



CITY of NOVI CITY COUNCIL

Agenda Item H
April 10, 2017

SUBJECT: Approval to award geotechnical services to Soil and Materials Engineers, Inc. for the Beck Road Rehabilitation (8 Mile Road to 9 Mile Road) in the amount of \$32,000.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division GDM

CITY MANAGER APPROVAL: PR

EXPENDITURE REQUIRED	\$ 32,000
AMOUNT BUDGETED	\$ 37,500
LINE ITEM NUMBER	202-202.00-865.160

BACKGROUND INFORMATION:

In accordance with the Agreement for Geotechnical Engineering Consultant Services for Public Projects, Soils and Materials Engineers, Inc., (SME) has been selected to provide construction phase material testing services for the Beck Road Rehabilitation (8 Mile Road to 9 Mile Road) project. The material testing services necessary for this project exceed \$15,000, which requires City Council approval under the City's Purchasing Policy.

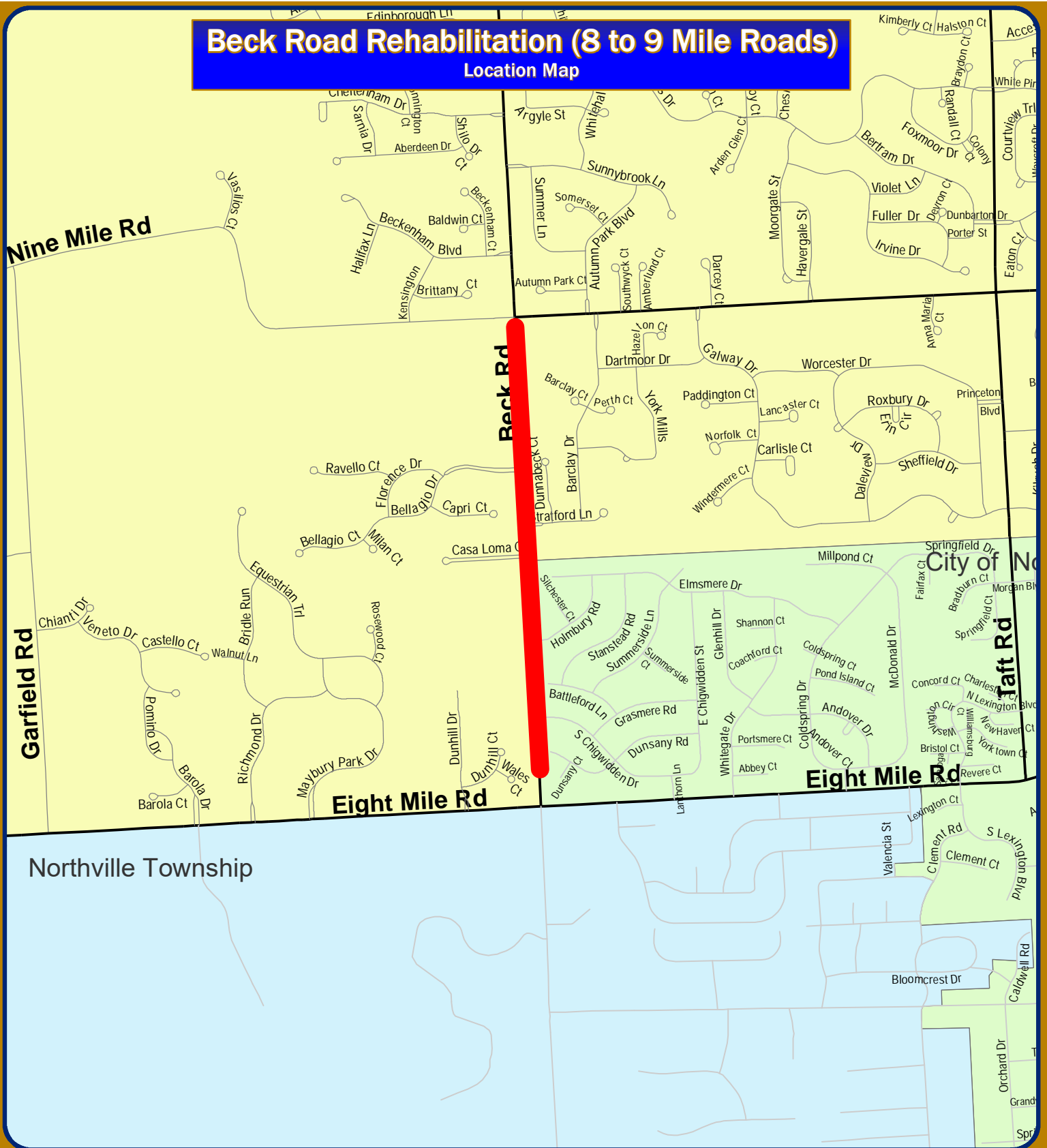
The scope of material testing services required for this project has been determined based on discussions with SME and AECOM-Great Lakes (the City's consulting engineer on for the project), and is summarized in the attached proposal from TEC. The material testing work is necessary to ensure that the specifications are being met by the contractor resulting in a quality product that performs as designed.

Construction of the project has been awarded by MDOT and it is anticipated that this project will be completed by the summer of 2017.

RECOMMENDED ACTION: Approval to award geotechnical services to Soil and Materials Engineers, Inc. for the Beck Road Rehabilitation (8 Mile Road to 9 Mile Road) in the amount of \$32,000.

Beck Road Rehabilitation (8 to 9 Mile Roads)

Location Map

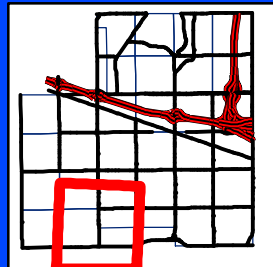


Map Author: Aaron J. Staup
 Date: February 15, 2017
 Project: Beck Road Rehab (8 to 9)
 Version #: 1

Amended By:
 Date:
 Department:

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.



City of Novi

Engineering Division
 Department of Public Services
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 cityofnovi.org



1 inch = 1,411 feet





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March 20, 2017

Mr. Aaron Staup
Construction Engineer
City of Novi
26300 Lee BeGole Drive
Novi, Michigan 48375

Via electronic mail: ataup@cityofnovi.org

RE: Proposal for Construction Material Services
Beck Road Rehabilitation – 8 Mile Road to 9 Mile Road
Novi, Michigan
SME Proposal No. P00745.17

Dear Mr. Staup:

SME is pleased to provide engineering services for the referenced project. This letter presents our scope and fee estimate for the proposed services.

UNDERSTANDING OF THE PROJECT

We understand the City of Novi intends to perform rehabilitation of Beck Road between 8 Mile Road and 9 Mile Road. We understand the work will consist of a combination of cold milling the existing asphalt pavement. In addition, a portion of the roadway will be completely reconstructed. AECOM has been retained by the City of Novi to provide civil engineering design services for this project. The City of Novi and AECOM have requested SME to prepare a proposal for construction material services during the construction phase of the project. We understand the construction budget is \$1.4 million.

SCOPE OF SERVICES

Based on the project requirements, we estimated our proposed number visits as follows:

1. Attend one pre-construction meeting.
2. Perform review of mix designs.
3. Attend weekly progress meetings during construction.
4. 8 - full day site visits to complete proofroll observations, obtain one point maximum densities, and perform field density testing on the aggregate base material;
5. 4 - half day site visits for concrete testing during driveway, curb/gutter, and sidewalk placements;
6. 8 full day site visits during HMA paving;

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7. 8 full day visits to the bituminous supplier's plant for testing/sampling during paving;
8. 16 bituminous one-point mix verifications (two per paving day);
9. 20 concrete cylinders compressive strength tests;
10. 2 gradation analysis on aggregate base, and;
11. 2 modified proctor test on each of the aggregate base, imported backfill, and subgrade materials.

PROFESSIONAL SERVICE FEE

Based on the estimated number of visits, we estimate a fee of \$32,000 to provide construction material testing services outlined above for the referenced project. These services will be provided in accordance with the attached fee schedules (FS:0 and 4) based upon the actual amount of time expended, tests performed and materials used. This is determined by your staff's request of our services during construction based on the duration, progress, and scheduling of the above items.

ASSUMPTIONS

The fee estimate is based on the above scope of services and the following assumptions. If these assumptions are in error, please let us know so we may re-evaluate our fee estimate.

1. Rights of entry and access to the streets will be provided to us.
2. Work will be performed during regular business hours on weekdays. We have assumed approximately 10 hours per day during the HMA paving portion of the project.
3. Construction is planned for between June to September 2017.

AUTHORIZATION

After you have reviewed our proposal, please provide us with a sub-consultant agreement/task order for our review and signature as authorization to proceed. We are available to discuss our scope of services with you at your convenience.

Very truly yours,



Eric P. Eckler
Senior Engineer

Jason A. Schwartzenberger, PE
Senior Consultant

Encl. FS: 0 and 4 (01/13)

Cc: Mark Koskinen: mark.koskinen@aecom.com

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FEE SCHEDULE PERSONNEL AND EXPENSES

PERSONNEL

Technician I.....	Per Hour.....	42.00
Technician II.....	Per Hour.....	50.00
Technician III.....	Per Hour.....	60.00
Technician IV.....	Per Hour.....	70.00
NDT Technician.....	Per Hour.....	80.00

Minimum 4 Hours Per Day for Technicians

Field Engineer/Geologist.....	Per Hour.....	75.00
Staff Engineer/Geologist, Materials Specialist, Environmental Specialist.....	Per Hour.....	85.00
Senior Engineer/Geologist, Senior Materials Specialist, Senior Environmental Specialist.....	Per Hour.....	100.00
Project Engineer/Consultant/Geologist, Materials Consultant.....	Per Hour.....	120.00
Senior Project Engineer/Consultant/Geologist, Project Manager.....	Per Hour.....	145.00
Senior Consultant, Senior Project Manager, Certified Industrial Hygienist.....	Per Hour.....	165.00
Certified Professional (Ohio VAP).....	Per Hour.....	190.00
Principal Consultant.....	Per Hour.....	210.00
Laboratory Technician.....	Per Hour.....	70.00
CAD.....	Per Hour.....	80.00
Senior CAD.....	Per Hour.....	90.00
Drafter.....	Per Hour.....	65.00
Log Processor.....	Per Hour.....	60.00
Word Processing, Administrative Assistant.....	Per Hour.....	55.00
Communication Fee (Postage, Shipping, Faxes, Cell Phones, etc).....	3% of Personnel Fees	

Expert Testimony and Depositions (including preparation time)..... Premium of 50% added to hourly rate

Overtime rate (Applies to all work in excess of 8 hours per day, before 8:00 am or after 5:00 pm Monday through Friday or anytime Saturday, Sunday, or Holiday)..... Standard Rate x 1.5

TRANSPORTATION AND EXPENSES

Transportation Charge, SME or Private Vehicle.....	Per Mile.....	0.75
Lodging, Subsistence, Out-of-town Travel.....	At Cost + 20%	
Subcontract Expenses, Equipment Rental.....	At Cost + 20%	
Direct Expenses (Prints, Permits, Maps, etc).....	At Cost + 20%	
Hard Copies of Report.....	Per Copy.....	75.00
Plotting 24 x 36 (Black & White).....	Each.....	10.00
Plotting 24 x 36 (Color).....	Each.....	20.00

Other Services including Drilling, Equipment use, and Laboratory Testing..... See Appropriate Fee Schedule

GENERAL NOTES

- Hourly rates will be charged for time spent in the interest of the project, in preparation of reports, as well as travel time to and from the job site. Fees for laboratory tests include reporting of routine results without comments, recommendations or conclusions. Discussion, interpretation, and consultation are charged at appropriate hourly rates.
- SME representatives may provide observation and field-testing. The scope of services does not include job or site safety, supervision, or direction of the actual work of the contractor. The presence of SME on the job site should not be construed to relieve the contractor in any way of his obligations and responsibilities under the construction contract.
- SME General Conditions govern all the work performed.



FEE SCHEDULE LABORATORY TESTING ENGINEERED MATERIALS SERVICES

SEE FS:0 FOR STAFF RATES

Concrete

Grout Cylinder Testing.....	Each	14.00
Compressive Strength of Concrete Cylinders – Made by SME	Each	14.00
– Made by Others.....	Each	20.00
Compressive Strength of Concrete Cores.....	Each	65.00
Indirect Split Tensile Strength of Concrete Cores.....	Each	80.00
Flexural Strength of Concrete Beams.....	Each	75.00
Concrete Chloride (Titration Method).....	Each	100.00
Concrete Mix Design (normal weight) and Trial Batch	Each	450.00

Soil/Aggregates

Lightweight Particles in Fine Aggregate (ASTM C123).....	Each	90.00
Lightweight Particles in Coarse Aggregate (ASTM C123).....	Each	175.00
Clay Lumps Friable Particles	Each	50.00
Flat & Elongated Particles (ASTM D4791)	Each	55.00
Laboratory Proctor Test (ASTM 1557 or 698) – 4 inch mold.....	Each	140.00
Laboratory Proctor Test (ASTM 1557 or 698) – 6 inch mold.....	Each	160.00
Clay Proctor Sample Preparation	Each	60.00
One-Point Proctor	Each	70.00
Sieve Analysis	Each	60.00
Loss by Wash	Each	60.00
Specific Gravity of Soils	Each	150.00
Specific Gravity of Aggregates, with Absorption	Each	70.00
Organic Impurities.....	Each	70.00
Organic Content	Each	50.00
Unit Weight of Fine or Coarse Aggregate.....	Each	60.00
Soundness of Aggregate (5 cycle).....	Each	225.00
Crushed Content.....	Each	70.00
Deleterious Pick	Each	70.00
Atterberg Limits (LL + PL).....	Each	125.00
Hydrometer/ Gradation Analysis.....	Each	185.00
Permeability Test of Liner Sample (Clayey Soil).....	Each	275.00
Permeability Test of Compacted Sample	Each	325.00
Coarse Aggregate Test (ASTM C-33).....	Each	950.00
Fine Aggregate Test (ASTM C-33).....	Each	800.00
Sand Equivalency.....	Each	115.00
Angularity Index	Each	25.00
Fine Aggregate Angularity.....	Each	35.00
Expansion Index (ASTM D4829)	Each	300.00
Triaxial Strength Testing – Unconsolidated/Undrained	Each Point.....	150.00
Triaxial Strength Testing – Consolidated/Drained	Each Point.....	300.00
Potential Alkali Reactivity of Aggregates (ASTM C-1567/ASTM C-1260)	Each	625.00
Alkali Reactivity of Aggregates (ASTM C-1293).....	Each	1000.00



Bituminous

Bituminous Mix Design – 4 Point Marshall Method.....	Each	900.00
Bituminous Mix Design–3 Point Marshall Method.....	Each	675.00
One–Point Mix Verification	Each	400.00
Marshall Stability and Flow Test (molded samples)	Per Set of 3 Samples	90.00
MDOT Submittal for Marshall Design.....	Each	2,000.00
Marshall Density of Laboratory Compacted Asphalt	Per Set of 3 Samples	90.00
Density of Pavement Core.....	Per Core	45.00
Theoretical Maximum Density (Rice Method)	Each	110.00
Extraction/Gradation of Bituminous Concrete	Each	175.00
Asphalt Cement Content Only	Each	110.00
Penetration of Bituminous Material	Each	85.00
Abson Recovered Penetration with extraction/gradation	Each	300.00
Abson Recovered Penetration without extraction/gradation	Each	225.00

Concrete Masonry Units

Compressive Strength of Block – Gross Area/Net.....	3 Block Set.....	300.00
Absorption.....	3 Block Set.....	200.00
Dimensional Review	3 Block Set.....	150.00
Linear Shrinkage	3 Block Set.....	450.00
Compressive Strength of Prism – Hollow	Each prism	300.00
Compressive Strength of Prism – Solid (Grouted).....	Each prism	400.00
Freeze-Thaw Testing (100 cycles)	5 Block Set.....	850.00
Freeze-Thaw Testing (additional 50 cycles)	5 Block Set.....	550.00
Freeze-Thaw Testing (Canadian Method 50 cycles).....	5 Block Set.....	500.00

Brick

Compressive Strength.....	5 Brick Set	250.00
Modulus of Rupture	5 Brick Set	250.00
Absorption – Basic	5 Brick Set	150.00
Absorption – Basic with Saturation Coefficient	5 Brick Set	300.00
Absorption– Initial Rate (Lab method)	5 Brick Set	150.00
Efflorescence.....	5 Brick Set	300.00
Dimensional Review	10 Brick Set	250.00
Freeze-Thaw Testing (100 cycles)	5 Brick Set	800.00

Retaining Wall Masonry Units

Compressive Strength.....	3 Block Set.....	450.00
Absorption.....	3 Block Set.....	250.00
Freeze-Thaw Testing.....	5 Block Set.....	750.00

Paver Brick

Compressive Strength.....	Each	50.00
Absorption.....	Each	30.00
Freeze-Thaw Testing (50 cycles)	5 Block Set.....	500.00
Modulus of Rupture for Paving Brick	5 Block Set.....	250.00

Grout/Mortar

Compressive Strength – 2” x 2” Cubes	Each	35.00
Compressive Strength – 3” x 3” x 6” Specimen.....	Each	45.00
Splitting Tensile – 3” x 6” Cylinders	Each	50.00
Mortar Aggregate Ratio.....	Each	150.00
Quantitative Analysis of Hardened Mortar (Historical/Mix)	Each	2,100.00



Roofing

Built-up Roof Test Cut Analysis (ASTM D-2829) with aggregate.....	Each	300.00
Built-up Roof Test Cut Analysis (ASTM D-3617) without aggregate	Each	225.00
Thermal Insulation Compressive Strength (ASTM D-1621).....	Each	100.00
Thermal Insulation Density (ASTM D-1622).....	Each	80.00
Softening Point of Bitumen – Ring and Ball (ASTM D-36)	Each	200.00

Fireproofing

Density Laboratory Test	Each	80.00
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GENERAL NOTES

1. Equipment charges do not include personnel time for performing test.
2. Consultation, interpretation of data, and recommendation or conclusions based on tests results are not included in equipment fee.

