ARAPAHO RD EXTENSION Addison to Marsh
HNTB PROPOSAL - ENGR

(2)

HNTB ARCHITECTS ENGINEERS PLANNERS

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Steve —
my comments
Jim
10/17/01

July 13, 2001

Town of Addison
16801 Westgrove Drive
P.O. Box 9010
Addison, Texas 75001-9010

Attn: Mr. Steve Chutchian, P.E.

ARAPAHO ROAD EXTENSION - Phase III
Professional Services Agreement

Dear Mr. Chutchian:

Enclosed for your review are three copies of a Professional Services Agreement for preparation of construction plans and contract documents for the construction of Phase III of the Arapaho Road Extension. Phase III construction will extend from Surveyor Boulevard to Addison Road. The Agreement includes our proposed Scope and Fee for your review.

Per our discussions since the last proposal, we have removed the following items: right-of-way element (executed in a separate contract), pedestrian trail (currently under study), and the demolition plans for structures along the corridor. The design of the structural and architectural elements of the bridge over Midway Road is also not included.

After your review of the enclosed agreement, we will be pleased to meet with you to discuss the project to clarify any issues or questions you may have. We appreciate the opportunity to work with you and your staff on this exciting project for the Town of Addison.

Very truly yours,

HNTB CORPORATION

Jerry D. Holder, Jr., P.E.

JDH/dmc

Enclosures
25768

7-17-01

HNTB ARCHITECTS ENGINEERS PLANNERS

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PROPOSAL for SERVICES

PEDESTRIAN LINK / TRAIL PLANNING
ARAPAHO ROAD - MARSH LANE to ADDISON ROAD
Town of Addison

Project Area and Project Scope Understanding

HNTB's understanding is that the project will consist of developing a Conceptual Pedestrian Link / Trail Plan study adjacent to the proposed Arapaho Road extension between Marsh Lane and Addison Road. HNTB will identify Town property adjacent to and nearby the Arapaho Road Phase II and III Rights - of -Way for the purpose of developing conceptual schemes for pedestrian links tying into existing Arapaho Road at Addison Road. In addition to the trail plan HNTB will develop conceptual schemes on potential improvement to Town property in the form of green space reserves, visual screening and buffering.
The final trail plan will be used as a base for the development of construction documents related to the Arapaho Phase III project

1.0 Basic Services

1.1 HNTB will attend a kickoff / programming meeting with the Town of Addison to discuss the project requirements, acquire information from the Town required to develop the trail plan and obtain Town property information pertinent to the establishment of a trail network associated with the extension of Arapaho Road. It is anticipated that an additional data-gathering trip will be required to confirm parcel location and rights- of –way alignment.

1.2 HNTB will carry out site visits to areas along the Arapaho Road R.O.W for the purpose of taking digital photographs pertinent to the roadway and trail design. These photographs will be used in the development of computer enhanced images depicting trail and roadway placement at key points along Arapaho Road.

2.0 Conceptual Design Options

2.1 Based on initial programmatic meetings with the City, HNTB will proceed with trail and parcel development concepts to prepare a Conceptual Trail Plan. Plans / actions are:

- Conceptual plans will be drawn at a scale sufficient to explain design intent. The drawings to be produced will be one rendered site plan with up to two alternatives and enlarged plans as required to explain design intent.
- Site photographs will be digitally enhanced to depict the proposed roadway orientation and trail options in the context of surrounding development. These photos will also be used to indicate landscape development options on parcels of land currently owned by the Town.

2.2 HNTB will meet with the Town of Addison to present the Conceptual Trail Plan options. Comments received from Town Staff will be incorporated into the Final Conceptual Design package.

3.0 Final Conceptual Design Package

3.1 Based on the approved Conceptual Design option, HNTB will prepare Final Design Documents sufficient in detail to describe the Pedestrian Trail Plan, linkages to Town parcels and proposed green space options. The following drawings will be prepared:

- A rendered aerial site plan of the Town parcel and trail linkage plan
- Digital enhanced photographs showing trail and roadway interface at key locations adjacent to proposed Arapaho Road
- Parcel design options i.e.: visual buffer, screening and potential trail staging areas

4.0 Compensation

4.1 HNTB will be reimbursed for the above Scope of Work and Basic Services on a Lump Sum basis in the amount of $14 ,000.00.

5.0 Schedule

5.1 It is anticipated that the Scope of Work listed under the Basic Services will be performed in a one month period from the date of Notice to Proceed issued by the Town of Addison.

Additional Services

The following services are not included in the scope of Basic Services. HNTB shall provide these services if authorized in writing by the client on a Time and Expense in addition to the compensation for Basic Services.

- Additional travel beyond that allocated in this proposal.
- Illustrative renderings beyond those described in the Basic Services.
- Zoning changes or variances
- Construction documents and specifications

(2)

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for design of Arapaho Road from Surveyor Boulevard to Addison Road.

I. Project Definition

This project consists of the preparation of plans and specifications for bidding and construction of Arapaho Road Phase III from Surveyor Boulevard to Addison Road (the Project). The project will be a 4-lane reinforced concrete roadway, with turn lanes at Surveyor Boulevard and Addison Road. A grade separated intersection will be provided at Midway Road. The design of the bridge over Midway Road is not included in this scope of services. Services will generally include geotechnical investigation and recommendations; final construction plans for the roadway, structure, stormwater, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing, signing and striping; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies.

II. Detailed Scope of Basic Services

The improvements have been implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The scope of services for the schematic design are described in a separate scope of services and Agreement between the Town of Addison and HNTB Corporation executed February 12, 1997 with official authorization to proceed dated March 9, 1998. The basic scope of services for PS&E from Marsh Lane to Surveyor Boulevard (Phase II) are described in a separate scope and Agreement executed October 18, 2000 between the Town of Addison and HNTB Corporation.

A. Phase III Final Design – Paving, Drainage, and Utilities

1. Prepare final construction drawings. (Scale 1" = 20' Horizontal and 1" = 5' Vertical except as noted.) The plans will be designed to meet ADA requirements. The following sheets shall be included:

   a. Cover Sheet

   b. General Notes

   c. Quantity Sheets

   d. Removal Plans

   e. R-O-W Plans

   f. Typical Sections

   g. Construction Phasing (Scale 1" = 40')

   h. Survey Control

   i. Utility Relocation Plan

   j. Paving Plan and Profile Sheets

   k. Paving Details

   l. Signing and Striping Plans (Scale 1" = 40')

   m. Erosion Control Plans

   n. Grading Plan

   o. Driveway and Special Grading Sheets

   p. Drainage Area Map (Scale 1" = 100') — already done

   q. Stormwater Plan and Profile Sheets with hydraulic gradient shown

   r. Erosion Control Plans

   s. Roadway Cross Sections

   t. Street Lighting Plan

Design shall meet current ADA reqmts

2. Prepare Contract Documents

3. Prepare Estimate of Final Construction Cost

4. Submit three (3) sets of plans for review to the Owner for 50% review, 95% review, and 100% (final).

5. Incorporate Owner's review comments into plans.

B. Streetscape

Engineer's understanding is the Project will consist of right-of-way improvements for Arapaho Road from Surveyor Boulevard to Addison Road. The current R.O.W. will be widened in some areas allowing for additional landscaping. The proposed streetscape improvements shall respond to and complement the existing landscape and hardscape elements currently used in the Arapaho Road R.O.W. from the North Dallas Tollway to Addison Road. Proposed streetscape improvements will utilize the existing Town Landscape Ordinance and guidelines. Critical visibility concerns shall be incorporated into the overall roadway improvements.

This proposal does not include architectural improvements related to the proposed bridge spanning Midway Road. These improvements may be added at a later date by the Owner through a supplemental agreement..

Basic Services

1. Schematic Design
   a. Engineer will attend a kickoff / programming meeting with the Owner to discuss the project requirements and to acquire information required to develop the schematic landscape master plan for Phase III.

   b. Based on initial programmatic meetings with the Owner, Engineer will proceed with site development concepts to develop a schematic landscape master plan. Schematic design plans will be drawn at a scale sufficient to explain design intent. The drawings to be produced will be one rendered site plan and necessary cross sections and enlarged plans as required to explain design intent.

   c. Engineer will meet with the Owner to present the schematic landscape master plan and will receive comments from staff for incorporation into the design development package.

2. Design Development

a. Based on the approved schematic design, Engineer will prepare a design development package. This package will include the following:

- Materials plan
- Site grading plan
- Site walls/entry features
- Hardscape/paving
- Site lighting (location and fixture type only-circuiting by others)
- Landscape plan
- Critical cross-sections

This package will include an appropriate level of detail to illustrate design character, intent, means, materials and construction methods sufficient to further refine probable construction costs.

b. Engineer will prepare an opinion of probable construction costs based on design development drawings.

c. Engineer will meet with the Owner to review the design development package and will receive comments from staff for incorporation into the construction document package.

3. Construction Documentation

a. Based on the approved design development package, Engineer will prepare contract documents sufficient to describe the work necessary for construction. The following drawings will be prepared:

- Layout and materials plan
- Enlarged intersection layout & materials plan, if required.
- Grading plan for the R.O.W. improvements
- Enlarged intersection grading plan, if required.
- Planting plan
- Enlarged intersection planting plan, if required.
- Irrigation plan
- Enlarged intersection irrigation plan, if required.
- Site lighting (location & fixture type; circuiting by others)
- Details and sections at appropriate scales necessary to convey the sizes, appearances, finishes, and colors of all pavements, walls, site furnishings, and light fixtures.
- Coordinate structural details and incorporate on plans to be approved by structural.

include in PCAPS

b. Engineer will prepare technical specifications describing all elements of the proposed work.

c. Engineer will prepare a revised opinion of probable construction costs based on design development drawings.

d. Engineer will meet with the Owner to review the construction document package and will receive comments from staff for finalizing the construction document package.

4. Bidding and Negotiation
   a. Engineer will prepare a list of qualified potential subcontractors who can perform the work.

   b. Engineer will prepare addenda as may be required during the bidding or negotiating process.

   c. Engineer will assist the Owner in the evaluation and assessment of bids or negotiated proposals.

   d. Engineer will propose and/or evaluate value engineering and substitutions with respect to cost implications and effect on quality and/or scope of the work.

5. Construction Observation
   a. Engineer will attend a kickoff meeting with the Owner, the selected landscape / hardscape subcontractor and General Contractor to review the project requirements, schedule and responsibilities.

   b. Engineer will review and approve subcontractor submittals regarding landscape and hardscape material specified for the streetscape project and keep logs for submittals.

   c. Engineer will review and prepare responses to questions, clarifications and information requests submitted by the subcontractor. Clarification and information requests will be logged and copied to the Owner.

   d. Engineer will prepare a punchlist of the completed work and coordinate the list with the Owner. The punchlist will identify items needing correction, deficiencies in the works and damage.

   e. Engineer will review the completed punchlist items with the contractor and issue a notice of completion to the Owner.

   f. Engineer will coordinate the preparation of record drawings with the landscape / hardscape contractor, review for completeness and issue to the Owner with all records of

construction developed for the project based on documents delivered to Engineer by such contractor. This will constitute the project close out of the construction phase.

6. Additional Services

The following services are not included in the scope of basic services. Engineer shall provide these services if authorized in writing by the Owner on a time and expense in addition to the compensation for Basic Service.

- Illustrative renderings beyond those described in the Basic Services.
- Zoning changes or variances
- Irrigation design and construction documents

Need this in plans

C. Bidding and Contract Award

1. Prepare Advertisement for Bidders.
2. Provide 25 half-size sets of plans and bid documents.
3. ~~Attend~~ Conduct pre-bid meeting.
4. Prepare necessary addenda and respond to bidder's questions.
5. Prepare bid tabulation.
6. Recommend a bidder for the award of the construction contract.

D. Construction Administration

3 full size, 5 1/2 size for Town

~~and~~ 2 full size, 3 1/2 size for Contractor

1. Provide three ~~(3) full size sets of plans for Owner and Contractor~~.
2. ~~Attend~~ Conduct pre-construction meeting.
3. Respond to Requests for Information.
4. Review submittals, as required by the contract documents.
5. Attend final inspection.
6. Prepare mylar record drawings and electronic files.

Provide inspection SVCS Engr & inspector

III. Detailed Scope of Additional Services

A. Surveying

1. Update property ownership.

2. Stake centerline at 100-foot intervals with PC's and PT's prior to geotechnical borings performed in field.

3. Locate bore holes horizontally and vertically.

4. Cross sections of Arapaho Road at Midway Road to include lane shots.

5. Project management and administration for surveying elements.

B. Geotechnical Investigation

The geotechnical services will include the following: field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road.

1. Field Investigation

Drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency.

The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained

from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

Owner shall provide or coordinate right-of-entry to the property so that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. Traffic control services shall be Additional Services if required to complete the borings.

include in plans

The drilling operations will proceed in a manner that will ~~reduce~~ avoid the potential of damage to underground utilities. Owner shall provide any information regarding any existing underground utilities that are present on-site prior to Engineer beginning the field work. Engineer will coordinate underground utility line clearance with the Texas Excavation Safety System, the Owner, and Dallas Area Rapid Transit (DART). However, Engineer will not be responsible for damage to underground utility lines that are not properly identified by the Owner prior to mobilization of drilling equipment to the site.

Dallas Water Utilities,

2. Laboratory Testing

The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization

3. Engineering Analyses and Report

The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for

design and construction of the roadway. The results of this investigation will be presented in an engineering report, Three copies of the report will be submitted. The report will include the following:

a. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.

b. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.

c. Recommendations for design of MSE retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.

d. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.

e. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.

f. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.

g. Recommendations for pavement subgrade preparation.

h. Recommendations for Portland cement concrete pavement sections. Owner will arrange to provide the anticipated traffic loading for use in our analysis.

i. Discussion of potential construction problems, such as hard rock excavation, groundwater, and subgrade instability.

C. Traffic Study

a. Signal Design Layout

1. Prepare preliminary traffic signal design plans and specifications for intersection of Arapaho Road at Addison Road to include railroad preemption. Plans and specifications will be prepared using Owner standards.

2. Review plans and specifications with Owner and revise as necessary. Prepare final plans, specifications, construction estimates and contract documents for installation of traffic signals.

b. *Traffic Signal Data Collection*

1. Collect AM peak period (~~7:00~~ – 9:00 AM) and PM peak period (~~4:30~~ PM – 6:30 PM) turning movement counts in 15 minutes intervals, including pedestrian counts, for two representative intersections. These intersections will provide a general understanding of the volume of traffic and traffic characteristics of the area.

2. Compile the existing traffic turning movement counts for the AM and PM peak hour time periods and determine the existing AM and PM peak hours, peak hour factors and percent trucks for each intersection. Balance the traffic turning movement counts for Phase II and Phase III for the AM and PM peak hours. Prepare base maps for Phase II and Phase III illustrating the existing peak hour turning movement counts, intersection geometrics, speed limits, distances between intersections, percent trucks, PHF, and existing traffic signal phasing. Compile the existing traffic signal timing plans to determine the existing traffic signal phasing, cycle length, minimum and maximum green times, yellow times, all-red times, walk times and flashing don't walk times.

c. *Initial Traffic Analysis – West Segment*

1. Analyze the three signalized intersections in West Segment, utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. More specifically, the following process will be utilized for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - TRANSYT-7F – Holding the cycle length and green splits constant, run this program to optimize offsets to provide progression for the highest volume movements (minimize system delay).

   Summarize the results with MOE tables and phasing/timing diagrams and illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Arapaho Road from Marsh

Lane to Surveyor Boulevard and Marsh Lane from Beltline Road to Arapaho Road.

d. *Initial Traffic Analysis – East Segment*

1. Analyze the six signalized intersections in Phase III East Segment, utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. The goal will be to provide traffic signal progression along the three signalized intersections along Addison Road and the four signalized intersections along Arapaho Road. The following process for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - PASSERII – Holding the cycle length and green splits constant, run this program to optimize the offsets for through movement progression on Addison Road and Arapaho Road. Two runs will be completed consisting of one run for Addison Road and one run for Arapaho Road.
   - TRANSYT-7F – This program will be used to combine the two PASSERII runs and fine-tune the offsets for higher volume turning movements (minimize system delay).

   Summarize the results with MOE tables and phasing/timing diagrams. Illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Addison Road from Beltline Road to Lindberg and for Arapaho Road from Addison Road to Spectrum. Assist Engineer with coordination with railroad and traffic signal design for railroad preemption.

e. *Technical Memorandum*

Document the procedures, findings and recommendations of the traffic signal timing analysis, with exhibits, tables and text in a technical memorandum. The technical memorandum will also include an appendix with the traffic software output.

Note: Additional information on the Traffic Study is included in Exhibit B.

D. Phase I Environmental Site Assessment
See Exhibit A for detailed description.

E. Construction Inspection
See Exhibit B for detailed description.

SECTION 3. PAYMENT
Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation
Owner shall make payment monthly to Engineer based upon statements submitted by the Engineer for percentage of work performed.

Compensation for performing Basic and Additional Services shall be on a Lump Sum Basis. The Lump Sum amount for Services shall not exceed $595,457.00.

SECTION 4. RESPONSIBILITIES
Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in such design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner and Engineer under this Agreement are as provided by law. Engineer shall not be responsible for construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project.

SECTION 5. TIME FOR PERFORMANCE
Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the terms of this Agreement. The services to complete construction documents shall be completed within 15 months of Notice-to-Proceed.

how long - Lets discuss this !! see

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative delay of over 180 days, Engineer shall have the right to

renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from proceeding with its services on the project. This shall include, but is not limited to, Owner reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made. Provided, however, Engineer shall not be considered in default hereunder in delays are caused by reasons beyond its reasonable control.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that intended in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer is hired to modify such instrument for such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the services, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving five (5) days written notice to the Engineer. In the event termination is for

cause however, such shall be in accordance with section 14 hereof. In the event suspension or termination is without cause, payment to Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of this Agreement, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Engineer may terminate this Agreement.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against losses, liability or damage of any character, including defense costs, expenses and attorney fees incidental to the defense of such losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including the loss of use resulting therefrom, from any negligent act, error, or omission of the Engineer, its officers, employees, or subcontractors, or anyone else for whom Engineer is legally liable which are resulting from or caused by the performance of any services called for by this Agreement. In the event the parties are found to be jointly or derivatively negligent or liable for such damage or injury, the indemnification shall be assessed on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor or any other party contracting with Owner to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of the responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; or other documents prepared by Engineer, its employees, and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

To the extent Owner has paid Engineer in full hereunder for same, Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Neither party shall assign or sublet this Agreement or any part thereof, without the prior written consent of the other party.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or is unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within fourteen (14) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all services determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for percentage of completion by Engineer through such date of termination. In the event of, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all reasonable, unmitigatable costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation. The reasonable expense for same may be offset against amounts due the Engineer. In such case, Engineer shall not be liable with respect to indemnity or otherwise for any such services performed, arranged, or furnished by Owner. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement, which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 2001.

OWNER: TOWN OF ADDISON, TEXAS	ENGINEER: HNTB CORPORATION
By: _____	By: _____
Ron Whitehead, City Manager 5300 Beltline Road P.O. Box 144 Addison, Texas 75001-0144	Benjamin J. Biller P.E. Vice President, Central Division 14114 Dallas Parkway, Suite 630 Dallas, Texas 75240-4381
Witness: _____	Witness: _____

EXHIBIT A

ARAPAHO ROAD EXTENSION
SURVEYOR BOULEVARD TO ADDISON ROAD
FEE PROPOSAL - JULY 2001

Basic Services

Final Design	
Paving, Drainage, and Utilities	$97,780
Streetscape	$17,262
Bidding and Contract Award	$6,414
Construction Administration	$8,930
Direct Labor Cost Phase III Basic Services	$130,386
Indirect Labor, Overhead	$200,665
HNTB Engineering Subtotal	$331,051
Profit and Contingency	$49,658
Out-of-Pocket Expense	$6,500
HNTB Subtotal Fee, Basic Services	$387,209
GBW	
See GBW Proposal	$125,608
Basic Services Fee	$512,817

Additional Services

Surveying, See ARS Inc. Proposal	$10,511
Geotechnical, See TerraMar Proposal	$33,125
Traffic Engineering	$36,354
Phase I Environmental Site Assessment, See TerraMar Proposal	$2,650
Subtotal Fee, Additional Services	$82,640
TOTAL FEE FOR SERVICES	**$595,457**

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - PAVING, DRAINAGE, AND UTILITIES

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 1: Final Design-Paving, Drainage, and Utilities						
Task 1.1 Paving Construction Drawings						
A. Cover Sheet			4		16	2
B. General Notes			8	16	16	
C. Quantity Summary Sheets				24	24	8
D. Utility Relocations		16				
E. Typical Sections			24	24	40	
F. ROW Map - Temporary Construction Easements						
G. Construction Sequencing/Traffic Control		16				
H. Plan and Profile Sheets (8 sheets)		80	120	160	200	
I. Paving, Sidewalk, Intersection, Misc. Details	?	4	20	80	100	
J. Driveway Detail, Special Grading Sheet		16	40	80	80	
K. Striping Plan, Details		8				
L. Signing Plan, Details		8	16	40	80	
M. RR Grade Crossing Plan, Details, Coordination	40	80	80	16	40	24
N. Street Lighting Plan, Details	12	48	40	40	32	
O. Removal Sheet			16	24	32	
P. Bid Quantities		24	40	64	16	
Q. Opinion of Probable Cost		12	24	32		8
R. QA/QC	16	40				4
S. Review Comment Revisions		24	40	40	80	4
Task 1.2 Project Management/Coordination	240	200				40
Task 1.3 Drainage Construction Drawings						
A. Drainage Plan/Profile		8				
B. Drainage Calculations		8				
C. Drainage Area Map		4				
D. Details		4	4		4	
E. Storm Water Pollution Prevention		4		4	4	
Task 1.4 Specifications and Contract Documents	8	40	20			40
Task 1 Total Hours	316	644	496	644	764	130
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$17,064	$28,980	$16,368	$15,456	$17,572	$2,340
			HNTB Final Design-Pavement, and Utilities			**$97,780**

204 hrs

560 hrs
70 hr/sheet

Don't this done?

Too much engr time

Take out design of structural elements of the bridge.

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - STREETSCAPE

	Group Director	Design Director	Senior LA	LA 3	LA 2	LA 1	
Task 2: Final Design- Streetscape							
Task 2.1 Schematic Design							
A. Kickoff/Programming Meeting			4		4		
B. Schematic Landscaping Master Plan	8	4	24		40		
C. Schematic Plan Review Meeting			4		4		
Task 2.2 Design Development							
A. Prepare Design Development Package	8	8	24		60		
B. Prepare Opinion of Probable Construction Costs			8		16		
C. Design Development Plan Review Meeting			4		4		
Task 2.3 Construction Documentation							
A. Prepare Construction Documents	16		40		120	40	
B. Prepare Technical Specifications			8		16	16	
C. Prepare Revised Opinion of Probably Cost			4		4	8	
D. Construction Document Review Meeting			4		4	4	
Task 2.4 Bid Phase							
~~A. Prepare List of Qualified Sub-Contractors~~	~~8~~		~~8~~		~~8~~		
B. Prepare Addenda			4		16		
C. Assist Owner in Evaluation of Bids			4		8		
~~D. Value Engineering/Substitutions~~			~~4~~		~~12~~		
Task 2.5 Construction Observation							
A. Kickoff Meeting	8		4		4	4	
B. Review Submittals; Tag Trees			16		24	8	
C. Review Information Requests			8		12	8	
D. Review Work Progress			8		40		
E. Prepare Punchlist			4		16	8	
F. Punchlist Review					4	4	
G. As-Builts - Project Closeout			2		16	4	
Task 2 Total Hours	48	12	186	0	432	104	
Hourly Rate	$32.21	$37.50	$30.77	$22.60	$18.27	$15.87	
Direct Labor Cost	$1,546	$450	$5,723	$0	$7,893	$1,650	
			Final Design - Streetscape				$17,262

Revised

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
BIDDING AND CONTRACT AWARD

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 3. Bidding and Contract Award						
A. Prepare Advertisement for Bidders		4			4	10
B. Prepare 25 Half-Size Sets of Plans & Bid Documents		2			16	8
C. Attend Pre-Bid Meeting		4	4			2
D. Prepare Addenda & Respond to Bidder's Questions		24	32	32	16	40
E. Attend Bid Opening\ Review Bid Docs\Prepare Bid Tab	2	4	8			8
F. Recommend a Bidder to the Town of Addison		4				8
Task 3 Total Hours	2	42	44	32	36	76
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$108	$1,890	$1,452	$768	$828	$1,368

Bidding and Contract Award $6,414

Revised

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
CONSTRUCTION ADMINISTRATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 4: Construction Administration						
A. Provide 3 Full-Size Sets - Town and Contractor			2		4	2
B. Attend Pre-Construction Meeting		4	4			4
C. Review Submittals		8	24		16	40
D. Respond to Requests for Information.	2	12	20		16	16
E. Attend Final Inspection		8	8			4
F. Prepare Mylar Record Drawings	2	16	24	32	40	8
Task 4 Total Hours	4	48	82	32	76	74
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$216	$2,160	$2,706	$768	$1,748	$1,332
			Construction Administration			$8,930

Resident inspection needed.

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - GBW ENGINEERS, INC.

	Asst. Project Manager	Project Engineer	Design Tech	CADD Operator	Clerical
Task 5 GBW Engineers, Inc.					
Project Meetings/Management	60				
Utility Coordination	8	4	40		16
Drainage Plans/Profile	8	16	40	160	
Drainage Calculations ? done already ?	8	16	24	60	
Drainage Area Map " "	4	8	24	40	
Utility Relocations	8	16	40	120	
Construction Sequence/Traffic Control	8	16	40	180	
Striping	4	8	24	100	
Storm Water Pollution Prevention Plan	4	8	24	100	
Traffic Signal Drafting	8		8	96	
Details	4	8	16	48	
Bid Quantities	4	8	24	16	8
Bid Documents and Specifications	24	16			24
Opinion of Probable Cost	4	8	16		8
Task 5 Total Hours (GBW)	156	132	320	920	56
Hourly Rate	$45.00	$41.00	$24.00	$16.00	$16.00
Direct Labor Cost	$7,020	$5,412	$7,680	$14,720	$896
		Final Design-GBW			$35,728

	Survey Manager	Survey Tech.	Survey Crew
GBW Engineers, Inc.			
Utility Survey	8	24	24
Task 2 Total Hours	8	24	24
Hourly Rate	$100.00	$60.00	$110.00
Direct Labor Cost	$800	$1,440	$2,640
	Survey-GBW		$4,880

Direct Labor Cost	$35,728
Indirect Labor, Overhear (1.8775)	$67,079
Subtotal	$102,807
Profit and Contingency	$15,421
Surveying Expense	$4,880
Direct Expense	$2,500
TOTAL FEE (GBW)	$125,608

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - SURVEYING - ARS ENGINEERS, INC.

	Abstractor	RPLS	Sr. Svy Tech	Survey Tech	3 Man Crew	Admin
Task 6. Additional Services - Surveying						
A. Update Property Ownership.	0			0		
B. Prepare Parcel Plats and Descriptions for 15 TCEs		0	0	0		
C. Stake Centerline at 100 ft intervals with PCs and PTs				10	40	
D. Locate Bore Holes Horizontally and Vertically				5	24	
E. Additional Survey Shots at Midway Road				4	16	
F. Project Management and Administration		8				4
G. Three (3) Each Plats and Descriptions, Electronic Files		0		0		0
Task 6 Total Hours	0	8	0	19	80	4
Hourly Rate	$48.00	$90.00	$63.00	$53.00	$105.00	$40.00
Direct Labor Cost	$0	$720	$0	$1,007	$8,400	$160
		Labor Total				$10,287
		Expenses				$224
		Additional Services - Surveying				$10,511

Expenses	
Map/Deed Copies	$0
Mileage	$94
Reprographics (Copies & Plots)	$50
Delivery/Courier Service	$30
Misc. Field Expenses	$50
Total Expenses	$224

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - GEOTECHNICAL INVESTIGATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 7. Additional Services - Geotechnical Investigation						
Task 7 Total Hours						
Hourly Rate						
Direct Labor Cost						
	Additional Services - Geotechnical Investigation					$33,125.00

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - TRAFFIC STUDY

	Project Manager	Senior Engineer	Design Engineer	HNTB Co-op	Jack Hatchell	Gram Traffic
Task 8. Additional Services - Traffic Study						
A. Signal Design Layout						
1. Preliminary Design					$5,000	
2. Final Design					$2,200	
B. Traffic Signal Data Collection						
1. Peak Period Turning Movement Counts						$799
C. Signal Phasing and Timing Analysis						
1. Project Management, Administration, Coordination	8					
2. Compile existing signal; timing plans (determine existing phasing)		1	8			
3. Determination of existing ped. Phasing and cycle lengths		2	10			
4. Compile existing/projected ADT's and Turning Movement Counts		2	8			
5. Determine projected AM and PM peak hour turning movements		4	24			
6. Obtain Geometric Plans/Base Maps		2	4			
7. Determine Clearance Times (Yellow/All-red)		6	12			
8. Coordination for Railroad Preemption	2	8	20			
9. SIGNAL2000 Analysis - LOS and Phase Determination		6	24			
10. NOSTOP and SIGNAL2000 - Cycle Length for Prog.		4	16			
11. TRANSYT-7F Analysis - Offsets		4	16			
12. Summary Phasing/Timing		4	8		$4,000	
13. Illustration of Preemption phases - Phase II		4	8			
14. Illustration of Preemption phases - Phase III		2	12			
15. Technical Memorandum		6	12	20		
15. Bidding and Award of Contract / Review					$600	
Task 8 Total Hours	10	55	182	20		
Hourly Rate	$54.00	$45.00	$24.00	$14.00		
Direct Labor Cost	$540	$2,475	$4,368	$280	$11,800	$799.00
Total Direct Labor and Burden	$1,674	$7,673	$13,541	$868	$11,800	$799.00
			Additional Services - Traffic Study			$36,354

Get Robin's comments

TERRA-MAR

Consulting Engineers • Geotechnical • Environmental • Construction Materials Testing

DALLAS • FORT WORTH • HOUSTON • AUSTIN • LONGVIEW

July 10, 2001
TMI Proposal No.: P01-1538DN

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas, Parkway, Suite 630
Dallas, Texas 75240

Tel; 972-661-5626

RE: Proposal for Phase I Environmental Site Assessment
Automotive Facility, Southeast Corner, Intersection of Addison Rd. and Arapaho Rd.
Addison, Texas

Dear Mr. Holder:

At your request, Terra-Mar, Inc. (TMI) is pleased to submit this proposal to provide a Phase I Environmental Site Assessment (ESA) at the above-referenced property. This proposal outlines our proposed scope of services and presents our estimated compensation and schedule to perform the work.

PROJECT BACKGROUND

The property subject to this investigation is currently an active automotive repair facility located at the southeast corner of the intersection of Addison and Arapaho Roads, in Addison, Dallas, County, Texas.

It is our understanding that HNTB is requesting a Phase I Environmental Site Assessment of the above-referenced property prior to acquisition of the property for the Arapaho Road Extension-Phase III project.

PROPOSED SCOPE OF SERVICES

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Terra-Mar, Inc. (TMI) will provide the professional services required to identify the presence of recognized environmental conditions at the site by performing a regulatory/historical review and visual inspection of the site for the presence or evidence of hazardous substances on or near the property. The Phase I ESA services to be provided by TMI are described in the following Scope

TERRA-MAR

of Work. TMI's scope of services and report format incorporate the criteria established by ASTM-1527-00, and the ESA will be performed in general conformance with this standard.

On-Site Assessment

Our environmental assessment personnel will conduct a walk-through of the property. The site inspection will cover the following visual activities related to:

- Areas of potential contamination;
- Areas of visible contamination;
- Observed adjacent properties;
- Site boundaries;
- Chemical storage or dispensing activities;
- Geological and hydrogeological characteristics of the site;
- Apparent and unusual topographical changes;
- Site operations;
- Grounds management;
- Waste storage/management practices;
- Proximity of surface water;
- Existing transformers, and light ballasts that may potentially contain PCBs;
- On-site petroleum storage tank management practices and compliance;
- On-site disposal and landfill practices;
- Pesticide usage and dust control;
- Ponds, basins and lagoons;
- Stained and discolored building surfaces/soils; and
- Hazardous materials storage/handling practices;
- Suspect Asbestos-containing materials (Option to include collection of up to 30 bulk samples for PLM analysis; separate fee shown below).

Document Review and Interviews

The following published lists will be reviewed in order to discover if the subject site or properties within the prescribed ASTM radii have either past or present potential/documented environmental conditions:

- U.S. EPA'S CERCLIS list of sites potentially contaminated with hazardous waste;
- The National Priorities List (NPL) of sites contaminated with hazardous waste;
- The U.S. EPA RCRA Notifiers List of facilities which generate, treat, store, transport, or dispose of hazardous waste;
- The U.S. EPA ERNS (Emergency Response Notification System) List; and
- The Texas Natural Resource Conservation Commission (TNRCC) lists of State Superfund Sites, Registered and Leaking Underground Storage Tanks, Spill Incidents and Accidents, and Municipal Waste Registration List.

TERRA-MAR

Additionally, TMI will review a 50-year chain of title, historical aerial photographs, city directories, building permits, and Sanborn maps, if available.

We will review available USGS topographic maps of the site area to estimate local topography, and we will review selected maps and documents pertinent to knowledge about the geologic/ hydrogeologic setting of the site. If available, we will interview persons with specific relevant knowledge of the site.

REPORT

Following our site visit, historical/regulatory reviews and interviews, we will prepare a report for the site, detailing our observations, findings, conclusions, and recommendations. Figures, maps, photographs and other referenced documentation will be appended to the final report. TMI will provide three (3) copies of the final report.

SCOPE LIMITATIONS

The following tasks are not included in the above scope of services, but can be provided at an additional cost if needed:

- Additional file acquisition, research, or investigation into listed facilities discovered on adjacent properties during the performance of the regulatory review;
- Sampling of stored materials/waste;
- Sampling and analysis of soils or groundwater or potential lead-based paint containing surfaces;
- Disposal of any contaminated surface or subsurface soils or groundwater;
- Area delineation and quantification of any contaminated soil;
- Assessment of the site or structures for suitability of intended use; structural, mechanical, building, roof, or site safety inspections;
- Wetlands delineation;
- Oil and Gas survey;
- Water wells search;

PROJECT FEES

Phase I ESA .....**$ 1,900.00**
Pre-Demolition Asbestos Survey (up to 30 samples*) .....**$ 750.00**

TMI will provide the presented scope of services on a fixed fee basis.

TERRA-MAR

PROJECT SCHEDULE

TMI proposes to initiate environmental investigation activities within 24 hours following receipt of client's written permission to proceed. Field activities will be completed in two working days. TMI will complete and submit our draft Phase 1 report within 15 business days following notification to proceed.

PAYMENT

Payment for services is requested within 30 days of delivery of TMI's report.

PROPOSAL ACCEPTANCE

TMI appreciates the opportunity to submit this proposal. Executing the Proposal Acceptance Agreement (PAA) and Faxing to TMI at (972) 488-8080 can indicate formal acceptance, and will constitute TMI's Notice to Proceed.

TMI's experienced engineers and scientists are committed to meeting your needs. We look forward to serving you on your project.

Respectfully submitted,

Terra-Mar, Inc.

James R. Gaw
Vice President, Environmental Services

EXHIBIT B – Additional Services not included in proposal

Design of Pedestrian Link / Trail

- HNTB is currently doing a study for the Owner to determine the route and location of a Pedestrian Link / Trail along the north side of Arapaho Road. After this study is done, it is anticipated that a supplemental agreement will be made to design the facility and its amenities along the roadway corridor.

Traffic Signal Coordination Timing Plans – Final Timing

- Progression analysis should be refined between the months of October and April, after Arapaho Road is open to traffic. After the road is open, new traffic counts need to be taken in order to base the progression analysis off accurate, current data. Based on the new traffic counts, progression analysis would be performed using SIGNAL2000, NOSTOP, TRANSYT-7F, and PASSERII-90 software. The traffic counts and progression analysis would be done through a supplemental agreement.

Building Demolition Plans

- There are three known locations that will require demolition plans for existing structures along the corridor. The necessary plans and specifications for the demolition of these structures is not included in this scope of work.

Construction Observation

- It is anticipated the Owner will require assistance with construction observation throughout the construction duration. For this proposal it is assumed that assistance will be provided on a half-time basis, or 20 hours per week throughout the duration of a 12-month construction schedule. The Engineer's construction representative will perform services under supervision and at the direction of the Owner's construction inspection staff. The following tasks would be performed by this task. Based on today's rates, the total estimated fee for this service would be $86,425.

  - Monitor construction activities including office/on-site observations during construction operations. This effort will be performed in association with the Owner's staff to supplement their own inspection staff.

  - The Engineer's construction representative and staff shall be stationed in Engineer's offices for the administration of the contract documents.

  - The Engineer's construction representative shall assist in working with the Contractor to address RFI's, shop drawings, and related questions concerning design issues to support timely response and resolution of issues
  - The Project construction representative shall assist in monitoring the construction schedule on an ongoing basis at bi-weekly intervals based upon a 12-month construction schedule, and report to the Owner on matters that may lead to delays and deficiencies.

- Review requests for alternatives and substitutions from the Contractor and submit them, together with Engineer's recommendations, to Owner for consideration.

- Review and make recommendations on contractor submitted shop drawings.

- Observe construction to determine in general if the Work is proceeding in such a manner indicating that when completed it will be in accordance with requirements of the contract documents.

- Conduct observations to determine an estimate of percent completion.

- Prepare preliminary and final deficiencies lists at intervals during the overall Project duration.

- Based on observations and evaluations of the Contractor's applications for payment, the Project construction representative shall review and certify the amounts due the Contractor.

Coordination with third-party for bridge Aesthetics

- If the Town of Addison chooses to have a third party design the aesthetic treatments for the bridge over Midway Road it will require a coordination effort between HNTB and the third party. The town has requested an estimate of how much time it would take for coordination between the Engineer, for the design of the structural elements, and the third-party, for the design of the aesthetic elements. This estimate is for meetings with the third party, information sharing, transfer of files (electronic, including CAD), notes and sketches, and meetings with the Town to incorporate ideas into the bridge. This estimate is not for the design of any elements of the bridge that are developed through these meetings or by the third party. We have based our estimate on a total of 140 hours over the course of the design. The estimated amount would be approximately $17,500. A more detailed estimate can be provided once more information is known.

Reviewed SZC Sept. 2001

(1) THIS AGREEMENT SHOULD INCORPORATE THE PEDESTRIAN HIKE/BIKE TRAIL INTO THE STREETSCAPE SECTION,

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for design of Arapaho Road from Surveyor Boulevard to Addison Road.

I. Project Definition

This project consists of the preparation of plans and specifications for bidding and construction of Arapaho Road Phase III from Surveyor Boulevard to Addison Road (the Project). The project will be a 4-lane reinforced concrete roadway, with turn lanes at Surveyor Boulevard and Addison Road. A grade separated intersection will be provided at Midway Road. The design of the bridge over Midway Road is not included in this scope of services. Services will generally include geotechnical investigation and recommendations; final construction plans for the roadway, structure, stormwater, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing, signing and striping; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies.

II. Detailed Scope of Basic Services

The improvements have been implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The scope of services for the schematic design are described in a separate scope of services and Agreement between the Town of Addison and HNTB Corporation executed February 12, 1997 with official authorization to proceed dated March 9, 1998. The basic scope of services for PS&E from Marsh Lane to Surveyor Boulevard (Phase II) are described in a separate scope and Agreement executed October 18, 2000 between the Town of Addison and HNTB Corporation.

A. Phase III Final Design – Paving, Drainage, and Utilities

1. Prepare final construction drawings. (Scale 1" = 20' Horizontal and 1" = 5' Vertical except as noted.) The plans will be designed to meet ADA requirements. The following sheets shall be included:

   a. Cover Sheet

   b. General Notes

   c. Quantity Sheets

   d. Removal Plans

   ~~e. R-O-W Plans~~

   f. Typical Sections

   g. Construction Phasing (Scale 1" = 40')

   h. Survey Control

   i. Utility Relocation Plan

   j. Paving Plan and Profile Sheets

   k. Paving Details

   l. Signing and Striping Plans (Scale 1" = 40')

   m. Erosion Control Plans

   n. Grading Plan

   o. Driveway and Special Grading Sheets

   p. Drainage Area Map (Scale 1" = 100')

   q. Stormwater Plan and Profile Sheets

   ~~r. Erosion Control Plans~~

   s. Roadway Cross Sections

   t. Street Lighting Plan

LISTED TWICE

2. Prepare Contract Documents

3. Prepare Estimate of Final Construction Cost

4. Submit ~~three (3)~~ FOUR (4) sets of plans for review to the Owner for ~~50%~~ 65% review, 95% review, and 100% (final).

5. Incorporate Owner's review comments into plans, AFTER EACH SUBMITTAL

B. Streetscape

THIS SECTION MUST BE REVIEWED & APPROVED BY SLADE STRICKLAND!

Engineer's understanding is the Project will consist of right-of-way improvements for Arapaho Road from Surveyor Boulevard to Addison Road. The current R.O.W. will be widened in some areas allowing for additional landscaping. The proposed streetscape improvements shall respond to and complement the existing landscape and hardscape elements currently used in the Arapaho Road R.O.W. from the North Dallas Tollway to Addison Road. Proposed streetscape improvements will utilize the existing Town Landscape Ordinance and guidelines. Critical visibility concerns shall be incorporated into the overall roadway improvements.

This proposal does not include architectural improvements related to the proposed bridge spanning Midway Road. These improvements may be added at a later date by the Owner through a supplemental agreement..

Basic Services

1. Schematic Design
   a. Engineer will attend a kickoff / programming meeting with the Owner to discuss the project requirements and to acquire information required to develop the schematic landscape master plan for Phase III.

   b. Based on initial programmatic meetings with the Owner, Engineer will proceed with site development concepts to develop a schematic landscape master plan. Schematic design plans will be drawn at a scale sufficient to explain design intent. The drawings to be produced will be one rendered site plan and necessary cross sections and enlarged plans as required to explain design intent.

   c. Engineer will meet with the Owner to present the schematic landscape master plan and will receive comments from staff for incorporation into the design development package.

SECTION b. MUST PROVIDE FOR REVISIONS TO THE ONE SITE PLAN, AS DETERMINED BY THE TOWN TO BE NECESSARY!

2. Design Development

a. Based on the approved schematic design, Engineer will prepare a design development package. This package will include the following:

- Materials plan
- Site grading plan
- Site walls/entry features
- Hardscape/paving
- Site lighting (location and fixture type only-circuiting by others)
- Landscape plan
- Critical cross-sections

This package will include an appropriate level of detail to illustrate design character, intent, means, materials and construction methods sufficient to further refine probable construction costs.

b. Engineer will prepare an opinion of probable construction costs based on design development drawings.

c. Engineer will meet with the Owner to review the design development package and will receive comments from staff for incorporation into the construction document package.

3. Construction Documentation

a. Based on the approved design development package, Engineer will prepare contract documents sufficient to describe the work necessary for construction. The following drawings will be prepared:

- Layout and materials plan
- Enlarged intersection layout & materials plan, if required.
- Grading plan for the R.O.W. improvements
- Enlarged intersection grading plan, if required.
- Planting plan
- Enlarged intersection planting plan, if required.
- Irrigation plan
- Enlarged intersection irrigation plan, if required.
- Site lighting (location & fixture type; circuiting by others)
- Details and sections at appropriate scales necessary to convey the sizes, appearances, finishes, and colors of all pavements, walls, site furnishings, and light fixtures.
- Coordinate structural details and incorporate on plans to be approved by structural.

b. Engineer will prepare technical specifications describing all elements of the proposed work.

c. Engineer will prepare a revised opinion of probable construction costs based on design development drawings.

d. Engineer will meet with the Owner to review the construction document package and will receive comments from staff for finalizing the construction document package.

4. Bidding and Negotiation
   a. Engineer will prepare a list of qualified potential subcontractors who can perform the work.

   b. Engineer will prepare addenda as may be required during the bidding or negotiating process.

   c. Engineer will assist the Owner in the evaluation and assessment of bids or negotiated proposals.

   d. Engineer will propose and/or evaluate value engineering and substitutions with respect to cost implications and effect on quality and/or scope of the work.

5. Construction Observation
   a. Engineer will attend a kickoff meeting with the Owner, the selected landscape / hardscape subcontractor and General Contractor to review the project requirements, schedule and responsibilities.

   b. Engineer will review and approve subcontractor submittals regarding landscape and hardscape material specified for the streetscape project and keep logs for submittals.

   c. Engineer will review and prepare responses to questions, clarifications and information requests submitted by the subcontractor. Clarification and information requests will be logged and copied to the Owner.

   d. Engineer will prepare a punchlist of the completed work and coordinate the list with the Owner. The punchlist will identify items needing correction, deficiencies in the works and damage.

   e. Engineer will review the completed punchlist items with the contractor and issue a notice of completion to the Owner.

   f. Engineer will coordinate the preparation of record drawings with the landscape / hardscape contractor, review for completeness and issue to the Owner with all records of

construction developed for the project based on documents delivered to Engineer by such contractor. This will constitute the project close out of the construction phase.

6. Additional Services

The following services are not included in the scope of basic services. Engineer shall provide these services if authorized in writing by the Owner on a time and expense in addition to the compensation for Basic Service.

- Illustrative renderings beyond those described in the Basic Services.
- ~~Zoning changes or variances~~
- Irrigation design and construction documents

SLADE MAY DESIRE THIS TO BE IN BASIC SERVICES

C. Bidding and Contract Award

1. Prepare Advertisement for Bidders.
2. Provide 25 half-size sets of plans and bid documents.
3. Attend pre-bid meeting.
4. Prepare necessary addenda and respond to bidder's questions.
5. Prepare bid tabulation.
6. Recommend a bidder for the award of the construction contract. & PERFORM REFERENCE CHECKS

SEE JIM'S COMMENTS / ~~ALSO PROVIDE 6 FULL SIZE SETS OF PLANS~~

D. Construction Administration

1. Provide ~~three (3)~~ ~~six (6)~~ full-size sets of plans for Owner and Contractor.
2. Attend pre-construction meeting.
3. Respond to Requests for Information.
4. Review submittals, as required by the contract documents.
5. Attend final inspection. & PREPARE PUNCH LIST
6. Prepare mylar record drawings and electronic files.

III. Detailed Scope of Additional Services

A. Surveying

1. Update property ownership, including revision to property owner legal descriptions and maps, as determined to be necessary by Town
2. Stake centerline at 100-foot intervals with PC's and PT's prior to geotechnical borings performed in field.
3. Locate bore holes horizontally and vertically.
4. Cross sections of Arapaho Road at Midway Road to include lane shots.
5. Project management and administration for surveying elements.

B. Geotechnical Investigation

The geotechnical services will include the following: field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road.

1. Field Investigation

Drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency.

The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained

from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

Owner shall ~~provide~~ WITH ENGINEER TO OBTAIN coordinate right-of-entry to the property so that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. Traffic control services shall be Additional Services if required to complete the borings.

The drilling operations will proceed in a manner that will reduce the potential of damage to underground utilities. Owner shall provide any information regarding any existing underground utilities that are present on-site prior to Engineer beginning the field work. Engineer will coordinate underground utility line clearance with the Texas Excavation Safety System, the Owner, and Dallas Area Rapid Transit (DART). However, Engineer will not be responsible for damage to underground utility lines that are not properly identified by the Owner prior to mobilization of drilling equipment to the site.

2. Laboratory Testing

The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization

3. Engineering Analyses and Report

The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for

design and construction of the roadway. The results of this investigation will be presented in an engineering report, Three copies of the report will be submitted, The report will include the following: TO TOWN ✓

a. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.

b. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.

c. Recommendations for design of MSE retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.

d. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.

e. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.

f. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.

g. Recommendations for pavement subgrade preparation.

h. Recommendations for Portland cement concrete pavement sections. Owner will arrange to provide the anticipated traffic loading for use in our analysis.

i. Discussion of potential construction problems, such as hard rock excavation, groundwater, and subgrade instability.

C. Traffic Study

a. Signal Design Layout

1. Prepare preliminary traffic signal design plans and specifications for intersection of Arapaho Road at Addison Road to include railroad preemption. Plans and specifications will be prepared using Owner standards.

2. Review plans and specifications with Owner and revise as necessary. Prepare final plans, specifications, construction estimates and contract documents for installation of traffic signals. THROUGHOUT PROJECT LIMITS. ✓

b. *Traffic Signal Data Collection*

1. Collect AM peak period (7:00 – 9:00 AM) and PM peak period (4:30 PM – 6:30 PM) turning movement counts in 15 minutes intervals, including pedestrian counts, for two representative intersections. These intersections will provide a general understanding of the volume of traffic and traffic characteristics of the area.

2. Compile the existing traffic turning movement counts for the AM and PM peak hour time periods and determine the existing AM and PM peak hours, peak hour factors and percent trucks for each intersection. Balance the traffic turning movement counts for Phase II and Phase III for the AM and PM peak hours. Prepare base maps for Phase II and Phase III illustrating the existing peak hour turning movement counts, intersection geometrics, speed limits, distances between intersections, percent trucks, PHF, and existing traffic signal phasing. Compile the existing traffic signal timing plans to determine the existing traffic signal phasing, cycle length, minimum and maximum green times, yellow times, all-red times, walk times and flashing don't walk times.

c. *Initial Traffic Analysis – West Segment*

1. Analyze the three signalized intersections in West Segment, utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. More specifically, the following process will be utilized for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - TRANSYT-7F – Holding the cycle length and green splits constant, run this program to optimize offsets to provide progression for the highest volume movements (minimize system delay).

   Summarize the results with MOE tables and phasing/timing diagrams and illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Arapaho Road from Marsh

Lane to Surveyor Boulevard and Marsh Lane from Beltline Road to Arapaho Road.

d. Initial Traffic Analysis – East Segment

1. Analyze the six signalized intersections in Phase III East Segment, utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. The goal will be to provide traffic signal progression along the three signalized intersections along Addison Road and the four signalized intersections along Arapaho Road. The following process for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - PASSERII – Holding the cycle length and green splits constant, run this program to optimize the offsets for through movement progression on Addison Road and Arapaho Road. Two runs will be completed consisting of one run for Addison Road and one run for Arapaho Road.
   - TRANSYT-7F – This program will be used to combine the two PASSERII runs and fine-tune the offsets for higher volume turning movements (minimize system delay).

   Summarize the results with MOE tables and phasing/timing diagrams. Illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Addison Road from Beltline Road to Lindberg and for Arapaho Road from Addison Road to Spectrum. Assist Engineer with coordination with railroad and traffic signal design for railroad preemption.

e. Technical Memorandum

Document the procedures, findings and recommendations of the traffic signal timing analysis, with exhibits, tables and text in a technical memorandum. The technical memorandum will also include an appendix with the traffic software output.

Note: Additional information on the Traffic Study is included in Exhibit B.

D. Phase I Environmental Site Assessment
See Exhibit A for detailed description.

E. Construction Inspection
See Exhibit B for detailed description.

SECTION 3. PAYMENT
Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation
Owner shall make payment monthly to Engineer based upon statements submitted by the Engineer for percentage of work performed.

Compensation for performing Basic and Additional Services shall be on a Lump Sum Basis. The Lump Sum amount for Services shall not exceed $595,457.00.

SECTION 4. RESPONSIBILITIES
Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in such design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner and Engineer under this Agreement are as provided by law. Engineer shall not be responsible for construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project.

SECTION 5. TIME FOR PERFORMANCE
Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the terms of this Agreement. The services to complete construction documents shall be completed within 15 months of Notice-to-Proceed.

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative delay of over 180 days, Engineer shall have the right to

renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from proceeding with its services on the project. This shall include, but is not limited to, Owner reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made. Provided, however, Engineer shall not be considered in default hereunder in delays are caused by reasons beyond its reasonable control.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that intended in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer is hired to modify such instrument for such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the services, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving five (5) days written notice to the Engineer. In the event termination is for

cause however, such shall be in accordance with section 14 hereof. In the event suspension or termination is without cause, payment to Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of this Agreement, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Engineer may terminate this Agreement.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against losses, liability or damage of any character, including defense costs, expenses and attorney fees incidental to the defense of such losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including the loss of use resulting therefrom, from any negligent act, error, or omission of the Engineer, its officers, employees, or subcontractors, or anyone else for whom Engineer is legally liable which are resulting from or caused by the performance of any services called for by this Agreement. In the event the parties are found to be jointly or derivatively negligent or liable for such damage or injury, the indemnification shall be assessed on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor or any other party contracting with Owner to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of the responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; or other documents prepared by Engineer, its employees, and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

To the extent Owner has paid Engineer in full hereunder for same, Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Neither party shall assign or sublet this Agreement or any part thereof, without the prior written consent of the other party.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or is unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within fourteen (14) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all services determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for percentage of completion by Engineer through such date of termination. In the event of, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all reasonable, unmitigatable costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation. The reasonable expense for same may be offset against amounts due the Engineer. In such case, Engineer shall not be liable with respect to indemnity or otherwise for any such services performed, arranged, or furnished by Owner. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement, which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 2001.

OWNER: TOWN OF ADDISON, TEXAS	ENGINEER: HNTB CORPORATION
By: _____	By: _____
Ron Whitehead, City Manager 5300 Beltline Road P.O. Box 144 Addison, Texas 75001-0144	Benjamin J. Biller P.E. Vice President, Central Division 14114 Dallas Parkway, Suite 630 Dallas, Texas 75240-4381
Witness: _____	Witness: _____

EXHIBIT A

ARAPAHO ROAD EXTENSION
SURVEYOR BOULEVARD TO ADDISON ROAD
FEE PROPOSAL - JULY 2001

Basic Services

Final Design	
Paving, Drainage, and Utilities	$97,780
Streetscape	$17,262
Bidding and Contract Award	$6,414
Construction Administration	$8,930
Direct Labor Cost Phase III Basic Services	$130,386
Indirect Labor, Overhead	$200,665
HNTB Engineering Subtotal	$331,051
Profit and Contingency	$49,658
Out-of-Pocket Expense	$6,500
HNTB Subtotal Fee, Basic Services	$387,209
GBW	
See GBW Proposal	$125,608
Basic Services Fee	$512,817

Additional Services

Surveying, See ARS Inc. Proposal	$10,511
Geotechnical, See TerraMar Proposal	$33,125
Traffic Engineering	$36,354
Phase I Environmental Site Assessment, See TerraMar Proposal	$2,650
Subtotal Fee, Additional Services	$82,640
TOTAL FEE FOR SERVICES	**$595,457**

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - PAVING, DRAINAGE, AND UTILITIES

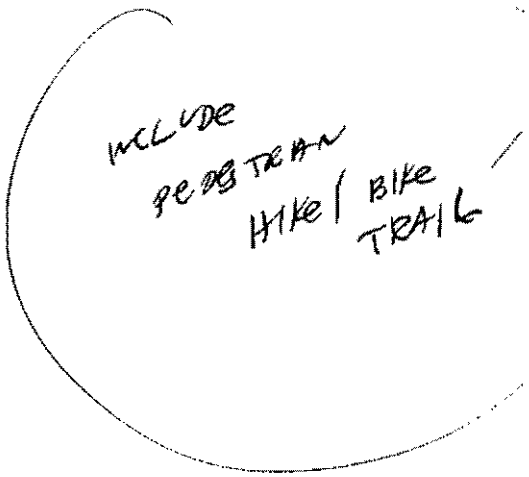
	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 1: Final Design-Paving, Drainage, and Utilities						
Task 1.1 Paving Construction Drawings						
A. Cover Sheet			4		16	2
B. General Notes			8	16	16	
C. Quantity Summary Sheets				24	24	8
D. Utility Relocations		16				
E. Typical Sections			24	24	40	
F. ~~ROW Map - Temporary Construction Easements~~ SEPARATE AGREEMENT						
G. Construction Sequencing/Traffic Control		16				
H. Plan and Profile Sheets		80	120	160	200	
I. Paving, Sidewalk, Intersection, Misc. Details		4	20	80	100	
J. Driveway Detail, Special Grading Sheet		16	40 HIGH	80	80	
K. Striping Plan, Details		8				
L. Signing Plan, Details		8	16	40	80	
M. RR Grade Crossing Plan, Details, Coordination	40	80	80	16	40	24
N. Street Lighting Plan, Details	12	48	40	40	32	
O. Removal Sheet		HIGH 16	16	24	32	
P. Bid Quantities		24	40	64	16	
Q. Opinion of Probable Cost		12	24	32		8
R. QA/QC	~~6~~ 16	~~30~~	20	10		4
S. Review Comment Revisions		~~24~~	40	40	80	4
Task 1.2 Project Management/Coordination	~~240~~ 175	200				40
Task 1.3 Drainage Construction Drawings						
A. Drainage Plan/Profile		8				
B. Drainage Calculations		8				
C. Drainage Area Map		4				
D. Details		4	4		4	
E. Storm Water Pollution Prevention		4		4	4	
Task 1.4 Specifications and Contract Documents	8	40	20			40
Task 1 Total Hours	316	644	496	644	764	130
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$17,064	$28,980	$16,368	$15,456	$17,572	$2,340

HNTB Final Design-Pavement, and Utilities **$97,780**

HIGH - PHASE II COVER SHEET SHOULD SERVE AS BASE FOR PH-III COVER SHEET

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - STREETSCAPE

	Group Director	Design Director	Senior LA	LA 3	LA 2	LA 1
Task 2 Final Design - Streetscape						
Task 2.1 Schematic Design						
A. Kickoff/Programming Meeting			4		4	
B. Schematic Landscaping Master Plan	8	4	24		40	
C. Schematic Plan Review Meeting			4		4	
Task 2.2 Design Development						
A. Prepare Design Development Package	8	8	24		60	
B. Prepare Opinion of Probable Construction Costs			8		16	
C. Design Development Plan Review Meeting			4		4	
Task 2.3 Construction Documentation						
A. Prepare Construction Documents	16		40		120	40
B. Prepare Technical Specifications			8		16	16
C. Prepare Revised Opinion of Probably Cost			4		4	8
D. Construction Document Review Meeting			4		4	4
Task 2.4 Bid Phase						
~~A. Prepare List of Qualified Sub-Contractors~~	8		8		8	
B. Prepare Addenda			4		16	
C. Assist Owner in Evaluation of Bids			4		8	
~~D. Value Engineering/Substitutions~~			4		12	
Task 2.5 Construction Observation						
A. Kickoff Meeting	8		4		4	4
B. Review Submittals; Tag Trees			16		24	8
C. Review Information Requests			8		12	8
D. Review Work Progress			8		40	
E. Prepare Punchlist			4		16	8
F. Punchlist Review					4	4
G. As-Builts - Project Closeout			2		16	4
Task 2 Total Hours	48	12	186	0	432	104
Hourly Rate	$32.21	$37.50	$30.77	$22.60	$18.27	$15.87
Direct Labor Cost	$1,546	$450	$5,723	$0	$7,893	$1,650
			Final Design - Streetscape			$17,262



ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
BIDDING AND CONTRACT AWARD

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 3: Bidding and Contract Award						
A. Prepare Advertisement for Bidders		~~4~~ 2			~~2~~ 4	~~2~~ 16
B. Prepare 25 Half-Size Sets of Plans & Bid Documents		2			16	8
C. Attend Pre-Bid Meeting		~~4~~ 3	~~4~~ 3			2
D. Prepare Addenda & Respond to Bidder's Questions		~~16~~ 24	20 ~~32~~	20 ~~32~~	16	~~20~~ ~~40~~
E. Attend Bid Opening\ Review Bid Docs\Prepare Bid Tab	2	4	8			8
F. Recommend a Bidder to the Town of Addison		4				8
Task 3 Total Hours	2	42	44	32	36	76
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$108	$1,890	$1,452	$768	$828	$1,368

Bidding and Contract Award $6,414

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - GBW ENGINEERS, INC.

	Asst. Project Manager	Project Engineer	Design Tech	CADD Operator	Clerical
Task 5: GBW Engineers, Inc.					
Project Meetings/Management	60				
Utility Coordination	8	4	40		16
Drainage Plans/Profile	8	16	40	160	
Drainage Calculations	8	16	24	60	
Drainage Area Map	4	8	24	40	
Utility Relocations	8	16	40	120	
Construction Sequence/Traffic Control	8	16	40	180	
Striping	4	8	24	100	
Storm Water Pollution Prevention Plan	4	8	24	100	
Traffic Signal Drafting	8		8	96	
Details	4	8	16	48	
Bid Quantities	4	8	24	16	8
Bid Documents and Specifications	24	16			24
Opinion of Probable Cost	4	8	16		8
Task 5 Total Hours (GBW)	156	132	320	920	56
Hourly Rate	$45.00	$41.00	$24.00	$16.00	$16.00
Direct Labor Cost	$7,020	$5,412	$7,680	$14,720	$896
		Final Design-GBW			$35,728

	Survey Manager	Survey Tech.	Survey Crew
GBW Engineers, Inc.			
Utility Survey	8	24	24
Task 2 Total Hours	8	24	24
Hourly Rate	$100.00	$60.00	$110.00
Direct Labor Cost	$800	$1,440	$2,640
	Survey-GBW		$4,880

Direct Labor Cost	$35,728
Indirect Labor, Overhear (1.8775)	$67,079
Subtotal	$102,807
Profit and Contingency	$15,421
Surveying Expense	$4,880
Direct Expense	$2,500
TOTAL FEE (GBW)	$125,608

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - SURVEYING - ARS ENGINEERS, INC.

	Abstractor	RPLS	Sr. Svy Tech	Survey Tech	✓ 3 Man Crew	Admin
Task 6 - Additional Services - Surveying						
A. Update Property Ownership.	0			0		
B. Prepare Parcel Plats and Descriptions for 15 TCEs		0	0	0		
C. Stake Centerline at 100 ft. intervals with PCs and PTs				10	40 ✓	
D. Locate Bore Holes Horizontally and Vertically				5	24	
E. Additional Survey Shots at Midway Road				4	16 ✓	
F. Project Management and Administration		8				4
G. Three (3) Each Plats and Descriptions, Electronic Files		0		0		0
Task 6 Total Hours	0	8	0	19	80	4
Hourly Rate	$48.00	$90.00	$63.00	$53.00	$105.00	$40.00
Direct Labor Cost	$0	$720	$0	$1,007	$8,400	$160

Labor Total	$10,287
Expenses	$224
Additional Services - Surveying	$10,511

Expenses	
Map/Deed Copies	$0
Mileage	$94
Reprographics (Copies & Plots)	$50
Delivery/Courier Service	$30
Misc. Field Expenses	$50
Total Expenses	$224

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - GEOTECHNICAL INVESTIGATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 7. Additional Services - Geotechnical Investigation						
Task 7 Total Hours	see TERRAMAR	PROPOSAL				
Hourly Rate						
Direct Labor Cost						
Additional Services - Geotechnical Investigation						$33,125.00

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - TRAFFIC STUDY

	Project Manager	Senior Engineer	Design Engineer	HNTB Co-op	Jack Hatchell	Gram Traffic
Task 8: Additional Services - Traffic Study						
A. Signal Design Layout						
1. Preliminary Design					$5,000	
2. Final Design					$2,200	
B. Traffic Signal Data Collection						
1. Peak Period Turning Movement Counts						$799
C. Signal Phasing and Timing Analysis						
1. Project Management, Administration, Coordination	8					
2. Compile existing signal; timing plans (determine existing phasing)		1	8			
3. Determination of existing ped. Phasing and cycle lengths		2	10			
4. Compile existing/projected ADT's and Turning Movement Counts		2	8			
5. Determine projected AM and PM peak hour turning movements		4	24			
6. Obtain Geometric Plans/Base Maps		2	4			
7. Determine Clearance Times (Yellow/All-red)		6	12			
8. Coordination for Railroad Preemption	2	8	20			
9. SIGNAL2000 Analysis - LOS and Phase Determination		6	24			
10. NOSTOP and SIGNAL2000 - Cycle Length for Prog.		4	16			
11. TRANSYT-7F Analysis - Offsets		4	16			
12. Summary Phasing/Timing		4	8		$4,000	
13. Illustration of Preemption phases - Phase II		4	8			
14. Illustration of Preemption phases - Phase III		2	12			
15. Technical Memorandum		6	12	20		
15. Bidding and Award of Contract / Review					$600	
Task 8 Total Hours	10	55	182	20		
Hourly Rate	$54.00	$45.00	$24.00	$14.00		
Direct Labor Cost	$540	$2,475	$4,368	$280	$11,800	$799.00
Total Direct Labor and Burden	$1,674	$7,673	$13,541	$868	$11,800	$799.00
			Additional Services - Traffic Study			$36,354

TERRA-MAR

Consulting Engineers • Geotechnical • Environmental • Construction Materials Testing

DALLAS • FORT WORTH • HOUSTON • AUSTIN • LONGVIEW

July 10, 2001
TMI Proposal No.: P01-1538DN

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas, Parkway, Suite 630
Dallas, Texas 75240

Tel; 972-661-5626

RE: Proposal for Phase I Environmental Site Assessment
Automotive Facility, Southeast Corner, Intersection of Addison Rd. and Arapaho Rd.
Addison, Texas

Dear Mr. Holder:

At your request, Terra-Mar, Inc. (TMI) is pleased to submit this proposal to provide a Phase I Environmental Site Assessment (ESA) at the above-referenced property. This proposal outlines our proposed scope of services and presents our estimated compensation and schedule to perform the work.

PROJECT BACKGROUND

The property subject to this investigation is currently an active automotive repair facility located at the southeast corner of the intersection of Addison and Arapaho Roads, in Addison, Dallas, County, Texas.

It is our understanding that HNTB is requesting a Phase I Environmental Site Assessment of the above-referenced property prior to acquisition of the property for the Arapaho Road Extension-Phase III project.

PROPOSED SCOPE OF SERVICES

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Terra-Mar, Inc. (TMI) will provide the professional services required to identify the presence of recognized environmental conditions at the site by performing a regulatory/historical review and visual inspection of the site for the presence or evidence of hazardous substances on or near the property. The Phase I ESA services to be provided by TMI are described in the following Scope

of Work. TMI's scope of services and report format incorporate the criteria established by ASTM-1527-00, and the ESA will be performed in general conformance with this standard.

On-Site Assessment

Our environmental assessment personnel will conduct a walk-through of the property. The site inspection will cover the following visual activities related to:

- Areas of potential contamination;
- Areas of visible contamination;
- Observed adjacent properties;
- Site boundaries;
- Chemical storage or dispensing activities;
- Geological and hydrogeological characteristics of the site;
- Apparent and unusual topographical changes;
- Site operations;
- Grounds management;
- Waste storage/management practices;
- Proximity of surface water;
- Existing transformers, and light ballasts that may potentially contain PCBs;
- On-site petroleum storage tank management practices and compliance;
- On-site disposal and landfill practices;
- Pesticide usage and dust control;
- Ponds, basins and lagoons;
- Stained and discolored building surfaces/soils; and
- Hazardous materials storage/handling practices;
- Suspect Asbestos-containing materials (Option to include collection of up to 30 bulk samples for PLM analysis; separate fee shown below).

Document Review and Interviews

The following published lists will be reviewed in order to discover if the subject site or properties within the prescribed ASTM radii have either past or present potential/documented environmental conditions:

- U.S. EPA'S CERCLIS list of sites potentially contaminated with hazardous waste;
- The National Priorities List (NPL) of sites contaminated with hazardous waste;
- The U.S. EPA RCRA Notifiers List of facilities which generate, treat, store, transport, or dispose of hazardous waste;
- The U.S. EPA ERNS (Emergency Response Notification System) List; and
- The Texas Natural Resource Conservation Commission (TNRCC) lists of State Superfund Sites, Registered and Leaking Underground Storage Tanks, Spill Incidents and Accidents, and Municipal Waste Registration List.

TERRA-MAR

Additionally, TMI will review a 50-year chain of title, historical aerial photographs, city directories, building permits, and Sanborn maps, if available.

We will review available USGS topographic maps of the site area to estimate local topography, and we will review selected maps and documents pertinent to knowledge about the geologic/ hydrogeologic setting of the site. If available, we will interview persons with specific relevant knowledge of the site.

REPORT

Following our site visit, historical/regulatory reviews and interviews, we will prepare a report for the site, detailing our observations, findings, conclusions, and recommendations. Figures, maps, photographs and other referenced documentation will be appended to the final report. TMI will provide three (3) copies of the final report.

SCOPE LIMITATIONS

The following tasks are not included in the above scope of services, but can be provided at an additional cost if needed:

- Additional file acquisition, research, or investigation into listed facilities discovered on adjacent properties during the performance of the regulatory review;
- Sampling of stored materials/waste;
- Sampling and analysis of soils or groundwater or potential lead-based paint containing surfaces;
- Disposal of any contaminated surface or subsurface soils or groundwater;
- Area delineation and quantification of any contaminated soil;
- Assessment of the site or structures for suitability of intended use; structural, mechanical, building, roof, or site safety inspections;
- Wetlands delineation;
- Oil and Gas survey;
- Water wells search;

PROJECT FEES

Phase I ESA .....**$ 1,900.00**
Pre-Demolition Asbestos Survey (up to 30 samples*) .....**$ 750.00**

TMI will provide the presented scope of services on a fixed fee basis.

TERRA-MAR

PROJECT SCHEDULE

TMI proposes to initiate environmental investigation activities within 24 hours following receipt of client's written permission to proceed. Field activities will be completed in two working days. TMI will complete and submit our draft Phase I report within 15 business days following notification to proceed.

PAYMENT

Payment for services is requested within 30 days of delivery of TMI's report.

PROPOSAL ACCEPTANCE

TMI appreciates the opportunity to submit this proposal. Executing the Proposal Acceptance Agreement (PAA) and Faxing to TMI at (972) 488-8080 can indicate formal acceptance, and will constitute TMI's Notice to Proceed.

TMI's experienced engineers and scientists are committed to meeting your needs. We look forward to serving you on your project.

Respectfully submitted,

Terra-Mar, Inc.

James R. Gaw
Vice President, Environmental Services

EXHIBIT B – Additional Services not included in proposal

Design of Pedestrian Link / Trail

- HNTB is currently doing a study for the Owner to determine the route and location of a Pedestrian Link / Trail along the north side of Arapaho Road. After this study is done, it is anticipated that a supplemental agreement will be made to design the facility and its amenities along the roadway corridor.

Traffic Signal Coordination Timing Plans – Final Timing

- Progression analysis should be refined between the months of October and April, after Arapaho Road is open to traffic. After the road is open, new traffic counts need to be taken in order to base the progression analysis off accurate, current data. Based on the new traffic counts, progression analysis would be performed using SIGNAL2000, NOSTOP, TRANSYT-7F, and PASSERII-90 software. The traffic counts and progression analysis would be done through a supplemental agreement.

Building Demolition Plans

- There are three known locations that will require demolition plans for existing structures along the corridor. The necessary plans and specifications for the demolition of these structures is not included in this scope of work.

Construction Observation

- It is anticipated the Owner will require assistance with construction observation throughout the construction duration. For this proposal it is assumed that assistance will be provided on a ~~half~~ time basis, or ~~20~~ hours per week throughout the duration of a 12-month construction schedule. The Engineer's construction representative will perform services under supervision and at the direction of the Owner's construction inspection staff. The following tasks would be performed by this task. ~~Based on today's rates, the total estimated fee for this service would be $86,425.~~

  - Monitor construction activities including office/on-site observations during construction operations. This effort will be performed in association with the Owner's staff to supplement their own inspection staff.
  - The Engineer's construction representative and staff shall be stationed in Engineer's offices for the administration of the contract documents.
  - The Engineer's construction representative shall assist in working with the Contractor to address RFI's, shop drawings, and related questions concerning design issues to support timely response and resolution of issues
  - The Project construction representative shall assist in monitoring the construction schedule on an ongoing basis at bi-weekly intervals based upon a 12-month construction schedule, and report to the Owner on matters that may lead to delays and deficiencies.

construction schedule, and report to the Owner on matters that may lead to delays and deficiencies.

- Review requests for alternatives and substitutions from the Contractor and submit them, together with Engineer's recommendations, to Owner for consideration.
- Review and make recommendations on contractor submitted shop drawings.
- Observe construction to determine in general if the Work is proceeding in such a manner indicating that when completed it will be in accordance with requirements of the contract documents.
- Conduct observations to determine an estimate of percent completion.
- Prepare preliminary and final deficiencies lists at intervals during the overall Project duration.
- Based on observations and evaluations of the Contractor's applications for payment, the Project construction representative shall review and certify the amounts due the Contractor.

THIS ITEM SHOULD BE INCORPORATED IN BASE BID

Coordination with third-party for bridge Aesthetics & STRUCTURAL ?

- If the Town of Addison chooses to have a third party design the aesthetic treatments for the bridge over Midway Road it will require a coordination effort between HNTB and the third party. The town has requested an estimate of how much time it would take for coordination between the Engineer, for the design of the structural elements, and the third-party, for the design of the aesthetic elements. This estimate is for meetings with the third party, information sharing, transfer of files (electronic, including CAD), notes and sketches, and meetings with the Town to incorporate ideas into the bridge. This estimate is <u>not for the design</u> of any elements of the bridge that are developed through these meetings or by the third party. We have based our estimate on a total of 140 hours over the course of the design. The estimated amount would be approximately $17,500. A more detailed estimate can be provided once more information is known.

HNTB ARCHITECTS ENGINEERS PLANNERS

5910 W Plano Parkway
Suite 200
Plano, Texas
75093
(972) 661-5626
FAX (972) 661-5614
www.hntb.com

November 13, 2001

Town of Addison
16801 Westgrove Drive
P.O. Box 9010
Addison, Texas 75001-9010

Attn: Mr. Steve Z. Chutchian, P.E.

ARAPAHO ROAD PHASE III – SCOPE AND FEE

Dear Steve:

Attached please find one original and one copy of the revised scope and fee for the referenced project. The updated man-hours represent a decrease in the engineering fees of over $36,000 from our previous submittal. As we discussed, there are several items that have both increased and decreased the fee during this revision. These items include the following:

- Pedestrian Hike/Bike Trail (added)
- Irrigation Design (added)
- Engineering man-hours (reduced)
- Third-Party Coordination (added)
- Surveying (changed to add 50' staking)

We are returning your marked up agreements for reference, along with an opinion of probable construction cost per your request. If you compare our engineering fee to the construction cost (without the bridge), it calculates to be less than 5.5%. We trust this revised scope and fee meets with your approval. If so, please sign the original and return to us. We are excited about working with you and your staff on this new phase of the project.

Very truly yours,

HNTB CORPORATION

Jerry D. Holder, P.E.
Director of Capital Projects

JDH/dsl

Enclosure

25768

TOWN OF ADDISON, TEXAS

HNTB / GBW Engineers 11/13/01

ARAPAHO ROAD EXTENSION FROM ADDISON ROAD TO MARSH LANE

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

OPTION 5C - SURVEYOR BLVD. TO ADDISON ROAD - Phase 3

ITEM NO	ITEM DESCRIPTION ROADWAY	UNIT	QUANTITY	ENGINEERS ESTIMATE UNIT PRICE	ENGINEERS ESTIMATE AMOUNT
100	PREP. & MAINT. OF RIGHT-OF-WAY	STA	59.5	$ 2,750.00	$ 163,735.00
104	REMOVE OLD CONCRETE (PVMT.)	SY	500	$ 3.85	$ 1,925.00
110	EXCAVATION (ROADWAY)	CY	7,000	$ 3.50	$ 24,500.00
132	EMBANKMENT (ORDINARY COMPACTION)	CY	34,000	$ 9.50	$ 323,000.00
260	LIME TREATED SUBGRADE (6 in) (Mainline)	SY	24,200	$ 3.30	$ 79,860.00
360	CONCRETE PAVEMENT (10 in) (Mainline)	SY	23,200	$ 34.20	$ 793,440.00
360	MONOLITHIC CURB (TYPE A) (6 in)	LF	11,500	$ 2.25	$ 25,875.00
423	RETAINING WALL (CAST IN PLACE)	SF	21,000	$ 35.25	$ 740,250.00
500	MOBILIZATION	LS	1	$ 100,000.00	$ 100,000.00
502	BARRICADES, SIGNS AND TRAFFIC HANDLING	LS	1	$ 100,000.00	$ 100,000.00
666	REFLECT PAVE MARKINGS	LF	25,000	$ 1.75	$ 43,750.00
*	LIGHTING	LF	5,400	$ 38.50	$ 207,900.00
*	TRAFFIC SIGNALS (PER INTERSECTION)	EA	1	$ 132,000.00	$ 132,000.00
	RAILROAD SIGNALS, CROSSING	EA	2	$ 275,000.00	$ 550,000.00
681	TEMPORARY TRAFFIC SIGNAL	EA	1	$ 11,000.00	$ 11,000.00
	LANDSCAPING	LS	1	$ 1,200,000.00	$ 1,200,000.00
	INLETS	EA	25	$ 2,750.00	$ 68,750.00
	MANHOLES	EA	5	$ 5,500.00	$ 27,500.00
	LATERALS	LF	1,180	$ 55.00	$ 64,900.00
	24" RCP	LF	3,000	$ 55.00	$ 165,000.00
	30" RCP	LF	1,310	$ 70.00	$ 91,700.00
	36" RCP	LF	500	$ 85.00	$ 42,500.00
	6' X 5' RCBC	LF	260	$ 275.00	$ 71,500.00
	7' X 5' RCBC	LF	400	$ 325.00	$ 130,000.00
	9' X 5' RCBC	LF	500	$ 375.00	$ 187,500.00
	2 - 7' X 5' RCBC	LF	800	$ 600.00	$ 480,000.00
	2 - 9' X 5' RCBC	LF	1,460	$ 775.00	$ 1,131,500.00
	2 - 10' X 6' RCBC	LF	920	$ 875.00	$ 805,000.00
	HEADWALL CONCRETE	CY	30	$ 650.00	$ 19,500.00
	REMOVE CONCRETE CHANNEL LINING	SY	10,500	$ 11.00	$ 115,500.00
	REMOVE/REPLACE CONCRETE CHANNEL LINING	SY	1,100	$ 65.00	$ 71,500.00
	OTHER UTILITY RELOCATIONS	LS	1	$ 77,500.00	$ 77,500.00
	RIGHT-OF-WAY	LS	1	$ 2,750,000.00	$ 2,750,000.00
	DEMOLITION	LS	1	$ 100,000.00	$ 100,000.00
	SUBTOTAL				$ 10,897,085.00
	20% CONTINGENCY				$ 2,179,417.00
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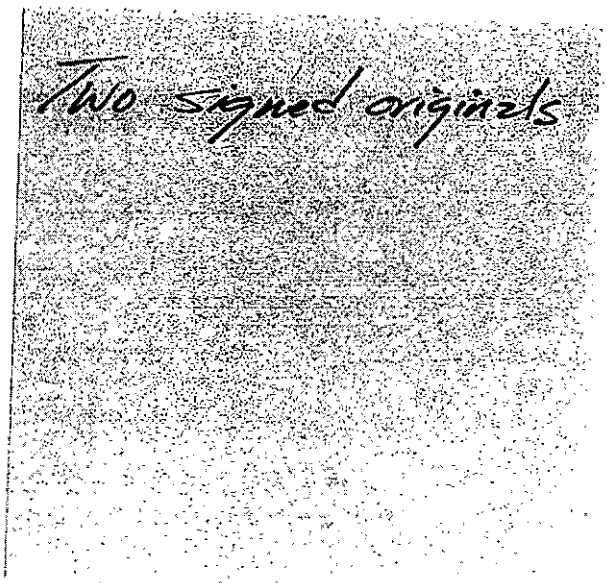
	TOTAL CONSTRUCTION COST				$ 13,076,502.00


Two signed originals

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for design of Arapaho Road from Surveyor Boulevard to Addison Road.

I. Project Definition

This project consists of the preparation of plans and specifications for bidding and construction of Arapaho Road Phase III from Surveyor Boulevard to Addison Road (the Project). The project will be a 4-lane reinforced concrete roadway, with turn lanes at Surveyor Boulevard and Addison Road. A grade separated intersection will be provided at Midway Road. The design of the bridge over Midway Road is not included in this scope of services. Services will generally include geotechnical investigation and recommendations; final construction plans for the roadway, structure, stormwater, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing, signing and striping; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies.

II. Detailed Scope of Basic Services

The improvements have been implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The scope of services for the schematic design are described in a separate scope of services and Agreement between the Town of Addison and HNTB Corporation executed February 12, 1997 with official authorization to proceed dated March 9, 1998. The basic scope of services for construction documents from Marsh Lane to Surveyor Boulevard (Phase II) are described in a separate scope and Agreement executed October 18, 2000 between the Town of Addison and HNTB Corporation.

A. Phase III Final Design – Paving, Drainage, and Utilities

1. Prepare final construction drawings. (Scale 1" = 20' Horizontal and 1" = 5' Vertical except as noted.) The plans will be designed to meet current ADA requirements. The following sheets shall be included:

   a. Cover Sheet

   b. General Notes

   c. Quantity Sheets

   d. Removal Plans

   e. Typical Sections

   f. Construction Phasing (Scale 1" = 40')

   g. Survey Control

   h. Utility Relocation Plan

   i. Paving Plan and Profile Sheets

   j. Paving Details

   k. Signing and Striping Plans (Scale 1" = 40')

   l. Erosion Control Plans

   m. Grading Plan

   n. Driveway and Special Grading Sheets

   o. Drainage Area Map (Scale 1" = 100')

   p. Stormwater Plan and Profile Sheets

   q. Roadway Cross Sections

   r. Street Lighting Plan

2. Prepare Contract Documents

3. Prepare Estimate of Final Construction Cost

4. Submit four (4) sets of plans for review to the Owner for 65% review, 95% review, and 100% (final).

5. Incorporate Owner's review comments into plans after each submittal.

B. Streetscape

Engineer's understanding is the Project will consist of right-of-way improvements for Arapaho Road from Surveyor Boulevard to Addison Road. The current R.O.W. will be widened in some areas allowing for additional landscaping. Proposed streetscape improvements will utilize the existing Town Landscape Ordinance and guidelines. Critical visibility concerns shall be incorporated into the overall roadway improvements.

This proposal does not include architectural improvements related to the proposed bridge spanning Midway Road. These improvements may be added at a later date by the Owner through a supplemental agreement..

Basic Services

1. Schematic Design
   a. Engineer will attend a kickoff / programming meeting with the Owner to discuss the project requirements and to acquire information required to develop the schematic landscape master plan for Phase III.

   b. Based on initial programmatic meetings with the Owner, Engineer will proceed with site development concepts to develop a schematic landscape master plan. Schematic design plans will be drawn at a scale sufficient to explain design intent. The drawings to be produced will be one rendered site plan and necessary cross sections and enlarged plans as required to explain design intent.

   c. Engineer will meet with the Owner to present the schematic landscape master plan and will receive comments from staff for incorporation into the design development package.

2. Design Development

a. Based on the approved schematic design, Engineer will prepare a design development package. This package will include the following:

- Materials plan
- Site grading plan
- Site walls/entry features
- Hardscape/paving

Site lighting (location and fixture type)

- Landscape plan
- Critical cross-sections

This package will include an appropriate level of detail to illustrate design character, intent, means, materials and construction methods sufficient to further refine probable construction costs.

b. Engineer will prepare an opinion of probable construction costs based on design development drawings.

c. Engineer will meet with the Owner to review the design development package and will receive comments from staff for incorporation into the construction document package.

3. Construction Documentation

a. Based on the approved design development package, Engineer will prepare contract documents sufficient to describe the work necessary for construction. The following drawings will be prepared:

- Layout and materials plan
- Enlarged intersection layout & materials plan, if required.
- Grading plan for the R.O.W. improvements
- Enlarged intersection grading plan, if required.
- Planting plan
- Enlarged intersection planting plan, if required.
- Irrigation plan
- Enlarged intersection irrigation plan, if required.
- Site lighting (location & fixture type)
- Details and sections at appropriate scales necessary to convey the sizes, appearances, finishes, and colors of all pavements, walls, site furnishings, and light fixtures.
- Coordinate structural details and incorporate on plans to be approved by structural.

b. Engineer will prepare technical specifications describing all elements of the proposed work.

c. Engineer will prepare a revised opinion of probable construction costs based on design development drawings.

d. Engineer will meet with the Owner to review the construction document package and will receive comments from staff for finalizing the construction document package.

4. Construction Observation

a. Engineer will attend a kickoff meeting with the Owner, the selected landscape / hardscape subcontractor and General Contractor to review the project requirements, schedule and responsibilities.

b. Engineer will review and approve subcontractor submittals regarding landscape and hardscape material specified for the streetscape project and keep logs for submittals.

c. Engineer will coordinate the preparation of record drawings with the landscape / hardscape contractor, review for completeness and issue to the Owner with all records of construction developed for the project based on documents delivered to Engineer by such contractor. This will constitute the project close out of the construction phase.

6. Additional Services

The following services are not included in the scope of basic services. Engineer shall provide these services if authorized in writing by the Owner on a time and expense in addition to the compensation for Basic Service.

- Illustrative renderings beyond those described in the Basic Services.
- Zoning changes or variances

C. Bidding and Contract Award

1. Prepare Advertisement for Bidders.

2. Provide 25 half-size sets of plans and bid documents.

3. Conduct pre-bid meeting.

4. Prepare necessary addenda and respond to bidder's questions.

5. Prepare bid tabulation.

6. Recommend a bidder for the award of the construction contract after performing reference checks.

D. Construction Administration

1. Provide three (3) full-size and five (5) half-size sets of plans and specifications for Owner.

2. Provide two (2) full-size and three (3) half-size sets of plans and specifications for Contractor.

3. Conduct pre-construction meeting.

4. Respond to Requests for Information.

5. Review submittals, as required by the contract documents.

6. Provide construction administration and observation services.

7. Attend final inspection and prepare punch list.

8. Prepare mylar record drawings and electronic files.

III. Detailed Scope of Additional Services

A. Surveying

1. Update property ownership, to include current ownership. Any subdivision of the existing parcel will be addressed on a case by case basis.

2. Stake centerline at 50-foot intervals with PC's and PT's prior to geotechnical borings performed in field.

3. Locate bore holes horizontally and vertically.

4. Cross sections of Arapaho Road at Midway Road to include lane shots.

5. Project management and administration for surveying elements.

B. Geotechnical Investigation

The geotechnical services will include the following: field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road.

1. Field Investigation

Drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency.

The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

Owner shall coordinate with the Engineer to obtain right-of-entry to the property so that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. Traffic control services shall be Additional Services if required to complete the borings.

The drilling operations will proceed in a manner that will avoid the potential of damage to underground utilities. Owner shall provide any information regarding any existing underground utilities that are present on-site prior to Engineer beginning the field work. Engineer will coordinate underground utility line clearance with the Texas Excavation Safety System, the Owner, Dallas Water Utilities, and Dallas Area Rapid Transit (DART). However, Engineer will not be responsible for damage to underground utility lines that are not properly identified by the Owner prior to mobilization of drilling equipment to the site.

2. Laboratory Testing

   The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization

3. Engineering Analyses and Report

   The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for design and construction of the roadway. The results of this investigation will be presented in an engineering report, Three copies of the report will be submitted to the Owner. The report will include the following:

   a. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.

   b. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.

   c. Recommendations for design of mechanically stabilized earth retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.

   d. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.

   e. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.

f. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.

g. Recommendations for pavement subgrade preparation.

h. Recommendations for Portland cement concrete pavement sections. Owner will arrange to provide the anticipated traffic loading for use in our analysis.

i. Discussion of potential construction problems, such as hard rock excavation, groundwater, and subgrade instability.

C. Traffic Study

a. Signal Design Layout

1. Prepare preliminary traffic signal design plans and specifications for intersection of Arapaho Road at Addison Road to include railroad preemption. Plans and specifications will be prepared using Owner standards.

2. Review plans and specifications with Owner and revise as necessary. Prepare final plans, specifications, construction estimates and contract documents for installation of traffic signals throughout project limits.

b. Traffic Signal Data Collection

1. Collect AM peak period (6:30 – 9:00 AM) and PM peak period (4:00 PM – 6:30 PM) turning movement counts in 15 minutes intervals, including pedestrian counts, for two representative intersections. These intersections will provide a general understanding of the volume of traffic and traffic characteristics of the area.

2. Compile the existing traffic turning movement counts for the AM and PM peak hour time periods and determine the existing AM and PM peak hours, peak hour factors and percent trucks for each intersection. Balance the traffic turning movement counts for Phase II and Phase III for the AM and PM peak hours. Prepare base maps for Phase II and Phase III illustrating the existing peak hour turning movement counts, intersection geometrics, speed limits, distances between intersections, percent trucks, peak hour factor, and existing traffic signal phasing. Compile the existing traffic signal timing plans to determine the existing traffic signal

phasing, cycle length, minimum and maximum green times, yellow times, all-red times, walk times and flashing don't walk times.

c. *Initial Traffic Analysis – Segment 1 (West of Midway Road)*

1. Analyze the three signalized intersections in Segment 1, (Marsh, Surveyor, and Beltline/Marsh) utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. More specifically, the following process will be utilized for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - TRANSYT-7F – Holding the cycle length and green splits constant, run this program to optimize offsets to provide progression for the highest volume movements (minimize system delay).

   Summarize the results with measure of effectiveness tables and phasing/timing diagrams and illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Arapaho Road from Marsh Lane to Surveyor Boulevard and Marsh Lane from Beltline Road to Arapaho Road.

d. *Initial Traffic Analysis – Segment 2 (East of Midway Road)*

1. Analyze the six signalized intersections in Segment 2 of Phase III, (Addison, Edwin Lewis, Quorum, Spectrum, Addison/Lindberg, and Addison/Beltline) utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. The goal will be to provide traffic signal progression along the three signalized intersections along Addison Road and the four signalized intersections along Arapaho Road. The following process for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.

- NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
- SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
- PASSERII – Holding the cycle length and green splits constant, run this program to optimize the offsets for through movement progression on Addison Road and Arapaho Road. Two runs will be completed consisting of one run for Addison Road and one run for Arapaho Road.
- TRANSYT-7F – This program will be used to combine the two PASSERII runs and fine-tune the offsets for higher volume turning movements (minimize system delay).

Summarize the results with MOE tables and phasing/timing diagrams. Illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Addison Road from Beltline Road to Lindberg and for Arapaho Road from Addison Road to Spectrum. Assist Engineer with coordination with railroad and traffic signal design for railroad preemption.

e. Technical Memorandum

Document the procedures, findings and recommendations of the traffic signal timing analysis, with exhibits, tables and text in a technical memorandum. The technical memorandum will also include an appendix with the traffic software output.

Note: Additional information on the Traffic Study is included in Exhibit B.

D. Phase I Environmental Site Assessment

See Exhibit A for detailed description.

E. Construction Inspection

See Exhibit B for detailed description.

F. Coordination with third-party for bridge design

If the Town of Addison chooses to have a third party design the bridge over Midway Road it will require a coordination effort between HNTB and the third party. The Town has requested an estimate of how much time it would take for coordination between the Engineer and the third-party bridge designer. This estimate is for meetings with the third party,

information sharing, transfer of files (electronic, including CAD), notes and sketches, and meetings with the Town to incorporate ideas into the bridge. This estimate is not for the design of any elements of the bridge that are developed through these meetings or by the third party. We have based our estimate on a total of 140 hours over the course of the design. The estimated amount would be approximately $17,500.

SECTION 3. PAYMENT

Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation

Owner shall make payment monthly to Engineer based upon statements submitted by the Engineer for percentage of work performed.

Compensation for performing Basic and Additional Services shall be on a Lump Sum Basis. The Lump Sum amount for Services shall not exceed $589,790.00.

SECTION 4. RESPONSIBILITIES

Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in such design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner and Engineer under this Agreement are as provided by law. Engineer shall not be responsible for construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project.

SECTION 5. TIME FOR PERFORMANCE

Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the terms of this Agreement. The services to complete construction documents shall be completed within 10 months of Notice-to-Proceed.

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative delay of over 180 days, Engineer shall have the right to

renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from proceeding with its services on the project. This shall include, but is not limited to, Owner reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made. Provided, however, Engineer shall not be considered in default hereunder in delays are caused by reasons beyond its reasonable control.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that intended in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer is hired to modify such instrument for such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the services, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving five (5) days written notice to the Engineer. In the event termination is for

cause however, such shall be in accordance with section 14 hereof. In the event suspension or termination is without cause, payment to Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of this Agreement, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Engineer may terminate this Agreement.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against losses, liability or damage of any character, including defense costs, expenses and attorney fees incidental to the defense of such losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including the loss of use resulting therefrom, from any negligent act, error, or omission of the Engineer, its officers, employees, or subcontractors, or anyone else for whom Engineer is legally liable which are resulting from or caused by the performance of any services called for by this Agreement. In the event the parties are found to be jointly or derivatively negligent or liable for such damage or injury, the indemnification shall be assessed on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor or any other party contracting with Owner to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of the responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; or other documents prepared by Engineer, its employees, and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

To the extent Owner has paid Engineer in full hereunder for same, Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Neither party shall assign or sublet this Agreement or any part thereof, without the prior written consent of the other party.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or is unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within fourteen (14) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all services determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for percentage of completion by Engineer through such date of termination. In the event of, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all reasonable, unmitigatable costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation. The reasonable expense for same may be offset against amounts due the Engineer. In such case, Engineer shall not be liable with respect to indemnity or otherwise for any such services performed, arranged, or furnished by Owner. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement, which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 2001.

OWNER:
TOWN OF ADDISON, TEXAS

By: _____

Ron Whitehead, City Manager
5300 Beltline Road
P.O. Box 144
Addison, Texas 75001-0144

Witness:

_____

ENGINEER:
HNTB CORPORATION

By: _____

Benjamin J. Biller P.E.
Vice President, Central Division
5910 Plano Parkway, Suite 200
Plano, Texas 75093

Witness: _____

EXHIBIT A

ARAPAHO ROAD EXTENSION
SURVEYOR BOULEVARD TO ADDISON ROAD
FEE PROPOSAL - NOVEMBER 2001

Basic Services

Final Design	
Paving, Drainage, and Utilities	$86,848
Streetscape	$20,925
Bidding and Contract Award	$4,952
Construction Administration	$8,880
Direct Labor Cost Phase III Basic Services	$121,605
Indirect Labor, Overhead	$187,149
HNTB Engineering Subtotal	$308,754
Profit and Contingency	$46,313
Out-of-Pocket Expense	$7,300
HNTB Subtotal Fee, Basic Services	$362,367
GBW	
See GBW Proposal	$124,918
Basic Services Fee	$487,285

Additional Services

Surveying, See ARS Inc. Proposal	$12,876
Geotechnical, See TerraMar Proposal	$33,125
Traffic Engineering	$36,354
Phase I Environmental Site Assessment, See TerraMar Proposal	$2,650
Coordination with Third Party designer of bridge over Midway	$17,500
Irrigation Layout and Design	$2,800
Subtotal Fee, Additional Services	$102,505
TOTAL FEE FOR SERVICES	**$589,790**

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - PAVING, DRAINAGE, AND UTILITIES

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD/ Tech	Clerical
Task 1 - Final Design-Paving, Drainage, and Utilities						
Task 1.1 Paving Construction Drawings						
A. Cover Sheet			4		12	2
B. General Notes			8	16	16	
C. Quantity Summary Sheets				24	16	
D. Utility Relocations		16				
E. Typical Sections			24	24	40	
F. Construction Specifications and Contract Documents	4	16	40	8		16
G. Construction Sequencing/Traffic Control		16				
H. Plan and Profile Sheets		64	110	140	160	
I. Paving, Sidewalk, Intersection, Misc. Details		4	20	64	80	
J. Driveway Detail, Special Grading Sheet		16	32	48	60	
K. Striping Plan, Details		8				
L. Signing Plan, Details		8	16	40	40	
M. RR Grade Crossing Plan, Details, Coordination	40	80	80	16	40	16
N. Street Lighting Plan, Details	12	48	40	40	32	
O. Removal Sheet			16	24	32	
P. Bid Quantities		12	40	64	16	
Q. Opinion of Probable Cost		12	24	32		8
R. QA/QC	6	30	20	10		4
S. Review Comment Revisions		24	32	32	80	4
Task 1.2 Project Management/Coordination	200	16		184		24
Task 1.3 Drainage Construction Drawings						
A. Drainage Plan/Profile		8				
B. Drainage Calculations		8				
C. Drainage Area Map		4				
D. Details		4	4		4	
E. Storm Water Pollution Prevention		4		4	4	
Task 1.4 Specifications and Contract Documents	8	40	20			40
Task 1 Total Hours	270	438	530	770	632	114
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$14,580	$19,710	$17,490	$18,480	$14,536	$2,052

HNTB Final Design-Pavement, and Utilities **$86,848**

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - STREETSCAPE

	Group Director	Design Director	Senior LA	LA 3	LA 2	LA 1
Task 2 - Final Design - Streetscape						
Task 2.1 Schematic Design						
A. Kickoff/Programming Meeting			4		4	
B. Schematic Landscaping Master Plan	8	8	24		48	24
C. Schematic Plan Review Meeting			4		4	
Task 2.2 Design Development						
A. Prepare Design Development Package	8	12	40		72	24
B. Prepare Opinion of Probable Construction Costs			8		24	8
C. Design Development Plan Review Meeting			4		4	
Task 2.3 Construction Documentation						
A. Prepare Construction Documents	16	16	48		120	48
B. Prepare Technical Specifications			8		24	24
C. Prepare Revised Opinion of Probably Cost			4		8	8
D. Construction Document Review Meeting			4		4	4
Task 2.4 Bid Phase						
A. Prepare List of Qualified Sub-Contractors	*Not applicable to this contract*					
B. Prepare Addenda			8		16	8
C. Evaluate bid tabulation and recommend award			4		8	
D. Value Engineering/Substitutions	*Not applicable to this contract*					
Task 2.5 Construction Observation						
A. Kickoff Meeting	8		4		4	4
B. Review Submittals; Tag Trees			16		32	8
C. Review Information Requests			8		12	8
D. Review Work Progress			8		48	8
E. Prepare Punchlist			4		16	16
F. Punchlist Review					8	4
G. As-Builts - Project Closeout			2		24	12
Task 2 Total Hours	40	36	202	0	480	208
Hourly Rate	$32.21	$37.50	$30.77	$22.60	$18.27	$15.87
Direct Labor Cost	$1,288	$1,350	$6,216	$0	$8,770	$3,301

Final Design - Streetscape $20,925

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
BIDDING AND CONTRACT AWARD

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 3: Bidding and Contract Award						
A. Prepare Advertisement for Bidders		2			2	2
B. Prepare 25 Half-Size Sets of Plans & Bid Documents		2			16	8
C. Conduct Pre-Bid Meeting		3	3			2
D. Prepare Addenda & Respond to Bidder's Questions		16	24	24	16	24
E. Attend Bid Opening\ Review Bid Docs\Prepare Bid Tab	2	4	8			8
F. Recommend a Bidder to the Town of Addison		4				8
Task 3 Total Hours	2	31	35	24	34	52
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$108	$1,395	$1,155	$576	$782	$936
					Bidding and Contract Award	$4,952

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
CONSTRUCTION ADMINISTRATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 4 Construction Administration						
A. Provide 3 Full-Size, 5 Half-Size Sets for Town			2		4	2
B. Provide 2 Full-Size, 3 Half-Size Sets for Contractor					2	
C Conduct Pre-Construction Meeting		3	3			3
D Review Submittals		8	24		16	40
E Respond to Requests for Information.	2	12	20		16	16
F. Attend Final Inspection		8	8			4
G Prepare Mylar Record Drawings	2	16	24	32	40	8
Task 4 Total Hours	4	47	81	32	78	73
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$216	$2,115	$2,673	$768	$1,794	$1,314
			Construction Administration			**$8,880**

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - GBW ENGINEERS, INC.

	Asst. Project Manager	Project Engineer	Design Tech	CADD Operator	Clerical
Task 5 GBW Engineers, Inc.					
Project Meetings/Management	60				
Utility Coordination	8	4	40		16
Drainage Plans/Profile (1)	8	16	40	160	
Drainage Calculations	8	16	24	60	
Drainage Area Map	4	8	24	40	
Utility Relocations	8	16	40	120	
Construction Sequence/Traffic Control	8	16	40	180	
Striping	4	8	24	100	
Storm Water Pollution Prevention Plan	4	8	24	85	
Traffic Signal Drafting	8		8	96	
Details	4	8	16	48	
Bid Quantities	4	8	24	16	8
Bid Documents and Specifications	24	16			24
Opinion of Probable Cost	4	8	16		8
Task 5 Total Hours (GBW)	156	132	320	905	56
Hourly Rate	$45.00	$41.00	$24.00	$16.00	$16.00
Direct Labor Cost	$7,020	$5,412	$7,680	$14,480	$896
		Final Design-GBW			$35,488

(1) Hydraulic Gradient will be shown.

	Survey Manager	Survey Tech.	Survey Crew
GBW Engineers, Inc.			
Utility Survey	8	24	24
Task 2 Total Hours	8	24	24
Hourly Rate	$100.00	$60.00	$110.00
Direct Labor Cost	$800	$1,440	$2,640
	Survey-GBW		$4,880

Direct Labor Cost	$35,488
Indirect Labor, Overhear (1.8775)	$66,629
Subtotal	$102,117
Profit and Contingency	$15,421
Surveying Expense	$4,880
Direct Expense	$2,500
TOTAL FEE (GBW)	$124,918

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - SURVEYING - ARS ENGINEERS, INC.

	Abstractor	RPLS	Sr. Svy Tech	Survey Tech	3 Man Crew	Admin
Task 6. Additional Services - Surveying						
A. Update Property Ownership.	0			0		
B. Prepare Parcel Plats and Descriptions for 15 TCEs		0	0	0		
C. Stake Centerline at 50 ft. intervals with PCs and PTs				15	60	
D. Locate Bore Holes Horizontally and Vertically				5	24	
E. Additional Survey Shots at Midway Road				4	16	
F. Project Management and Administration		8				4
G. Three (3) Each Plats and Descriptions, Electronic Files		0		0		0
Task 6 Total Hours	0	8	0	24	100	4
Hourly Rate	$48.00	$90.00	$63.00	$53.00	$105.00	$40.00
Direct Labor Cost	$0	$720	$0	$1,272	$10,500	$160

Labor Total	$12,652
Expenses	$224
Additional Services - Surveying	$12,876

Expenses	
Map/Deed Copies	$0
Mileage	$94
Reprographics (Copies & Plots)	$50
Delivery/Courier Service	$30
Misc. Field Expenses	$50
Total Expenses	$224

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - GEOTECHNICAL INVESTIGATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 7 - Additional Services - Geotechnical Investigation						
Task 7 Total Hours						
Hourly Rate	***See attached Terra-Mar proposal***					
Direct Labor Cost						
				Additional Services - Geotechnical Investigation		$33,125.00

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March 23, 2001

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas Parkway, Suite 630
Dallas, Texas 75240

Re: Geotechnical Investigation
Arapaho Road Extension – Phase III
Addison, Texas
TMI Proposal No. P01-1547DE

Dear Mr. Holder:

We are pleased to submit this proposal to provide geotechnical services for the above referenced project. This proposal includes a description of the project, and our proposed the scope of work, schedule, and budget.

PROJECT DESCRIPTION

The project consists of extending Arapaho Road from Surveyor Boulevard about 5,800 feet east to Addison Road. A 1,600-foot-long bridge is planned to carry Arapaho Road over Midway Road. Mechanically stabilized earth retaining walls will be constructed at the bridge approaches. These walls will have a maximum height of approximately 25 feet. An existing 60-inch-diameter waterline parallels the MSE walls on the south side of the alignment. A reinforced concrete box culvert is planned under a portion of the proposed roadway. The top of the box culvert will be on the order of 2 feet below the pavement section. The box culvert invert will extend approximately 10 feet below the current site grades and will be installed in an existing drainage ditch.

ANTICIPATED SUBSURFACE CONDITIONS

The project alignment is underlain by the Austin Chalk Formation. Subsurface conditions are expected to consist of active clays to depths of 2 to 10 feet underlain by tan weathered limestone to depths of 10 to 15 feet. Gray unweathered limestone suitable for support of the bridge foundations underlies the tan limestone. Based upon previous borings drilled by Terra-Mar in the area of the proposed site, we anticipate that the gray limestone will be encountered at depths of 10 to 15 feet below the ground surface.

SCOPE OF SERVICES

Our services for this project will include a field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road. A description of our proposed scope of services is presented below.

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Field Investigation

We proposed to drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

TABLE 1 – PROPOSED FIELD INVESTIGATION

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency. The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

It is assumed that the client has the right-of-entry to the property and that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. It is also assumed that traffic control will not be required to complete the borings.

The drilling operations will proceed in a manner that will reduce the potential of damage to underground utilities. We request that we be provided with any information regarding any existing

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underground utilities that are present on-site prior to beginning the field work. We will coordinate underground utility line clearance with the Texas Excavation Safety System, the City of Addison, and Dallas Area Rapid Transport (DART). However, we will not be responsible for damage to underground utility lines that are not properly identified by others prior to mobilization of drilling equipment to the site.

Laboratory Testing

The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization.

Engineering Analyses and Report

The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for design and construction of the roadway. The results of this investigation will be presented in an engineering report. Three copies of the report will be submitted. The report will include the following:

1. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.
2. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.
3. Recommendations for design of the MSE retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.
4. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.
5. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.
6. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.
7. Recommendations for pavement subgrade preparation.
8. Recommendations for Portland cement concrete pavement sections. It is assumed that others will provide the anticipated traffic loading for use in our analysis.

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9. Discussion of potential construction problems, such a hard rock excavation, groundwater, and subgrade instability.

PROJECT SCHEDULE

It is anticipated that it will take approximately 10 working days to have the utilities marked in the field. The field investigation will require 10 days to complete, weather conditions permitting. Laboratory testing will require approximately 15 working days to compete. It is anticipated that the final report will be completed within approximately 35 to 40 working days after receiving authorization to proceed. Preliminary results can be provided during the course of study if desired.

PROJECT BUDGET

Based on the proposed scope of services outlined above, we will provide a geotechnical report for this project for a lump sum fee of **$33,125.00**. This offer is good for a period of 90 days from the date of the proposal.

CLOSURE

Signing the attached Proposal Acceptance Sheet and faxing it to TMI at 972-488-8080 will indicate formal acceptance of the attached Terms & Conditions. Receipt of the signed copy will constitute TMI's notice to proceed. Payment for services is due within thirty (30) days after receipt of TMI's invoice. This proposal is valid for a thirty-day period from the date of this proposal.

We appreciate the opportunity to be of assistance on this project. If you have any questions, please call.

Sincerely,

TERRA-MAR INC.

Roger K. Southworth, P.E.
Project Manager

Berry R. Grubbs, P.E.
President

Attachments: Proposal Acceptance Agreement
Professional Services ♦ General Terms and Conditions

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - TRAFFIC STUDY

	Project Manager	Senior Engineer	Design Engineer	HNTB Co-op	Jack Hatchell	Gram Traffic
Task 8 - Additional Services - Traffic Study						
A. Signal Design Layout						
1. Preliminary Design					$5,000	
2. Final Design					$2,200	
B. Traffic Signal Data Collection						
1. Peak Period Turning Movement Counts						$799
C. Signal Phasing and Timing Analysis						
1. Project Management, Administration, Coordination	8					
2. Compile existing signal; timing plans (determine existing phasing)		1	8			
3. Determination of existing ped. Phasing and cycle lengths		2	10			
4. Compile existing/projected ADT's and Turning Movement Counts		2	8			
5. Determine projected AM and PM peak hour turning movements		4	24			
6. Obtain Geometric Plans/Base Maps		2	4			
7. Determine Clearance Times (Yellow/All-red)		6	12			
8. Coordination for Railroad Preemption	2	8	20			
9. SIGNAL2000 Analysis - LOS and Phase Determination		6	24			
10. NOSTOP and SIGNAL2000 - Cycle Length for Prog.		4	16			
11. TRANSYT-7F Analysis - Offsets		4	16			
12. Summary Phasing/Timing		4	8		$4,000	
13. Illustration of Preemption phases - Phase II		4	8			
14. Illustration of Preemption phases - Phase III		2	12			
15. Technical Memorandum		8	12	20		
15. Bidding and Award of Contract / Review					$600	
Task 8 Total Hours	10	55	182	20		
Hourly Rate	$54.00	$45.00	$24.00	$14.00		
Direct Labor Cost	$540	$2,475	$4,368	$280	$11,800	$799.00
Total Direct Labor and Burden	$1,674	$7,673	$13,541	$868	$11,800	$799.00
			Additional Services - Traffic Study			$36,354

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July 10, 2001
TMI Proposal No.: P01-1538DN

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas, Parkway, Suite 630
Dallas, Texas 75240

Tel; 972-661-5626

RE: Proposal for Phase I Environmental Site Assessment
Automotive Facility, Southwest Corner, Intersection of Addison Rd. and Arapaho Rd.
Addison, Texas

Dear Mr. Holder:

At your request, Terra-Mar, Inc. (TMI) is pleased to submit this proposal to provide a Phase I Environmental Site Assessment (ESA) at the above-referenced property. This proposal outlines our proposed scope of services and presents our estimated compensation and schedule to perform the work.

PROJECT BACKGROUND

The property subject to this investigation is currently an active automotive repair facility located at the southwest corner of the intersection of Addison and Arapaho Roads, in Addison, Dallas, County, Texas.

It is our understanding that HNTB is requesting a Phase I Environmental Site Assessment of the above-referenced property prior to acquisition of the property for the Arapaho Road Extension-Phase III project.

PROPOSED SCOPE OF SERVICES

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Terra-Mar, Inc. (TMI) will provide the professional services required to identify the presence of recognized environmental conditions at the site by performing a regulatory/historical review and visual inspection of the site for the presence or evidence of hazardous substances on or near the property. The Phase I ESA services to be provided by TMI are described in the following Scope

of Work. TMI's scope of services and report format incorporate the criteria established by ASTM-1527-00, and the ESA will be performed in general conformance with this standard.

On-Site Assessment

Our environmental assessment personnel will conduct a walk-through of the property. The site inspection will cover the following visual activities related to:

- Areas of potential contamination;
- Areas of visible contamination;
- Observed adjacent properties;
- Site boundaries;
- Chemical storage or dispensing activities;
- Geological and hydrogeological characteristics of the site;
- Apparent and unusual topographical changes;
- Site operations;
- Grounds management;
- Waste storage/management practices;
- Proximity of surface water;
- Existing transformers, and light ballasts that may potentially contain PCBs;
- On-site petroleum storage tank management practices and compliance;
- On-site disposal and landfill practices;
- Pesticide usage and dust control;
- Ponds, basins and lagoons;
- Stained and discolored building surfaces/soils; and
- Hazardous materials storage/handling practices;
- Suspect Asbestos-containing materials (Option to include collection of up to 30 bulk samples for PLM analysis; separate fee shown below).

Document Review and Interviews

The following published lists will be reviewed in order to discover if the subject site or properties within the prescribed ASTM radii have either past or present potential/documented environmental conditions:

- U.S. EPA'S CERCLIS list of sites potentially contaminated with hazardous waste;
- The National Priorities List (NPL) of sites contaminated with hazardous waste;
- The U.S. EPA RCRA Notifiers List of facilities which generate, treat, store, transport, or dispose of hazardous waste;
- The U.S. EPA ERNS (Emergency Response Notification System) List; and
- The Texas Natural Resource Conservation Commission (TNRCC) lists of State Superfund Sites, Registered and Leaking Underground Storage Tanks, Spill Incidents and Accidents, and Municipal Waste Registration List.

Additionally, TMI will review a 50-year chain of title, historical aerial photographs, city directories, building permits, and Sanborn maps, if available.

We will review available USGS topographic maps of the site area to estimate local topography, and we will review selected maps and documents pertinent to knowledge about the geologic/ hydrogeologic setting of the site. If available, we will interview persons with specific relevant knowledge of the site.

REPORT

Following our site visit, historical/regulatory reviews and interviews, we will prepare a report for the site, detailing our observations, findings, conclusions, and recommendations. Figures, maps, photographs and other referenced documentation will be appended to the final report. TMI will provide three (3) copies of the final report.

SCOPE LIMITATIONS

The following tasks are not included in the above scope of services, but can be provided at an additional cost if needed:

- Additional file acquisition, research, or investigation into listed facilities discovered on adjacent properties during the performance of the regulatory review;
- Sampling of stored materials/waste;
- Sampling and analysis of soils or groundwater or potential lead-based paint containing surfaces;
- Disposal of any contaminated surface or subsurface soils or groundwater;
- Area delineation and quantification of any contaminated soil;
- Assessment of the site or structures for suitability of intended use; structural, mechanical, building, roof, or site safety inspections;
- Wetlands delineation;
- Oil and Gas survey;
- Water wells search;

PROJECT FEES

Phase I ESA ..... **$ 1,900.00**
Pre-Demolition Asbestos Survey (up to 30 samples*) ..... **$ 750.00**

TMI will provide the presented scope of services on a fixed fee basis.

PROJECT SCHEDULE

TMI proposes to initiate environmental investigation activities within 24 hours following receipt of client's written permission to proceed. Field activities will be completed in two working days. TMI will complete and submit our draft Phase I report within 15 business days following notification to proceed.

PAYMENT

Payment for services is requested within 30 days of delivery of TMI's report.

PROPOSAL ACCEPTANCE

TMI appreciates the opportunity to submit this proposal. Executing the Proposal Acceptance Agreement (PAA) and Faxing to TMI at (972) 488-8080 can indicate formal acceptance, and will constitute TMI's Notice to Proceed.

TMI's experienced engineers and scientists are committed to meeting your needs. We look forward to serving you on your project.

Respectfully submitted,

Terra-Mar, Inc.

James R. Gaw
Vice President, Environmental Services

EXHIBIT B – Additional Services not included in proposal

Traffic Signal Coordination Timing Plans – Final Timing

- Progression analysis should be refined between the months of October and April, after Arapaho Road is open to traffic. After the road is open, new traffic counts need to be taken in order to base the progression analysis off accurate, current data. Based on the new traffic counts, progression analysis would be performed using SIGNAL2000, NOSTOP, TRANSYT-7F, and PASSERII-90 software. The traffic counts and progression analysis would be done through a supplemental agreement.

Building Demolition Plans

- There are three known locations that will require demolition plans for existing structures along the corridor. The full extent of how the buildings will be effected cannot be determined at this time. The necessary plans and specifications for the demolition of these structures are not included in this scope of work.

Construction Observation

- It is anticipated the Owner will require assistance with construction observation throughout the construction duration. For this proposal it is assumed that assistance will be provided on a full-time basis, or 40 hours per week throughout the duration the construction schedule. The following tasks would be performed by this task. A supplemental agreement will have to be completed prior to the pre-construction meeting.

  - Monitor construction activities including office/on-site observations during construction operations. This effort will be performed in association with the Owner's staff to supplement their own inspection staff.

  - The Engineer's construction representative and staff shall be stationed in Engineer's offices for the administration of the contract documents.

  - The Engineer's construction representative shall assist in working with the Contractor to address RFI's, shop drawings, and related questions concerning design issues to support timely response and resolution of issues

  - The Project construction representative shall assist in monitoring the construction schedule on an ongoing basis at bi-weekly intervals based upon a 12-month construction schedule, and report to the Owner on matters that may lead to delays and deficiencies.

- Review requests for alternatives and substitutions from the Contractor and submit them, together with Engineer's recommendations, to Owner for consideration.

- Review and make recommendations on contractor submitted shop drawings.

- Observe bridge construction and related components.

- Observe construction to determine in general if the Work is proceeding in such a manner indicating that when completed it will be in accordance with requirements of the contract documents.

- Conduct observations to determine an estimate of percent completion.

- Prepare preliminary and final deficiencies lists at intervals during the overall Project duration.

- Based on observations and evaluations of the Contractor's applications for payment, the Project construction representative shall review and certify the amounts due the Contractor.

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for design of Arapaho Road from Surveyor Boulevard to Addison Road.

I. Project Definition

This project consists of the preparation of plans and specifications for bidding and construction of Arapaho Road Phase III from Surveyor Boulevard to Addison Road (the Project). The project will be a 4-lane reinforced concrete roadway, with turn lanes at Surveyor Boulevard and Addison Road. A grade separated intersection will be provided at Midway Road. The design of the bridge over Midway Road is not included in this scope of services. Services will generally include geotechnical investigation and recommendations; final construction plans for the roadway, structure, stormwater, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing, signing and striping; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies.

II. Detailed Scope of Basic Services

The improvements have been implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The scope of services for the schematic design are described in a separate scope of services and Agreement between the Town of Addison and HNTB Corporation executed February 12, 1997 with official authorization to proceed dated March 9, 1998. The basic scope of services for construction documents from Marsh Lane to Surveyor Boulevard (Phase II) are described in a separate scope and Agreement executed October 18, 2000 between the Town of Addison and HNTB Corporation.

A. Phase III Final Design – Paving, Drainage, and Utilities

1. Prepare final construction drawings. (Scale 1" = 20' Horizontal and 1" = 5' Vertical except as noted.) The plans will be designed to meet current ADA requirements. The following sheets shall be included:

   a. Cover Sheet

   b. General Notes

   c. Quantity Sheets

   d. Removal Plans

   e. Typical Sections

   f. Construction Phasing (Scale 1" = 40')

   g. Survey Control

   h. Utility Relocation Plan

   i. Paving Plan and Profile Sheets

   j. Paving Details

   k. Signing and Striping Plans (Scale 1" = 40')

   l. Erosion Control Plans

   m. Grading Plan

   n. Driveway and Special Grading Sheets

   o. Drainage Area Map (Scale 1" = 100')

   p. Stormwater Plan and Profile Sheets

   q. Roadway Cross Sections

   r. Street Lighting Plan

2. Prepare Contract Documents

3. Prepare Estimate of Final Construction Cost

4. Submit four (4) sets of plans for review to the Owner for 65% review, 95% review, and 100% (final).

5. Incorporate Owner's review comments into plans after each submittal.

B. Streetscape

Engineer's understanding is the Project will consist of right-of-way improvements for Arapaho Road from Surveyor Boulevard to Addison Road. The current R.O.W. will be widened in some areas allowing for additional landscaping. Proposed streetscape improvements will utilize the existing Town Landscape Ordinance and guidelines. Critical visibility concerns shall be incorporated into the overall roadway improvements.

This proposal does not include architectural improvements related to the proposed bridge spanning Midway Road. These improvements may be added at a later date by the Owner through a supplemental agreement..

Basic Services

1. Schematic Design
   a. Engineer will attend a kickoff / programming meeting with the Owner to discuss the project requirements and to acquire information required to develop the schematic landscape master plan for Phase III.

   b. Based on initial programmatic meetings with the Owner, Engineer will proceed with site development concepts to develop a schematic landscape master plan. Schematic design plans will be drawn at a scale sufficient to explain design intent. The drawings to be produced will be one rendered site plan and necessary cross sections and enlarged plans as required to explain design intent.

   c. Engineer will meet with the Owner to present the schematic landscape master plan and will receive comments from staff for incorporation into the design development package.

2. Design Development

a. Based on the approved schematic design, Engineer will prepare a design development package. This package will include the following:

- Materials plan
- Site grading plan
- Site walls/entry features
- Hardscape/paving

Site lighting (location and fixture type)

- Landscape plan
- Critical cross-sections

This package will include an appropriate level of detail to illustrate design character, intent, means, materials and construction methods sufficient to further refine probable construction costs.

b. Engineer will prepare an opinion of probable construction costs based on design development drawings.

c. Engineer will meet with the Owner to review the design development package and will receive comments from staff for incorporation into the construction document package.

3. Construction Documentation

a. Based on the approved design development package, Engineer will prepare contract documents sufficient to describe the work necessary for construction. The following drawings will be prepared:

- Layout and materials plan
- Enlarged intersection layout & materials plan, if required.
- Grading plan for the R.O.W. improvements
- Enlarged intersection grading plan, if required.
- Planting plan
- Enlarged intersection planting plan, if required.
- Irrigation plan
- Enlarged intersection irrigation plan, if required.
- Site lighting (location & fixture type)
- Details and sections at appropriate scales necessary to convey the sizes, appearances, finishes, and colors of all pavements, walls, site furnishings, and light fixtures.
- Coordinate structural details and incorporate on plans to be approved by structural.

b. Engineer will prepare technical specifications describing all elements of the proposed work.

c. Engineer will prepare a revised opinion of probable construction costs based on design development drawings.

d. Engineer will meet with the Owner to review the construction document package and will receive comments from staff for finalizing the construction document package.

4. Construction Observation

a. Engineer will attend a kickoff meeting with the Owner, the selected landscape / hardscape subcontractor and General Contractor to review the project requirements, schedule and responsibilities.

b. Engineer will review and approve subcontractor submittals regarding landscape and hardscape material specified for the streetscape project and keep logs for submittals.

c. Engineer will coordinate the preparation of record drawings with the landscape / hardscape contractor, review for completeness and issue to the Owner with all records of construction developed for the project based on documents delivered to Engineer by such contractor. This will constitute the project close out of the construction phase.

6. Additional Services

The following services are not included in the scope of basic services. Engineer shall provide these services if authorized in writing by the Owner on a time and expense in addition to the compensation for Basic Service.

- Illustrative renderings beyond those described in the Basic Services.
- Zoning changes or variances

C. Bidding and Contract Award

1. Prepare Advertisement for Bidders.

2. Provide 25 half-size sets of plans and bid documents.

3. Conduct pre-bid meeting.

4. Prepare necessary addenda and respond to bidder's questions.

5. Prepare bid tabulation.

6. Recommend a bidder for the award of the construction contract after performing reference checks.

D. Construction Administration

1. Provide three (3) full-size and five (5) half-size sets of plans and specifications for Owner.

2. Provide two (2) full-size and three (3) half-size sets of plans and specifications for Contractor.

3. Conduct pre-construction meeting.

4. Respond to Requests for Information.

5. Review submittals, as required by the contract documents.

6. Provide construction administration and observation services.

7. Attend final inspection and prepare punch list.

8. Prepare mylar record drawings and electronic files.

III. Detailed Scope of Additional Services

A. Surveying

1. Update property ownership, to include current ownership. Any subdivision of the existing parcel will be addressed on a case by case basis.

2. Stake centerline at 50-foot intervals with PC's and PT's prior to geotechnical borings performed in field.

3. Locate bore holes horizontally and vertically.

4. Cross sections of Arapaho Road at Midway Road to include lane shots.

5. Project management and administration for surveying elements.

B. Geotechnical Investigation

The geotechnical services will include the following: field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road.

1. Field Investigation

Drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency.

The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

Owner shall coordinate with the Engineer to obtain right-of-entry to the property so that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. Traffic control services shall be Additional Services if required to complete the borings.

The drilling operations will proceed in a manner that will avoid the potential of damage to underground utilities. Owner shall provide any information regarding any existing underground utilities that are present on-site prior to Engineer beginning the field work. Engineer will coordinate underground utility line clearance with the Texas Excavation Safety System, the Owner, Dallas Water Utilities, and Dallas Area Rapid Transit (DART). However, Engineer will not be responsible for damage to underground utility lines that are not properly identified by the Owner prior to mobilization of drilling equipment to the site.

2. Laboratory Testing

The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization

3. Engineering Analyses and Report

The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for design and construction of the roadway. The results of this investigation will be presented in an engineering report, Three copies of the report will be submitted to the Owner. The report will include the following:

a. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.

b. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.

c. Recommendations for design of mechanically stabilized earth retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.

d. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.

e. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.

f. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.

g. Recommendations for pavement subgrade preparation.

h. Recommendations for Portland cement concrete pavement sections. Owner will arrange to provide the anticipated traffic loading for use in our analysis.

i. Discussion of potential construction problems, such as hard rock excavation, groundwater, and subgrade instability.

C. Traffic Study

a. Signal Design Layout

1. Prepare preliminary traffic signal design plans and specifications for intersection of Arapaho Road at Addison Road to include railroad preemption. Plans and specifications will be prepared using Owner standards.

2. Review plans and specifications with Owner and revise as necessary. Prepare final plans, specifications, construction estimates and contract documents for installation of traffic signals throughout project limits.

b. Traffic Signal Data Collection

1. Collect AM peak period (6:30 – 9:00 AM) and PM peak period (4:00 PM – 6:30 PM) turning movement counts in 15 minutes intervals, including pedestrian counts, for two representative intersections. These intersections will provide a general understanding of the volume of traffic and traffic characteristics of the area.

2. Compile the existing traffic turning movement counts for the AM and PM peak hour time periods and determine the existing AM and PM peak hours, peak hour factors and percent trucks for each intersection. Balance the traffic turning movement counts for Phase II and Phase III for the AM and PM peak hours. Prepare base maps for Phase II and Phase III illustrating the existing peak hour turning movement counts, intersection geometrics, speed limits, distances between intersections, percent trucks, peak hour factor, and existing traffic signal phasing. Compile the existing traffic signal timing plans to determine the existing traffic signal

phasing, cycle length, minimum and maximum green times, yellow times, all-red times, walk times and flashing don't walk times.

c. *Initial Traffic Analysis – Segment 1 (West of Midway Road)*

1. Analyze the three signalized intersections in Segment 1, (Marsh, Surveyor, and Beltline/Marsh) utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. More specifically, the following process will be utilized for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.
   - NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
   - SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
   - TRANSYT-7F – Holding the cycle length and green splits constant, run this program to optimize offsets to provide progression for the highest volume movements (minimize system delay).

   Summarize the results with measure of effectiveness tables and phasing/timing diagrams and illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Arapaho Road from Marsh Lane to Surveyor Boulevard and Marsh Lane from Beltline Road to Arapaho Road.

d. *Initial Traffic Analysis – Segment 2 (East of Midway Road)*

1. Analyze the six signalized intersections in Segment 2 of Phase III, (Addison, Edwin Lewis, Quorum, Spectrum, Addison/Lindberg, and Addison/Beltline) utilizing an interactive process to provide coordinated traffic signal timings without sacrificing level of service for the minor traffic movements. The goal will be to provide traffic signal progression along the three signalized intersections along Addison Road and the four signalized intersections along Arapaho Road. The following process for both the AM and PM peak hours:

   - SIGNAL2000- Design optimum cycle length, phasing and green times for each isolated intersection such that all movements operate at LOS D or better.

- NOSTOP – With the green splits designed in SIGNAL2000, use this program to determine the optimum cycle length to provide maximum progression on the corridor.
- SIGNAL2000 – Rerun, if necessary, if the cycle length is different through NOSTOP than originally assumed.
- PASSERII – Holding the cycle length and green splits constant, run this program to optimize the offsets for through movement progression on Addison Road and Arapaho Road. Two runs will be completed consisting of one run for Addison Road and one run for Arapaho Road.
- TRANSYT-7F – This program will be used to combine the two PASSERII runs and fine-tune the offsets for higher volume turning movements (minimize system delay).

Summarize the results with MOE tables and phasing/timing diagrams. Illustrate the train preemption phasing.

2. Jack Hatchell & Associates will assist the Engineer in a management role consisting of technical assistance and plan review for traffic signal timing plan for Addison Road from Beltline Road to Lindberg and for Arapaho Road from Addison Road to Spectrum. Assist Engineer with coordination with railroad and traffic signal design for railroad preemption.

e. *Technical Memorandum*
Document the procedures, findings and recommendations of the traffic signal timing analysis, with exhibits, tables and text in a technical memorandum. The technical memorandum will also include an appendix with the traffic software output.

Note: Additional information on the Traffic Study is included in Exhibit B.

D. Phase I Environmental Site Assessment

See Exhibit A for detailed description.

E. Construction Inspection

See Exhibit B for detailed description.

F. Coordination with third-party for bridge design

If the Town of Addison chooses to have a third party design the bridge over Midway Road it will require a coordination effort between HNTB and the third party. The Town has requested an estimate of how much time it would take for coordination between the Engineer and the third-party bridge designer. This estimate is for meetings with the third party,

information sharing, transfer of files (electronic, including CAD), notes and sketches, and meetings with the Town to incorporate ideas into the bridge. This estimate is not for the design of any elements of the bridge that are developed through these meetings or by the third party. We have based our estimate on a total of 140 hours over the course of the design. The estimated amount would be approximately $17,500.

SECTION 3. PAYMENT

Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation

Owner shall make payment monthly to Engineer based upon statements submitted by the Engineer for percentage of work performed.

Compensation for performing Basic and Additional Services shall be on a Lump Sum Basis. The Lump Sum amount for Services shall not exceed $589,790.00.

SECTION 4. RESPONSIBILITIES

Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in such design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner and Engineer under this Agreement are as provided by law. Engineer shall not be responsible for construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project.

SECTION 5. TIME FOR PERFORMANCE

Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the terms of this Agreement. The services to complete construction documents shall be completed within 10 months of Notice-to-Proceed.

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative delay of over 180 days, Engineer shall have the right to

renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from proceeding with its services on the project. This shall include, but is not limited to, Owner reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made. Provided, however, Engineer shall not be considered in default hereunder in delays are caused by reasons beyond its reasonable control.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that intended in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer is hired to modify such instrument for such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the services, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving five (5) days written notice to the Engineer. In the event termination is for

cause however, such shall be in accordance with section 14 hereof. In the event suspension or termination is without cause, payment to Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of this Agreement, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Engineer may terminate this Agreement.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against losses, liability or damage of any character, including defense costs, expenses and attorney fees incidental to the defense of such losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including the loss of use resulting therefrom, from any negligent act, error, or omission of the Engineer, its officers, employees, or subcontractors, or anyone else for whom Engineer is legally liable which are resulting from or caused by the performance of any services called for by this Agreement. In the event the parties are found to be jointly or derivatively negligent or liable for such damage or injury, the indemnification shall be assessed on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor or any other party contracting with Owner to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of the responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents and services provided by Engineer hereunder; or other documents prepared by Engineer, its employees, and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

To the extent Owner has paid Engineer in full hereunder for same, Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Neither party shall assign or sublet this Agreement or any part thereof, without the prior written consent of the other party.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or is unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within fourteen (14) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all services determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for percentage of completion by Engineer through such date of termination. In the event of, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all reasonable, unmitigatable costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation. The reasonable expense for same may be offset against amounts due the Engineer. In such case, Engineer shall not be liable with respect to indemnity or otherwise for any such services performed, arranged, or furnished by Owner. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement, which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 2001.

OWNER:
TOWN OF ADDISON, TEXAS

By: _____

Ron Whitehead, City Manager
5300 Beltline Road
P.O. Box 144
Addison, Texas 75001-0144

Witness:

_____

ENGINEER:
HNTB CORPORATION

By: _____

Benjamin J. Biller P.E.
Vice President, Central Division
5910 Plano Parkway, Suite 200
Plano, Texas 75093

Witness: _____

EXHIBIT A

ARAPAHO ROAD EXTENSION
SURVEYOR BOULEVARD TO ADDISON ROAD
FEE PROPOSAL - NOVEMBER 2001

Basic Services

Final Design	
Paving, Drainage, and Utilities	$86,848
Streetscape	$20,925
Bidding and Contract Award	$4,952
Construction Administration	$8,880
Direct Labor Cost Phase III Basic Services	$121,605
Indirect Labor, Overhead	$187,149
HNTB Engineering Subtotal	$308,754
Profit and Contingency	$46,313
Out-of-Pocket Expense	$7,300
HNTB Subtotal Fee, Basic Services	$362,367
GBW	
See GBW Proposal	$124,918
Basic Services Fee	$487,285

Additional Services

Surveying, See ARS Inc. Proposal	$12,876
Geotechnical, See TerraMar Proposal	$33,125
Traffic Engineering	$36,354
Phase I Environmental Site Assessment, See TerraMar Proposal	$2,650
Coordination with Third Party designer of bridge over Midway	$17,500
Irrigation Layout and Design	$2,800
Subtotal Fee, Additional Services	$102,505
TOTAL FEE FOR SERVICES	**$589,790**

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - PAVING, DRAINAGE, AND UTILITIES

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD/ Tech	Clerical
[illegible]						
A. Cover Sheet			4		12	2
B. General Notes			8	16	16	
C. Quantity Summary Sheets				24	16	
D. Utility Relocations		16				
E. Typical Sections			24	24	40	
F. Construction Specifications and Contract Documents	4	16	40	8		16
G. Construction Sequencing/Traffic Control		16				
H. Plan and Profile Sheets		64	110	140	160	
I. Paving, Sidewalk, Intersection, Misc. Details		4	20	64	80	
J. Driveway Detail, Special Grading Sheet		16	32	48	60	
K. Striping Plan, Details		8				
L. Signing Plan, Details		8	16	40	40	
M. RR Grade Crossing Plan, Details, Coordination	40	80	80	16	40	16
N. Street Lighting Plan, Details	12	48	40	40	32	
O. Removal Sheet			16	24	32	
P. Bid Quantities		12	40	64	16	
Q. Opinion of Probable Cost		12	24	32		8
R. QA/QC	6	30	20	10		4
S. Review Comment Revisions		24	32	32	80	4
[illegible]	200	16		184		24
[illegible]						
A. Drainage Plan/Profile		8				
B. Drainage Calculations		8				
C. Drainage Area Map		4				
D. Details		4	4		4	
E. Storm Water Pollution Prevention		4		4	4	
[illegible]	8	40	20			40
Task 1 Total Hours	270	438	530	770	632	114
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$14,580	$19,710	$17,490	$18,480	$14,536	$2,052
				HNTB Final Design-Pavement, and Utilities		$86,848

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - STREETSCAPE

	Group Director	Design Director	Senior LA	LA 3	LA 2	LA 1
Task 2 Final Design Streetscape						
A. Kickoff/Programming Meeting			4		4	
B. Schematic Landscaping Master Plan	8	8	24		48	24
C. Schematic Plan Review Meeting			4		4	
A. Prepare Design Development Package	8	12	40		72	24
B. Prepare Opinion of Probable Construction Costs			8		24	8
C. Design Development Plan Review Meeting			4		4	
A. Prepare Construction Documents	16	16	48		120	48
B. Prepare Technical Specifications			8		24	24
C. Prepare Revised Opinion of Probably Cost			4		8	8
D. Construction Document Review Meeting			4		4	4
A. Prepare List of Qualified Sub-Contractors	*Not applicable to this contract*					
B. Prepare Addenda			8		16	8
C. Evaluate bid tabulation and recommend award			4		8	
D. Value Engineering/Substitutions	*Not applicable to this contract*					
A. Kickoff Meeting	8		4		4	4
B. Review Submittals; Tag Trees			16		32	8
C. Review Information Requests			8		12	8
D. Review Work Progress			8		48	8
E. Prepare Punchlist			4		16	16
F. Punchlist Review					8	4
G. As-Builts - Project Closeout			2		24	12
Task 2 Total Hours	40	36	202	0	480	208
Hourly Rate	$32.21	$37.50	$30.77	$22.60	$18.27	$15.87
Direct Labor Cost	$1,288	$1,350	$6,216	$0	$8,770	$3,301
					Final Design - Streetscape	$20,925

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
BIDDING AND CONTRACT AWARD

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 3 Bidding and Contract Award						
A. Prepare Advertisement for Bidders		2			2	2
B. Prepare 25 Half-Size Sets of Plans & Bid Documents		2			16	8
C. Conduct Pre-Bid Meeting		3	3			2
D. Prepare Addenda & Respond to Bidder's Questions		16	24	24	16	24
E. Attend Bid Opening\ Review Bid Docs\Prepare Bid Tab	2	4	8			8
F. Recommend a Bidder to the Town of Addison		4				8
Task 3 Total Hours	2	31	35	24	34	52
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$108	$1,395	$1,155	$576	$782	$936
					Bidding and Contract Award	$4,952

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
CONSTRUCTION ADMINISTRATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 4 - Construction Administration						
A. Provide 3 Full-Size, 5 Half-Size Sets for Town			2		4	2
B. Provide 2 Full-Size, 3 Half-Size Sets for Contractor					2	
C Conduct Pre-Construction Meeting		3	3			3
D Review Submittals		8	24		16	40
E Respond to Requests for Information.	2	12	20		16	16
F. Attend Final Inspection		8	8			4
G Prepare Mylar Record Drawings	2	16	24	32	40	8
Task 4 Total Hours	4	47	81	32	78	73
Hourly Rate	$54.00	$45.00	$33.00	$24.00	$23.00	$18.00
Direct Labor Cost	$216	$2,115	$2,673	$768	$1,794	$1,314
				Construction Administration		$8,880

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
FINAL DESIGN - GBW ENGINEERS, INC.

	Asst. Project Manager	Project Engineer	Design Tech	CADD Operator	Clerical
Task 5 GBW Engineers, Inc.					
Project Meetings/Management	60				
Utility Coordination	8	4	40		16
Drainage Plans/Profile (1)	8	16	40	160	
Drainage Calculations	8	16	24	60	
Drainage Area Map	4	8	24	40	
Utility Relocations	8	16	40	120	
Construction Sequence/Traffic Control	8	16	40	180	
Striping	4	8	24	100	
Storm Water Pollution Prevention Plan	4	8	24	85	
Traffic Signal Drafting	8		8	96	
Details	4	8	16	48	
Bid Quantities	4	8	24	16	8
Bid Documents and Specifications	24	16			24
Opinion of Probable Cost	4	8	16		8
Task 5 Total Hours (GBW)	156	132	320	905	56
Hourly Rate	$45.00	$41.00	$24.00	$16.00	$16.00
Direct Labor Cost	$7,020	$5,412	$7,680	$14,480	$896
			Final Design-GBW		$35,488

(1) Hydraulic Gradient will be shown.

	Survey Manager	Survey Tech.	Survey Crew
GBW Engineers, Inc.			
Utility Survey	8	24	24
Task 2 Total Hours	8	24	24
Hourly Rate	$100.00	$60.00	$110.00
Direct Labor Cost	$800	$1,440	$2,640
	Survey-GBW		$4,880

Direct Labor Cost	$35,488
Indirect Labor, Overhear (1.8775)	$66,629
Subtotal	$102,117
Profit and Contingency	$15,421
Surveying Expense	$4,880
Direct Expense	$2,500
TOTAL FEE (GBW)	$124,918

ARAPAHO ROAD EXTENSION
PHASE III - PS&E
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - SURVEYING - ARS ENGINEERS, INC.

	Abstractor	RPLS	Sr. Svy Tech	Survey Tech	3 Man Crew	Admin
Task 6 - Additional Services - Surveying						
A. Update Property Ownership.	0			0		
B. Prepare Parcel Plats and Descriptions for 15 TCEs		0	0	0		
C. Stake Centerline at 50 ft. intervals with PCs and PTs				15	60	
D. Locate Bore Holes Horizontally and Vertically				5	24	
E. Additional Survey Shots at Midway Road				4	16	
F. Project Management and Administration		8				4
G. Three (3) Each Plats and Descriptions, Electronic Files		0		0		0
Task 6 Total Hours	0	8	0	24	100	4
Hourly Rate	$48.00	$90.00	$63.00	$53.00	$105.00	$40.00
Direct Labor Cost	$0	$720	$0	$1,272	$10,500	$160

Labor Total	$12,652
Expenses	$224
Additional Services - Surveying	$12,876

Expenses	
Map/Deed Copies	$0
Mileage	$94
Reprographics (Copies & Plots)	$50
Delivery/Courier Service	$30
Misc. Field Expenses	$50
Total Expenses	$224

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - GEOTECHNICAL INVESTIGATION

	Project Manager	Senior Engineer	Project Engineer	Design Engineer	CADD	Clerical
Task 7 - Additional Services - Geotechnical Investigation						
Task 7 Total Hours						
Hourly Rate	***See attached Terra-Mar proposal***					
Direct Labor Cost						

Additional Services - Geotechnical Investigation $33,125.00

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March 23, 2001

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas Parkway, Suite 630
Dallas, Texas 75240

Re: Geotechnical Investigation
Arapaho Road Extension – Phase III
Addison, Texas
TMI Proposal No. P01-1547DE

Dear Mr. Holder:

We are pleased to submit this proposal to provide geotechnical services for the above referenced project. This proposal includes a description of the project, and our proposed the scope of work, schedule, and budget.

PROJECT DESCRIPTION

The project consists of extending Arapaho Road from Surveyor Boulevard about 5,800 feet east to Addison Road. A 1,600-foot-long bridge is planned to carry Arapaho Road over Midway Road. Mechanically stabilized earth retaining walls will be constructed at the bridge approaches. These walls will have a maximum height of approximately 25 feet. An existing 60-inch-diameter waterline parallels the MSE walls on the south side of the alignment. A reinforced concrete box culvert is planned under a portion of the proposed roadway. The top of the box culvert will be on the order of 2 feet below the pavement section. The box culvert invert will extend approximately 10 feet below the current site grades and will be installed in an existing drainage ditch.

ANTICIPATED SUBSURFACE CONDITIONS

The project alignment is underlain by the Austin Chalk Formation. Subsurface conditions are expected to consist of active clays to depths of 2 to 10 feet underlain by tan weathered limestone to depths of 10 to 15 feet. Gray unweathered limestone suitable for support of the bridge foundations underlies the tan limestone. Based upon previous borings drilled by Terra-Mar in the area of the proposed site, we anticipate that the gray limestone will be encountered at depths of 10 to 15 feet below the ground surface.

SCOPE OF SERVICES

Our services for this project will include a field investigation, laboratory testing and engineering analysis in order to develop recommendations to guide design and construction of Arapaho Road. A description of our proposed scope of services is presented below.

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Field Investigation

We proposed to drill and sample 25 borings for this project. The following table summarizes the proposed number of borings for the various structures.

TABLE 1 – PROPOSED FIELD INVESTIGATION

Proposed Structure	Total Number of Borings
Bridge	7
Retaining Walls and Box Culvert	14
Pavement	4

The bridge borings will be advanced a depth of 20 feet into unweathered gray limestone. The bridge borings are therefore anticipated to extend to a total depth of approximately 35 feet. The retaining wall box culvert borings will extend to a depth of 15 feet. The pavement borings will extend to a depth of 10 feet or 5 feet into weathered limestone, whichever is encountered first.

The borings will be continuously sampled to a depth of 6 feet, and at 5-foot intervals thereafter and/or at each change in the stratum until boring termination. The soil samples will be obtained with thin-walled tube and/or split-spoon samplers, depending upon the soil type and consistency. The bedrock in the bridge borings will be continuously cored. Samples of the bedrock from the other borings will be obtained from the auger cuttings. Texas Cone Penetrometer (TCP) tests will be performed at 5-foot intervals to evaluate the bearing properties of the bedrock.

The drill crew foreman will record the depth that seepage water is encountered during drilling. Water level readings will also be obtained from each boring at drilling completion. The boreholes will be backfilled with auger cuttings after the water level readings are obtained.

It is understood that ARS Engineers (ARS), the project surveyor, will stake the centerline of the roadway alignment to assist us in locating our borings in the field. Terra-Mar will then stake the boring locations. The boring locations will be marked in the field so that ARS can determine the boring coordinates and ground surface elevations following the field exploration program.

It is assumed that the client has the right-of-entry to the property and that the boring locations will be accessible to our conventional truck-mounted drilling equipment during normal working days. It is also assumed that traffic control will not be required to complete the borings.

The drilling operations will proceed in a manner that will reduce the potential of damage to underground utilities. We request that we be provided with any information regarding any existing

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underground utilities that are present on-site prior to beginning the field work. We will coordinate underground utility line clearance with the Texas Excavation Safety System, the City of Addison, and Dallas Area Rapid Transport (DART). However, we will not be responsible for damage to underground utility lines that are not properly identified by others prior to mobilization of drilling equipment to the site.

Laboratory Testing

The project geotechnical engineer will classify the samples recovered from the field investigation in the Terra-Mar laboratory. A laboratory testing program will then be implemented to evaluate the pertinent engineering properties of the encountered deposits. Laboratory testing will include liquid and plastic limit, moisture content, unconfined compression, and calibrated penetrometer tests. Lime series tests will be performed to determine the optimum lime content for subgrade stabilization.

Engineering Analyses and Report

The results of the field investigation and laboratory testing programs will be evaluated to provide recommendations for design and construction of the roadway. The results of this investigation will be presented in an engineering report. Three copies of the report will be submitted. The report will include the following:

1. Logs of borings in TxDOT "WinCore2" format, laboratory test results, borehole water level observations, and a plan of borings.
2. Recommendations for design of drilled shaft bridge foundations, including allowable bearing resistance, estimated depth of bearing stratum, and estimated foundation settlement.
3. Recommendations for design of the MSE retaining wall foundations that will include allowable bearing pressures, sliding resistance, global stability, and estimated settlement.
4. Recommendations for design of the box culvert, including equivalent fluid pressures and allowable bearing pressures.
5. Recommendations for retaining wall and box culvert backfill soil types, backfill placement, and compaction.
6. Evaluation of the impact of the box culvert on the performance of the proposed pavement section, including recommendations for reducing the amount of differential movement between sections of the roadway supported over the box culvert and box culvert backfill, and sections supported on the existing subgrade soils.
7. Recommendations for pavement subgrade preparation.
8. Recommendations for Portland cement concrete pavement sections. It is assumed that others will provide the anticipated traffic loading for use in our analysis.

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9. Discussion of potential construction problems, such a hard rock excavation, groundwater, and subgrade instability.

PROJECT SCHEDULE

It is anticipated that it will take approximately 10 working days to have the utilities marked in the field. The field investigation will require 10 days to complete, weather conditions permitting. Laboratory testing will require approximately 15 working days to compete. It is anticipated that the final report will be completed within approximately 35 to 40 working days after receiving authorization to proceed. Preliminary results can be provided during the course of study if desired.

PROJECT BUDGET

Based on the proposed scope of services outlined above, we will provide a geotechnical report for this project for a lump sum fee of **$33,125.00**. This offer is good for a period of 90 days from the date of the proposal.

CLOSURE

Signing the attached Proposal Acceptance Sheet and faxing it to TMI at 972-488-8080 will indicate formal acceptance of the attached Terms & Conditions. Receipt of the signed copy will constitute TMI's notice to proceed. Payment for services is due within thirty (30) days after receipt of TMI's invoice. This proposal is valid for a thirty-day period from the date of this proposal.

We appreciate the opportunity to be of assistance on this project. If you have any questions, please call.

Sincerely,

TERRA-MAR INC.

Roger K. Southworth, P.E.
Project Manager

Berry R. Grubbs, P.E.
President

Attachments: Proposal Acceptance Agreement
Professional Services ♦ General Terms and Conditions

ARAPAHO ROAD EXTENSION
PHASE III
SURVEYOR BOULEVARD to ADDISON ROAD
ESTIMATE OF MANHOURS
ADDITIONAL SERVICES - TRAFFIC STUDY

	Project Manager	Senior Engineer	Design Engineer	HNTB Co-op	Jack Hatchell	Gram Traffic
Task 8 - Additional Services - Traffic Study						
1. Preliminary Design					$5,000	
2. Final Design					$2,200	
1. Peak Period Turning Movement Counts						$799
1. Project Management, Administration, Coordination	8					
2. Compile existing signal; timing plans (determine existing phasing)		1	8			
3. Determination of existing ped. Phasing and cycle lengths		2	10			
4. Compile existing/projected ADT's and Turning Movement Counts		2	8			
5. Determine projected AM and PM peak hour turning movements		4	24			
6. Obtain Geometric Plans/Base Maps		2	4			
7. Determine Clearance Times (Yellow/All-red)		6	12			
8. Coordination for Railroad Preemption	2	8	20			
9. SIGNAL2000 Analysis - LOS and Phase Determination		6	24			
10. NOSTOP and SIGNAL2000 - Cycle Length for Prog.		4	16			
11. TRANSYT-7F Analysis - Offsets		4	16			
12. Summary Phasing/Timing		4	8		$4,000	
13. Illustration of Preemption phases - Phase II		4	8			
14. Illustration of Preemption phases - Phase III		2	12			
15. Technical Memorandum		6	12	20		
15. Bidding and Award of Contract / Review					$600	
Task 8 Total Hours	10	55	182	20		
Hourly Rate	$54.00	$45.00	$24.00	$14.00		
Direct Labor Cost	$540	$2,475	$4,368	$280	$11,800	$799.00
Total Direct Labor and Burden	$1,674	$7,673	$13,541	$868	$11,800	$799.00
					Additional Services - Traffic Study	$36,354

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July 10, 2001
TMI Proposal No.: P01-1538DN

Mr. Jerry D. Holder, Jr., P.E.
Director of Capital Projects
HNTB Corporation
14114 Dallas, Parkway, Suite 630
Dallas, Texas 75240

Tel; 972-661-5626

RE: Proposal for Phase I Environmental Site Assessment
Automotive Facility, Southwest Corner, Intersection of Addison Rd. and Arapaho Rd.
Addison, Texas

Dear Mr. Holder:

At your request, Terra-Mar, Inc. (TMI) is pleased to submit this proposal to provide a Phase I Environmental Site Assessment (ESA) at the above-referenced property. This proposal outlines our proposed scope of services and presents our estimated compensation and schedule to perform the work.

PROJECT BACKGROUND

The property subject to this investigation is currently an active automotive repair facility located at the southwest corner of the intersection of Addison and Arapaho Roads, in Addison, Dallas, County, Texas.

It is our understanding that HNTB is requesting a Phase I Environmental Site Assessment of the above-referenced property prior to acquisition of the property for the Arapaho Road Extension-Phase III project.

PROPOSED SCOPE OF SERVICES

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Terra-Mar, Inc. (TMI) will provide the professional services required to identify the presence of recognized environmental conditions at the site by performing a regulatory/historical review and visual inspection of the site for the presence or evidence of hazardous substances on or near the property. The Phase I ESA services to be provided by TMI are described in the following Scope

of Work. TMI's scope of services and report format incorporate the criteria established by ASTM-1527-00, and the ESA will be performed in general conformance with this standard.

On-Site Assessment

Our environmental assessment personnel will conduct a walk-through of the property. The site inspection will cover the following visual activities related to:

- Areas of potential contamination;
- Areas of visible contamination;
- Observed adjacent properties;
- Site boundaries;
- Chemical storage or dispensing activities;
- Geological and hydrogeological characteristics of the site;
- Apparent and unusual topographical changes;
- Site operations;
- Grounds management;
- Waste storage/management practices;
- Proximity of surface water;
- Existing transformers, and light ballasts that may potentially contain PCBs;
- On-site petroleum storage tank management practices and compliance;
- On-site disposal and landfill practices;
- Pesticide usage and dust control;
- Ponds, basins and lagoons;
- Stained and discolored building surfaces/soils; and
- Hazardous materials storage/handling practices;
- Suspect Asbestos-containing materials (Option to include collection of up to 30 bulk samples for PLM analysis; separate fee shown below).

Document Review and Interviews

The following published lists will be reviewed in order to discover if the subject site or properties within the prescribed ASTM radii have either past or present potential/documented environmental conditions:

- U.S. EPA'S CERCLIS list of sites potentially contaminated with hazardous waste;
- The National Priorities List (NPL) of sites contaminated with hazardous waste;
- The U.S. EPA RCRA Notifiers List of facilities which generate, treat, store, transport, or dispose of hazardous waste;
- The U.S. EPA ERNS (Emergency Response Notification System) List; and
- The Texas Natural Resource Conservation Commission (TNRCC) lists of State Superfund Sites, Registered and Leaking Underground Storage Tanks, Spill Incidents and Accidents, and Municipal Waste Registration List.

Additionally, TMI will review a 50-year chain of title, historical aerial photographs, city directories, building permits, and Sanborn maps, if available.

We will review available USGS topographic maps of the site area to estimate local topography, and we will review selected maps and documents pertinent to knowledge about the geologic/ hydrogeologic setting of the site. If available, we will interview persons with specific relevant knowledge of the site.

REPORT

Following our site visit, historical/regulatory reviews and interviews, we will prepare a report for the site, detailing our observations, findings, conclusions, and recommendations. Figures, maps, photographs and other referenced documentation will be appended to the final report. TMI will provide three (3) copies of the final report.

SCOPE LIMITATIONS

The following tasks are not included in the above scope of services, but can be provided at an additional cost if needed:

- Additional file acquisition, research, or investigation into listed facilities discovered on adjacent properties during the performance of the regulatory review;
- Sampling of stored materials/waste;
- Sampling and analysis of soils or groundwater or potential lead-based paint containing surfaces;
- Disposal of any contaminated surface or subsurface soils or groundwater;
- Area delineation and quantification of any contaminated soil;
- Assessment of the site or structures for suitability of intended use; structural, mechanical, building, roof, or site safety inspections;
- Wetlands delineation;
- Oil and Gas survey;
- Water wells search;

PROJECT FEES

Phase I ESA .....**$ 1,900.00**
Pre-Demolition Asbestos Survey (up to 30 samples*) .....**$ 750.00**

TMI will provide the presented scope of services on a fixed fee basis.

PROJECT SCHEDULE

TMI proposes to initiate environmental investigation activities within 24 hours following receipt of client's written permission to proceed. Field activities will be completed in two working days. TMI will complete and submit our draft Phase I report within 15 business days following notification to proceed.

PAYMENT

Payment for services is requested within 30 days of delivery of TMI's report.

PROPOSAL ACCEPTANCE

TMI appreciates the opportunity to submit this proposal. Executing the Proposal Acceptance Agreement (PAA) and Faxing to TMI at (972) 488-8080 can indicate formal acceptance, and will constitute TMI's Notice to Proceed.

TMI's experienced engineers and scientists are committed to meeting your needs. We look forward to serving you on your project.

Respectfully submitted,

Terra-Mar, Inc.

James R. Gaw
Vice President, Environmental Services

EXHIBIT B – Additional Services not included in proposal

Traffic Signal Coordination Timing Plans – Final Timing

- Progression analysis should be refined between the months of October and April, after Arapaho Road is open to traffic. After the road is open, new traffic counts need to be taken in order to base the progression analysis off accurate, current data. Based on the new traffic counts, progression analysis would be performed using SIGNAL2000, NOSTOP, TRANSYT-7F, and PASSERII-90 software. The traffic counts and progression analysis would be done through a supplemental agreement.

Building Demolition Plans

- There are three known locations that will require demolition plans for existing structures along the corridor. The full extent of how the buildings will be effected cannot be determined at this time. The necessary plans and specifications for the demolition of these structures are not included in this scope of work.

Construction Observation

- It is anticipated the Owner will require assistance with construction observation throughout the construction duration. For this proposal it is assumed that assistance will be provided on a full-time basis, or 40 hours per week throughout the duration the construction schedule. The following tasks would be performed by this task. A supplemental agreement will have to be completed prior to the pre-construction meeting.

  - Monitor construction activities including office/on-site observations during construction operations. This effort will be performed in association with the Owner's staff to supplement their own inspection staff.

  - The Engineer's construction representative and staff shall be stationed in Engineer's offices for the administration of the contract documents.

  - The Engineer's construction representative shall assist in working with the Contractor to address RFI's, shop drawings, and related questions concerning design issues to support timely response and resolution of issues

  - The Project construction representative shall assist in monitoring the construction schedule on an ongoing basis at bi-weekly intervals based upon a 12-month construction schedule, and report to the Owner on matters that may lead to delays and deficiencies.

- Review requests for alternatives and substitutions from the Contractor and submit them, together with Engineer's recommendations, to Owner for consideration.

- Review and make recommendations on contractor submitted shop drawings.

- Observe bridge construction and related components.

- Observe construction to determine in general if the Work is proceeding in such a manner indicating that when completed it will be in accordance with requirements of the contract documents.

- Conduct observations to determine an estimate of percent completion.

- Prepare preliminary and final deficiencies lists at intervals during the overall Project duration.

- Based on observations and evaluations of the Contractor's applications for payment, the Project construction representative shall review and certify the amounts due the Contractor.

COPY

RESOLUTION NO. R04-085

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS AUTHORIZING THE CITY MANAGER TO ENTER INTO A CONTRACT IN THE AMOUNT OF $36,741.11 WITH SBC FOR THE RELOCATION AND INSTALLATION OF TELEPHONE CABLE IN CONNECTION WITH THE EXTENSION OF ARAPAHO ROAD, PHASE III, FROM ADDISON ROAD TO SURVEYOR BOULEVARD.

WHEREAS, many aspects relating to the Arapaho Road, Phase II construction project is the relocation of all affected utilities; and,

WHEREAS, SBC has recently determined that existing telephone cables along the project limits must be relocated; and,

WHEREAS, SBC will place cable, hand hole, and five pedestals from the rear of 4101 Centurion Way to the rear of 4139 Centurion Way, Addison, TX; and,

WHEREAS, the charges only reflect the scope of work on this project at this location; and,

BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

THAT, the City Council of the Town of Addison does hereby authorize the City manager to enter into a contract in the amount of $36,741.11 with SBC for the relocation and installation of telephone cable in connection with the extension of Arapaho Road, Phase III, from Addison Road to Surveyor Boulevard.

DULY PASSED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS this the 12th day of October, 2004.

Mayor

ATTEST:

City Secretary

Archer Western
Contractors

RECEIVED
NOV 09 2004
HNTB CORPORATION
DALLAS, TEXAS

MIKE

I HAVE THE COLOR SAMPLE
GUY HAS ASKED FOR A
COST BREAK DOWN FOR
THESE ITEMS

November 9, 2004

Letter: HNTB -18

HNTB
5910 W Plano Parkway
Suite 200
Plano, Texas 75093
Attn: Mr. Guy Van-Baulen

RE: Town of Addison
Arapaho Road Phase III
Project No. 04-22
Metal Painting System
PCO #24

Dear Guy:

In accordance with conversations with HNTB and the Town of Addison, Archer Western is submitting product and pricing information the following paint systems for the steel parts of Arch, Stinger, T-4 Rail and Pedestrian Rail:

1. Devoe - Devshield 4328 - Without Clear Coat = $33,357.29
2. Devoe - Devshield 4328 - With Devthane 379UVA Clear Coat = $47,267.45
3. Tnemec - High Build Epoxoline 66 & Endura-Shield II 1075 W/O Clear Coat = $69,705.23
4. Tnemec - High Build Epoxoline 66 & Endura-Shield II 1075 W Fluoranar 1076 Clear Coat = $132,262.60

These prices are minus the Costs for the TxDot System II Paint.

The Paint Product information is enclosed

If you require additional information, please contact Andrew at our field office.

Sincerely,

Andrew Schneemann
Asst. Project Manager

Enclosure

XC: Ben Withered
Don Good
File

2121 Avenue J, Suite 103
Arlington, Texas 76006
Phone: 817.640.3898
Fax: 817.640.8734
www.walshgroup.com

TXDOT SYSTEM II
BID PAINT SYSTEM

SHERWIN WILLIAMS
Industrial and Marine Coatings

TX DOT 810-E PRIME COAT (SYSTEM II) B69AVJ002 SIZE CODE 36 B69D210

PRODUCT INFORMATION

Product Description

Tx DOT 810-E Prime Coat is an epoxy zinc rich primer made to Tx DOT formulation. **PROTECTION SYSTEM II**
Kit consists of one gallon of B69AJ1 and B69VJ1

Recommended Uses

For use over prepared:

Bridges (Steel) New construction and repaint

Product Characteristics

Finish: Flat

Color: Gray/Green

Volume Solids:	56.1% Mixed
VOC :	Reduced at 1/2 pint per gal 400 g/l
Flash Point:	60 °F.

Recommended Spreading Rate per coat:

Wet mils:	3.5 to 10.0
Dry mils:	1.75 to 5.0
Coverage:	450 sq ft/gal approximate

Note: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 4.0 mils wet @ 50% RH:
@ 77°F

To touch:	30 minutes
To handle:	2 hours
To recoat:	2 hours

Drying time is temperature, humidity, and film thickness dependent.

Reducer/Clean Up:	MEK, Ketones
Sweat-in-time:	30 minutes
Shelf Life:	12 Months , unopened, at 77°F.

Performance Characteristics

This Product is manufactured to Tx DOT formulation specifications and inspected in our Garland facility.

continued on back

SHERWIN WILLIAMS®

Industrial and Marine Coatings

TX DOT 810-E PRIME COAT (SYSTEM II) B69AVJ002 SIZE CODE 36 B69D210

PRODUCT INFORMATION

Recommended Systems

May be applied over properly prepared Steel Bridges, for New construction and repaint. **Protection System II.**

Apply in 2 coats to yield 3.5 to 10.0 mils dft.

The systems listed above are representative of the product's use. Other systems may be appropriate.

Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to TxDOT Tape Test for additional surface preparation information.

Minimum recommended surface preparation:
TxDOT Class A Blast Clean. Remove visible rust, paint, mill scale, and other forms of contamination. The blasted area shall exhibit a uniform surface appearance when viewed with the unaided eye (20-20 vision).Similar to Near-White Blast Cleaning, SSPC-SP10 OR NACE 2.

Color Availability/Tinting

Tint: Do not tint

Application Conditions

Temperature:	40°F minimum, 100°F maximum (air, surface, and material)
	At least 5°F above dew point
Relative humidity:	85% maximum

Do not allow product to freeze.

Refer to product Application Bulletin for detailed application information.

Ordering Information

Packaging	1 gallon base B69AJ1
	1 gallon hardner B69VJ1
	1 KEG B69D210
Weight per unit:	63 lb per keg unit B69D210
	18.45 lb per box (base/ hardner)

Safety Precautions

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

SHERWIN WILLIAMS

Industrial and Marine Coatings

TX DOT 810-E
PRIME COAT (SYSTEM II)
B69AVJ002 SIZE CODE 36
B69D210

APPLICATION BULLETIN

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion. Refer to TxDOT Tape Test.

Minimum recommended surface preparation:

TxDOT Class A Blast Clean. Remove visible rust, paint, mill scale, and other forms of contamination. The blasted area shall exhibit a uniform surface appearance when viewed with the unaided eye (20-20 vision).Similar to Near-White Blast Cleaning, SSPC-SP10 OR NACE 2.

APPLICATION CONDITIONS

Temperature:	40°F minimum, 100°F maximum (air, surface, and material) At least 5°F above dew point
Relative humidity:	85% maximum

Do not allow to freeze

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compatible with the existing environmental and application conditions.

Reducer/Clean Up: ..... MEK, Ketones

Airless Spray

Pressure	2000 psi
Hose	1/4" ID
Tip	.015"-.019"
Filter	60 mesh
Reduction	as needed, up to 1/2 pint per gallon

Conventional Spray

Gun	Binks 95
Fluid Nozzle	66
Air Nozzle	63PB
Atomization Pressure	60 psi
Fluid Pressure	25 psi
Reduction	as needed up to 1/2 pint per gallon

Brush

Brush	Natural Bristle
Reduction	Not recommended

Roller

Cover	3/8" woven with phenolic core
Reduction	Not recommended

If specific application equipment is listed above, equivalent equipment may be substituted.

continued on back

SHERWIN Williams

Industrial and Marine Coatings

TX DOT 810-E
PRIME COAT (SYSTEM II)
B69AVJ002 SIZE CODE 36
B69D210

APPLICATION BULLETIN

Application Procedures

Surface preparation must be completed as indicated.

Mixing Instructions: One complete kit consists of one (two gallon) carton containing the liquid portions and one 3 1/2 gallon bucket containing the zinc dust. Thoroughly mix the liquid portions before pouring them into a suitable clean mixing container. If further thinning is needed, a small amount of MEK or Ketone, combinations thereof or similar approved solvent may be used. Mixing of the liquid portions shall be done at least 30 minutes (induction time) before use. After induction stir the liquids, adding the zinc dust slowly. Continue to stir until all the zinc dust is completely dispersed. Strain before using. .

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate Per Coat:

Wet mils: 3.5 to 10.0
Dry mils: 1.75 to 5.0
Coverage: 450 sq ft /gal approximate

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 6.0 mils wet and 50% RH

	@77°F
To touch:	30 minutes
To handle:	2 hours
To recoat:	2 hours

Sweat-In-Time: 30 Minutes

Drying time is temperature, humidity, and film thickness

Performance Tips

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness of porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Refer to Product Information sheet for additional performance characteristics and properties.

Clean Up Instructions

Clean spills and spatters immediately with MEK, Ketones. Clean tools immediately after use with MEK ,Ketones. Follow manufacturer's safety recommendations when using any solvent.

Safety Precautions

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

SHERWIN Williams

Industrial and Marine Coatings

TX DOT 742 H GRAY APPEARANCE COAT

B29AJ1000

PRODUCT INFORMATION

Product Description

742 H GRAY APPEARANCE COAT is a topcoat made to Tx DOT formulation. Can be used for Tx DOT System I or II.

Recommended Uses

For use over prepared:

Bridges (Steel) New construction and repaint.

Product Characteristics

Finish: Flat

Color: Gray

Volume Solids: 49%

VOC Thinned 1/2 pint per gal
450 g/l

Recommended Spreading Rate per coat:

Wet mils:	4.0
Dry mils:	2.0
Coverage:	400 sq ft/gal approximate

Drying Schedule @ 4.0 mils wet @ 50% RH:

	@ 77°F
To touch:	30 minutes
To handle:	2 hours

Shelf Life: 12 months, unopened, at 77°F

Flash Point: 78 °F, PMCC

Reducer/Clean Up: Xylene, Mak / Ketones

Performance Characteristics

This product is manufactured to Tx DOT formulation specifications and inspected in our Garland facility

continued on back

SHERWIN WILLIAMS

Industrial and Marine Coatings

TX DOT 742 H GRAY APPEARANCE COAT

B29AJ1000

PRODUCT INFORMATION

Recommended Systems

Over prepared system I or II
1 coat B29AJ1000 @ 2 mils dft.

Note: System I or II coatings, including field touch-up, should be allowed to cure prior to the application of Tx DOT 742 H Gray Appearance Coat in accordance with the following schedule.

77 °F and above	2 days
65 to 77 °F	3 days
55 to 65 °F	4 days
40 to 55 °F	5 days

When cure of previously applied paint is in doubt, the cure can be determined by the following test. Using moderate to heavy pressure, place thumb on paint surface and apply a twisting motion. If the paint film gives or twists with the thumb, the coating is not thoroughly cured.

The systems listed above are representative of the product's use. Other systems may be appropriate.

Surface Preparation

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to Tx DOT Tape Test for additional surface preparation information.

Color Availability/Tinting

Tint: Do not tint

Application Conditions

Temperature:	40°F minimum, 100°F maximum (air, surface, and material) At least 5°F above dew point
Relative humidity:	85% maximum

Refer to product Application Bulletin for detailed application information.

Ordering Information

Packaging	5 gallon containers
Weight per container:	57 lbs

Safety Precautions

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

SHERWIN WILLIAMS

Industrial and Marine Coatings

TX DOT 742 H GRAY APPEARANCE COAT

B29AJ1000

APPLICATION BULLETIN

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to Tx DOT Tape Test for additional surface preparation information.

APPLICATION CONDITIONS

Temperature:	40°F minimum, 100°F maximum (air, surface, and material) At least 5°F above dew point
Relative humidity:	85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compatible with the existing environmental and application conditions.

Reducer/Clean Up:..... Xylene, MEK or Ketone solvents

Airless Spray
- Pressure ..... 2500 psi
- Hose ..... 1/4" ID
- Tip ..... .015"
- Reduction ..... as needed, up to 1/2 pint per gal

Brush
- Brush ..... Natural Bristle
- Reduction ..... Not recommended

Roller
- Cover ..... 3/8"-1/2" woven with phenolic core
- Reduction ..... Not recommended

If specific application equipment is listed above, equivalent equipment may be substituted.

Note: Brush and roller application will require use of a slow Aromatic solvent.

continued on back

SHERWIN WILLIAMS

Industrial and Marine Coatings

TX DOT 742 H GRAY APPEARANCE COAT

B29AJ1000

APPLICATION BULLETIN

Application Procedures

Surface preparation must be completed as indicated.

Mixing Instructions: Mix paint thoroughly by boxing and stirring before use.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:
Wet mils: 4.0
Dry mils: 2.0
Coverage: 400 sq ft /gal approximate

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 8.0 mils wet and 50% RH

	@77°F
To touch:	30 minutes
To handle:	2 hours

Note: System I or II coatings, including field touch-up, should be allowed to cure prior to the application of Tx DOT 742 H Gray Appearance Coat in accordance with the following schedule.

77 °F and above	2 days
65 to 77 °F	3 days
55 to 65 °F	4 days
40 to 55 °F	5 days

When cure of previously applied paint is in doubt, the cure can be determined by the following test. Using moderate to heavy pressure, place thumb on paint surface and apply a twisting motion. If the paint film gives or twists with the thumb, the coating is not thoroughly cured.

Drying time is temperature, humidity, and film thickness dependent.

Performance Tips

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness of porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Refer to Product Information sheet for additional performance characteristics and properties.

Clean Up Instructions

Clean spills and spatters immediately with Xylene, MEK or Ketones. Clean tools immediately after use with Xylene, MEK or Ketones.

Safety Precautions

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DEVOE PAINT SYSTEM

ICI DEVOE HIGH PERFORMANCE COATINGS

ICI Devoe Coatings is a member of the ICI Paints World Group

DEVTHANE™ 379UVA

Clear Aliphatic Urethane Finish

Cat. # 379K0036 Gloss Clear
Cat. # 379K0020 Flat Clear

PRODUCT DESCRIPTION

Generic: Aliphatic Acrylic Urethane

General Description: A high performance, two-component chemically-cured clear aliphatic urethane finish for use in areas where maximum gloss retention is required.

Typical Uses: For use on properly prepared and primed steel, concrete or steel floors, masonry, drywall, plaster, metal, concrete block, galvanized, aluminum, poured concrete, and glazed brick. Ideal for use on exterior or interior structural steel, piping, metal buildings, control cabinetry, conveyors, pumps, storage tanks, motors, machinery, and transportation vehicles. Can also be used in the hard service areas of food processing plants, dairies, schools, restaurants, hospitals, correctional facilities, factories, stadiums, arenas, and amusement parks.

Special Qualifications: Suitable for use on structural surfaces or surfaces where there is a possibility of incidental food contact in commercial food preparation establishments, food processing plants and federally inspected meat and poultry plants. USDA no longer requires or furnishes product certification letters.

FEATURES

Advantages:
- Exceptional gloss retention
- Excellent abrasion and chemical resistance
- Higher solids and higher film build than typical urethane finishes
- VOC compliant urethane
- Easily applied by brush, roller or spray
- Excellent resistance to marring, chipping, and scratching
- Provides added protection to urethane color coats and epoxies where used on floors.
- Gloss Clear contaings UV absorber
- Gloss Clear may be used over Devthane 379 Enamel for improved weather resistance
- Performance alternate for Devthane 369 and 4708

Graffiti Resistance: Excellent resistance to most graffiti materials such as spray paint, magic markers and lipstick. Contact your ICI Devoe Coatings Representative for more information on the graffiti removing cleaner to service your needs.

Limitations of Use: Color may change as temperature approaches 250°F (121°C) limit, but the film will remain intact. Not recommended for exterior use over epoxies, alkyds or oil-base paints. Not recommended for interior use over alkyd or oil-base paints. **Flat Clear should not be used for graffiti resistance purposes.**

SPECIFICATION DATA

Color: Clear

Finish: Gloss – 90 units minimum @ 60°(379K0036), Flat < 30 units maximum @ 85°(379K0020)

Reduction Solvent: T-9 for spray, T-17 for brush or roller.

Clean-up Solvent: T-9 Thinner

Weight/Gallon: 8.5 lbs./gal. (1.01 kg/L)

VOC (EPA 24)**:** 3.0 lbs./gal. (360 g/L)

Solids By Volume: 57%

Theoretical Coverage at 1.0 Mil (25 microns) **Dry:** 914 sq. ft. (22.4 m²/L)

Recommended Film Thickness: 2.0-3.0 mils (50-75 microns) dry – 4.0-6.0 mils (100-150 microns) wet

Systems: Please consult the appropriate system guide, the particular job specification or your ICI Devoe Coatings' Industrial Coatings Specialist for proper systems using this product. Systems must be selected considering the particular environment involved.

Service Temperature Limits: 250°F (121°C) dry

Minimum Dry Time (ASTM D 1640)**:** At 3 mils (75 microns) DFT

Substrate Temperature	40°F (4°C)	60°F (16°C)	80°F (27°C)
Minimum Recoat	10 Hours	6 Hours	3 Hours
Dry Hard	>32 Hours	24 Hours	16 Hours
Maximum Recoat			
Self	2 Weeks	2 Weeks	2 Weeks

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

Warning: The above table provides guidelines only. Always consult your ICI Devoe Coatings Specialist for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Industrial Coatings Specialist for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

Shelf Life: Over 24 months at 77°F (25°C) – unopened

Hardness (ASTM D 3363, 7 day cure @ 77°F (25°C)**:** 4H

Mix Ratio By Volume: 4 (base): 1 (converter) – see mixing instructions.

Induction: None required – see mixing instructions.

Pot Life: 4 hours @ 77°F (25°C) & 50% R.H.

PERFORMANCE DATA

Abrasion Resistance: (ASTM D 4060) – Very Good

Humidity Resistance: (ASTM D 2247) – Very Good

9 FINISHES SPECIAL COATINGS (9800)

ICI DEVOE COATINGS A member of the ICI Paints World Group

GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean, free of oil, grease, dirt, mildew, form release agents, curing compounds, loose and flaking paint and other foreign substances.

Previously Painted Surfaces: May be applied as a protective clear coat to two-component colored polyurethane coatings and epoxies for interior use. Not recommended over alkyd or oil-based paints.

DIRECTIONS FOR USE

Tinting: Do not tint.

Thinning: Thinning is not normally required. However, depending on local VOC and air quality regulations, small amounts (5% or less) of the solvents on the reverse page may be added. Small amounts (5% or less) of Devoe Coatings T-17 Thinner will improve roller or brush applications. If local VOC and/or air quality regulations are not an issue, and depending on the individual set-up of the spray equipment, additional thinning may be allowed to obtain the desired individual finish. Contact your local ICI Devoe Coatings Representative for additional information.

Mixing: DEVTHANE 379 Enamel is a two-component product supplied in 5 gallon or 1 gallon kits which contain the proper ratio of ingredients. The entire contents of each container must be mixed together. It is important that all mixing equipment is free of moisture and that moisture does not contaminate the coating. Mix the base portion to obtain a smooth, homogeneous condition. After mixing the base portion, add the convert-er slowly with continued agitation. Mix thoroughly. The pot life of the mixed material is 4 hours at 77° (25°C). Higher temperatures will reduce working life of the coating; lower temperatures will increase it.

Application: Apply by airless spray, air spray, roller or brush. For airless spray, any air, electric, or gas operated airless sprayer capable of 3,000 psi (207 bars) and able to support a .011" to .017" tip sizes can be used. Multiple guns and long fluid lines require pumps with adequate capacity. For air spray application, use a Graco #800 gun; a .070" or larger fluid tip. Adjust fluid and air pressure to get a good spray pattern.

Note: Be sure all spray equipment and fluid lines are clean, and free of water or solvents. For brush application, use good quality, dry, clean brushes. **For roller application use new, short nap mohair rollers.** Do not apply over wet surfaces or under very humid conditions where condensation or fog could settle on the coating during the cure process.

Spreading Rate: For maximum protection in corrosive areas, apply at 335 sq. ft. per gallon (8.2 m²/L) or 3.0 mils (75 microns) dry-4.8 mils (120 microns) wet. In mild to moderate exposures, apply at 500 sq. ft. per gallon (12.25 m²/L) or 2.0 mils (50 microns) dry-3.2 mils (80 microns) wet. Make allowance for any losses due to overspray or surface irregularities.

Dry Time: At 80°F (27°C) & 50% R.H., dries to recoat in 3 hours and dries hard in 16-24 hours.

Clean-up: Use T-9 Thinner.

Cure Acceleration: Devthane Cure Accelerator 070A0000 may be used to accelerate cure of this urethane at or below 40°F (5°C). 070A0000 us prepackaged (5 fluid ounces in a one-half pint container) for field addition. The addition of one to two ounces per gallon of urethane (one to two containers per five gallons of urethane) will decrease the dry hard time approximately one-third to one-half respectively. The pot life will be reduced one-half to three-fourths.

Utra-Violet Light Absorbers (UVA): Devthane Utra-Violet Light Absorber 080A0000 is already contained in Devthane 379 Clear Gloss. Additional Gloss Retention Enhancer is not required nor desired. Devthane Gloss Retention Enhancer is not recommended in Devthane 379 Clear Flat.

PRECAUTIONS

For industrial use only. Keep out of reach of children. Consult Material Safety Data Sheets appropriate for this product for important health and safety information prior to use.

HMIS DATA

COMPONENT	HEALTH	FLAMMABILITY	REACTIVITY
379 BASE 379BXXXX	2*	3	1
379 CONVERTER 379C0910	3*	3	2

* Indicates possible chronic health hazard

SHIPPING

Freight Classification: Paint, 3, PG III, UN1263 (Flammable Liquid)
Flash Point: 80°F (27°C)
Packaging: 1 gallon kit (3.785L): 0.80 gallon base, 0.20 gallon converter; 5 gallon kit (18.925L): 4.0 gallon base, 1.0 gallon converter

Shipping Weight: 4 - 1 gallon kits - 40 lbs. (18.2 kg)
5 gallon kit - 49 lbs. (22 kg)

379K0038/379K0020 (8/98)
Ad Stock #68677A

DEVOE HIGH PERFORMANCE COATINGS
Cleveland, Ohio, U.S.A.
800-654-2616
www.devoecoatings.com
ICI Devoe Coatings is a member of the ICI Paints World Group

DEVSHIELD™ 4328

Interior/Exterior Alkyd Urethane Gloss Enamel

Cat. # 4328-XXXX

ICI Devoe Coatings is a member of the ICI Paints World Group

PRODUCT DESCRIPTION

Generic: Alkyd-Urethane

General Description: A premium quality interior/exterior alkyd-urethane gloss enamel for use on wood or above grade concrete porches or floors not laid directly on damp or water bearing surfaces. May be used on interior or exterior above grade surfaces. Also good for woodwork, radiators, ornamental iron, boat docks, fire escapes, etc. Features good resistance to abrasion, oils and washing.

Special Qualifications: Suitable for use on structural surfaces or surfaces where there is a possibility of incidental food contact in commercial food preparation establishments, food processing plants and federally inspected meat and poultry plants. USDA no longer requires or furnishes product certification letters.

FEATURES

Advantages:

- Durable high gloss finish
- Interior or exterior usage
- Excellent flow and leveling
- Easy application - brush, roll or spray
- Ready for use the day after application
- Resists marring, weathering and water spotting
- Performance alternate for Federal Specifications TT-E-487E, TT-E-489H, TT-E-506K, and TT-E-505A.

Limitations of Use: Not for use in highly alkaline or chemical areas.

SPECIFICATION DATA

Color: White, custom & ready-mix colors

Finish: Gloss, 70 units minimum @ 60°

Clean-up Solvent: Mineral Spirits or VM&P Naphtha

Weight/Gallon: 10.0 lbs./gal. (1.20 kg/L) - varies with color

VOC: 3.21 lbs./gal. (385 g/L) - varies with color

Solids By Volume: 51% ± 1% - varies with color

Theoretical Coverage at 1.0 Mil Dry: 816 sq. ft./gal. (20 m²/L)

Practical Coverage: Apply at 400-500 sq. ft./gal. (10-12 m²/L). Actual coverage may vary depending on substrate and application method.

Recommended Film Thickness: 1.6-2.0 mils (40-50 microns) dry - 3.2-4.0 mils (80-100 microns) wet

Systems: Please consult the appropriate system guide, the particular job specification or your ICI Devoe Coatings' Industrial Coatings Specialist for proper systems using this product. Systems must be selected considering the particular environment involved.

Service Temperature Limit: 200°F (93°C) in air

Flame Spread Rating: Class A (0-25) over non-combustible surfaces

Flash Point: 105°F (41°C)

Dry Time @ 77°F (25°C) & 50% RH:
To touch - 6 hours
To recoat or light foot traffic - 16 hours

Warning: The above table provides general guidelines only. Always consult your ICI Devoe Coatings Specialist for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Industrial Coatings Specialist for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

Shelf Life: 1 year minimum - unopened

PERFORMANCE DATA

PROPERTY	TEST METHOD	RESULTS
Adhesion	ASTM D 3359	Excellent: 5A No peeling or removal
Direct Impact Resistance	ASTM D 2794	Good: > 10 in - lbs.
Abrasion Resistance	ASTM D 4060	Good

09800

DANGER! COMBUSTIBLE. HARMFUL OR FATAL IF SWALLOWED. Read label and Material Safety Data Sheet Prior to Use. See other cautions on front page.

GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean and free of oil, grease, dirt, mildew, form release agents, curing compounds, loose and flaking paint and other foreign substances.

New Surfaces: **Concrete (concrete floors) and Masonry** - Do not use on floors subject to dampness from the ground. Cure at least 30 days before painting. pH must be 10.0 or lower. Roughen unusually slick poured or precast concrete by acid etching or sandsweeping. Follow acid manufacturer's application and safety instructions. Rinse thoroughly with water and allow to dry. Remove loose aggregate. Prime properly prepared concrete floors less than one year old with solventborne primer DEVSHIELD 4130. **Wood** - Prime with this product. **Steel** - Prime with solventborne metal primer DEVSHIELD 4130. **Galvanized Metal and Aluminum** - Prime with solventborne metal primer DEVGUARD™ 4120.

Previously Painted Surfaces: Wash to remove contaminants. Rinse thoroughly with water and allow to dry. Dull glossy areas by light sanding. Remove sanding dust. Remove loose paint. Scrub heavy chalk exterior areas and overhead areas such as eaves with soap and water. All existing mildew must be removed by washing with a solution of 16 oz. (473 mL) liquid household bleach and two oz. (59 mL) non-ammoniated liquid detergent per gallon (3.785 L) of water. Rinse surfaces clean with water and allow to dry for 24 hours. Prime bare areas with primer specified under **New Surfaces**.

DIRECTIONS FOR USE

Tinting: Tint the appropriate base with ICI Colorants.

Spreading Rate: Apply at 400-500 sq. ft./gal. (10-12 m²/L) or 3.2-4.0 mils wet (1.6-2.0 mils dry). Actual coverage may vary depending on substrate and application method. For best hiding, tint primers toward finish coat color. Certain shades of yellow, orange, pink and red may require multiple coats.

IMPORTANT: Alkyd or alkyd urethane enamels may yellow in time in the absence of light, especially sunlight.

Application: Mix thoroughly before use. May be applied by spray, roll or spray. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding. No thinning required. For airless spray use a .015" tip. Adjust pressure as needed. Do not apply when surface or air temperature is below 40°F (4°C). Two coats are suggested for best results. Surfaces coated with this product may become slippery when wet. For additional slip resistance in areas of pedestrian traffic, add one pound per gallon of coarse pumice or other texturing material.

Drying Time: At 77°F (25°C) & 50% R.H., dries to touch in six hours, to light foot traffic and recoat in 16 hours. Low temperature, high humidity, thick films or poor ventilation will increase these times.

Clean-up: Clean immediately with mineral spirits or VM&P Naphtha.

PRECAUTIONS

DANGER! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. OVEREXPOSURE MAY CAUSE LIVER, KIDNEY DAMAGE. WHEN TINTED, CONTAINS ETHYLENE GLYCOL WHICH CAN CAUSE SEVERE KIDNEY DAMAGE WHEN INGESTED AND HAS BEEN SHOWN TO CAUSE BIRTH DEFECTS IN LABORATORY ANIMALS. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series may contain solvents. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. For additional safety information, refer to the Material Safety Data Sheet for this product. Keep away from heat, sparks and flame. **Do not smoke.** Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. If sanding is done, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** In case of skin contact, wash off **quickly** with plenty of soap and water, remove contaminated clothing. For eye contact flush **immediately** with large amounts of water, for at least 15 minutes. **Obtain emergency medical treatment.** If swallowed, **obtain medical treatment immediately.** If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, **get medical help. Note: These warnings encompass the product series. Prior to use, read and follow product specific MSDS and label information.**

SHIPPING

Freight Classification: Paint
Flash Point: 105°F (41°C)
Packaging: 1 gallon (3.785L)
5 gallons (18.925L)

Shipping Weight: 4 gallon case - 44 lbs. (20.0 kg)
5 gallon pail - 54 lbs. (24.5 kg)

4328-XXXX (12/99)
Ad Stock #68618A

ICI DEVOE HIGH PERFORMANCE COATINGS
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800-654-2616
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DEVOE HIGH PERFORMANCE COATINGS

ICI Devoe Coatings is a member of the ICI Paints World Group

DEVSHIELD™ 4130

Rust Penetrating Metal Primer

Cat. # 4130-6130

PRODUCT DESCRIPTION

Generic: Modified Epoxy

General Description: A high performance, modified epoxy, rust inhibitive, metal primer. Provides excellent corrosion protection and rusty metal adhesion far superior to alkyd primers. Light gray color permits good coverage with one finish coat. Use under alkyd, latex or modified epoxy finishes. Also makes an excellent alkali resistant masonry bonding primer.

Typical Uses: Ideal for structural steel, tanks, piping and equipment.

Special Qualifications: Suitable for use on structural surfaces or surfaces where there is a possibility of incidental food contact in commercial food preparation establishments, food processing plants and federally inspected meat and poultry plants. USDA no longer requires or furnishes product certification letters.

FEATURES

Advantages:

- Excellent corrosion resistance
- Good penetration of surfaces that cannot be well cleaned
- Ideal for old, rusty galvanized metal surfaces
- Excellent alkali resistant bonding primer for masonry
- Helps block efflorescence
- Performance alternate for Federal Specifications TT-C-530B, TT-P-615D, and TT-P-645B

SPECIFICATION DATA

Color: Light Gray
Finish: Flat
Clean-up Solvent: Xylene
Weight/Gallon: 11.1 lbs./gal. (1.33 kg/L)
VOC: 3.50 lbs./gal. (420 g/L) maximum
Solids By Volume: 47% ± 1%
Theoretical Coverage at 1.0 Mil Dry: 754 sq. ft./gal. (19 m²/L)
Practical Coverage: Apply at 285-400 sq. ft./gal. (7-10 m²/L). Actual coverage may vary depending on substrate and application method.
Recommended Film Thickness: 2.2-3.5 mils (55-88 microns) dry - 5.0-8.0 mils (125-200 microns) wet
Systems: Please consult the appropriate system guide, the particular job specification or your ICI Devoe Coatings' Industrial Coatings Specialist for proper systems using this product. Systems must be selected considering the particular environment involved.
Service Temperature Limit: 225°F (107°C) in air
Flame Spread Rating: Class A (0-25) over non-combustible surfaces
Flash Point: Over 102°F (39°C)
Dry Time @ 77°F (25°C) & 50% RH:
To touch - 6 hours
To recoat - Overnight
Warning: The above table provides general guidelines only. Always consult your ICI Devoe Coatings Specialist for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Industrial Coatings Specialist for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.
Shelf Life: 1 year minimum - unopened

PERFORMANCE DATA

PROPERTY	TEST METHOD	RESULTS
Adhesion	ASTM D 4541	600 psi
Pencil Hardness	ASTM D 3363	H
Flexibility	ASTM D 522, Method B, 1/8"	No cracking or flaking
Humidity/Corrosion Resistance	ASTM D 4585, 3000 hours	No blistering or delamination of the film, slight rust staining at scribe

09800

DANGER! COMBUSTIBLE. HARMFUL OR FATAL IF SWALLOWED. Read label and Material Safety Data Sheet Prior to Use. See other cautions on last page. DSF2-0790

GENERAL SURFACE PREPARATION

All surfaces must be sound, dry, clean and free of oil, grease, dirt, mildew, form release agents, curing compounds, loose and flaking paint and other foreign substances.

New Surfaces: **Steel** - Best results are obtained over a surface sandblasted to a Commercial Blast (SSPC-SP6). Performance over hand or power-tool cleaned surfaces is dependent on the degree of cleaning. **Old Galvanized Metal** - Old rusty, galvanized metal surfaces must be wire brushed and scraped to remove loose rust and primed with this paint. **Concrete, Plaster and Masonry** - Cure at least 30 days before painting. pH must be 10.0 or lower. Remove laitance and roughen unusually slick poured or precast concrete by acid etching or sand-sweeping. Follow acid manufacturer's application and safety instructions. Rinse thoroughly with water and allow to dry. Remove loose aggregate. Prime with this paint.

Previously Painted Surfaces: All spots failed by rusting, peeling, blistering, etc. shall be wire brushed and scraped to remove all loose or loosely adhering material. Spot prime bare areas. For optimum performance in more corrosive areas, entire surface should be abrasive blast cleaned.

DIRECTIONS FOR USE

Tinting: May be tinted with up to two oz./gal. of ICI Colorants.

Spreading Rate: Apply at 285-400 sq. ft./gal. (7-10 m^2/L) or 5.0-8.0 mils wet (2.2-3.5 mils dry). Actual coverage may vary depending on substrate and application method.

Application: May be applied by brush, roll or spray. Apply liberally. For airless spray, use a .015" tip. Adjust pressure as needed. No thinning required. Do not apply in damp weather or when the surface or air temperature is below or expected to be below 40°F (4°C). Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

Drying Time: At 77°F (25°C) and 50% R.H., dries to touch in six hours and to recoat overnight. Low temperature, high humidity, thick films or poor ventilation will increase these times.

Clean-up: Clean immediately with xylene.

PRECAUTIONS

DANGER! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION. OVEREXPOSURE MAY CAUSE LIVER, KIDNEY DAMAGE. CONTAINS CYRSTALLINE SILICA WHICH CAN CAUSE LUNG CANCER AND OTHER LUNG DAMAGE IF INHALED. CONTAINS MICA WHICH CAN CAUSE PNEUMOCONIOSIS. WHEN TINTED, CONTAINS ETHYLENE GLYCOL WHICH CAN CAUSE SEVERE KIDNEY DAMAGE WHEN INGESTED AND HAS BEEN SHOWN TO CAUSE BIRTH DEFECTS IN LABORATORY ANIMALS. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. Keep away from heat, sparks and flame. **Do not** smoke. Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. If sanding is done, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** In case of skin contact, wash off **quickly** with plenty of soap and water, remove contaminated clothing. For eye contact flush **immediately** with large amounts of water, for at least 15 minutes. **Obtain emergency medical treatment.** If swallowed, **obtain medical treatment immediately.** If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, **get medical help. Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.**

SHIPPING

Freight Classification: Paint
Flash Point: Over 102°F (39°C)
Packaging: 1 gallon kit (3.785L)
5 gallons (18.925L))

Shipping Weight: 4 gallon case - 48 lbs. (21.8 kg)
5 gallon pail - 59 lbs. (26.8 kg)

4130-8130 (12/99)
Ad Stock #58507A

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TNEMEC PAINT SYSTEM

Fluoronar® Clear SERIES 1076

PRODUCT PROFILE

GENERIC DESCRIPTION Advanced Thermoset Solution Fluoropolymer Clear

COMMON USAGE An exterior clear fluoropolymer finish coat especially designed to enhance the exterior weatherability of Fluoronar and HydroFlon. Fluoronar Clear has outstanding resistance to ultra-violet light providing extended color and gloss retention. An indicator dye is provided to aid in application.

COLOR Clear. **Note:** 44-500 will change the appearance to a violet tint during application. After a period of up to 72 hours of sunlight exposure, appearance will be clear.

FINISH High gloss

PERFORMANCE CRITERIA Extensive test data available. Contact your Tnemec representative for specific test results.

COATING SYSTEM

BASE COATS Series 700, 1070, 1078. **Note:** Series 1076 should be applied within 14 days of a Series 700, 1070 or 1078 application.

SURFACE PREPARATION

Prepare surfaces by method suitable for exposure and service. (See Base Coat Product Data Sheet for surface preparation recommendations.)

ALL SURFACES Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS 56.7 ± 2.0% (mixed)

RECOMMENDED DFT 1.5 to 2.0 mils (40 to 50 microns) per coat. **Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.**

CURING TIME

Temperature	To Touch	To Handle	Minimum Recoat*
75°F (24°C)	1½ hours	6-8 hours	24 hours

* Maximum recoat: 7 days. Curing time varies with surface temperature, air movement, humidity and film thickness.

VOLATILE ORGANIC COMPOUNDS

Unthinned	Thinned 5%
3.18 lbs/gallon (381 grams/litre)	3.37 lbs/gallon (404 grams/litre)

THEORETICAL COVERAGE 910 mil sq ft/gal (22.3 m²/L at 25 microns). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS Two: Part A and Part B

MIXING RATIO By volume: Four (Part A) to one (Part B)

PACKAGING Small Kit: Consists of a partially filled one-gallon can of Part A, a quart can of Part B and a foil package containing a vial of 44-500. When mixed yields one gallon (3.79L).

WEIGHT PER GALLON 9.26 ± 0.25 lbs (4.20 ± .11 kg) (mixed)

STORAGE TEMPERATURE Minimum 20°F (-7°C) Maximum 110°F (43°C)

TEMPERATURE RESISTANCE (Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

SHELF LIFE 12 months at recommended storage temperature.

FLASH POINT - SETA Part A: 80°F (27°C) Part B: 130°F (54°C)

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

SERIES 1076 Fluoronar® Clear

APPLICATION

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)
Suggested	2.0 (50)	3.5 (90)	449 (41.7)
Minimum	1.5 (40)	2.5 (65)	599 (55.6)
Maximum	2.0 (50)	3.5 (90)	449 (41.7)

Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. **Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.**

MIXING Small Kit: Add contents of the vial of 44-500 to Part A while under agitation. Mix thoroughly. Add contents of the quart can marked Part B to the mixture of Parts A and 44-500 while under agitation. Continue agitation until all components are thoroughly mixed. **Important:** Mixing ratio is four (Part A) to one (Part B) by volume.

Do not use mixed material beyond pot life limits. **Caution:** Part B is moisture-sensitive and will react with atmospheric moisture. Unused material must be kept tightly closed at all times.

POT LIFE 4 hours at 77°F (25°C) unthinned 5 hours at 77°F (25°C) thinned

THINNING For air spray, thin up to 5% or ¼ pint (190 mL) per gallon with No. 2 Thinner. For roller, thin 3% to 5% or ¾ pint (190 mL) per gallon with No. 2 Thinner. Thinning is required for proper application. **Caution:** Do not add thinner if more than thirty (30) minutes have elapsed after mixing.

SURFACE TEMPERATURE Minimum 40°F (4°C) Maximum 120°F (49°C)
The surface should be dry and at least 5°F (3°C) above the dew point.
Cure time necessary to resist direct contact with moisture at surface temperature:
60°F (16°C): 6 hours 70°F (21°C): 3 hours 80°F (27°C): 2 hours
90°F (32°C): 1 hour 100°F (38°C): 30 minutes
If the coating is exposed to moisture before the preceding cure parameters are met, dull, flat or spotty-appearing areas may develop. Actual times will vary with air movement, film thickness and humidity.

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC	E	78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-90 psi (5.2-6.2 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.
Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

Roller: Use 1/4" (6.4 mm) synthetic nap cover. Do not use medium or long nap roller covers.
Brush: Use high quality natural or synthetic bristle brushes.

CLEANUP Flush and clean all equipment immediately after use with the recommended thinner or MEK.

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Endura-Shield® II SERIES 1075

PRODUCT PROFILE

GENERIC DESCRIPTION Aliphatic Acrylic Polyurethane

COMMON USAGE A coating highly resistant to abrasion, wet conditions, corrosive fumes and exterior weathering. High build quality combines with project specific primers for two-coat, labor saving systems. Fast curing options are available; see Curing Time below. Product has some applications as a direct to metal finish. Contact your Tnemec representative for more details. NOT FOR IMMERSION SERVICE.

COLORS Refer to Tnemec Color Guide. **Note:** Certain colors may require multiple coats depending on method of application and finish coat color. When feasible, the preceding coat should be in the same color family, but noticeably different.

FINISH Semi-gloss

SPECIAL QUALIFICATIONS **Note:** Series 1075 meets California's SCAQMD, Rule 1113 definition for "Rust Preventative Coating" when used for metal surfaces only or for "Essential Public Service." Series 1075 also meets the requirements of SSPC-36 Paint Standard.

PERFORMANCE CRITERIA Contact your Tnemec representative for specific test results.

COATING SYSTEM

PRIMERS **Steel:** Series 20, FC20, 27, 66, N68, N69, 91-H_2O, 90-97, 104, 135, N140, 161, 530
Galvanized Steel and Non-Ferrous Metal: Series 66, N69, 161
Concrete: Series 66, N69, 84, 104, 161
CMU: 54-660, 130. Intermediate coat required.
Note: Before topcoating with Series 1075, Series 530 exterior exposed more than 24 hours must first be scarified or receive an intermediate coat of Tnemec polyamide epoxy. **Also,** Series N68 exterior exposed for 21 days or Series N69, 104, N140 or 161 exterior exposed more than two months must first be scarified or reprimed with themselves. Blasting with fine abrasive is the preferred method of scarification.

TOPCOATS Series 76, optional when extended weatherability is desired.

SURFACE PREPARATION

ALL SURFACES Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS* 75 ± 2.0% (mixed)

RECOMMENDED DFT 2.0 to 5.0 mils (50 to 125 microns) per coat. **Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.**

CURING TIME

Temperature	To Touch	To Handle	To Recoat
75°F (24°C)	1 hour	6 hours	8 hours

To resist moisture condensation: 6 hours. Curing time varies with surface temperature, air movement, humidity and film thickness. **Note:** For faster curing and low-temperature applications, add No. 44-710 Urethane Accelerator; see separate product data sheet. Contact Tnemec Technical Services for force curing times and temperatures.

VOLATILE ORGANIC COMPOUNDS*

Unthinned	No. 39 Thinner (Maximum 15%)	No. 42 Thinner (Maximum 15%)	No. 48 Thinner (Maximum 15%)
1.84 lbs/gallon (220 grams/litre)	2.42 lbs/gallon (290 grams/litre)	2.48 lbs/gallon (297 grams/litre)	2.55 lbs/gallon (305 grams/litre)

THEORETICAL COVERAGE* 1,203 mil sq ft/gal (29.5 m^2/L at 25 microns). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS Two: Part A and Part B

MIXING RATIO By volume: Eight (Part A) to one (Part B)

PACKAGING Three Gallon Kit: Consists of a partially-filled five-gallon can of Part A and a partially-filled half-gallon can of Part B. When mixed, yields three gallons (11.4L).
One Gallon Kit: Consists of a partially-filled one-gallon can labeled Part A and a partially-filled pint can labeled Part B. When mixed, yields one gallon (3.79L).

NET WEIGHT PER GALLON* 12.75 ± 0.25 lbs (5.80 ± .11 kg)

STORAGE TEMPERATURE Minimum 20°F (-7°C) Maximum 110°F (43°C)

TEMPERATURE RESISTANCE (Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

SERIES 1075 Endura-Shield® II

TECHNICAL DATA continued

FLASH POINT - SETA: Part A: 95°F (35°C) Part B: 135°F (57°C)

SHELF LIFE: 12 months at recommended storage temperature.

HEALTH & SAFETY: This product contains chemical ingredients which are considered hazardous. Read container label warning and material safety data sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

APPLICATION

COVERAGE RATES*

	Conventional Build (Spray, Brush or Roller)			High-Build (Spray Only)		
	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)
Suggested	2.5 (65)	3.5 (90)	481 (44.7)	4.0 (100)	5.5 (140)	301 (28.0)
Minimum	2.0 (50)	3.0 (75)	602 (55.9)	3.0 (75)	4.0 (100)	401 (37.3)
Maximum	3.0 (75)	4.0 (100)	401 (37.3)	5.0 (125)	6.5 (165)	241 (22.4)

Note: Can be spray applied at 3.0 to 5.0 mils (75 to 125 microns) DFT per coat when extra protection or the elimination of a coat is desired. Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. **Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.**

MIXING: Stir contents of the container marked Part A, making sure no pigment remains on the bottom. Add the contents of the can marked Part B to Part A while under agitation. Continue agitation until the two components are thoroughly mixed. When used with 44-710 Urethane Accelerator, first blend 44-710 into Part A under agitation; continue as above. Do not use mixed material beyond pot life limits. **Caution:** Part B is moisture-sensitive and will react with atmospheric moisture. Unused material must be kept tightly closed at all times.

POT LIFE: 1½ hours at 77°F (25°C) unthinned 2 hours at 77°F (25°C) thinned

THINNING: For air or airless spray, thin up to 15% or 1¼ pints (570 mL) per gallon with No. 42 Thinner if temperatures are below 80°F (27°C), use No. 48 Thinner for temperatures above 80°F (27°C). For brush and roller, thin 15% or 1¼ pints (570 mL) per gallon with No. 39 Thinner. **Note:** Thinning is required for proper application. **Caution:** Do not add thinner if more than 30 minutes have elapsed after mixing.

SURFACE TEMPERATURE: Minimum 35°F (2°C) Maximum 120°F (49°C)

The surface should be dry and at least 5°F (3°C) above the dew point.

If coating is exposed to moisture before the applicable cure parameters are met, dull, flat or spotty appearing areas may develop. Actual cure time will vary with air movement, film thickness and humidity.

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC	E	78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-90 psi (5.2-6.2 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.009"-0.013" (230-330 microns)	3000-3500 psi (207-241 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	100 mesh (150 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.

Roller: Use 1/4" (6.4 mm) synthetic nap cover. Do not use medium or long nap roller covers. Two coats are required to obtain dry film thickness above 3.0 mils (75 microns).

Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes. Two coats are required to obtain recommended film thickness above 3.0 mils (75 microns).

CLEANUP: Flush and clean all equipment immediately after use with the recommended thinner or MEK.

* Values may vary with color.

Hi-Build Epoxoline SERIES 66

PRODUCT PROFILE

GENERIC DESCRIPTION	Polyamide Epoxy
COMMON USAGE	Industry standard for epoxy coatings for over 30 years. Known for its forgiving application characteristics in adverse and varied conditions, and for benchmark performance.
COLORS	Refer to Tnemec Color Guide. **Note:** Epoxies chalk with extended exposure to sunlight and may yellow on aging. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may accelerate any potential yellowing.
FINISH	Satin
SPECIAL QUALIFICATIONS	Meets the performance requirements of **AWWA C 210** (not for potable water contact). Contact your Tnemec representative for system recommendations.
PERFORMANCE CRITERIA	Extensive test data available. Contact your Tnemec representative for specific test results.

COATING SYSTEM

PRIMERS	**Steel:** Self-priming or Series 20, 37H, N69, 90, 91-H_2O, 161, 530 **Galvanized Steel and Non-Ferrous Metal:** Self-priming **Concrete:** Self-priming, 54-660, 201, 216, 218 **CMU:** 54-562, 54-660, 130, 216, 218 **Drywall:** 51-792 for dry interior environments
TOPCOATS	46H-413, 66, N69, 73, 84, 104, 113, 114, 161, 175, 262, 265, 291, 1074, 1075 Refer to COLORS on applicable topcoat data sheets for additional information.

SURFACE PREPARATION

STEEL	**Immersion Service:** SSPC-SP10 Near-White Blast Cleaning **Non-Immersion Service:** SSPC-SP6 Commercial Blast Cleaning
PRIMED STEEL	**Immersion Service:** Scarify the Series 66 prime coat surface by abrasive-blasting with a fine abrasive before topcoating if: (a) the 66 prime coat has been in exterior exposure for 60 days or longer and 66, 46H-413, N69 or 161 is the specified topcoat; (b) the 66 prime coat has been in exterior exposure for 14 days or longer and Series 104 is the specified topcoat; (c) the 66 prime coat has been in exterior exposure for 7 days or longer and Series 262 or 265 is the specified topcoat.
GALVANIZED STEEL & NON-FERROUS METAL	Surface preparation recommendations will vary depending on substrate and exposure conditions. Contact your Tnemec representative or Tnemec Technical Services.
CAST/DUCTILE IRON	Contact your Tnemec representative or Tnemec Technical Services.
CONCRETE	Allow new concrete to cure 28 days. Abrasive blast referencing SSPC-SP13/NACE 6 Surface Preparation of Concrete and Tnemec's Surface Preparation and Application Guide.
CMU	Allow mortar to cure for 28 days. Level protrusions and mortar spatter.
PAINTED SURFACES	**Non-Immersion Service:** Ask your Tnemec representative for specific recommendations.
ALL SURFACES	Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS*	56.0 ± 2.0% (mixed)
RECOMMENDED DFT	2.0 to 6.0 mils (50 to 150 microns) per coat. **Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.**

CURING TIME

Temperature	To Touch	To Handle	To Recoat	Immersion
75°F (24°C)	2 hours	10 hours	12 hours	7 days

Curing time varies with surface temperature, air movement, humidity and film thickness.

VOLATILE ORGANIC COMPOUNDS*

Unthinned	Thinned 5%	Thinned 10%
3.04 lbs/gallon (364 grams/litre)	3.22 lbs/gallon (385 grams/litre)	3.39 lbs/gallon (406 grams/litre)

THEORETICAL COVERAGE*	898 mil sq ft/gal (22.0 m^2/L at 25 microns). See APPLICATION for coverage rates.
NUMBER OF COMPONENTS	Two: Part A and Part B
PACKAGING	5 gallon (18.9L) pails and 1 gallon (3.79L) cans — Order in multiples of 2.
NET WEIGHT PER GALLON*	12.50 ± 0.25 lbs (5.67 ± .11 kg) (mixed)
STORAGE TEMPERATURE	Minimum 20°F (-7°C) Maximum 110°F (43°C)

SERIES 66 Hi-Build Epoxoline

TECHNICAL DATA continued

TEMPERATURE RESISTANCE (Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

SHELF LIFE Part A: 24 months; Part B: 12 months at recommended storage temperature.

FLASH POINT - SETA Part A: 82°F (28°C) Part B: 64°F (18°C)

HEALTH & SAFETY Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

APPLICATION

COVERAGE RATES*

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)
Suggested	4.0 (100)	7.0 (180)	225 (20.9)
Minimum	2.0 (50)	3.5 (90)	450 (41.8)
Maximum	6.0 (150)	10.5 (265)	150 (13.9)

Note: The above reflects the total range to which Series 66 can be applied for specific applications. To insure the proper thickness and number of coats is specified for certain substrates and exposures, consult the Tnemec Guide Specifications and/or contact your Tnemec representative. **Note:** Roller or brush application may require two or more coats to obtain recommended film thickness. Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING Power mix contents of each container, making sure no pigment remains on the bottom. Pour a measured amount of Part B into a clean container large enough to hold both components. Add an equal volume of Part A to Part B while under agitation. Continue agitation until the two components are thoroughly mixed. Do not use mixed material beyond pot life limits. **Note:** Both components should be above 50°F (10°C) prior to mixing. For application to surfaces between 50°F to 60°F (10°C to 16°C), allow mixed material to stand thirty (30) minutes and restir before using. For optimum application properties, blended components should be above 60°F (16°C). Mixing ratio is one to one by volume.

POT LIFE 20 hours at 50°F (10°C) 10 hours at 77°F (25°C) 4 hours at 100°F (38°C)

THINNING Use No. 4 Thinner. For air spray, thin up to 10% or ¾ pint (380 mL) per gallon. For airless spray, roller or brush, thin up to 5% or ¼ pint (190 mL) per gallon.

SURFACE TEMPERATURE Minimum 50°F (10°C) Maximum 135°F (57°C) The surface should be dry and at least 5°F (3°C) above the dew point. Coating will not cure below minimum surface temperature.

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC or JGA	E	765 or 78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-100 psi (5.2-6.9 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.015"-0.019" (380-485 microns)	1800-3000 psi (124-207 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.
Note: Application over inorganic zinc-rich primers: Apply a wet mist coat and allow tiny bubbles to form. When bubbles disappear in 1 to 2 minutes, apply a full wet coat at specified mil thickness.
Roller: Roller application optional when environmental restrictions do not allow spraying. Use 3/8" or 1/2" (9.5 mm or 12.7 mm) synthetic nap covers.
Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

CLEANUP Flush and clean all equipment immediately after use with the recommended thinner or MEK.

*Values may vary with color.

Tneme-Zinc 90-97

PRODUCT PROFILE

GENERIC DESCRIPTION	Aromatic Urethane, Zinc-Rich
COMMON USAGE	An advanced technology, two-component, moisture-cured, zinc-rich primer providing extraordinary performance. It's user friendly and rapid curing so that chemical- and corrosion-resistant topcoats can be applied the "same-day." Also used for field touch-up of inorganic zinc coating. Application methods include "dry-fall" under certain conditions (see Application).
ZINC DUST CONTENT	83% by weight in dried film
COLOR	90-97 Reddish-gray
SPECIAL QUALIFICATIONS	90-97 Tneme-Zinc uses a zinc dust which meets the requirements of **ASTM D 520 Type III** and contains less than .002% lead. This level qualifies it to be classed as "non-lead" (less than 0.06% lead by weight) as defined in Part 1303 of the Consumer Product Safety Act Regulations. Conforms to **SSPC Paint 20, Type II.**
PERFORMANCE CRITERIA	Extensive test data available. Contact your Tnemec representative for specific test results.

COATING SYSTEM

TOPCOATS	Series 6, 26, 27, 46H-413, 66, N69, 73, 84, 104, 113, 114, 161, 175, 1074, 1075 **Note:** Certain topcoat colors may not provide one-coat hiding depending on method of application. Contact your Tnemec representative.

SURFACE PREPARATION

Severe Exposure: SSPC-SP10 Near-White Blast Cleaning.
Moderate Exposure: SSPC-SP6 Commercial Blast Cleaning.

TECHNICAL DATA

VOLUME SOLIDS: 63.0 ± 2.0% (mixed)

RECOMMENDED DFT: 2.5 to 3.5 mils (65 to 90 microns) per coat.

CURING TIME

Without 44-710

Temperature*	To Handle	To Recoat
75°F (24°C)	1 hour	4 hours
65°F (18°C)	1½ hours	5 hours
55°F (11°C)	2 hours	6 hours
45°F (7°C)	2½ hours	7 hours
35°F (2°C)	3 hours	8 hours

* 50% relative humidity. Curing time will vary with surface temperature, humidity and film thickness.

With 44-710: Reference the 44-710 Urethane Accelerator product data sheet.

VOLATILE ORGANIC COMPOUNDS

Unthinned	Thinned 2.5%	Thinned 10%
2.67 lbs/gallon (320 grams/litre)	2.78 lbs/gallon (333 grams/litre)	3.09 lbs/gallon (370 grams/litre)

THEORETICAL COVERAGE: 1,011 mil sq ft/gal (24.8 m²/L at 25 microns). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS: Two: Part A and Part B

PACKAGING: Four-Gallon and One-Gallon Kits: Consist of one premeasured container of liquid (Part A) and one premeasured container of powder (Part B). When mixed, yields four gallons (15.1L) or one gallon (3.79L).

NET WEIGHT PER GALLON: 23.94 ± 0.60 lbs (10.86 ± .27 kg)

STORAGE TEMPERATURE: Minimum 20°F (-7°C) Maximum 110°F (43°C)

TEMPERATURE RESISTANCE: (Dry) Continuous 250°F (121°C) Intermittent 300°F (149°C)

SHELF LIFE: Part A: 12 months at recommended storage temperature.
Part B: 24 months at recommended storage temperature.

FLASH POINT - SETA: Part A: 78°F (26°C) Part B: NA

HEALTH & SAFETY: Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

90-97 Tneme-Zinc

APPLICATION

CAUTION! Dry overspray can be wiped or washed from most surfaces. Satisfactory dry-fall performance depends upon height of work, weather conditions and equipment adjustment. Low temperature is of particular concern. Test for each application as follows: Spray from 15 to 25 feet towards paint container. The material then should readily wipe off. **Note:** Heat can fuse-dry overspray to surfaces. Always clean dry overspray from hot surfaces before fusing occurs. Be aware that surface temperatures can be higher than air temperature.

COVERAGE RATES

	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)
Suggested	3.0 (75)	5.0 (125)	337 (31.3)
Minimum	2.5 (65)	4.0 (100)	404 (37.5)
Maximum	3.5 (90)	5.5 (140)	289 (26.9)

Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING Always use the entire contents of A and B components. Use an air-driven power mixer and keep material under constant agitation while mixing. Slowly sift powder (Part B) into liquid (Part A). **–Do Not Reverse This Procedure–** Adjust mixer speed to break up lumps and mix until the two components are thoroughly blended. Strain through a 35 to 50 mesh (300 to 600 microns) screen before using. For spray application, keep under low RPM agitation to prevent settling. For brush or roller application, stir frequently to prevent settling. Do not use mixed material beyond pot life limits.

POT LIFE 8 hours at 77°F (25°C) and 50% R.H.
Caution: This product cures with moisture acting as a catalyst. Incorporation of moisture or moisture laden air (humidity) during use will shorten pot life. Avoid continual agitation at high RPM. When feasible keep containers of mixed material covered during use.

THINNING For spray, thin up to 10% or ¾ pint (380 mL) per gallon with No. 2 Thinner if temperatures are below 80°F (27°C). Thin up to 10% or ¾ pint (380 mL) per gallon with No. 3 Thinner if temperatures are above 80°F (27°C). For brush or roller, thin up to 10% or ¾ pint (380 mL) with No. 3 Thinner. Do not thin more than 2.5% when air pollution regulations limit the atmospheric discharge of volatile organic compounds (VOC) in coatings to a maximum of 340 grams/litre (2.80 lbs/gal).

SURFACE TEMPERATURE Minimum 35°F (2°C) Maximum 120°F (49°C) Maximum for Brush & Roller 100°F (38°C)
The surface should be dry and at least 5°F (3°C) above the dew point.

APPLICATION EQUIPMENT **Note:** When finish coats are white or light colors, best hiding of this dark color primer can be achieved by spray application; or when roller applied, by using ¼" nap covers.

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
Binks No. 18 or 62 •	66	63 PB	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	40-50 psi (2.8-3.4 bar)	10-20 psi (0.7-1.4 bar)

• (with heavy mastic spring) Low temperatures or longer hoses will require additional pressure. Use pressure pot equipped with an agitator and keep pressure pot at same level or higher than the spray gun. Compressed air must be dry.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.017"-0.021" (430-535 microns) Reversible Tip	2400-3000 psi (165-207 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions. Keep material agitated to prevent settling.
Roller: Use a 1/4" or 3/8" (6.4 mm or 9.5 mm) synthetic nap cover. Stir material frequently or keep under agitation to prevent settling.
Brush: Use high quality natural or synthetic bristle brushes.

CLEANUP Flush and clean all equipment immediately after use with the recommended thinner or xylene.

Transportation Enhancements

HNTB's extensive experience in community and regional planning, architecture and landscape architecture, combined with the firm's expertise in transportation, transit and bridge design, enables our design professionals to create lasting and memorable transportation venues. HNTB recognizes the substantial influence such projects have on the communities they serve and commits to delivering environmentally sensitive, enduring and fiscally responsible design solutions.

HNTB professionals bring to their clients extensive knowledge of local, state and federal government regulations and funding programs, including TEA-21. The firm frequently assists community officials in soliciting community input and attaining available state and federal investment dollars, helping to stretch resources.

Our portfolio of transportation enhancement projects includes multimodal stations, bus facilities, parking facilities, hike-and-bike trails, urban streetscapes, historic facilities and office and maintenance structures. HNTB also is recognized nationally for its efforts to restore historic transportation structures.

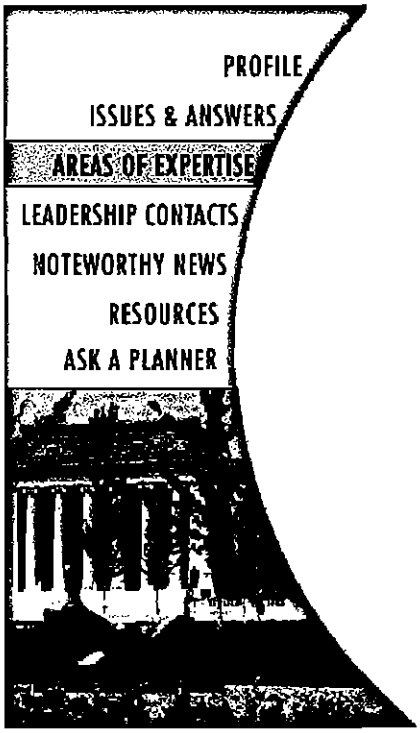
The firm's architects and landscape architects collaborate with HNTB's engineering professionals to integrate striking aesthetic and landscape features into bridge and highway design projects. Maintenance considerations are balanced with aesthetics and functional requirements to ensure that each facility meets the demands of its varied users for years to come.

Broadway Corridor
Kansas City, Mo.

Big Four Depot
Lafayette, Ind.

Green Ribbon Project
Houston, Tex.

The HNTB Companies Phone: (816) 472-1201


PROFILE
ISSUES & ANSWERS
AREAS OF EXPERTISE
LEADERSHIP CONTACTS
NOTEWORTHY NEWS
RESOURCES
ASK A PLANNER

architecture

BRIDGE AESTHETICS

HNTB Arc
Markets
SPORTS
TRANSPORTA
URBAN DESIG
HIGHER EDUC
CIVIC
CONVENTION
DESIGN-BUILD
HOSPITALITY/
CORPORATE
MAIN

The awe-inspiring union of here and there. At HNTB, our architects and engineers design landmark bridges that surpass the ordinary and leave a bold signature on the horizon.

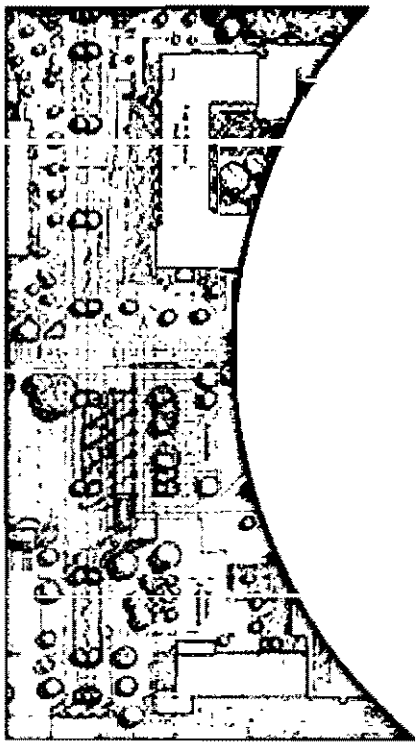

Brightman Street


Lake Street

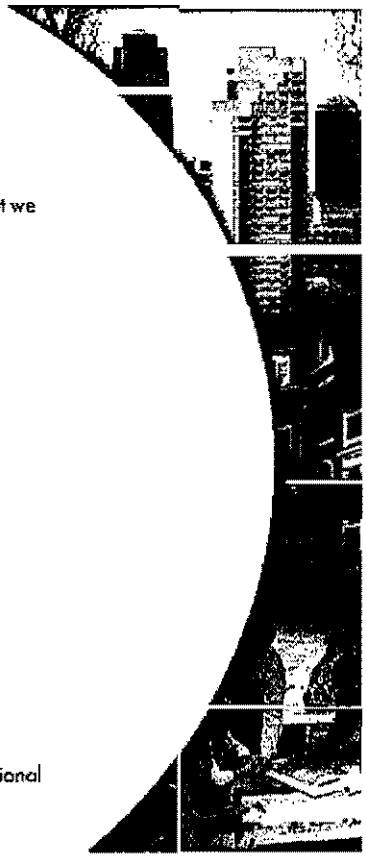

Wornall Road


Historic Covered

CONTACT:
Ray McCabe
Sr. Vice President
Chairman of Bridge & Tunnel Services



Choose one of the topics below to see what we can do for your community.



LDR International

HNTB Corporation acquired LDR International in October 2000. Click here for more information about LDR International.

TOWN OF ADDISON

Public Works / Engineering
16801 Westgrove • P.O. Box 9010
Addison, Texas 75001-9010
Telephone: (972) 450-2871 • Fax: (972) 450-2837

LETTER OF TRANSMITTAL

DATE 9-22-00	JOB NO.
ATTENTION	
RE: Arapaho Road Extension Addison Rd. & Marsh Lane	

TO Carmen Moran

GENTLEMAN:

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			HNTB Supplemental Agreement No. 1 for above Engineering Contract

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☑ For your use ☐ Approved as noted ☐ Submit 1 copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return 1 corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

SIGNED: J. Lee

If enclosures are not as noted, please notify us at once.

HNTB ARCHITECTS ENGINEERS PLANNERS

14114 Dallas
Parkway, Suite 630
Dallas, Texas
75240-4381
(972) 661-5626
FAX (972) 661-5614

September 7, 2000

Town of Addison
16801 Westgrove Drive
P.O. Box 9010
Addison, Texas 75001

Attn: Mr. James C. Pierce, Jr., P.E., DEE

ARAPAHO ROAD EXTENSION, ADDISON ROAD TO MARSH LANE
Supplemental Agreement No. 1

Dear Mr. Pierce:

This letter is to confirm our recent telephone conversation concerning the performance of additional surveying services and preparation of exhibits for potential condemnation proceedings for right-of-way acquisitions for the Arapaho Road Extension project.

As discussed, we are proceeding with the surveying services and preparation of the revised parcel plats and descriptions. These should be completed and furnished to you by the end of the week.

For the performance of these services and similar additional services for other right-of-way acquisition needs, we request compensation at the rate of 2.2 times the salary costs, plus the out-of-pocket expenses and subcontract costs, if any. Salary costs will be defined as direct labor plus salary-related costs, including allowance for holidays, sick leave, vacation, employee group insurance, workers' compensation, social security, unemployment and disability taxed, and miscellaneous employee benefits. Time spent by a principal employee performing services or functions capable of being carried out by other, subordinate personnel with a lower standard hourly rate, shall be billed at a rate equivalent to that of the applicable qualified subordinate personnel. Payment will be made on the basis of a certified time and expense record and actual cost of subcontractor invoices.

For the initial services to be provided under this Supplemental Agreement we have estimated the costs will be as follows:

Administration and Exhibit preparation	$4,586
ARS Subcontract for Surveying, Plat preparation	$2,791
Expenses	$100
	$7,477

If, as the services progress, it appears that the estimated compensation will be exceeded we will advise you in writing and request additional compensation be authorized to complete the work.

Should this request for additional compensation for these services be acceptable to the Town of Addison it may serve as a Supplemental Agreement with the return of a copy, bearing signature of acceptance in the space provided.

Very truly yours,

HNTB CORPORATION

Benjamin J. Biller
Vice President, Central Division

Accepted:

Town of Addison

By: _____

_____

Date: 9-13-00

BJB/DFB/tlf

Enclosure

Arapaho Rd, PIT

HNTB ARCHITECTS ENGINEERS PLANNERS

14114 Dallas
Parkway, Suite 630
Dallas, Texas
75240-4381
(972) 661-5626
FAX (972) 661-5614

November 25, 1996

Mr. John Baumgartner, P.E.
Director of Public Works
Town of Addison
Public Works Department
16801 Westgrove
Addison, Texas 75248

ARAPAHO ROAD EXTENSION
Agreement and Fee Proposal
Arapaho Road to Marsh Lane

Dear Mr. Baumgartner:

We are enclosing two copies of the Agreement for Preliminary Engineering Services on the subject project and our Fee Proposal for the performance of these services. The Fee Proposal includes the services to be performed by our subcontractors, GBW Engineers, Inc., A.R.S. Engineers, Inc., and Jack Hatchell & Associates. We do not anticipate any geotechnical services as being required for the preliminary design effort and, therefore, we have not included a proposal from Terra-Mar, Inc. for these phases.

After you have had an opportunity to review the proposal, we will be happy to meet with you to review and discuss particulars.

Respectfully submitted,

HNTB CORPORATION

Daniel F. Becker, P.E.
Vice President, Central Division

DFB/cec

Enclosures

cc: Mr. Bruce Grantham, GBW Engineers, Inc.

25768

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work and services set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said work and services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 1. GENERAL

Engineer shall furnish and pay for all labor, tools, materials, equipment, supplies, transportation and management necessary to perform all services set forth in "Section 2" hereof for the Owner in accordance with the terms, conditions, and provisions of the Scope of Services. Owner may, at any time, stop any services by the Engineer upon giving Engineer written notice 21 days in advance of such action. Engineer shall be bound to Owner by the terms, conditions, and responsibilities toward the Owner for Engineer's services set forth in this Agreement.

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for alignment studies, preliminary design, and plans for Arapaho Road from Addison Road to Marsh Lane.

I. Project Definition

This project consists of alignment studies, determination of right-of-way needs, meetings with property owners affected by project, and the preparation of right-of-way documents, and the preparation of plans and specifications for construction of Arapaho Road from Addison Road to Marsh Lane. The type and characteristics of the project will be a 4-lane divided reinforced concrete roadway with turn lanes. Services will include field survey work (both aerial and on the ground) for the preliminary alignment study and right-of-way establishment; right-of-way documents; geotechnical and environmental investigation and recommendations; preliminary and final construction plans for the roadway, storm drainage, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies. Right-of-way documents will include metes and bounds descriptions and sketch of each parcel required for the project.

II. Detailed Scope of Basic Services

The project will be implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The Basic Scope of Services for Phase I and Phase II are described herein. The Scope of Services for subsequent phases of the project will be determined as the project develops and will be included in supplements to this Agreement.

A. Phase I - Data Acquisition and Conceptual Design

1. Perform site visit and records research to determine, based on these records, the:

   a. location and description of existing easements and rights-of-way for public and franchise utilities;

   b. location of existing public and franchise utilities; and

   c. physical elements which will affect the design process.

2. Review "Record" plans and other data made available to determine the location of existing public and franchise utilities (water, wastewater, storm water, gas, electric, telephone, and cable TV).

3. Review previous studies of the corridor, including the preliminary alignment prepared by Barton-Aschman.

4. Evaluation of physical constraints and the impact they may have on adjacent properties.

5. Prepare base map utilizing CADD Microstation showing existing topographic features, physical features, contours (1-foot interval), spot elevations (scale: 1 inch = 20 feet) for preliminary plan and profile of the project. Base map showing existing utility locations obtained from record drawings and research will be shown at a scale of 1 inch = 100 feet.

   Base maps will be prepared utilizing aerial photogrammetric mapping supplemented by field surveys.

6. Study alternative alignments to the preliminary alignment as proposed in Barton-Aschman study (maximum two alternatives).

   a. Set preliminary horizontal roadway alignment.

   b. Set preliminary roadway grades.

c. Establish preliminary drainage areas and prepare map (1 inch = 200 feet). Prepare preliminary storm water design calculations.

d. Prepare preliminary drainage layout (1 inch = 20 feet).

7. Prepare studies of the intersection of the project with Midway Road, including an at-grade and a grade-separated intersection.

8. Meet with representatives of the St. Louis and Southwestern Railroad Company to initiate discussions of at-grade crossing the railroad siding tracks.

9. Evaluate environmental considerations and make recommendations for additional services, if necessary.

10. Determine preliminary right-of-way and easement requirements.

11. Prepare preliminary opinion of probable construction cost for alternative alignments studies, including grade separation at Midway Road.

12. Prepare draft preliminary engineering report. The report will present the findings of the various alternative studies, the preliminary right-of-way and easement requirements, opinion of probable construction costs, and graphical exhibits to illustrate the design characteristics of the studies to date.

13. Submit two (2) sets of alignment studies and draft preliminary engineering report to the Town of Addison for review and determination of preferred alternative.

14. Meet with property owners to discuss improvements and easement requirements, if required. Two meetings are anticipated with property owner groups.

15. Prepare exhibits and assist Town staff with presentation to Town Council.

B. Phase II - Preliminary Design

1. Plot cross sections at 50-foot intervals for the approved alignment and review the impact on adjacent properties.

2. Establish a final horizontal roadway alignment and roadway grades.

3. Finalize a drainage area map based on final alignment and prepare runoff calculations.

4. Develop preliminary storm drainage design based on preferred alignment.

5. Use preliminary designs to determine the effects on private property and existing public and franchise utilities to determine where relocations will be required.

6. Prepare an opinion of probable cost for the approved alignment.

7. Submit two (2) sets of the final engineering report and preliminary engineering plans to the Town of Addison.

8. Meet with utility companies to discuss relocation needs.

9. Prepare exhibits and assist staff with a final presentation to City Council

C. Phase Development

The Scope of Services for additional phases of project development will be determined as sources of funding are identified.

III. Detailed Scope of Additional Services

A. Surveying for Design

1. Establish horizontal and vertical control based on the Town's monumentation. Set control points in the field and reference to existing features.

2. Perform field and/or aerial topographic surveys to compile sufficient data for preliminary design. Additional surveys may be required in subsequent phases of project development.

3. Obtain field data on existing franchised utilities as located and, if necessary, uncovered in the field by the owner of the utilities.

4. Obtain field data on existing Town-owned water, wastewater and storm water lines.

5. Obtain profile of rail tracks and establish centerline of tracks and intersecting streets. Obtain profile of curb and/or pavement of intersecting streets.

B. Surveying for Right-of-Way Acquisition

1. Research to verify property ownerships of key parcels and existence of all utility easements across those parcels.

2. Perform field surveys to locate existing rights-of-way, property lines and easements pertinent to the project and tie-in to the Town's horizontal control.

3. Perform boundary survey work necessary to prepare right-of-way and easement documents used in acquisition.

4. Prepare right-of-way strip map to show property ownerships and right-of-way parcels needed for this project based on the preferred alignment.

5. Prepare individual parcel plats and field notes by a Registered Professional Land Surveyor suitable for inclusion in right-of-way and/or easement deeds to be prepared by the City's legal counsel.

6. Set new front property corners on all tracts from which right-of-way is to be acquired based on the approved alignment.

C. Geotechnical Investigation

Scope of Services

The purpose of the geotechnical investigation will be to sample and evaluate subsurface conditions along the proposed project alignment and from this data develop engineering design parameters for design and construction of the proposed improvements and to provide recommendations regarding these improvements. For the Phase I and Phase II services, it is not anticipated that any geotechnical investigations will be necessary. These investigations will be included in subsequent phases of project development.

D. Traffic Study

1. Data Collection

   a. Obtain available information on existing traffic volumes on Arapaho Road, Midway Road, Marsh Lane, and other area major thoroughfares.

   b. Work with the North Central Texas Council of Governments (NCTCOG) to prepare year 2000, 2010, and 2020 traffic assignments for proposed Arapaho Road east of Quorum Drive. Obtain NCTCOG future traffic assignments for Midway Road, Surveyor Lane, and Marsh Lane.

   c. Obtain origin, destination, and peak-hour traffic volume data from the Arapaho Road study east of Quorum Drive from the Town of Addison.

2. Traffic Analysis

a. Prepare traffic assignments for various sections and alignments for Arapaho Road. Traffic assignments will be analyzed for four sections of Arapaho Road between Quorum Drive, Midway Road, Surveyor Lane, and Marsh Lane. Assignments will be prepared for alternative alignments, as appropriate, to include a potential one-way couplet.

b. Prepare projected turning volumes for the intersections of Arapaho Road at Midway Road and Marsh Lane to determine the number of traffic lanes required to accommodate through and turning traffic.

c. Analyze projected traffic volumes at the intersection of Arapaho Road and Midway Road to determine if a grade separated intersection is required.

d. Evaluate traffic flow and traffic signal coordination on Arapaho Road, Midway Road, Surveyor Lane, and Marsh Lane to determine signal timing needed to accommodate projected traffic flows.

e. Prepare capacity analyses at major intersections on Arapaho Road to determine projected levels-of-service for future traffic conditions. Identify any improvements needed to improve unacceptable levels-of-service.

3. Documentation

a. Prepare technical memorandum that documents traffic analysis, findings, and recommendations for inclusion in the final engineering report.

b. Present findings and recommendations to the Town staff and Town Council, if required.

E. Environmental Site Audits

The construction of the Arapaho Road Extension will require the demolition of existing buildings and construction on properties to be acquired by the Town of Addison. A Phase I environmental audit of these buildings and properties will be made to determine from examination of available records the potential for harmful materials, toxic wastes, or materials such as asbestos, being present in buildings to be demolished or property to be acquired.

SECTION 3. PAYMENT

Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation

Payment shall be made monthly by Owner to Engineer based upon statements submitted by the Engineer for work performed.

Compensation for performing Basic Services shall be on a Lump Sum Basis as developed through man-hour estimates presented in Exhibit B. The Lump Sum amount for Basic Services shall be $221,282.00. Compensation for Additional Services and expenses shall be made based on actual invoices received from subcontractors and/or material supplies incurring costs attributable to the project. The estimated fee for Additional Services for subconsultants is given in the attached Exhibits D, E and F. The maximum Additional Services fee shall be $78,220.00. Engineer agrees to perform the Basic and Additional Services to complete the project for a maximum total fee of $299,502.00.

SECTION 4. RESPONSIBILITIES

Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in the design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner under this Agreement are as provided by law.

SECTION 5. TIME FOR PERFORMANCE

Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the Owner's requirements. As time is of the essence for this Agreement, the Phase I and Phase II services shall be completed according to the schedule to be established upon receipt of Notice-to-Proceed.

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative delay of over 120 days, Engineer shall have the right to renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from

proceeding with his work on the project. This shall include, but is not limited to, Town reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that specified in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer participates in such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the project, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving written notice to the Engineer. In the event suspension or termination is without cause, payment to Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of its contract with Engineer, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Owner may terminate this Agreement as provided in this Section 7.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including, but not limited to, insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, satisfactory to Owner, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any negligent act, error, or omission of the Engineer, its officers, employees, servants, agents or subcontractors, or anyone else under the Engineer's direction and control, and arising out of, occurring in connection with, resulting from or caused by the performance of any services called for by this Agreement. In the event one or more of the Indemnities is determined by a court of law to be jointly or derivatively negligent or liable for such damage or injury, the Engineer shall be obligated to indemnify Owner as provided herein on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of this responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and work; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents and work; or other documents prepared by Engineer, its employees, contractor, agents and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Engineer shall not assign or sublet this Agreement, or any part thereof, without the prior written consent of Owner.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes relating or applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or becomes disabled and unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within ten (10) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all work determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for actual costs, including reasonable salaries and travel expenses of Engineer to and from meeting called by Owner at which Engineer is required to attend, but shall not include any loss of profit of Engineer. In the event, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation, at the expense of the Engineer. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution of the contract by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 1996.

OWNER:

TOWN OF ADDISON, TEXAS

By: _____

Ron Whitehead
City Manager
5300 Beltline Road
P.O. Box 144
Addison, Texas 75001-0144

Witness:

_____
Director of Public Works

ENGINEER:

HNTB CORPORATION

By: _____

K. Stephen Bonnette, P.E.
Vice President, Central Division
14114 Dallas Parkway
Suite 630
Dallas, Texas 75240

Witness:

_____

EXHIBIT A

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
FEE PROPOSAL

Phase I - Data Acquisition Conceptual Design, and
Phase II - Preliminary Design

Basic Services

Job Title	Hours	Rate/Hour	Total
Project Manager	170	$50.00	$8,500.00
Assistant Project Manager	278	$42.00	11,676.00
Project Engineers	930	$30.00	27,900.00
Design Engineers	576	$22.00	12,672.00
CADD Technicians	480	$21.00	10,080.00
Clerical	150	$16.00	2,400.00
Direct Labor Cost Phase I and Phase II Basic Services			73,228.00
Indirect Labor, Overhead			114,148.00
Subtotal			187,376.00
Profit and Contingency			28,106.00
Direct Expense			5,800.00
Subtotal Fee, Basic Services (1)			221,282.00

Additional Services

Surveying, See ARS Inc. Proposal	66,070.00
Aerial Mapping, See Dallas Aerial Surveys Proposal	6,650.00
Traffic Engineering, See Jack Hatchell Associates Proposal	5,500.00
Subtotal Fee, Additional Services	78,220.00
TOTAL FEE FOR SERVICES	**$299,502.00**

(1) Includes fee of GBW Engineers, Inc.

EXHIBIT B

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
ESTIMATE OF MANHOURS
BASIC SERVICES
(HNTB and GBW Total)

Activity	Project Manager	Assistant Project Manager	Project Engineer	Design Engineer	Technician	Clerical	Total
A. Phase I							
1. Record and Utility Research	2	2	16	4	16	2	42
2. Record Review	2	2	12	16		2	34
3. Review Previous Studies	4	4	8	4			20
4. Evaluation of Constraints	2	4	8	4		2	20
5. Prepare Base Maps		2	2	16	40		60
6. Study Alternative Alignments	4	4	16	16			40
a. Preliminary Horizontal Alignment	4	4	32	40	40		120
b. Preliminary Vertical Alignment	4	4	16	40	32		96
c. Preliminary Drainage Map	4	16	80	56	40		196
d. Preliminary Drainage Plan	2	4	88	44	40		178
7. Midway Road Intersection Study	4	2	16	80	40	2	144
8. Study Railroad Grade Crossings	16		16	32	16	2	82
9. Assess Environmental Issues		16				2	18
10. Set Preliminary Right-of-Way Requirements	8	8	40				56
11. Prepare Opinion of Cost	4	8	40	16		2	70
12. Preliminary Engineering Report	4	8	40	16	16	16	100
13. Determine Preferred Plan	4	4	16			16	40
14. Meet with Property Owners	8	32				20	60
15. Present to Council	4	4				4	12
B. Phase II Preliminary Design							
1. Plot Cross Sections Review Impact	2	4	24	40	40	4	114
2. Establish Final Line and Grade	4	4	48	40	40	4	140
3. Finalize Drainage Map		2	56	24	40	4	126
4. Develop Storm Drain Design		16	64	40	40	4	164
5. Assess Property Impact, Utility Relocations	2	16	16			4	38
6. Prepare Opinion of Cost	2	8	56	24		4	94
7. Submit Preliminary Plans, Town	4	4				4	12
8. Submit Preliminary Plan, Utility Companies	4		4				8
9. Prepare Engineering Report, Exhibits		16	40		40	16	112
Subtotal	98	198	754	552	480	114	2196
Project Management Coordination Activities:							
Town of Addison	32	40	80			4	156
Utility Companies			40				40
Huitt Zollars	4					4	8
Railroad Company	16		16			4	36
Property Owners	4	40				20	64
Subconsultants	16		40	24		4	84
Subtotal	72	80	176	24	0	36	388
Total Hours	170	278	930	576	480	150	2584
Hourly Rate	50	42	30	22	21	16	181
Direct Labor Cost	8500	11676	27900	12672	10080	2400	73228

EXHIBIT C

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
ESTIMATE OF MANHOURS
(GBW Engineers Inc.)

Activity	Project Manager	Assistant Project Manager	Project Engineer	Design Engineer	Technician	Clerical	Total
A. Phase I							
1. Record and Utility Research		2	4		16	2	24
2. Record Review		2	4				6
3. Review Previous Studies		4	4				8
4. Evaluation of Constraints		4	4				8
5. Prepare Base Maps		2					2
6. Study Alternative Alignments		4	4				8
a. Preliminary Horizontal Alignment		4	8				12
b. Preliminary Vertical Alignment		4	8				12
c. Preliminary Drainage Map		16	64		40		120
d. Preliminary Drainage Plan		4	80		40		124
7. Midway Road Intersection Study		2	8				10
8. Study Railroad Grade Crossings					8		8
9. Assess Environmental Issues		16					16
10. Set Preliminary Right-of-Way Requirements		8	16				24
11. Prepare Opinion of Cost		8	24				32
12. Preliminary Engineering Report		8	16				24
13. Determine Preferred Plan		4	4			8	16
14. Meet with Property Owners		32				16	48
15. Present to Council		4				4	8
B. Phase II Preliminary Design							
1. Plot Cross Sections Review Impact		4	8				12
2. Establish Final Line and Grade		4	8				12
3. Finalize Drainage Map		2	40		40		82
4. Develop Storm Drain Design		16	48		40		104
5. Assess Property Impact, Utility Relocations		16	8				24
6. Prepare Opinion of Cost		8	40				48
7. Submit Preliminary Plans, Town		4					4
8. Submit Preliminary Plan, Utility Companies			4				4
9. Prepare Engineering Report, Exhibits		16	16		16		48
Subtotal	0	198	420	0	200	30	848
Project Management Coordination Activities:							
Town of Addison		40	32			8	80
Utility Companies			24			4	28
Huitt Zollars							0
Railroad Company							0
Property Owners		40				16	56
Subconsultants							0
Subtotal	0	80	56	0	0	28	164
							0
Total Hours		278	476	0	200	58	1012
Hourly Rate		42	30		21	16	
Direct Labor Cost	0	11676	14280	0	4200	928	31084

A.R.S. ENGINEERS SURVEY COST ESTIMATE

PROJECT: Arapaho Road Extension
Proposal No. 160-96-048

EXHIBIT D

TASK	PRINCIPAL	RPLS	FIELD COORD	TECH	3 MAN CREW	4 MAN CREW	ABST	SEC'Y
1. PROJECT MANAGEMENT								
a. Project Meetings	2	2						
2. CONTROL SURVEY								
a. Primary Control		3	4	21	30			
b. Secondary Control			2	10	21			
c. Centerline / Control Lines		1	3	15	30			
d. Establish X,Y & Z on Panel Points			1	10	15			
e. Set panel points for aerial mapping			1		8			
3. DESIGN SURVEY - TOPOGRAPHIC								
a. Intersecting Streets - Addison Road, Midway Road, Runyun, Railroad			4	30	34			
Survey Blvd., Commercial, Business, Marsh, Realty-curb line profile only								
b. Locate Utilities w/Elevations			3	16	20			
c. Drainage Surveys			5	10	10			
d. Topographic Survey Length of Project			8	30	30			
4. ADDITIONAL FIELD SURVEYS								
a. Miscellaneous Topo as needed			5	40	40			
5. RIGHT OF WAY								
a. Abstracting							40	
b. Right of Entry Letters (31 Owners)		10						8
c. Locate Existing R.O.W. Moments		4	6	44	54			
6. RIGHT OF WAY PARCELS								
a. Abstracting		4					54	
b. Field Surveys - tract corner location (34 parcels)		2	8		90			
c. Calculations - parcels and easements (34 parcels)		12	1	72				
d. Preparation of legal descriptions, maps, closures (34 parcels)		16	1	72				
e. Field Surveys - set parcel corners (34 parcels)		2	8		85			
7. DELIVERABLES								
a. Cadd Drawings in Microstation				4				
b. ASCII Point Listing				2				
c. Breaklines				2				
TOTALS								

A.R.S. ENGINEERS SURVEY COST ESTIMATE

PROJECT: Arapaho Road Extension
Proposal No. 160-96-048

	PRINCIPAL	RPLS	FIELD COORD	TECH	3 MAN CREW	4 MAN CREW	ABST	SEC'Y
TOTAL MANHOURS FROM PAGE 1	2	56	60	378	467	0	94	8
Hourly Service Rates	$100.00	$72.00	$56.00	$40.00	$82.00	$93.00	$34.00	$29.00
Subtotal	$200.00	$4,032.00	$3,360.00	$15,120.00	$38,294.00	$0.00	$3,196.00	$232.00
Subtotal Labor Cost		$64,434.00						
Mileage: 2344 miles @ $.28 each	$656.32							
Reprographics (Xerox Copies & Plots)	$50.00							
Delivery/Courier Service: 2 @ $15.00 each	$30.00							
Misc. Field Supplies (Monuments, etc.) 60 days @ $15.00	$900.00							
Subtotal		$1,636.32						

TOTAL CONTRACT COST $ **$66,070.32**

EXHIBIT E

Dallas Aerial Surveys, Inc.

Aerial Photography and Mapping Services

September 30, 1996

Mr. Dan Becker
HNTB
14114 Dallas Pkwy., Suite 630
Dallas, Texas 75240

Dear Mr. Becker:

We are pleased to submit this proposal for providing aerial photogrammetric services. The location and area photographed shall be that specified on your furnished map, that area being an extension of Arapaho Road from Addison Road to Marsh Lane. The area length is approximately 8000', and the width varying from 600' to 800'. The following will be included.

Aerial Photography

New aerial photography shall be taken. The photogrammetrist shall determine a flight plan, which shall show the number, spacing and length of flight lines over the mapping project area and the spacing of photographs along the flight lines. The flight plan shall be sufficient to acquire the photographic coverage required by this contract.

Survey Services

The essential ground control surveys to determine the horizontal position and elevation of all control points required for the completion of planimetrics and topography will be provided by the firm of ARS Engineers, Inc. Horizontal and vertical control shall be established by either conventional or Global Positioning System (GPS) techniques. Such control shall comply with National Map Accuracy Standards. Upon completion of its ground control responsibilities, ARS will furnish to the photogrammetrist a diagram of control locations along with a list of coordinates. We will assume that the client, HNTB, will instruct ARS in regard to the coordinate system to be used.

Stereo Plotting

Planimetric features to be shown will include, but not be limited to, the following: roadways, bridges, driveways, houses, buildings, culverts, creeks, rivers, lakes, ponds, railroads, transmission lines, power poles, fences and group tree outlines. Contours shall be shown as solid lines with index contours indicated by a heavier line weight and labelled. In obscure areas contours shall be shown as dashed lines. Data will be provided in computer format compatible with HNTB software.

10220 Forest Lane / Dallas, Texas 75243 / 214-349-2190 / 1-800-862-2190 / Fax 214-349-2193

Fees

The cost for this project will be as follows:

Aerial Photography	$1,200.00
Mapping 1" = 50', 1.0' Contours	$5,450.00

If you have any questions, please do not hesitate to call. We appreciate the opportunity to provide this proposal, and look forward to providing you with this service.

Sincerely,
DALLAS AERIAL SURVEYS, INC.

Bill L. Johnson, Sr., C.P.
President

WLJ/df

Jack Hatchell & Associates

Fee Estimate
Arapaho Road Alignment Study

Task	Hours	
	Hatchell	Clerical
1. Data Collection & Review		
- Existing Studies	3.5	
- NCTCOG Traffic Assignments	8.0	
2. Traffic Analysis		
- Traffic Assignments for Alternative Alignments	8.5	
- Intersections	4.5	
- Midway Grade Separation	3.5	
- Traffic Signal Coordination	3.5	
- Capacity Analysis	3.0	
3. Documentation		
- Technical Memorandum	6.0	3.0
- Presentations	3.0	
4. Meetings	12.5	
Total	56.0	3.0

Personnel		
Jack Hatchell	56 hours @ $75.00 per hour	$ 4,200
Clerical	3 hours @ 30.00 per hour	90
Expenses		
Travel	450 miles @ $0.30 per mile	135
Printing & Reproduction		75
NCTCOG Traffic Assignments		1,000
Total Fee		$ 5,500

TOWN OF ADDISON

PUBLIC WORKS DEPARTMENT

Post Office Box 144 Addison, Texas 75001

(214) 450-2871

16801 Westgrove

March 26, 1996

Mr. Brian Marcus, P.E., R.P.L.S.
Post, Buckley, Schuh & Jernigan, Inc.
5999 Summerside Drive, Suite 202
Dallas, Texas 75252

Dear Mr. Marcus:

Attached is a request for qualifications for firms interested in providing professional engineering services to the Town of Addison. Request for qualifications are being sent to firms that have expressed interest in providing these services to the Town of Addison.

It is our goal to have staff make a selection by June 10, 1996 and present our recommendation to the Council by the end of June.

If you have any questions or need additional information, please call me at (214)450-2871.

Sincerely,

John R. Baumgartner, P.E.
Director of Public Works

JRB/amh

Attachment

HNTB ARCHITECTS ENGINEERS PLANNERS

14114 Dallas
Parkway, Suite 630
Dallas, Texas
75240-4381
(972) 661-5626
FAX (972) 661-5614

November 18, 1997

Mr. John Baumgartner, P.E.
Director of Public Works
Town of Addison
16801 Westgrove
Addison, Texas 75248

ARAPAHO ROAD EXTENSION
Agreement and Fee Proposal
Arapaho Road to Marsh Lane

Dear Mr. Baumgartner:

We are enclosing two copies of the Agreement for Preliminary Engineering Services on the subject project and our Fee Proposal for the performance of these services. The Fee Proposal, which includes the services to be performed by our subcontractors, has been revised to reflect those changes discussed during our meeting with you on November 11, 1997.

We trust the proposal will meet with your approval and can be placed on the Council agenda for further action.

Respectfully submitted,

HNTB CORPORATION

Daniel F. Becker, P.E.
Vice President, Central Division

DFB/cec

Enclosures

cc: Mr. Bruce Grantham, GBW Engineers, Inc.

25768

AGREEMENT

THIS AGREEMENT is made by and between HNTB Corporation, hereinafter called "ENGINEER", and the Town of Addison, Texas, hereinafter called "OWNER."

WHEREAS, Owner desires Engineer to perform certain work and services set forth in Section 2, Scope of Services.

WHEREAS, the Engineer has expressed a willingness to perform said work and services, hereinafter referred to only as "services", specified in said Scope of Services, and enumerated under Section 2 of this Agreement.

NOW, THEREFORE, all parties agree as follows:

SECTION 1. GENERAL

Engineer shall furnish and pay for all labor, tools, materials, equipment, supplies, transportation and management necessary to perform all services set forth in "Section 2" hereof for the Owner in accordance with the terms, conditions, and provisions of the Scope of Services. Owner may, at any time, stop any services by the Engineer upon giving Engineer written notice 21 days in advance of such action. Engineer shall be bound to Owner by the terms, conditions, and responsibilities toward the Owner for Engineer's services set forth in this Agreement.

SECTION 2. SCOPE OF SERVICES

The following Basic and Additional Services, when authorized in writing by a notice-to-proceed, shall be performed by the Engineer in accordance with the Owner's requirements for alignment studies, preliminary design, and plans for Arapaho Road from Addison Road to Marsh Lane.

I. *Project Definition*

This project consists of alignment studies, determination of right-of-way needs, meetings with property owners affected by project, and the preparation of right-of-way documents, and the preparation of plans and specifications for construction of Arapaho Road from Addison Road to Marsh Lane. The type and characteristics of the project will be a 4-lane divided reinforced concrete roadway with turn lanes. Services will include field survey work (both aerial and on the ground) for the preliminary alignment study and right-of-way establishment; right-of-way documents; geotechnical and environmental investigation and recommendations; preliminary and final construction plans for the roadway, storm drainage, water, wastewater, landscaping, irrigation, traffic signals, construction sequencing; bid document originals; record drawings; and coordination with franchised utilities, the Town of Addison, and applicable agencies. Right-of-way documents will include metes and bounds descriptions and sketch of each parcel required for the project.

II. *Detailed Scope of Basic Services*

The project will be implemented in several phases consistent with the availability of funds to complete final construction plans and specifications and to finance the construction. The Basic Scope of Services for Phase I and Phase II are described herein. The Scope of Services for subsequent phases of the project will be determined as the project develops and will be included in supplements to this Agreement.

A. Phase I - Data Acquisition and Conceptual Design

1. Perform site visit and records research to determine, based on these records, the:

   a. location and description of existing easements and rights-of-way for public and franchise utilities;

   b. location of existing public and franchise utilities; and

   c. physical elements which will affect the design process.

2. Review "Record" plans and other data made available to determine the location of existing public and franchise utilities (water, wastewater, storm water, gas, electric, telephone, and cable TV).

3. Review previous studies of the corridor, including the preliminary alignment prepared by Barton-Aschman.

4. Evaluation of physical constraints and the impact they may have on adjacent properties.

5. Prepare base map utilizing CADD Microstation showing existing topographic features, physical features, contours (1-foot interval), spot elevations (scale: 1 inch = 20 feet) for preliminary plan and profile of the project. Base map showing existing utility locations obtained from record drawings and research will be shown at a scale of 1 inch = 100 feet.

   Base maps will be prepared utilizing aerial photogrammetric mapping supplemented by field surveys.

6. Study alternative alignments to the preliminary alignment as proposed in Barton-Aschman study (maximum two alternatives).

   a. Set preliminary horizontal roadway alignment.

   b. Set preliminary roadway grades.

c. Establish preliminary drainage areas and prepare map (1 inch = 200 feet). Prepare preliminary storm water design calculations.

d. Prepare preliminary drainage layout (1 inch = 20 feet).

7. Prepare studies of the intersection of the project with Midway Road, including an at-grade and a grade-separated intersection.

8. Meet with representatives of the St. Louis and Southwestern Railroad Company to initiate discussions of at-grade crossing the railroad siding tracks.

9. Evaluate environmental considerations and make recommendations for additional services, if necessary.

10. Determine preliminary right-of-way and easement requirements.

11. Prepare preliminary opinion of probable construction cost for alternative alignments studies, including grade separation at Midway Road.

12. Prepare draft preliminary engineering report. The report will present the findings of the various alternative studies, the preliminary right-of-way and easement requirements, opinion of probable construction costs, and graphical exhibits to illustrate the design characteristics of the studies to date.

13. Submit twelve (12) sets of alignment studies and draft preliminary engineering report to the Town of Addison for review and determination of preferred alternative.

14. Meet with property owners to discuss improvements and easement requirements, if required. Two meetings are anticipated with property owner groups.

15. Prepare exhibits and assist Town staff with presentation to Town Council.

B. Phase II - Preliminary Design

1. Plot cross sections at 50-foot intervals for the approved alignment and review the impact on adjacent properties.

2. Establish a final horizontal roadway alignment and roadway grades.

3. Finalize a drainage area map based on final alignment and prepare runoff calculations.

4. Develop preliminary storm drainage design based on preferred alignment.

5. Use preliminary designs to determine the effects on private property and existing public and franchise utilities to determine where relocations will be required.

6. Prepare an opinion of probable cost for the approved alignment.

7. Submit twelve (12) sets of the final engineering report and preliminary engineering plans to the Town of Addison.

8. Meet with utility companies to discuss relocation needs.

9. Prepare exhibits and assist staff with a final presentation to City Council

C. Phase Development

The Scope of Services for additional phases of project development will be determined as sources of funding are identified.

III. *Detailed Scope of Additional Services*

A. Surveying for Design

1. Establish horizontal and vertical control based on the Town's monumentation. Set control points in the field and reference to existing features.

2. Perform field and/or aerial topographic surveys to compile sufficient data for preliminary design. Additional surveys may be required in subsequent phases of project development.

3. Obtain field data on existing franchised utilities allocated and, if necessary, uncovered in the field by the owner of the utilities.

4. Obtain field data on existing Town-owned water, wastewater and storm water lines.

5. Obtain profile of rail tracks and establish centerline of tracks and intersecting streets. Obtain profile of curb and/or pavement of intersecting streets.

B. Surveying for Right-of-Way Acquisition

1. Research to verify property ownerships of key parcels and existence of all utility easements across those parcels.

2. Perform field surveys to locate existing rights-of-way, property lines and easements pertinent to the project and tie-in to the Town's horizontal control.

3. Perform boundary survey work necessary to prepare right-of-way and easement documents used in acquisition.

4. Prepare right-of-way strip map to show property ownerships and right-of-way parcels needed for this project based on the preferred alignment.

5. Prepare individual parcel plats and field notes by a Registered Professional Land Surveyor suitable for inclusion in right-of-way and/or easement deeds to be prepared by the City's legal counsel.

6. Set new front property corners on all tracts from which right-of-way is to be acquired based on the approved alignment.

C. Geotechnical Investigation

Scope of Services

The purpose of the geotechnical investigation will be to sample and evaluate subsurface conditions along the proposed project alignment and from this data develop engineering design parameters for design and construction of the proposed improvements and to provide recommendations regarding these improvements. For the Phase I and Phase II services, it is not anticipated that any geotechnical investigations will be necessary. These investigations will be included in subsequent phases of project development.

D. Traffic Study

1. Data Collection

a. Obtain available information on existing traffic volumes on Arapaho Road, Midway Road, Marsh Lane, and other area major thoroughfares.

b. Work with the North Central Texas Council of Governments (NCTCOG) to prepare year 2000, 2010, and 2020 traffic assignments for proposed Arapaho Road east of Quorum Drive. Obtain NCTCOG future traffic assignments for Midway Road, Surveyor Lane, and Marsh Lane.

c. Obtain origin, destination, and peak-hour traffic volume data from the Arapaho Road study east of Quorum Drive from the Town of Addison.

2. Traffic Analysis

a. Prepare traffic assignments for various sections and alignments for Arapaho Road. Traffic assignments will be analyzed for four sections of Arapaho Road between Quorum Drive, Midway Road, Surveyor Lane, and Marsh Lane. Assignments will be prepared for alternative alignments, as appropriate, to include a potential one-way couplet.

b. Prepare projected turning volumes for the intersections of Arapaho Road at Midway Road and Marsh Lane to determine the number of traffic lanes required to accommodate through and turning traffic.

c. Analyze projected traffic volumes at the intersection of Arapaho Road and Midway Road to determine if a grade separated intersection is required.

d. Evaluate traffic flow and traffic signal coordination on Arapaho Road, Midway Road, Surveyor Lane, and Marsh Lane to determine signal timing needed to accommodate projected traffic flows.

e. Prepare capacity analyses at major intersections on Arapaho Road to determine projected levels-of-service for future traffic conditions. Identify any improvements needed to improve unacceptable levels-of-service.

3. Documentation

a. Prepare technical memorandum that documents traffic analysis, findings, and recommendations for inclusion in the final engineering report.

b. Present findings and recommendations to the Town staff and Town Council, if required.

E. Environmental Site Audits

The construction of the Arapaho Road Extension will require the demolition of existing buildings and construction on properties to be acquired by the Town of Addison. A Phase I environmental audit of these buildings and properties will be made to determine from examination of available records the potential for harmful materials, toxic wastes, or materials such as asbestos, being present in buildings to be demolished or property to be acquired.

SECTION 3. PAYMENT

Owner shall pay Engineer for services authorized in writing as properly performed by Engineer on the basis herein described, subject to additions or deletions for changes or extras agreed upon in writing.

Basis of Compensation

Payment shall be made monthly by Owner to Engineer based upon statements submitted by the Engineer for work performed.

Compensation for performing Basic Services shall be on a Lump Sum Basis as developed through man-hour estimates presented in Exhibit B. The Lump Sum amount for Basic Services shall be $216,021.00. Compensation for Additional Services and expenses shall be made based on actual invoices received from subcontractors and/or material supplies incurring costs attributable to the project. The estimated fee for Additional Services for subconsultants is given in the attached Exhibits D, E and F. The maximum Additional Services fee shall be $78,220.00. Engineer agrees to perform the Basic and Additional Services to complete the project for a maximum total fee of $294,241.00.

SECTION 4. RESPONSIBILITIES

Engineer shall be responsible for the professional quality, technical accuracy, and the coordination of the design, drawings, plans, specifications, estimates, and other services furnished by Engineer under this Agreement. Engineer shall, without additional compensation, correct or review any errors or deficiencies that are attributable to the Engineer in the design, drawings, plans, specifications, estimates, and other services.

Neither Owner's review, approval or acceptance of, nor payment for, any of the services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Engineer shall be and remain liable to Owner in accordance with applicable law for all damages to Owner caused by Engineer's negligent performance of any of the services furnished under this Agreement.

The rights and remedies of Owner under this Agreement are as provided by law.

SECTION 5. TIME FOR PERFORMANCE

Engineer shall perform all services as provided for under this Agreement in a proper, efficient and professional manner in accordance with the Owner's requirements. As time is of the essence for this Agreement, the Phase I and Phase II services shall be completed according to the schedule to be established upon receipt of Notice-to-Proceed.

In the event Engineer's performance of this Agreement is delayed or interfered with by acts of the Owner or others, Engineer may request an extension of time for the performance of same as hereinafter provided. If such delay is in excess of 60 days on any one occurrence or a cumulative

delay of over 180 days, Engineer shall have the right to renegotiate the remainder of this contract. A delay shall be defined as any event caused by others that substantially inhibits the Engineer from proceeding with his work on the project. This shall include, but is not limited to, Town reviews, right-of-way negotiations and awaiting critical information to be supplied by Town or franchised utility companies.

No allowance of any extension of time, for any cause whatever, shall be claimed or made by the Engineer, unless Engineer shall have made written request upon Owner for such extension within 14 calendar days after the cause for such extension occurred, and unless Owner and Engineer have agreed in writing upon the allowance of additional time to be made.

SECTION 6. DOCUMENTS

All instruments of service (including plans, specifications, drawings, reports, designs, computations, computer files, estimates, surveys, other data or work items, etc.) prepared under this Agreement shall be submitted for approval of the Owner. All completed instruments of service shall be professionally sealed as may be required by law or by Owner.

Such instruments of service, together with necessary supporting documents, shall be delivered to Owner, and Owner shall have unlimited rights, for the benefit of Owner, in all instruments of service, including the right to use same on any other work of Owner without additional cost to Owner. If, in the event, Owner uses such instruments of service on any work of Owner other than that specified in the Scope of Services, defined in Section 2, under those circumstances Owner hereby agrees to protect, defend, indemnify and hold harmless the Engineer, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any inaccuracy, such use of such instruments of service with respect to such other work except where Engineer participates in such other work.

Engineer agrees to and does hereby grant to Owner a royalty-free license to such instruments of service which Engineer may cover by copyright and to designs as to which Engineer may cover by copyright and to designs as to which Engineer may assert any rights or establish any claim under the design patent or copyright laws. Engineer, after completion of the project, agrees to furnish the originals of such instruments of service to the Owner. Engineer may, however, retain copies of any and all documents produced. The license granted herein by Engineer shall survive termination of this Agreement for any reason.

SECTION 7. TERMINATION

Owner may suspend or terminate this Agreement for cause or without cause at any time by giving written notice to the Engineer. In the event suspension or termination is without cause, payment to

Engineer, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by Owner to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to Owner.

Should the Owner require a material modification of its contract with Engineer, and in the event Owner and Engineer fail to agree upon such modification to this Agreement, Owner shall have the option of terminating this Agreement and the Engineer's services hereunder at no additional cost other than the payment to Engineer, in accordance with the terms of this Agreement, for the services reasonably determined by Owner to be properly performed by the Engineer prior to such termination date.

Engineer may terminate this Agreement upon written notice to Owner in the event of substantial failure by the Owner to perform in accordance with the terms of this Agreement. Owner shall have 14 calendar days from the receipt of the termination notice to cure or to submit a plan for cure acceptable to the Engineer. In the event the parties cannot agree upon an acceptable cure within a reasonable period of time from the date of notice, Owner may terminate this Agreement as provided in this Section 7.

SECTION 8. INSURANCE

Engineer shall provide and maintain Worker's Compensation and Employer's Liability Insurance for the protection of Engineer's employees, as required by law. Engineer shall also provide and maintain in full force and effect during the term of this Agreement, insurance (including, but not limited to, insurance covering the operation of automobiles, trucks and other vehicles) protecting Engineer and Owner against liability from damages because of injuries, including death, suffered by any person or persons other than employees of Engineer, and liability for damages to property, arising from or growing out of Engineer's operations in connection with the performance of this Agreement.

Such insurance covering personal and bodily injuries or death shall be in the sum of not less than Two Hundred Fifty Thousand Dollars ($250,000.00) for one (1) person, and not less than Three Hundred Thousand Dollars ($300,000.00) for any one (1) occurrence. Insurance covering damages to property shall be in the sum of not less Three Hundred Thousand Dollars ($300,000.00) aggregate.

Engineer shall also provide and maintain Professional Liability Insurance coverage to protect Engineer from liability arising out of the performance of professional services under this Agreement. Such coverage shall be in the sum of not less than $1,000,000.00.

A signed Certificate of Insurance, satisfactory to Owner, showing compliance with the requirements of this Section, shall be furnished to Owner before any services are performed under this Agreement. Such Certificate of Insurance shall provide for ten (10) days written notice to Owner prior to the cancellation or modification of any insurance referred to therein. Such Certificates shall terminate after completion of the project.

Owner shall be named as an "additional insured" party on all insurance policies, except for Worker's Compensation and Professional Liability policies.

SECTION 9. INDEMNIFICATION FOR INJURY AND PERFORMANCE

Engineer further specifically obligates itself to Owner in the following respects, to wit:

The Engineer hereby agrees to protect, indemnify and hold harmless the Owner, their officers, agents, servants and employees (hereinafter individually and collectively referred to as "Indemnities"), from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including, in part, attorney fees incidental to the defense of such suits, actions, claims, losses, damages or liability on account of injury, disease, sickness, including death, to any person or damage to property including, in part, the loss of use resulting therefrom, arising from any negligent act, error, or omission of the Engineer, its officers, employees, servants, agents or subcontractors, or anyone else under the Engineer's direction and control, and arising out of, occurring in connection with, resulting from or caused by the performance of any services called for by this Agreement. In the event one or more of the Indemnities is determined by a court of law to be jointly or derivatively negligent or liable for such damage or injury, the Engineer shall be obligated to indemnify Owner as provided herein on a proportionate basis in accordance with the final judgment, after all appeals are exhausted, determining such joint or derivative negligence or liability.

The Engineer is not responsible for the actions of the Owner's contractor to perform the construction of the improvements covered under this Agreement.

Acceptance and approval of the final plans by the Owner shall not constitute nor be deemed a release of this responsibility and liability of Engineer, its employees, associates, agents and Engineers for the accuracy or competency of their designs, working drawings and specifications, or other documents and work; nor shall such approval be deemed to be an assumption of such responsibility by the Owner for any defect in the designs, working drawings and specifications, or other documents prepared by Engineer, its employees, contractor, agents and subconsultants.

SECTION 10. INDEMNIFICATION FOR UNEMPLOYMENT COMPENSATION

Engineer agrees that it is an independent contractor and not an agent of the Owner, and that Engineer is subject, as an employer, to all applicable Unemployment Compensation Statutes, so as to relieve Owner of any responsibility or liability from treating Engineer's employees as employees of Owner for the purpose of keeping records, making reports or payments of Unemployment Compensation taxes or contributions. Engineer further agrees to indemnify and hold Owner harmless and reimburse it for any expenses or liability incurred under said Statutes in connection with employees of Engineer.

SECTION 11. INDEMNIFICATION FOR NON-PAYMENT

Engineer shall defend and indemnify Owner against and hold Owner and the premises harmless from any and all claims, suits or liens based upon or alleged to be based upon the non-payment of labor, tools, materials, equipment, supplies, transportation and management costs incurred by Engineer in performing this Agreement.

SECTION 12. ASSIGNMENT

Engineer shall not assign or sublet this Agreement, or any part thereof, without the prior written consent of Owner.

SECTION 13. APPLICABLE LAWS

Engineer shall comply with all federal, state, county and municipal laws, ordinances, regulations, safety orders, resolutions and building codes relating or applicable to services to be performed under this Agreement.

SECTION 14. DEFAULT OF ENGINEER

In the event Engineer fails to comply or becomes disabled and unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within ten (10) days after written notice by Owner to Engineer, Owner may, at its sole discretion without prejudice to any other right or remedy:

- Terminate this Agreement and be relieved of the payment of any further consideration to Engineer except for all work determined by Owner to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for actual costs, including reasonable salaries and travel expenses of Engineer to and from meeting called by Owner at which Engineer is required to attend, but shall not include any loss of profit of Engineer. In the event, of such termination, Owner may proceed to complete the services in any manner deemed proper by Owner, either by the use of its own forces or by resubletting to others. In either event, the Engineer shall be liable for all costs in excess of the total contract price under this Agreement incurred to complete the services herein provided for and the costs so incurred may be due or that may thereafter become due to Engineer under and by virtue of this Agreement.

- Owner may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation, at the expense of the Engineer. Engineer shall not be considered in default of this Agreement for delays in performance caused by acts of the Owner or other circumstances beyond the reasonable control of the Engineer.

SECTION 15. ADJUSTMENTS IN SERVICES

No claims for extra services, additional services or change in the services will be made by Engineer without a written agreement with Owner prior to the performance of such services.

SECTION 16. EXECUTION BECOMES EFFECTIVE

This Agreement will be effective upon execution of the contract by and between Engineer and Owner.

SECTION 17. AGREEMENT AMENDMENTS

This Agreement contains the entire understanding of the parties with respect to the subject matter hereof and there are no oral understandings, statements, or stipulation bearing upon the meaning or effect of this Agreement which have not been incorporated herein. This Agreement may only be modified, amended, supplemented or waived by a written instrument executed by the parties except as may be otherwise provided therein.

SECTION 18. WRITTEN NOTICES

All notices, demands and communications hereunder shall be in writing and may be served or delivered personally upon the party for whom intended, or mailed to the party to whom intended at the address set forth on the signature page of this Agreement. The address of a party may be changed by notice given pursuant to this Section.

SECTION 19. GENDER AND NUMBER

The use of any gender in this Agreement shall be applicable to all genders, and the use of singular numbers shall include the plural conversely.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the _____ day of _____, 1997.

OWNER:
TOWN OF ADDISON, TEXAS

By: _____
Ron Whitehead, City Manager
5300 Beltline Road
P.O. Box 144
Addison, Texas 75001-0144

Witness:

_____
Director of Public Works

ENGINEER:
HNTB CORPORATION

By: _____
Daniel F. Becker, P.E.
Vice President, Central Division
14114 Dallas Parkway, #630
Dallas, Texas 75240

Witness: _____

EXHIBIT A

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
FEE PROPOSAL

Phase I - Data Acquisition Conceptual Design, and
Phase II - Preliminary Design

Basic Services

Job Title	Hours	Rate/Hour	Total
Project Manager	170	$50.00	$8,500.00
Assistant Project Manager	264	$42.00	11,088.00
Project Engineers	890	$30.00	26,700.00
Design Engineers	576	$22.00	12,672.00
CADD Technicians	480	$21.00	10,080.00
Clerical	150	$16.00	2,400.00
Direct Labor Cost Phase I and Phase II Basic Services			71,440.00
Indirect Labor, Overhead			111,361.00
Subtotal			182,801.00
Profit and Contingency			27,420.00
Direct Expense			5,800.00
Subtotal Fee, Basic Services (1)			216,021.00

Additional Services

Surveying, See ARS Inc. Proposal	66,070.00
Aerial Mapping, See Dallas Aerial Surveys Proposal	6,650.00
Traffic Engineering, See Jack Hatchell Associates Proposal	5,500.00
Subtotal Fee, Additional Services	78,220.00
TOTAL FEE FOR SERVICES	**$294,241.00**

(1) Includes fee of GBW Engineers, Inc.

EXHIBIT B

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
ESTIMATE OF MANHOURS
BASIC SERVICES
(HNTB and GBW Total)

Activity	Project Manager	Assistant Project Manager	Project Engineer	Design Engineer	Technician	Clerical	Total
A. Phase I							
1. Record and Utility Research	2	2	16	4	16	2	42
2. Record Review	2	2	12	16		2	34
3. Review Previous Studies	4	4	8	4			20
4. Evaluation of Constraints	2	4	8	4		2	20
5. Prepare Base Maps		2	2	16	40		60
6. Study Alternative Alignments	4	4	16	16			40
a. Preliminary Horizontal Alignment	4	4	32	40	40		120
b. Preliminary Vertical Alignment	4	4	16	40	32		96
c. Preliminary Drainage Map	4	16	80	56	40		196
d. Preliminary Drainage Plan	2	4	88	44	40		178
7. Midway Road Intersection Study	4	2	16	80	40	2	144
8. Study Railroad Grade Crossings	16		16	32	16	2	82
9. Assess Environmental Issues		16				2	18
10. Set Preliminary Right-of-Way Requirements	8	8	40				56
11. Prepare Opinion of Cost	4	8	40	16		2	70
12. Preliminary Engineering Report	4	8	40	16	16	16	100
13. Determine Preferred Plan	4	4	16			16	40
14. Meet with Property Owners	8	32				20	60
15. Present to Council	4	4				4	12
B. Phase II Preliminary Design							
1. Plot Cross Sections Review Impact	2	4	24	40	40	4	114
2. Establish Final Line and Grade	4	4	40	40	40	4	132
3. Finalize Drainage Map		2	56	24	40	4	126
4. Develop Storm Drain Design		16	64	40	40	4	164
5. Assess Property Impact, Utility Relocations	2	16	16			4	38
6. Prepare Opinion of Cost	2	8	56	24		4	94
7. Submit Preliminary Plans, Town	4	4				4	12
8. Submit Preliminary Plan, Utility Companies	4		4				8
9. Prepare Engineering Report, Exhibits		16	32		40	16	104
Subtotal	98	198	738	552	480	114	2180
Project Management Coordination Activities:							
Town of Addison	32	34	56			4	126
Utility Companies			40				40
Huitt Zollars	4					4	8
Railroad Company	16		16			4	36
Property Owners	4	32				20	56
Subconsultants	16		40	24		4	84
Subtotal	72	66	152	24	0	36	350
Total Hours	170	264	890	576	480	150	2530
Hourly Rate	50	42	30	22	21	16	181
Direct Labor Cost	8500	11088	26700	12672	10080	2400	71440

EXHIBIT C

ARAPAHO ROAD EXTENSION
ADDISON ROAD TO MARSH LANE
ESTIMATE OF MANHOURS
(GBW Engineers Inc.)

Activity	Project Manager	Assistant Project Manager	Project Engineer	Design Engineer	Technician	Clerical	Total
A. Phase I							
1. Record and Utility Research		2	4		16	2	24
2. Record Review		2	4				6
3. Review Previous Studies		4	4				8
4. Evaluation of Constraints		4	4				8
5. Prepare Base Maps		2					2
6. Study Alternative Alignments		4	4				8
a. Preliminary Horizontal Alignment		4	8				12
b. Preliminary Vertical Alignment		4	8				12
c. Preliminary Drainage Map		16	64		40		120
d. Preliminary Drainage Plan		4	80		40		124
7. Midway Road Intersection Study		2	8				10
8. Study Railroad Grade Crossings					8		8
9. Assess Environmental Issues		16					16
10. Set Preliminary Right-of-Way Requirements		8	16				24
11. Prepare Opinion of Cost		8	24				32
12. Preliminary Engineering Report		8	16				24
13. Determine Preferred Plan		4	4			8	16
14. Meet with Property Owners		32				16	48
15. Present to Council		4				4	8
B. Phase II Preliminary Design							
1. Plot Cross Sections Review Impact		4	8				12
2. Establish Final Line and Grade		4	8				12
3. Finalize Drainage Map		2	40		40		82
4. Develop Storm Drain Design		16	48		40		104
5. Assess Property Impact, Utility Relocations		16	8				24
6. Prepare Opinion of Cost		8	40				48
7. Submit Preliminary Plans, Town		4					4
8. Submit Preliminary Plan, Utility Companies			4				4
9. Prepare Engineering Report, Exhibits		16	16		16		48
Subtotal	0	198	420	0	200	30	848
Project Management Coordination Activities:							
Town of Addison		34	20			8	62
Utility Companies			24			4	28
Huitt Zollars							0
Railroad Company							0
Property Owners		32				16	48
Subconsultants							0
Subtotal	0	66	44	0	0	28	138
							0
Total Hours		264	464	0	200	58	986
Hourly Rate		42	30		21	16	
Direct Labor Cost	0	11088	13920	0	4200	928	30136

FAX:214 521 9214 ID:ARS ENGINEERS

A.R.S. ENGINEERS SURVEY COST ESTIMATE

PROJECT: Arapaho Road Extension
Proposal No. 160-96-048

TASK	MAN-HOUR ESTIMATE							
	PRINCIPAL	RPLS	FIELD COORD	TECH	3 MAN CREW	4 MAN CREW	ABST	SECY
1. PROJECT MANAGEMENT								
2. CONTROL SURVEY								
a. Primary Control		2	4	18	28			
b. Secondary Control			2	10	18			
c. Centerline / Control Lines		1	2	14	28			
d. Establish X,Y & Z on Panel Points			1	8	14			
e. Set panel points for aerial mapping			1		8			
3. DESIGN SURVEY - TOPOGRAPHIC								
a. Intersecting Streets - Addison Road, Midway Road, Runyan, Railroad			4	28	34			
Survey Blvd., Commercial, Business, Marsh, Realty-curb line profile only								
b. Locate Utilities w/Elevations			3	16	20			
c. Drainage Surveys			5	8	8			
d. Topographic Survey Length of Project			8	28	28			
4. ADDITIONAL FIELD SURVEYS								
a. Miscellaneous Topo as needed			5	40	40			
5. RIGHT OF WAY								
a. Abstracting							40	
b. Right of Entry Letters (31 Owners)		8						8
c. Locate Existing R.O.W. Monuments		2	6	38	54			
6. RIGHT OF WAY PARCELS								
a. Abstracting		4					48	
b. Field Surveys - tract corner location (34 parcels)		2	8		90			
c. Calculations - parcels and easements (34 parcels)		10	2	70				
d. Preparation of legal descriptions, maps, closures (34 parcels)		16	2	70				
e. Field Surveys - set parcel corners (34 parcels)		2	8		84			
7. DELIVERABLES								
a. Cadd Drawings in Microstation				2				
b. ASCII Point Listing				2				
c. Breaklines				2				
TOTALS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

A.R.S. ENGINEERS SURVEY COST ESTIMATE

PROJECT: Arapaho Road Extension
Proposal No. 160-96-048

	MANHOUR ESTIMATE SUMMARY							
	PRINCIPAL	RPLS	FIELD COORD	TECH	3 MAN CREW	4 MAN CREW	ABST	SEC'Y
TOTAL MANHOURS FROM PAGE 1	0	47	61	354	454	0	88	8
Hourly Service Rates	$100.00	$72.00	$57.00	$43.00	$86.00	$98.00	$36.00	$30.00
Subtotal	$0.00	$3,384.00	$3,477.00	$15,222.00	$39,044.00	$0.00	$3,168.00	$240.00
Subtotal Labor Cost		$64,535.00						
Mileage: 2036 miles @ $.28 each	$570.06							
Reprographics (Xerox Copies & Plots)	$50.00							
Delivery/Courier Service: 0 @ $15.24 each	$15.24							
Misc. Field Supplies (Monuments, etc.) 60 days @ $15.00	$900.00							
Subtotal		$1,535.32						

TOTAL CONTRACT COST $ $66,070.32

EXHIBIT E

Dallas Aerial Surveys, Inc.
Aerial Photography and Mapping Services

September 30, 1996

Mr. Dan Becker
HNTB
14114 Dallas Pkwy., Suite 630
Dallas, Texas 75240

Dear Mr. Becker:

We are pleased to submit this proposal for providing aerial photogrammetric services. The location and area photographed shall be that specified on your furnished map, that area being an extension of Arapaho Road from Addison Road to Marsh Lane. The area length is approximately 8000', and the width varying from 600' to 800'. The following will be included.

Aerial Photography

New aerial photography shall be taken. The photogrammetrist shall determine a flight plan, which shall show the number, spacing and length of flight lines over the mapping project area and the spacing of photographs along the flight lines. The flight plan shall be sufficient to acquire the photographic coverage required by this contract.

Survey Services

The essential ground control surveys to determine the horizontal position and elevation of all control points required for the completion of planimetrics and topography will be provided by the firm of ARS Engineers, Inc. Horizontal and vertical control shall be established by either conventional or Global Positioning System (GPS) techniques. Such control shall comply with National Map Accuracy Standards. Upon completion of its ground control responsibilities, ARS will furnish to the photogrammetrist a diagram of control locations along with a list of coordinates. We will assume that the client, HNTB, will instruct ARS in regard to the coordinate system to be used.

Stereo Plotting

Planimetric features to be shown will include, but not be limited to, the following: roadways, bridges, driveways, houses, buildings, culverts, creeks, rivers, lakes, ponds, railroads, transmission lines, power poles, fences and group tree outlines. Contours shall be shown as solid lines with index contours indicated by a heavier line weight and labelled. In obscure areas contours shall be shown as dashed lines. Data will be provided in computer format compatible with HNTB software.

Mr. Dan Becker
HNTB
September 30, 1996

Page 2

Fees

The cost for this project will be as follows:

Aerial Photography	$1,200.00
Mapping 1" = 50', 1.0' Contours	$5,450.00

If you have any questions, please do not hesitate to call. We appreciate the opportunity to provide this proposal, and look forward to providing you with this service.

Sincerely,
DALLAS AERIAL SURVEYS, INC.

Bill L. Johnson, Sr., C.P.
President

WLJ/df

Jack Hatchell & Associates

Fee Estimate
Arapaho Road Alignment Study

Task	Hours	
	Hatchell	Clerical
1. Data Collection & Review		
- Existing Studies	3.5	
- NCTCOG Traffic Assignments	8.0	
2. Traffic Analysis		
- Traffic Assignments for Alternative Alignments	8.5	
- Intersections	4.5	
- Midway Grade Separation	3.5	
- Traffic Signal Coordination	3.5	
- Capacity Analysis	3.0	
3. Documentation		
- Technical Memorandum	6.0	3.0
- Presentations	3.0	
4. Meetings	12.5	
Total	56.0	3.0

Personnel

Jack Hatchell	56 hours @ $75.00 per hour	$ 4,200
Clerical	3 hours @ 30.00 per hour	90

Expenses

Travel 450 miles @ $0.30 per mile	135
Printing & Reproduction	75
NCTCOG Traffic Assignments	1,000
Total Fee	$ 5,500