SULLIVAN ENGINEERING, INC.
317 Main Street, Suite 201
Franklin, TN 37064
(615)642-5822

December 3, 2014

Mr. Paul Holzen, P.E.
Franklin Director of Engineering
109 3rd Avenue South
P.O. Box 305
Franklin, TN 37065

Re: McEwen Drive, Phase 4-Supplement #1
From: 1,000' +/- East of Cool Springs Blvd.
To: 500' +/- West of Wilson Pike (SR-252)
Total project Length 1.23+/- L.M. (Does not include s 0.75+/- Miles of Side Roads)
City of Franklin, Tennessee
Williamson County
SEI#15-003

Dear Paul,

As requested Sullivan Engineering, Inc. (SEI) would like to submit the following proposal for additional engineering roadway design, survey, structural, and geotechnical services necessary to produce final Right-of-Way property acquisition, and Construction Bid Documents on the section of McEwen Drive, from east of Cool Springs Blvd. to west Wilson Pike (SR 252). Since 2004, the design of this project has undergone a variety of changes since its inception. The requested changes include items such as additional design services of a pedestrian/bike access, geotechnical exploration, field survey updates, and retaining wall design and various construction cost estimates. Because of these unforeseen conditions additional time and resources has been expended to provide the City necessary information on how to budget and proceed toward final right-of-way and construction documents, which are not included in SEI's original scope of services. A more detailed summary of the changes and explanation of previous expenditures are contained in Appendix "A."

Roadway Design Services

This project is a combination of new alignment and improving sections of the existing roadway. McEwen Drive begins east of Cool Springs Blvd. and extends 1.5+/- miles east to a point of intersection with Wilson Pike (SR 252) as indicated on the City's Major Thoroughfare Plan. The city's Major Thoroughfare Plan classified McEwen Drive as an urban collector street with a design speed of forty-five (45-MPH) miles per hour. In addition to the design work on McEwen Drive, approximately 4,000 linear feet of side roads and auxiliary roadway will be required to serve residents along this corridor.

The proposed roadway template will provide for two (12'-0") basic lanes in each direction flanked with a standard 6-30 curb and gutter all contained within a one hundred thirty foot (130) foot minimum right-of-way. The travel lanes shall be separated by a 20'-0" raised grass median allowing for the possible addition of left turn lanes as approved by the city's engineering staff. Outer most lane, behind the 6-30 curb and gutter contain a 5'-0" grass strip followed by a 5-foot sidewalk. Bicycle lanes (5-foot) in each direction shall be incorporated into the design utilizing the abandoned McEwen roadway when feasible. Design documents shall be for the four lane median divided section as described above however, with final quantities based on the four lane design. However, if prior to preparation of construction quantities the city elects to only pave two lanes, on one side of the proposed centerline or the other the quantities can be calculated accordingly. Final quantities shall be prepared for only one scenario within this scope of services.

Discussion's prior to preparation of this proposal resulted in options to eliminate the bridge at Players Mill/Road of the Round Table. SEI, prepared options and presented them to the City of evaluation. It was determined to eliminate the bridge and realign the roadways based on "Appendix C" attached.

Prior to design of the project a review of the geometrics at Players Mill and Road of the Round Table shall be prepared for review and discussion. The review will include horizontal and vertical options on how to handle the offset alignment of the two aforementioned roadways. This section also deals with grade issues requiring realignment of the Players Mill/Road of the Round Table intersection. The aforementioned study will provide options on how to handle traffic during construction.

The city recently completed construction of an intersection improvement project at Wilson Pike. The city project did not include curb and gutter west of the CSX Transportation (railroad) crossing. The inclusion of curb and gutter west of CSX is to be included within this scope of services. The inclusion of these services may involve coordination with CSX Transportation, if work is required on the CSX right-of-way. It is SEI's understanding that these coordination efforts, if required, will be handed by City Staff and are therefore, not included within this scope of services.

Illumination of the roadway shall be from within the median (if possible). The roadway lighting shall be of the same poles and fixtures utilized in construction McEwen on the project referenced as the Temporary Connector and also the section of McEwen west of Cool Springs on McEwen. Design standards shall be per City of Franklin Standards while at the same time being acceptable to Middle Tennessee Electric, so the system can be energized. The lighting system is to be owned and operated by the City of Franklin. Ownership and maintenance of the lighting system, shall include the Millbank pedestals required by the city as part of the electrical design. This proposal provides for lighting of the bike lane with the design meeting the same requirements as the roadway specifications noted above.

The storm drainage design shall be based on a ten-year design storm frequency with all cross drains based on a fifty-year design storm frequency unless a design exception is granted by Franklin's Engineering Department. Any changes, in these requirements shall be provided in writing from the City

prior to beginning the storm drainage design. Storm drainage, erosion control and water quality features shall be done as close as practical with current TN Department of Environment and Conservation (TDEC) and City of Franklin storm water regulations. Property acquisition constraints may require that detention requirements imposed by the City may need to be relaxed to avoid adversely affecting adjoining property owners. However, City if Franklin, adherence to water quality standards imposed at the time the design is initiated, shall be maintained.

Drainage structures shall be in accordance with TN Department of Transportation (TDOT) approved catch basins, Class III Reinforced Concrete Pipe, concrete box or slab culverts or reinforced concrete arch (Con Span or equal) structures. Special design of concrete box or slab structures is not included within the scope of services, therefore; these structures, if required, shall be selected from available TDOT Standard Structure Drawings.

Various utilities exist along the proposed McEwen Drive corridor. Roadway improvements of this magnitude typically include relocation or upgrades of major electrical, water, gas, sewer, telephone, and cable TV lines including customer service connections. All utility relocation design shall be the responsibility of the owner or their assigned representative. In is anticipated that AT&T and ATMOS gas design documents shall be included within the final construction documents. If these utilities are included, they shall be a standalone set of plans and specifications, signed and sealed by an engineer registered in the State of TN. The utility design documents shall be delivered to the SEI from City Staff, for insertion into the bidding documents, which SEI shall reference on the index.

In keeping with the City's Traffic operation Center conduit for future fiber optic cable shall be provided behind the back of curb, between the curb and sidewalk. Signalization at the intersection with Wilson Pike is not within this scope of services. However, future signalization efforts will need to be coordinated with TDOT and the City of Franklin Traffic Operation Center, by City Staff.

Geotechnical Design Services:

Approximately 1.5 miles of new road construction is planned to extend McEwen Drive as a four lane, divided road from Cool Springs Boulevard to Wilson Pike in Franklin, Tennessee. Additionally approximately 5,700 linear feet of retaining walls are planned to accommodate grade changes along the proposed alignment. Additionally the retaining walls will have about 2,000 feet with a maximum wall heights of 10 feet (drill test borings at 100 foot spacing) or less and the remaining 3,700 feet will have maximum wall heights between 10 and 35 feet (test borings at 50-foot spacing). Additionally, a box culvert (TDOT Standard) is planned at Players Mill (drill 4 test borings).

Review of available aerial imaged on Google Earth show some of the planned alignment and wall locations will required limited path clearing to reach the boring locations. Further, some of the borings will be located along Liberty Pike; partial lane and/or shoulder closures will be required.

After receiving authorization, we will contact the Tennessee One Call to facilitate the location of public member utilities; location of other utilities will be the responsibility of the owner. Test locations

of known or suspected underground utilities and piping will be adjusted to avoid conflict. Our engineering staff will establish test locations by pacing or measuring distances and estimating right angles from existing features. Ground surface elevations at each test location will be interpolated based on the provided topographic information. Based on the methods used to establish the location and elevation of each test location, this information should be considered approximate.

A local grading company will provide equipment and personnel to clear access paths to boring locations when required. Coordination with property owners along the alignment will be done by the design team prior to our mobilization.

Additionally, we will subcontract FlagPro (or similar traffic control provider) to provide signs, trucks, and personnel to temporarily close shoulders or driving lanes to facilitate movement and field work by our crews. Given the proximity of Liberty Pike to our boring locations, we expect that traffic control services will be required for a majority of our field work.

We plan to mobilize two drill rigs to perform up to 88 borings in general accordance with ASTM D1586, the *Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*. Our exploration scope is as follows:

- 2,000 feet of walls less than 10 feet tall – 21 borings (assuming one boring at each end) each drilled to an average depth of 15 feet, unless shallower auger refusal is encountered.
- 3,700 feet of walls between 10 and 35 feet tall – 75 borings (again, assuming one boring at each end of run) each drilled to an average depth of 25 feet, unless shallower auger refusal is encountered.
- Culvert at Players Mill – 4 borings drilled to auger refusal, estimated to be about 25 feet deep.

Upon completion, subsurface water will be checked and measured in each borehole and then backfilled with auger cuttings and a borehole closure device. While no method of closing a borehole is totally foolproof, we have found that the use of borehole closure appliances will substantially improve the stability of the surface in the vicinity of completed boreholes. Unless otherwise directed otherwise closure of all boreholes made in this exploration shall be in accordance with our standard protocol after drilling operations have ceased.

To assist with our classifications and analyses, we may perform up to 40 moisture content tests (ASTM D2216), six Atterberg limits (ASTM D4318), four unconfined compressive strength tests ASTM D2166), and four triaxial shear strength tests (ASTM D4767) on selected soil samples.

Our geotechnical exploration will culminate with a written report prepared by a member of our design team and containing the following:

- Summary of project information.
- Summary of the site conditions, topographic features, and site geology.
- A summary of the field exploration methods;
- A test location plan and boring logs for each test location,

- A summary of the subsurface conditions encountered in our test borings,
- A summary of laboratory test procedures and results,
- Conclusions,
- Recommendations for site preparation, compacted fill, subgrade preparation, and groundwater control relative to the retaining walls and bridge,
- Recommended foundation type, allowable bearing pressure, minimum foundation sizes and depths, expected total and differential settlement, and construction
- guidelines, and
- Recommendations for retaining wall design including lateral earth pressure coefficients, friction coefficients, cohesion values, and allowable bearing values.

Additionally, we will prepare foundation data sheets for the retaining walls and bridge in general accordance with current Tennessee Department of Transportation (TDOT) standards.

Structural Design Services:

1. Bridge adjustments over CSX near Wilson Pike. Basic design services will assume the existing waterline on the north side edge of bridge has been detached from the edge of bridge, moved away from the limits of the Phase 4 project, and independently supported through a separate contract by Milcrofton Utility District and CONSULTANT will redesign the bridge parapet and overhang to add a sidewalk on the north side of the bridge. CONSULTANT will make submittals for the CSX Preliminary Engineering Agreement and subsequent submittals required to receive an Executed CSX Construction Agreement for the bridge work. The design as proposed does not include criteria to support the existing water line as the scope of services is bead on an independent support system for the waterline to independently and permanently supported and not reattached to the bridge. CONSULTANT will not make the necessary CSX Utility Crossing Permit Application to obtain as that service would be included by the designer of the waterline crossing.

1.1. All CSX Design and Construction Permit Review Fees will be paid directly by the City of Franklin.

2. Provide retaining wall design (approximately 2,000 linear feet of walls less than ten (10) feet in height and 3,700 linear feet of walls between ten (10) and thirty-five (35) feet in height. Basic fee will be CONSULTANT to provide complete retaining wall design for one (1) wall type at each wall location. The anticipated wall types are expected to be Cast-In-Place Concrete, MSE or Soldier Pile.

For clarification and information the following services are specifically not included as part of the SCOPE OF SERVICES as previously described: CSX Right of Entry Permit for Updated Survey Data, survey, Transportation Planning Report (TPR), roadway design, utility design or relocation plan development, lighting design, right-of-way negotiation/acquisition services, drainage design, offsite analysis of the existing drainage system, flood studies, mitigation design, environmental permit application, pavement design, Construction Engineering and Inspections (CEI) to TDOT standards, construction phase services, shop drawing review, advertisement of bid, printing of City review plans or bid documents, landscape design and NEPA Document Preparation.

Design Approach

The initial step in the design process would be to obtain additional topographic information, concurrent with updating existing field survey data, originally obtained in 2004-2005. The updated survey data shall be limited in nature as noted in the "Summary of Additional Services". This information will be incorporated into a computerized 3-D topographic model.

SEI's design team will use the computerized 3-D model to modify previously approved horizontal and vertical alignments for use in designing temporary detours required to maintain traffic during construction. The detours shall be reviewed with city officials, prior to incorporation into the bid documents. Upon selection and approval of a detour alignment, property acquisition documents shall be reviewed for additional easement requirements, and presented to City staff for input as part of the context sensitive design process. The design team along with city officials will review options presented, and modify as necessary prior to inclusion in the final design.

Based on the aforementioned SEI will provide updated cross sections to the original geotechnical firm (AMEC) for review and comment of slope recommendations originally provided. This work shall also include incorporation of boring data previously obtained to be shown on the revised cross sections. The updated information provided by the geotechnical team shall be incorporated into final development of Right-of-Way acquisition documents. The updated data provided by the geotechnical teams subsurface information will provide, SEI's design team valuable insight into slope stability, potential undercut areas, retaining wall and bridge design guidelines.

Preparation of final right-of-way acquisition and construction bid documents shall be based on the approved preliminary plans inclusive of temporary detours. Final right-of-way documents will include not only roadway and drainage design efforts but supplemental design documents received from City Staff. The need for permits other those required from the TN Department of Environment and Conservation are outside of the services required under this contract. Fees required for obtaining any permit shall be paid by the City. Potential permits required would be from TN Dept. of Transportation, TN Dept. of Environment and Conservation, and CSX Transportation officials prior to construction of this project

As part of the construction bid documents, the design team will prepare a list of general notes, standard drawings, and special details, providing instruction to the contractor on various procedures and requirements for items of work. In addition, special agreements, details, insurance requirements may be required when crossing the CSX Transportation system or access to right-of-way. However, at this time it is difficult to determine what may be required and what if any associated fees may be incurred.

The final construction bid documents shall consist of design documents, specifications, permits, and bid form necessary to evaluate and award a construction contract. The final bid package will incorporate TDOT Construction Specifications with regard to materials, installation procedures and testing for acceptance. Bid documents shall be as supplied by the City of Franklin Engineering

Department, with SEI providing supplements of when and where Bids will be received, Items and quantities to be bid, and schedule completion date of the project. Prior to Advertisement of Bid, SEI shall have a TN registered Engineer Stamp and Seal the technical specifications, with City Staff responsible for having a TN Engineer Stamp and Seal shall the balance of the Project Manual. The contract bid form shall be based on the engineer's estimated quantities, used to develop the estimated probable cost of construction. A brief outline of each task and estimated engineering cost are as follows:

I) Topographic Survey

a) Survey data coordinated with Franklin's GIS System;
b) Property and utility owner contacts
    (a) Research of record documents
    (b) Owner name and address to be supplied in a word or excel format by city staff.

II) Civil Roadway Design Documents

a) Coordinate Alignment with City officials
    i) Prior to initiating design efforts City Staff is to advise SEI's design team if two or four lanes are to be paved.
b) Cross Sections at 50' intervals
c) Coordination with utilities for design purposes
    i) Utilities to be incorporated into the final Bid documents shall be coordinated by City Staff.
d) Geotechnical Investigations (AMEC)
    i) Slope stability recommendations and report update
    ii) Update cross sections with geotechnical soil data previously obtained.
    iii) Ten and twenty year pavement design, shall be utilized from the original report prepared by AMEC.
e) Identify Land Parcels impacted by construction
    i) Coordinate with Franklin's Phase 2 Storm Water Regulations
    ii) Identify Permanent Drainage Easements
    iii) Size hydraulic crossings
    iv) Prepare Property Acquisition Descriptions
    v) Field stake areas of acquisition
f) Estimated Construction Quantities at completion of Right-of-Way
g) City Staff shall initiate and coordinate review and approval process with CSX Transportation
h) Preliminary Bridge Design
i) Preliminary Roadway Lighting Design
j) Attend and participate in Field Reviews (three) and Public Meeting (one)

III) Geotechnical and Retaining Wall Design Documents

a) Field locate areas of potential retaining wall locations
b) Explore by mechanical means subsurface conditions
c) Test soil and rock conditions for retaining wall design parameters

d) Present various wall types and construction requirements to city staff for review and selection process.
e) Prepare design documents for selected retaining walls
f) Revise right-of-way documents and property acquisitions descriptions

IV) Construction Structural Design & Bidding Documents (Benesch)

a) Coordinate construction details with City officials
b) Cross Sections at 50' intervals
c) Review final design with utilities for coordination purposes
d) Coordinate with City Staff construction contract requirements with CSX Transportation
e) Estimated Construction Quantities at Right-of-Way completion and incorporation into the final bid form
f) Structural design special details and notes
g) Final estimated quantity calculations
h) Assist with development of the Traffic Control Plan
i) Coordinate with Roadway lighting plan if required to attach to structures
j) Retaining wall design documents
k) Bridge design documents
l) Construction Bid package
m) Attend and participate in Field Reviews (three) and Public Meeting (one)

LISTING OF SHEETS REQUIRED

All documents will be developed in accordance with City of Franklin and current TDOT design criteria. TDOT Design Guidelines and Standard Drawings shall be used in the development of this project.

Base Proposal

1) Title Sheet
a) Preliminary/Right-of-Way
b) Construction

2) Typical Sections
a) Mainline
b) Cross-Road
c) Traffic Control
d) Ingress and Egress
i) Private Drives
ii) Field Entrances
iii) Business Entrances
e) Paving Schedule
i) 20 year design section
ii) Construction Documents Only

3) Construction Details and Notes
a) Special Details
b) General and Special Notes
c) Scope of Work
d) T.D.O.T. Standard Drawings List
e) Signalization System

4) Tabulated Data
a) Private Drives/Field Entrances/Business Entrances
b) Erosion Control
c) Traffic Control
d) Storm and Cross Drainage
e) Box/Slab Culvert Quantities
f) Paving Quantities
g) Signing & Pavement Markings

h) Itemized Construction Quantities
   i) At completion of Construction Documents

5) Property Map
a) Right-of-Way Notes
b) Acquisition Block
   i) Footnote erosion control easements.
   ii) Footnote temporary construction easements.
c) Scale 1" = 50'
d) Identify property acquisition parcels
e) Prepare property acquisition descriptions

6) Present Layout
a) Scale 1" = 50'
b) Proposed horizontal alignment data
c) Survey control points and bench marks
d) Right-of-Way, inclusive of Easement requirements(Permanent & Temporary)

7) Proposed Layout/Drainage
a) Scale 1"=50'
b) Details as required
c) Permanent Pavement Markings
d) Permanent Signing
e) Roadside ditch, storm drain and cross drainage systems
f) Signalization system

8) Proposed Profiles/Drainage
a) Scale (1"=50'Horiz. & 1"=5'Vert.)
b) Roadside Ditch, storm drain and Cross Drainage systems
c) Drainage tabulation tables

9) Private Drive/Field Entrance Profiles
a) Scale (1"=50'Horiz. & 1"=5'Vert.)
b) Driveway surface
   i) Match in kind
   ii) Minimum pavement shall be to the proposed right-of-way
   iii) Drives not paved shall be surfaced in accordance with TDOT Design Guidelines
c) Side drain requirements

10) Culvert Sections (if Required)
a) As Required

11) Cross-Sections
a) 50' Intervals
b) To be included in:
   i) Preliminary design documents
   ii) Right-of-Way design documents
   iii) Construction design documents

12) Utility Design Coordination
a) By the City of Franklin
b) SEI will prepare a utility information sheet based on data received from the City of Franklin.
c) City Staff shall provide all design, specifications and quantities if utility construction is to be included in the bid package.

13) Project Reviews
a) Right-Of-Way
b) Construction

14) Design Project Management
a) Coordinate with City of Franklin Officials
b) Coordinate with appropriate State and Federal agencies as required

15) Traffic Control
a) Maintain Traffic During Construction
b) Per M.U.T.C.D. Guidelines

16) Erosion Control
a) Per Current City of Franklin Storm Water Management Guidelines
b) Prepare necessary State and Federal Permits
   i) Permits submittal and fees to be paid by City of Franklin

17) Roadway Lighting Design
a) Review with MTEMC and City officials as required

b) Construction bid specifications for a LED System

18) Construction Bid Documents by SEI

a) Unit Price Bid
   i) T.D.O.T. pay item units and descriptions
b) Standard City of Franklin Bid Manual shall be used.
   i) City accepts liability for conflicts with TDOT Specifications
   ii) City is to hold SEI harmless from errors and ambiguities in the City Bid Manual

The following design fee summary represents SEI's design teams estimated cost for completion of right-of-way acquisition and construction bid documents.

SUMMARY OF ADDITIONAL SERVICES

TASK REQUIRED	CONTRACT FEE
SURVEY	
Survey (Update - Owners, Deed Research, Property Lines, Acquisition Table) City to supply Owner name and address	$5,495.00
Survey (Update - Utilities Owner & Location) City to furnish owner contact information	$2,716.88
Survey Stake Geotechnical bore locations (2 mobilizations max)	$4,830.00
Survey Property Acquisition (Stake Right-of-Way, & furthest easement point, 2 mobilizations max)	$4,226.25
Field Survey (Update - Topo, & 3D Model)	$7,245.00
SUBTOTAL SURVEY	**$24,513.13**
ROADWAY	
Preliminary Design Documents (Evaluate Player Mill and Road of the Round Table Geometrics)	$8,400.00
R-O-W Design Documents (No TDOT Involvement, Design termini will be from 600'+/- east of Cool Springs to 300'+/- east of CSX Bridge)	$157,500.00
Construction Documents (No TDOT Involvement, Design termini will be from 600' +/- west of Cool Springs to 300'+/- east of CSX Bridge, One bid Package)	$126,000.00
Final quantities, details, notes and standard drawings	$18,375.00
Construction project manual and City Contract (Does not include time for legal review)	$4,72500
Coordination of ATMOS and MTEMC relocation and easement layout	$26,250.00

TASK REQUIRED	CONTRACT FEE
SUBTOTAL ROADWAY	**$341,250.00**
ELECTRICAL	
Roadway Lighting Design (LED Design per McEwen 3 Guidelines)	$12,637.80
Bike/Walk Path Lighting Design (LED Design per McEwen 3 Guidelines)	$10,012.80
SUBTOTAL ELECTRICAL	**$22,650.60**
STRUCTURES	
Insert the soil drilling profile into the cross section and draw the proposed retaining wall on the section.	$28,521.15
Geotechnical (Not TDOT Compliant, Update Cross-sections and exploration for Bridge/retaining wall/revised Template width)	$99,015.00
Task 1 -Bridge Over CSX (Redesign the bridge parapet and overhang to add a sidewalk on the north side of the bridge)	$17,810.63
Task 2 -Retaining Wall (Complete design documents for approximately 2,000 linear feet of walls less than ten (10) feet in height and 3,700 linear feet of walls between ten (10) and thirty-five (35) feet in height. Basic fee will be CONSULTANT to provide complete retaining wall design for one (1) wall type at each wall location. The anticipated wall types are expected to be Cast-In-Place Concrete, MSE or Soldier Pile.)	$155,163.75 (1)
SUBTOTAL STRUCTURES	**$300,510.53**
MISCELLANEOUS	
AMEC update of geotechnical report and soils date in cross-sections	$17,025.75
Reproduction (PDF'S/Meeting Display, all other printing by the City)	$3,000.00
Reimbursable Fees (TDEC, Corp, CSX	(2)
Preparation and Attendance at a Public Meeting (Court Reporter and Printing of Documents by the City)	$4,050.00
SUBTOTAL MISCELLANEOUS	**$24,075.75**
TOTAL ESTIMATED FEE	**$713,000.00**

Notes:

(1) Retaining walls shall be based on a cast in-place design with form liner.

(2) Review and Submittal fees to be paid by the City prior to submittal of documents

EXCLUSIONS:

- Aerial survey,
- Grading Plans,
- Landscaping Design or Street Scape Features
- Utility Relocation Design,

- Environmental and Erosion Control mitigation design plans,
- Signal modifications at Wilson Pike
- Independent Water line support beam over CSX
- Attachment of water line to parapet rail
- Traffic Study and Signal Design at Players Mill
- Construction Administration, Testing and Observation, although this item has been excluded at this time the Design has the experienced staff of professionals that can oversee all aspects of the work to insure the project specifications are adhered to during construction, and
- Coordination with TDOT, inclusive of TDOT Review of Documents.

COMPENSATION:

This project will be developed in accordance with City of Franklin and T.D.O.T. Guidelines, with the design fee based on a lump sum basis. The proposed fee includes all items listed in the Scope of Work, computer plotting, and travel expenses. SEI will prepare PDF's for printing purposes which is limited in scope to prints for city staff reviews only. Printing required for Public Meetings, utility coordination and project bidding shall be the responsibility of the City with PDF's to be provided by Sullivan Engineering. All documents shall be computer generated (ACAD format) and reproduced on suitable parchment which can be copied and printed for bidding purposes.

I hope this proposal meets with your approval. If you have any questions please give me a call so we can arrange a time to discuss and resolve any questions you may have.

Sincerely,
Sullivan Engineering, Inc.

Paul Collins

Paul V. Collins, Jr.
Vice President

CC: Mr. Richard Sullivan, PE, Sullivan Engineering, Inc.

Appendix "A"

Re: McEwen Drive, Phase 4-Supplement #1
From: 1,000' +/- East of Cool Springs Blvd.
To: 500' +/- West of Wilson Pike (SR-252)
Total project Length 1.23+/- L.M. (Does not Include s 0.75+/- Miles of Side Roads)
City of Franklin, Tennessee
Williamson County

In review of Sullivan Engineering, Inc. association with this work, I feel it necessary to clarify the history of this project since it's inception in the fall of 2004. The original plan allocated funding for Preliminary Design and Right-of-Way design documents to be prepared. Over this period of time, the project has had several different City project managers, as well as several different Franklin Director of Engineer's to oversee the work, in addition to changes in elected officials all of which has resulted in the design of this project to undergo a variety of changes since its inception inclusive of additional redesign of pedestrian/bike access, geotechnical exploration, field survey updates and retaining wall design. As a result of these unforeseen conditions additional time and resources had to be expended to provide the preliminary design documents you have today.

Original Scope of Services

This project is a combination of new alignment and improving sections of the existing roadway. McEwen Drive begins east of Cool Springs Blvd. and extends 1.5+/- miles east to a point of intersection with Wilson Pike (SR 252) as indicated on the City's Major Thoroughfare Plan. The city's Major Thoroughfare Plan classified McEwen Drive as an urban collector street with a design speed of forty-five (45-MPH) miles per hour. In addition to the design work on McEwen Drive approximately 4,000 linear feet of side roads and auxiliary roadway will be required to serve residents along this corridor.

The proposed roadway template provided for two (12'-0") basic lanes in each direction with five (5') foot bicycle lanes along each side flanked with 6-30 curb and gutters within a one hundred thirty foot (130) foot minimum right-of-way. The travel lanes shall be separated by a 25'-0" raised median (20' Grass with 2 @ 6-30 Curb/Gutter) and sod inclusive of additional left turn lanes as approved by the city's engineering staff. Behind the outer roadway curbs are 5'-0" sod areas flanked by 5-foot sidewalks. The proposed roadway shall be illuminated from within the median utilizing round tapered bronze colored poles with a shoe box fixture meeting Middle Tennessee Electric standards. The storm drainage design shall be based on a ten year design storm frequency with all cross drains based on a fifty year design storm frequency. All storm drainage and erosion control shall be done in accordance with current City of Franklin Phase Two Storm Water Regulations. As part of this project an environmental, historical and archeological assessments shall be conducted in accordance with current State of Tennessee Department of Transportation guidelines.

After the preliminary design and geotechnical was completed, it was determined by city staff that the best option fir this section was to move the bike lanes to behind the curb and eliminate sidewalk where there is no residential development. Also during the design process the city plans review staff approved a connection to McEwen Drive to the north. They also approved a grade above 14%. This drive

to the north crossed the proposed McEwen Drive Alig[illegible]d not allow the original McEwen Drive Alignment to work. There is not enough vertical clearance between the sideroad and McEwen Drive. Holding the original horizontal alignment and changing the vertical was not a practical option because of the serve fill. Therefore a combination of horizontal and vertical alignment had to be designed.

Revised Scope of Services

Preliminary design documents have been prepared based on a combination of new alignment, inclusion recent of improvement made east Cool Springs Boulevard to west of Wilson Pike, inclusion of incorporation of various of changes that have occurred along this corridor. The most notable change along this corridor will now require construction of an additional bridge at the Knights of the Round Table intersection with McEwen Drive. The city's Major Thoroughfare Plan classifies McEwen Drive as a Major Arterial street with a design speed of forty-five (45-MPH) miles per hour. In addition to the design work on McEwen Drive approximately 0.75 miles of side or auxiliary roads will need to be designed. As part of the roadway design process, traffic control plans will need to be developed providing access not only to home owners but to thousands of vehicles which travel the route on a regular basis. Extensive coordination will also be required with utilities along this route to maintain service to not just the homes adjoining the site but residents and businesses within the Williamson County area receiving service from the main feeder lines along this corridor. Future signal needs will be evaluated so that necessary property and underground infrastructure can be accounted for in the design process.

The proposed roadway template will provide for two (12'-0") basic lanes in each direction flanked with standard 6-30 curb and gutter all contained within a one hundred thirty foot (130) foot minimum right-of-way. The travel lanes shall be separated by a 25'-0" raised median with curb/gutter and sod inclusive of additional left turn lanes as approved by the city's engineering staff. Behind the outer roadway curbs are 5'-0" sod shoulders and in the residential areas flanked by 5-foot sidewalks/ Pedestrian-Bike trail. The existing McEwen Drive will be utilized for the Pedestrian-Bike trail as much as practical.

Modification of Design Fee

As you can see by the change in design template noted above the impact on the design can be minimal or extensive dependent on when the change is initiated. The unfortunate part of this portion of the engineering design is that change in template was not identified until the original plans had been completed by SEI's design staff. The unfortunate issue is that a change in template was not identified until SEI had completed approximately 75% of the original design. As a result all of the previously completed work had to be either revised or totally redesigned.

The redesign required that the design model be totally rebuilt inclusive of multiple horizontal and vertical alignments, and the recreation of the cross-sections and slope lines.

At the time the redesign was initiated it was apparent that the original design schedule was going to be delayed but it was still imperative that the alignment be established inclusive of potential impact to adjoining property. It was also known at this time that a future supplement would be required for additional geotechnical, field survey and right-of-way and construction design/bid documents. With that

knowledge at hand and funds already allocated for completion of right-of-way plans SEI was instructed to proceed with the design and to invoice the additional cost from others items budgeted within the contract.

Therefore, based on the verbal instructions issued to SEI the redesign was initiated with cost to be invoiced against contract amounts earmarked for other aspects of design. Therefore, SEI proceeded to invoice against other items in the fee schedule. The amounts indicated on SEI Invoice Number 10.074 listed as R-O-W Design documents are charges incurred for the preparation of the revised preliminary design and the charges incurred as shown on Preliminary Bridge Design are for additional geotechnical services. The additional geotechnical charges were incurred to explore an area near the centerline which contained traces of petroleum.

SEI has also incurred a cost for supplemental survey services in the amount of $5,500.00 which have not been invoiced to date. This was an item that was being delayed until a point in time that a final supplement would be developed for completion of the construction bid documents. Therefore, as part of this process I would request that the additional survey charges be approved to be invoiced against Property Acquisition Staking. This would clean up all outstanding issues and allow us to move ahead with a final supplement for construction bid documents having all back issues resolved.

This project as with any project which incurs delays for an extended period, over and above what anyone would normally anticipate, combined with numerous changes in city staff overseeing the design effort, makes it understandable that some confusion exist at this point.

I hope this document has provided some clarity and sufficient evidence of what has transpired over the years. If, I have made errors in my recollection of the project history please inform me so that the necessary revisions can be incorporated into this document.

Appendix "B"

From: Jonathan Marston [mailto:jonathan.marston@franklintn.gov]
Sent: Monday, October 27, 2014 12:42 PM
To: Paul Holzen; David Parker
Cc: Dickie Sullivan (dickie@sullivanengineering.com); Paul Collins (pcollins@sullivanengineering.com); Pat Wiggins (pwiggins@sullivanengineering.com)
Subject: East McEwen Drive Phase 4 - Questions
Importance: High

All,

It is my understanding that SEI needs answers to the following 3 questions, before they can finalize their design scope.

1. Proposed realignment of Road of the Round Table (Avalon back entrance) to coincide with location of Players Mill Road. This proposed option would require additional geotechnical work and the potential for additional retaining wall(s) or rock benches, but would also eliminate the need for a bridge in this area.
2. Are we going to continue with the original decision to grade and construct infrastructure (i.e. storm drainage, retaining walls, etc.) to support a 4-lane, median divided typical section, but only complete 2-lanes as a part of this project.
3. When does the City need the final proposal?

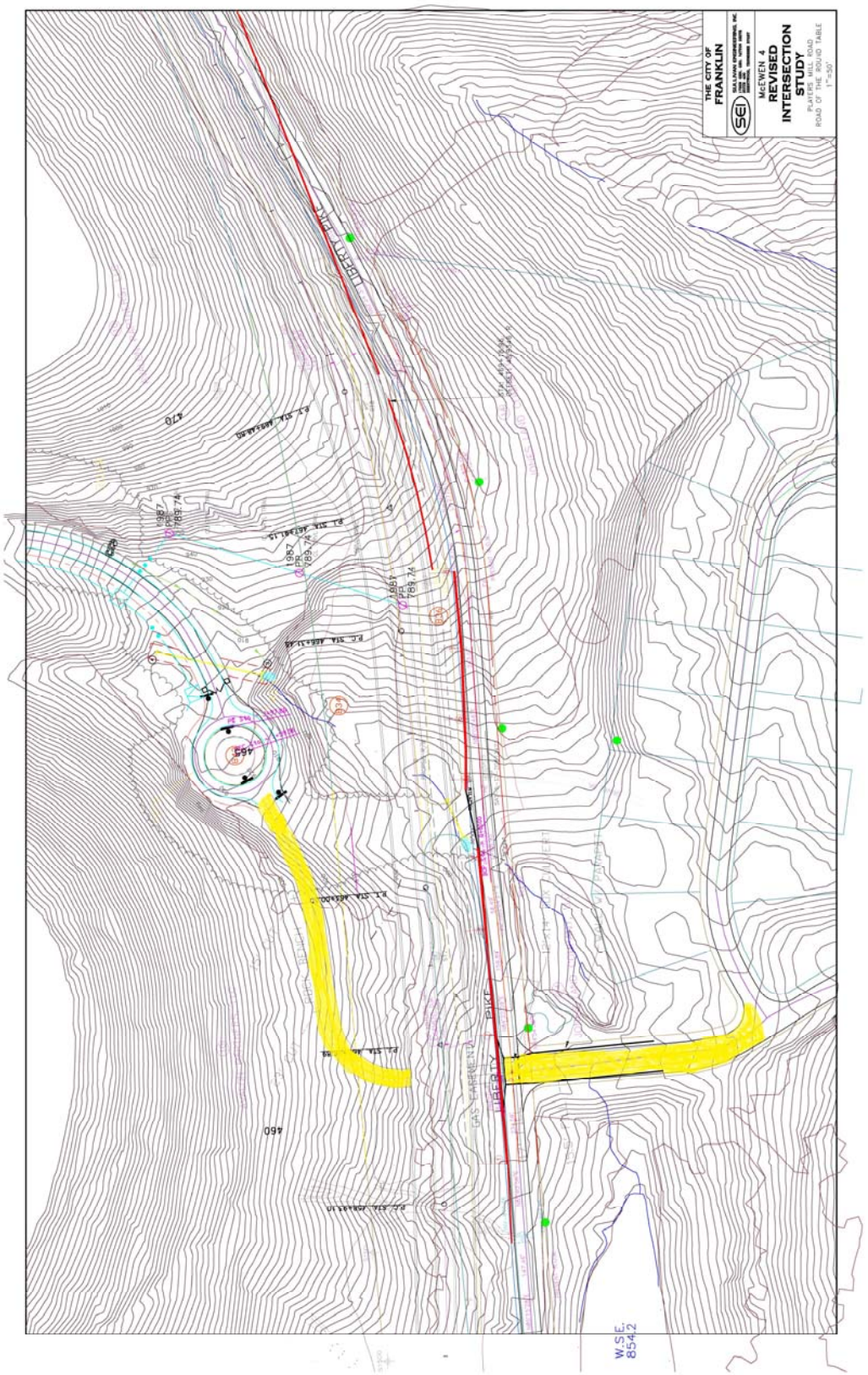
The following is my opinion on all these issues:

1. Yes, proceed with the realignment of Road of the Round Table to match the existing horizontal location of Players Mill Road. This proposed realignment will eliminate: (1) offset intersection and (2) need for a structural bridge on East McEwen Drive.
2. I would suggest that we go ahead and proceed with the full and final 4-lane, median divided typical section. If we move forward with a 2-lane design, we would still be grading and installing infrastructure to support 4-lanes, with the only savings coming at the expense of the curb & gutter and pavement for the additional 2 lanes. I would also imagine that building the full section will allow for easier construction phasing. I'm sure I will get push back on this, but this is my thought process.
3. We need to get this PSA on the CIC Agenda for November 12, 2014. That means I need everything finalized by the end of this week, at the absolute latest.

Thoughts?

Jonathan Marston, P.E.
Staff Engineer 3
City of Franklin – Engineering Department
Email: jonathan.marston@franklintn.gov
Office: 615.791.3218
Direct: 615.550.6675
Fax: 615.791.3293

Appendix "C"


THE CITY OF FRANKLIN
McEWEN 4
REVISED
INTERSECTION
STUDY
LIBERTY PIKE
LIBERTY PIKE
W.S.E.
854.2

Appendix "D"

Reimbursable Expense Schedule

Reimbursable expenses for services performed are valid for one year from the date of the Agreement are:

Sullivan Engineering, Inc.

FAX	$0.25/page
8"x11" Copies/Impression	$0.10/page
Blue Print Copies	$0.50/sq. ft.
Reproducible Copies (24" x 36" Mylar)	$15.00/page
Reproducible Copies (24" x 36" Vellum)	$10.00/page
Reproducible Copies (24" x 36" Bond)	$5.00/page
Mileage (auto)	$0.49/mile
Long Distance Phone Calls	at cost
Meals and Lodging	at cost

Standard Hourly Rates Schedule

Current agreements for engineering services stipulate that the standard hourly rates are subject to review and adjustment per Exhibit C. Hourly rates for services performed on the date of the Agreement are:

Sullivan Engineering, Inc.

Classification	Staff	Hourly Billable
Billing Class 10	Professional Engineer II	$158.70
Billing Class 9	Professional Engineer I	$146.63
Billing Class 8	Staff Associate/Project Coordinator	$117.66
Billing Class 7	Project Manager	$106.76
Billing Class 6	Roadway Designer II	$100.63
Billing Class 5	Roadway Designer I	$95.18
Billing Class 4	CADD Technician	$89.81
Billing Class 3	Storm Water Inspection	$89.25
Billing Class 2	Secretary	$57.89
Billing Class 1	Office Helper	$47.25

CLASSIFICATION	RATE
Technologist I	$48.00
Technologist II	$70.00
Senior Technologist	$84.00
Resident Project Representative	$76.00
Code Official I	$60.00
Code Official II	$68.00
Senior Code Official	$92.00
Designer I	$72.00
Designer II	$78.00
Senior Designer	$88.00
Project Engineer I	$ 92.00
Project Engineer II	$108.00
Senior Project Engineer	$120.00
Project Manager I	$114.00
Project Manager II	$128.00
Senior Project Manager II	$180.00
Principal	$190.00

DIRECT REIMBURSABLE EXPENSES

Travel	IRS Approved Rate
Overnight/Special Delivery Postage	At Cost
Special Equipment Rental	At Cost
Tolls/Parking	At Cost
Printing/Copies	At Cost

- Alfred Benesch & Company does not charge additional hourly rates for Accounting or Administrative functions.
- The above rates are all inclusive; there are no extra charges or fees.

ENGINEERING PERSONNEL FEE SCHEDULE
MCEWEN DRIVE EXTENSION
FRANKLIN, TENNESSEE
S&ME PROPOSAL NUMBER 12-1400394

Staff Professional (P1, P2), per hour	$	85.00
Project Engineer (P3, P4), per hour	$	110.00
Senior Engineer (P5), per hour	$	160.00
Principal Engineer (P6, P7), per hour	$	185.00
CADD (C1, C2, C3), per hour	$	55.00
Administrative (S1, S2), per hour	$	45.00
Truck Mileage, per mile	$	0.75
Drill Rig Mobilization, per each	$	600.00
Difficult Moving / Water Hauling, per hour	$	200.00
Drill Crew Per Diem (2-man crew), per day	$	250.00
Soil Test Boring, per foot	$	14.00
Undisturbed Samples, per each	$	100.00
Moisture Content Tests, per each	$	15.00
Atterberg Limits, per each	$	85.00
Unconfined Compressive Strength Test, per each	$	100.00
Triaxial Shear, per each	$	450.00

Subcontractor expenses (Traffic Pros, clearing subcontractor, etc.) and reimbursable items will be charged at actual cost plus 15%.