



June 1, 2022
P47512.001

Mr. Romin Khavari, P.E., CFM
City Engineer
City of Grand Prairie
206 W. Church Street
Grand Prairie, Texas 75053-4045

RE: Great Southwest Parkway Schematic and Noise Wall Study & Design

Dear Mr. Khavari:

Halff Associates, Inc. (Halff) is pleased to submit the updated proposal for engineering services for the City of Grand Prairie's Great Southwest Parkway Schematic and Noise Wall Study & Design project which addresses the comments received on May 18, 2022 and May 25, 2022.

Halff is highly qualified to excel on this project. Below is a general statement of Halff's qualifications and history working with the City of Grand Prairie.

David Burkett will be the project manager for this work. He has over 20 years of engineering experience related to roadway, drainage, and utility design. David is a Transportation Team Leader in Halff's Fort Worth office. Recent projects he has successfully delivered for the City of Grand Prairie include Palace Parkway, IH 20 Right Turn Lake at Lake Ridge Parkway, N.E. 15th Street, Gifford Street, Bagdad Road, IH 30 frontage roads, and multiple feasibility studies. David also completed the feasibility study for this portion of Great Southwest Parkway in 2015. Furthermore, David also has worked with Dallas County as the Project Manager to design Wildlife Parkway.

Other Halff key staff assisting David on the project will be Stephen Crawford, Connor Guerrero, Scott Rushing, and Cameron Vester. Stephen will serve as Principal-in-Charge and provide support for David as needed. Stephen has extensive experience in Grand Prairie including plan review assistance supporting City staff with a total of 26 years working with Grand Prairie. Connor Guerrero will serve as the Deputy Project Manager and has 6 years' experience in transportation design. He also was the lead design engineer on the City's IH-20 Right Turn Lane at Lake Ridge Pkwy project and has experience as Lead Designer/Deputy Project Manager on several high profile TxDOT projects including US 77 in Corpus Christi and US 287 in Fort Worth. Scott Rushing and his 14 years' experience has overseen numerous hydraulics and hydrology projects in Grand Prairie. Cameron Vester and his 12 years' experience has significant experience structures including many in Grand Prairie.

Jay Sappington at CMJ will also be assisting David and Halff to provide geotechnical services. Jay has worked on numerous projects in Grand Prairie and many of those with David and Halff Associates.

As you can see, Halff has the qualifications to be highly successful to complete the Great Southwest Parkway project and provide the City of Grand Prairie with high quality deliverables.



David and Halff confirm that we have the availability and resources to assign to this project in order to provide the City of Grand Prairie a successful project delivery.

For your review and consideration, I am attaching Exhibit "A", including the scope of work, basis of compensation, organizational structure, and project schedule, all suitable for inclusion into the City standard Consultant Agreement. Please feel free to contact me at 817-764-7443 if you have any questions.

Sincerely,
HALFF ASSOCIATES, INC.
TBPELS Firm No. 312

A handwritten signature in black ink that reads "David A. Burkett".

David A. Burkett, P.E.
Transportation Team Leader, Fort Worth Office

EXHIBIT "A"

GREAT SOUTHWEST PARKWAY SCHEMATIC AND NOISE WALL STUDY & DESIGN

ATTACHMENT "A"

SCOPE OF WORK

Attachment "A" is the scope of work to be performed by Halff Associates, Inc. (Halff) for the City of Grand Prairie (City) to develop a schematic for Great Southwest Parkway and conduct a noise study and prepare bid documents for the construction of a noise wall at an industrial development north of Avenue K and assist with bidding and construction services.

A. GENERAL DESCRIPTION:

This project involves the development of a schematic for Great Southwest Parkway as well as an industrial noise study and construction of a noise wall between Avenue K and Fountain Parkway.

Due to flooding issues downstream of the project, a drainage alternative feasibility study is also included with this proposal.

B. ASSUMPTIONS:

1. Northern Applied Sciences Inc. (NAPSCI) will be working as a subconsultant to provide services for the noise study. As the firm is not local, they will be coordinating remotely with Halff to convey their services to the City and to the Public. See attached NAPSCI proposal for more details.
2. Halff shall prepare plans, specifications, and opinions of probable construction costs. These will contain noise wall design, ditch profiles and grading, drainage design and erosion control plans.
3. There are no utilities in the vicinity of the noise wall, therefore, Utility Coordination and Subsurface Utility Engineering (SUE) services are not needed.
4. This project is in the same area as a planned future extension of Great Southwest Parkway. If built, under a separate project, Great Southwest Parkway will be designed as a Principal Four-Lane Divided Arterial (P4D). This project will take this possible future roadway into account, and ensure that the noise wall being constructed is compatible both with and without the roadway in place.
5. There is a development that is already under construction in the parcel directly north of Avenue K. The development has dedicated 120-feet of right of way to the City and is constructing half of the divided roadway with three lanes from Avenue K up to the last warehouse driveway. The noise study and noise wall design will be based off the latest construction plans provided by the development (released for construction on March 24, 2022).
6. Geotechnical engineering services will be provided for the project by CMJ Engineering under a subcontract with Halff. See attached CMJ Engineering proposal for more details.

7. A retaining wall will be required on the east side of the future Great Southwest Parkway extension. There likely will be a noise wall proposed in this area. The noise wall at this location will be designed to take the future roadway into account and act as a retaining wall if the roadway is constructed.
8. Dependent on the noise study, construction plans for either a single wythe masonry screen wall or a cast-in-place concrete acoustic noise barrier will be prepared. Either is assumed to have a height of 10 to 15 feet and a maximum length of 1,600 feet. Dependent on the geotechnical recommendations, the screen wall would be founded on suspended grade beams supported by drilled shafts, and the noise barrier would be founded on either a continuous spread footing or supported by drilled shafts.
9. The City of Grand Prairie will provide meeting space for the planned two (2) Public Meetings. Coordination and fees associated with identifying a public meeting space are not included in this scope and fee. Should the City desire that Halff assist with securing a meeting venue, Halff can provide a fee proposal for the additional work at that time.
10. The methodology utilized for bidding the contract is assumed to be the standard low bid method. This scope and fee does not include efforts for completing an alternative bid process of competitive sealed bids. Should the City desire to move forward with competitive sealed bids, Halff can provide a fee proposal for the additional work at that time.

C. SCOPE OF WORK

1. Project Administration
 - a. Attend project meetings with the City at regular intervals. Halff will prepare meeting agenda and meeting minutes for each meeting. Up to ten (10) project meetings are included over the course of the project's design.
 - b. Perform field reconnaissance of the proposed corridor and prepare a photographic record of major features. Up to three (3) site visits, or more as needed are included over the course of the project's design.
 - c. Conduct internal meetings to discuss objectives and solutions.
 - d. Internally perform objective Quality Assurance/Quality Control reviews from an independent internal QAQC manager at each milestone submittal (30%, 60%, 90%, and 100%)
2. Design Surveys – Halff will perform all design surveys. Design survey will be conducted within the existing right-of-way that is to be dedicated by the warehouse development north of Avenue K. This property extends 1600' north of Avenue K.
 - a. Obtain right of entry and permission to survey on private property from property owners. Right of entry will include language for SUE and site observation purposes.
 - b. Verify and establish horizontal and vertical control utilizing City GPS monuments as a reference.
 - c. Perform a complete and accurate boundary survey to determine the limits of existing right of way, easements, and parcels. This will include obtaining deeds, easements, plats and other property records from the County Deed Records.
 - d. Perform a complete and accurate topographic survey of existing features.

- i. This will be performed to 10' beyond the existing 120' ROW along the proposed future corridor route (where Halff is feasibly able to obtain access).
 - e. Process data and construct digital terrain model (DTM) and TIN.
 - f. Stake boreholes for geotechnical investigation.
 - g. Limited supplemental survey (as necessary) to obtain changes in existing conditions through the life of the project. Additional field survey will be limited to two days of field work.
 - h. Exclusions
 - i. The area north of the development will not be surveyed, nor will the roadway intersections at Avenue K and Fountain Parkway. Any additional areas outside of surveyed areas will be supplemented with LiDAR.
- 3. Geotechnical Engineering – see attached CMJ Engineering, Inc. proposal for scope of work.
- 4. Schematic Preparation – Halff shall develop a design schematic for Great Southwest Parkway.
 - a. A schematic will be developed for Great Southwest Parkway. This schematic will be based on the Great Southwest Parkway Alignment Study completed in 2015 (W.O. #615.76). The schematic will build upon the past study by incorporating:
 - i. Current survey and topography
 - ii. New development/portion of Great Southwest Parkway currently under construction.
 - iii. Noise wall along the roadway
 - b. Engineer's Opinion on Probable Construction Cost – Provide updated estimate to the City upon schematic submittal.
 - c. Natural resource impacts will be evaluated at this stage
 - i. Review historical aerial imagery and conduct a LiDAR topography data analysis to identify obvious or suspected areas that would be classified as a stream, open water, or wetland. The presence/absence of wetlands will be verified consistent with USACE protocol for wetland delineations.
 - ii. This exercise will entail a field delineation to determine the presence of potential water of the United States.
 - iii. A summary report with maps and site photographs will be prepared describing the methodology and results of the investigation, and potential jurisdiction under Section 404 of the Clean Water Act. This assessment will serve as information purposes only to document that the project is authorized by Nationwide Permit 14 – Linear Transportation Projects without the need for a pre-construction notification to the U.S. Army Corps of Engineers.
- 5. Noise Study
 - a. Commercial/Industrial Noise Study – See attached Northern Applied Sciences, Inc. proposal
 - b. Support for noise study – Services to be provided by Halff Associates, Inc.
 - i. Support to included coordination with Northern Applied Sciences, provided noise evaluation expertise, coordination with City staff, and attendance of public meetings to provided noise study expertise.
- 6. Public Meeting – Halff will conduct two (2) public meetings. One will be after the schematic phase is completed, and another after the 90% PS&E design.

- a. This task includes compiling a mailing list of adjacent property owners and create a corresponding map.
 - b. Prepare public meeting exhibits and handouts.
 - c. Attend a meeting with city and obtain approval for exhibits and other materials.
 - d. Prepare notice of public meeting. Submit the notice to the city for review. Halff will publish the notice in a local newspaper (English and Spanish) once in advance of the public meeting as well as mail notices to adjacent property owners, elected officials, and agency staff.
 - e. Halff will provide up to four staff to perform registration and answer questions (bilingual staff can be available).
 - f. Develop and submit to the city a written summary of the public meeting, including when the meeting was conducted, where the meeting was held and who was in attendance. The public meeting documentation shall also include the comments received and responses to comments, as well as modifications, if any, to the project resulting from comments received.
 - g. Exclusions
 - i. Halff will not need to reserve a venue for the Public Meeting, as it is assumed there will be a venue provided by the City.
7. Drainage Study and Downstream Assessment – Perform a drainage study and downstream assessment to evaluate potential adverse impacts to existing storm drain systems, channels, and property resulting from the roadway extension. This includes evaluation of the Goodwin Branch.
 - a. The drainage study will be updated as needed at each milestone submittal (30%, 60%, 90%, 100%).
 - b. Halff will leverage the City’s Internal Storm Drain Master Plan model to assist with the downstream assessment. This scope assumes the downstream limits of the drainage study will be the confluence of Goodwin Branch with Johnson Creek.
 - c. Prepare a brief drainage study report describing methodology and results with supporting tables and figures.
 - d. The study will evaluate the fully developed condition and provide recommendations for the drainage system design as to not adversely impact the properties upstream or downstream.
8. Drainage Alternative Feasibility Study – The City has expressed concerns over flooding issues downstream of the project in existing conditions. A drainage alternative evaluation will be prepared under this item to conceptualize solutions to these existing flooding issues. This scope would not include construction plan preparation of these solutions but would take them into consideration for future compatibility with this project.
 - a. Evaluate up to two (2) detention alternatives to mitigate potential adverse from the roadway extension.
 - b. Evaluate potential future storm drain diversion sizing and alignment towards Johnson Creek to support the future extension of Great Southwest Parkway south of Avenue K.
9. Noise Wall Aesthetic Study and Design – Halff shall prepare a form lined aesthetic design for both sides of the noise wall, dependent on City and Public outreach.
 - a. Project Management and Meetings

- i. Public Arts Committee Workshop – Halff will organize an in-person workshop with the Public Arts Council. A workshop will occur after the site investigation and base map preparation but before conceptual design work begins.
 - ii. City Council / Park Board Presentation – Halff will make separate presentations to City Council and Parks Board. A power point presentation will be prepared to present the project deliverables once the initial concept plans have been completed. The goal of these presentations is to gather feedback and to obtain confirmation that the conceptual design is consistent with the City Council and Park Board vision for the noise wall aesthetics. Notes will be taken by the Halff at these presentations to record items discussed and decisions made and will be delivered in digital format to the City.
- b. Site Investigation – Halff will conduct one (1) site investigation visit to noise wall locations to confirm existing conditions. The impacts and opportunities that results from this site visit will be documented for use in the concept plan preparation process. Photographs will be taken during this site investigation visit to record existing conditions. Site investigation will take note of existing plant material, hardscape improvements, regulatory and informational signage in the median and right-of-way of each of the noise wall locations. Site investigation will also evaluate surrounding improvements at adjacent properties to establish a contextual snapshot that could have an impact on the proposed design of the noise wall improvements.
- c. Schematic Design
 - i. Public Arts Council Workshop
 - 1. Halff will participate in an in-person Public Arts Council workshop to establish an understanding between the design team and the Grand Prairie Public Arts Council on the direction they want to see the schematic design to take for the noise walls.
 - 2. Workshop agenda will be focus on the following items:
 - a. Discussion on how best to display them for optimal visibility.
 - b. General discussion of the locations and what can be done to improve the aesthetic appeal of these areas.
 - 3. Notes will be taken by Halff at this workshop to record items discussed and decisions made and will be delivered in digital format to the City.
 - ii. Initial Schematic Design
 - 1. A color rendered schematic design will be prepared for each location using the base map combined with information gathered from the kickoff meeting and the public arts workshop. Schematic design will include the following components:
 - a. Location and orientation of noise walls
 - 2. In addition to the illustrative plan view up to three (03) illustrative perspectives will be prepared that illustrate the view of the noise walls as motorists are passing by on the roadway and to illustrate upgrades.
 - iii. Initial Schematic Design Review Meeting – Halff will conduct one (01) initial schematic design review meeting with City Staff to discuss the approach taken to produce the plan view and perspectives for each noise wall and receive comments. Halff will take notes of items discussed and decisions made during this review meeting and will distribute these notes to the City.

- iv. Revised Schematic Design – Based on comments received during the initial schematic design review meeting the plan view and perspectives for each noise wall will be revised to incorporate review comments.
 - v. Schematic Design Presentation – Halff will prepare a power point presentation of the schematic design plan view and perspectives for noise walls to present to the Park Board. A separate presentation will be made to the City Council. Notes will be taken at these presentations to record items discussed and decisions made at this presentation.
 - vi. Final Schematic Design – Based on comments received at the Park Board and City Council presentations the revised schematic design will be modified to address comments received at each of these presentations. The final schematic design submittal will include the following deliverables for each noise wall:
 - 1. Color rendered plan view that show the noise wall location and orientation.
 - 2. Up to three (03) illustrative perspectives.
 - vii. Deliverables
 - 1. Public Arts Committee Workshop noise wall agenda and power point presentation;
 - 2. City Council noise wall agenda and power point presentation;
 - 3. Park Board noise wall agenda and power point presentation;
 - 4. Site Investigation maps, graphics and PDF files;
 - 5. Initial Schematic Design, rendered graphics in 24 x 36 format and PDF files;
 - 6. Revised Schematic Design, rendered graphics in 24 x 36 format and PDF files;
 - 7. Final Schematic Design, Up to three illustrated perspectives on 24 x 36 format and PDF files.
10. Construction Plans – The Consultant shall develop construction plans for review, permitting, bidding, construction, inspection and record keeping. Construction plans will be submitted to the City at each milestone (30%, 60%, 90% and 100%) for review.
- a. The construction plans will consist of numerous sheets as follows. In general, construction plans shall be consistent with normal practice for projects of this nature unless stated otherwise. Sheets will be prepared at full-size 22"x34" which can be reduced to half size 11"x17" as needed. Scales below apply to full-size sheets (22"x34").
 - i. Cover Sheet and Index
 - ii. Project Layout Sheet and Survey Control
 - iii. General Notes and Legend
 - iv. Removal Plan (1"=50')
 - v. Ditch Plan and Profile (1"=20' H; 1"=4' V)
 - vi. Grading Plan (1"=20')
 - vii. Screen Wall or Noise Barrier Plan and Profile, Sections and Details – Dependent on the noise study
 - viii. Noise Wall Aesthetic Design – See Item 9
 - ix. Drainage Area Map
 - x. Drainage Calculations
 - xi. Drainage Plan and Profile (1"=20' H; 1"=4' V)
 - xii. Erosion Control Plan
 - xiii. City of Grand Prairie Standard Details

- xiv. Miscellaneous Details
 - xv. Ditch and Noise Wall Cross Sections
 - b. Engineer's Opinion on Probable Construction Cost – Provide updated estimate to the City along with each milestone submittal (30%, 60%, 90% and 100%).
 - c. Project Manual – A project manual will be prepared using the latest standard City of Grand Prairie format. The latest edition of the North Central Texas Council of Governments Standard Specifications for Public Works Construction will be used for the technical specifications and supplemented as necessary for any work special to the project. The project manual will be submitted to the City at 60%, 90% and 100% submittals. The Project Manual will include the following:
 - i. Notice to Bidders
 - ii. Bid Proposal
 - iii. Bid Bond
 - iv. Standard Form of Agreement
 - v. Performance Bond and Payment Bond
 - vi. Maintenance Bond
 - vii. General Conditions of Agreement
 - viii. Special Conditions of Agreement
 - ix. Specific Technical Notes applicable to each bid item
 - x. Appendices
 - d. Printing
 - i. Provide up to three (3) hard copies of 22"x34" full size plans at each milestone submittal.
 - ii. Provided up to three (3) hard copies of the project manual at the 60%, 90% and 100% submittals.
 - iii. Each submittal will also be provided electronically as pdfs.
 - e. Exclusions
 - i. Landscape design and plans (such as landscape beds along wall) are not included with this Scope of Services. Medians and parkways will be vegetated with sodding only.
11. Bidding and Construction – Upon City approval of the final plans, Halff will print up to five (5) sets of half-size (11"x17") plans and project manuals for use in the bidding. Additionally, one (1) set of full size (22"x34") final plans will be provided as well as electronic files of the plans and specifications in AutoCAD and PDF format. All bid procurements, addenda and bid tabulations shall be provided in CivCast or in person. The City will advertise the project. During bidding and construction, Halff will provide the following services:
- a. Bidding
 - i. Prepare an agenda and conduct the pre-bid meeting.
 - ii. Prepare the official list of meeting attendees.
 - iii. Respond to bidder questions with City approved responses utilizing CivCast. Halff to set up CivCast account for project.
 - iv. Prepare bid addenda as required.
 - v. Tabulate bids.
 - vi. Phone screening of Contractor references.
 - vii. Prepare a letter of recommendation for the award of contract.
 - b. Construction Observation

- i. After project award, provide one digital copy (in AutoCAD and PDF format) and three (3) half size hard copies of the conformed project documents (plans and project manual).
 - ii. Prior to starting construction provide one digital copy (in AutoCAD and PDF format) and hard copies of the conformed construction documents as follows:
 - 1. Ten (10) half size copies of plans
 - 2. Two (2) full size copies of plans
 - 3. Size (6) copies of the project manual
 - iii. Prepare agenda and conduct pre-construction meeting and monthly progress meetings as required. Document each meeting with written minutes.
 - iv. Visit the project site at appropriate intervals as construction proceeds to observe and report on the progress and quality of the executed work. In performing these services the Consultant will endeavor to protect the City against defects and deficiencies in the work of the Contractor. However, the Consultant cannot guarantee the performance of the Contractor, nor be responsible for the actual supervision of the construction operations or for the safety measures that the Contractor takes or should take.
 - v. Review shop drawings and Contractor submittals.
 - vi. Monitor laboratory test reports on materials and equipment.
 - vii. Prepare and review Change Orders between the Contractor and the City. Prepare plan revisions as required that are part of the change order.
 - viii. Attend final walkthrough and prepare a punch list report.
 - ix. Prepare an Acceptance Letter stating that project is complete and no punch list items remain.
 - c. Record Drawings – Based on information supplied by the Contractor, plan revisions and site visits, Halff shall provide the City with record drawings in electronic format (AutoCAD and PDF). Halff is not responsible for any differences between the record drawings and final construction.
 - d. Exclusions
 - i. Halff will not provide construction inspection services for the project. Halff can provide a fee proposal for these services should the City want to move forward with this item.
 - ii. The City will be responsible for hiring a third party testing lab for obtaining materials testing of backfill, density, asphalt, concrete pavement, and concrete structures. Halff will only be responsible for reviewing laboratory test reports conducted by the materials testing consultant to verify that the results conform to the contract documents.
 - iii. Construction Staking – The Contractor will provide construction staking.
 - iv. Services pertaining to Halff assisting with the competitive sealed bid methodology. If the City desires to utilize this bid methodology, Halff can prepare a fee proposal for providing the additional work at that time.
12. Right of Way Document Preparation – If needed, based on the noise study, if it is found that the noise wall should be located elsewhere than inside of the existing right of way for Great Southwest Parkway, additional right of way may be needed. Two (2) documents have been provided under this line item.
- a. Right of Way Exhibits

- i. Area required
 - ii. Area remaining
 - iii. Parcel number
 - iv. Property owner name, mailing address, volume and page of deed
 - v. Existing easements
 - vi. All of the above shall be placed on one page of 8-1/2"x11" mylar and signed and sealed by a registered professional land surveyor.
- b. Legal descriptions for each parcel shall reference the volume, page and owner of the parent tract and shall be incorporated into a standard City easement instrument document. Individual parcels will be cross-referenced on the construction plans.
- c. Iron pins for the new right of way line will be set based on the alignment of the proposed roadway.
- d. Exclusions
 - i. The City will prepare the required ROW instruments for ROW acquisition.
 - ii. Right of way acquisition services are not included within this Scope of Services. Should the City determine that right of way acquisitions services are needed, Half can provide a fee proposal for the additional work.

EXHIBIT "A"
GREAT SOUTHWEST PARKWAY SCHEMATIC AND NOISE WALL STUDY & DESIGN
ATTACHMENT "B"
BASIS OF COMPENSATION

Attachment "B" is the basis of compensation for work to be performed by Halff Associates, Inc. (Consultant) for the City of Grand Prairie (City) to prepare design plans and assist in construction.

LUMP SUM ITEMS

1. Project Administration	\$ 31,500.00
2. Design Surveys	\$ 24,100.00
3. Geotechnical Engineering (CMJ Engineering)	\$ 7,200.00
4. Schematic Preparation	\$ 16,000.00
5. Noise Study	\$ 16,400.00
6a. Public Meeting 1 (After Schematic)	\$ 32,500.00
6b. Public Meeting 2 (After 90% PS&E)	\$ 32,500.00
7. Drainage Study and Downstream Assessment	\$ 31,800.00
8. Drainage Alternative Feasibility Study	\$ 8,800.00
9. Noise Wall Aesthetic Study and Design	\$ 45,500.00
10. Construction Plan Preparation	\$ 114,300.00
11. Bidding and Construction	\$ 27,800.00
SUBTOTAL - LUMP SUM FEE	\$ 388,400.00

UNIT PRICE FEE

12. Right of Way Document Preparation	\$ 6,000.00
SUBTOTAL - UNIT PRICE FEE	\$ 6,000.00

TOTAL PROJECT COSTS \$ 394,400.00

All work is to be completed by Halff Associates except the geotechnical engineering which will be completed by CMJ Engineering, and the noise study which will be completed by Northern Applied Sciences, Inc.

Lump Sum Fees will be billed monthly based on percent completion of the tasks and may include partial payments of the total amounts designated for each item, for a maximum not-to-exceed fee of \$388,400.

Unit Price Costs will be billed monthly on an as-needed basis, for a maximum not-to-exceed fee of \$6,000.

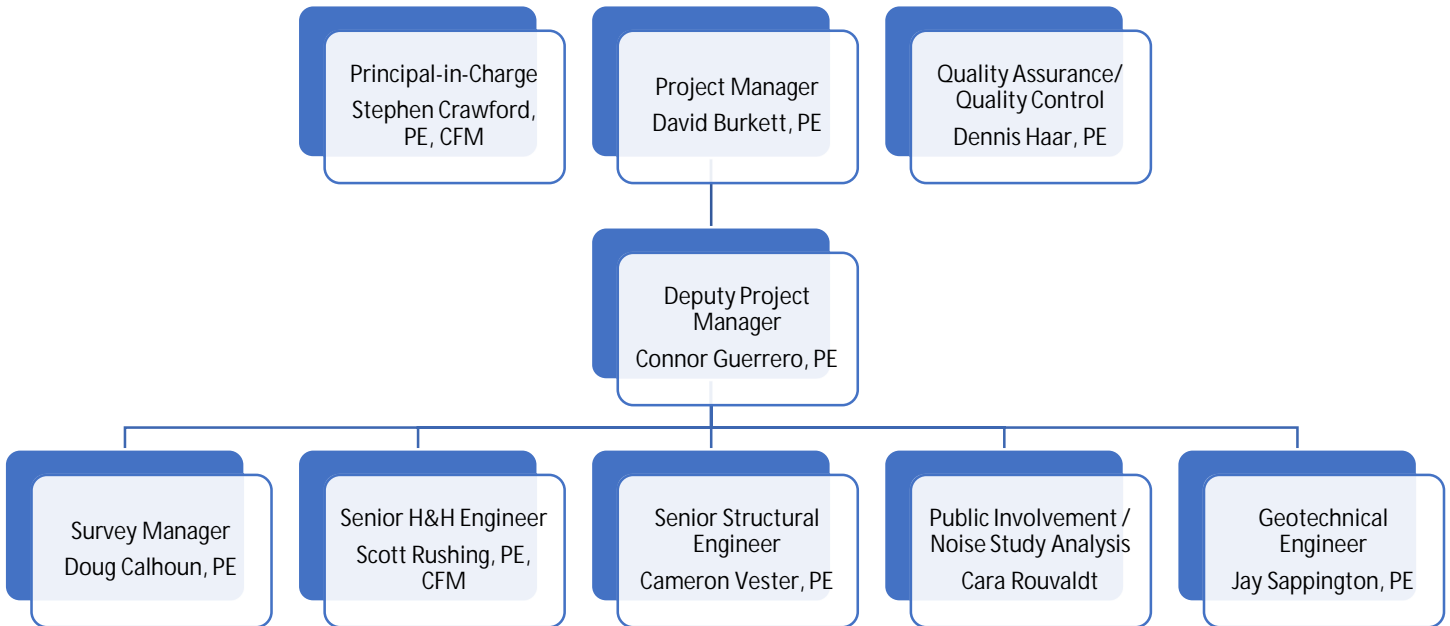
Each invoice will include a progress report discussing the work completed each month.

EXHIBIT "A"

GREAT SOUTHWEST PARKWAY SCHEMATIC AND NOISE WALL STUDY & DESIGN

ATTACHMENT "C"

ORGANIZATIONAL CHART





NORTHERN Applied Sciences Inc.

June 1, 2022

Connor Guerrero, PE
Project Manager
Halff Associates Inc.
4000 Fossil Creek Blvd
Fort Worth, TX 76137
United States

**RE: Proposal for Noise Study – Commercial/Industrial Facility
City of Grand Prairie, Texas
NAPSCI Ref. Q22-066 (Rev1)**

Dear Mr. Guerrero:

Northern Applied Sciences Inc. (NAPSCI) is pleased to provide Halff Associates Inc. (Halff) with this quotation to prepare a noise study for a potential commercial/industrial facility in the City of Grand Prairie, Texas.

The subject facility is proposed to be located along a new road segment on the western side of Great Southwest Parkway. In discussions with Halff, we understand there are concerns from the City that this facility may, in the future, potentially impact nearby residential receptors. It is anticipated that a noise barrier wall may be needed to proactively mitigate potential noise impact. One important challenge facing Halff is that the proposed use of the facility and noise-specific sources are not yet known.

In order to address these unknowns, NAPSCI proposes to prepare a detailed predictive noise study using assessment practices specifically designed for stationary sources. We will present a detailed inventory of conservatively assumed noise sources for the facility. These noise sources may include noise generated from shipping/receiving bay doors, rooftop HVAC and air make-up units, sidewall fans and louvres, and on-site vehicle traffic from trucks. Both steady-state and impulsive noise will be considered, as appropriate.

The sound-level criteria for this facility will be confirmed as part of this noise investigation with both local city ordinances and any state criteria. We will designate, before the analysis, what constitutes as a noise “impact” for adjacent residential receivers or what is the allowable noise level for the proposed industrial facility.

Noise impacts at the receptors will be determined using the acoustic computer model Cadna-A (Computer Aided Noise Abatement) which is one of the preferred models for stationary noise propagation. The model determines the impact of each noise source at each identified receptor. The computer model is based on

ISO Standard 9613-2 “Acoustics – Attenuation of Sound during Propagation Outdoors”. The ISO based model accounts for reduction in sound level due to increased distance and geometrical spreading, air absorption, ground attenuation, and acoustical shielding by intervening structures, topography and brush. The model is considered conservative since it represents atmospheric conditions that promote propagation of sound from source to receiver.

If the resultant noise impacts at the receptors are less than the applicable noise performance limit, the facility is deemed to be compliant with no additional mitigation needed. If impacts are above the applicable limits, the next step would be to specify the appropriate mitigation to satisfy the noise criteria.

For this site, the most appropriate noise mitigation is likely a noise barrier wall, however, we will confirm mitigation specifics following a review of the results of the noise model. Should a barrier wall be specified, we would evaluate several distinct scenarios including:

- Barrier wall positioned next to the industrial development
- Barrier wall positioned along the future roadway
- Barrier wall positioned near the receptors (i.e. along the backside of the neighborhood)

Deliverable

NAPSCI will provide a detailed report that identifies:

- Project narrative and detailed assessment methodology
- List of assumed noise sources and associated sound power levels
- Identification of nearby noise sensitive receptors
- Site figures and receptor figures
- Mitigated and unmitigated scenarios
- Visual noise impact contours
- Tabular summary of results
- Noise barrier specifications (location, length, height, surface density)
- Any other conclusions, findings or recommendations

Time will also be allotted for two (2) internal meetings and two (2) external meetings. It is presently assumed that travel to Texas is not needed at this time.

Experience

The Northern Applied Sciences team has experience completing more than 500 acoustic assessment reports over the past eighteen years under rigorous regulatory protocols. We have a wide range of experience conducting industrial and commercial acoustical assessments and specifying noise mitigation.

Costs

The cost to complete the scope of work outlined above is **\$6,800 USD**. Please note that this cost does not include any time for travel to Texas for meetings or any time for direct sound level measurements (which we do not anticipate to be needed).

Authorization for Services

We are prepared to begin these tasks as soon as we receive authorization to do so in the form of a signed copy of the attached Project Authorization, or written authorization by e-mail. We thank you for this opportunity and we look forward to working with you on this project.

Should you have questions or wish to discuss any aspect of the proposal, please do not hesitate to contact Stephen Kuchma at 416-992-4116 (kuchma@napsci.io) or Chris Scullion at 647-381-3080 (scullion@napsci.io).

Yours truly,
Northern Applied Sciences Inc.



Chris Scullion, B.E.Sc. (Civil Engineering)
scullion@napsci.io
647-381-3080



Stephen Kuchma, P.Eng
kuchma@napsci.io
416-992-4116

Attachment – Project Authorization Form

Proposal No. 22-8587 (Revised)
June 1, 2022

Halff Associates, Inc.
1201 N. Bowser Road
Richardson, Texas 75081-2275

Attn: Mr. Connor Guerrero, P.E.

**PROPOSAL FOR:
GEOTECHNICAL ENGINEERING SERVICES
PROPOSED NOISE WALL AND RETAINING STRUCTURE
NORTH OF E. AVENUE K
GRAND PRAIRIE, TEXAS**

Dear Mr. Guerrero:

INTRODUCTION

CMJ Engineering, Inc. (CMJ) is pleased to submit a proposal for providing geotechnical engineering services in conjunction with the above-referenced project. We prepared this proposal based on emails from Mr. Connor Guerrero, P.E. dated March 31 and May 31, 2022 and on the preliminary scope submitted to this office.

The project, as currently planned, will consist of a noise wall measuring 1,200 linear feet with an anticipated height of 8 feet in order to provide a buffer between the industrial area off 111th Street and the residential area to the east. In addition, a retaining structure may be necessary in the southern portion of the screen wall. Exact wall length and location is still to be determined.

Following a cursory site reconnaissance, approximately 500 feet is wooded. Unit fees for brush clearing for boring locations access are included as Additional Services within this proposal. In addition, it is assumed that no underground utilities exist at boring locations.

SCOPE OF SERVICES

I. BASIC SERVICES

A. SUBSURFACE EXPLORATION

Experienced drillers and technicians will evaluate subsurface conditions with a total of four (4) borings drilled to a depth of 25 feet below existing grades in the area of the proposed noise wall and retaining structure.

The field personnel will drill the borings using truck-mounted equipment. Cohesive and non-cohesive soil samples will be obtained using 3-inch diameter Shelby tube samplers and 2-inch diameter standard split-spoon samplers, respectively. In addition, rock encountered will be evaluated by use of Texas Department of Transportation (TxDOT) cone penetration tests. A soils logger will extrude the samples in the field, check the samples for consistency with a hand penetrometer, carefully wrap them to preserve their condition, and return them to the laboratory for testing. A log of each boring will be prepared to document field activities and results.

CMJ's personnel will stake the boring locations using hand-held GPS equipment. Approximate locations of the borings will be shown on the plan of borings. Precise surveying of boring locations and elevations is not included in the cost estimate. These services may be provided as Additional Services upon request. At the completion of drilling operations, boreholes will be backfilled with drill cuttings and tamped at the surface.

B. LABORATORY SERVICES

Considering the planned facilities, anticipated soil conditions and geology, laboratory tests will be required for classification purposes, and to determine strength characteristics. The following types of tests are therefore recommended:

- moisture content and soil identification
- liquid and plastic limit determinations
- percent passing the No. 200 sieve
- unconfined compression tests on soil
- absorption pressure and/or one-point pressure swell tests
- unit weight determinations

The specific types and quantities of tests will be determined based on geologic conditions encountered in the borings.

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C. ENGINEERING SERVICES

An engineering report will be prepared to present the results of the field and laboratory data together with our analyses of the results and recommendations. We will provide two copies of the report and an electronic copy. The report will address:

- general soil and groundwater conditions
- recommendations for noise wall and culvert foundation type, depth, and allowable loading
- foundation construction requirements
- an evaluation of the swell characteristics of the subgrade soils
- lateral earth pressures for below-grade walls
- earthwork recommendations

Items other than those specified above, which are revealed by these studies or are necessitated by a change in project scope, may require revised field, laboratory, and engineering services. These services, if required and requested, will be performed as Additional Services. Additional Services are described in Section II.

D. COMPENSATION FOR BASIC SERVICES

It is proposed that the Basic Services described above be performed on a unit price basis, in accordance with the attached Basic Services Cost estimate. Based on the anticipated scope and the attached Basic Services Cost estimate, the total cost of the Basic Services should be on the order of \$7,100 to \$7,200. For budget purposes, a maximum cost of \$7,200 is recommended. This cost for Basic Services will not be exceeded without prior authorization.

Anticipated brush clearing of 3 hours is anticipated and included in the above cost of the Basic Services. Additional Services for clearing wooded boring locations can be provided on a per hour basis at \$250 per hour.

The estimated costs shown in this proposal are based on the anticipated soil conditions. The final invoice will be based on the specific quantities drilled and tested. If unanticipated conditions are encountered during drilling, we will notify you accordingly.

E. SCHEDULE FOR BASIC SERVICES

Weather permitting, we plan to initiate these studies within fifteen business days of receipt of notice to proceed and anticipate that two working days will be required to complete the subsurface exploration for the site (weather conditions permitting). You will receive the final report approximately four weeks following the completion of the field phase. We will make preliminary design data available sooner if necessary.

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II. ADDITIONAL SERVICES

A. AUTHORIZATION AND SCOPE

Additional Services will be performed only if specifically requested and authorized by Client. Additional Services may consist of the following:

- Additional subsurface exploration, including quantities or items other than described in Basic Services.
- Bulldozer or other equipment services required to achieve access to boring locations.
- Stand-by time or time in excess of one-half hour required for travel between boring locations.
- Additional laboratory services, including quantities or items other than described in Basic Services.
- Additional insurance coverage or limits (if available) other than CMJ's standard policies.
- Additional engineering services, including personnel time and expenses for items not specifically described in Basic Services. This may include, but is not limited to, additional meetings requested by Client or Client's other consultants, assistance to Client in dealing with regulatory agencies, preparation and engineering assistance in legal proceedings, and evaluation of alternative designs for the project or relocation of structure, following initial submittal of the geotechnical report.
- Additional copies of the report, other than the number described in Basic Services.
- Any other required or requested services authorized by Client, other than those specifically described in Basic Services.

B. COMPENSATION AND SCHEDULE FOR ADDITIONAL SERVICES

Additional Services, when authorized by Client, will be in accordance with our Schedule of Fees. Additional Services will be performed at reasonable times and within reasonable schedules as requested by Client. Authorized Additional Services will be billed as a separate item on invoices and a description of the Additional Services will be provided.

III. TERMS AND CONDITIONS

The scope of services will be performed pursuant to the Standard Agreement with Halff Associates, Inc.

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Thank you for the opportunity to present this proposal. Do not hesitate to call if you have any questions or if you have suggestions regarding changes to the agreement or to the proposed scope of services.

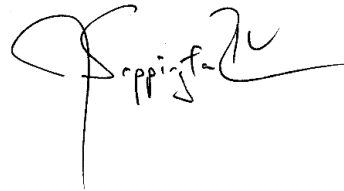
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We look forward to working with Halff Associates, Inc. and their consultants on this project.

Respectfully submitted,
CMJ ENGINEERING, INC.



Kimberly L. Fyffe
Geotechnical Project Manager



James P. Sappington IV, P.E.
President
Texas No. 97402

copies submitted: (1) Mr. Connor Guerrero, P.E.; Halff Associates, Inc. (by email)

CMJ ENGINEERING, INC.
GEOTECHNICAL ENGINEERING SERVICES
BASIC SERVICES COST ESTIMATE

ESTIMATE: 22-8587 (Revised)
DATE: 6/1/2022
PROJECT: PROPOSED NOISE WALL AND RETAINING STRUCTURE
NORTH OF E. AVENUE K
GRAND PRAIRIE, TEXAS

<u>SUBSURFACE EXPLORATION</u>	Quant.	Unit \$	Total \$
Mobilization (Drill Rig)	1	540.00	540.00
Soil Drilling-Intermittent Sampling (0-25 ft.)	100	17.00	1,700.00
Brush Clearing (hr.)	3	250.00	750.00
Access Time (hr.)	1	250.00	250.00
Underground Utility Check	1	175.00	175.00
Subtotal Subsurface Services			\$ 3,415.00
 <u>LABORATORY SERVICES</u>			
Moisture Content and Soil Identification	40	7.50	300.00
Liquid and Plastic Limits	7	64.00	448.00
Percent Passing the No. 200 Sieve	3	72.00	216.00
Unconfined Compressive Strength-Soil	7	52.00	364.00
Unit Weight	9	14.00	126.00
Free Swell	2	85.00	170.00
Subtotal Laboratory Services			\$ 1,624.00
 <u>ENGINEERING SERVICES</u>			
Senior Principal Engineer	3	148.00	444.00
Staff Engineer	14	102.00	1,428.00
Drafting & Secretarial Support	2	53.50	107.00
Misc. Expense (report production, mileage, etc.)	1	120.00	120.00
Subtotal Engineering Services			\$ 2,099.00
TOTAL ESTIMATE			\$ 7,138.00