



CITY of NOVI CITY COUNCIL

Agenda Item I
March 9, 2015

SUBJECT: Approval to award engineering design services to Orchard, Hiltz & McCliment for the Whipple Drive Bridge Reconstruction project in the amount of \$19,965.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division *BTC RJA*

CITY MANAGER APPROVAL: *[Signature]*

EXPENDITURE REQUIRED	\$ 19,965
AMOUNT BUDGETED	\$ 46,660
LINE ITEM NUMBER	210-211.00-805.049 (Drain Fund)

BACKGROUND INFORMATION:

This project involves the replacement of the small bridge on Whipple Drive over Leavenworth Creek (see attached location map). Staff has been monitoring the bridge for many years. In the most recent inspection, staff observed failing abutments and a small sink hole. It was determined that the bridge required replacement this year and was funded in the 2nd quarter budget amendment (see attached memo from Ben Croy dated October 22, 2014 for additional information).

OHM will be assisting the Engineering Division with the design and construction engineering services for this project. Since there isn't an established fee schedule for this type of task in the Agreement for Professional Engineering Services for Public Projects for the City's three pre-qualified engineering consultants, the design was based on actual hours estimated at the hourly rates provided in the agreement. The design fees for this project will be \$19,965 per OHM's proposal dated February 18, 2015. The construction phase engineering fees will be awarded at the time of construction award and will be based on the contractor's bid and the fee percentage in OHM's proposal. A draft of the Supplemental Professional Engineering Services Agreement for this project is enclosed.

The Whipple Drive Bridge construction is expected to be completed in summer/fall 2015, and will be dependent upon permit approval by the Michigan Department of Environmental Quality. The road will likely be closed at this location to complete the construction, but staff will strive to keep the closure's duration to a minimum and a contingency plan for routing public safety vehicles will be developed. The Engineering Division has already met with some of the adjacent residents to inform them of the upcoming project.

RECOMMENDED ACTION: Approval to award engineering design services to Orchard, Hiltz & McCliment for the Whipple Drive Bridge Reconstruction project in the amount of \$19,965.

	1	2	Y	N
Mayor Gaff				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Markham				

	1	2	Y	N
Council Member Mutch				
Council Member Poupard				
Council Member Wrobel				

Whipple Bridge

Location Map



Map Author: Croy
Date: 8/15/14
Project: Whipple Culvert
Version #: v1.0

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



1 inch = 140 feet



City of Novi
Engineering Division
Department of Public Services
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

MEMORANDUM



TO: BRIAN COBURN, PE; ENGINEERING MANAGER
FROM: BEN CROY, PE; CIVIL ENGINEER *BC*
SUBJECT: WHIPPLE STREET BRIDGE
DATE: OCTOBER 22, 2014

The small bridge on Whipple Street has been showing signs of deterioration over the last few years. Primarily, the abutments have shifted significantly, as can be seen in the pictures below. Field Operations staff has been monitoring the bridge since the shifted abutments were first noticed (possibly up to ten years ago). In August 2013, Engineering staff visited the site with a bridge engineer from Orchard, Hiltz, and McCliment (OHM). The bridge was identified as a Jack-Arch type bridge, and although the abutments have shifted, OHM did not see any immediate danger or signs of imminent failure. Therefore, it was determined that closure of the bridge isn't required, but rather observation of the bridge should continue with frequent visual inspections.



West End of Bridge



East End of Bridge

Recently however, a sink hole was observed on top of the bridge (see black patched area in picture below). This is likely a sign that a portion of the bridge between the abutments is failing, and it will likely continue to get worse until it presents a dangerous condition. Therefore, it appears that the bridge should be replaced relatively soon. This course of action was confirmed by OHM, given the uncertainty of the structure below the surface. The replacement could be designed over the winter, with construction taking place in 2015. Until then, the bridge will be closely monitored by Field Operations staff to make sure it remains in stable and safe condition.



Sink Hole Recently Observed

The attached construction cost estimate developed by OHM indicates the bridge replacement would cost approximately \$233,000 including engineering costs (although this may be slightly conservative given the high estimated cost for traffic control). OHM recommends that the bridge be reconstructed with a box culvert, including new wing walls at both ends. Additionally, approximately 50 feet of the pavement would need to be replaced.

Since this project is not funded in the current fiscal year, we will prepare a budget amendment once we identify a potential funding source.

2014

BRIDGE COST ESTIMATE WORKSHEET
- CPM, REHAB, REPLACE -

REV. 1/14/2014

REGION: Metro Region FISCAL YEAR: 2015 STRUCTURE ID: (3-5 digits)
 ENGINEER: KSO DATE: _____
 LOCATION: Whipple over Leavenworth Creek DECK AREA: SFT BRIDGE ID: XXX-XXXX
 PRIMARY WORK ACTIVITY: Culvert Replacement DECK DIM: _____ STR. TYPE: _____

WORK ACTIVITY	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE				
Multiple Spans, Concrete (add demo & road approach & traffic control)		SFT	\$190.00/SFT	
Multiple Spans, Steel (as above)		SFT	\$210.00/SFT	
Over Water or Single Span (add to replacement cost)		SFT	\$45.00/SFT	
Assume 9x4' box culvert	28.0	FT	\$1,400.00/FT	\$39,200.00
Wingwalls	1.0	LSUM	\$40,000.00/LSUM	\$40,000.00
NEW SUPERSTRUCTURE				
Concrete (includes remove exist super, new railing; add l.c. & approach)		SFT	\$120.00/SFT	
Steel (as above)		SFT	\$150.00/SFT	
Over Water (add to new superstructure cost)		SFT	\$30.00/SFT	
Raise Superstructure (includes substructure work)		SFT	\$110.00/SFT	
Other				
WIDENING				
Added portion only, _____ ft of width (add road approach transition)		SFT	\$210.00/SFT	
Other				
NEW DECK				
Includes remove exist deck & new railing (add l.c. & approach)		SFT	\$66.00/SFT	
Other				
DEMOLITION				
Entire bridge, grade separation		SFT	\$28.00/SFT	
Entire bridge, over water	192.0	SFT	\$38.00/SFT	\$7,296.00
Other				
SUPERSTRUCTURE REPAIR				
Concrete Deck Patch (includes hand chipping)		SFT	\$33.00/SFT	
Full Depth Patch		SFT	\$70.00/SFT	
HMA Cap (no membrane, add bridge rail if req'd)		SFT	\$1.25/SFT	
HMA Overlay with W/P membrane (add bridge rail if req'd)		SFT	\$4.50/SFT	
Removal of Concrete Wearing Course (latex) or HMA Overlay		SFT	\$1.00/SFT	
Epoxy Overlay		SYD	\$34.00/SYD	
Shallow Overlay (includes joint repl & hydro; add bridge rail if req'd)		SFT	\$23.00/SFT	
Deep Overlay (includes joint repl & hydro; add bridge rail if req'd)		SFT	\$24.00/SFT	
PCI Beam End Repair (\$2000-\$4000 per beam end)		EA	\$3,000.00/EA	
High Load Hit Repair (PCI Beam)		SFT	\$180.00/SFT	
Repair Structural Steel (\$2000 bolted, \$6000 welded)		EA	\$5,000.00/EA	
Paint Structural Steel (includes clean & coat)		SFT	\$9.00/SFT	
Partial Painting (includes clean & coat)		SFT	\$18.00/SFT	
Pin & Hanger replacement (includes temporary supports)		EA	\$8,200.00/EA	
Other				
SUBSTRUCTURE REPAIR				
Pier repair (measured x 2) Replace unit if spalled area > 30%		CFT	\$200.00/CFT	
Pier repair over water (measured x 2)		CFT	\$225.00/CFT	
Pier replacement		CFT	\$75.00/CFT	
Abutment repair (measured x 2)		CFT	\$200.00/CFT	
Temporary Supports for Substructure Repair		EA	\$1,500.00/EA	
Slope Protection repairs		SYD	\$82.00/SYD	
Other				
MISCELLANEOUS				
Expansion or Construction Joints (includes removal)		FT	\$480.00/FT	
Bridge Railing, remove and replace (\$205 Type 4, \$270 Aesthetic Parapet)		FT	\$235.00/FT	
Three Beam Railing retrofit		FT	\$30.00/FT	
Deck Drain Extensions		EA	\$400.00/EA	
Scour Countermeasures		LSUM	LSUM	
Other				
ROAD WORK				
Approach Pavement, 12" RC (add C & G, GR, Slope, Shldr.) 40' ea. end	1,120.0	SFT	\$14.00/SFT	\$15,680.00
Approach Curb & Gutter (18' ea. quad.)		FT	\$42.00/FT	
Guardrail Anchorage to Bridge (<40')		quads	\$1,500.00/quad	
Guardrail, Type B or T (beyond GR anchorage to bridge, <200')		FT	\$20.00/FT	
Guardrail Ending (end section)		EA	\$1,750.00/EA	
Roadway Approach work (beyond approach pavement)		LSUM	LSUM	
Utilities		LSUM	LSUM	
Excavation & Backfill	610.0	/CYD	\$55.00/CYD	\$33,550.00
TRAFFIC CONTROL <i>Unit Cost to be determined by Region or TSC T&S</i>				
Part Width Construction		LSUM	LSUM	
Crossovers		EA	\$250,000.00/EA	
Temporary Traffic Signals		set	\$20,000.00/set	
RR Flagging		LSUM	LSUM	
Detour	1.0	LSUM	\$25,000.00/LSUM	\$25,000.00
Other				
CONTINGENCY (10% - 20%) (use higher contingency for small projects)	20	%	\$161,000.00	\$32,000.00
MOBILIZATION (estimate at 5% but put "10% max" in pay item description)	5	%	\$193,000.00	\$10,000.00
INFLATION (assume 5% per year, beginning in 2015)		%	\$203,000.00	\$0.00

(DOES NOT INCLUDE PE & CE)

CONSTRUCTION TOTAL \$203,000

SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT

WHIPPLE BRIDGE RECONSTRUCTION

This Agreement shall be considered as made and entered into as of the date of the last signature hereon, and is between the City of Novi, 45175 W. Ten Mile Road, Novi, MI 48375-3024, hereafter, "City," and Orchard, Hiltz & McCliment, Inc., whose address is 34000 Plymouth Road, Livonia, Michigan 48150, hereafter, "Consultant."

RECITALS:

This Agreement shall be supplemental to, and hereby incorporates the terms and conditions of the AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR PUBLIC PROJECTS, and attached exhibits, entered into between the City and the Consultant on December 18, 2012.

The project includes the design and the preparation of plans and specifications for reconstruction of the Whipple bridge over the Leavenworth Creek. Plan preparation will include submission of the DEQ joint permit required for the work.

NOW, THEREFORE, in consideration of the foregoing, the City and Consultant agree as follows:

Section 1. Professional Engineering Services.

For and in consideration of payment by the City as provided under the "Payment for Engineering Services" section of this Agreement, Consultant shall perform the work described in the manner provided or required by the following Scope of Services, which is attached to and made a part of this Agreement as Exhibit A, all of said services to be done in a competent, efficient, timely, good and workmanlike manner and in compliance with all terms and conditions of this Agreement.

Exhibit A Scope of Services

Section 2. Payment for Professional Engineering Services.

1. Basic Fee.
 - a. Design Phase Services: The Consultant shall complete the design phase services as described herein for a lump sum fee of \$19,965, per the proposal dated February 18, 2015.
 - b. Construction Phase Services will be awarded at the time of construction award, should it occur.

2. Payment Schedule for Professional Engineering Services Fee.

Consultant shall submit monthly statements for professional engineering services rendered. The statements shall be based on Consultant's estimate of the proportion of the total

services actually completed for each task as set forth in Exhibit A at the time of billing. The City shall confirm the correctness of such estimates, and may use the City's own engineer for such purposes. The monthly statements should be accompanied by such properly completed reporting forms and such other evidence of progress as may be required by the City. Upon such confirmation, the City shall pay the amount owed within 30 days.

Final billing under this agreement shall be submitted in a timely manner but not later than three (3) months after completion of the services. Billings for work submitted later than three (3) months after completion of services will not be paid. Final payment will be made upon completion of audit by the City.

3. Payment Schedule for Expenses.

All expenses required to complete the scope of services described herein, including but not limited to costs related to mileage, vehicles, reproduction, computer use, etc., shall be included in the basic fee and shall not be paid separately. However, as compensation for expenses that are not included in the standard scope of services, when incurred in direct connection with the project, and approved by the City, the City shall pay the Consultant its actual cost times a factor of 1.15.

Section 4. Ownership of Plans and Documents; Records.

1. Upon completion or termination of this agreement, all documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigations, studies, etc., as instruments of service shall become the property of the City.

2. The City shall make copies, for the use of the Consultant, of all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Consultant under this Agreement, and also make available any other maps, records, or other materials available to the City from any other public agency or body.

3. The Consultant shall furnish to the City, copies of all maps, records, field notes, and soil tests that were developed in the course of work for the City and for which compensation has been received by the Consultant.

Section 5. Termination.

1. This Agreement may be terminated by either party upon 7- days' prior written notice to the other party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party.

2. This Agreement may be terminated by the City for its convenience upon 90 days' prior written notice to the Consultant.

3. In the event of termination, as provided in this Article, the Consultant shall be paid as compensation in full for services performed to the date of that termination, an amount calculated in accordance with Section 2 of this Agreement. Such amount shall be paid by the City upon the Consultant's delivering or otherwise making available to the City, all data, drawings, specifications, reports, estimates, summaries, and that other information and materials

as may have been accumulated by the Consultant in performing the services included in this Agreement, whether completed or in progress.

Section 6. Disclosure.

The Consultant affirms that it has not made or agreed to make any valuable gift whether in the form of service, loan, thing, or promise to any person or any of the person's immediate family, having the duty to recommend, the right to vote upon, or any other direct influence on the selection of consultants to provide professional engineering services to the City within the two years preceding the execution of this Agreement. A campaign contribution, as defined by Michigan law shall not be considered as a valuable gift for the purposes of this Agreement.

Section 7. Insurance Requirements.

1. The Consultant shall maintain at its expense during the term of this Agreement, the following insurance:

- A. Worker's Compensation insurance relative to all Personnel engaged in performing services pursuant to this Agreement, with coverage not less than that required by applicable law.
- B. Comprehensive General Liability insurance with maximum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate and minimum Property Damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- C. Automotive Liability insurance covering all owned, hired, and non-owned vehicles with Personal Protection insurance to comply with the provisions of the Michigan No Fault Insurance Law including Residual Liability insurance with minimum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate minimum property damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- D. The Consultant shall provide proof of Professional Liability coverage in the amount of not less than \$1,000,000 (One Million Dollars) per occurrence and/or aggregate, and Environmental Impairment coverage.

2. The Consultant shall be responsible for payment of all deductibles contained in any insurance required hereunder.

3. If during the term of this Agreement changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Consultant will furnish on demand such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected at the Consultant's expense, under valid and enforceable policies, issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

4. All policies shall name the Consultant as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice to the City.

With the exception of professional liability, all insurance policies shall name the City of Novi, its officers, agents, and employees as additional insured. Certificates of Insurance evidencing such coverage shall be submitted to Sue Morianti, Purchasing Manager, City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 prior to commencement of performance under this Agreement and at least fifteen (15) days prior to the expiration dates of expiring policies.

5. If any work is sublet in connection with this Agreement, the Consultant shall require each subconsultant to effect and maintain at least the same types and limits of insurance as fixed for the Consultant.

6. The provisions requiring the Consultant to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Consultant under this Agreement.

Section 8. Indemnity and Hold Harmless.

A. The Consultant agrees to indemnify and hold harmless the City, its elected and appointed officials and employees, from and against any and all claims, demands, suits, losses and settlements, including actual attorney fees incurred and all costs connected therewith, for any damages which may be asserted, claimed or recovered against the City by reason of personal injury, death and/or property damages which arises out of or is in any way connected or associated with the actions or inactions of the Consultant in performing or failing to perform the work.

The Consultant agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Agreement. Further, this Consultant agrees to hold the City harmless for any loss of such property and materials used pursuant to the Consultant's performance under this Agreement.

Section 9. Nondiscrimination.

The Consultant shall not discriminate against any employee, or applicant for employment because of race, color, sex, age or handicap, religion, ancestry, marital status, national origin, place of birth, or sexual preference. The Consultant further covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 4563) and will require a similar covenant on the part of any consultant or subconsultant employed in the performance of this Agreement.

Section 10. Applicable Law.

This Agreement is to be governed by the laws of the State of Michigan and the City of Novi Charter and Ordinances.

Section 11. Approval; No Release.

Approval of the City shall not constitute nor be deemed release of the responsibility and liability of Consultant, its employees, associates, agents and subconsultants for the accuracy and competency of their designs, working drawings, and specifications, or other documents and services; nor shall that approval be deemed to be an assumption of that responsibility by the City for any defect in the designs, working drawings and specifications or other documents prepared by Consultant, its employees, subconsultants, and agents.

After acceptance of final plans and special provisions by the City, Consultant agrees, prior to and during the construction of this project, to perform those engineering services as may be required by City to correct errors or omissions on the original plans prepared by Consultant and to change the original design as required.

Section 12. Compliance With Laws.

This Contract and all of Consultants professional services and practices shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which apply because the City is a public governmental agency or body. Consultant represents that it is in compliance with all such laws and eligible and qualified to enter into this Agreement.

Section 13. Notices.

Written notices under this Agreement shall be given to the parties at their addresses on page one by personal or registered mail delivery to the attention of the following persons:

City: Rob Hayes, P.E., Director of Public Services and Maryanne Cornelius, Clerk, with a copy to Thomas R. Schultz, City Attorney

Consultant: James Stevens, P.E.

Section 14. Waivers.

No waiver of any term or condition of this Agreement shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

Section 15. Inspections, Notices, and Remedies Regarding Work.

During the performance of the professional services by Consultant, City shall have the right to inspect the services and its progress to assure that it complies with this Agreement. If such inspections reveal a defect in the work performed or other default in this Agreement, City shall provide Consultant with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Consultant shall correct the specified defects or defaults within the time specified. Upon a failure to do so, the City may terminate this Agreement by written notice and finish the work through whatever method it deems appropriate, with the cost in doing so being a valid claim and charge against Consultant; or, the City may preserve the claims of defects or defaults without termination by written notice to Consultant.

All questions which may arise as to the quality and acceptability of work, the manner of performance and rate of progress of the work, and the interpretation of plans and specifications shall be decided by the City. All questions as to the satisfactory and acceptable fulfillment of the terms of this agreement shall be decided by the City.

Section 16. Delays.

No charges or claims for damages shall be made by the Consultant for delays or hindrances from any cause whatsoever during the progress of any portions of the services specified in this agreement, except as hereinafter provided.

In case of a substantial delay on the part of the City in providing to the Consultant either the necessary information or approval to proceed with the work, resulting, through no fault of the Consultant, in delays of such extent as to require the Consultant to perform its work under changed conditions not contemplated by the parties, the City will consider supplemental compensation limited to increased costs incurred as a direct result of such delays. Any claim for supplemental compensation must be in writing and accompanied by substantiating data.

When delays are caused by circumstances or conditions beyond the control of the Consultant as determined by the City, the Consultant shall be granted an extension of time for such reasonable period as may be mutually agreed upon between the parties, it being understood, however, that the permitting of the Consultant to proceed to complete the services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights herein set forth.

Section 17. Assignment.

No portion of the project work, heretofore defined, shall be sublet, assigned, or otherwise disposed of except as herein provided or with the prior written consent of the City. Consent to sublet, assign, or otherwise dispose of any portion of the services shall not be construed to relieve the Consultant of any responsibility for the fulfillment of this agreement.

Section 18. Dispute Resolution.

The parties agree to try to resolve any disputes as to professional engineering services or otherwise in good faith. In the event that the parties cannot resolve any reasonable dispute, the parties agree to seek alternative dispute resolution methods agreeable to both parties and which are legally permissible at the time of the dispute. The parties agree to use their best efforts to resolve any good faith dispute within 90 (ninety) days notice to the other party. In the event the parties cannot resolve that dispute as set forth above, they may seek such remedies as may be permitted by law.

WITNESSES

Orchard, Hiltz & McCliment, Inc.

By:
Its:

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of
_____.

Notary Public

County, Michigan
My Commission Expires: _____

WITNESSES

CITY OF NOVI

By: Robert J. Gatt
Its: Mayor

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of the City of Novi.

Notary Public
Oakland County, Michigan
My Commission Expires: _____

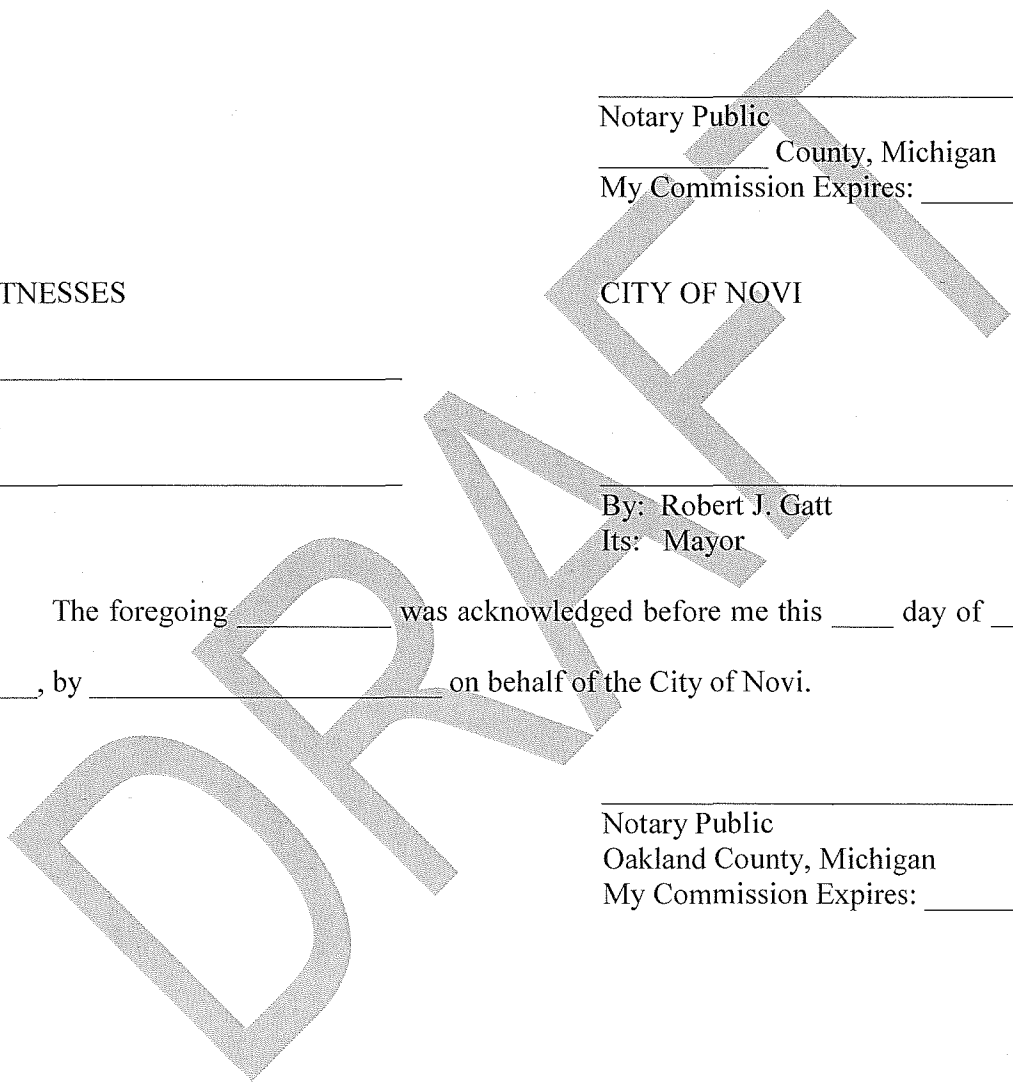


EXHIBIT A - SCOPE OF SERVICES

Consultant shall provide the City professional engineering services in all phases of the Project to which this Agreement applies as hereinafter provided. These services will include serving as the City's professional engineering representative for the Project, providing professional engineering consultation and advice and furnishing customary civil, structural, mechanical and electrical engineering services and customary engineering services incidental thereto, as described below.

A. Basic Services.

[see attached]

B. Performance.

1. The Consultant agrees that, immediately upon the execution of this Agreement, it will enter upon the duties prescribed in this agreement, proceed with the work continuously, and make the various submittals on or before the dates specified in the attached schedule. The City is not liable and will not pay the Consultant for any services rendered before written authorization is received by the Consultant.
2. The Consultant shall submit, and the City shall review and approve a timeline for submission of plans and/or the completion of any other work required pursuant to this Scope of Services. The Consultant shall use its best efforts to comply with the schedule approved by the City.
3. If any delay is caused to the Consultant by order of the City to change the design or plans; or by failure of the city to designate right-of-way, or to supply or cause to be supplied any data not otherwise available to the Consultant that is required in performing the work described; or by other delays due to causes entirely beyond the control of the Consultant; then, in that event, the time schedules will be adjusted equitably in writing, as mutually agreed between the City and the Consultant at the moment a cause for delay occurs.
4. Since the work of the Consultant must be coordinated with the activities of the City (including firms employed by and governmental agencies and subdivisions working with the City), the Consultant shall advise the City in advance, of all meetings and conferences between the Consultant and any party, governmental agency, political subdivision, or third party which is necessary to the performance of the work of the Consultant.

February 18, 2015



Mr. Ben Croy
Civil Engineer
City of Novi
Field Services Complex
26300 Delwal Drive
Novi, MI 48375

**Subject: City of Novi
Whipple Street Culvert Replacement
Proposal for Engineering Services**

Dear Mr. Croy:

OHM Advisors (OHM) is pleased to submit this proposal for engineering services for preparing construction plans for the replacement of the culvert on Whipple Street over the Leavenworth Creek for the City of Novi.

Project Understanding

We understand that this project is to replace the existing jack arch structure on Whipple Street over the Leavenworth Creek. The existing culvert abutments have failed, but it was stable, until recently when a hole on the roadway above opened up. We understand that at this point the City would like to replace the culvert.

Scope of Service

The scope of service that OHM will provide includes:

- Design a replacement for the existing jack arch culvert at the Leavenworth Creek on Whipple Street
- Topographic survey will be collected in the area of the Leavenworth Creek for 50' each side of centerline for a length of approximately 200' centered on the culvert. The survey will collect locations of visible private and public utilities, manhole structures, storm sewers, crown and edges of road, edges of shoulder, driveway locations, fences, ditches, trees over 6" and limits of brush. One cross section of the stream both upstream and downstream and at each abutment will also be collected.
- Preparation of a structure study, comparing options and costs for the replacement structure
- Preparation of the DEQ joint permit
- Prepare plans for the culvert replacement including:
 - Title, note, legend sheets
 - Culvert details (including wing walls if necessary)
 - Excavation, backfill and roadway reconstruction details (minimum required to replace culvert)
 - Soil erosion and sedimentation items
 - Maintenance of Traffic for detour
- Preparation of contract book
- Assist the City with coordination of utilities found in the area that may have minor impacts during construction. It is anticipated that the utility pole in the northwest quadrant will need to be relocated. One field meeting has been included in the proposal.
- Coordination with MDEQ
- Traffic control plans for a complete closure of Whipple Street
- Provide Construction Engineering, Contract Administration and Staking during the construction phase of the project.

Project Assumptions

The following project assumptions were used to complete this proposal for this project.

- ▶ Road grades will remain the same as existing
- ▶ Wingwalls will be precast concrete (if required)
- ▶ Proposed box culvert will be approximately 9'-10' in width (final width determined after survey has been completed)
- ▶ Roadway cross section will allow for 28 foot clear roadway (2-10 foot lanes and 2-4 foot shoulders) to eliminate the need for guardrail in the area.
- ▶ Guardrail or railings will not be required.

Deliverables

- ▶ The deliverables are to consist of construction plans, an engineer's estimate and the contract book for the project.

Exclusions

- ▶ Hydraulic modeling of existing and proposed conditions on the Leavenworth Creek. Our initial investigation has indicated that this will not be required if we increase the size of the box and maintain the elevation of the existing roadway. If after the design begins and more information on the project is available, indicating that hydraulic modeling is necessary then it will need to be added to an amended contract. We anticipate that a contract increase of \$3,000 would be required if hydraulic modeling would need to be added.
- ▶ Permit fees for DEQ permit.

City Responsibility

- ▶ Coordination with property owners in the area of the project. It is anticipated that the fence in the northeast quadrant will be impacted by the project.
- ▶ Review of culvert plans at milestones in project
- ▶ Coordination with utilities that need to be moved as part of the project. It is anticipated that the utility pole in the northwest quadrant will need to be relocated.

Fee Schedule

OHM proposes to provide the above outlined professional services in accordance with the following fee schedule. Services will be performed on an hourly basis not to exceed \$19,965.00.

Task	Hours
Survey	
Survey Field Work	12
Total Survey Hours	12
2 man survey crew (per hour)	\$ 150.00
Survey Cost	\$ 1,800.00
Design	
Survey Processing	4
DEQ Permit	12
Plans and Estimate	105
Contract Book Preparation	40
Utility Coordination	12
Total Design Hours	173
Design fee per hour	\$ 105.00
Design Cost	\$ 18,165.00
Total cost	\$ 19,965.00

Construction Engineering, Contract Administration and staking will be performed as a percentage of the construction cost. Percentage is based on the Road Construction Engineering Fee table in the Agreement for Engineering Services. No bridge work table exists and the work on Whipple will most closely follow road construction with the installation of a culvert.

The fee for the construction engineering work as described above will be at 7.5% of the construction cost. Cost for doing construction inspection is not part of this proposal and will be included in the construction contract as Inspection Days.

Schedule

Work will proceed for a June 2015 advertisement through the City of Novi.

Additional Services

Additional services for any other services not specifically described in the Scope of Services will be performed on an hourly basis in accordance negotiated rates with the City of Novi.

Sincerely,
OHM Advisors


Kimberly O'Rear, PE
Structures Group Manager

BRIDGE COST ESTIMATE WORKSHEET
- CPM, REHAB, REPLACE -

REGION: Metro Region FISCAL YEAR: 2015
ENGINEER: KSO DATE:
LOCATION: Whipple over Leavenworth Creek
PRIMARY WORK ACTIVITY: Culvert Replacement

STRUCTURE ID: (3-5 digits)
BRIDGE ID: XXX-XXXX
STR. TYPE:
DECK AREA: SFT
DECK DIM:

WORK ACTIVITY		QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE					
Multiple Spans, Concrete	(add demo & road approach & traffic control)		SFT	\$190.00 /SFT	
Multiple Spans, Steel	(as above)		SFT	\$210.00 /SFT	
Over Water or Single Span	(add to replacement cost)		SFT	\$45.00 /SFT	
Assume 9'x4' box culvert		28.0	FT	\$1,400.00 /FT	\$39,200
Wingwalls		1.0	LSUM	\$40,000.00 /LSUM	\$40,000
NEW SUPERSTRUCTURE					
Concrete	(includes remove exist super, new railing; add t.c. & approach)		SFT	\$120.00 /SFT	
Steel	(as above)		SFT	\$150.00 /SFT	
Over Water	(add to new superstructure cost)		SFT	\$30.00 /SFT	
Raise Superstructure	(includes substructure work)		SFT	\$110.00 /SFT	
Other					
WIDENING					
Added portion only	_____ ft of width (add road approach transition)		SFT	\$210.00 /SFT	
Other					
NEW DECK					
Includes remove exist deck & new railing	(add t.c. & approach)		SFT	\$66.00 /SFT	
Other					
DEMOLITION					
Entire bridge, grade separation			SFT	\$28.00 /SFT	
Entire bridge, over water		192.0	SFT	\$38.00 /SFT	\$7,296
Other					
SUPERSTRUCTURE REPAIR					
Concrete Deck Patch	(includes hand chipping)		SFT	\$33.00 /SFT	
Full Depth Patch			SFT	\$70.00 /SFT	
HMA Cap	(no membrane, add bridge rail if req'd)		SFT	\$1.25 /SFT	
HMA Overlay with WP membrane	(add bridge rail if req'd)		SFT	\$4.50 /SFT	
Removal of Concrete Wearing Course (latex) or HMA Overlay			SFT	\$1.00 /SFT	
Epoxy Overlay			SYD	\$34.00 /SYD	
Shallow Overlay	(includes joint repl & hydro; add bridge rail if req'd)		SFT	\$23.00 /SFT	
Deep Overlay	(includes joint repl & hydro; add bridge rail if req'd)		SFT	\$24.00 /SFT	
PCI Beam End Repair	(\$2000-\$4000 per beam end)		EA	\$3,000.00 EA	
High Load Hit Repair	(PCI Beam)		SFT	\$180.00 /SFT	
Repair Structural Steel	(\$2000 bolted, \$6000 welded)		EA	\$5,000.00 EA	
Paint Structural Steel	(includes clean & coat)		SFT	\$9.00 /SFT	
Partial Painting	(includes clean & coat)		SFT	\$18.00 /SFT	
Pin & Hanger replacement	(includes temporary supports)		EA	\$6,200.00 EA	
Other					
SUBSTRUCTURE REPAIR					
Pier repair	(measured x 2) Replace unit if spalled area > 30%		CFT	\$200.00 /CFT	
Pier repair over water	(measured x 2)		CFT	\$225.00 /CFT	
Pier replacement			CFT	\$75.00 /CFT	
Abutment repair	(measured x 2)		CFT	\$200.00 /CFT	
Temporary Supports for Substructure Repair			EA	\$1,500.00 EA	
Slope Protection repairs			SYD	\$82.00 /SYD	
Other					
MISCELLANEOUS					
Expansion or Construction Joints	(includes removal)		FT	\$480.00 /FT	
Bridge Railing, remove and replace	(\$205 Type 4, \$270 Aesthetic Parapet)		FT	\$235.00 /FT	
Thrie Beam Railing retrofit			FT	\$30.00 /FT	
Deck Drain Extensions			EA	\$400.00 EA	
Scour Countermeasures			LSUM	LSUM	
Other					
ROAD WORK					
Approach Pavement, 12" RC	(add C & G, GR, Slope, Shldr.) 40' ea. end	1,120.0	SFT	\$14.00 /SFT	\$15,680
Approach Curb & Gutter	(18' ea. quad.)		FT	\$42.00 /FT	
Guardrail Anchorage to Bridge	(<40')		quads	\$1,500.00 /quad	
Guardrail, Type B or T	(beyond GR anchorage to bridge, <200')		FT	\$20.00 /FT	
Guardrail Ending	(end section)		EA	\$1,750.00 /EA	
Roadway Approach work	(beyond approach pavement)		LSUM	LSUM	
Utilities			LSUM	LSUM	
Excavation & Backfill		610.0	/CYD	\$55.00 /CYD	\$33,550
TRAFFIC CONTROL <i>Unit Cost to be determined by Region or TSC T&S</i>					
Part Width Construction			LSUM	LSUM	
Crossovers			EA	\$250,000.00 EA	
Temporary Traffic Signals			set	\$20,000.00 /set	
RR Flagging			LSUM	LSUM	
Detour		1.0	LSUM	\$25,000.00 /LSUM	\$25,000
Other					
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)	20	%	\$161,000.00	\$32,000
MOBILIZATION	(estimate at 5% but put "10% max" in pay item description)	5	%	\$193,000.00	\$10,000
INFLATION	(assume 5% per year, beginning in 2015)		%	\$203,000.00	\$0

(DOES NOT INCLUDE PE & CE)

CONSTRUCTION TOTAL \$203,000