


Municipality	L O C A L A G E N C Y	 Illinois Department of Transportation	C O N S U L T A N T	Name Alfred Benesch & Company
Township				Address 35 W. Wacker Drive, Suite 3300
County Lake County – Division of Transportation				City Chicago
Section 15-00120-06-CH				State IL

THIS AGREEMENT is made and entered into this _____ day of _____, _____ between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above SECTION. Motor Fuel Tax Funds, allotted to the LA by the State of Illinois under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely or in part to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

Section Description

Name Fairfield Road at Monaville Road Intersection Improvements

Route _____ Length 0.58 Mi. 3050.00 FT (Structure No. _____)

Termini 700-ft west of intersection to 850-ft east, 400-ft south to 500-ft north, and 600-ft of Old Monaville Rd

Description:

Construction of new roundabout intersection with associated improvements to remove the intersection of Old Monaville Road with Monaville Road.

Agreement Provisions

The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
 - a. ☒ Make such detailed surveys as are necessary for the preparation of detailed roadway plans
 - b. ☐ Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
 - c. ☐ Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
 - d. ☐ Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
 - e. ☒ Prepare Army Corps of Engineers Permit, **Lake County Stormwater Management Commission Permit**, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
 - f. ☐ Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
 - g. ☒ Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with **one (1) copy of each document in both hardcopy and electronic format**. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at the ENGINEER's actual cost for reproduction.
 - h. ☐ Furnish the LA with survey and drafts in **duplicate** of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.
 - i. ☐ Assist the LA in the tabulation and interpretation of the contractors' proposals.

- j. ☒ Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
 - k. ☐ Prepare the Project Development Report when required by the DEPARTMENT.
 - l. ☒ **Services as included and/or defined in the attached Scope of Services.**
2. That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies **of the LA and** of the DEPARTMENT. It is being understood that all such reports, plats, plans and drafts shall, before being finally accepted, be subject to approval by the LA and the DEPARTMENT.
 3. To attend conferences at any reasonable time when requested to do so by representatives of the LA or the Department.
 4. In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that the ENGINEER will perform such work without expense to the LA, even though final payment has been received by the ENGINEER. The ENGINEER shall give immediate attention to these changes so there will be a minimum delay to the CONTRACTOR.
 5. That basic survey notes and sketches, charts, computations and other data prepared or obtained by the ENGINEER pursuant to this AGREEMENT will be made available, upon request, to the LA or the DEPARTMENT without cost and without restriction or limitations as to their use.
 6. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will show the ENGINEER's professional seal where such is required by law.

The LA Agrees,

1. ~~To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT according to the following method indicated by a check mark:~~
 - a. ☐ A sum of money equal to _____ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
 - b. ☐ A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

Schedule for Percentages Based on Awarded Contract Cost

Awarded Cost	Percentage Fees	(see note)
Under \$50,000	_____	%
	_____	%
	_____	%

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for all services rendered in accordance with this AGREEMENT at the actual cost of performing such work plus percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at the ENGINEER's actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided in section 1 of the ENGINEER AGREES. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus an additional service charge of up to five (5) percent.

"Cost to Engineer" to be verified by furnishing the LA and the DEPARTMENT copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed. ***See the CECS**

The Total Not-to-Exceed Contract Amount shall be \$518,882.36

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed. ~~in accordance with the following schedule:~~

- ~~a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by section 1 of the ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.~~
- ~~b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.~~

By Mutual agreement, partial payments, ~~not to exceed 90 percent of the amount earned,~~ may be made from time to time as the work progresses.

4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in sections 1 and 3 of the ENGINEER AGREES and prior to the completion of such services, the LA shall reimburse the ENGINEER for the ENGINEER's actual costs plus 198 percent incurred up to the time the ENGINEER is notified in writing of such abandonment -"actual cost" being defined as in paragraph 2 of the LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of the ENGINEER AGREES, after they have been approved by the DEPARTMENT, the LA will pay the ENGINEER for such changes on the basis of actual cost plus 198 percent to cover profit, overhead and readiness to serve -"actual cost" being defined as in paragraph 2 of the LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of the ENGINEER's responsibility to prepare a complete and adequate set of plans and specifications.

It is Mutually Agreed,

1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
2. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with section 4 of the LA AGREES.
3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA and their approval by the DEPARTMENT, the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and approved by the LA and the DEPARTMENT.
4. That the ENGINEER warrants that the ENGINEER has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that the ENGINEER has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in quintuplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

ATTEST: _____ County of Lake _____ of the
(Municipality/Township/County)
State of Illinois, acting by and through its
County Board
By _____
Lake County Clerk
(Seal) By _____
Title Chairman of the County Board

RECOMMENDED FOR EXECUTION

Shane E. Schneider, P.E.
Director of Transportation/County Engineer
Lake County

Executed by the ENGINEER:

ATTEST: _____
Engineering Firm
33 W. Wacker Drive, Ste. 3300
Street Address
Chicago, IL 60601
City, State
By Ryan M. Thaddeus
Title Vice President
By E. Gallagher
Title Senior Vice President

Note: Five (5) Original Executed Contracts – (2) LCDOT; (2) IDOT District 1, Local Roads; (1) Consultant

**Phase II Engineering Cost Proposal for
Proposed Intersection Improvement
Fairfield Road at Monaville Road
LCDOT Section 15-00120-06-CH**

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DETAILED SCOPE OF WORK

Phase II Engineering for Fairfield Road at Monaville Road Intersection Improvements

Lake County Section: 15-00120-06-CH

The scope of work for this project includes Phase II engineering and land acquisition services for the intersection improvements at Fairfield Road and Monaville Road. The project includes installation of a roundabout at the existing intersection and realignment of the approaching roadways, installation of a cul-de-sac at the east end of Old Monaville Road, drainage improvements, installation of pedestrian and bicycle accommodations, intersection lighting and landscaping work.

The following tasks are included to complete this work.

1.0 Project Coordination

This task includes coordination with various entities to complete the project. This includes coordination with Lake County DOT, Lake County Forest Preserve District, Village of Lake Villa, Lake Villa Township, Lake County SMC and utility companies. No coordination meetings with IDOT are anticipated or included in this scope.

2.0 Civil Plans

Plans, special provisions, cost estimates, plats and legals will be prepared in accordance with the Lake County Division of Transportation Plan Preparation Guidelines. Applicable guidelines from the IDOT Bureau of Design and Environment and Bureau of Local Roads manuals will be used as required or referenced by LCDOT. The project is anticipated to be let by LCDOT with Local Funds, however there is a possibility of using Federal funds if obtained during the design process. Where there is a discrepancy between LCDOT and IDOT format, the plans will be prepared to meet IDOT requirements.

The tasks comprising the Civil Plan scope of work are detailed below.

2.1 Roadway Plans

This portion of the Phase II task will include the preparation of roadway plans. The following process will be utilized to complete this task:

1. Cover Sheet

The standard LCDOT Title Sheet will be utilized.

2. Notes/Index/Standards

- A list of commitments from Phase I will be included.
- IDOT and LCDOT general notes will be utilized as applicable.
- An index of sheets will be included

- A list of current IDOT and LCDOT standards pertinent to the subject project will be included in the plans.

3. Summary of Quantities

- Hours for preparing the Summary of Quantity sheets will consist of formatting the summary of quantity tables and inputting the required information.
- Hours for calculating the quantities will be included in the hours for the preparation of the respective plan sheets on which the items appear.

4. Schedules of Quantities

- Items which are repeated on multiple pages will be shown in a tabular format in the Schedule of Quantities.
- Hours for preparing Schedule of Quantity sheets will consist of formatting the schedules and inputting the required information.
- Hours for calculating the quantities will be included in the hours for the preparation of the respective plan sheets on which the items appear.
- A bituminous mixture chart and QC/QA schedule for bituminous materials will be included with the Schedules of Quantities.

5. Typical Sections

- A legend will be provided on all sheets. Pay items will be called out exactly as they appear on the Summary of Quantity sheets.
- The typical sections will be proportioned in such a manner that all information will be adequately conveyed.
- Pavement design information will be provided on the cover sheet per LCDOT standard.
- Pavement design will be prepared and submitted to LCDOT for approval
- Existing Typical Sections will cover the entire length of the proposed improvement and will be determined based on the various pavement structures.
- Removal items will be cross hatched on the existing typical sections.
- Proposed Typical Sections (as presented in plan sheets) will cover the entire length of the proposed improvement for the construction and will be provided based on the following conditions: superelevation, where the roadway transitions from a curbed section to a non-curbed section and vice versa, changes to the pavement structure, changes to pavement width, cross section changes and side slope variations.
- Notes will be utilized where feasible to describe special cases and therefore limit the amount of typical sections required.

6. Alignments, Ties & Benchmarks

- An appropriate scale will be utilized to fit the entire project on one sheet. Curve data and the survey marker schedule will be included on this sheet.

- Schematic drawings for all of the reference ties will be shown together on a separate sheet.
- Benchmarks and control points will be shown together on a separate sheet.

7. Plan and Profile Sheets

The plans will be assembled under the following general assumptions:

- Two window view: existing plan/proposed plan, existing profile/proposed profile.
- Vertical and horizontal curve data, including superelevation rates and transitions, will be shown on the plans.
- Horizontal scale: 1"=20', Vertical scale: 1"=10' (with 1/10 grid)
- Utility lines will not be shown.
- Items which are repeated on multiple pages will be shown in a tabular format in the Schedule of Quantities.
- Roadway removal items (including tree removal) will be shown on the Removal sheets.

Hours to prepare the plan and profile sheets will also include the following:

- Quantity take offs.
- Clear zone and barrier warrant analyses.

8. Intersection Details/Elevations/Geometrics

- Intersection details will be included for roundabout layout, jointing, baselines and profiles.
- 1"=20' Scale will be used.
- ADA ramp grading details will be included

9. Removal Plans

- These will be prepared as separate sheets at 1"=20' Scale

10. Cross Sections

- Horizontal scale: 1"=10', Vertical scale: 1"=5' (with 1/10 grid)
- Cross Sections will be provided at 50' along the length of the project, including all driveways and side roads as necessary.
- Cross Sections will be provided at every culvert crossing.
- Existing and proposed right of way will be shown.
- Profile grade line, edge of pavement and ditch elevations will be depicted.
- Cut and fill areas will be labeled on each cross section per stage of construction.
- Locations of unsuitable materials to be removed will be indicated.
- Temporary widening and temporary cut and fill areas will be shown.
- The proposed drainage system and existing utility lines will be shown and labeled.

- Earth excavation and embankment will be calculated and paid for in accordance with the methods outlined in the IDOT Standard Specifications. A 15% shrinkage factor is utilized in District One.

Hours to prepare Cross Sections will also include earthwork quantity take offs.

11. Special Provisions

- LCDOT special provisions will be used for all applicable items. Where LCDOT special provisions do not exist, the Standard Specifications for Road and Bridge Construction in Illinois, IDOT Recurring Special Provisions and IDOT District Ones Special Provisions will be used.
- Benesch will prepare additional special provisions as necessary.

2.2 Drainage and Utility Plans

This portion of the Phase II task will include the task of preparation of drainage and utility plans. The following process will be utilized to complete this task:

General Assumptions:

- The Plan and Profile base sheets will be utilized as the basis of the drainage sheets.
- Drainage and Utility sheets will depict and annotate drainage removal/adjustment items and the proposed drainage system in the existing and proposed plan views respectively. In profile, the proposed drainage system will be depicted and annotated. Separate drainage removal sheets will not be included.
- Utility lines and structures will be shown.
- Drainage structure and storm sewer information will be shown on the same sheet.

Hours to prepare the Drainage and Utility sheets will also include quantity take-offs.

Drainage Calculations

The IDOT Drainage Manual and Lake County Watershed Development Ordinance will be consulted to determine approved drainage software packages and methods for hydraulic calculations.

The following drainage calculations will be required to design and analyze the proposed drainage system:

- Inlet Spacing
- Storm Sewer Design
- Ditch Analysis
- Culvert Analysis
- Detention Calculations

Additional removal and grading plan sheets will be provided for depressional storage grading in the Forest Preserve temporary easement area. Drain tile investigation (Task 10) findings will be incorporated into the final drainage design.

2.3 Erosion Control and Sediment Plans

Erosion control and sediment plans will be prepared in accordance with the following:

- 1"=100' Scale
- Text describing the erosion control measures to be implemented at each stage of construction will also be included.
- During the development of the staging for the project, consideration will be given to IEPA requirements regarding disturbed area and discharge testing requirements during construction. Options will be presented to the County for review and decisions will be documented.
- Hours to prepare the erosion control plans will also include quantity take offs.

This task will also include the preparation of a Stormwater Pollution and Prevention Plan (SWPPP).

2.4 Staging and Traffic Control

- Measures that are required to maintain drainage during construction will be evaluated.
- Access to active properties will be maintained during construction.
- MOT will be demonstrated at a 1"=20' scale
- A separate sheet for staging notes, general notes and the legend will be included and placed on all sheets as applicable.
- Temporary roadway plan and profile sheets will be detailed within the Maintenance of Traffic plans.
- Construction guide signing will be depicted on the Maintenance of Traffic plans in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).
- Temporary lighting is not included in this scope of work.
- Benesch will develop special provisions for MOT as required.
- Benesch will be responsible for obtaining District One standard details pertaining to Maintenance of Traffic and incorporating the standards into the plan set.

Estimate of Time

BDE 220 will be utilized to prepare the estimate of construction time.

2.5 Pavement Marking and Signing Plans

- Scale 1" = 50'
- Pavement marking shall be detailed and called out on the plans.

- Signage will also be detailed.

The quantities for the items under this task will be tallied and added to the Schedule of Quantities.

3.0 Lighting Plans

Benesch will develop plans for intersection lighting for the roundabout intersection and approaches. This work will include calculations of lighting levels based on the recommended practices and design guides of the Illuminating Engineering Society of North America to determine the number and type of fixtures to be utilized.

The existing lighting at the intersection of Old Monaville Road and Monaville Road appears to be utility owned lighting and will be removed through utility coordination.

4.0 Landscaping Plans

- 1"=50' Scale.
- A landscaping plan for the new roundabout will be provided on one sheet.
- Landscaping slated for removal during construction will be shown for restoration in these sheets, including Forest Preserve restoration.
- A plan sheet and special provisions for new landscaping to be installed in the existing roundabout at Cedar Lake Road & Monaville Road will be included in addition to the new roundabout at Fairfield Road and Monaville Road. It is anticipated existing geometry for the Cedar Lake roundabout will be provided by LCDOT, and plantings for the two roundabouts will be similar in nature. Preferred plantings and general layout guidance will be provided by LCDOT based on their coordination with the Village of Lake Villa.

5.0 Submittals (plans, specifications and estimates):

The scope of work consists of efforts to assemble and package the plans, specifications and estimate of costs for the defined submittals. The following submittals are anticipated:

- Existing Conditions Plan Sheets
- Preliminary (60%)
- ROW Plats & Legals
- Pre-Final (90%)
- Final (100%)
- Final (Bid) Submittal

This scope of work covers the final submittal requirements for a Lake County (Local Funds) letting in both hard and electronic formats. Separate submittals to IDOT are not included in this scope of work. The electronic bid package will be prepared in accordance with the LCDOT guideline.

This task will include the preparation of cost estimates for the improvements at the preliminary, pre-final and final phases of the project. These will be developed utilizing a

compilation of recent bid prices for typical items of similar quantities, and customized estimates for unique items prepared by analyzing the labor and materials required to complete the work and then applying appropriate industry costs.

6.0 Quality Assurance/Quality Control

The development of a Quality Management Plan (QMP) and the effort to implement the plan during the Phase II schedule is included with this task.

Benesch's Quality Management Plan (QMP) procedures are compatible with the County's QA/QC program. This process is initiated with the development of the work plan that is used as the basis for the QMP. The QMP will define the procedures used to control and ensure the quality of the engineering. The draft QMP will be submitted after notice to proceed and the Final QMP incorporating comments by the County; will be submitted within two weeks of receipt of comments. The QMP will address the following:

- management responsibility;
- design standards and documents;
- document control;
- process control;
- review of preliminary engineering; and quality records; and
- audit procedures.

An independent review of all plans will be completed by senior staff prior to submittal. The purpose of this review is to look for inconsistencies in the information presented and to spot check design details for constructability problems.

7.0 Project Administration

Administration consists of the following project management responsibilities to ensure a quality product on schedule and within budget:

- Project Schedule including baseline and critical path shown,
- Progress Reports
- staffing resource management
- internal project team meetings
- preparation of the Project Management Plan
- preparation and distribution of correspondence, meeting minutes, records of conversation and all other project documentation necessary to track and document the project decisions

Benesch will prepare progress reports with invoices on a four-week cycle using IDOT BDE 430 form. The percent complete shown on the form shall be in agreement with the project schedule.

Benesch will prepare the design project schedule, including a breakdown of the major tasks depicting the project's key milestones and deliverables for Phase II. The schedule will be updated monthly and at a minimum, will include:

- milestones of key decisions
- submittals of project documents for County review and IDOT review
- receipt of review comments
- submittals of documents for permit review
- progress meetings
- agency review meetings

8.0 Survey, Plats & Legals

This work will be performed in accordance with LCDOT survey procedures. The scope of this work includes the following.

- Additional topographic survey for areas not included in Phase I survey or general pick-up survey required for design refinement or right-of-way acquisition negotiations
- Preparation of plats and legal descriptions for parcels to be acquired for the cul-de-sac along Old Monaville Road and along Monaville Road.
- Preparation of a Plat (or Exhibit) of Vacation. It is not within this survey scope to conduct the governmental steps in the Vacation process to pass the Ordinance or to obtain the necessary signatures.

Recording the Plat of Highways or acquisition deeds are not included in this scope. It is assumed that the County will record the necessary documents to complete the land acquisition. It is also assumed that the county will be invoiced at direct cost the fee to record Monument Records, if needed.

9.0 Preliminary Site Investigation (PSI) / CCDD (Huff & Huff)

The scope of the PSI is based on findings of the PESA, which identified two sites as potentially impacted properties (PIPs). These properties are Hickory Knoll Golf Course (24745 W Monaville Road) and Avon Automotive (36947 N. Fairfield Road). The PSI will include a series of soil borings to address the PIPs identified in the PESA and to also provide coverage for the non-PIP areas for the CCDD assessment and documentation.

9.1 Soil Borings and Soil/Sediment Sampling

It is anticipated that one day of field effort will be required with up to six (6) borings completed to address the PIPs and up to an additional ten (10) borings for CCDD considerations, assumed with the aid of traffic control services. The borings will be advanced and soil samples collected for laboratory analysis to address sites identified as PIPs for soil disposal considerations, specifically at locations identified for proposed excavation. The depths of the soil borings will be dependent upon design details to account for depths of proposed disturbance. H&H will determine depths of planned borings prior to mobilization consistent with project plans as provided by Client, in conjunction with PESA findings. Currently it is estimated that borings will be advanced to approximately 4 to 8 feet below ground surface.

9.2 Analytical

Laboratory analysis of soil samples is proposed to be consistent with constituents of concern (COCs) as determined from the PESA as presented below. Boring locations where petroleum products or other volatile organic compounds represent the primary concern, samples will be field screened with a photoionization detector (PID). The sample with the highest PID reading in each boring will be analyzed for:

- **Volatile Organic Compounds** (up to 2 samples) – VOCs are volatile compounds found in gasoline and related to various solvents;
- **Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl-tert-butyl-ether (MTBE)** (up to 2 samples) – BTEX / MTBE are volatile compounds found in gasoline;
- **Semi-Volatile Organic Compounds (SVOCs) or Polynuclear Aromatic Hydrocarbons (PNAs)** (up to 4 samples) – SVOCs are semi-volatile compounds commonly formed during incomplete combustion of organic compounds. PNAs are a subset of SVOCs and can be formed by the combustion of wood, coal, and petroleum products. They are also found in less refined, nonvolatile petroleum products and can be used to identify potential for diesel or fuel oil contamination in soil.
- **Pesticides and Herbicides** (up to 2 samples) – Golf course properties have a history of using pesticide and herbicide products to maintain their properties.

Other field screening factors such as visual, or proximity to potential sources of known contamination to determine which samples will be analyzed to identify the presence of:

- **RCRA Metals, total and SPLP/TCLP methods** (up to 4 samples) – Federal environmental regulations identify eight (8) heavy metals as hazardous if present in a *solid waste* at concentrations above varying threshold concentrations. Samples will be analyzed for select RCRA Metals, some of which may require further SPLP or TCLP analysis to determine compliance with the CCDD maximum allowable concentrations (MACs) (2 samples).

In addition, soil samples will be analyzed for soil pH from each boring location, analyzed with a field meter consistent with CCDD sampling requirements with select pH samples submitted for laboratory analysis.

9.3 PSI Report Preparation

A report summarizing the results of the soil and sediment sample collection activities and analytical results will be prepared, including results of the updated database search for a PESA update. This document will present information

pertinent for the bidding documents regarding conditions of soils tested, handling and final disposition considerations.

9.4 CCDD (LPC-Form) Documentation

The soil sample results will be compared to the Maximum Allowable Concentrations (MACs) associated with CCDD facility acceptance, including the soil pH range of 6.25 to 9.0. If results achieve the MAC values, H&H will prepare the LPC-663 document that will be signed/stamped by the H&H. This proposal assumes the potential for requiring a separate form for each area to account for this currently unknown situation. CCDD precertification/approval will be obtained prior to letting and included in the contract documents.

Any locations that do not achieve the MACs (including soil pH range) will be identified as exclusion zones, not acceptable for CCDD facility disposal.

9.5 CCDD Facility and Specification Coordination

Time under this task will be used to coordinate with various CCDD and/or uncontaminated soil fill operations (USFO) facilities that are pre-approved for receiving uncontaminated soil and/or CCDD from Client projects. H&H will submit LPC-Form documentation from this specific project to the facilities in order to secure a minimum of three (3) project-specific, pre-approval letters for incorporation into the bidding specifications. We understand Client will include language within the bidding specifications to encourage bidding contractors to utilize one of the pre-approved facilities for off-site final disposition of spoils from this project.

9.6 Wetland Permitting Corps of Engineers

Permits for impacts to jurisdictional surface waters and/or wetlands are issued through the Chicago District, USACE in Lake County. This scope of work includes the tasks necessary to obtain a Regional Permit.

Consultant will complete and submit the Joint Application form and other necessary information to obtain a permit from the USACE for impacts to WOUS and/or wetlands. The USACE will coordinate with the following agencies during the review of the Joint Application as required:

- U.S. Army Corps of Engineers (USACE)
- U.S. Fish & Wildlife Service (FWS)
- Illinois Department of Natural Resources (IDNR)
- Illinois Department of Natural Resources/Office of Water Resources (IDNR/OWR)
- Illinois Environmental Protection Agency (IEPA)
- Illinois Historic Preservation Agency (IHPA)

The Chicago District of the USACE has a regional permit program meant to simplify and expedite specific types of projects. Most regional permits have automatically authorized Section 401 Water Quality Certification (WQC) from the IEPA. It is anticipated that this project will qualify for a regional permit. If the project does not qualify for a regional permit, an individual permit will be required. Individual permits require a public notice period as well as separate WQC from the IEPA. The individual permit process can take significantly more time than the regional permit process. This scope of work assumes the project will qualify under the Regional Permit program. This scope does not include permitting as an Individual Permit.

Within the regional permit program, permits are classified as either Category I or Category II. Category I includes activities with minimal impacts requiring review by the USACE. Category II includes activities with minimal impacts requiring more rigorous review by the USACE and coordination with the resource agencies.

Regional Permit 3 (RP3) authorizes the construction or replacement of public transportation projects, including roads, bridges, runways and taxiways, and railroads. Cumulative impacts to WOUS permitted under an RP3 shall not exceed 1.0.

Endangered species review is also required through the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act if a federal action is undertaken (the USACE issuing a permit). The USFWS no longer conducts project-by-project review upon request; rather, the applicant is required to conduct an assessment and determine if impacts to federally listed species will occur as a result of the proposed project. To conduct this review, applicants are required to conduct the USFWS Section 7 Consultation and document their findings. Consultant will prepare the Section 7 Consultation letter. Threatened or endangered species surveys are not included in this scope. Coordination with the IDNR is initiated through the submittal of the Ecological Compliance Assessment Tool (EcoCAT), requesting information on project threatened or endangered species.

Based on the findings of the coordination with the IDNR and the USFWS, endangered species surveys may be required, which can only be completed during certain portions of the year, depending on the species. Because of the uncertainty of the types of species possibly present, estimating costs for surveys at this time is not possible. Therefore, if surveys are required by the agencies after coordination, a more suitable cost estimate can be prepared at that time.

Coordination with the Illinois Historic Preservation Agency (IHPA) is required to determine the presence/absence and potential impacts of the project to cultural or archeological resources. If cultural or archeological resources are identified within the proposed project a Phase I archeological survey could be required by IHPA. Consultant will coordinate with Client to find a qualified firm if a certified Phase I

archeologist is required for the project. A cost for such a study is not included in this proposal as the need is undetermined until IHPA responds.

This scope includes a pre-application meeting with the USACE.

Other permits

Costs for the following permits are not included in this proposal. If these permits become necessary, a separate proposal can be submitted.

- Section 401 of the Clean Water Act is automatically granted under most Regional Permits from the USACE. If the project does not meet the guidelines of the Regional Permit Program, separate Section 401 WQC will be required. This proposal assumes the project will qualify for a regional permit.
- *National Pollutant Discharge Elimination System (NPDES) Permitting* Huff & Huff will complete only the coordination with the IDNR and IHPA (associated with a Section 404 permit), which will need to be submitted during the NPDES permitting process, prior to receiving an NPDES permit. Benesch will be responsible for plan preparation and additional coordination related to the NPDES permitting.

Hours have been included in this task for Benesch review of the Preliminary Site Investigation and incorporation of findings into the design.

10.0 Drain Tile Investigation (Hey and Associates)

Hey and Associates, Inc. will locate and document existing farm and storm drainage tiles in the project limits in accordance with standards identified in the Lake County Watershed Development Ordinance (Ordinance). Hey has previously inventoried existing farm and storm drainage tiles along the north side of Monaville Road, west of Fairfield Road, and will reference and incorporate known applicable existing information. Hey will attempt to locate all on-site drain tiles, however, any drain tile not located during the investigative procedure will necessarily remain unknown.

10.1 Fieldwork

During this task, Hey will:

- Review existing topography, aerial photography and other data for the site,
- Perform a site reconnaissance to assess likelihood of previous drain tile activity, determine if further investigation is warranted and if so identify initial trenching locations,

- Perform investigative trenching at key locations (if warranted) to determine the presence or absence of drain tiles,
- Repair encountered drain tiles damaged during the investigation,
- Backfill trenches with the material excavated from the trench,
- Record location, size, material, condition, percentage of flow, percentage of siltation and depth of cover of encountered tiles at points of exposure,
- Flag tile locations at regular intervals, and
- Stake tile locations at points of ingress, egress and other useful locations for detailed surveying by others.

Excessively tall vegetation such as naturalized vegetation, shrubs and trees may hinder or prevent a thorough investigation. The existing and proposed right-of-way may have existing utilities that hinder or prevent investigative trenching. In areas that are not conducive to trenching methods, hand probed transects will be used to locate tiles.

One day of televising is anticipated with a push-type camera to trace lines at known structures or from points of exposure. If additional days, cleaning or other forms of televising equipment are needed, a proposal will be provided for that work.

10.2 Report Preparation

They will prepare a summary report incorporating the previous and newly collected information in accordance with the Ordinance. The report will consist of an exhibit depicting the location of investigative trenches as well as any encountered tiles and their approximate location, size and extent overlaid on an aerial photograph and client provided wetland, topography and other pertinent site information. The report will be constructed from derived GPS data points as well as topographical observation and interpretation. The following report data will be provided when complete:

- one (1) electronic (PDF) copy of the report
- one (1) electronic (DWG or SHP) copy of the tile linework

Hours have been included for Benesch review of the Drain Tile Investigation and incorporation of findings into the drainage design.

11.0 Land Acquisition Services (MROWCO)

MROWCO will perform the following services:

1. Title Commitments & Documents
2. Appraisal
3. Appraisal Review
4. Negotiations
5. Closing

All services will be conducted by an individual or individuals whose qualifications have been approved by the Illinois Department of Transportation, when applicable. A kickoff meeting with LCDOT will be held prior to beginning the services.

All services within the scope shall be performed, where applicable, in accordance with the Land Acquisition Policies and Procedures Manual, hereinafter referred to as the LAPPM.

11.1 TITLE COMMITMENTS & DOCUMENTS

A Title Insurance Company licensed to issue title insurance in the State of Illinois will provide title Commitments and documents.

11.2 APPRAISALS

Determinations of fair market value performed by the Appraiser shall be in accordance with the LAPPM.

The Appraiser shall make a detailed inspection of the properties and make such investigations and studies as are necessary to derive sound conclusions for the preparation of appraisal reports.

Valuations shall be prepared as outlined in the LAPPM. The format to be used shall be one of the following types as described in the LAPPM:

- Non-Complex Appraisal Report
- Complex Appraisal Report

The Appraiser is to determine which type of appraisal format should be used for each parcel and obtain the COUNTY'S concurrence. MROWCO shall provide a copy of an appraisal of each parcel together with Improvement Disposition Values form to be submitted to the COUNTY for approval.

Property needed shall be acquired by fee simple, dedication, permanent easement, temporary use permit, or temporary easement as determined and shown on the right of way plan furnished by the COUNTY.

It may be necessary for a completed appraisal to be updated for condemnation purposes or revised due to a change in the ROW plat or due to new information provided by the COUNTY. These updates or revisions will be assigned to the Appraiser in a separate work order as the need arises. An Appraiser's revision of the appraisal due to the Review Appraiser's comments or corrections does not constitute an update or revision that would necessitate a separate work order.

On parcels that require the acquisition of a residence, it may be necessary for the Appraiser to perform an additional analysis to determine an allocated value for the residence and home site as separate from the whole parcel to be acquired. This would be needed for

relocation purposes and is not to be included in the appraisal report. The cost for the additional appraisal analysis will be established in the work order for that appraisal.

The Appraiser shall prepare a comparable sales brochure in accordance with the LAPPM for each project and as directed by the COUNTY.

The Appraiser shall prepare grids that compare comparable sales to the subject parcel, where appropriate.

The Appraiser shall include land and improvement allocations in the comparable sales data section of all appraisals.

The Non-Complex Appraisal Report and Complex Appraisal Report, and an updated or revised appraisal report, shall be deemed complete when an acceptable appraisal report is submitted by MROWCO and approved by the COUNTY.

Appearances in court and/or pretrial conferences, which include depositions and preparation time for depositions and court, may be required for the appraisal services requested herein. The time spent at such appearance or appearances shall be made upon request of the COUNTY or its trial counsel and shall be paid for as specified in Section IV.

Appraiser may be asked to perform a Cost Analysis for budgetary purposes.

Appraiser may be asked to provide a Comparable Sales Book as an on-going assignment independent of individual appraisals.

MROWCO staff may assist in the preparation of appraisal work.

11.3 REVIEW APPRAISALS

All appraisals must be reviewed and certified by a Review Appraiser. Appraisal reviews performed by the Review Appraiser must be in accordance with the LAPPM. It is the Review Appraiser's responsibility to ensure that all items affecting the value of the property have been considered in the appraisal. A study of the comparable sales brochure is considered as part of the appraisal review.

The Review Appraiser must complete an Appraisal Review Certification for all appraisal reviews.

It may be necessary for a completed appraisal review to be updated due to a change in the ROW plat or due to new information provided by the COUNTY. These updates or revisions will be assigned to MROWCO in a separate work order as the need arises. A Review Appraiser's second or other subsequent review of an appraisal, rewritten by the appraiser due to the Review Appraiser's comments or corrections, does not constitute an update or revision to the appraisal review that would necessitate a separate work order.

The Appraisal Review for the Non-Complex Appraisal Report and Complex Appraisal Report, and an updated or revised appraisal review, shall be deemed complete when an acceptable Appraisal Review is submitted by MROWCO and approved by the COUNTY.

Appearances in court and/or pretrial conferences, which include depositions, may be required for the review appraisal services requested herein. The time spent at such appearance or appearances shall be made upon request of the COUNTY or its trial counsel and shall be paid for as specified in Section IV.

The Review Appraiser may be asked to perform a Cost Analysis for budgetary purposes.

The Review Appraiser may be asked to review a Comparable Sales Book as an on-going assignment independent of individual appraisals.

MROWCO staff may assist in the preparation of review appraisal work.

11.4 NEGOTIATIONS

The Negotiator is responsible for all land acquisition negotiations conducted under this AGREEMENT. Negotiations shall be in accordance with the LAPP. The negotiator shall:

- Be the COUNTY's representative to the property owner.
- Work with the Project Manager to receive and understand the scope of work for each work order and the associated deadlines/time frames involved.
- Establish schedules for each activity and report the progress to the Project Manager to assure a quality product.
- Assure that the deadlines assigned are met.
- Maintain channels of communication.
- Provide a quality product.

Before the initiation of negotiations for each parcel, the COUNTY must approve the amount of just compensation. The Negotiator shall fully document on an ongoing basis all efforts made to acquire the parcel in the Negotiator's Report. Said report shall be available to the COUNTY as reasonably requested

The Negotiator may recommend administrative settlements as outlined in the LAPP. Administrative settlements will be determined by the COUNTY on an individual parcel basis.

In the event MROWCO, after having made every reasonable effort to negotiate with the owner of a parcel, is unable to obtain a settlement on the approved appraisal amount, MROWCO shall prepare and submit a written report summarizing the progress of negotiations to date together with a copy of MROWCO'S Negotiator's Report completed to date with the names and addresses of all interested parties. MROWCO'S written report shall also include its recommendation for further procedure towards acquiring the parcel.

The COUNTY may elect to prepare and forward a Final Offer letter (with copy to MROWCO) to the owner of the parcel and thereafter refer the matter to the State's Attorney's Office to proceed with preparation of a condemnation petition. In any case, the COUNTY reserves the right to require MROWCO to make additional negotiation contacts with the parcel owner up until the actual date of filing a petition to condemn the parcel.

The negotiation for a parcel will be deemed complete when all required documents necessary to obtain title approval are submitted and approved by the COUNTY. If a negotiated settlement cannot be reached, the negotiation for a parcel will be deemed complete when the documentation for eminent domain action is submitted and approved by the COUNTY, and the complaint is filed.

If requested to do so, MROWCO shall provide title review and an attorney's approval letter provided by Mathewson & Mathewson, P.C. for no additional cost.

Each Updated Negotiation or Revised Negotiation shall be paid for at the per parcel fee as specified in Section IV. An updated negotiation or revised negotiation is defined as additional negotiation work requested by the COUNTY due to new parcel information supplied by the COUNTY to MROWCO after first contact with the property owner. New parcel information could include, but is not limited to, significant changes in the area of the acquisition; updated (and modified) appraisal amounts that require revised negotiation documents; updated (and modified) title information that requires negotiations with additional property owner(s). Any additional work required to obtain title approval does not constitute an update or revision that would necessitate a separate work order.

Where the acquisition of a parcel involves the displacement of an owner or tenant occupant from a residence or any personal property thereof, MROWCO shall coordinate the offering of relocation assistance any payments to each displaced owner-occupant simultaneously with initiation of negotiations and to each displaced tenant-occupant within seven (7) days following initiation of negotiations for the parcel.

Appearances in court and/or pretrial conferences, which include depositions, may be required for the negotiation services requested herein. The time spent at such appearance or appearances shall be made upon request of the COUNTY or its trial counsel and shall be paid for as specified in Section IV.

11.5 CLOSINGS

MROWCO shall attend or otherwise supervise the actual closing of each acquired parcel. It is anticipated that most closings will not require an escrow transaction but it is understood that certain acquisitions are best facilitated through an escrow closing.

An estimate of hours has been included in this task for Benesch review of property owner requests for minor design modifications and adjustments anticipated during the negotiation phase. This also includes an estimate of cost for the septic field reconfiguration at the southeast corner of Fairfield Road and Monaville Road. It is anticipated that compensation for the septic field work will be

included in the acquisition cost of the parcel, and contracted by the owner. These hours will be tracked and reported to LCDOT in the monthly progress reports. Should major design changes or full design of the septic field reconfiguration be required, a supplement will be prepared for the additional design services.

12.0 Phase III Coordination

Benesch will provide Phase III services to respond to bidder inquiry, prepare exhibits for and attend a public Construction Open House, address contractor Requests for Information (RFI's) and complete shop drawing reviews for electrical items. Assumed hours for each item are included in the task list.

13.0 Phase I Geometry

Benesch will work with MTJ to develop concept recommendations for design modifications to mitigate ROW impact to adjacent property owners, especially on the south side of Monaville Road. This evaluation will include modification of the chicanes, moving the roundabout to the north, and modifying the profile to lower the intersection. A recommendation for new preliminary horizontal and vertical design will be provided to LCDOT with associated impacts. Phase II design will be advanced from the final geometry approved by LCDOT. If Federal funding is obtained for the project, a technical memo or PDR update may be required by IDOT to address any changes in geometry. Services for such updates are not included in this scope, and will be estimated based on specific IDOT requirements at the time of introducing Federal funds.

Details of MTJ tasks are included in Section VI.

**Estimated Hours and Costs
(Alfred Benesch and Company)**

ESTIMATE OF STAFF HOURS

Lake County Division of Transportation - Fairfield Road at Monaville Road Phase II Detailed Hour Breakdown

ITEM			TOTALS
1.0 PROJECT COORDINATION			122
2.0 CIVIL PLANS			1560
	2.1 ROADWAY PLANS	932	
	2.2 DRAINAGE AND UTILITY PLANS	288	
	2.3 EROSION CONTROL AND SEDIMENT PLANS	108	
	2.4 STAGING AND TRAFFIC CONTROL	144	
	2.5 PAVEMENT MARKING AND SIGNING PLANS	88	
3.0 LIGHTING PLANS			164
4.0 LANDSCAPING PLANS			128
5.0 SUBMITTALS			42
6.0 QUALITY ASSURANCE			68
7.0 ADMINISTRATION			124
8.0 SURVEY, PLATS & LEGALS			428
9.0 PRELIMINARY SITE INVESTIGATION			8
10.0 DRAIN TILE INVESTIGATION			8
11.0 LAND ACQUISITION SERVICES			8
12.0 PHASE III COORDINATION			48
13.0 PHASE I GEOMETRY			120
ESTIMATE OF STAFF HOURS TOTAL			2828

1.0 PROJECT COORDINATION	No. of Meetings	Hours per meeting	TOTAL
Coordination with LCDOT (1/2 hour per week)			26
Meetings with Village of Lake Villa	1	8	8
Meetings with Lake Villa Township	1	8	8
Meetings with Lake County SMC	2	8	16
Meetings with Forest Preserve District	1	8	8
Utility Coordination Meeting	1	8	8
Right of Way Kickoff Meeting	1	8	8
Meeting with IDOT (if Federal funding used)	0	8	0
Exhibit preparation for coordination (10 @ 4 hrs each)			40

PROJECT COORDINATION SUBTOTAL 122

2.1 ROADWAY PLANS		No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTAL
GENERAL PLAN SHEETS					20
	Cover Sheet	1	8	8	
	General Notes/Index/Standards/Commitments	1	12	12	
SUMMARY AND SCHEDULE OF QUANTITIES (not quantity take-offs)					120
	Summary of Quantities	3	16	48	
	Schedules	3	24	72	
TYPICAL SECTIONS (Ex. and Proposed)*					58
	Fairfield Road (4 sections)	1	16	16	
	Monaville Road (4 Sections)	1	16	16	
	Old Monaville Road (2 Sections)	1	16	16	
	Amber Lane & Circulating Lane	1	8	8	
	Pavement Design			2	
ALIGNMENT, TIES AND BENCHMARKS		1	16	16	16
PLAN & PROFILE SHEETS					184
	Fairfield Road	2	24	48	
	Monaville Road	3	24	72	
	Old Monaville Road	1	24	24	
	Quantity Calculations			40	
INTERSECTION DETAILS					96
	General Layout & Apron Jointing	1	16	16	
	Curb Return Baselines	1	16	16	
	Splitter Islands and Circulating Lane Baselines	1	16	16	
	Outside Curb Profiles	1	16	16	
	Splitter Island Profiles	1	16	16	
	Circulating Lane Profiles	1	16	16	
REMOVAL PLANS					48
	Fairfield Road	1	16	16	
	Monaville Road	1	16	16	
	Old Monaville Road	1	16	16	
DETAILS - ROADWAY					72
	Driveway Details	2	20	40	
	ADA Ramps	2	16	32	
CROSS SECTIONS					238
	Monaville Road	18	6	108	
	Fairfield Road	10	6	60	
	Old Monaville Road	5	6	30	
	Staged Earth Quantity Calculations & Earthwork			40	
SPECIAL PROVISIONS					80

ROADWAY PLANS SUBTOTAL 932

2.2 DRAINAGE AND UTILITY PLANS		No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
SCHEDULES					24
(not quantity take-offs)					
	Drainage Schedule	1	24	24	
DRAINAGE PLAN & PROFILE SHEETS					184
	Fairfield Road	2	24	48	
	Monaville Road	3	24	72	
	Old Monaville Road	1	24	24	
	Drainage Calculations			40	
DETAILS - DRAINAGE					80
	Forest Preserve Grading Plan	2	24	48	
	Outlet Structures	1	16	16	
	Culvert East of Amber Lane	1	16	16	

DRAINAGE UTILITY PLANS TOTAL 288

2.3 EROSION CONTROL AND SEDIMENT PLANS	No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
EROSION CONTROL				108
Schedule & Notes	1	16	16	
Plan	3	16	48	
Details	1	4	4	
Quantity calculations			24	
Special Provisions			16	

EROSION CONTROL AND SEDIMENT PLANS TOTAL 108

2.4 STAGING AND TRAFFIC CONTROL	No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
SEQUENCING PLAN & NOTES	1	16	16	16
M.O.T. TYPICAL SECTIONS	1	16	16	16
STAGING PLAN SHEETS				48
Fairfield Road	1	24	24	
Monaville Road	1	24	24	
DETOUR PLAN	1	16	16	16
Estimate of Time/Construction Duration				8
M.O.T. Quantity Calculations				24
M.O.T. Specifications				16

STAGING AND TRAFFIC CONTROL TOTAL 144

2.5 PAVEMENT MARKING AND SIGNING PLANS		No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
PLAN					72
	Fairfield Road	1	24	24	
	Monaville Road	2	24	48	
Quantity Calculations					16

PAVEMENT MARKING AND SIGNING PLANS TOTAL 88

3.0 LIGHTING PLANS	No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
INDEX OF SHEETS, GENERAL ELECTRICAL AND CONSTRUCTION NOTES	3	16	48	48
EXISTING AND REMOVAL PLANS	0	8	0	0
ELECTRICAL DETAILS	2	12	24	24
PROPOSED INTERSECTION LIGHTING PLAN				32
Fairfield Road & Monaville Road	1	32	32	
ROADWAY LIGHTING CALCULATIONS				16
Roundabout intersection	N/A		8	
Crosswalk calculations (4 crosswalks)			8	
ROADWAY LIGHTING SPECIFICATIONS	N/A			4
QUANTITY CALCS AND ELECTRICAL SOQ				40

LIGHTING PLANS TOTAL 164

Assumptions:

Existing lighting is utility owned and will be modified/removed by others.

Crosswalk calculations for vertical illuminance required per DG-19

4.0 LANDSCAPING PLANS	No. of Sheets	Hrs per Sheet	Task or Sheet Hours Extended	ITEM TOTALS
LANDSCAPING PLANS				128
Roundabout Plan Sheets	2	24	48	
Forest Preserve Plan Sheets	1	24	24	
Tree Removal Plan	0	24	0	
Detail Sheets	2	8	16	
Specs			24	
Quantity Calculations			16	

LANDSCAPING PLANS TOTAL 128

5.0 SUBMITTALS	Existing Condition Plan Sheets	Prelim Submittal (60%)	Pre-Final Submittal	Final Submittal	Bid Submittal	Total
Lake County	4	4	4	4	6	22
IDOT			0	0	0	0
Lake County SMC			2	2		4
Develop cost estimate		8				8
Update cost estimate			4	4		8

SUBMITTALS TOTAL 42

6.0 QUALITY ASSURANCE	Hours			Total
	Preliminary Submittal	Pre-Final Submittal	Final Submittal	
Quality Management Plan				4
QA Reviews	12	24	12	48
Field Checks		16		16

QUALITY ASSURANCE 68

7.0 PROJECT ADMINISTRATION	Staff	Hours/ week	# of Weeks	Hours/ month	# of Months	Total
Project Start-up	1	16	1			16
Progress Reports	1			0.5	18	9
Project Management Plan	1	8	1			8
Schedules/monitoring	1	0.5	78			39
internal project meetings (bi-weekly)	4	0.5	26			52

PROJECT ADMINISTRATION 124

Assumes 12 months active design and 18 months progress tracking

8.0 SURVEY, PLATS & LEGALS	TOTAL
Topographic Survey - outside of Phase I limits	24
General supplemental survey - as needed	16
Property research and staking (10 parcels + plat of vacation)	88
Plat Preparation (10 parcels + plat of vacation)	300

SURVEY, PLATS & LEGALS TOTAL 428

12.0 PHASE III COORDINATION	TOTAL
Bid Assistance	4
RFI's (10 RFI's at 2 hrs each)	20
Construction Open House (2 attendees plus exhibit prep)	16
Shop Drawing Review (electrical items)	8

PHASE III COORDINATION TOTAL 48

13.0 PHASE I GEOMETRY	TOTAL
Geometric Modifications (update preliminary plan and profile sheets)	40
Update drainage model and design calculations for new geometry	40
Update 3D model for new geometry cross sections	40

PHASE I GEOMETRY TOTAL 120

COST ESTIMATE OF CONSULTANT SERVICES

Sheet: 1 of 1

Project: Fairfield Road at Monaville Road - Phase II

Section: 15-00120-06-CH

Firm: ALFRED BENESCH & COMPANY

Date: March 14, 2018

County: Lake County

Overhead Rate: 159.64

Complexity Factor: 0

Job No.: _____

Estimate Prepared By: _____

CPFF Formula: 14.5% (DL+(R*DL)+(OH*DL)+IHDC)

Item	Number of Staff hours (A)	Estimated Cost In Dollars									Percent Of Grand Total (I)
		Adjusted Hourly Rate (A1)	Payroll (B)	Overhead Fringe Benefits (C)	Eligible Direct Costs (D)	Subtotal (E)	Profit (F)	Ineligible Direct Costs (D1)	Services By Others* (G)	Total (H)	
PROJECT TASKS											
1 Project Coordination	122	45.00	5,490.00	8,764.24	635.00	14,889.24	2,158.94	0.00		17,048.18	3.3
2 Civil Plans	1,560	42.00	65,520.00	104,596.13	0.00	170,116.13	24,666.84	0.00		194,782.97	37.5
3 Lighting Plans	164	42.00	6,888.00	10,996.00	0.00	17,884.00	2,593.18	0.00		20,477.18	3.9
4 Landscaping Plans	128	42.00	5,376.00	8,582.25	0.00	13,958.25	2,023.95	0.00		15,982.19	3.1
5 Submittals	42	42.00	1,764.00	2,816.05	7,080.00	11,660.05	1,690.71	0.00		13,350.76	2.6
6 Quality Assurance	68	45.00	3,060.00	4,884.98	0.00	7,944.98	1,152.02	0.00		9,097.01	1.8
7 Administration	124	45.00	5,580.00	8,907.91	0.00	14,487.91	2,100.75	0.00		16,588.66	3.2
8 Survey, Plats & Legals	428	45.00	19,260.00	30,746.66	815.00	50,821.66	7,369.14	0.00		58,190.81	11.2
9 Preliminary Site Investigation (Huff & Huff)	8	45.00	360.00	574.70	125.00	1,059.70	153.66	0.00	21,277.60	22,490.96	4.3
10 Drain Tile Investigation (Hey & Assoc)	8	45.00	360.00	574.70	125.00	1,059.70	153.66	0.00	6,575.00	7,788.36	1.5
11 Land Acquisition Services (MROWCO)	8	45.00	360.00	574.70	0.00	934.70	135.53	0.00	98,250.00	99,320.24	19.1
12 Phase III Coordination	48	45.00	2,160.00	3,448.22	1,200.00	6,808.22	987.19	0.00		7,795.42	1.5
13 Phase I Geometry	120	45.00	5,400.00	8,620.56	35.00	14,055.56	2,038.06	0.00	19,876.00	35,969.62	6.9
Sub-totals	2,828		121,578	194,087	10,015	325,680	47,223.62	0	145,978.60	518,882.36	100.0

Lake County
Division of Transportation
Fairfield Road at Monaville Road Intersection Improvements
Estimate of Direct Costs Phase II

	Unit	Unit Cost	1 Project		2 Civil Plans		3 Lighting Plans		4 Landscape Plans		5 Submittals		6 Quality Assurance		7 Administration	
			Qty	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
I. PRINTING & REPRODUCTION																
CADD PLOTTING MEDIUM; BOND* (6 sq. ft.x \$1/sq.ft.)	PLOT	\$6.00	0	\$0	0	\$0	0	\$0	0	\$0	520	\$3,120		\$0	0	\$0
B. 11x17 PRINTING (COLOR)	SHT	\$2.00	40	\$80	0	\$0	0	\$0	0	\$0	500	\$1,000	0	\$0	0	\$0
C. 11x17 PRINTING (B&W)	SHT	\$0.50	0	\$0	0	\$0	0	\$0	0	\$0	3120	\$1,560	0	\$0	0	\$0
D. REPORT & EXHIBIT PRINTING	SHT	\$0.50	200	\$100	0	\$0	0	\$0	0	\$0	2000	\$1,000	0	\$0	0	\$0
E. PUBLIC MEETING EXHIBITS	EACH	\$75.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
II. SHIPPING AND DELIVERY																
A. OVERNIGHT DELIVERY	PACKAGES	\$25.00	0	\$0	0	\$0	0	\$0	0	\$0	8	\$200	0	\$0	0	\$0
B. COURIER DELIVERY	EACH	\$200.00	0	\$0	0	\$0	0	\$0	0	\$0	1	\$200	0	\$0	0	\$0
III. TRAVEL																
A. VEHICLE (OWNED OR LEASED)	DAY	\$65.00	7	\$455	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
B. SURVEY TRUCK	LUMP SUM	\$715.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
III. MISCELLANEOUS																
A. SURVEY FIELD EXPENSES	LUMP SUM	\$100.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
TOTAL				\$635		\$0		\$0		\$0		\$7,080		\$0		\$0

Lake County
Division of Transportation
Fairfield Road at Monaville Road Intersection Improvements
Estimate of Direct Costs Phase II

	Unit	Unit Cost	8 Survey, Plats & Quantity Cost		9 Preliminary Site Quantity Cost		10 Drain Tile Quantity Cost		11 Land Acquisition Quantity Cost		12 Phase III Quantity Cost		13 Phase I Geom Quantity Cost		TOTAL COST
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	
I. PRINTING & REPRODUCTION															
CADD PLOTTING MEDIUM; BOND* (6 sq. ft.x \$1/sq.ft.)	PLOT	\$6.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$3,120
B. 11x17 PRINTING (COLOR)	SHT	\$2.00	0	\$0	50	\$100	50	\$100	0	\$0	0	\$0	10	\$20	\$1,300
C. 11x17 PRINTING (B&W)	SHT	\$0.50	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	10	\$5	\$1,565
D. REPORT & EXHIBIT PRINTING	SHT	\$0.50	0	\$0	50	\$25	50	\$25	0	\$0	0	\$0	20	\$10	\$1,160
E. PUBLIC MEETING EXHIBITS	EACH	\$75.00	0	\$0	0	\$0	0	\$0	0	\$0	16	\$1,200	0	\$0	\$1,200
II. SHIPPING AND DELIVERY															
A. OVERNIGHT DELIVERY	PACKAGES	\$25.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$200
B. COURIER DELIVERY	EACH	\$200.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$200
III. TRAVEL															
A. VEHICLE (OWNED OR LEASED)	DAY	\$65.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$455
B. SURVEY TRUCK	LUMP SUM	\$715.00	1	\$715	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$715
III. MISCELLANEOUS															
A. SURVEY FIELD EXPENSES	LUMP SUM	\$100.00	1	\$100	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	\$100
TOTAL				\$815		\$125		\$125		\$0		\$1,200		\$35	\$10,015

**Estimated Hours and Costs
(Huff & Huff, Inc)**



Payroll Escalation Table
Fixed Raises

FIRM NAME
PRIME/SUPPLEMENT

Huff & Huff, Inc.
Alfred Benesh & Company

DATE 1/22/2018
PTB NO.

CONTRACT TERM
START DATE
RAISE DATE

OVERHEAD RATE
COMPLEXITY FACTOR
% OF RAISE

12 MONTHS
2/1/2018
3/1/2018

186.64%
0
3.00%

ESCALATION PER YEAR

2/1/2018 - 3/1/2018	3/2/2018 - 2/1/2019		
1	11		
12	12		

= 8.33%
= 1.0275

The total escalation for this project would be:

2.75%



**Illinois Department
of Transportation**

Payroll Rates

FIRM NAME
PRIME/SUPPLEMENT
PTB NO.

Huff & Huff, Inc.
Alfred Benesh & Company

DATE 1/22/2018

ESCALATION FACTOR

2.75%

CLASSIFICATION	CURRENT RATE	ESCALATED RATE
Senior Principal	\$70.00	\$70.00
Principal	\$70.00	\$70.00
Associate Principal II	\$70.00	\$70.00
Associate Principal I	\$53.54	\$55.01
Senior Consultant	\$66.94	\$68.78
Senior Geotechnical Consultant	\$61.91	\$63.61
Senior Project Manager III	\$57.69	\$59.28
Senior Project Manager II	\$40.93	\$42.06
Senior Landscape Architect	\$51.05	\$52.45
Senior Planning PM	\$45.89	\$47.15
Senior Geologist PM	\$41.60	\$42.74
Senior Technical Specialist	\$43.25	\$44.44
Senior Scientist PM II	\$44.75	\$45.98
Senior Scientist PM I	\$36.57	\$37.58
Senior Technical Scientist	\$35.02	\$35.98
Senior CADD Specialist	\$32.45	\$33.34
Scientist PM	\$41.32	\$42.46
Geologist PM	\$34.65	\$35.60
Engineer PM II	\$39.86	\$40.96
Engineer PM I	\$34.50	\$35.45
Planning PM	\$33.95	\$34.88
Architect PM	\$33.69	\$34.62
Assistant PM Engineer II	\$38.01	\$39.06
Assistant PM Engineer I	\$34.65	\$35.60
Assistant PM Scientist	\$27.10	\$27.85
Engineer I	\$30.44	\$31.28
Scientist EI	\$25.06	\$25.75
Administrative Managers	\$39.03	\$40.10
Senior Administrative Assistant	\$27.04	\$27.78
Intern	\$15.50	\$15.93
		\$0.00
		\$0.00
		\$0.00
		\$0.00
		\$0.00
		\$0.00
		\$0.00



Firm	Huff & Huff, Inc.
Route	Fairfield Road at Monaville Road
Section	
County	Lake
Job No.	
PTB & Item	

Complexity Factor 0

Method of Compensation:	
Cost Plus Fixed Fee 1	<input checked="" type="checkbox"/> 14.5%[DL + R(DL) + OH(DL) + IHDC]
Cost Plus Fixed Fee 2	<input type="checkbox"/> 14.5%[DL + R(DL) + 1.4(DL) + IHDC]
Cost Plus Fixed Fee 3	<input type="checkbox"/> 14.5%[(2.3 + R)DL + IHDC]
Specific Rate	<input type="checkbox"/>
Lump Sum	<input type="checkbox"/>



Average Hourly Project Rates

Route Fairfield Road at Monaville Road

Section Lake

County Huff & Huff, Inc.

Job No.

PTB/Item

Date 1/22/2018

Sheet 1 OF 1

Payroll Classification	Total Project Rates				PSI/CDD			CCDD Facility and Specification			Wetland Permitting Corps of E			Project Management			QA/QC		
	Avg Hourly Rates	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	
Senior Principal	70.00	0																	
Principal	70.00	0																	
Associate Principal II	70.00	0																	
Associate Principal I	55.01	11	9.48%	5.22				2	50.00%	27.51				3	60.00%	33.01	6	75.00%	
Senior Consultant	68.78	0																41.26	
Senior Geotechnical Consultant	63.61	0																	
Senior Project Manager III	59.28	0																	
Senior Project Manager II	42.06	0																	
Senior Landscape Architect	52.45	0																	
Senior Planning PM	47.15	0																	
Senior Geologist PM	42.74	2	1.72%	0.74													2	25.00%	
Senior Technical Specialist	44.44	0																10.69	
Senior Scientist PM II	45.98	0																	
Senior Scientist PM I	37.58	46	39.66%	14.90															
Senior Technical Scientist	35.98	1	0.86%	0.31	1	1.89%	0.68												
Senior CADD Specialist	33.34	4	3.45%	1.15	4	7.55%	2.52												
Scientist PM	42.46	0																	
Geologist PM	35.60	0																	
Engineer PM II	40.96	0																	
Engineer PM I	35.45	23	19.83%	7.03	23	43.40%	15.38												
Planning PM	34.88	0																	
Architect PM	34.62	0																	
Assistant PM Engineer II	39.06	0																	
Assistant PM Engineer I	35.60	25	21.55%	7.67	23	43.40%	15.45	2	50.00%	17.80									
Assistant PM Scientist	27.85	0																	
Engineer I	31.28	0																	
Scientist EI	25.75	0																	
Administrative Managers	40.10	0																	
Senior Administrative Assistant	27.78	4	3.45%	0.96	2	3.77%	1.05												
Intern	15.93	0																	
TOTALS		116	100%	\$37.97		53	100%	\$35.08	4	100%	\$45.31	46	100%	\$37.15	5	100%	\$48.04	8	100%
																		\$51.95	

HUFF & HUFF, INC.

SUMMARY OF INHOUSE DIRECT COSTS

Project: Benesch Fairfield Monaville PSI

DIRECT

Task 01 - PSI/CCDD

Trips - Company	115 miles	x	2	x	\$	0.545	=	\$	125.35
Tolls			8	x	\$	1.50	=	\$	12.00
Reproduction	3 sets	x	100	x	\$	0.03	=	\$	9.00
Color copies	3 sets	x	25	x	\$	0.11	=	\$	8.25
Field Kit	1 day	x	1	x	\$	30.00	=	\$	30.00
PID Meter	1 day	x	1	x	\$	50.00	=	\$	50.00
pH meter	1 day	x	1	x	\$	10.00	=	\$	10.00
Task Total									\$ 244.60

Task 02 - CCDD Facility and Specification Coordination

Reproduction	1 sets	x	50	x	\$	0.03	=	\$	1.50
			0	x	\$	-	=	\$	-
Task Total									\$ 1.50

Task 03 - Wetland Permitting Corps of Engineers

Trips - Company	35 miles	x	1	x	\$	0.545	=	\$	19.08
Parking			6	x	\$	5.00	=	\$	30.00
Reproduction	2 sets	x	200	x	\$	0.03	=	\$	12.00
Color copies	2 sets	x	50	x	\$	0.11	=	\$	11.00
			0	x	\$	-	=	\$	-
Task Total									\$ 72.08

Task 04 - Project Management

0	x	\$	-	=	\$	-
Task Total						\$ -

Task 05 - QA/QC

0	x	\$	-	=	\$	-
Task Total						\$ -

GRAND TOTAL \$ 318.18

HUFF & HUFF, INC.
SUMMARY OF OUTSIDE DIRECT COSTS

Project: Benesch Fairfield Monaville PSI

OUTSIDE

Task 01 - PSI/CCDD

Analytical

VOC

2 x \$ 138.00 = \$ 276.00

BTEX

4 x \$ 65.00 = \$ 260.00

RCRA total

4 x \$ 85.00 = \$ 340.00

RCRA SPLP

4 x \$ 165.00 = \$ 660.00

pH

8 x \$ 20.00 = \$ 160.00

SVOC

4 x \$ 205.00 = \$ 820.00

0 x \$ - = \$ -

Task Total \$ 2,516.00

Task 02 - CCDD Facility and Specification Coordination

0 x \$ - = \$ -

Task Total \$ -

Task 03 - Wetland Permitting Corps of Engineers

Federal Express

2 x \$ 20.00 = \$ 40.00

0 x \$ - = \$ -

Task Total \$ 40.00

Task 04 - Project Management

0 x \$ - = \$ -

Task Total \$ -

Task 05 - QA/QC

0 x \$ - = \$ -

Task Total \$ -

GRAND TOTAL \$ 2,556.00

HUFF & HUFF, INC.
SUMMARY OF SERVICES BY OTHERS

Project: Benesch Fairfield Monaville PSI

OUTSIDE

Task 01 - PSI/CCDD

Driller (day)	1	x	\$	2,100.00	=	\$	2,100.00
Traffic Control (day)	1	x	\$	1,800.00	=	\$	1,800.00
	0	x	\$	-	=	\$	-
				Task Total		\$	3,900.00

Task 02 - CCDD Facility and Specification Coordination

	0	x	\$	-	=	\$	-
				Task Total		\$	-

Task 03 - Wetland Permitting Corps of Engineers

	0	x	\$	-	=	\$	-
				Task Total		\$	-

Task 04 - Project Management

	0	x	\$	-	=	\$	-
				Task Total		\$	-

Task 05 - QA/QC

	0	x	\$	-	=	\$	-
				Task Total		\$	-

GRAND TOTAL	\$	3,900.00
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**Estimated Hours and Costs
(Hey and Associates)**

COMPENSATION AND FEES

Hey and Associates, Inc.

COMPENSATION	Hourly Billing Rate	The scope identified will be performed on a lump sum basis for a fee of \$6,575.
Principal	\$195	
Engineering		Reimbursable expenses are included in the lump sum fee listed above and are limited to travel, phone and other communication charges and supply costs related to the execution of the project. Any supplemental work (at client's direction) not listed would be in addition to the above amount or by separate proposal.
Senior Civil Engineer	\$160	
Civil Engineer I to V	\$95-135	
Engineering Designer	\$145	
Water Resources Specialist I to IV	\$85-100	
Engineering Technician I to II	\$85-100	
Ecological Services		
Wetlands and Ecology		
Senior Project Scientist	\$150	
Environmental Services Manager	\$130	
Senior Water Resources Planner	\$95	
Environmental Scientist I to III	\$80-100	
Native Landscape Restoration		
Ecological Restoration Manager	\$115	
Environmental Scientist I to III	\$80-100	
Environmental Intern	\$40	
Landscape Architecture		
Senior Landscape Architect	\$160	
Landscape Architect I to II	\$100-125	
Landscape Designer	\$80	
Erosion Control		
Senior Erosion and Sediment Control Specialist	\$150	
Erosion and Sediment Control Specialist	\$85	
Surveying		
Professional Land Surveyor	\$105	
Subsurface Drainage Services		
Subsurface Drainage Services Manager	\$145	
Engineering Technician I to II	\$80-100	
Design Support		
CAD Manager	\$95	
CAD Technician	\$90	
GIS Specialist	\$80	
Administration		
Senior Administrator	\$105	
Administrative Assistant	\$60	
Expert Testimony		
Rates to be determined on per-project basis		

REIMBURSABLE EXPENSES

Reimbursable expenses shall be reimbursed at cost plus an 8% administrative service charge. Such expenses shall include, but are not necessarily limited to travel, reproduction, shipping/delivery, aerial photographs, phone and other communication charges, consultants and subcontractor fees, equipment and supply costs related to the execution of the project. Fixed reimbursable expense costs are as follows:

Travel	\$.65/mile
Copies	\$.20/page
Software/Digital Resource Charge	\$100.00/project
ATV Usage	\$ 40.00/hour
ATV Discing, Herbicide Spraying, Mowing	\$ 45.00/hour
Boat Usage	\$ 75.00/hour
Chain Saw Usage	\$ 20.00/hour
Additional Plotting, B & W	\$.90/sq. ft.
Additional Plotting, Color	\$ 2.75/sq. ft.
Additional Plotting, Mylar	\$ 4.50/sq. ft.
Flow Meter	\$ 50.00/day
GPS Rover	\$350.00/day
Total Station	\$100.00/day

**Estimated Hours and Costs
(Mathewson Right-of-Way Company)**

EXHIBIT B: COMPENSATION

The services to be provided by MROWCO under this agreement shall be assigned and compensated as provided in the table below.

<u>Task</u>	<u>Fee</u>	<u>Parcels</u>	<u>Total</u>
Title Commitments & Documents	\$500.00	13(tax parcels)	\$6,500.00
Appraisals	\$3,000.00	9	\$27,000.00
Appraisal Review	\$1,500.00	9	\$13,500.00
Negotiations	\$4,000.00	9	\$36,000.00
Closing Fee	\$750.00	9	\$6,750.00
Direct Costs including Title Updates & Documents and Partial Release Fees	\$500.00	9	\$4,500.00
Project Management	\$4,000.00		\$4,000.00
		Total:	\$98,250.00

The sum total of all services shall not exceed **\$98,250.00**.

MROWCO shall advance funds to cover direct expenses related to the project. These expenses shall include but not be limited to, title company expenses for title later dates, title insurance fees, document copy fees, recording fees, partial release fees, land trustee fees, escrow fees, shipping and the like. BENESCH shall reimburse MROWCO for the actual cost of the direct expenses.

The fees for services shall include all transportation, food, lodging, telephone, or any other operating expenses incurred by MROWCO in the performance thereof.

Project Management will include document preparation for Forest Preserve parcels in addition to kickoff meeting.

**Estimated Hours and Costs
(MTJ Roundabout Engineering)**

PROJECT UNDERSTANDING

MTJ services in the Phase II contract:

- Develop concept recommendations for strategies to minimize impacts within the site constraints, which Benesch will incorporate into a modified design plan and profile.
- Review the proposed new design layout.

Please see the tasks described below in the Scope of Work.

SCOPE OF WORK (Tasks)

TASK 1: EVALUATION AND REVIEW OF EXISTING CONDITIONS/DESIGNS ANALYSIS AND OBJECTIVES

In coordination with the project team, MTJ will identify major constraints, overall project objectives. This will assist in determining available design envelopes and identify traffic planning issues such as access and business circulation objectives and opportunities.

Review existing constraints and context to include:

- Existing roadway context
- Circulation and side street access requirements
- ROW, sensitive environmental areas and any major utilities
- Pedestrian and bicycle facilitation needs
- Large truck and freight movement requirements and desired accommodations
- Establish expected operational objectives for long-range traffic

TASK 2: SKETCH LEVEL CONCEPT HORIZONTAL DESIGN

MTJ will develop concept sketch design changes to look for opportunities to reduce impacts to sensitive rights-of-way and/or other environmental constraints:

TASK 3: PRELIMINARY HORIZONTAL DESIGN (for incorporation into final plans)

Building upon decisions made in the previous task 2, we will refine the sketches into preferred preliminary horizontal designs for incorporation into final horizontal plan (by others). The preliminary geometric designs will be survey correct line work and document adherence to FHWA Performance Checks (NCHRP Report 672, Roundabouts – An Informational Guide):

- 6.7.1 Fastest Path
- 6.7.2 Natural Path/Path Alignment
- 6.7.3 Sight Distance Envelopes – stopping sight distance and intersection sight distance
- 6.7.4 Entry/view angles – angles of visibility
- 6.5.7 Design vehicle considerations (Freight/OSOW)

TASK 4: DOCUMENTATION OF CRITICAL DESIGN ELEMENTS

MTJ will provide a written summary of critical design elements, to include:

- Operational analysis summary (ref. previous operational analysis)
- Safety criteria (a.k.a. fast paths)
- Large truck movement templates
- Ped/bike accommodations

TASK 5: REVIEW OF SIGNING AND PAVEMENT MARKINGS

MTJ will provide signing and marking recommendations for this project to optimize safety and operations. This information is to be used to develop the final signing and marking details and plans. MTJ will also review and provide red-line comments for the pavement marking plans to verify optimized pavement markings and specifications.

TASK 6: REVIEW OF CONSTRUCTION DETAILS

Construction materials and colors are an integral part of roundabout design. Operational effectiveness of the roundabout and safety are impacted by these design elements. MTJ will review curb types, construction details and material choices with respect to the roundabout to maximize the efficiency and effectiveness of the roundabout as a traffic control device. MTJ will provide review, recommendations, and options for consideration.

TASK 7: REVIEW OF VERTICAL DESIGN

MTJ will review and provide red-line comments for:

- Preliminary grading and drainage plan
- Alignment plan
- Typical sections
- Cross sections

TASK 8: DOCUMENTATION of REVIEW TASKS 5,7

Provide a summary of design review recommendations:

- Signing and Pavement Markings
- Vertical Design

TASK 9: COMMUNICATIONS/ADMINISTRATION

MTJ will coordinate with project team and agency staff as necessary, including:

- Responses to inquiries
- Phone and email correspondence
- Net-based meetings (MTJ subscribes to GoToMeeting)

PROPOSED FEE SCHEDULE FOR PHASE II

Project Fee Estimate for: MTJ Engineering, LLC						
Client:	Alfred Benesch & Company					
Project:	Lake Co., IL: Fairfield & Monaville – Phase II			Date:	1/23/18	
Description:	Phase II Roundabout Analysis & Design			Prepared By:	MTJ	
Task No.	Task Description	Estimated Person Hours Required				Totals
		Principal Engineer (MTJ)	Project Engineer*	Proj. Admin.	Graphics Tech	
1)	REVIEW EXISTING ANALYSIS & PROJECT OBJECTIVES	1				1
2)	HORIZONTAL DESIGN: CONCEPT/SKETCHES	24			8	32
3)	HORIZONTAL DESIGN - PRELIMINARY	24			8	32
4)	DOCUMENTATION OF CRITICAL DESIGN ELEMENTS	16				16
5)	REVIEW OF SIGNING & PAVEMENT MARKINGS	4			4	8
6)	REVIEW OF CONSTRUCTION DETAILS	-				-
7)	REVIEW OF VERTICAL DESIGN	4	24			28
8)	DOCUMENTATION of REVIEW TASKS 5-7	8				8
9)	COMMUNICATIONS/ADMINISTRATION (net meetings, email, phone, response to inquiries)	8		4		12
Total Person Hours		89	24	4	20	137
Billing Rate/Hr		\$ 172	\$ 128	\$ 74	\$ 60	
Total Billable for Charged Time		\$ 15,308	\$ 3,072	\$ 296	\$ 1,200	\$ 19,876
Fee Proposal for:			Direct Expenses (at actual):			
MTJ Engineering, LLC			Flight, Hotel, Car, Food			
313 Price Place, Suite 11						
Madison, WI 53705						
			Total Project Fees			
			\$ 19,876			

*Staff extension via partner firm

MTJ Labor Rate Schedule				
Classification	Direct Rate	Current FAR* Overhead Rate:	Profit	Total
		123.34%	10%	
Roundabout Designer/Engineer	\$70.00	\$86.34	\$15.63	\$172
Project Engineer/CADD	\$52.00	\$64.14	\$11.61	\$128
Administrative Mgr.	\$30.00	\$37.00	\$6.70	\$74
Graphics Technician	\$24.50	\$30.22	\$5.47	\$60
* Federal Acquisition Regulation				