

## ILLINOIS DEPARTMENT OF TRANSPORTATION

Request for Approval  
of Change in Consultant Contract

Date: 2/12/2018

Local Agency: LAKE COUNTY

Request: No. 3

Name: Hart Road at US Route 14 (Northwest  
Highway) Intersection Improvement  
Section: 09-00174-05-CH

To: Lake County Division of Transportation

Consultant: TranSystems Corporation

I recommend that an addition be made to the above consultant contract.

The estimated work is listed below

|                                                     |              |
|-----------------------------------------------------|--------------|
| Original contract amount<br>for services described: | \$927,604.31 |
|-----------------------------------------------------|--------------|

|                                                |              |
|------------------------------------------------|--------------|
| Sum of all previous contract<br>change orders: | \$132,801.42 |
|------------------------------------------------|--------------|

| Item<br>#  | Description                                                              | Additions   | Deductions |
|------------|--------------------------------------------------------------------------|-------------|------------|
| 1          | Soil Borings, Analysis and Ground Stabilization Design                   | \$24,706.38 |            |
| 2          | Resubmit Final Plans, Specifications and Cost Estimate to LCDOT and IDOT | \$7,083.58  |            |
| TOTALS     |                                                                          | \$31,789.96 | \$0.00     |
| NET CHANGE |                                                                          | \$31,789.96 | \$0.00     |

Net ADDITION change to date \$164,591.38 which is 17.74 % of the original contract amount for services described

State fully the nature and reason for change:

|                                                    |                |
|----------------------------------------------------|----------------|
| Revised contract amount<br>for services described: | \$1,092,195.69 |
|----------------------------------------------------|----------------|

Please see attached Exhibit A.

When the net increase or decrease in the cost of the contract is \$10,000 or more, or the time of completion is increased or decreased by 30 days or more, one of the following statements shall be checked.

☒ The undersigned determined that the circumstances which necessitated this change were not reasonably foreseeable at the time the contract was signed.

☐ The undersigned determined that the circumstances which necessitated this change were not within the contemplation of the contract as signed.

☐ The undersigned determined that this change is in the best interest of the local agency and is authorized by law.

Consultant  Date 2-12-18

Project Manager/Engineer \_\_\_\_\_ Date \_\_\_\_\_

Department Head \_\_\_\_\_ Date \_\_\_\_\_

Chief Accounting Specialist \_\_\_\_\_ Date \_\_\_\_\_

Approved \_\_\_\_\_ Date \_\_\_\_\_  
County Engineer

## EXHIBIT A – SUPPLEMENT #3 SCOPE OF SERVICES

Hart Road at US Route 14 (Northwest Highway)

Intersection Improvement

Section No. 09-00174-05-CH

This supplement consists of Phase II Engineering services to perform additional soil borings, soil analysis and the design of ground stabilization for the embankment in the southwest quadrant of the intersection of Hart Road and the Union Pacific Railroad tracks as requested by IDOT. In addition, it includes additional Phase II services for the resubmittal of Final Bid Plans, Specifications and Cost Estimate to LCDOT and IDOT when the project is ready to be resubmitted for a future letting date that is to be determined.

1. Soil Borings, Analysis and Ground Stabilization Design
  - a. Perform soil borings, soil analysis and recommendations for ground stabilization design. See attached proposal from Wang.
  - b. Wang to assist in implementing recommended option for ground stabilization into the plans and specifications. See attached proposal from Wang.
  - c. Provide engineering services to implement Wang's ground stabilization design recommendations into the plans and specifications (2 to 4 additional sheets)
  - d. Estimate of cost for ground stabilization design.
  - e. Coordination with IDOT and LCDOT.
2. Resubmit Final Plans, Specifications and Cost Estimate to LCDOT and IDOT
  - a. Revise Final Plans and Specifications in order for LCDOT and IDOT to let the Hart Road project in the future (date of letting to be determined). This includes the following:
    1. Updating plans to be current based on date of letting and start of construction (i.e. updating standards, notes, dates, cover sheet etc.)
    2. Replacing and updating IDOT and LCDOT specifications that are out of date.
    3. Updating individual specifications to be current based on the date of the letting and start of construction (i.e. completion date plus working days etc.)
    4. Compiling plans, specifications and cost estimate for resubmittal.
    5. Resubmit plans, specifications and cost estimate to LCDOT and IDOTThis does not include additional design changes outside of the current design shown in the current Final Plans, Specifications and Cost Estimate. In addition, this does not include changes to the design that would be required by updates to the LCDOT and IDOT standards and specifications.
  - b. Address comments from LCDOT and IDOT on the resubmittal.
  - c. Coordinate with LCDOT and IDOT on resubmittal.

PAYROLL ESCALATION TABLE  
FIXED RAISES

FIRM NAME  
PRIME/SUPPLEMENT

TranSystems Corporation  
Supplement

DATE  
PTB NO.

02/12/18

CONTRACT TERM  
START DATE  
RAISE DATE

12 MONTHS  
2/8/2018  
4/7/2018

OVERHEAD RATE  
COMPLEXITY FACTOR  
% OF RAISE

149.77%  
0  
3.00%

ESCALATION PER YEAR

2/8/2018 - 4/7/2018

2  
12

= 16.67%  
= 1.0250

4/8/2018 - 2/7/2019

10  
12

85.83%

The total escalation for this project would be:

2.50%

## PAYROLL RATES

FIRM NAME TranSystems Corporatic DATE 02/12/18  
PRIME/SUPPLEMENT Supplement  
PSB NO. \_\_\_\_\_

ESCALATION FACTOR 2.50%

| CLASSIFICATION        | CURRENT RATE | CALCULATED RATE |
|-----------------------|--------------|-----------------|
| Engineer 5 (E5)       | \$70.00      | \$70.00         |
| Engineer 4 (E4)       | \$67.72      | \$69.41         |
| Engineer 3 (E3)       | \$55.59      | \$56.98         |
| Engineer 2 (E2)       | \$42.00      | \$43.05         |
| Engineer 1 (E1)       | \$33.33      | \$34.16         |
| Surveyor 3 (S3)       | \$33.60      | \$34.44         |
| Surveyor 1 (S1)       | \$19.90      | \$20.40         |
| Technician 3 (T3)     | \$29.88      | \$30.63         |
| Technician 1 (T1)     | \$20.40      | \$20.91         |
| Administrative 2 (A2) | \$35.70      | \$36.59         |
|                       |              | \$0.00          |
|                       |              | \$0.00          |
|                       |              | \$0.00          |
|                       |              | \$0.00          |
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|                       |              | \$0.00          |
|                       |              | \$0.00          |

DF-824-039  
REV 12/04  
02/12/18

**TranSystems Corporation**

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**Supplement**

$$\frac{1.4977}{0}$$

DBE 0.00%

DBE 0.00%



February 2, 2018

Mr. Joseph Cwynar, P.E.  
**TranSystems Corporation**  
1475 E Woodfield Road, Suite 600  
Schaumburg, IL 60173

Re: Geotechnical Engineering Services  
US Route 12 and Hart Road Reconstruction  
Organic Soil Investigation  
Lake County Division of Transportation  
**Wang No. P180111**

Dear Mr. Cwynar:

Wang Engineering, Inc. (Wang) is pleased to present our proposal to provide the geotechnical investigation, laboratory testing, engineering analyses, and recommendations for the embankment widening along Hart Road at US Route 14 and the Union Pacific Railroad in Lake County, Illinois.

#### **SCOPE OF WORK**

In late 2017 the scope of the roadway widening and improvements along Hart Road at US Route 14 was changed from a proposed retaining wall to an embankment sloping out into the existing wetland area to the southwest of the roadway. A hand-auger investigation in October of 2017, with borings advanced to a maximum depth of 12 feet below ground surface (bgs) revealed deposits of organic-rich clays along the edges of the wetland and peat soils within the wetland itself. Both soil units underlie the proposed embankment widening. To investigate the extent, depth limits, and deformation properties of these organic soils, we propose extending four soil borings to depths averaging 30 feet bgs and obtaining undisturbed field samples for laboratory testing. To accomplish these objectives, Wang proposes the following tasks:

**Geotechnical Drilling and Sampling:** Wang will provide equipment, labor, and associated materials to drill and sample four soil borings to an average depth of 30 feet bgs at the locations shown in the attached Boring Location Plan. The borings will be sampled at 2.5-foot intervals. Soil samples will be collected with split-

spoon samplers according to AASHTO T 206, "Penetration Test and Split-Barrel Sampling of Soils." The soft and compressible organic materials will be sampled in accordance with AASHTO T 207, "Thin-walled Tube Sampling of Soils." The borings will be backfilled with soil cuttings and bentonite chips immediately after completion.

**Field Supervision:** Prior to the field investigation, a Wang representative will mark the boring locations in the field and clear utilities through the JULIE one-call system. A field engineer will monitor drilling activity, maintain daily field notes, develop soil boring logs, as well as receive, classify, and prepare soil samples for laboratory analyses. The field engineer will perform penetrometer and Rimac unconfined compressive strength tests on cohesive soil samples and will monitor the as-drilled groundwater level in boreholes. Wang will survey the boring locations with a combination of mapping-grade GPS and level.

**Laboratory Testing:** At the completion of each boring the soil samples will be transported to our laboratory. The soil testing program will include natural moisture content, as well as Atterberg limits, particle size analyses, and organic content tests on selected spilt-spoon samples. Shelby tube samples of the soft and compressible organic materials will be tested for one-dimensional consolidation and unconfined compressive strength.

**Engineering Analyses and Recommendations:** Wang will confirm the analyses performed for the revised Roadway Geotechnical Report (RGR), submitted November 1, 2017. Settlement estimates for the widening of the Hart Road embankment over the organic soils will be performed considering the laboratory testing, as well as the full depth of the organic unit encountered in the borings. The RGR will then be revised to reflect the analyses, and will include the new boring logs, soil profiles, and boring location plan.

Wang will also assist TranSystems in preparation of specifications or special provisions related to the proposed improvement and provide quality control reviews of design materials at TranSystems' request. We will also assist in general plan preparation and cost estimating.

## **SCHEDULING**

Wang will start the project expediently upon prior authorization to proceed. We anticipate that, after utility clearance, two working days will be necessary to mobilize into the wetland area and complete the drilling phase of the project. The laboratory testing program will be completed within three weeks after the completion of drilling. The geotechnical report will be finalized one additional week after the completion of the testing program.



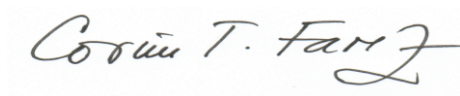
### **COST ESTIMATE AND ASSUMPTIONS**

Wang proposes to provide the above tasks at the cost shown on the attached cost estimate for geotechnical services. In preparing the cost estimate we have assumed the borings are accessible to an ATV-mounted drilling rig, permits are not required to access the locations, and traffic control will not be necessary.

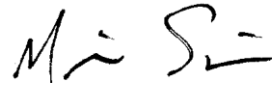
Wang Engineering, Inc. appreciates the opportunity to present this proposal. We look forward to working with you on this project. If you have questions, or if you require additional information, please contact us at (630) 953-9928.

Sincerely,

**Wang Engineering, Inc.**

A handwritten signature in black ink that reads 'Corina T. Farez'.

Corina T. Farez, P.E., P.G.  
Vice President

A handwritten signature in black ink that reads 'Mickey L. Snider'.

Mickey L. Snider, P.E.  
Senior Geotechnical Engineer

Name: Hart Road Additional Work

Date: 02/02/2018  
Wang No.: P180111

| Task Description                                                                                          | Units      | Unit Price       | Extended Cost     |
|-----------------------------------------------------------------------------------------------------------|------------|------------------|-------------------|
| <b>DRILLING, SAMPLING &amp; INSITU TESTING</b>                                                            |            |                  |                   |
| Drilling Coordination, Utilities Clearance, Site Access, Permitting                                       | 2.0 Hours  | \$97.00 /Hour    | \$194.00          |
| Mobilization                                                                                              | 0          | \$1,400.00 /Each | \$0.00            |
| Stand-by Hourly Rate                                                                                      | 0.0 Hours  | \$363.00 /Hour   | \$0.00            |
| <b><u>Drilling &amp; Sampling - Hourly</u> (SPT, Penetrometer, Rimac, Visual Classification Included)</b> |            |                  |                   |
| Two-man crew - normal working hrs                                                                         | 12.0 Hours | \$363.00 /Hour   | \$4,356.00        |
| Two-man crew - overtime (2 hrs per day)                                                                   | 2.0 Hours  | \$452.00 /Hour   | \$904.00          |
| Two-man crew and field supervisor- normal working hrs                                                     | 0.0 Hours  | \$435.00 /Hour   | \$0.00            |
| Two-man crew and field supervisor - overtime (2 hrs per day)                                              | 0.0 Hours  | \$525.00 /Hour   | \$0.00            |
| <b><u>Hand Augering, Pavement/ Deck Coring &amp; Testing</u></b>                                          |            |                  |                   |
| Two-man crew and equipment                                                                                | 0.0 Hours  | \$300.00 /Hour   | \$0.00            |
| Asbestos content testing on deck cores                                                                    | 0 Tests    | \$175.00 /Test   | \$0.00            |
| <b><u>Surveying of Boring Locations</u></b> (Two-man crew)                                                | 4.0 Hours  | \$230.00 /Hour   | \$920.00          |
| <b><u>Monitoring Well or Inclinator Installation</u></b>                                                  |            |                  |                   |
| <b><u>2.0- or 4-inch monitoring wells</u></b>                                                             |            |                  |                   |
| Two-man crew - normal working hours                                                                       | 0.0 Hours  | \$433.00 /Hour   | \$0.00            |
| Two-man crew - overtime (2 hours per day)                                                                 | 0.0 Hours  | \$522.00 /Hour   | \$0.00            |
| <b><u>Inclinator casing installation</u></b>                                                              |            |                  |                   |
| Two-man drilling crew - normal working hours                                                              | 0.0 Hours  | \$510.00 /Hour   | \$0.00            |
| Two-man crew - overtime (2 hours per day)                                                                 | 0.0 Hours  | \$599.00 /Hour   | \$0.00            |
| <b><u>Other items</u></b>                                                                                 |            |                  |                   |
| 55 gallon dot containment drums                                                                           | 0 Drums    | \$38.00 /Drum    | \$0.00            |
| Digital datalogger and barometer                                                                          | 0 Each     | \$1,300.00 /Each | \$0.00            |
| <b><u>Drilling and Sampling - per Foot</u> (SPT, Penetrometer, Rimac, Visual Classification Included)</b> |            |                  |                   |
| Between 0 and 75 feet                                                                                     | 0.0 Feet   | \$35.00 /Foot    | \$0.00            |
| Between 75 and 150 feet                                                                                   | 0.0 Feet   | \$50.00 /Foot    | \$0.00            |
| Drill without sampling                                                                                    | 0.0 Feet   | \$26.00 /Foot    | \$0.00            |
| Shelby tube samples                                                                                       | 0 Samples  | \$70.00 /Sample  | \$0.00            |
| Rock core setup                                                                                           | 0 Setups   | \$380.00 /Setup  | \$0.00            |
| Set casing and rock coring                                                                                | 0.0 Feet   | \$85.00 /Foot    | \$0.00            |
| Borehole backfilling                                                                                      | 0.0 Feet   | \$10.00 /Foot    | \$0.00            |
| Pavement patching                                                                                         | 0 Patches  | \$20.00 /Each    | \$0.00            |
| Drilling crew daily travel & support vehicle                                                              | 0 Days     | \$170.00 /Day    | \$0.00            |
| <b><u>Other Insitu Tests</u></b>                                                                          |            |                  |                   |
| Pressuremeter testing                                                                                     | 0 Days     | \$2,500.00 /Day  | \$0.00            |
| Vane shear                                                                                                | 0 Tests    | \$200.00 /Test   | \$0.00            |
| Dilatometer testing                                                                                       | At Cost    |                  | \$0.00            |
| Cone penetration testing (CPT/CPTu)                                                                       | At Cost    |                  | \$0.00            |
| Photoionization detector (PID)                                                                            | 0 Days     | \$100.00 /Day    | \$0.00            |
| Double ring infiltrometer test (ASTM D3385)                                                               | 0 Tests    | \$1,125.00 /Test | \$0.00            |
| Single ring infiltrometer test (chicago stormwater ordinance)                                             | 0 Tests    | \$620.00 /Test   | \$0.00            |
| <b><u>Boring Location Accessibility, Railroad Fees, State/County/Municipal Fees, Barge Drilling</u></b>   |            |                  |                   |
| Private utility determination                                                                             | At Cost    |                  | \$0.00            |
| Tree clearance                                                                                            | At Cost    |                  | \$0.00            |
| Guardrail removal and replacement                                                                         | At Cost    |                  | \$0.00            |
| Dozer / equipment rental                                                                                  | At Cost    |                  | \$0.00            |
| Railroad permitting                                                                                       | At Cost    |                  | \$0.00            |
| Railroad protective insurance                                                                             | At Cost    |                  | \$0.00            |
| Railroad flagman                                                                                          | At Cost    |                  | \$0.00            |
| Pavement opening permit                                                                                   | At Cost    |                  | \$0.00            |
| State/municipal insurance and bonding                                                                     | At Cost    |                  | \$0.00            |
| Barge drilling on a navigable waterway                                                                    | At Cost    |                  | \$0.00            |
|                                                                                                           |            |                  | <b>\$6,374.00</b> |

Name: Hart Road Additional Work

Date: 02/02/2018  
Wang No.: P180111

| Task Description                                                                      |       |                                                   | Units     | Unit Price       | Extended Cost |
|---------------------------------------------------------------------------------------|-------|---------------------------------------------------|-----------|------------------|---------------|
| <b>LABORATORY TESTING</b>                                                             |       |                                                   |           |                  |               |
| T265                                                                                  | D2216 | Water Content                                     | 100 Tests | \$9.80 /Test     | \$980.00      |
| --                                                                                    | D7263 | Unit Weight (Density)                             | 0 Tests   | \$36.00 /Test    | \$0.00        |
| T100                                                                                  | D854  | Specific Gravity                                  | 0 Tests   | \$66.00 /Test    | \$0.00        |
| --                                                                                    | D4972 | pH of Soil                                        | 0 Tests   | \$59.00 /Test    | \$0.00        |
| T267                                                                                  | D2974 | Organic Content by LOI                            | 6 Tests   | \$60.00 /Test    | \$360.00      |
| T194                                                                                  | --    | Organic Content by Wet Combustion                 | 0 Tests   | \$133.00 /Test   | \$0.00        |
| <b><u>Particle Size Distribution</u></b>                                              |       |                                                   |           |                  |               |
| T88                                                                                   | D422  | Sieve Analysis                                    | 0 Tests   | \$77.00 /Test    | \$0.00        |
| T88                                                                                   | D422  | Combined Sieve and Hydrometer                     | 6 Tests   | \$122.00 /Test   | \$732.00      |
| --                                                                                    | D1140 | Percent Finer than No. 200 Sieve                  | 6 Tests   | \$50.00 /Test    | \$300.00      |
| <b><u>Atterberg Limits</u></b>                                                        |       |                                                   |           |                  |               |
| T89, T90                                                                              | D4318 | Liquid and Plastic Limits                         | 0 Tests   | \$77.00 /Test    | \$0.00        |
| T92                                                                                   | D427  | Shrinkage Factors                                 | 0 Tests   | \$90.00 /Test    | \$0.00        |
| <b><u>Classification of Soils</u></b>                                                 |       |                                                   |           |                  |               |
| --                                                                                    | D2488 | Visual Manual                                     | 0 Samples | \$19.00 /Sample  | \$0.00        |
| --                                                                                    | D2487 | Unified Soil Classification System                | 0 Samples | \$195.00 /Sample | \$0.00        |
| M145                                                                                  | --    | AASHTO Classification                             | 0 Samples | \$195.00 /Sample | \$0.00        |
| --                                                                                    | --    | USDA Classification                               | 0 Samples | \$122.00 /Sample | \$0.00        |
| <b><u>Soil Settlement, Swelling, and Collapse Potential</u></b>                       |       |                                                   |           |                  |               |
| T216                                                                                  | D2435 | One-Dimensional Consolidation                     | 1 Tests   | \$556.00 /Test   | \$556.00      |
| --                                                                                    | D4546 | One-Dimensional Swell                             | 0 Tests   | \$540.00 /Test   | \$0.00        |
| --                                                                                    | D5333 | Collapse Potential                                | 0 Tests   | \$300.00 /Test   | \$0.00        |
| <b><u>Shear Strength of Soil</u></b>                                                  |       |                                                   |           |                  |               |
|                                                                                       |       | Rimac Unconfined Compressive Strength             | 0 Tests   | \$14.50 /Test    | \$0.00        |
| T208                                                                                  | D2166 | Unconfined Compressive Strength                   | 2 Tests   | \$81.00 /Test    | \$162.00      |
| T236                                                                                  | D3080 | Direct Shear of Soils (3 points)                  | 0 Tests   | \$715.00 /Test   | \$0.00        |
| T296                                                                                  | D2850 | UU Triaxial Compression (3 points)                | 0 Tests   | \$335.00 /Test   | \$0.00        |
| T297                                                                                  | D4767 | CU Triaxial Compression (3 points)                | 0 Tests   | \$1,100.00 /Test | \$0.00        |
| T297                                                                                  | D4767 | CD Triaxial Compression (3 points)                | 0 Tests   | \$1,100.00 /Test | \$0.00        |
|                                                                                       | D7012 | Peak Uniaxial Compressive Strength of Rock Core   | 0 Tests   | \$163.00 /Test   | \$0.00        |
| <b><u>Laboratory Compaction Tests</u></b>                                             |       |                                                   |           |                  |               |
| T99                                                                                   | D698  | Moisture-Density of Soils (Standard Effort)       | 0 Tests   | \$200.00 /Test   | \$0.00        |
| T180                                                                                  | D1557 | Moisture-Density of Soils (Modified Effort)       | 0 Tests   | \$210.00 /Test   | \$0.00        |
| T193                                                                                  | --    | Illinois Bearing Ratio (1 point)                  | 0 Tests   | \$500.00 /Test   | \$0.00        |
| T193                                                                                  | D1883 | California Bearing Ratio (3 points)               | 0 Tests   | \$920.00 /Test   | \$0.00        |
| <b><u>Coefficient of Permeability</u></b>                                             |       |                                                   |           |                  |               |
| T215                                                                                  | D2434 | Hydraulic Conductivity (Constant Head)            | 0 Tests   | \$450.00 /Test   | \$0.00        |
| --                                                                                    | D5084 | Hydraulic Conductivity (Flexible Wall)            | 0 Tests   | \$475.00 /Test   | \$0.00        |
| <b><u>Additional Sample Preparation Procedures</u></b>                                |       |                                                   |           |                  |               |
|                                                                                       |       | Removal of Organic Matter                         | 0 Samples | \$87.00 /Sample  | \$0.00        |
|                                                                                       |       | Extrusion & Preservation of Undisturbed Samples   | 0 Samples | \$28.00 /Sample  | \$0.00        |
|                                                                                       |       | Logging & Classification of Undisturbed Samples   | 0 Samples | \$65.00 /Sample  | \$0.00        |
|                                                                                       |       | Remolding and Trimming of Samples                 | 0 Samples | \$62.00 /Sample  | \$0.00        |
| <b><u>Planting Soil Mix Testing</u></b>                                               |       |                                                   |           |                  |               |
| <i>Chemical Analyses &amp; Mitigation Recommendations (300 g sample required)</i>     |       |                                                   |           |                  |               |
|                                                                                       |       | pH, CEC, Soluble Salts, OM, P, K, Other Nutrients | 0 Tests   | \$115.00 /Test   | \$0.00        |
|                                                                                       |       | Residual Chemicals , Herbicides Full Screen       | 0 Tests   | \$645.00 /Test   | \$0.00        |
| <i>Mechanical Analyses &amp; Mitigation Recommendations (1,000 g sample required)</i> |       |                                                   |           |                  |               |
| T88                                                                                   | D422  | Combined Sieve and Hydrometer                     | 0 Tests   | \$122.00 /Test   | \$0.00        |
| <b><u>Analytical Laboratory Services - for CCDD</u></b>                               |       |                                                   |           |                  |               |
|                                                                                       |       | Volatile Organic Components (VOC)                 | 0 No      | \$200.00 /Each   | \$0.00        |
|                                                                                       |       | SemiVOC including PNA's                           | 0 No      | \$335.00 /Each   | \$0.00        |
|                                                                                       |       | PCB                                               | 0 No      | \$135.00 /Each   | \$0.00        |
|                                                                                       |       | Total Metals                                      | 0 No      | \$210.00 /Each   | \$0.00        |
|                                                                                       |       | PH Determination                                  | 0 No      | \$23.00 /Each    | \$0.00        |
| <b><u>Corrosion Testing</u></b>                                                       |       |                                                   |           |                  |               |
|                                                                                       |       | (Resistivity, Chlorides, pH, Redox, and Sulfates) | 0 No      | \$290.00 /Each   | \$0.00        |
| <b>\$3,090.00</b>                                                                     |       |                                                   |           |                  |               |

Name: Hart Road Additional Work

Date: 02/02/2018  
Wang No.: P180111

| Task Description                             | Units     | Unit Price       | Extended Cost    |
|----------------------------------------------|-----------|------------------|------------------|
| <b>TRAFFIC CONTROL</b>                       |           |                  |                  |
| <u><b>Expressway (1/2 mile)</b></u>          |           |                  |                  |
| Shoulder Closure                             | 0.0 No.   | \$1,200.00 /Each | \$0.00           |
| One-lane Closure                             | 0.0 No.   | \$3,200.00 /Each | \$0.00           |
| Two-lane Closure                             | 0.0 No.   | \$3,400.00 /Each | \$0.00           |
| Three-lane Closure                           | 0.0 No.   | \$3,650.00 /Each | \$0.00           |
| Ramp Closure                                 | 0.0 No.   | \$1,250.00 /Each | \$0.00           |
| Additional 1/2 mile                          | 0.0 No.   | \$100.00 /Each   | \$0.00           |
| <u><b>Arterial (1/2 mile)</b></u>            |           |                  |                  |
| Shoulder Closure                             | 0.0 No.   | \$1,000.00 /Each | \$0.00           |
| One-lane Closure                             | 0.0 No.   | \$1,100.00 /Each | \$0.00           |
| Two-lane Closure                             | 0.0 No.   | \$1,200.00 /Each | \$0.00           |
| Detour                                       | 0.0 No.   | \$1,100.00 /Each | \$0.00           |
| U-2                                          | 0.0 No.   | \$1,200.00 /Each | \$0.00           |
| Additional 1/2 mile                          | 0.0 No.   | \$100.00 /Each   | \$0.00           |
| <u><b>Impact Attenuator with Driver</b></u>  |           |                  |                  |
| Port-to-Port                                 | 0.0 Hours | \$235.00 /Hour   | \$0.00           |
| <u><b>Roadway Flagmen (two-man crew)</b></u> |           |                  |                  |
| Port-to-Port                                 | 0.0 Hours | \$250.00 /Hour   | \$0.00           |
|                                              |           |                  | <b>\$ -</b>      |
| <b>FIELD VEHICLES &amp; MILEAGE</b>          |           |                  |                  |
| <u><b>Field Vehicle</b></u>                  |           |                  |                  |
| Field Vehicle Mileage (>100 Miles per Day)   | 0.0 Miles | \$0.535 /Mile    | \$0.00           |
| Field Vehicle Daily (<100 Miles per Day)     | 5 Days    | \$65.00 /Day     | \$325.00         |
|                                              |           |                  | <b>\$ 325.00</b> |

Name: Hart Road Additional Work

Date: 02/02/2018  
Wang No.: P180111

| Task Description                                | Units      | Unit Price     | Extended Cost      |
|-------------------------------------------------|------------|----------------|--------------------|
| <b>ENGINEERING, REPORTING &amp; MANAGEMENT</b>  |            |                |                    |
| <b>Desk Study, Site Access &amp; Permitting</b> |            |                |                    |
| Senior Engineer                                 | 0.0 Hours  | \$169.14 /Hour | \$0.00             |
| Project Engineer/Project Geologist              | 0.0 Hours  | \$100.77 /Hour | \$0.00             |
| Assistant Engineer/Assistant Geologist          | 0.0 Hours  | \$72.85 /Hour  | \$0.00             |
| <b>Field Activities</b>                         |            |                |                    |
| Project Engineer/Project Geologist              | 4.0 Hours  | \$100.77 /Hour | \$403.08           |
| Assistant Engineer/Assistant Geologist          | 24.0 Hours | \$72.85 /Hour  | \$1,748.40         |
| <b>Laboratory Testing</b>                       |            |                |                    |
| Project Engineer/Project Geologist              | 0.0 Hours  | \$100.77 /Hour | \$0.00             |
| Laboratory Technician                           | 0.0 Hours  | \$70.08 /Hour  | \$0.00             |
| <b>Data Analyses &amp; Engineering</b>          |            |                |                    |
| Senior Engineer                                 | 8.0 Hours  | \$169.14 /Hour | \$1,353.12         |
| Project Engineer/Project Geologist              | 12.0 Hours | \$100.77 /Hour | \$1,209.24         |
| Assistant Engineer/Assistant Geologist          | 12.0 Hours | \$72.85 /Hour  | \$874.20           |
| <b>Report Preparation</b>                       |            |                |                    |
| Senior Engineer                                 | 8.0 Hours  | \$169.14 /Hour | \$1,353.12         |
| Project Engineer/Project Geologist              | 10.0 Hours | \$100.77 /Hour | \$1,007.70         |
| Assistant Engineer/Assistant Geologist          | 0.0 Hours  | \$72.85 /Hour  | \$0.00             |
| QC/QA Reviewer                                  | 2.0 Hours  | \$161.27 /Hour | \$322.54           |
| <b>Project Management</b>                       |            |                |                    |
| Principal in Charge                             | 0.0 Hours  | \$195.99 /Hour | \$0.00             |
| Project Manager                                 | 2.0 Hours  | \$169.14 /Hour | \$338.28           |
| Administrative Assistant                        | 0.0 Hours  | \$92.28 /Hour  | \$0.00             |
|                                                 |            |                | <b>\$ 8,609.68</b> |

|                                                |            |                |                     |
|------------------------------------------------|------------|----------------|---------------------|
| <b>SUMMARY</b>                                 |            |                |                     |
| <b>DRILLING, SAMPLING &amp; INSITU TESTING</b> |            |                | \$6,374.00          |
| <b>LABORATORY TESTING</b>                      |            |                | \$3,090.00          |
| <b>TRAFFIC CONTROL</b>                         |            |                | \$0.00              |
| <b>FIELD VEHICLES &amp; MILEAGE</b>            |            |                | \$325.00            |
| <b>OUT-OF-TOWN EXPENSES</b>                    |            |                | \$0.00              |
|                                                |            |                | <b>\$ 9,789.00</b>  |
| <b>ENGINEERING, REPORTING &amp; MANAGEMENT</b> |            |                |                     |
| Principal in Charge                            | 0.0 Hours  | \$195.99 /Hour | \$0.00              |
| Project Manager                                | 2.0 Hours  | \$169.14 /Hour | \$338.28            |
| Senior Engineer                                | 16.0 Hours | \$169.14 /Hour | \$2,706.24          |
| Project Engineer/Project Geologist             | 26.0 Hours | \$100.77 /Hour | \$2,620.02          |
| Assistant Engineer/Assistant Geologist         | 36.0 Hours | \$72.85 /Hour  | \$2,622.60          |
| Laboratory Technician                          | 0.0 Hours  | \$70.08 /Hour  | \$0.00              |
| Administrative Assistant                       | 0.0 Hours  | \$92.28 /Hour  | \$0.00              |
| QC/QA Reviewer                                 | 2.0 Hours  | \$161.27 /Hour | \$322.54            |
|                                                | 82.0       |                | <b>\$ 8,609.68</b>  |
| <b>TOTAL</b>                                   |            |                | <b>\$ 18,398.68</b> |

PAYROLL ESCALATION TABLE  
FIXED RAISES

|                                           |                                                       |                                                  |                                            |
|-------------------------------------------|-------------------------------------------------------|--------------------------------------------------|--------------------------------------------|
| FIRM NAME<br>PRIME/SUPPLEMENT             | <u>Wang Engineering, Inc.</u><br><u>Supplement</u>    | DATE<br>PTB NO.                                  | <u>02/09/18</u><br>_____                   |
| CONTRACT TERM<br>START DATE<br>RAISE DATE | <u>6</u> MONTHS<br><u>3/1/2018</u><br><u>1/1/2019</u> | OVERHEAD RATE<br>COMPLEXITY FACTOR<br>% OF RAISE | <u>142.99%</u><br><u>0</u><br><u>3.00%</u> |

ESCALATION PER YEAR

|                                    |                                    |
|------------------------------------|------------------------------------|
| <u>3/1/2018</u> - <u>8/31/2018</u> | <u>9/1/2018</u> - <u>8/31/2018</u> |
| <u>6</u>                           | <u>0</u>                           |
| <u>6</u>                           | <u>6</u>                           |

= 100.00%  
= 1.0000  
0.00%  
0.00%

The total escalation for this project would be:

02/09/18

**ESCALATION FACTOR** 0.00%

**PREPARED BY THE AGREEMENTS UNIT** Printed 2/9/2018 10:10 AM







DATE 02/09/18  
SHEET 2

| PAYROLL<br>CLASSIFICATION | AVG<br>HOURLY<br>RATES | Project Management |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|---------------------------|------------------------|--------------------|------------|-------------|-------|------------|-------------|-------|------------|-------------|-------|------------|-------------|-------|------------|-------------|
|                           |                        | Hours              | %<br>Part. | Wgtd<br>Avg | Hours | %<br>Part. | Wgtd<br>Avg | Hours | %<br>Part. | Wgtd<br>Avg | Hours | %<br>Part. | Wgtd<br>Avg | Hours | %<br>Part. | Wgtd<br>Avg |
| Principal in Charge       | 75.00                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| Project Manager           | 60.41                  | 2                  | 100.00%    | 60.41       |       |            |             |       |            |             |       |            |             |       |            |             |
| Senior Engineer           | 60.41                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| Project Engineer/Pro      | 35.99                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| Assistant Engineer/A      | 26.02                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| Laboratory Technicia      | 25.03                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| Administrative Assis      | 32.96                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| QC/QA Reviewer            | 57.60                  |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
|                           |                        |                    |            |             |       |            |             |       |            |             |       |            |             |       |            |             |
| TOTALS                    |                        | 2                  | 100%       | \$60.41     | 0     | 0%         | \$0.00      | 0     | 0%         | \$0.00      | 0     | 0%         | \$0.00      | 0     | 0%         | \$0.00      |