Michael Baker
INTERNATIONAL

Appendix L:
Sole Source Aquifer MOU

MEMORANDUM OF UNDERSTANDING

AMONG THE FEDERAL HIGHWAY ADMINISTRATION,

THE U.S. ENVIRONMENTAL PROTECTION AGENCY (REGION 5),

AND THE INDIANA DEPARTMENT OF TRANSPORTATION

REGARDING

SOLE SOURCE AQUIFERS IN THE STATE OF INDIANA

I. INTRODUCTION

The purpose of this memorandum is to develop and document an understanding among the U.S. Environmental Protection Agency (EPA) Region 5, the Federal Highway Administration (FHWA), and the Indiana Department of Transportation (INDOT), collectively referred to as the "PARTIES" and individually referred to as "PARTY," concerning the review of proposed Federal-aid highway projects, in order to protect the EPA-designated Sole Source Aquifer (SSA) located in the State of Indiana, as shown in Attachment A, including any SSAs that EPA may designate in the future. EPA's authority for the SSA Protection Program is authorized under Section 1424(e) of the Safe Drinking Water Act of 1974, 42 U.S.C. § 300h-3(e), (the Act) and states, in part, that "no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer."

All commitments made by EPA in this MOU are subject to the availability of appropriated funds. Nothing in this MOU, in and of itself, obligates EPA to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations that would be inconsistent with Agency budget priorities. FHWA and INDOT agree not to submit a claim for compensation for services rendered to EPA in connection with activities it carries out in furtherance of this MOU. This MOU does not exempt FHWA and INDOT from EPA policies governing competition for assistance agreements. Any transaction involving reimbursement or competition of funds between the parties to this MOU will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

This Memorandum of Understanding (MOU) outlines the criteria used to evaluate proposed federal-aid highway projects within the State of Indiana that may contaminate the SSA and the procedures to be followed by the PARTIES in evaluating and reviewing such projects. This MOU also outlines the categories of proposed projects that do not need to be submitted to EPA for review. To the extent any criteria or procedures in this MOU differ from or are in addition to the ones in the April 1989 Memorandum of Understanding between Federal Highway Administration, Region 5 and the U.S. Environmental Protection Agency, Region V, this MOU shall reflect the current understanding between the Parties regarding federal-aid highway projects within the State of Indiana.

This MOU is a voluntary agreement that expresses the good-faith intentions of the parties, is not intended to be legally binding, and is not enforceable by any party.

This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity,

by persons who are not party to this MOU, or against the PARTIES, their officers or employees, subrecipients, or any other person. This MOU does not apply to any person outside of the PARTIES.

II. APPLICABILITY

This MOU applies to the review of all proposed federal-aid highway projects within all current and future SSA project review areas in the State of Indiana. When an aquifer in the State of Indiana is designated as an SSA, EPA plans to notify FHWA and INDOT, and Attachment A will be updated as necessary.

III. GOAL

The goal of this MOU is to ensure that each project receiving federal-aid highway funding is planned, designed, and constructed to prevent the introduction of contaminants into the SSA in quantities that may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health as defined in Attachment B, and to establish formal coordination procedures for the review of such projects among EPA, FHWA, and INDOT.

IV. GUIDING PRINCIPLES FOR PROJECT REVIEW

For the purposes of this MOU, in determining whether the act of constructing a proposed project would create a significant hazard to public health, the parties agree to consider the following factors, at a minimum:

1. The toxicity and migration/transformation potential of the contaminants involved;
2. The volume of contaminants that may enter the SSA; and
3. Characteristics of the SSA in the area affected by the project (i.e., geochemical, hydrological, geological, etc.), and attenuation capability of the SSA.

Attachment B contains additional definitions for terms used in this MOU.

V. CRITERIA AND PROCEDURES

A. The current procedure for submission and review of projects is as follows:

1. The INDOT agrees to notify all applicants for and subrecipients of FHWA federal-aid highway projects within its oversight authority of the location of designated SSA project review areas and identify applicable permits and recommended Best Management Practices (BMPs) necessary to minimize impact to the SSA. A searchable interactive map of designated SSA project review areas is available at https://www.epa.gov/dwssa.

2. The INDOT agrees to review proposed projects to determine if they require EPA SSA review. INDOT agrees to consider each step in the most current Indiana Department of Transportation Categorical Exclusion Manual (https://www.in.gov/indot/2523.htm).

3. The INDOT (or its designee such as the applicant for FHWA federal-aid highway projects) agrees to submit a brief written narrative to EPA describing the proposed project highlighting any risks that could create a significant hazard to public health. If

there are any risks due to the project that could create a significant hazard to public health, INDOT agrees to identify the proposed mitigation measures in the narrative provided to the EPA SSA Coordinator.

4. The EPA intends to respond to SSA review requests within thirty (30) calendar days of receipt unless EPA deems additional review time as described below in 4a.-c. If supplemental documentation is needed to make a determination, EPA intends to notify the requestor within thirty (30) calendar days of receipt of the SSA review request; in such cases, the thirty (30) calendar review period for EPA's decision will start once all necessary documentation has been received by EPA.

    a. If there are comments (with substantiating data such as project information, review of literature, independent field investigation, or a physically observable or obvious fact) received from the public, interested agencies, or tribes, indicating potential adverse impacts on the SSA, INDOT, through FHWA, shall immediately send these comments to EPA. EPA intends to notify FHWA and INDOT, within thirty (30) calendar days of receipt of the comments, regarding its decision. EPA reserves the right to extend this time period when it finds that additional information is needed, that additional administrative review is necessary, or that it will be in the public interest to hold a public meeting. Prior to publicly announcing a public meeting, EPA intends to inform INDOT of its intention to hold a public meeting and allow INDOT 10 days to resolve any remaining issues. EPA may request, in writing, additional time or information to complete its review.

    b. If EPA receives a citizen's request at any time during the review or at any time before FHWA has approved the project's final environmental document, EPA intends to immediately notify FHWA and INDOT (in writing, if time permits or by telephone if the end of the comment period is near). The EPA may consult with FHWA and INDOT as necessary to reevaluate the project with respect to the concern(s) contained in the request, and EPA intends to notify FHWA and INDOT within thirty (30) calendar days of receiving such request of EPA's decision.

    c. The EPA may request additional review time or information in writing. If EPA requests additional time or information, EPA intends to inform FHWA and INDOT within thirty (30) additional calendar days, or any other reasonable period of time needed to conduct the review, of the results of this evaluation.

5. The EPA review will result in one of the following determinations described below. EPA agrees to provide its determination in writing.

    a. If EPA determines the proposed project as designed most likely will not result in contamination of the SSA so as to create a significant hazard to public health, EPA intends to inform the requestor (e.g., applicant for FHWA federal-aid highway project or its designee) that no further assessment or evaluation is required under the SSA program. Prior to federal financial assistance for projects within the SSA, INDOT and FHWA agree to review funding applications to confirm that either this determination has been documented by EPA or that the project is exempt from EPA SSA Review (see below).

b. If EPA determines the project has the potential to result in contamination of the SSA so as to create a significant hazard to public health, EPA intends to inform the requestor (e.g., applicant for FHWA federal-aid highway project or its designee), as well as INDOT and FHWA, that a *Detailed Ground Water Impact Assessment* is required.

1) If such a determination is made, EPA and FHWA plan to discuss measures that must be implemented to ensure that any contamination of the SSA will not create a significant hazard to the public health; and

2) The FHWA and INDOT agree to inspect and monitor to ensure that such measures are implemented.

6. If no response is received from EPA, FHWA and INDOT may advance the project after notifying in writing the EPA Region 5 Sole Source Aquifer Coordinator that the official review period has concluded. FHWA and INDOT will consider to the maximum extent practicable those comments that are submitted after the official review period has concluded and will accept EPA's final determination (which EPA plans to announce after consultation with FHWA and INDOT).

7. When roadways and/or bridges need emergency repair as determined by FHWA, most of such repairs will meet the criteria in Section V.B. "Projects Exempt from EPA SSA Review". If emergency activities do not meet the Section V.B. criteria, EPA will strive to complete its review in such emergency situations within seven (7) calendar days of receipt of FHWA's notification. In the rare cases when the emergency circumstances require immediate attention to address threats to life or property, and the activities do not meet the exemption criteria, then emergency repairs will proceed and FHWA agrees to notify EPA as soon as practicable.

   To the extent practicable for emergency situations, INDOT will ensure that emergency repairs are conducted in a manner that will not contaminate an SSA so as to create a significant hazard to public health.

8. The EPA agrees to maintain a project review file that includes copies of all SSA project review documents and correspondence for the preceding ten years consistent with EPA Records Retention Schedule 1035, Environmental Programs and Projects, item c (Routine environmental program and project records).

9. To carry out the joint activities described in the MOU, any assertion of business confidentiality (not including any attorney-client communications or attorney work product privileges) will not prevent INDOT from sharing these documents with EPA. Upon notification of the presence and location of confidential business information in received documents, EPA will protect the confidentiality of the confidential business information, including records, reports, or other financial information as set forth in EPA's regulations at 40 C.F.R. Part 2, subpart B.

B. Projects Exempt from EPA SSA Review

All proposed Federal-aid highway projects for which all associated construction elements are situated outside of designated SSA project review areas are exempt from EPA SSA review.

Federal-aid highway projects classified as Categorical Exclusions (CEs) under 23 C.F.R. § 771.117 are exempt from EPA SSA review, unless the project involves any of the elements below.

- Projects that involve substantial excavation depth (greater than 10 feet below ground surface (bgs)) except deeper finite, controlled excavation greater than 10 feet bgs. Projects requiring deeper finite, controlled excavation greater than 10 feet bgs, which follow all applicable state and federal laws and INDOT standard specifications, do not pose a substantial threat to groundwater quality, the SSA(s), or the human environment due to high confidence in engineering control measures and natural dispersion. Examples of deeper finite, controlled excavation include pile driving, structural foundations, septic tank removal, manholes, sanitary sewer, core drilling for traffic signal poles, etc.
- Projects that involve the use of chemicals listed in the National Primary Drinking Water Regulations (40 C.F.R. Part 141).
- Any other project or activity which the requestor, FHWA, or INDOT determines may contaminate a designated SSA through its recharge area so as to create a significant hazard to public health.

Implementation of BMPs, required in permits under the Clean Water Act (CWA) and construction industry standards, are expected to prevent the exceedance of drinking water standards in surface waters. Therefore, such CEs are not expected to pose a significant hazard to public health and are exempt from EPA SSA review.

The EPA understands that certain federal-aid highway projects, such as those listed below, may not be classified as CEs and therefore INDOT and FHWA intend to provide to EPA for SSA review if located within any SSA project review area.

- New, modified, or disturbed wells including where wells of any type (e.g., water, geothermal, oil/gas production) are within the anticipated construction area and are not clearly flagged to be protected.
- New, modified, or disturbed septic systems or other individual disposal systems, other than septic system removal following applicable state laws and standard specifications to prevent septage release.
- New, modified, or disturbed French drains or stormwater basins designed to promote infiltration.
- New, modified, or disturbed chemical storage (e.g., salt storage; relocation of petroleum/chemical storage tanks or pipelines, sanitary sewers, or waste storage facilities)
- Projects within or in close proximity to known soil or groundwater contamination (e.g., a site listed on the EPA National Priorities List (i.e., a Superfund site) or a state-designated brownfield or clean-up site) that involve earthwork where shallow groundwater is expected to be encountered and dewatered.

The EPA reserves the right to review an exempt project upon written notice to FHWA and INDOT should new information lead it to conclude the project may contaminate an SSA so as to create a significant hazard to public health.

VI. DURATION, MODIFICATION, AND TERMINATION

This MOU will remain in effect for a period of five (5) years from the effective date. This MOU may be extended or modified, at any time through the mutual written consent of the PARTIES. Additionally, a PARTY may terminate its participation in this MOU at any time by providing written notice to the other PARTIES, at least ninety (90) days in advance of the desired termination date.

VII. COORDINATION AND CONTACTS

Materials furnished to EPA by INDOT, with a copy to FHWA, under this MOU will be addressed to the attention of the SSA Coordinator listed on the Region 5 EPA SSA website.

Agency contact information is listed as follows:

FHWA: FHWA Environmental Program Manager
FHWA Indiana Division
575 N. Pennsylvania St., Room 254
Indianapolis, IN 46204
Indiana.FHWA@dot.gov

INDOT: Indiana Department of Transportation
Director of Environmental Services, IGCN, 758-ESD
100 N. Senate Ave.
Indianapolis, IN 46204
ESDReview@indot.in.gov

EPA: Sole Source Aquifer Coordinator
Water Division, Groundwater and Drinking Water Branch
U.S. Environmental Protection Agency, Region 5 (WG-15J)
77 W. Jackson Blvd.
Chicago, IL 60604

VIII. AGREEMENT APPROVALS

Effective date: This MOU will become effective upon the date signed by the last of the Parties. This MOU is subject to revision upon agreement of all of the following agencies.

Date: 7-15-21

Travis Underhill, Deputy Commissioner
Indiana Department of Transportation

JERMAINE R HANNON

Digitally signed by JERMAINE R HANNON
Date: 2021.07.16 10:54:47 -04'00'

Date:

Jermaine R. Hannon, Division Administrator
Federal Highway Administration

Date:

Cheryl Newton, Acting Regional Administrator/Deputy Regional Administrator
Environmental Protection Agency, Region 5

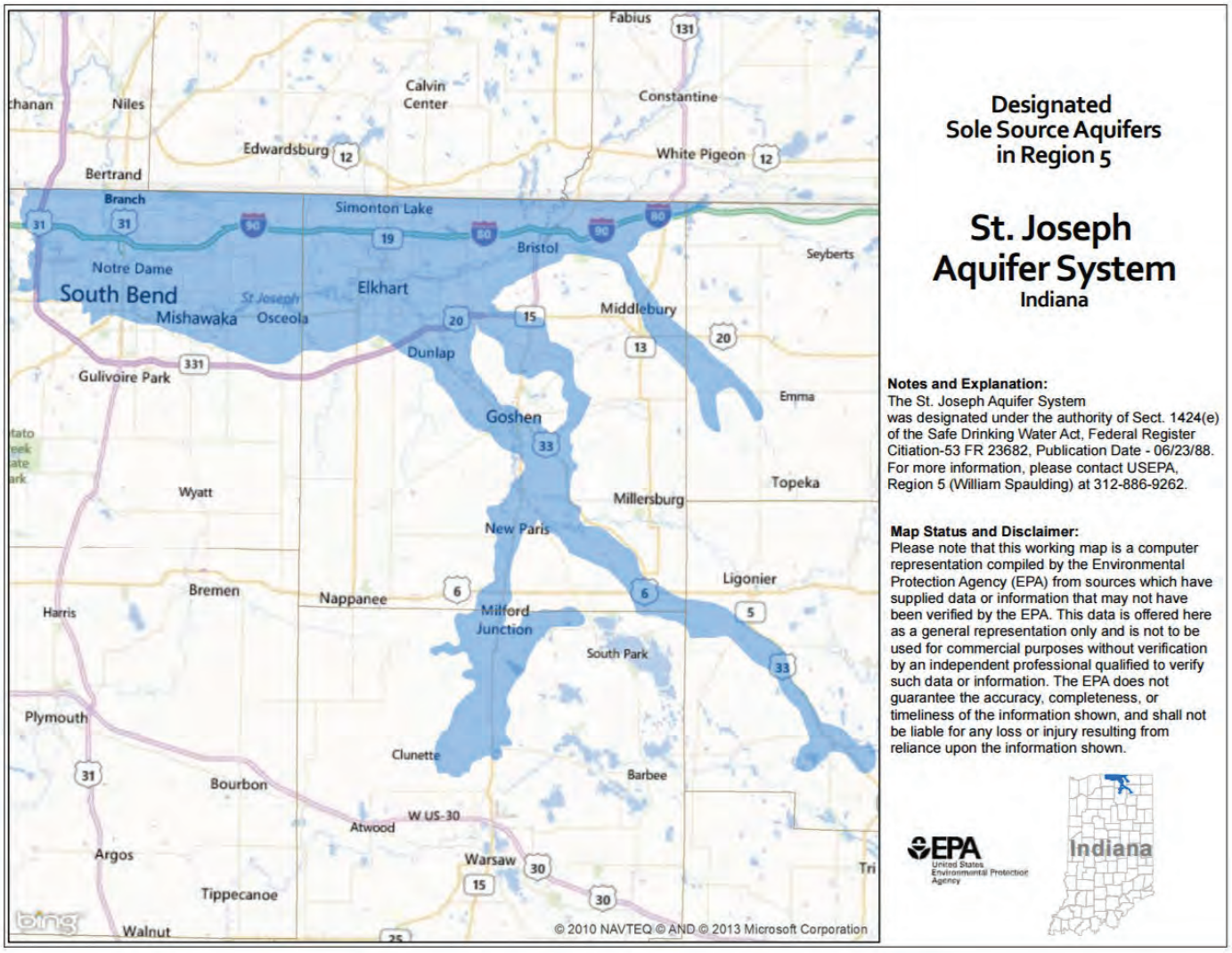
Attachments

A. Designated SSA
B. Definitions

ATTACHMENT A – Designated Sole Source Aquifer

Pursuant to the Safe Drinking Water Act, EPA has determined that the St. Joseph Sole Source Aquifer System in Indiana is the sole or principal drinking water source for its designated area. See EPA's June 23, 1988 Notice of Determination at 53 FR 23682. As such, no commitment for Federal financial assistance identified by FHWA as Federal-aid highway funding may be authorized, and no FHWA approval may be given, for projects within the boundaries of the St. Joseph SSA's designated Project Review Area for any project that EPA determines may contaminate this designated aquifer through its recharge area so as to create a significant hazard to public health. A searchable interactive map of designated SSA project review areas is available at **https://www.epa.gov/dwssa**.

Map of the St. Joseph Sole Source Aquifer Project Review Area:



ATTACHMENT B - DEFINITIONS

Aquifer means a geological formation, group of formations, or part of a formation that is sufficiently permeable that when saturated can yield useful quantities of groundwater to wells, springs, or streams.

Designated area means the surface area above the aquifer and its recharge area.

Federal financial assistance means any financial benefits provided directly as aid to a project by a department, agency, or instrumentality of the Federal government in any form including contracts, grants, and loan guarantees. It does not include actions or programs carried out directly by or on behalf of the Federal government (e.g., U.S. Army Corps of Engineers 404 permits, U.S. Coast Guard permits, etc.). EPA determines whether projects receive "federal financial assistance" (referred to in Section 1424(e) of the Safe Drinking Water Act) on a case-by-case basis and based on the specific project, person, or entity completing the project, source of Federal funds involved, and any other relevant factors.

Federal-aid highway proposed project or federal-aid highway project is any roadway or bridge project that may receive federal-aid highway funding for which an application for Federal financial assistance has been made.

Pollution generating impervious surface (PGIS) means an impervious surface that is considered a significant source of pollutants in storm water runoff, including surfaces that receive direct rainfall (or run-on or blow-in of rainfall) and are subject to vehicular use; industrial activities; or storage of erodible or leachable materials, wastes, or chemicals. Erodible or leachable materials, wastes, or chemicals are substances that, when exposed to rainfall, measurably alter the physical or chemical characteristics of the rainfall runoff. Examples include roadways, sidewalks that are regularly treated with salt or other deicing chemicals, erodible soils that are stockpiled, uncovered process wastes, fertilizers, oily substances, ashes, kiln dust, and garbage container leakage. A surface, whether paved or not, is considered subject to vehicular use if it is regularly used by motor vehicles. The following are considered regularly used surfaces: roads, un-vegetated road shoulders, bicycle lanes within the travel lane of a roadway, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.

Project review area means the area within which federal financially assisted projects will be reviewed, which could include all or part of the designated area and streamflow source areas, identified on the Project Review Area map.

Significant hazard to public health means any level of contaminant which causes or may cause the aquifer to exceed any maximum contaminant level set forth in any promulgated National Primary Drinking Water Standard at any point where the water may be used for drinking purposes or which may otherwise adversely affect the health of persons, or which may require a public water system to install additional treatment to prevent such adverse effect.

Sole source aquifer (SSA) means an aquifer designated by EPA as a Sole or Principal Source Aquifer under section 1424(e) of the Safe Drinking Water Act which supplies at least 50% of the drinking water for its service and where there is no reasonably available alternative sources should the aquifer become contaminated.

A project that is "located within* a *sole source aquifer" means a federal-aid highway project with any associated construction element that is situated within the boundaries defined on the Sole Source Aquifer Project Review Area map.

Michael Baker
INTERNATIONAL

Appendix M:

2019 Engineering Report

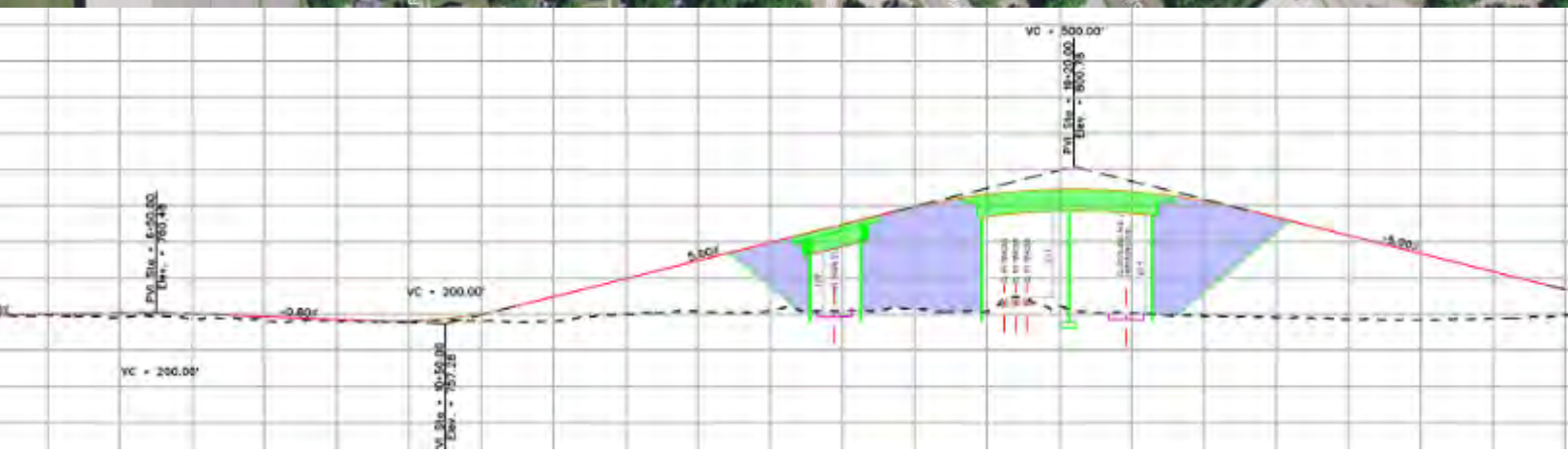
ENGINEER'S REPORT

Hively Avenue Grade Separation
Between Sanders Avenue and Clayton Ave.
City of Elkhart, Indiana
Elkhart County

Michael Baker International, Inc.

3815 River Crossing Pkwy.
Suite 20
Indianapolis, IN 46240

(317) 663-8430
(317) 663-8410 Fax



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Prepared For:
INDOT – Local Trax Program

Table of Contents

Appendices:

I. PURPOSE OF REPORT

The purpose of this report is to expand upon the original project feasibility study completed in 2017 (2017 Feasibility Study). The 2017 Feasibility Study evaluated three alternatives with Alt. 2 being identified as the preferred alternative. This report has further evaluated Alt. 2 and considered three additional options which examine the use of MSE walls and alignment adjustments of Hively Avenue. The conclusions reached by this report will then be used to develop final plan services for this project.

II. PROJECT LOCATION

This project is located in the City of Elkhart, Elkhart County Indiana along Hively Avenue. The project limits will extend from Bismark Avenue to Hazel Street with impacts to all crossing streets including Monger Ave., Morton Ave., Roosevelt Ave., Homer Ave., Main Street, Garden Blvd., Norfolk Southern Railway, Sterling Ave., Eddy Street, Hammond Ave., Lowell Ave., and Warren Street. The length of the project is approximately 0.5 miles. A Project Location Map is provided in Appendix A.

III. PROJECT PURPOSE AND NEED

The Local TRAX rail overpass program is a partnership with the Indiana Department of Transportation (INDOT), local communities, businesses, industry and railroads to improve the quality of life for residents through large scale rail related transportation projects. INDOT awarded the City of Elkhart a grant through the Local TRAX program for grade separating the East Hively Avenue and Norfolk Southern Railroad crossing (the Project) in Elkhart, Elkhart County, Indiana.

Approximately 70-100 trains a day utilize the railroad tracks at Hively Avenue. These trains inhibit mobility for the 6,000 vehicles a day that use Hively Avenue. The Project will eliminate the existing Norfolk Southern Railroad at-grade-crossing at Hively Avenue by creating a new grade separation (bridge) that will carry Hively Avenue over the Norfolk Southern Railroad and South Main Street. Additional modifications will be made to surrounding local streets to accommodate the new grade separation (bridge), including street connectivity, pavement improvements and new drainage infrastructure, as required for the project. The Project will improve safety and mobility in the area by eliminating vehicle backups and congestion that occur at the crossing and adjacent intersections due to frequent train traffic.

IV. PROJECT HISTORY, PRIOR STUDIES

The 2017 Feasibility Study was completed and submitted by American StructurePoint in April of 2017. Within the study three options were examined to eliminate the existing at-grade-crossing with Hively Avenue and Norfolk Southern Railroad. The first option examined changed the profile grade of Hively such that a bridge would be required to cross over the Norfolk Southern railroad, and no retaining walls were used. Option 2 within the report raised Hively, but also used retaining walls which required an additional bridge to span Hively over Main Street. Option 3 in the report focused on depressing Hively such that it would go underneath the existing railroad. The 2017 Feasibility Study identified Option 2 as the preferred alternative based on reduced property impacts and overall project cost.

V. EXISTING CONDITIONS

Existing roadway geometry for this project is listed in the table below. Proposed roadway geometry will be designed to tie-in directly to the existing roadways with smooth transitions.

Roadway	Number of Lanes	Curbing	Unique Features	Roadway Width
Hively Ave. (Bismark Ave. to Main Street)	(2) 12'-0" Lanes EB (2) 12'-0" Lanes WB	Yes	Sidewalk (Both Sides)	49'-0"
Hively Ave. (Main Street to Sterling Street)	(2) 11'-0" Lanes EB (2) 11'-0" Lanes WB	Yes	Park Strip (North Side) Sidewalk (Both Sides)	45'-0"
Hively Ave. (Sterling Street to Hazel Street)	(1) 15'-0" Lanes EB (1) 15'-0" Lanes WB	Yes	Lane Transition EB & WB (From 2 Lanes down to 1)	31'-0"
Main Street (South of Hively Ave.)	(2) 13'-0" Lanes NB (2) 13'-0" Lanes SB	Yes	2' Centerline Separation	55'-0"
Main Street (North of Hively Ave.)	(2) 11'-0" Lanes NB (2) 11'-0" Lanes SB	Yes	Park Strip (West Side) Sidewalk (West Side)	45'-0"
Sterling Avenue	(1) 11'-0" Lanes NB (1) 11'-0" Lanes SB	No	5'-0" Bike Lane (NB & SB)	32'-0"
Hammond Avenue	(1) 12'-0" Lanes NB (1) 12'-0" Lanes SB	No	9'-0" Bike Lane (West Side) Park Strip (West Side)	24'-0"
Standard City Streets	(2) 10'-0" to 12'-0"	No	Sidewalks Typical (West of Tracks)	Varies

Table 1: Existing Roadway Geometry

Existing right-of-way within the project limits varies along each street. Along Hively Avenue, and Sterling Avenue the apparent existing right-of-way is 60 feet. Along South Main Street the apparent existing right-of-way is 66 feet. For all remaining streets including Hammond Avenue the apparent right-of-way is 50 feet. During the design phase of the project, existing right-of-way for each parcel will be identified.

Cross Streets and Intersections:

Within the project limits there are fourteen at-grade intersections, one of which is signalized.

1. Hively Ave. & Monger Ave. (1-way stop controlled)
2. Hively Ave. & Roosevelt Ave. (1-way stop controlled)
3. Hively Ave. & Morton Ave. (1-way stop controlled)
4. Hively Ave. & Homer Ave. (1-way stop controlled)
5. Hively Ave. & S. Main St. (Signalized)
6. Hively Ave. & Sterling Ave. (1-way stop controlled)
7. Hively Ave. & Hammond Ave. (1-way stop controlled)
8. Hively Ave. & Eddy St. (1-way stop controlled)
9. Hively Ave. & Lowell Ave. (2-way stop controlled)
10. Hively Ave. & Warren St. (North) (1-way stop controlled)
11. Hively Ave. & Warren St. (South) (1-way stop controlled)
12. S. Main St. & Bismark Ave. (1-way stop controlled)
13. S. Main St. & Garden Blvd. (1-way stop controlled)
14. Morton Ave. & Bismark Ave. (All-way stop controlled)

Within the project limits there is one at-grade railroad crossing.

1. Hively Ave. between S. Main St. and Sterling Ave. (Flashers with gate arms)

VI. RAIL INTERSECTION CRASH PREDICTION

The U.S. Department of Federal Railroad Administration (FRA) provides a Web Accident Prediction System to provide data on the crash potential of at-grade railroad-road intersections along with estimates of trains per day and allowable speed for trains through the crossing. There have not been any accidents at this grade crossing, but the number of trains per day creates dangerous queuing into nearby intersections.

Intersection	Trains Per Day	Maximum Allowable Train Speed (mph)	Accident Prediction Value (Shown as percent chance of collision per year)
Hively Avenue	90	79	5.22%

Table 2: Rail Accident Prediction Value

VII. TRAFFIC VOLUME METHODOLOGY

Existing traffic count data was collected throughout the project study area in May and June of 2019. MioVision was used to collect 24-hour turning movement counts at the Hively Avenue intersections with Monger Avenue, Main Street, Sterling Avenue and Hammond Avenue on Tuesday, June 4, 2019. Turning movement counts were supplemented by multi-day tube counts on the lower volume local roads in the study area. It was assumed that Opening Year (2022), No Build Traffic volumes and Existing Year (2019) traffic volumes were approximately equal.

Annual growth rates were selected for the purpose of estimating future traffic volumes over a 20-year horizon. A linear annual growth rate of 1% was assumed on E. Hively Avenue and Hammond Avenue using estimates from INDOT's Traffic Count Database System. While the most recent AADT information indicates a decrease in traffic volumes on S. Main Street, a 1% linear annual growth rate was conservatively assumed. Lastly, a 3% linear annual growth rate was calculated for Sterling Avenue using the available traffic count data from MACOG. These growth rates were applied to estimate Design Year (2042) No Build traffic volumes. All other roads throughout the study area were assumed to have negligible growth.

Traffic projections at the Hively Avenue grade crossing were provided by Michiana Area Council of Governments "MACOG" for the year 2022, the expected Opening Year of the project. Between the years 2018 and 2022, traffic volumes on Hively Avenue are expected to increase by 23%. Given the lower growth trends in the area, this volume increase is likely attributed to the diversion of traffic from the Lusher Avenue at-grade crossing, which is planned for closure. A 23% increase in through traffic on Hively Avenue was calculated based on existing (Year 2019) traffic data. This diversion estimate was then added to Design Year (2042) No Build volumes prior to reassignment of traffic for each of the considered project Build alternatives.

Under each scenario, traffic volumes were reassigned to the most logical path. In circumstances where drivers have multiple choices for modified routes, traffic reassignments were split considering factors such as left vs. right turn movements and intersection traffic control.

See Appendix "D" for AADT & Level of Service for each alternate.

VIII. BASIC DESIGN ELEMENTS

The new proposed overpass crossing Main Street, and Norfolk Southern Railroad will tie directly into Hively Avenue. Geometric design of the overpass will follow the basic design elements of Hively Avenue in conjunction with the Indiana Design Manual "IDM". Level 1 Design Checklist for Hively Avenue is included in Appendix "B"

Hively Avenue	
Posted Speed Limit	35 mph
Project Design Criteria	New Construction
Functional Classification	Arterial
Rural/Urban	Urban

Table 3: Hively Ave. Roadway Classification

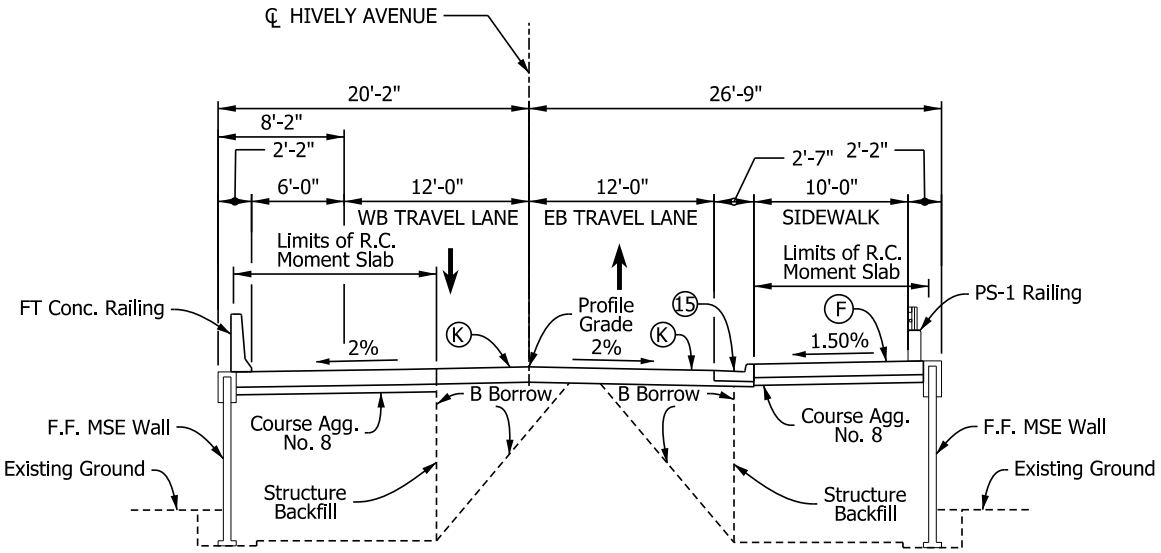
Hively Avenue Roadway Geometry:

The proposed geometry of the Hively Avenue grade-separation is summarized in the table. The Hively Avenue geometry is compared to the minimum required "Level 1" geometry criteria cited in the Indiana Design Manual for New Construction Projects.

Information shown is for the preferred Alternate 3A geometry. Geometry varies at the tie in locations and have been excluded for clarity at this time.

Criteria	IDM Minimum	Hively Avenue
Number of Lanes	2 Lanes	2 Lanes
Lane Widths	11 ft	12 ft
Shoulder Widths	2'-0"	2'-7"
Bridge Clear-Roadway Width	31 ft	31 ft
Horizontal Curve, Min. Radius	390 ft	610 ft
Stopping Sight Distances at Horizontal Curves	250 ft	250 ft
Stopping Sight Distances at Vertical Curves	250 ft	358 ft
Structural Capacity Bridge	HL-93	HL-93
Bridge-Railing Safety Performance	TL-2 & TL-4	TL-2 & TL-4

Table 4: Hively Ave. Proposed Geometric Criteria



TYPICAL SECTION - Hively Avenue

XXX+XX.XX TO XXX+XX.XX

IX. PROJECT ALTERNATIVES SUMMARY

Alternate	Description	Right-of-Way Relocations	Estimated Total Project Costs (See Table 11: Cost Breakdown)	% Above Lowest Cost Alternative
2A	MAINTAIN HIVELY ALIGNMENT; CONNECTION ROADWAY TO SOUTH	22	$ 23,181,944.44	12%
2B	MAINTAIN HIVELY ALIGHTMENT; USE BISMARK AS CONNECTING ROADWAY	22	$ 22,697,168.07	10%
3A	REALIGN HIVELY TO SOUTH; CONNECTION ROADWAY TO NORTH	22	$ 20,632,606.25	0%
4A	REALIGN HIVELY TO SOUTHL USE BISMARK AS CONNECTING ROADWAY	21	$ 21,138,855.43	2%
5	DO NOTHING	0	DISMISSED	N/A

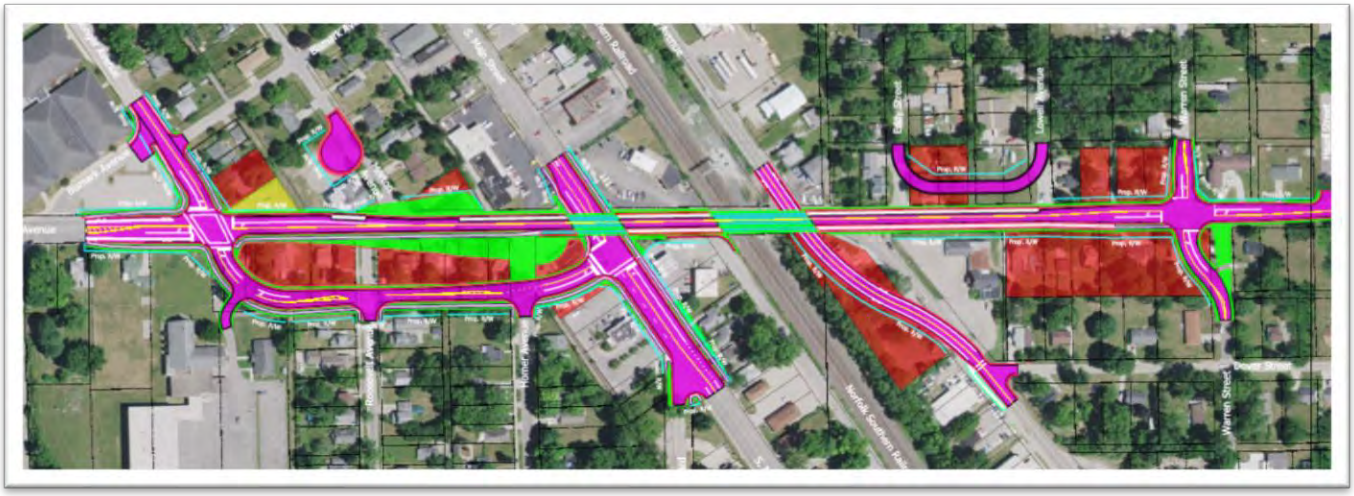
Table 5: Alternatives Summary

PROJECT ALTERNATIVE COST BREAKDOWN

Alternate	Estimated Construction Cost	Construction Inspection (12.5% of Construction)	Right-Of-Way Land & R/W Engineering Cost	Estimated Total Project Cost (Before Inflation)	Inflation (2021, 2 years at 2%/year)	Estimated Total Project Cost (After Inflation)
2A	$ 17,050,454	$ 2,131,307	$ 3,100,000	$ 22,281,761	$ 900,183	$ 23,181,944
2B	$ 16,725,164	$ 2,090,645	$ 3,000,000	$ 21,815,809	$ 881,359	$ 22,697,168
3A	$ 14,516,815	$ 1,814,602	$ 3,500,000	$ 19,831,417	$ 801,189	$ 20,632,606
4A	$ 14,949,340	$ 1,868,668	$ 3,500,000	$ 20,318,008	$ 820,848	$ 21,138,855

Table 6: Cost Breakdown

ALTERNATE 2A: MAINTAIN HIVELY ALIGNMENT; CONNECTION ROADWAY TO SOUTH



A Plan & Profile of Alternative 2A is included in Appendix "E"

Characteristics:

- Horizontal alignment of Hively Avenue to be maintained.
- Connection roadway between Monger Avenue intersection and Main Street to be placed to south.
- Grade crossings to consist of one single span bridge @ 121'-0" span length and one two span bridge @ 118'-0" span lengths.

Pros

- Does not require the realignment of Hively Avenue. An "S" bend is not introduced to an otherwise straight alignment.
- Traffic volume increase on Bismark Avenue; however, less than Alternatives 2B and 4A.

Cons

- Reduced signal head visibility at Main Street and connection roadway intersection under bridge.
- Undesirable roadway geometry and limited signal sight distance at Hively Avenue and Monger Avenue intersection.
- Minimal distance between MSE wall and several buildings.
- Requires closure of Hively Avenue to complete construction.
- Eddy Street and Lowell Avenue access to Sterling Avenue/Hammond Avenue eliminated.

Cost Summary

Detailed construction cost estimate is included in Appendix "F".

Alternate	Estimated Construction Cost	Construction Inspection (12.5% of Construction)	Right-Of-Way Land & R/W Engineering Cost	Estimated Total Project Cost (Before Inflation)	Inflation (2021, 2 years at 2%/year)	Estimated Total Project Cost (After Inflation)
2A	$ 17,050,454	$ 2,131,307	$ 3,100,000	$ 22,281,761	$ 900,183	$ 23,181,944

Table 7: Alternate 2A Summary

ALTERNATE 2B: MAINTAIN HIVELY ALIGNMENT; USE BISMARK AS CONNECTING ROADWAY

A Plan & Profile of Alternative 2B is included in Appendix "E"

Characteristics:

- Horizontal alignment of Hively Avenue to be maintained.
- Bismark Avenue to be used as connecting roadway between Hively Avenue and Main Street.
- Grade crossings to consist of one single span bridge @ 121'-0" span length and one two span bridge @ 118'-0" span lengths.

Pros

- Does not require the realignment of Hively Avenue. An "S" bend is not introduced to an otherwise straight alignment.
- Provides desirable intersection/horizontal geometry and sight distance for high volume leg of Bismark Avenue and Hively Avenue intersection.

Cons

- Significant Increase of traffic volume on Bismark Avenue.
- Undesirable intersection placement at Monger Avenue and Bismark Avenue.
- Minimal distance between MSE wall and several buildings.
- Requires closure of Hively Avenue to complete construction.
- Eddy Street and Lowell Avenue access to Sterling Avenue/Hammond Avenue eliminated.

Cost Summary

Detailed construction cost estimate is included in Appendix "F".

Alternate	Estimated Construction Cost	Construction Inspection (12.5% of Construction)	Right-Of-Way Land & R/W Engineering Cost	Estimated Total Project Cost (Before Inflation)	Inflation (2021, 2 years at 2%/year)	Estimated Total Project Cost (After Inflation)
2B	$ 16,725,164	$ 2,090,645	$ 3,000,000	$ 21,815,809	$ 881,359	$ 22,697,168

Table 8: Alternate 2B Summary

ALTERNATE 3A: REALIGN HIVELY TO SOUTH; CONNECTION ROADWAY TO NORTH

A Plan & Profile of Alternative 3A is included in Appendix "E"

Characteristics:

- Hively Avenue is realigned to south
- Connection roadway to be placed to north. Existing Hively Avenue and Main Street intersection to remain.
- Grade crossings to consist of one single span bridge @ 77'-0" span length and one two span bridge @ 120'-6" span lengths.

Pros

- Provides desirable intersection/horizontal geometry at Hively Avenue and connecting roadway.
- Traffic volume increase on Bismark Avenue; however, less than Alternatives 2B and 4A.
- Only short-term closure of Hively Avenue required for construction.
- Eddy Street and Lowell Avenue access to Sterling Avenue/Hammond Avenue maintained.

Cons

- Requires significant realignment of Hively Avenue. An "S" bend is introduced to an otherwise straight alignment.
- Tighter curve radii and longer bridge required to maintain Sterling Avenue/Hammond Avenue connection.

Cost Summary

Detailed construction cost estimate is included in Appendix "F".

Alternate	Estimated Construction Cost	Construction Inspection (12.5% of Construction)	Right-Of-Way Land & R/W Engineering Cost	Estimated Total Project Cost (Before Inflation)	Inflation (2021, 2 years at 2%/year)	Estimated Total Project Cost (After Inflation)
3A	$ 14,516,815	$ 1,814,602	$ 3,500,000	$ 19,831,417	$ 801,189	$ 20,632,606

Table 9: Alternate 3A Summary

ALTERNATE 4A: REALIGN HIVELY TO SOUTH; USE BISMARK AS CONNECTING ROADWAY

A Plan & Profile of Alternative 4A is included in Appendix "E"

Characteristics:

- Hively Avenue is realigned to south
- Bismark Avenue to be used as connecting roadway. between Hively Avenue and Main Street.
- Grade crossings to consist of one single span bridge @ 88'-0" span length and one two span bridge @ 121'-6" span lengths.

Pros

- Provides desirable intersection/horizontal geometry and sight distance for high volume leg of Bismark Avenue and Hively Avenue intersection.
- Only short-term closure of Hively Avenue required for construction.
- Eddy Street and Lowell Avenue access to Sterling Avenue/Hammond Avenue maintained.
- Only 1 of 6 environmental concern areas impacted. (Seven Eleven)

Cons

- Significant Increase of traffic volume on Bismark Avenue.
- Undesirable intersection placement at Monger Avenue and Bismark Avenue.
- Requires realignment of Hively Avenue. An "S" bend is introduced to an otherwise straight alignment.
- Tighter curve radii and longer bridge required to maintain Sterling Avenue/Hammond Avenue connection.
- 2 of 6 environmental concern areas impacted. (Seven Eleven and Elkhart Speedwash)

Cost Summary

Detailed construction cost estimate is included in Appendix "F".

Alternate	Estimated Construction Cost	Construction Inspection (12.5% of Construction)	Right-Of-Way Land & R/W Engineering Cost	Estimated Total Project Cost (Before Inflation)	Inflation (2021, 2 years at 2%/year)	Estimated Total Project Cost (After Inflation)
4A	$ 14,949,340	$ 1,868,668	$ 3,500,000	$ 20,318,008	$ 820,848	$ 21,138,855

Table 10: Alternate 4A Summary

ALTERNATE 5: DO NOTHING

This alternate allows the current roadways to remain in place without any efforts to improve operational safety of the railroad crossing and to alleviate traffic congestion in the area. This alternate does not meet the stated project purpose and need.

X. RECOMMENDED ALTERNATIVE

To best meet the stated project purpose and need, after consideration of cost and final product quality, we recommend **Alternate 3A**. This alternate provides the lowest construction cost and provides the least amount of impact to existing property owners. Shifting of the Hively Avenue alignment additionally provides the least impact during construction since the new structure can be constructed offline for the majority of construction which allows for the existing Hively Avenue to stay active until the final phase of construction.

The total estimated project cost of Alternate 3A is $20,632,606 in 2021.

XI. ADDITIONAL CONSIDERATIONS

Structural Design Components:

For each alternate considered a full preliminary structural design was completed including an examination of the types of abutments, piers, and beams. MSE wall limits were also detailed due to the urban site condition in order to limit the amount of right-of-way required.

Abutments:

Each alternative that was developed will use integral pile supported abutments behind MSE walls. This allows the shortest bridge spans to be used while limiting encroachment onto existing right-of-way. Per Norfolk Southern Railway design guidelines, MSE walls are allowed within the railroads right-of-way as long as they follow criteria for horizontal clearance from the centerline of track. Integral abutments will also help reduce the long term structure maintenance cost since there will be no joints.

Piers:

Piers for this project are assumed to be wall piers. Foundations under the piers will most likely be pile supported. A final determination of pier and foundation type cannot be made until the geotechnical investigation has been completed in the final design of the project.

Superstructure:

Both precast and welded steel plate girders where designed for each bridge option. Preliminary cost estimates show that the precast girders are the most cost efficient because the proposed spans are not long enough to merit steel. Vertical clearance is another element that was examined since the railroad requires a minimum of 23’-0” and the precast beams for alternate 3A have sufficient clearance.

MSE Walls:

Walls have been detailed for each alternate such that they are used only when required. Due to the large elevation difference between the existing roadway and the proposed overpass MSE walls are required to limit the amount of right-of-way that needs to be purchased for construction. In locations where right-of-way are not critical, 2:1 slopes are used.

Topographic Survey:

A topographic survey of this project has been completed. The topographic survey is LIDAR based with top of rails being picked up by traditional survey techniques to ensure vertical clearance is provided over the Norfolk Southern Railroad. Part of the scope of the survey in in the final design phase is the creation of a Location Control Route Survey. This will be required to develop the Right of Way Plans for final design.

Vehicular Traffic Maintenance:

The preferred alternate will provide the least amount of impact to the community during construction. By offsetting the new Hively Avenue alignment the existing Hively Avenue can remain open during a majority of construction. Construction phasing will be determined during final design and focus on connecting the existing Hively Alignment at Bismark Street and Hazel Street during the final phase of construction. This will reduce the time roadway closures are required during the project construction.

Railroad Coordination:

Railroad coordination during the design and construction of this project will be critical in order to keep on schedule. Norfolk Southern Railway will be engaged during the entire process to ensure this project follows their design policies where applicable, and to ensure this project does not cause adverse effects to their railroad traffic.

Right-of-Way:

Due to the Urban nature of this project, right-of-way is a driving component of the selected alternative. Both cost, and environmental impacts have been evaluated for each alternative, and the estimated acquisition cost has been derived by using a multiplier of the assessed value of the property. The table below shows the required right-of-way to construct the preferred alternate 3A.

Property Type	Number of Properties	Total Assessed Value	Total Estimated R/W Acquisition Cost
Residential	19	$1,236,200	$2,249,884
Commercial	8	$580,800	$1,161,600
-	Partial R/W Acquisitions of Parcels		$ 50,000
	TOTALS	**$ 1,817,000**	**$ 3,461,484**

Table 11: Alternative 3A Cost - Continued

Drainage:

Drainage design will incorporate inlets along the curb lines to collect roadway drainage in an enclosed storm sewer system. The new drainage system will be tied into the existing drainage system.

Utilities:

All utilities have been identified and located during the topographic survey of the project site. Utilities within the project limits include overhead electric powerlines, gas lines, water mains, storm sewers, sanitary sewers, combined sewers, buried telecommunication cables and cable television lines. At this time the City of Elkhart has also furnished existing plans of certain buried utilities. The following utility companies have been identified as having facilities within the project limits: AEP (Indiana Michigan Power), AT&T, Comcast, City of Elkhart, Intellifiber Networks, Level 3 Communications, NIPSCO, US Signal, and Verizon. A preliminary utility map has been provided in Appendix "C"

Pavement Treatment:

For estimating purposes, the pavement section of all roadways is assumed to consist of the following components:

165 #/SY QC/QA-HMA, 3, 70, SURFACE, 9.5 mm ON
275 #/SY QC/QA-HMA, 3, 70, INTERMEDIATE, 19.0 mm ON
330 #/SY QC/QA-HMA, 3, 64, BASE, 19.0 mm ON
330 #/SY QC/QA-HMA, 3, 64, BASE, 19.0 mm ON
GEOTEXTILE FOR SUBGRADE TREATMENT, TYPE IA

Environmental Considerations:

As part of the early planning phase, a kickoff meeting was held with the City of Elkhart on May 8, 2019 to discuss the project, baseline conditions, constraints, and considerations. Four alternatives were designed based on these discussions and preliminary analysis has been done for the potential impacts of each alternative.

Early Coordination

Early coordination letters were sent on May 23, 2019 to the agencies listed in the table below. A 30-day response period was given. No project concerns were expressed by the agencies during the 30-day period. The United States Environmental Protection Agency (USEPA) responded with questions about the stormwater management. The information is not known at this time but will be provided to USEPA for their review as the project progresses.

Agency	Response Received	Comments
United States Fish and Wildlife Service (USFWS)-Northern Indiana Sub Office	Yes	Project will have minor impacts on natural resources, and no Federally endangered species are known to be present, the USFWS will not be providing a comment letter
United States Environmental Protection Agency (USEPA), Region 5	Yes	Questions about stormwater management
Federal Highway Administration (FHWA)	Yes	No project specific comment, responded that letter was received
Natural Resource Conservation Service (NRCS)	Yes	Project will not cause a conversion of prime farmland

Agency	Response Received	Comments
Indiana Geological Survey (IGS)	Yes	1. Geological Hazards: Moderate liquefaction potential Floodway 2. Mineral Resources: Bedrock Resource: Moderate Potential Sand and Gravel Resource: High Potential 3. Active or abandoned mineral resources extraction sites: Abandoned Industrial Minerals Sand Gravel Pits
Indiana Department of Natural Resources (IDNR) Division of Fish and Wildlife	Yes	No plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity. However, the Elkhart Environmental Center is located within 1/2 mile of the project area.
Indiana Department of Environmental Management (IDEM) Groundwater	Yes	Not within Wellhead Protection Area
IDEM	Yes	Automated Response
United States Army Corps of Engineers (USACE)-Detroit District	Yes	May require permit if proposed work occurs within a WOTUS or wetlands. review of FEMA Flood Insurance Rate Map database indicates that the project site is not within a Federally mapped floodplain
US Department of Housing & Urban Development	No	N/A
INDOT Environmental Services-Ft. Wayne District	Yes	Responded that letter was added to their files
INDOT Environmental Services-Central Office	No	N/A
INDOT-Public Involvement Office	Yes	Standard acknowledgement email response
Elkhart County Highway Department	No	N/A
Elkhart County Surveyor	No	N/A
Elkhart County Planning and Development	No	N/A
Elkhart County Parks and Recreation	No	N/A
Elkhart County Stormwater	No	N/A
Monger Elementary School	No	N/A

Agency	Response Received	Comments
Greater Elkhart Chamber of Commerce	No	N/A
National Park Service (NPS)	No	N/A
City of Elkhart Public Works and Utilities Department	Yes	Email acknowledging received
Elkhart Local Floodplain Administrator	No	N/A
Office of the Mayor of Elkhart	No	N/A

Table 12: Early Coordination Letters List of Responses - Continued

Water Resources

A site visit was conducted on June 5, 2019. No wetlands or other water resources were identified within the project area. Therefore, no Waters of the U.S. Determination/ Wetland Delineation Report will be required.

Sole Source Aquifer

The project is located within the St. Joseph Sole Source Aquifer. An early coordination letter was sent to the United States Environmental Protection Agency (USEPA) on May 23, 2019. The USEPA responded on June 13, 2019 asking questions about the stormwater management for the project. As the project continues to develop, Michael Baker will continue to coordinate with USEPA and provide the requested information.

Cultural Resources

The State Historic Architectural and Archaeological Research Database and Structures (SHAARD) map was reviewed on July 26, 2019 and two contributing sites were identified within the project area:

- 1301 Hively Ave. – House, 039-186-25026, rated Contributing, c. 1935 English Cottage
- 2700 Hammond Avenue - Concord Township School Number 10, 039-186-33378, rated Contributing, c. 1890 Romanesque

Contributing properties, using the Indiana Historic Sites and Structures Inventory (IHSSI) rating system, are an important contribution to an area's historic fabric but are not individually eligible, unless part of a historic district. No historic district has been identified within the project area. However, the project will need to be coordinated with the INDOT Cultural Resource Office for review under the INDOT Minor Projects Programmatic Agreement (MPPA). The project may require full Section 106.

Section 4(f) Resources

One public trail, Mapleheart Trail, is located within the project area and is owned by the Elkhart Park and Recreation Department. This trail would likely be considered a Section 4(f) resource and would require coordination and further documentation for any potential temporary or permanent impacts.

Hazardous Materials

A draft Red Flag Investigation (RFI) was prepared and submitted to INDOT on June 26, 2019 for review. The draft RFI identified the following sites that would be impacted by all the alternatives, and therefore require further investigation:

- One (1) RCRA generator site, 7-Eleven, 2700 S Main Street, AI # 30269, is located within the project area. 7-Eleven is an active gas station (USTs), and is also listed as a LUST site.
- One (1) UST site, Domore Office Furniture Incorporated, 2400 Sterling Ave, ID # 30148 is located 0.05 mile north of the project area.
- Two (2) LUST sites, 7-Eleven, 2700 S Main Street, AI# 30269 and Wade's Service Station, 2644 Sterling Ave, AI# 31162, are located within the project area.
- The potential for additional hazardous material sites not included in the GIS mapping layers were identified via review of INDOT supplied documents, Google Earth / Street View October 2018, a and during a site visit conducted by Michael Baker on June 7, 2019. These include a dry cleaner, a former foundry, automotive repair/salvage facilities, and railroad tracks located within the project limits.

It was concluded in the RFI that a Phase I Environmental Site Assessment (ESA) is recommended due to four identified sites and additional hazardous material sites that were not identified in GIS.

Environmental Site Assessment

In support of the RFI, an initial Phase I ESA screening (desktop and regulatory database reviews, and a site visit) were conducted on June 7, 2019 of sites located within or adjacent to project alternatives. Initial Phase I screening results were used to correct INDOT GIS mislocated and omitted locations for the RFI submittal and rank sites based upon potential to encounter hazardous waste, during development of alternatives.

Preliminary Property Impacts

Four alternatives have been reviewed for the impacts on the surrounding community. Table 2 below identifies each alternative and the total number of relocations, parcel acquisitions, and strip takes that would be required. It also identifies the number that would impact commercial, residential, school, or church properties. Further investigation will need to occur to determine the impacts each alternative has on the community.

Alternative Relocations, Acquisitions, and Strip Takes Summary

	Relocations			Parcel Acquisitions			Strip Takes				
Alternative	Commercial	Residential	TOTAL	Church	Commercial	TOTAL	Church	School	Commercial	Residential	TOTAL
2A	2	20	**22**	1	2	**3**	2	1	7	17	**27**
2B	1	21	**22**	1	2	**3**	3	1	4	9	**17**
3A	3	19	**22**	1	-	**1**	-	1	7	16	**24**
4A	4	17	**21**	1	1	**2**	2	1	3	17	**23**

Table 13: Property Impacts

Environmental Justice

A desktop review for Environmental Justice (EJ) communities was conducted on April 10, 2019. The EPA's EJ website identified three block groups within the project area. All three block groups would likely be considered low income populations and one block group would likely be considered minority. Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have disproportionality high and adverse effect on minority or low-income populations. Since this project has anticipated relocations (exceeding two relocations for each alternative) the potential for full EJ Analysis may be required.

APPENDIX B

Level One Design Criteria

LEVEL ONE CONTROLLING CRITERIA CHECKLIST

Route: Hively Avenue, Alternates 2A & 2B

Date: 7/17/19 Submittal: Engineer's Assessment

Design Year: 2042 AADT: 8,400

Des. No.

Functional Classification: Minor Arterial, Urban, Built-Up

Terrain: Level

Project Scope of Work Reconstruction (Non-Freeway) Enter the minimum criteria below.	Design Criteria Reference	Existing Condition	Does the proposed design satisfy the criteria? Enter the value provided in the appropriate column.		
			Yes	No *	N/A
1. Design Speed: 30 - 35 mph	IDM Fig. 53-7	35 mph	35 mph		
2. Lane Width, Mainline: 11 ft Auxiliary Lanes: 10 ft	IDM Fig. 53-7	11 ft	12 ft		
3a. Uncurbed Sections, Usable Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
Uncurbed Sections, Paved Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
3b. Curbed Sections, Curb Offset: 2 ft	IDM Fig. 53-7	0 ft	2 ft		
4. Bridge Clear-Roadway Width 31 ft	IDM Fig. 53-7	N/A	31 ft		
5. Structural Capacity HL-93	IDM Fig. 53-7	N/A	HL-93		
6. Horizontal Curvature, Minimum Radius = 390 ft	IDM Fig. 53-7	N/A			N/A
7. Superelevation Transition Lengths N/A	IDM 43-3.04	N/A			N/A
8a. Stopping Sight Distances at Horizontal Curves 250 ft	IDM Fig. 53-7	N/A			N/A
8b. Stopping Sight Distances at Vertical Curves 250 ft	IDM Fig. 53-7	N/A	362 ft		
9. Maximum Grades 7 %	IDM Fig. 53-7	0%	5%		
10. Through-Travel-Lane Cross Slope: 2 %	IDM Fig. 53-7	1.5%	2%		
11. Superelevation Rate e_{max} =	IDM 43-3.02	N/A			N/A
12. Vertical Clearances 16.5 and 23.0 ft	IDM Fig. 53-7	N/A	19.7 ft & 23.7 ft		
13. Americans with Disabilities Act (ADA) Criteria					
14. Bridge-Railing Safety Performance Criteria, (circle one of the following) TL-2 v. TL-4 v. TL-5	IDM 404-4.01	N/A	FT Left, PS-1 Right		

** A design exception is required when minimum criteria are not satisfied. See* Indiana Design Manual *Section 40-8.0.*

Submitted By CMB Date 7/22/19. Checked By Date . INDOT location or Consultant:

LEVEL ONE CONTROLLING CRITERIA CHECKLIST

Route: Hively Avenue, Alternate 3A

Date: 7/17/19 Submittal: Engineer's Assessment

Design Year: 2042 AADT: 8,400

Des. No.

Functional Classification: Minor Arterial, Urban, Built-Up

Terrain: Level

Project Scope of Work Reconstruction (Non-Freeway) Enter the minimum criteria below.	Design Criteria Reference	Existing Condition	Does the proposed design satisfy the criteria? Enter the value provided in the appropriate column.		
			Yes	No *	N/A
1. Design Speed: 30 - 35 mph	IDM Fig. 53-7	35 mph	35 mph		
2. Lane Width, Mainline: 11 ft Auxiliary Lanes: 10 ft	IDM Fig. 53-7	11 ft	12 ft		
3a. Uncurbed Sections, Usable Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
Uncurbed Sections, Paved Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
3b. Curbed Sections, Curb Offset: 2 ft	IDM Fig. 53-7	0 ft	2 ft		
4. Bridge Clear-Roadway Width 31 ft	IDM Fig. 53-7	N/A	31 ft		
5. Structural Capacity HL-93	IDM Fig. 53-7	N/A	HL-93		
6. Horizontal Curvature, Minimum Radius = 390 ft	IDM Fig. 53-7	N/A	610		
7. Superelevation Transition Lengths N/A	IDM 43-3.04	N/A			N/A
8a. Stopping Sight Distances at Horizontal Curves 250 ft	IDM Fig. 53-7	N/A	>250 ft		
8b. Stopping Sight Distances at Vertical Curves 250 ft	IDM Fig. 53-7	N/A	358 ft		
9. Maximum Grades 7 %	IDM Fig. 53-7	0%	5%		
10. Through-Travel-Lane Cross Slope: 2 %	IDM Fig. 53-7	1.5%	2%		
11. Superelevation Rate e_{max} = 4%	IDM 43-3.02	N/A	Normal Crown		
12. Vertical Clearances 16.5 and 23.0 ft	IDM Fig. 53-7	N/A	17.5 ft & 23.1 ft		
13. Americans with Disabilities Act (ADA) Criteria					
14. Bridge-Railing Safety Performance Criteria, (circle one of the following) TL-2 v. TL-4 v. TL-5	IDM 404-4.01	N/A	FT Left, PS-1 Right		

** A design exception is required when minimum criteria are not satisfied. See* Indiana Design Manual *Section 40-8.0.*

Submitted By CMB Date 7/22/19. Checked By Date . INDOT location or Consultant:

LEVEL ONE CONTROLLING CRITERIA CHECKLIST

Route: Hively Avenue, Alternate 4A

Date: 7/17/19 Submittal: Engineer's Assessment

Design Year: 2042 AADT: 8,400

Des. No.

Functional Classification: Minor Arterial, Urban, Built-Up

Terrain: Level

Project Scope of Work Reconstruction (Non-Freeway) Enter the minimum criteria below.	Design Criteria Reference	Existing Condition	Does the proposed design satisfy the criteria? Enter the value provided in the appropriate column.		
			Yes	No *	N/A
1. Design Speed: 30 - 35 mph	IDM Fig. 53-7	35 mph	35 mph		
2. Lane Width, Mainline: 11 ft Auxiliary Lanes: 10 ft	IDM Fig. 53-7	11 ft	12 ft		
3a. Uncurbed Sections, Usable Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
Uncurbed Sections, Paved Shoulder Width adjacent to: Mainline: 8 ft Auxiliary Lanes: 2 ft	IDM Fig. 53-7	N/A			N/A
3b. Curbed Sections, Curb Offset: 2 ft	IDM Fig. 53-7	0 ft	2 ft		
4. Bridge Clear-Roadway Width 31 ft	IDM Fig. 53-7	N/A	31 ft		
5. Structural Capacity HL-93	IDM Fig. 53-7	N/A	HL-93		
6. Horizontal Curvature, Minimum Radius = 390 ft	IDM Fig. 53-7	N/A	4,260		
7. Superelevation Transition Lengths N/A	IDM 43-3.04	N/A			N/A
8a. Stopping Sight Distances at Horizontal Curves 250 ft	IDM Fig. 53-7	N/A	>250 ft		
8b. Stopping Sight Distances at Vertical Curves 250 ft	IDM Fig. 53-7	N/A	358 ft		
9. Maximum Grades 7 %	IDM Fig. 53-7	0%	5%		
10. Through-Travel-Lane Cross Slope: 2 %	IDM Fig. 53-7	1.5%	2%		
11. Superelevation Rate e_{max} = 4%	IDM 43-3.02	N/A	Normal Crown		
12. Vertical Clearances 16.5 and 23.0 ft	IDM Fig. 53-7	N/A		23.2 ft & 20.3 ft	
13. Americans with Disabilities Act (ADA) Criteria					
14. Bridge-Railing Safety Performance Criteria, (circle one of the following) TL-2 v. TL-4 v. TL-5	IDM 404-4.01	N/A	FT Left, PS-1 Right		

** A design exception is required when minimum criteria are not satisfied. See* Indiana Design Manual *Section 40-8.0.*

Submitted By CMB Date 7/22/19. Checked By Date . INDOT location or Consultant:

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)

Back

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.

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

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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LEVEL ONE CALCS **LEVEL ONE CALCS**

1. Design Speed

Required:	35-55 mph	mph	*~Fig. 53-7*
Provided:	35	mph	

2. Lane Width

Desirable:	**12**	ft	*~Curbed, Fig. 53-7*
Minimum:	**11**	ft	*~Curbed, Fig. 53-7*
Provided:	**12**	ft	

3a. Uncurbed Sections, Shoulder Width

On the Bridge:

Usable:

Desirable:	**8**	ft	*~Curbed, Fig. 53-7*
Minimum:	**2**	ft	*~Curbed, Fig. 53-7*
Provided:	**2**	ft	

Paved:

Desirable:	**8**	ft	*~Curbed, Fig. 53-7*
Minimum:	**2**	ft	*~Curbed, Fig. 53-7*
Provided:	**2**	ft	

OK

On the Approach:

Usable:

Desirable:	**8**	ft	*~Curbed, Fig. 53-7*
Minimum:	**2**	ft	*~Curbed, Fig. 53-7*
Provided:	**2**	ft	

Paved:

Desirable:	**8**	ft	*~Curbed, Fig. 53-7*
Minimum:	**2**	ft	*~Curbed, Fig. 53-7*
Provided:	**2**	ft	

OK

Level One Criteria for shoulder width is OK

3b. Curbed Sections, Curb Offset: N/A

Minimum:	**2**	ft	*~Fig. 53-7*
Provided:	**2**	ft	

OK

Level One Criteria for curb offset is OK

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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4. Bridge Clear Roadway Width

Minimum per Design Criteria Table:	**31**	ft	*~Full Approach Curb-to-Curb Width*
Provided:	**31**	ft	

OK

Level One Criteria for clear roadway width is OK

5. Structural Capacity

Required:	**HL-93**
Provided:	**HL-93**

6. Horizontal Curvature, Minimum Radius

Alternates 2A & 2B:

Minimum:	**390**	ft	*~For e_{max} = 6%, Fig. 53-7*
Provided:	**N/A**	ft	

OK

Level One Criteria for minimum radius is OK

Alternate 3A:

Minimum:	**390**	ft	*~For e_{max} = 6%, Fig. 53-7*
Provided:	**610**	ft	

OK

Level One Criteria for minimum radius is OK

Alternate 4A:

Minimum:	**390**	ft	*~For e_{max} = 6%, Fig. 53-7*
Provided:	**4260**	ft	

OK

Level One Criteria for minimum radius is OK

7. Superelevation Transition Lengths: N/A

All proposed alternates qualify for maintaining normal crown throughout the project. Therefore, Superelevation Transition Length requirements are not applicable.

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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8a. Stopping Sight Distance at Horizontal Curves

Alternates 2A & 2B:

Minimum:	**N/A**	ft	*~No horizontal curves proposed*
Provided:	**N/A**	ft	

OK

Level One Criteria for Stopping Sight Distance is OK

Alternate 3A:

Centerline Radius =	**610**	ft	
Radius of Center of Inside Lane, R =	**604**	ft	
Required Middle Ordinate, M =	**12.5**	ft	*~Fig. 43-4A*
Provided Middle Ordinate, M =	**>12.5**	ft	*~Horizontal curve ends before the need for bridge railing*

OK

Level One Criteria for Stopping Sight Distance is OK

Alternate 4A:

Centerline Radius =	**4260**	ft	
Radius of Center of Inside Lane, R =	**4254**	ft	
Required Middle Ordinate, M =	**10**	ft	*~Fig. 43-4A*
Provided Middle Ordinate, M =	**11**	ft	

OK

Level One Criteria for Stopping Sight Distance is OK

8b. Stopping Sight Distance at Vertical Curves

Alternates 2A & 2B:

Type of Curve		**Crest**		
Needed Stopping Sight Distance	SSD	**250**	ft	IDM Fig 44-3A
Vertical Curve Length	L	**500**	ft	
Grade 1	G1	**4.647**	%	
Grade 2	G2	**-5.00**	%	
Difference between grades	A	9.65		

Use K Value from Table : 44-3A

Kmin **29** ft

S<L, K provided = L/A

K provided: 52 ft

K provided > K min, OK for Sight Distance

S provided: **362** ft > 250' (Equation 44-3.3)

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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Alternate 3A:

Type of Curve		**Crest**		
Needed Stopping Sight Distance	SSD	**250**	ft	IDM Fig 44-3A
Vertical Curve Length	L	**500**	ft	
Grade 1	G1	**5.000**	%	Vertical Curve Information from C1 of 1959 Plans
Grade 2	G2	**-5.00**	%	
Difference between grades	A	10.00		

Use K Value from Table : 44-3A

Kmin **29** ft

S<L, K provided = L/A

K provided: 50 ft

K provided > K min, OK for Sight Distance

S provided: **358** ft > 250' (Equation 44-3.3)

Alternate 4A:

Type of Curve		**Crest**		
Needed Stopping Sight Distance	SSD	**250**	ft	IDM Fig 44-3A
Vertical Curve Length	L	**500**	ft	
Grade 1	G1	**5.000**	%	Vertical Curve Information from C1 of 1959 Plans
Grade 2	G2	**-5.00**	%	
Difference between grades	A	10.00		

Use K Value from Table : 44-3A

Kmin **29** ft

S<L, K provided = L/A

K provided: 50 ft

K provided > K min, OK for Sight Distance

S provided: **358** ft > 250' (Equation 44-3.3)

9. Maximum Grade

Maximum Allowed: **7.0%** *~Fig. 53-7*

Proposed: **5.0%** *~All alternates*

OK

10. Through-Travel-Lane Cross Slope

Desirable: **2.0%** *~Fig. 53-7*

Existing: **1.50%**

Proposed: **2%**

OK

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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11. Superelevation Rate

Alternates 2A & 2B:

Minimum:	**N/A**	ft	*~No horizontal curves proposed*
Provided:	**N/A**	ft	

OK

Level One Criteria for SE transition length is OK

Alternate 3A:

Radius:	**610**	ft	
Minimum:	**-0.045**	ft	*~Fig. 43-3C*
Provided:	**-0.02**	ft	*~Normal Crown*

OK

Level One Criteria for SE transition length is OK

Alternate 4A:

Radius:	**4260**	ft	
Minimum:	**-0.06**	ft	*~Fig. 43-3C*
Provided:	**-0.02**	ft	*~Normal Crown*

OK

Level One Criteria for SE transition length is OK

12. Vertical Clearance

Alternates 2A & 2B:

Over Main Street:

Minimum:	**16.5**	ft
Provided:	**19.7**	ft

OK

Over Railroad:

Minimum:	**23.0**	ft
Provided:	**23.7**	ft

OK

Level One Criteria for vertical clearance is OK

Alternate 3A:

Over Main Street:

Minimum:	**16.5**	ft
Provided:	**17.5**	ft

OK

Over Railroad:

Minimum:	**23.0**	ft
Provided:	**23.1**	ft

OK

Level One Criteria for vertical clearance is OK

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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LEVEL ONE CALCS **LEVEL ONE CALCS**

Alternate 4A:

Over Main Street:

Minimum:	**16.5**	ft
Provided:	**23.2**	ft

OK

Over Railroad:

Minimum:	**23.0**	ft
Provided:	**23.00**	ft

OK

Level One Criteria for vertical clearance is OK

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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Alternates 2A & 2B

Determine Grade Traffic Adjustment Factor, K_g

IDM Fig. 49-6B

Grade **-5.000** % (max) K_g = 1.75

Determine Curvature Traffic Adjustment Factor, K_c

IDM Fig. 49-6B

Horizontal Curvature Radius Tangent ft (min) *~For outside railing* K_c = 1.00

Determine Traffic Adjustment Factor, K_s

IDM Fig. 49-6C

Land Use: High Occupancy

Deck Height: 30.50 ft K_s = 1.10

Determine Adjusted AADT

Adjusted AADT = (Construction-year AADT)(K_g)(K_c)(K_s)

Construction Year AADT	7000	vpd	Year 2022
Adjusted Construction Year AADT (T), 1000's	13.48	vpd	

Determine Test Level (TL) - LEFT RAILING

IDM Fig. 49-6D (35)

Design Speed	35	mph
Percent Trucks	10	%
Edge of Travel Lane to Front Face Barrier	5.00	ft (min)
Number of Lanes	2	
Highway Type	Undivided	

TL-4 (T), 1000's	12.5	vpd	*~Interpolated between 49-6D(30) & 49-6D(40)*
TL-5 (T), 1000's	84.4	vpd	

BRIDGE-RAILING SELECTION TL-4 Required

Determine Test Level (TL) - RIGHT RAILING

IDM Fig. 49-6D (35)

Design Speed	35	mph
Percent Trucks	10	%
Edge of Travel Lane to Front Face Barrier	12.58	ft (min)
Number of Lanes	2	
Highway Type	Undivided	

TL-4 (T), 1000's	32.3	vpd	*~Interpolated between 49-6D(30) & 49-6D(40)*
TL-5 (T), 1000's	278.1	vpd	

BRIDGE-RAILING SELECTION TL-2 Required

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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Alternate 3A

Determine Grade Traffic Adjustment Factor, K_g

IDM Fig. 49-6B

Grade **-5.000** % (max) K_g = 1.75

Determine Curvature Traffic Adjustment Factor, K_c

IDM Fig. 49-6B

Horizontal Curvature Radius Tangent ft (min) *~For outside railing* K_c = 1.00

Determine Traffic Adjustment Factor, K_s

IDM Fig. 49-6C

Land Use High Occupancy

Deck Height 30.50 ft K_s = 1.10

Determine Adjusted AADT

Adjusted AADT = (Construction-year AADT)(K_g)(K_c)(K_s)

Construction Year AADT 7000 vpd Year 2022

Adjusted Construction Year AADT (T), 1000's 13.48 vpd

Determine Test Level (TL) - LEFT RAILING

IDM Fig. 49-6D (35)

Design Speed 35 mph

Percent Trucks 10 %

Edge of Travel Lane to Front Face Barrier 5.00 ft (min)

Number of Lanes 2

Highway Type Undivided

TL-4 (T), 1000's 12.5 vpd *~Interpolated between 49-6D(30) & 49-6D(40)*

TL-5 (T), 1000's 84.4 vpd

BRIDGE-RAILING SELECTION TL-4 Required

Determine Test Level (TL) - RIGHT RAILING

IDM Fig. 49-6D (35)

Design Speed 35 mph

Percent Trucks 10 %

Edge of Travel Lane to Front Face Barrier 12.58 ft (min)

Number of Lanes 2

Highway Type Undivided

TL-4 (T), 1000's 32.3 vpd *~Interpolated between 49-6D(30) & 49-6D(40)*

TL-5 (T), 1000's 278.1 vpd

BRIDGE-RAILING SELECTION TL-2 Required

PROJECT : *Local Trax - Hively Ave. over N&S Railroad*

TASK : *Engineer's Assessment* PROJECT NO :

SUBJECT : *Level One Checklist Calculations*

CALCULATED BY : *CMB* DATE : *7/17/2019* CHECKED BY : DATE :

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Alternate 4A

Determine Grade Traffic Adjustment Factor, K_g

IDM Fig. 49-6B

Grade **-5.000** % (max) K_g = 1.75

Determine Curvature Traffic Adjustment Factor, K_c

IDM Fig. 49-6B

Horizontal Curvature Radius	4260.00	ft (min)	*~For inside railing*	K_c = 1.00
Horizontal Curvature Radius	4260.00	ft (min)	*~For outside railing*	K_c = 1.00

Determine Traffic Adjustment Factor, K_s

IDM Fig. 49-6C

Land Use: High Occupancy

Deck Height: 30.50 ft K_s = 1.10

Determine Adjusted AADT

Adjusted AADT = (Construction-year AADT)(K_g)(K_c)(K_s)

Construction Year AADT	7000	vpd	Year 2022
Adjusted Construction Year AADT (T), 1000's	13.48	vpd, Inside Railing	
Adjusted Construction Year AADT (T), 1000's	13.48	vpd, Outside Railing	

Determine Test Level (TL) - INSIDE RAILING

IDM Fig. 49-6D

	(35)		
Design Speed	35	mph	
Percent Trucks	10	%	
Edge of Travel Lane to Front Face Barrier	5.00	ft (min)	
Number of Lanes	2		
Highway Type	Undivided		
TL-4 (T), 1000's	12.5	vpd	*~Interpolated between 49-6D(30) & 49-6D(40)*
TL-5 (T), 1000's	84.4	vpd	

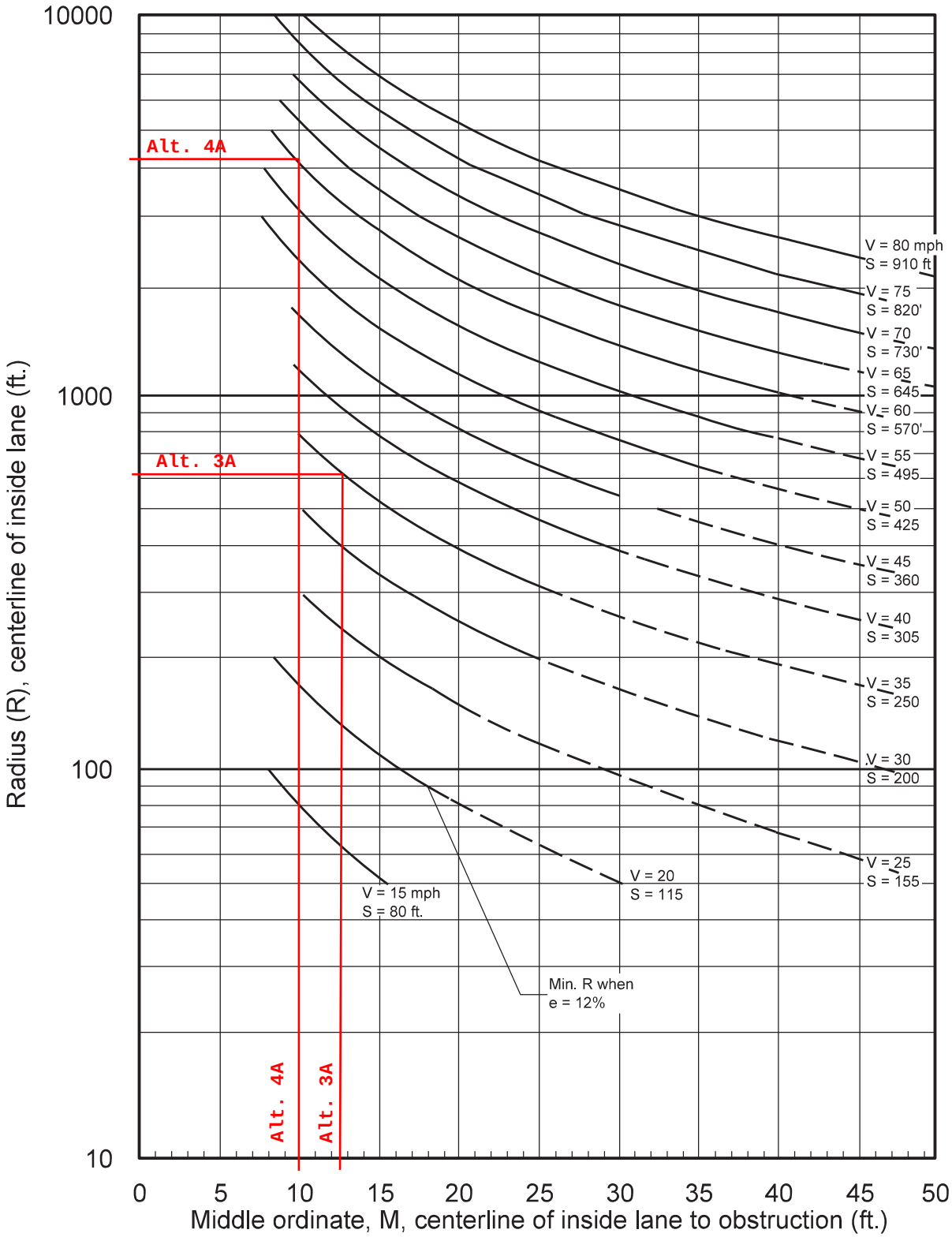
BRIDGE-RAILING SELECTION TL-4 Required

Determine Test Level (TL) - OUTSIDE RAILING

IDM Fig. 49-6D

	(35)		
Design Speed	35	mph	
Percent Trucks	10	%	
Edge of Travel Lane to Front Face Barrier	12.58	ft (min)	
Number of Lanes	2		
Highway Type	Undivided		
TL-4 (T), 1000's	32.3	vpd	*~Interpolated between 49-6D(30) & 49-6D(40)*
TL-5 (T), 1000's	278.1	vpd	

BRIDGE-RAILING SELECTION TL-2 Required



DESIGN CONTROLS FOR STOPPING SIGHT DISTANCE ON HORIZONTAL CURVE

Figure 43-4A

Back

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.*

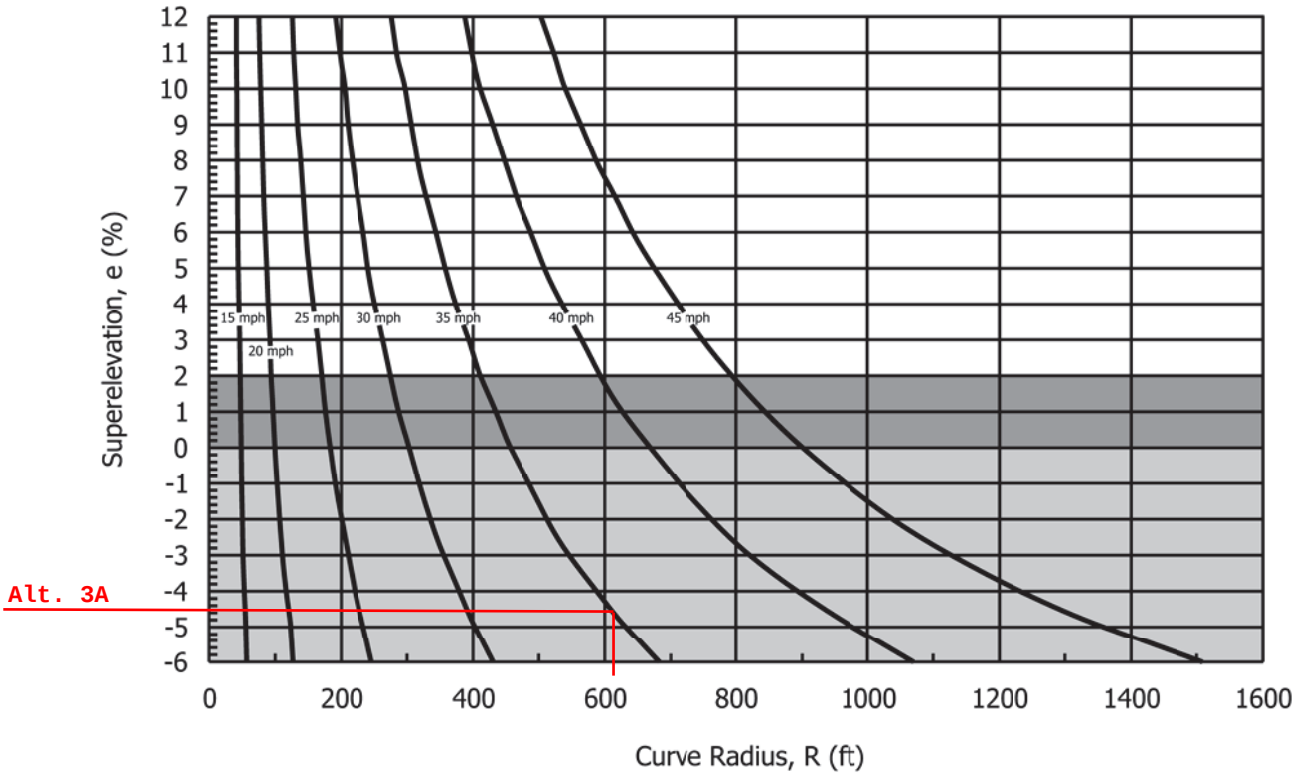
2 *The K value is calculated using the rounded value for design stopping sight distance, eye height of 3.5 ft, and object height of 2 ft.*

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

Back



Notes:

1. Figure denotes three areas for the determination of superelevation rates. See Section 43-3.02 for examples on how to use the figure.

2. The basic equation for the figure is: $R = \frac{V^2}{15\,(e + f)}$

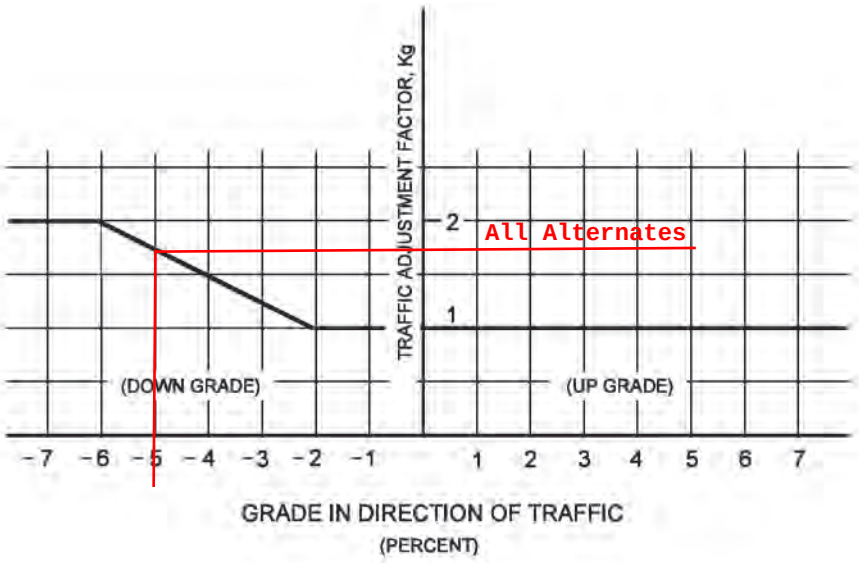
   Where:
   R = curve radius, ft.
   V = design speed, mph
   e = super elevation rate
   f = side-friction factor

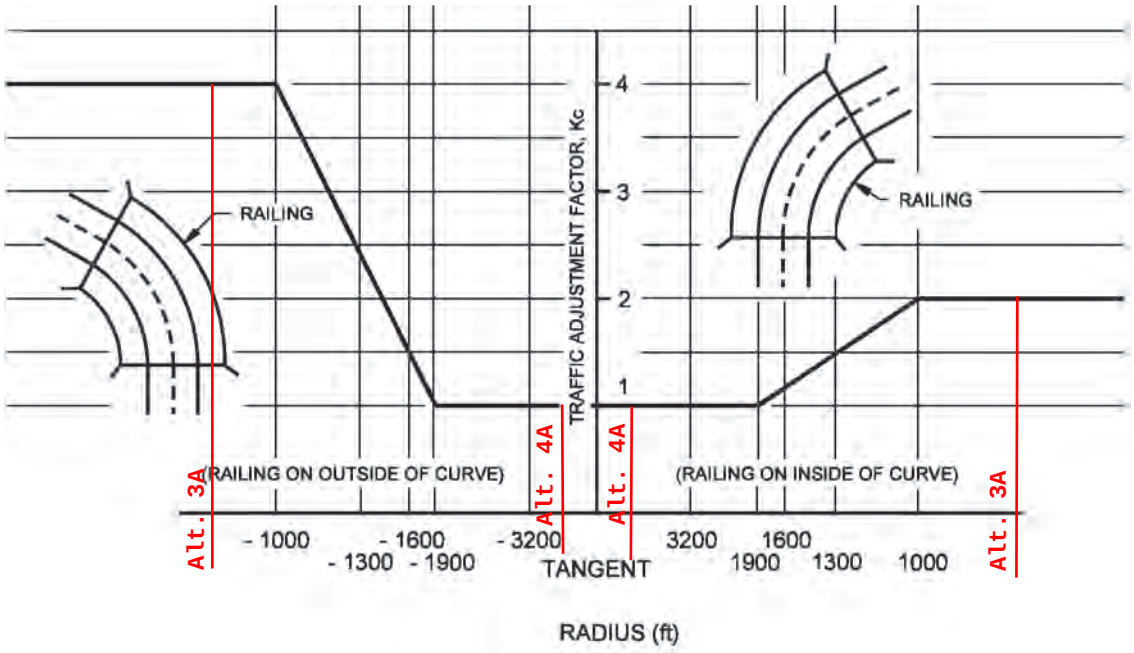
3. Negative superelevation values beyond -2.0 percent should be used for a low-type surface such as gravel, crushed stone, or earth. However a normal cross slope of -2.5 percent can be used on a high-type surface in an area with intense rainfall.

SUPERELEVATION RATE FOR LOW-SPEED URBAN STREET

Figure 43-3C

Back

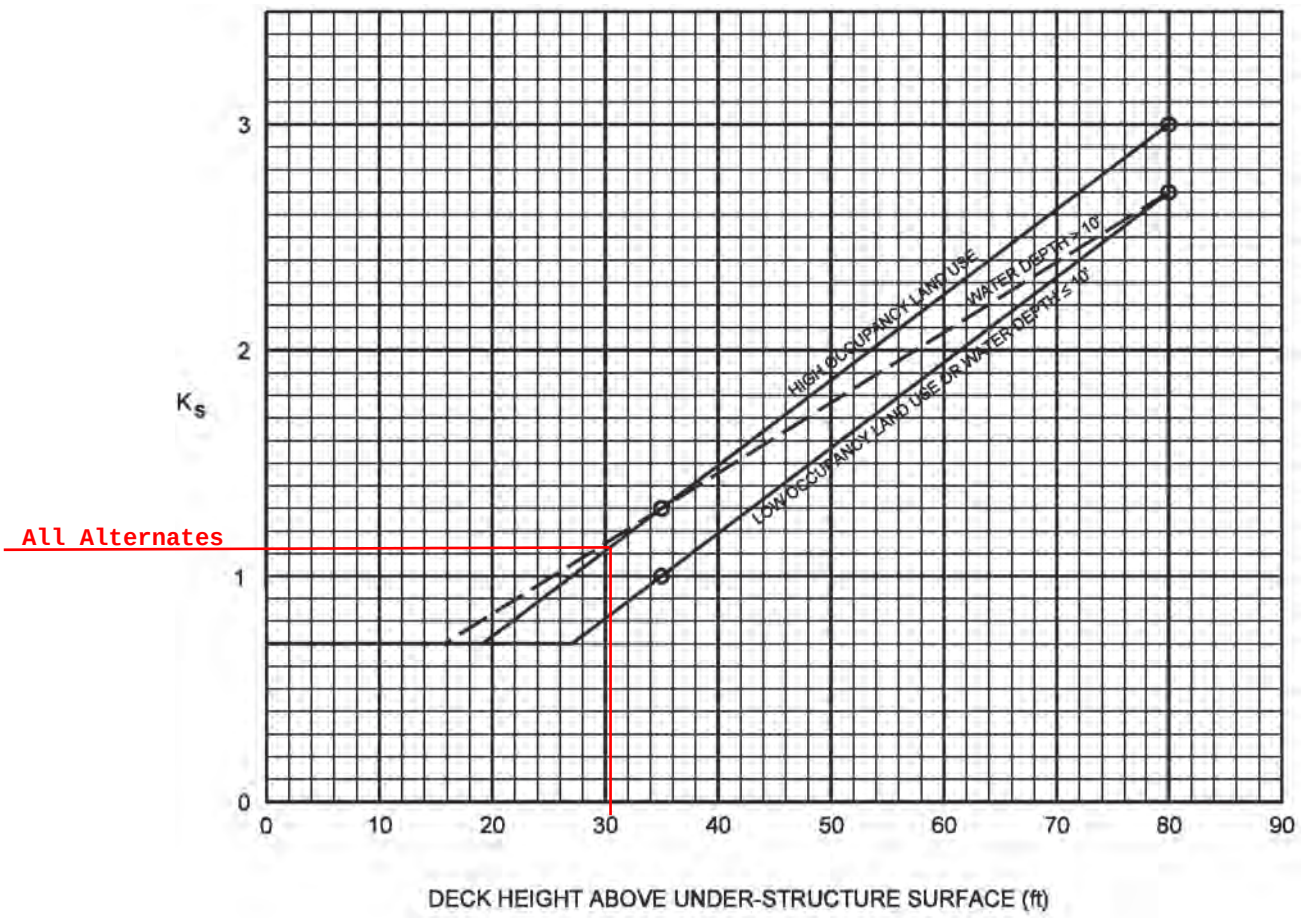




GRADE TRAFFIC-ADJUSTMENT FACTOR, K_g AND
CURVATURE TRAFFIC-ADJUSTMENT FACTOR, K_c

Figure 49-6B

Back



TRAFFIC-ADJUSTMENT FACTOR K_S,
Deck Height and Under-Structure Shoulder Height Conditions

Figure 49-6C

Back

Site Characteristics		Adjusted Construction Year Average Annual Daily Traffic, T, (1000's) for Traffic Barrier Test Levels								
		Highway Type								
% Trk	Edge of Travel Lane to Front Face Barrier, L_2 (ft)	Divided, or Undivided With 5 or More Lanes			Undivided With 4 Lanes or Fewer			One-Way		
		Test Level			Test Level			Test Level		
		TL-2	TL-4	TL-5	TL-2	TL-4	TL-5	TL-2	TL-4	TL-5
0≤ % <5	≤ 3	< 56.6	≥ 56.6	n/a	< 48.0	≥ 48.0	n/a	28.3<	28.3 ≤ T < 357.1	≥ 357.1
	3 < L_2 ≤ 7	< 90.4	≥ 90.4	n/a	< 74.6	≥ 74.6	n/a	< 45.2	≥ 45.2	n/a
	7 < L_2 ≤ 12	<148.3	≥ 148.3	n/a	< 128.9	≥ 128.9	n/a	< 74.2	≥ 74.2	n/a
	> 12	<316.0	≥ 316.0	n/a	< 277.9	≥ 277.9	n/a	< 158.0	≥ 158.0	n/a
5≤ % <10	≤ 3	< 23.9	23.9 ≤ T < 179.8	≥ 179.8	< 19.3	19.3 ≤ T < 147.9	≥ 147.9	< 12.0	12.0 ≤ T < 89.9	≥ 89.9
	3 < L_2 ≤ 7	< 36.5	36.5 ≤ T < 258.3	≥ 258.3	< 28.8	28.8 ≤ T < 228.7	≥ 228.7	< 18.3	18.3 ≤ T < 129.2	≥ 129.2
	7 < L_2 ≤ 12	< 55.9	55.9 ≤ T < 404.4	≥ 404.4	< 46.5	46.5 ≤ T < 364.6	≥ 364.6	< 28.0	28.0 ≤ T < 202.2	≥ 202.2
	> 12	<100.7	≥ 100.7	n/a	< 84.6	≥ 84.6	n/a	< 50.4	50.4 ≤ T < 417.1	≥ 417.1
10≤ % <15	≤ 3	< 15.1	15.1 ≤ T < 102.9	≥ 102.9	< 12.1	12.1 ≤ T < 84.5	≥ 84.5	< 7.6	7.6 ≤ T < 51.5	≥ 51.5
	3 < L_2 ≤ 7	< 22.8	22.8 ≤ T < 146.6	≥ 146.6	< 17.9	17.9 ≤ T < 129.2	≥ 129.2	< 11.4	11.4 ≤ T < 73.3	≥ 73.3
	7 < L_2 ≤ 12	< 34.4	34.4 ≤ T < 228.5	≥ 228.5	< 28.3	28.3 ≤ T < 205.3	≥ 205.3	< 17.2	17.2 ≤ T < 114.3	≥ 114.3
	> 12	< 59.9	59.9 ≤ T < 472.0	≥ 472.0	< 49.9	49.9 ≤ T < 466.5	≥ 466.5	< 30.0	30.0 ≤ T < 236.0	≥ 236.0
15≤ % <20	≤ 3	< 11.1	11.1 ≤ T < 72.0	≥ 72.0	< 8.8	8.8 ≤ T < 59.1	≥ 59.1	< 5.6	5.6 ≤ T < 36.0	≥ 36.0
	3 < L_2 ≤ 7	< 16.6	16.6 ≤ T < 102.4	≥ 102.4	< 13.0	13.0 ≤ T < 90.0	≥ 90.0	< 8.3	8.3 ≤ T < 51.2	≥ 51.2
	7 < L_2 ≤ 12	< 24.9	24.9 ≤ T < 159.2	≥ 159.2	< 20.4	20.4 ≤ T < 142.9	≥ 142.9	< 12.5	12.5 ≤ T < 79.6	≥ 79.6
	> 12	< 42.6	42.6 ≤ T < 329.1	≥ 329.1	< 35.4	35.4 ≤ T < 325.2	≥ 325.2	< 21.3	21.3 ≤ T < 164.6	≥ 164.6
20≤ % <25	≤ 3	< 8.7	8.7 ≤ T < 55.4	≥ 55.4	< 6.9	6.9 ≤ T < 45.4	≥ 45.4	< 4.4	4.4 ≤ T < 27.7	≥ 27.7
	3 < L_2 ≤ 7	< 13.1	13.1 ≤ T < 78.6	≥ 78.6	< 10.2	10.2 ≤ T < 69.1	≥ 69.1	< 6.6	6.6 ≤ T < 39.3	≥ 39.3
	7 < L_2 ≤ 12	< 19.5	19.5 ≤ T < 122.2	≥ 122.2	< 15.9	15.9 ≤ T < 109.6	≥ 109.6	< 9.8	9.8 ≤ T < 61.1	≥ 61.1
	> 12	< 33.1	33.1 ≤ T < 252.6	≥ 252.6	< 27.4	27.4 ≤ T < 249.6	≥ 249.6	< 16.6	16.6 ≤ T < 126.3	≥ 126.3

MEDIAN BARRIER AND BRIDGE RAILING TEST LEVEL SELECTION
DESIGN SPEED 30 mph

Figure 49-6D(30)

Back

Site Characteristics		Adjusted Construction-Year Average Annual Daily Traffic, T, (1000s) for Traffic-Barrier Test Levels								
		Highway Type								
% Trk	Edge of Travel Lane to Front Face Barrier, L_2 (ft)	Divided, or Undivided With 5 or More Lanes			Undivided With 4 Lanes or Fewer			One-Way		
		Test Level			Test Level			Test Level		
		TL-2	TL-4	TL-5	TL-2	TL-4	TL-5	TL-2	TL-4	TL-5
0≤ % <5	≤ 3	< 14.0	14.0 ≤ T < 280.7	≥ 280.7	< 10.4	10.4 ≤ T < 202.4	≥ 202.4	< 7.0	7.0 ≤ T < 140.4	≥ 140.4
	3 < L_2 ≤ 7	< 18.0	18.0 ≤ T < 335.1	≥ 335.1	< 13.4	13.4 ≤ T < 253.8	≥ 253.8	< 9.0	9.0 ≤ T 167.6	≥ 167.6
	7 < L_2 ≤ 12	< 24.4	24.4 ≤ T < 452.0	≥ 452.0	< 19.2	19.2 ≤ T < 366.7	≥ 366.7	< 12.2	12.2 < 226.0	≥ 226.0
	> 12	< 39.5	≥ 39.5	n/a	< 32.1	≥ 32.1	n/a	< 19.8	19.8 ≤ T < 362.7	≥ 362.7
5≤ % <10	≤ 3	< 9.8	9.8 ≤ T < 79.7	≥ 79.7	< 7.1	7.1 ≤ T < 55.6	≥ 55.6	< 4.9	4.9 ≤ T < 39.9	≥ 39.9
	3 < L_2 ≤ 7	< 12.7	12.7 ≤ T < 89.8	≥ 89.8	< 9.2	9.2 ≤ T < 68.6	≥ 68.6	< 6.4	6.4 ≤ T < 44.9	≥ 44.9
	7 < L_2 ≤ 12	< 16.9	16.9 ≤ T < 132.4	≥ 132.4	< 12.8	12.8 ≤ T < 102.3	≥ 102.3	< 8.5	8.5 ≤ T < 66.2	≥ 66.2
	> 12	< 25.8	25.8 ≤ T < 183.6	≥ 183.6	< 20.1	20.1 ≤ T < 157.2	≥ 157.2	< 12.9	12.9 ≤ T < 91.8	≥ 91.8
10≤ % <15	≤ 3	< 7.5	7.5 ≤ T < 46.4	≥ 46.4	< 5.4	5.4 ≤ T < 32.2	≥ 32.2	< 3.8	3.8 ≤ T < 23.2	≥ 23.2
	3 < L_2 ≤ 7	< 9.8	9.8 ≤ T < 51.9	≥ 51.9	< 7.0	7.0 ≤ T < 39.6	≥ 39.6	< 4.9	4.9 ≤ T < 26.0	≥ 26.0
	7 < L_2 ≤ 12	< 12.9	12.9 ≤ T < 77.6	≥ 77.6	< 9.6	9.6 ≤ T < 59.4	≥ 59.4	< 6.5	6.5 ≤ T < 38.8	≥ 38.8
	> 12	< 19.1	19.1 ≤ T < 105.1	≥ 105.1	< 14.6	14.6 ≤ T < 89.6	≥ 89.6	< 9.6	9.6 ≤ T < 52.6	≥ 52.6
15≤ % <20	≤ 3	< 6.1	6.1 ≤ T < 32.8	≥ 32.8	< 4.4	4.4 ≤ T < 22.7	≥ 22.7	< 3.1	3.1 ≤ T < 16.4	≥ 16.4
	3 < L_2 ≤ 7	< 8.0	8.0 ≤ T < 36.5	≥ 36.5	< 5.6	5.6 ≤ T < 27.9	≥ 27.9	< 4.0	4.0 ≤ T < 18.3	≥ 18.3
	7 < L_2 ≤ 12	< 10.4	10.4 ≤ T < 54.9	≥ 54.9	< 7.7	7.7 ≤ T < 41.9	≥ 41.9	< 5.2	5.2 ≤ T < 27.5	≥ 27.5
	> 12	< 15.2	15.2 ≤ T < 73.6	≥ 73.6	< 11.5	11.5 ≤ T < 62.7	≥ 62.7	< 7.6	7.6 ≤ T < 36.8	≥ 36.8
20≤ % <25	≤ 3	< 5.1	5.1 ≤ T < 25.3	≥ 25.3	< 3.6	3.6 ≤ T < 17.5	≥ 17.5	< 2.6	2.6 ≤ T < 12.7	≥ 12.7
	3 < L_2 ≤ 7	< 6.7	6.7 ≤ T < 28.1	≥ 28.1	< 4.7	4.7 ≤ T < 21.5	≥ 21.5	< 3.4	3.4 ≤ T < 14.1	≥ 14.1
	7 < L_2 ≤ 12	< 8.8	8.8 ≤ T < 42.4	≥ 42.4	< 6.4	6.4 ≤ T < 32.3	≥ 32.3	< 4.4	4.4 ≤ T < 21.2	≥ 21.2
	> 12	< 12.6	12.6 ≤ T < 56.7	≥ 56.7	< 9.5	9.5 ≤ T < 48.2	≥ 48.2	< 6.3	6.3 ≤ T < 28.4	≥ 28.4

MEDIAN-BARRIER OR BRIDGE-RAILING TEST-LEVEL SELECTION, DESIGN SPEED 40 mph

Figure 49-6D(40)

Back

Beres, Christopher

From: Coates, Angela
Sent: Friday, July 19, 2019 2:42 PM
To: Beres, Christopher
Cc: Boltz, Charles
Subject: RE: Hively Ave AADT Projections

The 2022 AADT is 7000 vpd. I would just assume the same daily truck percentage.

Michael Baker INTERNATIONAL

Angela M. Coates, P.E., PTOE | Traffic Engineer
200 South Orange Avenue, Suite 1050 | Orlando, FL 32801 | [O] 407-562-4127
angela.coates@mbakerintl.com | www.mbakerintl.com |

From: Beres, Christopher
Sent: Friday, July 19, 2019 2:40 PM
To: Coates, Angela <Angela.Coates@mbakerintl.com>
Cc: Boltz, Charles <Charles.Boltz@mbakerintl.com>
Subject: RE: Hively Ave AADT Projections

Thank you, Angela!
Any chance you have the 2022 AADT available as well?

Thanks,

Chris Beres | Civil Engineer - Bridge
3815 River Crossing Parkway, Suite 20 | Indianapolis, IN 46240 | [O] 317-689-6914
christopher.beres@mbakerintl.com | www.MBakerintl.com

Michael Baker INTERNATIONAL

From: Coates, Angela
Sent: Friday, July 19, 2019 2:36 PM
To: Beres, Christopher <Christopher.Beres@mbakerintl.com>
Cc: Boltz, Charles <Charles.Boltz@mbakerintl.com>
Subject: Hively Ave AADT Projections

Chris,

The estimated design year data for the Hively Avenue bridge is:

- 2042 AADT = 8400
- 2042 Daily Truck Percentage = 10%

Let me know if you need anything else or have any questions.

APPENDIX C

Utility Location Map

DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: JLR

CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #3A UTILITIES

HORIZONTAL SCALE	BRIDGE FILE
1" = 100'	N/A
VERTICAL SCALE	DESIGNATION
	1801933

SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

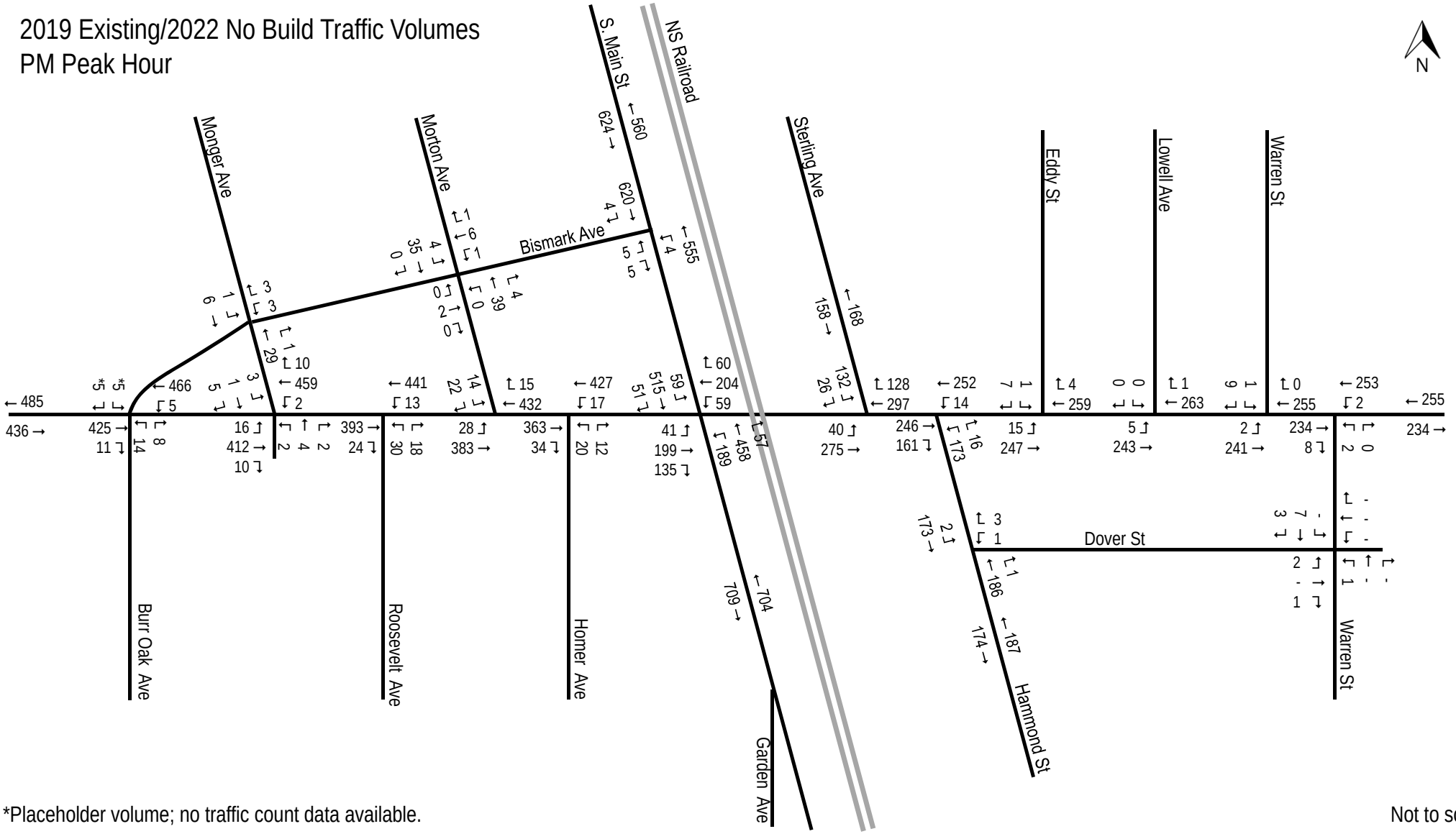
D:\p_PWP\dms02589\Elkhart_ALT_3A_UTIL.dgn

Des. No. 1801933

APPENDIX D

AADT & Level of Service

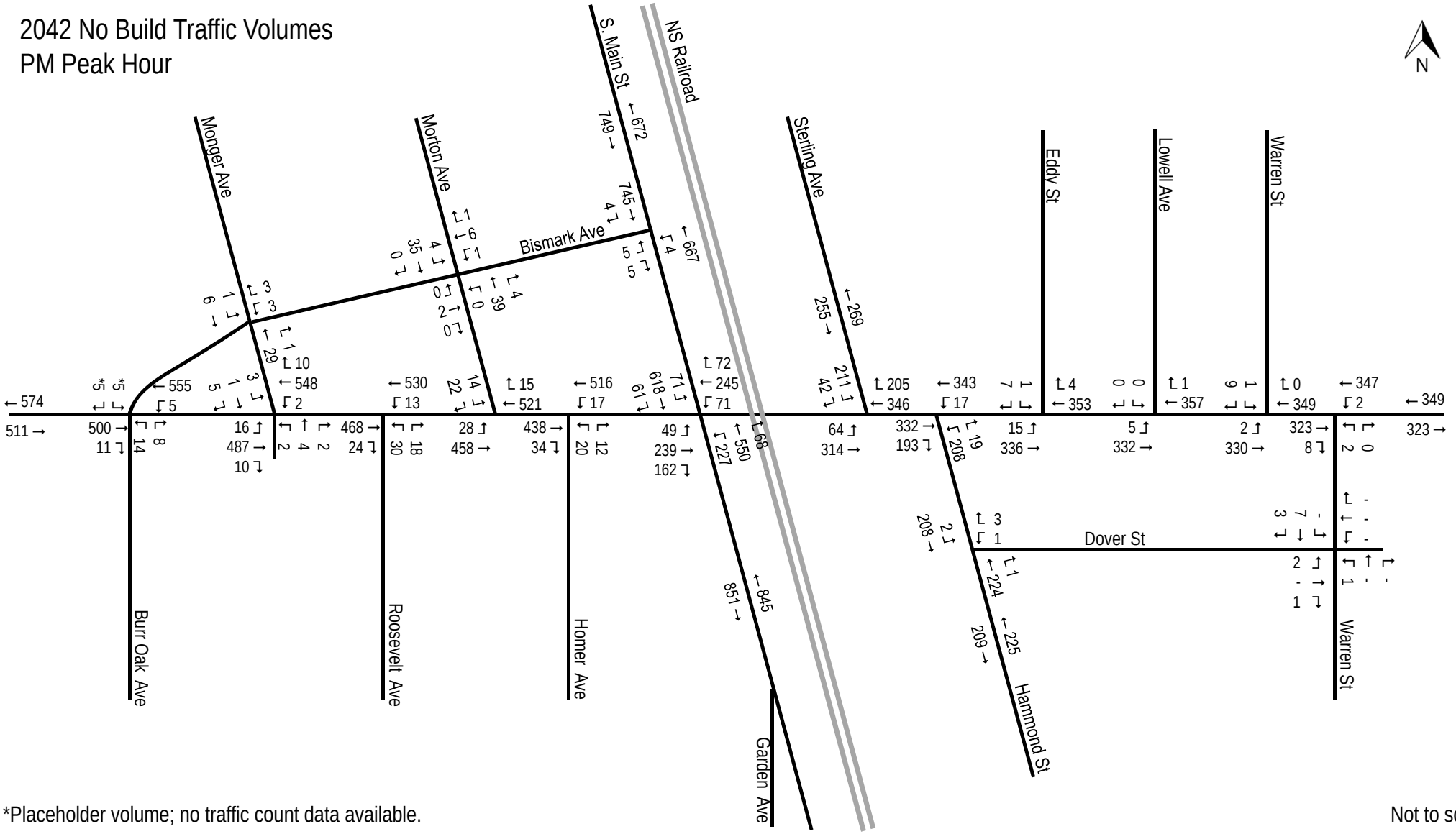
2019 Existing/2022 No Build Traffic Volumes
PM Peak Hour



*Placeholder volume; no traffic count data available.

Not to scale

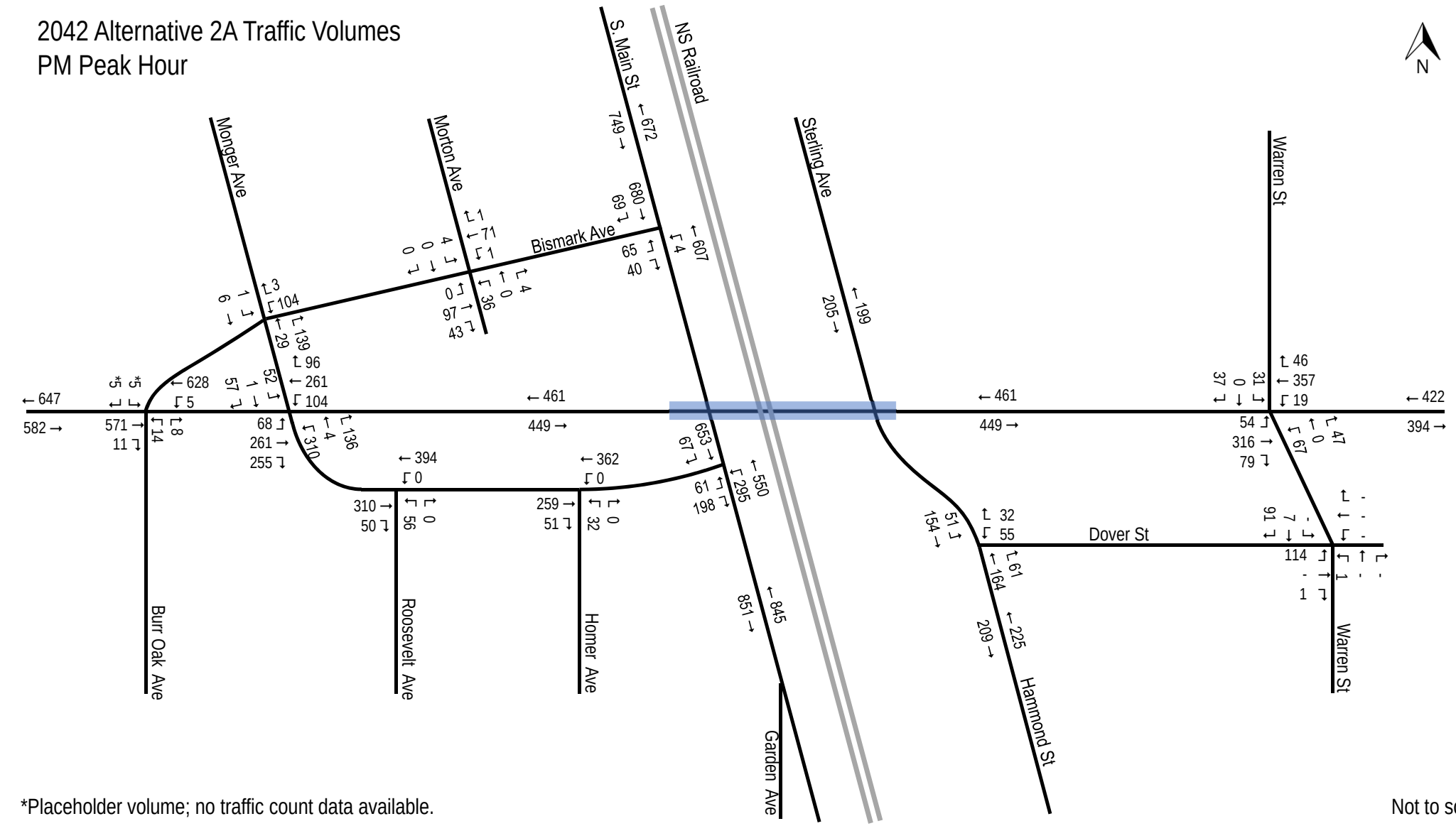
2042 No Build Traffic Volumes
PM Peak Hour



*Placeholder volume; no traffic count data available.

Not to scale

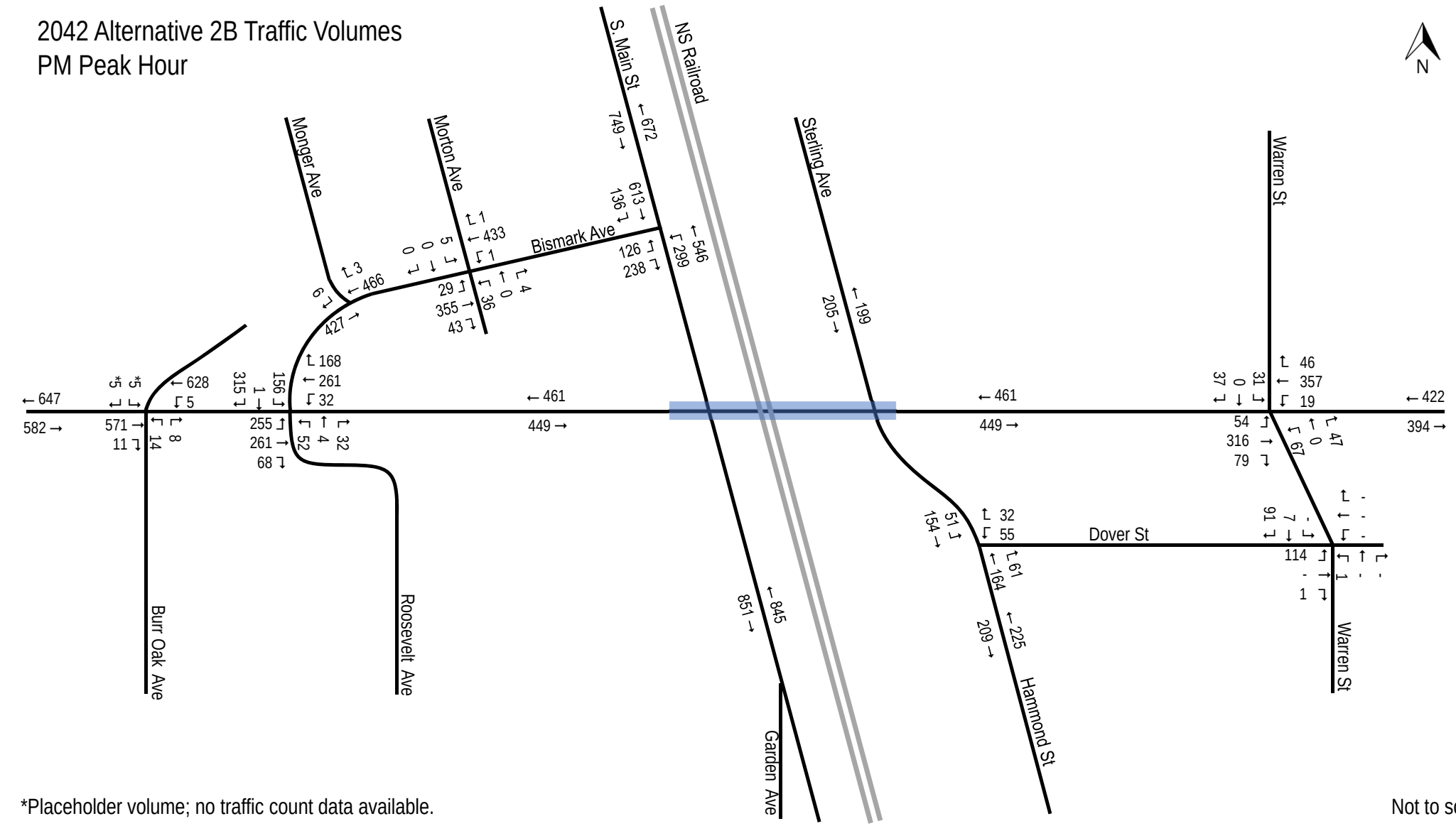
2042 Alternative 2A Traffic Volumes
PM Peak Hour



*Placeholder volume; no traffic count data available.

Not to scale

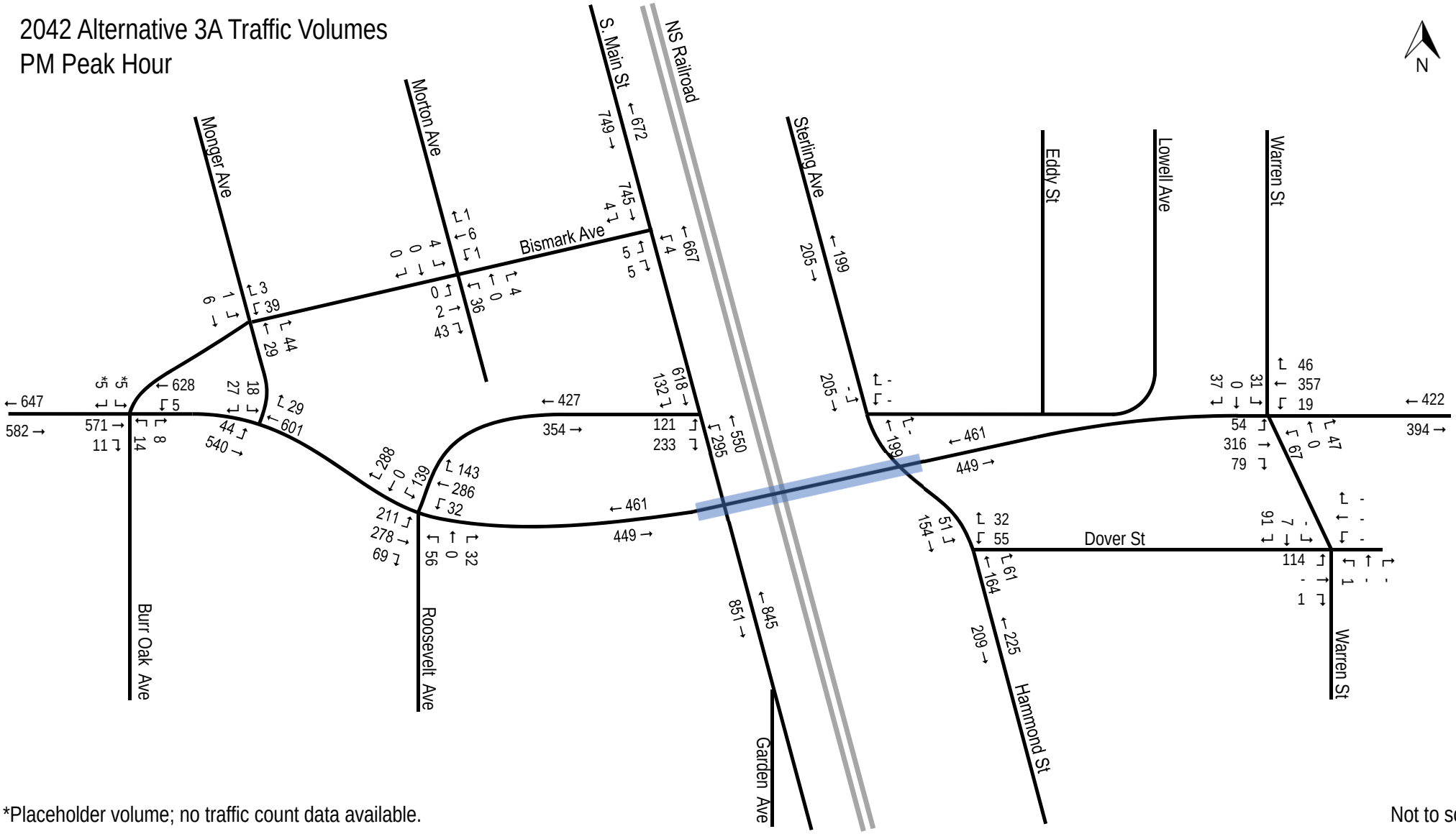
2042 Alternative 2B Traffic Volumes
PM Peak Hour



*Placeholder volume; no traffic count data available.

Not to scale

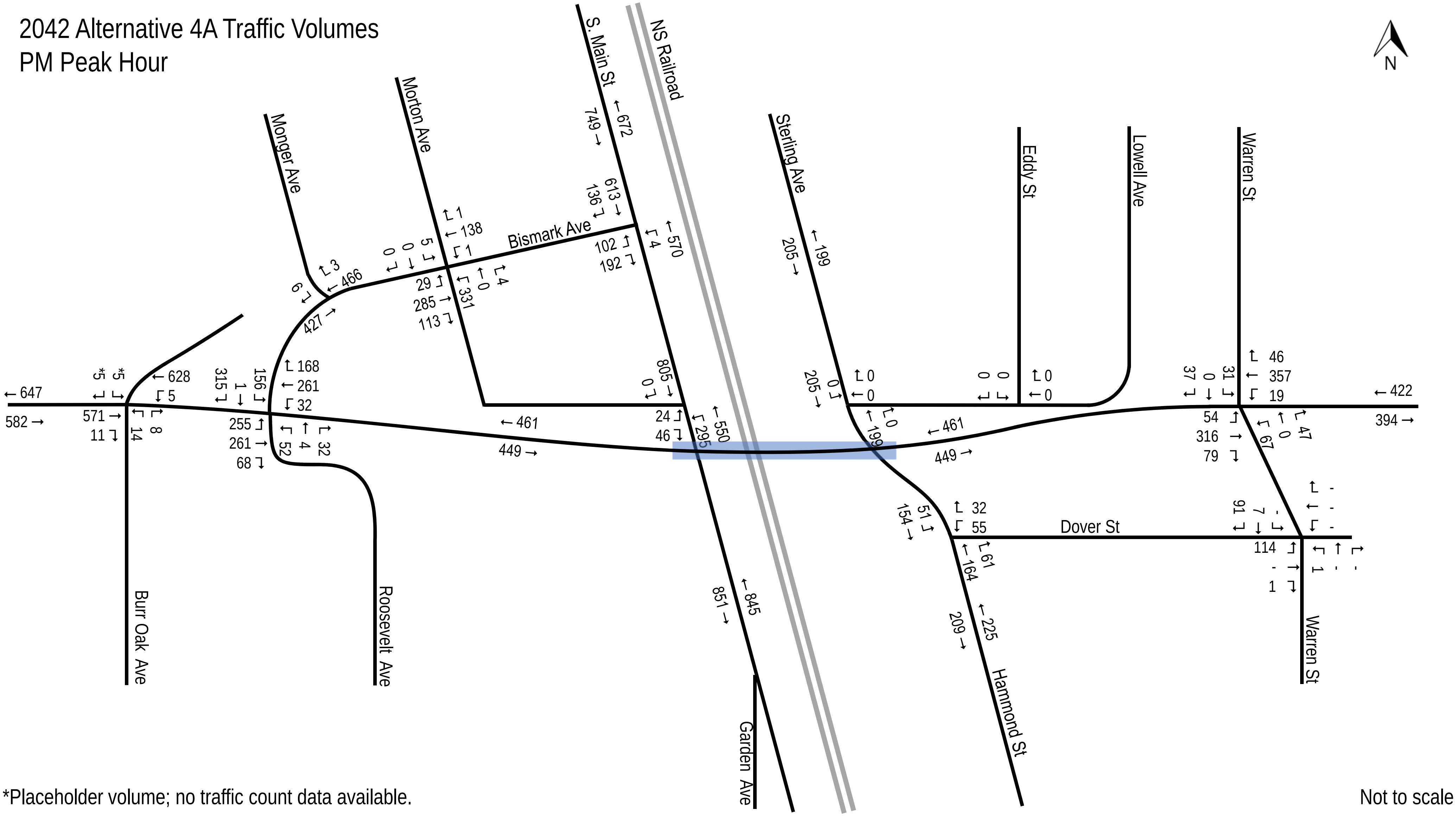
2042 Alternative 3A Traffic Volumes
PM Peak Hour



*Placeholder volume; no traffic count data available.

Not to scale

2042 Alternative 4A Traffic Volumes
PM Peak Hour

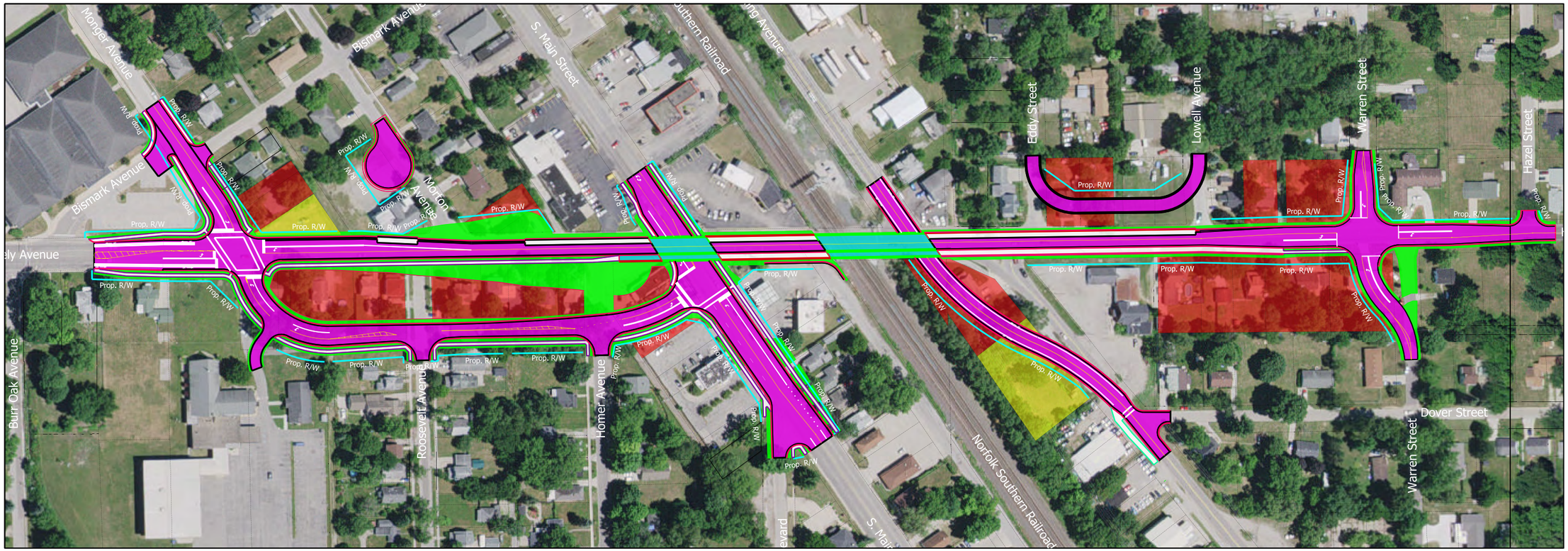


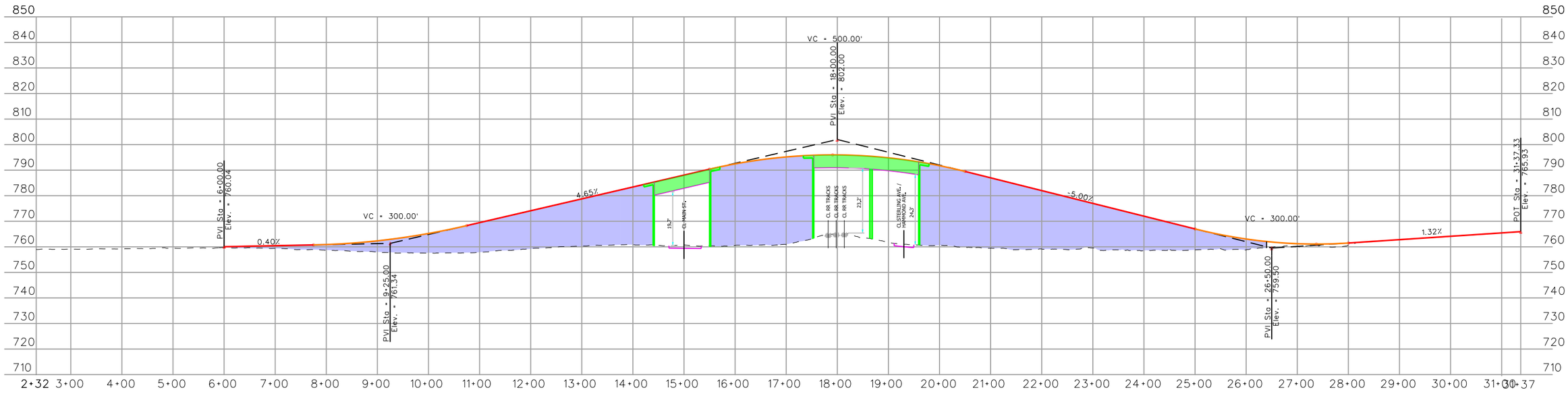
*Placeholder volume; no traffic count data available.

Not to scale

APPENDIX E

Plan and Profiles





DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

CHECKED: CAB CHECKED: CMB

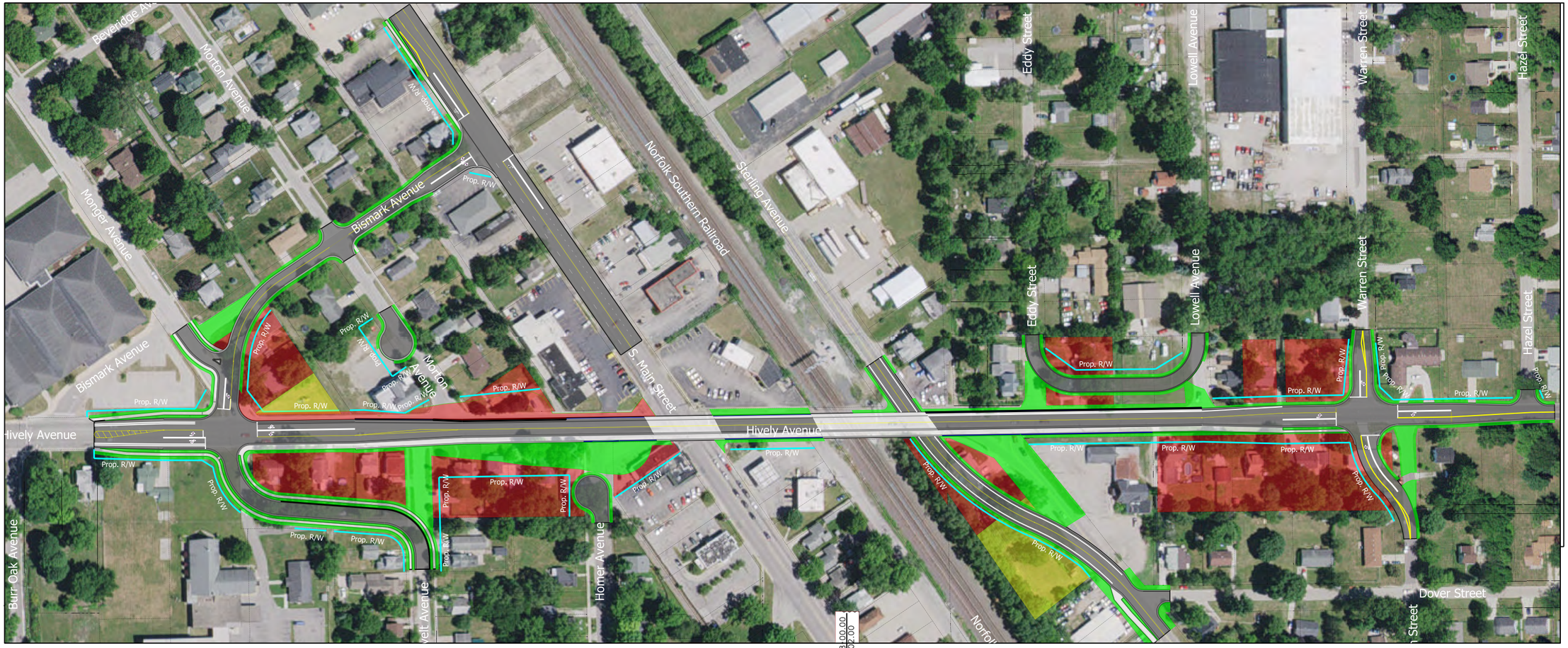
INDIANA
DEPARTMENT OF TRANSPORTATION

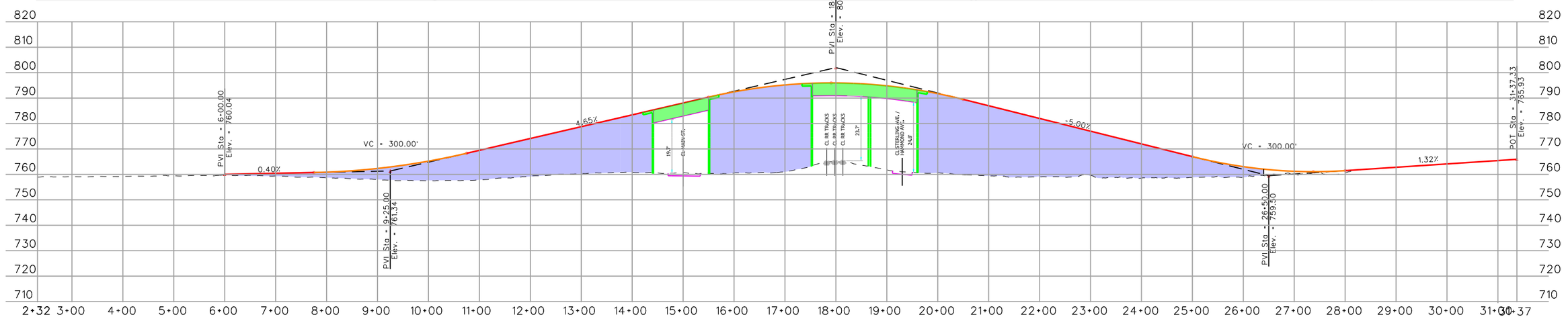
ALTERNATE #2A PROFILE

HORIZONTAL SCALE	BRIDGE FILE
	N/A
VERTICAL SCALE	DESIGNATION
	1801933
SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

P_PWP:dms025891\Elkhart_ALT_2A_P&P.dgn

Des. No. 1801933





DATE	REVISION

RECOMMENDED FOR APPROVAL

DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

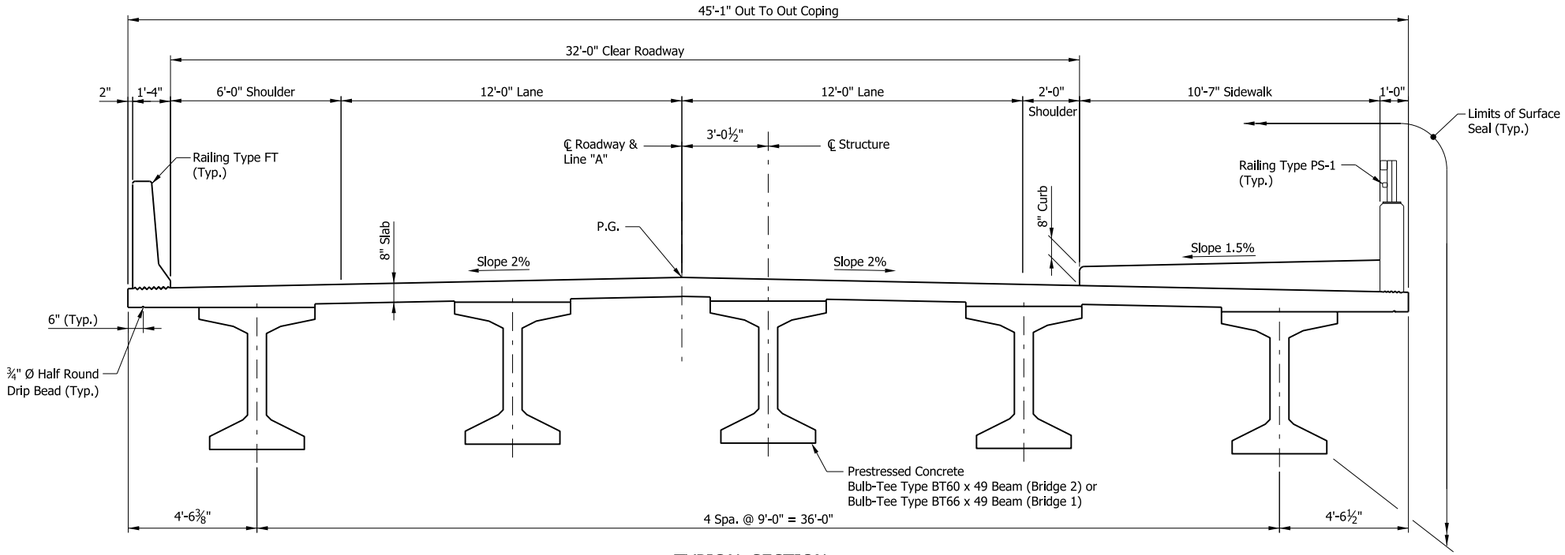
CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

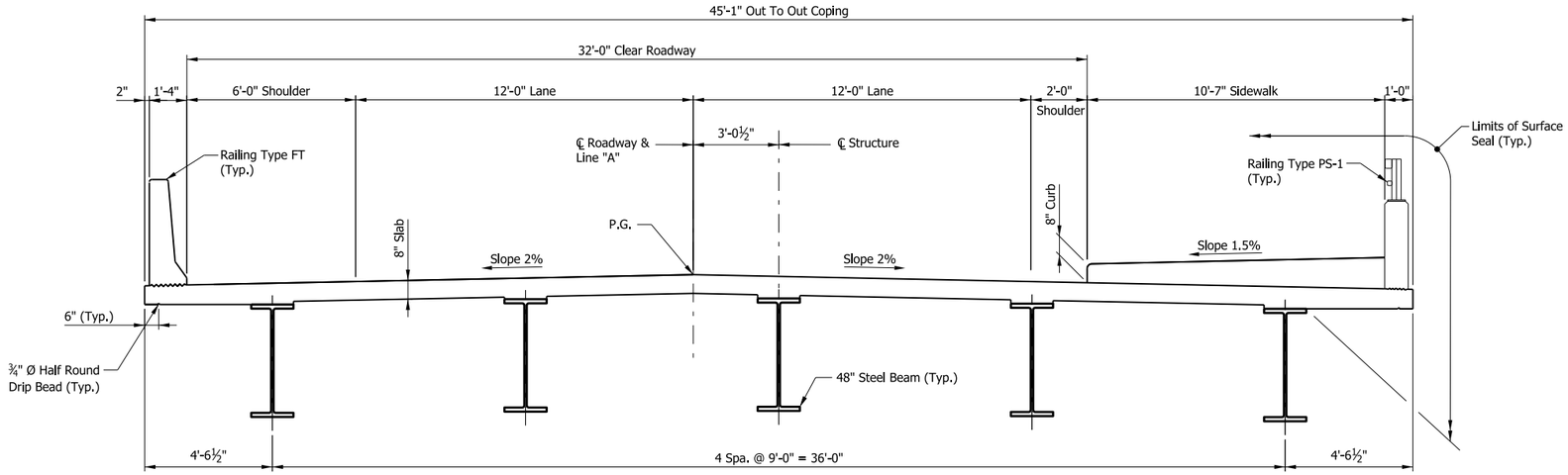
ALTERNATE #2B PROFILE

HORIZONTAL SCALE	BRIDGE FILE
	N/A
VERTICAL SCALE	DESIGNATION
	1801933
SURVEY BOOK	SHEETS
-	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

IP_PWP:dms025891\Elkhart_ALT_2B_P&P.dgn



TYPICAL SECTION
CONCRETE ALTERNATE



TYPICAL SECTION
STEEL ALTERNATE

GENERAL NOTES

Reinforcing steel cover shall be 2½" in the top and 1" minimum in the bottom of deck slab, and 2" in all other parts, unless noted.

Concrete in Superstructure, End Bents, and Concrete Barrier Railing shall be Class "C".

All Reinforcing Steel in the Deck, Semi-Integral End Bents, Concrete Railing & Concrete Bridge Approaches shall be epoxy coated.

Chamfer exposed edges 1", unless noted.

All exposed faces of end bents & wingwalls, top of the new deck, all exposed faces of new concrete bridge railings and transitions, face of copings and underside of the deck slab from the face of coping to the outside face of exterior beams, and bridge approaches to be surface sealed. Alternate to Concrete Sealers may be used. See Std. Specifications 709.05(c).

These plans were prepared according to current survey datum (N.A.V.D. 1988).

Existing bridge elevations shall be checked by the contractor to ensure proper fit of new concrete to existing concrete.

Contractor shall check all dimensions and conditions in the field and report any discrepancies to the engineer and assume responsibility for their correctness and the fit of the new part to the old.

DESIGN DATA

Originally beam and substructure designed for HS-20 loading in accordance with AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002, and Subsequent Interim Revisions.

Deck Slab designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, Eighth Edition, 2020.

Designed for actual weight plus 10 psf noncomposite load for stay-in-place forms and 18.75 psf composite load for future wearing surface on top of the proposed 8" deck slab.

Deck Slab designed with structural depth 7½" and a ½" integral wearing surface.

Unit stresses:

Class "C" concrete:	F'c = 4,000 psi
Class "A" concrete:	F'c = 3,500 psi
Reinforcing steel:	Fy = 60,000 psi

CONSTRUCTION LOADING

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

Deck Falsework Loads:	Designed for 15 lb/ft² for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway
Construction Live Load:	Designed for 20 lb/ft² extending 2 ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6" outside the face of coping over 30-ft length of the deck centered with the finishing machine.
Finishing-Machine Load:	4500 lb distributed over 10 ft along coping.
Wind Load:	Structure designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.

DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #2A & 2B
TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	N/A
VERTICAL SCALE	DESIGNATION
1/4" = 1'-0"	1801933
SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

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IP_PWP:dms02589\Elkhart_ALT_3A_P&P.dgn

DATE	REVISION

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: CMB
DRAWN: SWB
CHECKED: CAB
CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #3A PROFILE

HORIZONTAL SCALE	BRIDGE FILE
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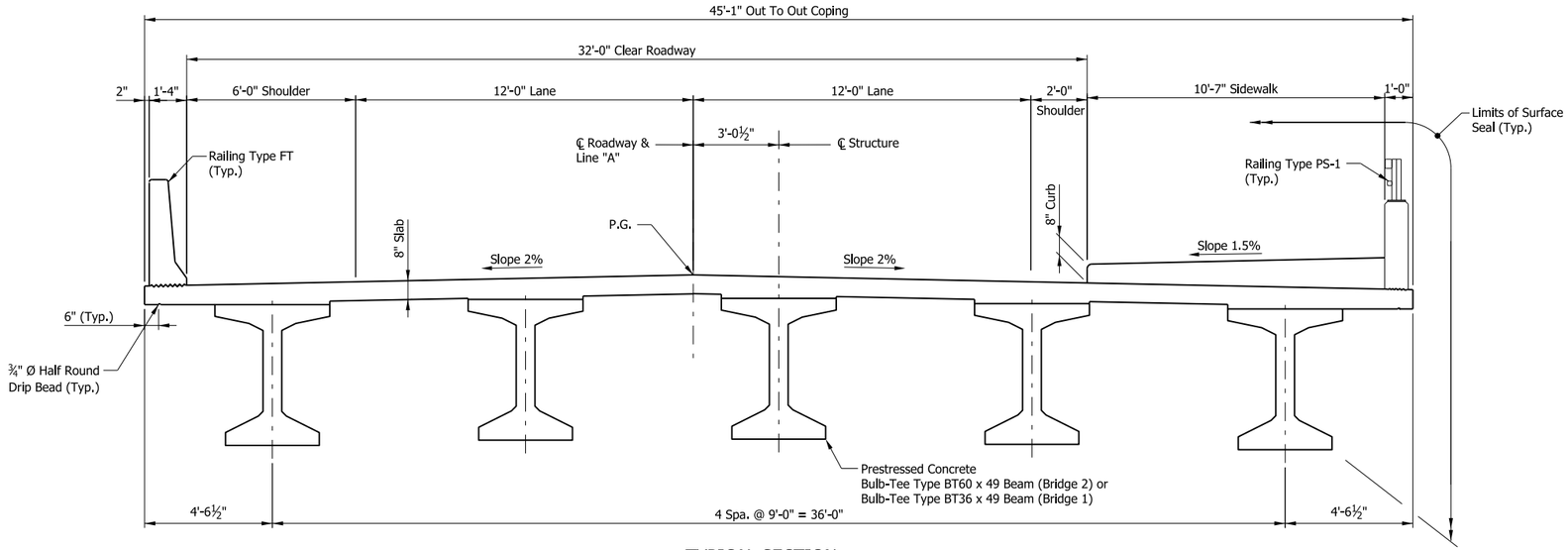
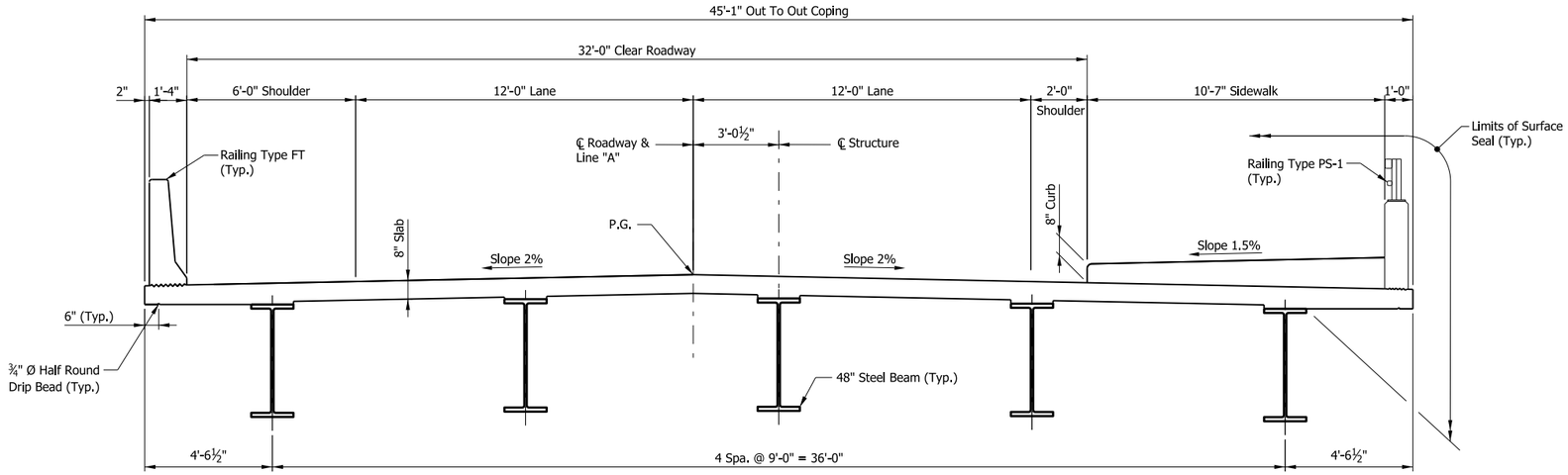
VERTICAL SCALE	DESIGNATION
	1801933
SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933



TYPICAL SECTION
CONCRETE ALTERNATE



TYPICAL SECTION
STEEL ALTERNATE

GENERAL NOTES

Reinforcing steel cover shall be 2½" in the top and 1" minimum in the bottom of deck slab, and 2" in all other parts, unless noted.

Concrete in Superstructure, End Bents, and Concrete Barrier Railing shall be Class "C".

All Reinforcing Steel in the Deck, Semi-Integral End Bents, Concrete Railing & Concrete Bridge Approaches shall be epoxy coated.

Chamfer exposed edges 1", unless noted.

All exposed faces of end bents & wingwalls, top of the new deck, all exposed faces of new concrete bridge railings and transitions, face of copings and underside of the deck slab from the face of coping to the outside face of exterior beams, and bridge approaches to be surface sealed. Alternate to Concrete Sealers may be used. See Std. Specifications 709.05(c).

These plans were prepared according to current survey datum (N.A.V.D. 1988).

Existing bridge elevations shall be checked by the contractor to ensure proper fit of new concrete to existing concrete.

Contractor shall check all dimensions and conditions in the field and report any discrepancies to the engineer and assume responsibility for their correctness and the fit of the new part to the old.

DESIGN DATA

Originally beam and substructure designed for HS-20 loading in accordance with AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002, and Subsequent Interim Revisions.

Deck Slab designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, Eighth Edition, 2020.

Designed for actual weight plus 10 psf noncomposite load for stay-in-place forms and 18.75 psf composite load for future wearing surface on top of the proposed 8" deck slab.

Deck Slab designed with structural depth 7½" and a ½" integral wearing surface.

Unit stresses:

Class "C" concrete:	F'c = 4,000 psi
Class "A" concrete:	F'c = 3,500 psi
Reinforcing steel:	Fy = 60,000 psi

CONSTRUCTION LOADING

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

Deck Falsework Loads:	Designed for 15 lb/ft² for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway
Construction Live Load:	Designed for 20 lb/ft² extending 2 ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6" outside the face of coping over 30-ft length of the deck centered with the finishing machine.
Finishing-Machine Load:	4500 lb distributed over 10 ft along coping.
Wind Load:	Structure designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.

DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #3A
TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	N/A
VERTICAL SCALE	DESIGNATION
1/4" = 1'-0"	1801933
SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

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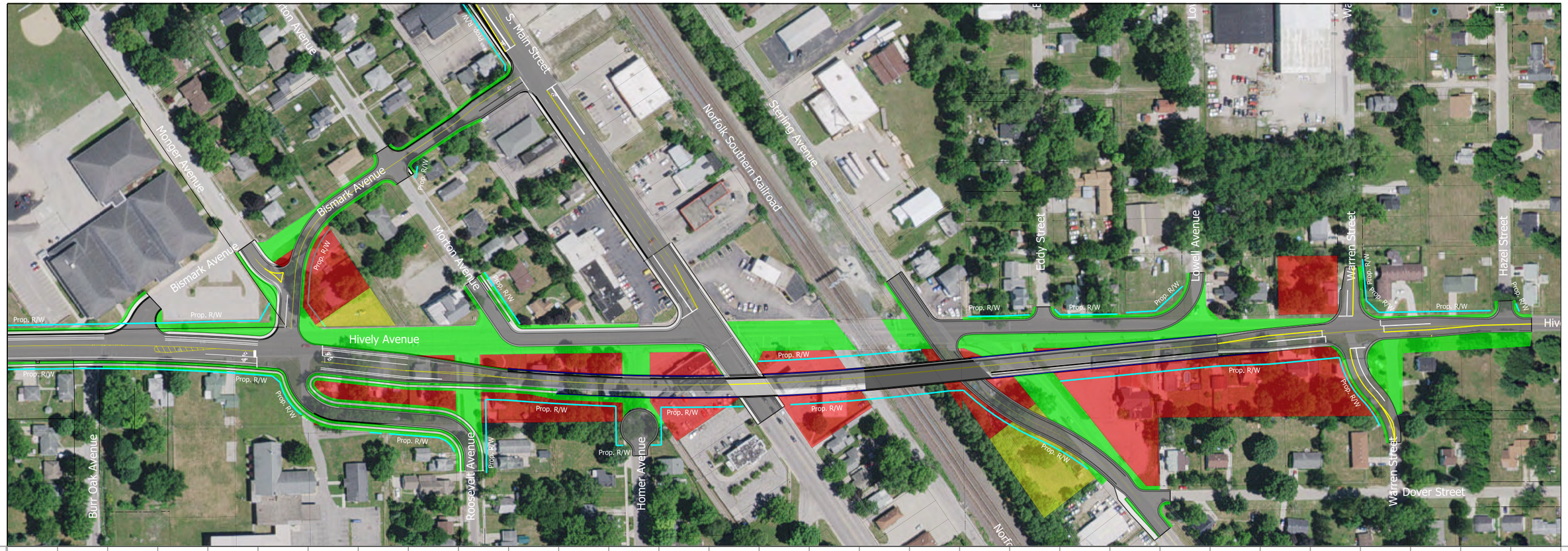

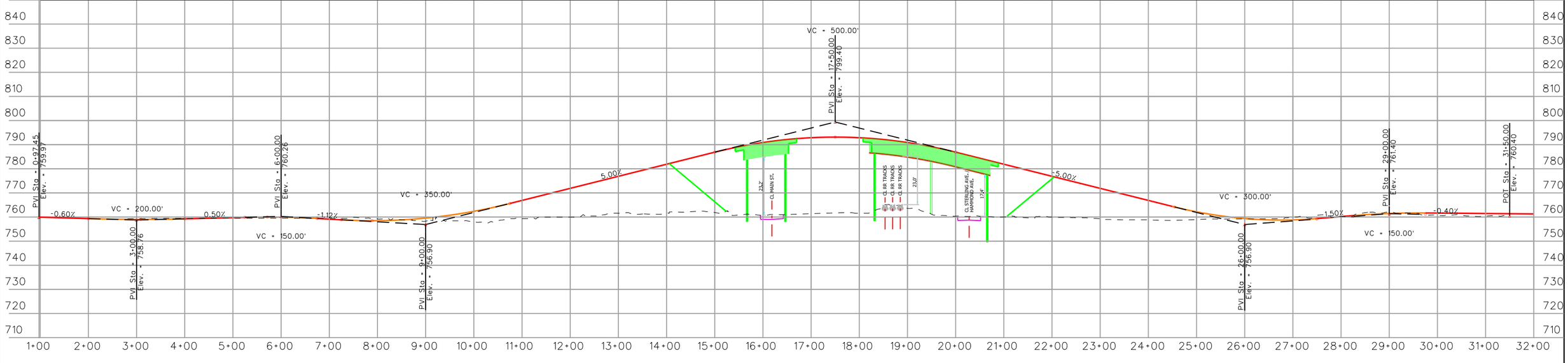

DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #4A PROFILE

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VERTICAL SCALE	DESIGNATION
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SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
B-41845	1801933

IP_PWP:dms02589\Elkhart_ALT_4A_P&P.dgn

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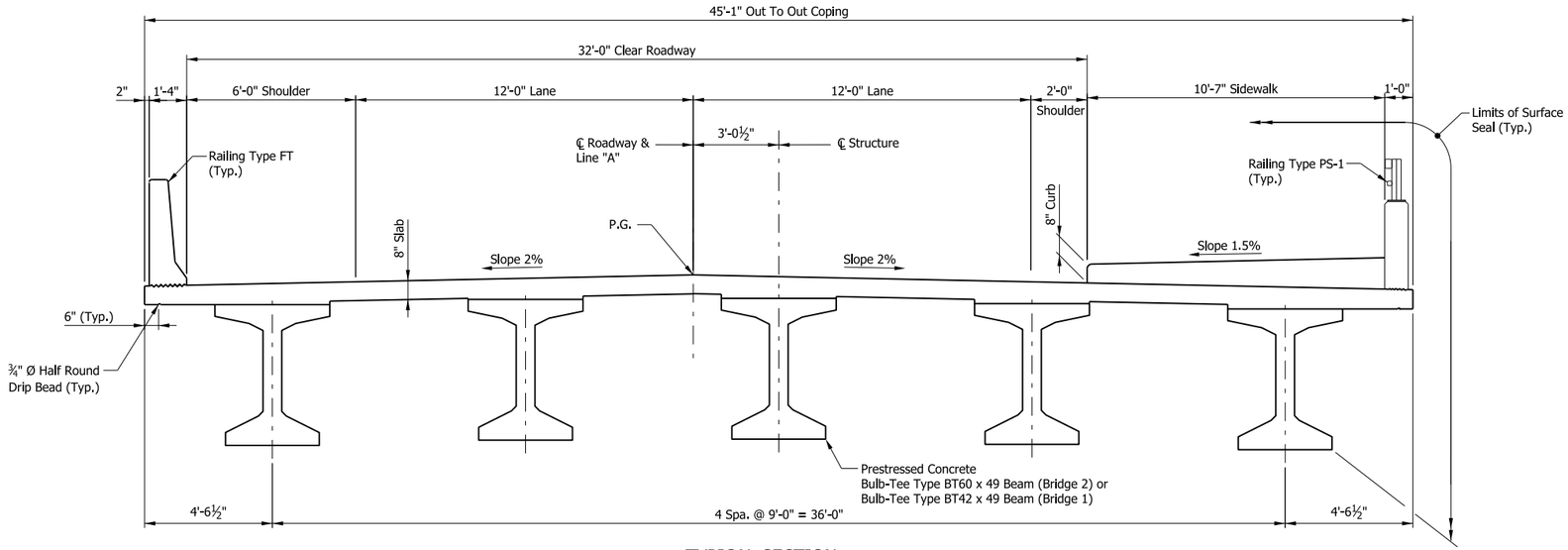
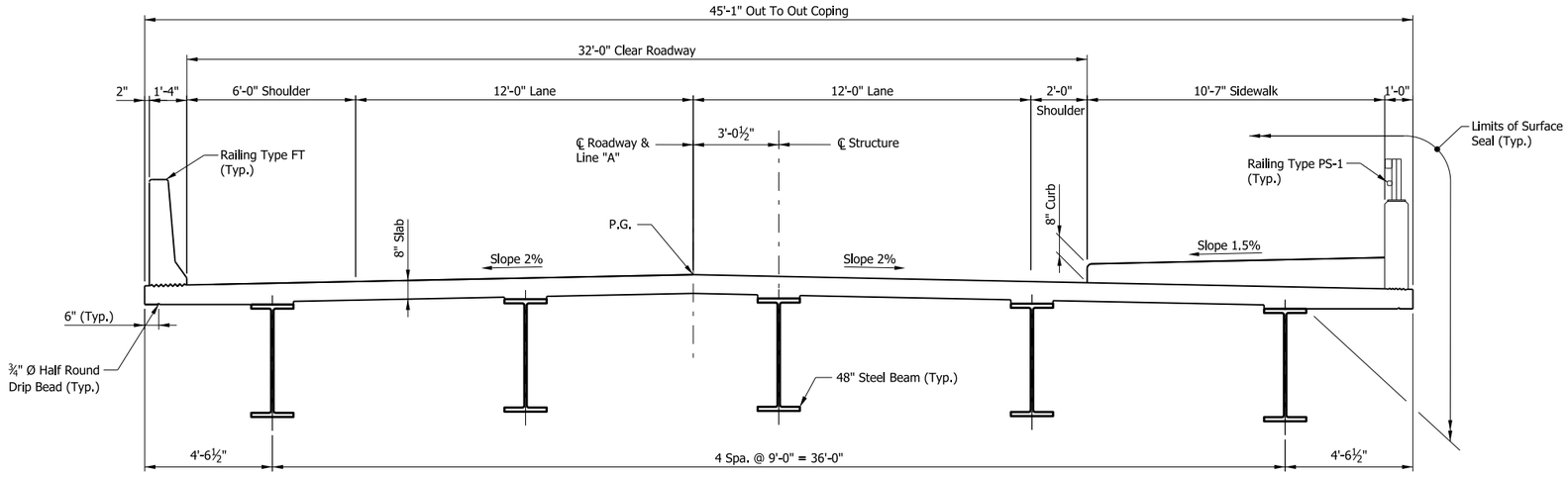


TYPICAL SECTION
CONCRETE ALTERNATE



TYPICAL SECTION
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DATE	REVISION

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: CMB DRAWN: SWB

CHECKED: CAB CHECKED: CMB

INDIANA
DEPARTMENT OF TRANSPORTATION

ALTERNATE #4A
TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	N/A
VERTICAL SCALE	DESIGNATION
1/4" = 1'-0"	1801933
SURVEY BOOK	SHEETS
.	1 OF 1
CONTRACT	PROJECT
B-41845	1801933

IP_PWP:dms025891Ekhart_ALT_4A_BR_SHT_TYP.dgn

Michael Baker
INTERNATIONAL

Appendix N:

Draft Conceptual Site Relocation Study

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Conceptual Stage Relocation Study

Table of Contents

Purpose of the Conceptual Stage Relocation Study

The purpose of a Conceptual Stage Relocation Study (CSRS) is to inventory the characteristics and needs of residents and businesses that may be displaced by a project, analyze potential problems caused by the displacement, and propose solutions to those problems. Ultimately, the CSRS can serve as a basis for determining the extent of hardship to displaced residents and businesses and to those who remain in the project area once the work is completed.

About the Author

The author of this study, Joe Gromosky of Boomerang Ventures, LLC, has been a full-time relocation agent for 15 years and has worked directly with thousands of relocatees—homeowners; residential tenants; landlords; and small, medium, and large businesses—on some of the largest right-of-way relocation projects in the country. See Appendix A for more on the author's background.

The Project

The project is located in Elkhart, Indiana on East Hively Avenue at the Norfolk Southern Railroad crossing. The project will eliminate the existing Norfolk Southern Railroad at-grade-crossing at Hively Avenue by creating a bridge that will carry traffic over the railroad. The project should dramatically improve mobility in the area by eliminating vehicle backups and congestion that occur at the crossing and nearby intersections due to frequent train traffic.

See Appendix B for overview and detailed maps of the study area and photos of affected parcels.

CSRS Methodology and Definitions

The following process is used to complete the CSRS:

1. Map the study area to find homes, businesses, and other structures or personal property in the area to be acquired.
2. Contact and offer to meet with affected residents and businesses to understand their needs and determine how the project and a move may affect them. Help them understand the project need, acquisition process and timing, and relocation benefits to which they may be entitled.
3. Determine the number and type of relocations in the study area based on information received from private meetings, public meetings, personal observation, property and tax records, and other sources.
4. Determine the availability and affordability of replacement housing for residential owners and tenants.
5. Determine the availability of replacement commercial sites for affected businesses.
6. Summarize the impact of the project and present findings.

The Uniform Act, 49 CFR Part 24, provides relocation assistance for residents and businesses displaced by federal-aid projects. There are five different relocation types defined by the Uniform Act:

Relocation Type	Code	Definition
Residential Owner	RO	A home in the area to be acquired is occupied by the owner. The homeowner who meets the length-of-occupancy requirements is entitled to relocation benefits.
Residential Tenant	RT	A home in the area to be acquired is occupied by a tenant. The tenant who meets the length-of-occupancy requirements is entitled to relocation benefits.
Business	BR	A displaced business, farm, non-profit organization, or church is entitled to relocation benefits.
Landlord	BL	The owner of a residential or commercial property that is rented to another person or business is entitled to relocation benefits as a landlord.
Personal Property Move Only	PP	When neither a residential owner/tenant nor a business is displaced, but the acquired area contains personal property that must be removed, the owner of the personal property is entitled to relocation benefits. This often occurs in a partial take where a garage, barn, shed, or other structure is in the acquired area. Other examples of a PP relocation are when an unoccupied residence or business which contains personal property is acquired or when bare land is acquired with personal property scattered around.

Each of the five different relocation types is eligible for a different set of relocation entitlements (benefits).

Relocation Type	Code	Relocation Entitlements
Residential Owner	RO	1. Moving expenses (self-move or professional move) 2. Price differential payment 3. Closing cost reimbursement (for eligible expenses) 4. Incidental expense reimbursement (typically home inspections) 5. Increased mortgage interest payment (if new mortgage interest rate is higher than the old one)
Residential Tenant	RT	1. Moving expenses (self-move or professional move) 2. Rental assistance payment OR Downpayment assistance payment
Business	BR	1. Moving expenses (self-move or professional move) 2. Business Reestablishment reimbursement (up to $25,000) 3. Business Searching expense reimbursement (up to $2,500) OR 4. Payment-in-Lieu (PIL) (up to $40,000)

Landlord	BL	1. Moving expenses (self-move or professional move) 2. Business Reestablishment reimbursement (up to $25,000) 3. Business Searching expense reimbursement (up to $2,500) *Landlords are not eligible for the Payment-in-Lieu (PIL)*
Personal Property Move Only	PP	1. Moving expenses (self-move or professional move)

There can be eligibility for multiple Uniform Act relocations on a single parcel of land that is to be acquired. The following table gives examples of different land uses that might be encountered on a parcel and the number and types of eligible relocations for each one.

Parcel to be Acquired Contains	**Relocations**
Owner-occupied single-family residence	1 RO
Tenant-occupied single-family residence	1 RT, 1 BL
Residential duplex, both sides tenant-occupied	2 RT, 1 BL
Ten-unit apartment, each unit tenant-occupied	10 RT, 1 BL
Owner-occupied business	1 BR
Tenant-occupied business	1 BR, 1 BL
Strip mall with five tenant businesses	5 BR, 1 BL
A rented single-family residence, a rented mobile home, and a tenant business.	2 RT, 1 BR, 1 BL
A home that has been unoccupied for two years and contains the owner's furniture and other belongings	1 PP
A storage facility with 50 individually rented units	50 PP, 1 BL

Relocations in the Study Area

Based on the current plan, relocation will be required on 26 parcels with an estimated 33 total eligible relocations as detailed in the table below.

The table shows the parcel numbers assigned by the project and used everywhere in this document. The close-up maps and photos in Appendix B are labeled with parcel numbers. In the table, the assumed relocation types are listed in the five columns to the right of each parcel.

Members of the project team met with nearly 100% of affected residents in person or by phone. The eligible relocation types were determined by conducting these "kitchen table meetings" (KTM's). If the resident/business did not request a meeting, relocation types are assumed using information from project plan/design documents, corridor maps, multiple visits to the study area, and tax records.

Pcl	ParcelName	Address	Type	RO	RT	BL	BR	PP	Relos	KTM #
007	Robinson, Rick A. & Joy R.	1207 E Hively Ave	Res	1					1	1
008	Davies, William L. & Kathy L.	1215 E Hively Ave	Res	1					1	1
009	Bonewitz, Michael & Nancy	1219 E Hively Ave	Res		1	1			2	2
010	Pav, Heap S.	1223 E Hively Ave	Res	1					1	1
014	Pineda, Edwin & Cortes, Nataly	2712 Roosevelt Ave	Res	1					1	1
015	Foust, Rosina M.	1301 E Hively Ave	Res	1					1	1
016	Johnson, Russell E. & Angela M.	1315 E Hively Ave	Res	1					1	1
017	Hudson Street Properties, LLC	2721 Homer Ave	Res		1	1			2	2
018	Mann, Dennis L.	2718 Homer Ave	Res					1	1	1
019	Hunter's Place	2703 S Main St	Biz				1		1	1
020	KFC	2709 S Main St	Biz				1		1	0
021	7-Eleven, Inc.	2700 S Main St	Biz			1	1		2	2
022	Reyes, Margaret R.	2722 S Main St	Res	1					1	1
024	Novoa, Jesus	1605 E Hively Ave	Res	1					1	1
025	Moreno's Roofing	2700 Hammond Ave	Biz					1	1	1
026	Moore, Anthony R. & Pamela S.	1801 E Hively Ave	Res	1					1	1
027	Valerie G. Singell Revocable Trust	1815 E Hively Ave	Res		1	1			2	1
029	Harvest Homes LLC	1806 E Hively Ave	Res		1	1			2	2
030	Robinson, Leroy & Euba A.	1823 E Hively Ave	Res	1					1	1
032	Ragsdale, Jason & Taneshia	1833 E Hively Ave	Res	1					1	1
033	Kyle, Ernest C., Sr. & Ernest C., Jr.	1904 E Hively Ave	Res	1					1	1
040	Miller, Dewayne & Ruby	1319 E Hively Ave	Res		1	1			2	2
041	Martin, Lois K.	1321 E Hively Ave	Res		1	1			2	2
051	Kabardin, Pavel & Galina	2729 Hammond Ave	Biz				1		1	1
060	Rivera, Manuel & Lorenzo, Keyla	1818 E Hively Ave	Res	1					1	1
064	Marlo Inc. (Elkhart Speedwash)	2701 S Main St	Biz				1		1	1
				13	6	7	5	2	33	31
		Total relocations		39%	18%	21%	15%	6%		94%
		Residential relocations		68%	32%					

Legend:

- *RO = residential owner relocation*
- *RT = residential tenant relocation*
- *BL = business landlord relocation (landlord for a residential or business tenant)*
- *BR = business relocation (other than a landlord)*
- *PP = personal property move only relocation*
- *KTM = kitchen table meeting*

Contact with Affected Residents and Businesses

Affected residents and businesses were offered the opportunity to meet with members of the project team in person, by phone, or via video call for a kitchen table meeting (KTM). The purpose of the meeting was to familiarize residents with the project and members of the project team, answer their questions, and address their concerns.

Meetings were conducted by Jim Deahl, Right-of-Way Manager for the project, and Joe Gromosky, the Relocation Agent who will be working with each displacee for the duration of the project. Jim discussed the background and purpose of the project, explained the acquisition process and timeline, and shared names and contact information for those individuals who will be interacting with area residents as the project moves forward—project managers, appraisers, land acquisition agents, and the relocation agent. Joe explained the relocation benefits to which each person or business will be entitled and the likely timing of their move. Federal acquisition and relocation brochures were emailed or mailed to residents before each meeting or handed out at the meeting.

To date, KTM's have been conducted with 31 of 33 (94%) potential relocation parcels. One business (KFC) did not respond to the two owner contact letters that were mailed, and one landlord asked us not to contact his residential tenant.

Specific observations from KTM's are discussed in later sections of this document, but in general:

1. Interactions with residents and businesses were very cordial and people were welcoming and inquisitive.
2. Several residents expressed that they will be happy to move away from the high-traffic area and look forward to the day when they are no longer stopped at the railroad tracks.
3. Attitudes regarding the project are generally positive. Only one resident spoke out against it, but admitted he is looking forward to a fresh start in a new home.
4. Everyone interviewed is aware of and concerned about the fast-moving real estate market—whether they are looking for homes to purchase or rent, or a new business location.

For detailed information about contact made with residents and businesses, see Appendix C which contains:

- The two owner/resident contact letters that were mailed and the mailing list showing to whom and where each letter was mailed.
- Kitchen Table Meeting notes from the R/W Project Manager, Jim Deahl.
- Kitchen Table Meeting notes from the Relocation Agent, Joe Gromosky.
- Detailed notes from on-going interactions with affected residents and business owners—before, during, and after the KTM—by the Relocation Agent.

Considerations for Relocating Affected Residents

Residential Owner Occupants

Thirteen properties have been identified as owner-occupied residential. KTM's were conducted with all 13 homeowners, and all meetings were cordial and productive. Not a single resident expressed any great concern over losing their current home, but everyone is concerned about finding an affordable replacement in a housing market that is historically active.

Most displaced homeowners will choose to purchase their replacement, so it is important that there is an adequate supply of affordable replacement housing. The goal of any displacement, unless homeowners have other plans, would be to move the affected residents within the same geographical area from where they are displaced. It would be typical for a relocation agent to search for comparable homes within a 10-mile radius from a displaced person's residence. The Uniform Act allows for a search radius of up to 50 miles.

The table below shows the number of two-, three-, and four-bedroom homes to be acquired in the study area and the number of similar-sized homes for sale by price range and distance from the study area. Within each price range, the number of homes within a 10-mile radius and within a 50-mile radius is given.

Owner-Occ'd Homes Acq'd			Homes for Sale - By Price Range and Distance from Study Area											
			$75-100k		$101-150k		$151-200k		$201-300k		$301k+		Total	
Beds	#	Beds	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi
2	2	2	2	1	5	11	1	8	-	3	1	-	9	23
3	9	3	2	11	4	17	7	26	14	23	1	8	28	85
4	2	4	1	1	4	1	1	6	12	21	3	4	21	33
Total	13	Total	5	13	13	29	9	40	26	47	5	12	58	141

Note: No foreclosures, auctions, bank-owned, short sales, estates, "As-Is"
Sources: Realtor.com, GNIARmls.com
Data as of 4/22/2022

Compared to the number of owner-occupied homes acquired, there may appear to be an adequate supply of homes for sale. The current housing market in and around Elkhart; however, is very active, the supply of available homes at any one time is low, and homes turn over at a high rate. The Elkhart real estate market is following national trends of reduced inventory and increased home prices. See Appendix D for charts showing national and local market trends and statistics.

The Local Market Update from the Indiana Association of Realtors (IAR), also in Appendix D, states that in January of 2022 there was only a half-month supply of active listings in the Elkhart County market. The number of days a home is available on the market has decreased by almost two weeks compared to last year, going from 33 days in 2021 to only 18 days in 2022. Median home prices in the county have risen over 10% in one year. Homes in Elkhart County in 2022, according to the IAR, are being purchased for more than the list price.

Jeff Chupp—a 67-year resident of Elkhart, an investor in area real estate for nearly 50 years, and a local Realtor since 2011—said the market is the busiest he has ever seen. He supported the IAR's findings and said the local housing market is extremely difficult to navigate. He said buyers at every price point are having trouble securing homes. According to Jeff, prospective

buyers often forgo home inspections or accept homes "as is," must pay more than appraised value, and should be ready to make offers within hours of homes hitting the market.

Obviously, there are more available homes if displaced residents are willing to broaden their search radius. There are several towns and cities in the neighboring counties that have an active housing market, comparable amenities, and good school systems. More than one of the households with school-age children said they would be willing to move outside of Elkhart so their kids could attend better schools. From resident interviews, there appear to be six households with a total of 20 school-age children affected by the project, as summarized in the table below.

School-Age Children per Household in the Study Area

Parcel -->	07	08	09	10	14	15	16	17	22	24	26	27	29	30	32	33	40	41	60	Total
High School	1						1												1	3
Middle School	1				1										1				2	5
Elementary	1			5	3										3					12
Total	3			5	4		1								4				3	20

Total Households (HH)	19
HH with School-Age Children	6
% of HH w/School-Age Children	32%

All children younger than middle-school age are included in the "Elementary" count.

Data gathered from meetings with affected residents.

Data from only two households, shown in red, are incomplete. P27 was not interviewed (at the request of the landlord) and P29 is scheduled to be interviewed after this writing.

The six tenant-occupied properties are shown in blue and with border lines -->

Non-residential parcels are excluded from the table.

The table below lists the cities and towns neighboring the City of Elkhart and their respective Indiana Department of Education "grade". Since neighboring school systems have better DOE grades than Elkhart Community Schools, educational opportunity is one good reason for displaced homeowners to expand their home search outside the immediate area.

City/Town	Miles to Project	School Grade	School System
Elkhart	0	C	**Elkhart Community Schools**
Jamestown	7	B	Baugo Community Schools
Osceola	8	A	Penn-Harris-Madison Schl Corp
Goshen	9	B	Goshen Community Schools
Bristol	11	C	**Elkhart Community Schools**
Middlebury	13	B	Middlebury Community Schools
Mishawaka	16	A	School City of Mishawaka

Source: Indiana Department of Education

Surrounding counties have similar median housing prices. The table below shows basic real estate statistics for neighboring counties.

County	Median Home Px	Population	Towns w/in 50 miles of the Study Area
Elkhart	$ 210,000.00	197,559	Elkhart, Goshen, Jamestown, Middlebury, Bristol
St Joseph	$ 175,000.00	266,931	Mishawaka, Osceloa, South Bend
LaGrange	$ 275,000.00	37,128	LaGrange, Shipshewana
Noble	$ 178,950.00	47,536	Ligonier
Kosciusko	$ 248,500.00	77,358	Warsaw, Milford
Marshall	$ 176,500.00	47,051	Plymouth, Bremen

The hyperactive housing market may result in high relocation price differential payments (PDP's) to owner occupants, but this relocation benefit should put replacement homes within their financial means. It may be difficult to find replacement homes, but experience from other projects tells us that, as long as homes are affordable, people use typical resources, like Realtors and home-sale websites, as well as their own social networks to locate homes to purchase.

The City of Elkhart in conjunction with the Indiana Department of Transportation (INDOT) must be prepared to adapt their policies to allow home buyers to secure new homes. It has been typical for relocation claims to take 45-60 days to be paid, but this slow turnaround will close prospective buyers out of the market. The agency must be willing to adapt their process to make funds available sooner and make acquisition and relocation payments more quickly. Also, purchase comparables and prospective replacement homes are selling so quickly and home prices increasing so rapidly that the agency must consider allowing agents to increase relocation payments—by performing new comparables searches and recalculating relocation benefits—to make new homes affordable.

Residential Tenants

Six potential residential tenant displacements have been identified in the study area. KTM's were conducted with five of these households and all were very cordial. Tenants in the study area are in a variety of situations. One is low-income and concerned about finding another Section 8 housing unit, three couples are excited about the possibility of using the relocation DAP (downpayment assistance payment) to help them purchase new homes, and the fifth just wants to find another affordable home to rent nearby.

Monthly rents are all across the board. Three project-area tenants rent three-bedroom single-family homes. One has Section 8 assistance and pays just a few hundred dollars each month, one is paying $600, and the third pays $1,300.

Jeff Chupp, the Elkhart Realtor, shared that the rental market in the Elkhart area is even tighter than the purchase market. He shared that:

- New rental listings can get as many as one hundred applications.
- Many landlords are selling their rental properties to take advantage of the high residential sales prices which results in rents increasing as new owners take over.
- Institutional investors are buying many rental homes in the market and driving up base rents.

- Demand for labor in the Elkhart area is so high that unemployment is historically low—less than 1% according to a March 2022 NPR news segment. Many people are moving into the area to fill these jobs, further increasing the demand for housing. Amazon is building a new distribution center and will need to hire 1000 workers.
- Those with poor credit, little savings, and low income are being shut out of rentals since landlords can choose better-qualified applicants.

There are several areas outside of Elkhart to look for available rentals. Almost 20% of the workforce in Elkhart County commutes in from the surrounding counties and Michigan, so living outside the county is not uncommon. See Appendix D for more information.

The table below shows the number of two-, three-, and four-bedroom rental properties to be acquired in the study area and the number of similar-sized homes for rent by price range and distance from the study area. As stated in the "Residential Owner Occupants" section above, it would be typical for a relocation agent to search for comparable rentals within a 10-mile radius from a displaced person's residence, and the Uniform Act allows for a search radius of up to 50 miles.

Rentals to be Acquired			Homes for Rent - By Monthly Rent Range and Distance from Study Area											
			$500-1,000		$1,001 - 1,400		$1,401-1,800		$1,801-2,200		$2,201+		Total	
Beds	#	Beds	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi	0-10mi	11-50mi
2	1	2	1	6	-	8	1	-	-	-	-	-	2	14
3	5	3	1	-	1	6	1	3	1	1	3	4	7	14
4	0	4	-	-	1	-	-	2	-	2	-	-	1	4
Total	6	Total	2	6	2	14	2	5	1	3	3	4	10	32

Note: 2-3 bedroom multi-family units (apts, duplexes) not included but available throughout search area
Sources: Realtor.com, GNIARmls.com (management companies featured on Realtor.com)
Data as of 4/22/2022

Homes for sale are easier to find than homes for rent since there are more established home-sales resources. Rental listings are more difficult to find because there is no single consolidated rental property source as there is for home sales. As the project proceeds and actual comparable rentals are needed, additional rental properties can be found by driving the area and talking to local landlords and rental property managers, so the number of available rentals is probably higher than what is reported here.

The active rental market may result in high rental assistance payments (RAP's) and downpayment assistance payments (DAP's) to tenants. These payments are designed to put replacement homes within the financial means of displaced tenants. It may be difficult to find replacement rentals, however, as with home buyers, experience from other projects tells us that tenants often use their own networks to locate new rentals.

The Uniform Act encourages tenants to purchase their replacement home rather than rent again. Relocated tenants have the option to use a DAP that ranges from a *minimum* of $7,200 to $20,000 or more. As mentioned earlier, at least three of the displaced tenants hope to take

advantage of this benefit to purchase a new home, so the rental market will not be important to them.

Again, the City of Elkhart and INDOT must be prepared to adapt their policies to allow tenants to rent or purchase homes quickly. They must be willing to make relocation payments as quickly as possible rather than the usual 45-60 days. Also, rental comparables and prospective properties rent so quickly that the agency must consider allowing agents to "re-comp" and increase relocation payments to make new rentals affordable.

Considerations for Relocating Affected Businesses

Six business properties have been identified in the study area. Only five are shown in the table on page 5 because one business owns a vacant building and has not moved into it yet, so they are only entitled to a move of personal property and are classified in the table as a "PP" relocation. KTM's were conducted with five business owners.

The six businesses can be classified into three categories. Each category of business will be affected by the project in different way and will use their relocation benefits differently.

Large national chains/franchises

The project will displace one KFC store and a 7-11 convenience store/gas station. In general, these types of businesses have strong financial backing and will reestablish under any conditions but not necessarily in the same geographic area. The relocation payments are not a significant benefit to these businesses and are often unclaimed.

Growing small businesses

There are two in this category. Moreno's Roofing owns the vacant building in the study area (parcel 25) where they planned to move their business. They are presently operating out of a residential dwelling not far from the project. Per the Uniform Act, they are only entitled to a personal property move since they are not operating out of the building and, by definition, their business is not displaced. Their business is growing and the owners will probably continue operating out of their present location until they find another property they can move to and grow in. The acquisition funds and the relocation move payment from the project will help them accomplish this goal.

Pavel's Auto, LLC operates out of a new building on parcel 51. The business owner purchased the property in 2016 and did much of the work himself to finish the building. He has operated his business out of the building only since finishing construction in January of this year. It is unfortunate that the owner built so recently and the building will now be acquired for the project, but the appraised value and acquisition payment should reflect the recent construction of the building. This payment and his business relocation entitlements should allow him to reestablish nearby.

Lifestyle small businesses

Hunter's Place restaurant and Elkhart Speedwash, both to be acquired, appear to fall into this category. These owners are near retirement age and have not invested in their businesses recently. The business owners, both women, expressed that the displacement by the project may present an opportunity for them to retire. They may take their land acquisition payments plus the

relocation payment-in-lieu to increase their retirement portfolio. It may be difficult for them if they choose to reestablish, since their appraised value may be low, reflecting their lack of investment in their businesses. If they have additional funds, they may use their relocation benefits to help establish themselves in a new location and breathe new life into their businesses.

For those businesses that choose to reestablish in the Elkhart area, the commercial real estate market has ownership and leasing opportunities across all zoning and property class types. The commercial listing searches using Loopnet, Crexi, and the County Economic Development resources resulted in multiple listings for each type of business. There is also vacant land for sale if the affected businesses seek to build replacements. See Appendix E for maps showing the number of commercial properties for sale or lease within a 10- and 50-mile radius of the study area, and a recent sample of commercial property listings.

Estimated Relocation Entitlement Costs

As explained in the "Methodology" section, each different relocation type is eligible for a different set of relocation entitlements (benefits) under the Uniform Act. In the table below, the estimated entitlement cost per relocation type (in the "Per Parcel" column) is multiplied by the number of relocations of each type (in the "# Relos" column) to give an estimate of the total cost of relocation entitlements to be paid.

FEDERAL Regulations - Relocation Benefits			Entitlement Estimate	
# Relos	Code	Relocation Type	Per Parcel	Total
7	BL	Landlord (Residential or Business)	$ 32,500.00	$ 227,500.00
5	BR	Business	$ 62,500.00	$ 312,500.00
2	PPMO	Personal Property Only	$ 12,500.00	$ 25,000.00
13	RO	Residential Owner	$ 92,500.00	$ 1,202,500.00
6	RT	Residential Tenant	$ 43,000.00	$ 258,000.00
33		Totals		$ 2,025,500.00

The above estimates reflect the following assumptions:

1. *The availability of homes to purchase and rent is very low and could increase entitlement amounts, but the per parcel estimates have been increased to reflect the current state of the market.*
2. *The actual number of each relocation type may vary until all acquisition offers have been made, but in-person meetings have been conducted with most potential displacees, so the number/type of relocations estimated should be accurate.*
3. *RO entitlement estimates assume the market is heating up faster than appraisal values will reflect, resulting in high price differential payments (PDP's). If the market slows or appraisals match current market values, PDP's will decrease and this total could drop substantially.*

The above numbers are estimates only, based on experience with hundreds of relocations, but any number of factors can increase or decrease relocation payment amounts.

Conclusion

All but two of 33 potential relocation parcels on this project were contacted directly by members of the project team and the response was overwhelmingly positive and understanding. There are one or two situations that will require special handling, but every project has those.

One homeowner (P60, Spanish) and one business owner (P51, Ukrainian) would like to have a translator present at meetings, but each understands and speaks English well enough to communicate directly with the project team, and each has a trusted translator in their family to help communicate more complex ideas. The meetings conducted with these two were cordial and productive, so the language barrier should not present an issue.

Relocation payments are the fuel that drives movement in right-of-way projects, and this need is magnified in today's real estate market and in this study area. Home buyers and tenants will be overwhelmed by the fast-moving market if relocation funds are not readily available to help them purchase or rent new homes. To help improve the outcomes of all the displaced residents, the City of Elkhart and INDOT must be willing to adapt their processes to allow relocation claims to be paid quickly and they should allow the relocation agent the flexibility to re-do purchase and rental comps so that price differential and rental assistance payments can keep pace with skyrocketing home purchase prices and rental rates.

Businesses provide employment, stimulate the local economy, and expand the tax base. Data indicate that there are adequate replacement options for the four growing businesses, although the needs of each is quite different. Because they have corporate resources and experience searching for new real estate opportunities, the large national chains will find new locations if they choose to reestablish in the area. There appears to be adequate commercial real estate available for the two growing businesses—Pavel's Auto and Moreno's Roofing—to relocate and continue to grow. Two other business owners will probably take this opportunity to retire.

It is difficult to measure the impact a project such as this will have on the surrounding area, but it is likely that the net effect of this project will be positive. Traffic delays caused by stopped trains occur many times daily and negatively impact businesses and residents in the area. After the project is completed, traffic will flow through the area smoothly—on local roads and on the train tracks—and, hopefully, a couple dozen homeowners, tenants, and businesses will find themselves better off in new homes, new rental properties, and new places of business.

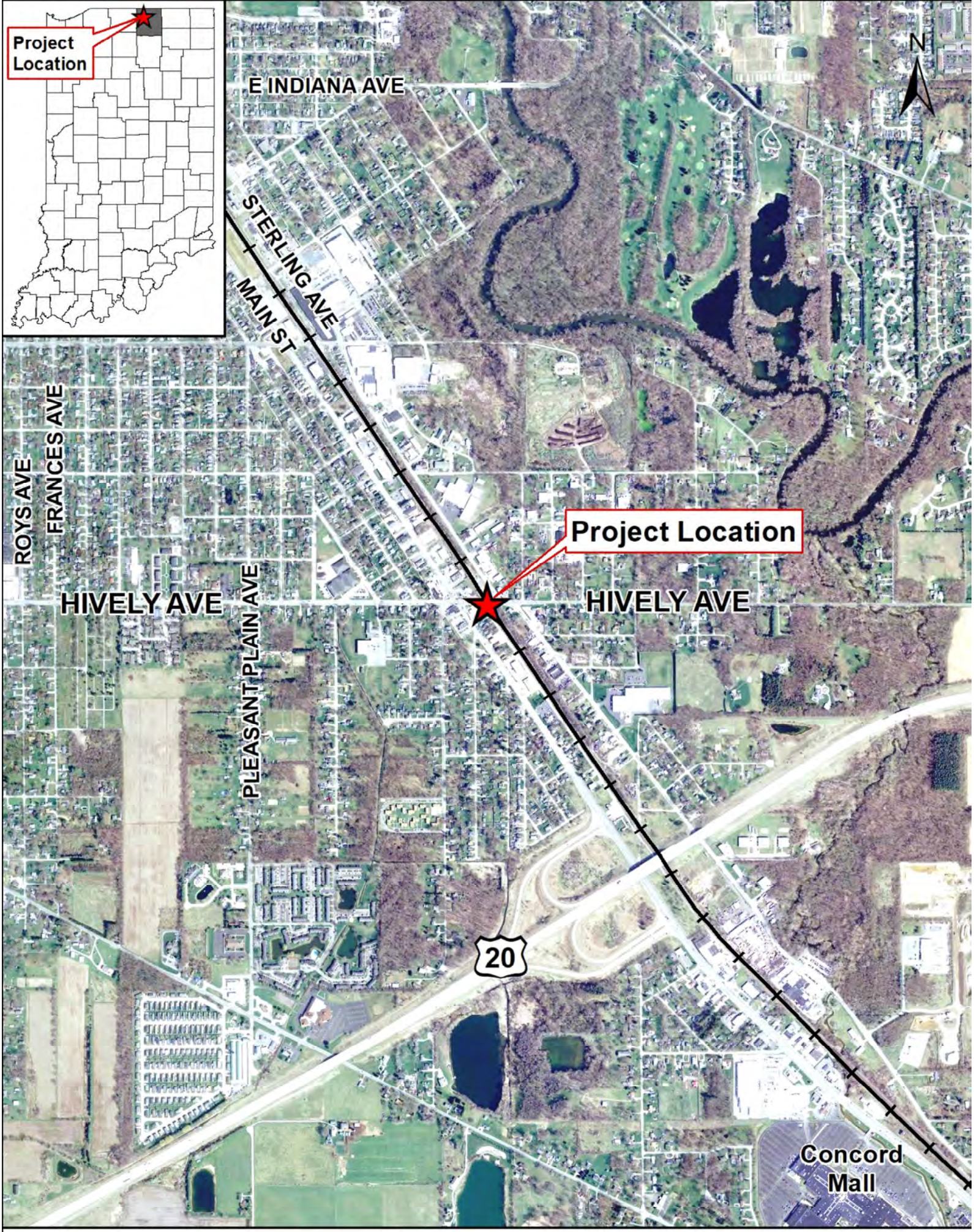
Appendix A: CSRS Author's Background

Joe Gromosky, owner of Boomerang Ventures, LLC—a right-of-way relocation services firm based in Indianapolis, IN—has been an Indiana-certified relocation agent since 2007 and has completed more than 2,000 relocations.

- Extensive knowledge and experience interpreting and implementing Federal regulations according to the Uniform Act (URA) and relocation regulations that vary by state.
- Work on right-of-way projects for the Indiana Department of Transportation (INDOT), Michigan Department of Transportation (MDOT), other state and local agencies, and as a subcontractor to engineering/construction firms and eminent domain attorneys.
- Experience with the following types of relocations:
  - *Business*: large corporate-owned entities, manufacturing, retail, construction, multi-unit storage facilities, healthcare, gas stations, automotive dealerships, automotive service, grocery stores, liquor stores, hotels/motels, churches, restaurants, banks, franchises, kennels, numerous small businesses, residential/business landlords, and many more.
  - *Residential*: single- and multi-owner, single- and multi-tenant, low-income/Sec 8, non-English speaking, apartment complexes, mobile home parks, complex in-state and out-of-state moves, and more.
  - *Personal Property Moves*: very large to very small, multi-unit storage facilities, aggregate/ materials operations, pet cemetery, farms, and others.
- Extensive relocation experience on some of the largest right-of-way relocation projects in the country: NICTD/Chicago commuter train extension; I-69 from Evansville, IN to Indianapolis, IN; Gordie Howe International Bridge (Detroit, MI); Ohio River Bridges (IRWA 2013 Project of the Year); US 31 in Indianapolis, Kokomo, and South Bend; and many others.
- Developed a right-of-way database to track all relocation parcel details: owner/tenant contact information, milestone dates, claim status, outstanding tasks, and all parcel interactions (contact management). Use this database to manage relocation projects, quickly report project/parcel status to clients, and ensure timely communication with relocatees.
- Created mobile office-equipped work vans -- Internet access and print/scan/email capabilities – giving Boomerang agents the ability to serve relocatees more efficiently and respond to client requests quickly.
  - Use technology to perform the administrative portion of relocation work accurately and efficiently, making it possible for agents to spend more time serving each relocatee.
- Education
  - BSME, Purdue University, 1987
  - MA in Graduate Studies, The Ohio State University, 1991
  - Indiana-certified relocation agent, 2007
  - Indiana Real Estate Broker

Appendix B: Study Area and Project Maps, Parcel Photos

Aerial Maps of the Study Area and Project



Legend
Project Location

Des. No. 1801933

N16

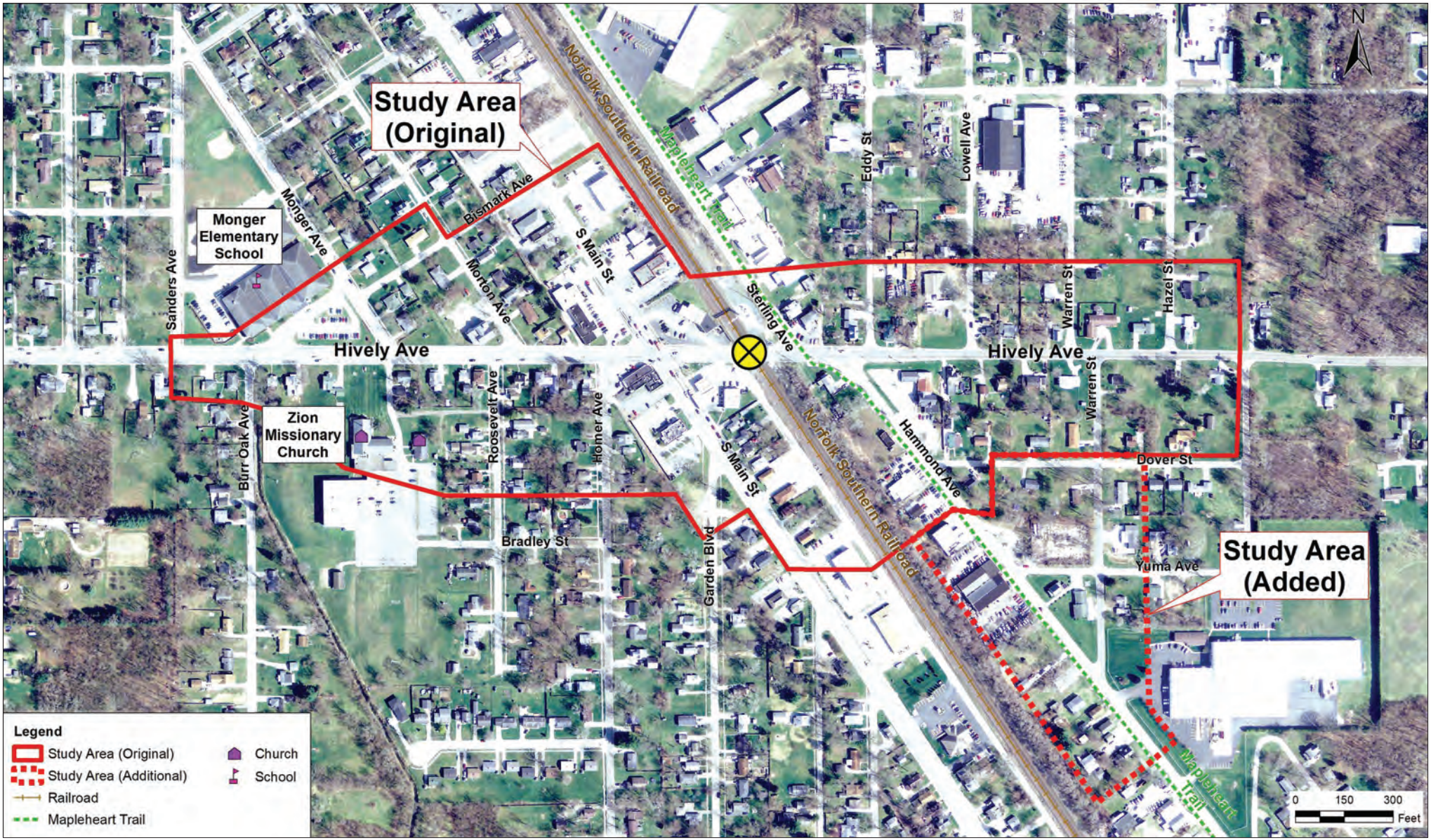
0 0.125 0.25 Miles

AREA NETWORK

STUDY AREA

City of Elkhart, Indiana
the city with a heart

LOCAL TRAX Rail Overpass Program



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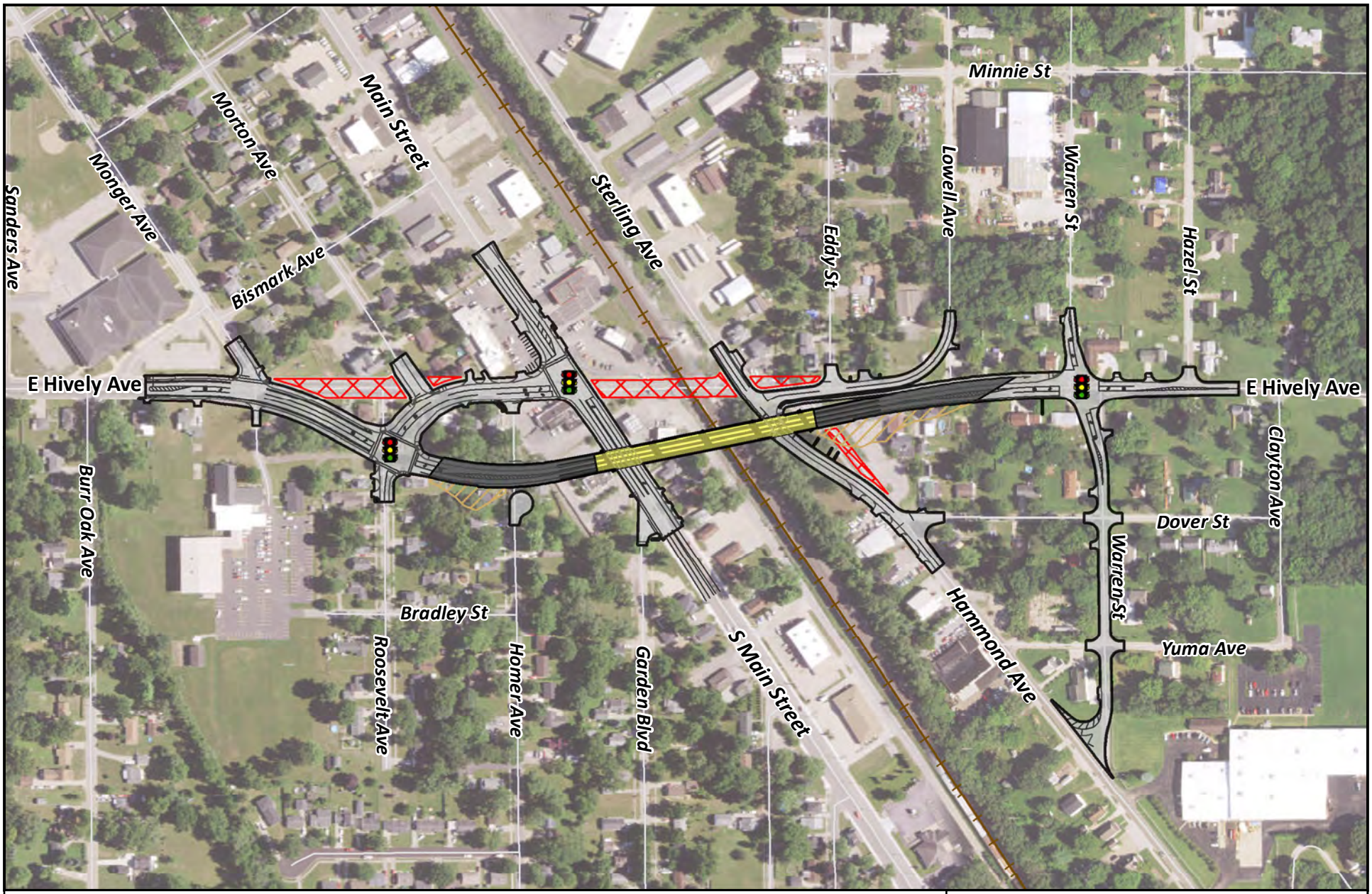


Legend

- Bridge
- Elevated Roadway
- Grade Elevation
- Pavement Removal
- Pavement Limits
- Railroad

0 175 350 Feet

N

Hively Avenue Overpass
Des. No. 1801933
Elkhart County, Indiana
Preliminary Preferred Alternative

Study Area Map Showing Affected Parcels

Legend

- Preferred Alternative
- Construction Limits Preferred
- Property Line
- Proposed RW
- Temporary RW
- Commercial Relocation
- Commercial Acquisition
- Residential Relocation
- Residential Acquisition
- Permanent R/W
- Temporary R/W

Hively Avenue Overpass Project
Des No. 1801983
Elkhart, Indiana
Preferred Alternative Property Impacts

Sheet 1 of 3

Legend

- Preferred Alternative
- Construction Limits Preferred
- Property Line
- Proposed RW
- Temporary RW
- Commercial Relocation
- Commercial Acquisition
- Residential Relocation
- Residential Acquisition
- Permanent R/W
- Temporary R/W

Hively Avenue Overpass Project
Des No. 1801983
Elkhart, Indiana
Preferred Alternative Property Impacts

Sheet 2 of 3

Photos of Relocation Parcels

(showing relocation parcel numbers and addresses)

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Relocation Parcels

07

1207 E Hively Ave

08

1215 E Hively Ave

09

1219 E Hively Ave

10

1223 E Hively Ave

14

2712 Roosevelt Ave

15

1301 E Hively Ave

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Relocation Parcels

16

1315 E Hively Ave

17

2721 Homer Ave

18

2718 Homer Ave

19

2703 S Main St

20

2709 S Main St

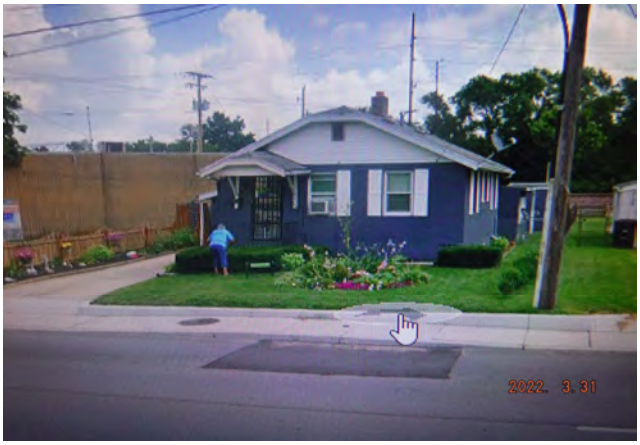
21

2700 S Main St

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Relocation Parcels

22



2722 S Main St

24

1605 E Hively Ave

25

2700 Hammond Ave

26

1801 E Hively Ave

27

1815 E Hively Ave

29

1806 E Hively Ave

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Relocation Parcels

30

1823 E Hively Ave

32

1833 E Hively Ave

33

1834 E Hively Ave

40

1319 E Hively Ave

41

1321 E Hively Ave

51

2729 Hammond Ave

Local TRAX - Elkhart E Hively Ave Railroad Overpass

Relocation Parcels

60  1818 E Hively Ave	64  2701 S Main St

Appendix C: Contact Made with Affected Residents/Businesses

Owner Contact Letters and Mailing Lists

Owner Contact Letter 1

Rod Roberson
Mayor

Laura Kolo
Envirnmental Resources

Tory Irwin, P.E.
Engineering Services

City of Elkhart
the city with a heart

Public Works &
Utilities Department

Administration,Engineering
& Laboratory
574.293.2572

Utility Billing
574.264.4273

1201 S. Nappanee St.
Elkhart, Indiana 46516

Notice to Owner

January 28, 2022

Project: East Hively Avenue Bridge over Norfolk & Southern RR
Des. No.: 1801933
County: Elkhart
Parcel: _____

Dear Property Owner:

The purpose of this notice is to inform you that the City of Elkhart, Indiana, by and through its City Council (the "City") is considering your property located at _____ for potential acquisition as part of the above-referenced project.

If the City determines that some type of acquisition from your property is necessary to facilitate the project, Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended ("Uniform Act"), will be applicable. The Uniform Act can be found in the Code of Federal Regulations (CFR), Title 49, Part 24. The enclosed "Acquisition" brochure highlights the key elements of the process for federal-aid right-of-way acquisitions, including your rights as a property owner.

This notice is not a contractual offer or commitment to purchase your property and is not intended to establish eligibility for relocation assistance. The purpose of this notice is only to notify you, as the owner of certain real property, that the City is considering whether a nearby transportation improvement project will affect your property.

If your property is determined to be eligible for relocation assistance, you can request an in-person meeting or a computer-based video call with members of the project team. Please contact **James Deahl Consulting** at **(317) 225-3202** or **Joe Gromosky**, relocation specialist with Boomerang Ventures, at **(317) 563-8050** to schedule the meeting.

For additional information, please refer to http://www.fhwa.dot.gov/real_estate/.

Respectfully submitted,

Troy S. Irwin, PE
City Engineer
City of Elkhart

Local Trax - Elkhart E Hively Ave Railroad Overpass

Owner Contact Mailing List 1

Map Parcel ID	Landuse	Property Address	Property Owner	Business Name	Alternate Address
7	Residential	1207 E HIVELY	Rick A. Robinson, Lyle D. & Virginia J. Snodgrass		
8	Residential	1215 E HIVELY	William L. & Kathy L. Davies		
9	Residential	1219 E HIVELY	Michael & Nancy Bonewitz		1606 Canton Dr.Goshen, IN 46526
10	Residential	1223 E HIVELY	Heap Song Pav		
14	Residential	2712 ROOSEVELT	Edwin Pindea & Nataly Cortes		
15	Residential	1301 E HIVELY	Loyd Foust & Rosina Munakampe - Foust		
16	Residential	1315 E HIVELY	Russell E. & Angela Johnson		
17	Residential	2721 HOMER	Hudson Street Properties, LLC		22805 Fari Oaks Ct., Elkhart, IN 46514
18	Residential	2718 HOMER	Dennis L. & Kathy A. Mann		
19	Commercial	2703 S MAIN ST	Frances E. Hunter	Hunter's Place	418 River Pointe Dr., Elkhar, IN 46514
20	Commercial	2709 S MAIN ST	Eym Reality of Indiana LLC	KFC	450 E John Carpenter Freeway #100, Irving, TX 75062
21	Commercial	2700 S MAIN ST	The Southland Corporation	7-Eleven & Mobil Gas Station	PO Box 711, Dallas, TX 75221
22	Residential	2722 S MAIN ST	Margaret R. Reyes		
24	Residential	1605 E HIVELY	Rodolfo Castillo & Marilu Novoa		
25	Commercial	2700 HAMMOND AVE	Reya Cecilia Sanchez Martinez & Juan Moreno Hurta	Being Renovated - Moreno" Roofing	1229 W Lusher Ave., Elkhart, IN 46516
26	Residential	1801 E HIVELY	Anthony R. & Pamela Moore		
27	Residential	1815 E HIVELY	Valerie G Singall Rev Trust		23726 Bel Ridge Dr., Elkhart, IN 46516
29	Residential	1806 E HIVELY	Harvest Homes, LLP	Rental - 1 Tenant	59959 E County Rd., Middlebury, IN 46540
30	Residential	1823 E HIVELY	Leroy & Euba A. Robinson		
32	Residential	1833 E HIVELY	Jason Ragsdale		
33	Residential	1904 E HIVELY	Ernest C. Kyle		
40	Residential	1319 E HIVELY	Dewayne & Ruby Miller	Rental - 1 Tenant	22359 County Rd. 30, Goshen, IN 46526
41	Residential	1321 E HIVELY	Marlin & Lois Martin	Rental - 1 Tenant	2632 Pleasant PlainAve., Elkhart, IN 46517
51	Commercial	2729 HAMMOND AVE	Pavel & Galina Kabardin	Car Repair	58584 St. Marys Ln., Goshen, IN 46528
60	Residential	1818 E HIVELY	Rivera Manuel		
64	Commercial	2701 S MAIN ST	Marlin & Lois Martin	Elkhart Speedwash	2632 Pleasant PlainAve., Elkhart, IN 46517

Rod Roberson
Mayor

Laura Kolo
Envirnmental Resources

Tory Irwin, P.E.
Engineering Services

City of Elkhart
the city with a heart

Public Works &
Utilities Department

Administration,Engineering
& Laboratory
574.293.2572

Utility Billing
574.264.4273

1201 S. Nappanee St.
Elkhart, Indiana 46516

East Hively Avenue Bridge Project

Kitchen Table Meeting Invitation

March 8, 2022

Dear Property Owner, Resident, Business Owner/Operator, or Tenant,

By now, I'm sure you are aware that the Indiana Department of Transportation (INDOT) together with the City of Elkhart are planning to build a bridge over the Norfolk Southern (NS) railroad crossing at East Hively Avenue. You are receiving this letter because the City is anticipating that the property you own and/or occupy at **1219 E Hively Ave, Elkhart, IN 46517** will need to be acquired (purchased) for this project.

Our project team is led by Michael Baker International with James Deahl Consulting and Boomerang Ventures to help with land acquisition and to assist the homeowners, tenants, and businesses who are affected.

We are offering you the opportunity to meet with members of the project team for a "kitchen table meeting" in your home or workplace—or by phone or video call if you prefer.

At this meeting, our team members will:

- Discuss the project schedule and when you may have to move.
- Explain the land acquisition process.
- Explain the relocation assistance (payments) for which you may be eligible.
- Answer all your questions.

The project is moving forward quickly, so we encourage you to schedule a meeting right away. To do so, please call the Boomerang Ventures office at 317-563-8050 and ask to schedule a Kitchen Table Meeting with Joe Gromosky.

Sincerely,

Tory S. Irwin, P.E.
City Engineer

P9(01)

Local Trax - Elkhart E Hively Ave Railroad Overpass

Owner Contact Mailing List 2

Parcel	Suffix	Name	Acquired	Mailing	City	State	ZIP
9	01	Current Resident	1219 E Hively Ave	1219 E Hively Ave	Elkhart	IN	46517
9	00	Michael & Nancy Bonewitz	1219 E Hively Ave	1606 Canton Dr	Goshen	IN	46526
10	00	Heap Song Pav	1223 E Hively Ave	1223 E Hively Ave	Elkhart	IN	46517
14	00	Edwin Pindea & Nataly Cortes	2712 Roosevelt Ave	2712 Roosevelt Ave	Elkhart	IN	46517
15	00	Loyd Foust & Rosina Munakampe - Foust	1301 E Hively Ave	1301 E Hively Ave	Elkhart	IN	46517
17	01	Current Resident	2721 Homer Ave	2721 Homer Ave	Elkhart	IN	46517
17	00	Hudson Street Properties, LLC	2721 Homer Ave	22805 Fair Oaks Ct	Elkhart	IN	46514
18	00	Dennis L. & Kathy A. Mann	2718 Homer Ave	2718 Homer Ave	Elkhart	IN	46517
19	01	Hunter's Place	2703 S Main St	2703 S Main St	Elkhart	IN	46517
19	00	Frances E. Hunter	2703 S Main St	418 River Pointe Dr	Elkhart	IN	46514
20	01	KFC	2709 S Main St	2709 S Main St	Elkhart	IN	46517
20	00	Eym Realty of Indiana LLC	2709 S Main St	450 E John Carpenter Freeway #100	Irving	TX	75062
21	01	7-Eleven/Mobil	2700 S Main St	2700 S Main St	Elkhart	IN	46517
21	00	The Southland Corporation	2700 S Main St	PO Box 711	Dallas	TX	75221
22	00	Margaret R. Reyes	2722 S Main St	2722 S Main St	Elkhart	IN	46517
24	00	Rodolfo Castillo & Marilu Novoa	1605 E Hively Ave	1605 E Hively Ave	Elkhart	IN	46517
26	00	Anthony R. & Pamela Moore	1801 E Hively Ave	1801 E Hively Ave	Elkhart	IN	46517
27	01	Current Resident	1815 E Hively Ave	1815 E Hively Ave	Elkhart	IN	46517
27	00	Valerie G. Singall Rev Trust	1815 E Hively Ave	23726 Bel Ridge Dr	Elkhart	IN	46516
41	01	Current Resident	1321 E Hively Ave	1321 E Hively Ave	Elkhart	IN	46517
41	00	Marlin & Lois Martin	1321 E Hively Ave	2632 Pleasant Plain Ave	Elkhart	IN	46517
51	01	Business Owner	2729 Hammond Ave	2729 Hammond Ave	Elkhart	IN	46517
51	00	Pavel & Galina Kabardin	2729 Hammond Ave	58584 St Marys Ln	Goshen	IN	46528
64	01	Elkhart Speedwash	2701 S Main St	2701 S Main St	Elkhart	IN	46517
64	00	Marlin & Lois Martin	2701 S Main St	2632 Pleasant Plain Ave	Elkhart	IN	46517

Project Manager's Meeting Notes

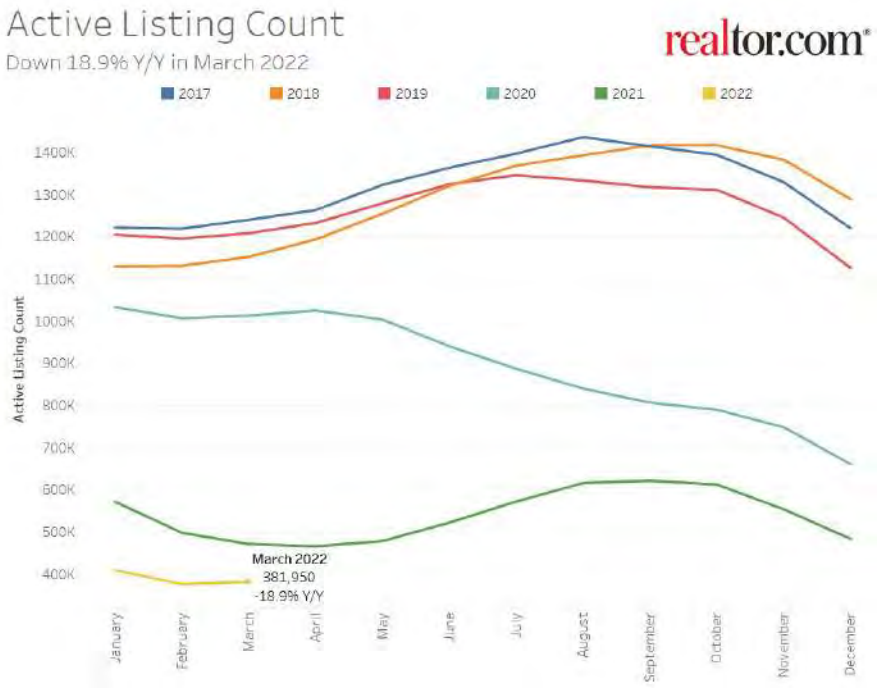
*Sensitive Information removed, located in project file.

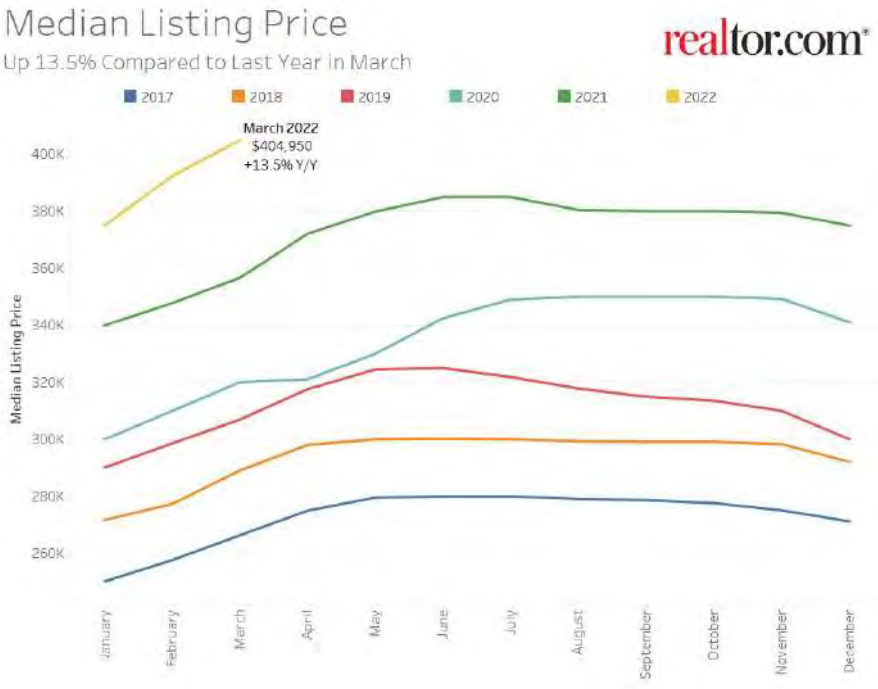
Relocation Agent's Meeting Notes

*Sensitive Information removed, located in project file.

Appendix D: Real Estate Trends and Statistics

National Real Estate Trends





Local Market Update for January 2022

A RESEARCH TOOL PROVIDED BY THE INDIANA ASSOCIATION OF REALTORS®

Elkhart County

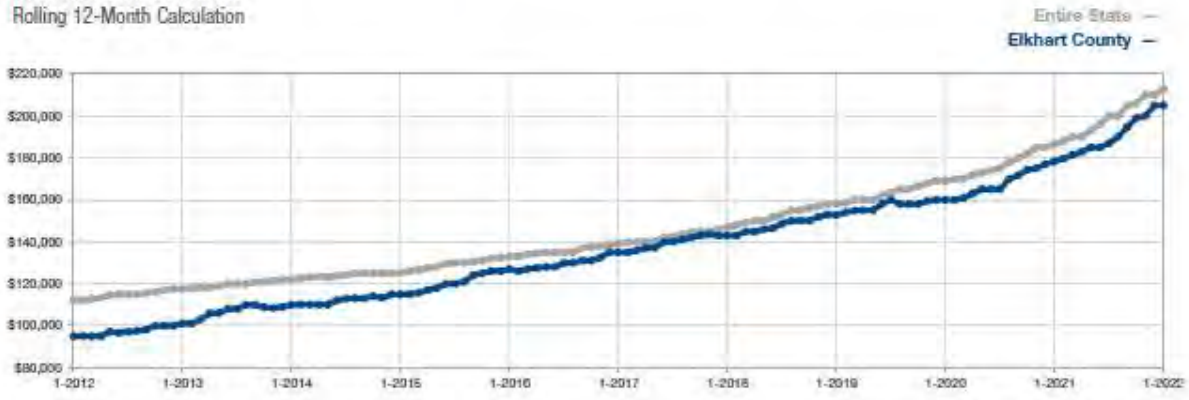
	January			Year to Date		
Key Metrics	**2021**	**2022**	**Percent Change**	**Thru 1-2021**	**Thru 1-2022**	**Percent Change**
New Listings	123	**133**	+ 8.1%	123	**133**	+ 8.1%
Closed Sales	128	**139**	+ 8.6%	128	**139**	+ 8.6%
Median Sales Price	$176,950	**$195,000**	+ 10.2%	$176,950	**$195,000**	+ 10.2%
Percent of Original List Price Received*	98.2%	**101.0%**	+ 2.9%	98.2%	**101.0%**	+ 2.9%
Months Supply of Inventory	0.7	**0.5**	- 28.6%	--	--	--
Inventory of Homes for Sale	131	**100**	- 23.7%	--	--	--

* Does not account for list price from any previous listing contracts. | Activity for one month can sometimes look extreme due to small sample size.

January

Median Sales Price

Rolling 12-Month Calculation



A rolling 12-month calculation represents the current month and the 11 months prior in a single data point. If no activity occurred during a month, the line extends to the next available data point.

MLS Statistics
Monthly 2022 to 2021 Comparison
Elkhart County Residential

This comparison is based on properties from the MLS of Elkhart County representing Elkhart County Townships

Month	# New Listings			# Active Listings			# Sold Listing			Median Price $			DOM			% Sale to List		
	2022 Monthly	2021 Monthly	2021 Annual	2022 Monthly	2021 Monthly	2021 Annual	2022 Monthly	2021 Monthly	2021 Annual	2022 Monthly	2021 Monthly	2021 Annual	2022 Monthly	2021 Monthly	2021 Annual	2022 Monthly	2021 Monthly	2021 Annual
JANUARY	137	127	127	119	153	153	144	131	131	195,000	175,000	175,000	18	29	29	100.48	98.32	98.32
FEBRUARY	132	125	125	72	124	124	128	140	140	210,000	172,900	172,900	18	33	33	100.53	98.41	98.41
MARCH			206			121			151			182,500			32			97.78
APRIL			211			113			183			185,000			26			100.25
MAY			217			123			211			191,000			19			101.08
JUNE			269			144			198			205,250			15			101.86
JULY			276			152			212			215,000			13			101.08
AUGUST			238			195			266			209,700			12			100.31
SEPTEMBER			242			183			219			225,000			14			100.35
OCTOBER			228			162			226			219,700			15			100.22
NOVEMBER			181			164			218			200,000			16			100.59
DECEMBER			115			140			198			220,000			17			100.28
CUMMULATIVE TOTALS	269	252	2435				272	271	2353	200,000	175,000	205,000	18	31	19	100.51	98.37	100.23

Statistics in this report were obtained from the Indiana Regional MLS & the U.S. Department of Labor Statistics. The Indiana Regional MLS and ECBOR are not responsible for the accuracy of the data. Data maintained by IRMLS/ECBOR may not reflect all real estate activity in Elkhart County. **Data revised quarterly to reflect activity reported after the date of this report. Report compiled as of 3/21/2022. Statistics are also available on the 16 Year History Report on the MLS Homepage.**

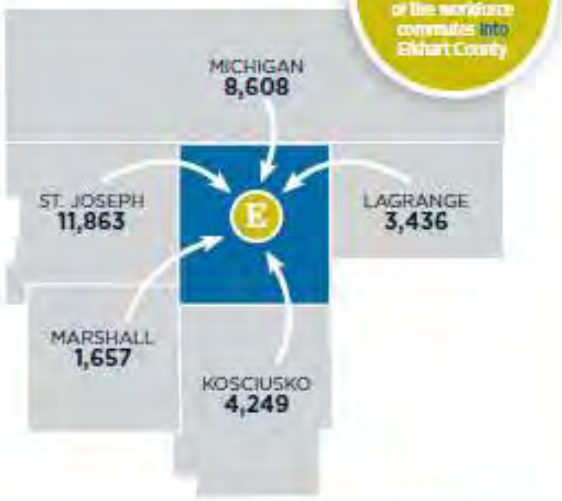
Demographic Data

ELKHART COUNTY, INDIANA

Commuting into Elkhart County

33,726 people live in another county or state who commute to work into Elkhart County

19.3% of the workforce commutes into Elkhart County

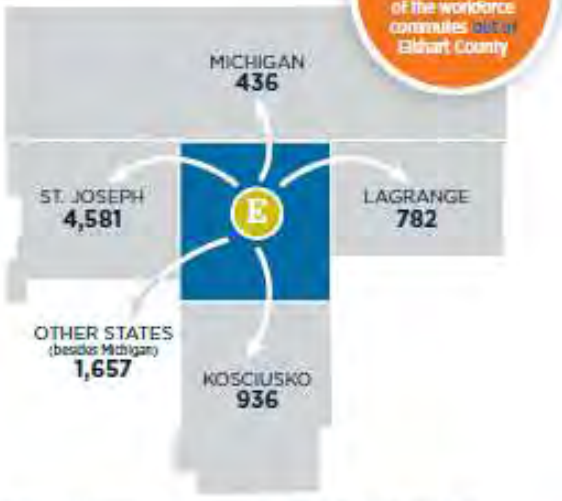


Source: STATS Indiana Annual Commuting Trends Profile Tax Year 2017

Commuting out of Elkhart County

8,491 people live in Elkhart County who commute to work outside the county

5.7% of the workforce commutes out of Elkhart County



Source: STATS Indiana Annual Commuting Trends Profile Tax Year 2017

Elkhart County Advantages

- ✓ Logistics
- ✓ Interstate Access
- ✓ Low Taxes
- ✓ Workforce
- ✓ Proximity to Major Markets
- ✓ Low cost of Doing Business

Major Manufacturers*

Thor Industries, Inc.
Forest River, Inc.
Lippert Components, Inc.
Patrick Industries
Supreme Corporation
Newmar Corporation
Utilimaster
KIK Custom Products
MasterBrand Cabinets, Inc.
Bennington Marine LLC

*With an employee count above 500

Major Employers*

Thor Industries, Inc.
Forest River, Inc.
Lippert Components, Inc.
Patrick Industries
Beacon Health System
Elkhart Community Schools
Goshen Community Schools
Elkhart County Government
Martin's Super Markets
Utilimaster

*With an employee count above 500

Cost of Living

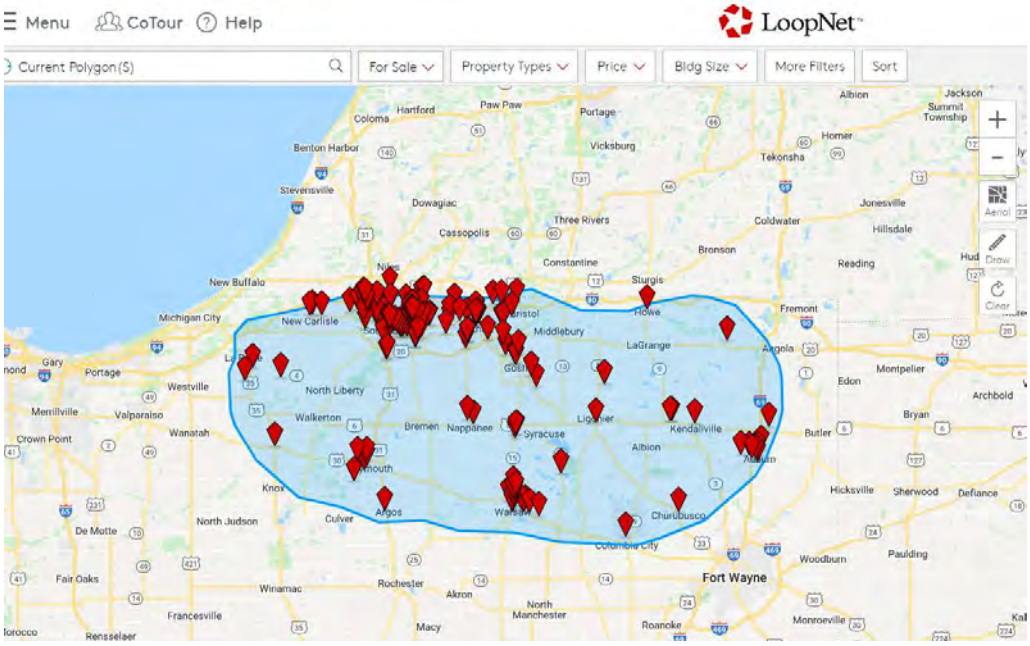
Composite Index (100%)	90.0
Grocery Items (13.47%)	97.9
Housing (28.15%)	73.4
Utilities (9.90%)	97.2
Transportation (8.99%)	91.7
Health Care (4.57%	106.6
Miscellaneous (34.92%)	95.3

Source: ACCRA Cost of Living Index, 2018 Annual Average

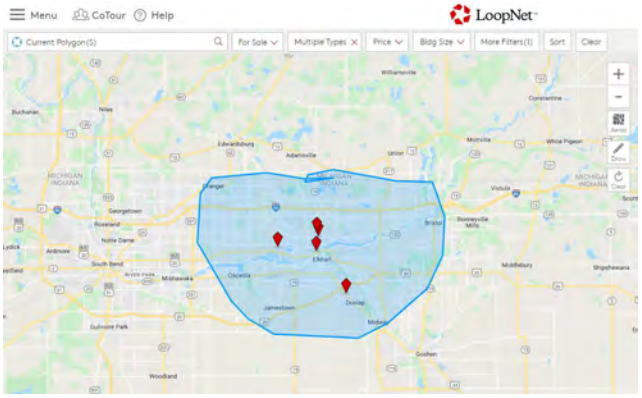
Economic Development Corporation, Elkhart County || 574-293-5627 || edc@elkhartcountybiz.com || **elkhartcountybiz.com**

Appendix E: Commercial Real Estate Maps and Property Listings

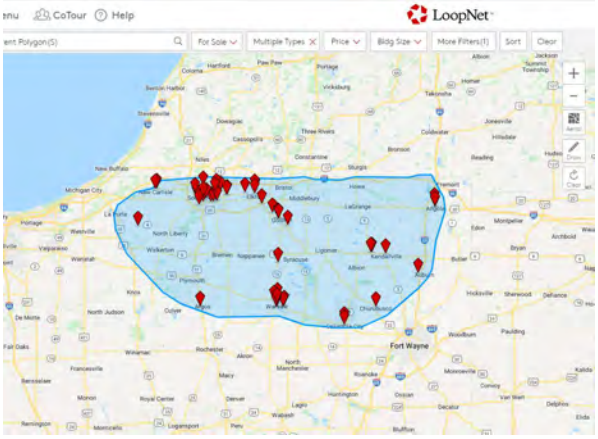
All Commercial Property for Sale – Approx 50 mi from Study Area (149)



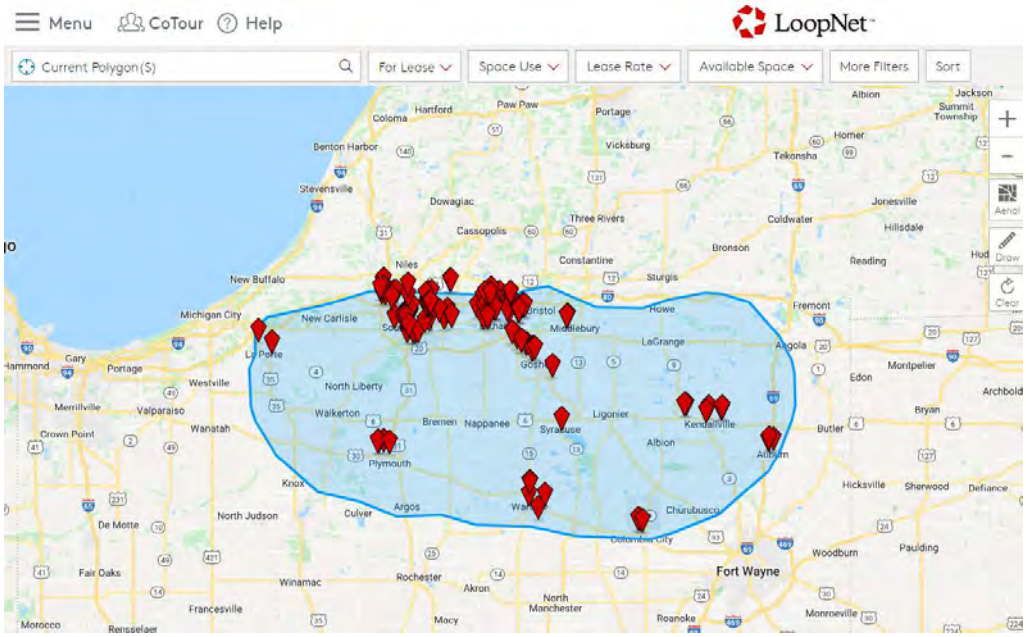
Retail, Restaurant, and Industrial for Sale w/in 10 miles (5)



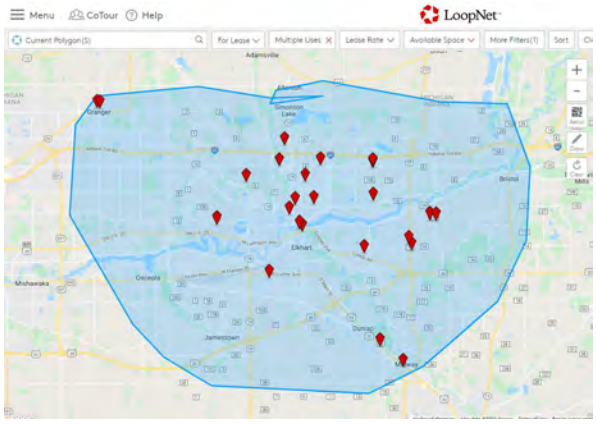
Retail, Restaurant, and Industrial for Sale w/in 50 miles (49)



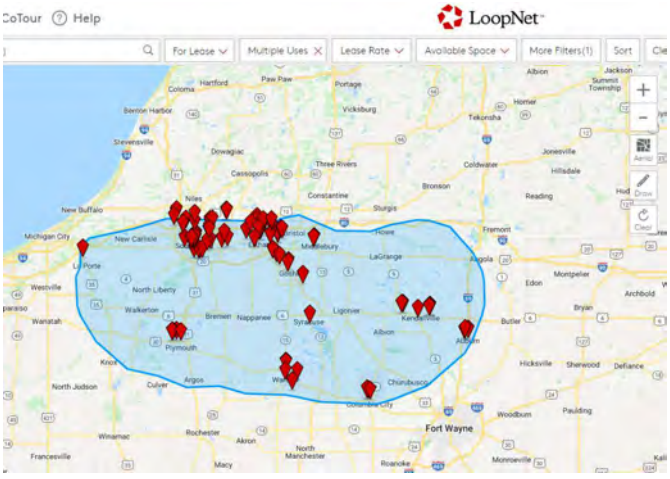
All Commercial Property for Lease – Approx 50 mi from Study Area (128)



Retail, Restaurant, and Industrial for Lease w/in 10 miles (24)



Retail, Restaurant, and Industrial for Lease w/in 50 miles (85)



Summary Properties Report

Waterford Commons South -Shovel Ready

Address: CR 27 & Waterford Mills Pkwy.
City: Goshen
County: Elkhart County
Zip Code: 46528
Min Size: 200 acres
Max Size: 200 acres
Featured Property Description: Shovel Ready
Parcel: 20-11-27-426-035.000-015

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Goshen, IN - Dunkin'

Address: 906 W Pike St
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

54139 Angeline Dr

Address: 54139 Angeline Dr
City: Bristol
County: Elkhart County
Zip Code: 46507
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Personnel Partners Bldg

Address: 2311 Cassopolis St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 2,362 sqft
Max Size: 2,362 sqft

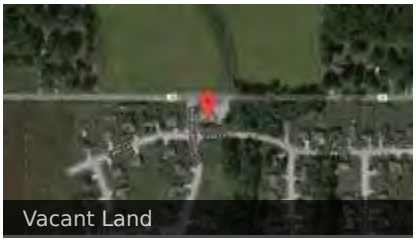
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

30895, 30913 Old U.S. 20

Address: 30895, 30913 Old U.S. 20
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 2,200 sqft
Max Size: 2,200 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

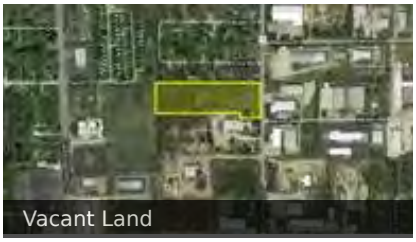
4117 Tyler Ln



Address: 4117 Tyler Ln
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

VL Offering Cataldo CR 9



Address: 53671 Co Rd 9
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

The Professional Plaza

Address: 705 Co Rd 6
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 16,000 sqft
Max Size: 16,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1st Source Bank Building

Address: 101 S Main St
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 170 sqft
Max Size: 1,040 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1120 N. Main St.

Address: 1120 N. Main St.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 47,266 sqft
Max Size: 281,434 sqft
Parcel: 20-02-32-454-009.000-027

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

815 Eisenhower Dr. S.

Address: 815 Eisenhower Dr. S
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 15,000 sqft
Max Size: 15,000 sqft
Parcel: 20-11-22-327-003.000-015, 20-11-22-327-010.000-015
Column Spacing: 25

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Aeroplex Industrial Park 66 Acre Parcel

Address: John Weaver Parkway
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 3 acres
Max Size: 66 acres

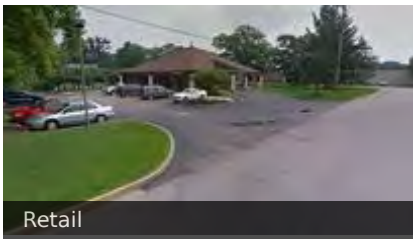
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2410 Peddlers Village Rd

Address: 2410 Peddlers Village Rd
City: Goshen
County: Elkhart County
Zip Code: 46528
Min Size: 3,840 sqft
Max Size: 3,840 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

308 South Division Street



Address: 308 S Division St
City: Bristol
County: Elkhart County
Zip Code: 46507
Min Size: 2,867 sqft
Max Size: 2,867 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

881 Parkway Ave

Address: 881 Parkway Ave
City: Goshen
County: Elkhart County
Zip Code: 46528
Min Size: 2,184 sqft
Max Size: 2,184 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Co Rd 13

Address: Co Rd 13
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 148.60 acres
Max Size: 148.60 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Lot 2 Reliance Rd

Address: Lot 2 Reliance Rd
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 1.44 acres
Max Size: 1.44 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

23810 Old U.S. 20

Address: 23810 Old U.S. 20
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 4,240 sqft
Max Size: 4,240 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

VL Adj to 5020 Lincolnway E

Address: 5020 Lincolnway E
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 56.35 acres
Max Size: 56.35 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2810 Dexter Dr.

Address: 2810 Dexter Dr
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 10,000 sqft
Max Size: 20,100 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

333 Nibco Pkwy

Address: 333 Nibco Pkwy
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 4,017 sqft
Max Size: 4,017 sqft

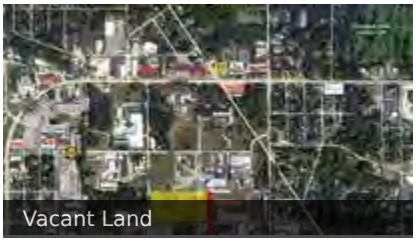
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Comfort Suites South Elkhart

Address: 27838 Co Rd 24
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Randolph St & Oak St VL



Address: 1100 Mishawaka St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 13.16 acres
Max Size: 13.16 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

414 W High St

Address: 414 W High St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 3,050 sqft
Max Size: 3,050 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

10441 CR 2 Land

Address: 10441 CR 2 Land
City: Middlebury
County: Elkhart County
Zip Code: 46540
Min Size: 45 acres
Max Size: 45 acres
Parcel: 20-04-12-400-010.000-032

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

West 78 Business Park

Address: State Rte 19 & Co Rd 26
City: Bristol
County: Elkhart County
Zip Code: 46517
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Verizon Wireless

Address: 3365 S Main St
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2104 Aeroplex Dr

Address: 2104 Aeroplex Dr
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 60,000 sqft
Max Size: 60,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1111 Lighthouse Ln

Address: 1111 Lighthouse Ln
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 16,511 sqft
Max Size: 16,511 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1209 Harrison St

Address: 1209 Harrison St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 2,700 sqft
Max Size: 2,700 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Linway Plaza

Address: 508 W Lincoln Ave
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 4,986 sqft
Max Size: 7,500 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

CR 17 & Hoffman St.

Address: 5200 Hoffman St.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 350,000 sqft
Max Size: 350,000 sqft
Parcel: 20-063-01-277-004.000-011

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Elkhart Building

Address: 101 S Main St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1000 N Michigan St

Address: 1000 N Michigan St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0 sqft
Max Size: 0 sqft

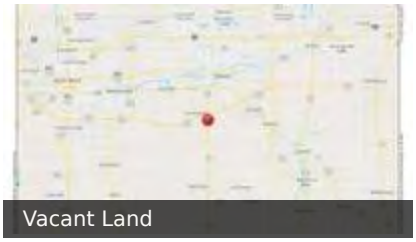
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2642 S Main St

Address: 2642 S Main St
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 0.21 acres
Max Size: 0.21 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

SR 19 & County Rd 26 (171.72 Acres VL)



Address: 60248 State Rte 19
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 171.72 acres
Max Size: 171.72 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2414 Lowell Ave

Address: 2414 Lowell Ave
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 1,800 sqft
Max Size: 1,800 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

202 E Indiana Ave

Address: 202 E Indiana Ave
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 1,034 sqft
Max Size: 1,034 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

30013 Old U.S. 20

Address: 30013 Old U.S. 20
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0.12 acres
Max Size: 0.12 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

216 Harrison St

Address: 216 Harrison St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 6,000 sqft
Max Size: 6,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1131 D.I. Drive 5-Building Complex

Address: 1131 D.I. Drive
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 91,758 sqft
Max Size: 91,758 sqft
Parcel: 20-02-19-376-004.000-027

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

107 Rush Ct.

Address: 107 Rush Ct.
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 24,210 sqft
Max Size: 24,210 sqft
Parcel: 20-06-01-128-011.000-011

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Arby's | Abs. Net | Upcoming 8% Rent Increase | Large Signalized Corner Lot

Address: 2022 Lincoln Hwy
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 8 sqft
Max Size: 8 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

3708 E Mishawaka Rd

Address: 3708 E Mishawaka Rd
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 800 sqft
Max Size: 800 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1015-1019 Lincolnway E

Address: 1015-1019 Lincolnway E
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 0.09 acres
Max Size: 0.09 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Aeroplex Industrial Park at John Weaver Parkway

Address: Aeroplex Industrial Park at John Weaver Parkway
City: Elkhart
County: Elkhart County
Zip Code: 46510
Min Size: 25 acres
Max Size: 25 acres
Parcel: 20-01-25-300-009.000-006

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2408 Lincolnway E.

Address: 2408 Lincolnway E.
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 32,109 sqft
Max Size: 32,109 sqft
Parcel: 20-11-24-352-001.000-015

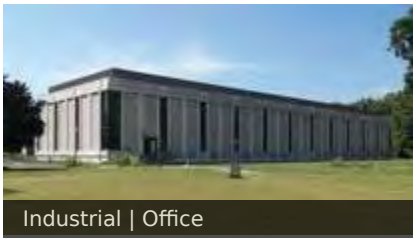
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1842 E. Bristol Street

Address: 1842 E Bristol St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1111 W Bristol St



Address: 1111 W Bristol St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 156,503 sqft
Max Size: 156,503 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

5200 Hoffman St.

Address: 5200 Hoffman St.
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 350,000 sqft
Max Size: 350,000 sqft
Parcel: 20-06-01-277-004.000-011
Column Spacing: 50

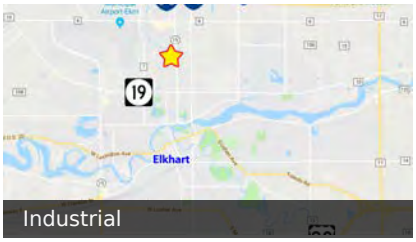
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Maywell Industrial Park/Middleton Run Road Land

Address: Middleton Run Road
City: Elkhart
County: Elkhart County
Zip Code: 46510
Min Size: 12.76 acres
Max Size: 12.76 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1919 Cassopolis St.



Address: 1919 Cassopolis St.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 22,392 sqft
Max Size: 22,392 sqft
Parcel: 20-02-29-455-001.000-027, 20-02-29-455-002.000-027

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

John Weaver Parkway Land

Address: John Weaver Parkway Land
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 92 acres
Max Size: 92 acres
Parcel: 20-01-25-100-004.000.006, 20-01-26-201-006.000-006, 20-01-26-251-001.000.006,

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1801 Wood St

Address: 1801 Wood St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 3,600 sqft
Max Size: 3,600 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

29243 Phillips St

Address: 29243 Phillips St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 9,200 sqft
Max Size: 9,200 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Redevelopment Land

Address: 515 East St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

State Road 19 & County Rd 26 -NW Corner

Address: State Rd 19 & County Rd 26 -NW Corner
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 77.52 acres
Max Size: 77.52 acres
Parcel: 20-05-25-400-013.000-001

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

21840 Protecta Drive

Address: 21840 Protecta Drive
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 31,900 sqft
Max Size: 31,900 sqft
Parcel: 20-03-31-377.000-030
Column Spacing: 25

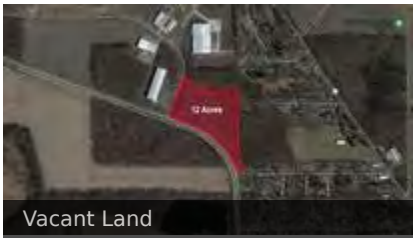
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

4615 Wyland Dr

Address: 4615 Wyland Dr
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 10,800 sqft
Max Size: 10,800 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

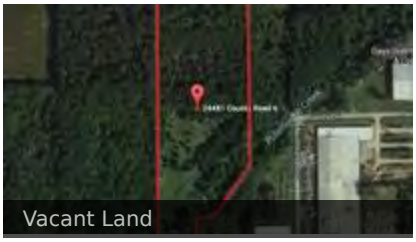
Aeroplex Industrial Park VL



Address: John Weaver Pkwy
City: Bristol
County: Elkhart County
Zip Code: 46514
Min Size: 12 acres
Max Size: 12 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

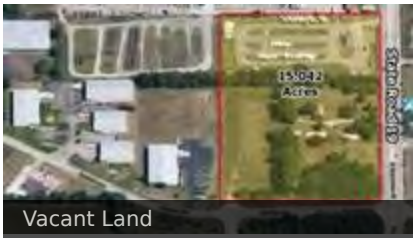
24481 CR 6



Address: 24481 CR 6
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 26 acres
Max Size: 26 acres
Parcel: 20-02-22-402-001.000-026

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

58402 State Road 19



Address: 58402 State Road 19
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 15.04 acres
Max Size: 15.04 acres
Parcel: 20-05-24-276-004.000-002

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

W. Lincoln Riverfront Land

Address: 1800 Co Rd 42
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Northridge Centre

Address: 851 US-20
City: Middlebury
County: Elkhart County
Zip Code: 46540
Min Size: 1,200 sqft
Max Size: 1,200 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

57264 Alpha Dr.

Address: 57264 Alpha Dr
City: Goshen
County: Elkhart County
Zip Code: 46528
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Oak St. & Bristol St.

Address: 1884 Miles Ave.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 16 acres
Max Size: 16 acres
Parcel: 20-02-31-426-004.000-027

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

22355 Co Rd 6

Vacant Land

Address: 22355 Co Rd 6
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 1 acres
Max Size: 1 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Aeroplex Industrial Park 27 Acre Parcel


Vacant Land

Address: John Weaver Parkway
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 27.70 acres
Max Size: 27.70 acres
Parcel: 20-01-25-100-002.000-006

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

5500 Beck Dr


Industrial

Address: 5500 Beck Dr
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 40,000 sqft
Max Size: 40,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

New Construction on Commerce Drive & CR 29


Industrial | Warehouse/Distribution

Address: Commerce Drive & CR 29
City: Bristol
County: Elkhart County
Zip Code: 46507
Min Size: 87,750 sqft
Max Size: 87,750 sqft
Parcel: 20-03-24-176-002.000-031
Column Spacing: 112.50

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

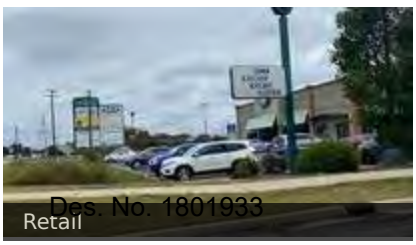
US-20 & SR-15


Vacant Land

Address: US-20 & SR-15
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 3.52 acres
Max Size: 3.52 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Perkins Restaurant (Elkhart)


Retail

Address: 107 Northpointe Blvd
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0 sqft
Max Size: 0 sqft

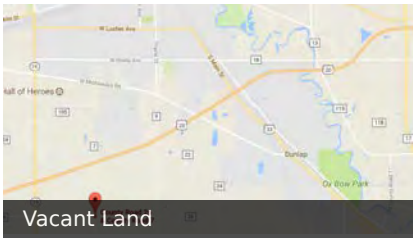
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

923 S Main St

Address: 923 S Main St
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 2,224 sqft
Max Size: 2,224 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

CR 7 & CR 26 Land



Address: CR 7 & CR 26 Land
City: Elkhart
County: Elkhart County
Zip Code: 46517
Min Size: 22 acres
Max Size: 22 acres
Parcel: 20-06-30-400-002.000-009, 20-06-30-400-007.000-009

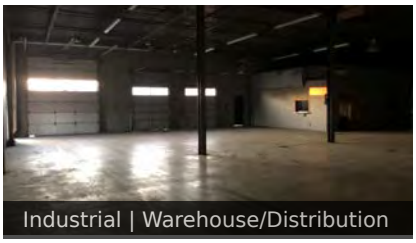
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

River Point West

Address: 200 Jr. Achievement Dr
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 1,139 sqft
Max Size: 1,139 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

700 Collins Road



Address: 700 Collins Road
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 47,650 sqft
Max Size: 47,650 sqft
Parcel: 20-06-02-376-018.000-012

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

52203 CR 21

Address: 52203 CR 21
City: Bristol
County: Elkhart County
Zip Code: 46507
Min Size: 326 acres
Max Size: 326 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

2906 Airport Parkway

Address: 2906 Airport Parkway
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 29,000 sqft
Max Size: 29,000 sqft
Parcel: 20-01-24-379-017.000-006

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Crystal Valley Plaza

Address: 424 N Main St
City: Middlebury
County: Elkhart County
Zip Code: 46540
Min Size: 1,400 sqft
Max Size: 1,400 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

302 Stainless Dr

Address: 302 Stainless Dr
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 63,000 sqft
Max Size: 63,000 sqft

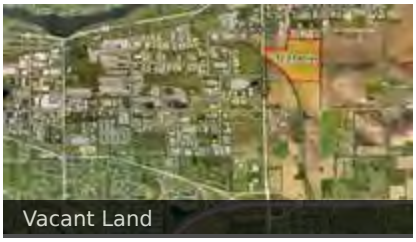
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

52396 CR 9

Address: 52396 CR 9
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 2.90 acres
Max Size: 52.90 acres
Parcel: 20-02-21-176-002.000-026

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

CR 17 & Beck Rd.



Address: CR 17 & Beck Rd.
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 92.07 acres
Max Size: 92.07 acres
Parcel: 20-07-06-102-003.000-039

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Office For Lease

Address: 1416 Cassopolis St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 1,500 sqft
Max Size: 3,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

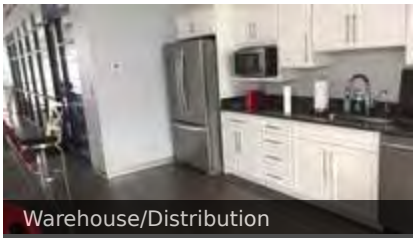
Elkhart East - Area B at I 80 / 90

Vacant Land

Address: Elkhart East - Area B at I 80 / 90
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 100 acres
Max Size: 100 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

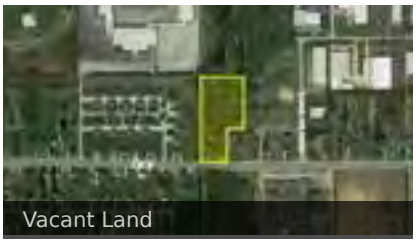
2800 Aeroplex Dr.


Warehouse/Distribution

Address: 2800 Aeroplex Dr.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 45,668 sqft
Max Size: 45,668 sqft
Parcel: 20-01-25-100-003.000-006

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

VL Offering Cataldo CR 6


Vacant Land

Address: Co Rd 6
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 0 acres
Max Size: 0 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

756 Patricia Court


Industrial | Warehouse/Distribution

Address: 756 Patricia Court
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 50,000 sqft
Max Size: 60,000 sqft
Parcel: 20-06-01-378-002.000-011, 20-06-01-452-009.000-011
Column Spacing: 50

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

SR15 Land


Industrial

Address: 60687 SR 15
City: Goshen
County: Elkhart County
Zip Code: 46528
Min Size: 229 acres
Max Size: 229 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Retail For Lease

Address: 2010 Elkhart Rd
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 1,500 sqft
Max Size: 1,500 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Amberwood Terrace

Address: 655 County Rd 17
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 4,265 sqft
Max Size: 4,265 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

3630 Manchester Dr.

Address: 3630 Manchester Dr.
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 153,654 sqft
Max Size: 153,654 sqft
Parcel: 20-05-02-251-004.000-006, 20-05-02-176-032.000-006

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Borg Road Land

Address: Borg Road
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 31.53 acres
Max Size: 31.53 acres
Parcel: 20-02-28-176-007.000-027

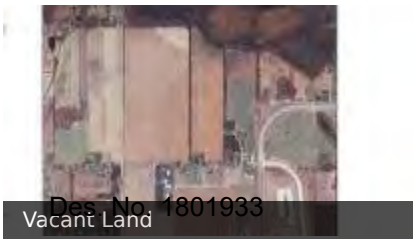
Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

30814 Corwin St

Address: 30814 Corwin St
City: Elkhart
County: Elkhart County
Zip Code: 46514
Min Size: 33,000 sqft
Max Size: 33,000 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Elkhart East - Area A at I 80 / 90



Address: Elkhart East - Area A at I 80 / 90
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 120 acres
Max Size: 120 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Hemlock Court - Riverside Industrial Park

Vacant Land

Address: Hemlock Court - Riverside Industrial Park
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 11.54 acres
Max Size: 11.54 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

Beacon Medical Group


Office

Address: 357 N Nappanee St
City: Nappanee
County: Elkhart County
Zip Code: 46550
Min Size: 3,342 sqft
Max Size: 3,342 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

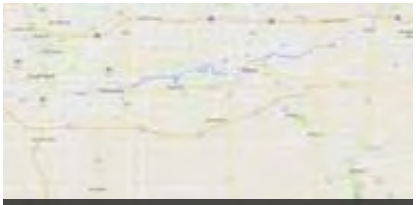
Market Centre

Other

Address: No Address
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 2,400 sqft
Max Size: 42,928 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

1763 Lincolnway E


Vacant Land

Address: 1763 Lincolnway E
City: Goshen
County: Elkhart County
Zip Code: 46526
Min Size: 3.63 acres
Max Size: 3.63 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

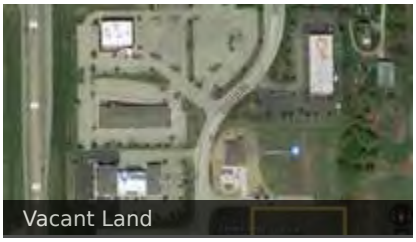
Toledo Road Storage


Other

Address: 1651 Toledo Rd
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 0 sqft
Max Size: 0 sqft

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com

924 Parkway Ave


Vacant Land

Address: 924 Parkway Ave
City: Elkhart
County: Elkhart County
Zip Code: 46516
Min Size: 0.56 acres
Max Size: 0.56 acres

Company: EDC of Elkhart County, Indiana
Contact Name: Chris Stager
Phone: 574-293-5627
Email: edc@elkhartcountybiz.com