

PRINCIPALS

Daniel W. Mitchell
Nancy M. D. Faught
Keith D. McCormack
Jesse B. VanDeCreek
Roland N. Alix
Michael C. MacDonald
James F. Burton
Charles E. Hart

CONTROLLER

Donna M. Martin

SENIOR ASSOCIATES

Gary J. Tressel
Randal L. Ford
William R. Davis
Dennis J. Benoit
Robert F. DeFrain
Thomas D. LaCross
Albert P. Mickalich
Timothy H. Sullivan
Thomas G. Maxwell

ASSOCIATES

Marshall J. Grazioli
Colleen L. Hill-Stramsak
Bradley W. Shepler
Karyn M. Stickel
Jane M. Graham
Todd J. Sneathen
Aaron A. Uranga
Salvatore Conigliaro
Melissa A. Coatta
Michael P. Darga
Brian K. Davies
James E. Scholl
Matthew G. Slicker
James J. Surhigh
Trevor S. Wagenmaker

HUBBELL, ROTH & CLARK, INC.

MAILING: PO Box 824
Bloomfield Hills, MI 48303-0824

SHIPPING: 555 Hulet Drive
Bloomfield Hills, MI 48302-0360

PHONE: 248-454-6300

WEBSITE: hrcengr.com

OTHER OFFICE LOCATIONS

Delhi Township
Detroit
Grand Rapids
Howell
Jackson
Kalamazoo
Lansing

May 2, 2018

Road Commission for Oakland County
31001 Lahser Road
Beverly Hills, Michigan 48025

Attn: Mr. Jeff O'Brien, P.E., Design Engineer

Re: Livernois Road Rehabilitation
Avon Road to North of Walton Blvd.
City of Rochester Hills
Proposal for Preliminary Engineering

HRC Job No. 20180200

Dear Mr. O'Brien:

Based on our scope meeting, our recent conversations, please find the proposed scope of work for Preliminary Engineering Services below, for the subject project.

INTRODUCTION

This project involves the replacement of the existing concrete pavement along Livernois Road from Avon Road to approximately 1000 ft north of Walton Boulevard/University Drive, in the City of Rochester Hills, Michigan. The total project length is approximately 6,600 ft with an estimate construction cost of \$4.5M.

Funding for this project is anticipated to be through Federal Aid with an Advanced Construct planned for 2019 construction. The project will be let through the Michigan Department of Transportation (MDOT) Local Agency Program Unit.

PROJECT DESCRIPTION

This project involves replacing the existing concrete pavement and curb and gutter with either HMA or concrete pavement. An evaluation of both pavement types will be completed by HRC with recommendations for RCOC consideration. At this time it is anticipated that the existing aggregate base and underlying pavement structure is in good condition and that the existing pavement can be replaced in its current location with minimal changes to grade or horizontal location. The scope of work also includes traffic signal modernization or improvements at Walton Boulevard, the Rochester High School (as needed), and Springwood/Harding (pending a traffic signal warrant analysis). Traffic signal staging may also be required at Avon and this scope of work is included herein.

Improvements to sidewalk crossings are also included in the scope of work. This will include upgrading existing facilities to meet ADA guidelines. In addition, the pedestrian crossing at Rochester High School will also be evaluated with possible safety improvements based on prior studies by RCOC.

Right of way improvements are not anticipated for this project but HRC can provide, as part of this scope of work, up to five (5) temporary grading or driveway grading license documents if required.

UNDERSTANDING OF PROJECT REQUIREMENTS

This Scope of Design Services is based on communications and meetings with the Road Commission for Oakland County (RCOC) design staff. Based on the project description, HRC understands the following scope of work as part of this proposal:

- Preliminary engineering design services including pavement design, typical sections and details, horizontal and vertical alignments, and ADA Accessible path / sidewalk design
- Utility Coordination
- Maintenance of Traffic (MOT) plans
- Permanent pavement marking and sign plans
- Traffic signal plans for Avon (staging), Springwood/Harding, Rochester High School, and Walton Blvd.
- Prepare plans, special provisions and estimates
- Prepare Permit Applications
- Attend design and progress meetings
- Storm water drainage design is anticipated to remain as existing with structure reconstructions and adjustments anticipated.
- Prepare plans, special provisions and estimates for an MDOT LAP bid letting to complete construction in 2019.

WORK PLAN / TASKS

HRC's technical approach to accomplishing this project is divided into three (3) phases. The first phase, Alignment & Base Plan Phase will begin with the scope meeting and end with the development of the Base Plan, a construction cost estimate, and the evaluation of proposed pavement materials. The second phase, Preliminary Engineering, will begin after the Base Plan documents have been prepared and end after the Preliminary Plan Review Meeting. The third phase, Final Engineering, begins after the Preliminary Plan Review Meeting and ends with the completion of Final Plans and Specifications. Throughout the project duration, HRC will maintain a record in our files which includes a history of significant events during the preparation of plans, transmittal letters and correspondence from the RCOC and other agencies involved with this project.

HRC's work plan also includes additional QA/QC procedures intended to maintain and improve the overall quality, constructability and effectiveness of the plans and specifications. This includes supplemental reviews from design engineers and technicians as further described herein.

The following summarizes the method by which the scope of design services would be delivered.

Design Kickoff Meeting

This meeting has been held as part of the proposal effort and HRC has included an additional meeting to be held on-site with both RCOC and City staff. HRC's in-house design-related field visits are included separately from these meetings.

Topographic Survey

HRC proposes to perform a full ground-level topographic survey for the limits previously described and beyond in order to ensure smooth alignment transitions with a planned width of approximately 120' plus some additional distances at all driveways, side streets and ADA ramp locations. The topographic survey will include all visible features, trees 3 inches in diameter and larger, including species identification, property controlling corners, monuments, witnesses and other features. HRC will also survey the building edges where additional property / easements may be required. The topographic survey will be NAD 83 for horizontal control and NAVD 88 for vertical control. The results of the survey will be a full DTM surface for use in design using AutoCAD and Civil3D design software. The survey will also include obtaining the depths of underground utilities at existing structures that can be accessed by survey crews.

Preliminary Alignment and Base Plans

HRC will prepare base plans showing the proposed horizontal and vertical alignments. These will also include existing utilities and other key elements relating to the project scope. During this phase HRC will:

- Prepare horizontal and vertical alignments for both directions of the boulevard
- Prepare a proposed pavement design and evaluation for both HMA and concrete pavement types
- Prepare a base construction cost estimate
- Develop the MOT concepts and options to maintain traffic

Utility Coordination & Mapping

HRC will gather existing utility information and include the plans and maps on the plans. 3D modeling of the existing utilities will be included wherever elevation data is reliable. HRC will work with individual companies to obtain accurate depth information as needed. Further coordination will include various plan submittals to companies, identify needed relocations and design coordination. If substantial impacts are determined, an early coordination meeting will be held. Otherwise HRC anticipates two overall utility coordination meetings to be necessary. At this time HRC anticipates minimal conflicts with existing utilities.

HRC has assumed that no municipal utility work will be included for water main or sanitary sewer. The scope of work does include structure adjustments as well as miscellaneous hydrant adjustments/relocations that may be in conflict with proposed work.

HRC has included time to assist RCOC and the City with lighting improvements through coordination with DTE. HRC understands that DTE owns and maintains the existing lighting and the City may desire to upgrade these to LED fixtures. HRC will assist in this effort through communication and plan sharing with DTE, in order to facilitate DTE design. The construction of the lighting improvements is not anticipated as part of the road construction project.

Develop MOT Plans

Recommendations for maintaining traffic during construction will be prepared by HRC based on current traffic data, site conditions and construction methods suitable for the project. HRC anticipates that the project will require substantial local access and will consider options to maintain through traffic if practical. HRC anticipates options to also include a full closure or bi-directional closure if it may result in substantial reduction in the construction duration. Options and their benefits and limitations will be presented to RCOC and the City for consideration prior to the development of detailed staging plans. The MOT is also expected to include minor provisions for maintaining traffic and coordination with the City and schools. A detour plan will be provided if a closure is proposed as part of this project. A temporary road is not anticipated along this route but minor areas of temporary paving and maintenance gravel for access may be necessary.

Develop Traffic Signal Plans

HRC will prepare traffic signal plans and complete the required design for the locations previously detailed. This work will include any required signal staging as part of the MOT plan. HRC, if requested, will also complete a signal warrant study at Harding/Springwood if this location is being considered for removal. HRC has included the costs to modernize this signal in the event that it remains.

Develop Preliminary Plans

The tasks previously described, and subsequent reviews by RCOC, will be the basis for preparing the Preliminary Plans (75% complete). These plans will be given a QA/QC peer and constructability review. Upon completion of the QA/QC review, the plans will be submitted to RCOC for review. HRC will then revise the plans as needed and submit plans to either RCOC or MDOT, requesting the Grade Inspection Meeting. HRC is planning to meet a bid letting that allows for a 2019 construction schedule. This will likely include a late winter / early spring 2019 bid letting.

HRC will prepare the plans, special provisions and estimate for the project. Additional work to be included beyond the previously described scope includes pavement markings and signs, soil erosion plans, typical sections and project details, grading limits, cross sections, driveway and detailed grading.

HRC will prepare the permit applications and documents needed for this project. It is anticipated that an NPDES Notice of Coverage will not be required. HRC does not anticipate any other substantial permitting for this project. HRC will prepare the SESC

plans for RCOC review/acceptance as the APA for this project.

It is anticipated that during the preliminary plan development that a meeting with the Public will be held. HRC will provide materials and staff for this meeting.

QA/QC and Constructability Review

HRC will utilize an enhanced QA/QC process that includes:

- Additional HRC design staff (Project Manager) to review details, special provisions and estimates. This staff will not be part of HRC's project design team to provide an independent evaluation and review.
- Robert DeFrain, P.E., HRC's lead construction engineer will also review the plans for quality, consistency, and constructability. In addition, permits that are needed from local and State agencies will be confirmed. Also, bid quantities, clarity of the specifications and plans, and constructability will be reviewed.
- A peer review for the plan preparation and road design. This will be performed by one of HRC's road design engineers with recent experience working with RCOC in order to address any concerns specific to RCOC based on prior projects.

Constructability includes assessing conflicts with both above and below ground utilities, reviewing the traffic staging plans with respect to balancing the needs of the public with the needs of the Contractor, and to review the entire design for potential cost overruns and construction delays.

HRC will also be requesting input from RCOC's Traffic Safety and Construction Departments so as to produce a more complete and higher quality set of design documents.

Once corrections have been made based on the QA/QC review, preliminary plans and all special provisions will be submitted for the Grade Inspection Meeting to RCOC by the HRC Project Manager.

Develop Final Plans and Specifications

The HRC Project Manager will coordinate the preparation of Final Plans and Specifications. The plans will be developed based on comments from the Preliminary Plan Review meeting, along with additional comments at a later date. Design details, such as alignments sheets and detailed MOT and miscellaneous details will be completed.

The HRC Project Manager and the QA/QC Engineer will review the Final Plans and Specifications and submit them to RCOC for a final review. Upon approval from RCOC, HRC will submit the Final Plans to MDOT.

HRC will also provide RCOC and MDOT with electronic files as required including the CAD files for the project. The project design files will be assembled and submitted to

RCOC for file. These will be provided in a digital format and will include design files, correspondence and other related details.

HRC Responsibilities during Execution of Work Plan

- All meeting minutes are prepared and distributed to all meeting attendees within two weeks of the meeting.
- HRC will assist in the coordination of utility meetings and relocations with RCOC's utility coordinator and project manager.
- HRC submits design records and documentation as necessary for the project permits. Permit requests are submitted by RCOC.
- HRC attends project related meetings as directed by the RCOC.
- HRC will assist in the review of driveway and utility permit requests, and incorporate any new information into the design plans.
- The RCOC shall be made aware of all communications regarding the project. HRC will forward or address all correspondence to the RCOC immediately.
- Whenever design alternatives or discoveries change the scope, limits, quantities, costs, or right-of-way, HRC shall contact the RCOC.
- Preparation of plans, specifications and estimate in MERL format for bidding through MDOT.

SUBMITTALS

Throughout the design process various submittals shall be made to the RCOC for review and approval, or comment. These will include the following:

- Prepare and submit the preliminary horizontal and vertical alignments and Base Plans to RCOC and request a meeting to review if needed.
- Prepare and submit the preliminary MOT Concept to the RCOC and request a meeting if necessary.
- Prepare and submit for RCOC forwarding all necessary permit applications.
- Prepare and submit construction drawings, specifications, and opinion of construction cost for the Owner's review at Preliminary Plan Review and Final Plan completion. Electronic copies (PDF) of the plans will be provided along with any requests for paper copies.
- Provide RCOC with mylars, ½ size electronic bid sets, electronic copies of design files, calculations, models and correspondence records and a CD disk of the design drawings. The design drawings will be in AutoCAD / Civil 3D format.

RCOC RESPONSIBILITIES / WORK NOT INCLUDED

As we understand, the RCOC is responsible for the following:

- SHPO Submittal / Review
- Obtaining title work, preparing document cover sheets and acquisition for all temporary and permanent easements and grading licenses
- Construction Engineering and support

The following scope of work is not included in the project:

- Geotechnical investigation or pavement cores
- Landscaping design
- Lighting design
- Major geometric improvements or modifications to existing crossovers
- Structural retaining wall design

SCHEDULE

We propose to commence with the Alignment & Base Plan Phase immediately and provide the professional design engineering services in accordance with the current RCOC contract. HRC has the staff and is prepared to begin work on this project immediately with an anticipated completion of the Alignment & Base Plan Phase by July 2018. HRC anticipates a GI Submittal to RCOC or MDOT late Summer 2018. The estimated substantial contract completion date is Spring 2018 including a submittal of final design deliverables, bid documents and requested support.

COST & INVOICING

HRC will provide the services as described herein on a time and material basis, using HRC's Certified 2017 MDOT Audited Rates for Direct Labor, Overhead, Facilities Cost of Capital (FCC) and Fixed Fee (Profit) as detailed in the attached hours and cost sheets. Based on the scope of work described herein, this will include a not to exceed total fee of \$266,924.22. This total fee includes a maximum fixed fee of \$26,406.82.

HRC proposes to invoice RCOC based on the following milestones:

- Preliminary Plan Submittal: 80% of Contract (up to \$213,500)
- Final Plan Submittal: 96% of Contract (up to \$256,200)
- Pre-Construction Meeting / Provide Data for Construction: 99% of Contract (up to \$264,200)
- Final Deliverables: 100% of Contract

If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,
HUBBELL, ROTH & CLARK, INC.



Charles E. Hart, P.E.
Vice President

CEH/ceh
Attachment
pc: HRC; File

RCOC: Livernois Road Rehabilitation
Avon Road to North of Walton Boulevard
RCOC Project No. _____
Preliminary Engineering
Proposed Costs and Person Hours by Task

Task Description	Vice President	QA/QC Engineer	Survey Dept Head	Project Engineer	Grad. Engineer I	Proj. Eng (Traffic)	Sr CAD Tech	Survey Supervisor	Sr. Crew Chief	Instrum. Oper	Total By Task
Meetings/Site Visits	12			24	16	20	8				80
Topographic Survey & Property Lines/ROW	4		18	8			40	32	160	160	422
Base Plans, Pavement Design, Model, & Estimate	12			40	80		100				232
Horizontal & Vert Alignment & Sheets	6			16	40		50				112
Traffic Signal Design	8	2		24	160	90	160				444
Utility Coordination & Mapping	4			24	80		80				188
Sidewalk & Ramp Design	2			12	60		40				114
Develop MOT Plans	16			40	80	40	120				296
Develop Preliminary Plans	16			120	240	24	300				700
QA/QC Reveiws	8	16		8		2					34
Develop Final Plans	12			60	120	12	150				354

Total Hours by Classification

100 18 18 376 876 188 1048 32 160 160 2976

**RCOC: Livernois Road Rehabilitation
Avon Road to North of Walton Boulevard
RCOC Project No. _____
Preliminary Engineering
Proposed Costs and Person Hours by Task**

	Hours	Direct Hourly Cost	Direct Cost
Partner / Vice President (C. Hart)	100	\$ 49.00	\$ 4,900.00
QA/QC Engineer (N. Faight, R. DeFrain)	18	\$ 50.00	\$ 900.00
Survey Department Head (G. Chalice)	18	\$ 44.00	\$ 792.00
Project Engineer (A. Pike)	376	\$ 32.50	\$ 12,220.00
Graduate Engineer I (R. D'Agostini)	876	\$ 28.70	\$ 25,141.20
Project Engineer - Traffic (L. Michaels)	188	\$ 33.60	\$ 6,316.80
Senior CAD Technician (K. Walley)	1048	\$ 35.20	\$ 36,889.60
Survey Supervisor (W. Wonnacott)	32	\$ 42.10	\$ 1,347.20
Sr. Survey Crew Chief (F. Biehl)	160	\$ 37.60	\$ 6,016.00
Instrument Operator (T. Spicer)	160	\$ 28.00	\$ 4,480.00
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Sub-total Hours	2976	Sub-total Labor	\$ 99,002.80
Overhead (Labor x 142.48%)			\$ 141,059.19
Sub Total		Labor + OH	\$ 240,061.99
Facilities Cost of Capital (FCC): (Labor x 0.46%)			\$ 455.41
Sub Total		Labor+OH+FCC	\$ 240,517.40
Fixed Fee: (Total Labor + Total Overhead) x 11%			\$ 26,406.82
Sub Total HRC Costs		Labor+OH+FCC+FF+ Direct Exp	\$ 266,924.22
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		Sub Total HRC Costs	\$ 266,924.22
		Total Preliminary Engineering Costs	\$ 266,924.22
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<u>Fixed Fee Breakdown</u>			
HRC			\$ 26,406.82
G2			n/a
		Total Fixed Fee	\$ 26,406.82

CERTIFICATION OF OVERHEAD COST RATE

This Certification is required per U.S. Department of Transportation, Federal Highway Administration (FHWA) Order 4470.1A, and dated October 27, 2010. FHWA has issued this new policy to be **effective January 1, 2011**, requiring consultants provide certification that costs used to establish overhead cost rates for Federal-aid engineering and design related services contracts do not include any costs which are expressly unallowable; and that the overhead cost rate was established only with allowable costs.

This certification is to provide assurance that the overhead costs rate was calculated in accordance with the applicable cost principles contained in the Federal Acquisition Regulations (FAR) of Title 48, Code of Federal Regulations (CFR) Part 31.

This form shall be completed and submitted by the prime consultant and each subconsultant (first and second tier subconsultant(s)) that have a derivation of cost sheet as part of this priced proposal where an overhead rate was proposed. Please note that the Certifying Official is defined as the firm's Executive (President, Vice President or equivalent) of Chief Financial Officer.

PROJECT INFORMATION

MDOT CONTROL SECTION(S) – JOB NUMBER(S): <p style="text-align: center;">RCOC: Livernois Rehab. - Avon to N. of Walton</p>	CONTRACT / AUTHORIZATION NUMBER: <p style="text-align: center;">n/a</p>
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PROJECT DESCRIPTION: <p style="text-align: center;">Rehab of Livernois in the City of Rochester Hills</p>
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DECLARATION OF CERTIFICATION

OVERHEAD COST RATE:	<u>142.48%</u>
DATE OF OVERHEAD COST RATE DETERMINATION (mm/dd/yyyy):	<u>7/6/2017</u>
FISCAL PERIOD COVERED: (mm/dd/yyyy to mm/dd/yyyy)	<u>8/1/2017</u> to <u>7/31/2018</u>

I, the undersigned, certify that I have reviewed the overhead rate calculation for the fiscal period as specified above and to the best of my knowledge and belief:

- 1.) All costs included to establish the above overhead cost rate are allowable in accordance with the cost principles of the Federal Acquisition Regulation (FAR) of title 48, Code of Federal Regulations (CFR), part 31.
- 2.) This overhead cost rate does not include any costs which are expressly unallowable under the cost principles of the FAR of 48 CFR 31.

All known material transactions or events that have occurred affecting the firm's ownership, organization and overhead cost rates have been disclosed.

CONSULTANT INFORMATION

LEGAL BUSINESS NAME: <p style="text-align: center;">Hubbell, Roth & Clark, Inc.</p>	FEDERAL ID NUMBER: (Must match prequalification file) <p style="text-align: center;">38-0668370</p>	ROLE: (Prime, Tier 1, Tier 2) <p style="text-align: center;">Prime Firm</p>
COMPANY ADDRESS: <p style="text-align: center;">555 Hulet Drive, PO Box 824</p>	CITY: <p style="text-align: center;">Bloomfield Hills</p>	STATE: <p style="text-align: center;">MI</p>
EMAIL (AUTHORIZED CONTRACT SIGNER): <p style="text-align: center;">chart@hrcengr.com</p>	PHONE NO.: <p style="text-align: center;">248.454.6301</p>	ZIP CODE: <p style="text-align: center;">48303</p>
EMAIL (FOR SIGNED CONTRACT DISTRIBUTION): <p style="text-align: center;">chart@hrcengr.com</p>		

By signature on this form, the consultant agrees that information provided in the consultant priced proposal does not contradict the scope of services or violate the contract terms and conditions.

CERTIFYING OFFICIAL: (Printed Name - Title) <p style="text-align: center;">Charles E. Hart, P.E. Vice-President</p>	SIGNATURE OF CERTIFYING OFFICIAL: 	DATE: <p style="text-align: center;">5/2/2018</p>
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