AUTHORIZATION FOR PROFESSIONAL SERVICES

PROJECT NAME: **Fishtrap Road Widening and Reconstruction**

TNP PROJECT NUMBER: **LIT 23419**

CLIENT: **Town of Little Elm, TX**
ADDRESS: **100 West Eldorado Parkway**
Little Elm, TX 75068

The Town of Little Elm (the CLIENT) hereby requests and authorizes Teague Nall and Perkins, Inc., (the CONSULTANT) to perform the following services:

Article I

SCOPE: Provide engineering and surveying services for preparation of construction plans and bid documents to increase the traffic capacity of Fishtrap Road from just east of the roundabout on Union Park Boulevard to the intersection of the FM 1385. The proposed project will widen and reconstruct the existing two-lane, undivided roadway to an urban four-lane divided section with curb and gutters and enclosed storm drains. The new, wider roadway will displace existing utilities on both sides of the road, requiring significant utility coordination.

The project includes the following:

- Topographic survey
- Easement and ROW documents
- Subsurface utility engineering
- Roadway widening and reconstruction plans
- Storm drainage systems design
- Cross culvert design
- Lighting plans
- Utility coordination
- Bid support
- Construction support

A detailed scope of services is included as Attachment ‘A’ and is made a part hereto.

Article II

COMPENSATION to be on the basis of the following:

A. The CONSULTANT's compensation for Basic Services included in Attachment 'A' shall be based on a Total Fee of **$1,080,000.00** which includes expenses such as prints, plots, photocopies, plans or documents on CD, DVD or memory devices, mileage, air fare, and lodging. Payment to the CONSULTANT shall be due in monthly installments based on the CONSULTANT's estimate of the percentage of the contract completed during the billing period.

Basic Services Tasks	**Fee Type:**		**Fees:**
Task 1: Surveying Services			
Task 1a: Topographic Design Services	Fixed Fee	$	96,000.00
Task 1b: ROW and Easement Documents (25 @ $3,000 / each)	$/EA	$	75,000.00
Task 2: Subsurface Utility Engineering			
Task 2a: Level B-D Subsurface Utility Engineering	Fixed Fee	$	162,500.00
Task 2b: Level A Subsurface Utility Engineering (10 @ $2,800/EA)	$/EA	$	28,000.00
Task 3: Project Management	Fixed Fee	$	35,000.00
Task 4: Construction Plans and Bid Documents	Fixed Fee	$	475,000.00
Task 5: TxDOT Coordination	Fixed Fee	$	10,000.00
Task 6: Geotechnical Engineering	Fixed Fee	$	37,000.00
Task 7: Floodplain Study	Fixed Fee	$	35,000.00
Task 8: Lighting Plans	Fixed Fee	$	30,000.00
Task 9: Stakeholder Meeting (2 Meetings)	Hourly	$	12,500.00
Task 10: Utility Coordination	Hourly	$	40,000.00
Task 11: Bid Support	Hourly	$	12,000.00
Task 12: Construction Support	Hourly	$	32,000.00
Total Basic Services		**$**	**1,080,000.00**

B. Fees: Any permit fees, filing fees, or other fees related to the project and paid on behalf of the client by the CONSULTANT to other entities shall be invoiced at 1.10 times actual cost.

C. Additional Services: Any service provided by the CONSULTANT which is not specifically described in the scope of work for this contract as defined above or delineated in an attachment shall be considered additional services. A list of additional services is included as Attachment 'A-1'.

Upon written authorization from the CLIENT, the CONSULTANT will perform Additional Services. Payment to the CONSULTANT for Additional Services shall be on a Fixed Fee or Hourly Reimbursable basis, as described above.

Fixed Fee Compensation for Additional Services: Payment shall be as described above for Basic Services.

Hourly Reimbursable Compensation for Additional Services: Payment shall be due in monthly installments based on the amount of hours worked by each employee and the CONSULTANT'S current standard rates presented in Attachment 'B' Standard Rate Schedule. A fee equal to 3%

of Additional Service labor billings shall be included on each monthly invoice for prints, plots, photocopies, plans or documents on CD, DVD or memory devices, and mileage. No individual or separate accounting of these items will be performed by the CONSULTANT.

D. Payment Terms: CLIENT shall be billed monthly for services rendered and pay promptly upon receipt of invoice. Delays of transmitting payments to CONSULTANT more than 30 days from invoice date may result in cessation of services until payment is received**.**

E. Sample Invoice: The CONSULTANT'S invoice format will match the sample invoice included in Attachment 'B-1'.

Article III

SCHEDULE: The proposed services shall begin within 10 working days of authorization to proceed. A project schedule is included as Attachment 'C' and made a part hereto.

Article IV

CONTRACT PROVISIONS: The document entitled "Contract Provisions" which are attached hereto is made a part hereof. This Authorization of Professional Services, together with the Contract Provisions and all other exhibits attached hereto are collectively referred to as the "Agreement".

Please execute and return a signed copy for our files. Receipt of an executed copy of this contract will serve as notice to proceed. No work shall commence on the project until CONSULTANT receives an executed copy of this contract. By signing below, the signer warrants that he or she is authorized to execute binding contracts for the CLIENT.

Approved by CLIENT:

Town of Little Elm

By: _____

Title: _____

Date: _____

Accepted by CONSULTANT:

Teague Nall and Perkins, Inc.

By: _____

Title: _____

Date: _____

Firm Contact Information:
3200 South Interstate 35E, Suite 1129
Denton, Texas 76210
940.383.4177
Contact: Chris Hartke, PE

CONTRACT PROVISIONS

1. **AUTHORIZATION TO PROCEED**
   Signing this agreement shall be construed as authorization by CLIENT for CONSULTANT to proceed with the work, unless otherwise provided for in this agreement.

2. **DIRECT EXPENSES**
   A fee equal to 3% of labor billings shall be included on each monthly invoice for prints, plots, photocopies, plans or documents on CD, DVD or memory devices, and mileage. No individual or separate accounting of these items will be performed by TNP.

3. **OUTSIDE SERVICES**
   When technical or professional services are furnished by an outside source, subject to reasonable, timely and substantive objections of CLIENT, an additional amount shall be added to the cost of these services for CONSULTANT's administrative costs, as provided herein.

4. **OPINION OF PROBABLE COST**
   In providing opinions of probable cost, the CLIENT understands that CONSULTANT has no control over costs or the price of labor, equipment, or materials, or over the Contractor's method of pricing, and that the opinions of probable cost provided to CLIENT are to be made on the basis of the design professional's qualifications and experience. CONSULTANT makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.

5. **PROFESSIONAL STANDARDS**
   The standard of care for all professional engineering and services performed or furnished by CONSULTANT shall be the care and skill ordinarily used by other members of the relevant profession in the same circumstances and type of work in the State of Texas, and with the same level of professional and technical soundness, accuracy, and adequacy of all design, drawings, specifications, and other work and materials furnished under this Authorization as other members of the same profession in the same circumstances and location. CONSULTANT makes no other warranty, expressed or implied. Subject to the above standards of care, CONSULTANT may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.

6. **TERMINATION**
   Either CLIENT or CONSULTANT may terminate this authorization by giving 10 days written notice to the other party. In such event CLIENT shall forthwith pay CONSULTANT in full for all work previously authorized and performed prior to effective date of termination. If no notice of termination is given, relationships and obligations created by this Authorization shall be terminated upon completion of all applicable requirements of this Authorization.

7. **LEGAL EXPENSES**
   In the event legal action is brought by CLIENT or CONSULTANT against the other to enforce any of the obligations hereunder or arising out of any dispute concerning the terms and conditions hereby created, the losing party shall pay the prevailing party such reasonable amounts for fees, costs and expenses as may be set by the court.

8. **PAYMENT TO CONSULTANT**
   Monthly invoices will be issued by CONSULTANT for all work performed under the terms of this agreement. Invoices are due and payable on receipt. If payment is not received within 30 days of invoice date, all work on CLIENT's project shall cease and all work products and documents shall be withheld until payment is received by TNP. Time shall be added to the project schedule for any work stoppages resulting from CLIENT's failure to render payment within 30 days of invoice date. Interest at the rate of 1½% per month will be charged on all past-due amounts, unless not permitted by law, in which case, interest will be charged at the highest amount permitted by law.

9. **ADDITIONAL SERVICES**
   Services not specified as Basic Services in Scope and Attachment 'A' will be provided by CONSULTANT as Additional Services when authorized by the CLIENT. Additional services will be paid for by CLIENT as indicated in Article II, Compensation.

10. **SALES TAX**
    In accordance with the State Sales Tax Codes, certain surveying services are taxable. Applicable sales tax is not included in the fee set forth and will be added on and collected when required by state law. Sales tax at the applicable rate will be indicated on invoice statements.

11. **SURVEYING SERVICES**
    In accordance with the Professional Land Surveying Practices Act of 1989, the CLIENT is informed that any complaints about surveying services may be forwarded to the Texas Board of Professional Engineers and Land Surveyors, 1917 S. Interstate 35, Austin, Texas 78741, (512) 440-7723.

12. **LANDSCAPE ARCHITECT SERVICES**
    The Texas Board of Architectural Examiners has jurisdiction over complaints regarding the professional practices of persons registered as landscape architects in Texas. The CLIENT is informed that any complaints about landscape architecture services be forwarded to the Texas Board of Architectural Examiners, Hobby Building: 333 Guadalupe, Suite 2-350, Austin, Texas 78701, Telephone (512) 305-9000, Fax (512) 305-8900.

13. **INVALIDITY CLAUSE**
    In case any one or more of the provisions contained in this Agreement shall be held illegal, the enforceability of the remaining provisions contained herein shall not be impaired thereby.

14. **PROJECT SITE SAFETY**
    CONSULTANT has no duty or responsibility for project site safety.

15. **CONSTRUCTION MEANS AND METHODS AND JOBSITE SAFETY**
    Means and methods of construction and jobsite safety are the sole responsibility of the contractor. CONSULTANT shall not: (I) at any time supervise, direct, control, or

have authority over any contractor's work, or (ii) be responsible for construction site safety, the means and methods of construction or the safety precautions a selected or used by any contractor. CONSULTANT shall not be responsible for any decisions, acts or omissions of any constructor.

16. OWNER RESPONSIBILITY

CLIENT shall be responsible for all requirements and instructions that it furnishes to CONSULTANT pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by CLIENT to CONSULTANT pursuant to this Agreement CONSULTANT may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items. CLIENT shall give prompt written notice to CONSULTANT whenever CLIENT observes or otherwise becomes aware of: (i) any hazardous materials or matters that affect the scope or time of performance of CONSULTANT's services; or (ii) any defect or nonconformance in CONSULTANT's services or the contractor's work.

17. SITE VISITS

In the event the Scope of work requires CONSULTANT to make site visits to observe contractor's work on a Project, such visits and observations are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the work, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the work based on CONSULTANT's exercise of professional judgment. CONSULTANT will have no responsibility for any defects in the work not actually discovered by CONSULTANT during such site visits.

18. CHOICE OF LAW; VENUE

This Agreement shall be governed by and construed in accordance with the laws of the State of Texas without regard to applicable principles of conflicts of law. Each of the parties hereto irrevocably consents to the exclusive jurisdiction of any federal or state court located within Tarrant County, Texas, in connection with any matter based upon, arising out of, or contemplated in this Agreement or the matters.

19. DOCUMENTS

A. All documents prepared by CONSULTANT ("Documents") are instruments of service, and CONSULTANT shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the CONSULTANT) whether or not the subject project ("Project") is completed. CLIENT may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project., and will have a limited license to use the Documents only on the Project, extensions of the Project, and for related uses, subject to receipt by CONSULTANT of full payment due and owing for all services relating to preparation of the Documents, may not be used unless completed and not for any work or purpose not intended.

B. CLIENT and CONSULTANT may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.

20. ATTORNEY FEES

In the event that any suit or action over the enforcement, interpretation or other matter emanating from this Agreement, the prevailing party in such dispute shall be entitled to recover from the losing party all fees, costs and expenses of enforcing any right of such prevailing party under or with respect to this Agreement, including without limitation, such reasonable fees and expenses of attorneys and accountants, which shall include, without limitation, all fees, costs and expenses of appeals.

21. MISCELLANEOUS

This Agreement is binding on and will inure to the benefit of each of the parties and their respective successors and legal representatives. Neither party may assign this Agreement in whole or in part without the prior written consent of the other party. There are no third party beneficiaries. Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the parties. non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

ATTACHMENT 'A'
ITEMIZED SCOPE OF SERVICES

Teague Nall and Perkins, Inc., (TNP) shall render the following professional services necessary for the development of the project:

Section 1: Detailed Scope of Services

Task 1: Topographic Design Survey
The CONSULTANT shall provide all office and field work necessary to capture data for an approximate 7600 linear foot corridor for the Fishtrap Road from Union Park Blvd. to FM 1385 project.

a. Topographic Survey:
   i. Data will be extracted from the LiDAR point cloud to determine existing 2D features and planimetrics, as well as generate a triangulated irregular network (TIN) for the project area: including edge asphalt, curb & gutter, sidewalk, fence lines, culverts, & inlets.
   ii. The Topographic Design Survey will identify topography (one foot contours), visible features and above ground improvements including pavement, curbs, structures, fences, trees (6"dbh and greater), sidewalks, drainage features & inverts, slabs around utility features and other pertinent features within the project area as necessary for engineering design.
   iii. The flight will be performed using a DJI Matrice M600 equipped with a Velodyne HDL-32e laser scanner. The acquisition density for this project will be approximately 350 points per square meter. CONSULTANT estimates that approximately 15 ground control points will be required for the project. Ground truthing and supplemental field surveys as necessary to verify ground features and elevations within obscured areas are included herein.
   iv. All survey information provided by the CONSULTANT will be referenced to the Texas Coordinate System of 1983 {North Central Zone No. 4202; NAD83(2011) Epoch 2010} as derived locally from Allterra Central's continuously operating reference stations via real time kinematic survey methods. Elevations will be referenced to NAVD88 datum as derived from RTK observations. Orthometric heights will be calculated by applying the Geoid 12B model to ellipsoid heights. Coordinates will be adjusted to Surface using County Scale Factor.
b. ROW and Boundary Survey
   i. All adjoining properties, subdivisions, and platted lots will be surveyed to establish existing ROW of Fishtrap Road and an estimated 25 parcel/easement documents will be created.
c. Temporary Right of Entry Preparation and Submittal
   i. Documentation shall be provided in conformance with templates available from the Town.

CONSULTANT shall perform all surveying services in accordance with the General Rules and Procedures of Practice, and the Professional and Technical Standards established by the Texas Board of Professional Engineers and Land Surveyors.

Task 2: Subsurface Utility Engineering

The CONSULTANT will provide Subsurface Utility Engineering (SUE) services along Fishtrap Rd as described below. Survey services to tie utility crossing marks and identifiers placed during the subsurface utility designating and locating effort will be provided in this contract.

Quality Level B through D Utility Information & Designation - TNP will provide utility information, up to QL-B, for the following areas:

Fishtrap Rd from Union Park Blvd E to FM 1385 and extending 100 ft along each city street intersection roadway. Approximately 550 feet along FM 1385. SUE limits also include the HOA properties for the following locations:

- Northside – from Lowbranch Trl, east to the property line (approximately 1,600 feet).
- Northside – east and west of Blue Azalea (approximately 650 feet).
- Southside – west of Jasmine Tr to FM 1385 (approximately 2,600 feet).

a. Quality Level D
   i. Conduct appropriate investigations (e.g., owner records, County/City records, personal interviews, visual inspections, etc.), to help identify utility owners that may have facilities within the project limits or that may be affected by the project.
   ii. Collect applicable records (e.g., utility owner base maps, “as built” or record drawings, permit records, field notes, geographic information system data, oral histories, etc.) on the existence and approximate location of existing involved utilities.
   iii. Review records for: evidence or indication of additional available records; duplicate or conflicting information; need for clarification.
   iv. Develop SUE plan sheets and transfer information on all involved utilities to appropriate design plan sheets, electronic files, and/or other documents as required. Exercise professional judgment to resolve conflicting information. For information depicted, indicate: utility type and ownership; date of depiction; quality level(s); end points of any utility data; line status (e.g., active, abandoned, out of service); line size and condition; number of jointly buried cables; and encasement.
b. Quality Level C (includes tasks as described for Quality Level D)
   i. Identify surface features, from project topographic data and from field observations, that are surface appurtenances of subsurface utilities.
   ii. Include survey and correlation of aerial or ground-mounted utility facilities in Quality Level C tasks.
   iii. Survey surface features of subsurface utility facilities or systems, if such features have not already been surveyed by a professional surveyor. If previously surveyed, check survey data for accuracy and completeness.
   iv. The survey shall also include (in addition to subsurface utility features visible at the ground surface): determination of invert elevations of any manholes and vaults; sketches showing interior dimensions and line connections of such manholes and vaults; any surface markings denoting subsurface utilities, furnished by utility owners for design purposes.
   v. Exercise professional judgment to correlate data from different sources, and to resolve conflicting information.
   vi. Update (or prepare) plan sheets, electronic files, and/or other documents to reflect the integration of Quality Level D and Quality Level C information.
   vii. Recommend follow-up investigations (e.g., additional surveys, consultation with utility owners, etc.) as may be needed to further resolve discrepancies.
   viii. Provide Quality Level C to identify overhead utilities on the project and provide the overhead utility information on the SUE plan sheets.
c. Level B (includes tasks as described for Quality Level C)

i. Select and apply appropriate surface geophysical method(s) to search for and detect subsurface utilities within the project limits, and/or to trace a particular utility line or system.
ii. Based on an interpretation of data, mark the indications of utilities on the ground surface for subsequent survey. Utilize paint or other method acceptable for marking of lines.
iii. Unless otherwise directed, mark centerline of single-conduit lines, and outside edges of multi-conduit systems.
iv. Resolve differences between designated utilities and utility records and surveyed appurtenances.
v. Recommend additional measures to resolve differences if they still exist. Recommendations may include additional or different surface geophysical methods, exploratory excavation, or upgrade to Quality Level A data.
vi. As an alternative to the physical marking of lines, the ENGINEER may, with CITY's approval, utilize other means of data collection, storage, retrieval, and reduction, that enables the correlation of surface geophysical data to the project's survey control.

d. Level A
i. Expose and locate utilities at specific locations.
ii. Tie horizontal and vertical location of utility to survey control.
iii. Provide utility size and configuration.
iv. Provide paving thickness and type, where applicable.
v. Provide general soil type and site conditions and such other pertinent information as is reasonably ascertainable from each test hole site.

e. Assumptions
i. Up to Ten (10) Level A test holes are included.
ii. Surveying of overhead utilities is not included in this scope of services.

f. Deliverables
i. Electronic Base Map prepared in AutoCAD – Civil 3D format.
ii. Drawing of the project layout with dimensions and coordinate list.

GENERAL UNDERSTANDING:

The following represents the general understanding between the Client and Engineer regarding the basis and limitations under which these subsurface utility designating and locating services are provided:

a. These services will be conducted and provided in general compliance with CI/ASCE 38-22 (Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data). This standard establishes and defines four quality levels for data collection that are briefly described as:
i. Quality Level D (QL-D) - Generally QL-D indicates information collected or derived from research of existing records and/or oral discussions.
ii. Quality Level C (QL-C) - Generally QL-C indicates information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to QL-D information. Incorporates QL-D information. (Limited in this scope, this scope is to cover underground utility crossings)
iii. Quality Level B (QL-B) - Generally QL-B, also known as "designating" indicates information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Quality level B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents. Incorporates QL-D & QL-C information.
iv. Quality Level A (QL-A) - Generally QL-A, also known as "locating," indicates the precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, at a specific point. Incorporates QL-D QL-C & QL-B information.

b. These services are for the purpose of aiding the design of the subject project by providing information related to subsurface utilities to allow potential utility conflicts to be minimized or eliminated.

c. The Engineer will provide services that meet the standard of care for existing subsurface utility location and mapping as established in CI/ASCE 38-22 by exercising due diligence regarding records research and acquisition of utility information, including visually inspecting the work area for evidence of utilities and reviewing the available utility record information from the various utility owners. However, the Engineer makes no guarantee that all utilities can or will be identified and shown as there still may be utilities within the project area that are undetectable or unknown.
d. Facilities that are discovered through field investigative efforts by the Engineer, but no plan records or ownership data can be identified will be hereafter referred to as unknown. As part of these services, the Engineer will provide QL-C information in the project deliverables for all unknown utilities that may be identified in the field investigation of the project. Designating and/or locating unknown utilities will typically not be part of the initial scope of work but depending on the client's needs can be added as additional work to address concerns of the project impacts of "unknown" facilities.
e. Ground penetrating radar will not be used as a part of the field investigation of the project site unless that use has been specifically addressed with the scope of services described herein.
f. The documented results produced by these services represent a professional opinion and interpretation based upon record information and/or field evidence. These results may be affected by a variety of existing site conditions, including soil content, depth of the utility, density of utility clusters, and electro-magnetic characteristics of the targeted utilities. Also, the lack of and/or poor condition of a trace wire for non-conductive materials such as PVC, HDPE, etc. in most cases will make the successful detection and location of the utility unlikely.
g. The Engineer will apply professional judgment to determine which utilities require additional field effort and/or methods to properly designate and/or locate, most commonly when record drawings are not available. In such cases, the Engineer will provide a recommendation or request for additional services to the Client. Among other methods, a detectable duct rodder or other conductor may be introduced into the line to enable the designation of the utility. This method is dependent upon approval by the utility owner, as well as access to, size and condition of the utility.
h. None of these services are intended to and should not be understood to relieve the Client or others from the responsibility to comply with the statutory requirements related to notifying the proper one-call system(s) in advance of any excavation, grading and/or construction within the project site.

Task 3: Project Management

The CONSULTANT will manage the work outlined in this scope to ensure efficient and effective use of CONSULTANT's and Town's time and resources. CONSULTANT will manage change, communicate effectively, coordinate internally and externally as needed, and proactively address issues with the Town's Project Manager and others as necessary to make progress on the work. This task will more specifically include the following:

a. Managing the Team:
   i. Lead, manage, and direct design team activities.
   ii. Ensure Quality Control / Quality Assurance (QC/QA) is practiced in performance of the work.
   iii. Communicate internally among team members.
   iv. Task and allocate team resources.
b. Communications and Reporting:
   i. Attend a pre-design project kickoff meeting with Town staff to confirm and clarify scope, understand Town objectives, and ensure economical and functional designs that meet Town requirements.
   ii. Attend one constructability review meeting with Town representatives, including Traffic Management, at the 60% submittal milestone.
   iii. Conduct and document bi-weekly project update meetings with Town Project Manager
   iv. Conduct review meetings with the Town at the end of each design phase.
   v. Conduct QC/QA reviews and document those activities.

vi. Prepare invoices, in accordance with **Attachment B** to this Standard Agreement and submit monthly in the format requested by the Town. Multi-month billing is not allowed.
vii. Prepare and submit baseline Project Schedule initially, and Project Schedule updates according to the master project schedule in **Attachment C**
viii. Coordinate with other agencies and entities as necessary for the design of the proposed infrastructure, and provide and obtain information needed to prepare the design.

c. **ASSUMPTIONS**
   i. 1 pre-design project kickoff/chartering meeting
   ii. 1 constructability review meeting during design
   iii. 24 monthly project update meetings during design phase
   iv. 3 plan review meetings
   v. All submittals to the Town will be Quality checked prior to submission.
   vi. Project design phase is anticipated to take twelve 12 months.
   vii. Project construction phase is anticipated to take 18 months.

Task 4: Construction Plans & Bid Documents

The CONSULTANT will develop construction plans for the roadway improvements based on the survey, SUE data, and applicable Town requirements. The overall objective of the project is to expand the vehicular capacity of the roadway by expanding the roadway from two lanes to four. Some portions of the existing corridor do not have sufficient width in the ROW to accommodate the wider roadway sections. Therefore, the overall width of the ROW will need to increase by means of ROW acquisitions. The new road will have to be lowered to allow storm drains and inlets to receive water within the ROW. This may necessitate short walls in some areas and utility relocations. There are currently sidewalks and trails on both sides of the road, therefore no sidewalks are proposed in the roadway section. However, the plans will include limited ramps at intersections as needed for pedestrian crossing of side streets and up to two mid-block crossings protected by rectangular rapid-flashing beacons (RRFB). TDLR review is anticipated and included in this scope because of the sidewalk improvements and RRFBs.

The Construction Plans will more specifically include the following elements:

a. Street paving:
   i. Cover sheet.
   ii. General notes and proposed typical sections for main lanes and turn lanes.
   iii. Paving plan and profiles showing horizontal and vertical designs.
   iv. Design for transitions as required to tie into existing paving as needed.
   v. Paving cross sections.
   vi. Driveway and side street profiles.
   vii. Limited pedestrian improvements including sidewalk ramps and mid-block crossings with RRFBs. TDLR review is expected and included in the scope. The Town will be responsible for the TDLR review fees according to Article II above.
   viii. Special details.
   ix. Paving details.
b. Storm drainage
   i. Drainage area maps showing the existing and proposed drainage conditions. As built plans will be provided by the Town in order to account for offsite drainage into the proposed roadway storm systems.
   ii. Storm drain plans and profiles for the roadway drainage system.
   iii. Plan and profiles for cross culverts.
   iv. Storm drain calculations.
   v. Storm drain details.
c. Utility adjustments
   i. Water lowering details.

1. Up to 3 lowerings anticipated where water mains cross the roadway corridor.
2. Each lowering should be less than 100 feet and shall include plans and profiles of the crossings to ensure clearance from proposed improvements.

ii. No sewer mains have been identified crossing the roadway, therefore no sewer adjustments are included.
iii. No design of other utilities is included.

d. Retaining walls
   i. Plan and profiles for retaining walls along the roadways in locations where needed due to grading constraints in the ROW.
   ii. No walls over 4-feet tall are expected, therefore structural design is not included.
   iii. Retaining wall details.
   iv. Assumes up to 1,000 linear feet of retaining wall.
e. Construction phasing plan.
   i. It is generally assumed that the road will need to be widened on both sides, and the outside lanes can be constructed while keeping traffic on the existing roadway.
   ii. Plans will include general traffic control notes and standard TxDOT traffic control details.
   iii. The contractor will be responsible for detailed traffic control plans and phasing.
f. Pavement marking plans.
   i. Overall signage and pavement marking plans.
   ii. Typical pavement marking details.
   iii. Location, details, and specifications for up to two mid-block pedestrian crossings with RRFB pedestrian signals.
   iv. Signage details.
g. Restoration.
   i. Restoration will be sodding or hydromulch and will be shown and noted in the paving plans.
   ii. All disturbed areas within the medians will be restored by sodding.
   iii. Select areas in the parkways will be identified for sod restoration where turn lanes or lane widening causes disturbance.
   iv. The paving plans will identify the placement of stamped concrete in the medians per Town standard details.
   v. No detailed landscape or irrigation plans will be prepared.
   vi. Design or replacement of existing monument signage is not included.
   vii. No tree plantings are included.
h. Project Manual
   i. The project will be bid and the contract awarded by Denton County.
   ii. The project manual will be based on front-end contract documents provided by the Denton County.
   iii. Technical specifications will refer to NCTCOG standard specifications and TxDOT specifications.
   iv. Bid proposal quantities will be provided in Denton County standard format.
i. Opinion of Construction Cost
   i. The CONSULTANT will provide opinions of cost at each deliverable phase of the project in order to help the Town determine the best options to accomplish the project.

The preparation of the construction plans will include submittals according to the deliverables listed in **Section 2** and the timeline for the project will be according to the schedule provided in **Attachment C**.

Task 5: TxDOT Coordination

This task will consist of assembling plans for TxDOT review of the proposed connection to FM 1385 with respect to the proposed FM 1385 realignment at the east limit of the Fishtrap Road project. This task will also include limited coordination with TxDOT to verify the connection to the TxDOT roadway.

It is expected that the TxDOT improvements will meet the east limit of the Fishtrap Road project, therefore

TxDOT permitting is not included.

Task 6: Geotechnical Engineering
The CONSULTANT will subcontract with a geotechnical engineering firm to perform soil borings and pavement recommendations. This will include the following:

The geotechnical investigation will obtain subsurface data and develop foundation, earthwork, and pavement recommendations for the proposed new residential development. All services provided will be performed in accordance with and limited to those generally accepted engineering standards prevailing at the time and in the area that the work is performed.

a. Field Services
   i. Based on the size and scope of the project, we propose a total of sixteen (17) borings. Fifteen (15) borings will be drilled to depths of about 15 feet at approximately 500-feet spacing along the proposed alignment. The remaining two (2) borings will be drilled at the proposed bridge-class culvert location to depths of about 50 feet below existing grades.
   ii. The borings will be drilled and sampled using either a truck-mounted drilling rig or an ATV-mounted drilling rig is required. Conventional tube or split-barrel (standard penetration test) samples will be collected as appropriate for the soils encountered. Soil and bedrock strata, as expected to be encountered will also be tested periodically in situ using Texas Cone Penetration tests. The recovered subsurface samples will be described, then preserved and labeled as to the appropriate boring number and depth in the field.
   iii. These materials will be described in further detail in the laboratory by a staff geologist or engineer. Groundwater, if observed, will be recorded during and at the completion of drilling. After final groundwater observations, the borings will be backfilled with the excavated cuttings.
b. Laboratory Services
   i. Selected laboratory testing of the recovered samples will be performed to evaluate soil index, volume change, and strength properties of the subsurface materials, and to provide data for analysis. These tests may include but may not be limited to the following:
      1. Moisture content
      2. Atterberg limits
      3. Percent passing No. 200 mesh sieve
      4. Soluble sulfates
      5. Overburden swell tests
      6. Unconfined compression tests (soil)
      7. Overburden swell
      8. PH-Lime Series
   ii. Geotex Engineering will retain recovered samples for 30 days after submission of the geotechnical report unless other arrangements are made by the client.
b. **Engineering Analysis and Report**
   i. Data obtained from the field investigation and laboratory tests will be presented in a geotechnical data report. Information to be provided includes the following:
      1. A plan sheet indicating the approximate location of each boring.
      2. A log of each boring with the boring number, depth of each stratum, material description, soil classification with laboratory test results, and groundwater information.
      3. A discussion of subsurface soil and groundwater conditions.
      4. A brief discussion of the site geology.
      5. Estimates of soil movement related to settlement and expansive soils.
      6. Outline of the engineering properties of the natural soils present and any existing fill, if encountered.
      7. Earthwork recommendations, including material type(s), compaction, and backfill requirements.
      8. Pavement subgrade preparation and pavement section recommendations in accordance with City

of Frisco standards.
9. Electronic copy of the geotechnical report.

Task 7: Floodplain Study
This task will consist of performing hydrological and hydraulic analysis of the existing bridge-class culvert near the east end of the project. More specifically, this will include:

a. Data collection
   i. Perform up to two field visits to evaluate the site conditions and understand drainage patterns, as well as potential construction constraints.
   ii. Obtain record drawings for existing infrastructure and developments in the area, as necessary.
b. Flood study
   i. The CONSULTANT will perform a floodplain analysis of Doe Branch Tributary 3 in the area of Fishtrap Rd crossing. The study has several purposes:
   ii. Develop SCS Unit Hydrograph hydrologic parameters and peak discharges for the Doe Branch Tributary 3 for fully developed conditions to meet the Town's requirements.
   iii. Create HEC-RAS hydraulic model from approximately 500 feet upstream of Fishtrap Road to approximately 600 feet downstream of Fishtrap Road along Doe Branch Tributary 3.
   iv. Compute the expected 100-year fully developed flood elevations along Doe Branch Tributary 3 for existing conditions.
   v. Sizing the proposed culvert/bridge crossing on Fishtrap Rd.
   vi. Prepare exhibits delineated the existing and revised floodplain.
   vii. Prepare a report summarizing the assumptions made, methodologies used, and conclusions reached in the flood study. The report will provide the technical background data to support a request for revising the current floodplain limits within the project area.
   viii. The analysis will be performed in accordance with the Town of Little Elm Engineering Design Standards.

Application fees are not included in the BASIC SERVICES fees and must be paid by the CLIENT prior to submittal.

ADDITIONAL SERVICES: Additional services include, but are not limited to the following:
a. Comprehensive review of hydrologic and hydraulic modeling prepared by others or under separate contract to extents or in capacities other than those stated herein.
b. Engineering design of retaining walls, foundations for structures, soil conditioning plans, landscape features, entry gates or screening walls.
c. FEMA floodplain map amendments or studies (CLOMR, LOMA, LOMR, etc).
d. Water and/or sanitary sewer studies or modeling.
e. TCEQ dam permitting or dam breach analyses.
f. Preparation of emergency action plans or similar.
g. TWDB water rights permitting.
h. Environmental assessments or permitting.

Task 8: Lighting Plans
The CONSULTANT will design lighting for the roadway including luminaire spacing, fixtures, conduits, conductors, and foundation details. Luminaire poles will be placed in the median wherever possible, and on the roadside otherwise for the entire length of the project. The Town will provide luminaire and pole height requirements. No lighting fixtures or equipment will be upgraded or reused. Lighting plans will consist of approximately 10 sheets including plan view layouts with general notes, proposed lighting improvements, and noted removals; and two design summary sheets with Conduit and wiring table, voltage drop calculations, luminaire pole summary, and ground box summary. CONSULTANT will include Town and TXDOT standard

sheets and specifications for the lighting fixtures and poles.

a. Conceptual (30%) Lighting Plans
   i. The CONSULTANT shall prepare a conceptual lighting layout in a strip map with other proposed design elements and existing utilities, and to obtain the Town's approval of the pole locations prior to performing additional design. This submittal will not include calculations. conceptual design plans must be approved by the Town prior to commencing with the preparation of preliminary design plans. Conceptual Design Plans will be prepared by following the steps described below:
   ii. Permanent lighting improvements will be based on survey and as-built information.
   iii. The 30% lighting design plans will detail location of proposed poles and foundations only.
b. Preliminary (60%) Lighting Plans
   i. Preliminary design plans must be approved by the Town prior to commencing with the preparation of pre-final design plans.
   ii. Develop plan sheets for permanent lighting improvements based on survey and as-built information and incorporate comments from the conceptual client review.
   iii. The 60% lighting design plans will detail location of proposed poles and foundations, conduit runs, anticipated ground box locations, electrical service locations, and charts quantifying each pole, foundation, ground box type, conduit lengths and installation methods, and wiring quantities.
c. Pre-Final (90%) Lighting Plans
   i. The pre-final submittal shall include pre-final design plans, response to 60% Town Comments and supporting studies and/or calculations. Pre-final design Plans will be prepared by following the steps described below:
   ii. Attend one design review meeting with Town staff.
   iii. Incorporate review comments on 60% plans.
d. Final (100%) Lighting Plans
   i. This item shall include final design plans, response to 90% Town Comments and supporting studies and/or calculations.
   ii. Incorporate review comments on 90% plans.
   iii. Finalize special technical specifications.
   iv. Prepare estimates of final construction quantities and final opinions of construction costs for traffic signal improvements.

Task 9: Stakeholder Meetings
The CONSULTANT will attend and participate in up to two stakeholder meetings, organized and scheduled by the CLIENT, to present the project to neighborhood stakeholders. This effort includes the production of up to three copies of a project strip map and up to three TNP staff members to attend the meeting and assist with answering questions and fielding feedback from stakeholders at the meeting.

Task 10: Utility Coordination
The CONSULTANT will assist the Town in coordinating with franchise utility owners by providing and distributing utility notification plans, attending utility coordination meetings, and maintaining communications with utility companies as needed to reduce or eliminate utility conflicts during the construction phase of the project.

This task will be billed at HOURLY rates and will be as directed by the Town.

Task 11: Bid Support
The CONSULTANT will provide electronic versions of the bid documents for use in bidding, award of contracts and construction. Denton County will be responsible for advertisement for bids and for dispersing all plans and specifications to prospective bidders. The CONSULTANT will provide technical support to the County during the bidding and contract award phase by responding to questions and preparing or assisting with the

preparation of addenda for distribution to prospective bidders.

This task will be billed at HOURLY rates and will be as directed by the Town and the County.

Task 12: Construction Support
This task will include limited construction support services during construction including the following items:

a. Preconstruction meeting - the CONSULTANT will prepare a pre-construction agenda and print plan sets for the meeting, attend the meeting, and provide meeting notes after the meeting is completed.
b. Notice to Proceed - At the direction of the Town and County, the CONSULTANT will draft a send a 'Notice to Proceed' letter to the contractor.
c. Submittal reviews - The CONSULTANT will review material submittals from the contractor to ensure general compliance with the contract documents and material specifications.
d. Requests for information (RFI) - the CONSULTANT will review and respond to RFIs from the contractor in a timely fashion to allow construction to continue. RFIs that require plan changes will be returned with revised plan sheets annotated to indicate revisions and the date of the revised sheets.
e. Pay application reviews - The CONSULTANT will visit the project site and review monthly pay application requests from the contractor to ensure the amounts charged correlate with work completed and to verify that there are no calculation errors in the pay application.
f. Change orders - The CONSULTANT will review and verify that any change order quantities and unit prices correlate correctly with the contract documents and any project scope changes approved by the Town and the County. The CONSULTANT will provide change order forms for owner, contractor, and engineer approvals
g. Final walk-through - The CONSULTANT will participate in a final walk though of the project site to confirm the constructed improvements are complete and reasonably match the construction plans. Based on observations during the walk-through, the CONSULTANT will prepare a punch list to document any deficient items and distribute the punch list to the owners, and the contractor to have the deficiencies corrected.
h. Record Drawings - The CONSULTANT will prepare record drawings based on project construction records maintained and provided by the Contractor. These drawings will be based on information provided by the Contractor and any documented plan changes during construction. Field verification of actual construction is not included in this item. In the event the Contractor claims no changes were made to the plans during construction, Contractor will provide a letter on their letterhead positively stating that all construction was done per the construction documents.

   This task will be billed at HOURLY rates and will be as directed by the Town and the County.

SECTION 2: Deliverables

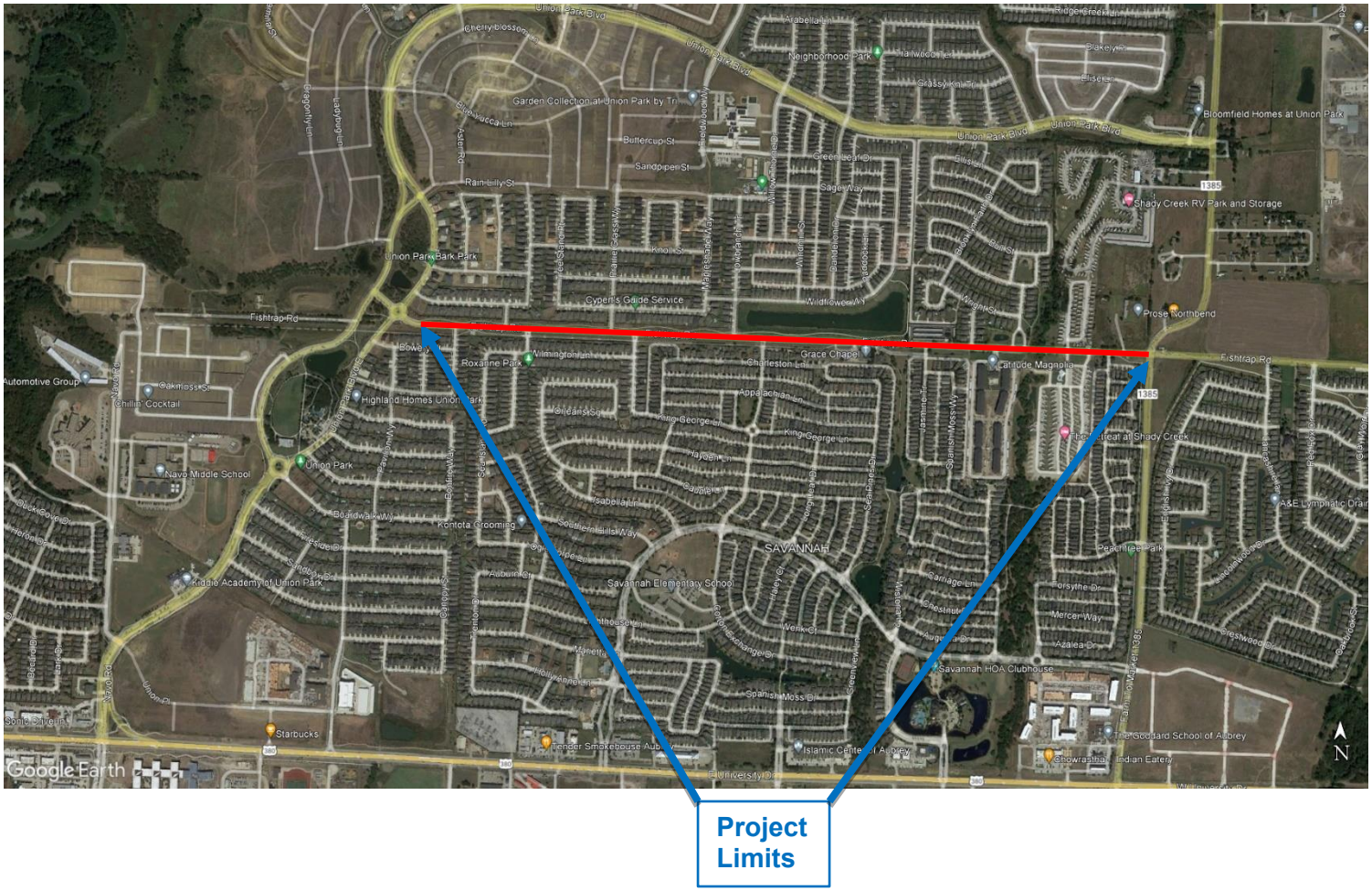
Deliverables:

TNP will provide the following deliverables:

a. Schematic Plans (30%):
   i. Preliminary roadway strip map and typical sections
   ii. Side street and driveway connections
   iii. Potential retaining wall locations
   iv. Schematic layout of street lighting
   v. Opinion of construction cost
b. Preliminary Plans (60%):
   i. Preliminary construction plans for all project elements
   ii. Standard details
   iii. Preliminary technical specifications
   iv. Conceptual traffic signal plans
   v. Opinion of construction cost
c. Prefinal Plans (90%):
   i. Prefinal construction plans for all project elements
   ii. Standard details
   iii. Project specific details
   iv. Prefinal project manual and technical specifications
   v. Opinion of construction cost
d. Bid Documents (100%):
   i. Sealed Construction Plans
   ii. Opinion of Construction Cost
   iii. Project Manual (Contract documents and technical specification)

The bid documents will include technical specifications, estimated quantities, instructions to bidders regarding insurance and bonds, maps identifying the streets to be rehabilitated, and plans and details as necessary to convey the intent of the work. The CONSULTANT will prepare an Opinion of Probable Construction Cost based on the proposed improvements.

SECTION 3: Project Location Map



ATTACHMENT 'A-1'
ADDITIONAL SERVICES

Additional Services:
Following is a list of services which are not included in the scope of services. These services can be added to the project if needed. Additional services shall be billed at hourly rates according to the terms defined in Attachment C.

a. Drainage maps, hydrology, and drainage studies other than what is included in Basic Services
b. Roadway profiles, corridor models, and cross sections
c. Driveway profiles and grading plans
d. Water design and construction plans
e. Sewer design and construction plans
f. Traffic signal design and construction plans
g. Traffic impact analysis
h. Traffic signal timing
i. Traffic operations analysis
j. Traffic signal interconnection, ITS, or other connectivity
k. FEMA coordination, LOMR or CLOMR applications
l. Utility relocation design
m. Roadway capacity calculations
n. Roundabout design
o. Monument signs
p. Construction support services other than what is included in Basic Services
q. ROW and easement acquisitions support services
r. Landscaping plans
s. Irrigation plans
t. Construction staking
u. Construction inspections services
v. Materials testing
w. Coordination with municipal or governmental agencies other than the Town
x. Detention pond design
y. Downstream assessments and timing studies

ATTACHMENT 'B'
STANDARD RATE SCHEDULE

Effective January 1, 2024 to December 31, 2024

Engineering/Landscape Architecture/ROW	Hourly Billing Rate
Principal or Director	$310.00
Team Leader	$285.00
Senior Project Manager	$280.00
Project Manager	$240.00
Senior Engineer	$290.00
Project Engineer	$190.00
Senior Structural Engineer	$295.00
Structural Engineer	$210.00
Engineer III/IV	$170.00
Engineer I/II	$145.00
Senior Landscape Architect/Planner	$290.00
Landscape Architect / Planner	$210.00
Landscape Designer	$150.00
Senior Designer	$195.00
Designer	$170.00
Senior CAD Technician	$165.00
CAD Technician	$130.00
IT Technician	$190.00
Clerical	$90.00
ROW Manager	$265.00
Senior ROW Agent	$195.00
ROW Agent	$155.00
Relocation Agent	$195.00
ROW Admin	$110.00
Intern	$90.00

Surveying	Hourly Billing Rate
Survey Manager	$310.00
Registered Professional Land Surveyor (RPLS)	$265.00
Field Coordinator	$160.00
S.I.T. or Senior Survey Technician	$155.00
Survey Technician	$140.00
1-Person Field Crew w/Equipment**	$170.00
2-Person Field Crew w/Equipment**	$200.00
3-Person Field Crew w/Equipment**	$225.00
4-Person Field Crew w/Equipment**	$245.00
Flagger	$65.00
Abstractor (Property Deed Research)	$105.00
Small Unmanned Aerial Systems (sUAS) Equipment & Crew	$475.00
Terrestrial Scanning Equipment & Crew	$290.00

Utility Management, Utility Coordination, and SUE	Hourly Billing Rate	
Senior Utility Coordinator	$190.00	
Utility Coordinator	$170.00	
SUE Field Manager	$190.00	
Sr. Utility Location Specialist	$180.00	
Utility Location Specialist	$135.00	
1-Person Designator Crew w/Equipment***	$165.00	
2-Person Designator Crew w/Equipment***	$220.00	
2-Person Vac Excavator Crew w/Equip (Exposing Utility Only)	$335.00	(4 hr. min.)
Core Drill (equipment only)	$830.00	per day
SUE QL-A Test Hole (0 < 8 ft)***	$2,400.00	each
SUE QL-A Test Hole (> 8 < 15 ft)***	$2,900.00	each

Construction Management, Construction Engineering and Inspection (CEI)	Hourly Billing Rate
Construction Inspector I/II	$120.00
Construction Inspector III	$140.00
Senior Construction Inspector	$160.00
Construction Manager	$235.00
Senior Construction Manager	$280.00

Direct Cost Reimbursables

A fee equal to 3% of labor billings shall be included on each monthly invoice for prints, plots, photocopies, plans or documents on CD, DVD or memory devices, and mileage. No individual or separate accounting of these items will be performed by TNP.

Any permit fees, filing fees, or other fees related to the project and paid on behalf of the client by TNP to other entities shall be invoiced at 1.10 times actual cost.

Notes:

All subcontracted and outsourced services shall be billed at rates comparable to TNP's billing rates above or cost times a multiplier of 1.10.

* *Rates shown are for 2024 and are subject to change in subsequent years.*

** *Survey equipment may include truck, ATV, Robotic Total Station, GPS Units and Digital Level.*

*** *Includes crew labor, vehicle costs, and field supplies.*

ATTACHMENT 'B-1'
SAMPLE INVOICE

Teague, Nall & Perkins, Inc.
5237 N. Riverside Drive
Suite 100
Fort Worth, TX 76137
817-336-5773

Wesley Brandon, PE
Town Engineer
Town of Little Elm, Texas
100 West Eldorado Parkway
Little Elm, TX 75068

Invoice number 01
Date: July 10, 2023

Fishtrap Road Widening and Reconstruction
TNP Project Number LIT23419

Professional services rendered for the month ending June 30,2023

Description	Contract Amount	Percent Complete	Total Billed	Prior Billed	Current Billed
Design and Bid Phase Services	130,000.00	57.92	75,300.00	62,000.00	13,300.00
Survey Services	18,600.00	100.00	18,600.00	18,600.00	0.00
Subsurface Utility Engineering	14,500.00	100.00	14,500.00	14,500.00	0.00
Total	163,100.00	66.46	108,400.00	101,593.00	14,280.00

Invoice total **13,300.00**

Please show project number on all payments of this statement

ATTACHMENT 'C'
PROJECT SCHEDULE

The CONSULTANT shall endeavor to accomplish the work in accordance with the following schedule:

1. Work will commence within 14 calendar days of notice to proceed.

2. Perform field surveys, SUE field work, geotechnical borings, and data collection in 60 calendar days from Authorization to Proceed by Client and survey Right-of-Entry permission letters from property owners, whichever occurs latest.

3. Perform conceptual design in 60 calendar days from completion of topographic survey

4. Perform preliminary design in 90 calendar days from approval of conceptual design.

5. Provide final design and specifications in 60 calendar days from approval of preliminary design plans.