



CIVIL ENGINEERS

LAND SURVEYORS

LAND PLANNERS



January 14, 2016

Mr. Paul Davis, P.E.
City Engineer
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309

**RE: Kingsview Avenue, Avon to Springwood – City File E15-023
Bolinger Street, E. Avon to 750 feet North of E. Avon – City File E15-024
City of Rochester Hills, Michigan
Proposal #9-B952**

Dear Mr. Davis:

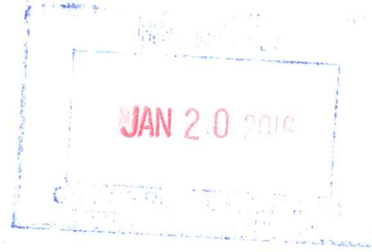
In response to your request, we have reviewed the project requirements relative to development of plans and specifications for Special Assessment District (SAD) roadway improvements for the above referenced streets. Both of these projects are scheduled for construction in 2017 as a part of the Rochester Hills SAD program. We understand that time is of the essence regarding the design development for these projects, and our office will work towards meeting all expected time frames in completing our work.

Bolinger Street SAD consists of improving an existing gravel street for approximately 14 homes which extends from East Avon Road to approximately 750 feet north of East Avon Road. The proposed road will consist of a 22-foot wide asphalt road, grass shoulders and an open ditch drainage system in accordance with the latest City of Rochester Hills engineering standards and specifications for paving. Sanitary and water main utilities exist along this portion of Bolinger Street and as such do not need to be constructed as a part of the SAD project. The service life of the pavement system will be designed to a 15-year performance standard. Drive approaches will match existing drive in material type and width from edge of road to property line. Existing gravel driveway approaches will be constructed as asphalt. NFE has prepared a preliminary cost estimate for this work and it is expected that the cost of this project will be approximately \$211,000 to construct.

Kingsview Avenue SAD consists of improving an existing gravel street for approximately 32 homes which extends west and north from South Livernois Road approximately 750 feet north of East Avon Road. The proposed road will consist of a 22-foot wide asphalt road, grass shoulders and an open ditch drainage system in accordance with the latest City of Rochester Hills engineering standards and specifications for paving. Sanitary and water main utilities exist along this portion of Kingsview Avenue and as such do not need to be constructed as a part of the SAD project. The service life of the pavement system will be designed to a 15-year performance standard. Drive approaches will match existing drive in material type and width from edge of road to property line. Existing gravel driveway approaches will be constructed as asphalt. NFE has prepared a preliminary cost estimate for this work and it is expected that the cost of this project will be approximately \$660,000 to construct.

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At this time, it is necessary to move forward with the engineering design phase of these projects to include: preparation of a topographic survey of the project area; completion of a geotechnical recommendation and report identifying pavement design recommendations and subgrade base repair recommendations; utility investigation and report whereby the existing storm sewer system within the influence of the roadway system will be inspected; full engineering design documents for the required improvements; and bid document preparation. We understand that construction administration service, construction inspection, and final construction as-builts of the proposed improvements will be quoted separately in the future at such time as the City determines that these services are necessary.

Based on our review of the project requirements, we have identified the following scope of work required to develop the project and advance it to the construction phase:

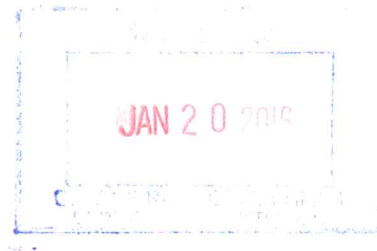
SCOPE OF WORK

PHASE I SERVICES – PRE-ENGINEERING

- Perform all field investigation and survey services required to support the full design development of the project. Field investigation and survey services will include the following:
 - Perform required field survey of the project development area and prepare existing condition drawings consistent with Rochester Hills requirements.
 - Perform ROW Survey to field locate and identify ROW limits. Certify ROW boundary line as necessary.
 - The addresses of existing houses within the project limits shall be identified on the plan drawings.
 - Existing underground utilities shall be located and identified, including rim elevations and pipe inverts.
 - Existing spot grades shall be obtained at 50-foot intervals for road edges and centerline, centerline of driveways and driveway edges, road intersection PC's, and other locations needed for design.
 - All existing trees and improvements within the right-of-way and immediately adjacent to the right-of-way, shall be located and identified.
 - Coordinate geotechnical investigation and analysis. Develop pavement cross section from geotechnical pavement design recommendations.
 - Perform field engineering analysis to identify construction constraints, conditions and make engineering assessment of current conditions to support design initiatives.
 - Conduct a utility inspection and investigation of the existing storm sewer system within the influence of the roadway areas to be improved. This inspection and investigation includes coordinating the cleaning and televising of utility structures and lines as necessary to assure that all subsurface improvements will support the proposed paving improvements.

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PHASE II SERVICES – PRELIMINARY ENGINEERING

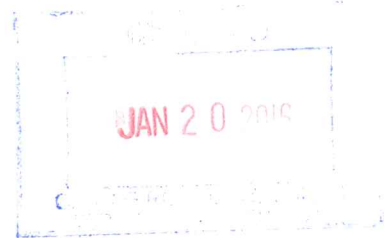
- Prepare preliminary construction plans in accordance with City requirements. Construction plans to include the following:
 - Cover sheet, including location map
 - Existing Condition Plans including plan and profile
 - Existing and proposed roadway cross sections
 - Preliminary Paving Plans (Plan view and profiles as required) including utility adjustments/extensions
 - Preliminary Typical Detail sheet with existing and proposed cross-sections.
 - Standard Detail Sheet
 - Preliminary Traffic Maintenance Plan (concept and/or narrative)
 - Preliminary Permanent Signing Plans

- Plan sheets will be drawn to a scale of 1"=30' horizontal and 1"=5' vertical. Quantity lists will be provided on each plan sheet
- Identify work items consistent with MDOT Standard Specifications for Construction, and prepare preliminary Engineer's Opinion of Construction Cost.
- Coordinate project development with the City and Road Commission for Oakland County, as required for project permits.
- Identify potential utility conflicts and coordinate with utility companies to resolve utility conflicts.
- Identify proposed permanent and temporary easement areas for construction and assist the City with easement acquisition by preparing easement exhibits and sketches. Securing ROW and easements will be by others.
- Attend project design review meeting to present preliminary design and obtain critical feedback from City staff and departments.
- Attend public hearings, City Commission meeting, etc. as requested

PHASE III SERVICES – FINAL ENGINEERING

- Prepare final construction plans in accordance with City requirements. Construction plans to include the following:
 - Existing Condition Plans
 - Final Paving Plans (Plan view and profiles as required) including utility adjustments/extensions
 - Final Typical Detail Sheet with existing and proposed Cross-Sections.
 - Standard Detail Sheet
 - Final Traffic Maintenance Plan
 - Final Permanent Signing Plans

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- Identify work items consistent with MDOT Standard Specifications for Construction, and prepare final Engineer's Opinion of Construction Cost.
- Coordinate project development with the City and Road Commission for Oakland County, as required for project permits. Apply for and obtain all required permits from permitting authorities.
- Prepare construction bid documents including modified Rochester Hills boiler plate, standard specifications for construction
- Submit 90% complete final design package to City for final review and comments.
- Make all necessary changes to final design documents and assist City with project bidding process
 - Review submitted bids for completeness and accuracy and prepare a bid tabulation sheet
 - Review references and prepare a letter recommending award to the desired contractor
- Attend project meetings as required to develop final design consistent with City requirements.

Based on the work outlined above, we submit the following engineering fee for your approval:

<u>WORK</u>	<u>ESTIMATED FEE</u>
Phase I – Pre Engineering Services	\$17,998.00
Phase II – Preliminary Engineering Services	\$31,784.00
Phase III – Final Engineering Services	\$24,704.00
Reimbursable Expenses	\$1,500.00
TOTAL NOT-TO-EXCEED AMOUNT:	<u>\$75,986.00</u>

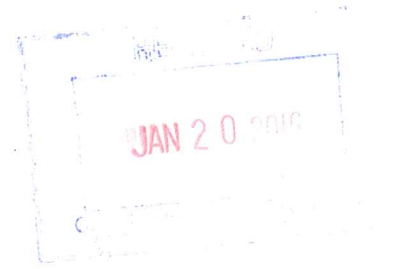
The work will be undertaken in accordance with our City engineering professional services agreement dated March 31, 2015 and we will proceed with the design work upon your authorization and complete the construction documents within the following design development schedule:

Pre-Engineering Phase	Completed by March 31, 2016
Preliminary Engineering Phase	Completed by May 13, 2016
Final Engineering Phase	Completed by August 15, 2016
Permits	Completed by August 15, 2016
Bid Package Complete	Completed by December 16, 2016
Bids Received	Mid-January, 2017

We submit the following cost breakdown as evidence of our expected costs associated with the design of the project:

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PHASE I

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
2 Person Survey Crew	Topographic Survey	50	\$139.00	\$6,950.00
Engineering Tech III	Topographic Survey	54	84.00	4,536.00
Engineer II	Field Review	24	78.00	1,872.00
Associate	Field Review & Coordination	32	100.00	3,200.00
Principal	Coordination	12	120.00	1,440.00
Subtotal Phase I				\$17,998.00

PHASE II – PRELIMINARY ENGINEERING

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
Engineering Tech. III	Prepare Const. Drawings in CAD	120	\$ 84.00	\$10,080.00
Engineering Tech. III	Prepare Exhibits	24	84.00	2,016.00
Project Engineer	Design of Improvements	48	96.00	4,608.00
Associate	Design of Improvements, etc.	80	100.00	8,000.00
Engineer II	Quantities & Cost Estimate, etc	60	78.00	4,680.00
Principal	Review & Coordinate	20	120.00	2,400.00
Subtotal Phase II:				\$31,784.00

PHASE III – FINAL ENGINEERING

<u>Classification</u>	<u>Description of Work</u>	<u>Estimate Hours</u>	<u>Hourly Rate</u>	<u>Amount</u>
Engineering Tech. III	Prepare Const. Drawings in CAD	80	\$ 84.00	\$6,720.00
Project Engineer	Design of Improvements	40	96.00	3,840.00
Associate	Design, Specifications, etc.	80	100.00	8,000.00
Engineer II	Quantities & Cost Estimate, etc.	48	78.00	3,744.00
Principal	Review & Coordinate	20	120.00	2,400.00
Subtotal Phase III:				\$24,704.00

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REIMBURSABLES

Blueprinting, delivery charges, etc. \$ 1,500.00

Subtotal Reimbursables: \$ 1,500.00

TOTAL NOT-TO-EXCEED AMOUNT: \$75,986.00

Please be advised that invoices will be based on actual hours and work required as approved by your office and the not-to-exceed amount will not be exceeded unless authorized by our office. We look forward to working with you on this important project for the City.

If you have any questions or require further information, please feel free to contact me.

Sincerely,
Nowak & Fraus Engineers



Jeffrey J. Huhta, P.E., P.S.
Executive Vice President

Date: 01/20/16

Recommended By:
CITY OF ROCHESTER HILLS

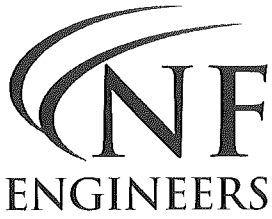
Allan E. Schneck, P.E., DPS Director

Date: _____

Approved By:
CITY OF ROCHESTER HILLS

Bryan K. Barnett, Mayor

Date: _____



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ESTIMATE FOR ROCHESTER HILLS GRAVEL - HMA SAD
 Overall Project - Conceptual Estimate

ITEM	QUANTITY	UNIT PRICE	TOTAL
Bollinger (Avon to Kirkton Ct)			
Remove Drive Approach & Culvert	550 SYD	\$12.00	\$ 6,600.00
Remove / Re-Install Mailbox	12 EA	\$200.00	\$ 2,400.00
Mill Ex. Pavement	500 SYD	\$18.00	\$ 9,000.00
Roadway Grading	1 LSUM	\$25,000.00	\$ 25,000.00
Ditch Grading / Cleanout	1200 FT	\$12.00	\$ 14,400.00
Adjust Hydrant	1 EA	\$1,500.00	\$ 1,500.00
Adjust Water Service	12 EA	\$350.00	\$ 4,200.00
Adjust Utility Cover	3 EA	\$450.00	\$ 1,350.00
Roadway Aggregate Base	1500 SYD	\$13.00	\$ 19,500.00
2.5" Leveling Course (MDOT 4E3)	230 TON	\$90.00	\$ 20,700.00
1.5" Wearing Course (MDOT 5E3)	180 TON	\$95.00	\$ 17,100.00
6" Concrete Drive Approach	550 SYD	\$70.00	\$ 38,500.00
Roadside Restoration	1200 FT	\$6.00	\$ 7,200.00
12" Drive Culverts	13 EA	\$600.00	\$ 7,800.00
			\$ 175,250.00
Kingsview Ave. (Livernois to Springwood Lane)			
Remove Pavement (Ex. Pvmnt)	1,050 SYD	\$10.00	\$ 10,500.00
Remove Drive Approach & Culvert	1,300 SYD	\$12.00	\$ 15,600.00
Remove / Re-Install Mailbox	29 EA	\$200.00	\$ 5,800.00
Roadway Grading	1 LSUM	\$70,000.00	\$ 70,000.00
Ditch Grading / Cleanout	5,000 FT	\$12.00	\$ 60,000.00
Adjust Hydrant	2 EA	\$1,500.00	\$ 3,000.00
Adjust Water Service	29 EA	\$350.00	\$ 10,150.00
Adjust Utility Cover	6 EA	\$450.00	\$ 2,700.00
Roadway Aggregate Base	6,200 SYD	\$13.00	\$ 80,600.00
2.5" Leveling Course (MDOT 4E3)	950 TON	\$90.00	\$ 85,500.00
1.5" Wearing Course (MDOT 5E3)	600 TON	\$95.00	\$ 57,000.00
6" Concrete Drive Approach	1,300 SYD	\$70.00	\$ 91,000.00
Concrete Curb and Gutter	700 FT	\$15.00	\$ 10,500.00
Roadside Restoration	5,000 FT	\$6.00	\$ 30,000.00
12" Drive Culverts	29 EA	\$600.00	\$ 17,400.00
			\$ 549,750.00
Misc. Construction Costs			
Mobilization	1 LSUM	\$36,250.00	\$ 36,250.00
Soil Erosion and Sedimentation Control	1 LSUM	\$15,000.00	\$ 15,000.00
Irrigation Repair	1 LSUM	\$8,500.00	\$ 8,500.00
Temporary Barricades and Traffic Control	1 LSUM	\$7,500.00	\$ 7,500.00
Temporary Aggregate / Maintaining Drives	1 LSUM	\$8,500.00	\$ 8,500.00
Construction Contingency (10%)	1 LSUM	\$72,500.00	\$ 72,500.00
			\$ 148,250.00
Estimated Project Construction Subtotal:			\$ 873,250.00

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