



5 June 2020

Mark Witsman, PE  
Town Engineer  
Town of McCordsville  
6280 W 800 N  
McCordsville, Indiana 46055

Re: Town of McCordsville, Indiana  
Mount Comfort Road CSX Railroad Crossing  
Proposal for Preliminary Planning Services

Dear Mr. Witsman:

The Mount Comfort Road Corridor is crucial to the future growth and development of McCordsville. The Town recognizes the importance of improving the condition at the existing CSX railroad crossing on Mount Comfort Road just north of State Route 67. In order to help the Town of McCordsville discern the solution that works best for the community, we propose to provide preliminary planning services as described below.

### **Scope of Work**

1. Collection and Review of Existing Information
  - a. Review the current versions of the analysis for the bridge and the at-grade options as prepared by A&F Engineering and provided by the Town
  - b. Perform a desktop study pertaining to underground and overhead utilities (including the fiber optic cable along the east side of the road) within the study limits based on information provided by the Town
  - c. Develop an understanding of future capital projects currently planned by the Town within the project area, including impacts on the potential project corridor
  - d. Review any currently known plans for future private development within the project area as provided by the Town
  - e. Site visit and reconnaissance by no more than two members from McMillen Jacobs.
  - f. Information gathered in this task will be integrated into deliverables described in tasks below.
  
2. Preparation of a Base Map for Preliminary Planning Purposes Only
  - a. Utilize the base mapping previously created by A&F Engineering for the evaluation of the bridge alternative; if the Town decides to proceed with further design development of any of the alternatives, a topographic survey and corresponding base mapping will be required at that time.
  - b. Supplement the A&F base map with information from the as-built drawings provided by the Town for the previous project designed by Crossroad Engineers
  - c. The deliverable will consist of a base map that will be used to develop plan and profile views of each alternative. The base map will include roads, property limits, utilities, and other significant features.

3. Geotechnical Investigation
  - a. Obtain three geotechnical borings reasonably close to the CSX crossing to provide an understanding of the geology that will be encountered to construct an underpass; three borings are necessary to consider alignment alternatives on both sides of the existing Mt. Comfort Road.
  - b. Each boring will be drilled to 50 feet below the existing ground surface.
  - c. Each boring will require both standard in-situ testing and laboratory testing, and information will be logged in the field by the firm performing the borings.
  - d. The deliverable will consist of a geotechnical data report to be used by the project planning team for developing both the underpass and the bridge options.
  
4. Optimization of Underpass Alternative
  - a. Using the concepts McMillen Jacobs shared with the Town during the 20 May 2020 presentation as a starting point, underpass options will be studied in terms of constructability, compliance with Indiana Department of Transportation criteria, and our understanding of the Town's needs.
    - i. Qualitative evaluation of a horizontal alignment offset east of the existing Mt. Comfort Rd. versus a horizontal alignment offset west of Mt. Comfort Rd. and determine the better alignment based on a qualitative comparison only; the purpose of this step is to identify which offset alignment provides the more desirable route to continue studying in item 4.a.ii.
    - ii. Evaluate and qualitatively compare the feasibility of the one selected offset alignment at 30mph versus 40mph according to INDOT design speed criteria
    - iii. Evaluate and qualitatively compare the feasibility of a horizontal alignment within the existing right-of-way for Mt. Comfort Road at 30mph versus 40mph.
    - iv. Identify the one preferred alignment for further design development to 10% Line, Grade, and Typical Section in Task 5; subtasks 4.a.ii. and 4.a.iii. described above generate four conceptual options for the underpass but only one will be chosen to advance to 10% design in Task 5.
  - b. Present findings and recommendations to the Town Engineer, Director of Planning, and the Town Council Public Works Committee chair in a workshop setting via Microsoft Teams
  - c. The deliverable will consist of a technical memorandum documenting the findings from the optimization exercise and subsequent decisions made during the workshop.
  
5. Development of Alternatives to a 10% Line, Grade, and Typical Sections
  - a. Underpass Alternative
    - i. Plan of horizontal alignment utilizing the base map identified above in Item 2
    - ii. Profile view of underpass alignment
    - iii. Development of three typical sections (under tracks, south of tracks, and north of tracks)
    - iv. Limited hydrology and hydraulics to allow for identification of a conceptual storm water pump station and possible detention pond only; hydrology will consist of determining the approximate drainage area contributing to the storm water pump station and using the rational formula to establish the flow rate; the flow rate will be used to determine pump size (assume Town will provide the sample plan set for the underpass project in Ohio; also, assume the Town will provide existing and future flow rate in the existing sanitary sewer on S. Railroad Street to allow for conceptual sizing of sanitary pump station)
    - v. Identify the necessary utility relocations

- vi. Identification of land acquisition necessary to construct the underpass option and creation of a list of other key issues to address if the Town decides to select this alternative for further design development
  - b. Bridge Alternative
    - i. Plan of horizontal alignment utilizing the base map identified above in Item 2
    - ii. Profile view of bridge alignment
    - iii. Development of three typical sections (south of tracks, north of tracks, and elevation along profile of structure over tracks)
    - iv. Identify a bridge structure type and verify the AREMA clearance for a bridge over the tracks
    - v. Identify the necessary utility relocations
    - vi. Identification of land acquisition necessary to construct the bridge and creation of a list of other key issues to address if the Town decides to select this alternative for further design development
  - c. At-Grade Alternative
    - i. Plan of horizontal alignment utilizing the base map identified above in Item 2 (A profile of this alternative is probably not necessary or helpful right now so will not be provided.)
    - ii. Development of one typical section
    - iii. Identification of land acquisition necessary to construct the at-grade solution and creation of a list of other key issues to address if the Town decides to select this alternative for further design development
6. Preliminary Traffic Engineering
- a. Prepare a literature review and summary of past traffic studies pertaining to the Mt. Comfort Rd. corridor in the immediate vicinity of the intersection of SR 67 and the CSX railroad crossing with and emphasis on the following:
    - i. Delays at the CSX railroad crossing during the morning and afternoon peak hours
    - ii. Long-term level of service capacity of the intersection at SR 67
    - iii. Estimated time savings for motorists with an Underpass/Overpass versus an at-grade crossing
  - b. The deliverable will be in the form of a technical memorandum and the key findings integrated into the Alternatives Evaluation Report in Task 7
7. Evaluation of Alternatives and Recommendation to Town
- a. Quantitative Evaluation
    - i. Prepare an engineer's opinion of probable construction cost (OPCC) for the underpass, bridge, and at-grade alternatives; the OPCC will be based on a Class 4 cost estimate per the recommended practices of AACE and account for utility relocations, pump stations, and land acquisition.
    - ii. Identify and quantify any on-going Operations & Maintenance costs associated with each alternative (i.e. annual bridge inspections, bridge painting program, pump station operation, etc.)
    - iii. Prepare a preliminary construction schedule for the underpass, bridge, and at-grade alternatives
  - b. Qualitative Evaluation
    - i. Identify advantages and disadvantages of each alternative
    - ii. Develop a system to score each alternative based on the Town's priorities for this project; Director of Planning and Town Engineer will obtain approval of scoring criteria from Town Council

- c. Present findings and conclusions to Town Engineer and Director of Planning at a workshop via Microsoft Teams
  - d. The deliverable will consist of a technical report that documents the findings and recommendations in addition to any decisions made during the workshop
  - e. Assist the Town Engineer and Director of Planning present findings to the Town Council
    - i. Prepare PowerPoint presentation describing the evaluation of alternatives and recommendation
    - ii. Attend the Town Council meeting; attendees will include the project manager from McMillen Jacobs, the design lead from McMillen Jacobs, and the design lead from A&F Engineering
8. “If Authorized” Value-Added Services
- a. 3D architectural renderings of Underpass Alternative based on engineering content developed in Revit and enhanced using architectural rendering software
  - b. 3D architectural renderings of the Bridge Alternative based on engineering content developed in Revit and enhanced using architectural rendering software

**Schedule for Preliminary Planning Services\*\***

The milestone dates and main tasks with corresponding duration are presented below. A more detailed schedule is attached to this letter proposal.

<u>Event / Milestone / Task Description</u>	<u>Start Date</u>	<u>Finish Date</u>
Notice-to-Proceed	6 July 2020	N/A
Collect and Review Existing Information	7 July 2020	31 July 2020
Prepare Base Map	7 July 2020	17 July 2020
Geotechnical Investigation	22 June 2020*	14 August 2020
Optimization of Underpass Alternative	20 July 2020	21 August 2020
Underpass Optimization Workshop with Town Staff	18 August 2020	N/A
Develop Alternatives to 10% Line, Grade, and Typical	3 August 2020	16 Sept 2020
Preliminary Traffic Engineering	7 July 2020	16 Sept 2020
Evaluations of Alternatives	17 Sept 2020	23 Oct 2020
Evaluations Workshop with Town Staff	20 October 2020	N/A
Submit Final Deliverables	6 November 2020	N/A
Prep for Presentation to Town Council	28 December 2020	8 January 2021
Assist Town Staff with Presentation to Town Council	12 January 2021	N/A

Note \*\* Regarding Schedule: The overall schedule is based on finalizing the contract during June 2020 and receiving a notice-to-proceed from the Town by Monday, 6 June 2020. The final schedule will be adjusted using the actual notice-to-proceed date and the current durations shown for each task.

Note \* Regarding Schedule: The consultant team is requesting a separate early authorization of the geotechnical investigation in order to meet the schedule shown in this proposal.

### **Compensation and Fee**

The table below describes the proposed fee to perform the Preliminary Planning Services.

<b><u>Scope Items</u></b>	<b><u>Lump Sum Amount</u></b>
Base Services (Scope Items 1 through 7):	
Collection & Review of Existing Information	\$6,250
Preparation of Base Map	\$5,100
Geotechnical Investigation	\$23,550
Optimization of Underpass Options	\$28,850
Development of Alternatives to 10% Design	\$61,100
Preliminary Traffic Engineering	\$16,500
Evaluation of Alternatives	\$56,300
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<b>Subtotal for Base Services</b>	<b>\$197,650</b>
“If Authorized” Services:	
3D Rendering of Underpass Alternative	\$5,000
3D Rendering of Bridge Option	\$4,500
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<b>Subtotal for “If Authorized” Services</b>	<b>\$9,500</b>
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<b>Total Lump Sum Fee</b>	<b>\$207,150</b>

McMillen Jacobs looks forward to helping the Town of McCordsville with their discernment process regarding this infrastructure challenge. Please contact me at your convenience if you have any questions or comments regarding the proposed scope, schedule, and fee. I am available via telephone at (216) 285-9685 (office) or (216) 513-7067 (mobile), and via e-mail at [dombroski@mcmjac.com](mailto:dombroski@mcmjac.com).

Best regards,



Kenneth Leo Dombroski, PE, MPA  
Central Region Vice President