

REQUEST FOR PROPOSAL

RFP # 21-20

E. Medical Center Drive Bridge Rehabilitation and Widening Project

City of Ann Arbor
Public Services Area - Engineering



Due Date: July 6, 2021 by 2:00 p.m. (local time)

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal is to select a firm, or firms, to provide professional Project Management and Design Engineering services for the E. Medical Center Drive Bridge Rehabilitation and Widening Project.

B. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

All questions regarding this Request for Proposal (RFP) shall be submitted via e-mail. Questions will be accepted and answered in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before June 22, 2021 at 10:00 a.m., and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to Michael G. Nearing, P.E., Senior Project Manager, mnearing@a2gov.org.

RFP Process and Compliance questions shall be e-mailed to Colin Spencer, Buyer - CSpencer@a2gov.org

Should any prospective offeror be in doubt as to the true meaning of any portion of this RFP, or should the prospective offeror find any ambiguity, inconsistency, or omission therein, the prospective offeror shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this RFP will be made only as an official addendum that will be posted to a2gov.org and MITN.info and it shall be the prospective offeror's responsibility to ensure they have received all addenda before submitting a proposal. Any addendum issued by the City shall become part of the RFP and must be incorporated in the proposal where applicable.

C. PRE-PROPOSAL MEETING

No pre-proposal meeting will be held for this RFP. Please contact staff indicated above with general questions regarding the RFP.

D. PROPOSAL FORMAT

To be considered, each firm must submit a response to this RFP using the format provided in Section III. No other distribution of proposals is to be made by the prospective offeror. An official authorized to bind the offeror to its provisions must sign the proposal in ink. Each proposal must remain valid for at least ninety days from the due date of this RFP.

Proposals should be prepared simply and economically providing a straightforward, concise description of the offeror's ability to meet the requirements of the RFP. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal.

E. SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system as shown in Section III. A selection committee comprised of staff from the City will complete the evaluation.

The fee proposals will not be reviewed at the initial evaluation. After initial evaluation, the City will determine top proposals, and open only those fee proposals. The City will then determine which, if any, firms will be interviewed. During the interviews, the selected firms will be given the opportunity to discuss their proposal, qualifications, past experience, and their fee proposal in more detail. The City further reserves the right to interview the key personnel assigned by the selected offeror to this project. If the City chooses to interview any respondents, the interviews will be tentatively held the **week of July 19th**. Offeror must be available on these dates.

All proposals submitted may be subject to clarifications and further negotiation. All agreements resulting from negotiations that differ from what is represented within the RFP or in the proposal response shall be documented and included as part of the final contract.

F. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before, July 6, 2021 at 2:00 p.m. (local time). Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each respondent must submit in a sealed envelope

- **one (1) original proposal**
- **five (5) additional proposal copies**
- **one (1) digital copy of the proposal preferably on a USB/flash drive as one file in PDF format**

Each respondent must submit in a single separate sealed envelope marked Fee Proposal

- **two (2) copies of the fee proposal**

The fee proposal and all costs must be separate from the rest of the proposal.

Proposals submitted must be clearly marked: **“RFP No. 21-20 – E. Medical Center Drive Bridge Rehabilitation and Widening Project”** and list the offeror's name and address.

Proposals must be addressed and delivered to:
City of Ann Arbor
c/o Customer Service
301 East Huron Street
Ann Arbor, MI 48107

All proposals received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

Hand delivered bids may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall. The City will not be liable to any prospective offeror for any unforeseen circumstances, delivery, or postal delays. Postmarking on the due date will not substitute for receipt of the proposal. Offerors are responsible for submission of their proposal. Additional time will not be granted to a single prospective offeror. However, additional time may be granted to all prospective offerors at the discretion of the City.

A proposal may be disqualified if the following required forms are not included with the proposal:

- **Attachment C - City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment D - City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment E - Vendor Conflict of Interest Disclosure Form of the RFP Document**

Proposals that fail to provide these forms listed above upon proposal opening may be deemed non-responsive and may not be considered for award.

Please provide the forms outlined above (Attachments C, D and E) within your narrative proposal, not within the separately sealed Fee Proposal envelope.

All proposed fees, cost, or compensation for the services requested herein should be provided in the separately sealed Fee Proposal envelope only.

G. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a proposal is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

H. TYPE OF CONTRACT

A sample of the Professional Services Agreement is included as Appendix A. Those who wish to submit a proposal to the City are required to review this sample agreement carefully. **The City will not entertain changes to its Professional Services Agreement.**

The City reserves the right to award the total proposal, to reject any or all proposals in whole or in part, and to waive any informality or technical defects if, in the City's sole judgment, the best interests of the City will be so served.

This RFP and the selected offeror's response thereto, shall constitute the basis of the scope of services in the contract by reference.

I. NONDISCRIMINATION

All offerors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Attachment C shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

J. WAGE REQUIREMENTS

The Attachments provided herein outline the requirements for payment of prevailing wages or of a "living wage" to employees providing service to the City under this contract. The successful offeror must comply with all applicable requirements and provide documentary proof of compliance when requested.

K. CONFLICT OF INTEREST DISCLOSURE

The City of Ann Arbor Purchasing Policy requires that the consultant complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected offeror unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may be awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Conflict of Interest Disclosure Form is attached.

L. COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the offeror prior to the execution of a Professional Services Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, offeror agrees to bear all costs incurred or related to the preparation, submission, and selection process for the proposal.

M. DEBARMENT

Submission of a proposal in response to this RFP is certification that the Respondent is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

N. PROPOSAL PROTEST

All proposal protests must be in writing and filed with the Purchasing Manager within five (5) business days of the award action. The offeror must clearly state the reasons for the protest. If an offeror contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the offeror to the Purchasing Manager. The Purchasing Manager will provide the offeror with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee, whose decision shall be final.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by the offeror to initiate contact with anyone other than the Designated City Contacts provided herein that the offeror believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

O. SCHEDULE

The proposals submitted should define an appropriate schedule in accordance with the requirements of the Proposed Work Plan in Section III.

The following is the schedule for this RFP process:

Activity/Event	Anticipated Date
Written Question Deadline	June 22, 2021, 10:00 a.m.
Addenda Published (if needed)	June 28, 2021
Proposal Due Date	July 6, 2021, 2:00 p.m. (Local Time)
Tentative Interviews (if needed)	Week of July 19, 2021
Selection/Negotiations	Week of July 26, 2021
Expected City Council Authorization	Monday, September 20, 2021
Receive Bids	Late Fall 2022

The above schedule is for information purposes only and is subject to change at the City's discretion.

P. IRS FORM W-9

The selected offeror will be required to provide the City of Ann Arbor an IRS form W-9.

Q. RESERVATION OF RIGHTS

1. The City reserves the right in its sole and absolute discretion to accept or reject any or all proposals, or alternative proposals, in whole or in part, with or without cause.
2. The City reserves the right to waive, or not waive, informalities or irregularities in of any proposal if determined by the City to be in its best interest.
3. The City reserves the right to request additional information from any or all offerors.
4. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested within RFP.
5. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or a revised scope be implemented.
6. The City reserves the right to select one or more consultants to perform services.
7. The City reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the firm of the conditions contained in this RFP, unless clearly and specifically noted in the proposal submitted.
8. The City reserves the right to disqualify proposals that fail to respond to any requirements outlined in the RFP, or failure to enclose copies of the required documents outlined within RFP.

R. ENVIRONMENTAL COMMITMENT

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote, and encourage the City's commitment to the environment.

The City encourages potential vendors to bring forward emerging and progressive products and services that are best suited to the City's environmental principles.

SECTION II - SCOPE OF SERVICES

BACKGROUND

The City of Ann Arbor (City), in conjunction with the University of Michigan (UM), wishes to undertake the design of the widening and rehabilitation of the E. Medical Center Drive Bridge over the Michigan Line (the Bridge.)

It is the City's intent to widen and improve the Bridge in order to return it to a State of Good Repair and prolong its life for the foreseeable future. We also must be sensitive to the many vital daily activities and functions that occur at the University of Michigan Regional Medical Center (Medical Center) as part of the design and proposed construction activities. The continued, uninterrupted, service to the hospital is of paramount importance in designing and detailing the repairs to the bridge. The maintenance of both vehicular and pedestrian traffic to, and around, the hospital, and the surrounding university community shall be a "first consideration" as part of all design efforts.

East Medical Center Drive is a collector street in the City of Ann Arbor. The Bridge carries a four-lane road and is located immediately south of the East Medical Center Drive/Fuller Road intersection and north of the East Medical Center Drive/West Medical Center Drive intersection. The road is the primary access to the Medical Center. The three-span bridge was constructed in 1982 with twelve rolled steel wide flange beams with welded cover plates and a composite, reinforced concrete deck. The bridge length is 160'-0" from reference line to reference line with an out-to-out width of 70'-11 ¼" and an approximate skew of 36° left. The alignment of East Medical Center Drive is in a horizontal curve across the bridge. To accommodate the curve, the alignment of the beams changes direction at both piers. The Bridge's cross section includes two sidewalks, four vehicular lanes of traffic consisting of three northbound lanes (right turn, through and left turn lanes) and one southbound lane, with 3-tube steel railings mounted to the top of concrete parapet railings. The clear roadway width is 47'-0". There is a deck expansion joint device located above the south pier and a rubber seal joint located above the north pier. The existing substructure consists of two, reinforced concrete stub abutments and two, reinforced concrete, column bent piers with crash walls. The abutment substructure units are supported on piles and the two piers are supported on spread footings.

The Bridge is now being inspected every twelve months due to its deteriorating condition. A copy of the October 2020 bridge condition and assessment report detailing its overall condition assessment is contained in Attachment "A" to this Request for Proposal document.

As part of the pre-design investigation and project scoping activities associated with this project, a Type, Size, and Location Study (TSL) was prepared for this bridge. A copy of this TSL is also included in Attachment "A." The TSL looked at two widening options, one each for the east and west side of the bridge, also investigated was a deck replacement and deep overlay option. As part of the TSL, various elements of the project work were

studied as well. Relocation of several fiber optic, co-axial, and other communication cables is also required as part of the project's work and will be described in more detail below. Also, given the minimal vertical clearance of the bridge, and the failed condition of the existing paint on the bridge beams, the possibility of removing and replacing the steel beams was investigated as it is believed to be extremely difficult to re-paint the existing beams over the railroad tracks. Given the frequency of trains using the Michigan Line, it appears that there are positive constructability elements associated with removing the beams from the sub-structure, storing them on a location on-site, and cleaning and coating, and re-assembling them on the sub-structure once the pier caps have been replaced. Finally, given the minimal under clearance that exists, it appears possible to slightly increase the height of the pier caps and/or pier columns in order to improve the under clearance to the extent allowed by the roadway touchdown points.

This City also desires as part of a possible future intersection capacity improvement project associated with the Fuller Road/Maiden Lane/E. Medical Center Drive intersection to create a network of Non-motorized (NM) Paths under the E. Medical Center Drive/Fuller Road/Maiden Lane bridges. Existing concrete sidewalk/NM Paths already exist at each of these bridges under the structures. The overarching objective with these existing path segments is to create a connection between the Border-to-Border (B2B) Trail in this area that will allow users of the B2B trail to cross Fuller Road without having to enter vehicular traffic streams. A future pedestrian bridge over the Huron River is contemplated as part of this future project and it tentatively planned to be sited somewhere westerly of the existing Maiden Land bridge. A preliminary plan layout of this path network has been created and is contained within the project's files. As part of the planned work on the Bridge, it will be necessary to widen and lengthen the existing concrete path located under the bridge to accommodate this future pathway project. The future path is to be fourteen (14') wide in its finished state. The design and construction of retaining walls will most probably be necessary to accommodate the widened path. The Consultant shall provide the necessary resources in their proposal to design this path segment.

In order to perform the planned work on the Bridge, it will be necessary to design extensions to the existing bridge abutments and piers, additional retaining walls, and grading all as necessary and as approved by the City in order to support the planned improvements described herein and contain them within existing rights-of-way, or within right-of-way to be acquired by the City.

Finally, it will also be necessary to determine and depict on the project plans appropriate construction staging areas for this work. Note, it is **not** possible to use any of the existing parking areas located along East or West Medical Center Drive, or any other University parking areas or roadways, to facilitate this work. It may be possible to utilize existing lawn areas along Fuller Road and portions of Fuller Park if appropriate restoration measures are undertaken as part of the project's work. Collaboration and coordination by the chosen Consultant with City of Ann Arbor Park's personnel will be required.

University of Michigan Fiber Optic Communications Cable Relocations

As part of this project, it will be necessary to investigate, design, and detail the relocation of several critical fiber optic, co-axial, and other communications cables that run through the existing bridge. These communications lines will be temporarily relocated to facilitate the planned widening and rehabilitation work of this bridge and then be replaced in the bridge as construction progresses. These communications lines are vital to the operation of the Medical Center, the Kellogg Eye Center, the UM's Central and North Campuses, other research facilities, hospitals, and related operations. The loss of communication between the hospital and any of these facilities is unacceptable. Consequently, the chosen Consultant will be responsible to fully investigate and understand the existing communication system and its operating parameters, the precise location horizontally and vertically of all conduits leading to and away from the bridge, what type of data each cable carries and its origin and destination, design the relocation of the facilities such that uninterrupted (or interrupted to the extent allowed by authorized University personnel) service is constantly maintained. It is expected that as part of the project's construction, University ITS Staff will be responsible for providing fiber optic cables, installing cables and related materials in the constructed duct banks, readying the cables for operation, splicing cables, circuit moves and activations, and all other work needed to place the cables in operation. All needed coordination between the City, University Staff, and the Contractor (via the contract plans and detailed specifications) to facilitate the seamless relocation and restoration of the cables in the final bridge structure is to be included as part of the design work associated with this project.

The use of state or federal funds for this project is not planned or expected. All work will be performed in accordance with the applicable American Association of State and Highway Transportation Officials (AASHTO), American Railway and Maintenance-of-way Association (AREMA), National Railroad Passenger Corporation (Amtrak), City of Ann Arbor, and UM, and Michigan Department of Transportation (MDOT) Standards as applicable and as approved by the City and UM. Contract documents and Detailed Specifications will be prepared in City of Ann Arbor format that detail the work and its requirements. All plans and specifications shall meet the City's complete satisfaction and will be required to be prepared by the chosen Consultant.

SCOPE OF WORK

All improvements shall be designed in accordance with the applicable AASHTO, City of Ann Arbor, AREMA, ADA, Amtrak, MDOT, and any other applicable and relevant standards.

We are now seeking proposals from qualified professional engineering consulting firms to provide the necessary design services for the preparation of plans and specifications to competitively bid and construct these improvements.

In general, the following items will need to be addressed by the consulting firm, in accordance with Section III of this request. The City of Ann Arbor intends to competitively bid this project through its Procurement Unit in late Fall 2022:

1. The Lead Consultant shall manage all aspects of the project design up to the award of the construction contract(s) for the project. This includes but, is not limited to; managing all aspects of the project, including the work of all sub-consultants and project coordination with all affected agencies. **The Project Manager must ensure the timely and effective delivery of the project design, as well as provide oversight and detailed, thorough, and comprehensive review and recommendation for acceptance by the City/UM of all project deliverables.** The Project Manager will be responsible for the overall review and coordination of the contract documents in order to ensure preparation of plans that are detailed, thorough, and accurate and meet all the requirements of the City of Ann Arbor and the UM. This task requires the services of a professional project manager(s) to ensure uninterrupted progress of the project.
2. Prepare a complete, detailed, ground survey of the entire construction influence area. The area of detailed ground survey shall be as shown in Attachment "A" of this request for proposals. The detailed ground survey may be augmented by aerial photography outside of the detailed topographic survey limits, however, aerial photography will not be the primary tool in developing the topographic survey for the project. The Consultant shall at a minimum, provide the following items in their proposed scope of work; locate all trees 6" in diameter or greater and provide the genus and cultivar (if applicable) breakdown; locate all cultural features within the requested survey boundaries; provide a survey with 1' contour intervals; locate all "breaklines" and other features as necessary to develop accurate contours; provide detailed spot elevations at all existing sidewalk and sidewalk ramp areas; and, provide all survey work to national map accuracy standards; locate all existing property irons and monuments within the survey limits; and, precisely locate all existing public and private utilities. Special attention shall be provided to ascertaining the existing locations of the fiber optic, co-axial, and other communications ducts and cables that exist within the existing bridge structure and surrounding areas. All survey work shall be performed in accordance with the City of Ann Arbor Public Services Area's Standards and its Geodetic Control Manual.

3. Design live loading for the bridges shall be HS-25. Review and critique proposed sub- and superstructure members from the Study. Propose refinements for constructability, cost savings, or other reasons, as necessary. The Consultant shall also perform a load rating of the completed bridge structure design prior to bidding the project. The load rating shall be performed using LRFR methodology. Provide a complete set of all calculations, computer input/output files, and any other supporting documentation for City review and acceptance and inclusion in MiBRIDGE.
4. Retaining walls will be required for this project. The Consultant shall propose a minimum of three different types of wall systems to be used on this project. Also, different retaining wall systems may be used and/or required in different locations of the project. The selection criteria shall be based on aesthetics, constructability, and/or cost.
5. Perform a complete and detailed geotechnical evaluation and analysis to determine the properties of the existing soils throughout the construction influence area for the purposes of evaluating sub-structure and roadway design needs.
6. Gather and review information pertaining to existing public and private utilities and determine the **precise** location, both horizontally and vertically, of all existing utilities. Obtain record drawings from the private utility companies. Coordinate all aspects of the proposed work with the UM and the private utility companies. A schematic layout of the known communications cables is contained within the TSL Study as part of Attachment A.” Where critical crossings of utilities are believed to exist, or the elevation(s) of existing utilities may significantly affect the design of the proposed bridge, utilities, roadways, retaining walls, and the like, test holes shall be dug to determine the precise location, both horizontally and vertically of these points. The Consultant shall arrange for these test holes to be dug and shall make arrangements to have the necessary inspection and survey personnel on hand to observe, locate, and verify the results of each excavation.
7. All drawings shall be prepared to City of Ann Arbor Public Services Area Drafting Standards or MDOT Standards as approved by the City of Ann Arbor. All drawings shall be prepared using Civil 3D 2021 software. The City of Ann Arbor shall be provided with one complete set of plans in their native format and portable document format (.pdf) when they are completed on a “flash drive” of sufficient capacity. The Consultant shall also provide native and .pdf copies of all supporting documentation, including, but not limited to; contract documents; project specifications; load rating calculations; cost estimates; and the like.
8. Provide geometric designs for the main line roadways and the intersecting streets in accordance with all AASHTO and City of Ann Arbor Standards. It is expected that the current roadway alignment will be followed to the extent practicable considering the proposed widening of the bridge structure to be undertaken. The inclusion of on-street bikelanes is not being proposed at this time. Propose typical cross-sections for the

roadway as needed to fit the existing site and proposed conditions created as part of the final design.

9. Two lanes of traffic and one sidewalk shall be open and available for vehicular and pedestrian traffic at all times as part of the project's work. The Consultant shall perform an operational analysis of E. Medical Center Drive and the roadways around the perimeter of the Medical Center using Highway Capacity Manual methods. The Consultant shall be responsible to propose maintenance of traffic schemes that minimize delay at the E/W Medical Center Drive intersection; the E. Medical Center Drive/Cancer Center Drive intersection; and the Fuller Road/Maiden Lane/E. Medical Center Drive intersections. Coordination of the existing traffic signals shall be provided as part of the maintenance of traffic schemes to facilitate traffic flow to the extent practicable.

The proposed closure of any streets must be approved by the City/University prior to traffic maintenance plans being prepared and developed.

Prepare complete, detailed, and accurate traffic control plans to construct the project based on the optimized intersection maintenance of traffic schemes and the overall detour route.

10. Prepare pavement marking plans to ensure safety of motorists and pedestrians. This shall include the re-striping of any streets affected by project maintenance of traffic routes.
11. Prepare visual aids and attend at least five meetings to coordinate the design of the project with other City Departments, University of Michigan staff, Michigan Medicine staff, City Council, and other formal and informal committees as needed.
12. Prepare complete, detailed, and accurate construction plans and specifications meeting the requirements of the City of Ann Arbor Public Services Area and the University of Michigan in order to satisfactorily complete the project.
13. Provide the design of retaining walls, railings, barriers, and guardrails, as necessary, to construct the planned roadway, sidewalk, and path alignments.
14. Prepare all plans necessary to meet pertinent City of Ann Arbor requirements. For example, Natural Features Protection Plans, Soil Erosion, Grading, Landscaping and Planting plans, etc. These requirements can be found in Chapter 57 of the City of Ann Arbor Code of Ordinances. The requirements of the City of Ann Arbor Code of Ordinances shall take precedence over all other MDOT standard practices.
15. Coordinate **all** elements of the design with all affected parties, including, but not limited to; Amtrak, various City Service Areas and Units, University of Michigan, MDOT Office

of Rail, private utility companies, other formal and informal committees, and the public in general.

16. Schedule and chair design progress meetings to be held on a bi-monthly basis. This is to include a design kick-off meeting in which all affected parties to the design will be contacted and invited to attend. Prepare and distribute meeting minutes for all progress and coordination meetings.
17. Prepare complete, thorough, detailed, and accurate contract documents including plans, specifications, bid forms, etc. to allow the project to be advertised and bid through the City of Ann Arbor's Procurement Unit. It is expected that the project will be bid in late-Fall 2022.

Design Details

In general, the Consultant shall prepare to City of Ann Arbor Standards, plan and profile sheets, at a horizontal scale of 1" = 20' and a vertical scale of 1" = 2' for all work. Other plans, such as General Plan of Site and General Plan of Structure, structure plans, sections, and elevations; retaining wall layout and profile views; traffic control drawings; intersection enlargement plans; typical cross-sections, cross-sections, details, etc. shall be drawn at scales as approved by **the City** in order to properly complete the work of the project. The following is a brief overview of the major or critical elements of the work:

1. Design Speed: E. Medical Center Drive: 30 mph.
2. Design Vehicle: WB-40 (unless otherwise directed)
3. Horizontal Alignment: The proposed horizontal alignment(s) shall follow those as contained in the TSL. It is expected that the currently proposed alignments will be reviewed, evaluated, and adjusted, if needed, in order to obtain the optimal final design. The use of on-street bike lanes is not being proposed at this time.
4. Vertical Alignment: Minimum longitudinal grade shall be 1.0%. Maximum longitudinal grade shall be 5%. The proposed vertical alignment(s) shall be studied for adjustment in order to allow for additional vertical clearance of the bridge over the existing railroad tracks to the extent practicable.
5. Typical Cross-Sections: It is expected that the current roadway and bridge cross-sections will be reviewed, evaluated, and adjusted, as needed, in order to obtain the optimal final design.
6. Drainage:

Provide enclosed conduit drainage systems. All drainage systems shall be designed and/or evaluated to accommodate a 10-year design storm, except as otherwise required by the City of Ann Arbor.

7. General Design Standards: Incorporate the AASHTO Policy on Geometric Design of Highways and Streets (2018); AASHTO Standard Specifications for Highway Bridges, 17th Edition; American Railway Engineers Association Standards (current edition); Amtrak Design Standards; the MDOT Design Guide; MDOT Standard Specifications for Construction (2020); ADA accessibility standards; the City of Ann Arbor Code of Ordinances; and the City of Ann Arbor Public Services Department Standard Specifications (current edition).

8. Intersection Enlargement Plans: All roadway intersections shall be detailed to include roadway centerline grades, curb grades as measured at the edge of metal, sidewalk and sidewalk ramp grades, any other large miscellaneous paved areas, and other areas as directed by the City. These drawings shall be drawn at scales as approved by the City, but in no case shall they be smaller than 1" = 10'.

These drawings shall take into consideration the effects of "part-width" construction and shall be adequately dimensioned to allow key elevations, or dimensions, to be obtained without calculation.

9. Soil Erosion, Grading, Natural Features Protection Plans, and other Miscellaneous Plans: These plans shall be prepared in accordance with the appropriate Chapters of the City of Ann Arbor Code of Ordinances, and as approved by the Project Engineer and/or the appropriate City Departments.

10. Soil Investigation: The Consultant shall employ a qualified geotechnical engineer to perform a detailed, comprehensive soil investigation, the cost of which shall be detailed separately in the proposal. Soil borings shall be taken at frequencies as determined by the Consultant, and as agreed to by the

City, all as necessary to ensure an adequate representation of site soil conditions.

A minimum of two borings at all proposed substructure units will also be required; the depth of these borings shall be approved by the City. Where retaining walls are to be installed, the Consultant shall propose, for City approval, soil boring locations and depths sufficient to properly design these structures. All soil borings shall be performed to a depth of at least 5' below any proposed structure or utility.

A Temporary Permit of Entry (TPE) will need to be obtained by the Prime and Geotechnical Consultants to be able to enter upon the MDOT Railroad Right-of-way. The Consultants shall be responsible to obtain the needed TPE from Amtrak.

As part of the soil investigation, the Consultant shall determine if any areas exist where construction operations may damage existing structures, or adversely affect their foundations, e.g. existing fiber optic communications duct banks/conduits under and near E. Medical Center Drive, existing high pressure DTE/Michcon Gas Mains, existing 42" diameter Southside Interceptor Sanitary Sewer, etc.. If any areas are determined to exist, recommendations for the elimination or minimization of adverse effects to these areas shall be incorporated into the planned improvements.

Based on the soil investigation, the Consultant shall provide the City with recommendations as to the proper remediation of deleterious soils if encountered, by specifying suggested corrective measures which are then to be incorporated into the Contract Documents as work items.

All traffic control required to perform the soil borings and all related work shall be in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) and the City of Ann Arbor Design Standards. The Consultant shall also be responsible for coordinating this work with the Miss Dig network a minimum of 3 working days in advance of any underground activities. **The costs associated with providing traffic control plans, obtaining the necessary permits, and permit fees themselves shall be included in the proposal.**

All findings as produced as part of the soil investigation shall be provided in a bound report and made available for review and comment by the City.

11. Pavement Structural Design: The pavements shall be designed in accordance with the "Guide for Design of Pavement Structures" as published by AASHTO, and the City of Ann Arbor Design Standards. The pavements shall be designed for a service life of 20 years.
12. Contract Specifications: The Consultant shall be responsible for the preparation of a complete set of Contract Documents and all required Specifications meeting the complete satisfaction of the City of Ann Arbor and the University of Michigan.
13. Maintenance of Traffic: The construction of the roadways and bridges associated with this project will be performed under traffic. Provide construction signing plans and detour routes that meet all requirements of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) and the City of Ann Arbor. The traffic control plans shall ensure the efficient, safe, and orderly maintenance of vehicular and pedestrian traffic throughout the project and around the construction staging areas.

A minimum of one lane of vehicular traffic in each direction shall be maintained along the roadways within the limits of construction at all times. Pedestrian traffic along one side of the roadway (on a sidewalk) shall be maintained at all times as well. Work restrictions will be required for University of Michigan events such as home football and basketball games, commencement exercises, and other events. The construction operations must be carefully considered and planned during special events and in the preparation of these plans.
14. Coordination of Design: The Consultant shall coordinate **all** elements of the design with all affected parties, including, but not limited to; MDOT Office of Rail, Amtrak, various City Departments, University of Michigan, Private Utility Companies, other formal and informal committees, and the public in general.

15. Bi-monthly Progress Mtgs./Meeting Attendance: Schedule and chair design progress meetings to be held on a bi-monthly basis. This is to include a design kick-off meeting in which all parties affected by the design and construction of the project are invited to attend. Prepare and distribute meeting minutes for all progress and coordination meetings.

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

Offerors should organize Proposals into the following Sections:

- A. Professional Qualifications
- B. Past Involvement with Similar Projects
- C. Proposed Work Plan
- D. Fee Proposal (include in a separate sealed envelope clearly marked "Fee Proposal")
- E. Authorized Negotiator
- F. Attachments

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

A. Professional Qualifications – 20 points

1. State the full name and address of your organization and, if applicable, the branch office or other subsidiary element that will perform, or assist in performing, the work hereunder. Indicate whether it operates as an individual, partnership, or corporation. If as a corporation, include whether it is licensed to operate in the State of Michigan.
2. Include the name of executive and professional personnel by skill and qualification that will be employed in the work. Show where these personnel will be physically located during the time they are engaged in the work. Indicate which of these individuals you consider key to the successful completion of the project. Identify only individuals who will do the work on this project by name and title. Resumes and qualifications are required for all proposed project personnel, including all sub-contractors. Qualifications and capabilities of any sub-contractors must also be included.
3. State history of the firm, in terms of length of existence, types of services provided, etc. Identify the technical details that make the firm uniquely qualified for this work.

B. Past involvement with Similar Projects – 30 points

The written proposal must include a list of specific experience in the project area and indicate proven ability in implementing similar projects for the firm **and** the individuals to be involved in the project. A complete list of client references must be provided for similar projects recently completed. The list shall include the firm/agency name, address, telephone number, project title, and contact person.

C. Proposed Work Plan – 30 points

A detailed work plan is to be presented which lists all tasks determined to be necessary to accomplish the work of the project. The work plan shall include, but not be limited to, the objectives/tasks listed in Section II of the RFP. The work plan shall define all resources needed for each task (title and person hours) and staff persons completing the project element tasks. In addition, the work plan shall include a time line schedule depicting the sequence and duration of tasks showing how the work will be organized and executed.

The work plan shall be sufficiently detailed and clear to identify the progress milestones, i.e. when project elements, measures, and deliverables are to be completed. Additional project elements suggested by the proposer to be necessary to the project are to be included in the work plan and identified as proposer-suggested elements.

Identify all of those, if any, who will be subcontracted to assist you with this project, and the extent of work for which they will be responsible. Include similar reference data for subcontractors and employees as requested above for the main proposer.

Include any other information that you believe to be pertinent but not specifically asked for elsewhere.

Offerors shall be evaluated on the clarity, thoroughness, and content of their responses to the above items.

D. Fee Proposal - 20 points

Fee schedules shall be submitted in a separate, sealed, envelope as part of the proposal. Fee quotations are to include the names, title, hourly rates, overhead factors, and any other details by which the overall and project element costs have been derived. The fee quotation is to relate in detail to each item of the proposed work plan, including the proposer-suggested project elements and proposer-suggested contingencies, if any. The consultants selected to be interviewed shall be capable of justifying the details of the fee proposal relative to personnel costs, overhead, how the overhead rate is derived, material, and time.

The fee proposed must include the total estimated cost for the project, when it is 100% completed. This total may be adjusted after negotiations with the City and prior to signing a formal contract, if justified. The Professional Services Agreement is included in Section IV of this RFP.

Fee proposals will only be opened for the firms that are going to be interviewed.

E. Authorized Negotiator

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City

F. Attachments

Legal Status of Offeror, Conflict of Interest Form, Living Wage Compliance Form, and the Non-Discrimination Form must be returned with the proposal. These elements should be included as attachments to the proposal submission.

PROPOSAL EVALUATION

1. The selection committee will evaluate each proposal by the above-described criteria and point system (A through C) to select a short-list of firms for further consideration. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview. The committee may contact references to verify material submitted by the offerors.
2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan and fee proposal.
3. The interview must include the project team members expected to complete a majority of work on the project, but no more than six members total. The interview shall consist of a presentation of up to thirty minutes (or the length provided by the committee) by the offeror, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.
4. The firms interviewed will then be re-evaluated by the above criteria (A through D), and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the offerors based on their proposals and fee schedules alone and open fee schedules before or prior to interviews.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

Work to be done under this contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents.

Any proposal that does not conform fully to these instructions may be rejected.

PREPARATION OF PROPOSALS

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper. Proposals should not be more than 30 sheets (60 sides), not including required attachments and resumes.

Each person signing the proposal certifies that they are a person in the offeror's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

If it becomes necessary to revise any part of the RFP, notice of the addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or the City of Ann Arbor web site www.A2gov.org for all parties to download.

Each offeror must acknowledge in its proposal all addenda it has received. The failure of an offeror to receive or acknowledge receipt of any addenda shall not relieve the offeror of the responsibility for complying with the terms thereof. The City will not be bound by oral responses to inquiries or written responses other than official written addenda.

SECTION IV - ATTACHMENTS

Attachment A – Supporting Engineering Documents

1. 2020 Bridge Inspection Report – DLZ Michigan, Inc. - February 19, 2021
2. Type, Size, and Location Study – Fishbeck - April 5, 2021 (this document includes the best available information with regard to the number and approximate location of the existing telecommunications cables within the existing E. Medical Center Drive bridge)
3. Survey Limits Drawing – City of Ann Arbor – May, 24, 2021

Attachment B - Legal Status of Offeror

Attachment C – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment D – Living Wage Declaration of Compliance Form

Attachment E – Vendor Conflict of Interest Disclosure Form

Attachment F – Non-Discrimination Ordinance Poster

Attachment G – Living Wage Ordinance Poster

ATTACHMENT A
SUPPORTING ENGINEERING DOCUMENTS



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

FINAL REPORT 2020 BRIDGE INSPECTION PROJECT

EAST MEDICAL CENTER DRIVE OVER NORFOLK SOUTHERN RAILROAD

CITY OF ANN ARBOR, MICHIGAN

Mark T. Lessens, P.E.
Registered Professional Engineer
State of Michigan No. 36092



Prepared For:

CITY OF ANN ARBOR, MICHIGAN

Prepared By:



DLZ Job No. 2041-7169-00

February 19, 2021

1425 Keystone Ave, Lansing, MI 48911-4039 | OFFICE 517.393.6800 | ONLINE WWW.DLZ.COM



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2020 Bridge Inspection Project
East Medical Center Drive over Norfolk Southern Railroad

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Structure Description

The existing bridge carrying East Medical Center Drive over Norfolk Southern Railroad is located in the City of Ann Arbor, Michigan. East Medical Center Drive is a collector street. The bridge carries a four lane road and is located immediately south of the East Medical Center Drive/Fuller Road intersection and north of the East Medical Center Drive/West Medical Center Drive intersection. The road is the primary access to the University of Michigan Hospital.

The three span bridge was constructed in 1982 with twelve rolled steel wide flange beams with welded coverplates and a composite, reinforced concrete deck. The bridge length is 160'-0" from reference line to reference line with an out-to-out width of 70'-11 ¼" and an approximate skew of 36° left. The alignment of East Medical Center Drive is in a horizontal curve across the bridge. To accommodate the curve, the alignment of the beams changes direction at both piers. The cross section includes two sidewalks, four lanes of traffic consisting of three northbound lanes (right turn, through and left turn lanes) and one southbound lane, with 3 tube steel railings mounted to the top of concrete parapet railings. The clear roadway width is 47'-0". There is a deck expansion joint device located above the south pier and a rubber seal joint located above the north pier.

The existing substructure consists of two, reinforced concrete stub abutments and two, reinforced concrete column bent piers with crashwalls. The abutment substructure units are supported on piles and the two piers are supported on spread footings.

Inspection Findings

The in-depth visual inspection of the bridge was performed on October 18, 2020. The overall condition of the structure is poor.

DECK AND SIDEWALKS

The concrete deck is in fair condition (**Photo 4**). There are multiple longitudinal and transverse cracks and several delaminated areas in the driving lanes and sidewalks. The largest area of concrete deterioration is present in the north span. The deck surface deterioration in the north span alone amounts to 45.4% of the area of the driving lanes. The acute angle corners of the deck have diagonal cracking at approximately 3' spacing.

The bottom side of the deck has approximately 5-10% of the total area consisting of spalls (some with exposed reinforcement), delaminations, cracks with moisture and efflorescence, and rust stains (**Photos 12 and 13**). The soffit of the east deck fascia has cracks with stalactites. The north span is in the worst condition which corresponds with the condition on the top of the deck. There is a concrete spall that has occurred along the west deck fascia above the south pier, and one of the anchor bolts for the light pole is exposed (**Photo 25**).

There is a concrete spall that has occurred along the east deck fascia above the north pier **(Photo 26)**.

The sidewalks are in fair condition. There is cracking, minor spalls and delaminations totaling 5.85% of the total sidewalk area (244.7 sft).

The expansion joints located over the piers are in poor condition. The glands are torn and debris filled **(Photo 7)**. The joints leak causing corrosion at the beam ends and end diaphragms located below. There are spalls along the concrete in the deck at the joints **(Photo 8)**.

STRINGERS

The existing structural steel is in fair condition overall, but poor condition at several beam ends, below the deck joints at the piers. The paint has failed throughout **(Photo 12)**. In locations where the paint is present, the top coat is blistering. The beam ends at the expansion joints are corroding, and there is measurable section loss at the ends or along the beams, including in the beam webs and the beam flanges **(Photos 15-16)**. The end diaphragms under the expansion joints also have corrosion with measurable section loss **(Photo 16)**.

ABUTMENTS

The abutments were found to be in good condition. The abutments have hairline cracks present. There were no concrete delaminations noted on either abutment **(Photos 17-18)**. Both abutments are covered with graffiti.

PIERS

The piers were found to be in fair to poor condition. The lower half of the south and north pier columns and the crashwalls are covered with graffiti. The south pier (Pier 1) has several areas of delaminated concrete on the south face and on the north face **(Photos 22-24)**.

The north pier (Pier 2) has several areas of delaminated concrete on both the south face and on the north face **(Photos 19-21)**. An area of bottom cap resteel is exposed and rusting. The concrete delaminations and spalled areas are primarily located on the pier cap, especially on the north face. The delaminations on the north face have reached the depth where the top edge (top surface of the pier cap) of the area is at the front corner of the skewed bearing plate **(Photo 16)**. This situation will need to be closely monitored and the addition of temporary supports may be warranted to assure the beam ends are supported in case additional concrete material is lost at the bearings.

MISCELLANEOUS FINDINGS

The bridge railings are in fair condition with vertical cracking at approximately 5' increments **(Photo 9)**. The northwest, northeast, and southeast railing end walls have spalled concrete and exposed anchor bolts **(Photo 10)**.

The bearings are in fair condition. The east fascia beam bearing pad (Beam M) at the south pier (Pier 1), north span, is tilting south. For cold weather conditions, the bearing should be positioned vertical or tilted inward to the north. There is no evidence of bulging or distress in the elastomeric bearing pad. The portion of the east fascia beam bearing that is visible at the north abutment (Abutment B) on the corresponding beam appears to be upright. The bearing tilt may be a result of incorrect positioning during construction or due to longitudinal grade on the bridge sloping south.

The concrete approach sidewalk in the northeast quadrant of the bridge is heavily cracked.

There is heavy vegetation present in all quadrants. There are trees growing through the slope paving.

The HMA approach pavements are in good condition with most cracks sealed (*Photos 2 and 3*).

See Appendix A for the updated Bridge Safety Inspection Report which details the condition of numerous bridge elements.

Bridge Compliance with Current Standards

The bridge has the following feature that does not meet current standards:

- The 3-Tube parapet mounted galvanized steel railings are not approved, crash tested railings that satisfy AASHTO and MDOT standards.
- Guardrail – the approach guardrail does not have standard anchorages or terminals.

Load Rating Analysis

DLZ prepared a computer model of this structure using AASHTOWare Bridge Rating software (BrR) for the purpose of completing load rating calculations. Existing beam conditions obtained during the field inspection, including deterioration at the beam ends/bearings (webs) and along the length of the beams (bottom flange) were included in the model. This software is specifically written to load rate structures, and includes all 28 Michigan Legal trucks, as well as the design vehicles. The results of the computer analysis indicate that all Rating Factors (RF's) are above 1.0, which indicates the bridge has the capacity to carry all Michigan legal live loads and the bridge does not require live load restrictions. The Assumption and Summary forms in MiBridge were updated to reflect the new modeling effort and the output from the program. The BrR computer model can be revised, as necessary, to reflect any future deterioration or repairs made to load carrying members, or changes in geometry or dead loads.

Recommendations

The inspection of the East Medical Center Drive Bridge found the structure to be in fair to poor condition. We understand that a rehabilitation project is currently being considered for this structure but is also on hold. There are several repairs that should be completed in the short-term (noted as High Priority, below) if a major

reconstruction or rehabilitation project is postponed beyond 1-2 years (beyond 2021-2022). Recommendations listed below are prioritized with low, medium, or high priority:

- Remove and replace the expansion and construction joints (High).
- Install beam end repairs, if determined to be needed based on the outcome of the Load Rating Analysis (TBD)
- Replace the pier cap at the north pier (Pier 2) (High).
- Perform substructure repairs at the south pier (Pier 1) (High).
- Paint the existing structural steel (High).
- Remove vegetation overgrowth from all quadrants and slope paving (High).
- Place a deep overlay on the deck travel surface and complete full depth deck patching, as needed (Medium).
- Remove and replace the bridge railings and install approach guardrail to satisfy AASHTO standards (Medium).
- Chip and patch areas of delaminated concrete on the bridge sidewalks (Low).

The joints are in poor condition and do not perform as they were designed. Removing and replacing the leaking expansion joints located over the piers is the highest priority. The leaking joints cause deterioration of the steel, rusting of the bearings, failure of the paint system, and deterioration of the pier caps, columns and crashwalls. Some diaphragms located under the joints may warrant replacement due to deterioration caused by the leaking deck joints.

The current inspection found 575 sft of delaminations at the pier caps and columns. If substructure deterioration exceeds 30% of the structural element, replacement is advised. The areas of delamination are over 40% of the north pier cap over 15% of the south pier cap. The north pier cap deterioration warrants replacement. The south pier cap can be repaired at this time. However, if the joint replacements are not performed, pier cap deterioration will continue and replacement of both pier caps may be warranted.

The structural steel is in fair condition with a failed paint system and heavy surface rust and some section loss at the beam ends. MDOT guidelines recommend complete painting be performed when steel beams have greater than 15% of the existing paint area failing. This structure has the majority of the top coat peeling or missing thus warranting coating and cleaning of the steel. It may be acceptable and more feasible to perform zone painting at the beam ends at the piers due to the difficulty of painting over active train tracks. Painting the structure will extend the life of the bridge by providing protection to the primary load carrying members of the bridge.

Remove vegetation overgrowth in all quadrants and in the slope paving. The vegetation encroaches on the structure and prohibits full access using reach-all equipment. In addition, vegetation traps moisture at the bridge which could contribute to the corrosion of the steel superstructure and deterioration of the paint system.

From our field inspection and the SI&A traffic counts, it is evident that this roadway is heavily traveled by both vehicular and pedestrian traffic. It is our opinion that the safety of this structure could be improved by replacing the substandard railing and guardrail. The existing railing is substandard and has spalled concrete with exposed anchor bolts in the northwest, northeast, and southeast quadrants. The railing and guardrail replacement can be postponed; however, if other items of work are being performed, it is economical to perform these repairs as well. However, rehabilitation of the railings similar to what was completed on the Fuller Road and Maiden Lane bridges in 2015, is feasible and may be more desirable than complete replacement.

Summary of Repair Costs

A breakdown of the cost of the recommended repairs is shown in Appendix C. The estimated cost to remove vegetation, repair slope paving, replace the deck joints, replace railings and guardrail, paint structural steel, complete pier cap replacement, substructure repairs, removal of existing latex overlay and placement of a deep overlay and approach work is \$3,883,000.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2020 Bridge Inspection Project
East Medical Center Drive over Norfolk Southern Railroad

APPENDIX A - SI&A and BSIR Forms

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

BRIDGE SAFETY INSPECTION REPORT

Facility E MEDICAL CENTER	Latitude / Longitude 42.2858 / -83.7321	MDOT Structure ID 814021200000R01	Structure Condition Poor Condition(4)	
Feature NORFOLK SOUTHERN RR	Length / Width / Spans 160 / 70.9 / 3	Owner City: ANN ARBOR(0212)		
Location 0.9 MI E OF US-23 BR	Built / Recon. / Paint / Ovly. 1982 / / 1982 / 1982	TSC Brighton(3)	Operational Status A Open, no restriction(A)	
Region / County University(6) / Washtenaw(81)	Material / Design 3 Steel / 32 Multi Str Comp	Last NBI Inspection 10/18/2020 / OVJS	Scour Evaluation N Not Over Waterway	

NBI INSPECTION

OVJS

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Mark Lessens	DLZ Michigan, Inc.	12	10/18/2020

GENERAL NOTES

Due to the poor condition of the north pier cap, the bridge deck and the leaking deck joints, it is recommended to maintain the inspection frequency at 12 months.

Detailed inspection completed using MDOT reach all, traffic control and Amtrak flagger. Completed on a Sunday to limit impacts to motoring public, which was very successful.

Remove vegetation and trees in all quadrants.

NS/Amtrak Contractor Safety Orientation Training required prior to detailed inspection. Railroad flagging required during detailed inspection.

DECK

10/17 10/19 10/20

	10/17	10/19	10/20	
1. Surface (SIA-58A)	5	5	5	<p>Longitudinal and transverse full depth cracking and delaminated areas and spalls. Heaviest concentration of delaminations in the north span. Diagonal cracking at skewed ends spaced at 3'. Approx. 1152 sft of surface defects, or approx. 12% of the deck and sidewalk areas. Some HMA patches noted. (10/20)</p> <p>Longitudinal and transverse full depth cracking and delaminated areas and spalls. Heaviest concentration of delaminations in the north span. Diagonal cracking at skewed ends spaced at 3'. Approx. 1152 sft of surface defects, or approx. 12% of the deck and sidewalk areas. Some HMA patches noted. (10/19)</p> <p>Longitudinal and transverse full depth cracking and delaminated areas and spalls. Heaviest concentration of delaminations in the north span. Diagonal cracking at skew ends spaced at 3'. Approx. 1152 sft of surface defects noted, or approx. 12% of the deck and sidewalk areas. (10/17)</p>
2. Expansion Joints	4	4	4	<p>Leaking below onto pier and beam ends. Joints are debris filled and partially broken. Spalls and delaminations along joint. East end at curb line is spalled and filled with debris. Light is visible through the joint from below the bridge. Areas of joint header move under traffic load. (10/20)</p> <p>Leaking below onto substructure. Joints are debris filled and partially broken. Spalls and delaminations along joint. East end at curb line is spalled and filled with debris. Light is visible through the joint from below the bridge. (10/19)</p> <p>Leaking below onto substructure. Joints are debris filled and partially broken. Spalls along joint. East end at curb line is spalled and filled with debris. Light is visible through the joint from below the bridge. (10/17)</p>
3. Other Joints	5	5	5	<p>Leaking below joints at north pier onto beam ends and pier. Joint filler present at north pier. Joint is broken at north reference line. Large spall at south reference line joint. (10/20)</p> <p>Leaking below joints. Joint filler present at north pier. Joint is broken at north reference line. Large spall at south reference line joint. (10/19)</p> <p>Leaking below joints. Joint filler present at north pier. Joint is broken at north reference line. Large spall at south reference line joint. (10/17)</p>
4. Railings	6	6	6	<p>The concrete railing has vertical cracks with some rust staining and is spalled at the steel tube connections to the concrete end wall at all quadrants. (10/20)</p> <p>The concrete railing has vertical cracks with some rust staining and is spalled at the steel tube connections to the concrete end wall at all quadrants. (10/19)</p> <p>The concrete railing has vertical cracks with some rust staining and is spalled at the steel tube connections to the concrete end wall at the SE, NE and NW quadrants. (10/17)</p>

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

BRIDGE SAFETY INSPECTION REPORT

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

5. Sidewalks or Curbs	5	5	5	Cracking and minor spalls. Several large areas of delaminated concrete on sidewalks. Some leaching and rust stains. Differential settlement at reference lines in NW and NE quadrants. (10/20) Cracking and minor spalls. Several large areas of delaminated concrete on sidewalks. Some leaching and rust stains. Differential settlement at reference lines in NW and NE quadrants. (10/19) Cracking and minor spalls. Several large areas of delaminated concrete totaling 1.43% of sidewalk area. Some leaching and rust stains. Differential settlement at reference lines in NW, SW, and SE quadrants. (10/17)
6. Deck Bottom Surface (SIA-58B)	5	5	5	Many leaching cracks, wet areas, delaminated and spalled concrete areas. Several areas of exposed reinforcement. (10/20) Many leaching cracks, wet areas, delaminated and spalled concrete areas. Several areas of exposed reinforcement. (10/19) Leaching cracks, delaminated and spalled areas. Several areas of exposed reinforcement. (10/17)
7. Deck (SIA-58)	5	5	5	Multiple cracks, spalls, and delaminated areas totaling 12% of the deck area. Largest concentration of deterioration is in the north span. Diagonal cracking at skew ends spaced at 3'. Approx. 1152 sft of surface defects noted, or approx. 12% of the deck and sidewalk areas. (10/20) Multiple cracks, spalls, and delaminated areas totaling 12% of the deck area. Largest concentration of deterioration is in the north span. Diagonal cracking at skew ends spaced at 3'. Approx. 1152 sft of surface defects noted, or approx. 12% of the deck and sidewalk areas. (10/19) Multiple cracks, spalls, and delaminated areas totaling 12% of the deck area. Largest concentration of deterioration in the north span. Diagonal cracking at skew ends spaced at 3'. Approx. 1152 sft of surface defects noted, or approx. 12% of the deck and sidewalk areas. (10/17)
8. Drainage				(10/20) (10/19) (10/17)

SUPERSTRUCTURE

	10/17	10/19	10/20	
9. Stringer (SIA-59)	5	5	5	Most of the beam ends at joints have corrosion. Diaphragms under joints have corrosion, surface rust and paint failure. These diaphragms are non-structural secondary members. The majority of the beam length, away from the beam ends at the piers, are in good condition. The north span beams away from the north pier joint have more corrosion than other spans. (10/20) Beam ends at joints are rusted. Diaphragms under joints have minor deterioration, surface rust and paint failure. These diaphragms are non-structural secondary members. (10/19) Beam ends at joints are rusted. Diaphragms under joints have minor deterioration, surface rust and paint failure. These diaphragms are non-structural secondary members. (10/17)
10. Paint (SIA-59A)	5	4	4	Paint system has failed. Top coat is blistering in areas where it has not peeled off. Paint failure exceeds 15%. (10/20) Paint system has failed. Top coat is blistering in areas where it has not peeled off. Paint failure exceeds 15%. (10/19) Paint system has failed. Top coat is blistering in areas where it has not peeled off. Paint failure exceeds 15%. (10/17)
11. Section Loss	2	2	1	Beam ends at both piers have heavy surface rust with section loss. (10/20) Beam ends have heavy surface rust with minor section loss. (10/19) Beam ends have heavy surface rust with minor section loss. (10/17)
12. Bearings	6	6	6	Paint cracking due to movement on elastomeric pads. Rusted sole plates at Pier 2. Minor deformation in some elastomeric pads at piers. (10/20) Paint cracking due to movement on elastomeric pads. Rusted sole plates at Pier 2. Minor deformation in some elastomeric pads at piers. (10/19) Paint cracking due to movement on elastomeric pads. Rusted sole plates at Pier 2. Minor deformation in some elastomeric pads at piers. (10/17)

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0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

SUBSTRUCTURE

	10/17	10/19	10/20	
13. Abutments (SIA-60)	7	7	7	Few hairline cracks. Graffiti covered surface. No delaminations found. (10/20) Few hairline cracks. Graffiti covered surface. No delaminations found. (10/19) Few hairline cracks. Graffiti covered surface. No delaminations found. (10/17)
14. Piers (SIA-60)	4	4	4	Cracked, spalled and delaminated concrete totaling 260 sft for south pier (Pier 1) and 290 sft for north pier (Pier 2). Exposed bottom steel in north pier cap. Graffiti covered surface. Water on surfaces from leaking joints above. Vertical cracks in 2nd column from east end in south pier. (10/20) Cracked, spalled and delaminated concrete totaling 260 sft for south pier (Pier 1) and 290 sft for north pier (Pier 2). Exposed bottom steel in north pier cap. Graffiti covered surface. Water on surfaces from leaking joints above. Vertical cracks in 2nd column from east end in south pier. (10/19) Cracked, spalled and delaminated concrete totaling 260 sft for south pier (Pier 1) and 290 sft for north pier (Pier 2). Exposed bottom steel in north pier cap. Graffiti covered surface. (10/17)
15. Slope Protection	7	7	7	Trees growing in slope paving. Slope paving is steep. (10/20) Trees growing in slope paving. Slope paving is steep. (10/19) Trees growing in slope paving. Slope paving is steep. (10/17)
16. Channel (SIA-61)	N	N	N	(10/20) (10/19) (10/17)
17. Scour Inspection	N	N	N	(10/20) (10/19) (10/17)

APPROACH

	10/17	10/19	10/20	
18. Approach Pavement	7	7	7	No patches on south approach, some sealed cracks. North approach has some cracks but is in good condition. (10/20) No patches on south approach, some sealed cracks. North approach has some cracks but is in good condition. (10/19) No patches on south approach, some cracking. North approach has been replaced recently and is in good condition. (10/17)
19. Approach Shoulders Sidewalks			6	HMA patches and spalls in SE, NE, and NW quadrants. Elevation difference between the approach curb line and bridge sidewalk exceeds 1" in NW, SW and SE quadrants. (10/20) HMA patches and spalls in SE, NE, and NW quadrants. Elevation difference between the approach curb line and bridge sidewalk exceeds 1" in NW, SW and SE quadrants. (10/19) Sidewalk in SE quadrant has been repaired. HMA patches and spalls in SE, NE, and NW quadrants. Elevation difference between the approach curbline and bridge sidewalk exceeds 1" in NW, SW and SE quadrants. (10/17)
20. Approach Slopes				(10/20) (10/19) (10/17)
21. Utilities				Lights along bridge on west and east sides. Plans indicate conduits in sidewalks. (10/20) Lights along bridge on west and east sides. (10/19) Lights along bridge on west and east sides. (10/17)
22. Drainage Culverts				(10/20) (10/19) (10/17)

MISCELLANEOUS

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

BRIDGE SAFETY INSPECTION REPORT

Facility E MEDICAL CENTER	Latitude / Longitude 42.2858 / -83.7321	MDOT Structure ID 814021200000R01	Structure Condition Poor Condition(4)	
Feature NORFOLK SOUTHERN RR	Length / Width / Spans 160 / 70.9 / 3	Owner City: ANN ARBOR(0212)		
Location 0.9 MI E OF US-23 BR	Built / Recon. / Paint / Ovly. 1982 / / 1982 / 1982	TSC Brighton(3)	Operational Status A Open, no restriction(A)	
Region / County University(6) / Washtenaw(81)	Material / Design 3 Steel / 32 Multi Str Comp	Last NBI Inspection 10/18/2020 / OVJS	Scour Evaluation N Not Over Waterway	

Guard Rail

<u>Item</u>	<u>Rating</u>
36A. Bridge Railings	0
36B. Transitions	0
36C. Approach Guardrail	0
36D. Approach Guardrail Ends	0

Other Items

<u>Item</u>	<u>Rating</u>
71. Water Adequacy	N
72. Approach Alignment	8
Temporary Support	0 No Temporary Supports
High Load Hit (M)	No
Special Insp. Equipment	
Underwater Insp. Method	0

False Decking (Timber) Removed to Complete Inspection

N/A - No False Decking

Critical Feature Inspections (SIA-92)

	<u>Freq</u>	<u>Date</u>
92A. Fracture Critical		
92B. Underwater		
92C. Other Special		
92D. Fatigue Sensitive		

MICHIGAN DEPARTMENT OF TRANSPORTATION

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STRUCTURE INVENTORY AND APPRAISAL

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

Bridge History, Type, Materials	
27 - Year Built	1982
106 - Year Reconstructed	
202 - Year Painted	1982
203 - Year Overlay	1982
43 - Main Span Bridge Type	3 32
44 - Appr Span Bridge Type	
77 - Steel Type	5
78 - Paint Type	2
79 - Rail Type	3
80 - Post Type	3
107 - Deck Type	1
108A - Wearing Surface	3
108B - Membrane	0
108C - Deck Protection	1

Structure Dimensions	
34 - Skew	36
35 - Struct Flared	N
45 - Num Main Spans	3
46 - Num Apprs Spans	0
48 - Max Span Length	62
49 - Structure Length	160
50A - Width Left Curb/SW	10.5
50B - Width Right Curb/SW	10.5
33 - Median	0
51 - Width Curb to Curb	46.9
52 - Width Out to Out	70.9
112 - NBIS Length	Y

Inspection Data	
90 - Inspection Date	10/18/2020
91 - Inspection Freq	12
92A - Frac Crit Req/Freq	N
93A - Frac Crit Insp Date	
92B - Und Water Req/Freq	N
93B - Und Water Insp Date	
92C - Oth Spec Insp Req/Freq	N
93C - Oth Spec Insp Date	
92D - Fatigue Req/Freq	N
93D - Fatigue Insp Date	
176A - Und Water Insp Method	0
58 - Deck Rating	5
58A/B - Deck Surface/Bottom	5 5
59 - Superstructure Rating	5
59A - Paint Rating	4
60 - Substructure Rating	4
61 - Channel Rating	N
62 - Culvert Rating	N

Navigation Data	
38 - Navigation Control	N
39 - Vertical Clearance	0
40 - Horizontal Clearance	0
111 - Pier Protection	
116 - Lift Brgd Vert Clear	0

Route Carried By Structure(ON Record)	
5A - Record Type	1
5B - Route Signing	5
5C - Level of Service	0
5D - Route Number	00000
5E - Direction Suffix	0
10L - Best 3m Unclr-Lt	0 0
10R - Best 3m Unclr-Rt	99 99
PR Number	
Control Section	
11 - Mile Point	0
12 - Base Highway Network	1
13 - LRS Route-Subroute	0000018392 04
19 - Detour Length	2
20 - Toll Facility	3
26 - Functional Class	14
28A - Lanes On	4
29 - ADT	17220
30 - Year of ADT	2014
32 - Appr Roadway Width	46.9
32A/B - Ap Pvt Type/Width	5 47.01
42A - Service Type On	5
47L - Left Horizontal Clear	0.0
47R - Right Horizontal Clear	46.9
53 - Min Vert Clr Ov Deck	99 99
100 - STRAHNET	0
102 - Traffic Direct	2
109 - Truck %	5
110 - Truck Network	0
114 - Future ADT	15356
115 - Year Future ADT	2030
Freeway	0

Structure Appraisal	
36A - Bridge Railing	0
36B - Rail Transition	0
36C - Approach Rail	0
36D - Rail Termination	0
67 - Structure Evaluation	4
68 - Deck Geometry	2
69 - Underclearance	6
71 - Waterway Adequacy	N
72 - Approach Alignment	8
103 - Temporary Structure	
113 - Scour Criticality	N

Miscellaneous	
37 - Historical Significance	5
98A - Border Bridge State	
98B - Border Bridge %	0
101 - Parallel Structure	N
EPA ID	
Stay in Place Forms	
143 - Pin & Hanger Code	
148 - No. of Pin & Hangers	

Route Under Structure (UNDER Record)	
5A - Record Type	
5B - Route Signing	
5C - Level of Service	
5D - Route Number	
5E - Direction Suffix	
10L - Best 3m Unclr-Lt	
10R - Best 3m Unclr-Rt	
PR Number	
Control Section	
11 - Mile Point	
12 - Base Highway Network	
13 - LRS Route-Subroute	
19 - Detour Length	
20 - Toll Facility	
26 - Functional Class	
28B - Lanes Under	
29 - ADT	
30 - Year of ADT	
42B - Service Type Under	2
47L - Left Horizontal Clear	
47R - Right Horizontal Clear	
54A - Left Feature	
54B - Left Underclearance	99 99
54C - Right Feature	
54D - Right Clearance	99 99
Under Clearance Year	
55A - Reference Feature	R
55B - Right Horiz Clearance	18
56 - Left Horiz Clearance	0
100 - STRAHNET	
102 - Traffic Direct	
109 - Truck %	
110 - Truck Network	
114 - Future ADT	
115 - Year Future ADT	
Freeway	

Proposed Improvements	
75 - Type of Work	36 1
76 - Length of Improvement	656.2
94 - Bridge Cost	2062
95 - Roadway Cost	0
96 - Total Cost	2062
97 - Year of Cost Estimate	2017

Load Rating and Posting	
31 - Design Load	9
41 - Open, Posted, Closed	A
63 - Fed Oper Rtg Method	6
64F - Fed Oper Rtg Load	2.56
64MA - Mich Oper Rtg Method	6
64MB - Mich Oper Rtg	1.61
64MC - Mich Oper Truck	17
65 - Inv Rtg Method	6
66 - Inventory Load	1.53
70 - Posting	5
141 - Posted Loading	
193 - Overload Class	

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

WORK RECOMMENDATIONS

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

WORK RECOMMENDATIONS

OVJS

Inspector Name	Agency / Company Name	Insp. Freq.	Insp. Date
Mark Lessens	DLZ Michigan, Inc.	12	10/18/2020

RECOMMENDATIONS & ACTION ITEMS

Recommendation Type	Priority	Description
Brush Cut	H	Remove vegetation overgrowth from all quadrants and slope paving.
Railing Repair	M	Remove and replace bridge railings. Repair tube railings to concrete end wall attachment bolts.
Joint Repair	H	Replace all deck joints
Deep Overlay	M	Place concrete deck overlay or replace deck.
Full Paint	H	Paint structure, at least at joints (zone paint) ASAP.
Super Repair	L	Chip and patch areas of delaminated concrete on bridge sidewalks.
Substr Repair	H	Replace north pier cap and make substructure repairs to south pier cap and column.
Other	M	Upgrade guardrail anchorage.

MICHIGAN DEPARTMENT OF TRANSPORTATION

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LOAD RATING ASSUMPTIONS

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

Rating Considers Field Condition of Members: Yes Inspection Date: 10/18/2020

Deterioration:

Beam Deterioration (2020 Inspections): Span 1: Beam Webs = 25% Section Loss, 2' Length at Beam Ends (Pier 1) Beam Bottom Flange = 10% Section Loss, half span length (North half of span) Span 2: Beam Webs = 25% Section Loss, 2' Length at Beam Ends (Pier 1 and Pier 2) Beam Bottom Flange = 10% Section Loss, half span length (South half of span) Span 3: Beam Webs = 25% Section Loss, 2'

Most Recent Year Construct / Reconstruct / Overlay: 1982

History of Work Impacting Load Rating:

None..

Superstructure Component: 3 Steel Beam fy: 50.0 ksi Beam f'c / fb: ksi

Composite: Yes Number of Beams: 12 Shop Drawings Verified: No

Beam Size(s) & Names (each span): Span 1: W27x94 w/ bottom flange cover plate; 55'-0 9/16". Span 2: @27x102 w/ bottom flange cover plate; 61'-8 5/8". Span 3: W27x84; 42'-7 1/16".

Deck: Thickness (in.): 9.0 Fy / f'c: 60.0 / 3.0 ksi Deck Design Load > H15: Yes

Wearing Surface: Mat'l: Thickness (in.): Unit Weight (pcf.):

	LEFT	CENTER	RIGHT
Barrier: Type / Weight (plf.):	Steel/Conc / 506.0	/	Steel/Conc / 506.0
Sidewalk: Width / Thick (in.):	141.13 / 12.3	/	144.13 / 12.3

Clear Roadway (ft.):

Additional Loads:

Diaphragms: third points in spans 1 and 2; midspan in Span 3. 0.325k max diaphragm load

Unique Factors That Affect Capacity:

8 1/2" x 3/4" cover plate on bottom of beams, Span 1 8 1/2" x 1" cover plate on bottom of beams, Span 2

Analyzed By: Carrie Hamel Date: 01/18/2021

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

LOAD RATING SUMMARY

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)
Feature	Length / Width / Spans	Owner	
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)	
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway



Compliance Issue: None
Compliance Verified: No
Analysis Program: AASHTOWare Bridge Rating (BrR)
Analysis Program Version: 6.8.4.3001
Rating Considers Field Condition of Members: Yes **Inspection Date:** 10/18/2020

Controlling component and failure mode:

Span 2, strength, Beam 2W, midspan, Design Flexure-Steel, Truck 17 (64MB). Span 3, serviceability, Beam 12W, midspan, Design Flexure-Steel, HS-20 (64F).

NEW INVENTORY CODING

NBI Item 63 - Operating Rating Method 6 LFR in Rating Factor
NBI Item 64F - Federal Operating Ratings 2.56
MDOT Item 64MA - Michigan Operating Method 6 LFR in Rating Factor
MDOT Item 64MB - Michigan Operating Rating 1.61
MDOT Item 64MC - Michigan Operating Truck 17
NBI Item 65 - Inventory Rating Method 6 LFR in Rating Factor
NBI Item 66 - Federal Inventory Rating 1.53
NBI Item 41 - Structure Open Posted Closed A A Open, no restriction
NBI Item 70 - Bridge Posting 5 5 - 100% or more
Posted By No Posting
MDOT Item 141 - Posted Loading
MDOT Item 193A - Michigan Overload Class
MDOT Item 193C - Overload Status
Analyzed By: Carrie Hamel **Date:** 01/18/2021
Checked By: Mark Lessens **Date:** 01/22/2021

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

OUTSTANDING WORK

Facility E MEDICAL CENTER	Latitude / Longitude 42.2858 / -83.7321	MDOT Structure ID 814021200000R01	Structure Condition Poor Condition(4)	
Feature NORFOLK SOUTHERN RR	Length / Width / Spans 160 / 70.9 / 3	Owner City: ANN ARBOR(0212)		
Location 0.9 MI E OF US-23 BR	Built / Recon. / Paint / Ovly. 1982 / / 1982 / 1982	TSC Brighton(3)	Operational Status A Open, no restriction(A)	
Region / County University(6) / Washtenaw(81)	Material / Design 3 Steel / 32 Multi Str Comp	Last NBI Inspection 10/18/2020 / OVJS	Scour Evaluation N Not Over Waterway	

WORK RECOMMENDATIONS

DECKS/SLABS

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Deep Overlay				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Place concrete deck overlay or replace deck. (Mark Lessens 11/03/2020)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Joint Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Replace all deck joints (Mark Lessens 11/03/2020)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Full Paint				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Paint structure, at least at joints (zone paint) ASAP. (Mark Lessens 11/03/2020)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Super Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments Chip and patch areas of delaminated concrete on bridge sidewalks. (Mark Lessens 11/03/2020)				

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Substr Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date
Comments				

MICHIGAN DEPARTMENT OF TRANSPORTATION

STR 11065

OUTSTANDING WORK

Facility	Latitude / Longitude	MDOT Structure ID	Structure Condition	
E MEDICAL CENTER	42.2858 / -83.7321	814021200000R01	Poor Condition(4)	
Feature	Length / Width / Spans	Owner		
NORFOLK SOUTHERN RR	160 / 70.9 / 3	City: ANN ARBOR(0212)		
Location	Built / Recon. / Paint / Ovly.	TSC	Operational Status	
0.9 MI E OF US-23 BR	1982 / / 1982 / 1982	Brighton(3)	A Open, no restriction(A)	
Region / County	Material / Design	Last NBI Inspection	Scour Evaluation	
University(6) / Washtenaw(81)	3 Steel / 32 Multi Str Comp	10/18/2020 / OVJS	N Not Over Waterway	

Replace north pier cap and make substructure repairs to south pier cap and column. (Mark Lessens 11/03/2020)

OTHER

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Brush Cut				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date

Comments
Remove vegetation overgrowth from all quadrants and slope paving. (Mark Lessens 11/03/2020)

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Railing Repair				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date

Comments
Remove and replace bridge railings. Repair tube railings to concrete end wall attachment bolts. (Mark Lessens 11/03/2020)

Request For	Contact/User	Agency/Company Name	Estimated Quantity	Unit
Other				
Activity	Material	Other Material	Actual Quantity	Unit
Personnel Hours	Equipment			Complete Date

Comments
Upgrade guardrail anchorage. (Mark Lessens 11/03/2020)



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2020 Bridge Inspection Project
East Medical Center Drive over Norfolk Southern Railroad

APPENDIX B - Photographs



Photograph No. 1
West Elevation Looking East



Photograph No. 2
South Approach Looking South



Photograph No. 3
North Approach Looking North



Photograph No. 4
View of Deck Looking North



Photograph No. 5

Newer Approach Pavement and Unfilled Joint at North Reference Line, Looking East



Photograph No. 6

Joint at Approach Pavement at South Reference Line, Looking East



Photograph No. 7
Spalling and Delamination along South Expansion Joint Looking East



Photograph No. 8
Loose South Expansion Joint



Photograph No. 9
Typical Vertical Cracking in Railing



Photograph No. 10
Spalling in Railing End Wall at the Northeast Quadrant



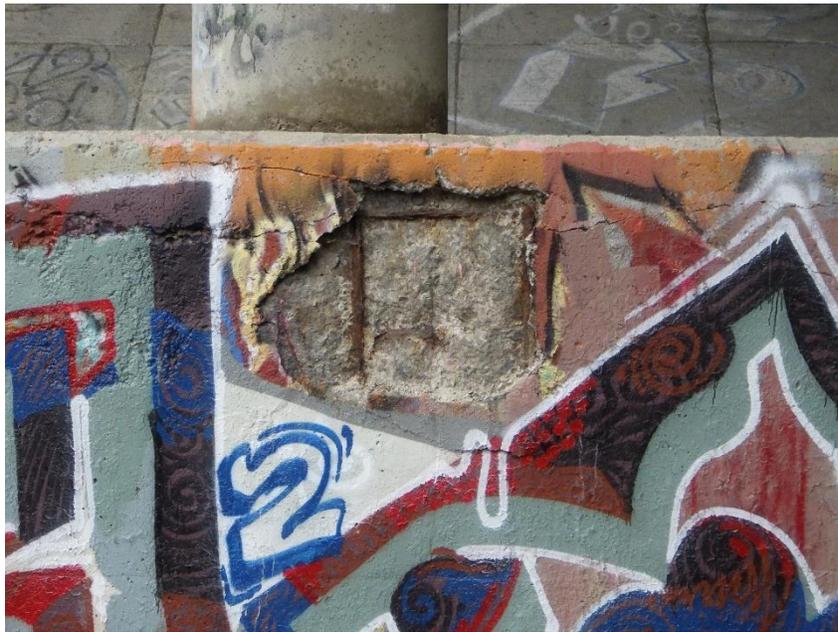
Photograph No. 11
Typical Cracking in Deck



Photograph No. 12
Delaminations on Bottom of Deck with Moisture, Leaching, and Exposed Rebar



Photograph No. 13
Spalled Concrete with Exposed Deteriorating Reinforcement on Bottom of Deck



Photograph No. 14
Spalled Crashwall and Exposed Reinforcement on North Side of South Pier under Column 2 (Pier 1)



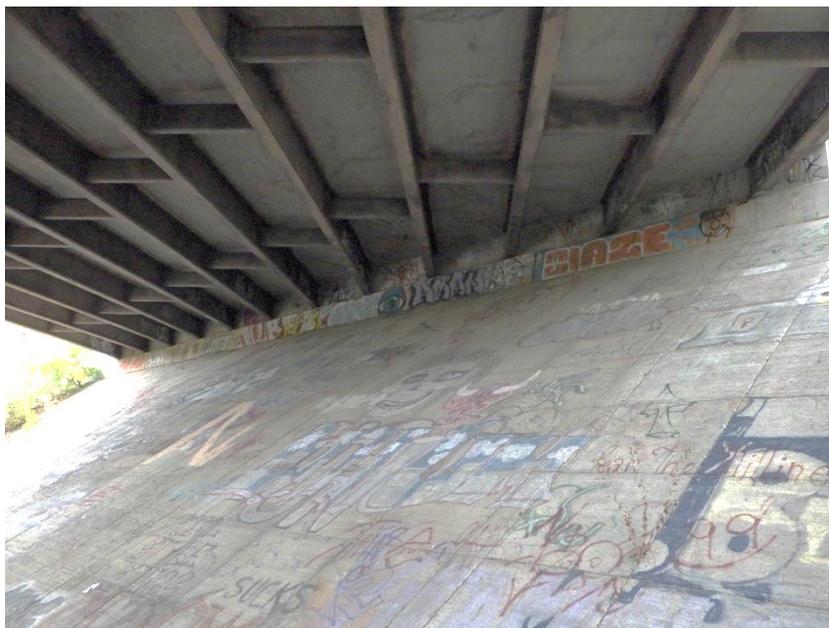
Photograph No. 15
Deteriorated Beam End and Diaphragm at Pier



Photograph No. 16
Location of Spall on North Face of North Pier at Edge of Bearing Pad



Photograph No. 17
North Abutment and Slope Paving



Photograph No. 18
South Abutment and Slope Paving



Photograph No. 19
South Side of North Pier (Pier 2)



Photograph No. 20
East Portion of North Side of North Pier (Pier 2)



Photograph No. 21
West Portion of North Side of North Pier (Pier 2)



Photograph No. 22
South Side of South Pier (Pier 1)



Photograph No. 23
North Side of South Pier (Pier 1)



Photograph No. 24
North Side of South Pier (Pier 1), Center Portion



Photograph No. 25
West Sidewalk Fascia Spall at South Pier



Photograph No. 26
East Deck Fascia Spall at North Pier



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2020 Bridge Inspection Project
East Medical Center Drive over Norfolk Southern Railroad

APPENDIX C – Repair Cost Estimate

2020

LAP - BRIDGE COST ESTIMATE WORKSHEET
- CPM, REHAB, REPLACE -

REV. 2/1/2020

OWNER: Ann Arbor FISCAL YEAR: 2020 DATE: 11/3/2020
 REGION: University LENGTH 160.0 Out to Out WIDTH 70.9 Curb to Curb WIDTH 46.9 ENGINEER:
 TSC: Brighton PR: #N/A MP: #N/A STRUCTURE ID: 11065
 BRIDGE ID: N/A
 LOCATION: E MEDICAL CENTER over NORFOLK SOUTHERN RR
 PRIMARY WORK ACTIVITY Substructure Repair DECK AREA: 11,344 SFT STR. TYPE: Steel
 Replace Expansion Joints & Bridge Railing,
 Paint Structural Steel, Remove Vegetation,
 OTHER WORK: Deep Overlay CLEAR ROADWAY: 7,504 SFT Multi-Stringer, W or I-Bear

WORK ACTIVITY	Michigan Bridge Design Manual	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE (increase deck area based on design standards and hydraulic requirements)					
Single or Multiple Spans, Grade Separation	(add demo, approach, MOT)		SFT	\$220.00 /SFT	
Single Span, Over Water	Length < 100ft (add demo, approach, MOT)		SFT	\$350.00 /SFT	
Multiple Spans, Over Water	Length > 100ft (add demo, approach, MOT)		SFT	\$220.00 /SFT	
Precast Culvert	Length < 40ft (add demo, approach, MOT)		SFT	\$350.00 /SFT	
NEW SUPERSTRUCTURE					
New Superstructure, Grade Separation	(incl. remove exist deck/super; add MOT & approach)		SFT	\$170.00 /SFT	
New Superstructure, Over Water	(incl. remove exist deck/super; add MOT & approach)		SFT	\$200.00 /SFT	
WIDENING					
Structure Widening, _____ ft	(incl. deck/super/sub widening, add approach transition)		SFT	\$270.00 /SFT	
NEW DECK					
New Bridge Deck & Barrier	(incl. remove exist deck/railing, add approach, MOT)		SFT	\$75.00 /SFT	
DEMOLITION					
Entire Structure, Grade Separation			SFT	\$33.00 /SFT	
Entire Structure, Over Water			SFT	\$46.00 /SFT	
DECK REPAIR / TREATMENTS					
Bridge Railing Replacement	(incl. removal and replacement)	322.0	FT	\$500.00 /FT	\$161,000
Concrete Brush Block / Curb Patch	(incl. hand chipping and formwork)		FT	\$24.00 /FT	
Concrete Barrier Patch	(incl. hand chipping and formwork)		SFT	\$45.00 /SFT	
Concrete Deck Patch	(incl. hand chipping)		SFT	\$30.00 /SFT	
Deep Overlay	(incl. joint repl & hydro)	7,632.0	SFT	\$45.00 /SFT	\$343,440
Epoxy Overlay	(incl. warranty)		SYD	\$30.00 /SYD	
Expansion Joint Gland Replacement	(remove and replace elastomeric gland)		FT	\$85.00 /FT	
Expansion Joint Replacement	(incl. removal)	165.0	FT	\$700.00 /FT	\$115,500
Full Depth Patch			SFT	\$76.00 /SFT	
Healer / Sealer	(penetrates cracks in bridge deck)		SYD	\$15.00 /SYD	
HMA Overlay with WP membrane			SYD	\$53.00 /SYD	
Overlay Removal	(Epoxy: \$8/syd Latex: \$16/syd HMA: \$7/syd)	848.0	SYD	\$25.00 /SYD	\$21,200
Reseal Bridge Joints			FT	\$16.00 /FT	
Shallow Overlay	(incl. joint repl & hydro)		SFT	\$22.00 /SFT	
SUPERSTRUCTURE REPAIR					
Bearing Realignment / Replacement	(incl. temporary supports)		EA	\$5,000.00 EA	
Heat Straightening	(incl. clean and coat)		EA	\$50,000.00 EA	
Pack Rust Repair	(greater than 3/8" separation)		FT	\$500.00 /FT	
Paint - Complete	(incl. clean & coat)	16,300.0	SFT	\$40.00 /SFT	\$652,000
Paint - Partial / Spot / Zone	(incl. clean & coat - \$20k minimum)		SFT	\$60.00 /SFT	
PCI Beam End Blockout	(incl. temporary supports)		EA	\$7,200.00 EA	
Pin & Hanger Replacement	(incl. temporary supports)		EA	\$8,000.00 EA	
Structural Steel Repair	(based on 6ft length; for stiffeners use \$1,200 ea)	25.0	EA	\$5,000.00 EA	\$125,000
SUBSTRUCTURE REPAIR					
Substructure Patching	(measured x 2) replace if repair area > 30%	270.0	CFT	\$450.00 /CFT	\$121,500
Substructure Replacement	(incl. temporary supports, excavation)		CFT	\$180.00 /CFT	
Substructure Horizontal Surface Sealer			SYD	\$40.00 /SYD	
Pier Replacement		2,643.0	CFT	\$125.00 /CFT	\$330,375
Temporary Supports	(add \$1,200 for ea steel beam - stiffeners)	24.0	EA	\$3,000.00 EA	\$72,000
Other Remove Vegetation		1.0	LSUM	\$5,000.00 LSUM	\$5,000
MISCELLANEOUS					
Articulating Concrete Block System (ACB)			SYD	\$150.00 /SYD	
Concrete Surface Coating			SYD	\$28.00 /SYD	
Culvert Cleanout			FT	\$30.00 /FT	
Epoxy Crack Injection	(structural crack repair)		FT	\$50.00 /FT	
Metal Mesh Panels	(48" width, max 6'-6" length)		SFT	\$20.00 /SFT	
Pressure Relief Joint	(use when approach concrete roadway exceeds 1,000ft)		FT	\$100.00 /FT	
Riprap	(assume 10ft distance around perimeter of substructure)		SYD	\$175.00 /SYD	
Silane Treatment	(penetrating sealer for concrete surfaces)		SFT	\$4.50 /SFT	
Slope Protection Repairs		25.0	SYD	\$150.00 /SYD	\$3,750
Other					

STRUCTURE CONSTRUCTION BUDGET \$1,950,765

ROAD WORK					
Approach Pavement, 12" RC	(incl. removal; add curb, gutter, guardrail) 20' ea. end	222.2	SYD	\$200.00 /SYD	\$44,444
Approach Curb & Gutter	(incl. removal) 20' ea. quadrant	80.0	FT	\$75.00 /FT	\$6,000
Guardrail Anchorage to Bridge	(each quadrant)	4.0	EA	\$2,000.00 /EA	\$8,000
Guardrail	(incl. removal) < 200ft beyond reference line		FT	\$28.00 /FT	
Guardrail Terminal	(each quadrant)	4.0	EA	\$2,500.00 /EA	\$10,000
Roadway Approach Work	(beyond approach pavement)	1.0	LSUM	\$500,000.00 LSUM	\$500,000
Utilities		1.0	LSUM	\$100,000.00 LSUM	\$100,000

TRAFFIC CONTROL Unit Cost to be determined by Region or TSC Traffic & Safety					
Part Width Construction		1.0	LSUM	\$250,000.00 LSUM	\$250,000
Crossovers			EA	\$300,000.00 /EA	
Temporary Traffic Signals			set	\$25,000.00 /set	
RR Flagging		1.0	LSUM	\$75,000.00 LSUM	\$75,000
Detour			LSUM		

RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET \$993,444

CONTINGENCY	(10% - 20%) (use higher contingency for small projects)	10	%	\$2,944,000.00	\$294,000
MOBILIZATION	(estimate at 10%)	10	%	\$3,238,000.00	\$324,000
INFLATION	(assume 3% per year, beginning in 2021)	9	%	\$3,562,000.00	\$321,000

(Does not include PE or CE)

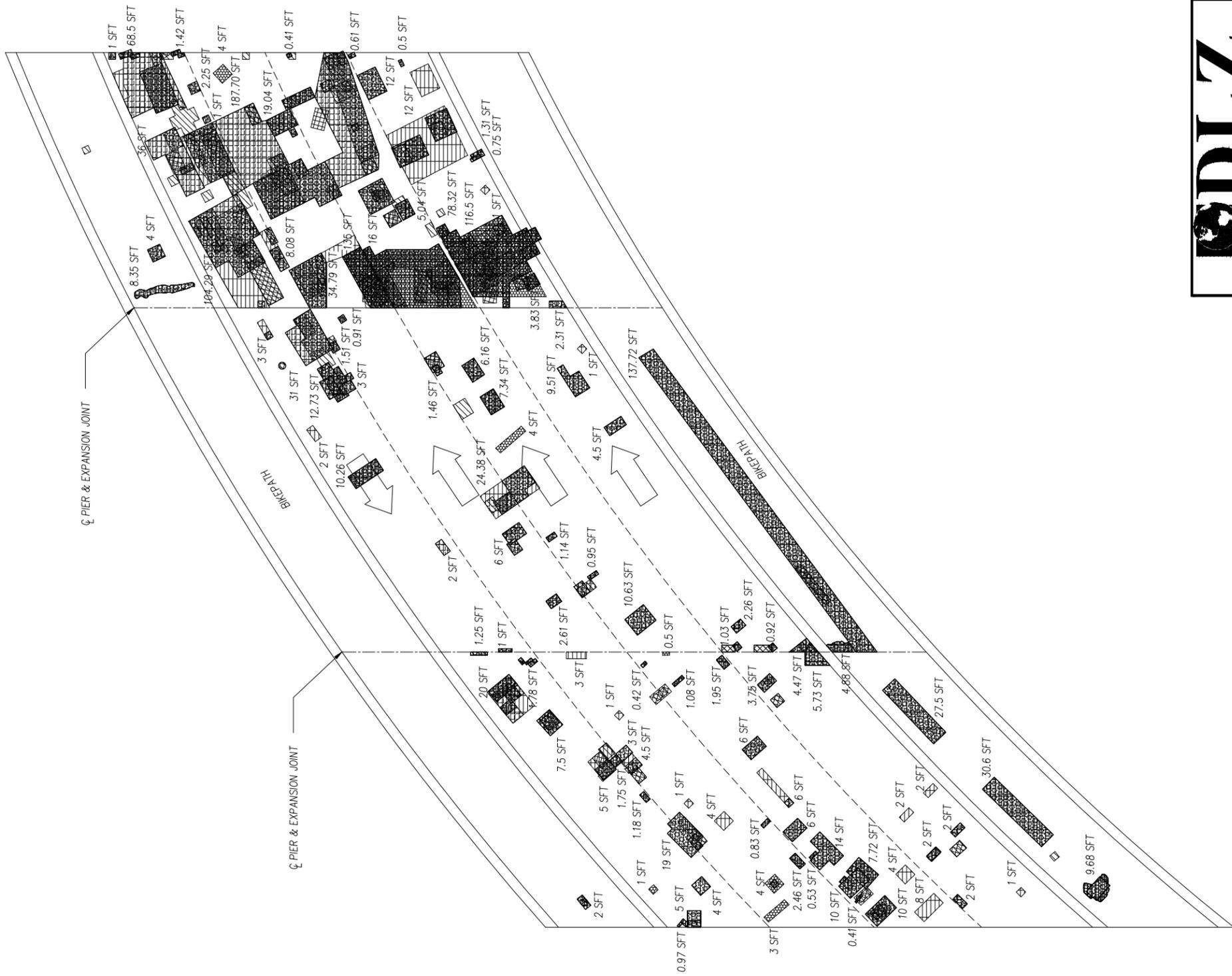
TOTAL CONSTRUCTION BUDGET \$3,883,000



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2020 Bridge Inspection Project
East Medical Center Drive over Norfolk Southern Railroad

APPENDIX D – Deck Delamination Survey



LEGEND:

-  - 2009 DECK DELAMINATION
-  - 2011 DECK DELAMINATION
-  - 2013 DECK DELAMINATION
-  - 2015 DECK DELAMINATION
-  - 2017 DECK DELAMINATION
-  - JAN 2020 DECK DELAMINATION
-  - OCT 2020 DECK DELAMINATION

2009 TOTAL DECK DELAMINATION = 200.75 SFT

2011 TOTAL DECK DELAMINATION = 270.75 SFT

2013 TOTAL DECK DELAMINATION = 522.66 SFT

2015 TOTAL DECK DELAMINATION = 23.7 SFT

2017 TOTAL DECK DELAMINATION = 862.72 SFT

2015 TOTAL SIDEWALK DELAMINATION = 244.73 SFT

2017 TOTAL SIDEWALK DELAMINATION = 1152.27 SFT

2017 TOTAL SIDEWALK DELAMINATION = 244.73 SFT

JAN 2020 TOTAL DECK DELAMINATION = 1281.77 SFT

JAN 2020 TOTAL SIDEWALK DELAMINATION = 244.73 SFT

OCT 2020 TOTAL DECK DELAMINATION = 1320.27 SFT

OCT 2020 TOTAL SIDEWALK DELAMINATION = 244.73 SFT



Memo

TO: Michael G. Nearing, PE – City of Ann Arbor

FROM: Jonathan Drummond, PE

DATE: April 5, 2021

PROJECT NO.: 210232

RE: East Medical Center Drive Bridge

Introduction

The East Medical Center Drive over Norfolk Southern Railroad bridge is located just north of the University of Michigan (U-M) Hospital Complex in Ann Arbor, Michigan, and just south of the Fuller Road-East Medical Center Drive intersection. Due to heavy pedestrian and vehicular traffic, this corridor and intersection have been considered for various improvements over the years to increase traffic capacity and improve safety for pedestrians. In accordance with budget constraints, improvements to the Fuller Road-East Medical Center Drive intersection are not currently being considered, however bridge conditions must be addressed in the near future.

The East Medical Center Drive over Norfolk Southern Railroad bridge is in poor condition and needs substantial work to bring the bridge back into good condition. While this rehabilitation work is being completed, it may be desirable to widen the bridge, so that future improvements made to the East Medical Center Drive-Fuller Road intersection will have a wider bridge deck to work with. The purpose of this memo is to evaluate the feasibility of four repair alternatives which include widening and provide cost estimates for each. A fifth alternative, involving the same repairs to the bridge without widening, has been included as a cost reference.

1. **Widen the bridge 10 feet to the west, with a complete deck replacement.**
2. **Widen the bridge 10 feet to the west and apply a deep overlay on the existing deck.**
3. **Widen the bridge 10 feet to the east, with a complete deck replacement.**
4. **Widen the bridge 10 feet to the east and apply a deep overlay on the existing deck.**
5. **No widening: apply deep overlay on the existing deck and perform other essential repairs.**

Components of the proposed work and how they are impacted by the widening are discussed below:

Approach Roadway

It is understood for the purposes of this study that no impacts will be made to the Fuller Road-East Medical Center Drive intersection, regardless of which direction the bridge is widened. This prevents significant changes made to the profile or superelevation over the bridge as part of this study.

For the purposes of this memo, the southern terminus of the approach roadway work is approximately the south end of the East Medical Center-West Medical Center Drive intersection, and the northern terminus is at the southern edge-of-metal extended line of the Fuller Road-East Medical Center Drive intersection. Due to the poor condition of West Medical Center Drive as it approaches East Medical Center Drive, it is recommended to replace the West Medical Center Drive pavement from the parking garage entrance to East Medical Center as a part of the project. Proceeding to the south from East Medical Center Drive-West Medical Center Drive intersection,

some additional roadway work with utility alterations will need to be performed to tie the proposed construction into the existing road, whichever direction the bridge is widened. The cost of this additional roadway work is accounted for in the cost estimate as a lump sum cost of **\$110,000** for widening to the west, and **\$100,000** for widening to the east.

This memo does not investigate what U-M has planned in the future for the East Medical Center corridor adjacent to the hospital. Due to the condition of the bridge, it is anticipated bridge work will be performed in the near future, and widening of the entire East Medical Center corridor will occur at some point in the future, perhaps several years after the bridge work has been completed.

Widening the bridge to the east adds some additional drainage costs to the project. Two existing catch basins will require removal and replacement between the bridge and Fuller Road; costs for this work have been added to the east widening alternatives.

The existing topography drops off sharply in the northwest and southeast quadrants of the bridge. Though not investigated in depth as a part of this project, it will be necessary to use reinforced soil slopes, or a retaining wall as was proposed in the 2002 plans, to support a widened roadway in this area. It appears these costs will be roughly the same regardless of which direction the bridge is widened. **\$150,000** has been included in all widening alternatives to account for this work.

Approximately 10 feet of full width pavement reconstruction has been assumed at either end of the bridge to ensure a smooth transition. Pavement limits have been kept to a minimum since East Medical Center Drive pavement on either side of the bridge is in good condition at this time.

Maintenance of Traffic

Maintenance of traffic is not being investigated in depth as a part of this study. Regardless of widening to the east or west, in order to perform the work required, traffic shall be shifted all the way to one side of the bridge and then the other. It will be possible to maintain one lane of traffic in each direction and one sidewalk at all times. For the purposes of cost estimating, a lump sum cost of **\$180,000** has been assumed for all alternatives for maintenance of traffic.

If the bridge is not widened and is simply repaired (as described in the 5th alternative option), it will not be possible to maintain one lane of traffic in each direction. The one lane of traffic would likely be utilized to maintain traffic inbound to the medical center during all phases of the planned work. Outbound traffic shall be detoured.

Constructability

It is understood the contractor will not be permitted to use U-M parking lots or lawn areas to store equipment during construction. It appears the best staging area will be in the northwest quadrant of the project. This will cause the least disturbance to pedestrians who will be parking in Lot M-71 off Fuller Road, many of whom will be proceeding to the hospital. The ground in the northwest quadrant is generally flatter, which will give the contractor more usable space than the other quadrants and will give direct access to Fuller Road. While not impossible, widening to the east will require more contractor staging in the eastern quadrants. To account for the difference in access costs between the alternatives, mobilization for west widening alternatives has been assumed to be **\$500,000** while the east widening alternatives have been assumed to be **\$550,000**.

Railroad Coordination

Railroad coordination was not initially part of this study but based on past experience working with Amtrak on the Fuller Road and Maiden Lane bridges, it is known their primary concern is maintaining horizontal and vertical clearances. Permanent horizontal clearances of 25 feet without barrier or 15 feet with barrier measured from the

centerline of the track, and 23 feet vertically from the top of rail is Amtrak's priority. The existing bridge currently meets the horizontal clearance requirements but falls just short of the required 23 feet vertical clearance minimum. As a result, slight profile and/or cross slope adjustments should be considered during final design to achieve these minimum clearances to ensure approval from the railroad. During construction, an envelope of 15 feet horizontally from the centerline of track and 22 feet vertically from the top of rail shall be maintained. No equipment can enter this envelope without railroad flaggers present. Since work will need to take place inside of this envelope, a Railroad Flagging cost of **\$200,000** has been included for each alternative.

Utilities

Natural gas and sanitary sewer lines cross East Medical Center Drive to the south of the bridge. Based on the most current information obtained to date, it is believed these utilities will not be impacted by this project, and no cost has been included to relocate them at this time. Minor expenses which are not expected to have any meaningful impact on the overall cost of the project, such as hand digging guardrail posts, may be incurred to ensure these lines are not disturbed during construction.

There are numerous utility ducts placed inside both the east and west sidewalks over the structure. There is also a light pole installed on the bridge, one on each side. One of the conduits in each sidewalk contains lighting cable for these poles. For whichever side is widened, the light pole and its associated conduit will need to be relocated as a part of the project. For cost estimating purposes, **\$20,000** has been assumed for miscellaneous lighting work for all alternatives.

In addition to the lighting conduit, there is an existing fiber optic conduit in the eastern sidewalk, which connects signals at the Fuller Road/East Medical Center Drive intersection to the intersections south of the bridge. It is recommended during construction to use a radio connection to link these signals during construction and reinstall the conduit afterward if the bridge is widened to the east. For cost estimating purposes, **\$10,000** has been assumed to perform this traffic signal work, which will only be necessary for the east widening alternatives.

The existing bridge structure has several conduits of various diameter cast into both the east and west sidewalks of the bridge. Based on existing information available at this time, it is believed several of the existing conduits on the bridge have fiber optic, coaxial, and other communications cables contained within them. Based on conversations with U-M planning staff on March 25, 2021, it became evident communications lines within the east sidewalk are extremely vital to the operation of Michigan Medicine and other university operations. The communications lines within the west sidewalk are essential as well. At this time, it is unclear which conduits within each sidewalk contain cables within them. It is imperative this issue be studied in greater detail if a widening option is selected. U-M has furnished a drawing to the City and Fishbeck which represents their best understanding of the communications cables within the bridge. This drawing is attached in Appendix 2. Additional field survey and field marking of the cables is highly recommended to determine the precise horizontal and vertical location of the conduits both on and off the bridge. A location map is also included in Appendix 2 indicating the existence of several large-diameter, high-pressure, DTE-Michcon gas mains within the project vicinity. While the gas mains are not expected to be impacted as part of the planned bridge rehabilitation work, recognizing their location could be important in more fully exploring communication cable relocation options.

It is our understanding the communications cables contained within the existing conduits in both the east and west sidewalk are either owned by, or were installed for, U-M and their operations. The City nor the general public are served by these cables. Consequently, any costs associated with relocating, re-working, temporarily supporting, or handling the cables or conduits in any manner in either widening option as a means to facilitate the construction is expected to be an expense that is solely attributable to U-M as part of their share of the project's cost. During the aforementioned March 25th meeting, U-M representatives indicated their preliminary, internal, conversations specified costs associated with relocating the east (or west) conduits and communications cables

could cost at least **\$1,000,000**. The estimated fiber optic communication cable relocation costs are not reflected in the current cost estimates due to their highly variable and assumed nature at this point in time as it could skew selection of a preferred alternative. In the event a widening option is selected, options which protect and maintain the integrity of the cables during the construction phase of the project, as well as minimize cost, should be studied in greater detail.

During final design, a determination can be made whether the proposed sidewalk(s) will have extra conduits installed within them for potential future use. The cost of conduit installation and expansion coupling installation will not significantly impact the cost of the project for any of the studied widening alternatives.

This study does not consider permanent traffic signal revisions at the Fuller Road-East Medical Center Drive intersection or the East Medical Center Drive-Cancer Center Drive intersections. However, unique traffic signal modifications will be required for the bridge widening scenarios. Those costs are taken into consideration in the individual cost estimates for each option. Additionally, various non-fiber optic and communication cable utility relocations or modifications will need to occur as a result of the approach roadway work and have not been investigated extensively as a part of this study. However, they will be a necessary part of all widening alternatives. A lump sum of **\$125,000** has been included for all widening alternatives to account for general utility relocation work, for the purpose of providing realistic high-level total cost estimates at this time.

Abutments

The existing abutments are in good condition. No spalls or delaminations were found during the last inspection. Other than the work required for widening, the abutments shall only need concrete surface coating applied to help preserve their condition.

To accommodate the widening, the southern wingwalls can be modified so that new beams can rest on the existing wingwalls. This will require the additional beams in the southern span to be slightly longer than the existing beams due to the existing wingwalls curving away from the bridge. Based on preliminary substructure evaluation, it appears the existing abutments can support the extra beam weight. It is economical to salvage more of the abutments and foundations and may also expedite construction.

At the northern abutment, the existing wingwalls curve at a much smaller radius away from the rest of the abutment than at the southern abutment. Since the piles in these wingwalls are no longer acting primarily in the same direction as the abutment piles, these wingwalls should not be modified to support additional beams.

Therefore, for this cost estimate, it is assumed the north abutment will require extension to accommodate the additional beams, with new piles driven to support the beam weight.

Abutment rehabilitation costs will be similar regardless of which direction the bridge is widened.

Piers

The existing pier caps are in poor condition, with considerable delaminations and spalling. The northern pier cap is in worse condition than the southern pier cap, but it is recommended that both pier caps be completely replaced. This will allow the piers to have the same expected life cycle moving forward, without a significant increase in cost. The existing concrete columns and crash walls will remain and be patched as necessary. Column temporary supports have been included to support the existing beams during construction. However, it will need to be investigated with Amtrak if they will allow the placement of temporary column supports on the railroad track side of the piers due to potential infringement within the railroad track clearance envelope. Depending upon the position that Amtrak takes regarding the placement of temporary supports, it could be necessary (and

advantageous from a constructability standpoint) to remove, disassemble, and re-erect the steel girders. This technique would allow for much easier cleaning and coating of the steel beams as well.

To accommodate the widening, the spread footings will be extended with a concrete column added, and the new concrete pier caps extended over the new column to support the proposed widened superstructure. The entire exposed surface of the piers will be coated with concrete surface coating to extend its service life. Pier rehabilitation costs will be similar regardless of which direction the bridge is widened. Again, this work will need to be closely coordinated with Amtrak during the design phase of the project in order to verify they understand, agree, and are comfortable with all aspects of the planned work. By engaging Amtrak early in the process, it will help reduce the likelihood of protracted plan reviews by Amtrak staff during the early stages of construction.

Existing Superstructure

The paint on the existing beams has completely failed. As a part of this project, the existing beams, diaphragms, and bearings to remain should be completely repainted. Painting over the railroad tracks will be extremely difficult to accomplish but is essential to assure the steel will be protected in the future. For the deck replacement option, it will be possible to remove the beams from all three spans, paint them in a contractor staging area, and reinstall them. This was discussed earlier in the section above regarding planned work to the piers. This would be less expensive and more practicable than painting them in place in a manner that satisfies all railroad requirements. For the deck overlay option with the existing deck in place, this will not be a possibility and the beams will need to be painted in place. The difficulty of re-painting the bridge beams in place has been reflected in the cost estimate by assigning a higher unit price for painting to the deep overlay alternatives as compared to the deck replacement alternatives.

Additionally, it was noted during the latest inspection report that the diaphragms and beam ends under the existing expansion joints have corrosion and potential section loss. This will require further investigation by the design team to determine the actual amount of corrosion and extent of repairs needed, but costs have been included for beam end repairs and diaphragm replacement as a part of this study. These costs will be identical regardless of which direction the bridge is widened.

Proposed Superstructure

The existing superstructure consists of W27 beams spaced at approximately 6 feet. To widen the bridge by 10 feet, two new beam lines of similar W27 beams would be required. As mentioned in the “*Abutments*” section, each new beam length will be unique based on location. This is consistent with the existing superstructure, which uses different length beams to accommodate the curved deck.

The proposed superstructure design will be complicated by the superelevation and sidewalks. The existing bridge is superelevated 3% over the roadway portion of the bridge, while the existing sidewalks are graded 0.5% towards the road.

If the bridge is widened to the west, the two westernmost existing beams, which were previously under the sidewalk, will now be under the widened roadway portion of the deck with its 3% superelevation. Since the superelevation slopes downward to the east, the haunches will need to be deeper over these two beams. The haunch thickness above the existing fascia beams in the outer spans will increase from 2 inches to approximately 6 inches. Haunches this deep would need to be reinforced but are otherwise acceptable. Widening to the west can be accommodated with two proposed W27 beams.

An option to study in additional detail if the alternative of replacing the bridge deck is chosen, is whether to increase the thickness of the pier caps and/or lengthen the pier columns in order to alleviate the sub-optimal under clearance of the existing bridge over the railroad tracks. To accomplish this task, it would require the removal of all steel girders. This allows replacement of the pier caps to be much easier as larger and more

powerful equipment will be utilized to demolish the existing pier caps; forming and pouring the new pier caps without overhead obstructions in place will allow the work to proceed more quickly. In turn, removing the steel beams will also allow the re-painting of the beams to be performed in a significantly easier manner. This is expected to decrease labor and containment costs associated with the painting operation. Simultaneously, while the superstructure has been removed, the vertical profile of the roadway could possibly be adjusted (raised) as stated above. The sub-alternative of removing the bridge beams and raising the vertical profile of the bridge, while requiring additional roadway replacement costs in order to extend the touchdown point of the southerly roadway approach, has the possibility to allow the overall bridge rehabilitation to be performed in a more expedited fashion, possibly reducing utility relocation costs (by allowing some of the existing utilities to remain in place), and increasing constructability.

When widening the deck to the west, the pier caps can be stepped to a higher elevation to account for the superelevation over the bridge. When widening to the east, the steps will conversely be at a lower elevation for spans 1 and 3. However, in span 2, this is not possible since railroad vertical clearance cannot be decreased from the existing condition. One option to maintain the vertical clearance without raising the entire superstructure is to add two new shallower beams. The shallower beams are less efficient, as they will need to use more steel to achieve the same strength, and thusly, be more expensive. These shallower beams do not pass the span-depth ratio requirements in AASHTO, but this check is optional and can be waived by the bridge owner.

Due to the additional cost for heavier beams, superstructure costs will be greater for the east widening alternatives. Widening to the east will also result in beams of different sizes being adjacent to each other at the pier cap, which will pose constructability challenges.

Deck, Sidewalks, Expansion Joints, and Railings

The existing deck is in fair condition, with longitudinal and transverse cracking throughout and significant deck surface deterioration. The north span is experiencing the worst deterioration with over 45% of the deck surface deteriorated. 5-10% of the deck bottom surface is deteriorated. Based on the Michigan Department of Transportation (MDOT) deck preservation matrix, a deep overlay would be the appropriate repair alternative.

The deep overlay alternative will require the existing sidewalk and deck underneath the sidewalk in the direction to be widened to be replaced. The new portion of the deck will be 23'-8 1/2" wide, leaving 47'-0" of remaining roadway width and the 10'-6" sidewalk to be patched as needed. From the previous bridge inspection report performed in October 2020, 1,320 square feet of deck delaminations were found. It is assumed for the purpose of this cost estimate that 200 square feet of this area, approximately 15%, will need to be patched full depth. The existing expansion joints will be removed and replaced, which will require deck removal around the expansion joints. Furthermore, the existing bridge railings no longer meet federal crash standards. The new railing on the widened side must be a crash-tested shape if federal funding will be used on the bridge, however the existing railing on the non-widened side may remain since that side of the bridge will just receive an overlay. It may be desirable to have the same railing on both sides of the bridge. This should be coordinated during final design when funding sources have been finalized.

The deck replacement alternative will have increased costs associated with a completely new deck and sidewalk. However, due to the widening of the bridge and significant other work required for a deep overlay (expansion joint replacements, extensive patching, barrier replacement), it may be advantageous to replace the entire deck

so the entire bridge superstructure is on the same life cycle, and will not require additional work for at least 25 or more years.

Miscellaneous

Vegetation will be removed from all four quadrants and slope paving repaired as needed for all alternatives.

Conclusion

Incorporating all of the aforementioned repairs and their associated costs into the estimates for the various alternatives produced the following cost estimates. Costs shown below include an additional 25% to account for both contingency and inflation to the year 2023. It should be noted these costs do not include the cost of relocating the communications cables and conduits located in the bridge sidewalks.

1. **Widen the bridge 10 feet to the west, deck replacement: \$7,030,000**
2. **Widen the bridge 10 feet to the west, concrete deep overlay: \$6,640,000**
3. **Widen the bridge 10 feet to the east, deck replacement: \$7,360,000**
4. **Widen the bridge 10 feet to the east, concrete deep overlay: \$6,980,000**
5. **No widening of the bridge: \$4,390,000**

These cost estimates reflect the necessary repairs based on the current condition of the bridge, and an assumed construction year of 2023. If work is not completed in 2023, these cost estimates will no longer be valid as the structure will continue to deteriorate, and this memo and project scope of work will need to be updated to reflect additional repair work required.

Schedule

It will take approximately two years to get this project ready to start construction in the Spring of 2023. This assumes U-M and the City agree on a scope of work and a cost-sharing framework to be reached on, or about, May 31, 2021. Once the City and U-M are in agreement on the aforementioned items, it will be necessary to select a design consultant, complete the design, plan for and relocate utilities, perform railroad coordination and obtain concurrence from the railroad with regard to the planned work, secure funding, advertise the project, and award a construction contract.

If work is not started on this project as previously described, deterioration of the bridge structure will continue. Consequently, the risk of expanding the scope of work on the project to a complete superstructure replacement will become a real possibility. If this were to happen, it could potentially add at least \$1,000,000 to the total project cost. Additionally, continued superstructure and pier cap deterioration could potentially lead to the bridge needing to be load posted before design and construction can be completed. A load posted structure could force emergency vehicles to go around the bridge, adding critical minutes to their trip. A load posting could also impact delivery vehicles' access to the medical center. Given the importance of this bridge to the U-M Hospital System, it is highly desirable to avoid this outcome. In order for construction to commence in 2023, a funding decision on this project would need to be made by May 31, 2021 as stated above to allow enough time for the necessary project planning and design processes to take place.

Attachments – Construction Cost Estimates and Conceptual Plans
By email

Appendix 1

OPINION OF PROBABLE
CONSTRUCTION COST

PROJECT: EMC Over RR
 LOCATION: Ann Arbor, Michigan
 BASIS FOR ESTIMATE: CONCEPTUAL PRELIMINARY FINAL
 WORK: West Widening - Deck Replacement

DATE: April 5, 2021
 PROJECT NO: 210232
 ESTIMATOR: MT
 CHECKED BY: BSM
 CURRENT ENR:

Item Number	Description	Unit	Estimated Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1	\$500,000	\$500,000
2010001	Clearing	Ac	1	\$20,000	\$20,000
2040020	Curb and Gutter, Rem	Ft	400	\$5	\$2,000
2040035	Guardrail, Rem	Ft	255	\$3	\$765
2040050	Pavt, Rem	Syd	1670	\$12	\$20,040
2040055	Sidewalk, Rem	Syd	375	\$15	\$5,625
2060002	Backfill Structure, CIP	Cyd	300	\$40	\$12,000
2060010	Excavation, Fdn	Cyd	300	\$30	\$9,000
2080036	Erosion Control, Silt Fence	Ft	800	\$5	\$4,000
3017021	Subbase, CIP, Class II Granular Material, Modified	Cyd	40	\$30	\$1,200
3027021	Aggregate Base, Variable Thickness	Cyd	550	\$75	\$41,250
5010031	HMA, 3C	Ton	715	\$200	\$143,000
5010032	HMA, 4C	Ton	220	\$200	\$44,000
7040003	Steel Sheet Piling, Temp, Left in Place	Sft	1400	\$50	\$70,000
7050002	Pile Driving Equipment, Furn	LSUM	1	\$12,000	\$12,000
7050030	Pile, Steel, Furn and Driven, 12 inch	Ft	240	\$50	\$12,000
7060001	Bridge Ltg, Furn and Rem	LSUM	1	\$5,000	\$5,000
7060002	Bridge Ltg, Oper and Maintain	Cyd	490	\$3	\$1,470
7060030	Conduit, 3 inch	Ft	1422	\$18	\$25,596
7060050	Expansion Joint Device	Ft	208	\$250	\$52,000
7060051	Expansion Joint Device, Cover Plate	Ft	60	\$250	\$15,000
7060060	False Decking	Sft	5280	\$5	\$26,400
7060092	Reinforcement, Steel, Epoxy Coated	Lb	122600	\$2	\$245,200
7060100	Substructure Conc	Cyd	229	\$1,250	\$286,250
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting	LSUM	1	\$294,000	\$294,000
7060113	Superstructure Conc, Night Casting	Cyd	490	\$600	\$294,000
7067051	Retaining Wall, Misc.	LSUM	1	\$150,000	\$150,000
7070040	Shear Developers	LSUM	1	\$10,000	\$10,000
7070050	Structural Steel, Mixed, Erect	Lb	7400	\$11	\$81,400
7070051	Structural Steel, Mixed, Furn and Fab	Lb	7400	\$8	\$59,200
7070070	Structural Steel, Rolled Shape. Erect	Lb	34400	\$9	\$309,600
7070071	Structural Steel, Rolled Shape. Furn and Fab	Lb	34400	\$6	\$206,400
7077050	Bearing, Elastomeric	Ea	60	\$3,000	\$180,000
7100010	Conc Surface Coating	LSUM	1	\$50,000	\$50,000
7117001	Bridge Railing, Aesthetic Parapet Tube	Ft	160	\$225	\$36,000
7117001	Bridge Railing, Aesthetic Parapet Tube, Modified	Ft	160	\$250	\$40,000
7120007	Hand Chipping, Other Than Deck	Cft	150	\$300	\$45,000
7120112	Patching Conc, C-L	Cyd	6	\$1,250	\$7,500
7120017	Patch, Forming	Sft	300	\$100	\$30,000
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	150	\$25	\$3,750
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	150	\$25	\$3,750
7120070	Structures, Rehabilitation, Rem Portions (Str 11065)	LSUM	1	\$600,000	\$600,000
7120071	Deck Joint, Rem	Ft	178	\$225	\$40,050
7120120	Embedded Galvanic Anode	Ea	250	\$5	\$1,250
7130071	Structural Steel, Retrofit, Furn, Fab, and Erect	Lb	1000	\$20	\$20,000
7130080	Support, Column, Temp	Ea	48	\$7,500	\$360,000
7150045	Steel Structure, Cleaning, Type 4	LSUM	1	\$326,000	\$326,000
7150046	Steel Structure, Coating, Type 4	LSUM	1	\$163,000	\$163,000
8027001	Curb and Gutter, Conc, Det F4, Special	Ft	400	\$30	\$12,000
8030036	Sidewalk Ramp, Conc, 6 inch	Sft	66	\$10	\$660
8037010	Detectable Warning Tiles	Sft	10	\$18	\$180
8037010	Sidewalk, Concrete, 6 inch, Special	Sft	3360	\$8	\$26,880
8070041	Guardrail Approach Terminal, Type 1T	Ea	2	\$1,500	\$3,000
8070130	Guardrail Anch, Bridge, Det M1	Ea	2	\$2,200	\$4,400
8070051	Guardrail Departing Terminal, Type T	Ea	2	\$1,500	\$3,000
8110094	Pavt Mrkg, Polyurea, 6 inch, White	Ft	900	\$4	\$3,600
8110095	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	550	\$4	\$2,200
8120170	Minor Traffic Devices, Max. \$ _____	LSUM	1	\$180,000	\$180,000
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1150	\$1	\$1,150
8127060	Railroad Inspection and Flagging	LSUM	1	\$200,000	\$200,000
8137011	Slope Protection, Replace	Syd	100	\$100	\$10,000
8167011	Hydroseeding	Syd	300	\$10	\$3,000
8167011	Topsoil Surface, 4 inch	Syd	300	\$10	\$3,000
8197051	Lighting, Misc.	LSUM	1	\$20,000	\$20,000
8207050	TS Mast Arm	Ea	1	\$50,000	\$50,000
	Subtotal				\$5,387,766
	Additional Roadway				\$110,000
	Additional Utility Relocation				\$125,000
	Contingency and Inflation				25%
	Widen West - Deck Replacement Total				\$7,030,000

OPINION OF PROBABLE
CONSTRUCTION COST

PROJECT: EMC Over RR
 LOCATION: Ann Arbor, Michigan
 BASIS FOR ESTIMATE: CONCEPTUAL PRELIMINARY FINAL
 WORK: West Widening - Deck Overlay

DATE: April 5, 2021
 PROJECT NO: 210232
 ESTIMATOR: MT
 CHECKED BY: BSM
 CURRENT ENR:

Item Number	Description	Unit	Estimated Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1	\$500,000.00	\$500,000
2010001	Clearing	Ac	1	\$20,000.00	\$20,000
2040020	Curb and Gutter, Rem	Ft	400	\$5.00	\$2,000
2040035	Guardrail, Rem	Ft	255	\$3.00	\$765
2040050	Pavt, Rem	Syd	1670	\$12.00	\$20,040
2040055	Sidewalk, Rem	Syd	375	\$15.00	\$5,625
2060002	Backfill Structure, CIP	Cyd	300	\$40.00	\$12,000
2060010	Excavation, Fdn	Cyd	300	\$30.00	\$9,000
2080036	Erosion Control, Silt Fence	Ft	800	\$5.00	\$4,000
3017021	Subbase, CIP, Class II Granular Material, Modified	Cyd	40	\$30.00	\$1,200
3027021	Aggregate Base, Variable Thickness	Cyd	550	\$75.00	\$41,250
5010031	HMA, 3C	Ton	715	\$200.00	\$143,000
5010032	HMA, 4C	Ton	220	\$200.00	\$44,000
7040003	Steel Sheet Piling, Temp, Left in Place	Sft	1400	\$50.00	\$70,000
7050002	Pile Driving Equipment, Furn	LSUM	1	\$12,000	\$12,000
7050030	Pile, Steel, Furn and Driven, 12 inch	Ft	240	\$50.00	\$12,000
7060001	Bridge Ltg, Furn and Rem	LSUM	1	\$5,000.00	\$5,000
7060002	Bridge Ltg, Oper and Maintain	Cyd	195	\$3.00	\$585
7060030	Conduit, 3 inch	Ft	1092	\$18.00	\$19,656
7060050	Expansion Joint Device	Ft	208	\$250.00	\$52,000
7060051	Expansion Joint Device, Cover Plate	Ft	60	\$250.00	\$15,000
7060060	False Decking	Sft	5280	\$5.00	\$26,400
7060092	Reinforcement, Steel, Epoxy Coated	Lb	62900	\$2.00	\$125,800
7060100	Substructure Conc	Cyd	229	\$1,250.00	\$286,250
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting	LSUM	1	\$117,000.00	\$117,000
7060113	Superstructure Conc, Night Casting	Cyd	195	\$600.00	\$117,000
7067051	Retaining Wall, Misc.	LSUM	1	\$150,000.00	\$150,000
7070040	Shear Developers	LSUM	1	\$10,000.00	\$10,000
7070050	Structural Steel, Mixed, Erect	Lb	7400	\$11.00	\$81,400
7070051	Structural Steel, Mixed, Furn and Fab	Lb	7400	\$8.00	\$59,200
7070070	Structural Steel, Rolled Shape, Erect	Lb	34400	\$9.00	\$309,600
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	34400	\$6.00	\$206,400
7077050	Bearing, Elastomeric	Ea	60	\$3,000.00	\$180,000
7100010	Conc Surface Coating	LSUM	1	\$50,000.00	\$50,000
7117001	Bridge Railing, Aesthetic Parapet Tube	Ft	160	\$225.00	\$36,000
7117001	Bridge Railing, Aesthetic Parapet Tube, Modified	Ft	160	\$250.00	\$40,000
7120001	Scarifying	Syd	848	\$30.00	\$25,440
7120007	Hand Chipping, Other Than Deck	Cft	150	\$300.00	\$45,000
7120010	Patch, Full Depth	Cyd	6	\$2,000.00	\$12,000
7120112	Patching Conc, C-L	Cyd	12	\$1,250.00	\$15,000
7120017	Patch, Forming	Sft	300	\$100.00	\$30,000
7120023	Conc, Bridge Deck Ovly	Cyd	70	\$400.00	\$28,000
7120025	Bridge Deck Surface Construction	Syd	848	\$125.00	\$106,000
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120070	Structures, Rehabilitation, Rem Portions (Str 11065)	LSUM	1	\$400,000.00	\$400,000
7120071	Deck Joint, Rem	Ft	178	\$225.00	\$40,050
7120120	Embedded Galvanic Anode	Ea	250	\$5.00	\$1,250
7130071	Structural Steel, Retrofit, Furn, Fab, and Erect	Lb	1000	\$20.00	\$20,000
7130080	Support, Column, Temp	Ea	48	\$7,500.00	\$360,000
7150045	Steel Structure, Cleaning, Type 4	LSUM	1	\$450,000.00	\$450,000
7150046	Steel Structure, Coating, Type 4	LSUM	1	\$225,000.00	\$225,000
8027001	Curb and Gutter, Conc, Det F4, Special	Ft	400	\$30.00	\$12,000
8030036	Sidewalk Ramp, Conc, 6 inch	Sft	66	\$10.00	\$660
8037010	Detectable Warning Tiles	Sft	10	\$18.00	\$180
8037010	Sidewalk, Concrete, 6 inch, Special	Sft	3360	\$8.00	\$26,880
8070041	Guardrail Approach Terminal, Type 1T	Ea	2	\$1,500.00	\$3,000
8070130	Guardrail Anch, Bridge, Det M1	Ea	2	\$2,200.00	\$4,400
8070051	Guardrail Departing Terminal, Type T	Ea	2	\$1,500.00	\$3,000
8110094	Pavt Mrkg, Polyurea, 6 inch, White	Ft	900	\$4.00	\$3,600
8110095	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	550	\$4.00	\$2,200
8120170	Minor Traffic Devices, Max. \$	LSUM	1	\$180,000.00	\$180,000
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1150	\$1.00	\$1,150
8127060	Railroad Inspection and Flagging	LSUM	1	\$200,000.00	\$200,000
8137011	Slope Protection, Replace	Syd	100	\$100.00	\$10,000
8167011	Hydroseeding	Syd	300	\$10.00	\$3,000
8167011	Topsoil Surface, 4 inch	Syd	300	\$10.00	\$3,000
8197051	Lighting, Misc.	LSUM	1	\$20,000.00	\$20,000
8207050	TS Mast Arm	Ea	1	\$50,000.00	\$50,000
Subtotal					\$5,072,481
Additional Roadway					\$110,000
Additional Utility Relocation					\$125,000
Contingency and Inflation 25%					
Widen West - Deep Overlay Total					\$6,640,000

**OPINION OF PROBABLE
CONSTRUCTION COST**

PROJECT: EMC Over RR
 LOCATION: Ann Arbor, Michigan
 BASIS FOR ESTIMATE: CONCEPTUAL PRELIMINARY FINAL
 WORK: East Widening - Deck Replacement

DATE: April 5, 2021
 PROJECT NO: 210232
 ESTIMATOR: MT
 CHECKED BY: BSM
 CURRENT ENR:

Item Number	Description	Unit	Estimated Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1	\$550,000.00	\$550,000
2010001	Clearing	Ac	1	\$20,000.00	\$20,000
2040020	Curb and Gutter, Rem	Ft	400	\$5.00	\$2,000
2040035	Guardrail, Rem	Ft	255	\$3.00	\$765
2040050	Pavt, Rem	Syd	1670	\$12.00	\$20,040
2040055	Sidewalk, Rem	Syd	280	\$15.00	\$4,200
2060002	Backfill Structure, CIP	Cyd	300	\$40.00	\$12,000
2060010	Excavation, Fdn	Cyd	300	\$30.00	\$9,000
2080036	Erosion Control, Silt Fence	Ft	800	\$5.00	\$4,000
3017021	Subbase, CIP, Class II Granular Material, Modified	Cyd	38	\$30.00	\$1,140
3027021	Aggregate Base, Variable Thickness	Cyd	570	\$75.00	\$42,750
4027001	Sewer, CI IV, 12 inch, Tr Det B, Modified	Ft	50	\$125.00	\$6,250
4037050	Dr Structure, Inlet-Junction Chamber	Ea	2	\$3,000.00	\$6,000
4037050	Dr Structure Cover, Type K, Special	Ea	2	\$1,000.00	\$2,000
5010031	HMA, 3C	Ton	735	\$200.00	\$147,000
5010032	HMA, 4C	Ton	225	\$200.00	\$45,000
7040003	Steel Sheet Piling, Temp, Left in Place	Sft	1400	\$50.00	\$70,000
7050002	Pile Driving Equipment, Furn	LSUM	1	\$14,000	\$14,000
7050030	Pile, Steel, Furn and Driven, 12 inch	Ft	280	\$50.00	\$14,000
7060001	Bridge Ltg, Furn and Rem	LSUM	1	\$5,000.00	\$5,000
7060002	Bridge Ltg, Oper and Maintain	Cyd	490	\$3.00	\$1,470
7060030	Conduit, 3 inch	Ft	1422	\$18.00	\$25,596
7060050	Expansion Joint Device	Ft	208	\$250.00	\$52,000
7060051	Expansion Joint Device, Cover Plate	Ft	60	\$250.00	\$15,000
7060060	False Decking	Sft	5280	\$5.00	\$26,400
7060092	Reinforcement, Steel, Epoxy Coated	Lb	122600	\$2.00	\$245,200
7060100	Substructure Conc	Cyd	233	\$1,250.00	\$291,250
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting	LSUM	1	\$294,000.00	\$294,000
7060113	Superstructure Conc, Night Casting	Cyd	490	\$600.00	\$294,000
7067051	Retaining Wall, Misc.	LSUM	1	\$150,000.00	\$150,000
7070040	Shear Developers	LSUM	1	\$10,000.00	\$10,000
7070050	Structural Steel, Mixed, Erect	Lb	7600	\$11.00	\$83,600
7070051	Structural Steel, Mixed, Furn and Fab	Lb	7600	\$8.00	\$60,800
7070070	Structural Steel, Rolled Shape, Erect	Lb	46300	\$9.00	\$416,700
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	46300	\$6.00	\$277,800
7077050	Bearing, Elastomeric	Ea	64	\$3,000.00	\$192,000
7100010	Conc Surface Coating	LSUM	1	\$50,000.00	\$50,000
7117001	Bridge Railing, Aesthetic Parapet Tube	Ft	160	\$225.00	\$36,000
7117001	Bridge Railing, Aesthetic Parapet Tube, Modified	Ft	160	\$250.00	\$40,000
7120007	Hand Chipping, Other Than Deck	Cft	150	\$300.00	\$45,000
7120112	Patching Conc, C-L	Cyd	6	\$1,250.00	\$7,500
7120017	Patch, Forming	Sft	300	\$100.00	\$30,000
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120070	Structures, Rehabilitation, Rem Portions (Str 11065)	LSUM	1	\$600,000.00	\$600,000
7120071	Deck Joint, Rem	Ft	178	\$225.00	\$40,050
7130071	Structural Steel, Retrofit, Furn, Fab, and Erect	Lb	1000	\$20.00	\$20,000
7130080	Support, Column, Temp	Ea	48	\$7,500.00	\$360,000
7150045	Steel Structure, Cleaning, Type 4	LSUM	1	\$308,000.00	\$308,000
7150046	Steel Structure, Coating, Type 4	LSUM	1	\$154,000.00	\$154,000
8027001	Curb and Gutter, Conc, Det F4, Special	Ft	400	\$30.00	\$12,000
8030036	Sidewalk Ramp, Conc, 6 inch	Sft	66	\$10.00	\$660
8037010	Detectable Warning Tiles	Sft	10	\$18.00	\$180
8037010	Sidewalk, Concrete, 6 inch, Special	Sft	3045	\$8.00	\$24,360
8070041	Guardrail Approach Terminal, Type 1T	Ea	2	\$1,500.00	\$3,000
8070130	Guardrail Anch, Bridge, Det M1	Ea	2	\$2,200.00	\$4,400
8070051	Guardrail Departing Terminal, Type T	Ea	2	\$1,500.00	\$3,000
8110094	Pavt Mrkg, Polyurea, 6 inch, White	Ft	900	\$4.00	\$3,600
8110095	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	550	\$4.00	\$2,200
8120170	Minor Traffic Devices, Max. \$	LSUM	1	\$180,000.00	\$180,000
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1500	\$1.00	\$1,500
8127060	Railroad Inspection and Flagging	LSUM	1	\$200,000.00	\$200,000
8137011	Slope Protection, Replace	Syd	100	\$100.00	\$10,000
8167011	Hydroseeding	Syd	300	\$10.00	\$3,000
8167011	Topsoil Surface, 4 inch	Syd	300	\$10.00	\$3,000
8197051	Lighting, Misc.	LSUM	1	\$20,000.00	\$20,000
8207050	TS Mast Arm	Ea	1	\$50,000.00	\$50,000
8207051	TS Control Cabinet, Relocate, Complete	LSUM	1	\$30,000.00	\$30,000
	Subtotal				\$5,659,911
	Additional Roadway				\$100,000
	Additional Utility Relocation				\$125,000
	Contingency and Inflation				25%
	Widen East - Deck Replacement Total				\$7,360,000

**OPINION OF PROBABLE
CONSTRUCTION COST**

PROJECT: EMC Over RR
LOCATION: Ann Arbor, Michigan
BASIS FOR ESTIMATE: CONCEPTUAL PRELIMINARY FINAL
WORK: East Widening - Deck Overlay

DATE: April 5, 2021
PROJECT NO.: 210232
ESTIMATOR: MT
CHECKED BY: BSM
CURRENT ENR:

Item Number	Description	Unit	Estimated Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1	\$550,000.00	\$550,000
2010001	Clearing	Ac	1	\$20,000.00	\$20,000
2040020	Curb and Gutter, Rem	Ft	400	\$5.00	\$2,000
2040035	Guardrail, Rem	Ft	255	\$3.00	\$765
2040050	Pavt, Rem	Syd	1670	\$12.00	\$20,040
2040055	Sidewalk, Rem	Syd	280	\$15.00	\$4,200
2060002	Backfill Structure, CIP	Cyd	300	\$40.00	\$12,000
2060010	Excavation, Fdn	Cyd	300	\$30.00	\$9,000
2080036	Erosion Control, Silt Fence	Ft	800	\$5.00	\$4,000
3017021	Subbase, CIP, Class II Granular Material, Modified	Cyd	38	\$30.00	\$1,140
3027021	Aggregate Base, Variable Thickness	Cyd	570	\$75.00	\$42,750
4027001	Sewer, CI IV, 12 Inch, Tr Det B, Modified	Ft	50	\$125.00	\$6,250
4037050	Dr Structure, Inlet-Junction Chamber	Ea	2	\$3,000.00	\$6,000
4037050	Dr Structure Cover, Type K, Special	Ea	2	\$1,000.00	\$2,000
5010031	HMA, 3C	Ton	735	\$200.00	\$147,000
5010032	HMA, 4C	Ton	225	\$200.00	\$45,000
7040003	Steel Sheet Piling, Temp, Left in Place	Sft	1400	\$50.00	\$70,000
7050002	Pile Driving Equipment, Furn	LSUM	1	\$14,000	\$14,000
7050030	Pile, Steel, Furn and Driven, 12 inch	Ft	280	\$50.00	\$14,000
7060001	Bridge Ltg, Furn and Rem	LSUM	1	\$5,000.00	\$5,000
7060002	Bridge Ltg, Oper and Maintain	Cyd	195	\$3.00	\$585
7060030	Conduit, 3 inch	Ft	330	\$18.00	\$5,940
7060050	Expansion Joint Device	Ft	208	\$250.00	\$52,000
7060051	Expansion Joint Device, Cover Plate	Ft	60	\$250.00	\$15,000
7060060	False Decking	Sft	5280	\$5.00	\$26,400
7060092	Reinforcement, Steel, Epoxy Coated	Lb	62900	\$2.00	\$125,800
7060100	Substructure Conc	Cyd	233	\$1,250.00	\$291,250
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting	LSUM	1	\$117,000.00	\$117,000
7060113	Superstructure Conc, Night Casting	Cyd	195	\$600.00	\$117,000
7067051	Retaining Wall, Misc.	LSUM	1	\$150,000.00	\$150,000
7070040	Shear Developers	LSUM	1	\$10,000.00	\$10,000
7070050	Structural Steel, Mixed, Erect	Lb	7600	\$11.00	\$83,600
7070051	Structural Steel, Mixed, Furn and Fab	Lb	7600	\$8.00	\$60,800
7070070	Structural Steel, Rolled Shape, Erect	Lb	46300	\$9.00	\$416,700
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	46300	\$6.00	\$277,800
7077050	Bearing, Elastomeric	Ea	64	\$3,000.00	\$192,000
7100010	Conc Surface Coating	LSUM	1	\$50,000.00	\$50,000
7117001	Bridge Railing, Aesthetic Parapet Tube	Ft	160	\$225.00	\$36,000
7117001	Bridge Railing, Aesthetic Parapet Tube, Modified	Ft	160	\$250.00	\$40,000
7120001	Scarifying	Syd	848	\$30.00	\$25,440
7120007	Hand Chipping, Other Than Deck	Cft	150	\$300.00	\$45,000
7120010	Patch, Full Depth	Cyd	6	\$2,000.00	\$12,000
7120112	Patching Conc, C-L	Cyd	12	\$1,250.00	\$15,000
7120017	Patch, Forming	Sft	300	\$100.00	\$30,000
7120023	Conc, Bridge Deck Ovly	Cyd	70	\$400.00	\$28,000
7120025	Bridge Deck Surface Construction	Syd	848	\$125.00	\$106,000
7120028	Adhesive Anchoring of Horizontal Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	150	\$25.00	\$3,750
7120070	Structures, Rehabilitation, Rem Portions (Str 11065)	LSUM	1	\$400,000.00	\$400,000
7120071	Deck Joint, Rem	Ft	178	\$225.00	\$40,050
7130071	Structural Steel, Retrofit, Furn, Fab, and Erect	Lb	1000	\$20.00	\$20,000
7130080	Support, Column, Temp	Ea	48	\$7,500.00	\$360,000
7150045	Steel Structure, Cleaning, Type 4	LSUM	1	\$450,000.00	\$450,000
7150046	Steel Structure, Coating, Type 4	LSUM	1	\$225,000.00	\$225,000
8027001	Curb and Gutter, Conc, Det F4, Special	Ft	400	\$30.00	\$12,000
8030036	Sidewalk Ramp, Conc, 6 inch	Sft	66	\$10.00	\$660
8037010	Detectable Warning Tiles	Sft	10	\$18.00	\$180
8037010	Sidewalk, Concrete, 6 inch, Special	Sft	3045	\$8.00	\$24,360
8070041	Guardrail Approach Terminal, Type 1T	Ea	2	\$1,500.00	\$3,000
8070130	Guardrail Anch, Bridge, Det M1	Ea	2	\$2,200.00	\$4,400
8070051	Guardrail Departing Terminal, Type T	Ea	2	\$1,500.00	\$3,000
8110094	Pavt Mrkg, Polyurea, 6 inch, White	Ft	900	\$4.00	\$3,600
8110095	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	550	\$4.00	\$2,200
8120170	Minor Traffic Devices, Max. \$ _____	LSUM	1	\$180,000.00	\$180,000
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1500	\$1.00	\$1,500
8127060	Railroad Inspection and Flagging	LSUM	1	\$200,000.00	\$200,000
8137011	Slope Protection, Replace	Syd	100	\$100.00	\$10,000
8167011	Hydroseeding	Syd	300	\$10.00	\$3,000
8167011	Topsoil Surface, 4 inch	Syd	300	\$10.00	\$3,000
8197051	Lighting, Misc.	LSUM	1	\$20,000.00	\$20,000
8207050	TS Mast Arm	Ea	1	\$50,000.00	\$50,000
8207051	TS Control Cabinet, Relocate, Complete	LSUM	1	\$30,000.00	\$30,000
	Subtotal				\$5,357,910
	Additional Roadway				\$100,000
	Additional Utility Relocation				\$125,000
	Contingency and Inflation				25%
	Widen East- Deep Overlay Total				\$6,980,000

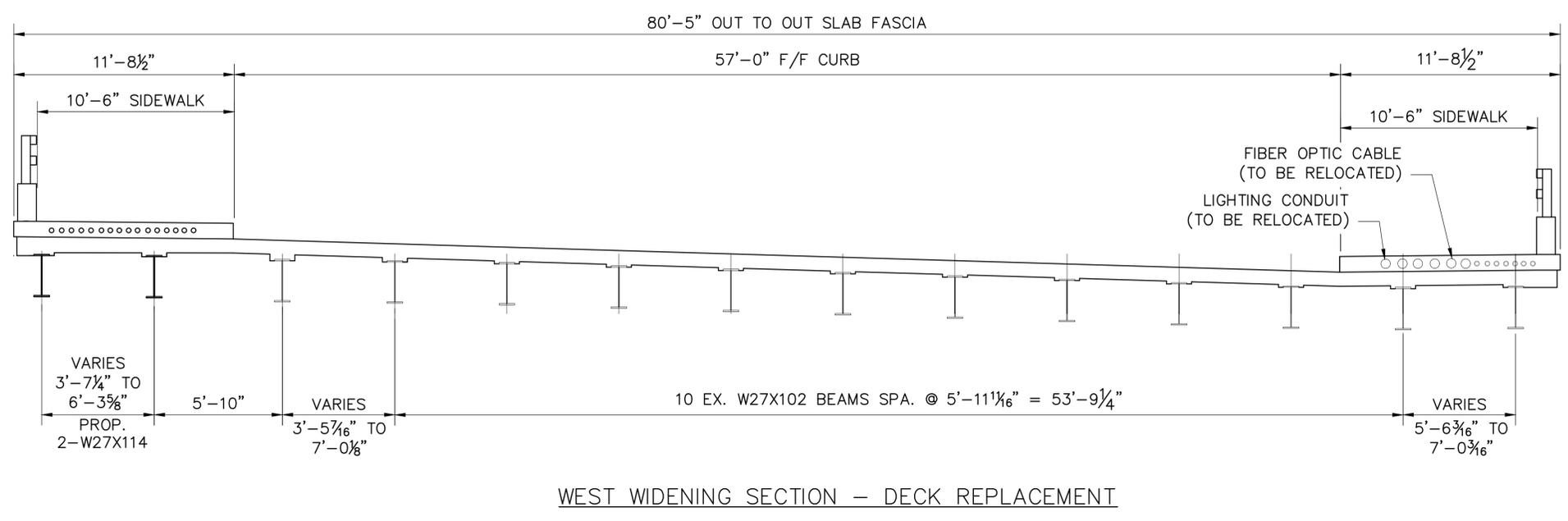
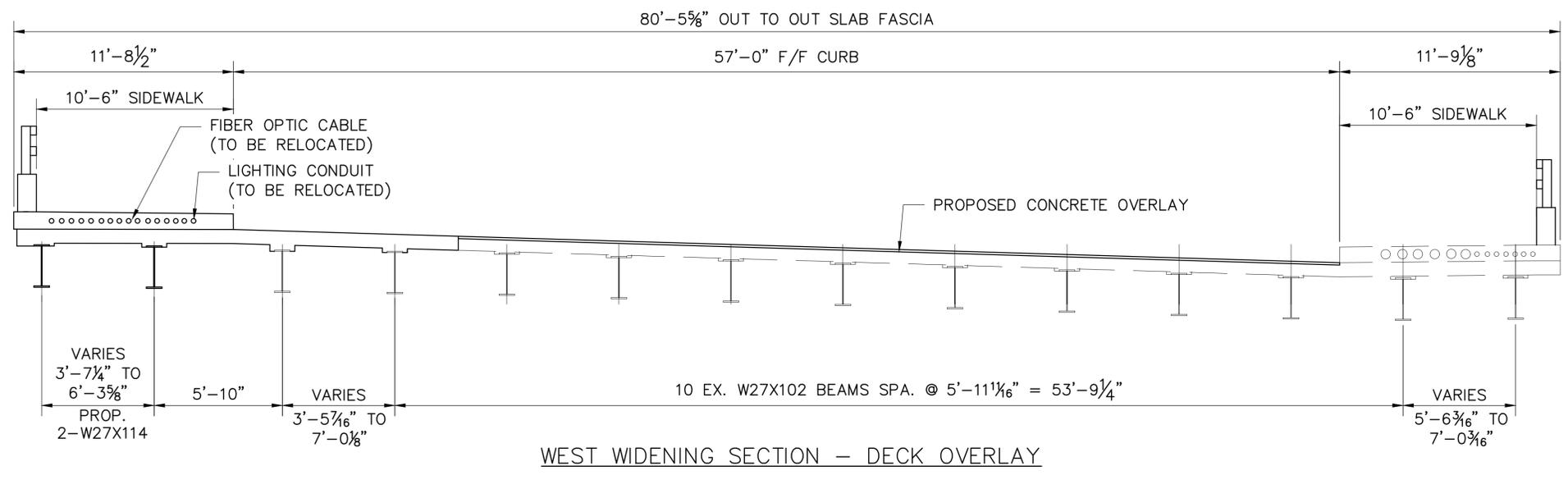
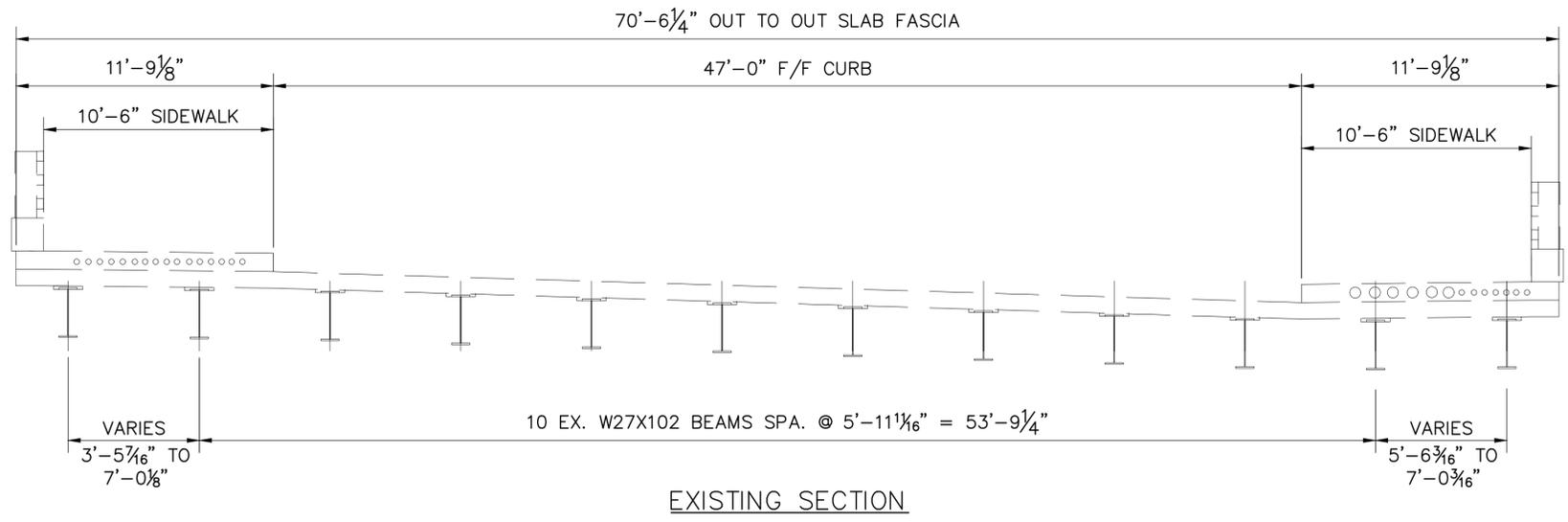
**OPINION OF PROBABLE
CONSTRUCTION COST**

PROJECT: EMC Over RR
 LOCATION: Ann Arbor, Michigan
 BASIS FOR ESTIMATE: CONCEPTUAL PRELIMINARY FINAL
 WORK: No Widening - Deck Overlay

DATE: April 5, 2021
 PROJECT NO. 210232
 ESTIMATOR: MT
 CHECKED BY: BSM
 CURRENT ENR:

Item Number	Description	Unit	Estimated Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1	\$350,000.00	\$350,000
2010001	Clearing	Ac	1	\$20,000.00	\$20,000
2040020	Curb and Gutter, Rem	Ft	400	\$5.00	\$2,000
2040035	Guardrail, Rem	Ft	255	\$3.00	\$765
2040050	Pavt, Rem	Syd	1670	\$12.00	\$20,040
2040055	Sidewalk, Rem	Syd	100	\$15.00	\$1,500
2080036	Erosion Control, Silt Fence	Ft	800	\$5.00	\$4,000
3017021	Subbase, CIP, Class II Granular Material, Modified	Cyd	12	\$30.00	\$360
3027021	Aggregate Base, Variable Thickness	Cyd	475	\$75.00	\$35,625
5010031	HMA, 3C	Ton	615	\$200.00	\$123,000
5010032	HMA, 4C	Ton	190	\$200.00	\$38,000
7060001	Bridge Ltg, Furn and Rem	LSUM	1	\$5,000.00	\$5,000
7060002	Bridge Ltg, Oper and Maintain	Cyd	30	\$3.00	\$90
7060050	Expansion Joint Device	Ft	208	\$250.00	\$52,000
7060051	Expansion Joint Device, Cover Plate	Ft	60	\$250.00	\$15,000
7060060	False Decking	Sft	5280	\$5.00	\$26,400
7060092	Reinforcement, Steel, Epoxy Coated	Lb	30900	\$2.00	\$61,800
7060100	Substructure Conc	Cyd	107	\$1,250.00	\$133,750
7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting	LSUM	1	\$18,000.00	\$18,000
7060113	Superstructure Conc, Night Casting	Cyd	30	\$600.00	\$18,000
7077050	Bearing, Elastomeric	Ea	48	\$3,000.00	\$144,000
7100010	Conc Surface Coating	LSUM	1	\$40,000.00	\$40,000
7117001	Bridge Railing, Aesthetic Parapet Tube, Modified	Ft	320	\$250.00	\$80,000
7120001	Scarifying	Syd	848	\$30.00	\$25,440
7120007	Hand Chipping, Other Than Deck	Cft	150	\$300.00	\$45,000
7120010	Patch, Full Depth	Cyd	6	\$2,000.00	\$12,000
7120112	Patching Conc, C-L	Cyd	12	\$1,250.00	\$15,000
7120017	Patch, Forming	Sft	300	\$100.00	\$30,000
7120023	Conc, Bridge Deck Ovly	Cyd	70	\$400.00	\$28,000
7120025	Bridge Deck Surface Construction	Syd	848	\$125.00	\$106,000
7120034	Adhesive Anchoring of Vertical Bar, 3/4 inch	Ea	300	\$25.00	\$7,500
7120070	Structures, Rehabilitation, Rem Portions (Str 11065)	LSUM	1	\$400,000.00	\$400,000
7120071	Deck Joint, Rem	Ft	178	\$225.00	\$40,050
7120076	Hydrodemolition, First Pass	Syd	848	\$100.00	\$84,800
7120077	Hydrodemolition, Second Pass	Syd	848	\$30.00	\$25,440
7120120	Embedded Galvanic Anode	Ea	250	\$5.00	\$1,250
7130071	Structural Steel, Retrofit, Furn, Fab, and Erect	Lb	1000	\$20.00	\$20,000
7130080	Support, Column, Temp	Ea	48	\$7,500.00	\$360,000
7150045	Steel Structure, Cleaning, Type 4	LSUM	1	\$450,000.00	\$450,000
7150046	Steel Structure, Coating, Type 4	LSUM	1	\$225,000.00	\$225,000
8027001	Curb and Gutter, Conc, Det F4, Special	Ft	400	\$30.00	\$12,000
8037010	Sidewalk, Concrete, 6 inch, Special	Sft	840	\$8.00	\$6,720
8070041	Guardrail Approach Terminal, Type 1T	Ea	2	\$1,500.00	\$3,000
8070130	Guardrail Anch, Bridge, Det M1	Ea	2	\$2,200.00	\$4,400
8070051	Guardrail Departing Terminal, Type T	Ea	2	\$1,500.00	\$3,000
8110094	Pavt Mrkg, Polyurea, 6 inch, White	Ft	900	\$4.00	\$3,600
8110095	Pavt Mrkg, Polyurea, 4 inch, Yellow	Ft	550	\$4.00	\$2,200
8120170	Minor Traffic Devices, Max. \$	LSUM	1	\$180,000.00	\$180,000
8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	Ft	1150	\$1.00	\$1,150
8127060	Railroad Inspection and Flagging	LSUM	1	\$200,000.00	\$200,000
8137011	Slope Protection, Replace	Syd	50	\$100.00	\$5,000
8167011	Hydroseeding	Syd	300	\$10.00	\$3,000
8167011	Topsoil Surface, 4 inch	Syd	300	\$10.00	\$3,000
8197051	Lighting, Misc.	LSUM	1	\$20,000.00	\$20,000
Subtotal					\$3,511,880
Contingency and Inflation					25%
No Widen - Deep Overlay Total					\$4,390,000

Appendix 2



811
Know what's below. Call before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED

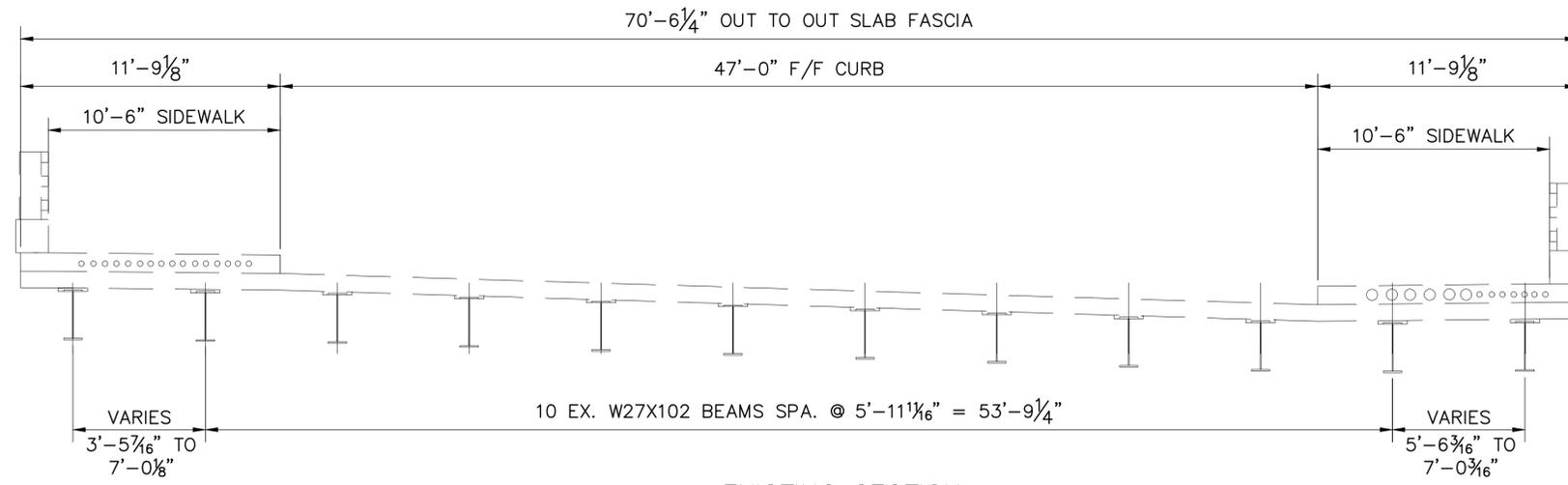
CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-1667
www.a2gov.org

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
CITY OF ANN ARBOR 2021 BRIDGE
CAPITAL PREVENTIVE MAINTENANCE REPAIRS
TYPICAL SECTION

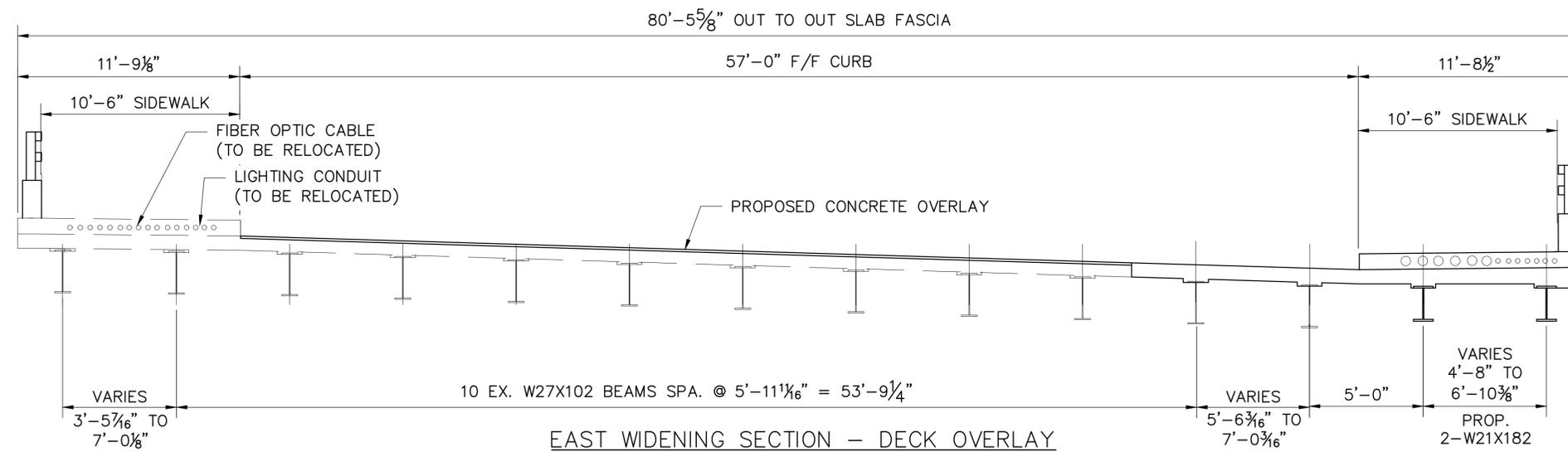
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PROFILE: N/A

DRAWING No. 2021-XXX

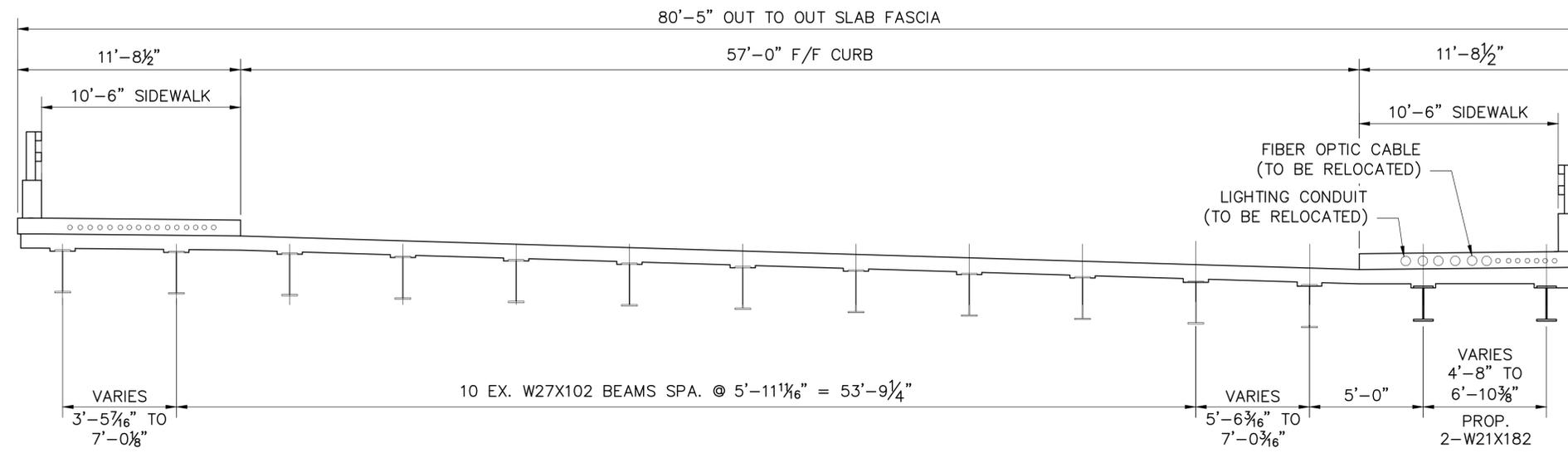
SHEET No.



EXISTING SECTION



EAST WIDENING SECTION - DECK OVERLAY

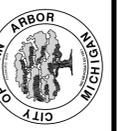


EAST WIDENING SECTION - DECK REPLACEMENT



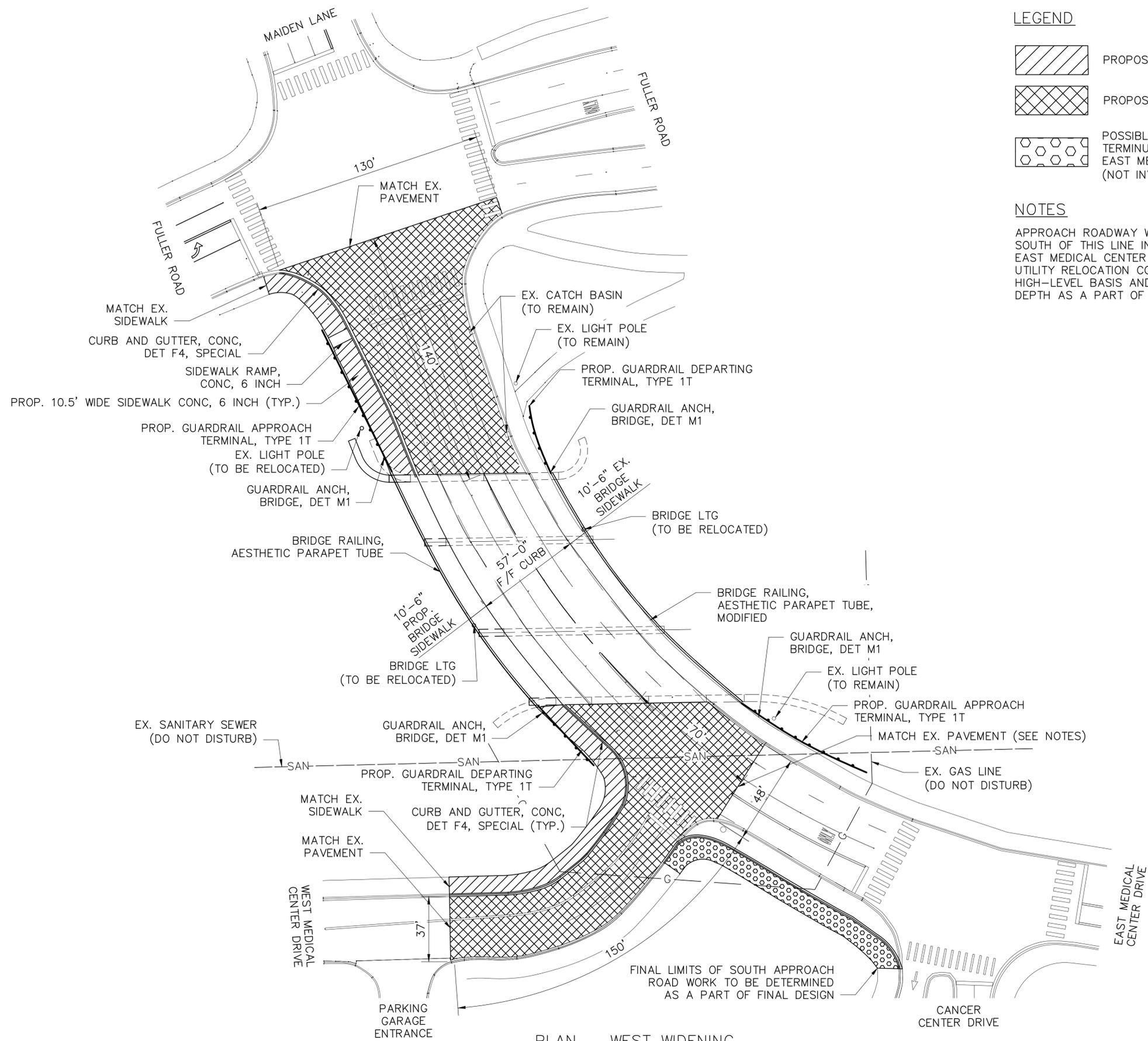
REV.	DESCRIPTION	DATE	DRAWN	CHECKED

CITY OF ANN ARBOR
 PUBLIC SERVICE
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-6647
 www.a2gov.org



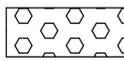
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR
 CITY OF ANN ARBOR 2021 BRIDGE
 CAPITAL PREVENTIVE MAINTENANCE REPAIRS
 TYPICAL SECTION

SCALE: 1"=4'
 PROFILE: N/A
 DRAWING No. 2021-XXX
 SHEET No.



PLAN - WEST WIDENING

LEGEND

-  PROPOSED SIDEWALK
-  PROPOSED PAVEMENT
-  POSSIBLE ROADWAY SOUTHERN TERMINUS TO TIE INTO EXISTING EAST MEDICAL CENTER DRIVE (NOT INVESTIGATED IN-DEPTH)

NOTES

APPROACH ROADWAY WILL NEED TO CONTINUE TO THE SOUTH OF THIS LINE IN ORDER TO TIE IN WITH THE EXISTING EAST MEDICAL CENTER DRIVE. THE APPROACH ROADWAY UTILITY RELOCATION COSTS ARE ESTIMATED ON A HIGH-LEVEL BASIS AND HAVE NOT BEEN INVESTIGATED IN DEPTH AS A PART OF THIS REPORT



Know what's below.
Call Before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED

CITY OF ANN ARBOR
 PUBLIC SERVICES
 301 EAST HURON STREET
 ANN ARBOR, MI 48106-1700
 734.794.4410
 www.a2gov.org



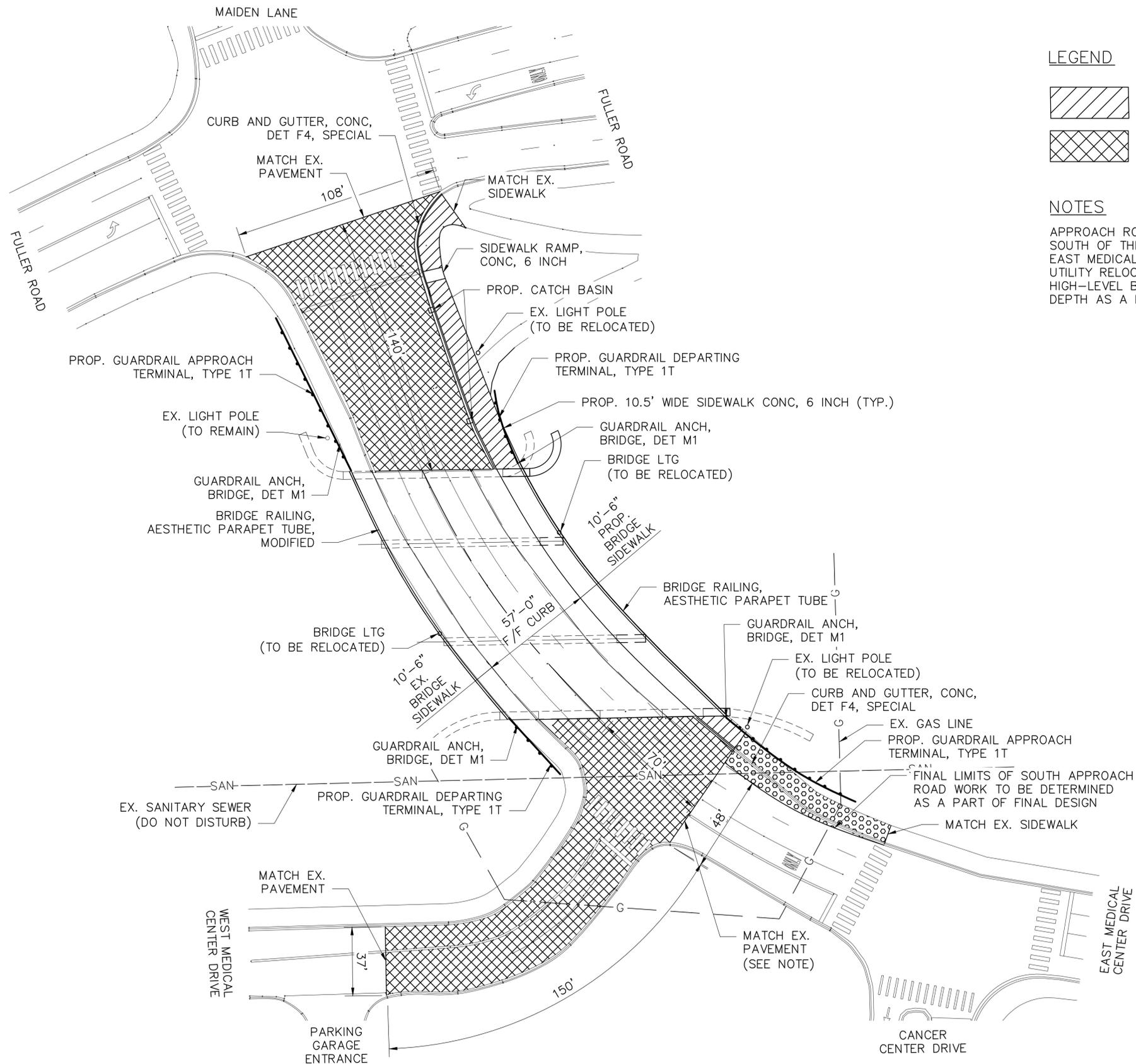
PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

CITY OF ANN ARBOR 2021 BRIDGE
 CAPITAL PREVENTIVE MAINTENANCE REPAIRS
 SITE PLAN

SCALE 1"=30'
 PROFILE: N/A

DRAWING No.
 2021-XXX

SHEET No.



PLAN - EAST WIDENING

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PAVEMENT

NOTES

APPROACH ROADWAY WILL NEED TO CONTINUE TO THE SOUTH OF THIS LINE IN ORDER TO TIE IN WITH THE EXISTING EAST MEDICAL CENTER DRIVE. THE APPROACH ROADWAY UTILITY RELOCATION COSTS ARE ESTIMATED ON A HIGH-LEVEL BASIS AND HAVE NOT BEEN INVESTIGATED IN DEPTH AS A PART OF THIS REPORT

811
Know what's below.
Call Before you dig.

REV.	DESCRIPTION	DATE	DRAWN	CHECKED

CITY OF ANN ARBOR
PUBLIC SERVICES
301 EAST HURON STREET
ANN ARBOR, MI 48106-1647
www.a3gov.org

PROJECT MANAGEMENT - PUBLIC SERVICES - CITY OF ANN ARBOR

CITY OF ANN ARBOR 2021 BRIDGE

CAPITAL PREVENTIVE MAINTENANCE REPAIRS

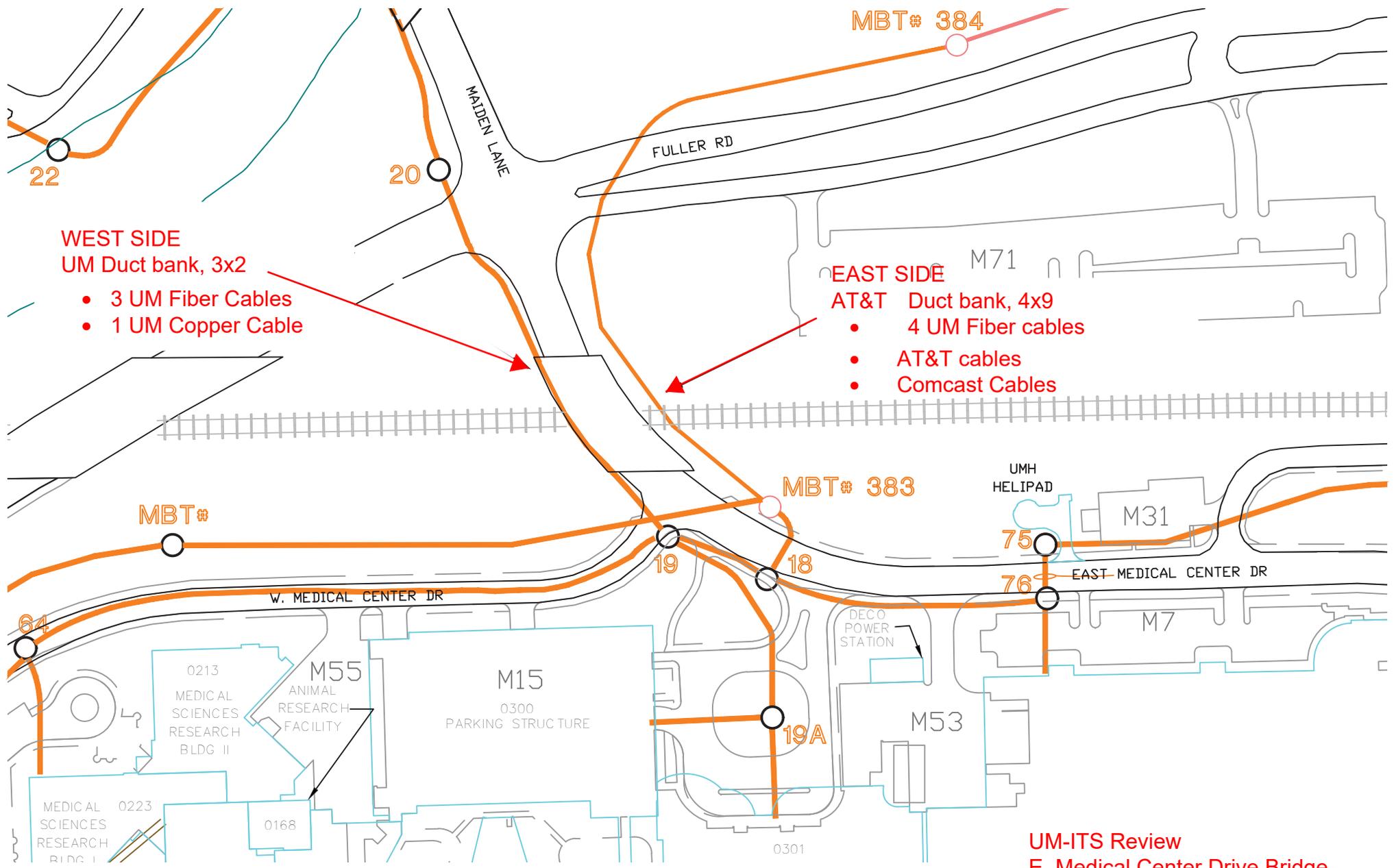
SITE PLAN

PROFILE: N/A

SCALE: 1"=30'

DRAWING No. 2021-XXX

SHEET No.



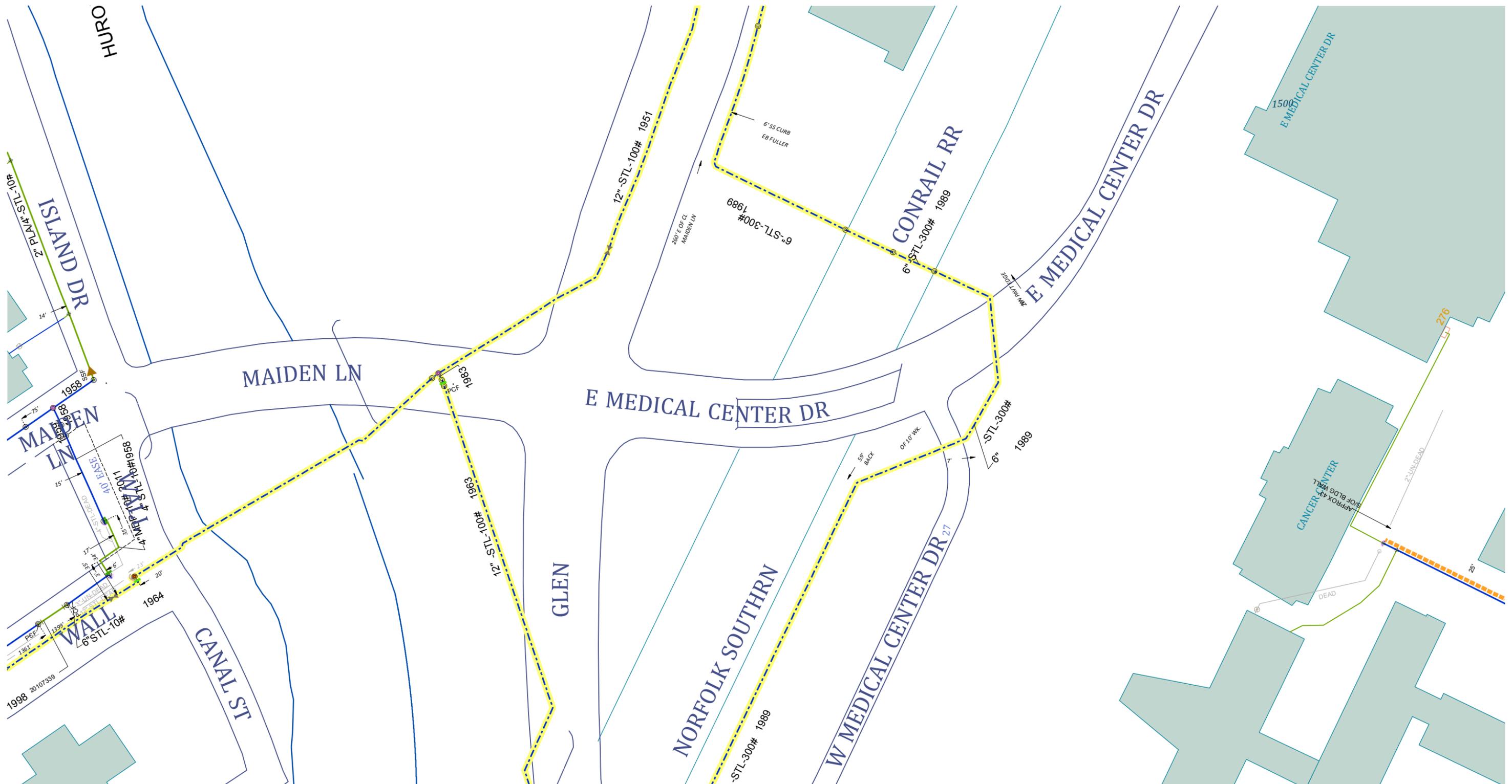
WEST SIDE
 UM Duct bank, 3x2

- 3 UM Fiber Cables
- 1 UM Copper Cable

EAST SIDE
 AT&T Duct bank, 4x9

- 4 UM Fiber cables
- AT&T cables
- Comcast Cables

UM-ITS Review
 E. Medical Center Drive Bridge
 Kevin McLaughlin, 734-433-6781
 2-10-21



DTE GAS COMPANY FACILITIES AS SHOWN
 INDICATE APPROXIMATE LOCATIONS ONLY AS DISCLOSED BY THE
 COMPANY'S RECORDS AND NO GUARANTEE IS MADE EITHER AS
 TO COMPLETENESS OR ACCURACY.

DTE GAS COMPANY

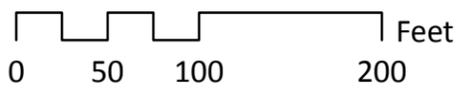
SIGNED: */s/ Alec D. Madison* January 13, 2021

CONSTRUCTION PLANS MADE SUBSEQUENT TO THIS DATE
 SHOULD BE CHECKED WITH DTE GAS COMPANY

- Pipe Material**
- CU - Copper
 - PLA - Plastic
 - STL - Bare Steel
 - STL - Coated Steel
 - CI - Cast Iron
 - WI - Wrought Iron
 - UN - Unknown
 - Inactive
 - Abandoned
- Main Line Styles**
- - - - In Design Main (Proposed)
 - Distribution Main
 - J — Joint Trench
 - EP — Exposed Pipe
 - Pipe Lining (CI or WI)
 - Transmission Main
 - - - - Subtransmission Main



STATE LAW ACT 174
 3 WORKING DAYS
 BEFORE YOU DIG
 DIAL TOLL FREE
 1-800-482-7171 OR 811

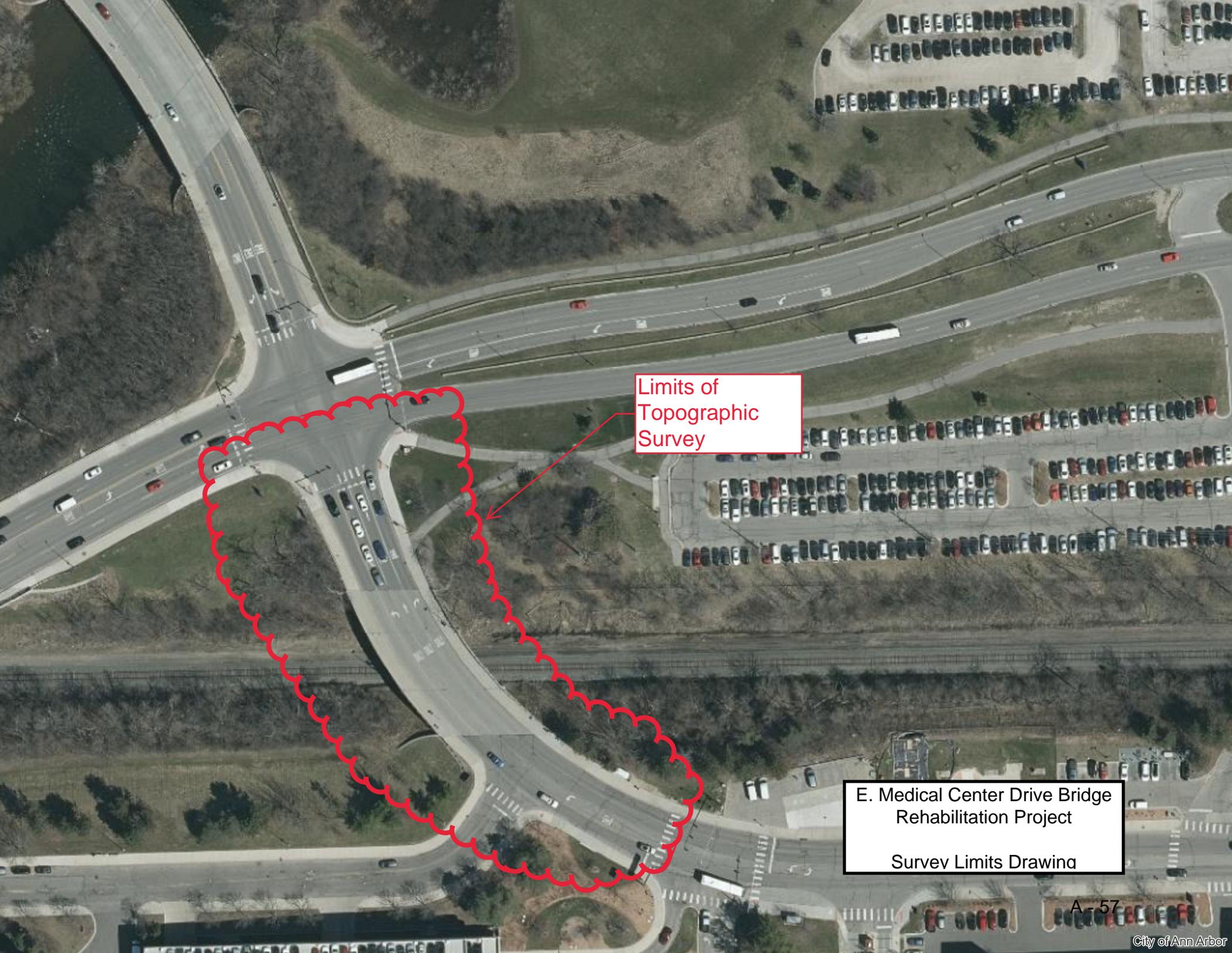


WARNING

HIGH PRESSURE MAINS ARE HIGHLIGHTED - - - -
 THEY SUPPLY GAS TO A LARGE NUMBER OF HOMES AND
 INDUSTRIES OF DETROIT AND VICINITY

IT IS OF THE UTMOST IMPORTANCE THAT EVERY PRECAUTION
 BE TAKEN SO AS NOT TO ENDANGER ITS USE DURING OR
 FOLLOWING YOUR CONSTRUCTION

DTE GAS COMPANY



Limits of
Topographic
Survey

E. Medical Center Drive Bridge
Rehabilitation Project
Survey Limits Drawing

**ATTACHMENT B
LEGAL STATUS OF OFFEROR**

(The Respondent shall fill out the provision and strike out the remaining ones.)

The Respondent is:

- A corporation organized and doing business under the laws of the state of _____, for whom _____ bearing the office title of _____, whose signature is affixed to this proposal, is authorized to execute contracts on behalf of respondent.*

*If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.
- A partnership organized under the laws of the State of _____ and filed with the County of _____, whose members are (attach list including street and mailing address for each.)
- An individual, whose signature with address, is affixed to this RFP.

Respondent has examined the basic requirements of this RFP and its scope of services, including all Addendum (if applicable) and hereby agrees to offer the services as specified in the RFP.

Signature Date: _____,

(Print) Name _____ Title _____

Firm: _____

Address: _____

Contact Phone _____

Fax _____

Email _____

**ATTACHMENT D
CITY OF ANN ARBOR**

LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here No. of employees__

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$14.05/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$15.66/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Company Name

Street Address

Signature of Authorized Representative

Date

City, State, Zip

Print Name and Title

Phone/Email address



ATTACHMENT E

VENDOR CONFLICT OF INTEREST DISCLOSURE FORM
--

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor’s conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee’s immediate family member has an ownership interest in vendor’s company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor’s Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor’s company <input type="checkbox"/> Other (please describe in box below)

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	Vendor Phone Number	
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

ATTACHMENT F
CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.
You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

**THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.**

ATTACHMENT G

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2021 - ENDING APRIL 29, 2022

\$14.05 per hour

If the employer provides health care benefits*

\$15.66 per hour

If the employer does **NOT** provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

**For Additional Information or to File a Complaint contact
Colin Spencer at 734/794-6500 or cspencer@a2gov.org**

APPENDIX A: SAMPLE PROFESSIONAL SERVICES AGREEMENT

If a contract is awarded, the selected Firm(s) will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors/service providers to the City of Ann Arbor. The required provisions are:

(2020 PSA Auto AI over \$25,000 Rev. 1)

PROFESSIONAL SERVICES AGREEMENT BETWEEN

AND THE CITY OF ANN ARBOR
FOR _____

This agreement ("Agreement") is between the City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and _____ ("Contractor"), a(n) _____, with its address at _____ (State where organized) _____ (Partnership, Sole Proprietorship, or Corporation). City and Contractor are referred to collectively herein as the "Parties." The Parties agree as follows:

I. DEFINITIONS

Administering Service Area/Unit means _____.

Contract Administrator means _____, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

Project means _____
Project name

II. DURATION

Contractor shall commence performance on _____, 20__ ("Commencement Date"). This Agreement shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI. The terms and conditions of this Agreement shall apply to the earlier of the Effective Date or Commencement Date.

III. SERVICES

A. The Contractor agrees to provide _____
Type of service
("Services") in connection with the Project as described in Exhibit A. The City

retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the compensation shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

- . Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.
- C. The Contractor shall perform its Services for the Project in compliance with all statutory, regulatory, and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement. The Contractor shall also comply with and be subject to the City of Ann Arbor policies applicable to independent contractors.
- D. The Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

Contractor does not have any authority to execute any contract or agreement on behalf of the City, and is not granted any authority to assume or create any obligation or liability on the City's behalf, or to bind the City in any way.

V. COMPENSATION OF CONTRACTOR

- A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.
- B. The Contractor will be compensated for Services performed in addition to the Services described in Article III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.
- C. The Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

VI. INSURANCE/INDEMNIFICATION

- A. The Contractor shall procure and maintain from the Effective Date or Commencement Date of this Agreement (whichever is earlier) through the conclusion of this Agreement, such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Agreement; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the policies and endorsements required by Exhibit C. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

- B. Any insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

- C. To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses, including attorney's fees, resulting or alleged to result, from any acts or omissions by Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.

VII. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

- B. Living Wage. If the Contractor is a “covered employer” as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a “living wage,” as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VIII. WARRANTIES BY THE CONTRACTOR

- A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.
- B. The Contractor warrants that it has all the skills, experience, and professional licenses (if applicable) necessary to perform the Services pursuant to this Agreement.
- C. The Contractor warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services pursuant to this Agreement.
- D. The Contractor warrants that it has no personal or financial interest in the Project other than the fee it is to receive under this Agreement. The Contractor further certifies that it shall not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of the Services it is to provide pursuant to this Agreement. Further Contractor agrees and certifies that it does not and will not employ or engage any person with a personal or financial interest in this Agreement.
- E. The Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes. Further Contractor agrees that the City shall have the right to set off any such debt against compensation awarded for Services under this Agreement.
- F. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

- G. The person signing this Agreement on behalf of Contractor represents and warrants that she/he has express authority to sign this Agreement for Contractor and agrees to hold the City harmless for any costs or consequences of the absence of actual authority to sign.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Contractor access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.
- B. The City shall notify the Contractor of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.
- B. The Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. TERMINATION OF AGREEMENT

- A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.
- B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor

written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.

- D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

XII. REMEDIES

- A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.
- B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.
- C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently effect its right to require strict performance of this Agreement.

XIII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated below or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

instance where, as the result of Contractor's representation, the Contractor has obtained sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

XVII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVIII. EXTENT OF AGREEMENT

This Agreement, together Exhibits A, B, and C, constitutes the entire understanding between the City and the Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

XIX. ELECTRONIC TRANSACTION

The parties agree that signatures on this Agreement may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Agreement. This Agreement may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

XX. EFFECTIVE DATE

This Agreement will become effective when all parties have signed it. The Effective Date of this Agreement will be the date this Agreement is signed by the last party to sign it.

[REMAINDER OF PAGE LEFT BLANK; SIGNATURE PAGE FOLLOWS]

FOR CONTRACTOR

By _____
Type Name

Its

Date: _____

FOR THE CITY OF ANN ARBOR

By _____
Christopher Taylor, Mayor

By _____
Jacqueline Beaudry, City Clerk

Date: _____

Approved as to substance

Type Name
Service Area Administrator

Tom Crawford, City Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

**EXHIBIT A
SCOPE OF SERVICES**

(Insert/Attach Scope of Work & Deliverables Schedule)

EXHIBIT B COMPENSATION

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

(insert/Attach Negotiated Fee Arrangement)

**EXHIBIT C
INSURANCE REQUIREMENTS**

From the earlier of the Effective Date or the Commencement Date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall have, at a minimum, the following insurance, including all endorsements necessary for Contractor to have or provide the required coverage.

A. The Contractor shall have insurance that meets the following minimum requirements:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting the Contractor and its employees in an amount not less than \$1,000,000.

2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident
Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit

3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the following minimum limits of liability are required:

\$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined
\$2,000,000	Per Project General Aggregate
\$1,000,000	Personal and Advertising Injury

4. Motor Vehicle Liability Insurance equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- B. Insurance required under A.3 and A.4 above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.
- C. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and unqualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company; name(s), email address(es), and address(es) of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions, which may be approved by the City in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. If any of the above coverages expire by their terms during the term of this Agreement, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.