsimulation software, and queueing information was averaged from these runs. The storage length for each turn lane was set to accommodate the higher of the AM peak or PM peak 95th percentile queue length, which is the length that is expected to be exceeded only five percent of the time under the forecast conditions. A

minimum storage length of 100 feet was used. The recommended intersection lane configurations, Level of Service and queueing results, and recommended minimum turn lane storage lengths are shown in **Table 4**. The lengths in the table only include full-width storage requirements and exclude entrance taper lengths. Turn lane lengths are assumed to exclude deceleration due to the developed urban area and speeds of 40 mph or less. Turn lanes would ideally be longer than the 95th percentile queue length in the adjacent through lane so that vehicles could enter turn lanes unimpeded. However, this would require significant additional cost and impact at these intersections. SimTraffic queueing reports are included in **Appendix E**.

Table 4. Lane Configuration and Recommended Minimum Turn Lane Storage Lengths

County Line Rd & Morgantown Rd												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	↵	↑↑	↻	↵	↑↑	↻	↵	↑	↻	↵	↑	↻
Level of Service	B/C	D/D	B/C	D/D	C/D	B/C	C/C	E/C	C/C	C/C	C/E	C/C
95 th % Queue Length (ft)	57	388	80	167	388	66	111	450	81	168	658	71
Turn Lane Length (ft)	100		100	170		120	120		100	170		100
County Line Rd & Railroad Rd/Peterman Rd												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes	↵	↑↑	↻	↵	↑↑	↻	↵	↑	↻	↵	↑	↻
	B/B	C/C	B/B	C/C	C/C	B/B	C/C	C/C	E/D	D/C	C/D	C/E
95 th % Queue Length (ft)	124	364	58	128	319	46	171	179	158	300	257	91
Turn Lane Length (ft)	130		100	130		100	180		160	300		100

8. Roadway Design

8.1 Typical Section

The proposed typical section for County Line Road follows the Metropolitan Area 4-Lane Primary Urban Arterial roadway typical section provided in the 2016 Marion County Thoroughfare Plan. The typical section includes two 11-foot lanes in each direction, one 13-foot center two-way left turn lane, and curb & gutter. The north side will have a 6-foot sidewalk separated by a 6-foot grass buffer, and the south side will have a 10-foot multi-use path separated by a 6-foot grass buffer. Typical proposed right of way width is 119 feet. Please see Appendix A for more details.

8.2 Geometrics

Recommended Geometric Design Criteria for the County Line Road Project are those for reconstruction of a suburban arterial with four or more lanes, as shown in Figure 53-6 of the Indiana Design Manual.

Table 5. Existing and Proposed Design Features

Feature	Existing	Proposed
Functional Classification	Urban Arterial	Urban Arterial
Travel Lanes	2 lanes @ 11-foot wide	4 Lanes @ 11-foot wide, 1 Lane @ 13-foot wide
Design Speed	N/A	40 mph
Posted Speed	30 mph, 40 mph	40 mph
Drainage	Ditches, Curb & Gutter	Curb & Gutter with enclosed Drainage
Pedestrian Accommodation	Few Sidewalks near SR 135 & County Line Road on both side of the road.	6-foot sidewalk on North side of County Line Road
Bicycle Accommodation	None	10-foot multi-use path on South side of County Line Road

8.3 Alignments & Centerline Alternatives

Horizontal and vertical geometry for the proposed County Line Road project was set according to the Indiana Design Manual, using a design speed of 40mph. The centerline of the proposed widened County Line Road will closely follow the existing centerline. However, the potential cost and impacts were reviewed for three alignment alternatives at the steep grade just west of Morgantown Road. Following are some of the criteria that were taken into consideration.

- R/W
- Drainage
- Cost
- Railroad Crossing
- Traffic Analysis
- Steep Vertical Grade west of Morgantown Intersection
- Utilities Relocations

The proposed vertical profile was designed for 40 mph, located just west of the Morgantown Road intersection. The difference in elevation between the ground and the steep ridge area vertical hill is almost 50 feet. A 40 mph urban arterial design criteria was used to reduce the elevation of the hill in order to accommodate the intersection and stopping sight distance at Morgantown Road. This design cuts the steep hill by approximately 25 feet in elevation. This means all the side roads that are on the hill will need to be adjusted back, along with the total take of properties as shown in the Appendix A. There are other ramifications if the Vertical Profile is adjusted, such as earthwork cost, utilities relocation cost around the ridge, drainage, and possibly adding retaining walls. The vertical curves used for the 40 mph design speed will greatly improve any sight distance issues that could arise. Multiple design alternatives were considered in order to ensure that impact on the area was minimized while still meeting all the design criteria.

8.3.1 Alignment Alternative 1 (Preferred Alternative)

In this alternative, the horizontal existing centerline was used throughout the project limits, splitting the proposed center turning lane in half (6.5 feet on each side) and expanding the proposed foot print to 119 feet as shown in the typical section.

The vertical profile was matched to existing ground as much as possible, except just west of Morgantown Road, where the profile grade of the existing steep hill was revised to meet 40 mph design criteria. The existing steep grade (approximately 9%) does not meet design standards currently. See Appendix A for the horizontal and vertical profile of Alternative 1.

8.3.2 Alignment Alternative 2

In this alternative, the horizontal alignment for County Line Road was set using the existing centerline, except that it was shifted to the south of the current existing centerline by 26 feet near the

Morgantown Road intersection to avoid some of the existing homes on the North side of the street. The vertical profile for the alignment maintains the 40 mph design speed through this horizontal alignment shift. The horizontal and vertical profile of Alternative 2 is shown in Appendix A.

8.3.3 Alignment Alternative 3

In this alternative, the horizontal alignment for County Line Road was set using the existing centerline, except where it is shifted to the north of the current existing centerline by 36 feet near the Morgantown Road intersection. The vertical profile for the alignment maintains the 40 mph design speed through this horizontal alignment shift. The horizontal and vertical profile of Alternative 3 is shown in Appendix A.

8.4 Preferred Alignment

Alternative 1 was identified as the preferred horizontal alignment for the following reasons:

- It has the least impact of property owners and R/W takes
- Least impact on railroad crossing
- Easier to upgrade Morgantown Road intersection without impacting the newly built bridge just North of the intersection on Morgantown Road.
- Less impact on Pleasant Run Creek and Buffalo Creek bridges since the impact is equally distributed on both sides without possibly realigning the channel that are required in both Alternatives 2 and 3.

9. Drainage and Detention

Existing drainage consists of curb and gutter along with roadside ditches. Existing impervious areas consist of two 11 foot lanes and shoulders throughout the roadway. Most existing storm water along this segment of County Line Road is collected and will drain to either Pleasant Run Creek or Buffalo Creek, as shown in Appendix G. The proposed typical section will increase the impervious footprint of County Line Road by adding two new travel lanes and a center turn lane, as well as sidewalk, a multiuse path, and turn lanes at the two major intersections. The proposed project will include curb and gutter, inlets, and an enclosed storm drainage system, along with manholes, occasional cross culverts, and ditches behind the side walk and multiuse path.

- Existing Impervious area: 8 Acres

- Proposed Impervious area: 22 Acres
- Increase of Impervious area: 14 Acres

The increase in impervious areas due to new added lanes, sidewalk and multiuse shared path, will require new detention areas as shown on the plan drawings in Appendix A. Due to the existing floodplain location and multiple anticipated project outfalls, 1.5 acres of detention will be required at multiple locations distributed through the project site, rather than a single downstream location.

10. Maintenance of Traffic

The County Line Road corridor between SR 37 and SR 135 (Meridian Street) mostly consists of residential neighborhoods on both sides of the streets with some commercial areas near the two ends, including a gas station at Railroad Road. Maintenance of traffic was analyzed to show what the best and most cost-effective method would be in order to build this project while having access to all of the residential and commercial driveways. The best way utilizes two-phase construction.

- Build one side while shifting the traffic on the other side.
- Add temporary pavement in order to maintain existing traffic.
- All drives need to have access at all times
- Bridge replacement will also take place during the part width construction.
- Temporary traffic signals may need to be utilized.
- Cross Culverts need to be constructed in two phases.

A total closure of County line road is not advised due to heavy traffic and driveway access in the area.

11. Conclusion and Recommendation

HNTB recommends that entire corridor should be designed for a 40 mph design speed, both horizontally and vertically by using the existing centerline as a baseline. In order to accommodate the 40 mph design speed and sight distance requirements, there will be approximately 25 feet of cut for the crest hill located east of Morgantown Road.

Retaining walls are not recommended due to nearby driveways, side roads, and sight distance issues. Improving storage lengths are also recommended at Railroad Road and Morgantown Road, to accommodate present and future traffic demands.

12. Cost Estimate

The cost estimate was prepared based upon the Preferred Horizontal and Vertical Alignments (Alternative 1). This estimate is broken down into two parts: Phase I and Phase II. Phase I consists of the estimate from SR 37 to Morgantown Road, and Phase II spans from Morgantown Road to the end of the project at SR 135 (Meridian Street).

Table 6. Cost Estimate for Phase I and Phase II

Item	Phase I Cost	Phase II Cost
Total Construction Cost (CN)	\$7,570,000	\$21,190,000
Utilities & Railroad Xing Upgrade (UT)	\$240,000	\$1,800,000
Construction Engineering (CE)	\$950,000	\$2,650,000
Professional Engineering (PE)	\$760,000	\$2,120,000
Total R/W Cost (RW)	\$1,430,000	\$2,500,000
Grand Total Cost	\$10,950,000	\$30,260,000

The scoping report cost analysis was performed using the major items using industry standard unit prices. A contingency of 30% was added for other items identified during final design. A more comprehensive cost estimate of both phases can be found in Appendix H.

Appendix

Appendix A: Typical Sections and Plan & Profile

Appendix B: Environmental Red Flag

Appendix C: Utilities

Appendix D: Railroad

Appendix E: Traffic

Appendix F: Other Related Projects

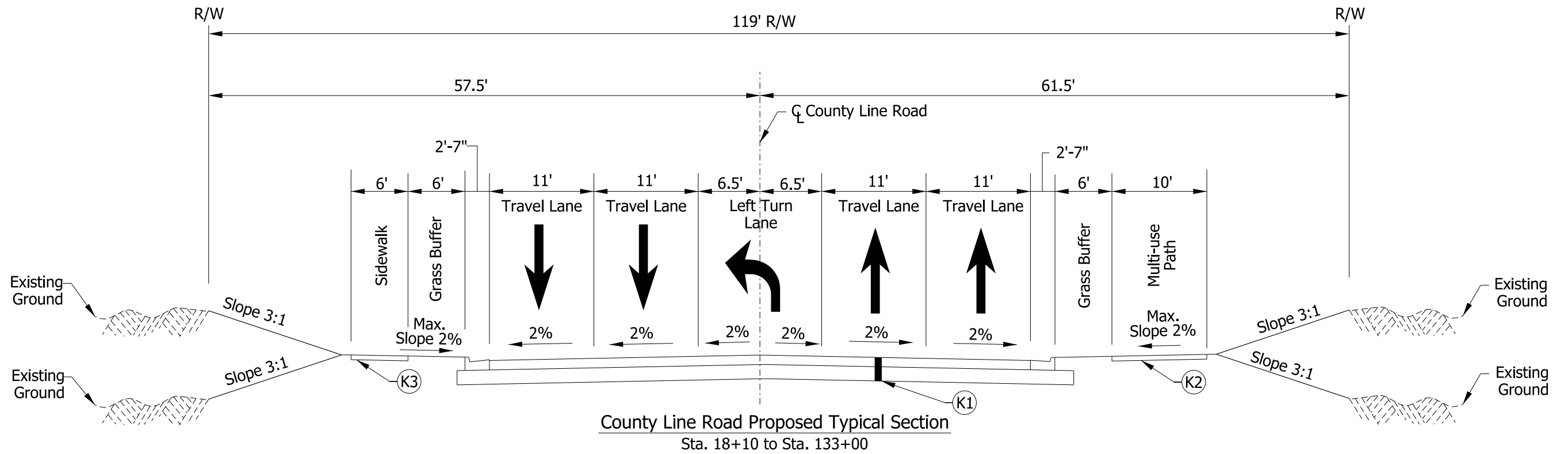
Appendix G: Miscellaneous

Appendix H: Cost Estimate

Appendix I: Photos From Site



Appendix A: Typical Sections and Plan & Profile



County Line Road Proposed Typical Section
Sta. 18+10 to Sta. 133+00

LEGEND

- (K1) 165#/Syd. QC/QA Surface, 3, 64, 9.5 mm on 330#/Syd. QC/QA Intermediate, 2, 64, 19.0 mm on 660#/Syd. QC/QA Base, 2, 64, 19.0 mm on 6" Compacted Aggregate, No. 53 on Subgrade Treatment, Type IC
- (K2) 140#/Syd. QC/QA Surface, 3, 64, 9.5 mm on 220#/Syd. QC/QA Intermediate, 2, 64, 19.0 mm on 6" Compacted Aggregate, No. 53 on Subgrade Treatment, Type IC
- (K3) 4in. Concrete Sidewalk

ozaman 10/28/2019 10:07:15 am
 model:Sheet1
 file: \\hntb\0289\projects\66413_iny.dwg as needed traffic_2017\02 - county\line road\cadd\in1\c6413-rd-s-ns01.dgn



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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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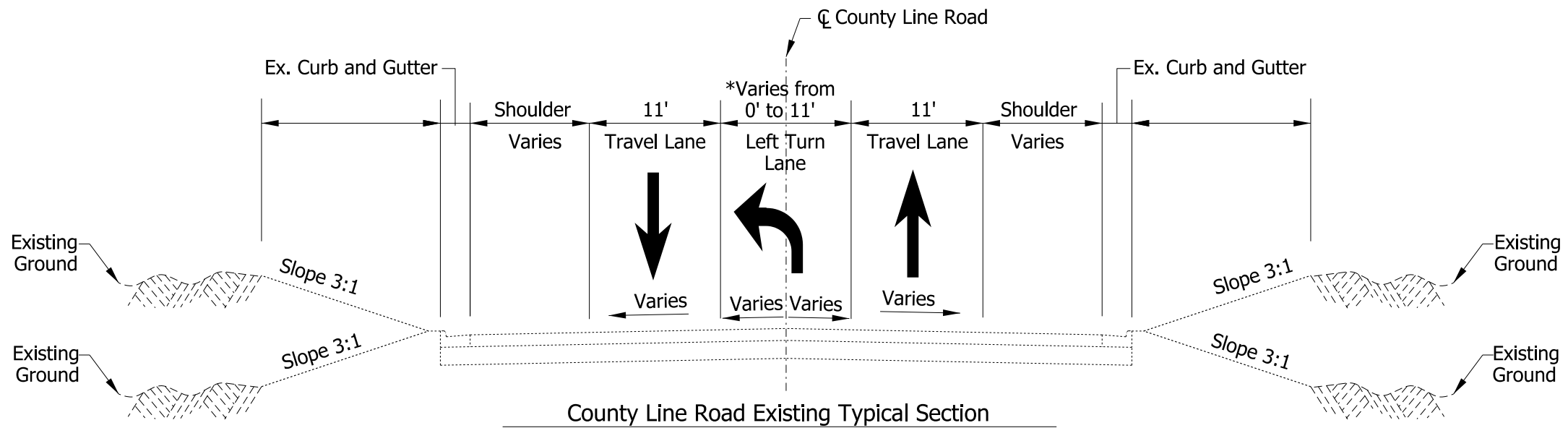
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DESIGNED: _____	DRAWN: _____	
CHECKED: _____	CHECKED: _____	



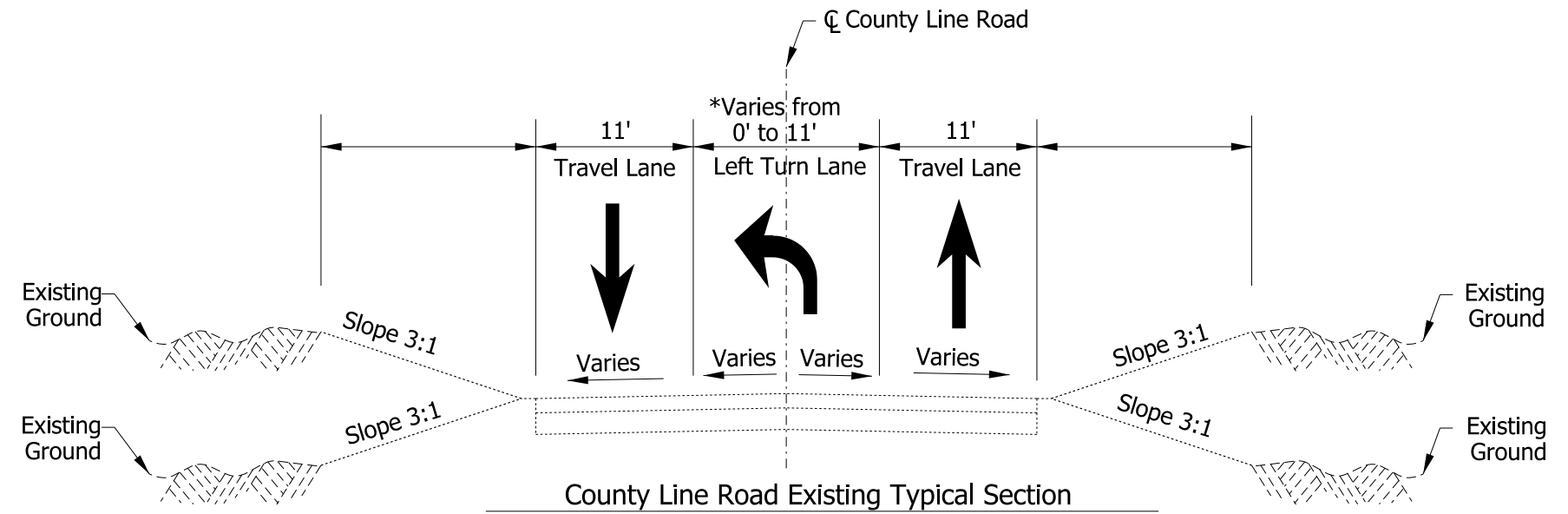
CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

County Line Road
 Proposed Typical Section

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	N/A
	DESIGNATION
SURVEY BOOK	SHEETS
Electronic	1 of 18
CONTRACT	PROJECT
	ST-45-067



County Line Road Existing Typical Section
 *0' at Sta. 29+38 to Sta. 32+10
 Transitions between 0' and 11' from Sta. 32+10 to Sta. 33+80 and 36+36 to 37+80
 11' at 33+80 to 36+36



County Line Road Existing Typical Section
 *0' at Sta. 18+10 to Sta. 29+38 and Sta. 37+80 to Sta. 130+92
 Transitions between 0' and 11' from Sta. 130+92 to Sta. 133+00

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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

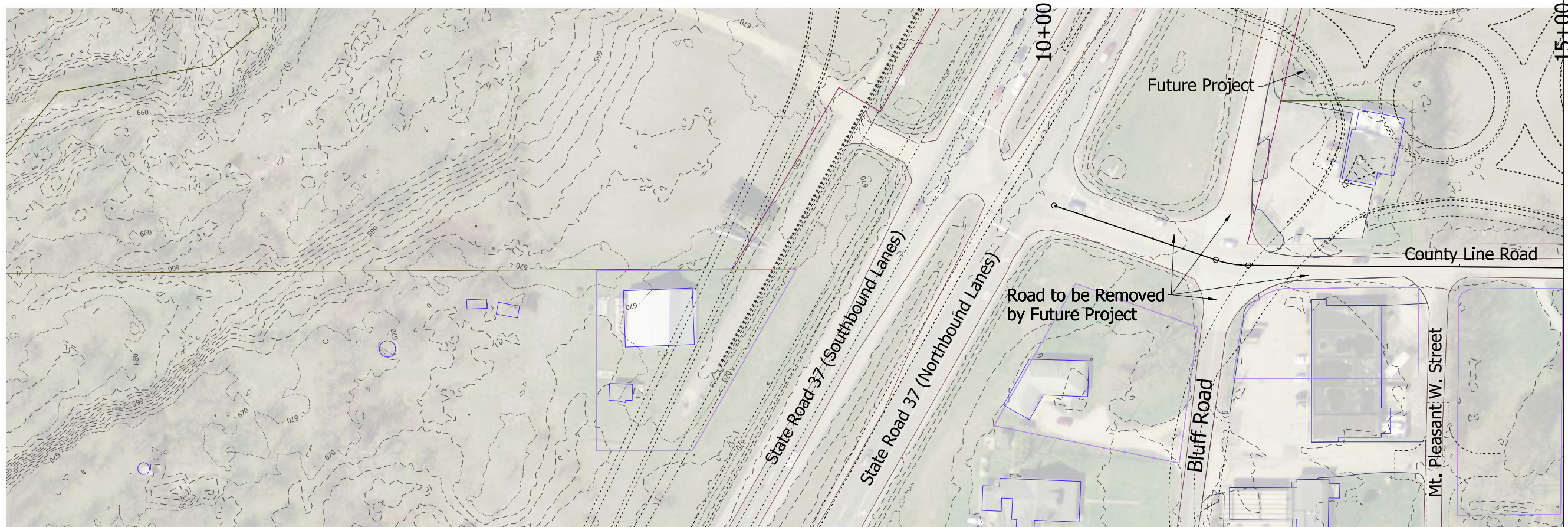
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 NOT FOR CONSTRUCTION

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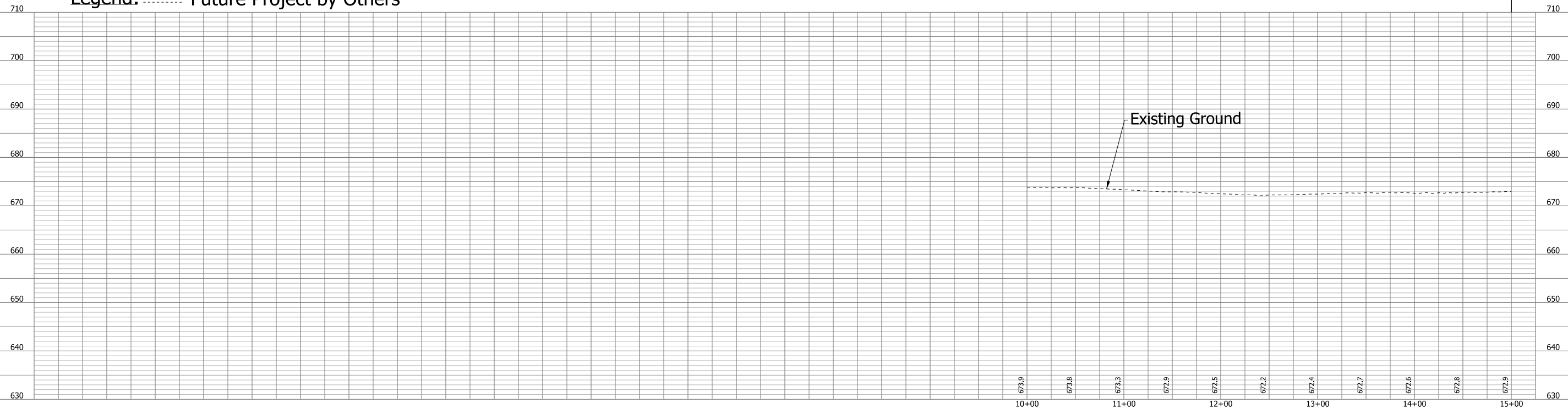


CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 County Line Road
 Existing Typical Section

HORIZONTAL SCALE	BRIDGE FILE
VERTICAL SCALE	N/A
	DESIGNATION
SURVEY BOOK	SHEETS
Electronic	2 of 18
CONTRACT	PROJECT
	ST-45-067



Legend: Future Project by Others



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 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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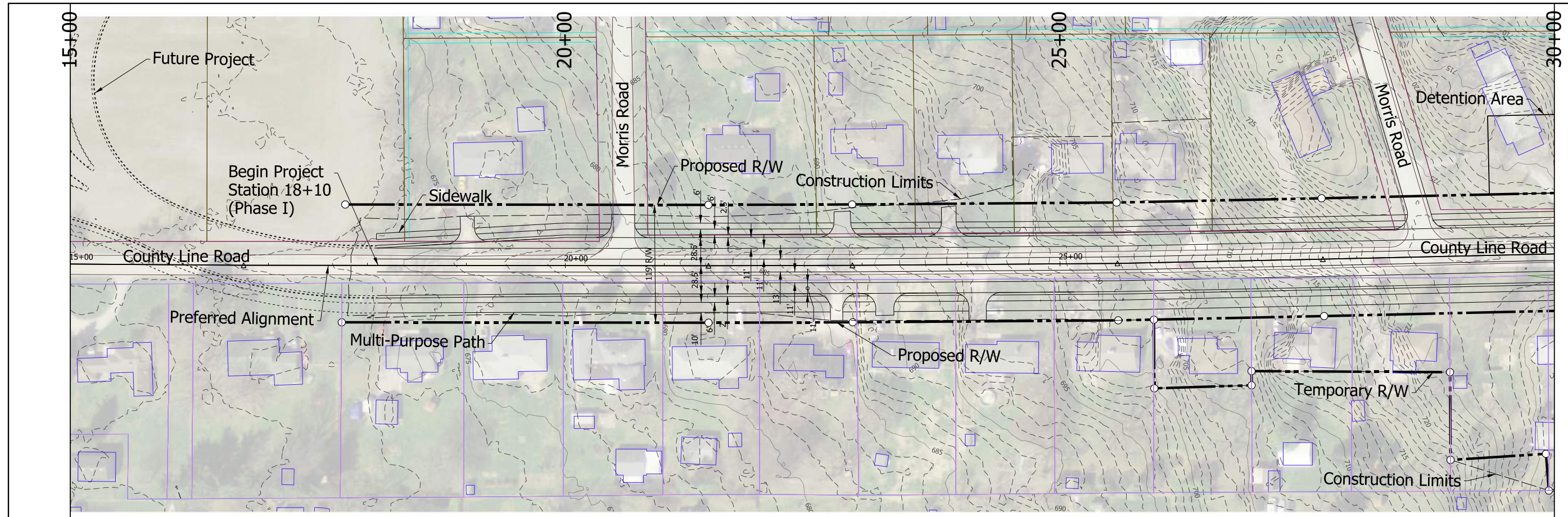
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CHECKED: _____	CHECKED: _____	



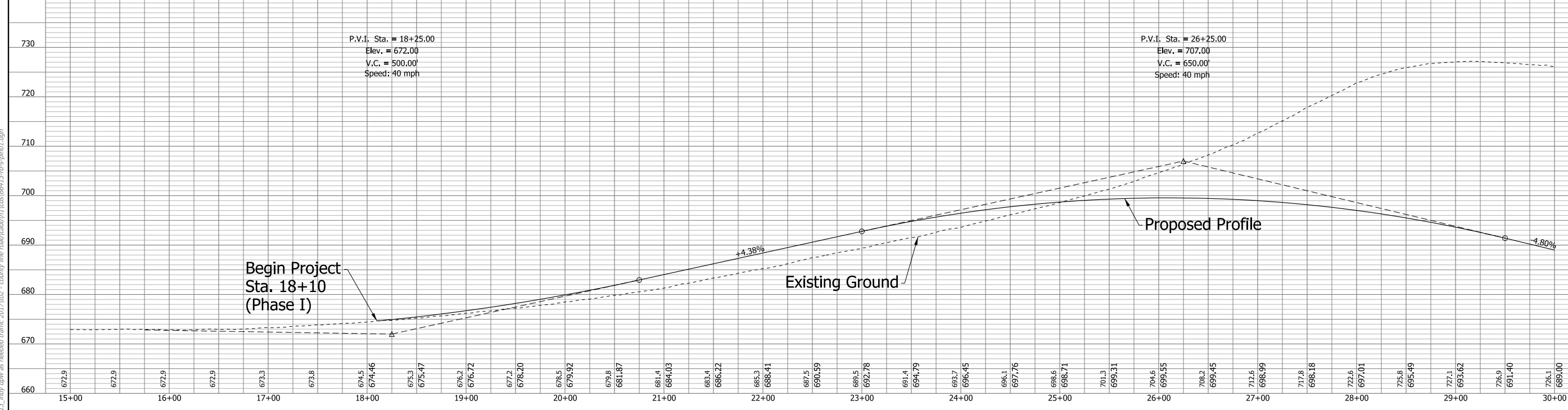
CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Preferred Alternative
 Plan and Profile

HORIZONTAL SCALE	BRIDGE FILE
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VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	3 of 18
Project Number	PROJECT
	ST-45-067



Legend: Future Project by Others



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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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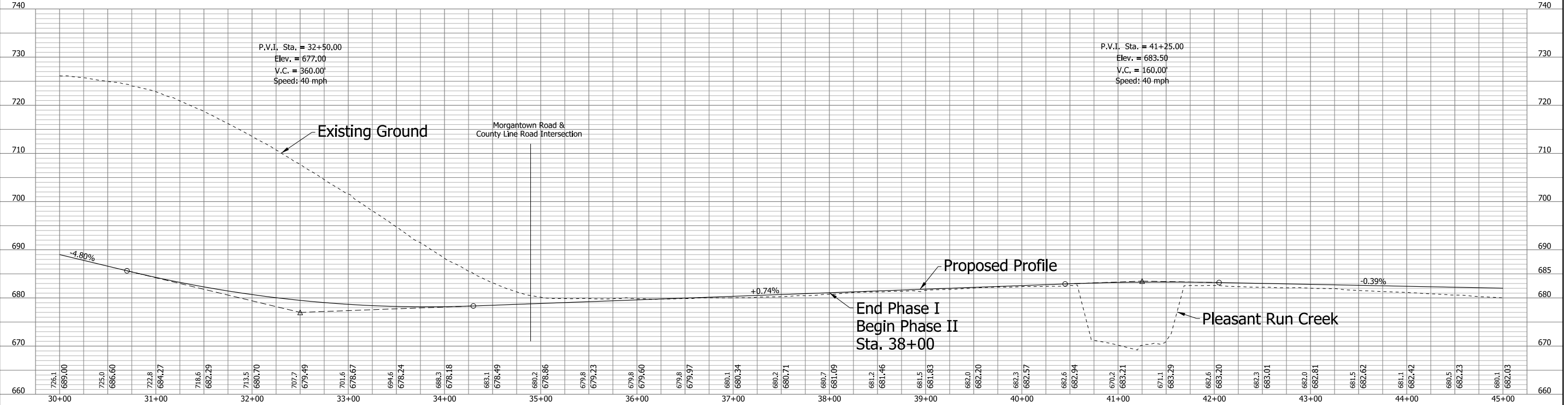
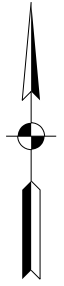
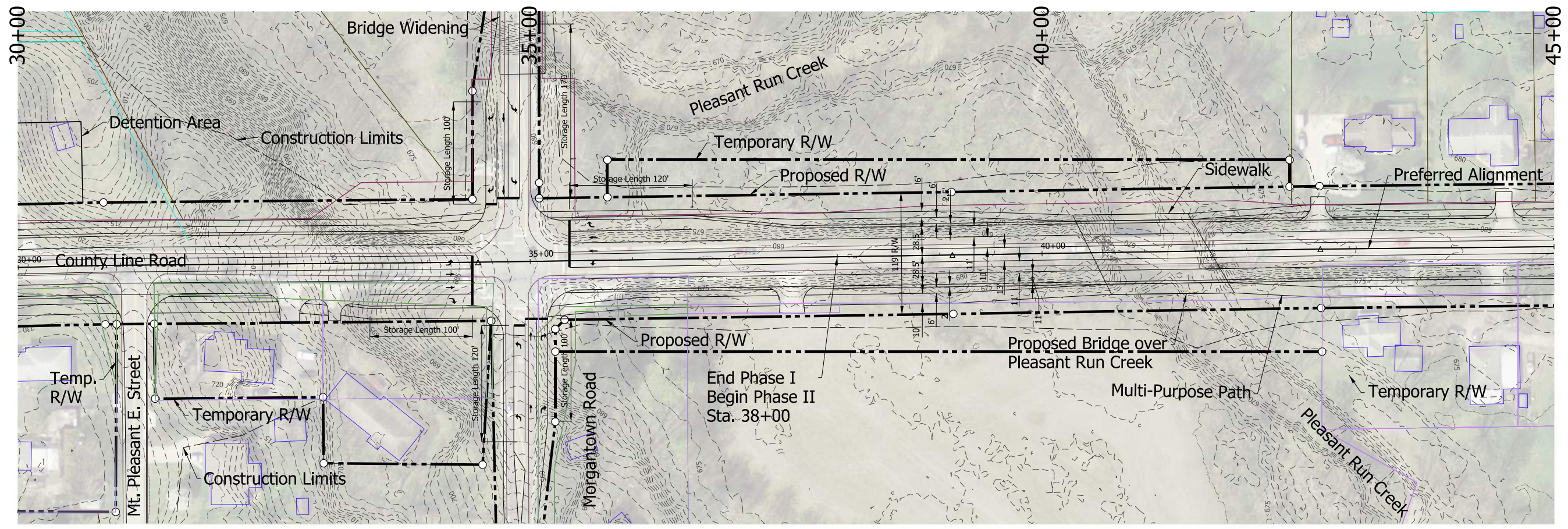
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 4 of 18
Project Number	PROJECT ST-45-067



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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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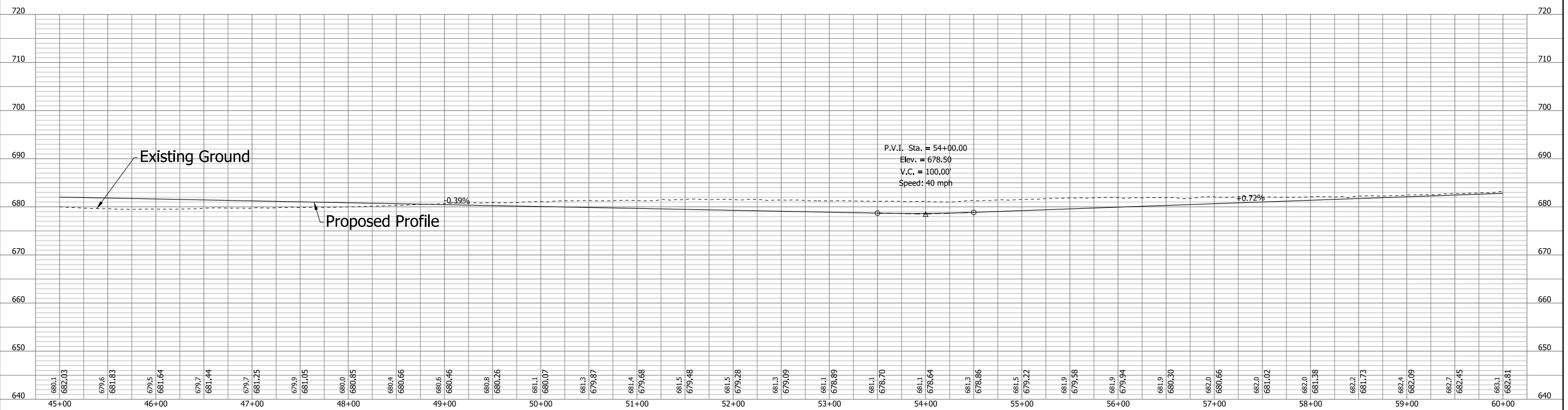
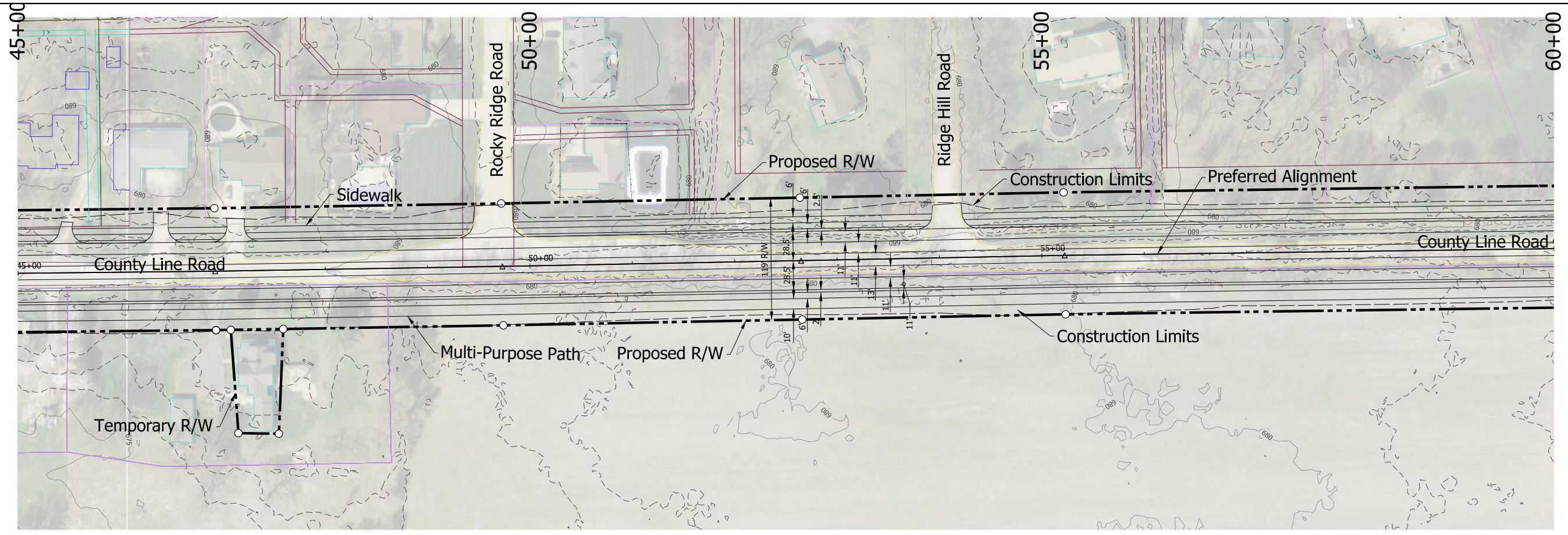
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 5 of 18
Project Number	PROJECT 5T-45-067



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HNTB
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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

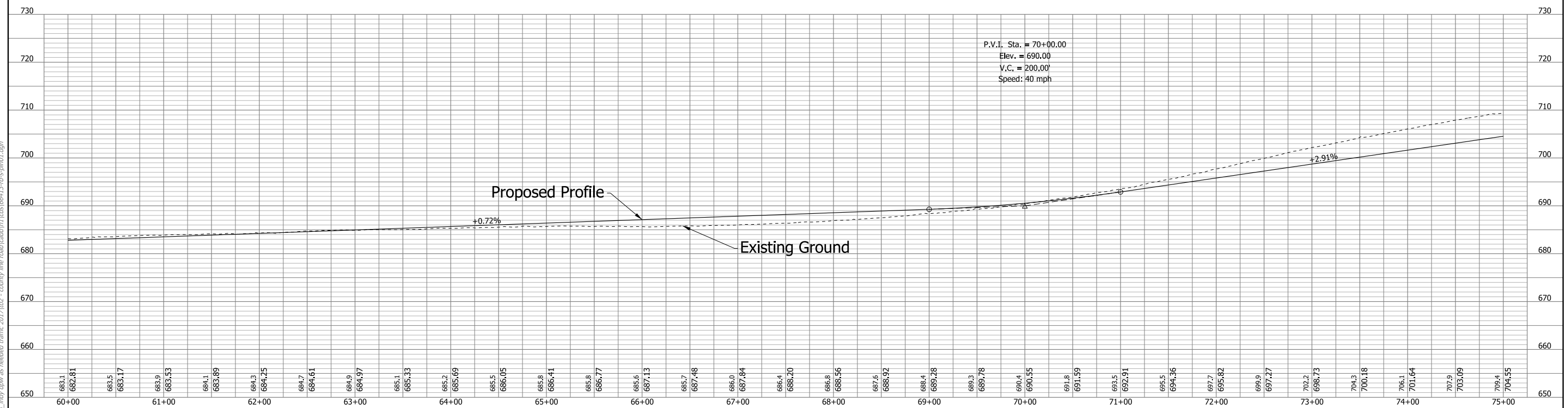
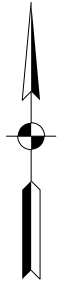
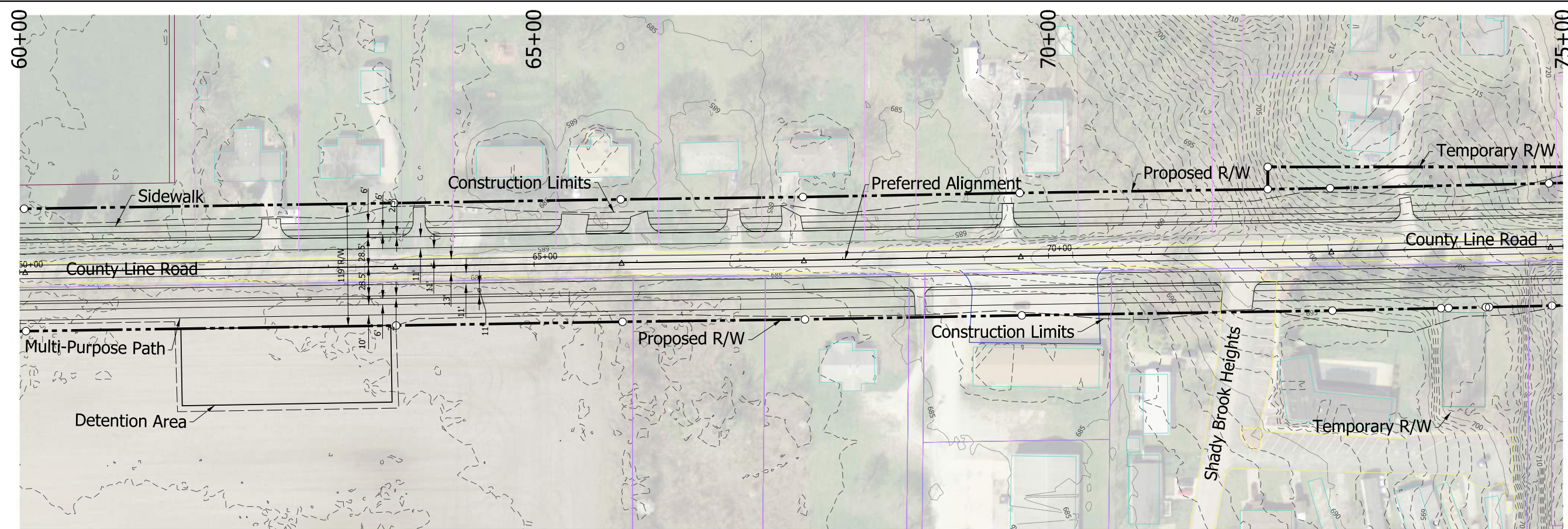
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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____
 DESIGNED: _____ DRAWN: _____
 CHECKED: _____ CHECKED: _____



CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	6 of 18
Project Number	PROJECT
	5T-45-067



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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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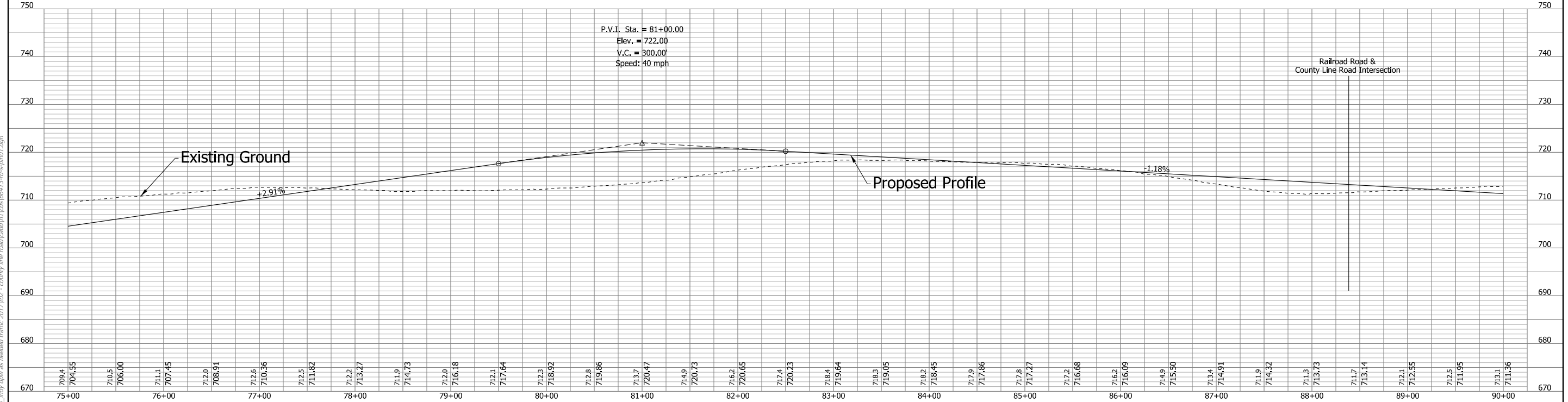
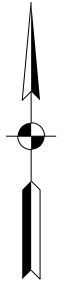
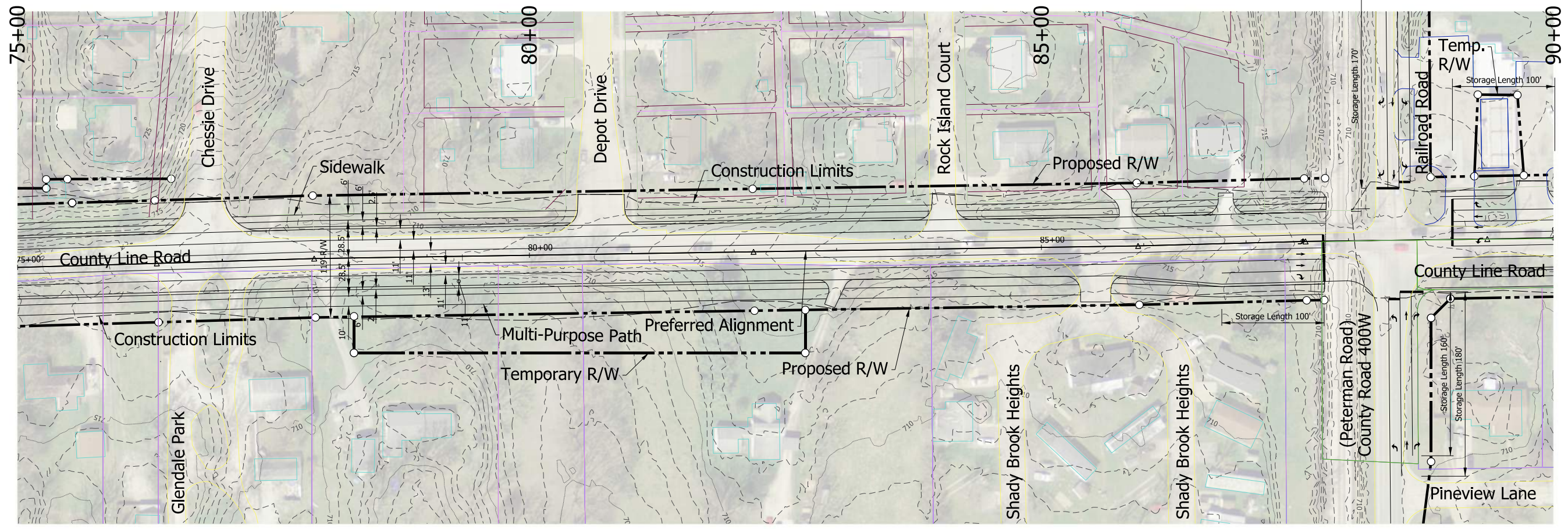
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 DESIGN ENGINEER _____ DATE _____
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 7 of 18
Project Number	PROJECT 5T-45-067

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 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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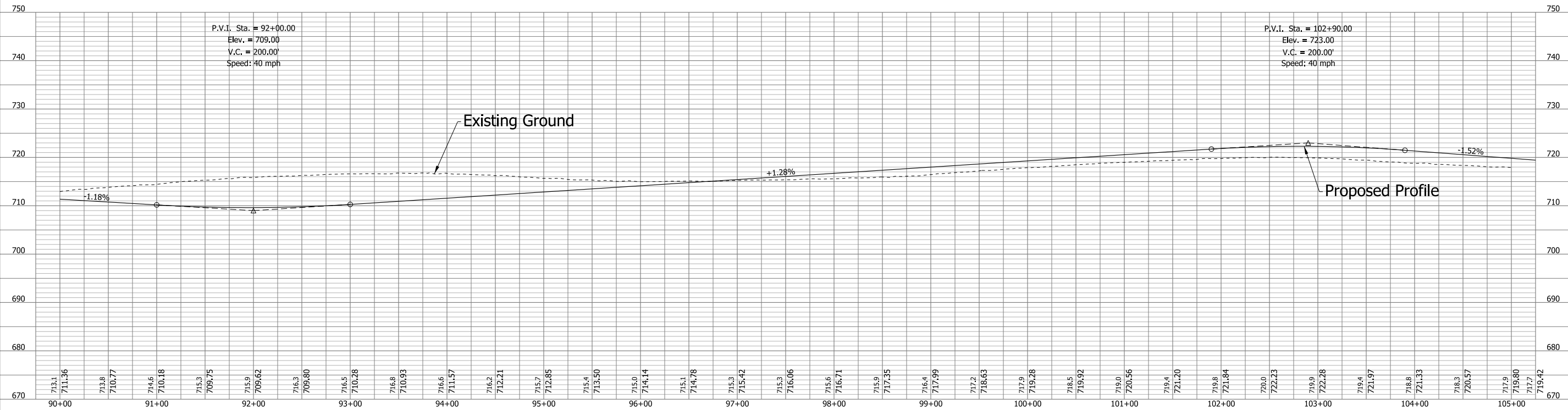
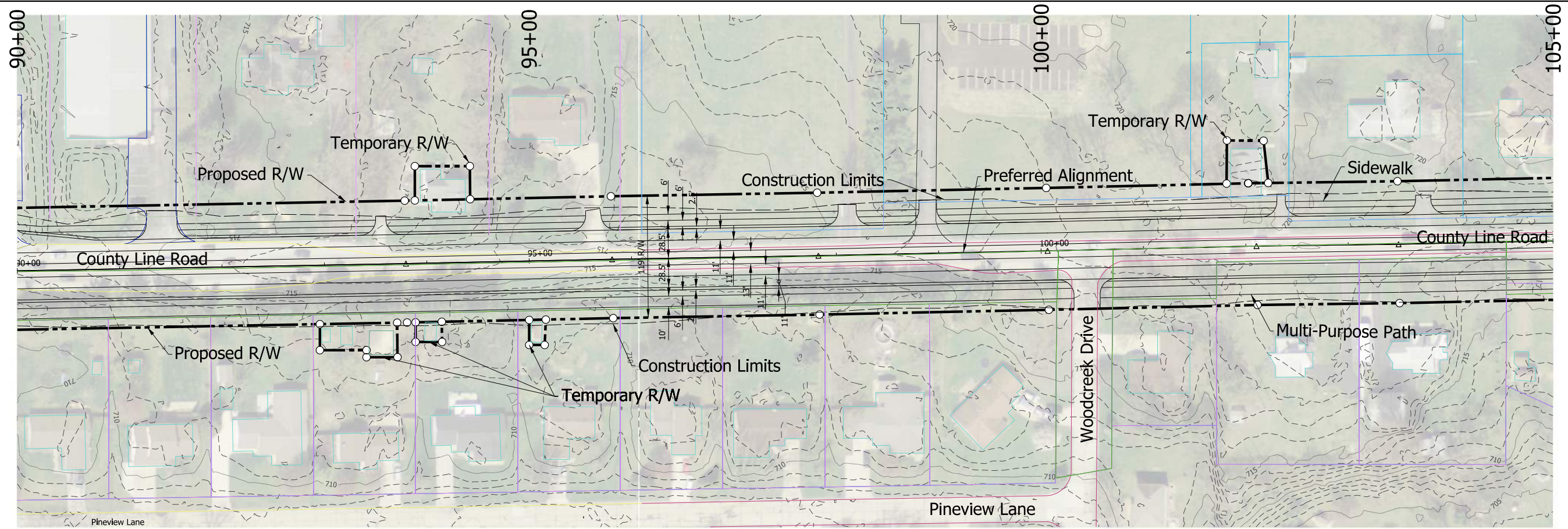
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DESIGNED: _____	DRAWN: _____	
CHECKED: _____	CHECKED: _____	



CITY OF INDIANAPOLIS
DEPARTMENT OF PUBLIC WORKS

Preferred Alternative
 Plan and Profile

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	8 of 18
Project Number	PROJECT
	ST-45-067



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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

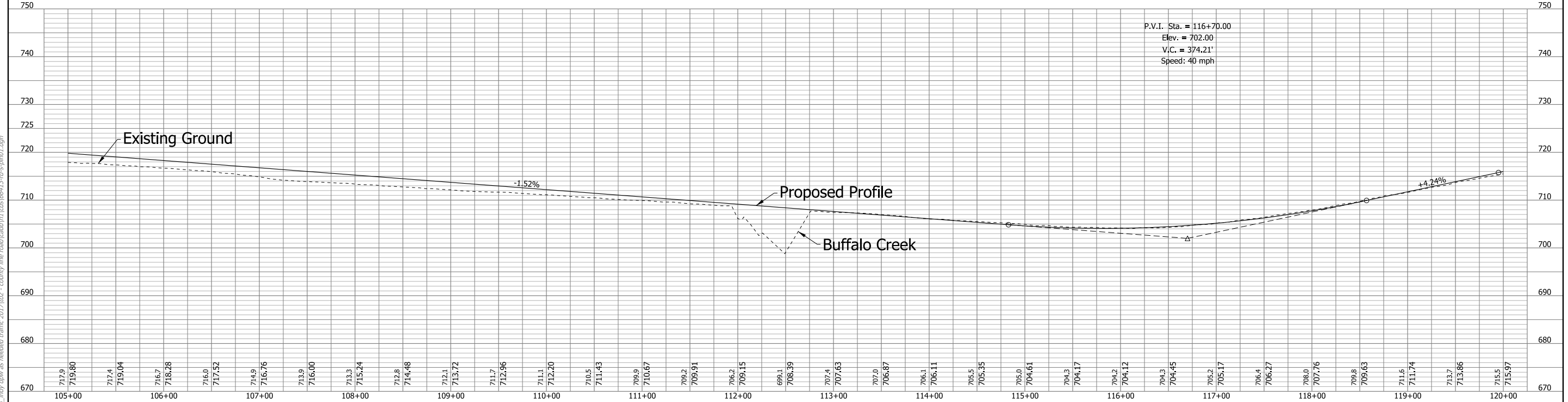
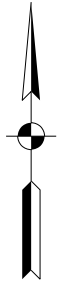
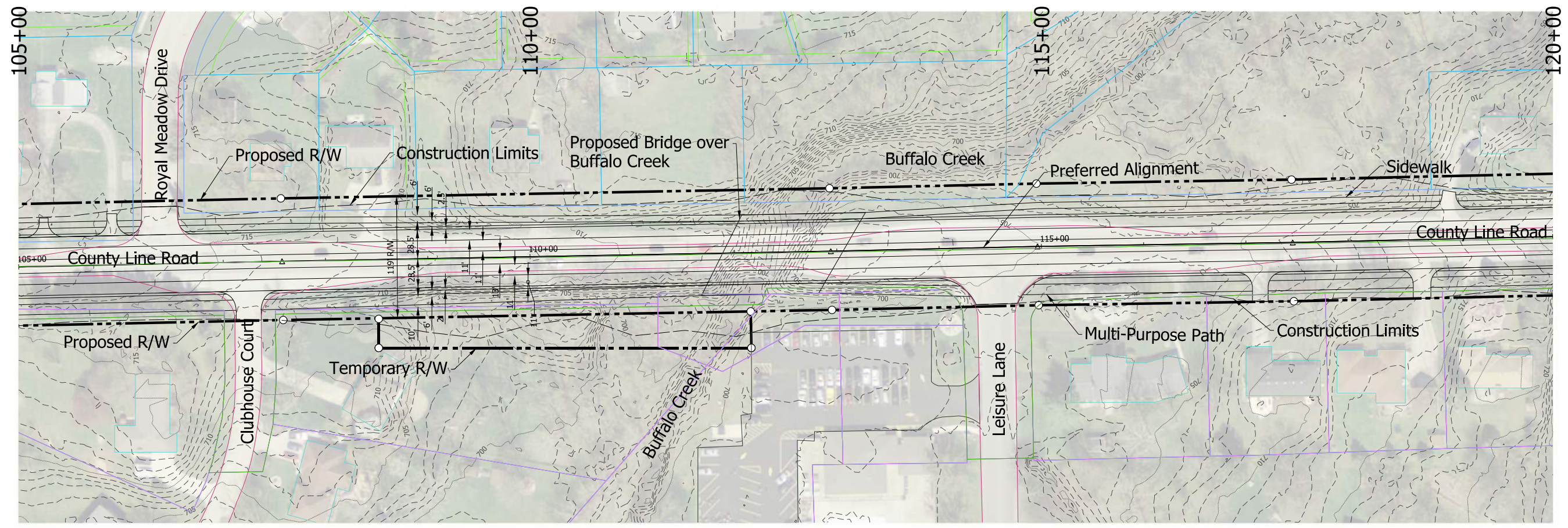
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RECOMMENDED FOR APPROVAL _____
 DESIGN ENGINEER _____ DATE _____
 DESIGNED: _____ DRAWN: _____
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	9 of 18
Project Number	PROJECT
	ST-45-067



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 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

DESIGNED: _____ DRAWN: _____

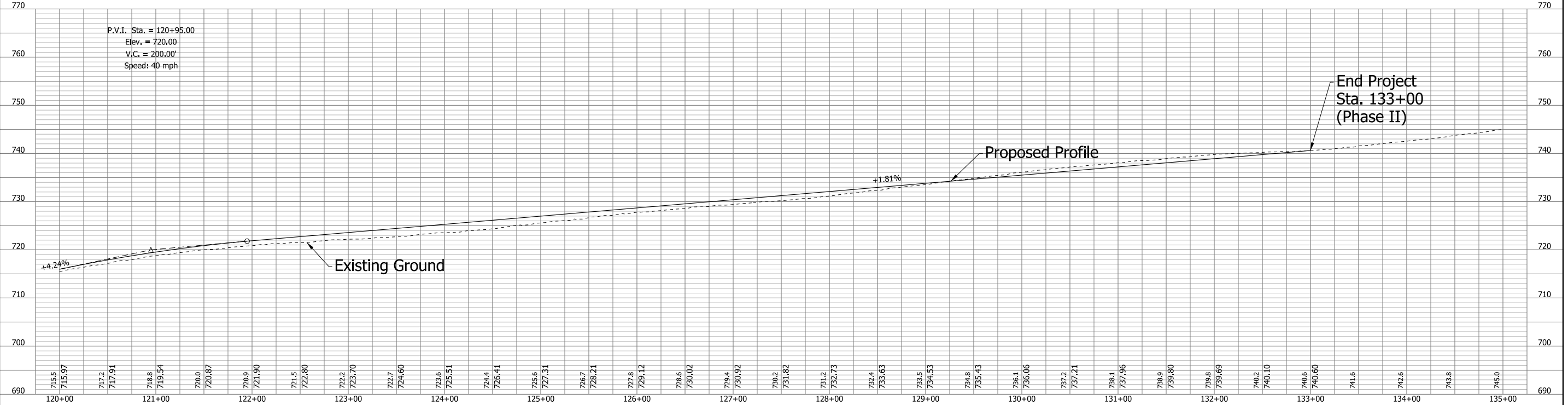
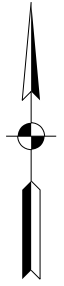
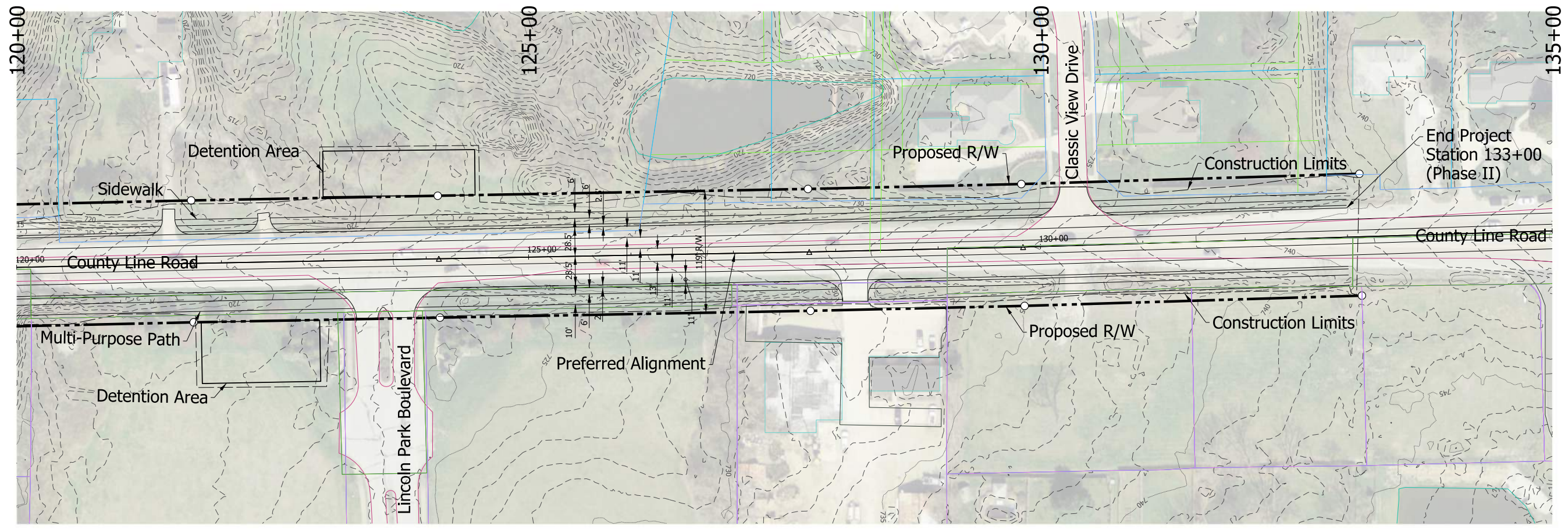
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Preferred Alternative
 Plan and Profile

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 10 of 18
Project Number	PROJECT ST-45-067



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 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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DESIGNED: _____ DRAWN: _____

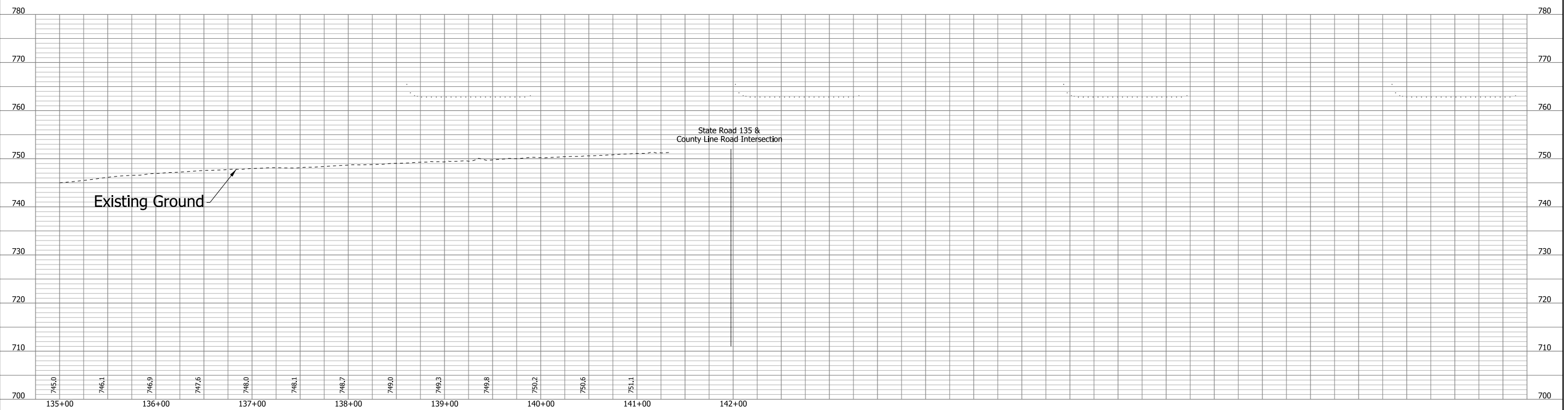
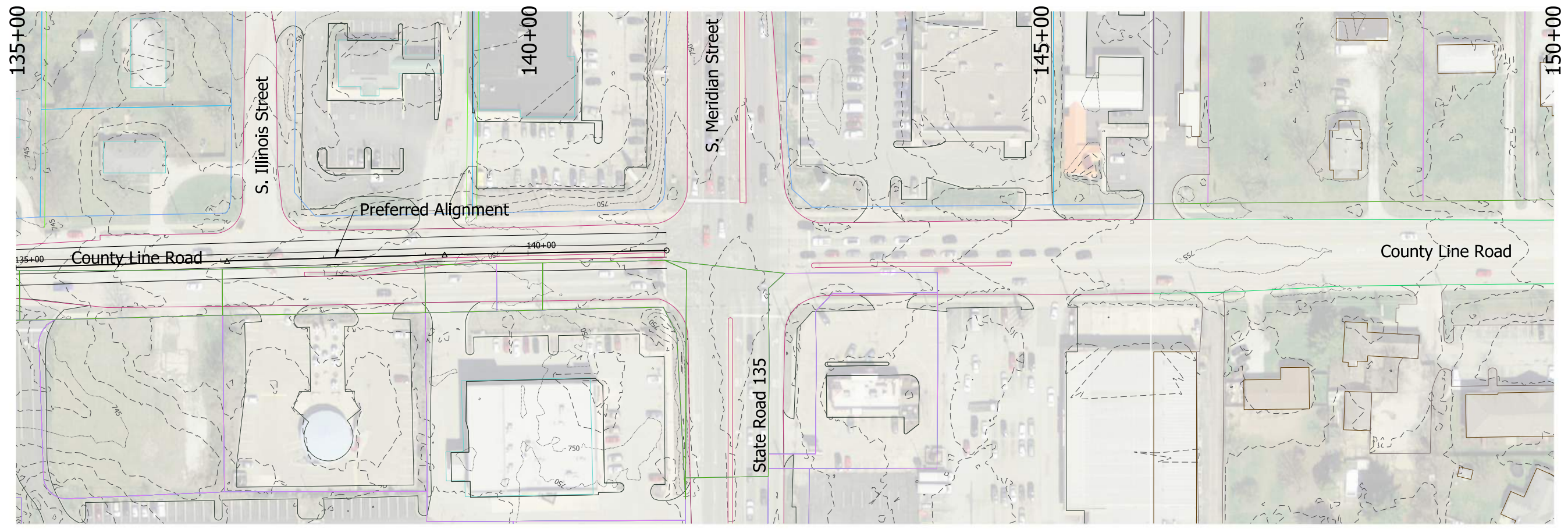
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Preferred Alternative
 Plan and Profile

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 11 of 18
Project Number	PROJECT
	Department of Public Works



ozaman
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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

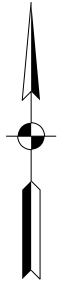
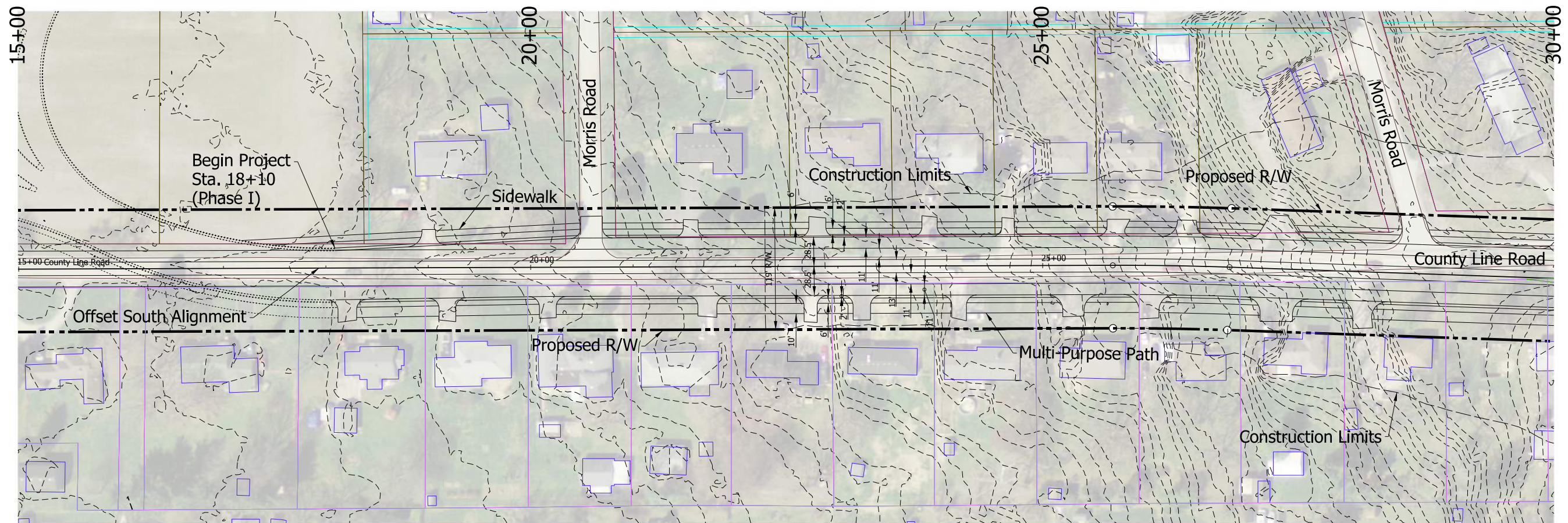
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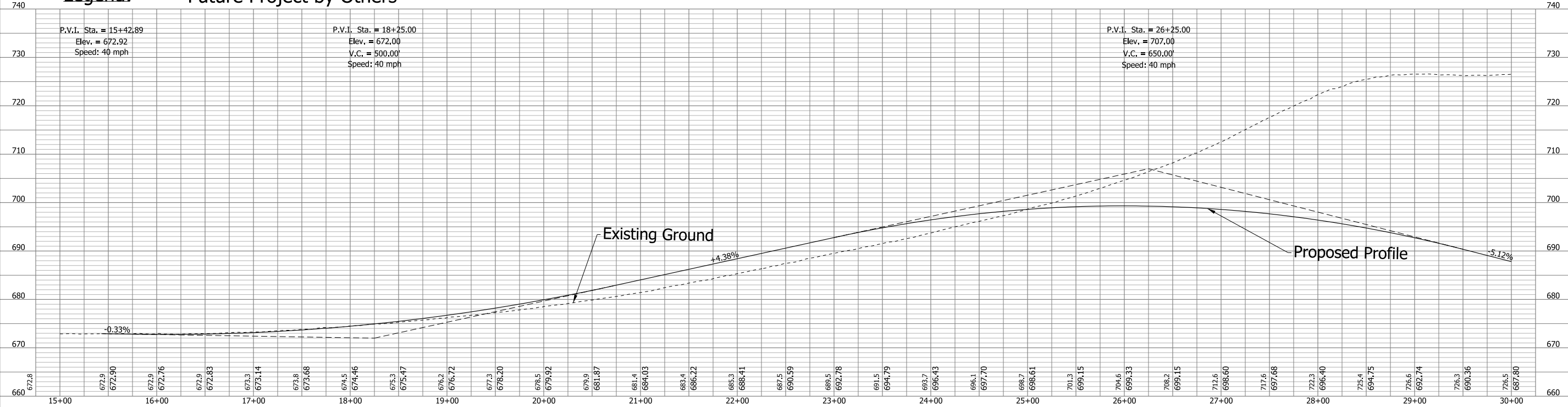
CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Preferred Alternative
 Plan and Profile

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	12 of 18
Project Number	PROJECT
	ST-45-067



Legend: Future Project by Others

See Typical Section for More Details



ozaman 10/28/2019 10:07:55 am
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 THE HNTB COMPANIES
 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

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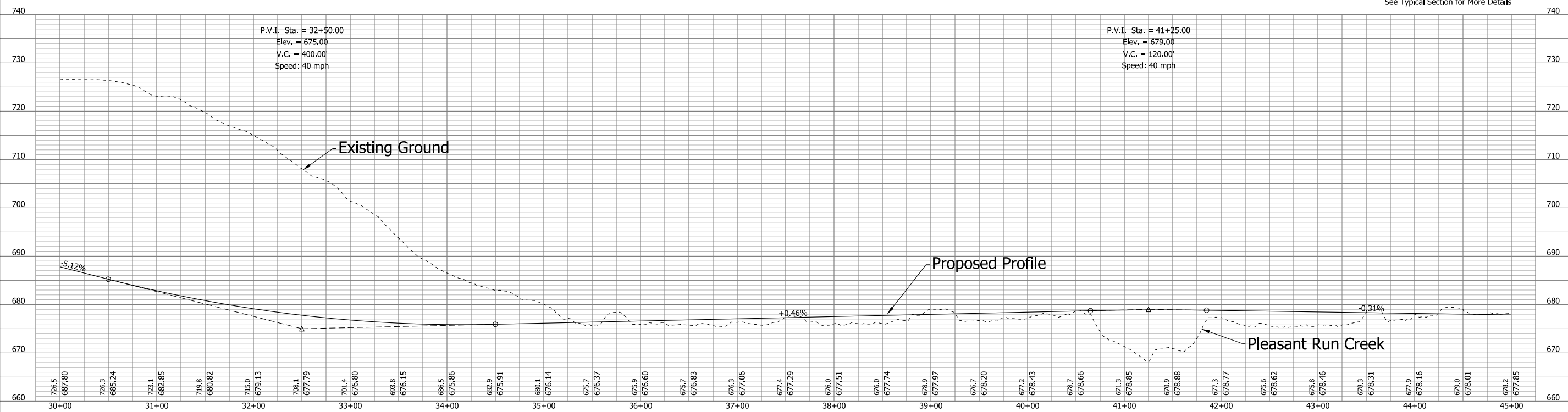
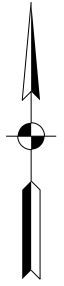
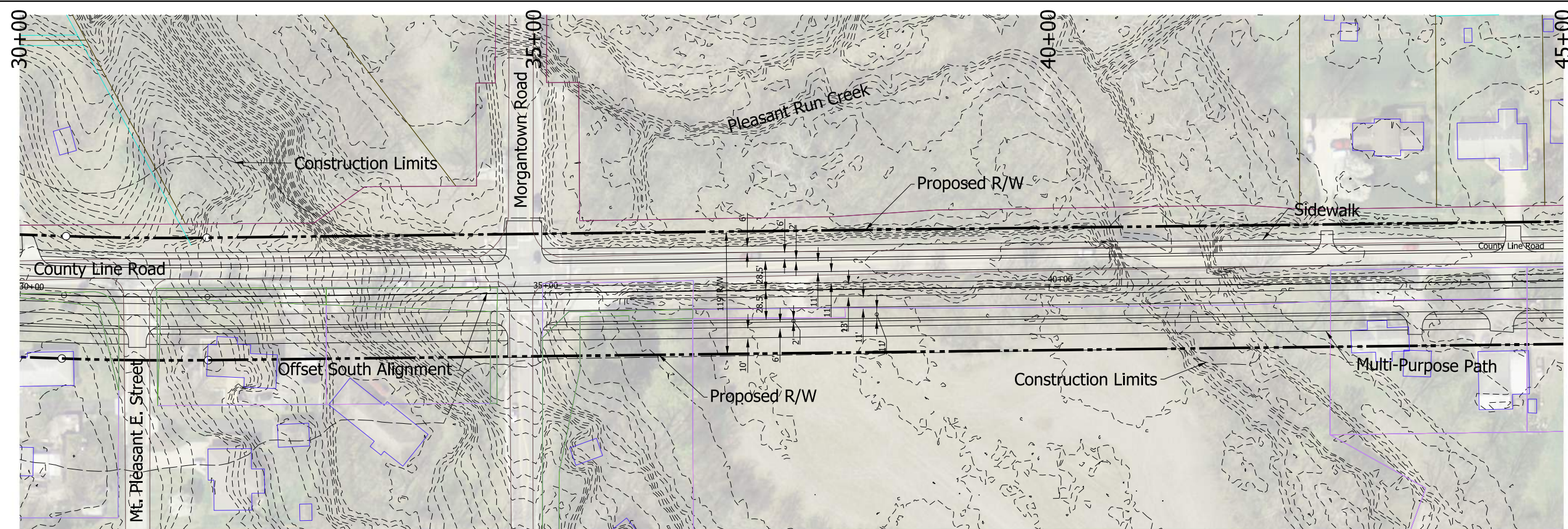
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Alternative 2-Offset South
 Plan and Profile Sheets

HORIZONTAL SCALE 1"=50'	BRIDGE FILE N/A
VERTICAL SCALE ###	DESIGNATION ###
SURVEY BOOK N/A	SHEETS 13 of 18
Project Number	PROJECT ST-45-067



See Typical Section for More Details

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 HNTB CORPORATION
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 ENGINEERS ARCHITECTS PLANNERS
 111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

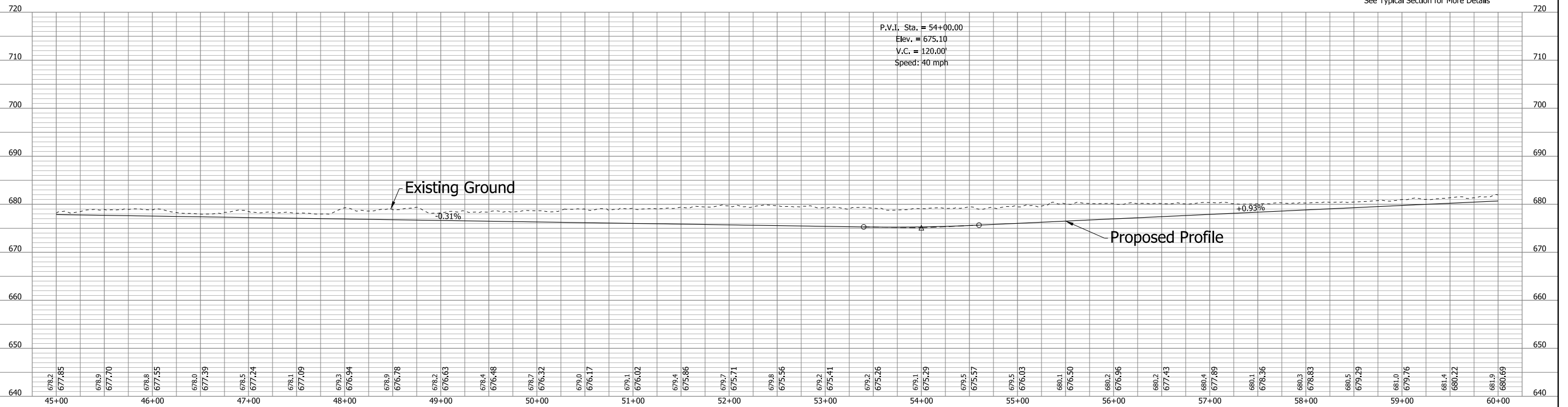
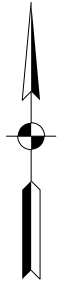
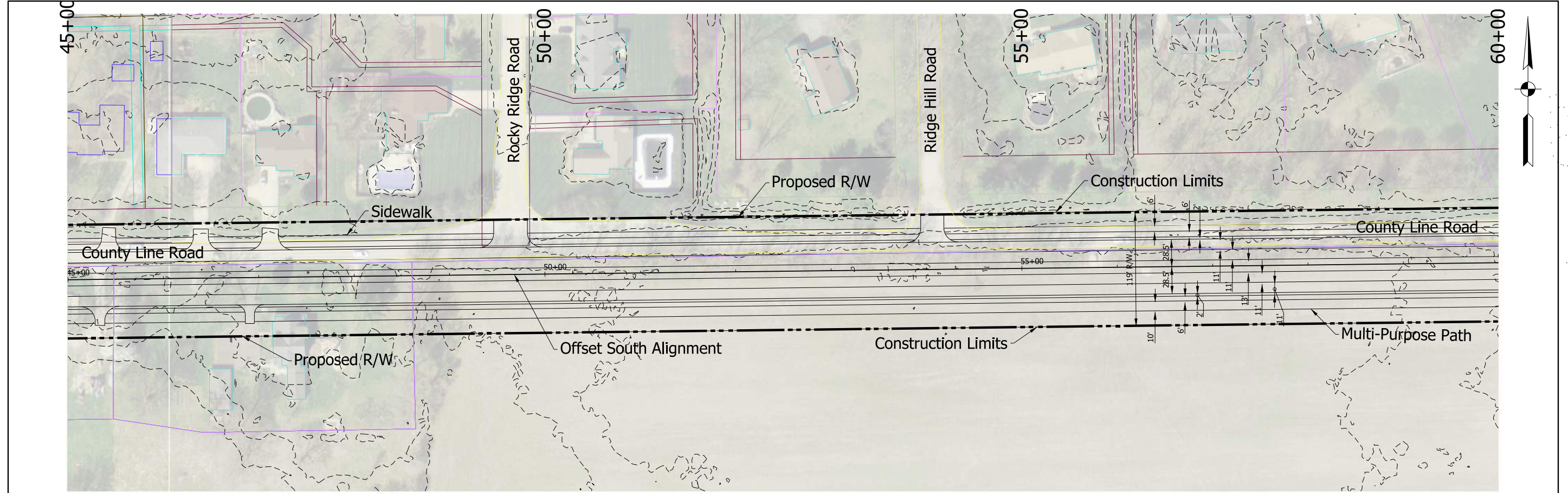
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS
 Alternative 2-Offset South
 Plan and Profile Sheets

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VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 14 of 18
Project Number	PROJECT 5T-45-067



See Typical Section for More Details

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 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

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RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

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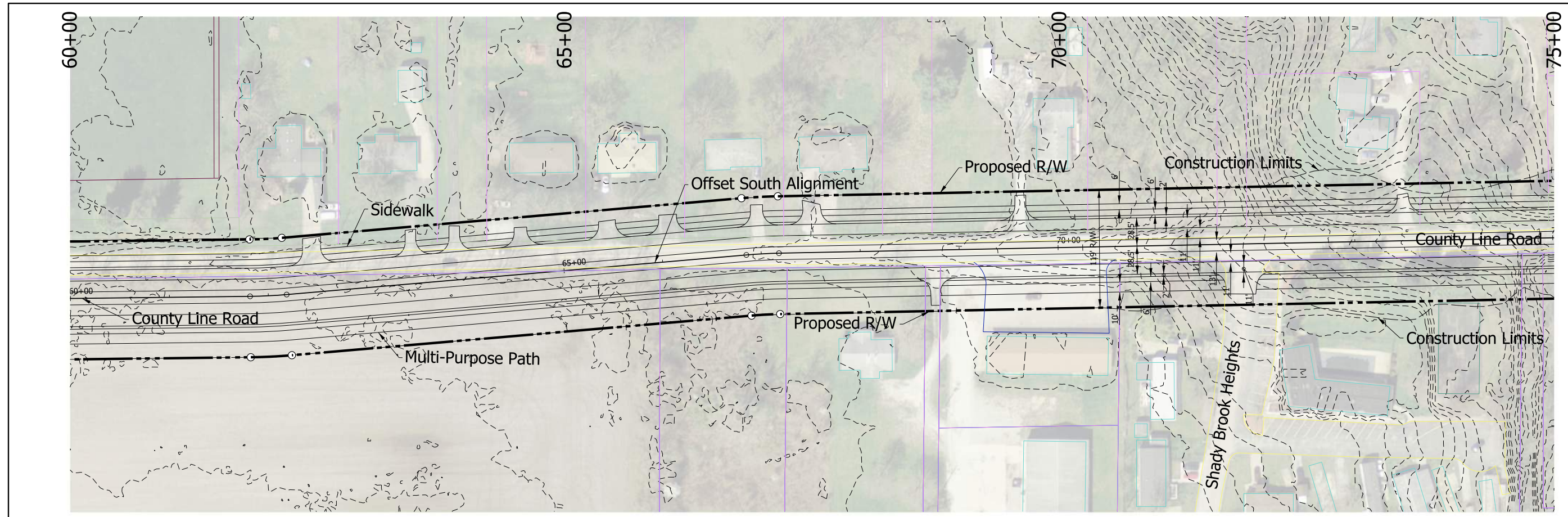
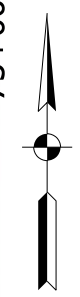
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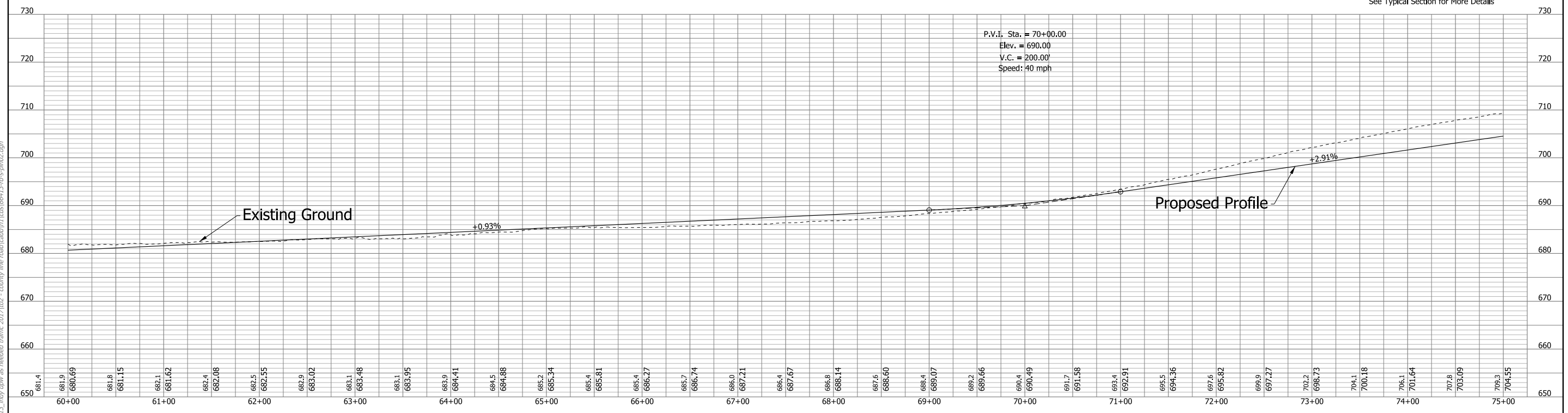
CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Alternative 2-Offset South
 Plan and Profile Sheets

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1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	15 of 18
Project Number	PROJECT
	5T-45-067



See Typical Section for More Details



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 THE HNTB COMPANIES
 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____

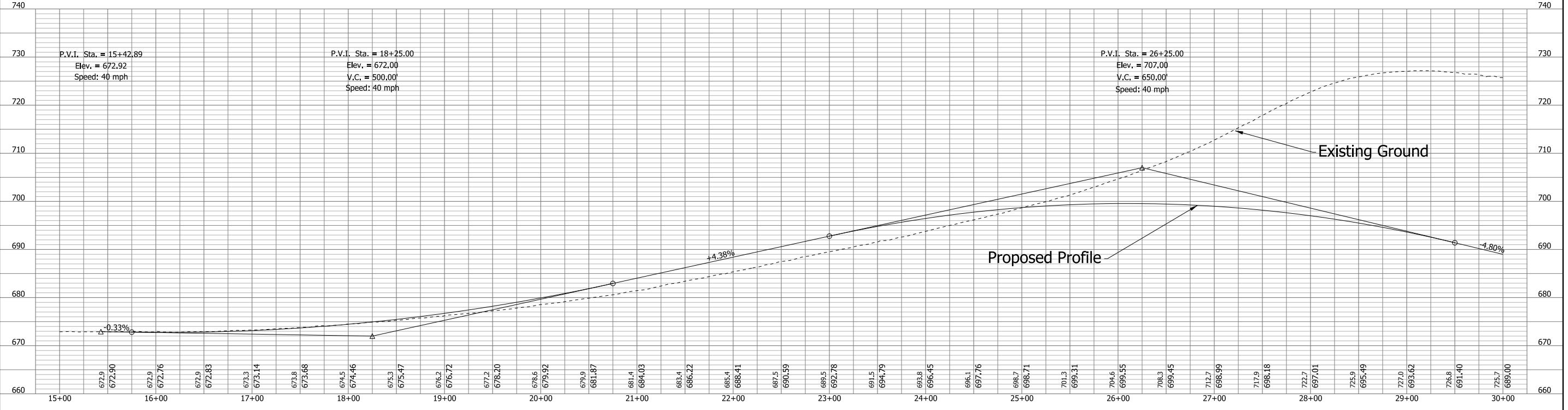
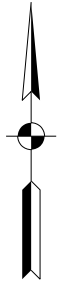
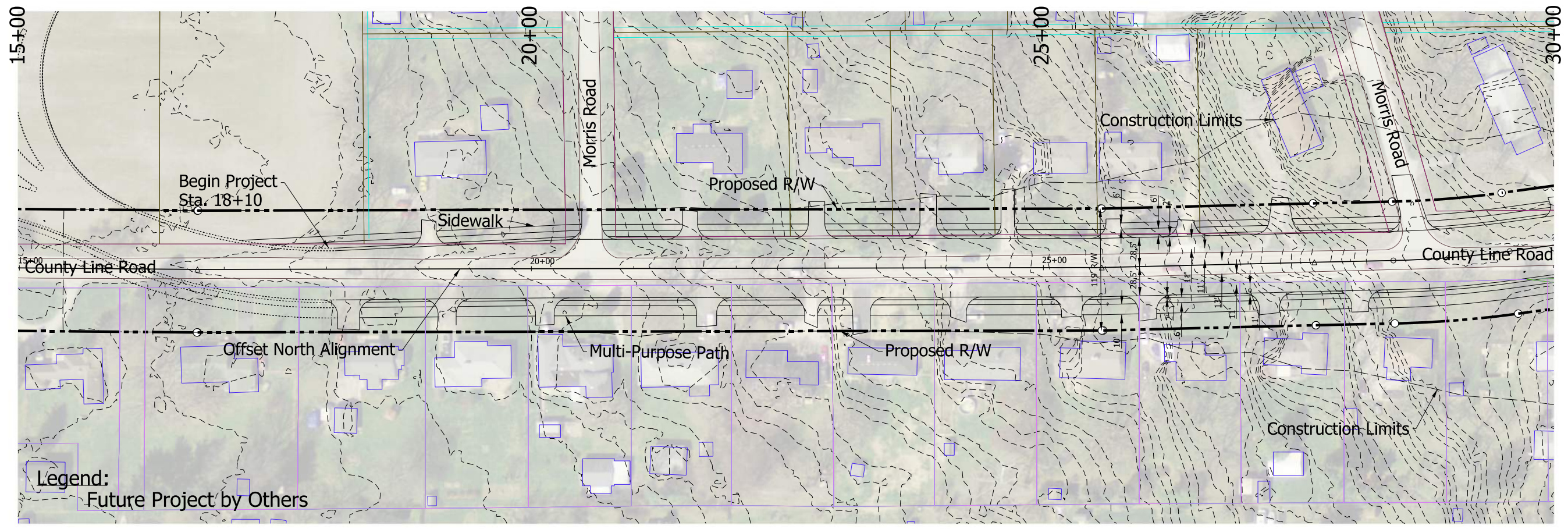
DESIGN ENGINEER _____ DATE _____



CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Alternative 2-Offset South
 Plan and Profile Sheets

HORIZONTAL SCALE	BRIDGE FILE
1"=50'	N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK	SHEETS
N/A	16 of 18
Project Number	PROJECT
	5T-45-067



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HNTB

HNTB CORPORATION
 THE HNTB COMPANIES
 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

DESIGNED: _____ DRAWN: _____

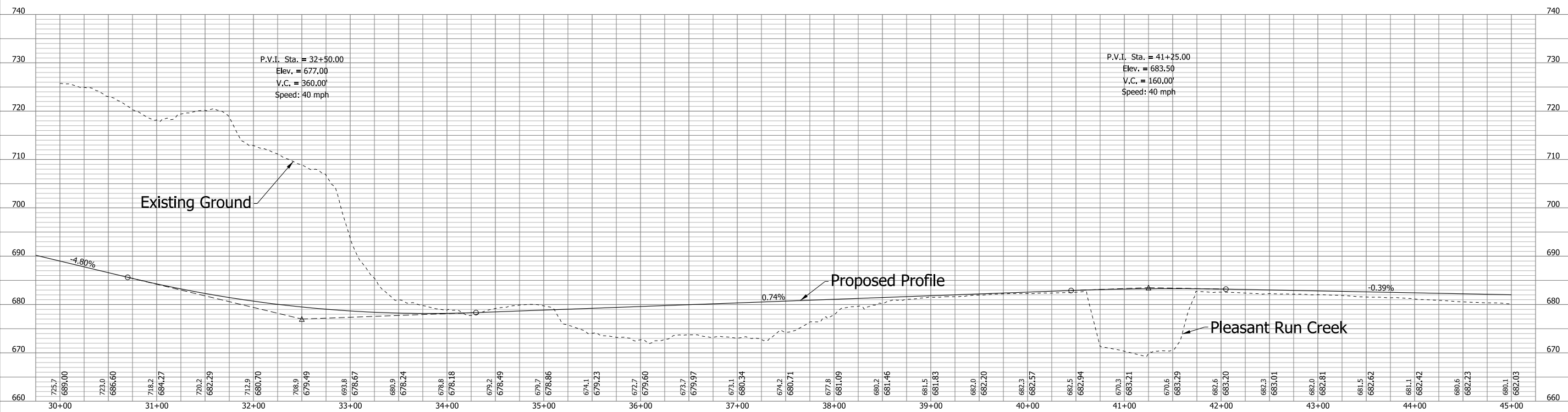
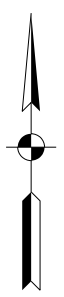
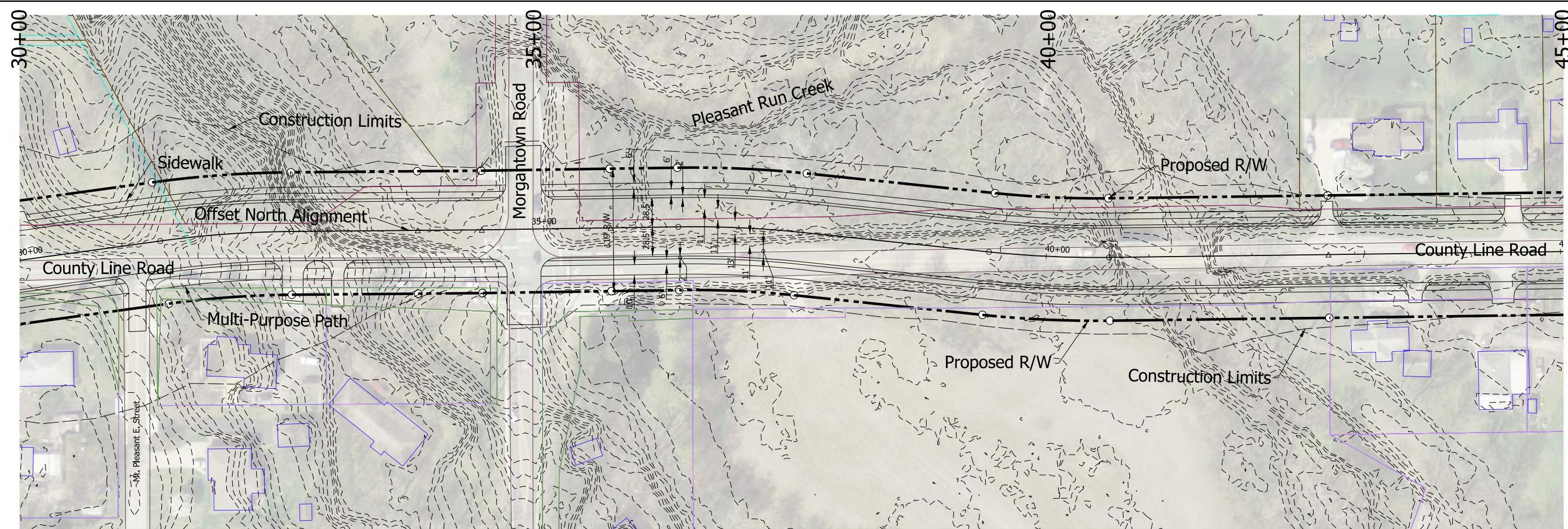
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CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Alternative 3-Offset North
 Plan and Profile Sheets

HORIZONTAL SCALE 1"=50'	BRIDGE FILE N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 17 of 18
Project Number	PROJECT ST-45-067



ozaman 10/25/2019 3:46:28 pm
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 THE HNTB COMPANIES
 ENGINEERS ARCHITECTS PLANNERS

111 MONUMENT CIRCLE
 SUITE 1200
 INDIANAPOLIS, IN 46204

DRAFT
 NOT FOR CONSTRUCTION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____

DESIGNED: _____ DRAWN: _____

CHECKED: _____ CHECKED: _____



CITY OF INDIANAPOLIS
 DEPARTMENT OF PUBLIC WORKS

Alternative 3-Offset North
 Plan and Profile Sheets

HORIZONTAL SCALE 1"=50'	BRIDGE FILE N/A
VERTICAL SCALE	DESIGNATION
SURVEY BOOK N/A	SHEETS 18 of 18
Project Number	PROJECT 5T-45-067



Appendix B: Environmental Red Flag



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

100 North Senate Avenue
Room N642
Indianapolis, Indiana 46204-2216 (317) 232-5348 FAX: (317) 233-4929

Eric Holcomb, Governor
Joe McGuinness, Commissioner

Date: October 18, 2019

To: Site Assessment & Management (SAM)
Environmental Policy Office – Environmental Services Division
Indiana Department of Transportation
100 N Senate Avenue, Room N642
Indianapolis, IN 46204

From: Landon Little
HNTB Corporation
111 Monument Circle, Suite 1200
Indianapolis, IN 46204
ltlittle@hntb.com

Re: RED FLAG INVESTIGATION
Des. No. 1800221
South County Lane Added Travel Lanes
SR 37 to SR 135
Marion County, Indiana

PROJECT DESCRIPTION

Brief Description of Project: The City of Indianapolis is planning to proceed with an added travel lane project on County line road in Marion/Johnson County. The project is located on County line road approximately 500 feet east of SR 37 and 950 feet west of S Meridian St. Anticipated plans include added travel lanes, added center lane, shared paths on the north and south sides of the road and two bridge replacements.

Bridge and/or Culvert Project: Yes No Structure # 49-4510F, 49-4503F

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).

Proposed right of way: Temporary # Acres N/A Permanent # Acres 14.23 acres

Type of excavation: Approximately 13 feet of excavation will be required at the sites where the bridges will be replaced.

Maintenance of traffic: Phased construction using lane closures will occur to maintain traffic.

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	3	Recreational Facilities	2
Airports ¹	2	Pipelines	8
Cemeteries	1	Railroads	2
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	N/A

¹In order to complete the required airport review, a review of public airports within 3.8 miles (20,000 feet) is required.

Explanation:

- Religious Facilities: Three (3) religious facilities are located within the 0.5-mile search radius. The nearest facility is 0.13 mile north west of the project area. No impact is expected.
- Airports: One (1) airport is located within the 0.5 mile search radius, Hillenburg, is a private airport and is located approximately 0.3 mile north west of the project area. Coordination with the Hillenburg airport owner will occur.
- Airports (continued): Although not located within the 0.5 mile search radius, one (1) public airport, Greenwood Municipal airport, is located within 3.8 miles (20,000 feet) of the project area. The public airport is located approximately 3.8 miles east of the project area; therefore, early coordination with INDOT Aviation will occur.
- Cemeteries: One (1) cemetery is located within the 0.5-mile search radius. Mount Pleasant Cemetery is located approximately 0.37 mile south of the western portion of the project area. No impact is expected.
- Recreational Facilities: Two (2) recreational facilities is located within the 0.5 mile search radius. The nearest facility, Carefree Club Inc, is adjacent to the project area. Traffic will be maintained through phased construction. Coordination with Carefree Club Inc will occur
- Pipelines: Eight (8) pipelines (segments) are located within the 0.5 mile search radius. 1 pipeline crosses the project area. Coordination with INDOT Utilities and Railroads should occur.
- Railroads: Two (2) railroad segments are located within the 0.5 mile search radius. 1 railroad segment crosses the project area. Coordination with INDOT Utilities and Railroads should 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	1
Karst Springs	N/A	NWI - Wetlands	19
Canal Structures – Historic	1	Lakes	2
NPS NRI Listed	N/A	Floodplain - DFIRM	21
NWI-Lines	6	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	2	Sinkhole Areas	N/A
Rivers and Streams	5	Sinking-Stream Basins	N/A

Explanation:

- Water Feature Name: Two (2) Water Features, Buffalo Creek and Pleasant Run Creek, are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.
- NWI-Points: One (1) NWI-point is located within the 0.5 mile search radius. The NWI-Point is located approximately 0.42 mile north of the project area. No impact is expected.
- NWI-Lines: Six (6) lines are located within the 0.5 mile search radius. Four lines are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.
- Canal Structures – Historic: One (1) historic canal structure is located within the 0.5 mile search radius. The historic canal structure is located approximately 0.20 mile north west of the project area. No impact is expected.
- IDEM 303d Listed Streams and Lakes: Two (2) 303d Listed Rivers and Streams are located within the 0.5 mile search radius. Buffalo Creek is located within the project area. Buffalo Creek and Pleasant Run Creek are listed as impaired for E. coli. Workers who are working in or near water with E. coli should take care to wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure. Buffalo Creek and Pleasant Run Creek are listed for Impaired Biotic Communities (IBC). Coordination with INDOT ES Ecology and Waterway Permitting should occur.
- Rivers and Streams: Five (5) river and stream segments are located within the 0.5 miles search radius. Two river and stream segments are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.
- NWI – Wetlands: Nineteen (19) wetlands are located within the 0.5 mile search radius. One wetland is located adjacent to the project area. A Waters of the US Report will be prepared and coordination with INDOT ES Ecology and Waterway Permitting will occur.
- Lakes: Two (2) lakes are located within the 0.5 mile search radius. The nearest lake is located 0.20 mile north of the west section of the project area. No impact is expected.

- Floodplain – DFIRM: Twenty one (21) floodplain polygons are located within the 0.5 mile search radius. The project is located within nine of the floodplain polygons. Coordination with INDOT Ecology and Waterway Permitting will occur.

URBANIZED AREA BOUNDARY SUMMARY

Explanation: This project lies within the Indianapolis Metropolitan Planning Organization UAB. Post construction Storm Water Quality Best Management Practices (BMPs) may need to be considered. An early coordination letter with topographic and aerial maps showing the project area should be sent to the Indianapolis MS4 Coordinator at 100 N. Senate Ave, Room 642.

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	N/A	Mineral Resources	N/A
Mines – Surface	N/A	Mines – Underground	N/A

Explanation: No Mining/Mineral Explorations were identified within the 0.5-mile search radius.

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	N/A	Waste Transfer Stations	N/A
Septage Waste Sites	N/A	Tire Waste Sites	N/A
Underground Storage Tank (UST) Sites	N/A	Confined Feeding Operations (CFO)	N/A
Voluntary Remediation Program	1	Brownfields	N/A
Construction Demolition Waste	N/A	Institutional Controls	4
Solid Waste Landfill	N/A	NPDES Facilities	3
Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	N/A
Leaking Underground Storage (LUST) Sites	2	Notice of Contamination Sites	N/A

Explanation: No Hazardous Material Concerns were identified within the 0.5-mile search radius.

- Voluntary Remediation Program: One (1) voluntary remediation program is located within the 0.5 mile search radius. The voluntary remediation program is located approximately 0.21 mile east of the project area. No impact is expected.
- LUSTs: Two (2) LUSTs are located within the 0.5 mile search radius. Speedway/Sm #6144, 936 W County Line Rd Agency ID # 13371. IDEM issued a No Further Action Approval Determination Pursuant to Remediation closure

www.in.gov/dot/

An Equal Opportunity Employer

guide on November 17, 2004, following the closure and replacement of the UST at the facility. Review of the Closure report indicated low levels of contamination remain on site under the canopy just north of the grass area at the south end of the site. Contaminants of concern were noted adjacent to the proposed additional travel lanes. Given the location of the added travel lanes in relation to the contaminant plume, no impact is expected.

- Institutional Controls: Four (4) Institutional Controls are located within the 0.5 mile search radius. 60 Minutes Cleaners is located 0.17 mile east of the project area. No impact is expected.
- NPDES Facilities: Three (3) NPDES Facilities are located within the 0.5 mile search radius. 920 W County Line Building Addition, SecureCare Self Storage, is located adjacent to the project area. No impact is expected.

ECOLOGICAL INFORMATION SUMMARY

The Marion County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. A preliminary review of the Indiana Natural Heritage Database by INDOT Environmental Services did indicate the presence of endangered species. Coordination with USFWS and IDNR will occur.

A review of the USFWS database indicated the presence of endangered bat species in or within 0.5 mile of the project area. The project area is located in an urban area surrounded by residential homes. The July 11, 2018 inspection report for Bridge # 46-4510F contains no information about whether bats are present or absent on the bridge. The July 11, 2018 inspection report for Bridge # 49-4510F contains no information about whether bats are present or absent on the bridge. Additional investigation to confirm the presence or absence of bats on the bridges will be necessary. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

An inquiry using the USFWS Information for Planning and Consultation (IPaC) website did not indicate the presence of the federally endangered species, the Rusty Patched Bumble Bee, in or within 0.5 mile of the project area. No impact is expected.

RECOMMENDATIONS SECTION

Include recommendations from each section. If there are no recommendations, please indicate N/A:

INFRASTRUCTURE:

Recreational Facilities: One (1) recreational facilities are located adjacent to the project area. Coordination with Carefree Club Inc will occur.

Airports: Although not mapped within the 0.5 mile search radius, one (1) public airport, Greenwood Municipal airport, is located within 3.8 miles (20,000 feet) of the project area. Coordination with INDOT Aviation will occur.

Airports (continued): One (1) private airport is located within the 0.5 mile search radius. Hillenburg airport is located approximately 0.3 mile northwest of the project area. Coordination with the Hillenburg airport owner will occur.

WATER RESOURCES:

The presence of the following water resources will require the preparation of a Waters of the US Report and coordination with INDOT ES Ecology and Waterway Permitting:

1 wetland is located adjacent to the project area.

The project area is located within floodplains (coordination only)

Two (2) stream segments, Buffalo Creek and Pleasant Run Creek, flow through the project area.

URBANIZED AREA BOUNDARY: This project lies within Indianapolis Metropolitan Planning Organization UAB. Post construction Storm Water Quality Best Management Practices (BMPs) may need to be considered. An early coordination letter with topographic and aerial maps showing the project area should be sent to the Indianapolis MS4 Coordinator at 100 N. Senate Ave, Room 642.

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: N/A

ECOLOGICAL INFORMATION: Coordination with USFWS and IDNR will occur. Additional investigation to confirm the presence or absence of bats on the bridge will be necessary. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

INDOT Environmental Services concurrence: _____(Signature)



Prepared by:
Landon Little
Scientist
HNTB Corporation

Graphics:

A map for each report section with a 0.5 mile search radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

SITE LOCATION: YES

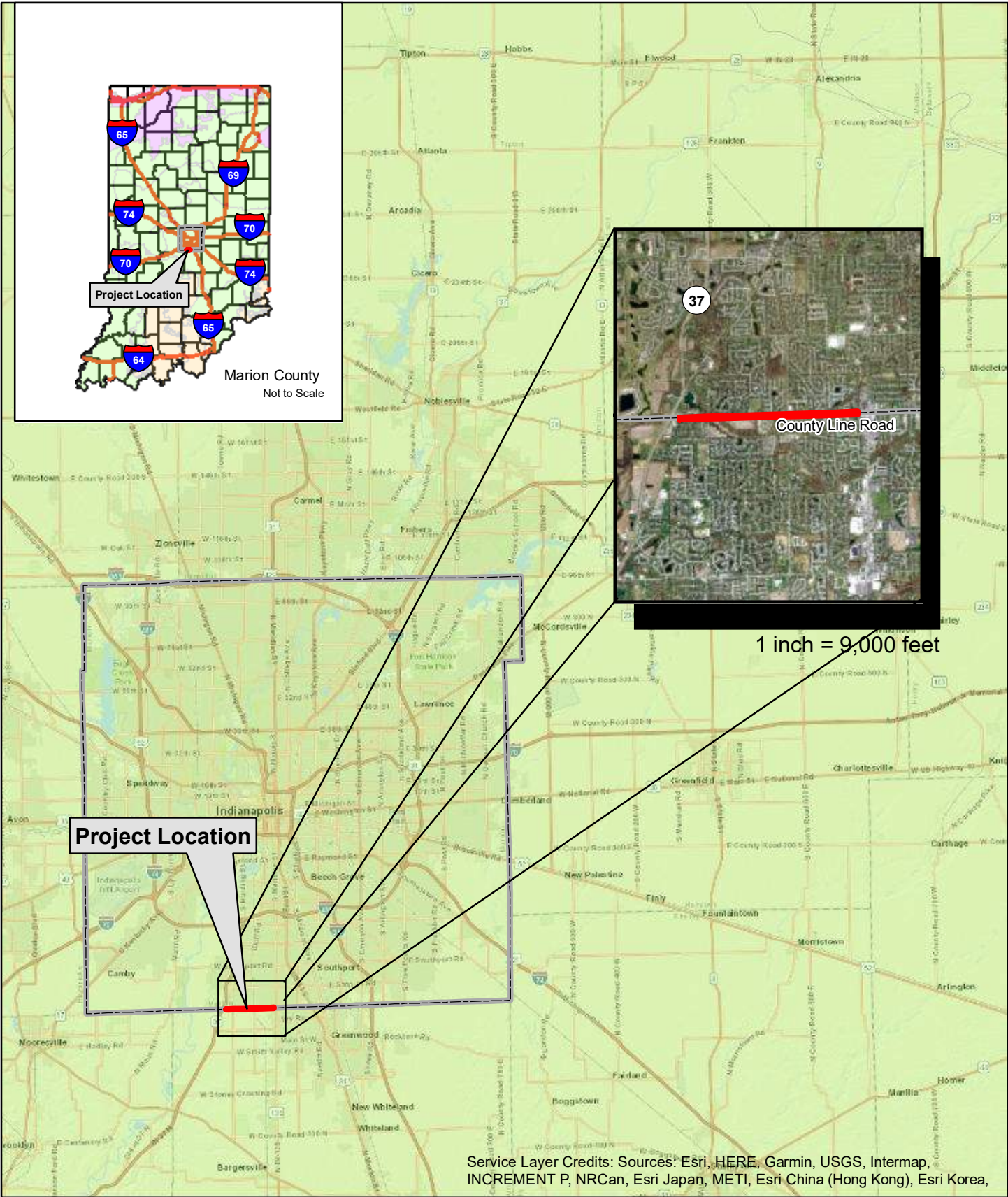
INFRASTRUCTURE: YES

WATER RESOURCES: YES



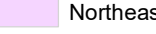

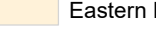
URBANIZED AREA BOUNDARY: YES

MINING/MINERAL EXPLORATION: N/A

HAZMAT CONCERNS: YES



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea,

	Project Area	NRCS Land Resource Regions
	Marion_County	 Northeast and Northcentral
		 Midwest
		 Eastern Mountains and Piedmont

0 3 6
Miles

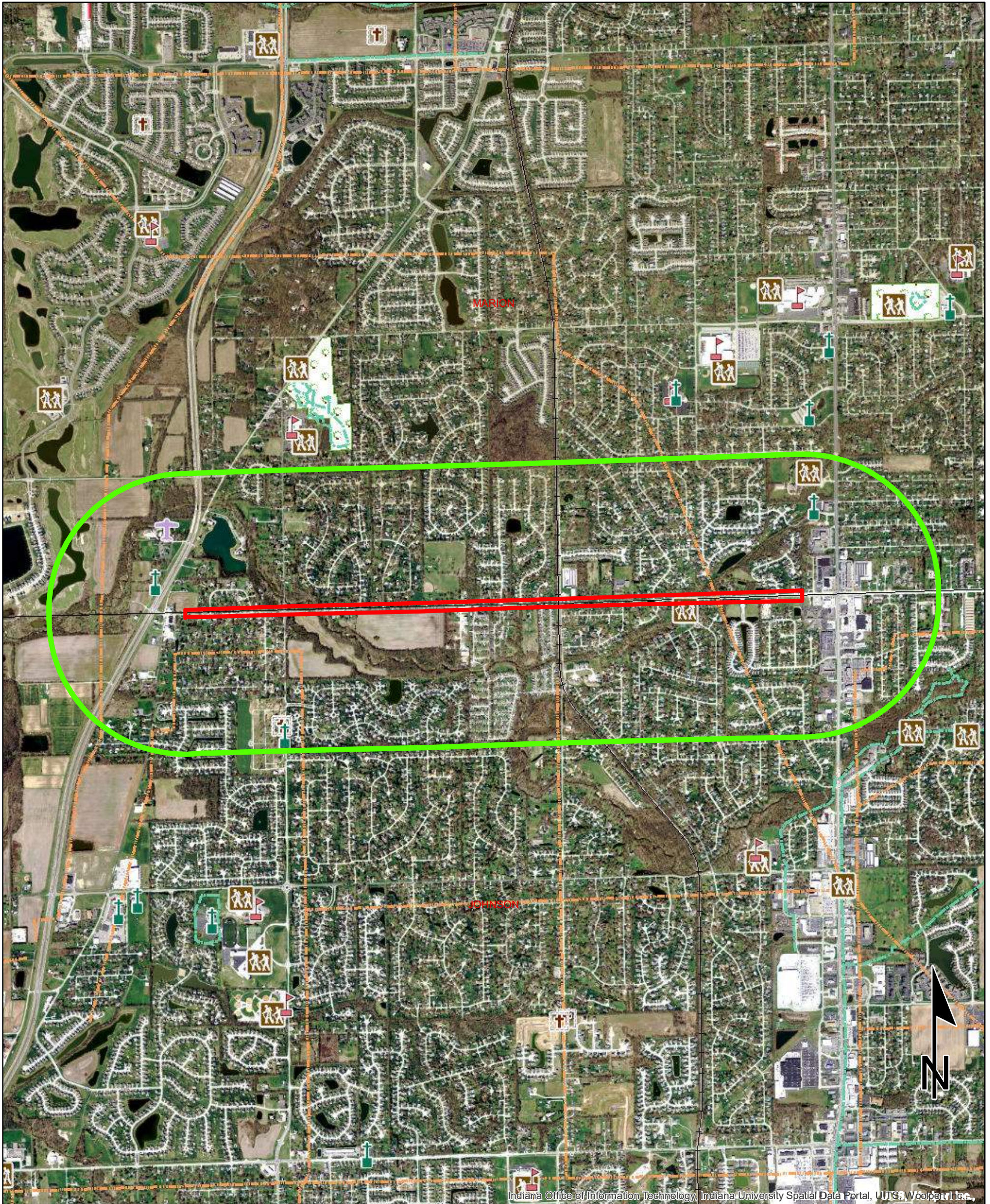
Project Location South County Line Road Added Travel Lanes, SR 37 to SR 135 Marion County, Indiana	
Des. No.	 Graphics created by HNTB Corporation (2019)
1 inch = 6 miles	

Red Flag Investigation - Infrastructure

South County Line Road

Des. No. 1800221, Added Travel Lanes, SR 37 to SR 135

Marion County, Indiana



Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert, Inc.

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.



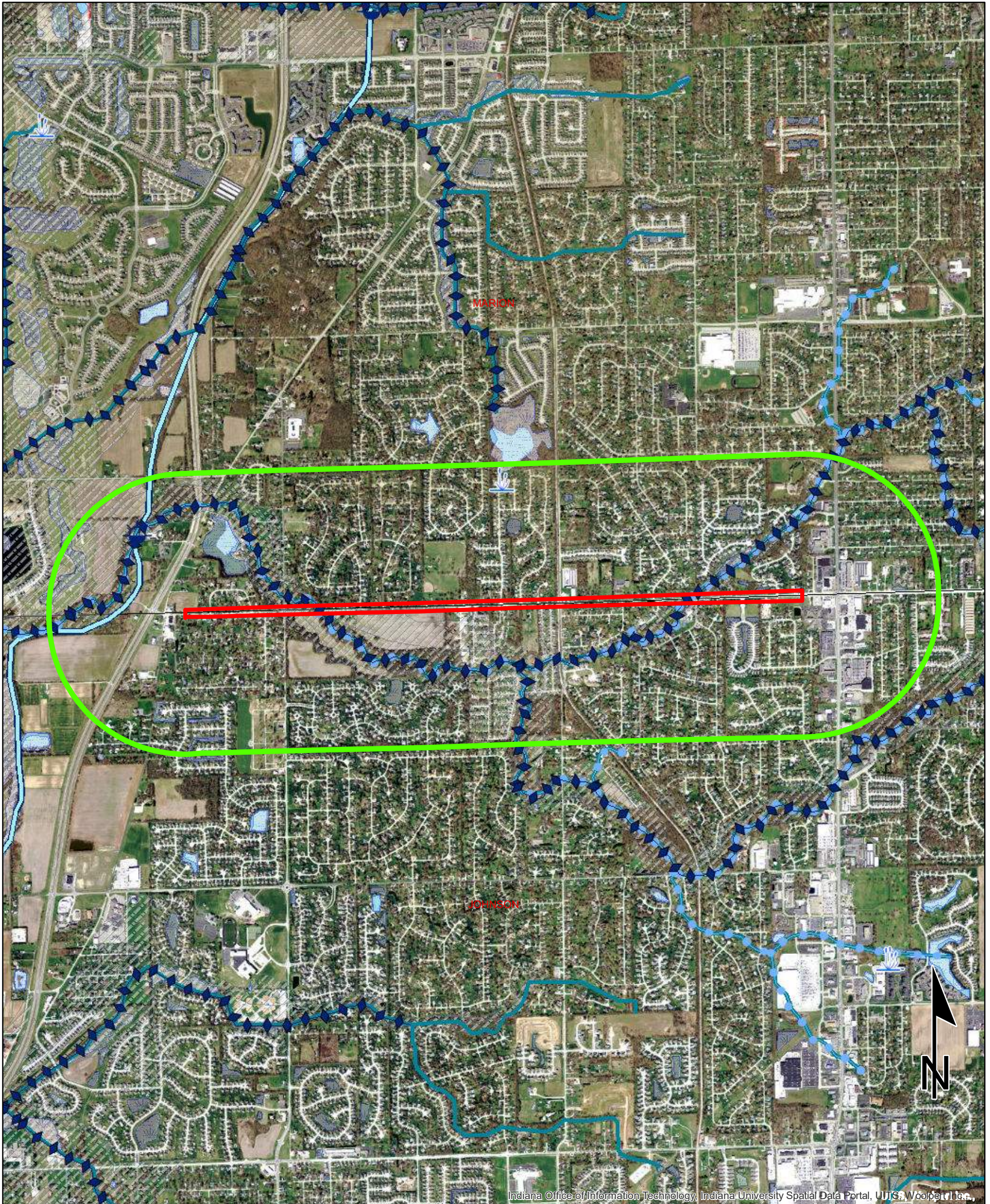
	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

Red Flag Investigation - Water Resources

South County Line Road

Des. No. 1800221, Added Travel Lanes, SR 37 to SR 135

Marion County, Indiana



Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert, Inc.,

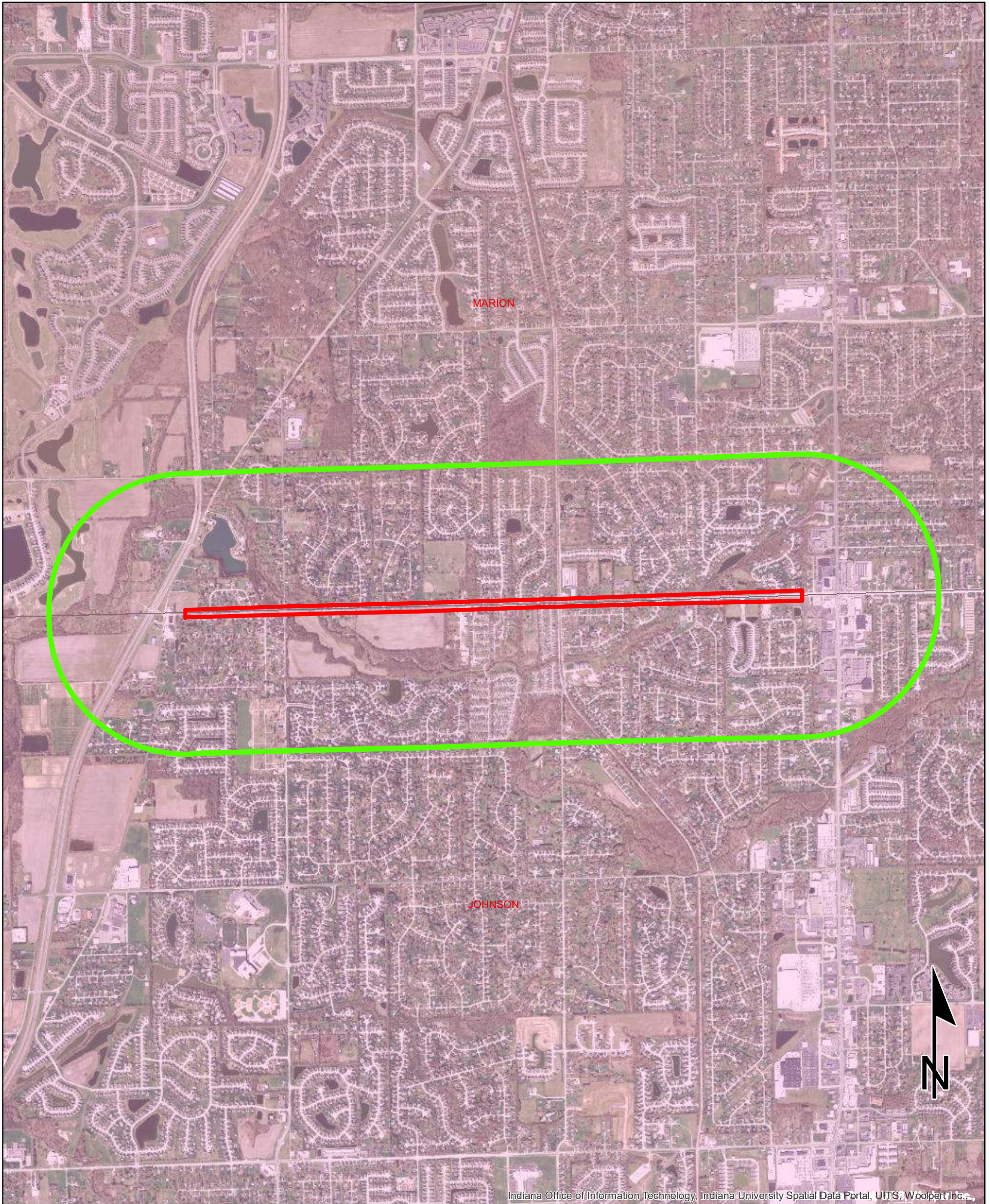
Sources: 0.45 0.225 0 0.45 Miles
Non Orthophotography

Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

	NWI - Point		Wetlands		Project Area
	Karst Spring		Lake		Half Mile Radius
	NWI- Line		Floodplain - DFIRM		Toll
	Impaired_Stream_Lake		Cave Entrance Density		Interstate
	NPS NRI listed		Sinkhole Area		State Route
	River		Sinking-Stream Basin		US Route
	Canal Structure - Historic		County Boundary		Local Road
	Canal Route - Historic				

Red Flag Investigation - Urbanized Area Boundary
 South County Line Road
 Des. No. 1800221, Added Travel Lanes, SR 37 to SR 135
 Marion County, Indiana

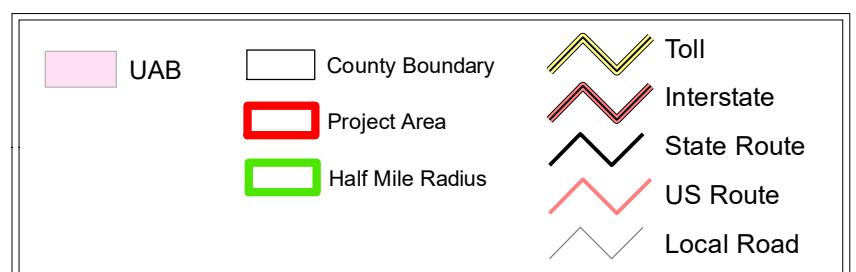


Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.,

Sources:
Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

0.45 0.225 0 0.45 Miles

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

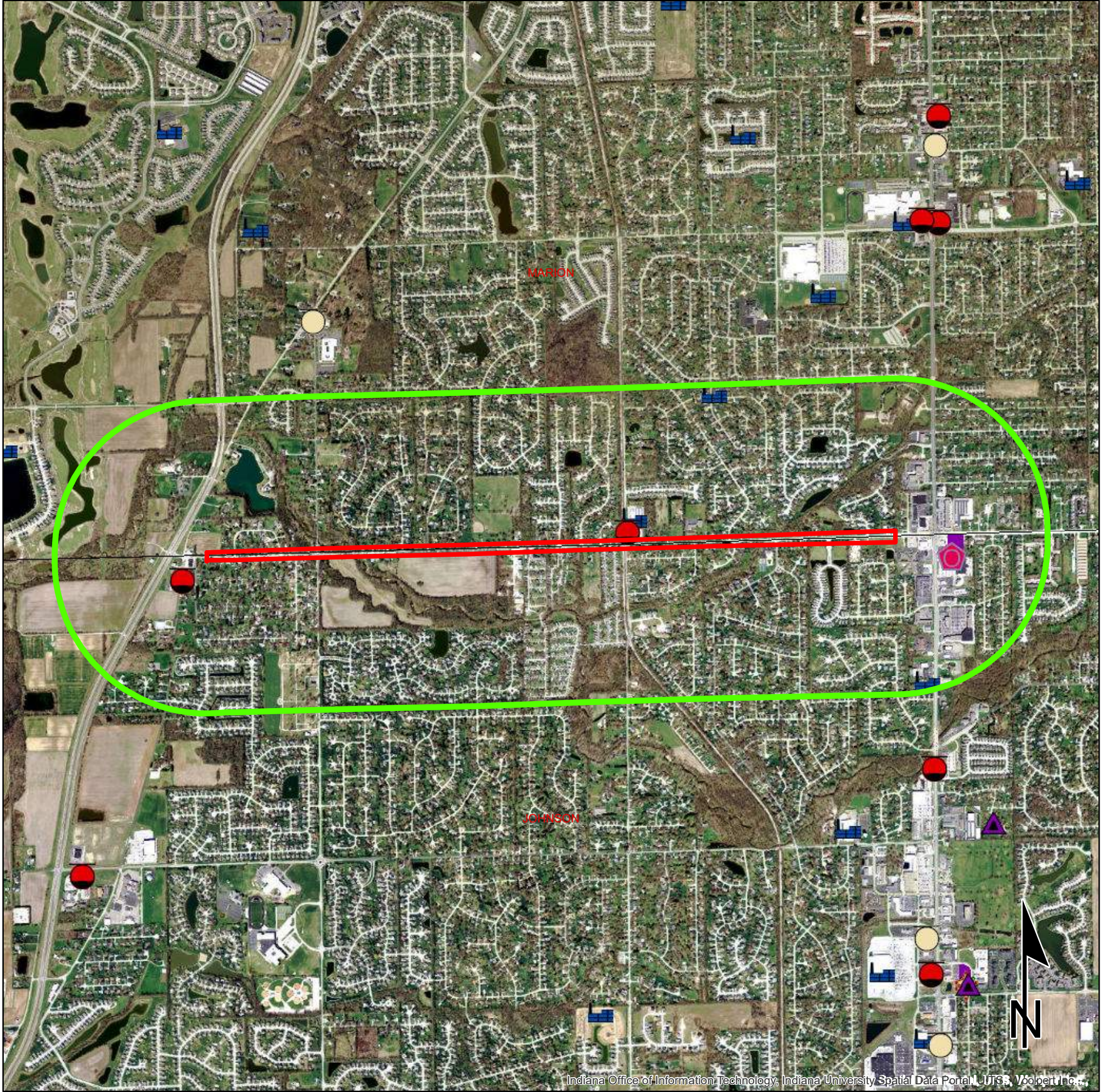


Red Flag Investigation - Hazardous Material Concerns

South County Line Road

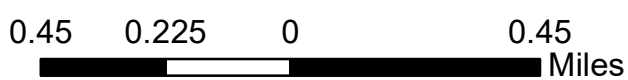
Des. No. 1800221, Added Travel Lanes, SR 37 to SR 135

Marion County, Indiana



Indiana Office of Information Technology, Indiana University Spatial Data Portal, UTM, Voelpert Inc.,

<ul style="list-style-type: none"> Brownfield RCRA Corrective Action Sites Confined Feeding Operation Notice_Of_Contamination Construction/Demolition Site Infectious/Medical Waste Site Leaking Underground Storage Tank Manufactured Gas Plant NPDES Facilites NPDES Pipe Locations Open Dump Waste Site 	<ul style="list-style-type: none"> RCRA Generator/TSD Restricted Waste Site Septage Waste Site Solid Waste Landfill State Cleanup Site Superfund Tire Waste Site Underground Storage Tank Voluntary Remediation Program Waste Transfer Station 	<ul style="list-style-type: none"> Institutional Controls County Boundary Project Area Half Mile Radius Toll Interstate State Route US Route Local Road
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This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Sources:
Non Orthophotography
 Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
 Map Projection: UTM Zone 16 N Map Datum: NAD83

Indiana County Endangered, Threatened and Rare Species List

County: **Johnson**

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Epioblasma rangiana	Northern Riffleshell	LE	SE	G2	S1
Epioblasma triquetra	Snuffbox	LE	SE	G3	S1
Lampsilis fasciola	Wavyrayed Lampmussel		SSC	G5	S3
Obovaria subrotunda	Round Hickorynut	C	SE	G4	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica	Rabbitsfoot	LT	SE	G3G4T3	S1
Simpsonaias ambigua	Salamander Mussel	C	SSC	G3	S2
Villosa fabalis	Rayed Bean	LE	SE	G2	S1
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Odonata (Dragonflies & Damselflies)					
Cordulegaster bilineata	Brown Spiketail		SE	G5	S3
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Sympetrum semicinctum	Band-winged Meadowhawk		SR	G5	S2S3
Amphibian					
Acris blanchardi	Blanchard's Cricket Frog		SSC	G5	S4
Reptile					
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2
Terrapene carolina carolina	Eastern Box Turtle		SSC	G5T5	S3
Bird					
Aimophila aestivalis	Bachman's Sparrow			G3	SXB
Ammodramus henslowii	Henslow's Sparrow		SE	G4	S3B
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Helmitheros vermivorus	Worm-eating Warbler		SSC	G5	S3B
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Rallus limicola	Virginia Rail		SE	G5	S3B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Setophaga citrina	Hooded Warbler		SSC	G5	S3B
Tyto alba	Barn Owl		SE	G5	S2
Mammal					
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis lucifugus	Little Brown Bat	C	SE	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SE	G1G2	S2S3

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting
State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list
GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank
SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: **Johnson**

Species Name	Common Name	FED	STATE	GRANK	SRANK
Myotis sodalis	Indiana Bat	LE	SE	G2	S1
Nycticeius humeralis	Evening Bat		SE	G5	S1
Perimyotis subflavus	Tricolored Bat		SE	G2G3	S2S3
Sorex fumeus	Smoky Shrew		SSC	G5	S2
Sorex hoyi	Pygmy Shrew		SSC	G5	S2
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Azolla caroliniana	Carolina Mosquito-fern		SR	G5	S3
Carex timida	Timid Sedge		SE	G2G4	S1
Chelone obliqua var. speciosa	Rose Turtlehead		WL	G4T3	S3
Huperzia lucidula	Shining Clubmoss		WL	G5	S3
Hydrastis canadensis	Golden Seal		WL	G3G4	S3
Juglans cinerea	Butternut		ST	G4	S2
Panax quinquefolius	American Ginseng		WL	G3G4	S3
High Quality Natural Community					
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry-mesic Highland Rim	Highland Rim Dry-mesic Upland Forest		SG	GNR	S3
Forest - upland mesic Highland Rim	Highland Rim Mesic Upland Forest		SG	GNR	S3
Wetland - seep circumneutral	Circumneutral Seep		SG	GU	S1

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Indiana County Endangered, Threatened and Rare Species List

County: Marion

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
<i>Cyprogenia stegaria</i>	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
<i>Epioblasma obliquata perobliqua</i>	White catspaw	LE	SE	G1T1	SX
<i>Epioblasma rangiana</i>	Northern Riffleshell	LE	SE	G2	S1
<i>Epioblasma triquetra</i>	Snuffbox	LE	SE	G3	S1
<i>Fusconaia subrotunda</i>	Longsolid	C	SX	G3	SX
<i>Lampsilis fasciola</i>	Wavyrayed Lampmussel		SSC	G5	S3
<i>Obovaria subrotunda</i>	Round Hickorynut	C	SE	G4	S1
<i>Plethobasus cicatricosus</i>	White Wartyback	LE	SX	G1	SX
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	LE	SX	G1	SX
<i>Plethobasus cyphus</i>	Sheepnose	LE	SE	G3	S1
<i>Pleurobema clava</i>	Clubshell	LE	SE	G1G2	S1
<i>Pleurobema plenum</i>	Rough Pigtoe	LE	SE	G1	S1
<i>Pleurobema rubrum</i>	Pyramid Pigtoe		SX	G2G3	SX
<i>Ptychobranhus fasciolaris</i>	Kidneyshell		SSC	G4G5	S2
<i>Quadrula cylindrica cylindrica</i>	Rabbitsfoot	LT	SE	G3G4T3	S1
<i>Toxolasma lividus</i>	Purple Lilliput	C	SSC	G3Q	S2
<i>Venustaconcha ellipsiformis</i>	Ellipse		SSC	G4	S2
<i>Villosa lienosa</i>	Little Spectaclecase		SSC	G5	S3
Insect: Hymenoptera					
<i>Bombus affinis</i>	Rusty-patched Bumble Bee	LE	SE	G1	S1
Insect: Lepidoptera (Butterflies & Moths)					
<i>Hyperaeschra georgica</i>	A Prominent Moth			G5	S2
Insect: Neuroptera					
<i>Sisyra sp. 1</i>	Indiana Spongilla Fly		ST	GNR	S2
Fish					
<i>Percina evides</i>	Gilt Darter		SE	G4	S1
Amphibian					
<i>Necturus maculosus</i>	Common mudpuppy		SSC	G5	S2
Reptile					
<i>Clemmys guttata</i>	Spotted Turtle	C	SE	G5	S2
<i>Clonophis kirtlandii</i>	Kirtland's Snake		SE	G2	S2
<i>Emydoidea blandingii</i>	Blanding's Turtle	C	SE	G4	S2
<i>Thamnophis butleri</i>	Butler's Garter Snake		SE	G4	S1
Bird					
<i>Aimophila aestivalis</i>	Bachman's Sparrow			G3	SXB
<i>Ardea alba</i>	Great Egret		SSC	G5	S1B
<i>Bartramia longicauda</i>	Upland Sandpiper		SE	G5	S3B
<i>Botaurus lentiginosus</i>	American Bittern		SE	G5	S2B

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Indiana County Endangered, Threatened and Rare Species List

County: Marion

Species Name	Common Name	FED	STATE	GRANK	SRANK
Buteo platyterus	Broad-winged Hawk		SSC	G5	S3B
Certhia americana	Brown Creeper			G5	S2B
Chordeiles minor	Common Nighthawk		SSC	G5	S4B
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Helmitheros vermivorus	Worm-eating Warbler		SSC	G5	S3B
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Lanius ludovicianus	Loggerhead Shrike		SE	G4	S3B
Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Pandion haliaetus	Osprey		SSC	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Setophaga citrina	Hooded Warbler		SSC	G5	S3B
Sitta canadensis	Red-breasted Nuthatch			G5	S1B
Mammal					
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Myotis lucifugus	Little Brown Bat	C	SE	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SE	G1G2	S2S3
Myotis sodalis	Indiana Bat	LE	SE	G2	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Chelone obliqua var. speciosa	Rose Turtlehead		WL	G4T3	S3
Deschampsia cespitosa	Tufted Hairgrass		SR	G5	S3
Hydrastis canadensis	Golden Seal		WL	G3G4	S3
Juglans cinerea	Butternut		ST	G4	S2
Melanthium virginicum	Virginia Bunchflower		SE	G5	S1
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Poa wolfii	Wolf Bluegrass		SR	G4	S3
Rubus odoratus	Purple Flowering Raspberry		ST	G5	S2
Trifolium stoloniferum	Running Buffalo Clover	LE	SE	G3	S1
High Quality Natural Community					
Forest - flatwoods central till plain	Central Till Plain Flatwoods		SG	G3	S2
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - floodplain wet	Wet Floodplain Forest		SG	G3?	S3
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry-mesic Central Till Plain	Central Till Plain Dry-mesic Upland Forest		SG	GNR	S2
Forest - upland mesic Central Till Plain	Central Till Plain Mesic Upland Forest		SG	GNR	S3

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Indiana County Endangered, Threatened and Rare Species List

County: Marion

Species Name	Common Name	FED	STATE	GRANK	SRANK
Wetland - fen	Fen		SG	G3	S3
Wetland - marsh	Marsh		SG	GU	S4

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Appendix C: Utilities



Section C-1: Utility Cost

Utility Company	Facility Type	Unit Cost	Quantity	Subtotal	Total Cost	Reimbursible Cost	Reimbursable	Comments/Assumptions:
AT&T Distribution	Telecom	\$ 15.00	12000	\$ 180,000.00	\$ 4,061,190.00	\$ 1,258,950.00	No	
AT&T Transmission	Telecom	\$ 15.00	12000	\$ 180,000.00			No	
CEG	Water	\$ 30.00	5500	\$ 165,000.00			Yes	
CEG	Sanitary	\$ 45.00	1450	\$ 65,250.00			Yes	Assumes no relocation of the 96" Interceptor is needed.
CEG	Gas	\$ 36.00	11750	\$ 423,000.00			Yes	
Comcast (Indy)	Cable	\$ 10.00	12000	\$ 120,000.00			No	
Duke Energy	OH Electric	\$ 10,000.00	3	\$ 30,000.00			No	Cost is per Pole
Enterprise Products	Pipeline	\$ 1,440.00	180	\$ 259,200.00			Yes	
City of Greenwood	Sanitary	\$ 45.00	4700	\$ 211,500.00			Yes	
City of Greenwood	Water	\$ 30.00	4500	\$ 135,000.00			Yes	
Indiana American Water	Water	\$ 30.00	7000	\$ 210,000.00			No	
IU Fiber	Fiber	\$ -	0	\$ -			N/A	Facility is outside project limits.
IP&L	OH Electric	\$ 10,000.00	72	\$ 720,000.00			No	Cost is per Pole
City of Indianapolis	Signals	\$ -	0	\$ -			N/A	Work included with construction costs.
Johnson County REMC	OH Electric	\$ 10,000.00		\$ -			Yes	Cost is per Pole
Centurylink	Telecom	\$ 15.00	12000	\$ 180,000.00			No	
MCI (Verizon)	Telecom	\$ 15.00	12000	\$ 180,000.00			No	
Metro Fibernet	Telecom	\$ 15.00	12000	\$ 180,000.00			No	
TCS Communications	Telecom	\$ 15.00	12000	\$ 180,000.00			No	
Vectren (Franklin)	Gas	\$ 36.00	12840	\$ 462,240.00			No	
Zayo Bandwidth	Fiber	\$ 15.00	12000	\$ 180,000.00	No			



Section C-2: 811 Design Ticket

Attention: You have just completed your Design ticket, not a valid locate request. The ticket you created is for design purposes only and will not be transmitted to any utilities. If you need to have lines located you must call 811 or 800-382-5544.

State: IN Cnty: LAKE Twp: CENTER
 Cityname: CROWN POINT Inside: Y Near: N
 Subdivision:

Address :

Street : E 109TH AVE

Location: NO LOCATION GIVEN

:

Grids : 3938D8609A 3938D8609B 3938D8609C 3938D8610A 3938D8610B

Grids : 3938D8610C 3938D8610D 3938D8611A 3938D8611B 3938D8611C

Grids : 3938D8611D 3938D8612C 3938D8612D

Submitted date: 10/16/2019 Time: 15:40

Service Area	Contact	Phone	Address
AT&T - DISTRIBUTION	Matt Spindler	(317) 265 - 3050	240 N. Meridian St., Room 1791 Indianapolis, IN 46204 ms4822@att.com
AT&T - TRANSMISSION	Kenneth Colwell	(630) 383 - 9249	1010 N. Saint Mary St. San Antonio, TX 78215 kc1298@att.com
CITIZENS ENERGY (INDIANAPOLIS)	Utility Coordination	(317) 927 - 6038	2150 Dr. Martin Luther King Jr St Indianapolis, IN 46200 utilitycoordination@citizensenergygroup.com
COMCAST CABLE (INDIANAPOLIS)			
DUKE ENERGY	Tim Umbaugh	(765) 349 - 4012	390 N MAIN STREET MARTINSVILLE, IN 46151 tim.umbaugh@duke-energy.com
ENTERPRISE PRODUCTS OPERATING, LLC (IND)			
GREENWOOD, CITY OF	Keith Meier	(317) 888 - 1254	367 S Washington St Greenwood, IN 46143 meierk@greenwood.in.gov
IN AMERICAN WATER	Ryan Moore	(317) 885 - 2404	inutilitycoordination@amwater.com
INDIANA UNIVERSITY FIBER			
INDIANAPOLIS POWER & LIGHT COMPANY	Janet Snodgrass	(317) 261 - 8617	1230 W. Morris St Indianapolis, IN 46221

			janet.snodgrass@aes.com
INDIANAPOLIS, CITY OF	Theresa Mendoza	(317) 327 - 2302	1200 S Madison Ave, Suite 200 Indianapolis, IN 46225 UtilityCoordination@indy.gov
JOHNSON COUNTY R.E.M.C.	Kevin Shelley	(317) 736 - 6174 x 7630	PO Box 309 Franklin, IN 46131 shelleyk@jcremc.com
LEVEL 3 NOW CENTURYLINK	Level 3 Communications Network Relocation	(877) 366 - 8344 x 2	, Nationalrelo@centurylink.com
MCI	Dean Boyers	(469) 886 - 4238	400 Internation PKWY Richardson, TX 75081 investigations@verizon.com
METRO FIBERNET, LLC	Mark Deckard	(812) 253 - 2196	3701 Communications Way Evansville, IN 47715 RRHWYPermits@metronetinc.com
	Rick Bowen	(812) 213 - 1340	3701 Communications Way Evansville, IN 47715 RRHWYPermits@metronetinc.com
TCS COMMUNICATIONS, LLC	Mike Marafine	(241) 597 - 4716	4355 Lafayette Blvd Indianapolis, IN 46254 mike.marafine@tesinllc.com
	Mary Gibbons	(812) 623 - 1233	4355 Lafayette Blvd Indianapolis, IN 46254 mary.gibbons@tesinllc.com
VECTREN (FRANKLIN)	Jon Eastham	(765) 287 - 2119	1800 W. 26th St. Muncie, IN 47302 jeastham@vectren.com
ZAYO BANDWIDTH	John Senese	(317) 524 - 5711	625 East 11th Street Indianapolis, IN 46202 jsenese@zayo.com



Appendix D: Railroad



Section D-1: Railroad Crossing Accident Reports

1. Name of Reporting Railroad Indiana Rail Road Company [INRD]				1a. Alphabetic Code INRD		1b. Railroad Accident/Incident No. 649006	
2. Name of Other Railroad or Other Entity Filling for Equipment Involved in Train Accident/Incident				2a. Alphabetic Code		2b. Railroad Accident/Incident No.	
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry) Indiana Rail Road Company [INRD]				3a. Alphabetic Code INRD		3b. Railroad Accident/Incident No. 649006	
4. U.S. DOT Grade Crossing ID No. 292261E				5. Date of Accident/Incident month day year 1 1 2 4 2012		6. Time of Accident/Incident 11:34 AM <input checked="" type="checkbox"/> PM <input type="checkbox"/>	
7. Nearest Railroad Station INDIANAPOLIS		8. Subdivision INDIANAPOLIS		9. County MARION		10. State Abbr. IN Code 18	
11. City (if in a city) INDIANAPOLIS			12. Highway Name or No. COUNTY LINE ROAD			Public <input checked="" type="checkbox"/> Private <input type="checkbox"/>	
Highway User Involved				Rail Equipment Involved			
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle A. Auto D. Pick-up truck G. School Bus K. Pedestrian Code B. Truck E. Van H. Motorcycle M. Other (specify) A				17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL D. EMU Locomotive(s) E. DMU Locomotive(s) Code 1			
14. Vehicle Speed (est. mph at impact) 0		15. Direction (geographical) 1. North 2. South 3. East 4. West Code 3		18. Position of Car Unit in Train 1			
16. Position 1. Stalled or stuck on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped on crossing by traffic 5. Blocked on crossing by gates Code 2				19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user Code 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code 4				20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code 4			
20c. State here the name and quantity of the hazardous material released, if any							
21. Temperature (specify if minus) 45 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark Code 2		23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow Code 1			
24. Type of Equipment (single entry) 1. Freight Train 2. Passenger Train-Pulling 3. Commuter Train-Pulling 4. Work Train 5. Single Car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Maint./inspect. car A. Spec. MoW Equip. B. Passenger Train-Pushing C. Commuter Train-Pushing D. EMU E. DMU Code 1				25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry Code 1		26. Track Number or Name INDY SUB MAIN	
27. FRA Track Class (1-9,X) 3		28. Number of Locomotive Units 2		29. Number of Cars 49		30. Consist Speed (Recorded speed if available) R. Recorded 23 mph E. Estimated R	
31. Time Table Direction 1. North 2. South 3. East 4. West Code 1				32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None Code(s) 03			
33. Signaled Crossing Warning (See reverse side for instructions and codes) Code 1				34. Roadway Conditions A. Dry B. Wet C. Snow/Slush D. Ice E. Sand, Mud, Dirt, Oil, Gravel F. Water (Standing, Moving) Code A			
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach Code 1			36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown Code 2			37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown Code 3	
38. Highway User's Age 29		39. Highway User's Gender 1. Male 2. Female Code 1		40. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown Code 2		41. Highway User 1. Went around the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify) 6. Went around/thru temporary barricade (if yes, see instructions) 7. Went thru the gate 8. Suicide/Attempted suicide Code 4	
42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown Code 2			43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed Code 8				
Casualties to:		Killed		Injured		44. Driver was 1. Killed 2. Injured 3. Uninjured Code 3	
46. Highway-Rail Crossing Users 0		47. Highway Vehicle Property Damage (est. dollar damage) \$7,500		45. Was Driver in the Vehicle? 1. Yes 2. No Code 1			
49. Railroad Employees 0		50. Total Number of People on Train (include passengers and train crew) 1		48. Total Number of Vehicle Occupants (including driver) 1			
52. Passengers on Train 0		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No Code 2					
53a. Special Study Block Video Taken? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Video Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				53b. Special Study Block			
54. Narrative Description (Be specific, and continue on separate sheet if necessary) VEHICLE APPROACHED CROSSING AND STOPPED ON CROSSING AND WAS STRUCK BY TRAIN. NO INJURIES TO DRIVER OF VEHICLE OR TRAIN OPERATOR.							
55. Typed Name and Title				56. Signature		57. Date	

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report..." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

1. Name of Reporting Railroad Illinois Central Gulf Railroad Company [ICG]			1a. Alphabetic Code ICG			1b. Railroad Accident/Incident No. 89784				
2. Name of Other Railroad or Other Entity Filing for Equipment Involved in Train Accident/Incident			2a. Alphabetic Code			2b. Railroad Accident/Incident No.				
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry) Illinois Central Gulf Railroad Company [ICG]			3a. Alphabetic Code ICG			3b. Railroad Accident/Incident No. 89784				
4. U.S. DOT Grade Crossing ID No. 292261E			5. Date of Accident/Incident month day year 0 4 1 2 1984			6. Time of Accident/Incident 5:30 AM <input type="checkbox"/> PM <input checked="" type="checkbox"/>				
7. Nearest Railroad Station FRANCES		8. Subdivision		9. County JOHNSON		10. State Abbr. IN		Code 18		
11. City (if in a city)			12. Highway Name or No. COUNTY LINE RD			Public <input checked="" type="checkbox"/> Private <input type="checkbox"/>				
Highway User Involved				Rail Equipment Involved						
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle A. Auto D. Pick-up truck G. School Bus K. Pedestrian B. Truck E. Van H. Motorcycle M. Other (specify)				17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing)		4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify)		A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL D. EMU Locomotive(s) E. DMU Locomotive(s)		
14. Vehicle Speed (est. mph at impact) 0		15. Direction (geographical) 1. North 2. South 3. East 4. West		Code 3		18. Position of Car Unit in Train 1				
16. Position 1. Stalled or stuck on crossing 2. Stopped on Crossing 3. Moving over crossing		4. Trapped on crossing by traffic 5. Blocked on crossing by gates		Code 1		19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user				
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither		Code 4		20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither						
20c. State here the name and quantity of the hazardous material released, if any										
21. Temperature (specify if minus) 60 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark		Code 2		23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow				
24. Type of Equipment Consist (single entry) 1. Freight Train 2. Passenger Train-Pulling 3. Commuter Train-Pulling 4. Work Train		5. Single Car 6. Cut of cars		9. Maint./inspect. car A. Spec. MoW Equip.		D. EMU E. DMU		25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry		
Code 1		Code 1		Code 1		Code 1		26. Track Number or Name INDIANAPOLIS DIST MA		
27. FRA Track Class (1-9,X) 2		28. Number of Locomotive Units 4		29. Number of Cars 65		30. Consist Speed (Recorded speed if available) R. Recorded E. Estimated 23 mph		Code E		
31. Time Table Direction 1. North 2. South 3. East 4. West		Code 2		32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None						
Code(s) 07 08		Code 07 08		Code 07 08		Code 07 08		33. Signaled Crossing Warning (See reverse side for instructions and codes) Code		
34. Roadway Conditions A. Dry B. Wet C. Snow/Slush D. Ice E. Sand, Mud, Dirt, Oil, Gravel F. Water (Standing, Moving)		Code 07 08		Code 07 08		Code 07 08		Code 07 08		
35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach			Code 1		36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown		Code 2		37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	
Code 1		Code 2		Code 1		Code 2		Code 1		
38. Highway User's Gender 1. Male 2. Female		Code 2		39. Highway User's Age 1. Male 2. Female		Code 2		40. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown		
Code 2		Code 2		Code 2		Code 2		41. Highway User 1. Went around the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing		
Code 2		Code 2		Code 2		Code 2		Code 4		
42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown		Code 2		43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed						
Code 2		Code 2		Code 2		Code 2		Code 8		
Casualties to: Killed Injured		Code 0 0		44. Driver was 1. Killed 2. Injured 3. Uninjured		Code 3		45. Was Driver in the Vehicle? 1. Yes 2. No		
Code 0 0		Code 0 0		Code 3		Code 3		Code 1		
46. Highway-Rail Crossing Users 0 0		Code 0 0		47. Highway Vehicle Property Damage (est. dollar damage) \$800		Code 800		48. Total Number of Vehicle Occupants (including driver) 1		
Code 0 0		Code 0 0		Code 800		Code 800		Code 1		
49. Railroad Employees 0 0		Code 0 0		50. Total Number of People on Train (include passengers and train crew)		Code 0 0		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No		
Code 0 0		Code 0 0		Code 0 0		Code 0 0		Code 2		
53a. Special Study Block Video Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No Video Used? <input type="checkbox"/> Yes <input type="checkbox"/> No		Code 0 0		53b. Special Study Block						
Code 0 0		Code 0 0		Code 0 0						
54. Narrative Description (Be specific, and continue on separate sheet if necessary)										
55. Typed Name and Title				56. Signature				57. Date		

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report..." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

1. Name of Reporting Railroad Illinois Central Gulf Railroad Company [ICG]				1a. Alphabetic Code ICG		1b. Railroad Accident/Incident No. 88794	
2. Name of Other Railroad or Other Entity Filing for Equipment Involved in Train Accident/Incident				2a. Alphabetic Code		2b. Railroad Accident/Incident No.	
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry) Illinois Central Gulf Railroad Company [ICG]				3a. Alphabetic Code ICG		3b. Railroad Accident/Incident No. 88794	
4. U.S. DOT Grade Crossing ID No. 292261E				5. Date of Accident/Incident month day year 1 1 7 1983		6. Time of Accident/Incident 1:25 AM <input type="checkbox"/> PM <input checked="" type="checkbox"/>	
7. Nearest Railroad Station FRANCES		8. Subdivision		9. County JOHNSON		10. State Abbr. IN Code 18	
11. City (if in a city)			12. Highway Name or No. COUNTY LINE RD			Public <input checked="" type="checkbox"/> Private <input type="checkbox"/>	
Highway User Involved				Rail Equipment Involved			
13. Type C. Truck-trailer F. Bus J. Other Motor Vehicle A. Auto D. Pick-up truck G. School Bus K. Pedestrian Code B. Truck E. Van H. Motorcycle M. Other (specify) A				17. Equipment 1. Train (units pulling) 2. Train (units pushing) 3. Train (standing) 4. Car(s) (moving) 5. Car(s) (standing) 6. Light loco(s) (moving) 7. Light loco(s) (standing) 8. Other (specify) A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL D. EMU Locomotive(s) E. DMU Locomotive(s) Code 4			
14. Vehicle Speed (est. mph at impact) 5		15. Direction (geographical) 1. North 2. South 3. East 4. West Code 3		18. Position of Car Unit in Train 1			
16. Position 1. Stalled or stuck on crossing 2. Stopped on Crossing 3. Moving over crossing 4. Trapped on crossing by traffic 5. Blocked on crossing by gates Code 3				19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user Code 1			
20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code 4				20b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither Code			
20c. State here the name and quantity of the hazardous material released, if any							
21. Temperature (specify if minus) 60 °F		22. Visibility (single entry) 1. Dawn 2. Day 3. Dusk 4. Dark Code 2		23. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow Code 2			
24. Type of Equipment (single entry) 1. Freight Train 2. Passenger Train-Pulling 3. Commuter Train-Pulling 4. Work Train 5. Single Car 6. Cut of cars 7. Yard/Switching 8. Light loco(s) 9. Maint./inspect. car A. Spec. MoW Equip. B. Passenger Train-Pushing C. Commuter Train-Pushing D. EMU E. DMU Code 4				25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry Code 1		26. Track Number or Name MAIN/INDIANAPOLIS DI	
27. FRA Track Class (1-9,X) 2		28. Number of Locomotive Units 0		29. Number of Cars 2		30. Consist Speed (Recorded speed if available) R. Recorded E. Estimated 10 mph Code E	
31. Time Table Direction 1. North 2. South 3. East 4. West Code 1				32. Type of Crossing Warning 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (specify) 12. None Code(s) 07 08			
33. Signaled Crossing Warning (See reverse side for instructions and codes) Code			34. Roadway Conditions A. Dry B. Wet C. Snow/Slush D. Ice E. Sand, Mud, Dirt, Oil, Gravel F. Water (Standing, Moving) Code			35. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach Code 1	
36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown Code 2			37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown Code 2			38. Highway User's Gender 1. Male 2. Female Code	
39. Highway User's Age 1. Male 2. Female Code		40. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown Code 2		41. Highway User 1. Went around the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other (specify) 6. Went around/thru temporary barricade (if yes, see instructions) 7. Went thru the gate 8. Suicide/Attempted suicide Code 3		42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown Code 2	
43. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing railroad equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicles 7. Other (specify) 8. Not Obstructed Code 8		44. Driver was 1. Killed 2. Injured 3. Uninjured Code 3		45. Was Driver in the Vehicle? 1. Yes 2. No Code 1			
46. Highway-Rail Crossing Users Killed 0 Injured 0		47. Highway Vehicle Property Damage (est. dollar damage) \$1,000		48. Total Number of Vehicle Occupants (including driver) 2			
49. Railroad Employees 0		50. Total Number of People on Train (include passengers and train crew) 0		51. Is a Rail Equipment Accident / Incident Report Being Filed 1. Yes 2. No Code 2			
52. Passengers on Train 0		53a. Special Study Block Video Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No Video Used? <input type="checkbox"/> Yes <input type="checkbox"/> No		53b. Special Study Block			
54. Narrative Description (Be specific, and continue on separate sheet if necessary)							
55. Typed Name and Title				56. Signature		57. Date	

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not "be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report..." 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).



Section D-2: Railroad Crossing Inventory

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 07 / 05 / 2018	B. Reporting Agency <input type="checkbox"/> Railroad <input type="checkbox"/> Transit <input checked="" type="checkbox"/> State <input type="checkbox"/> Other	C. Reason for Update (Select only one) <input checked="" type="checkbox"/> Change in Data <input type="checkbox"/> Re-Open <input type="checkbox"/> New Crossing <input type="checkbox"/> Date Change Only <input type="checkbox"/> Closed <input type="checkbox"/> Change in Primary Operating RR <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update <input type="checkbox"/> Admin. Correction	D. DOT Crossing Inventory Number 292261E
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Part I: Location and Classification Information

1. Primary Operating Railroad Indiana Rail Road Company [INRD]		2. State INDIANA		3. County MARION	
4. City / Municipality <input checked="" type="checkbox"/> In <input type="checkbox"/> Near INDIANAPOLIS		5. Street/Road Name & Block Number COUNTY LINE RD S (Street/Road Name) * (Block Number)		6. Highway Type & No. FAS 760	
7. Do Other Railroads Operate a Separate Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR _____			8. Do Other Railroads Operate Over Your Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR _____		
9. Railroad Division or Region <input type="checkbox"/> None		10. Railroad Subdivision or District <input type="checkbox"/> None INDIANAPOLIS		11. Branch or Line Name <input type="checkbox"/> None MAIN TRACK	
12. RR Milepost 0009.42 (prefix) (nnnn.nnn) (suffix)		13. Line Segment * 9-42-X		14. Nearest RR Timetable Station *	
15. Parent RR (if applicable) <input type="checkbox"/> N/A		16. Crossing Owner (if applicable) <input type="checkbox"/> N/A INRD		17. Crossing Type <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
18. Crossing Purpose <input checked="" type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.		19. Crossing Position <input checked="" type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input type="checkbox"/> RR Over		20. Public Access (if Private Crossing) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
21. Type of Train <input type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Commuter		<input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Tourist/Other		22. Average Passenger Train Count Per Day <input type="checkbox"/> Less Than One Per Day <input type="checkbox"/> Number Per Day 0	
23. Type of Land Use <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide Crossing Number _____			25. Quiet Zone (FRA provided) <input checked="" type="checkbox"/> No <input type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established _____		
26. HSR Corridor ID <input checked="" type="checkbox"/> N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 39.6346900		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -86.1777500	
29. Lat/Long Source <input checked="" type="checkbox"/> Actual <input type="checkbox"/> Estimated					
30.A. Railroad Use *			31.A. State Use * 2		
30.B. Railroad Use *			31.B. State Use * 90		
30.C. Railroad Use *			31.C. State Use * 2		
30.D. Railroad Use *			31.D. State Use * 1		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-677-1985		34. Railroad Contact (Telephone No.) 317-262-5140		35. State Contact (Telephone No.) 855-463-6848	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 2	1.B. Total Night Thru Trains (6 PM to 6 AM) 3	1.C. Total Switching Trains 0	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day <input type="checkbox"/> How many trains per week? _____
2. Year of Train Count Data (YYYY)		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 40 3.B. Typical Speed Range Over Crossing (mph) From 30 to 40		
4. Type and Count of Tracks Main 1 Siding _____ Yard _____ Transit _____ Industry _____				
5. Train Detection (Main Track only) <input type="checkbox"/> Constant Warning Time <input checked="" type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input type="checkbox"/> None				
6. Is Track Signaled? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		7.A. Event Recorder <input type="checkbox"/> Yes <input type="checkbox"/> No		7.B. Remote Health Monitoring <input type="checkbox"/> Yes <input type="checkbox"/> No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 07/05/2018		PAGE 2		D. Crossing Inventory Number (7 char.) 292261E	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 0		2.B. STOP Signs (R1-1) (count) 1	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) <input type="checkbox"/> None <input checked="" type="checkbox"/> W10-1 2 <input type="checkbox"/> W10-3 <input type="checkbox"/> W10-11 <input type="checkbox"/> W10-2 <input type="checkbox"/> W10-4 <input type="checkbox"/> W10-12	
2.E. Low Ground Clearance Sign (W10-5) <input type="checkbox"/> Yes (count _____) <input checked="" type="checkbox"/> No		2.F. Pavement Markings <input checked="" type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input checked="" type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None		2.G. Channelization Devices/Medians <input type="checkbox"/> All Approaches <input type="checkbox"/> Median <input type="checkbox"/> One Approach <input checked="" type="checkbox"/> None	2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.I. ENS Sign (I-13) Displayed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		2.J. Other MUTCD Signs <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Specify Type R8-8 Count 1 Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) <input type="checkbox"/> Yes <input type="checkbox"/> No	2.L. LED Enhanced Signs (List types)
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway 0 Pedestrian _____	3.B. Gate Configuration <input type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) Resistance <input type="checkbox"/> 3 Quad <input type="checkbox"/> Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 2 <input type="checkbox"/> Incandescent Not Over Traffic Lane 0 <input checked="" type="checkbox"/> LED		3.D. Mast Mounted Flashing Lights (count of masts) 2 <input type="checkbox"/> Incandescent <input checked="" type="checkbox"/> LED <input checked="" type="checkbox"/> Back Lights Included <input checked="" type="checkbox"/> Side Lights Included
3.E. Total Count of Flashing Light Pairs 9		3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> Not Required		3.G. Wayside Horn <input type="checkbox"/> Yes Installed on (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> No	3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3.I. Bells (count) 1		3.J. Non-Train Active Warning <input type="checkbox"/> Flagging/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input checked="" type="checkbox"/> None			3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____
4.A. Does nearby Hwy Intersection have Traffic Signals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4.B. Hwy Traffic Signal Interconnection <input checked="" type="checkbox"/> Not Interconnected <input type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs	4.C. Hwy Traffic Signal Preemption <input type="checkbox"/> Simultaneous <input type="checkbox"/> Advance	5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Storage Distance * _____ Stop Line Distance * _____	6. Highway Monitoring Devices (Check all that apply) <input type="checkbox"/> Yes - Photo/Video Recording <input type="checkbox"/> Yes - Vehicle Presence Detection <input checked="" type="checkbox"/> None	
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes 2 <input type="checkbox"/> One-way Traffic <input checked="" type="checkbox"/> Two-way Traffic <input type="checkbox"/> Divided Traffic		2. Is Roadway/Pathway Paved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3. Does Track Run Down a Street? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * _____ Length * _____ <input checked="" type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____					
6. Intersecting Roadway within 500 feet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Approximate Distance (feet) 75			7. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input checked="" type="checkbox"/> 60° - 90°		8. Is Commercial Power Available? * <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Part V: Public Highway Information					
1. Highway System <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input checked="" type="checkbox"/> (03) Federal AID, Not NHS <input type="checkbox"/> (08) Non-Federal Aid		2. Functional Classification of Road at Crossing <input type="checkbox"/> (0) Rural <input checked="" type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input checked="" type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input type="checkbox"/> (4) Minor Arterial <input type="checkbox"/> (7) Local		3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4. Highway Speed Limit 40 _____ MPH <input checked="" type="checkbox"/> Posted <input type="checkbox"/> Statutory
5. Linear Referencing System (LRS Route ID) *					
6. LRS Milepost *					
7. Annual Average Daily Traffic (AADT) Year 1997 AADT 017395		8. Estimated Percent Trucks 04 _____ %	9. Regularly Used by School Buses? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Average Number per Day _____		10. Emergency Services Route <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					



Appendix E: Traffic

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

TABLE 1

12/18/12

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	16,800	17,700	**	4	47,400	64,000	77,900	84,600	
4	Divided	*	37,900	39,800	**	6	69,900	95,200	116,600	130,600	
6	Divided	*	58,400	59,900	**	8	92,500	126,400	154,300	176,600	
8	Divided	*	78,800	80,100	**	10	115,100	159,700	194,500	222,700	
						12	162,400	216,700	256,600	268,900	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	7,300	14,800	15,600	4	45,800	61,500	74,400	79,900	
4	Divided	*	14,500	32,400	33,800	6	68,100	93,000	111,800	123,300	
6	Divided	*	23,300	50,000	50,900	8	91,500	123,500	148,700	166,800	
8	Divided	*	32,000	67,300	68,100	10	114,800	156,000	187,100	210,300	
Non-State Signalized Roadway Adjustments (Alter corresponding state volumes by the indicated percent.)						Freeway Adjustments					
Non-State Signalized Roadways - 10%						Auxiliary Lanes Present in Both Directions + 20,000					
						Ramp Metering + 5%					
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	8,600	17,000	24,200	33,300
2	Undivided	No	No	-20%		4	Divided	36,700	51,800	65,600	72,600
Multi	Undivided	Yes	No	-5%		6	Divided	55,000	77,700	98,300	108,800
Multi	Undivided	No	No	-25%		Uninterrupted Flow Highway Adjustments					
-	-	-	Yes	+ 5%		Lanes	Median	Exclusive left lanes	Adjustment factors		
One-Way Facility Adjustment Multiply the corresponding two-directional volumes in this table by 0.6						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE² (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						¹ Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.					
Paved Shoulder/Bicycle Lane Coverage						² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.					
	B	C	D	E		³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.					
0-49%	*	2,900	7,600	19,700		* Cannot be achieved using table input value defaults.					
50-84%	2,100	6,700	19,700	>19,700		** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
85-100%	9,300	19,700	>19,700	**		Source: Florida Department of Transportation Systems Planning Office www.dot.state.fl.us/planning/systems/sm/los/default.shtm					
PEDESTRIAN MODE² (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	2,800	9,500							
50-84%	*	1,600	8,700	15,800							
85-100%	3,800	10,700	17,400	>19,700							
BUS MODE (Scheduled Fixed Route)³ (Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							

TABLE 1
(continued)

Generalized Annual Average Daily Volumes for Florida's
Urbanized Areas

























12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities				Interrupted Flow Facilities					
	Freeways	Core Freeways	Highways		State Arterials				Class I	
					Class I	Class II		Bicycle	Pedestrian	
ROADWAY CHARACTERISTICS										
Area type (u,lu)	lu	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (n, nr, r)			n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	4	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4	4								
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)			1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.91	0.97	0.98						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (a, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, t, u)									t	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n
LEVEL OF SERVICE THRESHOLDS										
Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus		
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.		
		% ffs	Density						ats	ats
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6		
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4		
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3		
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2		

% ffs = Percent free flow speed ats = Average travel speed

HCM 6th Signalized Intersection Summary
 3: Morgantown Road & County Line Road

2045 Build
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1140	73	157	844	108	139	414	174	82	125	17
Future Volume (veh/h)	37	1140	73	157	844	108	139	414	174	82	125	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1856	1796	1870	1826	1856	1870	1870	1870	1722	1870	1870
Adj Flow Rate, veh/h	40	1239	79	171	917	117	151	450	189	89	136	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	3	7	2	5	3	2	2	2	12	2	2
Cap, veh/h	245	1344	580	216	1428	647	431	473	400	183	419	355
Arrive On Green	0.04	0.38	0.38	0.07	0.41	0.41	0.08	0.25	0.25	0.06	0.22	0.22
Sat Flow, veh/h	1711	3526	1522	1781	3469	1572	1781	1870	1585	1640	1870	1585
Grp Volume(v), veh/h	40	1239	79	171	917	117	151	450	189	89	136	18
Grp Sat Flow(s),veh/h/ln	1711	1763	1522	1781	1735	1572	1781	1870	1585	1640	1870	1585
Q Serve(g_s), s	1.3	30.1	3.0	5.3	19.0	4.2	5.8	21.3	9.1	3.7	5.5	0.8
Cycle Q Clear(g_c), s	1.3	30.1	3.0	5.3	19.0	4.2	5.8	21.3	9.1	3.7	5.5	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	1344	580	216	1428	647	431	473	400	183	419	355
V/C Ratio(X)	0.16	0.92	0.14	0.79	0.64	0.18	0.35	0.95	0.47	0.49	0.32	0.05
Avail Cap(c_a), veh/h	282	1350	583	216	1428	647	440	473	400	183	419	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	26.5	18.1	21.5	21.1	16.8	23.7	33.0	28.5	26.8	29.2	27.4
Incr Delay (d2), s/veh	0.3	10.6	0.1	17.8	1.0	0.1	0.5	29.6	0.9	2.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	13.5	1.0	3.0	7.3	1.5	2.4	13.1	3.4	1.5	2.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	37.1	18.2	39.3	22.1	16.9	24.2	62.6	29.4	28.8	29.6	27.4
LnGrp LOS	B	D	B	D	C	B	C	E	C	C	C	C
Approach Vol, veh/h		1358			1205			790			243	
Approach Delay, s/veh		35.4			24.1			47.3			29.2	
Approach LOS		D			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	39.8	13.1	25.6	8.7	42.5	10.5	28.2				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.9	34.4	8.0	19.7	5.1	35.2	5.0	22.7				
Max Q Clear Time (g_c+I1), s	7.3	32.1	7.8	7.5	3.3	21.0	5.7	23.3				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.4	0.0	10.5	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				33.8								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
6: Peterman Road/Railroad Road & County Line Road

2045 Build
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	141	1321	58	101	877	103	42	192	237	210	141	73
Future Volume (veh/h)	141	1321	58	101	877	103	42	192	237	210	141	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1811	1870	1870	1870	1870	1870	1870	1826
Adj Flow Rate, veh/h	153	1436	63	110	953	112	46	209	258	228	153	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	2	2	6	2	2	2	2	2	2	5
Cap, veh/h	316	1578	710	200	1487	685	311	348	295	271	393	326
Arrive On Green	0.07	0.45	0.45	0.05	0.43	0.43	0.04	0.19	0.19	0.06	0.21	0.21
Sat Flow, veh/h	1767	3526	1585	1781	3441	1585	1781	1870	1585	1781	1870	1547
Grp Volume(v), veh/h	153	1436	63	110	953	112	46	209	258	228	153	79
Grp Sat Flow(s),veh/h/ln	1767	1763	1585	1781	1721	1585	1781	1870	1585	1781	1870	1547
Q Serve(g_s), s	4.2	33.3	2.0	3.0	19.1	3.8	1.8	9.0	13.9	5.5	6.2	3.7
Cycle Q Clear(g_c), s	4.2	33.3	2.0	3.0	19.1	3.8	1.8	9.0	13.9	5.5	6.2	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	1578	710	200	1487	685	311	348	295	271	393	326
V/C Ratio(X)	0.48	0.91	0.09	0.55	0.64	0.16	0.15	0.60	0.87	0.84	0.39	0.24
Avail Cap(c_a), veh/h	326	1586	713	207	1489	686	346	383	325	271	393	326
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	22.6	13.9	20.0	19.6	15.2	27.2	32.7	34.7	33.3	29.8	28.9
Incr Delay (d2), s/veh	1.1	8.2	0.1	2.9	0.9	0.1	0.2	2.2	21.0	20.5	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	14.1	0.7	1.2	7.1	1.3	0.8	4.2	6.9	3.6	2.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	30.8	14.0	22.8	20.5	15.3	27.4	34.9	55.7	53.8	30.4	29.2
LnGrp LOS	B	C	B	C	C	B	C	C	E	D	C	C
Approach Vol, veh/h		1652			1175			513			460	
Approach Delay, s/veh		28.8			20.2			44.7			41.8	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	44.8	8.9	24.0	11.5	43.5	11.0	21.8				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.0	39.5	5.1	18.4	6.5	38.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s	5.0	35.3	3.8	8.2	6.2	21.1	7.5	15.9				
Green Ext Time (p_c), s	0.0	4.0	0.0	0.6	0.0	12.5	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay											29.9	
HCM 6th LOS											C	

HCM 6th Signalized Intersection Summary
 3: Morgantown Road & County Line Road

2045 Build
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↗	↘	↗↗	↗	↘	↗	↗	↘	↗	↗
Traffic Volume (veh/h)	39	964	115	177	1212	70	52	230	204	155	581	102
Future Volume (veh/h)	39	964	115	177	1212	70	52	230	204	155	581	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	1048	125	192	1317	76	57	250	222	168	632	111
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	3	2	2	2	2	2
Cap, veh/h	144	1239	553	253	1419	633	150	581	493	398	660	559
Arrive On Green	0.03	0.35	0.35	0.08	0.40	0.40	0.04	0.31	0.31	0.08	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1767	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	42	1048	125	192	1317	76	57	250	222	168	632	111
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1767	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.6	29.3	6.0	7.1	38.0	3.3	2.3	11.4	12.1	6.6	35.5	5.2
Cycle Q Clear(g_c), s	1.6	29.3	6.0	7.1	38.0	3.3	2.3	11.4	12.1	6.6	35.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1239	553	253	1419	633	150	581	493	398	660	559
V/C Ratio(X)	0.29	0.85	0.23	0.76	0.93	0.12	0.38	0.43	0.45	0.42	0.96	0.20
Avail Cap(c_a), veh/h	168	1273	568	253	1419	633	165	601	509	405	670	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	32.3	24.7	24.6	30.8	20.4	28.4	29.4	29.7	21.7	34.0	24.2
Incr Delay (d2), s/veh	1.1	5.3	0.2	12.6	10.9	0.1	1.6	0.5	0.6	0.7	24.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.9	2.2	3.7	17.4	1.2	1.0	5.1	4.6	2.8	20.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	37.7	24.9	37.2	41.7	20.4	30.0	29.9	30.3	22.4	58.7	24.4
LnGrp LOS	C	D	C	D	D	C	C	C	C	C	E	C
Approach Vol, veh/h		1215			1585			529			911	
Approach Delay, s/veh		36.0			40.1			30.1			47.8	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	43.0	8.1	43.4	7.6	48.4	12.6	38.9				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	9.0	38.5	5.0	38.5	5.0	42.5	9.0	34.5				
Max Q Clear Time (g_c+I1), s	9.1	31.3	4.3	37.5	3.6	40.0	8.6	14.1				
Green Ext Time (p_c), s	0.0	6.2	0.0	0.4	0.0	2.4	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay					39.3							
HCM 6th LOS					D							

HCM 6th Signalized Intersection Summary
 6: Peterman Road/Railroad Road & County Line Road

2045 Build
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	69	1037	52	147	1201	97	190	152	246	172	253	270
Future Volume (veh/h)	69	1037	52	147	1201	97	190	152	246	172	253	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	1127	57	160	1305	105	207	165	267	187	275	293
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	6	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	1492	644	275	1565	698	301	426	361	350	384	325
Arrive On Green	0.05	0.42	0.42	0.07	0.44	0.44	0.09	0.23	0.23	0.07	0.21	0.21
Sat Flow, veh/h	1781	3554	1535	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	75	1127	57	160	1305	105	207	165	267	187	275	293
Grp Sat Flow(s),veh/h/ln	1781	1777	1535	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.1	23.7	2.0	4.4	28.6	3.5	8.0	6.6	13.8	6.0	12.1	15.9
Cycle Q Clear(g_c), s	2.1	23.7	2.0	4.4	28.6	3.5	8.0	6.6	13.8	6.0	12.1	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	1492	644	275	1565	698	301	426	361	350	384	325
V/C Ratio(X)	0.36	0.76	0.09	0.58	0.83	0.15	0.69	0.39	0.74	0.53	0.72	0.90
Avail Cap(c_a), veh/h	227	1555	672	275	1595	712	301	436	369	350	393	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	21.7	15.4	17.5	21.8	14.8	26.0	28.8	31.5	27.1	32.6	34.1
Incr Delay (d2), s/veh	1.0	2.1	0.1	3.1	3.9	0.1	6.4	0.6	7.5	1.6	6.0	25.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.4	0.7	1.8	11.5	1.2	3.9	3.0	5.9	3.5	5.8	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	23.8	15.4	20.6	25.7	14.9	32.4	29.3	39.1	28.6	38.6	60.0
LnGrp LOS	B	C	B	C	C	B	C	C	D	C	D	E
Approach Vol, veh/h		1259			1570			639			755	
Approach Delay, s/veh		23.1			24.5			34.4			44.4	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	42.4	12.0	23.5	8.2	44.2	10.0	25.5				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	6.0	38.5	8.0	18.5	5.0	39.5	6.0	20.5				
Max Q Clear Time (g_c+I1), s	6.4	25.7	10.0	17.9	4.1	30.6	8.0	15.8				
Green Ext Time (p_c), s	0.0	10.7	0.0	0.2	0.0	8.2	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				29.1								
HCM 6th LOS				C								

Queuing and Blocking Report
2045 Build

AM Peak

Intersection: 3: Morgantown Road & County Line Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	83	400	369	66	156	232	239	80	136	525	78	160
Average Queue (ft)	22	253	218	16	77	116	133	25	60	262	40	61
95th Queue (ft)	57	388	353	44	135	212	233	66	111	450	68	124
Link Distance (ft)	967	967	967	967	5238	5238	5238	5238	714	714	714	808
Upstream Blk Time (%)												0
Queuing Penalty (veh)												0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: Morgantown Road & County Line Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	132	29
Average Queue (ft)	65	7
95th Queue (ft)	117	23
Link Distance (ft)	808	808
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Peterman Road/Railroad Road & County Line Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	156	375	382	40	120	303	249	66	73	200	195	342
Average Queue (ft)	64	200	210	10	52	173	129	20	26	106	88	146
95th Queue (ft)	124	351	364	28	101	270	231	46	59	179	158	300
Link Distance (ft)	5238	5238	5238	5238	778	778	778	778	807	807	807	975
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: Peterman Road/Railroad Road & County Line Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	143	60
Average Queue (ft)	62	24
95th Queue (ft)	118	53
Link Distance (ft)	975	975
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
2045 Build

PM Peak

Intersection: 3: Morgantown Road & County Line Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	64	401	382	107	193	395	411	61	84	231	107	253
Average Queue (ft)	23	254	221	38	96	230	246	19	32	124	48	82
95th Queue (ft)	54	363	334	80	167	372	388	47	67	209	81	168
Link Distance (ft)	966	966	966	966	5244	5244	5244	5244	1152	1152	1152	1074
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: Morgantown Road & County Line Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	656	93
Average Queue (ft)	403	33
95th Queue (ft)	658	71
Link Distance (ft)	1074	1074
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2045 Build

PM Peak

Intersection: 6: Peterman Road/Railroad Road & County Line Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	99	346	368	86	149	365	328	59	201	169	172	168
Average Queue (ft)	38	197	212	18	71	223	191	18	100	76	81	77
95th Queue (ft)	81	333	352	58	128	319	294	43	171	136	144	139
Link Distance (ft)	5244	5244	5244	5244	779	779	779	779	1176	1176	1176	1068
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: Peterman Road/Railroad Road & County Line Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	301	111
Average Queue (ft)	145	56
95th Queue (ft)	257	91
Link Distance (ft)	1068	1068
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0



Appendix F: Other Related Projects



Section F-1: Intersection Improvement at SR 135 and County Line Rd.

Scoping Report

DPW Project No. ST-45-067

South County Line Road, Indianapolis and Greenwood, Marion and Johnson Counties

<<Go Back

Intersection Improvement at SR-135 & County Line Rd. (1700158)

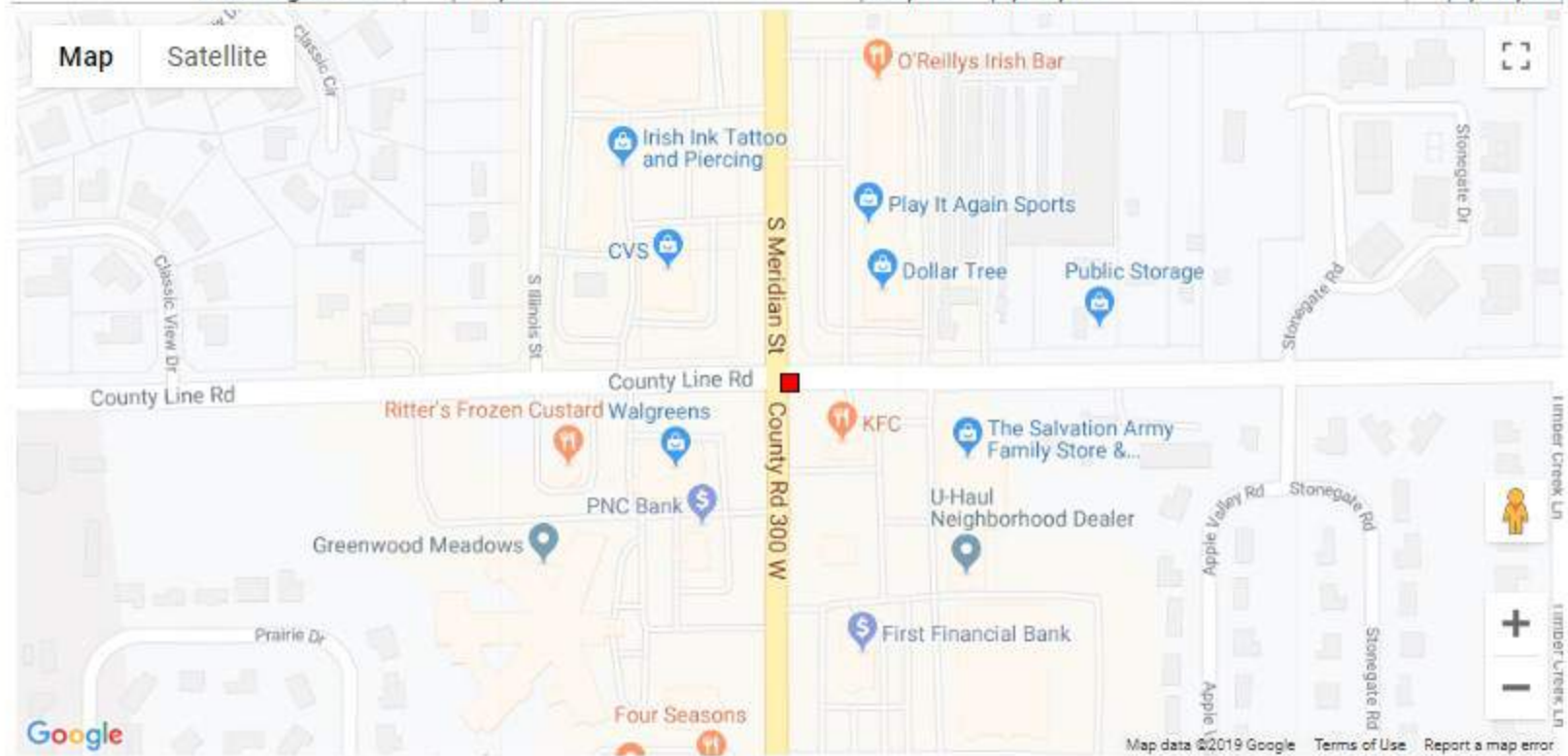
Des Number	1700158	Amendment	20-00 IRTIP	Exempt Category	Exempt	Est Total Project Cost	\$2,340,212
Lead Agency	INDOT	Contact (ERC)		INDOT District	Greenfield	County	Marion Marion Co.
Project Type	Intersect. Improv. W/ Added Turn Lanes	Letting Date	DEC/2022	Functional Classification	Other Principal Arterial	Bike/Ped Component(s)	No

Title Intersection Improvement at SR-135 & County Line Rd.

Limits Nearest Crossstreet: County Line Rd

Description Intersection Improvement project to add capacity and lessen back ups at the intersection

Phase	Fund Source	Prior SFY	SFY2020	SFY2021	SFY2022	SFY2023	SFY2024	Future SFY	Total
PE	FEDERAL - State STP	\$136,000	-	-	-	-	-	-	\$136,000
PE	STATE - Other	\$34,000	-	-	-	-	-	-	\$34,000
Total Preliminary Engineering		\$170,000	-	-	-	-	-	-	\$170,000
RW	FEDERAL - State STP	-	-	-	\$420,000	-	-	-	\$420,000
RW	STATE - Other	-	-	-	\$105,000	-	-	-	\$105,000
Total Right of Way		-	-	-	\$525,000	-	-	-	\$525,000
CN	FEDERAL - State STP	-	-	-	-	\$1,316,170	-	-	\$1,316,170
CN	STATE - Other	-	-	-	-	\$329,042	-	-	\$329,042
Total Construction		-	-	-	-	\$1,645,212	-	-	\$1,645,212
Total Programmed		\$170,000	-	-	\$525,000	\$1,645,212	-	-	\$2,340,212





Section F-2: Morgantown Road over Pleasant Run Creek

Scoping Report

DPW Project No. ST-45-067

South County Line Road, Indianapolis and Greenwood, Marion and Johnson Counties

<< Go Back

Morgantown Road over Pleasant Run Creek (1401717)

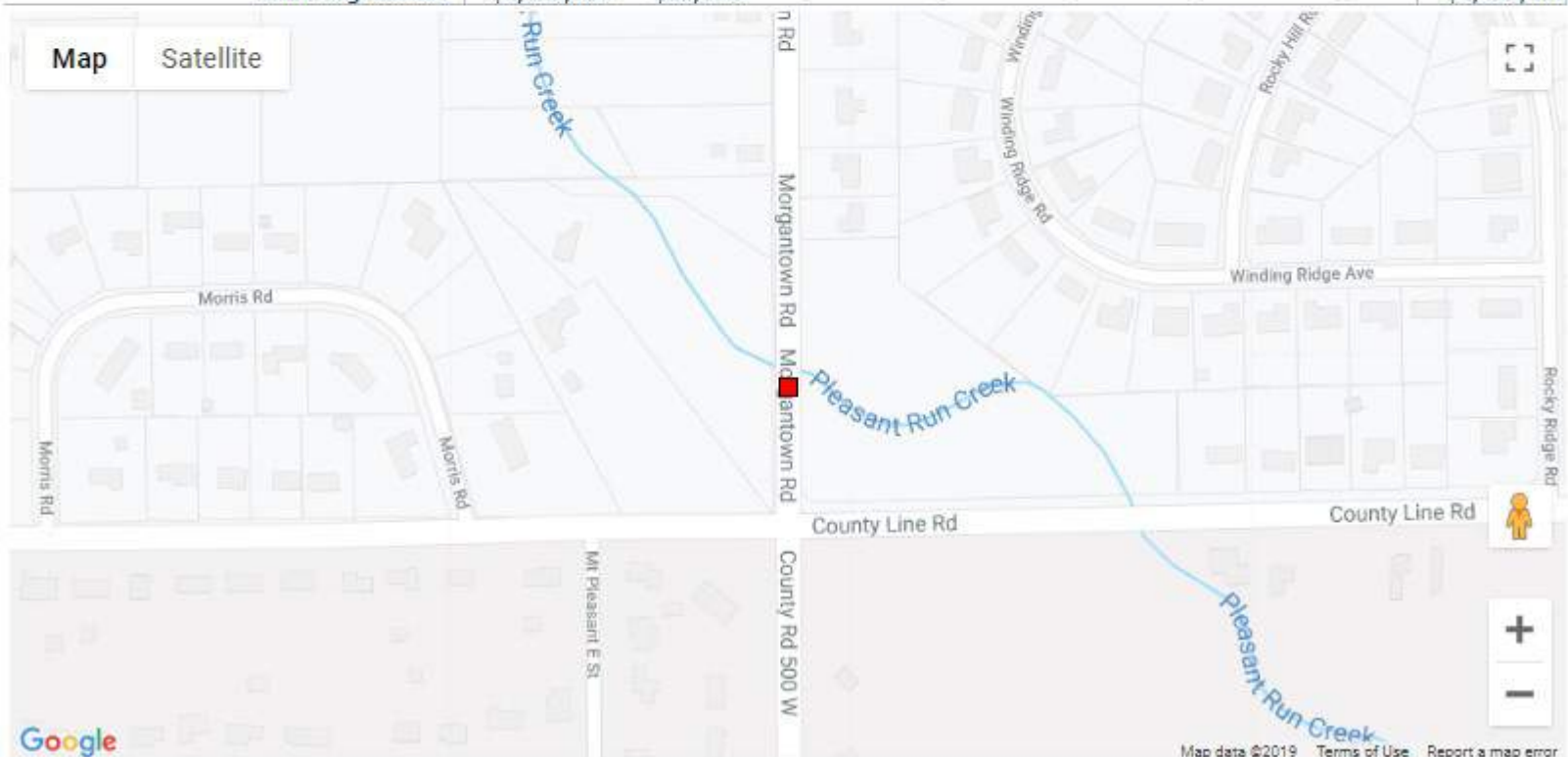
Des Number	1401717	Amendment	20-01.1 ADMIN MOD	Exempt Category	Exempt	Est Total Project Cost	\$1,415,356
Lead Agency	Indianapolis DPW	Contact (ERC)	William Chappell 3173274890	INDOT District	Greenfield	County	Marion
Project Type	Bridge Rehabilitation	Letting Date	02/06/2019	Functional Classification	Major Collector	Bike/Ped Component(s)	Yes 5%

Title Morgantown Road over Pleasant Run Creek

Limits Bridge #: 4509F

Description Bridge rehabilitation including superstructure replacement and widening, substructure rehabilitation and widening and road approach work.

Phase	Fund Source	Prior SFY	SFY2020	SFY2021	SFY2022	SFY2023	SFY2024	Future SFY	Total
PE	LOCAL - General fund, other	\$196,930	-	-	-	-	-	-	\$196,930
	<i>Total Preliminary Engineering</i>	\$196,930	-	-	-	-	-	-	\$196,930
RW	LOCAL - General fund, other	\$22,575	-	-	-	-	-	-	\$22,575
	<i>Total Right of Way</i>	\$22,575	-	-	-	-	-	-	\$22,575
CN	FEDERAL - STBG	\$850,383	-	-	-	-	-	-	\$850,383
CN	LOCAL - General fund, other	\$212,596	-	-	-	-	-	-	\$212,596
	<i>Total Construction</i>	\$1,062,979	-	-	-	-	-	-	\$1,062,979
CE	FEDERAL - STBG	\$30,000	\$76,298	-	-	-	-	-	\$106,298
CE	LOCAL - General fund, other	\$7,500	\$19,074	-	-	-	-	-	\$26,574
	<i>Total Construction Engineering</i>	\$37,500	\$95,372	-	-	-	-	-	\$132,872
	<i>Total Programmed</i>	\$1,319,984	\$95,372	-	-	-	-	-	\$1,415,356





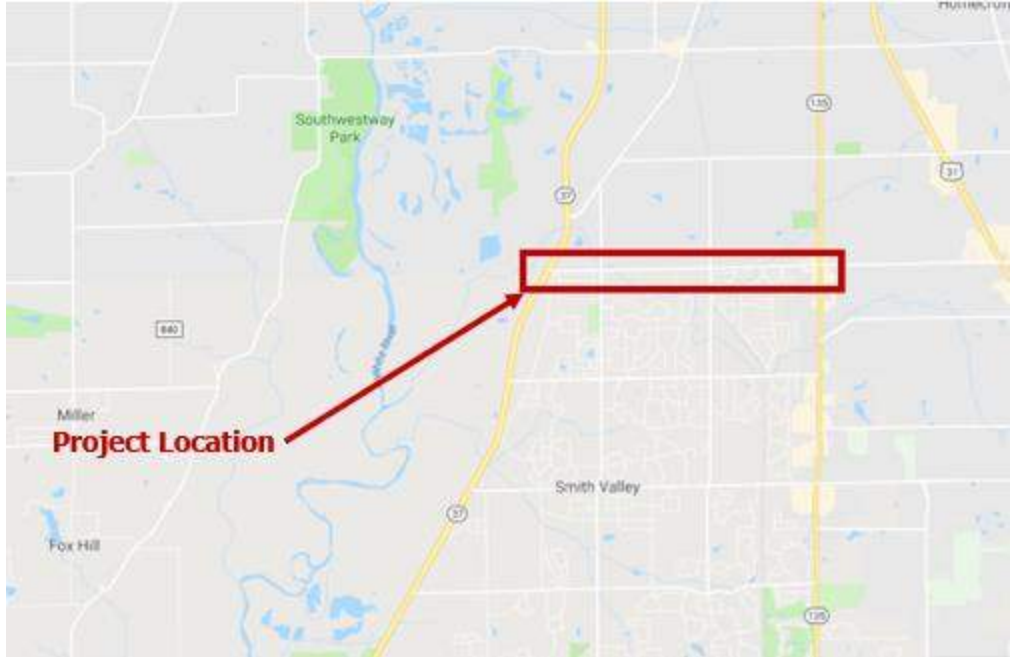
Section F-3: I-69 Section 6-SR 39 to I-465



Appendix G: Miscellaneous



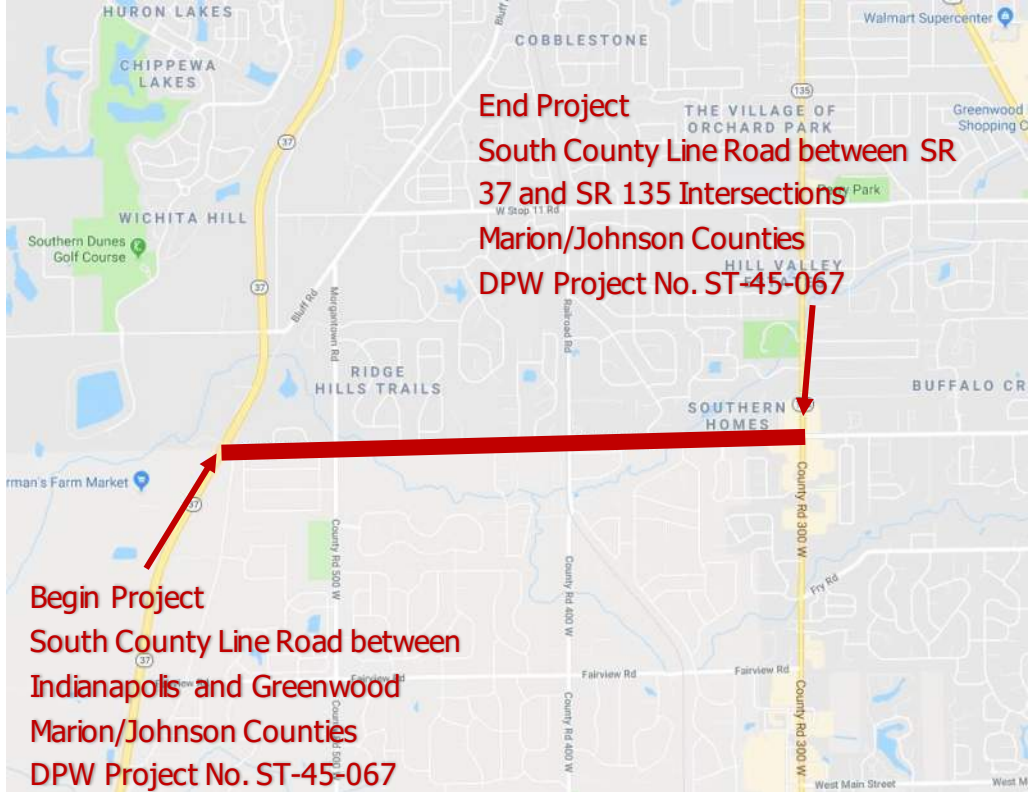
Section G-1: Project Location Map



Scoping Report

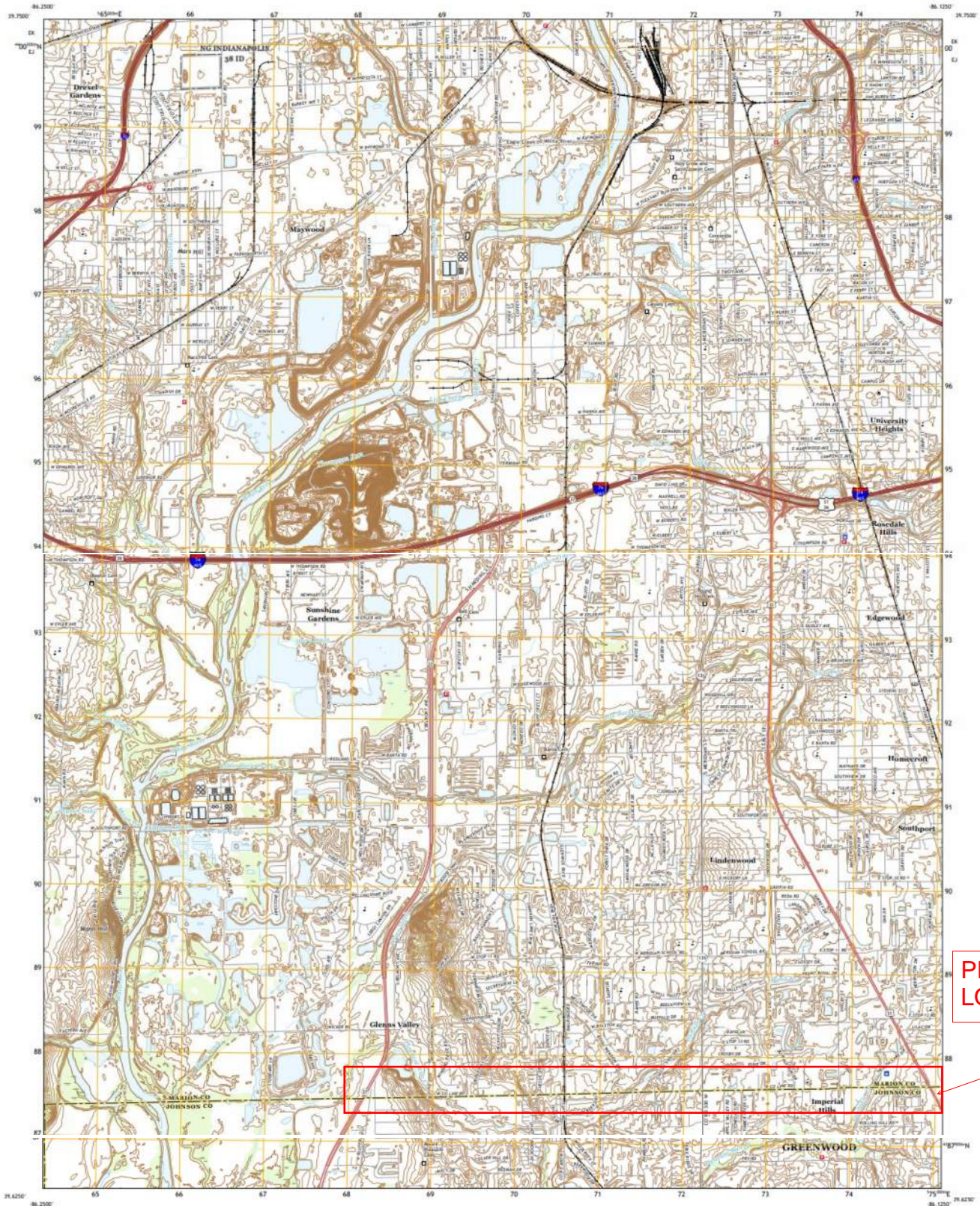
South County Line Road in Indianapolis/Greenwood, Marion/Johnson counties

DPW Project No. ST-45-067





Section G-2: TOPO



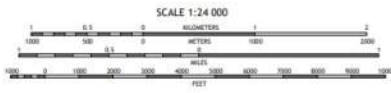
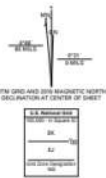
PROJECT
LOCATION

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid Universal Transverse Mercator, Zone 18S

This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
jurisdiction may not be shown. Obtain permission before
entering private lands.

Imagery: USGS, September 2014 - October 2014
Base: U.S. Census Bureau, 2014
Hydrography: National Hydrography Dataset, 1979 - 2019
Contours: National Elevation Dataset, 2010 - 2019
Boundaries: Multiple sources, see metadata file, 2017 - 2019
Place: Local Survey, 1950s - 2019
Metadata: FWS, National Wetlands Inventory, 1982



1	2	3	4
5	6	7	8
9	0	1	2

481099N (QUADRANGLE)

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Route	AWD
Interstate Route	US Route
	State Route

CONTOUR INTERVAL: 5 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced in conformance with the
National Geospatial Program of State Product Standards, 2011.
A metadata file associated with this product is available under U.S. 18

MAYWOOD, IN
2019

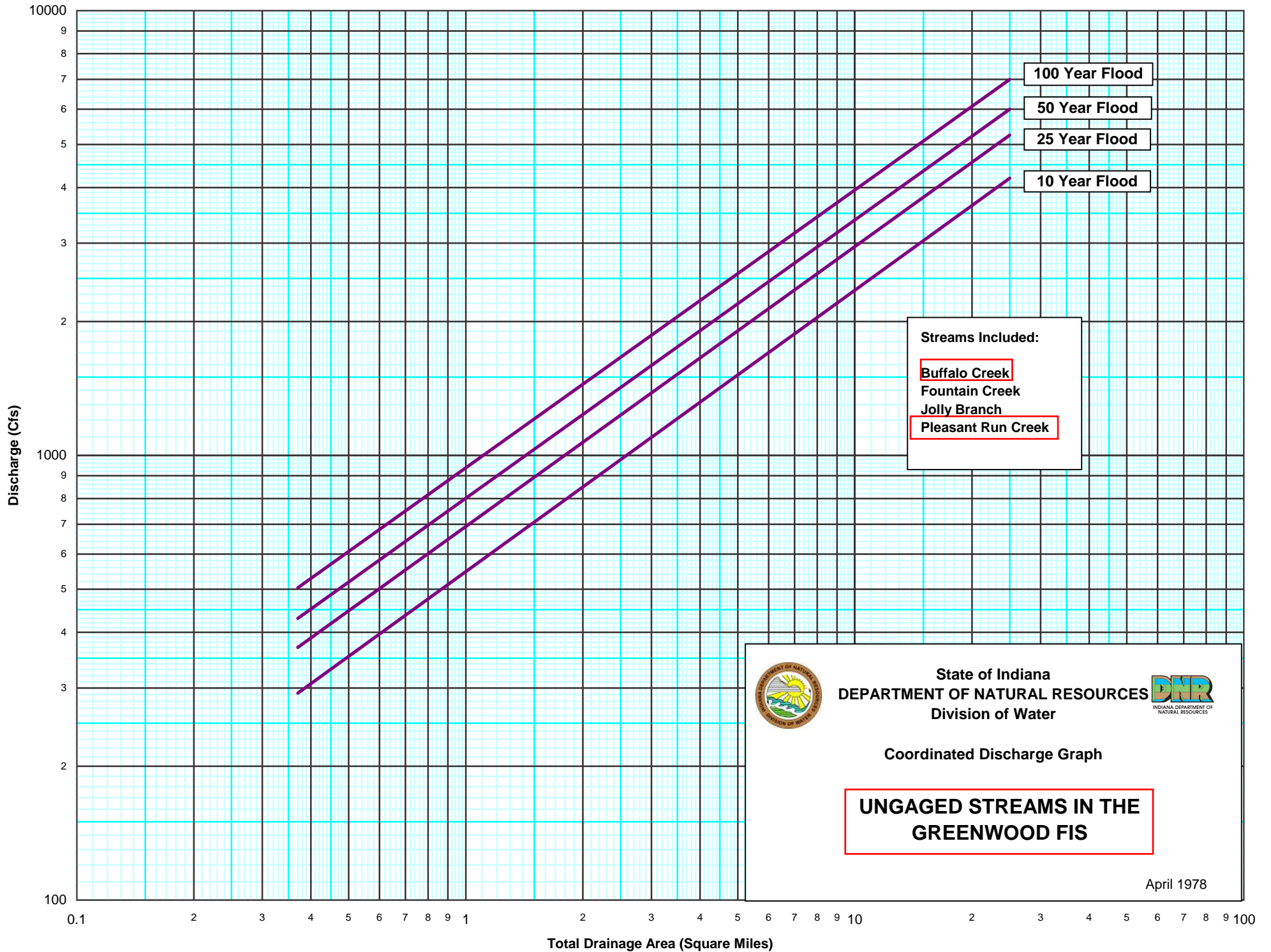






Section G-3: State Map



Section G-4: Ungaged Streams




State of Indiana
DEPARTMENT OF NATURAL RESOURCES 
 Division of Water

Coordinated Discharge Graph

UNGAGED STREAMS IN THE GREENWOOD FIS

April 1978



Section G-5: Buffalo Creek Stream Stats

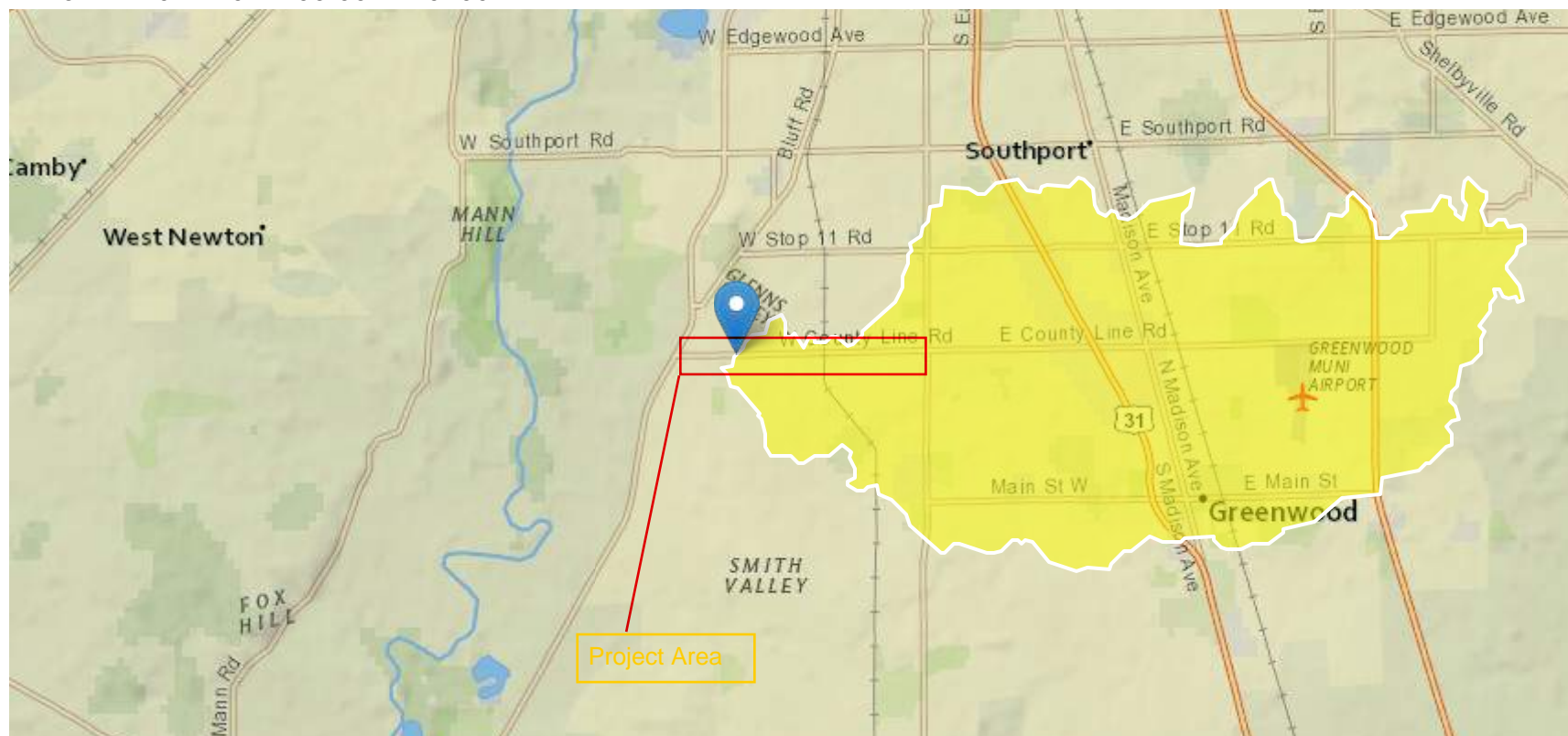
StreamStats Report - Buffalo Creek

Region ID: IN

Workspace ID: IN20191021125502686000

Clicked Point (Latitude, Longitude): 39.63443, -86.19418

Time: 2019-10-21 08:55:19 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	20.548	square miles
BFREGNO	BFREGNO	1566	dimensionless
K1INDNR	Average hydraulic conductivity (ft/d) for the top 70 ft of unconsolidated deposits from InDNR well database.	16	ft per day
BSLDEM10M	Mean basin slope computed from 10 m DEM	2.02	percent
QSSPERMTHK	Index of the permeability of surficial Quaternary sediments computed as in SIR 2014-5177	1373.67	dimensionless
T2INDNR	Average transmissivity (ft ² /d) for the full depth of unconsolidated deposits from InDNR well database.	1740	square feet per day
LOWREG	Low Flow Region Number	1729	dimensionless
K2INDNR	Average hydraulic conductivity (ft/d) for the full depth of unconsolidated deposits from InDNR well database.	19	ft per day
LC01FOREST	Percentage of forest from NLCD 2001 classes 41-43	2.8	percent
ST2INDNR	Average transmissivity (ft ² /d) for the full depth of unconsolidated deposits within 1000 ft of stream channel from InDNR well database.	1816	square feet per day
LAT_OUT	Latitude of Basin Outlet	39.634439	degrees

Bankfull Statistics Parameters[Bankfull Central Till Plain Region 2013 5078]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles	0.04	812

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BFREGNO	BFREGNO	1566	dimensionless		

Bankfull Statistics Flow Report^[Bankfull Central Till Plain Region 2013 5078]

Statistic	Value	Unit
Bankfull Width	48.9	ft
Bankfull Depth	2.59	ft
Bankfull Area	126	ft ²

Bankfull Statistics Citations

Robinson, B.A., 2013, Regional bankfull-channel dimensions of non-urban wadeable streams in Indiana: U.S. Geological Survey, Scientific Investigations Report 2013–5078, 33 p. (<http://pubs.usgs.gov/sir/2013/5078/>)

Low-Flow Statistics Parameters^[Statewide Lowflow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles	6.33	856
K1INDNR	Avg_Hydraulic_Conductivity_Upper_70ft	16	ft per day	5.78	76.9
BSLDEM10M	Mean Basin Slope from 10m DEM	2.02	percent	0.916	7.8
QSSPERMTHK	Permeability_Index	1373.67	dimensionless	0	30000

Low-Flow Statistics Parameters^[Statewide 30day Lowflow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles	6.33	856
K1INDNR	Avg_Hydraulic_Conductivity_Upper_70ft	16	ft per day	5.78	76.9
BSLDEM10M	Mean Basin Slope from 10m DEM	2.02	percent	0.916	7.8
QSSPERMTHK	Permeability_Index	1373.67	dimensionless	0	30000

Low-Flow Statistics Flow Report^[Statewide Lowflow 2016 5102]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SEp
1 Day 10 Year Low Flow	0.275	ft ³ /s	0.111	0.683	58.8
7 Day 10 Year Low Flow	0.379	ft ³ /s	0.159	0.902	55.7

Low-Flow Statistics Flow Report^[Statewide 30day Lowflow 2016 5102]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SEp
30 Day 10 Year Low Flow	0.603	ft ³ /s	0.236	1.54	61.5

Low-Flow Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D., 2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

General Flow Statistics Parameters^[Harmonic Mean Central Region 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles	2.99	828
K2INDNR	Avg_Hydraulic_Conductivity_Full_Depth	19	ft per day	6.36	45.9
QSSPERMTHK	Permeability_Index	1373.67	dimensionless	43.8	5400
LOWREG	Low Flow Region Number	1729	dimensionless		

General Flow Statistics Flow Report^[Harmonic Mean Central Region 2016 5102]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SEp
Harmonic Mean Streamflow	3.65	ft ³ /s	1.97	6.74	39.3

General Flow Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D., 2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for unengaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

Probability Statistics Parameters^[Prob Zero Flow Statewide Low Flow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles	2.99	856
ST2INDNR	Avg_Transmissivity_Near_Channel	1816	square feet per day	409	7650
LAT_OUT	Latitude of Basin Outlet	39.634439	degrees	38.1	41.8

Probability Statistics Flow Report[Prob Zero Flow Statewide Low Flow 2016 5102]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PC
Probability zero flow 1 day 10 year	0.563	dim	88.9
Probability zero flow 7 day 10 year	0.564	dim	88.9
Probability zero flow 30 day 10 year	0.348	dim	86.1

Probability Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D.,2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

Peak-Flow Statistics Parameters[Coordinated Reach: UNGAGED STREAMS IN THE GREENWOOD FIS]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	20.548	square miles		
PK10CoeffA	PK10 CoefficientA	547.806	dimensionless		
PK10CoeffB	PK10 CoefficientB	0.633	dimensionless		
PK25CoeffA	PK25 CoefficientA	691.912	dimensionless		
PK25CoeffB	PK25 CoefficientB	0.630	dimensionless		
PK50CoeffA	PK50 CoefficientA	800.942	dimensionless		
PK50CoeffB	PK50 CoefficientB	0.626	dimensionless		
PK100CoeffA	PK100 CoefficientA	937.751	dimensionless		

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
PK100CoeffB	PK100 CoefficientB	0.624	dimensionless		
Peak-Flow Statistics Flow Report[Coordinated Reach: UNGAGED STREAMS IN THE GREENWOOD FIS]					
Statistic			Value		Unit
10 year Peak Flood			3710		ft^3/s
25 year Peak Flood			4640		ft^3/s
50 year Peak Flood			5310		ft^3/s
100 year Peak Flood			6190		ft^3/s
<i>Peak-Flow Statistics Citations</i>					
Indiana DNR,Coordinated Discharges of Selected Streams in Indiana. (http://www.in.gov/dnr/water/4898.htm)					

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.3.8



Section G-6: Pleasant Run Creek Stream Stats

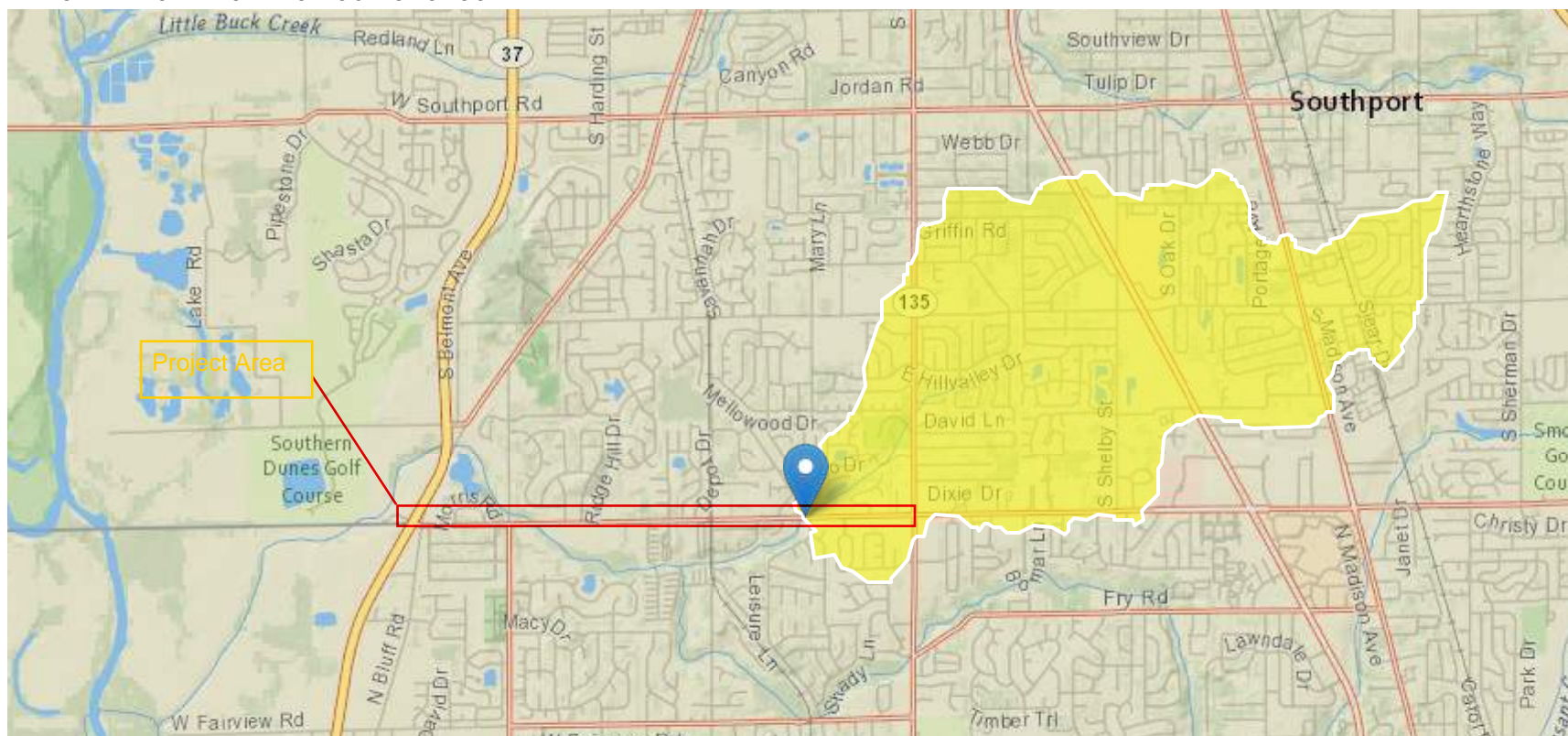
StreamStats Report - Pleasant Run Creek

Region ID: IN

Workspace ID: IN20191021130624055000

Clicked Point (Latitude, Longitude): 39.63486, -86.16874

Time: 2019-10-21 09:06:40 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.775	square miles
BFREGNO	BFREGNO	1566	dimensionless
K1INDNR	Average hydraulic conductivity (ft/d) for the top 70 ft of unconsolidated deposits from InDNR well database.	18	ft per day
BSLDEM10M	Mean basin slope computed from 10 m DEM	1.62	percent
QSSPERMTHK	Index of the permeability of surficial Quaternary sediments computed as in SIR 2014-5177	157.59	dimensionless
T2INDNR	Average transmissivity (ft ² /d) for the full depth of unconsolidated deposits from InDNR well database.	1654	square feet per day
LOWREG	Low Flow Region Number	1729	dimensionless
K2INDNR	Average hydraulic conductivity (ft/d) for the full depth of unconsolidated deposits from InDNR well database.	18	ft per day
LC01FOREST	Percentage of forest from NLCD 2001 classes 41-43	0	percent
ST2INDNR	Average transmissivity (ft ² /d) for the full depth of unconsolidated deposits within 1000 ft of stream channel from InDNR well database.	1660	square feet per day
LAT_OUT	Latitude of Basin Outlet	39.63489	degrees
URBAN	Percentage of basin with urban development		percent
WETLAND	Percentage of Wetlands		percent

Bankfull Statistics Parameters[Bankfull Central Till Plain Region 2013 5078]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles	0.04	812
BFREGNO	BFREGNO	1566	dimensionless		

Bankfull Statistics Flow Report[Bankfull Central Till Plain Region 2013 5078]

Statistic	Value	Unit
Bankfull Width	28.1	ft
Bankfull Depth	1.98	ft
Bankfull Area	55	ft ²

Bankfull Statistics Citations

Robinson, B.A.,2013, Regional bankfull-channel dimensions of non-urban wadeable streams in Indiana: U.S. Geological Survey, Scientific Investigations Report 2013–5078, 33 p. (<http://pubs.usgs.gov/sir/2013/5078/>)

Low-Flow Statistics Parameters[Statewide Lowflow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles	6.33	856
K1INDNR	Avg_Hydraulic_Conductivity_Upper_70ft	18	ft per day	5.78	76.9
BSLDEM10M	Mean Basin Slope from 10m DEM	1.62	percent	0.916	7.8
QSSPERMTHK	Permeability_Index	157.59	dimensionless	0	30000

Low-Flow Statistics Parameters^[Statewide 30day Lowflow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles	6.33	856
K1INDNR	Avg_Hydraulic_Conductivity_Upper_70ft	18	ft per day	5.78	76.9
BSLDEM10M	Mean Basin Slope from 10m DEM	1.62	percent	0.916	7.8
QSSPERMTHK	Permeability_Index	157.59	dimensionless	0	30000

Low-Flow Statistics Disclaimers^[Statewide Lowflow 2016 5102]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report^[Statewide Lowflow 2016 5102]

Statistic	Value	Unit
1 Day 10 Year Low Flow	0.0272	ft ³ /s
7 Day 10 Year Low Flow	0.0407	ft ³ /s

Low-Flow Statistics Disclaimers^[Statewide 30day Lowflow 2016 5102]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report^[Statewide 30day Lowflow 2016 5102]

Statistic	Value	Unit
30 Day 10 Year Low Flow	0.0667	ft ³ /s

Low-Flow Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D.,2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

General Flow Statistics Parameters^[Harmonic Mean Central Region 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles	2.99	828
K2INDNR	Avg_Hydraulic_Conductivity_Full_Depth	18	ft per day	6.36	45.9
QSSPERMTHK	Permeability_Index	157.59	dimensionless	43.8	5400
LOWREG	Low Flow Region Number	1729	dimensionless		

General Flow Statistics Flow Report^[Harmonic Mean Central Region 2016 5102]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SEp
Harmonic Mean Streamflow	0.336	ft ³ /s	0.179	0.633	39.3

General Flow Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D.,2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

Probability Statistics Parameters[Prob Zero Flow Statewide Low Flow 2016 5102]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles	2.99	856
ST2INDNR	Avg_Transmissivity_Near_Channel	1660	square feet per day	409	7650
LAT_OUT	Latitude of Basin Outlet	39.63489	degrees	38.1	41.8

Probability Statistics Flow Report[Prob Zero Flow Statewide Low Flow 2016 5102]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PC
Probability zero flow 1 day 10 year	0.956	dim	88.9
Probability zero flow 7 day 10 year	0.957	dim	88.9
Probability zero flow 30 day 10 year	0.834	dim	86.1

Probability Statistics Citations

Martin, G.R., Fowler, K.K., and Arihood, L.D.,2016, Estimating selected low-flow frequency statistics and harmonic-mean flows for ungaged, unregulated streams in Indiana (ver 1.1, October 2016): U.S. Geological Survey Scientific Investigations Report 2016–5102, 45 p. (<http://dx.doi.org/10.3133/sir20165102>)

Peak-Flow Statistics Parameters[Coordinated Reach: UNGAGED STREAMS IN THE GREENWOOD FIS]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.775	square miles		
PK10CoeffA	PK10 CoefficientA	547.806	dimensionless		

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
PK10CoeffB	PK10 CoefficientB	0.633	dimensionless		
PK25CoeffA	PK25 CoefficientA	691.912	dimensionless		
PK25CoeffB	PK25 CoefficientB	0.630	dimensionless		
PK50CoeffA	PK50 CoefficientA	800.942	dimensionless		
PK50CoeffB	PK50 CoefficientB	0.626	dimensionless		
PK100CoeffA	PK100 CoefficientA	937.751	dimensionless		
PK100CoeffB	PK100 CoefficientB	0.624	dimensionless		

Peak-Flow Statistics Flow Report[Coordinated Reach: UNGAGED STREAMS IN THE GREENWOOD FIS]

Statistic	Value	Unit
10 year Peak Flood	1270	ft ³ /s
25 year Peak Flood	1600	ft ³ /s
50 year Peak Flood	1840	ft ³ /s
100 year Peak Flood	2150	ft ³ /s

Peak-Flow Statistics Citations

Indiana DNR, Coordinated Discharges of Selected Streams in Indiana. (<http://www.in.gov/dnr/water/4898.htm>)

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Application Version: 4.3.8

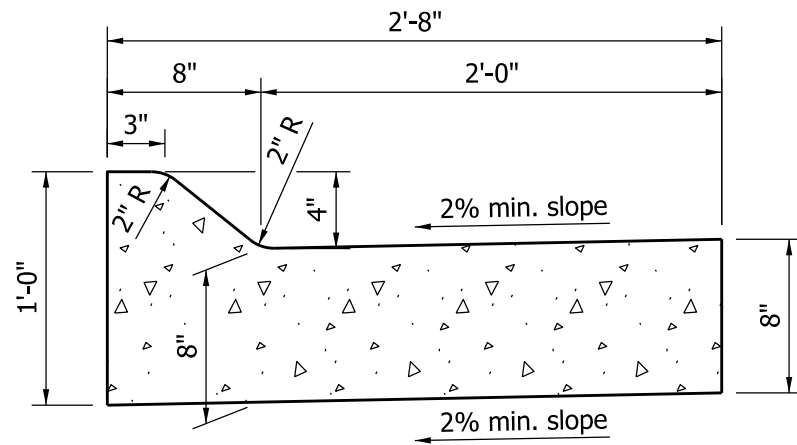


Section G-7: Curb and Gutter Drawing

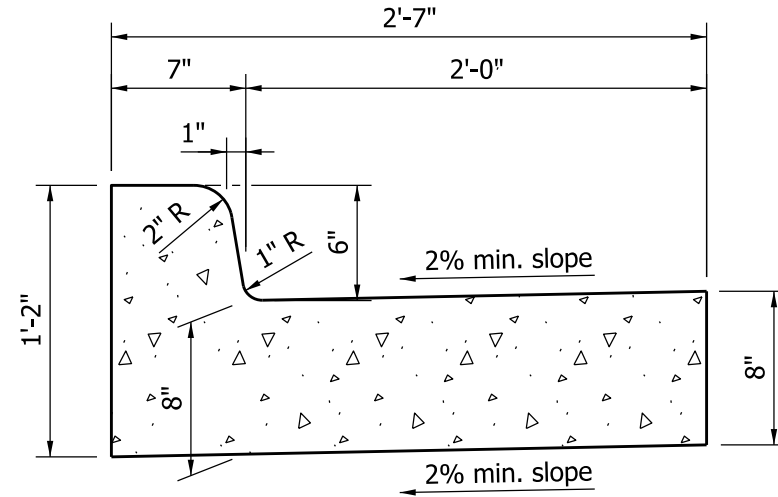
Scoping Report

DPW Project No. ST-45-067

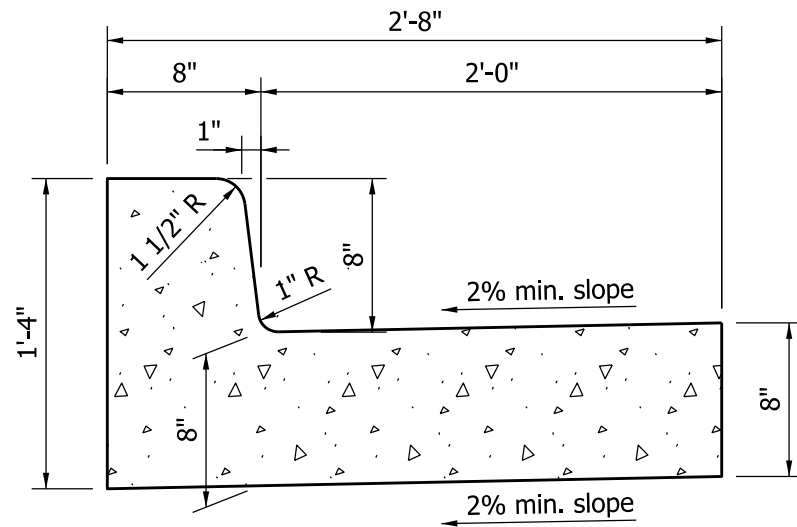
South County Line Road, Indianapolis and Greenwood, Marion and Johnson Counties



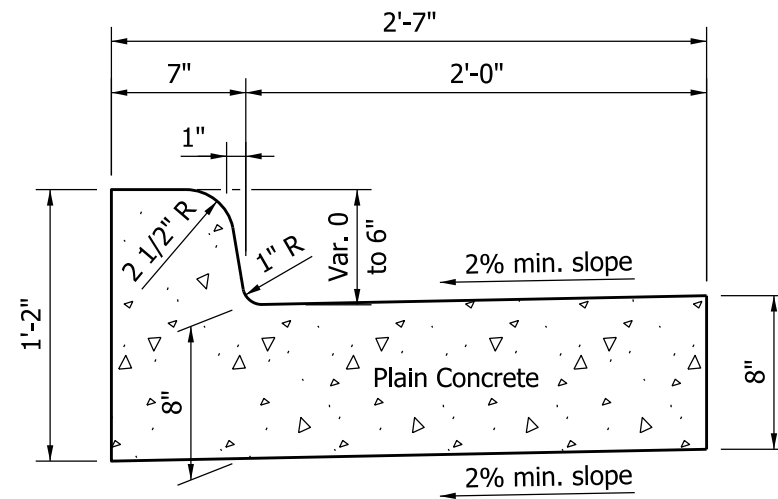
**COMBINED CONCRETE CURB
AND GUTTER, TYPE B
(SLOPING)**




**COMBINED CONCRETE CURB
AND GUTTER
(VERTICAL)**



**COMBINED CONCRETE CURB
AND GUTTER, TYPE C
(VERTICAL)**



**MONOLITHIC CURB
(VERTICAL)**

INDIANA DEPARTMENT OF TRANSPORTATION									
COMBINED CONCRETE CURB AND GUTTER									
SEPTEMBER 2011									
STANDARD DRAWING NO.	E 605-CCCG-01								
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; border-bottom: 1px solid black;"><i>/s/ Richard L. VanCleave</i></td> <td style="width: 20%; border-bottom: 1px solid black; text-align: right;">09/01/11</td> </tr> <tr> <td style="font-size: small;">DESIGN STANDARDS ENGINEER</td> <td style="text-align: right; font-size: small;">DATE</td> </tr> <tr> <td style="border-bottom: 1px solid black;"><i>/s/ Mark A. Miller</i></td> <td style="border-bottom: 1px solid black; text-align: right;">09/01/11</td> </tr> <tr> <td style="font-size: small;">CHIEF HIGHWAY ENGINEER</td> <td style="text-align: right; font-size: small;">DATE</td> </tr> </table>	<i>/s/ Richard L. VanCleave</i>	09/01/11	DESIGN STANDARDS ENGINEER	DATE	<i>/s/ Mark A. Miller</i>	09/01/11	CHIEF HIGHWAY ENGINEER	DATE
<i>/s/ Richard L. VanCleave</i>	09/01/11								
DESIGN STANDARDS ENGINEER	DATE								
<i>/s/ Mark A. Miller</i>	09/01/11								
CHIEF HIGHWAY ENGINEER	DATE								
DESIGN STANDARDS ENGINEER									



Section G-8: Design Values

Design Element		Manual Section	Design Value (By Type of Area)				
			Suburban	Intermediate	Built-up		
Design Controls	Design Forecast Period		40-2.02	20 Years	20 Years	20 Years	
	*Design Speed, mph (1)		40-3.0	Curbed: 35-55 Uncurbed: 40-55	Curbed: 35-55 Uncurbed: 40-50	Curbed: 30 - 35	
	Access Control		40-5.0	Partial Control / None	None	None	
	Level of Service		40-2.0	Des: B; Min: C	Des: C; Min: D	Des: C; Min: C	
	On-Street Parking		45-1.04	None	Optional (2)	Optional (2)	
Cross-Section Elements	Travel Lane	*Width (3)	45-1.01	Curbed: 12 ft Uncurbed: 12 ft	Curbed: Des.: 12 ft; Min.: 11 ft Uncurbed: 12 ft	Curbed: Des.: 12 ft; Min.: 11 ft	
		Typical Surface Type (4)	Ch. 304	Asphalt / Concrete	Asphalt / Concrete	Asphalt / Concrete	
	*Curb Offset (5)		45-1.02	2 ft	2 ft	2 ft	
	Shoulder	*Paved Width (6)	45-1.02	Curbed Des: 10 ft; Min. 2 ft Uncurbed: 10 ft	Curbed: Des: 8 ft; Min: 2 ft Uncurbed: 8 ft;	6 ft	
		Typical Surface Type (4)	Ch. 304	Asphalt / Concrete	Asphalt / Concrete	Asphalt / Concrete	
	Cross Slope	*Travel Lane (7)	45-1.01	2%	2%	2%	
		Shoulder (7A)	45-1.02	4%	4%	4%	
	Auxiliary Lane	Lane Width	45-1.03	Des: 12 ft; Min: 11 ft	Des: 12 ft; Min: 11 ft	Des: 11 ft; Min: 10 ft	
		Curb Offset (8)		1 ft	1 ft	1 ft	
		Shoulder Width	Des: 10 ft; Min: 2 ft	Des: 8 ft; Min: 2 ft	Des: 6 ft; Min: 2 ft		
		Typical Surface Type (4)	Chp. 402	Asphalt / Concrete	Asphalt / Concrete	Asphalt / Concrete	
	TWLTL Width		46-5.0	Des: 16 ft; Min. 14 ft	Des: 16 ft; Min: 14 ft	Des: 14 ft; Min: 12 ft	
	Parking-Lane Width		45-1.04	N/A	Des: 12 ft; Min: 10 ft (9)	Des: 12 ft; Min: 10 ft (9)	
	Sidewalk Width (10)		45-1.06	5 ft with 5-ft Buffer (Des)	5 ft with 5-ft Buffer (Des)	Varies; 6 ft Min	
	Bicycle-Lane Width (11)		51.7.0	Curbed: 5 ft Uncurbed: Shld. Width +4 ft	Curbed: 5 ft Uncurbed: Shoulder Width +4 ft	Curbed: 5 ft	
	Clear-Zone Width		49-2.0	(12)	(12)	(12)	
	Typical Curbing Type, where used (13)		45-1.05	Sloping / Vertical	Sloping / Vertical	Sloping / Vertical	
	Side Slopes, Uncurbed (14)	Cut	Foreslope	45-3.0	6:1 (15)	6:1 (15)	N/A
			Ditch Width		4 ft (16)	4 ft (16)	N/A
			Backslope		4:1 for 20 ft; 3:1 Max. to Top (17)	4:1 for 20 ft; 3:1 Max. to Top (17)	N/A
Fill		6:1 to Clear Zone; 3:1 Max. to Toe	6:1 to Clear Zone; 3:1 Max. to Toe		N/A		
Side Slopes, Curbed	Cut, Backslope		45-3.0	(18)	(18)	(18)	
	Fill			12:1 for 12 ft; 3:1 Max. to Toe	12:1 for 12 ft; 3:1 Max. to Toe	12:1 for 12 ft; 3:1 Max. to Toe	

Des: Desirable; Min. Minimum.

* Level One controlling criterion, see page 2 of 4

GEOMETRIC DESIGN CRITERIA FOR URBAN ARTERIAL, 2 LANES
(New Construction or Reconstruction)
Figure 53-7 (Page 1 of 4)

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Design Element			Manual Section	Design Value (By Type of Area)				
				Suburban	Intermediate	Built-Up		
Bridges	New or Reconstructed Bridge	*Structural Capacity (19)	Ch. 403	HL-93	HL-93	HL-93		
		*Clear-Roadway Width(20)	45-4.01	Uncurbed: Full Paved Approach Width Curbed: Full Approach Curb-to-Curb Width				
	Existing Bridge to Re-Main in Place	*Structural Capacity	Ch. 72	HS-20	HS-20	HS-20		
		*Clear-Roadway Width	45-4.0	Uncurbed: Travelway Plus 2 ft on Each Side; Curbed: Full Approach Curb-to-Curb Width				
	*Vertical Clearance, Arterial Under (21)	New or Replaced Overpassing Bridge (21a)	44-4.0	16.5 ft	16.5 ft (21b)	16.5 ft (21b)		
		Existing Overpassing Bridge		14 ft	14 ft	14 ft		
		Sign Truss / Pedestrian Bridge (21a)		New: 17.5 ft; Existing: 17 ft	New: 17.5 ft; Existing: 17 ft	New: 17.5 ft; Existing: 17 ft		
Vertical Clearance, Arterial over Railroad (22)		Ch. 402-6.01	23 ft					
Alignment Elements	Design Speed			30 mph	35 mph	45 mph	50 mph	55 mph
	*Stopping Sight Distance		42-1.0	200 ft	250 ft	360 ft	425 ft	495 ft
	Decision Sight Distance	Speed / Path / Direction Change	42-2.0	U: 620 ft SU: 535 ft	U: 720 ft SU: 625 ft	U: 930 ft SU: 800 ft	U: 1030 ft SU: 890 ft	U: 1135 ft SU: 980 ft
		Stop Maneuver		490 ft	590 ft	800 ft	910 ft	1030 ft
	Intersection Sight Distance, -3% to +3% (27)		46-10.0	P: 330 ft SUT: 420 ft	P: 390 ft SUT: 490 ft	P: 500 ft SUT: 630 ft	P: 630 ft SUT: 780 ft	P: 730 ft SUT: 890 ft
	*Minimum Radius for $e_{max} = 4\% / 6\%$		43-2.0	260 ft / 240 ft (23 a)	420 ft / 390 ft (23a)	600 ft / 550 ft (23a)	750 ft (23b)	1000 ft (23b)
	*Superelevation Rate (24)		43-3.0	Up to $e_{max}=6\%$			$e_{max}=8\%$	
	*Horizontal Sight Distance		43-4.0	(25)				
	*Vertical Curvature, K-value	Crest	44-3.0	19	29	61	84	114
		Sag		37	49	79	96	115
	*Maximum Grade (26)	Level	44-1.02	8%	7%	6.5%	6%	5.5%
Rolling		9%		8%	7.5%	7%	6.5%	
Minimum Grade		44-1.03	Desirable: 0.5% Minimum: 0.3% (Curbed) 0.0% (Uncurbed)					

U: Urban; SU: Suburban.

* Level One controlling criterion. Except as noted in this chapter, the values shown in AASHTO's *A Policy on Geometric Design of Highways and Streets* (the *Green Book*) may be used as minimum values if they are lower than similar values shown herein. A controlling criterion that does not meet the minimum value is a design exception and is subject to approval. See Section 40-8.0.

These criteria apply to a route on or off the National Highway System, regardless of funding source.

**GEOMETRIC DESIGN CRITERIA FOR URBAN ARTERIAL, 2 LANES
(New Construction or Reconstruction)
Figure 53-7 (Page 2 of 4)**

[Back](#)

- (1) Design Speed. The minimum design speed should equal the minimum value, the anticipated posted speed limit after construction or the legal speed limit on a non-posted highway. The legal speed limit in an urban district is 30 mph. Based upon an engineering study, the design speed may be raised to an absolute maximum of 55 mph.
- (2) On-Street Parking. In general, on-street parking is discouraged.
- (3) Travel-Lane Width. For an arterial on the National Truck Network, lane widths must be 12 ft.
- (4) Surface Type. The pavement-type selection will be determined by the INDOT Office of Pavement Engineering.
- (5) Curb Offset. The curb offset should be 2 ft. Vertical curbs introduced intermittently should be offset 2 ft. A continuous curb used along a median or channelizing island may be offset 1 ft.
- (6) Shoulder Width. The value applies to the paved-shoulder width. The following will also apply.
 - a. For an uncurbed section, the shoulder is paved to the front face of guardrail. The desirable guardrail offset is 2 ft from the usable shoulder width. See Section 49-4.0 for more information.
 - b. For an uncurbed section, a desirable additional 1 ft of compacted aggregate will be provided.
 - c. For a curbed section, the curb offset is included in the paved shoulder width.
- (7) Cross Slope, Travel Lane. Cross slopes of 1.5% are acceptable on an existing bridge to remain in place.
- (7A) Cross Slope, Shoulder. See Figure 45-1A(1) or Figure 45-1A(2) for more-specific information.
- (8) Curb Offset for Auxiliary Lane. In a curbed section, the offset may be zero.
- (9) Parking Lane. Where the parking lane will be used as a travel lane during peak hours or may be converted to a travel lane in the future, the width should be equal to the travel lane width plus a 1 ft offset to the curb (if present). The cross slope for a parking lane is typically 1% steeper than that of the adjacent travel lane.
- (10) Sidewalk Width. A buffer of less than 2 ft wide is not permitted. If no buffer is provided, the sidewalk width should be 6 ft.
- (11) Bicycle-Lane Width. The value is in addition to the width of a parking lane, if present. See Section 51-7.0 for additional details.
- (12) Clear-Zone Width. The following will apply.
 - a. Facility with Vertical Curbs. The clear-zone width will be measured from the edge of travel lane or will be to the right-of-way line, whichever is less. No clear zone is required where there is 24-h parking.
 - b. Facility with Sloping Curbs or without Curbs. The clear-zone width will vary according to design speed, traffic volume, side slopes, and horizontal curvature.
 - c. Curbed Facility. There should be an appurtenance-free area as measured from the gutter line of a curb.
 - d. Value. See Section 49-2.0 for specific clear-zone-width value.
- (13) Curbing Type. Vertical curbs may only be used with design speed 45 mph or lower.

GEOMETRIC DESIGN CRITERIA FOR URBAN ARTERIAL, 2 LANES
(New Construction or Reconstruction)
Figure 53-7 (Page 3 of 4)

- (14) Side Slope, Uncurbed. Value is for new construction. See Section 45-3.0 for more information. For a reconstruction project, see Section 49-3.0.
- (15) Foreslope. See Sections 49-2.0 and 49-3.0 for the lateral extent of the foreslope in a ditch section.
- (16) Ditch Width. A V-ditch should be used in a rock cut.
- (17) Backslope. The backslope for a rock cut will vary according to the height of the cut and the geotechnical requirements. See Sections 45-3.02 and 107-6.02 for typical rock-cut sections.
- (18) Side Slope, Curbed, Cut. A shelf or sidewalk will be present immediately behind the curb before the toe of the backslope. The minimum width of a shelf will be 6 ft. Where a sidewalk is present, the toe of the backslope will be 2 ft beyond the edge of sidewalk. See Section 45-3.0 for more information.
- (19) Structural Capacity, New or Reconstructed Bridge. The following will apply.
 - a. A State-highway bridge within 15 mi of a Toll-Road gate must be designed for Toll-Road loading.
 - b. A bridge on an Extra-Heavy-Duty Highway must be designed for the Michigan Train truck loading configuration.
- (20) Width, New or Reconstructed Bridge. See Section 402-6.02(01) for more information. The bridge clear-roadway width is the algebraic sum of the following:
 - a. the approach traveled-way width;
 - b. the approach usable shoulder width without guardrail; and
- (21) Vertical Clearance, Arterial Under Railroad. The following will apply.
 - a. Value includes an additional 6 in. allowance for future pavement overlays.
 - b. In a highly urbanized area, a minimum clearance of 14 ft may be provided if there is at least one route with a 16-ft clearance.
 - c. Vertical clearance applies from usable edge to usable edge of shoulder.
- (22) Vertical Clearance, Arterial Over Railroad. See Chapter 402-6.01(03) for additional information on railroad clearance under a highway.
- (23) Minimum Radius. The following will apply:
 - a. Based on $e_{\max} = 4\%$ or 6% and low-speed urban street conditions.
 - b. Based on $e_{\max} = 8\%$ and open-road conditions.
- (24) Superelevation Rate. See Section 43-3.0 for value of superelevation rate based on design speed and radius. See Section 43-3.0 and the INDOT *Standard Drawings* for information on superelevation requirements.
- (25) Horizontal Sight Distance. For a given design speed, the necessary middle ordinate will be determined by the radius and the sight distance which applies at the site. Sometimes the stopping-sight-distance value for a truck will apply. See the discussion in Section 43-4.0.
- (26) Where adjacent sidewalks are present, the maximum desirable grade is 5%.
- (27) Intersection Sight Distance. For a left turn onto a 2-lane roadway: P = Passenger car; SUT = single unit truck. See Figure 46-10G for value for a combination truck.



Section G-9: Soils

Search

Soil Map

2039.63361,-86.20693%2039.63361)&location=(-86.20982%2039.64783,-86.15442%2039.62149)&marker=(-86.13985%2039.63535)

Map Unit Legend

Legend Scale

Close

YmSC2	Miami silt loam-Urban land complex, 6 to 12 percent slopes, eroded	3.2	1.0%
YoxA	Ockley silt loam-Urban land complex, 0 to 2 percent slopes	8.7	4.3%
YrcA	Rensselaer clay loam-Urban land complex, 0 to 2 percent slopes	13.7	6.8%
YwtA	Whitaker-Urban land complex, 0 to 2 percent slopes	3.5	1.8%
Subtotals for Soil Survey Area		99.5	49.1%
Totals for Area of Interest		202.7	100.0%





Section G-10: K Value for Vertical Curve Tables

DESIGN SPEED (mph)	ROUNDED SSD FOR DESIGN ¹ (ft)		CALCULATED K VALUE ²		K VALUE ROUNDED FOR DESIGN	
	Des.	Min.	Des.	Min.	Des.	Min.
15	115	80	6.1	3.0	7	3
20	155	115	11.1	6.1	12	7
25	200	155	18.5	11.1	19	12
30	250	200	29.0	18.5	29	19
35	305	250	43.1	29.0	44	29
40	360	305	60.1	43.1	61	44
45	425	360	83.7	60.1	84	61
50	495	425	113.5	83.7	114	84
55	570	495	150.6	113.5	151	114
60	645	570	192.8	150.6	193	151
65	730	645	246.9	192.8	247	193
70	820	730	312.6	246.9	312	247

Notes:

- ¹ Stopping sight distance (SSD) is from Figure 42-1A.
- ² The K value is calculated using the rounded value for design stopping sight distance, eye height of 3.5 ft, and object height of 2 ft.
3. If curbs are present, and $K > 167$, proper pavement drainage should be ensured near the high point of the curve.

**K VALUE FOR CREST VERTICAL CURVE
(Stopping Sight Distance – Passenger Car)**

Figure 44-3A

DESIGN SPEED (mph)	ROUNDED SSD FOR DESIGN ¹ (ft)	CALCULATED K VALUE ² $K = \frac{S^2}{(400 + 3.5S)}$	K VALUE ROUNDED FOR DESIGN
20	115	16.5	17
25	155	25.5	26
30	200	36.4	37
35	250	49.0	49
40	305	63.4	64
45	360	78.1	79
50	425	95.7	96
55	495	114.9	115
60	570	135.7	136
65	645	156.5	157
70	730	180.3	181

Notes:

1. Stopping sight distance (SSD) is from Figure 42-1A.
2. The K value is calculated using the rounded value for design stopping sight distance S and a headlight height of 2 ft.
3. If curbs are present and $K > 167$, proper drainage should be ensured near the low point of the curve.

**K VALUE FOR SAG VERTICAL CURVE
(Stopping Sight Distance – Passenger Car)**

Figure 44-3C



Appendix H: Cost Estimate



Section H-1: Phase I Cost Estimate

Calculations For Scoping Report			
Made by	ONZ	Date	10/20/2019
Checked by	AB	Date	11/20/2019
Backchecked by	CJS	Date	11/20/2019



Title: South County Line Road - Phase I (SR 37 to Morgantown Road)

Pay Item No.	Item	Unit	Quantity	Unit Cost	Year - 2019	Year - 2025
					Total Cost	(FY 2025) Compounded Interest (3%)
105-06845	Construction Engineering	LS	1	\$131,600.00	\$131,600.00	\$157,100.00
110-01001	Mobilization and Demobilization	LS	1	\$329,000.00	\$329,000.00	\$392,800.00
201-52370	Clearing Right of Way	LS	1	\$131,600.00	\$131,600.00	\$157,100.00
202-02279	Curb and Gutter, Remove	LFT	5,133	\$8.68	\$44,554.44	\$53,200.00
203-02000	Common Excavation	CYS	168,184	\$11.44	\$1,924,021.18	\$2,297,400.00
205-12111	SWQCP Preparation and Implementation, Level 2	LS	1	\$62,309.00	\$62,309.00	\$74,400.00
207-09935	Subgrade Treatment, Type 1C	SYS	14,979	\$16.98	\$254,343.42	\$303,700.00
211-09264	Structure Backfill, Type 2	CYS	1,430	\$20.57	\$29,415.10	\$35,100.00
303-01180	Compacted Aggregate No. 53	TON	6,912	\$48.23	\$333,365.76	\$398,100.00
401-07322	QC/QA-HMA, 3, 64, Surface, 9.5 mm	TON	1,612	\$110.00	\$177,320.00	\$211,700.00
401-07390	QC/QA-HMA, 2, 64, Intermediate, 19.0 mm	TON	3,158	\$80.00	\$252,640.00	\$301,700.00
401-07423	QC/QA-HMA, 2, 64, Base, 19.0 mm	TON	5,829	\$70.00	\$408,030.00	\$487,200.00
406-05520	Asphalt for Tack Coat	TON	4	\$450.00	\$1,800.00	\$2,100.00
604-06070	Sidewalk, Concrete	SYS	1,327	\$45.00	\$59,715.00	\$71,300.00
604-08086	Curb Ramps	SYS	978	\$135.00	\$132,030.00	\$157,700.00
605-06140	Curb & Gutter, Concrete	LFT	4,680	\$18.50	\$86,580.00	\$103,400.00
610-08446	PCCP for Approaches, 6in.	SYS	505	\$58.00	\$29,290.00	\$35,000.00
628-09402	Field Office, B	MONTH	12	\$1,714.00	\$20,568.00	\$24,600.00
715-05048	Pipe, Type 4, Circular 6 Inch	LFT	3,936	\$7.00	\$27,552.00	\$32,900.00
718-52610	Aggregate For Underdrains	CYS	341	\$33.10	\$11,287.10	\$13,500.00
718-12305	Geotextile for Underdrains, Type 1A	SYS	3,135	\$2.00	\$6,270.00	\$7,500.00
720-98555	Inlet, C15	EACH	27	\$2,420.00	\$65,340.00	\$78,000.00
715-05024	Pipe, Type 2, Circular, 36 IN	LFT	656	\$75.00	\$49,200.00	\$58,700.00
715-05149	Pipe, Type 2, Circular, 12 IN	LFT	816	\$48.00	\$39,168.00	\$46,800.00
715-05152	Pipe, Type 2, Circular, 18 IN	LFT	656	\$55.00	\$36,080.00	\$43,100.00
715-05154	Pipe, Type 2, Circular, 24 IN	LFT	656	\$65.00	\$42,640.00	\$50,900.00
720-03194	Manhole, J4	EACH	13	\$3,005.00	\$39,065.00	\$46,600.00
801-06775	Maintaining Traffic	LS	1	\$131,600.00	\$131,600.00	\$157,100.00
805-01879	Traffic Signal	Each	1	\$196,075.00	\$196,075.00	\$234,100.00
	Bridge Widening	SQFT	2,000	\$230.00	\$460,000.00	\$549,300.00
807-04653	Light Standard Foundation	EACH	28	\$1,800.00	\$50,400.00	\$60,200.00
807-03738	Light Pole Assembly, Street	EACH	28	\$3,000.00	\$84,000.00	\$100,300.00
807-04866	Luminaire	EACH	28	\$1,500.00	\$42,000.00	\$50,200.00
					Sub-Total	\$6,582,100.00
					Contingency 15%	\$987,300.00
CN					Total Construction Cost	\$7,570,000.00

UT	Utilities	LS	1	\$201,432.00	\$201,432.00	\$240,000.00
CE	Const. Engineering - 12.50% of Construction Cost (CN)					\$950,000.00
PE	Professional Engineering - 10% of Construction Cost (CN)					\$760,000.00
	Total Cost for Land Aquisition (Proposed R/W)	Acre	1.8	\$75,000.00	\$135,000.00	\$160,000.00
	Total Cost for Improvements	Each	7	\$150,000.00	\$1,050,000.00	\$1,250,000.00
	Total Cost for Temp R/W	Acre	1.8	\$7,500.00	\$13,500.00	\$20,000.00
RW	Total R/W Cost				\$1,198,500.00	\$1,430,000.00
	CN+UT+CE+PE+RW				Grand Total Cost for Phase I	\$10,950,000.00

Christopher J. Schultz
 Christopher J. Schultz, P.E.
 Date: 11/20/2019





Section H-2: Phase II Cost Estimate

Calculations For	DPW SCOPING REPORT		
Made by	ONZ	Date	10/8/2019
Checked by	AB	Date	11/20/2019
Backchecked by	CJS	Date	11/20/2019



Title: South County Line Road - Phase II (Morgantown Road to SR 135)

Pay Item No.	Item	Unit	Quantity	Unit Cost	Total Cost	(SPY 2025) Compounded Interest (3%)
105-06845	Construction Engineering	LS	1	\$368,200.00	\$368,200.00	\$439,700.00
110-01001	Mobilization and Demobilization	LS	1	\$920,500.00	\$920,500.00	\$1,099,100.00
201-52370	Clearing Right of Way	LS	1	\$368,200.00	\$368,200.00	\$439,700.00
202-02279	Curb and Gutter, Remove	LFT	19,000	\$8.68	\$164,920.00	\$196,900.00
203-02000	Common Excavation	CYS	19,255	\$11.44	\$220,277.20	\$263,000.00
205-11626	Pump Around	EACH	2	\$8,000.00	\$16,000.00	\$19,100.00
205-12111	SWQCP Preparation and Implementation, Level 2	LS	1	\$114,098.00	\$114,098.00	\$136,200.00
207-09935	Subgrade Treatment, Type IC	SYS	64,996	\$16.98	\$1,103,632.08	\$1,317,800.00
211-09264	Structure Backfill	CYS	7,507	\$20.57	\$154,418.99	\$184,400.00
303-01180	Compacted Aggregate No. 53	TON	21,442	\$48.23	\$1,034,147.66	\$1,234,800.00
401-07322	QC/QA-HMA, 3, 64, Surface, 9.5 mm	TON	6,102	\$110.00	\$671,220.00	\$801,500.00
401-07390	QC/QA-HMA, 2, 64, Intermediate, 19.0 mm	TON	11,887	\$80.00	\$950,960.00	\$1,135,500.00
401-07423	QC/QA-HMA, 2, 64, Base, 19.0 mm	TON	21,449	\$70.00	\$1,501,430.00	\$1,792,800.00
406-05520	Asphalt for Tack Coat	TON	17	\$450.00	\$7,650.00	\$9,100.00
604-06070	Sidewalk, Concrete	SYS	6,334	\$45.00	\$285,030.00	\$340,300.00
604-08086	Curb Ramps	SYS	3,117	\$135.00	\$420,795.00	\$502,500.00
605-06140	Curb & Gutter, Concrete	LFT	19,000	\$18.50	\$351,500.00	\$419,700.00
610-08446	PCCP for Approaches, 6in.	SYS	2,353	\$58.00	\$136,474.00	\$163,000.00
628-09402	Field Office, B	Month	12	\$1,714.00	\$20,568.00	\$24,600.00
715-05048	Pipe, Type 4, Circular 6 Inch	LFT	20,664	\$7.00	\$144,648.00	\$172,700.00
718-52610	Aggregate For Underdrains	CYS	1,787	\$33.10	\$59,149.70	\$70,600.00
718-12305	Geotextile for Underdrains, Type 1A	SYS	16,456	\$2.00	\$32,912.00	\$39,300.00
720-98555	Inlet, C5	EACH	138	\$2,420.00	\$333,960.00	\$398,800.00
715-05024	Pipe, Type 2, Circular, 36 IN	LFT	4,283	\$75.00	\$321,225.00	\$383,600.00
715-05149	Pipe, Type 2, Circular, 12 IN	LFT	3,441	\$48.00	\$165,168.00	\$197,200.00
715-05152	Pipe, Type 2, Circular, 18 IN	LFT	3,441	\$55.00	\$189,255.00	\$226,000.00
715-05154	Pipe, Type 2, Circular, 24 IN	LFT	3,441	\$65.00	\$223,665.00	\$267,100.00
720-03194	Manhole, J4	EACH	69	\$3,005.00	\$207,345.00	\$247,600.00
	Bridge Replacement	SQFT	18,283	\$230.00	\$4,205,199.23	\$5,021,200.00
801-06775	Maintaining Traffic	LS	1	\$368,200.00	\$368,200.00	\$439,700.00
805-01879	Traffic Signal	Each	1	\$195,000.00	\$195,000.00	\$232,800.00
807-04653	Light Standard Foundation	EACH	28	\$1,800.00	\$50,400.00	\$60,200.00
807-03738	Light Pole Assembly, Street	EACH	28	\$3,000.00	\$84,000.00	\$100,300.00
807-04866	Luminaire	EACH	28	\$1,500.00	\$42,000.00	\$50,200.00
					Sub-Total	\$18,427,000.00
					Contingency 15%	\$2,764,050.00
CN					Total Construction Cost	\$21,190,000.00
UT	Utilities & Railroad Crossing Upgrades	LS	1	\$1,507,518.00	\$1,507,518.00	\$1,800,000.00
CE	Const. Engineering - 12.50% of Construction Cost (CN)					\$2,650,000.00
PE	Professional Engineering - 10% of Construction Cost (CN)					\$2,120,000.00
	Total Cost for Land Aquisition (Proposed R/W)	Acre	9.8	\$75,000.00	\$737,063.87	\$880,000.00
	Total Cost for Improvements	Each	9	\$150,000.00	\$1,350,000.00	\$1,610,000.00
	Total Cost for Temp R/W	Acre	1.4	\$7,500.00	\$10,358.99	\$10,000.00
RW	Total R/W Cost				\$2,097,422.86	\$2,500,000.00
	CN+UT+CE+PE+RW				Grand Total Cost for Phase II	\$30,260,000.00

Christopher J. Schultz

Christopher J. Schultz, P.E.
Date: 11/20/2019





Appendix I: Photos From Site

100 W S St
9000 S County Line Rd











SPEED
LIMIT
40

WARNING
DOWNED
CABLE

WARNING
CROSSING
AHEAD
STOPPING
SHORTLY
BEFORE
CROSSING



SPEED LIMIT 40

WARNING





SPEED
LIMIT
30















SPEED
LIMIT
35



County Line Rd

Morgantown Rd







RD



RAILROAD CROSSING

STOP

SPEED LIMIT 40

RAILROAD CROSSING

RAILROAD CROSSING

Sale





REPORT PROBLEM OR EMERGENCY 800-677-5985 1-800-622-2116

Center Grove Est. 317-888-1841

County Line Rd

AHEAD
WEIGHT
LIMIT
16
TONS





Speedway

W/LEADER 2.39
RAILROAD 0.89
PREMIUM 2.99
Pay at the Pump

Self-Care
SELF STORAGE
317-39-0371

40







County Line Rd

STOP







FIBER OPTIC CABLE
800-368-5838
FIBER OPTIC CABLE
THE VICINITY IS CONTROLLED BY THE STATE OF MICHIGAN

NO
NO

3-17-20
KELLY R

OFF SUR



 **SecurCare**
SELF STORAGE
317-889-0371





26
814
A



SAVINGS

COLLIER

COLLIER