FAIRFIELD AVENUE, EWING STREET, SUPERIOR STREET, AND WELLS STREET
PRELIMINARY FEASIBILITY STUDY

Prepared for:
City of Fort Wayne, Indiana

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AMERICAN STRUCTUREPOINT INC.

Preliminary Feasibility Study

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APPENDIX

Preliminary Feasibility Study

Type of Work:	One-Way to Two-Way Conversion and new Roundabout Construction
Route:	on Fairfield Avenue and Ewing Street. The project limits extend along Fairfield Avenue from just south of Hendricks Street in a northerly direction to just north of the intersection with Superior Street. The project limits extend along Ewing Street from Baker Street to just north of the intersection with Superior Street.
Functional Classification:	Urban Minor Arterial
Location:	Fort Wayne, Indiana
Posted Speed Limit:	30 mph

PURPOSE AND NEED

The purpose of this Preliminary Feasibility Study is to document the feasibility study phase, including an outline of the proposal for improvements along Fairfield Avenue and Ewing Street as well as a roundabout at the intersection of Ewing Street, Fairfield Ave, Superior Street, and Wells Street. This report provides conclusions and recommendations that will serve as a guide for succeeding survey and design.

PROJECT LOCATION

The project is located along Fairfield Avenue from just south of Hendricks Street extending in a northerly direction to just north of the intersection with Superior Street a distance of approximately 0.75 miles. The project limits also include Ewing Street from Baker Street extending in a northerly direction to just north of the intersection with Superior Street a distance of approximately 0.73 miles. The project is located in the City of Fort Wayne, Allen County, Indiana. See **Appendix A** for a map of the project area.

PROJECT OBJECTIVES

The goal of this feasibility study is to evaluate two alternatives for the conversion of Fairfield Avenue and Ewing Street from One-Way to Two-Way traffic, from just south of Hendricks Street to just north of the intersection with Superior Street. Option 1 objectives are described below:

A. Convert Fairfield Ave. and Ewing St. from one-way streets to two-way streets with no changes to existing typical section.
B. Roundabout analysis for the 5-leg intersection of Superior Street, Fairfield Avenue, Ewing Street, and Wells Street.
C. Convert Main Street and Superior Street from 4-lane to 3-lane roadways with the possibility of adding bike lanes on both streets.
D. Evaluate the feasibility of the following:
    1. Reduce excessive roadway width at the intersection of Fairfield Ave. and Brackenridge St.
    2. Convert Baker St. from one-way to two-way between Fairfield Ave. and Ewing St.
E. Identify potential right-of-way impacts.
F. Identify potential utility impacts.
G. Develop preliminary opinion of probable cost.

Option 2 objectives are described below:

A. Convert Fairfield Ave. and Ewing St. from one-way to two-way with changes to geometric layout that show a 3-lane typical section with new curb, 6' parkstrip, and 5' sidewalk to conform to the downtown Fort Wayne template. New LED street lighting (post mounted "acorn" style) should be included.
B. Landscaping per downtown Fort Wayne template.
C. Roundabout analysis for the 5-leg intersection of Superior Street, Fairfield Avenue, Ewing Street, and Wells Street.
D. Convert Main Street and Superior Street from 4-lane to 3-lane roadways with the possibility of adding bike lanes on both streets.
E. Evaluate the feasibility of the following:
    3. Reduce excessive roadway width at the intersection of Fairfield Ave. and Brackenridge Street
    4. Convert Baker St. from one-way to two-way between Fairfield Ave. and Ewing St.
F. Identify potential right-of-way impacts
G. Identify potential utility impacts
H. Develop preliminary opinion of probably cost.

EXISTING FACILITY

See **Appendix A** for ground level photographs and project area map.

- **Function:**

This section of Fairfield Avenue and Ewing Street is classified as an Urban Minor Arterial and has a posted speed of 30 mph throughout the project limits.

- **Roadway Cross Section:**

Along Fairfield Avenue, from the beginning of the project to Baker St., the roadway section consists of curb, sidewalk, and two 21'-0" wide travel lanes (one in each direction) with a roadway width of approximately 42'-0". From Baker St. to Brackenridge St., the roadway section consists of curb, sidewalk, and two 12'-0" wide southbound travel lanes and one variable width parking lane with a roadway width varying from approximately 32'-0" to 65'-0". From Brackenridge St. to Jefferson Blvd., the roadway section consists of curb, park strip, sidewalk, and two 12'-0" southbound travel lanes and one 8'-0" wide parking lane with a roadway width of approximately 32'-0". From Jefferson Blvd. to Main St., the roadway section consists of curb, sidewalk, and three 11'-8" southbound travel lanes and one 8'-0" parking lane with a roadway width of approximately 43'-0". From Main St. to Superior St, the Fairfield Ave. roadway section consists of curb, park strips, sidewalk and three 12'-8" southbound travel lanes with a roadway width of approximately 38'-0".

Along Ewing Street, from Baker St. to just north of Brackenridge St., the roadway section consists of curb, park strips, sidewalk, and two 14'-0" northbound travel lanes with a roadway width of approximately 28'-0". From just north of Brackenridge St. to Jefferson Blvd., the roadway section consists of curb, park strip, sidewalk and two 13'-6" northbound travel lanes and one 12'-0" parking lane with a roadway width of approximately 39'-0". From Jefferson Blvd. to Washington Blvd., the roadway section consists of curb, park strips, sidewalk, and three 11'-0" northbound travel lanes and one 10'-0"parking lane with a roadway width of approximately 43'-0". From Washington Blvd. to Wayne St., the roadway section consists of curb, park strips, sidewalk and three 12'-4" northbound

travel lanes with a roadway width of approximately 37'-0". From Wayne St. to Berry St., the roadway section consists of three 11'-8" northbound travel lanes and one 8'-0" parking lane with a roadway width of approximately 43'-0". From Berry St. to Superior St. the roadway section consists of curb, park strips, sidewalk, and three 12'-4" northbound travel lanes and a roadway width of approximately 37'-0".

Along Baker St., from Fairfield Ave. to Ewing St., the roadway section consists of curb, park strips, sidewalk, and two 10'-6" eastbound travel lanes and one 8'-0" parking lane with a roadway width of approximately 29'-0".

Along Brackenridge St., from Fairfield Ave. to Ewing St., the roadway section consists of curb, park strip, sidewalk, and one 12'-0" westbound travel lane and one 8'-0" parking lane on each side of the road with a roadway width of approximately 28'-0".

Along Main St., from Fairfield Ave. to Ewing St., the roadway section consists of curb, parks strip, sidewalk, and two 10'-6" westbound travel lanes and two 10'-6" eastbound travel lanes with a roadway width of approximately 42'-0".

The west approach of Superior St., at the intersection with Fairfield Ave., Ewing St., and Wells St., the roadway section consists of curb, sidewalk, and three 10'-8" travel lanes with a roadway width of approximately 32'-0". On the east approach of Superior St., at the intersection with Fairfield Ave., Ewing St., and Wells St., the roadway section consists of curb, park strip, sidewalk, and four 12'-3" travel lanes with a roadway width of approximately 49'-0".

The existing right-of-way width along Fairfield Ave., Ewing St., Baker St., Brackenridge St., and Superior St. varies from approximately 30'-0" to 33'-0" from the centerline of the roadway. The existing right-of-way is approximately located at the back of sidewalk.

- **Existing Pavement:**

The existing pavement along Fairfield Ave. from the south project limit to Jefferson Blvd. is asphalt. From Jefferson Blvd. to Superior St., the existing pavement along Fairfield Ave. is concrete.

The existing pavement along Ewing St. from Baker St. to Jefferson is asphalt. From Jefferson Blvd. to Berry St., the existing pavement along Ewing Street is concrete. From Berry St. to Pearl St., the existing pavement along Ewing Street is asphalt. From Pearl St. to Superior St., the existing pavement along Ewing St. is concrete.

The existing pavement along Baker St, Brackenridge St, and Main Street is asphalt. The existing pavement along Superior St. is concrete.

There are segments where the existing curbs are in poor condition and additional segments where the curb heights have been diminished from the resurfacing of the roadways. In some areas the sidewalks and curb ramps do not meet minimum ADA slope requirements.

- **Cross Streets and Intersections:**

Within the project limits there are 20 at-grade intersections, 12 of which are signalized. Below is a list of the intersections along Fairfield Avenue:

1. Hendricks Street (stop controlled)
2. Lavina Street (stop controlled)
7. Baker Street (stop controlled)
8. Brackenridge Street (stop controlled)

3. Jefferson Blvd. (Signalized)
4. Wayne Street (Signalized)
5. Main Street (Signalized)
6. Superior Street (Signalized)
9. Washington Blvd. (Signalized)
10. Berry Street (Signalized)
11. Pearl Street (stop controlled)

Below is a list of the intersections Along Ewing Street:

1. Baker Street (stop controlled)
2. Jefferson Blvd. (Signalized)
3. Wayne Street (Signalized)
4. Main Street (Signalized)
5. Superior Street (Signalized)
6. Brackenridge Street (stop controlled)
7. Washington Blvd. (Signalized)
8. Berry Street (Signalized)
9. Pearl Street (stop controlled)

Below is a more detailed description of existing intersections that are to be improved as part of the project.

1. Fairfield Avenue / Baker Street

The Baker St. intersection is an un-signalized intersection. The traffic flow north of the intersection is one-way in the southbound direction while the traffic flow is two-directional south of the intersection. The south approach consists of one northbound and one southbound travel lane. Baker St. is the point where two-way traffic is terminated from the south approach. A triangular island diverts the northbound lane onto the two-lane eastbound Baker St. The north approach of Fairfield Ave. consists of two southbound lanes. The triangular island diverts one of the southbound lanes onto the two-lane eastbound Baker St.

2. Fairfield Avenue / Brackenridge Street

The Brackenridge St. intersection with Fairfield Ave. is a non-signalized intersection. The eastbound approach is a one-way street and is stop controlled. The eastbound approach consists of an exclusive right turn lane. Traffic in the eastbound right turn lane must yield to Fairfield Ave. traffic before merging onto Fairfield Ave. The westbound approach is a one-way street and is stop controlled. The westbound approach consists of an exclusive left turn lane. Traffic in the westbound left turn lane must yield to Fairfield Ave. traffic before merging onto Fairfield Ave.

3. Fairfield Avenue / Ewing Street / Superior Street / Wells Street

The Superior St. and Wells St. intersection with Fairfield Ave. and Ewing St. is a signalized intersection. The eastbound approach consists of a thru lane and an exclusive left turn lane. The westbound approach consists of a thru lane, an exclusive left turn lane, and an exclusive right turn lane. The northbound approach consists of one thru lane, an exclusive left turn lane, and shared thru/right turn lane. The southbound approach consists of one thru lane, an exclusive left turn lane, and a shared thru/right turn lane.

- **Land Use:**

Land use within the project limits is heavy urban commercial and residential.

- **Utilities:**

Utilities that were visually observed within the project limits include gas, water, storm sewer, sanitary sewer, and both buried and overhead electric. The designer shall further coordinate with the local utility companies during the design stage for verification of utilities and potential utility conflicts with any proposed work.

- **Existing Lighting, Signage, and Signals**

The City of Fort Wayne is responsible for the existing lighting located within the project limits. Cobra head lighting and "shoebox" fixtures are located throughout the project limits.

There is one overhead sign mounted on a mast-arm structure. This structure is located on Fairfield Ave. between Jefferson Blvd. and Washington Blvd.

As previously mentioned, 12 of the intersections are signalized with mast-arm supports. Pedestrian signals exist at each of the signalized intersections.

- **Bridge Structures:**

There are two bridges located within the project limits. Fairfield Ave. and Ewing St. both cross under a single Norfolk Southern Railroad Bridge just south of Superior St. At the northern project limit, Wells Street crosses over the St. Mary's River.

- **Drainage:**

Throughout the project limits, inlets along the curb lines collect roadway drainage in an enclosed storm sewer system.

DISCUSSION OF ALTERNATIVES / IDENTIFICATION OF PROPOSAL

This feasibility study analyzes the operations of a proposed roundabout at the intersection of Fairfield Avenue, Ewing Street, Superior Street, and Wells Street in Fort Wayne, Indiana. The report also provides recommendations for the geometry of the roundabout, including number of lanes and inscribed circle diameter (ICD). This feasibility study also analyzes two alternatives for converting Fairfield Ave. and Ewing St. from one-way traffic to two-way traffic.

ROUNDABOUT ANALYSIS AND FEASIBILITY

- **Background Information**

Current Intersection Configuration

The current intersection configuration is a 4-way signalized intersection. The south leg of the intersection is comprised of Fairfield Avenue (one-way southbound) and Ewing Street (one-way northbound). Directly north of the intersection on Wells Street is a six-lane bridge over the St. Mary's River. Superior Street runs east-west at the intersection. All approaches have dedicated left-turn lanes, with the north and south having protected-permitted phasing, and the east and west being permitted only

.

Surrounding Land Uses

This intersection is on the near northwest side of the downtown area. The surrounding land uses are primarily commercial.

- **Proposed Configuration**

The proposed intersection configuration is a roundabout. A roundabout intersection would facilitate converting Fairfield Avenue and Ewing Street from a one-way pair into two two-way streets. The one-way to two-way conversion would not operate well with the current signalized intersection configuration. A roundabout would also provide the opportunity to improve the aesthetics of this gateway into downtown from the northwest.

The proposed improvements at this intersection have taken into account the existing bridge directly north of the intersection. The intention is to perform as little work as possible on the bridge.

- **Operational Analysis**

Traffic Data

The traffic data used for this analysis was obtained from the Northeastern Indiana Regional Coordinating Council (NIRCC). NIRCC not only performed the background traffic counts, but also provided traffic projections from their transportation demand model for the AADTs of the study area roadways after a one-way to two-way conversion on Fairfield Avenue and Ewing Street. American Structurepoint coordinated with NIRCC and used these projections to determine the AM and PM peak hour turning movements at the study intersection. The NIRCC projections and collected turning movements are provided in **Appendix B** and **Appendix C**, respectively.

Capacity Analysis

The following table summarizes the capacity analysis results for the year 2010 and the year 2032. RODEL software was used to analyze the traffic operations at the intersection. RODEL is based on extensive empirical data collected in the UK and analyzes the operations of a given roundabout based upon the geometric features of the roundabout. See **Appendix D** for a more detailed account of the results.

Capacity Analysis Summary for 2010 and 2032 AM and PM Peak Hour

		2010 AM Peak		2010 PM Peak		2032 AM Peak		2032 PM Peak	
Approach	# of entry lanes	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
North - Wells Street	1 / 2*	A	6.0	B	11.4	A	7.8	E / A	36.0 / 6.0
West - Superior Street	1	A	5.4	A	6.6	A	7.2	A	8.4
Southwest - Fairfield Avenue	1	A	5.4	A	9.0	A	7.2	C	16.8
Southeast - Ewing Street	1	A	4.8	A	6.0	A	5.4	A	7.8
East - Superior Street	1	A	5.4	A	6.0	A	7.2	A	7.8

* This approach was checked for a two-lane entry when it was determined that a single-lane entry did not perform acceptably.

RODEL was used to determine the minimum number of lanes required on each of the roundabout approaches and in the circulatory roadway. Based upon the capacity analysis, the north leg will

require two approach lanes. Because there is a low right-turn demand on this approach, the outside lane would be designated for right turns and through movements, and the inside lane would be designated for left turns.

- **Design Constraints**

The intersection of Fairfield Avenue, Ewing Street, and Wells Street has some noticeable site constraints, namely:

1) The skew between the two south legs of Fairfield Avenue and Ewing Street is significant. Anything less than 75 degrees becomes a challenge in roundabout design. The skew can be handled in one of two ways.
   a) Restrict right turns from Fairfield Avenue to Ewing Street. This is the least costly of the options, and it is anticipated that this movement would happen very rarely. This is the option that was chosen for the roundabout schematic.
   b) Use a right-turn bypass lane. This would take considerably more right-of-way, and would rarely be used.
2) The north leg (Wells Street) has a bridge in close proximity to the intersection. It is desired that the intersection improvement not impact the bridge or require any reconstruction. This was a challenge in the layout of the roundabout, as there are six lanes on the bridge.
3) The diameter of a typical single-lane roundabout with four legs is 110 to 130 feet. Because the intersection is not far from a heavy commercial district of the city, the design vehicle would be a WB-65, or a semi with a 53-foot trailer. As could be expected, the smaller the diameter, the more difficult it is for a large truck to negotiate. Due to the need to accommodate a WB-65 design vehicle and because this roundabout is a five-leg roundabout with a heavy skew between Fairfield Avenue and Ewing Street, a diameter of 150 feet will be used.
4) The existing roadway underpasses on Fairfield Avenue and Ewing Street limit the width and any re-alignment of these legs of the intersection.
5) The existing building and businesses on the northwest, southwest, and southeast corners of the intersection also restrict the size of the roundabout. With a limited budget for this project, the desire is to minimize impacts to these properties any more than necessary, while keeping in mind the Downtown Fort Wayne design standards.

- **Roundabout Recommendations**

Based upon the capacity analysis results, it is desirable to build a roundabout that has a minimum of one entry lane on each approach except for the north approach, which will have two lanes. Looking at the existing curblines, pavement extents, and traffic volumes, it also is desirable to provide a two-lane entry on the east leg of the roundabout. The right lane would be a right-turn only, and the left lane would be a shared through and left-turn lane. This scenario was not analyzed in RODEL, as this approach would operate acceptably with only a single entry lane.

The proposed roundabout geometry is as follows:

North Leg: Wells Street is a six-lane cross-section just north of the existing intersection. It is recommended to use pavement markings to drop the inside southbound lanes on the bridge. In order

to protect pedestrians crossing the dropped lane, a curb bumpout shall be used near the pedestrian crossing.

The northbound exit onto the bridge shall be two lanes exiting the roundabout that transitions to the three existing lanes. The existing median barrier on the bridge should be replaced near the roundabout with a raised splitter island. The splitter island should be designed such that it transitions smoothly into the remaining median barrier at the north end of the splitter island.

West Leg: The west leg of Superior Street shall consist of a single entry lane and a single exit lane.

Southwest Leg: Fairfield Avenue shall consist of a single entry lane and a single exit lane. Because of the skew in the proximity of Fairfield Avenue and Ewing Street, the acute right turn to Ewing Street shall be prohibited.

Southeast Leg: Ewing Street shall consist of a single entry lane and a single exit lane.

East Leg: The east leg of Superior Street shall consist of a two-lane entry (one right-turn only and one shared through / left-turn lane) and a single exit lane.

See rendering in **Appendix E** for an illustration of the roundabout.

ROADWAY ALTERNATIVES AND FEASIBILITY

This feasibility study analyzes two alternatives for converting Fairfield Ave. and Ewing St. from one-way traffic to two-way traffic.

- **Option 1 - Typical Cross Section**

Fairfield Avenue:

A 3-lane typical section, from the beginning of the project to the proposed roundabout at Superior St., is being proposed for Fairfield Ave. and Ewing St. The 3-lane typical section varies in width throughout the project limits, but shall consist of a minimum 10’-0” wide thru lane, one in each direction, with a 1’-0” wide curb offset and a minimum 10’-0” wide two-way-left-turn-lane. An 8’-0” wide parking lane will be maintained in the northbound direction for Ewing St. between Brackenridge St. and Washington Blvd. and between Wayne St. and Berry St.

From the beginning of the project to just north of Brackenridge Street, Fairfield Avenue will require approximately 870-feet of new curb construction to reduce the excessive pavement width. Where new curb is to be constructed, a 5’-0” wide sidewalk with a 6’-0” wide park strip will be reconstructed. The remaining existing curbs will be maintained along Fairfield Avenue.

At the Fairfield Ave. and Jefferson Blvd. intersection, a 10’-0” wide right turn lane will be added to the northbound approach.

Ewing Street:

From Baker St. to just north of Brackenridge Street, Ewing Street will be widened approximately 4'-0" to the west to accommodate the proposed 3-lane section. A 5'-0" wide sidewalk with a 6'-0" wide park strip will be reconstructed on the west side.

Baker Street:

Baker Street will be converted from one-way to two-way traffic between Fairfield Ave. and Ewing St. The 2-lane section shall consist of a 10'-0" wide thru lane, one in each direction, with a 1'-0" wide curb offset. An 8'-0" wide parking lane will be maintained in the eastbound direction. The south curb line will be reconstructed for approximately 200-feet to reduce the excessive pavement width. Where new curb is to be constructed, a 5'-0" wide sidewalk with a 7'-0" wide park strip will also be constructed. The remaining existing curbs will be maintained.

Main Street:

Main Street will be converted from a 4-lane section to a 3-lane section. The 3-lane section shall consist of one 10'-8" wide thru lane in each direction, a 10'-8" wide left-turn lane, and one 5'-0" wide bike lane in each direction.

All proposed street approaches, alleys, and drives shall be designed in accordance with City of Fort Wayne Design Standards. All proposed sidewalk shall be designed to meet current ADA requirements.

Refer to **Appendices F, G, and H** for the proposed Option 1 roadway typical sections and conceptual plan layout.

- **Option 2 - Typical Cross Section**

Fairfield Avenue and Ewing Street:

A 3-lane typical section, from the beginning of the project to the proposed roundabout at Superior St., is being proposed for Fairfield Ave. and Ewing St. The 3-lane typical section varies in width throughout the project limits, but shall consist of a minimum 10'-0" thru lane, one in each direction, with a 1'-0" wide curb offset, a minimum 11'-0" wide two-way-left-turn-lane, 0'-6" curb, 6'-0" wide park strip, and a 5'-0" wide sidewalk. An 8'-0" wide parking lane will be maintained in the northbound direction for Ewing St. between Brackenridge St. and Washington Blvd. and also between Wayne St. and Berry St.

In addition to the proposed 3-lane section, exclusive right-turn lanes are proposed at the following locations:

1. Northbound approach at the Fairfield Ave. and Jefferson Blvd. intersection.
2. Southbound approach at the Fairfield Ave. and Washington Blvd. intersection.
3. Northbound approach at the Fairfield Ave. and Wayne St. intersection.
4. Southbound approach at the Fairfield Ave. and Berry St. intersection.
5. Southbound approach at the Ewing St. and Washington Blvd. intersection.
6. Southbound approach at the Ewing St. and Berry St. intersection.

Due to existing right-of-way constraints, existing site conditions, and building locations, the new 6'-0" sidewalk is proposed adjacent to the back of curb for the following segments:

1. Southbound Fairfield Ave. from the beginning of the project to just south of Lavina St.
2. Northbound Fairfield Ave. from Jefferson Blvd. to Washington Blvd.
3. Southbound Fairfield Ave. from Washington Blvd. to Berry St.
4. Southbound Fairfield Ave. from Pearl St. to just north of the Norfolk Southern Railroad Bridge.
5. Northbound Ewing St. from Wayne St. to Berry St.
6. Southbound Ewing St. from Main St. to Pearl St.
7. Northbound Ewing St. from Pearl St. to just north of the Norfolk Southern Railroad Bridge.

Ewing Street from Baker St. to just north of Brackenridge St. will be widened approximately 5'-0" to the west to accommodate the proposed 3-lane section.

Baker Street:

Baker Street will be converted from one-way to two-way traffic between Fairfield Ave. and Ewing St. The 2-lane section shall consist of one 10'-0" wide thru lane in each direction with a 1'-0" wide curb offset. An 8'-0" wide parking lane will be maintained in the eastbound direction. This section includes reconstruction of the curb and construction of a 5'-0" sidewalk with a 7'-0" wide park strip on the south side and a 10'-0" wide park strip on the north side of the roadway.

Brackenridge Street:

The existing Brackenridge Street typical section between Fairfield Ave. and Ewing St. will be maintained. The one-way roadway shall consist of a 12'-0" wide westbound thru lane with an 8'-0" wide parking lane on each side of the roadway. This section includes reconstruction of the curb and construction of a 5'-0" sidewalk with a 5'-0" wide park strip on the south side and a 13'-0" wide park strip on the north side of the roadway.

Jefferson Boulevard:

Jefferson Blvd., between Fairfield Ave. and Ewing St., includes reconstruction of the curb and construction of a 5'-0" sidewalk with a 6'-0" wide park strip on the south side of the roadway.

Main Street:

Main Street will be converted from a 4-lane section to a 3-lane section. The 3-lane section shall consist of one 10'-8" wide thru lane in each direction, a 10'-8" wide left-turn lane, and one 5'-0" wide bike lane in each direction. Between Fairfield Ave. and Ewing St., the roadway includes reconstruction of the curb and a 5'-0" sidewalk with a 6'-0" wide park strip on both sides of the roadway. In order to convert the existing 4-lane section to a 3-lane section with bike lanes, Main Street will be required to drop one eastbound lane west of Fulton Street. On the east side of Ewing St., one of the westbound lanes will become the left turn lane to southbound Ewing Street.

All proposed street approaches, alleys, and drives shall be designed in accordance with City of Fort Wayne Design Standards. All proposed sidewalk and curb ramps shall be designed to meet current ADA requirements.

Refer to **Appendices F, G, and H** for the proposed Option 2 roadway typical section and the conceptual plan layout.

- **Option 1 & 2 - Pavement Recommendations**

Full depth pavement construction is being proposed within the limits of the roundabout. The existing asphalt pavement within the project limits shall be milled 1.5 inches and resurfaced with 1.5 inches of asphalt. The vertical alignment shall follow the existing vertical alignment of the roadway. Replacement of the existing concrete pavement outside the limits of the roundabout is not anticipated.

- **Option 1 & 2 - Horizontal Alignment Improvement:**

The horizontal alignment shall be improved at the following locations:

1. Fairfield Ave. from Lavina St. to just north of Brackenridge St.
2. Intersection of Fairfield Ave. & Jefferson Blvd.
3. Ewing St. from Baker St. to just north of Brackenridge St.
4. Intersection of Ewing St. & Jefferson Blvd.

The horizontal alignment will be modified from existing in these locations to avoid right of way impacts to Parkview Field and increase safety by aligning opposing traffic through the intersections.
Elsewhere, the horizontal alignment along Fairfield Ave. and Ewing St. shall remain the same as the existing horizontal alignment.

- **Option 1 & 2 – Drainage Recommendations**

This project shall include the installation of new storm sewer inlets, manholes, and/or pipe at the locations of added auxiliary lanes, pavement width reduction, improved curb radii, and at the proposed roundabout. Where existing curb locations are being maintained, the existing storm sewer castings shall be adjusted to grade.

- **Option 1 & 2 - Lighting, Signals, Signage, and Landscaping**

The City of Fort Wayne is responsible for the street lighting within the project limits. Under Option 1, the existing lighting will remain in place. Under Option 2, the existing lighting shall be replaced with new LED street lighting (post mounted “acorn” style) spaced at 100ft according to the City of Fort Wayne Downtown Design Manual.

Signal modernization and/or modification of the existing traffic signals will be required for all intersections within the project limits along both Fairfield Avenue and Ewing Street.

The existing traffic signal at the intersection of Fairfield Ave., Ewing St., Superior St., and Wells St. will be removed due to converting the signalized intersection to a roundabout.

New signal heads, poles, and mast arms will be required at each intersection. In order to accommodate left turn movements, additional signal heads and modifications will also be required on cross streets with two-directional traffic. The designer shall coordinate further with the City of Fort Wayne to determine the extent of the signal work and possibility of salvaging existing poles at each intersection.

Existing signage, including overhead signs, shall be replaced as part of this project.

Proposed Landscaping is not included in the scope of Option 1. Landscaping is included into the scope of Option 2 according to the City of Fort Wayne Downtown Design Manual. Street trees will be placed along the roadway at a spacing of 50ft. The vicinity of the roundabout will include landscape elements and shall be coordinated with the City of Fort Wayne Urban Designer. For the purposes of this feasibility study, various trees, shrubs, ornamental grasses, and groundcover were included for cost estimation.

- **Option 1 & 2 - Utilities**

It is not anticipated that underground utilities will need to be relocated as part of this project. For Options 1 and 2, the existing overhead transmission lines along the west side of Ewing St. shall be relocated to accommodate the proposed 3-lane section. The existing overhead transmission lines along the south side of Superior St. shall be relocated to accommodate the proposed roundabout. Existing utility poles may need to be relocated at isolated locations but will not be necessary for the majority of the corridor. The designer is to coordinate with the City of Fort Wayne and all utility companies to minimize utility conflicts.

- **Option 1 & 2 - Intersection Improvements**

Intersection improvements are required at the following intersections:

1. Fairfield Avenue / Baker Street

The existing triangular traffic island will be removed. Fairfield Ave. and Baker St. will both be converted from one-way to two-way traffic. This intersection will be un-signalized with Baker St. being stop-controlled.

2. Fairfield Avenue / Brackenridge Street

The excessive pavement width on Fairfield Ave. at Brackenridge St. will be reduced to accommodate the proposed 3-lane section. This intersection will be un-signalized with Brackenridge St. being stop-controlled.

3. Fairfield Avenue / Ewing Street / Superior Street / Wells Street

The existing 5-leg signalized intersection will be converted to a 5-leg roundabout. Refer to Appendix F, G and H for the conceptual plan layout.

OPINION OF PROBABLE COSTS

Option 1 – Roadway and Roundabout

Construction Items	
Roadway Construction	$ 2,443,300
Utilities	$ 200,000
Construction Total	$ 2,643,300
Non-Construction Items	
Engineering	$ 442,400
Right-of-Way/Land Acquisition	$ 235,000
Construction Inspection	$ 244,300
Non-Construction Total	$ 921,700
PROJECT TOTAL	$ 3,565,000

Option 2 – Roadway and Roundabout

Construction Items	
Roadway Construction	$ 4,255,100
Utilities	$ 200,000
Construction Total	$ 4,455,100
Non-Construction Items	
Engineering	$ 592,100
Right-of-Way/Land Acquisition	$ 569,000
Construction Inspection	$ 425,500
Non-Construction Total	$ 1,586,600
PROJECT TOTAL	$ 6,041,700

Refer to the opinions of probable cost in **Appendices I, J, and K.**

SURVEY REQUIREMENTS

Fairfield Avenue:

The survey limits for Fairfield Ave. should begin approximately 125' south of Hendricks St. and extend north to the intersection of Fairmount Place for a total length of 3,525 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Ewing Street:

The survey limits for Ewing St. should begin at the intersection of Baker St. and extend north to the Wells St. Bridge over the St. Mary's River for a total distance of 3,450 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Baker Street:

The survey limits for Baker St. should begin at Fairfield Ave. and extend approximately 200' east of Ewing Street for a total distance of 700 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Brackenridge Street:

The survey limits of Brackenridge should begin approximately 100' west of Fairfield Ave. and extend approximately 100' east of Ewing Street for a total distance of 700 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Jefferson Boulevard:

The survey limits for Jefferson Blvd. should begin at Fairfield Ave. and extend to Ewing St. on the south side of the roadway for a distance of 500 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Main Street:

The survey limits for Main St. should begin at Fulton St. and extend to Maiden Lane for a total distance of 1,400 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces. An additional 400 feet of survey from Broadway Street to Fulton Street will be required as well. The additional survey coverage should extend from the back of existing sidewalk on the south side of the roadway to the back of existing sidewalk on the north side of the roadway for a width of 63 feet.

Superior Street:

The survey limits for Superior St. should begin approximately 300' west of Fairfield Ave. and extend approximately 400' east of Ewing Street for a distance of 1,000 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

Wells Street:

The survey limits for Wells St. should extend from the back of existing sidewalk on the west side to the back of existing sidewalk on the east side of the roadway from Superior St. north to Commerce Drive for a distance of 1,100 feet. The survey coverage should extend approximately 25' beyond the existing right-of-way or to building faces.

RIGHT-OF-WAY IMPACTS

The existing right-of-way will accommodate the proposed typical sections along Fairfield Avenue and Ewing Street except for isolated locations. The proposed roundabout will require permanent right-of-way. Curb radii improvements and the addition of right-turn lanes at various locations will require permanent right-of-way.

In Option 1, it is estimated that permanent right-of-way will be acquired from 5 commercial parcels (0.24 acres). The effected parcels include commercial parking lots, a gas station parking lot, and used car lots.

In Option 2, it is estimated that permanent right-of-way will be acquired from 13 commercial parcels (0.42 acres). The effected parcels include commercial parking lots, a gas station parking lot, a church property, an apartment parking lot, and used car lots. It is anticipated that no relocations will be necessary as part of this project. Refer to the conceptual plan in **Appendix F, G, and H**, for approximate permanent right-of-way locations.

TRAFFIC MAINTENANCE DURING CONSTRUCTION

In order to construct the proposed roundabout in a timely manner, it is recommended to have full closure of Fairfield Avenue and Ewing Street from Pearl Street to Wells Street Bridge. A detour could be set up to divert southbound Wells St. traffic to the Van Buren St. Bridge, Harrison St. Bridge, and/or the Clinton St. Bridge to get to Main Street. The preferred detour for Superior St. would be via Van Buren St. and Harrison St. to access Main Street. Fairfield Ave. and Ewing St. would be closed from Pearl St. to Superior Street. Local access would be maintained during construction.

It is desirable to maintain a minimum of one lane and a maximum of two lanes of traffic on Fairfield Ave. and Ewing St., from the beginning of the project to Pearl St., at all times during construction. Maintaining a reduced number of travel lanes would provide minimal disruption to thru traffic and local traffic, maintain access to adjacent properties, and provide a safe environment for construction workers.

The final maintenance of traffic scheme will be evaluated and further determined during the design phase in conference with the City of Fort Wayne.

RECOMMENDATIONS/CONCLUSIONS/CONCURRENCE

The purpose of this study is to assess the feasibility of converting Fairfield Avenue and Ewing Street from one-way traffic to two-way traffic. The study also assesses the feasibility of a roundabout at the intersection of Fairfield Avenue, Ewing Street, Superior Street, and Wells Street. The proposed project scope includes a modernization and/or modification of the existing traffic signals, updated signage, improved intersection layouts, and the addition of a 5-leg roundabout at the intersection of Fairfield Ave., Ewing St., Superior St., and Wells St. Option 1 is a more cost effective alternative due to utilizing the existing pavement widths and using pavement markings to convert the roadways to two-way traffic. Spot improvements will be required to reduce excessive pavement widths. Option 2 costs are considerably higher, but this option incorporates the Downtown Fort Wayne Template for

adding LED lighting, curb reconstruction, and sidewalk reconstruction with a parkstrip throughout the corridor. Landscaping and trees will be added within the parkstrip as part of Option 2.

Based upon gathered data, field visits, and the information compiled in this report, Option 1 and Option 2 as well as the proposed 5-leg roundabout are both feasible alternatives to be constructed as outlined in the Project Recommendations section of this report. In conclusion, this project will be designed under the City of Fort Wayne Design Standards.

APPENDICES

Appendix A – Graphics

Appendix B – Traffic Counts and Projections

Appendix C – Intersection Turning Movements

Appendix D – RODEL Analysis

Appendix E – Conceptual Roundabout Rendering

Appendix F – Option 1 and 2 – Typical Sections

Appendix G – Option 1 – Conceptual Plan Layout

Appendix H – Option 2 – Conceptual Plan Layout

Appendix I – Option 1 – Roadway Opinion of Probable Cost

Appendix J – Option 2 – Roadway Opinion of Probable Cost

Appendix K – Roundabout Opinion of Probable Cost

Appendix A

Graphics

PROJECT LOCATION MAP

1" = 225'

LAVINA STREET
BRACKENRIDGE STREET
JEFFERSON BLVD.
WASHINGTON BLVD.
WAYNE STREET
BERRY STREET
MAIN STREET
FAIRFIELD AVENUE
WELLS STREET
SUPERIOR STREET
BAKER STREET
EWING STREET
PEARL STREET

AMERICAN STRUCTUREPOINT INC.

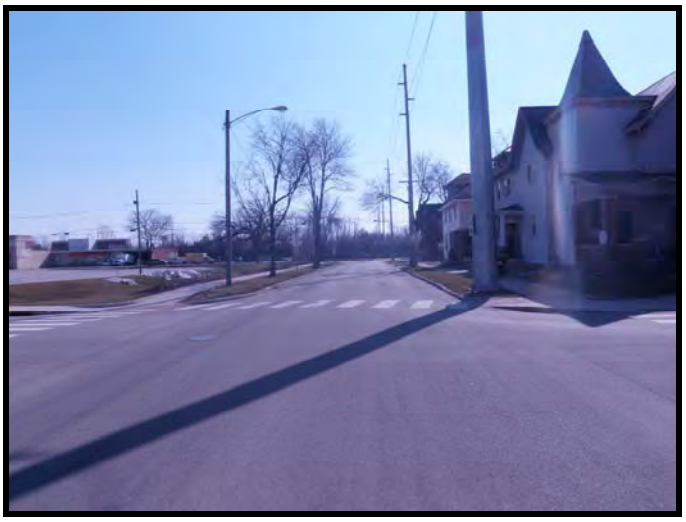
Facing north at Fairfield Ave. and Hendricks St. Intersection

Facing north at Fairfield Ave. and Baker St. Intersection

Facing north at Fairfield Ave. and Lavina St. Intersection

Facing south at Fairfield Ave. and Brackenridge St. Intersection

Facing north at Ewing St. and Brackenridge St. Intersection



Facing south at Ewing St. and Brackenridge St. Intersection

Facing north at Ewing St. and Brackenridge St. Intersection

Facing south at Ewing St. and Main St. Intersection

Facing north at Ewing St. and Main St. Intersection

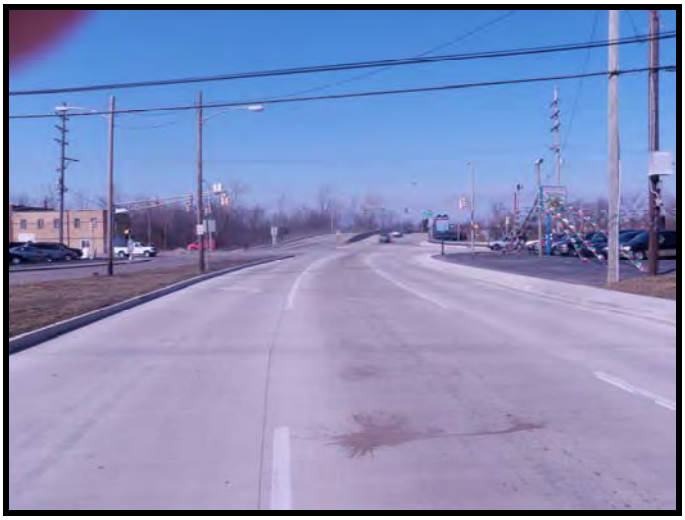
Facing north at Ewing St. and Wayne St. Intersection

Facing south at Fairfield Ave. and Pearl St. Intersection

Facing north at Fairfield Ave. and Pearl St. Intersection

Facing north on Fairfield Ave. at Railroad Underpass

Facing south on Ewing St. at Railroad Underpass



Facing north on Ewing St. at Railroad Underpass

Facing east at Superior St. and Wells St. Intersection

Facing west at Superior St. and Wells St. Intersection

Facing south at Ewing St. and Pearl St. Intersection

Facing south at Fairfield Ave. and Main St. Intersection

Facing north at Fairfield Ave. and Berry St. Intersection

Facing south at Fairfield Ave. and Berry St. Intersection

Facing north at Fairfield Ave. and Berry St. Intersection

Facing south at Fairfield Ave. and Washington Blvd. Intersection

Facing north at Fairfield Ave. and Washington Blvd. Intersection

Appendix B

Traffic Counts and Projections

Traffic Data Provided by NIRCC

Ewing St

From	To	AADT	Year	AM K FTR	PM K FTR
Superior St	Main St	6020	2010	0.0554	0.0936
Main St	Berry St	5450	2010	0.0674	0.0921
Berry St	Wayne St	5270	2010	0.0673	0.0905
Wayne St	Washington Blvd	6180	2010	0.0668	0.0884
Washington Blvd	Jefferson Blvd	5890	2010	0.0695	0.0974
Jefferson Blvd	Brackenridge St	7965	2010	0.0722	0.1106
Brackenridge St	Fairfield St	6195	2010	0.1008	0.0743

Fairfield Ave

From	To	AADT	Year	AM K FTR	PM K FTR
Superior St	Main St	7580	2010	0.0752	0.0818
Main St	Berry St	7720	2010	0.0641	0.0849
Berry St	Wayne St	8355	2010	0.0607	0.0854
Wayne St	Washington Blvd	8020	2010	0.0598	0.0927
Washington Blvd	Jefferson Blvd	9555	2008	0.0569	0.0763
Jefferson Blvd	Brackenridge St	7090	2010	0.0633	0.0849
Brackenridge St	Baker St	7730	2010	0.0569	0.0882

Jefferson Blvd

From	To	AADT	Year	AM K FTR	PM K FTR
Broadway	Fairfield St	19060	2010	0.0805	0.0730
Fairfield St	Ewing St	20125	2008	0.0692	0.0763
Ewing St	Webster St	19150	2008	0.0733	0.0764

Washington Blvd

From	To	AADT	Year	AM K FTR	PM K FTR
Broadway	Fairfield St	21220	2008	0.0642	0.0952
Fairfield St	Ewing St	22555	2010	0.0651	0.0940
Ewing St	Webster St	18875	2010	0.0663	0.0828

Berry St

From	To	AADT	Year	AM K FTR	PM K FTR
Broadway	Fairfield St	2105	2007	0.082	0.098
Fairfield St	Ewing St	2525	2010	0.0601	0.1057
Ewing St	Webster St	3390	2007	0.0686	0.1081

Wayne St

From	To	AADT	Year	AM K FTR	PM K FTR
Broadway	Fairfield St	2460	2007	0.0722	0.099
Fairfield St	Ewing St	2700	2010	0.0779	0.0953
Ewing St	Webster St	4970	2008	0.0746	0.0835

Main St

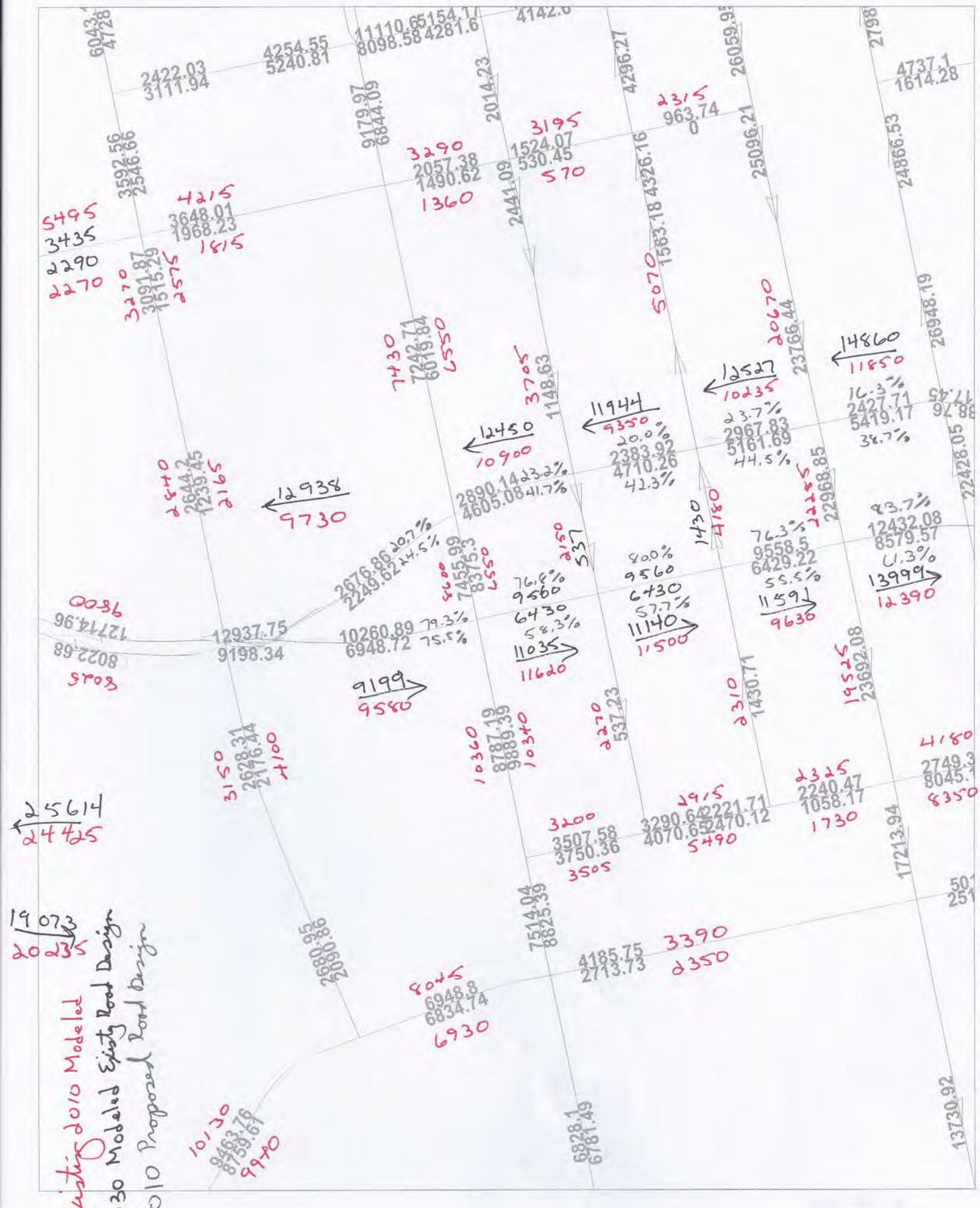
From	To	AADT	Year	AM K FTR	PM K FTR	AM D FTR	PM D FTR	24 D FTR
Broadway	Fairfield St	12580	2010	0.0709	0.0853	0.6285/EB	0.5067/WB	0.5169/EB
Fairfield St	Ewing St	14360	2008	0.0692	0.0860	0.5088/EB	0.5047/WB	0.5049/WB
Ewing St	Harrison St	14250	2008	0.0596	0.0891	0.5413/EB	0.5070/WB	0.5033/WB

Wells St

From	To	AADT	Year	AM K FTR	PM K FTR	AM D FTR	PM D FTR	24 D FTR
Railroad	Superior St	12070	2009	0.064	0.0846	0.5122/SB	0.5350/SB	0.5525/SB

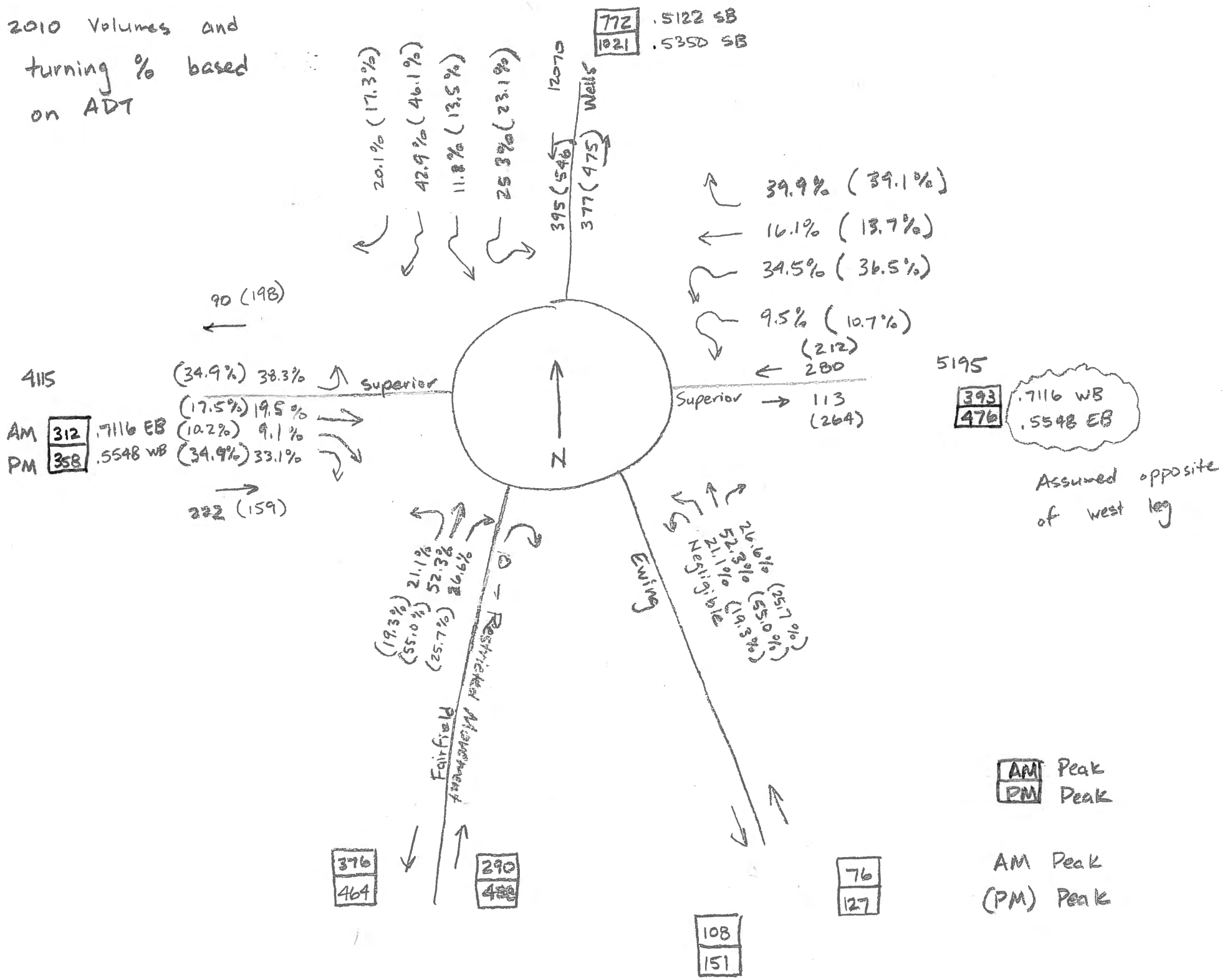
Superior St

From	To	AADT	Year	AM K FTR	PM K FTR	AM D FTR	PM D FTR	24 D FTR
Ross St	Fairfield Ave	4115	2008	0.0757	0.0869	0.7116/EB	0.5548/WB	0.5292/WB
Fairfield Ave	Wells St	5195	2009	0.0757	0.0917	NA	NA	NA

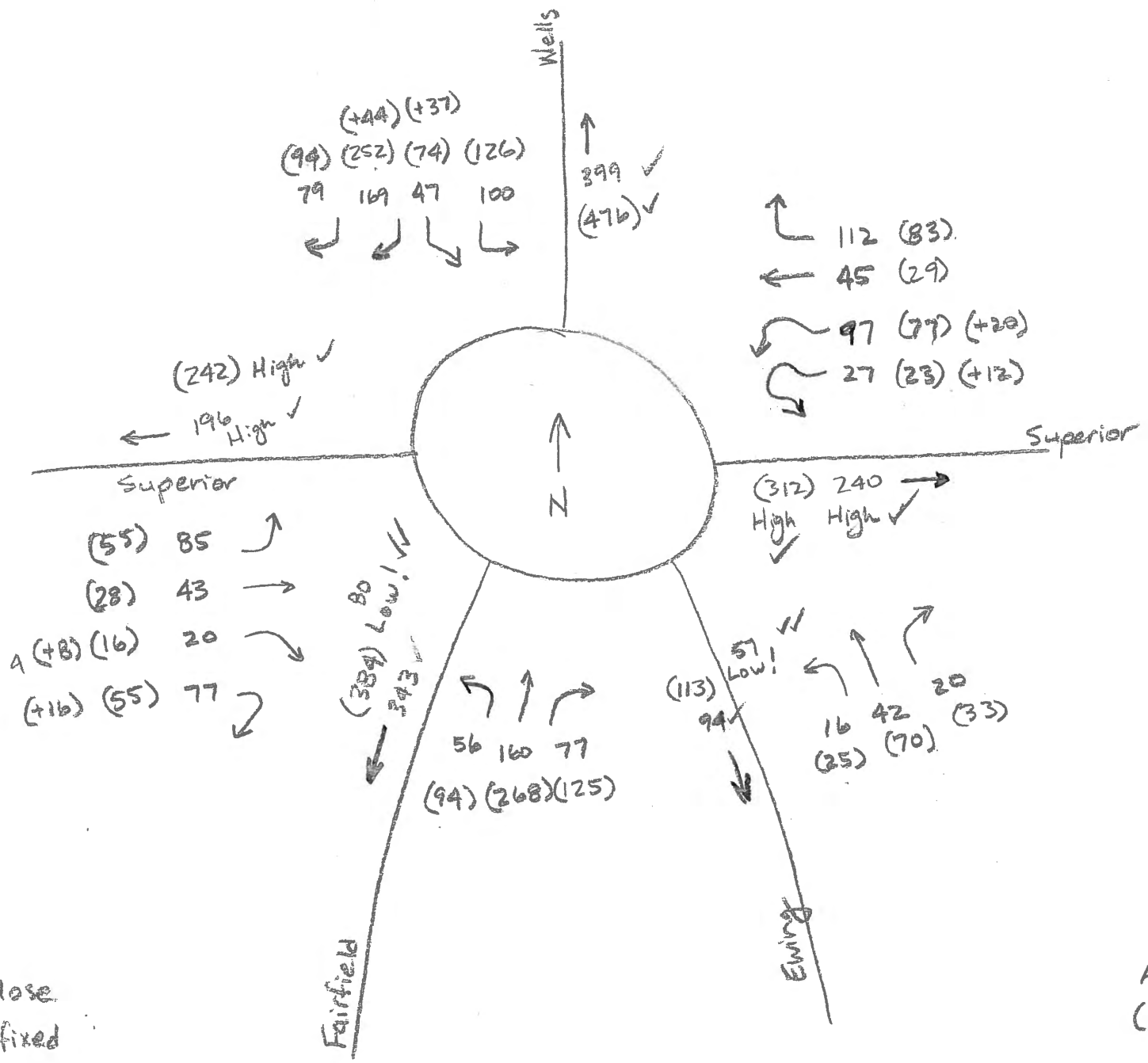

Existing 2010 Modeled
2030 Modeled Existing Road Design
2010 Proposed Road Design

Appendix C

Intersection Turning Movements


2010 Volumes and turning % based on ADT
772
1021
.5122 SB
.5350 SB
Wells
1207
20.1% (17.3%)
42.9% (46.1%)
11.8% (13.5%)
25.1% (23.1%)
395 (546)
377 (475)
39.9% (39.1%)
16.1% (13.7%)
34.5% (36.5%)
9.5% (10.7%)
(212)
280
90 (198)
4115
(34.9%) 38.3%
Superior
(17.5%) 19.5%
AM 312 .7116 EB
PM 358 .5548 WB
(10.2%) 9.1%
(34.9%) 33.1%
222 (159)
Superior
113
(264)
5195
393
476
.7116 WB
.5548 EB
Assumed opposite of west leg
N
(19.3%) (55.0%) (25.7%) 21.1% 52.3% 26.6%
Fairfield
Residential Collector
26.6% 52.3% 21.1% (25.7%) (55.0%) (19.3%)
Ewing
Negligible
376
464
290
488
76
127
108
151
AM Peak
PM Peak
AM Peak
(PM) Peak

2010 Volumes, Balanced



✓ = close

// = fixed

AM Peak

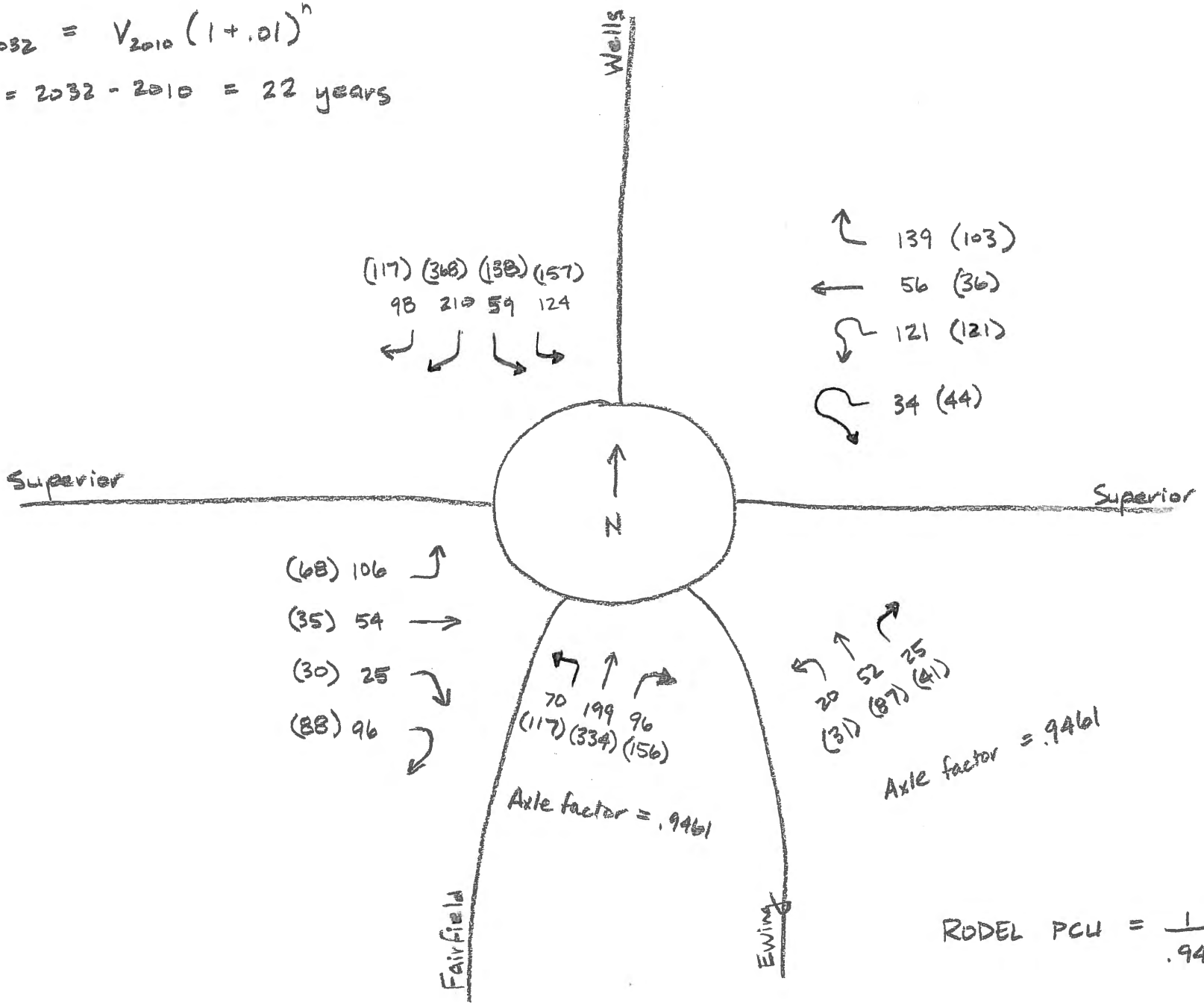
(PM) Peak

2032 Volumes

Assume growth rate = 1.00%/yr compound

$V_{2032} = V_{2010}(1+.01)^n$

$n = 2032 - 2010 = 22$ years

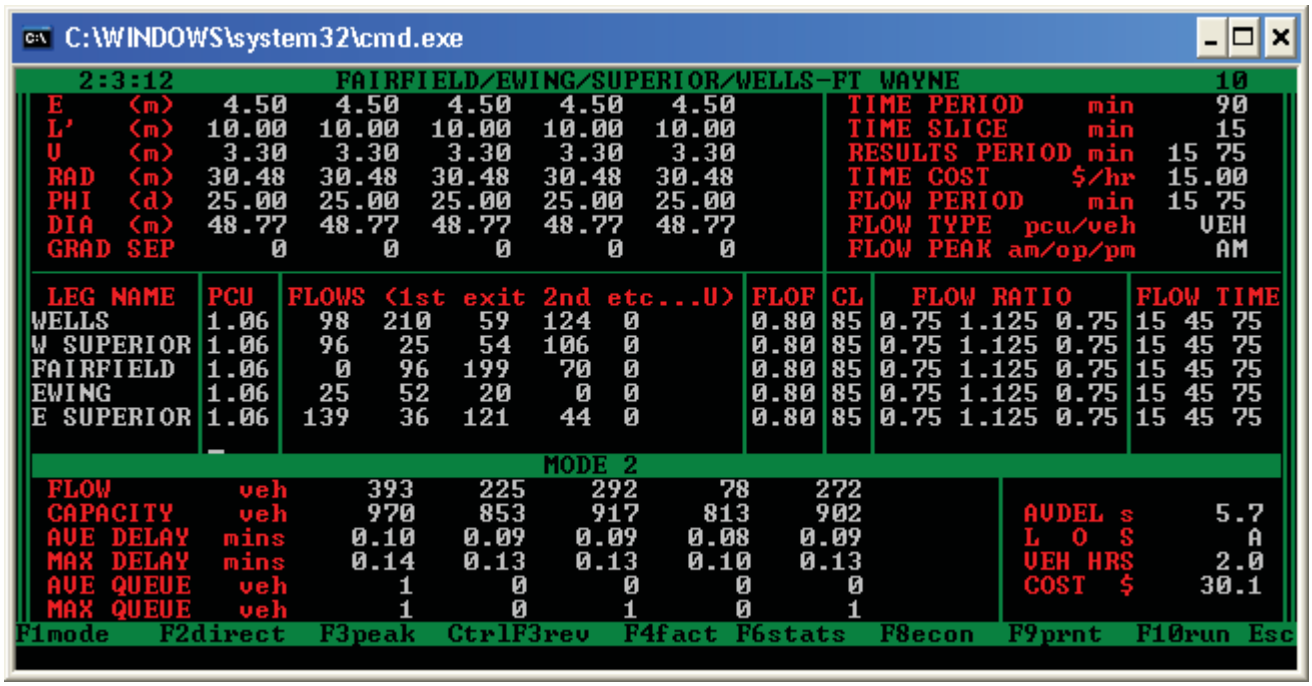


RODEL PCU = $\frac{1}{.9461} = 1.06$

Appendix D

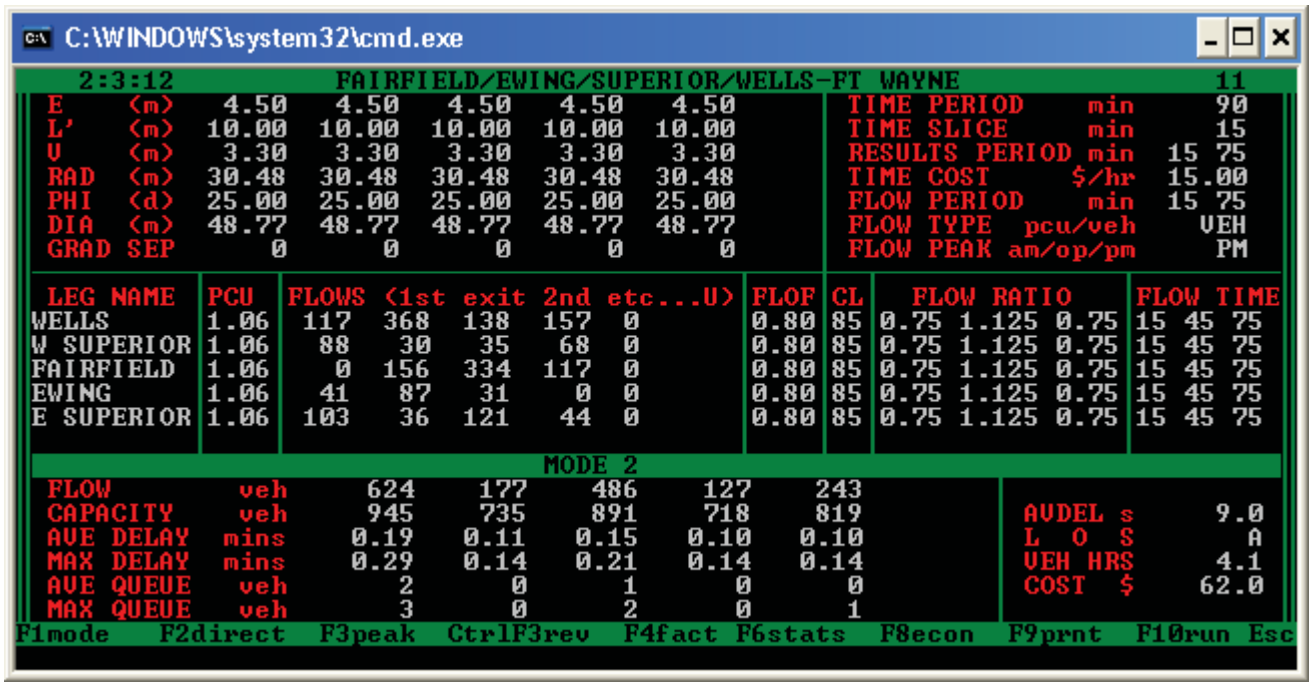
RODEL Analysis

2010 AM Peak



This RODEL output shows that a single-lane roundabout could be expected to operate at a LOS A, with an average delay per vehicle of 5.7 seconds. The maximum queue in the peak hour would be only one vehicle on the Wells, Fairfield, an east Superior approaches. The confidence level (CL) is set at 85 percent, *which is considered to be a pessimistic (conservative) estimate of capacity.* The flow factor (FLOF) is set at 0.80 because the 2010 traffic volumes are 80% of the 2032 traffic volumes, which have been entered in the FLOWS field.

2010 PM Peak



C:\WINDOWS\system32\cmd.exe

2:3:12 FAIRFIELD/EWING/SUPERIOR/WELLS-FT WAYNE 11

E	(m)	4.50	4.50	4.50	4.50	4.50
L'	(m)	10.00	10.00	10.00	10.00	10.00
V	(m)	3.30	3.30	3.30	3.30	3.30
RAD	(m)	30.48	30.48	30.48	30.48	30.48
PHI	(d)	25.00	25.00	25.00	25.00	25.00
DIA	(m)	48.77	48.77	48.77	48.77	48.77
GRAD SEP		0	0	0	0	0

TIME PERIOD	min		90
TIME SLICE	min		15
RESULTS PERIOD	min	15	75
TIME COST	$/hr		15.00
FLOW PERIOD	min	15	75
FLOW TYPE	pcu/veh		VEH
FLOW PEAK	am/op/pm		PM

LEG NAME	PCU	FLOWS (1st exit	2nd	etc...U)		FLOF	CL	FLOW RATIO			FLOW TIME
WELLS	1.06	117	368	138	157	0	0.80	85	0.75	1.125	0.75	15 45 75
W SUPERIOR	1.06	88	30	35	68	0	0.80	85	0.75	1.125	0.75	15 45 75
FAIRFIELD	1.06	0	156	334	117	0	0.80	85	0.75	1.125	0.75	15 45 75
EWING	1.06	41	87	31	0	0	0.80	85	0.75	1.125	0.75	15 45 75
E SUPERIOR	1.06	103	36	121	44	0	0.80	85	0.75	1.125	0.75	15 45 75

MODE 2

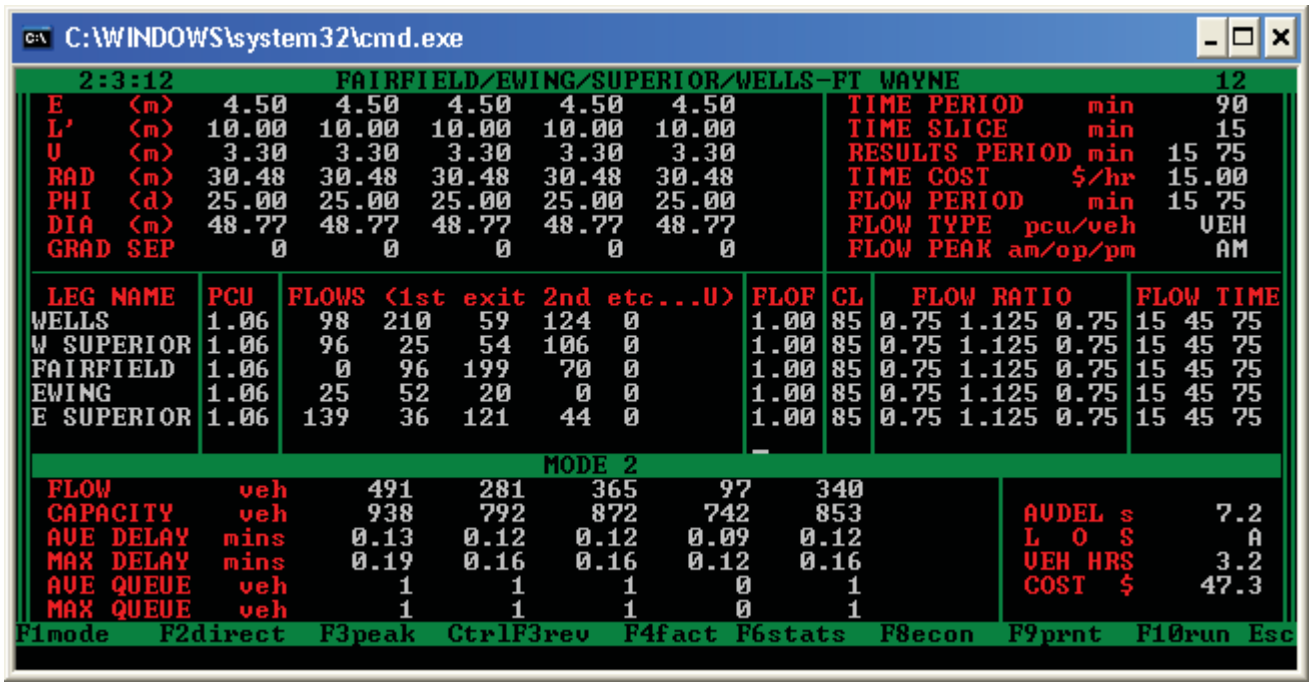
FLOW	veh	624	177	486	127	243
CAPACITY	veh	945	735	891	718	819
AVE DELAY	mins	0.19	0.11	0.15	0.10	0.10
MAX DELAY	mins	0.29	0.14	0.21	0.14	0.14
AVE QUEUE	veh	2	0	1	0	0
MAX QUEUE	veh	3	0	2	0	1

AVDEL s	9.0
L O S	A
VEH HRS	4.1
COST $	62.0

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

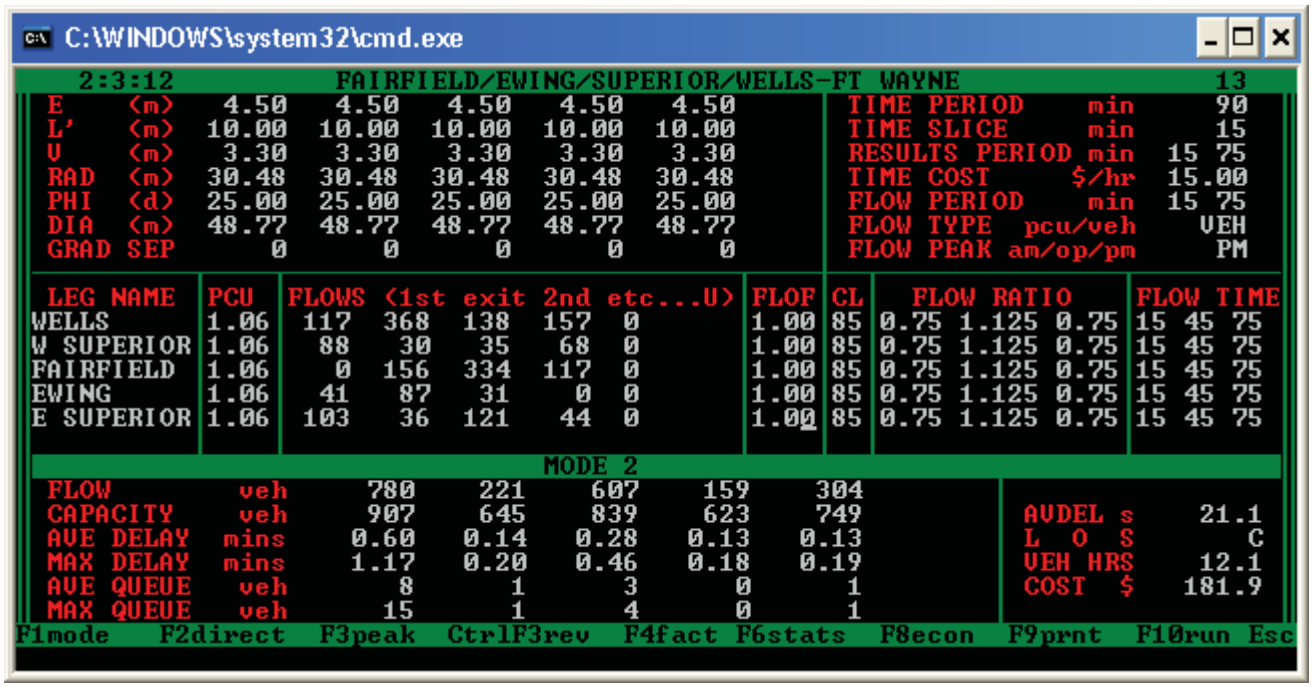
This RODEL output shows that a single-lane roundabout could be expected to operate at a LOS A, with an average delay per vehicle of 9.0 seconds. The maximum queue in the peak hour would be approximately three vehicles on the Wells Street approach. The flow factor (FLOF) is set at 0.80 because the 2010 traffic volumes are 80% of the 2032 traffic volumes, which have been entered in the FLOWS field.

2032 AM Peak



This RODEL output shows that a single-lane roundabout could be expected to operate at a LOS A, with an average delay per vehicle of 7.2 seconds. The maximum queue in the peak hour would only be one vehicle on four of the five approaches.

2032 PM Peak (Single Lane)



C:\WINDOWS\system32\cmd.exe

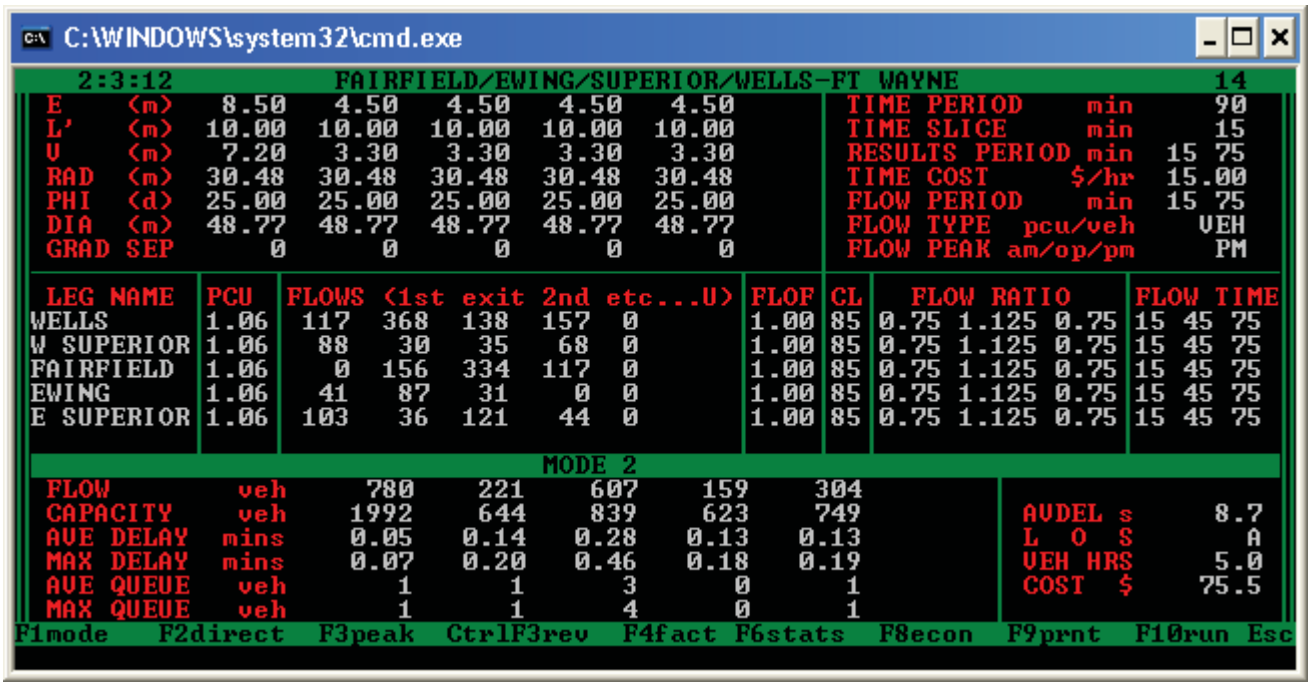
```
   2:3:12              FAIRFIELD/EWING/SUPERIOR/WELLS-FT WAYNE                13
 E     (m)    4.50    4.50    4.50    4.50    4.50        TIME PERIOD     min    90
 L'    (m)   10.00   10.00   10.00   10.00   10.00        TIME SLICE      min    15
 V     (m)    3.30    3.30    3.30    3.30    3.30        RESULTS PERIOD  min 15 75
 RAD   (m)   30.48   30.48   30.48   30.48   30.48        TIME COST      $/hr 15.00
 PHI   (d)   25.00   25.00   25.00   25.00   25.00        FLOW PERIOD     min 15 75
 DIA   (m)   48.77   48.77   48.77   48.77   48.77        FLOW TYPE   pcu/veh    VEH
 GRAD SEP       0       0       0       0       0        FLOW PEAK am/op/pm     PM

 LEG NAME  PCU  FLOWS (1st exit 2nd etc...U)  FLOF CL   FLOW RATIO      FLOW TIME
WELLS      1.06  117  368  138  157   0       1.00 85 0.75 1.125 0.75 15 45 75
W SUPERIOR 1.06   88   30   35   68   0       1.00 85 0.75 1.125 0.75 15 45 75
FAIRFIELD  1.06    0  156  334  117   0       1.00 85 0.75 1.125 0.75 15 45 75
EWING      1.06   41   87   31    0   0       1.00 85 0.75 1.125 0.75 15 45 75
E SUPERIOR 1.06  103   36  121   44   0       1.00 85 0.75 1.125 0.75 15 45 75

                                MODE 2
 FLOW          veh      780     221     607     159     304
 CAPACITY      veh      907     645     839     623     749      AVDEL s    21.1
 AVE DELAY     mins    0.60    0.14    0.28    0.13    0.13      L  O  S       C
 MAX DELAY     mins    1.17    0.20    0.46    0.18    0.19      VEH HRS    12.1
 AVE QUEUE     veh        8       1       3       0       1      COST  $   181.9
 MAX QUEUE     veh       15       1       4       0       1
F1mode   F2direct  F3peak  CtrlF3rev  F4fact F6stats  F8econ  F9prnt  F10run Esc
```

This RODEL output shows that a single-lane roundabout could be expected to operate at a LOS C, with an average delay per vehicle of 21.1 seconds. The maximum queue in the peak hour would be approximately 15 vehicles on the Wells Street approach.

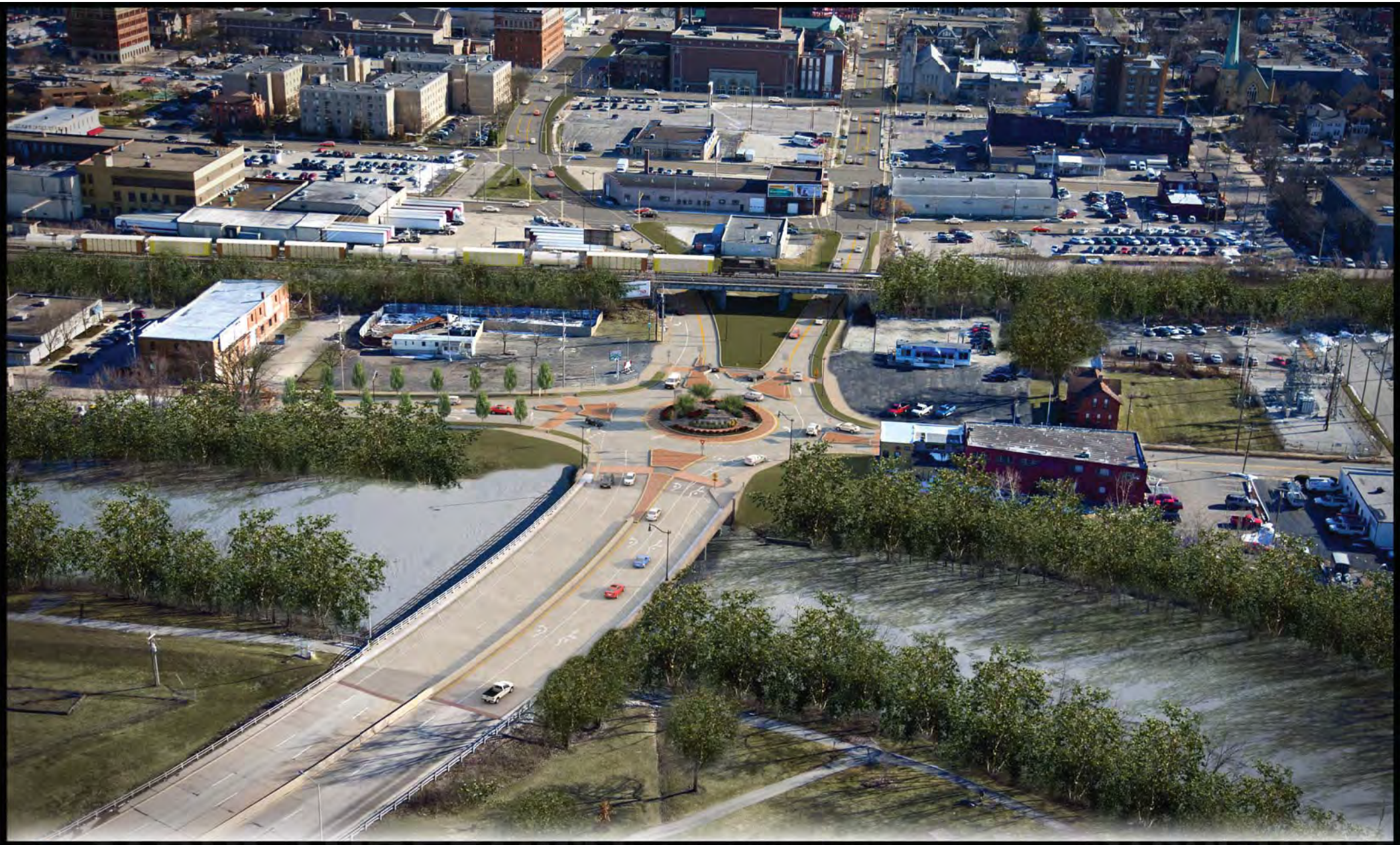
2032 PM Peak (Two Lane Entry for Wells Street)



This RODEL output shows that adding a second entry lane on the Wells Street approach would improve the 2032 PM peak LOS to A, with an average delay per vehicle of 8.7 seconds. The maximum queue in the peak hour would be approximately 4 vehicles on the Fairfield Avenue approach.

Appendix E

Conceptual Roundabout Rendering



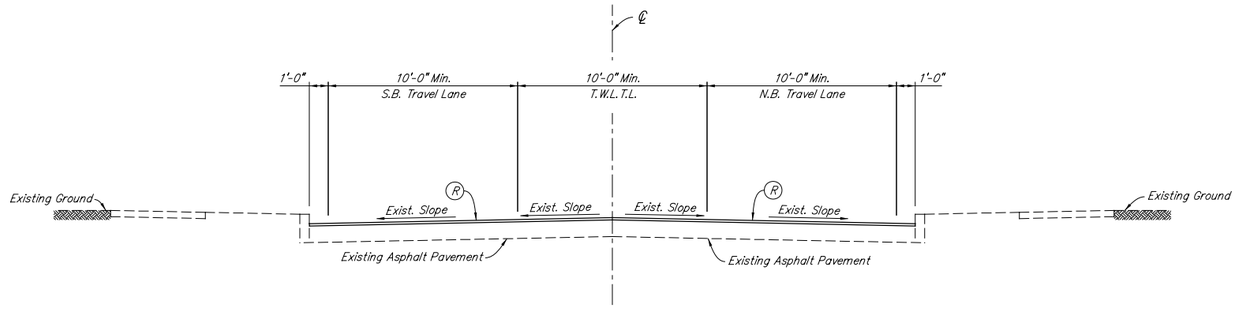
Fairfield & Ewing

Roundabout

American Structurepoint Inc

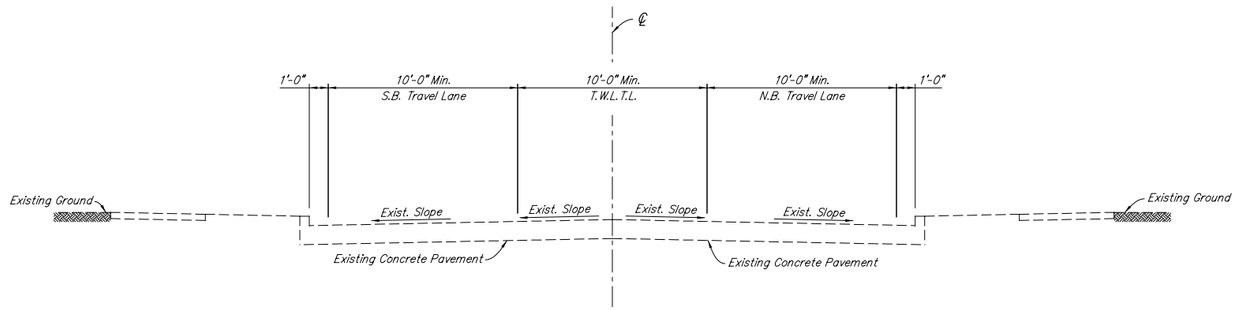
Appendix F

Option 1 and 2 – Typical Sections



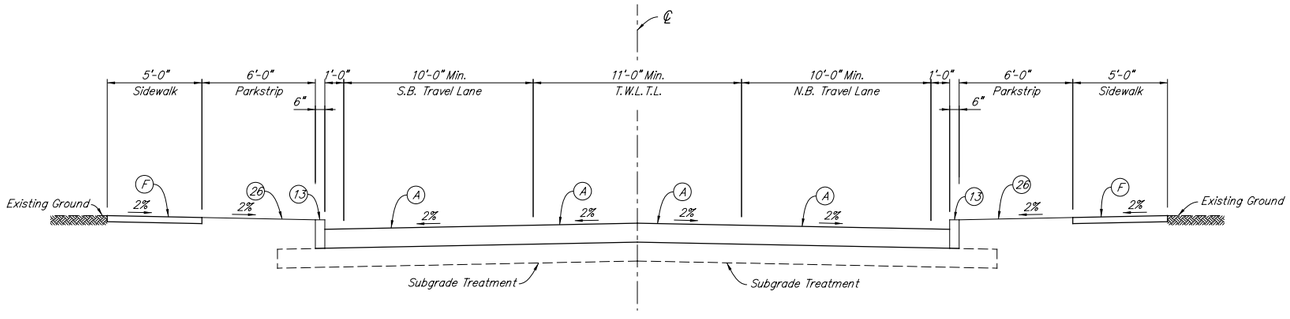
Option 1 Typical Section - Fairfield Ave. & Ewing St.

Sta. 10+00 to 23+00 Fairfield Ave.
Sta. 60+00 to 71+00 Ewing St.
Sta. 82+75 to 89+50 Ewing St.



Option 1 Typical Section - Fairfield Ave. & Ewing St.

Sta. 23+00 to 43+25 Fairfield Avenue
Sta. 71+00 to 82+75 Ewing Street
Sta. 89+50 to 92+00 Ewing Street



Option 1 & 2 Typical Section - Fairfield Ave. & Ewing St.

Sta. 43+25 to 47+25 Fairfield Ave.
Sta. 92+00 to 96+00 Ewing St.

LEGEND

- (A) Mainline Full Depth PCCP
- (F) Concrete Sidewalk, 4"
- (K) Mainline Full Depth HMA Pavement
- (R) Milling, Asphalt, 1.5" 165 #/Syd. HMA Surface
- (13) Concrete Curb Type II-A
- (14) Concrete Curb Type III
- (26) Sodding, Nursery

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

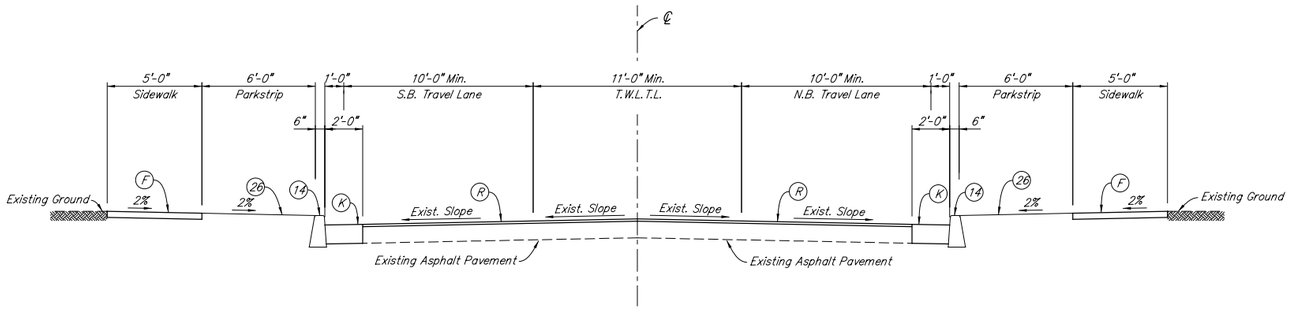
DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

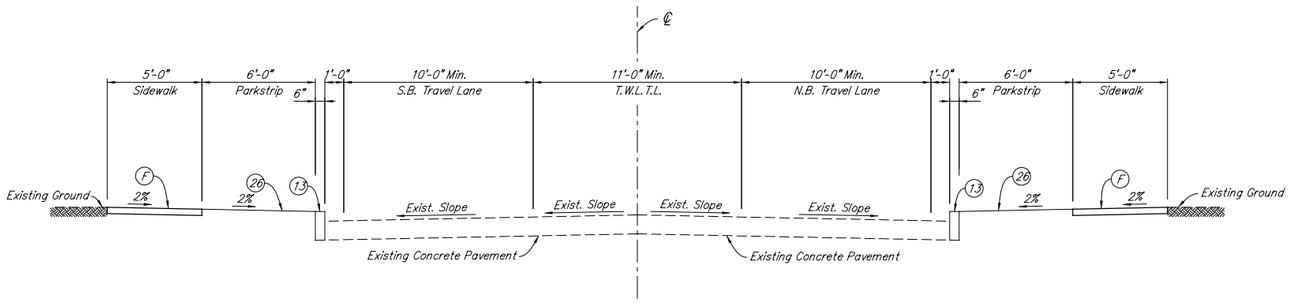
TYPICAL CROSS SECTIONS
FAIRFIED AVE. & EWING ST.

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.



Option 2 Typical Section - Fairfield Ave. & Ewing St.

Sta. 10+00 to 23+00 Fairfield Ave.
Sta. 60+00 to 71+00 Ewing St.
Sta. 82+75 to 89+50 Ewing St.



Option 2 Typical Section - Fairfield Ave. & Ewing St.

Sta. 23+00 to 43+25 Fairfield Avenue
Sta. 71+00 to 82+75 Ewing Street
Sta. 89+50 to 92+00 Ewing Street

LEGEND

- (A) Mainline Full Depth PCCP
- (F) Concrete Sidewalk, 4"
- (K) Mainline Full Depth HMA Pavement
- (R) Milling, Asphalt, 1.5" 165 #/Syd. HMA Surface
- (13) Concrete Curb Type II-A
- (14) Concrete Curb Type III
- (26) Sodding, Nursery

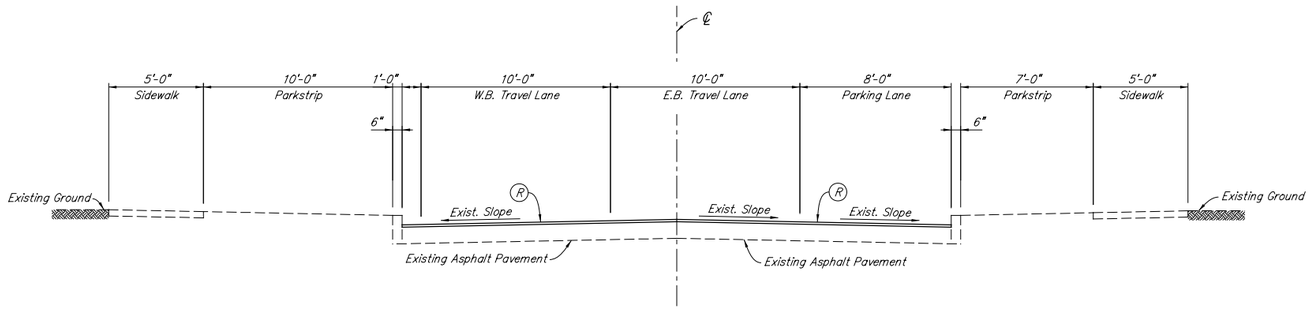
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU
CHECKED: SMC CHECKED: SMC

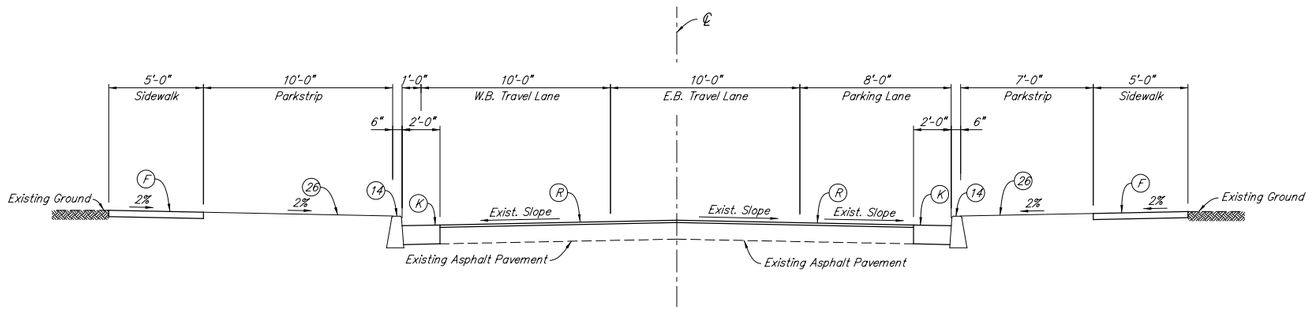
CITY OF FORT WAYNE

TYPICAL CROSS SECTIONS
FAIRFIED AVE. & EWING ST.

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.



Option 1 Typical Section - Baker St.



Option 2 Typical Section - Baker St.

LEGEND

- (A) Mainline Full Depth PCCP
- (F) Concrete Sidewalk, 4"
- (K) Mainline Full Depth HMA Pavement
- (R) Milling, Asphalt, 1.5" 165 #/Syd. HMA Surface
- (13) Concrete Curb Type II-A
- (14) Concrete Curb Type III
- (26) Sodding, Nursery

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

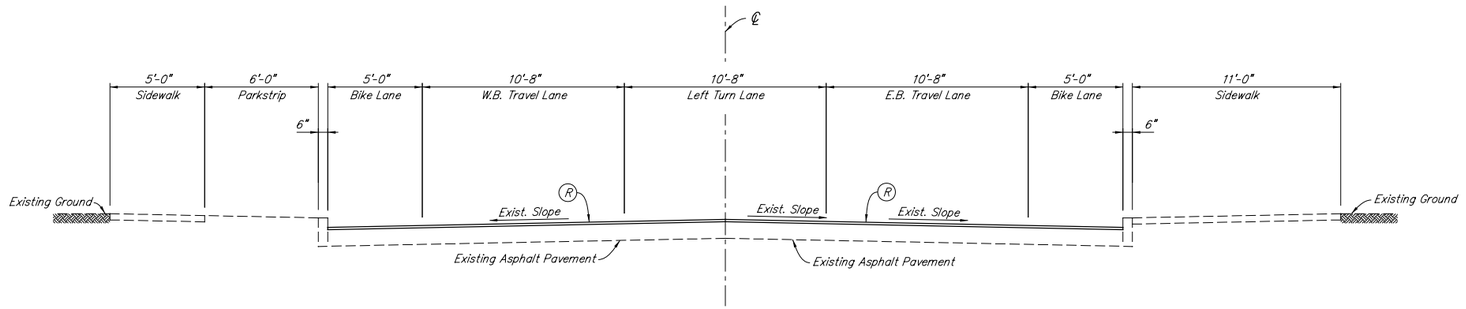
DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

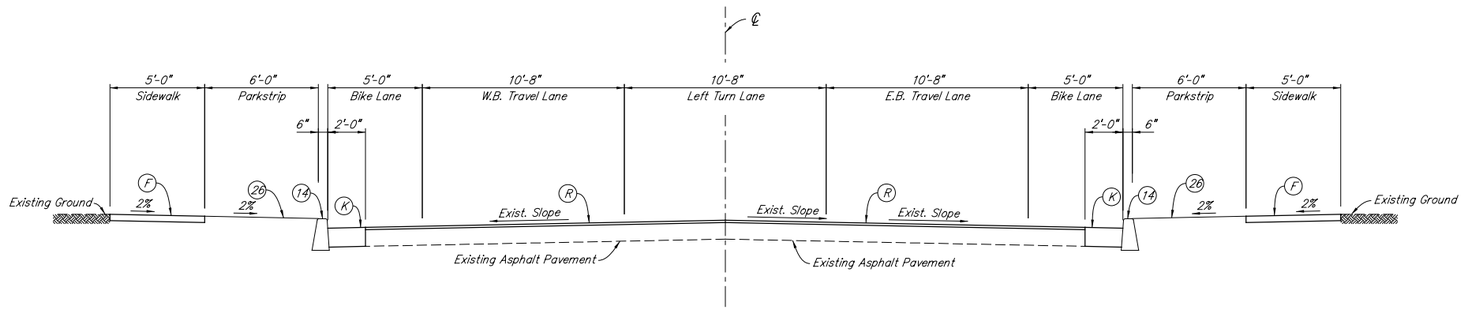
CITY OF FORT WAYNE

TYPICAL CROSS SECTIONS
BAKER STREET

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.



Option 1 Typical Section - Main St.



Option 2 Typical Section - Main St.

LEGEND

- (A) Mainline Full Depth PCCP
- (F) Concrete Sidewalk, 4"
- (K) Mainline Full Depth HMA Pavement
- (R) Milling, Asphalt, 1.5" 165 #/Syd. HMA Surface
- (13) Concrete Curb Type II-A
- (14) Concrete Curb Type III
- (20) Sodding, Nursery

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

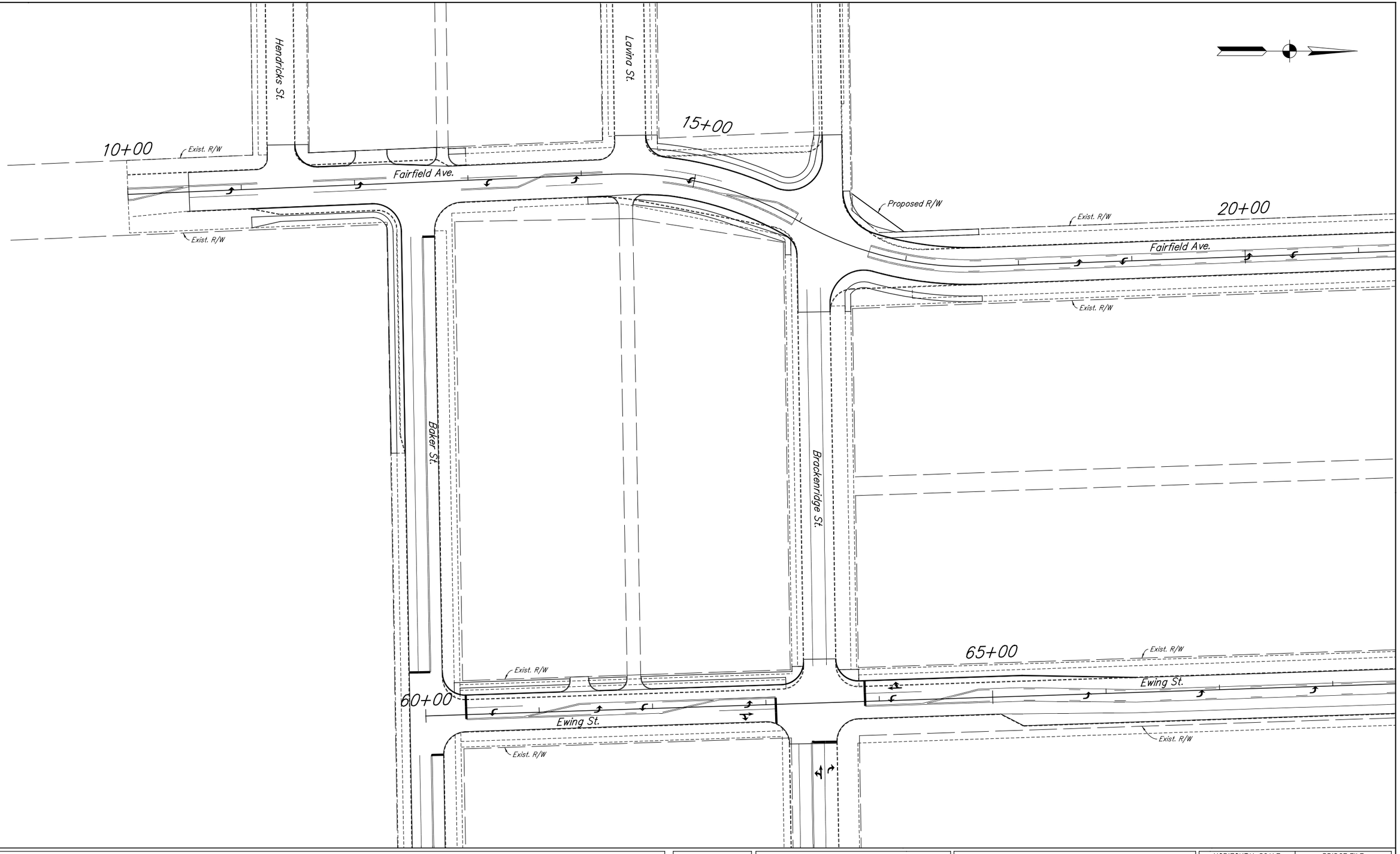
CITY OF FORT WAYNE

TYPICAL CROSS SECTIONS
MAIN STREET

HORIZONTAL SCALE	BRIDGE FILE
1/4" = 1'-0"	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

Appendix G

Option 1 – Conceptual Plan Layout



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.

SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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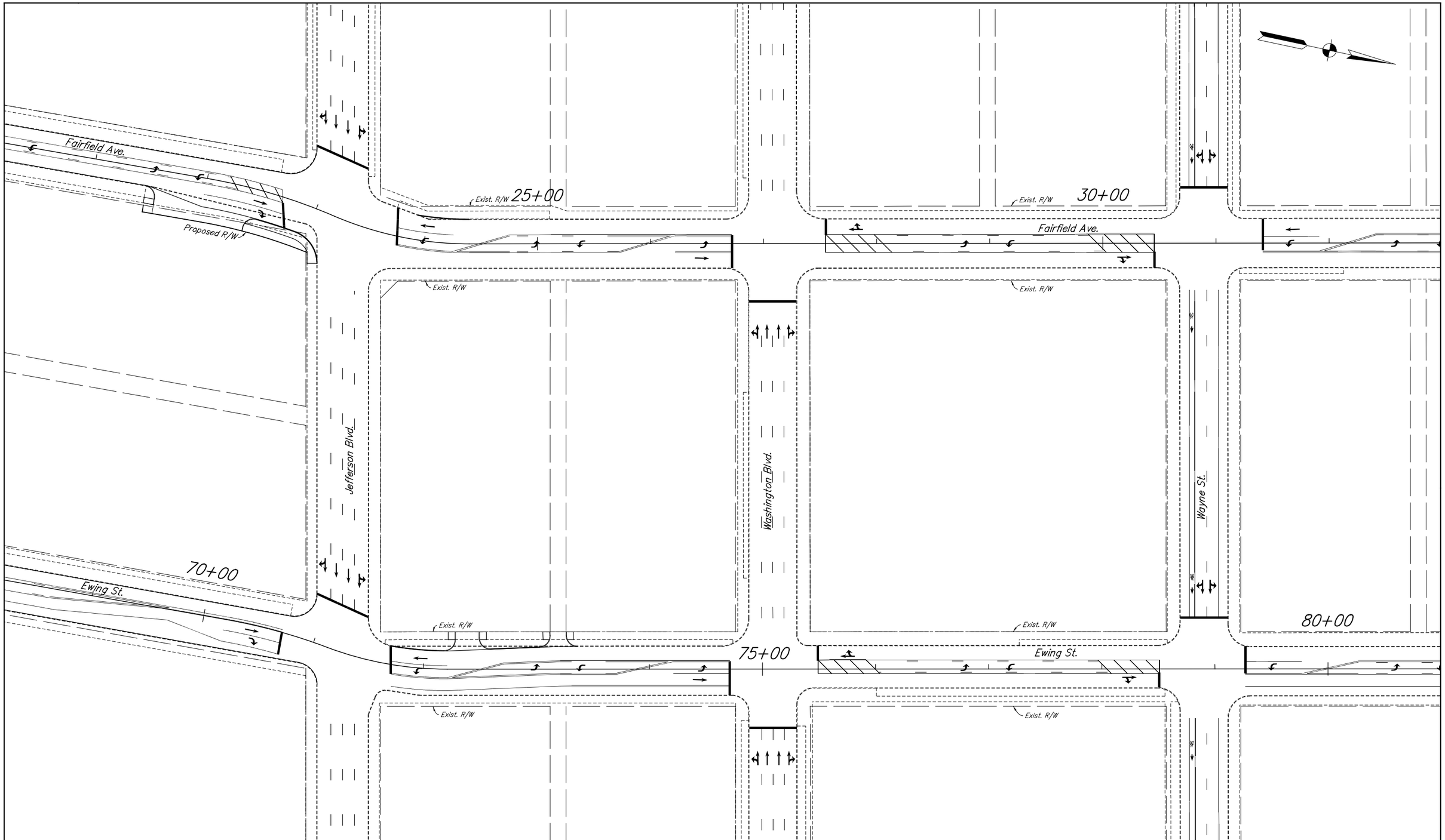

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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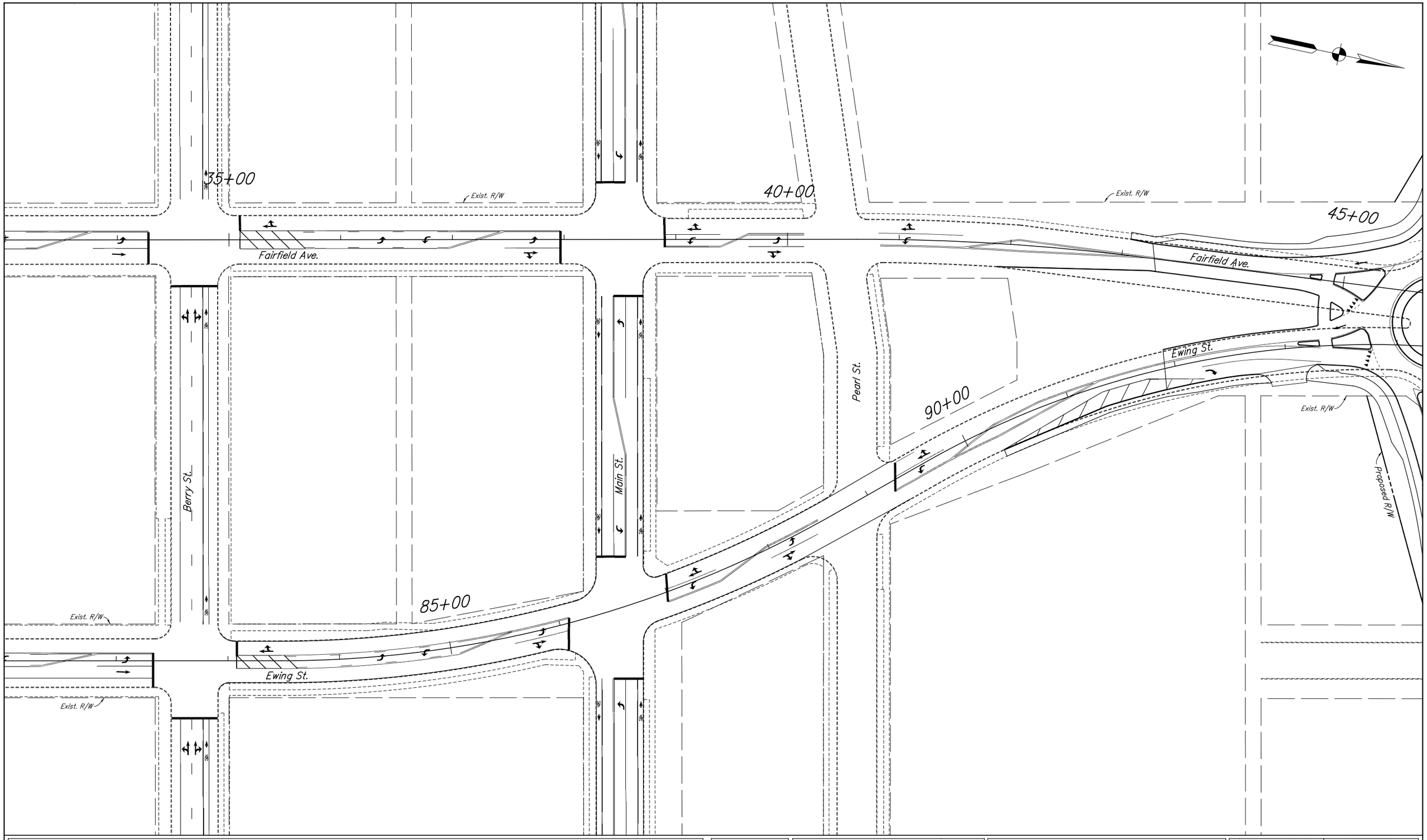

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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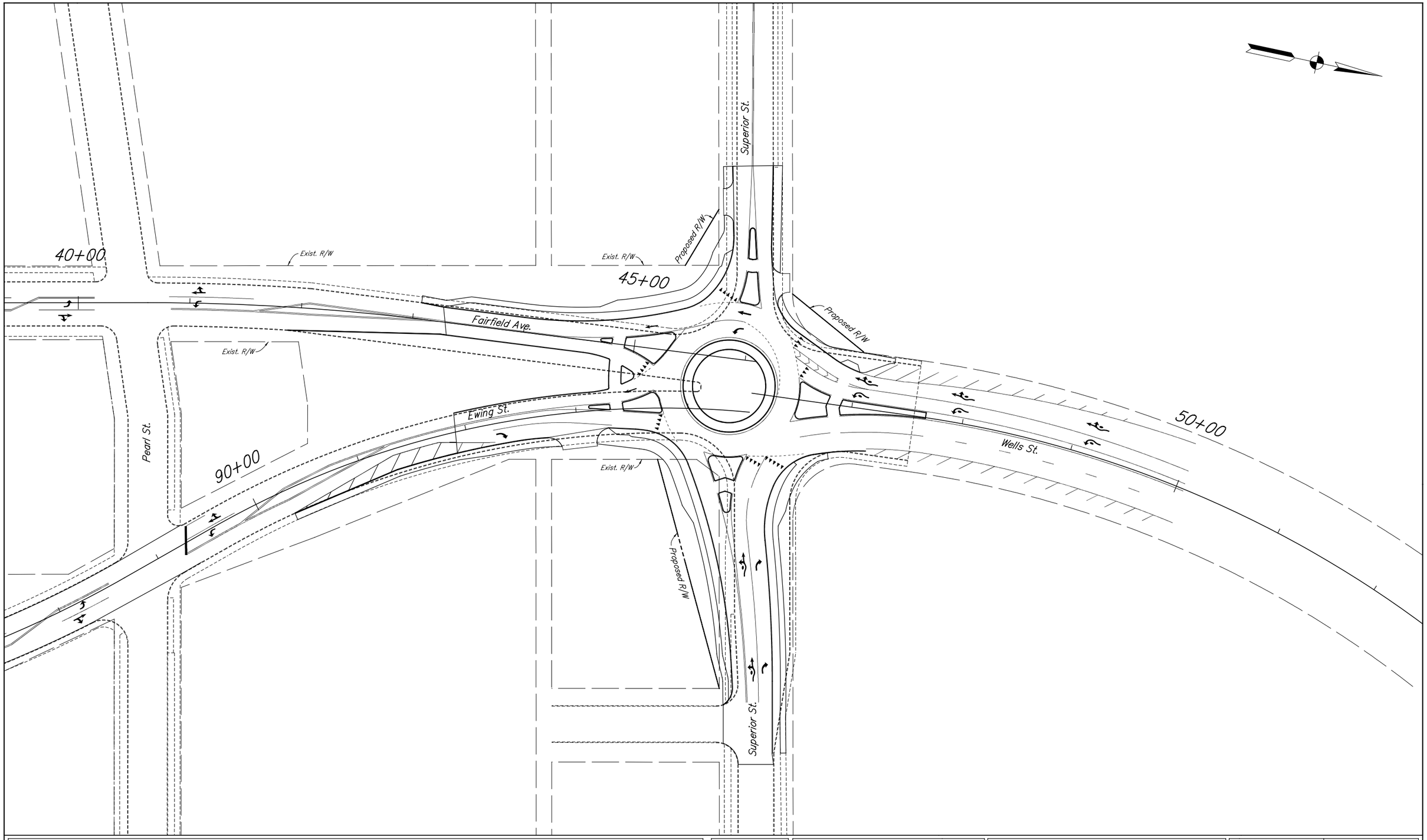

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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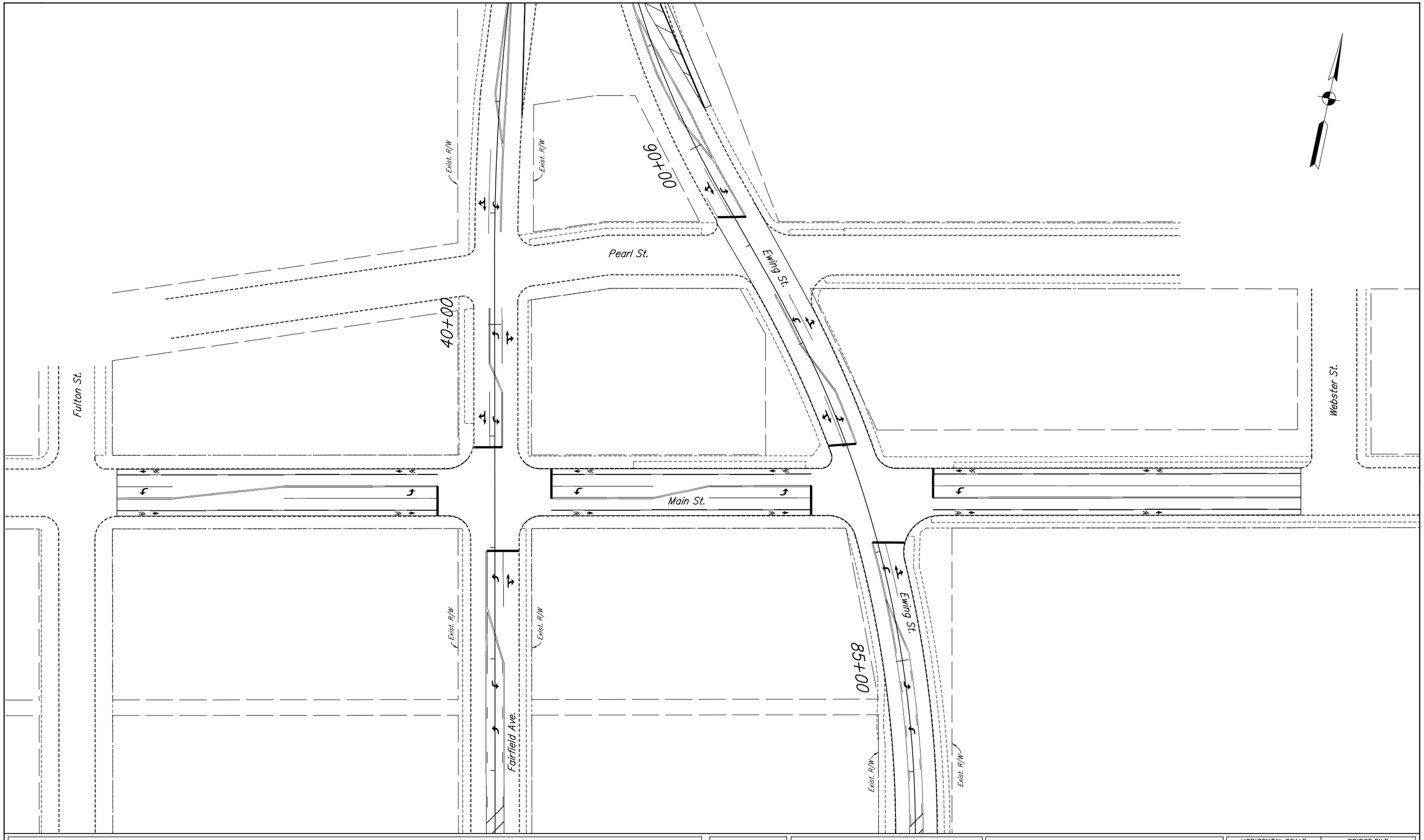

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

MAIN STREET
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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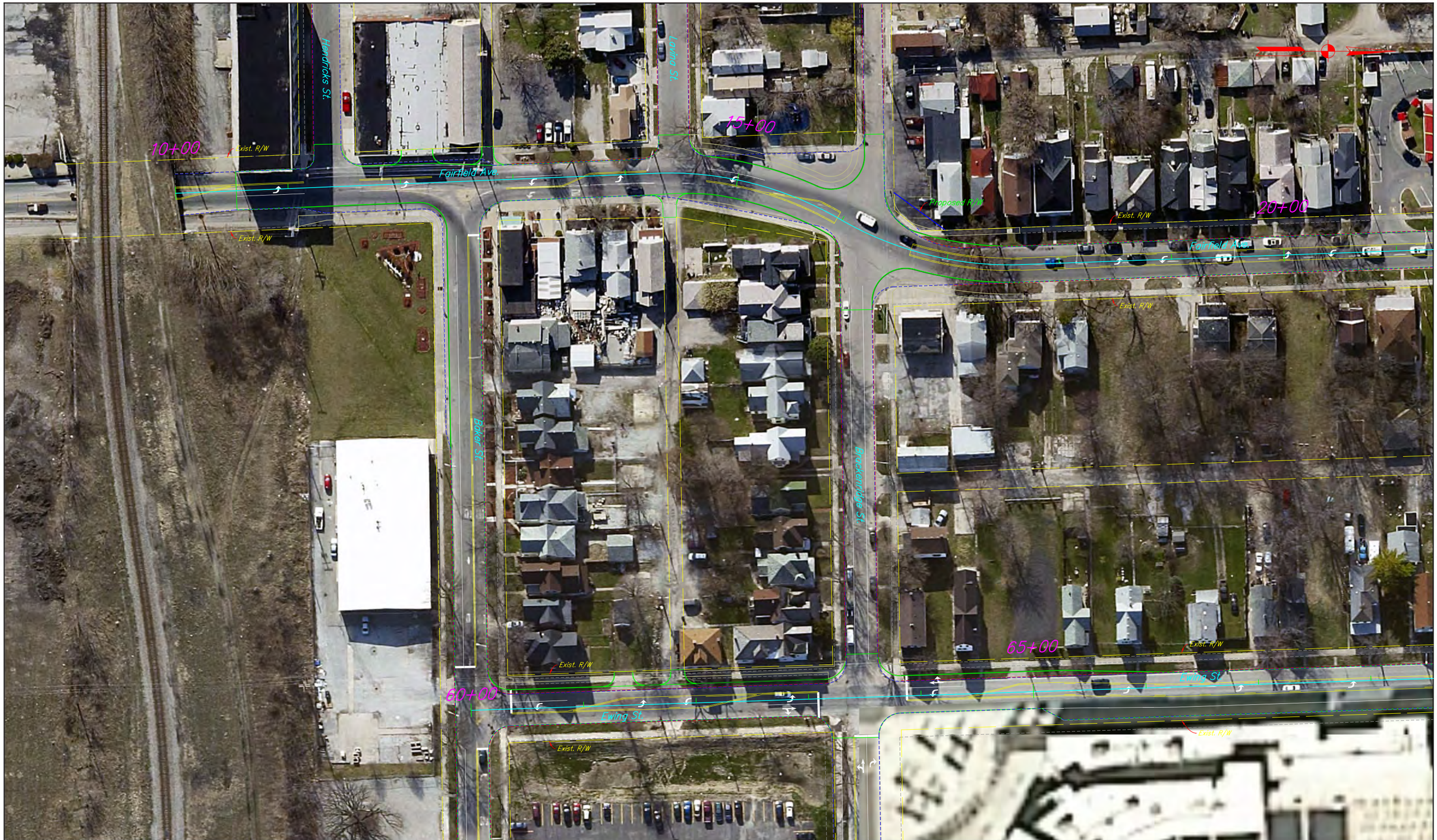

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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	RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	CITY OF FORT WAYNE	HORIZONTAL SCALE 1" = 80' / BRIDGE FILE
	DESIGNED: ASU DRAWN: ASU CHECKED: SMC CHECKED: SMC	FAIRFIELD AVE. & EWING ST. CONCEPTUAL PLAN - OPTION 1	VERTICAL SCALE / DESIGNATION NO. SURVEY BOOK / SHEETS of CONTRACT / PROJECT NO.

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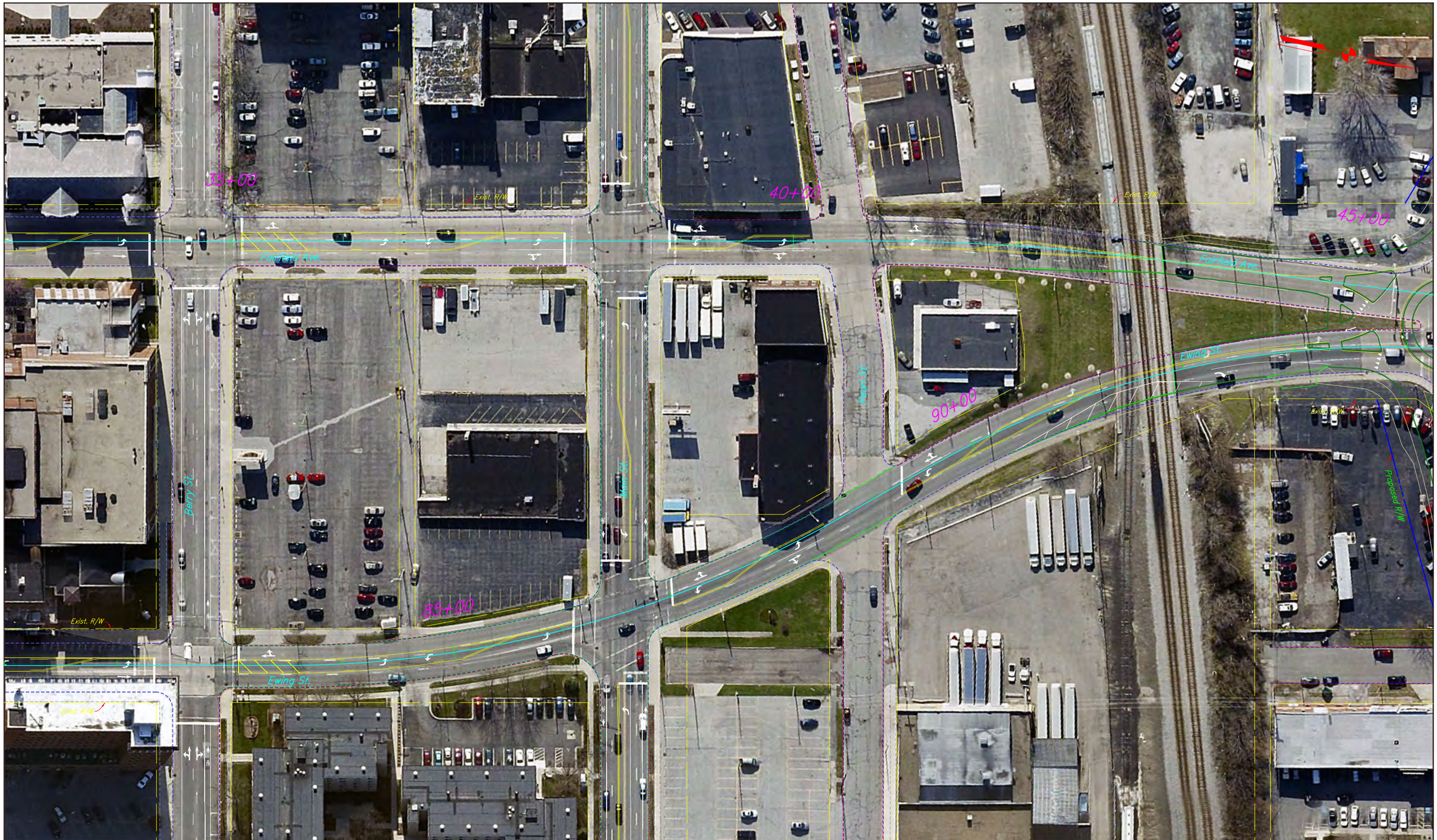

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.

SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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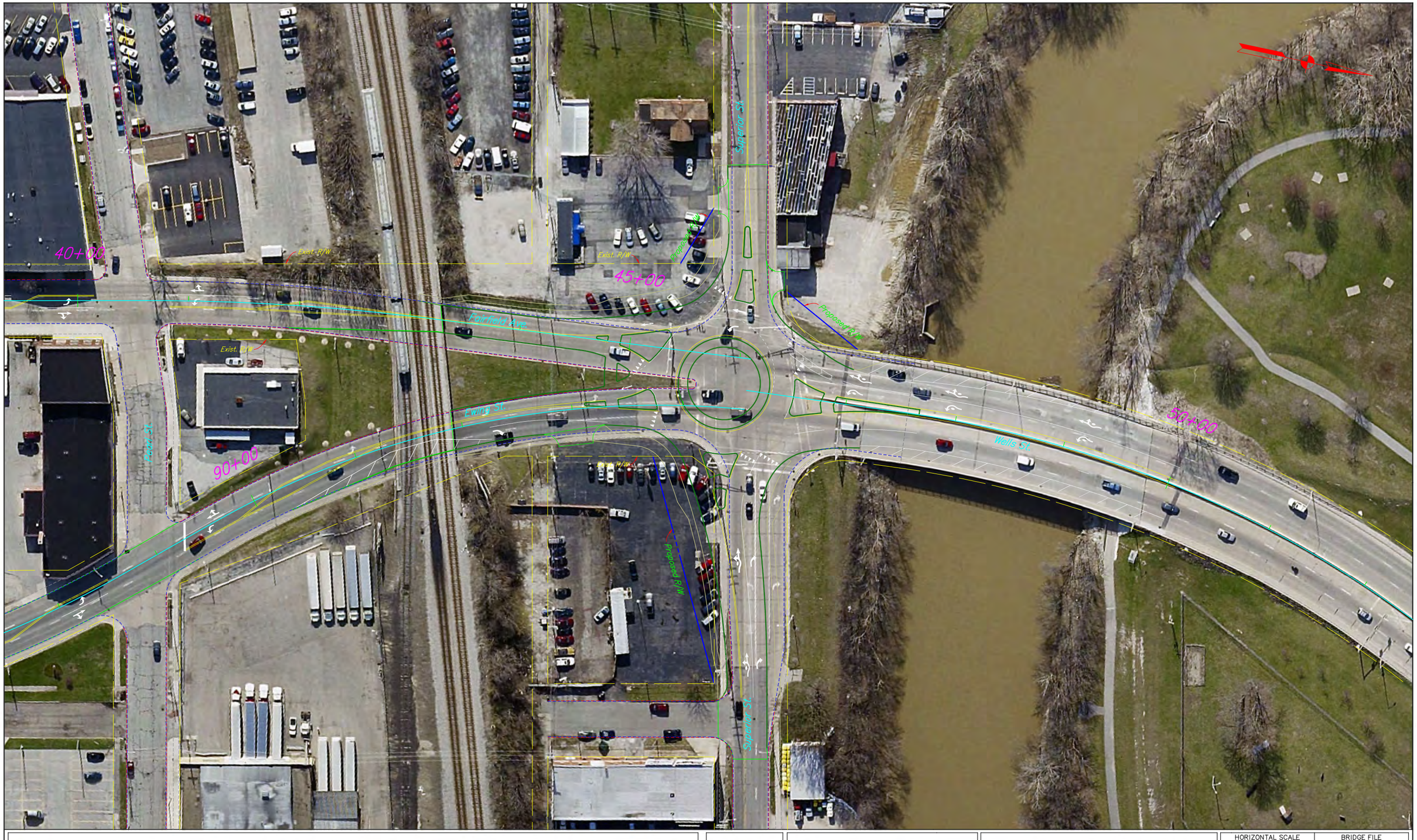

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 1

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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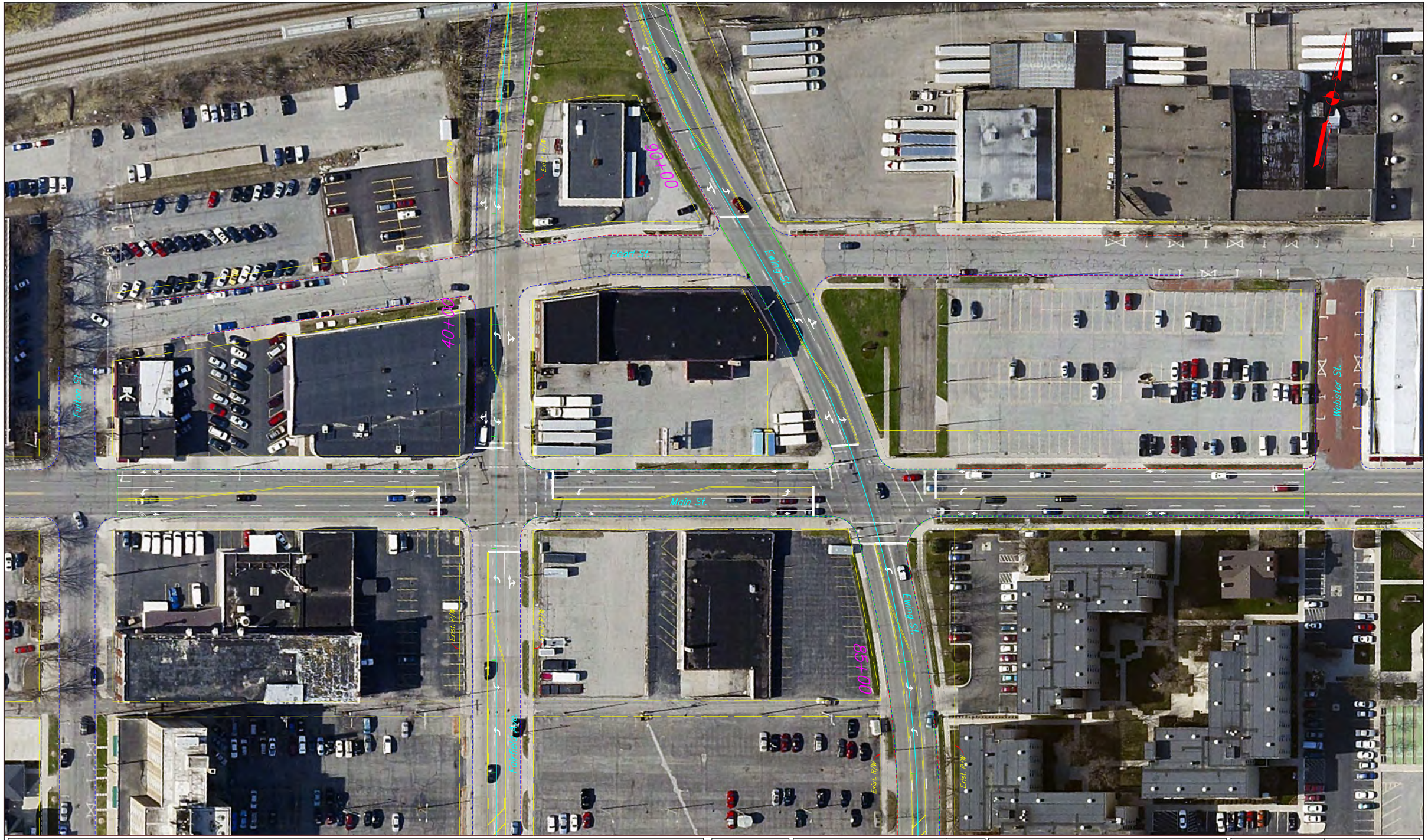

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		CHECKED: SMC CHECKED: SMC		CONTRACT	PROJECT NO.

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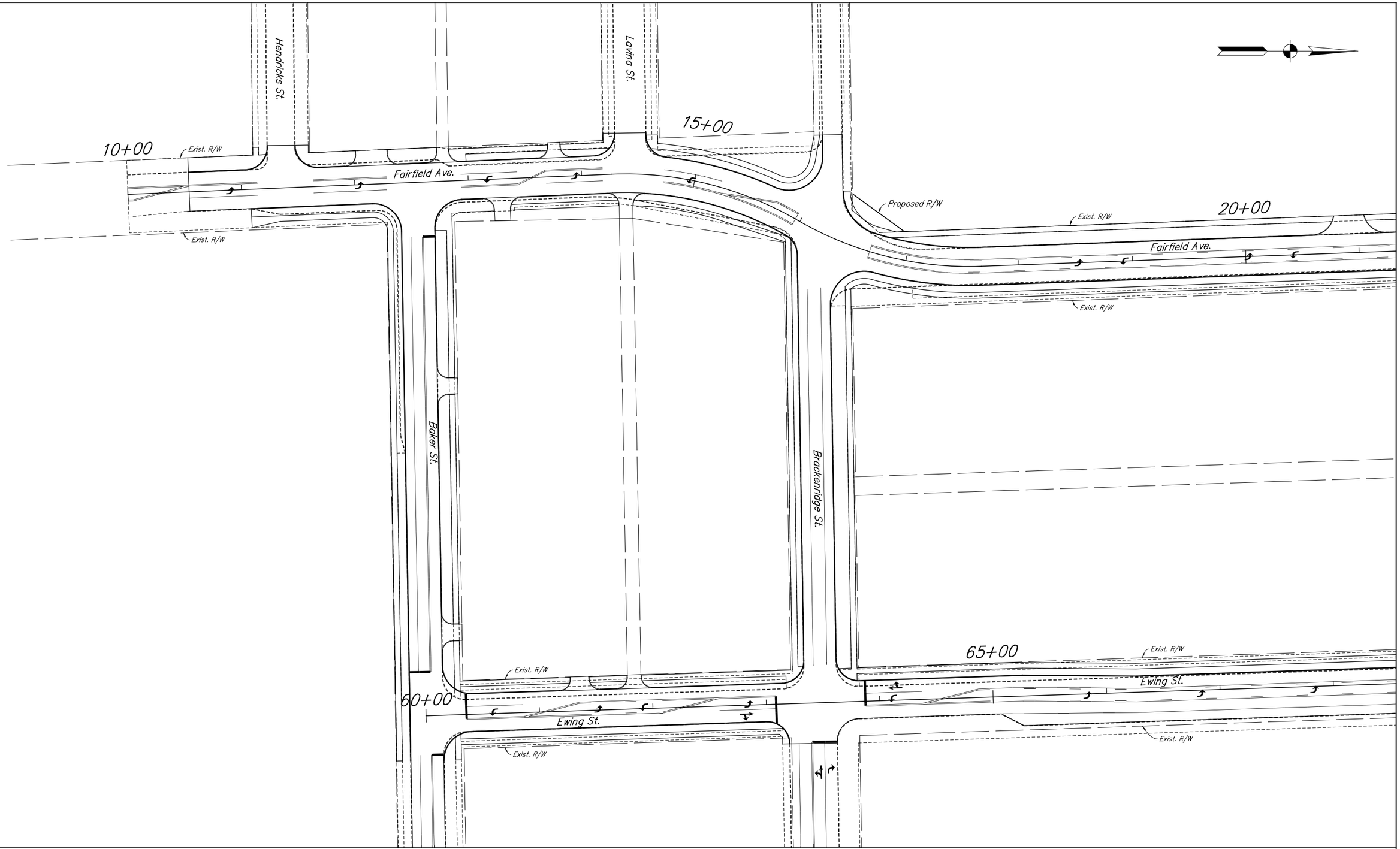
Appendix H

Option 2 – Conceptual Plan Layout



RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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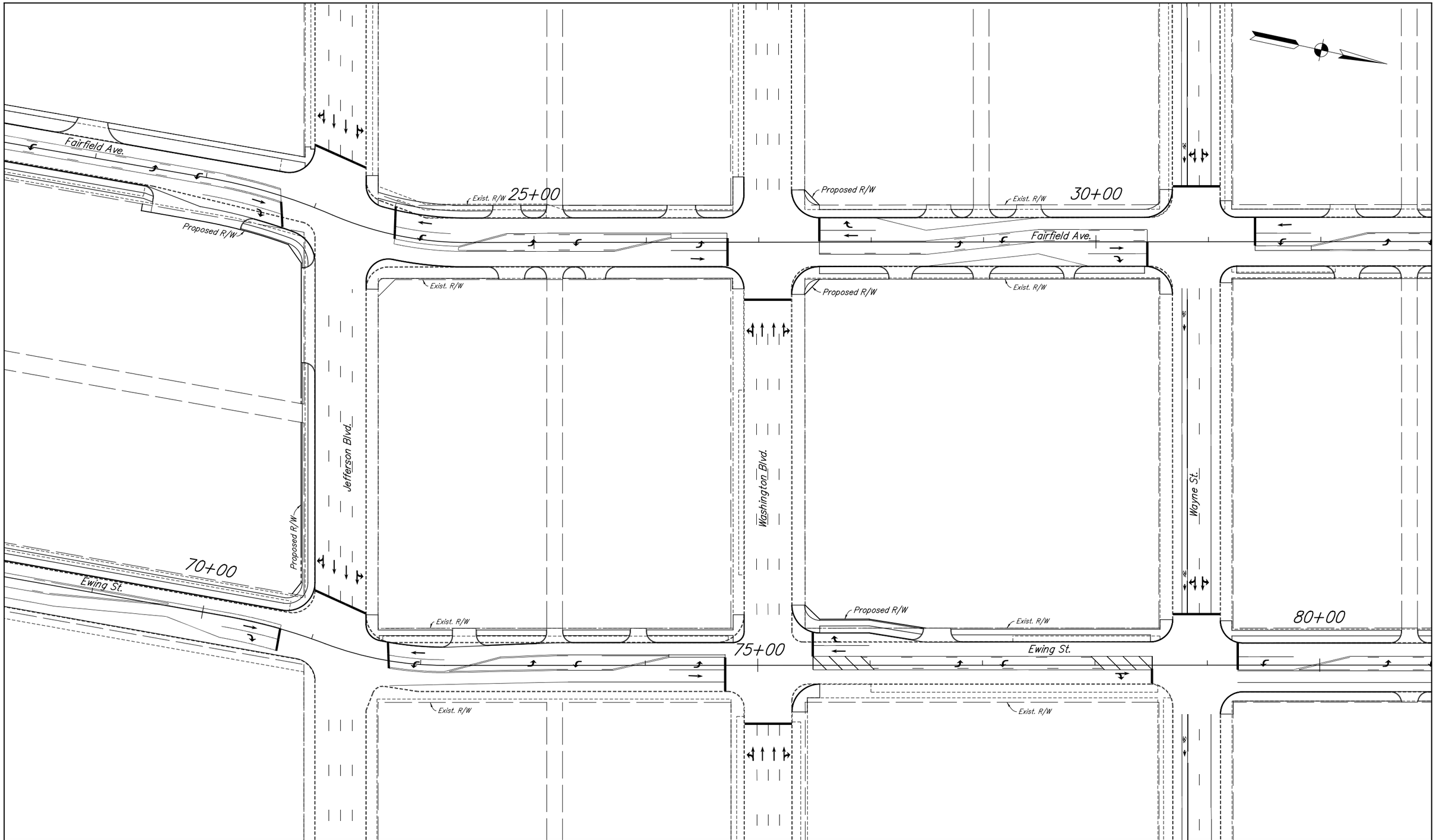

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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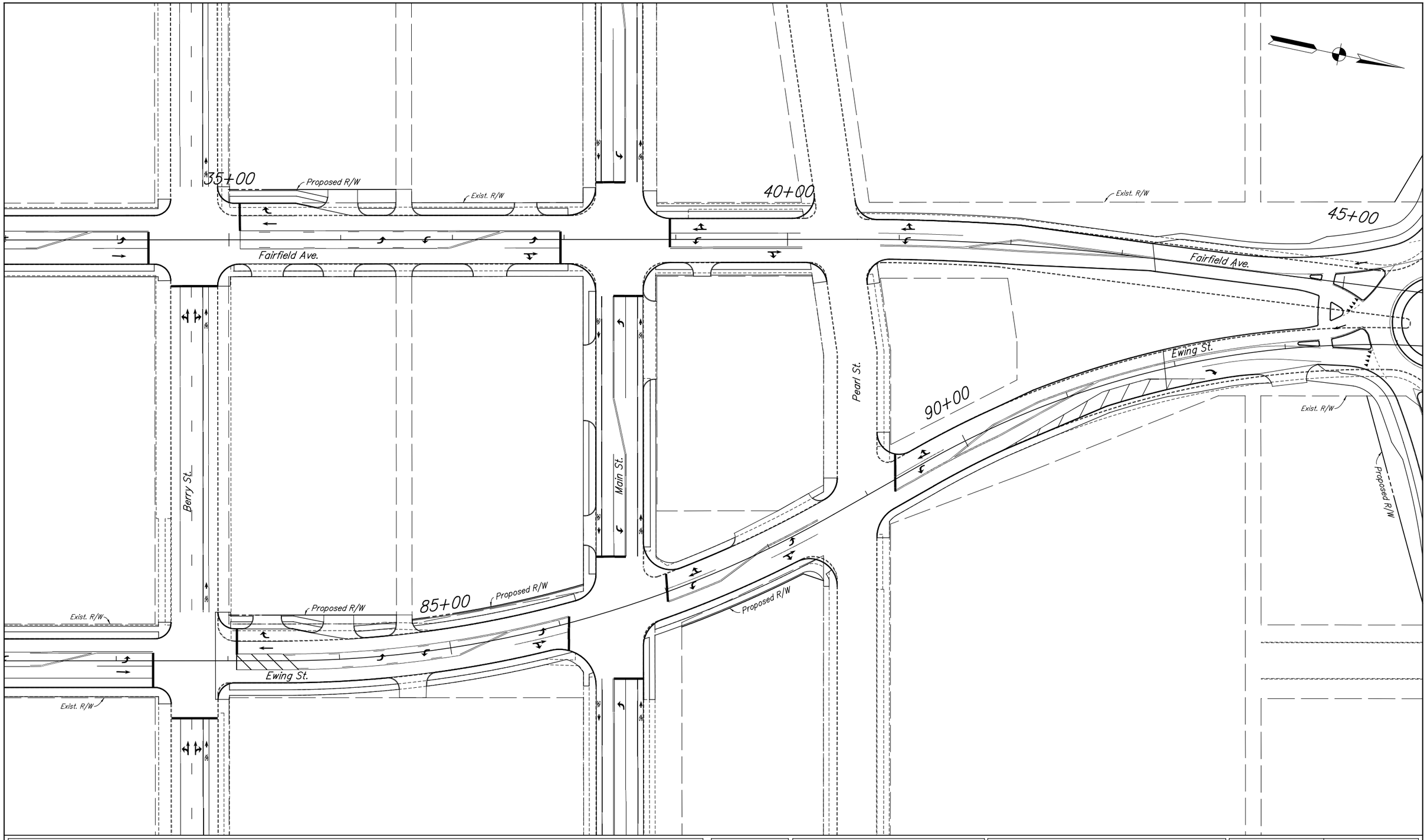

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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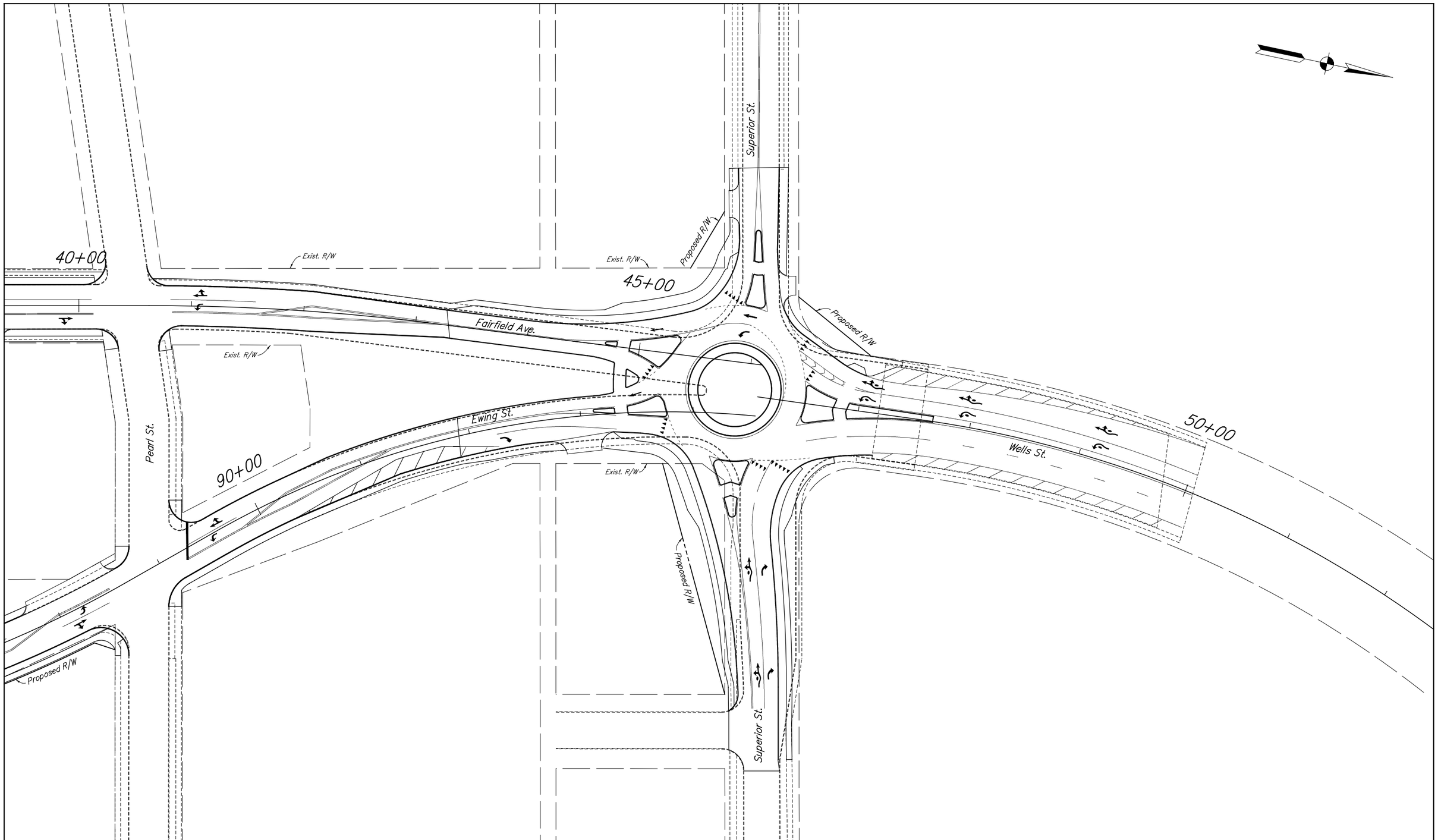

	RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	CITY OF FORT WAYNE	HORIZONTAL SCALE: 1" = 80' / BRIDGE FILE:
	DESIGNED: ASU / DRAWN: ASU / CHECKED: SMC / CHECKED: SMC	FAIRFIELD AVE. & EWING ST. CONCEPTUAL PLAN - OPTION 2	VERTICAL SCALE: / DESIGNATION NO.: / SURVEY BOOK: / SHEETS: of / CONTRACT: / PROJECT NO.:

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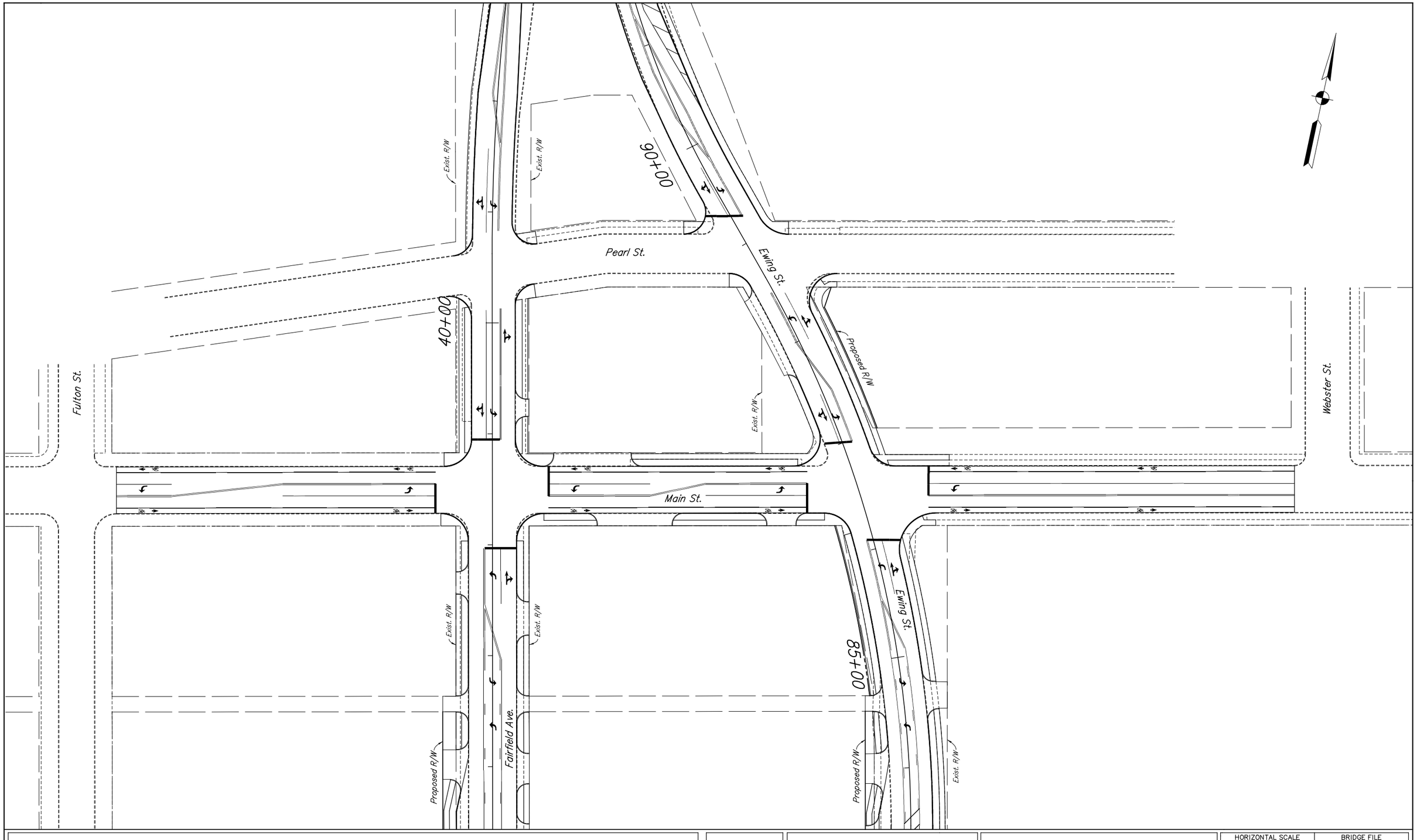

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

MAIN STREET
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

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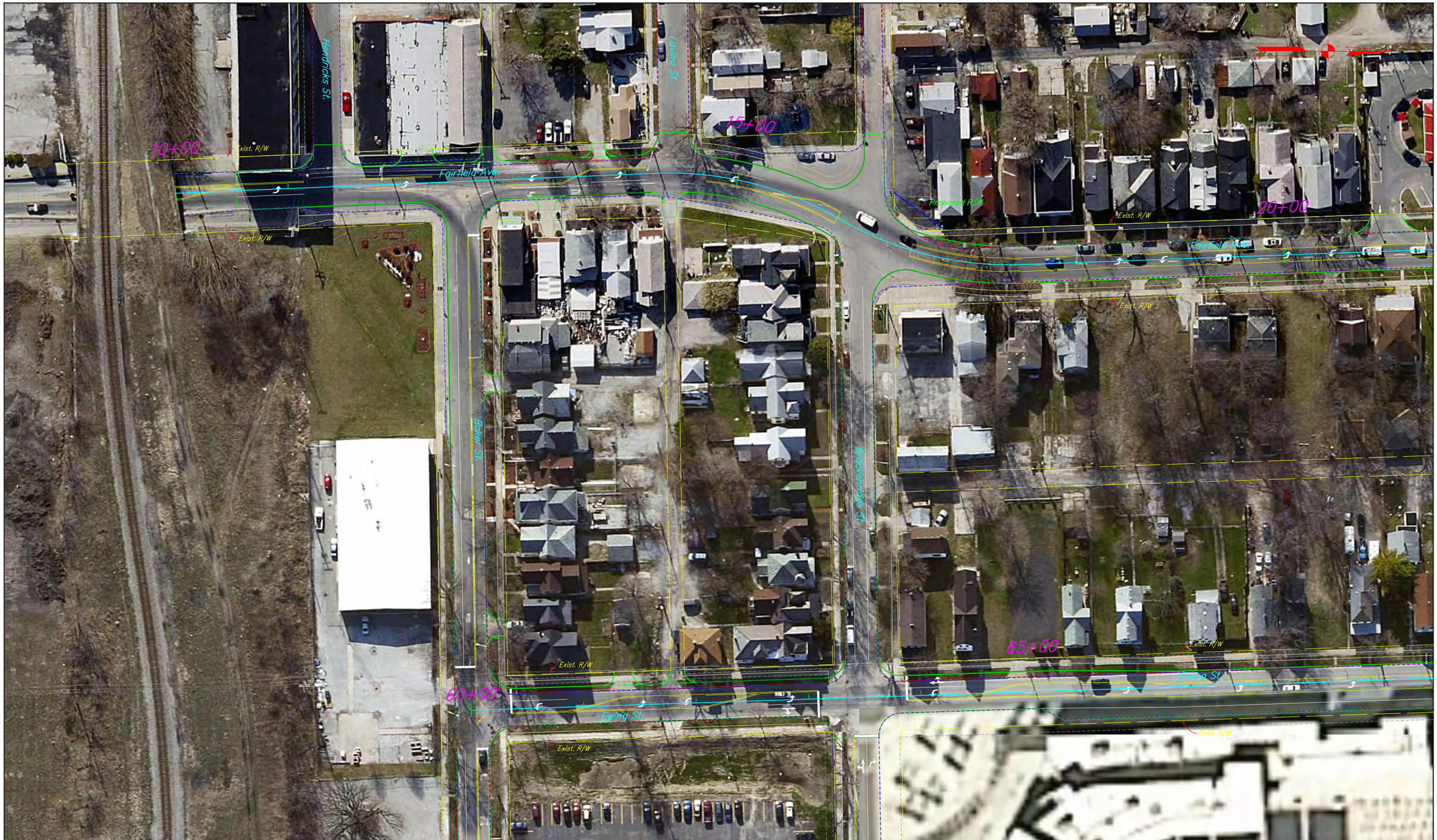

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

FAIRFIELD AVE. & EWING ST.
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

scrites 3/28/2012 5:18:14 PM P:*2011*00049*D. Drawings\201100049.RD.CD.OPTION2.06.dgn

	RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	CITY OF FORT WAYNE	HORIZONTAL SCALE 1" = 80' / BRIDGE FILE
	DESIGNED: ASU / DRAWN: ASU CHECKED: SMC / CHECKED: SMC	FAIRFIELD AVE. & EWING ST. CONCEPTUAL PLAN - OPTION 2	VERTICAL SCALE / DESIGNATION NO. SURVEY BOOK / SHEETS of CONTRACT / PROJECT NO.

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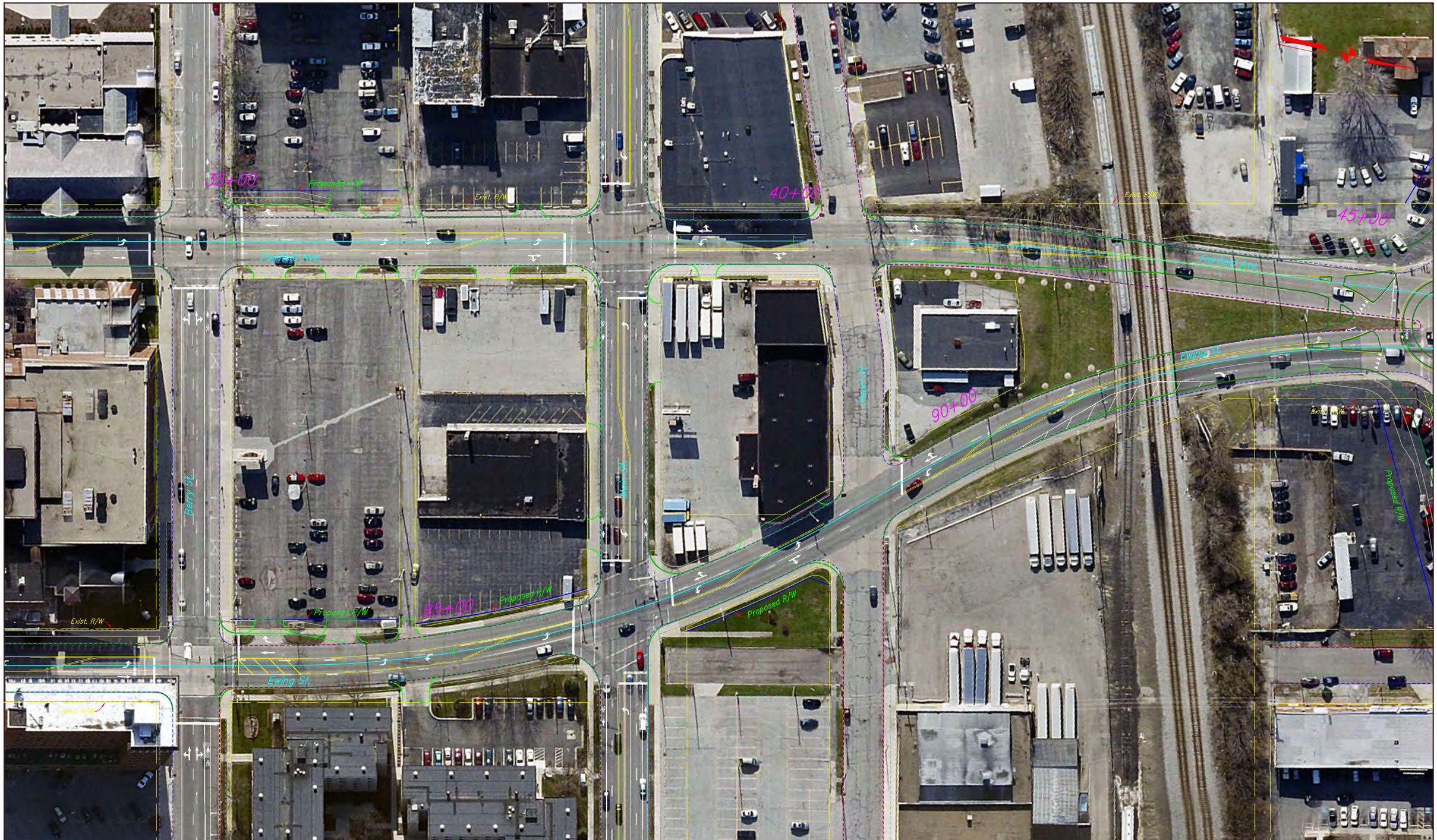

		RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE	CITY OF FORT WAYNE	HORIZONTAL SCALE: 1" = 80' / BRIDGE FILE:
		DESIGNED: ASU DRAWN: ASU	FAIRFIELD AVE. & EWING ST. CONCEPTUAL PLAN - OPTION 2	VERTICAL SCALE: / DESIGNATION NO.:
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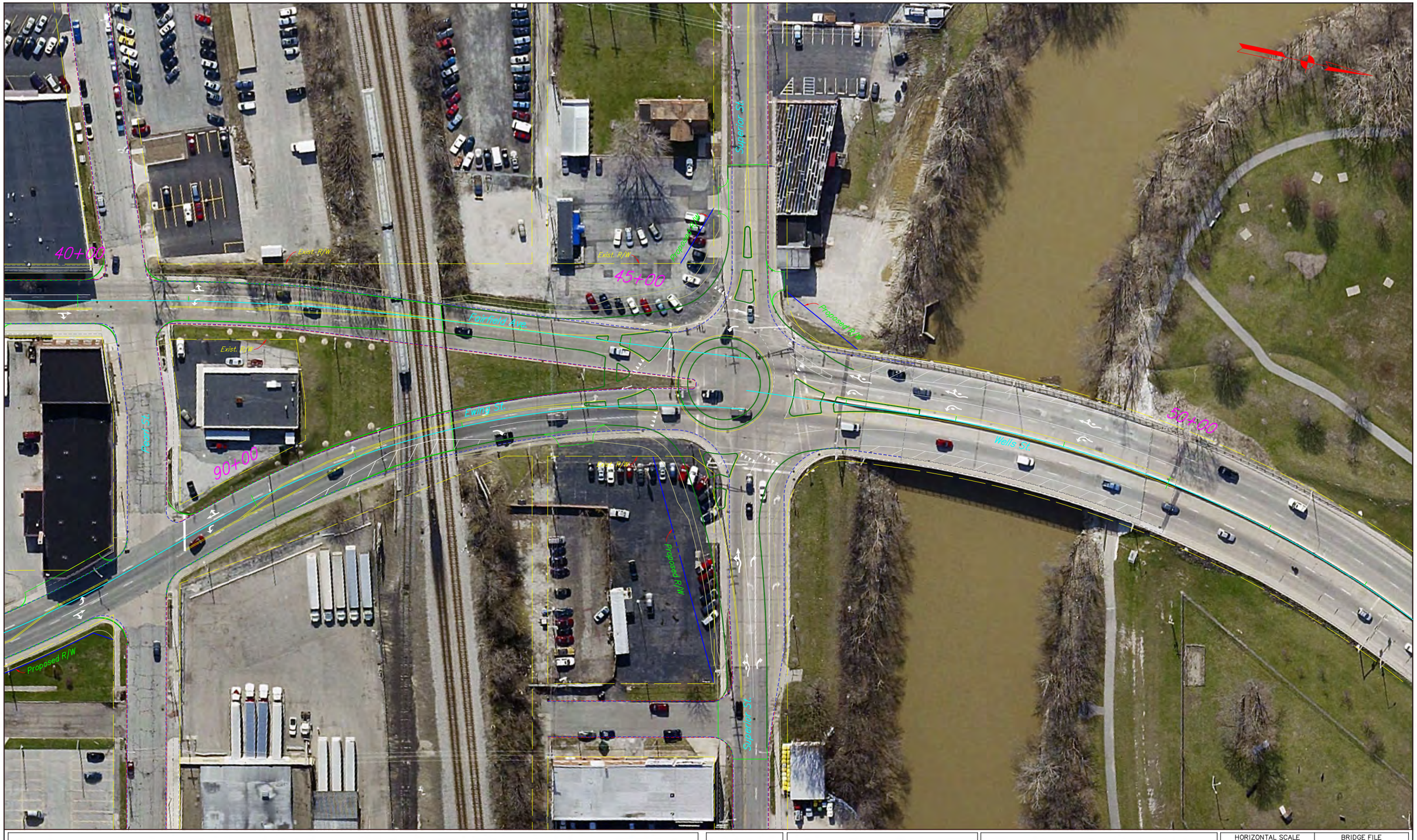

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				CONTRACT / PROJECT NO.

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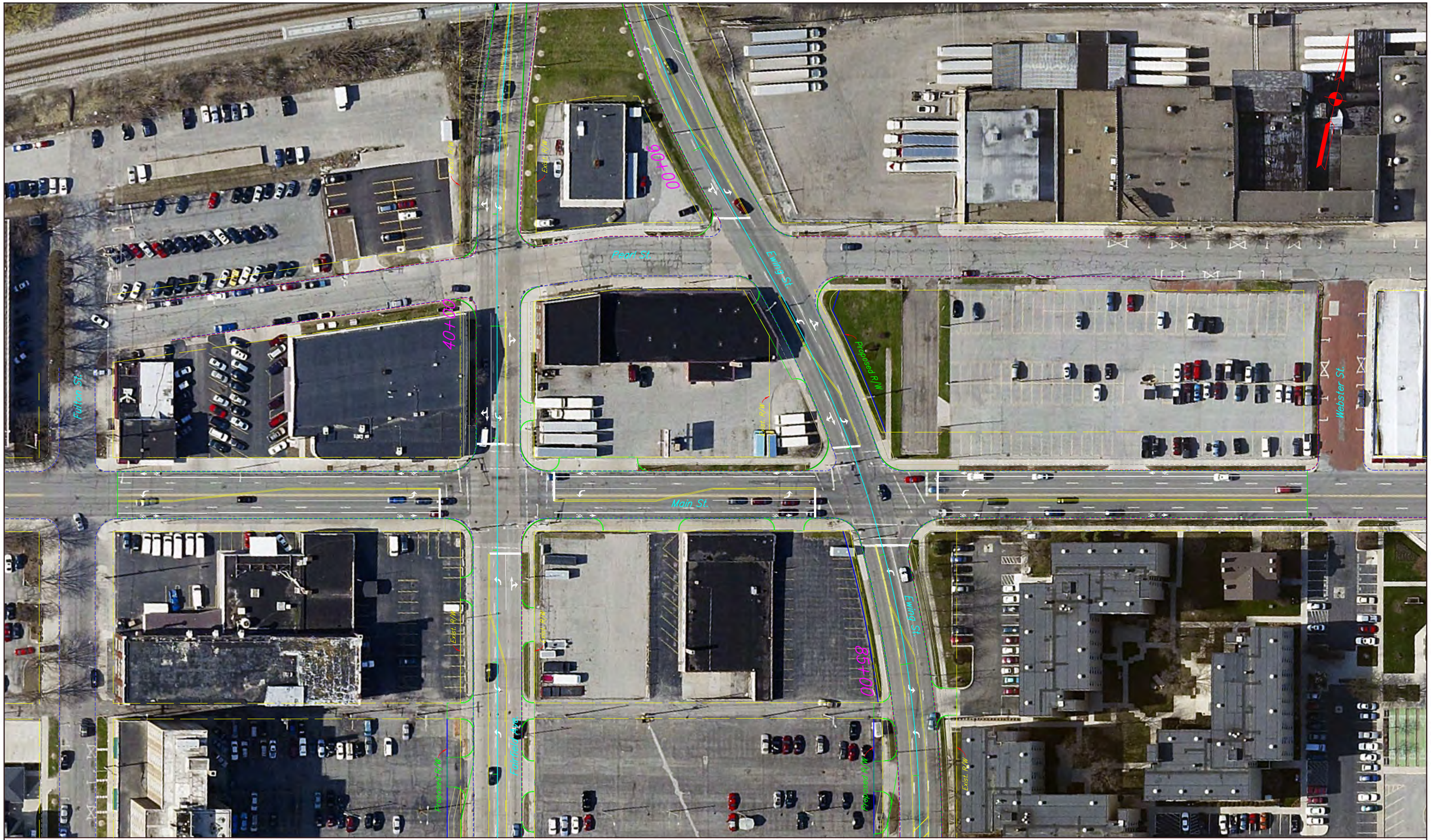

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: ASU DRAWN: ASU

CHECKED: SMC CHECKED: SMC

CITY OF FORT WAYNE

MAIN STREET
CONCEPTUAL PLAN - OPTION 2

HORIZONTAL SCALE	BRIDGE FILE
1" = 80'	
VERTICAL SCALE	DESIGNATION NO.
SURVEY BOOK	SHEETS
	of
CONTRACT	PROJECT NO.

scrites 3/28/2012 5:19:18 PM P:*2011*00049*D. Drawings\201100049.RD.CD.OPTION2.10.dgn

Appendix I

Option 1 – Roadway Opinion of Probable Cost

AMERICAN STRUCTUREPOINT INC.

QUANTITY COST ESTIMATE

Ewing & Fairfield Conversion -
One-Way to Two-Way - Option 1

Project No.: N/A

Des. No.: N/A

ESTIMATED PROJECT COST	
Total:	**$1,238,161.06**
20.0% Contingency:	**$247,632.21**
ESTIMATED TOTAL:	**$1,485,793.27**

ID	Item No.	Description	Quantity	Unit	Unit Price	Item Total
0001	105-06845	CONSTRUCTION ENGINEERING	1.00	LS	$43,828.71	$43,828.71
0002	110-01001	MOBILIZATION AND DEMOBILIZATION	1.00	LS	$32,871.53	$32,871.53
0003	201-52370	CLEARING RIGHT OF WAY	1.00	LS	$32,871.53	$32,871.53
0004	202-02240	PAVEMENT REMOVAL	425.00	SYS	$6.25	$2,656.25
0005	202-02274	CURB, CONCRETE, INTEGRAL, REMOVE	329.00	LFT	$5.30	$1,743.70
0006	202-02278	CURB, CONCRETE, REMOVE	1,886.00	LFT	$5.25	$9,901.50
0007	202-52710	SIDEWALK, CONCRETE, REMOVE	1,230.00	SYS	$8.00	$9,840.00
0008	203-02000	EXCAVATION, COMMON	560.00	CYS	$12.00	$6,720.00
0009	203-02070	BORROW	287.00	CYS	$6.00	$1,722.00
0010	207-08263	SUBGRADE TREATMENT, TYPE IA	1,259.00	SYS	$5.25	$6,609.75
0011	207-08267	SUBGRADE TREATMENT, TYPE IIIA	385.00	SYS	$9.50	$3,657.50
0012	302-06464	SUBBASE FOR PCCP	2.00	CYS	$32.50	$65.00
0013	306-08034	MILLING, ASPHALT, 1 1/2 IN	18,695.00	SYS	$0.75	$14,021.25
0014	402-07434	HMA SURFACE, TYPE C	1,596.00	TON	$70.00	$111,720.00
0015	402-07439	HMA INTERMEDIATE, TYPE C	97.00	TON	$60.00	$5,820.00
0016	402-07442	HMA BASE, TYPE C	492.00	TON	$55.00	$27,060.00
0017	406-05520	ASPHALT FOR TACK COAT	5.10	TON	$350.00	$1,785.00
0018	502-06329	PCCP, 12 IN	5.00	SYS	$50.00	$250.00
0019	604-91531	SIDEWALK, CONCRETE, 4 IN	955.00	SYS	$32.00	$30,560.00
0020	605-06090	CURB, INTEGRAL, CONCRETE	136.00	LFT	$12.50	$1,700.00
0021	605-06120	CURB, CONCRETE	1,732.00	LFT	$18.00	$31,176.00
0022	610-09108	PCCP FOR APPROACHES, 9 IN	385.00	SYS	$46.00	$17,710.00
0023	621-06570	TOPSOIL	166.00	CYS	$20.00	$3,320.00
0024	621-06575	SODDING, NURSERY	1,458.00	SYS	$3.10	$4,519.80
0025	715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	120.00	LFT	$33.00	$3,960.00
0026	720-45250	CATCH BASIN, K10	12.00	EACH	$2,100.00	$25,200.00
0027	801-06775	MAINTAINING TRAFFIC	1.00	LS	$32,871.53	$32,871.53
0028	805-79020	TRAFFIC SIGNAL INSTALLATION	1.00	LS	$774,000.00	$774,000.00

105-06845	**CONSTRUCTION ENGINEERING**	**TOTAL =**	**1.00 LS**

Calculations:

110-01001	**MOBILIZATION AND DEMOBILIZATION**	**TOTAL =**	**1.00 LS**

Calculations:

201-52370	**CLEARING RIGHT OF WAY**	**TOTAL =**	**1.00 LS**

Calculations:

202-02240 PAVEMENT REMOVAL **TOTAL = 425.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield / Baker Center Island	15
Fairfield Drive #1	34
Fairfield Drive #2	17
Fairfield Drive #3	25
Fairfield Drive #4	189
Ewing Drive #1	32
Ewing Drive #2	24
Ewing Drive #3	31
Ewing Drive #4	21
Ewing - North of Jefferson - West Curb Line	37

202-02274 CURB, CONCRETE, INTEGRAL, REMOVE **TOTAL = 329.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield - Between Jefferson & Washington SB	164
Ewing - Between Jefferson & Washington SB	165

202-02278 CURB, CONCRETE, REMOVE **TOTAL = 1,886.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield - Between Hendricks & Lavina SB	164
Fairfield - Between Lavina & Brackenridge SB	177
Fairfield - Between Brackenridge & Jefferson SB	147
Fairfield - Between Hendricks & Baker NB	139
Fairfield - Between Lavina & Brackenridge NB	201
Fairfield - Between Brackenridge & Jefferson NB	229
Baker - Between Fairfield & Ewing EB	198
Ewing - Between Baker & Brackenridge SB	350
Ewing - Between Brackenridge & Jefferson SB	281

202-52710 SIDEWALK, CONCRETE, REMOVE **TOTAL = 1,230.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	141
Fairfield - Between Lavina & Brackenridge SB	97
Fairfield - Between Brackenridge & Jefferson SB	79
Fairfield - SE Corner at Baker NB	335
Fairfield - Between Lavina & Brackenridge NB	103
Fairfield - Between Brackenridge & Jefferson NB	260
Ewing - Between Baker & Brackenridge SB	172
Ewing - NW Corner at Brackenridge SB	24
Ewing - NW Corner at Brackenridge SB	19

203-02000 EXCAVATION, COMMON **TOTAL = 560.00 CYS**

Calculations:

* Assumed Depth of Cut = 1'

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Hendricks & Lavina SB	88	30
Fairfield - Between Lavina & Brackenridge SB	325	109
Fairfield - Between Brackenridge & Jefferson SB	88	30
Fairfield - SE Corner at Baker NB	243	81
Fairfield - Between Lavina & Brackenridge NB	166	56
Fairfield - Between Brackenridge & Jefferson NB	316	106
Ewing - Between Baker & Brackenridge SB	239	80
Ewing - Between Brackenridge & Jefferson SB	202	68

203-02070 BORROW **TOTAL = 287.00 CYS**

Calculations:

* Assumed Depth of Fill = 1'

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Hendricks & Lavina SB	43	15
Fairfield - Between Lavina & Brackenridge SB	267	89
Fairfield - Between Brackenridge & Jefferson SB	32	11
Fairfield - SE Corner at Baker NB	148	50
Fairfield - Between Lavina & Brackenridge NB	109	37
Fairfield - Between Brackenridge & Jefferson NB	117	39
Ewing - Between Baker & Brackenridge SB	75	25
Ewing - Between Brackenridge & Jefferson SB	61	21

207-08263 SUBGRADE TREATMENT, TYPE IA **TOTAL = 1,259.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	83
Fairfield - Between Lavina & Brackenridge SB	108
Fairfield - Between Brackenridge & Jefferson SB	74
Fairfield - Between Hendricks & Baker NB	75
Fairfield - Between Lavina & Brackenridge NB	103
Fairfield - Between Brackenridge & Jefferson NB	82
Fairfield / Baker Center Island - Asph. Pavement	15
Fairfield / Jefferson SE Corner Asph. Pavement Widening	162
Fairfield / Jefferson NW Corner Conc. Pavement Widening	17
Baker - Between Fairfield & Ewing EB	98
Ewing - Between Baker & Brackenridge SB	240
Ewing - Between Brackenridge & Jefferson SB	202

207-08267 SUBGRADE TREATMENT, TYPE IIIA **TOTAL = 385.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield Drive #1	47
Fairfield Drive #2	27
Fairfield Drive #3	35
Fairfield Drive #4	149
Ewing Drive #1	30
Ewing Drive #2	24
Ewing Drive #3	45
Ewing Drive #4	28

302-06464 SUBBASE FOR PCCP **TOTAL = 2.00 CYS**

Calculations:

* 0.75' Depth

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Jefferson & Washington SB	5	2

306-08034 MILLING, ASPHALT, 1 1/2 IN **TOTAL = 18,695.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between BOP & Jefferson	5093
Ewing - Between Baker & Jefferson	4347
Baker - Between Fairfield & Ewing	1902
Ewing - Between Berry & Pearl	2673
Main - Between Fulton & Fairfield	1506
Main - Between Fairfield & Ewing	1383
Main - Between Ewing & Webster	1791

402-07434 HMA SURFACE, TYPE C **TOTAL = 1,596.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - Between BOP & Jefferson	5390	165	445
Ewing - Between Baker & Jefferson	4616	165	381
Baker - Between Fairfield & Ewing	1946	165	161
Ewing - Between Berry & Pearl	2673	165	221
Main - Between Fulton & Fairfield	1506	165	125
Main - Between Fairfield & Ewing	1383	165	115
Main - Between Ewing & Webster	1791	165	148

402-07439 HMA INTERMEDIATE, TYPE C **TOTAL = 97.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - Between Hendricks & Lavina SB	37	275	6
Fairfield - Between Lavina & Brackenridge SB	47	275	7
Fairfield - Between Brackenridge & Jefferson SB	49	275	7
Fairfield - SE Corner at Baker NB	77	275	11
Fairfield - Between Lavina & Brackenridge NB	46	275	7
Fairfield - Between Brackenridge & Jefferson NB	150	275	21
Ewing - Between Baker & Brackenridge SB	145	275	20
Ewing - Between Brackenridge & Jefferson SB	125	275	18

402-07442 HMA BASE, TYPE C **TOTAL = 492.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - Between Hendricks & Lavina SB	37	440	9
Fairfield - Between Lavina & Brackenridge SB	47	440	11
Fairfield - Between Brackenridge & Jefferson SB	49	440	11
Fairfield - SE Corner at Baker NB	77	440	17
Fairfield - Between Lavina & Brackenridge NB	46	440	11
Fairfield - Between Brackenridge & Jefferson NB	150	440	33
Ewing - Between Baker & Brackenridge SB	145	440	32
Ewing - Between Brackenridge & Jefferson SB	125	440	28

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - Between Hendricks & Lavina SB	53	660	18
Fairfield - Between Lavina & Brackenridge SB	88	660	30
Fairfield - Between Brackenridge & Jefferson SB	77	660	26
Fairfield - SE Corner at Baker NB	143	660	48
Fairfield - Between Lavina & Brackenridge NB	79	660	27
Fairfield - Between Brackenridge & Jefferson NB	195	660	65
Ewing - Between Baker & Brackenridge SB	199	660	66
Ewing - Between Brackenridge & Jefferson SB	179	660	60

406-05520 ASPHALT FOR TACK COAT **TOTAL = 5.10 TON**

Calculations:

Location	Area (SYS)	Rate (TON/SYS)	Volume (TON)
Fairfield - Between BOP & Jefferson	5427	0.00025	1.4
Ewing - Between Baker & Jefferson	4663	0.00025	1.2
Baker - Between Fairfield & Ewing	1995	0.00025	0.5
Ewing - Between Berry & Pearl	2750	0.00025	0.7
Main - Between Fulton & Fairfield	1552	0.00025	0.4
Main - Between Fairfield & Ewing	1533	0.00025	0.4
Main - Between Ewing & Webster	1936	0.00025	0.5

502-06329 PCCP, 12 IN **TOTAL = 5.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Jefferson & Washington SB	5

604-91531 SIDEWALK, CONCRETE, 4 IN **TOTAL = 955.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	143
Fairfield - Between Lavina & Brackenridge SB	108
Fairfield - Between Brackenridge & Jefferson SB	84
Fairfield - SE Corner at Baker NB	188
Fairfield - Between Lavina & Brackenridge NB	101
Fairfield - Between Brackenridge & Jefferson NB	134
Ewing - Between Baker & Brackenridge SB	164
Ewing - NW Corner at Brackenridge SB	14
Ewing - Between Jefferson & Wayne SB	19

605-06090 CURB, INTEGRAL, CONCRETE **TOTAL = 136.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield - Between Jefferson and Washington SB	46
Ewing - Between Jefferson and Washington SB	90

605-06120 CURB, CONCRETE **TOTAL = 1,732.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield - Between Hendricks & Lavina SB	85
Fairfield - Between Lavina & Brackenridge SB	208
Fairfield - Between Brackenridge & Jefferson SB	145
Fairfield - SE Corner at Baker NB	342
Fairfield - Between Lavina & Brackenridge NB	170
Fairfield - Between Brackenridge & Jefferson NB	232
Ewing - Between Baker & Brackenridge SB	274
Ewing - NW Corner at Brackenridge SB	276

610-09108 PCCP FOR APPROACHES, 9 IN **TOTAL = 385.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield Drive #1	47
Fairfield Drive #2	27
Fairfield Drive #3	35
Fairfield Drive #4	149
Ewing Drive #1	30
Ewing Drive #2	24
Ewing Drive #3	45
Ewing Drive #4	28

621-06570 TOPSOIL **TOTAL = 166.00 CYS**

Calculations:

* Assumed Depth of Fill = 0.33'

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Hendricks & Lavina SB	15	2
Fairfield - Between Lavina & Brackenridge SB	279	31
Fairfield - Between Brackenridge & Jefferson SB	64	8
Fairfield - SE Corner at Baker NB	261	29
Fairfield - Between Lavina & Brackenridge NB	104	12
Fairfield - Between Brackenridge & Jefferson NB	263	29
Ewing - Between Baker & Brackenridge SB	177	20
Ewing - Between Brackenridge & Jefferson SB	164	19
Fairfield - Between Jefferson & Washington SB	30	4
Ewing - Between Jefferson & Washington SB	101	12

621-06575 SODDING, NURSERY **TOTAL = 1,458.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	15
Fairfield - Between Lavina & Brackenridge SB	279
Fairfield - Between Brackenridge & Jefferson SB	64
Fairfield - SE Corner at Baker NB	261
Fairfield - Between Lavina & Brackenridge NB	104
Fairfield - Between Brackenridge & Jefferson NB	263
Ewing - Between Baker & Brackenridge SB	177
Ewing - Between Brackenridge & Jefferson SB	164
Fairfield - Between Jefferson & Washington SB	30
Ewing - Between Jefferson & Washington SB	101

715-05149	**PIPE, TYPE 2 CIRCULAR 12 IN**	**TOTAL =**	**120.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield Ave.	80
Ewing St.	30
Baker St.	10

720-45250	**CATCH BASIN, K10**	**TOTAL =**	**12.00 EACH**

Calculations:

Location	EACH
Fairfield Ave.	8
Ewing St.	3
Baker St.	1

801-06775	MAINTAINING TRAFFIC	TOTAL =	1.00 LS

Calculations:

805-79020	TRAFFIC SIGNAL INSTALLATION	TOTAL =	1.00 LS

Calculations:

Converting Existing Signals from One-Way to Two-Way Traffic

Appendix J

Option 2 – Roadway Opinion of Probable Cost

AMERICAN STRUCTUREPOINT INC.

QUANTITY COST ESTIMATE

Ewing & Fairfield Conversion -
One-Way to Two-Way - Option 2

Project No.: N/A

Des. No.: N/A

ESTIMATED PROJECT COST
Total: $2,747,987.84
20.0% Contingency: $549,597.57
ESTIMATED TOTAL: $3,297,585.41

ID	Item No.	Description	Quantity	Unit	Unit Price	Item Total
0001	105-06845	CONSTRUCTION ENGINEERING	1.00	LS	$97,273.91	$97,273.91
0002	110-01001	MOBILIZATION AND DEMOBILIZATION	1.00	LS	$72,955.43	$72,955.43
0003	201-52370	CLEARING RIGHT OF WAY	1.00	LS	$72,955.43	$72,955.43
0004	202-02240	PAVEMENT REMOVAL	2,255.00	SYS	$6.25	$14,093.75
0005	202-02274	CURB, CONCRETE, INTEGRAL, REMOVE	5,599.00	LFT	$5.30	$29,674.70
0006	202-02278	CURB, CONCRETE, REMOVE	7,500.00	LFT	$5.25	$39,375.00
0007	202-52710	SIDEWALK, CONCRETE, REMOVE	8,385.00	SYS	$8.00	$67,080.00
0008	203-02000	EXCAVATION, COMMON	1,705.00	CYS	$12.00	$20,460.00
0009	203-02070	BORROW	813.00	CYS	$6.00	$4,878.00
0010	207-08263	SUBGRADE TREATMENT, TYPE IA	4,893.00	SYS	$5.25	$25,688.25
0011	207-08267	SUBGRADE TREATMENT, TYPE IIIA	2,174.00	SYS	$9.50	$20,653.00
0012	302-06464	SUBBASE FOR PCCP	82.00	CYS	$32.50	$2,665.00
0013	306-08034	MILLING, ASPHALT, 1 1/2 IN	18,883.00	SYS	$0.75	$14,162.25
0014	402-07434	HMA SURFACE, TYPE C	1,729.00	TON	$70.00	$121,030.00
0015	402-07439	HMA INTERMEDIATE, TYPE C	303.00	TON	$60.00	$18,180.00
0016	402-07442	HMA BASE, TYPE C	1,603.00	TON	$55.00	$88,165.00
0017	406-05520	ASPHALT FOR TACK COAT	7.90	TON	$350.00	$2,765.00
0018	502-06329	PCCP, 12 IN	298.00	SYS	$50.00	$14,900.00
0019	604-91531	SIDEWALK, CONCRETE, 4 IN	7,108.00	SYS	$32.00	$227,456.00
0020	605-06090	CURB, INTEGRAL, CONCRETE	4,878.00	LFT	$12.50	$60,975.00
0021	605-06120	CURB, CONCRETE	6,350.00	LFT	$18.00	$114,300.00
0022	610-09108	PCCP FOR APPROACHES, 9 IN	2,174.00	SYS	$46.00	$100,004.00
0023	621-06570	TOPSOIL	687.00	CYS	$20.00	$13,740.00
0024	621-06575	SODDING, NURSERY	6,117.00	SYS	$3.10	$18,962.70
0025	622-04648	TREE GRATE	6.00	EACH	$1,000.00	$6,000.00
0026	622-05650	PLANT, DECIDUOUS TREE, SINGLE STEM, OVER 2 TO 2.5 IN	157.00	EACH	$270.00	$42,390.00
0027	715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	200.00	LFT	$33.00	$6,600.00
0028	720-45250	CATCH BASIN, K10	19.00	EACH	$2,100.00	$39,900.00
0029	801-06775	MAINTAINING TRAFFIC	1.00	LS	$72,955.43	$72,955.43
0030	805-79020	TRAFFIC SIGNAL INSTALLATION	1.00	LS	$774,000.00	$774,000.00
0031	807-03951	LIGHT POLE, ORNAMENTAL	145.00	EACH	$3,750.00	$543,750.00

105-06845	**CONSTRUCTION ENGINEERING**	**TOTAL =**	**1.00 LS**

Calculations:

110-01001	**MOBILIZATION AND DEMOBILIZATION**	**TOTAL =**	**1.00 LS**

Calculations:

201-52370	**CLEARING RIGHT OF WAY**	**TOTAL =**	**1.00 LS**

Calculations:

202-02240 PAVEMENT REMOVAL **TOTAL = 2,255.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield / Baker Center Island	15
Fairfield Drive #1	35
Fairfield Drive #2	17
Fairfield Drive #3	30
Fairfield Drive #4	23
Fairfield Drive #5	25
Fairfield Drive #6	66
Fairfield Drive #7	194
NW Corner Fairfield / Jefferson	14
NE Corner Fairfield / Jefferson	30
Fairfield Drive #8	36
Fairfield Drive #9	34
Fairfield Drive #10	23
Fairfield Drive #11	23
Fairfield Drive #12	27
Fairfield Drive #13	36
Fairfield Drive #14	30
Fairfield Drive #15	32
Fairfield Drive #16	23
Fairfield Drive #17	23
Fairfield Drive #18	32
Fairfield Drive #19	17
Fairfield Drive #20	33
Fairfield Drive #21	32
Fairfield Drive #22	23
Fairfield Drive #23	23
Fairfield Drive #24	40
Fairfield Drive #25	84
Fairfield Drive #26	39
Fairfield Drive #27	42
Fairfield Drive #28	23
Fairfield Drive #29	42

202-02240	PAVEMENT REMOVAL	TOTAL =	2,255.00 SYS

Fairfield Drive #30	30
Fairfield Drive #31	26
Ewing Drive #1	37
Ewing Drive #2	20
Ewing Drive #3	30
Ewing Drive #4	31
West Curb Line - Ewing N of Jefferson	29
Ewing Drive #5	22
Ewing Drive #6	25
NW Corner Ewing & Washington	11
Ewing Drive #7	40
Ewing Drive #8	26
Ewing Drive #9	20
Ewing Drive #10	69
Ewing Drive #11	69
Ewing Drive #12	32
Ewing Drive #13	59
Ewing Drive #14	95
Baker Drive #1	34
Baker Drive #2	34
Jefferson Drive #1	125
Main St Drive #1	99
Main St Drive #2	88
Main St Drive #3	38

202-02274 CURB, CONCRETE, INTEGRAL, REMOVE **TOTAL = 5,599.00 LFT**

Calculations:

For Concrete Pavement

Location	Length (LFT)
Fairfield - Between Jefferson & Washington SB	383
Fairfield - Between Jefferson & Washington NB	360
Fairfield - Between Washington & Wayne SB	370
Fairfield - Between Washington & Wayne NB	372
Fairfield - Between Wayne & Berry SB	355
Fairfield - Between Wayne & Berry NB	355
Fairfield - Between Berry & Main SB	352
Fairfield - Between Berry & Main NB	346
Fairfield - Between Main & Pearl SB	166
Fairfield - Between Main & Pearl NB	170
Ewing - Between Jefferson & Washington SB	375
Ewing - Between Washington & Wayne SB	380
Ewing - Between Washington & Wayne NB	44
Ewing - Between Wayne & Berry SB	358
Ewing - Between Wayne & Berry NB	358
Fairfield - From Pearl to Roundabout SB	280
Fairfield - From Pearl to Roundabout NB	131
Ewing - From Pearl to Roundabout SB	300
Ewing - From Pearl to Roundabout NB	144

202-02278 CURB, CONCRETE, REMOVE **TOTAL = 7,500.00 LFT**

Calculations:

For Asphalt Pavement

Location	Length (LFT)
Fairfield - South of Hendricks SB	87
Fairfield - Between Hendricks & Lavina SB	312
Fairfield - Between Lavina & Brackenridge SB	180
Fairfield - Between Brackenridge & Jefferson SB	689
Fairfield - Between Hendricks & Baker NB	141
Fairfield - Between Lavina & Brackenridge NB	351
Fairfield - Between Brackenridge & Jefferson NB	712
Baker - Between Fairfield & Ewing EB	384
Baker - Between Fairfield & Ewing WB	467
Brackenridge - Between Fairfield & Ewing Northside	306
Brackenridge - Between Fairfield & Ewing Southside	358
Jefferson - Between Fairfield & Ewing Southside	285
Ewing - Between Baker & Brackenridge SB	357
Ewing - Between Baker & Brackenridge NB	333
Ewing - Between Brackenridge & Jefferson SB	772
Ewing - Between Berry & Main SB	376
Ewing - Between Berry & Main NB	371
Ewing - Between Main & Peal SB	188
Ewing - Between Main & Peal NB	218
Main St - Between Fairfield & Ewing Northside	337
Main St - Between Fairfield & Ewing Southside	276

202-52710 SIDEWALK, CONCRETE, REMOVE **TOTAL = 8,385.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - South of Hendricks SB	99
Fairfield - Between Hendricks & Lavina SB	212
Fairfield - Between Lavina & Brackenridge SB	97
Fairfield - Between Brackenridge & Jefferson SB	384
Fairfield - Between Hendricks & Lavina NB	158
Fairfield - Between Lavina & Brackenridge NB	211
Fairfield - Between Brackenridge & Jefferson NB	465
Fairfield - Between Jefferson & Washington SB	221
Fairfield - Between Jefferson & Washington NB	300
Fairfield - Between Washington & Wayne SB	220
Fairfield - Between Washington & Wayne NB	331
Fairfield - Between Wayne & Berry SB	229
Fairfield - Between Wayne & Berry NB	277
Fairfield - Between Berry & Main SB	218
Fairfield - Between Berry & Main NB	131
Fairfield - Between Main & Pearl SB	131
Fairfield - Between Main & Pearl NB	149
Ewing - Between Baker & Brackenridge SB	170
Ewing - Between Baker & Brackenridge NB	157
Ewing - Between Brackenridge & Jefferson SB	446
Ewing - Between Jefferson & Washington SB	239
Ewing - Between Washington & Wayne SB	364
Ewing - Between Washington & Wayne NB	47
Ewing - Between Wayne & Berry SB	421
Ewing - Between Wayne & Berry NB	289
Ewing - Between Berry & Main SB	212
Ewing - Between Berry & Main NB	197
Ewing - Between Main & Pearl SB	108
Ewing - Between Main & Pearl NB	195
Baker - Between Fairfield & Ewing EB	328
Baker - Between Fairfield & Ewing WB	217
Brackenridge - Between Fairfield & Ewing Northside	178
Brackenridge - Between Fairfield & Ewing Southside	202

202-52710	**SIDEWALK, CONCRETE, REMOVE**	**TOTAL =**	**8,385.00 SYS**

Jefferson - Between Fairfield & Ewing Southside	183
Main St - Between Fairfield & Ewing EB	206
Main St - Between Fairfield & Ewing WB	115
Fairfield - From Pearl to Roundabout SB	147
Fairfield - From Pearl to Roundabout NB	11
Ewing - From Pearl to Roundabout SB	22
Ewing - From Pearl to Roundabout NB	98

203-02000 EXCAVATION, COMMON **TOTAL = 1,705.00 CYS**

Calculations:

* Assumed Depth of Cut = 1'

Location	Area (SYS)	Volume (CYS)
Fairfield - South of Hendricks SB	44	15
Fairfield - Between Hendricks & Lavina SB	186	62
Fairfield - Between Lavina & Brackenridge SB	341	114
Fairfield - Between Brackenridge & Jefferson SB	359	120
Fairfield - Between Hendricks & Baker NB	122	41
Fairfield - Between Lavina & Brackenridge NB	264	88
Fairfield - Between Brackenridge & Jefferson NB	521	174
Fairfield / Baker Center Island - Asph. Pavement	15	5
Fairfield - NE Corner of Washington	16	6
Fairfield - SW Corner of Wayne	16	6
Fairfield - SE Corner of Wayne	16	6
Fairfield - NW Corner of Berry Added Aux. Lane	152	51
Fairfield - SW Corner of Main St	16	6
Fairfield - SE Corner of Main St	18	6
Fairfield - NE Corner of Main St	18	6
Fairfield - SW Corner of Pearl	19	7
Fairfield - SE Corner of Pearl	11	4
Ewing - Between Baker & Brackenridge SB	281	94
Ewing - Between Baker & Brackenridge NB	166	56
Ewing - Between Brackenridge & Jefferson SB	450	150
Ewing - NW Corner of Washington Added Aux Lane SB	133	45
Ewing - NE Corner of Washington	20	7
Ewing - Between Berry & Main SB	269	90
Ewing - Between Berry & Main NB	184	62
Ewing - Between Main & Pearl SB	127	43
Ewing - Between Main & Pearl NB	132	44
Baker - Between Fairfield & Ewing EB	275	92
Baker - Between Fairfield & Ewing WB	192	64
Brackenridge - Between Fairfield & Ewing Northside	156	52
Brackenridge - Between Fairfield & Ewing Southside	179	60
Jefferson - Between Fairfield & Ewing Southside	143	48
Main Street - Between Fairfield & Ewing EB	113	38
Main Street - Between Fairfield & Ewing WB	127	43

203-02070 BORROW **TOTAL = 813.00 CYS**

Calculations:

* Assumed Depth of Fill = 1'

Location	Area (SYS)	Volume (CYS)
Fairfield - South of Hendricks SB	18	6
Fairfield - Between Hendricks & Lavina SB	73	25
Fairfield - Between Lavina & Brackenridge SB	282	94
Fairfield - Between Brackenridge & Jefferson SB	152	51
Fairfield - Between Hendricks & Baker NB	81	27
Fairfield - Between Lavina & Brackenridge NB	164	55
Fairfield - Between Brackenridge & Jefferson NB	227	76
Fairfield - NW Corner of Jefferson	30	10
Fairfield - NE Corner of Jefferson	42	14
Fairfield - NE Corner of Washington	9	3
Fairfield - SW Corner of Wayne	9	3
Fairfield - SE Corner of Wayne	9	3
Fairfield - NW Corner of Berry Added Aux. Lane	29	10
Fairfield - SW Corner of Main St	9	3
Fairfield - SE Corner of Main St	9	3
Fairfield - NE Corner of Main St	9	3
Fairfield - SW Corner of Pearl	8	3
Fairfield - SE Corner of Pearl	6	2
Ewing - Between Baker & Brackenridge SB	76	26
Ewing - Between Baker & Brackenridge NB	73	25
Ewing - Between Brackenridge & Jefferson SB	169	57
Ewing - Jefferson & Washington SB	53	18
Ewing - SW Corner of Washington	16	6
Ewing - NW Corner of Washington Added Aux Lane SB	30	10
Ewing - NE Corner of Washington	9	3
Ewing - Between Berry & Main SB	81	27
Ewing - Between Berry & Main NB	81	27
Ewing - Between Main & Pearl SB	47	16
Ewing - Between Main & Pearl NB	58	20
Baker - Between Fairfield & Ewing EB	145	49
Baker - Between Fairfield & Ewing WB	86	29
Brackenridge - Between Fairfield & Ewing Northside	70	24
Brackenridge - Between Fairfield & Ewing Southside	80	27

203-02070 BORROW	**TOTAL =**	**813.00 CYS**

Jefferson - Between Fairfield & Ewing Southside	64	22
Main Street - Between Fairfield & Ewing EB	50	17
Main Street - Between Fairfield & Ewing WB	57	19

207-08263 SUBGRADE TREATMENT, TYPE IA **TOTAL = 4,893.00 SYS**

Calculations:

Location	Area (SYS)	
Fairfield - Between Jefferson & Washington	17	
Fairfield - NE Corner of Washington	17	
Fairfield - SW Corner of Wayne	17	
Fairfield - SE Corner of Wayne	17	
Fairfield - NW Corner of Berry / Added Aux. Lane	153	
Fairfield - SW Corner of Main St	8	
Fairfield - SE Corner of Main St	8	
Fairfield - NE Corner of Main St	8	
Fairfield - SW Corner of Pearl	103	
Fairfield - SE Corner of Pearl	11	
Fairfield - NW Corner of Pearl	13	
Fairfield - NE Corner of Pearl	7	
Ewing - NW Corner of Washington / Added Aux. Lane	134	
Ewing - NE Corner of Washington	21	
Ewing - NW Corner of Pearl	35	Concrete Pavement Widening
Fairfield - South of Hendricks SB	44	Asphalt Pavement Widening
Fairfield - Between Hendricks & Lavina SB	181	
Fairfield - Between Lavina & Brackenridge SB	105	
Fairfield - Between Brackenridge & Jefferson SB	459	
Fairfield - Between Hendricks & Baker NB	74	
Fairfield - Between Baker & Brackenridge NB	183	
Fairfield - Between Brackenridge & Jefferson NB	268	
Fairfield / Baker Center Island - Asph. Pavement	15	
Fairfield / Jefferson SE Corner Asph. Pavement Widening	189	
Ewing - Between Baker & Brackenridge SB	282	
Ewing - Between Baker & Brackenridge NB	166	
Ewing - Between Brackenridge & Jefferson SB	474	
Ewing - NW Corner of Berry / Added Aux. Lane	150	
Ewing - Between Berry & Main SB	120	
Ewing - Between Berry & Main NB	185	
Ewing - Between Main & Pearl SB	129	
Ewing - Between Main & Pearl NB	133	

207-08263	**SUBGRADE TREATMENT, TYPE IA**	**TOTAL =**	**4,893.00 SYS**

Baker - Between Fairfield & Ewing EB	234
Baker - Between Fairfield & Ewing WB	193
Brackenridge - Between Fairfield & Ewing Northside	156
Brackenridge - Between Fairfield & Ewing Southside	179
Jefferson - Between Fairfield & Ewing Southside	143
Main St - Between Fairfield & Ewing EB	138
Main St - Between Fairfield & Ewing WB	124

207-08267 SUBGRADE TREATMENT, TYPE IIIA **TOTAL = 2,174.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield Drive #1	48
Fairfield Drive #2	22
Fairfield Drive #3	39
Fairfield Drive #4	23
Fairfield Drive #5	38
Fairfield Drive #6	69
Fairfield Drive #7	139
Fairfield Drive #8	38
Fairfield Drive #9	36
Fairfield Drive #10	25
Fairfield Drive #11	25
Fairfield Drive #12	29
Fairfield Drive #13	39
Fairfield Drive #14	33
Fairfield Drive #15	34
Fairfield Drive #16	25
Fairfield Drive #17	25
Fairfield Drive #18	34
Fairfield Drive #19	18
Fairfield Drive #20	36
Fairfield Drive #21	35
Fairfield Drive #22	25
Fairfield Drive #23	25
Fairfield Drive #24	42
Fairfield Drive #25	73
Fairfield Drive #26	42
Fairfield Drive #27	44
Fairfield Drive #28	25
Fairfield Drive #29	45
Fairfield Drive #30	32
Fairfield Drive #31	28
Ewing Drive #1	29

207-08267	SUBGRADE TREATMENT, TYPE IIIA	TOTAL =	2,174.00 SYS

Ewing Drive #2	23
Ewing Drive #3	45
Ewing Drive #4	27
Ewing Drive #5	27
Ewing Drive #6	41
Ewing Drive #7	28
Ewing Drive #8	22
Ewing Drive #9	42
Ewing Drive #10	69
Ewing Drive #11	34
Ewing Drive #12	62
Ewing Drive #13	100
Baker Drive #1	36
Baker Drive #2	36
Jefferson Drive #1	125
Main St Drive #1	104
Main St Drive #2	93
Main St Drive #3	40

302-06464 SUBBASE FOR PCCP **TOTAL = 82.00 CYS**

Calculations:

* 0.75' Depth

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Jefferson & Washington	5	2
Fairfield - NE Corner of Washington	6	2
Fairfield - SW Corner of Wayne	6	2
Fairfield - SE Corner of Wayne	6	2
Fairfield - NW Corner of Berry / Added Aux. Lane	117	30
Fairfield - SW Corner of Main St	3	1
Fairfield - SE Corner of Main St	3	1
Fairfield - NE Corner of Main St	3	1
Fairfield - SW Corner of Pearl	10	3
Fairfield - SE Corner of Pearl	3	1
Fairfield - NW Corner of Pearl	5	2
Fairfield - NE Corner of Pearl	1	1
Ewing - NW Corner of Washington / Added Aux. Lane	97	25
Ewing - NE Corner of Washington	10	3
Ewing - NW Corner of Pearl	23	6

306-08034 MILLING, ASPHALT, 1 1/2 IN **TOTAL = 18,883.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between BOP & Jefferson	4788
Ewing - Between Baker & Jefferson	4241
Baker - Between Fairfield & Ewing	1755
Ewing - Between Berry & Pearl	2721
Main - Between Fulton & Fairfield	1506
Main - Between Fairfield & Ewing	1266
Main - Between Ewing & Webster	1776
Brackenridge - Between Fairfield & Ewing	830

402-07434 HMA SURFACE, TYPE C **TOTAL = 1,729.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - Between BOP & Jefferson	5498	165	454
Ewing - Between Baker & Jefferson	4738	165	391
Baker - Between Fairfield & Ewing	1947	165	161
Ewing - Between Berry & Pearl	3052	165	252
Main - Between Fulton & Fairfield	1509	165	125
Main - Between Fairfield & Ewing	1411	165	117
Main - Between Ewing & Webster	1795	165	149
Brackenridge - Between Fairfield & Ewing	969	165	80

402-07439 HMA INTERMEDIATE, TYPE C **TOTAL = 303.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - South of Hendricks SB	20	275	3
Fairfield - Between Hendricks & Lavina SB	96	275	14
Fairfield - Between Lavina & Brackenridge SB	48	275	7
Fairfield - Between Brackenridge & Jefferson SB	169	275	24
Fairfield - Between Hendricks & Baker NB	33	275	5
Fairfield - Between Baker & Brackenridge NB	90	275	13
Fairfield - Between Brackenridge & Jefferson NB	120	275	17
Fairfield / Baker Center Island - Asph. Pavement	15	275	3
Fairfield / Jefferson SE Corner Asph. Pavement Widening	136	275	19
Ewing - Between Baker & Brackenridge SB	186	275	26
Ewing - Between Baker & Brackenridge NB	75	275	11
Ewing - Between Brackenridge & Jefferson SB	240	275	33
Ewing - NW Corner of Berry / Added Aux. Lane	115	275	16
Ewing - Between Berry & Main SB	54	275	8
Ewing - Between Berry & Main NB	83	275	12
Ewing - Between Main & Pearl SB	69	275	10
Ewing - Between Main & Pearl NB	61	275	9
Baker - Between Fairfield & Ewing EB	104	275	15
Baker - Between Fairfield & Ewing WB	86	275	12
Brackenridge - Between Fairfield & Ewing Northside	70	275	10
Brackenridge - Between Fairfield & Ewing Southside	70	275	10
Jefferson - Between Fairfield & Ewing Southside	64	275	9
Main St - Between Fairfield & Ewing EB	55	275	8
Main St - Between Fairfield & Ewing WB	62	275	9

402-07442 HMA BASE, TYPE C **TOTAL = 1,603.00 TON**

Calculations:

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - South of Hendricks SB	20	440	5
Fairfield - Between Hendricks & Lavina SB	96	440	22
Fairfield - Between Lavina & Brackenridge SB	48	440	11
Fairfield - Between Brackenridge & Jefferson SB	169	440	38
Fairfield - Between Hendricks & Baker NB	33	440	8
Fairfield - Between Baker & Brackenridge NB	90	440	20
Fairfield - Between Brackenridge & Jefferson NB	120	440	27
Fairfield / Baker Center Island - Asph. Pavement	15	440	4
Fairfield / Jefferson SE Corner Asph. Pavement Widening	136	440	30
Ewing - Between Baker & Brackenridge SB	186	440	41
Ewing - Between Baker & Brackenridge NB	75	440	17
Ewing - Between Brackenridge & Jefferson SB	240	440	53
Ewing - NW Corner of Berry / Added Aux. Lane	115	440	26
Ewing - Between Berry & Main SB	54	440	12
Ewing - Between Berry & Main NB	83	440	19
Ewing - Between Main & Pearl SB	69	440	16
Ewing - Between Main & Pearl NB	61	440	14
Baker - Between Fairfield & Ewing EB	104	440	23
Baker - Between Fairfield & Ewing WB	86	440	19
Brackenridge - Between Fairfield & Ewing Northside	70	440	16
Brackenridge - Between Fairfield & Ewing Southside	70	440	16
Jefferson - Between Fairfield & Ewing Southside	64	440	15
Main St - Between Fairfield & Ewing EB	55	440	13
Main St - Between Fairfield & Ewing WB	62	440	14

402-07442 HMA BASE, TYPE C **TOTAL = 1,603.00 TON**

Location	Area (SYS)	Rate (#/SYS)	Volume (TON)
Fairfield - South of Hendricks SB	36	660	12
Fairfield - Between Hendricks & Lavina SB	135	660	45
Fairfield - Between Lavina & Brackenridge SB	89	660	30
Fairfield - Between Brackenridge & Jefferson SB	290	660	96
Fairfield - Between Hendricks & Baker NB	62	660	21
Fairfield - Between Baker & Brackenridge NB	146	660	49
Fairfield - Between Brackenridge & Jefferson NB	236	660	78
Fairfield / Baker Center Island - Asph. Pavement	15	660	5
Fairfield / Jefferson SE Corner Asph. Pavement Widening	149	660	50
Ewing - Between Baker & Brackenridge SB	240	660	80
Ewing - Between Baker & Brackenridge NB	139	660	46
Ewing - Between Brackenridge & Jefferson SB	388	660	129
Ewing - NW Corner of Berry / Added Aux. Lane	124	660	41
Ewing - Between Berry & Main SB	91	660	31
Ewing - Between Berry & Main NB	146	660	49
Ewing - Between Main & Pearl SB	92	660	31
Ewing - Between Main & Pearl NB	102	660	34
Baker - Between Fairfield & Ewing EB	195	660	65
Baker - Between Fairfield & Ewing WB	148	660	49
Brackenridge - Between Fairfield & Ewing Northside	130	660	43
Brackenridge - Between Fairfield & Ewing Southside	140	660	47
Jefferson - Between Fairfield & Ewing Southside	100	660	33
Main St - Between Fairfield & Ewing EB	79	660	27
Main St - Between Fairfield & Ewing WB	97	660	33

406-05520 ASPHALT FOR TACK COAT **TOTAL = 7.90 TON**

Calculations:

Location	Area (SYS)	Rate (TON/SYS)	Volume (TON)
Fairfield - Between BOP & Jefferson	5498	0.00025	1.4
Ewing - Between Baker & Jefferson	4738	0.00025	1.2
Baker - Between Fairfield & Ewing	1947	0.00025	0.5
Ewing - Between Berry & Pearl	3052	0.00025	0.8
Main - Between Fulton & Fairfield	1509	0.00025	0.4
Main - Between Fairfield & Ewing	1411	0.00025	0.4
Main - Between Ewing & Webster	1795	0.00025	0.5
Brackenridge - Between Fairfield & Ewing	969	0.00025	0.3
Fairfield - South of Hendricks SB	20	0.00025	0.1
Fairfield - Between Hendricks & Lavina SB	96	0.00025	0.1
Fairfield - Between Lavina & Brackenridge SB	48	0.00025	0.1
Fairfield - Between Brackenridge & Jefferson SB	169	0.00025	0.1
Fairfield - Between Hendricks & Baker NB	33	0.00025	0.1
Fairfield - Between Baker & Brackenridge NB	90	0.00025	0.1
Fairfield - Between Brackenridge & Jefferson NB	120	0.00025	0.1
Fairfield / Baker Center Island - Asph. Pavement	15	0.00025	0.1
Fairfield / Jefferson SE Corner Asph. Pavement Widening	136	0.00025	0.1
Ewing - Between Baker & Brackenridge SB	186	0.00025	0.1
Ewing - Between Baker & Brackenridge NB	75	0.00025	0.1
Ewing - Between Brackenridge & Jefferson SB	240	0.00025	0.1
Ewing - NW Corner of Berry / Added Aux. Lane	115	0.00025	0.1
Ewing - Between Berry & Main SB	54	0.00025	0.1
Ewing - Between Berry & Main NB	83	0.00025	0.1
Ewing - Between Main & Pearl SB	69	0.00025	0.1
Ewing - Between Main & Pearl NB	61	0.00025	0.1
Baker - Between Fairfield & Ewing EB	104	0.00025	0.1
Baker - Between Fairfield & Ewing WB	86	0.00025	0.1
Brackenridge - Between Fairfield & Ewing Northside	70	0.00025	0.1
Brackenridge - Between Fairfield & Ewing Southside	70	0.00025	0.1
Jefferson - Between Fairfield & Ewing Southside	64	0.00025	0.1
Main St - Between Fairfield & Ewing EB	55	0.00025	0.1
Main St - Between Fairfield & Ewing WB	62	0.00025	0.1

502-06329 PCCP, 12 IN **TOTAL = 298.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Jefferson & Washington	5
Fairfield - NE Corner of Washington	6
Fairfield - SW Corner of Wayne	6
Fairfield - SE Corner of Wayne	6
Fairfield - NW Corner of Berry / Added Aux. Lane	117
Fairfield - SW Corner of Main St	3
Fairfield - SE Corner of Main St	3
Fairfield - NE Corner of Main St	3
Fairfield - SW Corner of Pearl	10
Fairfield - SE Corner of Pearl	3
Fairfield - NW Corner of Pearl	5
Fairfield - NE Corner of Pearl	1
Ewing - NW Corner of Washington / Added Aux. Lane	97
Ewing - NE Corner of Washington	10
Ewing - NW Corner of Pearl	23

604-91531 SIDEWALK, CONCRETE, 4 IN **TOTAL = 7,108.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	313
Fairfield - Between Hendricks & Baker NB	79
Fairfield - Between Baker & Lavina NB	128
Fairfield - Between Lavina & Brackenridge SB	108
Fairfield - Between Lavina & Brackenridge NB	86
Fairfield - Between Brackenridge & Jefferson SB	367
Fairfield - Between Brackenridge & Jefferson NB	335
Fairfield - Between Jefferson & Washington SB	194
Fairfield - Between Jefferson & Washington NB	336
Fairfield - Between Washington & Wayne SB	231
Fairfield - Between Washington & Wayne NB	204
Fairfield - Between Wayne & Berry SB	181
Fairfield - Between Wayne & Berry NB	184
Fairfield - Between Berry & Main SB	177
Fairfield - Between Berry & Main NB	160
Fairfield - Between Main & Pearl SB	98
Fairfield - Between Main & Pearl NB	102
Ewing - Between Baker & Brackenridge SB	157
Ewing - Between Baker & Brackenridge NB	165
Ewing - Between Brackenridge & Jefferson SB	412
Ewing - Between Jefferson & Washington SB	193
Ewing - Between Washington & Wayne SB	211
Ewing - Between Washington & Wayne NB	38
Ewing - Between Wayne & Berry SB	194
Ewing - Between Wayne & Berry NB	290
Ewing - Between Berry & Main SB	175
Ewing - Between Berry & Main NB	196
Ewing - Between Main & Pearl SB	101
Ewing - Between Main & Pearl NB	118
Baker - Between Fairfield & Ewing EB	260
Baker - Between Fairfield & Ewing WB	220

604-91531 SIDEWALK, CONCRETE, 4 IN **TOTAL = 7,108.00 SYS**

Brackenridge - Between Fairfield & Ewing Northside	178
Brackenridge - Between Fairfield & Ewing Southside	202
Jefferson - Between Fairfield & Ewing Southside	109
Main St - Between Fairfield & Ewing EB	88
Main St - Between Fairfield & Ewing WB	142
Fairfield - From Pearl to Roundabout SB	171
Ewing - From Pearl to Roundabout NB	205

605-06090 CURB, INTEGRAL, CONCRETE **TOTAL = 4,878.00 LFT**

Calculations:

For Concrete Pavement

Location	Length (LFT)
Fairfield - Between Jefferson and Washington SB	262
Fairfield - Between Jefferson and Washington NB	252
Fairfield - Between Washington & Wayne SB	251
Fairfield - Between Washington & Wayne NB	266
Fairfield - Between Wayne & Berry SB	279
Fairfield - Between Wayne & Berry NB	280
Fairfield - Between Berry & Main SB	240
Fairfield - Between Berry & Main NB	187
Fairfield - Between Main & Pearl SB	182
Fairfield - Between Main & Pearl NB	153
Ewing - Between Jefferson and Washington SB	266
Ewing - Between Washington & Wayne SB	320
Ewing - Between Washington & Wayne NB	40
Ewing - Between Wayne & Berry SB	324
Ewing - Between Wayne & Berry NB	324
Fairfield - From Pearl to Roundabout SB	277
Fairfield - From Pearl to Roundabout NB	387
Ewing - From Pearl to Roundabout SB	287
Ewing - From Pearl to Roundabout NB	301

605-06120 CURB, CONCRETE **TOTAL = 6,350.00 LFT**

Calculations:

For Asphalt Pavement

Location	Length (LFT)
Fairfield - Between Hendricks & Lavina SB	281
Fairfield - Between Lavina & Brackenridge SB	210
Fairfield - Between Brackenridge & Jefferson SB	621
Fairfield - Between Hendricks & Baker NB	147
Fairfield - Between Baker & Lavina NB	133
Fairfield - Between Lavina & Brackenridge NB	152
Fairfield - Between Brackenridge & Jefferson NB	597
Ewing - Between Baker & Brackenridge SB	277
Ewing - Between Baker & Brackenridge NB	331
Ewing - Between Brackenridge & Jefferson SB	763
Ewing - Between Berry & Main SB	236
Ewing - Between Berry & Main NB	325
Ewing - Between Main & Pearl SB	118
Ewing - Between Main & Pearl NB	214
Baker - Between Fairfield & Ewing EB	467
Baker - Between Fairfield & Ewing WB	318
Brackenridge - Between Fairfield & Ewing Northside	312
Brackenridge - Between Fairfield & Ewing Southside	358
Jefferson - Between Fairfield & Ewing Southside	186
Main St - Between Fairfield & Ewing EB	120
Main - Between Fairfield & Ewing WB	184

610-09108 PCCP FOR APPROACHES, 9 IN **TOTAL = 2,174.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield Drive #1	48
Fairfield Drive #2	22
Fairfield Drive #3	39
Fairfield Drive #4	23
Fairfield Drive #5	38
Fairfield Drive #6	69
Fairfield Drive #7	139
Fairfield Drive #8	38
Fairfield Drive #9	36
Fairfield Drive #10	25
Fairfield Drive #11	25
Fairfield Drive #12	29
Fairfield Drive #13	39
Fairfield Drive #14	33
Fairfield Drive #15	34
Fairfield Drive #16	25
Fairfield Drive #17	25
Fairfield Drive #18	34
Fairfield Drive #19	18
Fairfield Drive #20	36
Fairfield Drive #21	35
Fairfield Drive #22	25
Fairfield Drive #23	25
Fairfield Drive #24	42
Fairfield Drive #25	73
Fairfield Drive #26	42
Fairfield Drive #27	44
Fairfield Drive #28	25
Fairfield Drive #29	45
Fairfield Drive #30	32
Fairfield Drive #31	28
Ewing Drive #1	29

610-09108	PCCP FOR APPROACHES, 9 IN	TOTAL =	2,174.00 SYS

Ewing Drive #2	23
Ewing Drive #3	45
Ewing Drive #4	27
Ewing Drive #5	27
Ewing Drive #6	41
Ewing Drive #7	28
Ewing Drive #8	22
Ewing Drive #9	42
Ewing Drive #10	69
Ewing Drive #11	34
Ewing Drive #12	62
Ewing Drive #13	100
Baker Drive #1	36
Baker Drive #2	36
Jefferson Drive #1	125
Main St Drive #1	104
Main St Drive #2	93
Main St Drive #3	40

621-06570 TOPSOIL **TOTAL = 687.00 CYS**

Calculations:

* Assumed Depth of Fill = 0.33'

Location	Area (SYS)	Volume (CYS)
Fairfield - Between Hendricks & Lavina SB	70	8
Fairfield - Between Lavina & Brackenridge SB	279	31
Fairfield - Between Brackenridge & Jefferson SB	644	71
Fairfield - Between Hendricks & Lavina NB	169	19
Fairfield - Between Lavina & Brackenridge NB	80	9
Fairfield - Between Brackenridge & Jefferson NB	406	45
Fairfield - Between Jefferson & Washington SB	154	17
Fairfield - Between Washington & Wayne NB	151	17
Fairfield - Between Wayne & Berry SB	174	20
Fairfield - Between Wayne & Berry NB	172	19
Fairfield - Between Berry & Main SB	147	17
Fairfield - Between Berry & Main NB	115	13
Fairfield - Between Main & Pearl SB	85	10
Fairfield - Between Main & Pearl NB	76	9
Ewing - Between Baker & Brackenridge SB	163	18
Ewing - Between Baker & Brackenridge NB	186	21
Ewing - Between Brackenridge & Jefferson SB	485	54
Ewing - Between Jefferson & Washington SB	190	21
Ewing - Between Washington & Wayne SB	175	20
Ewing - Between Wayne & Berry SB	196	22
Ewing - Between Berry & Main SB	148	17
Ewing - Between Berry & Main NB	182	21
Ewing - Between Main & Pearl NB	110	13
Baker - Between Fairfield & Ewing EB	363	40
Baker - Between Fairfield & Ewing WB	415	46
Breckenridge - Between Fairfield & Ewing Northside	213	24
Breckenridge - Between Fairfield & Ewing Southside	207	23
Jefferson - Between Fairfield & Ewing Southside	129	15
Main St - Between Fairfield & Ewing EB	104	12
Main St - Between Fairfield & Ewing WB	129	15

621-06575 SODDING, NURSERY **TOTAL = 6,117.00 SYS**

Calculations:

Location	Area (SYS)
Fairfield - Between Hendricks & Lavina SB	70
Fairfield - Between Lavina & Brackenridge SB	279
Fairfield - Between Brackenridge & Jefferson SB	644
Fairfield - Between Hendricks & Lavina NB	169
Fairfield - Between Lavina & Brackenridge NB	80
Fairfield - Between Brackenridge & Jefferson NB	406
Fairfield - Between Jefferson & Washington SB	154
Fairfield - Between Washington & Wayne NB	151
Fairfield - Between Wayne & Berry SB	174
Fairfield - Between Wayne & Berry NB	172
Fairfield - Between Berry & Main SB	147
Fairfield - Between Berry & Main NB	115
Fairfield - Between Main & Pearl SB	85
Fairfield - Between Main & Pearl NB	76
Ewing - Between Baker & Brackenridge SB	163
Ewing - Between Baker & Brackenridge NB	186
Ewing - Between Brackenridge & Jefferson SB	485
Ewing - Between Jefferson & Washington SB	190
Ewing - Between Washington & Wayne SB	175
Ewing - Between Wayne & Berry SB	196
Ewing - Between Berry & Main SB	148
Ewing - Between Berry & Main NB	182
Ewing - Between Main & Pearl NB	110
Baker - Between Fairfield & Ewing EB	363
Baker - Between Fairfield & Ewing WB	415
Breckenridge - Between Fairfield & Ewing Northside	213
Breckenridge - Between Fairfield & Ewing Southside	207
Jefferson - Between Fairfield & Ewing Southside	129
Main St - Between Fairfield & Ewing EB	104
Main St - Between Fairfield & Ewing WB	129

622-04648 TREE GRATE **TOTAL = 6.00 EACH**

Calculations:

Location	Each
Fairfield - Between Jefferson & Washington NB	6

622-05650 PLANT, DECIDUOUS TREE, SINGLE STEM, OVER 2 TO 2.5 IN TOTAL = 157.00 EACH

Calculations:

Location	Each	
Fairfield - Between Hendricks & Lavina SB	3	
Fairfield - Between Lavina & Brackenridge SB	3	
Fairfield - Between Brackenridge & Jefferson SB	8	
Fairfield - Between Hendricks & Lavina NB	3	
Fairfield - Between Lavina & Brackenridge NB	5	
Fairfield - Between Brackenridge & Jefferson NB	10	
Fairfield - Between Jefferson & Washington SB	7	
Fairfield - Between Jefferson & Washington NB	6	w/ Tree Grates
Fairfield - Between Washington & Wayne NB	4	
Fairfield - Between Wayne & Berry SB	6	
Fairfield - Between Wayne & Berry NB	6	
Fairfield - Between Berry & Main SB	6	
Fairfield - Between Berry & Main NB	4	
Fairfield - Between Main & Pearl SB	3	
Fairfield - Between Main & Pearl NB	2	
Ewing - Between Baker & Brackenridge SB	5	
Ewing - Between Baker & Brackenridge NB	6	
Ewing - Between Brackenridge & Jefferson SB	14	
Ewing - Between Jefferson & Washington SB	5	
Ewing - Between Washington & Wayne SB	6	
Ewing - Between Wayne & Berry SB	6	
Ewing - Between Berry & Main SB	6	
Ewing - Between Berry & Main NB	5	
Ewing - Between Main & Pearl NB	3	
Baker - Between Fairfield & Ewing EB	9	
Baker - Between Fairfield & Ewing WB	3	
Brackenridge - Between Fairfield & Ewing Northside	3	
Brackenridge - Between Fairfield & Ewing Southside	2	
Jefferson - Between Fairfield & Ewing Southside	3	
Main St - Between Fairfield & Ewing EB	2	
Main St - Between Fairfield & Ewing WB	3	

715-05149 PIPE, TYPE 2 CIRCULAR 12 IN **TOTAL = 200.00 LFT**

Calculations:

Location	Length (LFT)
Fairfield Ave.	140
Ewing St.	50
Baker St.	10

720-45250 CATCH BASIN, K10 TOTAL = 19.00 EACH

Calculations:

Location	EACH
Fairfield Ave.	13
Ewing St.	5
Baker St.	1

801-06775	**MAINTAINING TRAFFIC**	**TOTAL =**	**1.00 LS**

Calculations:

805-79020	TRAFFIC SIGNAL INSTALLATION	TOTAL =	1.00 LS

Calculations:

Converting Existing Signals from One-Way to Two-Way Traffic

807-03951 LIGHT POLE, ORNAMENTAL **TOTAL = 145.00 EACH**

Calculations:

Location	Each
Fairfield - Between Hendricks & Lavina SB	3
Fairfield - Between Hendricks & Baker NB	2
Fairfield - Between Baker & Lavina NB	3
Fairfield - Between Lavina & Brackenridge SB	3
Fairfield - Between Lavina & Brackenridge NB	2
Fairfield - Between Brackenridge & Jefferson SB	7
Fairfield - Between Brackenridge & Jefferson NB	6
Fairfield - Between Jefferson & Washington SB	4
Fairfield - Between Jefferson & Washington NB	4
Fairfield - Between Washington & Wayne SB	4
Fairfield - Between Washington & Wayne NB	4
Fairfield - Between Wayne & Berry SB	4
Fairfield - Between Wayne & Berry NB	4
Fairfield - Between Berry & Main SB	4
Fairfield - Between Berry & Main NB	4
Fairfield - Between Main & Pearl SB	2
Fairfield - Between Main & Pearl NB	2
Ewing - Between Baker & Brackenridge SB	4
Ewing - Between Baker & Brackenridge NB	4
Ewing - Between Brackenridge & Jefferson SB	8
Ewing - Between Jefferson & Washington SB	4
Ewing - Between Washington & Wayne SB	4
Ewing - Between Wayne & Berry SB	4
Ewing - Between Wayne & Berry NB	4
Ewing - Between Berry & Main SB	4
Ewing - Between Berry & Main NB	4
Ewing - Between Main & Pearl SB	2
Ewing - Between Main & Pearl NB	2
Baker - Between Fairfield & Ewing EB	5
Baker - Between Fairfield & Ewing WB	5

807-03951	**LIGHT POLE, ORNAMENTAL**	**TOTAL =**	**145.00 EACH**

Brackenridge - Between Fairfield & Ewing Northside	4
Brackenridge - Between Fairfield & Ewing Southside	4
Jefferson - Between Fairfield & Ewing Southside	3
Main St - Between Fairfield & Ewing EB	3
Main St - Between Fairfield & Ewing WB	3
Fairfield - From Pearl to Roundabout SB	3
Fairfield - From Pearl to Roundabout NB	3
Ewing - From Pearl to Roundabout SB	3
Ewing - From Pearl to Roundabout NB	3

Appendix K

Roundabout Opinion of Probable Cost

AMERICAN STRUCTUREPOINT INC.

QUANTITY COST ESTIMATE

Ewing & Fairfield Conversion -
One-Way to Two-Way - Roundabout

Project No.: N/A

Des. No.: N/A

ESTIMATED PROJECT COST	
Total:	$797,944.81
20.0% Contingency:	$159,588.96
ESTIMATED TOTAL:	$957,533.77

ID	Item No.	Description	Quantity	Unit	Unit Price	Item Total
0001	105-06845	CONSTRUCTION ENGINEERING	1.00	LS	$28,245.83	$28,245.83
0002	110-01001	MOBILIZATION AND DEMOBILIZATION	1.00	LS	$21,184.38	$21,184.38
0003	201-52370	CLEARING RIGHT OF WAY	1.00	LS	$21,184.38	$21,184.38
0004	202-02240	PAVEMENT REMOVAL	5,675.00	SYS	$6.25	$35,468.75
0005	202-02274	CURB, CONCRETE, INTEGRAL, REMOVE	2,167.00	LFT	$5.30	$11,485.10
0006	202-52710	SIDEWALK, CONCRETE, REMOVE	954.00	SYS	$8.00	$7,632.00
0007	203-02000	EXCAVATION, COMMON	1,544.00	CYS	$12.00	$18,528.00
0008	203-02070	BORROW	3,419.00	CYS	$6.00	$20,514.00
0009	207-08263	SUBGRADE TREATMENT, TYPE IA	5,986.00	SYS	$5.25	$31,426.50
0010	207-08267	SUBGRADE TREATMENT, TYPE IIIA	101.00	SYS	$9.50	$959.50
0011	302-06464	SUBBASE FOR PCCP	1,497.00	CYS	$32.50	$48,652.50
0012	502-06329	PCCP, 12 IN	4,634.00	SYS	$50.00	$231,700.00
0013	502-06457	PCCP, 9 IN	221.00	SYS	$52.00	$11,492.00
0014	604-91531	SIDEWALK, CONCRETE, 4 IN	1,495.00	SYS	$32.00	$47,840.00
0015	605-06090	CURB, INTEGRAL, CONCRETE	2,878.00	LFT	$12.50	$35,975.00
0016	610-09108	PCCP FOR APPROACHES, 9 IN	101.00	SYS	$46.00	$4,646.00
0017	621-06570	TOPSOIL	184.00	CYS	$20.00	$3,680.00
0018	621-06575	SODDING, NURSERY	1,665.00	SYS	$3.10	$5,161.50
0019	622-02564	LANDSCAPING	1.00	LS	$19,075.00	$19,075.00
0020	622-05650	PLANT, DECIDUOUS TREE, SINGLE STEM, OVER 2 TO 2.5 IN	33.00	EACH	$270.00	$8,910.00
0021	715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	390.00	LFT	$33.00	$12,870.00
0022	715-05151	PIPE, TYPE 2 CIRCULAR 15 IN	340.00	LFT	$37.00	$12,580.00
0023	715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	600.00	LFT	$40.00	$24,000.00
0024	720-45045	INLET, J10	6.00	EACH	$1,900.00	$11,400.00
0025	720-45250	CATCH BASIN, K10	12.00	EACH	$2,100.00	$25,200.00
0026	720-45410	MANHOLE, C4	9.00	EACH	$2,300.00	$20,700.00
0027	801-06775	MAINTAINING TRAFFIC	1.00	LS	$21,184.38	$21,184.38
0028	807-03951	LIGHT POLE, ORNAMENTAL	15.00	EACH	$3,750.00	$56,250.00

105-06845	CONSTRUCTION ENGINEERING	TOTAL =	1.00 LS

Calculations:

4% of Cost Estimate

110-01001	MOBILIZATION AND DEMOBILIZATION	TOTAL =	1.00 LS

Calculations:

3% of Cost Estimate

201-52370	**CLEARING RIGHT OF WAY**	**TOTAL =**	**1.00 LS**

Calculations:

3% of Cost Estimate

202-02240 PAVEMENT REMOVAL **TOTAL = 5,675.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout Pavement	5574	Roundabout Quantities
Superior Drive #1	37	
Superior Drive #2	17	
Superior Drive #3	47	

202-02274 CURB, CONCRETE, INTEGRAL, REMOVE **TOTAL = 2,167.00 LFT**

Calculations:

For Concrete Pavement

Location	Length (LFT)	
Roundabout Curb Removal	2167	Roundabout Quantities

202-52710 SIDEWALK, CONCRETE, REMOVE **TOTAL = 954.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout Sidewalk Removal	954	Roundabout Quantities

203-02000 EXCAVATION, COMMON **TOTAL = 1,544.00 CYS**

Calculations:

Location	Area (SYS)	Volume (CYS)
Roundabout Cut - Assume 9 IN	6173	1544

203-02070 BORROW **TOTAL = 3,419.00 CYS**

Calculations:

Location	Area (SYS)	Volume (CYS)
Roundabout Fill - Assume 1.5 FT	6838	3419

207-08263 SUBGRADE TREATMENT, TYPE IA **TOTAL = 5,986.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout New 12" PCCP	5986	Roundabout Quantities

207-08267 SUBGRADE TREATMENT, TYPE IIIA **TOTAL = 101.00 SYS**

Calculations:

Location	Area (SYS)	
Ewing Drive #14	57	Roundabout Quantities
Superior Drive #1	27	
Superior Drive #2	17	

302-06464 SUBBASE FOR PCCP **TOTAL = 1,497.00 CYS**

Calculations:

* 0.75' Depth

Location	Area (SYS)	Volume (CYS)	
Roundabout New 12" PCCP	5986	1497	Roundabout

502-06329 PCCP, 12 IN **TOTAL = 4,634.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout New 12" PCCP	4634	Roundabout Quantities

502-06457	**PCCP, 9 IN**	**TOTAL =**	**221.00 SYS**

Calculations:

Truck Apron at Roundabout

Location	Area (SYS)	
Roundabout Truck Apron	221	Roundabout Quantities

604-91531 SIDEWALK, CONCRETE, 4 IN **TOTAL = 1,495.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout Sidewalk	1495	Roundabout Quantities

605-06090 CURB, INTEGRAL, CONCRETE **TOTAL = 2,878.00 LFT**

Calculations:

For Concrete Pavement

Location	Length (LFT)	
Roundabout Island Curb	1222	Roundabout Quantities
Roundabout EOP Curb	1656	

610-09108 PCCP FOR APPROACHES, 9 IN **TOTAL = 101.00 SYS**

Calculations:

Location	Area (SYS)	
Ewing Drive #14	57	Roundabout Quantities
Superior Drive #1	27	
Superior Drive #2	17	

621-06570 TOPSOIL **TOTAL = 184.00 CYS**

Calculations:

* Assumed Depth of Fill = 0.33'

Location	Area (SYS)	Volume (CYS)
Roundabout Sodding	1665	184

621-06575 SODDING, NURSERY **TOTAL = 1,665.00 SYS**

Calculations:

Location	Area (SYS)	
Roundabout Sodding	1665	Roundabout Quantities

622-02564	**LANDSCAPING**	**TOTAL =**	**1.00 LS**

Calculations:

Roundabout Landscaping

622-05650 PLANT, DECIDUOUS TREE, SINGLE STEM, OVER 2 TO 2.5 IN TOTAL = 33.00 EACH

Calculations:

Location	EACH	
Roundabout	33	Roundabout Quantities

715-05149	**PIPE, TYPE 2 CIRCULAR 12 IN**	**TOTAL =**	**390.00 LFT**

Calculations:

Location	Length (LFT)	
Roundabout	390	Roundabout Quantities

715-05151	**PIPE, TYPE 2 CIRCULAR 15 IN**	**TOTAL =**	**340.00 LFT**

Calculations:

Location	Length (LFT)	
Roundabout	340	Roundabout Quantities

715-05152	**PIPE, TYPE 2 CIRCULAR 18 IN**	**TOTAL =**	**600.00 LFT**

Calculations:

Location	Length (LFT)	
Roundabout	600	Roundabout Quantities

720-45045	**INLET, J10**	**TOTAL =**	**6.00 EACH**

Calculations:

Location	EACH	
Roundabout	6	Roundabout Quantities

720-45250	**CATCH BASIN, K10**	**TOTAL =**	**12.00 EACH**

Calculations:

Location	EACH	
Roundabout	12	Roundabout Quantities

720-45410	**MANHOLE, C4**	**TOTAL =**	**9.00 EACH**

Calculations:

Location	EACH	
Roundabout	9	Roundabout Quantities

801-06775	MAINTAINING TRAFFIC	TOTAL =	1.00 LS

Calculations:

3% of Cost Estimate

807-03951 LIGHT POLE, ORNAMENTAL **TOTAL = 15.00 EACH**

Calculations:

Location	Each	
Roundabout Lighting	15	Roundabout Quantities