

## PROJECT APPROACH

### PROJECT UNDERSTANDING

The Lake Park Arch Bridge over Ravine Drive is over 110 years old and constructed of concrete reinforced with a mixture of proprietary steel reinforcement and round steel bars. The bridge has been repaired and/or patched on more than one occasion over its lifetime. Period photographs lead us to understand the ornamental baluster parapet has been removed and replaced, and the metal cross bracing between the bottom flanges of the arch ribs has been removed without replacement.



The bridge is a contributing structure to the Lake Park Historic District listed on the National Register of Historic Places and included in the locally designated North Point North Historic District. The bridge is also a contributing structure to the National Register-eligible Lake Michigan Parkway (north). The bridge was designed by noted architects George B. Ferry and Alfred C. Clas between 1905 and 1906.

Milwaukee County is compelled to address the distressed condition of this historic structure in a manner consistent with the Secretary of the Interior's Standards for Rehabilitation and the City of Milwaukee Historic Preservation Ordinance. To the extent possible, the design will incorporate sustainable or "green" components into the project and/or project planning. Additionally, the repair/rehabilitation design is to extend the service life of the bridge 50 years beyond completion of the repair/rehabilitation efforts.

During our on-site review and after researching documents pertaining to the rehabilitation of this bridge, the ONE team has determined the following general conditions of the bridge and proposed rehabilitation:

- The bridge deck and parapet wall have deteriorated to the point that replacement is likely inevitable.
- Drainage and erosion have resulted in the undermining of some portions of the vaulted abutment walls, causing distress, out of plane sloping and translation.
- The existing condition of the vaulted abutment walls needs to be addressed.
- The thrust blocks, arch ribs, spandrel beams, struts and diaphragm will need to be repaired and/or reinforced.

The project is funded with \$2 million in federal Transportation Alternative Program (TAP) grant funds administered by WisDOT and \$500,000 in Milwaukee County funds. Because the TAP grant is administered by WisDOT, it requires conformance with federal and state laws and regulations along with certification requirements to be met by the County and its consultant. ONE understands that the type of contract for engineering services has not yet been finalized, but will be either a three-party contract (WisDOT, Milwaukee County and the selected consultant) or a two-party contract (between the County and the consultant). Our team is familiar with both types of contracts and will comply with the selected contract.

Our proposed scope of services consists of, but is not limited to, the following tasks, which will be explained in more detail in our project approach:

- Review of existing project information
- Review previous geotechnical investigations and reports and perform additional geotechnical analysis for design efforts, if needed
- Provide agency coordination for plan reviews
- Provide agency coordination for permits required under Section 106 and the City of Milwaukee Historic Preservation Ordinance and compliance with the Secretary of the Interior's Standards for Rehabilitations
- Investigate, develop and incorporate elements necessary to comply with historic rehabilitation requirements into the construction documents
- Provide erosion control planning and design
- Schedule, attend and facilitate a project design kick-off meeting
- Attend monthly meetings as necessary to review the project status and address planning and design issues
- File necessary agency notices related to erosion control
- Submit three hard copy sets and electronic files of various reports, project manuals and construction plans at each level of project development
- Develop design calculations demonstrating that the repaired/rehabilitated structure can support 90 pounds per square foot live load
- Complete project environment documentation required for the TAP grant
- Develop Design Study Report (design development report)
- Host one public information meeting within Milwaukee County, including visualization of the repaired/rehabilitated bridge
- Develop a set of construction documents to be used in a local competitive bidding environment for the repair and restoration of the bridge leading to a 50-year remaining service life. Final construction documents will be completed by December 2020 for construction letting in Spring 2021, depending on funding.
- Develop a pre-bid engineer's estimate of probable construction cost; estimates of probable construction costs will also be developed at the various intermediate submittal stages (30%, 60% and 90%) in order to control the project's overall budget.
- Develop a recommended maintenance schedule for the rehabilitated bridge consistent with extending the life of the bridge for 50 years
- Incorporate sustainable or "green" infrastructure elements into the project to the extent possible

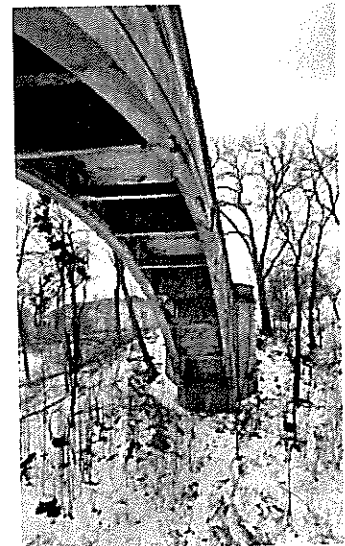
## PROJECT APPROACH

### **Project Administration**

Project administration will commence at Notice to Proceed anticipated at the end of June 2019. We will collect topographic survey data and previous inspection reports from Milwaukee County and then contract with our sub-consultants and prepare for a kick-off meeting. Milwaukee County will be invited, and the meeting will confirm the scope, schedule, roles and project approach. We will also review the project-specific Quality Management Plan (QMP) to see that each team conforms to the QMP over the lifespan of the project. Finally, we will schedule monthly project status meetings.

### **Bridge Assessment**

Rehabilitation design efforts will begin with a review of the existing project information, the development of condition assessment drawings, and field work. The ONE team will visit the bridge site to confirm that the conditions of the bridge are consistent with the July 2015 GRAEF in-depth Inspection Report. We will also conduct a laser scan survey of the bridge, the interior of the vaulted abutments and the surrounding topography. We will then develop



a 3D model of the bridge with the laser scan data. The 3D model will provide a dimensionally accurate model to be used for communication, visualization and design.

While at the project site, we will also video document the bridge's condition using an aerial drone and will visually confirm the topographic survey developed by Milwaukee County.

Accurately mapping the concrete deterioration is necessary to ascertain the condition of the bridge's elements. We will map the concrete deterioration using the condition assessment drawings to create a combination of thermography, traditional photography, sounding and visual inspection. Both the deteriorated concrete map and the 3D model will be used to create plans for concrete repair. Geotechnical investigations will be undertaken if deemed necessary.

No additional material testing is anticipated.

#### **Rehabilitation Planning and 30% Plans, Specifications and Estimates (PS&E)**

Once we have the 3D model, photography and deteriorated concrete mapped, we will be able to determine which elements of the bridge will be replaced and which will be repaired along with the extent of the repairs. At this point in the project development, it is desirable to consult with the SHPO and the City of Milwaukee Historic Preservation Commission and staff in addition to Milwaukee County and the Lake Park Friends organization.



Through consultation with the preservation agencies, we will determine which elements of the bridge will be repaired and/or replaced in-kind to minimize adverse effects to the historic bridge. The National Park Service's Preservation Brief 15, *Preservation of Historic Concrete* will be used as a guide while making decisions to repair and/or rehabilitate the concrete.

The conclusion of the rehabilitation planning will be marked with development of 30% plans and a 30% estimate of probable construction costs to document the overarching scope of the rehabilitation efforts and concurrence with SHPO, Milwaukee County and the City of Milwaukee. We anticipate the configuration of the bridge railing versus parapet will be defined and included on the 30% plans.

#### **60% PS&E**

The design of the replacement elements will be advanced to the point that the shape, dimension and structural demands are defined. We will also confirm the load carrying capacity of the arch ribs. At the 60% stage, pay items are defined, and a roster of technical specifications will be assembled. During this period, we will assemble visualizations to aid project reviews of the 60% plans by the SHPO, Milwaukee County and the City of Milwaukee.

We will also assemble an estimate of probable construction cost based on the 60% plans. The draft recommended maintenance schedule for the rehabilitated bridge will be developed during this period and submitted with the 60% plans. The Design Study Report will be done at the 60% completion stage.

#### **90% and 100% PS&E**

As part of this task, the 90% plans will be completed with quantities, pay items, notes and reference details. The technical specification will be completed and coordinated with the pay items presented in the Summary of Estimated Quantities Table. The estimate of probable construction cost will be updated based on the 90% plans. After receiving comments from Milwaukee County, SHPO and the City of Milwaukee, we will finalize the plans, specifications and estimates in addition to providing signed plans and specifications and calculations.

### Historic Coordination

Historian Emily Pettis from Mead & Hunt worked with Milwaukee County Project Manager Karl Stave to prepare a memorandum that outlines the compliance process for potential replacement of the Lake Park Bridge or conversion to non-vehicular use. The memorandum entitled "Regulatory Compliance and Next Steps – Lake Park Bridge over Ravine Drive" outlines the regulations that the team will need to consider for this project. Our project approach for historical coordination is to follow the recommendations contained in that memorandum. We will provide agency coordination for permits required under Section 106 and the City of Milwaukee Historic Preservation Ordinance and Secretary of the Interior's Standards for Rehabilitations.



### Environmental Checklists

We will prepare an environmental checklist for this project in accordance with the Sponsor's Guide, and we will coordinate review and approval of the checklist with the appropriate agencies.

### Open House Public Information Meeting

We will work with Milwaukee County to prepare and host one open house public information meeting for this project after the 30% PS&E stage. The date, time and location of this meeting will be coordinated with Milwaukee County and the Lake Park Friends. Exhibits and renderings of the proposed bridge rehabilitation will be presented along with an estimate of probable construction costs for the proposed rehabilitation.

### Civil/Erosion Control/Vegetation

For the path/roadway approaches to the bridge, we propose removing and replacing the pavement with new asphaltic pavement, similar to the paths/roadways that were removed and replaced for the Lake Park Lions Bridges projects. The approaches can be slightly widened and transitioned if necessary to match the clear width across the bridge. We understand that benches may be added at each end of the bridge, and, if so, can be incorporated into the design and PS&E. We will design the erosion control and vegetative items for the embankment slopes, similar to what was done for the two Lake Park Lions Bridges. We propose to use the same specifications for those two bridge projects and edit accordingly for this project. We will incorporate "lessons learned" for erosion control and vegetation from the Lions Bridges project into the PS&E for this project. Additionally, we will work with Milwaukee County Parks and the Lake Park Friends to determine which trees need to be removed to enhance the view of Lake Michigan. Part of the maintenance plan will be recommendations for vegetative control, including periodic tree trimming, underbrush cutting and prevention of removed trees from growing back.

### Utility Coordination

Although utilities are limited to park and drive lighting, irrigation, and storm sewer drainage system, these utilities will require coordination with both temporary and permanent relocation as well as and replacement. The electrical service to Lake Park is provided through the City of Milwaukee Bureau of Electrical Services. Park light fixture are decorative City of Milwaukee Harp Lights. Existing site and storm sewer drainage require redesign to eliminate runoff and erosion along the abutments and wing walls.

Early on in the project, we intend to establish a list of existing utilities and coordinate relocation and future utility needs with the providers and Milwaukee County Parks. We intend to contact Digger Hotline, Milwaukee County Parks and the private utilities to field locate their facilities. Utility coordination discussions and actions will be maintained in a project spreadsheet log.

### Engineering Cost Estimate

An accurate and reliable engineering cost estimate is essential for Milwaukee County's budget and to evaluate contractor bids. We intend to develop and share cost estimates at the 30% preliminary review, 60% DSR review and 90% pre-final review. We will incorporate the 90% review comments into a final project cost estimate.

The cost estimate will be developed by experienced staff in the design and construction of bridges with knowledge historic structure renovation. Due to the unique type of bridge structure and repairs, cost estimate will be developed utilizing actual estimated labor time and material cost. Modified state unit cost averages will only be utilized for comparison and reference. Additionally, we intend to obtain available bids of similar arch bridge rehabilitation projects constructed across the nation for comparison. We will internally have the final project cost estimate redeveloped and verified by an experienced independent professional engineer.



#### **Constructibility Review**

We intend to provide constructibility reviews continuously throughout the design development process. The final project plans and specifications will receive comprehensive constructibility review by experienced bridge design and construction engineers who are not members of the day-to-day design staff and will perform an independent review with summary recommendations. The review will include, but is not limited to:

- Construction staging and site access to minimize impacts on regular use and scheduled events in the Park and Bartolotta's Lake Park Bistro; limit construction staging to Ravine Drive
- Material selection; review materials for application and finishing associated construction application, accessibility, durability and timing
- Verify that necessary permits were obtained and that handling any hazardous materials are adequately addressed
- Review construction plans' general notes and details and see that they are comprehensive, clear and accurate
- Eliminate contradictions and redundancies between the construction plans and specifications
- See that the project schedule is doable and timely

#### **Maintenance Schedule**

We will develop a bridge preservation maintenance schedule to extend the life of the bridge to 50 years. The maintenance schedule will address the bridge itself and the adjoining site, including vegetation and slope stability. Included in the maintenance schedule will be the cyclical (non-condition-based) activities such as concrete sealing as well as condition-based activities like repair and patching.

No.	Sheet Title	Primary Resp.
1	Title Sheet	ONE
2	General Plan and Elevation - Bridge & Approaches	ONE
3	List of Sheets - Cross Sections	ONE
4	General Notes - Schedule of Quantities	ONE
5	Bridge Geometry	ONE
6	Deck and Parapet Wall Removal Details	Mead & Hunt
7	South Interior Structure - Plan View	ONE
8	South Interior Structure - West Wall Elevations (Walls 2 & 3)	ONE
9	South Interior Structure - West Wall Elevations (Walls 4, 5 & 6)	ONE
10	South Interior Structure - South and North Wall Elevations (Walls 7 & 1)	ONE
11	South Interior Structure - West Wall Elevations (Walls 8, 9 & 10)	ONE
12	South Interior Structure - West Wall Elevations (Walls 11 & 12)	ONE
13	North Interior Structure - Plan View	ONE
14	North Interior Structure - West Wall Elevations (Walls 2 & 3)	ONE
15	North Interior Structure - West Wall Elevations (Walls 4, 5 & 6)	ONE
16	North Interior Structure - South and North Wall Elevations (Walls 7 & 1)	ONE
17	South Interior Structure - West Wall Elevations (Walls 8, 9 & 10)	ONE
18	South Interior Structure - West Wall Elevations (Walls 11 & 12)	ONE
19	Helical Piles / Foundation Details	ONE
20	Interior Structure Details / Schedule of Reinforcement / Schedule of Quantities	ONE
21	Interior Structure Construction Sequence / Temporary Shoring	ONE
22	Interior Structure Construction Sequence / Temporary Shoring	ONE
23	Repair Loca. - South Approach Plan View	ONE
24	Repair Loca. - South Wing Wall & Abutment - Westerly Faces (1 of 2)	ONE
25	Repair Loca. - South Wing Wall & Abutment - Westerly Faces (2 of 2)	ONE
26	Repair Loca. - North Wing Wall & Abutment - Westerly Faces (1 of 2)	ONE
27	Repair Loca. - North Wing Wall & Abutment - Westerly Faces (2 of 2)	ONE
28	Repair Loca. - South Thrust Block & South Abut. Wall - North Face	ONE
29	Repair Loca. - South Wing Wall / Abut. / Thrust Block Details	ONE
30	Repair Loca. - South Abutment Wall Expansion Joints	ONE
31	Repair Loca. - West Arch Rib and Spandrel Walls - West Face (1 of 2)	ONE
32	Repair Loca. - West Arch Rib and Spandrel Walls - West Face (2 of 2)	ONE
33	Repair Loca. - West Arch Rib and Spandrel Walls - East Face (1 of 2)	ONE
34	Repair Loca. - West Arch Rib and Spandrel Walls - East Face (2 of 2)	ONE
35	Repair Loca. - West Arch Rib - Intrados Face & Opening Interior Faces	ONE
36	Repair Loca. - East Arch Rib - Intrados Face & Opening Interior Faces	ONE
37	Repair Loca. - East Arch Rib and Spandrel Walls - East Face (1 of 2)	ONE
38	Repair Loca. - East Arch Rib and Spandrel Walls - East Face (2 of 2)	ONE
39	Repair Loca. - East Arch Rib and Spandrel Walls - West Face (1 of 2)	ONE
40	Repair Loca. - East Arch Rib and Spandrel Walls - West Face (2 of 2)	ONE
41	Repair Loca. - North Thrust Block & North Abut. Wall - South Face	ONE
42	Repair Loca. - South Wing Wall / Abut. / Thrust Block Details	ONE
43	Repair Loca. - North Abutment Wall Expansion Joints	ONE
44	Repair Loca. - South Wing Wall & Abutment - Easterly Faces (1 of 2)	ONE
45	Repair Loca. - South Wing Wall & Abutment - Easterly Faces (2 of 2)	ONE
46	Repair Loca. - North Wing Wall & Abutment - Easterly Faces (1 of 2)	ONE
47	Repair Loca. - North Wing Wall & Abutment - Easterly Faces (2 of 2)	ONE
48	Repair Loca. - North Approach Plan View	ONE
49	Repair Loca. - Diaphragm 1 - Both Faces & Bottom	ONE
50	Repair Loca. - Diaphragm 2 - Both Faces & Bottom	ONE
51	Repair Loca. - Diaphragm 3 - Both Faces & Bottom	ONE
52	Repair Loca. - Diaphragm 4 - Both Faces & Bottom	ONE
53	Repair Loca. - Diaphragm 5 - Both Faces & Bottom	ONE
54	Repair Loca. - Strut 1.5 & 2.5- Four Sides	ONE
55	Repair Loca. - Strut 3.5 & 4.5- Four Sides	ONE
56	Concrete Repair Details - 1 of 7	ONE
57	Concrete Repair Details - 2 of 7	ONE
58	Concrete Repair Details - 3 of 7	ONE
59	Concrete Repair Details - 4 of 7	ONE
60	Concrete Repair Details - 5 of 7	ONE
61	Concrete Repair Details - 6 of 7	ONE
62	Concrete Repair Details - 7 of 7	ONE
63	Anode Application	ONE
64	Deck Reconstruction - Plan and Section	Mead & Hunt
65	Deck Reconstruction - Details (1 of 2)	Mead & Hunt
66	Deck Reconstruction - Details (2 of 2)	Mead & Hunt
67	Railing Reconstruction - Plan and Elevation	Mead & Hunt
68	Railing Reconstruction - Details 1 of 2	Mead & Hunt
69	Railing Reconstruction - Details 2 of 2	Mead & Hunt
70	Deck & Railing Bill of Reinforcement (1 of 2)	Mead & Hunt
71	Deck & Railing Bill of Reinforcement (2 of 2)	Mead & Hunt
72	Approach Rehabilitation	Mead & Hunt
73	Approach Rehabilitation	Mead & Hunt
74	Clearing / Grubbing and Grading	Mead & Hunt
75	Drainage 1 of 2	Mead & Hunt
76	Drainage 2 of 2	Mead & Hunt
77	Permanent Erosion Control Plan	Mead & Hunt
78	Erosion Control Details	Mead & Hunt
79	Erosion and Sedimentation Control Notes	Mead & Hunt
80	Turf Establishment and Landscaping	Mead & Hunt
81	Turf Establishment and Landscaping Details	Mead & Hunt
82	Rehabilitation Sequence Concept	ONE
83	Arch Rib Temporary Support Concept	ONE
84	Existing Topo	Mead & Hunt
85	Extant Drawings for Reference Only - 1 of 4	ONE
86	Extant Drawings for Reference Only - 2 of 4	ONE
87	Extant Drawings for Reference Only - 3 of 4	ONE
88	Extant Drawings for Reference Only - 4 of 4	ONE



Fee Computation Summary by Engineering Task

PROJECT TOTAL

Project ID: 2967-01-03/73

Table with columns: ONE Task Code, Task, Activity Code, Direct Labor Costs, Indirect Costs, Fixed Fee, Direct Expenses, Total. Rows 4-107, including sub-totals and a final TOTAL row.

Summary table with rows: ONE, Indirect Cost Rate (%): 152.50%; Mead & Hunt Indirect Cost Rate (%): 183.56%; WJE Indirect Cost Rate (%): 212.29%; Malus Engineering Indirect Cost Rate (%): 99.99%; Fixed Fee (%): 7.25%.

ONE TOTAL

Project ID:

Table with columns: ONE Task Code, Task, Activity Code, Direct Labor Costs, Indirect Costs, Fixed Fee, Direct Expenses, Total. Rows 4-60, including sub-totals.



Fee Computation Summary by Engineering Task

Table with 8 columns: Item #, Description, Quantity, Unit Cost, Total Cost, Fixed Fee, Direct Expenses, Total Fee. Lists 107 engineering tasks such as 'Edit Aerial Video / Photography', 'Arch Rib Structural Analysis', etc.

ONE Indirect Cost Rate (%): 153% Fixed Fee (%): 7.25%
ONE Fixed Fee Indirect Cost Rate (%) 150.00%

160
145
305
152.5

Mead and Hunt TOTAL

Project ID:

Large table with 8 columns: ONE Task Code, Task, Activity Code, Direct Labor Costs, Indirect Costs, Fixed Fee, Direct Expenses, Total. Lists 107 tasks similar to the first table but with different cost breakdowns.

Mead and Hunt Indirect Cost Rate (%): 183.56% Fixed Fee (%): 7.25%

**Fee Computation Summary by Engineering Task**

Head and Hunt Fixed Fee Indirect Cost Rate (%) 150.00% \* Assumes Indirect Rate > 150%

**WSJ TOTAL**

Project ID: \_\_\_\_\_

ONE Task Code	Task	Activity Code	Direct Labor Costs	Indirect Costs	Fixed Fee	Direct Expenses	Total
4	Kick Off Meeting	747					
5	Condition Assessment Findings Mtg.	747				\$38.60	\$38.60
6	County/Preser. Agency Coord. Mtg. 1	747					
7	County/Preser. Agency Coord. Mtg. 2	747					
8	County/Preser. Agency Coord. Mtg. 3	747					
9	County/Preser. Agency Coord. Mtg. 4	747					
10	Public Open House Meeting (PHM)	743					
11	Monthly Progress Mtgs - 12 Assumed	747					
29	30% Plan Review Meeting	747					
30	60% Plan Review Meeting	747					
31	90% Plan Review Meeting	747					
32	Project Progress Reports & Invoices	740					
50	Quality Assurance / Quality Control	740					
51	Develop / Administer Change Mgmt. Plan	740					
53	Review Existing Project Information	747					
54	Bridge Condition Confirmation	747	\$574.40	\$1,219.39	\$104.11		\$1,897.90
55	Laser Scan Survey	747					
56	Video / Photographic Doc. Of Bridge	747					
57	Map Deteriorated Concrete	747					
58	Perform Geotech. Invest.	1001					
60	Devel. 3-D Bridge Model	747					
61	Edit Aerial Video / Photography	747					
62	Arch Rib Structural Analysis (90 psf)	1001					
63	Section 106 Historic Coordination	769					
64	Devel. 30% Concrete Rehabilitation Sheets	1001					
65	Devel. Concrete Repair Strategies - 30%	1001	\$1,675.93	\$3,557.83	\$303.76		\$5,537.52
66	Devel. 30% Concrete Demolition Sheets	1001					
67	Devel. 30% Supplemental Structural Sheets	1001					
68	Devel. 30% Clearing/Grubbing/Grading Shits.	1001					
69	Devel. 30% Drainage/Erosion/Landscape Shits.	1001					
70	Devel. 30% Civil Sheets	1001					
71	Devel. 30% Geometry / Approach Rd./Path	741					
72	Devel. Front End / GP&E / Extant Sheets	1001					
73	Prepare Rehabilitation Structure Survey Report	746					
74	Assemble & Submit 30% Docs	1001					
75	Devel Estimate of Prob. Constr. Cost - 30%	767					
76	Devel. Visualization	743					
79	Prep. Programmatic Categorical Exclusion (PCE) & R	767					
80	Replacement Element Struct. Calculation - 60%	1002					
81	Advance Concrete Rehabilitation Sheets - 60%	1002					
82	Advance Supplemental Structural Sheets - 60%	1002					
83	Advance Erosion / Drainage / Landscaping - 60%	1002					
84	Finalize Geometry for Approach Rd./Path - 60%	742					
85	Advance Civil Design Sheets - 60%	1002					
86	Devel. Special Provisions - CSI Format	794					
87	Devel. Draft Bridge Maintenance Sch. - 60%	748	\$2,989.06	\$6,346.48	\$541.77		\$9,876.31
88	Devel. Green Conc. Mixes	794	\$695.69	\$1,476.88	\$126.09		\$2,298.66
89	Address Cty. / Preservation 30% Comments	746					
90	Devel. Abbreviated Design Study Report	748					
91	Assemble & Submit 60% Docs	794					
92	Develop Estimate of Prob. Constr. Cost - 60%	794					
93	Constructability Review	740					
96	Address Cty. / Preservation 60% Comments	746					
97	Finalize Maintenance Sch. - 60 Year Life - 90&100%	748	\$1,174.77	\$2,493.92	\$212.93		\$3,881.62
98	Finalize Structural Design - 90&100%	1002	\$386.97	\$821.50	\$70.14		\$1,278.61
99	Finalize Supplemental Structural Sheets - 90&100%	794					
100	Finalize Drainage / Erosion / Landscaping 90&100%	742					
101	Finalize Civil Sheets - 90&100%	742					
102	Finalize Special Provisions (CSI Format)	794					
103	Assemble & Submit PS&E Docs	794					
104	Develop Estimate of Prob. Constr. Cost - 90&100%	794					
106	Address Cty. / Preservation 90% Comments	740					
107	Submit Signed and Sealed Documents and Files	794					
<b>TOTAL:</b>			<b>\$7,496.82</b>	<b>\$15,915.00</b>	<b>\$1,358.80</b>	<b>\$98.60</b>	<b>\$24,869.22</b>

WSJ Indirect Cost Rate (%): 212.29% (2018 Audited FAR) Fixed Fee (%): 7.25%

WSJ Fixed Fee Indirect Cost Rate (%) 150.00% \* Assumes Indirect Rate > 150%

**Malas TOTAL**

Project ID: \_\_\_\_\_

ONE Task Code	Task	Activity Code	Direct Labor Costs	Indirect Costs	Fixed Fee	Direct Expenses	Total
4	Kick Off Meeting	747	\$130.00	\$129.99	\$23.56	\$17.40	\$300.95
5	Condition Assessment Findings Mtg.	747	\$260.00	\$259.97	\$47.13	\$17.40	\$584.50
6	County/Preser. Agency Coord. Mtg. 1	747	\$130.00	\$129.99	\$23.56	\$17.40	\$300.95
7	County/Preser. Agency Coord. Mtg. 2	747					
8	County/Preser. Agency Coord. Mtg. 3	747					
9	County/Preser. Agency Coord. Mtg. 4	747					
10	Public Open House Meeting (PHM)	743					
11	Monthly Progress Mtgs - 12 Assumed	747	\$260.00	\$259.97	\$47.13	\$69.60	\$636.70
29	30% Plan Review Meeting	747					
30	60% Plan Review Meeting	747					
31	90% Plan Review Meeting	747					
32	Project Progress Reports & Invoices	740	\$260.00	\$259.97	\$47.13		\$567.10
50	Quality Assurance / Quality Control	740					
51	Develop / Administer Change Mgmt. Plan	740					
53	Review Existing Project Information	747	\$390.00	\$389.96	\$70.69		\$850.65
54	Bridge Condition Confirmation	747					
55	Laser Scan Survey	747					
56	Video / Photographic Doc. Of Bridge	747					
57	Map Deteriorated Concrete	747					
58	Perform Geotech. Invest.	1001					
60	Devel. 3-D Bridge Model	747					
61	Edit Aerial Video / Photography	747					
62	Arch Rib Structural Analysis (90 psf)	1001					
63	Section 106 Historic Coordination	769					
64	Devel. 30% Concrete Rehabilitation Sheets	1001					
65	Devel. Concrete Repair Strategies - 30%	1001					
66	Devel. 30% Concrete Demolition Sheets	1001					
67	Devel. 30% Supplemental Structural Sheets	1001					
68	Devel. 30% Clearing/Grubbing/Grading Shits.	1001					
69	Devel. 30% Drainage/Erosion/Landscape Shits.	1001					
70	Devel. 30% Civil Sheets	1001					
71	Devel. 30% Geometry / Approach Rd./Path	741					
72	Devel. Front End / GP&E / Extant Sheets	1001					
73	Prepare Rehabilitation Structure Survey Report	746					
74	Assemble & Submit 30% Docs	1001					

**Fee Computation Summary by Engineering Task**

75	Devel Estimate of Prob. Constr. Cost - 30%	757	\$2,080.00	\$2,079.79	\$377.00		\$4,536.79
76	Devel. Visualization	743					
79	Prep. Programmatic Categorical Exclusion (PCE) & R	757					
80	Replacement Element Struct. Calculation - 60%	1002					
81	Advance Concrete Rehabilitation Sheets - 60%	1002					
82	Advance Supplemental Structural Sheets - 60%	1002					
83	Advance Erosion / Drainage / Landscaping - 60%	1002					
84	Finalize Geometry for Approach Rd./Path - 60%	742					
85	Advance Civil Design Sheets - 60%	1002					
86	Devel. Special Provisions - CSI Format	794					
87	Devel. Draft Bridge Maintenance Sch. - 60%	748					
89	Devel. Green Conc. Ideas	794					
89	Address Cty. / Preservation 30% Comments	748					
90	Devel. Abbreviated Design Study Report	748					
91	Assemble & Submit 60% Docs	794					
92	Develop Estimate of Prob. Constr. Cost - 60%	794	\$1,040.00	\$1,039.90	\$188.50		\$2,268.40
93	Constructability Review	740	\$1,560.00	\$1,559.84	\$282.75		\$3,402.59
96	Address Cty. / Preservation 60% Comments	748					
97	Finalize Maintenance Sch. - 50-Year Life - 90&100%	748					
98	Finalize Structural Design - 90&100%	1002					
99	Finalize Supplemental Structural Sheets - 90&100%	794					
100	Finalize Drainage / Erosion / Landscaping 90&100%	742					
101	Finalize Civil Sheets - 90&100%	742					
102	Finalize Special Provisions (CSI Format)	794					
103	Assemble & Submit PS&E Docs	794					
104	Develop Estimate of Prob. Constr. Cost - 90&100%	794	\$1,040.00	\$1,039.90	\$188.50		\$2,268.40
106	Address Cty. / Preservation 90% Comments	740					
107	Submit Signed and Sealed Documents and Files	794					
<b>TOTAL:</b>			<b>\$7,150.00</b>	<b>\$7,148.29</b>	<b>\$1,295.94</b>	<b>\$121.60</b>	<b>\$15,717.02</b>

Malus Indirect Cost Rate (%): 99.99% Fixed Fee (%): 7.25%  
 Malus Fixed Fee Indirect Cost Rate (%): 150.00%

# SCHEDULING

ID	Task Name	Start	Finish	Timeline											
				2nd Half 3rd Quarter Jul.   Aug.   Sep.	4th Quarter Oct.   Nov.   Dec.	1st Half 1st Quarter Jan.   Feb.   Mar.	2nd Quarter Apr.   May   Jun.	3rd Quarter Jul.   Aug.   Sep.	4th Quarter Oct.   Nov.   Dec.						
1	NTP	7/1/19	7/1/19	[Gantt bar from 7/1/19 to 7/1/19]											
2	Project Administration	7/1/19	11/30/20	[Gantt bar from 7/1/19 to 11/30/20]											
3	Obtain Data / Information	7/1/19	7/8/19	[Gantt bar from 7/1/19 to 7/8/19]											
4	Meetings	7/1/19	10/28/20	[Gantt bar from 7/1/19 to 10/28/20]											
5	Kick Off Meeting	7/12/19	7/12/19	[Gantt bar from 7/12/19 to 7/12/19]											
6	Condition Assessment Findings Mtg.	8/22/19	8/22/19	[Gantt bar from 8/22/19 to 8/22/19]											
7	Initial County/Preser.. Agency Coord.	8/26/19	8/26/19	[Gantt bar from 8/26/19 to 8/26/19]											
8	County / Preservation Agency Coord.	12/3/19	12/3/19	[Gantt bar from 12/3/19 to 12/3/19]											
9	County / Preservation Agency Coord.	9/5/19	9/5/19	[Gantt bar from 9/5/19 to 9/5/19]											
10	County / Preservation Agency Coord.	7/1/19	4/3/20	[Gantt bar from 7/1/19 to 4/3/20]											
11	County / Preservation Agency Coord.	7/1/19	7/1/19	[Gantt bar from 7/1/19 to 7/1/19]											
12	Public Open House Meeting	12/6/19	12/6/19	[Gantt bar from 12/6/19 to 12/6/19]											
13	Monthly Progress Meetings	8/7/19	10/28/20	[Gantt bar from 8/7/19 to 10/28/20]											
31	Quality Assurance / Quality Control	7/9/19	11/30/20	[Gantt bar from 7/9/19 to 11/30/20]											
32	Bridge Assessment	7/10/19	8/12/19	[Gantt bar from 7/10/19 to 8/12/19]											
33	Review Existing Project Information	7/10/19	7/23/19	[Gantt bar from 7/10/19 to 7/23/19]											
34	Develop Condition Assessment Drawings	7/11/19	7/24/19	[Gantt bar from 7/11/19 to 7/24/19]											
35	Bridge Condition Confirmation	7/31/19	8/5/19	[Gantt bar from 7/31/19 to 8/5/19]											
36	Laser Scan Survey	7/31/19	8/5/19	[Gantt bar from 7/31/19 to 8/5/19]											
37	Video / Photographic Doc. Of Bridge	8/6/19	8/12/19	[Gantt bar from 8/6/19 to 8/12/19]											
38	Topographic Survey Confirmation	7/31/19	8/6/19	[Gantt bar from 7/31/19 to 8/6/19]											
39	Concrete Deterioration Mapping	8/2/19	8/6/19	[Gantt bar from 8/2/19 to 8/6/19]											
40	Perform Geotech. Invest., if needed	8/6/19	8/9/19	[Gantt bar from 8/6/19 to 8/9/19]											
41	Rehabilitation Planning (30% Design)	8/9/19	1/29/20	[Gantt bar from 8/9/19 to 1/29/20]											
42	Devel.. 3-D Bridge Model	8/9/19	8/15/19	[Gantt bar from 8/9/19 to 8/15/19]											



