INVITATION FOR BIDS

GUADALUPE COUNTY FIBER OPTIC CONDUIT EXTENSION

OPENING DATE: 2 PM – THURSDAY, FEBRUARY 19, 2009

BID NUMBER 09-5300

Sealed bids, subject to the bid documents hereto attached, for a FIBER OPTIC CONDUIT EXTENSION are being accepted as set forth in this bid document.

By submitting a bid, Vendor hereby agrees to all of the terms and conditions of the bid documents, and to all terms and conditions of the contract.

Guadalupe County is appreciative of the time and effort you expended to submit an offer.

VENDOR IDENTIFICATION

_____
Legal Name of Contracting Company

_____ _____
Federal I.D.# (Company Or Corporation) Social Security # (Individual)

_____ _____
Telephone Number Facsimile Number

_____ _____
Contact Person Title

_____ _____ _____
Complete Mailing Address City & State Zip

_____ _____ _____
Complete Street Address City & State Zip

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

INTRODUCTION

In order to increase network efficiency and save costs, the County of Guadalupe, Texas (County) is preparing to install 4" conduit, pull boxes and connection points between existing county buildings so that fiber optic cable can be run to connect said buildings.

The County is requesting bids from established and qualified contractors (Contractor) to provide a Fiber Optic Conduit Extension. (Running/pulling the fiber optic cable through the conduit will be a separate project.)

The specific site location is shown on the plan documents and is located primarily on Donegan Street, Seguin, TX.

The enclosed BID, SPECIFICATIONS, and PLANS are for your convenience in offering the referenced products and/or services for the Guadalupe County Fiber Optic Conduit Extension.

BACKGROUND INFORMATION: In accordance with the technical specifications outlined herein, it is the intent of this invitation to receive bids for the installation of 4" conduit at the specified sites on the PLAN documents. This project will connect the Courthouse, Adult Probation, and Elections buildings.

SCOPE OF WORK: The awarded Contractor must bore and place 4" conduit on Donegan Street as shown on the PLAN documents. It will be the responsibility of the Contractor to include boring, run 4" conduit, install pull boxes and connection points as shown on the PLAN documents, and clean up and repair any damage done during the project. Contractor must restore all disturbed surfaces to their original pre-construction condition.

Locations of ingress and egress are illustrated on the included PLANS. Vendor will provide services necessary and appropriate to complete the work as shown in these bid documents, inclusive of the technical specifications and plan documents. Contractor must comply with all City, State, and Federal regulations.

PLAN DOCUMENTS: Included as part of these bid documents are the two (2) pages of PLAN DOCUMENTS provided by M & S Engineering, Ltd. and dated January 2009. These plans are a fundamental element of this bid and it is the Contractor's responsibility to comply with the PLAN DOCUMENTS.

The Contractor must pay special attention to the PLAN DOCUMENTS, including but not limited to the notes, diagrams, drawings, and details on PLAN DOCUMENTS.

PERMITS AND PREPARTION OF WORK SITE: The City of Seguin (City) is waiving permit fees; however, the County and the Contractor must coordinate with the City, to obtain all permissions and requirements to conduct this project. The City will designate the depth required to bore for this project.

The preparation of the work site, shall include, but is not limited to locating ALL underground and overhead utilities or obstructions PRIOR to boring. Any damaged utilities are the responsibility of the Contractor and will be repaired or replaced immediately upon damage at the Contractor's expense.

CONSTRUCTION SITE: The Contractor must provide temporary approved covers for any exposed holes or disturbed areas and place barricades necessary to protect all children or persons having access to the construction sites.

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

BID SUBMISSIONS

DEADLINE: Bids must be received in the County Judge's office prior to **2:00 pm on Thursday, February 19, 2009**. Bids will be received and publicly acknowledged at 2:00 pm or soon thereafter in the Guadalupe County Commissioners Courtroom, 2nd floor, Guadalupe County Administration Building, 307 W. Court, Seguin, Texas 78155. ***Late bids will not be accepted under any circumstances!***

SUBMITTAL: Completed Bids, must be in a sealed envelope clearly marked with "FIBER OPTIC CONDUIT EXTENSION", "BID NUMBER 09-5300", "FEBRUARY 19, 2009" and "2:00 P.M." written in the lower left-hand corner of the envelope containing the bid.

PROCUREMENT SCHEDULE: Bids will be available on February 3, 2009 after approval by the Guadalupe County Commissioners Court. Bid submission deadline is 2:00 p.m. on February 19, 2009. The conclusion of the bid process will be February 24th (estimated) with the awarding of the contract for the fiber optic conduit extension.

Bid Issued	February 3, 2009
Submission Deadline for Bids	February 19, 2009, 2:00 p.m.
Evaluation of Bids	
Award of Contract – To Be Determined	February 24, 2009 or March 3, 2009

ADDRESS: Sealed bids may be hand-delivered or mailed to County Judge Mike Wiggins, Guadalupe County, 307 W. Court, Suite 200, Seguin, Texas 78155.

METHODS: All bids must be returned in a sealed envelope with the bid name, number, opening date and time clearly marked on the outside. **If an overnight delivery service is used,** the bid name, number, opening date, and time must be clearly marked on the outside of the delivery service envelope. Facsimile and electronic mail transmittals are not acceptable.

WITHDRAWAL OR ALTERATIONS OF BIDS: Bids may be withdrawn at any time prior to the official opening. Alterations made before opening time must be initialed by vendor guaranteeing authenticity. After the official opening, bids may not be amended, altered or withdrawn without the recommendation of the County Auditor and the approval of the Commissioners Court.

NO OFFER: Please indicate on your "NO OFFER" response any area/concern that may have influenced your decision to indicate "NO OFFER."

BID OPENING: Bids will be received and publicly acknowledged at the location, date and time stated above. Vendors, their representatives, and interested persons may be present. The bids shall be reviewed and acknowledged only so as to avoid disclosure of the contents to competing vendors and kept confidential during negotiations. However, all bids shall be open for public inspection after the contract is awarded, except for trade secrets and confidential information contained in the bid and identified by vendor as such.

TAX EXEMPT STATUS: The County is exempt from Federal Excise and State Sales Tax. Therefore, tax must not be included in this bid.

AWARD: It is anticipated that awards will be made within approximately two weeks after bid opening date. Bids submitted must be binding for not less than ninety (90) days after the date received.

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

BID REQUIREMENTS

COMPLETED BID: A completed bid means an original and two (2) copies containing the following:

- Vendor Identification
- Bid Submission
- Contract page
- Affidavit
- Conflict of Interest Questionnaire

LEGIBILITY: Bids must be legible and of a quality that can be reproduced.

LATE BIDS: Bids received after submission deadline will not be opened and will be considered void and unacceptable. Guadalupe County is not responsible for lateness of mail, courier service, etc.

DOCUMENTATION: Vendor shall provide with this bid response, all documentation required by this bid. Failure to provide this information may result in rejection of the bid.

MINIMUM STANDARDS FOR RESPONSIBLE PROSPECTIVE VENDORS: A vendor must affirmatively demonstrate their responsibility. A vendor must meet the following minimum requirements:

1. Have adequate financial resources, or the ability to obtain such resources as required;
2. Be able to comply with the required or proposed delivery schedule;
3. Have a satisfactory record of performance;
4. Have a satisfactory record of integrity and ethics;
5. Be otherwise qualified and eligible to receive an award.

Guadalupe County may request representation and other information sufficient to determine vendor's ability to meet these minimum requirements listed above.

RESPONSE PREPARATION COSTS: The County will not pay any cost incurred by any vendor in the bid preparation, printing, demonstration or negotiation process. All costs shall be borne by the proposing vendors with exception of costs associated with any County personnel visits to vendor offices or other client sites.

AWARD

CONTRACT: This Bid, and accompanying documents, and any negotiated terms, when properly accepted by Guadalupe County, shall constitute a contract equally binding between the successful vendor and Guadalupe County. The successful vendor may be required to sign an additional agreement containing terms necessary to ensure compliance with the bid. No different or additional terms will become part of this contract with the exception of a Change Order.

CHANGE ORDERS: No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract must be made in writing and signed by both parties.

EVALUATION CRITERIA: Criteria utilized by Guadalupe County for determining the best acceptable vendor includes, but is not limited to: vendor's meeting County's specifications, vendor's experience, skill, ability, business judgment, financial capacity, integrity, honesty, possession of the necessary

facilities or equipment, previous performance, reputation, promptness, and any factor which could reasonably be asserted as being relevant to successful performance.

EXCEPTIONS / SUBSTITUTIONS: All bids meeting the intent of this bid will be considered for award. Vendors taking exception to the specifications, or offering substitutions, shall state these exceptions in the section provided or by attachment as part of the bid. The absence of such a list shall indicate that the vendor has not taken exceptions and shall hold the vendor responsible to perform in strict accordance with the specifications of the Bid. Guadalupe County Commissioners Court reserves the right to accept any, all, or none of the exception(s)/substitution(s) deemed to be in the best interest of the County.

REJECTION / ACCEPTANCE: It is understood that the Commissioners Court of Guadalupe County, Texas, reserves the right to accept or reject any or all bids for any or all materials and or services covered in this bid request. Additionally it is understood that they may waive discrepancies or defects in the bid or to accept such bid they shall deem to be in the best interest of Guadalupe County. Receipt of any bid shall under no circumstances obligate Guadalupe County to accept the lowest dollar bid.

ADDITIONAL INFORMATION: The County may request additional information to further clarify, explain or validate the contents of any response in this Bid. All information must be submitted to the County in writing within three (3) days of the County's request.

CONTRACT ADMINISTRATION: Under this contract, Larry Timmermann, Road & Bridge Administrator, shall be the contract administrator on this project with designated responsibility to ensure compliance with contract requirements, such as but not limited to, acceptance, inspection, and delivery. The contract administrator will serve as liaisons between Guadalupe County Commissioners Court and the successful vendor. In order to ensure fair and objective evaluation, all questions related to this bid should be addressed to the person named above.

NEGOTIATIONS: Guadalupe County reserves the right to negotiate the contract in accordance with Local Government Code section 262 for requests for bids.

CONTRACT AWARD: The award of this contract shall be made to the responsible vendor whose bid is determined to be the best evaluated, resulting from negotiation, taking into consideration the relative importance of price and the other evaluation factors set forth in the bid.

Price is an important consideration in this process, but not the only consideration. Other factors include track record of successes at other counties or cities, identification and understanding of the County's needs and requirements. Final award will be based on the best value to Guadalupe County considering the following factors: price, availability, insurance compliance, references.

TERMS AND CONDITIONS

CONFLICT OF INTEREST: No public official shall have interest in this contract in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitled C, Chapter 171, including, but not limited to, Local Government Code §171.002 and §171.003.

FUNDING: Funds for payment have been provided through the Guadalupe County budget approved by the Commissioners Court for the fiscal year only. Texas law prohibits the obligation and expenditure of public funds beyond the fiscal year for which a budget has been approved. Therefore, anticipated orders or other obligation that may arise past the end of the current Guadalupe County fiscal year shall be subject to budget approval.

DISCLOSURE REQUIREMENTS: All prospective vendors shall complete the conflict of interest questionnaire and submit it with their bid in accordance with Local Government Code §176.004. (The Texas Legislature passed House Bill 914 during the 2005 legislative session which require the conflict of interest questionnaire to be completed. This can be referenced under Local Government Code, Chapter 176. Disclosure of Certain Relationships with Local Government Officers; Providing Public Access to Certain Information.)

ETHICS: The vendor shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official or agent of Guadalupe County.

WARRANTY: The vendor shall provide a minimum of one-year warranty from the date of installation. Vendor shall warranty, during the warranty period, that the system will be free of defects in material and workmanship. Warranty shall include labor, materials, freight and equipment sold to or loaned to the County.

TERMINATION OF CONTRACT: This contract shall remain in effect until: 1) contract expires, 2) delivery/completion and acceptance of products and or services ordered or 3) terminated by either party with a thirty (30) days written notice prior to any cancellation. The successful vendor must state therein the reasons for such cancellation. In the event the contract is cancelled, the County reserves the right to award to the next best bid, as it deems to be in the best interest of the County.

TERMINATION FOR DEFAULT: Guadalupe County reserves the right to enforce the performance of this contract in any manner prescribed by law or deemed to be in the best interest of the County in the event of breach or default of this contract. Non-Performance of the vendor shall be a basis for termination of the contract by the County. Guadalupe County reserves the right to terminate the contract immediately in the event the successful vendor fails to 1) meet delivery or completion schedules or 2) otherwise perform in accordance with these specifications. Breach of contract or default authorizes the County to award to another vendor, purchase elsewhere and charge the full increase in cost and handling to the defaulting successful vendor. The County shall not pay for any commodities / services that are unsatisfactory. Vendors will be given a reasonable opportunity before termination to correct the deficiencies. This, however, shall in no way be construed as negating the basis for termination for non-performance.

FORCE MAJURE: Neither party shall be responsible for delays caused by “Acts of God”, non-county governmental processes, national emergency or any other causes beyond their reasonable control. Upon the discovery of such an event, the affected party shall notify the other and arrange a meeting to propose a program for a solution to the problem, and if necessary, to establish an estimated period of time of suspension or extension of the work.

COMPLIANCE WITH LAWS: The successful vendor shall comply with all applicable federal, state and local laws and regulations.

INVOICING: Invoices shall be sent directly to the Guadalupe County Auditor’s office, attention Accounts Payable, 307 West Court Street, Suite 205, Seguin, Texas 78155. Payments will be processed within thirty (30) days after receipt of invoice or items, whichever is later. Invoices must be itemized and must reference the Guadalupe County Purchase Order Number in order to be processed for payment.

PAYMENT: Payment shall be made by check from the County upon satisfactory completion and acceptance of items and submission of a valid invoice. Payments shall be made in accordance with the State of Texas Prompt Payment Act, Vernon's Texas Codes Annotated, Government Code Title 10,

Subtitled F, Chapter 2251. Successful vendor is required to pay subcontractors within ten (10) days after the successful vendor receives payment from the County.

Payment inquiries should be directed to the Auditor's Office, Accounts Payable: Sharon Riggs 830-303-4188 ext. 370.

VENUE: This agreement will be governed and construed according to the laws of the State of Texas. This agreement is performable in Guadalupe County, Texas.

ASSIGNMENT OF CONTRACT: The successful vendor shall not assign, sell, transfer, subcontract, or convey this contract, in whole or in part, without the prior written consent of Guadalupe County Commissioners Court.

SILENCE OF SPECIFICATIONS: The apparent silence of these specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of these specifications shall be made on the basis of this statement

DAMAGES: The Contractor will be responsible for any damages, injuries, accidents, and claims resulting from and or occurring during completion of specified services.

HOLD HARMLESS AGREEMENT: Contractor shall indemnify and hold Guadalupe County harmless from all claims for personal injury, death and / or property damage arising from any cause whatsoever, resulting directly or indirectly from Contractor's performance. Contractor shall procure and maintain, with respect to the subject matter of this bid, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover Contractor's liability as may arise directly or indirectly from work performed under terms of this bid. Certification of such coverage must be provided to the County upon request.

WAIVER OF SUBROGATION: By virtue of acceptance of this contract, both Contractor and insurance carrier waive any and all rights whatsoever with regard to subrogation against Guadalupe County as an indirect party to any suit arising out of personal or property damages resulting from Contractor's performance under this agreement.

LICENSE: The Contractor must all licenses and authorizations to complete the type of services required.

MANNER OF WORK: The Contractor must perform all work in a manner consistent with established methods, procedures, codes, ordinances, statutes and laws and where required: local, state, and federal standards.

TIME OF DAY: The Contractor must perform work at a time of day, and in a manner that allows for minimum of disturbance to residences, businesses, and vehicular traffic.

INSURANCE: Before commencing work, the successful vendor shall be required, at his own expense, to furnish the Guadalupe County Purchasing Coordinator within ten (10) days of notification of award with certificates of all insurance policies for all requirements as stated below to be in force throughout the term of the contract.

A. Commercial General Liability insurance at minimum combined single limits of $1,000,000 per occurrence and $2,000,000 general aggregate for bodily injury and property damage, which coverage shall include products / completed operations at $1,000,000 per occurrence. Coverage must be written on an occurrence form.

B. Commercial Automobile Liability insurance at minimum combined single limits of $300,000 per occurrence for bodily injury and property damage, including owned, non-owned, and hired vehicle coverage.

C. Workers Compensation insurance at statutory limits.

All insurance must be written on forms filed with and approved by the Texas State Board of Insurance. Certificates of Insurance shall be prepared and executed by the insurance company or it's authorized agent.

All required insurance shall be in force throughout the term of this contract. Failure to provide or any lapse in the required insurance may be cause for immediate cancellation of award of this contract.

CITIZENSHIP OF EMPLOYEES: The Bidder warrants, by execution of this Bid proposal, that it has complied with all federal laws and requirements therefore regarding immigration and citizenship, and that all employees are qualified as required therein.

QUESTIONS REGARDING BID DOCUMENTS: Questions concerning this bid should be directed to either Larry Timmermann, Road & Bridge Administrator at 830-303-4188 Ext. 269 or Carl Bertschy, MIS Director at 830-303-4188 Ext. 295.

GUADALUPE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT IN PART OR IN WHOLE ANY BIDS SUBMITTED, AND TO WAIVE ANY TECHNICALITIES FOR THE BEST INTEREST OF THE COUNTY.

DO NOT SIGN OR SUBMIT WITHOUT READING ENTIRE DOCUMENT AND PLANS.

TECHNICAL SPECIFICATIONS AND PLANS

All work shall be done in accordance with the following technical specifications AND plans which are attached hereto as a separate document.

All work done shall be of the highest quality and standards.

TECHNICAL SPECIFICATION

ITEM 105

REMOVING STABILIZED BASE AND ASPHALT PAVEMENT

105.1. Description. Break, remove, and store or dispose of existing asphalt pavement or stabilized base materials.

105.2. Construction. Break material retained by the Department into pieces not larger than 24 in. Remove existing asphalt pavement prior to disturbing stabilized base. Avoid contamination of the asphalt materials and damage to adjacent areas. Repair material damaged by operations outside the designated locations.

When shown on the plans and as directed, stockpile materials designated salvageable at designated sites. Prepare stockpile site by removing vegetation and trash and by providing for proper drainage. Dispose of materials not designated as salvageable in accordance with federal, state, and local regulations.

105.3. Measurement. This Item will be measured by the 100-ft. station along the baseline of each roadbed, by the square yard of existing stabilized base and asphalt pavement in its original position, or by the cubic yard of existing stabilized base and asphalt pavement in its original position, as calculated by the average end area method. Square yard and cubic yard measurement will be established by the widths and depths shown in the plans and the lengths measured in the field.

105.4. Payment. The work performed in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Removing Stabilized Base and Asphalt Pavement," of the depth specified. This price is full compensation for breaking the material, loading, hauling, unloading, stockpiling or disposing; repair to areas outside designated locations for removal; and equipment, labor, tools, and incidentals.

TECHNICAL SPECIFICATION

ITEM 110

EXCAVATION

100.1. Description. Excavate areas as shown on the plans or as directed. Remove materials encountered to the lines, grades, and typical sections shown on the plans and cross-sections.

100.2. Construction. Accept ownership of unsuitable or excess material and dispose of material in accordance with local, state, and federal regulations at locations outside the right of way.

Maintain drainage in the excavated area to avoid damage to the roadway section. Correct any damage to the subgrade caused by weather, at no additional cost to the Owner.

Shape slopes to avoid loosening material below or outside the proposed grades. Remove and dispose of slides as directed.

A. **Rock Cuts.** Excavate to finish subgrade. Manipulate and compact subgrade in accordance with Item 132.3.D, "Compaction Methods," unless excavation is to clean homogenous rock at finish subgrade elevation. If excavation extends below finish subgrade, use approved embankment material compacted in accordance with Item 132.3.D to replace undercut material at no additional cost.

B. **Earth Cuts.** Excavate to finish subgrade. In areas where base or pavement structure will be placed on subgrade, scarify subgrade to a uniform depth at least 6 in. below finish subgrade elevation. Manipulate and compact subgrade in accordance with Item 132.3.D, "Compaction Methods."

   If unsuitable material is encountered below subgrade elevations, take corrective measures as directed. Drying required deeper than 6 in. below subgrade elevation will be paid for in accordance with Article 9.4, "Payment for Extra Work." Excavation and replacement of unsuitable material below subgrade elevations will be performed and paid for in accordance with the applicable bid items. However, if Item 132, "Embankment," is not included in the Contract, payment for replacement of unsuitable material will be paid for in accordance with Article 9.4.

C. **Subgrade Tolerances.** For turnkey construction, excavate to within 1/2 in. in cross-section and 1/2 in. in 16 ft. measured longitudinally. For staged construction, excavate to within 0.1 ft. in cross-section and 0.1 ft. in 16 ft. measured longitudinally.

100.3. Measurement. This Item will be measured by the cubic yard in its original position as computed by the method of average end areas.

This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal. Additional measurements or calculations will be made if adjustments of quantities are required.

Limits of measurement for excavation in retaining wall areas will be as shown on the plans.

Shrinkage or swelling factors will not be considered in determining the calculated quantities.

100.4. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Roadway)," "Excavation (Channel)," "Excavation (Special)," or "Excavation (Roadway and Channel)." This price is full compensation for authorized excavation; drying; undercutting subgrade and reworking or replacing the undercut material in rock cuts; hauling; disposal of material not used elsewhere on the project; scarification and compaction; and equipment, labor, materials, tools, and incidentals.

When a slide not due to the Contractor's negligence or operation occurs, payments for removal and disposal of the slide material will be in accordance with Article 9.4, "Payment for Extra Work." Excavation in backfill areas of retaining walls will not be measured or paid for directly but will be subsidiary to pertinent Items.

TECHNICAL SPECIFICATION

ITEM 400

EXCAVATION AND BACKFILL FOR STRUCTURES

400.1. Description. Excavate for placement and construction of structures and backfill structures. Cut and restore pavement.

400.2. Materials. Use materials that meet the requirements of the following Items:

- Item 401, "Flowable Backfill"
- Item 421, "Hydraulic Cement Concrete"
- DMS-4600, "Hydraulic Cement"

400.3. Construction.

A. Excavation.

1. **General.** Excavate to the lines and grades shown on the plans or as directed. Provide slopes, benching, sheeting, bracing, pumping, and bailing as necessary to maintain the stability and safety of excavations up to 5 ft. deep. Excavation protection for excavations deeper than 5 ft. are governed by Item 402, "Trench Excavation Protection," and Item 403, "Temporary Special Shoring." Use satisfactory excavated material as backfill or as embankment fill in accordance with Item 132, "Embankment." Dispose of material not incorporated into the final project off the right of way in accordance with federal, state, and local regulations.

   When excavating for installation of structures across private property or beyond the limits of the embankment, keep any topsoil removed separate, and replace it, as nearly as feasible, in its original position. Restore the area to an acceptable condition.

   Excavate drilled shafts in accordance with Item 416, "Drilled Shaft Foundations."

   a. **Obstructions.** Remove obstructions to the proposed construction, including trees and other vegetation, debris, and structures, over the width of the excavation to a depth of 1 ft. below the bottom of excavation. If abandoned storm drains, sewers, or other drainage systems are encountered, remove as required to clear the new structure, and plug in an approved manner. After removing obstructions, restore the bottom of the excavation to grade by backfilling in accordance with this Item. Dispose of surplus materials in accordance with federal, state, and local regulations.

   b. **Excavation in Streets.** When structures are installed in streets, highways, or other paved areas, cut pavement and base to neat lines. Restore pavement structure after completion of excavation and backfilling.

      Maintain and control traffic in accordance with the approved traffic control plan and the TMUTCD.

   c. **Utilities.** Comply with the requirements of Article 7.12, "Responsibility for Damage Claims." Conduct work with minimum disturbance of existing utilities, and coordinate work in or near utilities with the utility owners. Inform utility owners sufficiently before work begins to allow them time to identify, locate, reroute, or make other adjustments to utility lines.

      Avoid cutting or damaging underground utility lines that are to remain in place. If damage occurs, promptly notify the utility company. If an active sanitary sewer line is damaged during excavation, provide temporary flumes across the excavation while open, and restore the lines when backfilling has progressed to the original bedding lines of the cut sewer.

   d. **De-Watering.** Do not construct or place structures in the presence of water unless approved. Place precast members, pipe, and concrete only on a dry, firm surface. Remove water by bailing, pumping, well-point installation, deep wells, underdrains, or other approved method.

      If structures are approved for placement in the presence of water, remove standing water in a manner that does not allow water movement through or alongside concrete being placed. Do not pump or bail while placing structural concrete or for a period of at least 36 hr. thereafter unless from a suitable sump separated from the concrete work. Pump or bail during placement of seal concrete only to the extent necessary to maintain a static head of water within the cofferdam. Do not pump or bail to de-water inside a sealed cofferdam until the seal has aged at least 36 hr.

If the bottom of an excavation cannot be de-watered to the point that the subgrade is free of mud or it is difficult to keep reinforcing steel clean, place a stabilizing material in the bottom of the excavation. Stabilizing material may be flexible base, cement-stabilized base or backfill, lean concrete, or other approved material. If lean concrete is used, provide concrete with at least 275 lb. of cement per cubic yard, and place to a minimum depth of 3 in. Stabilizing material placed for the convenience of the Contractor will be at the Contractor's expense.

2. **Bridge Foundations and Retaining Walls.** Do not disturb material below the bottom of footing grade. Do not backfill to compensate for excavation that has extended below grade. If excavation occurs below the proposed footing grade, fill the area with concrete at the time the footing is placed. The additional concrete placed will be at the Contractor's expense.

   If requested, take cores to determine the character of the supporting materials. Provide an intact sample adequate to judge the character of the founding material. Take these cores when the excavation is close to completion. Cores should be approximately 5 ft. deeper than the proposed founding grade.

   If the founding stratum is rock or other hard material, remove loose material, clean, and cut to a firm surface that is level, stepped, or serrated, as directed. Clean out soft seams, and fill with concrete at the time the footing is placed.

   If the material at the footing grade of a retaining wall, bridge bent, or pier is a mixture of compressible and incompressible material, do not place the foundation until the Engineer has inspected the excavation and authorized changes have been made to provide a uniform bearing condition.

3. **Cofferdams.** The term "cofferdam" designates any temporary or removable structure constructed to hold surrounding earth, water, or both out of the excavation whether the structure is formed of soil, timber, steel, concrete, or a combination of these. Cofferdams may require the use of pumping wells or well points for de-watering.

   For sheet-pile or other types of cofferdams requiring structural members, submit details and design calculations bearing the seal of a licensed professional engineer for review before constructing the cofferdam. The Department reserves the right to reject designs. Design structural systems to comply with the AASHTO *Standard Specifications for Highway Bridges* or AASHTO *LRFD Bridge Design Specifications*. Interior dimensions of cofferdams must provide sufficient clearance for the construction, inspection, and removal of required forms and, if necessary, sufficient room to allow pumping outside the forms. In general, extend sheet-pile cofferdams well below the bottom of the footings, and make concrete seals as well braced and watertight as practicable.

   For foundation seals, use Class E concrete unless otherwise specified. Place concrete foundation seals in accordance with Item 420, "Concrete Structures." Seals placed for the convenience of the Contractor will be at the Contractor's expense.

   When the Engineer judges it to be impractical to de-water inside a cofferdam and a concrete seal is to be placed around piling driven within the cofferdam, make the excavation deep enough to allow for swelling of the material at the base of the excavation during pile-driving operations. After driving the piling, remove swelling material to the bottom of the seal grade. Where it is possible to de-water inside the cofferdam without placing a seal, remove the foundation material to exact footing grades after driving piling. Do not backfill a foundation to compensate for excavation that has been extended below grade; fill such areas below grade with concrete at the time the seals or footings are placed.

   Unless otherwise provided, remove cofferdams after completing the substructure without disturbing or damaging the structure.

4. **Culverts and Storm Drains.** When the design requires special bedding conditions for culverts or storm drains, an excavation diagram will be shown on the plans. Do not exceed these limits of excavation.

   Unless otherwise shown on the plans, construct pipe structures in an open cut with vertical sides extending to a point 1 ft. above the pipe. When site conditions or the plans do not prohibit sloping

the cut, the excavation may be stepped or laid back to a stable slope beginning 1 ft. above the pipe. Maintain the stability of the excavation throughout the construction period.

For pipe to be installed in fill above natural ground, construct the embankment to an elevation at least 1 ft. above the top of the pipe, and then excavate for the pipe.

a. **Unstable Material.** When unstable soil is encountered at established footing grade, remove the material to a depth of no more than 2 ft. below the grade of the structure unless the Engineer authorizes additional depth. Replace soil removed with stable material in uniform layers at most 8 in. deep (loose measurement). Each layer must have enough moisture to be compacted by rolling or tamping as required to provide a stable foundation for the structure.

   When it is not feasible to construct a stable foundation as outlined above, use special materials such as flexible base, cement-stabilized base, cement-stabilized backfill, or other approved material.

b. **Incompressible Material.** If rock, part rock, or other incompressible material is encountered at established footing grade while placing prefabricated elements, remove the incompressible material to 6 in. below the footing grade, backfill with an approved compressible material, and compact in accordance with Section 400.3.C, "Backfill."

B. Shaping and Bedding. For precast box sections, place at least 2 in. of fine granular material on the base of the excavation before placing the box sections. For pipe installations, use bedding as shown in Figure 1. Use Class C bedding unless otherwise shown on the plans. The Engineer may require the use of a template to secure reasonably accurate shaping of the foundation material. Where cement-stabilized backfill is indicated on the plans, undercut the excavation at least 4 in. and backfill with stabilized material to support the pipe or box at the required grade.

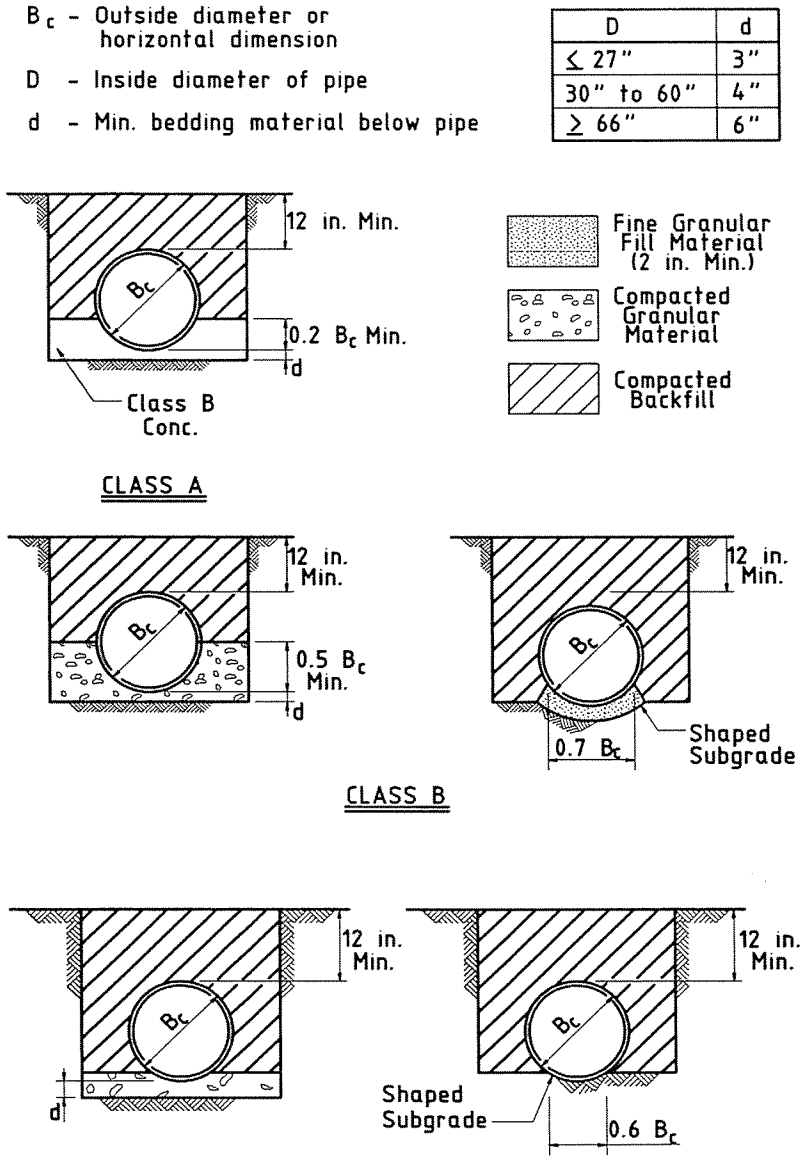

Figure 1
Bedding diagrams.

C. Backfill.

1. **General.** As soon as practical, backfill the excavation after placement of the permanent structure. Use backfill free from stones large enough to interfere with compaction; large or frozen lumps that will not break down readily under compaction; and wood or other extraneous material. Obtain backfill material from excavation or from other sources.

   In areas not supporting a completed roadbed, retaining wall, or embankment, place backfill in layers at most 10 in. deep (loose measurement). In areas supporting a portion of a roadbed, retaining wall, or embankment, place backfill in uniform layers at most 8 in. deep (loose measurement). Compact each layer to meet the density requirements of the roadbed, retaining wall, embankment material, or as shown on the plans.

   Bring each layer of backfill material to the moisture content needed to obtain the required density. Use mechanical tamps or rammers to compact the backfill. Rollers may be used to compact backfill if feasible.

Cohesionless materials such as sand may be used for backfilling. Compact cohesionless materials using vibratory equipment, water-ponding, or a combination of both.

2. **Bridge Foundations, Retaining Walls, and Box Culverts.** Do not place backfill against the structure until the concrete has reached the design strength required in Item 421, "Hydraulic Cement Concrete."

   Backfill retaining walls with material meeting the requirements of Item 423, "Retaining Walls." Backfill around bridge foundations and culverts using material with no particles more than 4 in. in greatest dimension and with a gradation that permits thorough compaction. Rock or gravel mixed with soil may be used if the percentage of fines is sufficient to fill all voids and ensure a uniform and thoroughly compacted mass of proper density.

   Where backfill material is being placed too close to the structure to permit compaction with blading and rolling equipment, use mechanical tamps and rammers to avoid damage to the structure.

   Avoid wedging action of backfill against structures. To prevent such action, step or serrate slopes bounding the excavation. Place backfill uniformly around bridge foundations. Place backfill along both sides of culverts equally and in uniform layers.

   The Engineer may require backfilling of structures excavated into hard, erosion-resistant material, and subject to erosive forces, with stone or lean concrete.

   Box culverts may be opened to traffic as soon as sufficient backfill and embankment has been placed over the top to protect culverts against damage from heavy construction equipment. Repair damage to culvert caused by construction traffic at no additional expense to the Department.

3. **Pipe.** After installing bedding and pipe as required, bring backfill material to the proper moisture condition and place it equally along both sides of the pipe in uniform layers at most 8 in. deep (loose measurement). Compact each lift mechanically. Thoroughly compact materials placed under the haunches of the pipe to prevent damage or displacement of the pipe. Continue to place backfill in this manner to the top-of-pipe elevation. Place and compact backfill above the top of the pipe in accordance with Section 400.3.C.1, "General."

   The Engineer may reject backfill material containing more than 20% by weight of material retained on a 3-in. sieve; with large lumps not easily broken down; or that cannot be spread in loose layers. Material excavated by a trenching machine will generally meet the requirements of this Section as long as large stones are not present.

   Where pipe extends beyond the toe of slope of the embankment and the depth of cover provided by backfill to the original ground level is less than the minimum required by the specifications for the type of pipe involved, place and compact additional material until the minimum cover has been provided.

4. **Cement-Stabilized Backfill.** When shown on the plans, backfill the excavation to the elevations shown with cement-stabilized backfill. Use cement-stabilized backfill that contains aggregate, water, and a minimum of 7% hydraulic cement based on the dry weight of the aggregate, in accordance with Tex-120-E. Use clean sand as aggregate for cement-stabilized backfill unless otherwise shown on the plans. Use only approved aggregate.

   Place cement-stabilized backfill equally along the sides of structures to prevent strain on or displacement of the structure. Fill voids when placing cement-stabilized backfill. Use hand operated tampers if necessary to fill voids.

5. **Flowable Backfill.** When shown on the plans, backfill the excavation with flowable backfill to the elevations shown. Prevent the structure from being displaced during the placement of the flowable fill, and prevent flowable fill from entering culverts and drainage structures.

400.4. Measurement. This is a plans quantity measurement Item. The quantity to be paid is the quantity shown in the proposal, unless modified by Article 9.2, "Plans Quantity Measurement." Additional measurements or calculations will be made if adjustments of quantities are required.

A. **Structural Excavation.** Unless shown on the plans as a pay item, structural excavation quantities shown are for information purposes only.

When structural excavation is specified as a pay item, structural excavation for pipe headwalls, inlets, manholes, culvert or storm drain extensions less than 15 ft. long, bridge abutments, retaining walls, and side road and private entrance pipe culverts will not be measured. No allowance will be made for variance from plans quantity incurred by an alternate bid.

When specified as a pay item, structural excavation will be measured by the cubic yard as computed by the average end areas method. Excavation diagrams on the plans take precedence over the provisions of this Article.

1. **Boundaries of Measurement.**

   a. **Pipe.**

      (1) **Pipe up to 42 Inches.** For pipe 42 in. or less in nominal or equivalent diameter, no material outside of vertical planes 1 ft. beyond and parallel to the horizontal projection of the outside surfaces of the pipe will be included.

      (2) **Pipe Larger than 42 Inches.** For pipes larger than 42-in. nominal or equivalent diameter, no material outside of vertical planes located 2 ft. beyond and parallel to the horizontal projection of the outside surfaces of the pipe will be included.

      Quantities for excavation in fill above natural ground include 1 ft. above the top of the pipe regardless of the height of completed fill. Excavation for pipe will be measured between the extreme ends of the completed structure including end appurtenances as shown on the plans and from centerline to centerline of inlets, manholes, etc.

   b. **Structural Plate Structures.** No material outside of vertical planes 3 ft. beyond and parallel to the horizontal projection of the outside surfaces of the structure will be included. When the quality of the existing soil or embankment is less than that of the proposed backfill material, the limits of measurement will be extended to vertical planes located 1/2 of the span beyond the horizontal projection of the outside surfaces of the structure.

   c. **Footings, Walls, Boxes, and Other Excavation.** No material outside of vertical planes 1 ft. beyond and parallel to the edges of the footings or outside walls will be included whether or not a cofferdam or shoring is used. When plans provide the option of cast-in-place or precast boxes, measurement will be based on the cast-in-place option.

      Where excavation in addition to that allowed for the footings is required for other portions of the structure, measurement for the additional excavation will be limited laterally by vertical planes 1 ft. beyond the face of the member and parallel to it, and vertically to a depth of 1 ft. below the bottom of the member.

   d. **Excavation near Roadways and Channels.** At structure sites other than culverts and pipe excavations, the measurement of structural excavation will include only material below or outside the limits of the completed road or channel excavation. Roadway and channel excavation will be paid under Item 110, "Excavation." For culverts except side road and private entrance culverts, excavation within the limits of the structure and below or outside the limits of the completed roadway excavation will be measured as structural excavation.

2. **Falsework.** No measurement will be made for excavation necessary for placing forms or falsework that exceeds the limits given in Section 400.4.B.1, "Boundaries of Measurement."

3. **Swelling.** Measurement will not include materials removed below footing grades to compensate for anticipated swelling due to pile driving, nor will it include material required to be removed due to swelling beyond the specified limits during pile driving operations.

4. **Cave-ins.** Measurement will not include additional volume caused by slips, slides, cave-ins, silting, or fill material resulting from the action of the elements or the Contractor's operation.

5. **Undercut.** Where rock or other incompressible or unstable material is undercut to provide a suitable foundation for pipe or box sections, such material below grade directed to be removed will be measured for payment.

6. **Grade Change.** Additional measurement will be made of the volume of excavation involved in the lowering or raising of the elevation of a footing, foundation, or structure unit, when such grade change is authorized.

B. **Cement-Stabilized Backfill.** Cement-stabilized backfill will be measured by the cubic yard as shown on the plans.

C. **Cutting and Restoring Pavement.** Cutting and restoring pavement will be measured by the square yard as shown on the plans. Excavation below pavement or base will be measured as structural excavation of the pertinent type.

400.5. Payment.

A. **Structural Excavation.** Unless specified as a pay item, structural excavation and backfill performed and material furnished in accordance with this Item will not be paid for directly but are subsidiary to pertinent Items.

When structural excavation is specified as a pay item, the excavation and backfill work performed and materials furnished will be paid for at the unit price bid for "Structural Excavation," "Structural Excavation (Box)," "Structural Excavation (Pipe)," and "Structural Excavation (Bridge)." This price includes concrete to compensate for excavation that has extended below grade for bridge foundations and retaining walls, and backfilling and compacting areas that were removed as part of structural excavation.

Cofferdams or other measures necessary for supporting excavations less than 5 ft. deep will not be measured or paid for directly but will be subsidiary to the Contract.

Foundation seal concrete for cofferdams, when required by the Engineer, will be paid for as provided in the pertinent Items. If no direct method of payment is provided in the Contract, the work will be measured and paid for in accordance with Article 9.4, "Payment for Extra Work." Seal placed for the convenience of the Contractor will not be paid for.

Unless otherwise provided, stone or lean concrete backfill around structures as provided for in Section 400.3.C.2, "Bridge Foundations, Retaining Walls, and Culverts," will be measured and paid for as extra work in accordance with Article 9.4.

When structural excavation is specified as a pay item, a partial payment of 50% of the bid price will be made for structural excavation completed to the satisfaction of the Engineer but not backfilled. The remaining amount will be paid upon completion of backfilling. When the Contractor elects to excavate beyond plan requirements, no measurement will be made of the additional volume.

B. **Removal and Replacement of Unsuitable or Incompressible Material.** Removal and replacement of material will be paid for if directed. Removal and replacement of material or placement of special material made necessary by the softening of founding material due to the Contractor's sequence of work or operation, will be at the Contractor's expense. Special material used or additional excavation made for the Contractor's convenience will not be paid for.

1. **Structural Excavation as a Pay Item.** Where special materials are not required or specified, payment for the removal and replacement of unstable or incompressible material will be made at a price equal to 200% of the unit price bid per cubic yard for Structural Excavation. When the Contractor elects to remove and replace material deeper than directed, no measurement will be made on that portion below the directed elevation. This price is full compensation for removing the unstable or incompressible material; furnishing, hauling, placing, and compacting suitable replacement material; and equipment, labor, tools, and incidentals.

   When the plans specify or when the Engineer directs the use of special materials such as flexible base, cement-stabilized base, cement-stabilized backfill, or other special material, payment for excavation below footing grades will be made at the unit price bid for Structural Excavation. Payment for furnishing, hauling, placing, and compacting the flexible base, cement-stabilized base, cement-stabilized backfill, or other special materials will be made at the unit price bid for these items in the Contract, or, if the required material is not a bid item, in accordance with Article 9.4, "Payment for Extra Work."

2. **Structural Excavation Not a Pay Item.** Where special materials for backfill are not required or specified, payment for the authorized removal and replacement of unstable or incompressible material will be measured and paid for at $15 per cubic yard of material removed. This price is full compensation for removing the unstable or incompressible material; furnishing, hauling, placing, and compacting suitable replacement material; and equipment, labor, tools, and incidentals.

When the plans specify or when the Engineer directs the use of special materials such as flexible base, cement-stabilized base, cement-stabilized backfill, or other special material, excavation below the footing grades will be paid for at $10 per cubic yard. Payment for furnishing, hauling, placing, and compacting the flexible base, cement-stabilized base, cement-stabilized backfill, or other special materials will be made at the unit price bid for these Items, or, if the required material is not a bid Item, in accordance with Article 9.4, "Payment for Extra Work."

C. **Lowering of a Structure Foundation.** If the Engineer requires a structure foundation to be lowered to an elevation below the grade shown on the plans, overexcavation will be paid in accordance with Table 1.

Table 1
Payment for Required Overexcavation

Variance of revised footing grade from plan grade	Payment terms	
	"Structural Excavation" is a bid item	Variance of revised footing grade from plan grade "Structural Excavation" is not a bid item
Up to and including 5 ft.	Unit price equal to 115% of unit price bid for "Structural Excavation"	$10 per cubic yard
Over 5 ft. up to 10 ft.	Unit price equal to 125% of unit price bid for "Structural Excavation"	$12 per cubic yard
Over 10 ft.	In accordance with Article 9.4, "Payment for Extra Work"	

D. **Cement-Stabilized Backfill.** Cement-stabilized backfill will be paid for at the unit price bid for "Cement Stabilized Backfill."

E. **Cutting and Restoring Pavement.** Cutting and restoring pavement will be paid for at the unit price bid for "Cutting and Restoring Pavement." Work done to repair damage to base or pavement incurred outside the limits shown on the plans, or the limits authorized by the Engineer, will not be measured for payment.

The unit prices bid are full compensation for excavation including removing obstructions and plugging drainage systems; bedding and backfilling including placing, sprinkling and compaction of material; soundings; cleaning and filling seams; constructing and removing cofferdams; de-watering, sheeting, or bracing excavations up to and including 5 ft. deep; pumps; drills; explosives; disposition of surplus material; cutting pavement and base to neat lines; and materials, hauling, equipment, labor, tools, and incidentals.

Flowable backfill will be paid for as provided in Item 401, "Flowable Backfill." Protection methods for open excavations deeper than 5 ft. will be measured and paid for as required under Item 402, "Trench Excavation Protection," or Item 403, "Temporary Special Shoring."

TECHNICAL SPECIFICATION

ITEM 502

BARRICADES, SIGNS, AND TRAFFIC HANDLING

500.1. Description. Provide, install, move, replace, maintain, clean, and remove upon completion of work all barricades, signs, cones, lights, and other traffic control devices used for traffic handling as indicated on the plans and as directed.

500.2. Construction. Provide traffic control devices that conform to details shown on the plans, the TMUTCD, and the Compliant Work Zone Traffic Control Device List (CWZTCDL) maintained by the Traffic Operations Division.

A. **Implementation.** Before beginning work, designate in writing a Contractor's Responsible Person (CRP) to be the representative of the Contractor who is responsible for taking or directing corrective measures of installation and maintenance deficiencies as soon as possible. The CRP must be accessible by phone and able to respond to emergencies 24 hours per day.

Follow the traffic control plan (TCP) and install traffic control devices as shown on the plans and as directed. Install traffic control devices straight and plumb. Do not make changes to the location of any device or implement any other changes to the TCP without the approval of the Engineer. Minor adjustments to meet field constructability and visibility are allowed.

Submit Contractor-proposed TCP changes, signed and sealed by a licensed professional engineer, to the Engineer for approval. The Engineer may develop, sign, and seal Contractor-proposed changes. Changes must conform to guidelines established in the TMUTCD using approved products from the CWZTCDL.

Maintain traffic control devices by taking corrective action as soon as possible. Corrective action includes but is not limited to cleaning, replacing, straightening, covering, or removing devices. Maintain the devices such that they are properly positioned, spaced, and legible, and that retroreflective characteristics meet requirements during darkness and rain.

B. **Flaggers.** Provide a Contractor representative who has been certified as a flagging instructor through courses offered by the Texas Engineering Extension Service, the American Traffic Safety Services Association, the National Safety Council, or other approved organizations. Provide the certificate indicating course completion when requested. This representative is responsible for training and assuring that all flaggers are qualified to perform flagging duties. A qualified flagger must be independently certified by one of the organizations listed above or trained by the Contractor's certified flagging instructor. Provide the Engineer with a current list of qualified flaggers before beginning flagging activities. Use only flaggers on the qualified list.

Flaggers must be courteous and able to effectively communicate with the public. When directing traffic, flaggers must use standard attire, flags, signs, and signals and follow the flagging procedures set forth in the TMUTCD.

C. **Removal.** Upon completion of work, remove all barricades, signs, cones, lights, and other traffic control devices used for work-zone traffic handling, unless otherwise shown on the plans.

500.3. Measurement. This Item will be measured by the month.

500.4. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Barricades, Signs, and Traffic Handling." This price is full compensation for installation, maintenance, adjustments, replacements, removal, materials, equipment, labor, tools, and incidentals.

When the plans establish pay items for particular work called for in the TCP, that work will be measured and paid for under pertinent Items.

A. **Initiation of Payment.** Payment for this Item will begin on the first estimate after barricades, signs, and traffic handling devices have been installed in accordance with the TCP and construction has begun. Installation of the project limit advance warning signs alone is not considered the beginning of construction.

B. **Paid Months.** Monthly payment will be made each succeeding month for this Item provided the barricades, signs, and traffic handling devices have been installed and maintained in accordance with the TCP until the Contract amount has been paid.

If, within the time frame established by the Engineer, the Contractor fails to provide or properly maintain signs and barricades in compliance with the Contract requirements, as determined by the Engineer, the Contractor will be considered in noncompliance with this Item. No payment will be made for the months in question, and the total final payment quantity will be reduced by the number of months the Contractor was in noncompliance.

C. Maximum Total Payment Prior to Acceptance. The total payment for this Item will not exceed 10% of the total Contract amount before final acceptance in accordance with Article 5.8, "Final Acceptance." However, when all work is complete for all project locations, except for work for vegetative establishment and maintenance periods and performance and test periods, the 10% of the total Contract amount may be exceeded. The remaining balance will be paid in accordance with Section 502.4.E, "Balance Due."

D. Total Payment Quantity. The quantity paid under this Item will not exceed the total quantity shown in the plans except as modified by change order and as adjusted by Section 502.4.B, "Paid Months." An overrun of the plans quantity for this Item will not be allowed for approving designs; testing; material shortages; closed construction seasons; curing periods; establishment, performance, test, and maintenance periods; failure to complete the work in the number of months allotted; nor delays caused directly or indirectly by requirements of the contract.

E. Balance Due. If all work is complete and accepted in accordance with Article 5.8, "Final Acceptance," before payment of the amount allowed by this Article, the balance due will be paid on the next estimate after the initial retainage release estimate or final acceptance for projects without retainage.

F. Law Enforcement. Law enforcement required by the Engineer will be paid in accordance with Article 9.5, "Force Account."

TECHNICAL SPECIFICATION

ITEM 900

DIRECTIONAL BORING SPECIFICATIONS

PART 1 - GENERAL

Work Included
The work specified in this section consists of furnishing and installing underground utilities using the directional boring (horizontal directional drilling, HDD) method of installation, also commonly referred to as guided horizontal boring. This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.

1.02. Quality Assurance.
The requirements set forth in this document specify a wide range of procedural precautions necessary to insure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

1.03. Submittals.

A. **Work Plan.** Prior to beginning work, the Contractor must submit to the Engineer a general work plan outlining the procedure and schedule to be used to execute the project. Plan should document the thoughtful planning required to successfully complete the project.

B. **Equipment.** Contractor will submit specifications on directional boring equipment to be used to ensure that the equipment will be adequate to complete the project. Spares inventory shall be included.

C. **Material.** Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.

D. **Personnel.** Documentation of training and relevant experience of personnel shall be submitted.

PART 2 - EQUIPMENT REQUIREMENTS

2.01. General.
The directional boring equipment shall consist of a directional boring rig of sufficient capacity to perform the bore and pullback the pipe, a boring fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.

2.02. Boring System.

A. **Boring Rig.** The directional boring machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power boring operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. The rig shall be grounded during boring and pull-back operations. Sufficient spares shall be kept on hand for any break-downs which can be reasonably anticipated.

B. **Bore Head.** The bore head shall be steerable by changing it's rotation and shall provide the necessary cutting surfaces and boring fluid jets.

C. **Mud Motors (if required).** Mud motors shall be of adequate power to turn the required boring tools.

D. **Drill Pipe.** Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

2.03. Guidance System.

The Guidance System shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.

2.04. Boring Fluid (Mud) System.

A. **Mixing System.** A self-contained, closed, boring fluid mixing system shall be of sufficient size to mix and deliver boring fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The boring fluid reservoir tank shall be a minimum of ____ gallons. Mixing system shall continually agitate the boring fluid during boring operations.

B. **Boring Fluids.** Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 - 10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Boring fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall.

C. **Delivery System.** The mud pumping system shall have a minimum capacity of ____ GPM and be capable of delivering the boring fluid at a constant minimum pressure of _____ psi. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used boring fluid and boring fluid spilled during boring operations shall be contained and properly diposed of. A berm, minimum of 12" high, shall be maintained around boring equipment, boring fluid mixing system, entry and exit pits and boring fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess boring fluid from containment areas to storage facilities.

2.05. Other Equipment.

A. **Pipe Rollers.** Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall used to prevent excess sagging of pipe.

B. **Pipe Rammers/Pullers.** Hydraulic or pneumatic pipe rammers or pullers may only be used if necessary and with the authorization of Engineer.

2.05. Other Equipment.

Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

PART 3 - OPERATIONS

3.01. General.
The Engineer must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

3.02. Personnel Requirements.
All personnel shall be fully trained in their respective duties as part of the directional boring crew and in safety. Training shall be provided specific to the project if any potential hazards may be encountered which has not already been included in personnel's training.

3.03. Boring Procedure.

A. Site Preparation. Prior to any alterations to work-site, contractor shall photograph or video tape entire work area, including entry and exit points. One copy of which shall be given to Engineer and one copy to remain with contractor for a period of one year following the completion of the project.

Work site as indicated on drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.

B. Bore Path Survey. Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If contractor is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.

C. Environmental Protection. Contractor shall place silt fence between all boring operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or boring fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200' of any water-body or wetland.

D. Utility Locates. Contactor shall notify all companies with underground utilities in the work area via the state or local "one-call" to obtain utility locates. Once the utilities have been located Contractor shall physically identify the exact location of the utilities by vaccuum or hand excavation, when possible, in order to determine the actual location and path of any underground utilities which might be within 20 feet of the bore path. Contractor shall not commence boring operations until the location of all underground utilities within the work area have been verified.

E. Safety. Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to Engineer.

F. Pipe. Pipe shall be connected together in one length prior to pull-back operations, if space permits. Steel pipe welds will be X-rayed prior to being placed in bore hole. Pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.

G. Pilot Hole. Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100'. In the event that pilot does deviate from bore path more than 5% of depth in 100', contractor will notify Engineer and Engineer may require contractor to pull-back and re-drill from the location along bore path before the deviation.

In the event that a boring fluid fracture, inadvertent returns or returns loss occurs during pilot hole boring operations, contractor shall cease boring, wait at least 30 minutes, inject a quantity of boring fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30

minutes. If mud fracture or returns loss continues, contractor will cease operations and notify Engineer. Engineer and contractor will discuss additional options and work will then proceed accordingly.

H. Reaming. Upon successful completion of pilot hole, contractor will ream bore hole to a minimum of 25% greater than outside diameter of pipe using the appropriate tools. Contractor will not attempt to ream at one time more than the boring equipment and mud system are designed to safely handle.

I. Pull-Back. After successfully reaming bore hole to the required diameter, contractor will pull the pipe through the bore hole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into bore hole. During pull-back operations contractor will not apply more than the maximum safe pipe pull pressure at any time.

In the event that pipe becomes stuck, contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, contractor will notify Engineer. Engineer and contractor will discuss options and then work will proceed accordingly.

3.04. Pipe Testing.
Following successful pull-back of pipe, contractor will hydro-test pipe using potable water for a period of __ hours at a pressure of ____ psi. A calibrated pressure recorder will be used to record the pressure during the test period. This record will presented to Engineer.

After successful completion of hydro-test, pipe will pigged dry.

3.05. Site Restoration.
Following boring operations, contractor will de-mobilize equipment and restore the work-site to original condition. All excavations will be backfilled and compacted to 95% of original density. Landscaping will be restored to original.

3.06. Record Keeping, As-Builts.
Contractor shall maintain a daily project log of boring operations and a guidance system log with a copy given to Engineer at completion of project. As-built drawings shall be certified as to accuracy by contractor.

Third-party verification of as-built drawings may be done, at owner's expense.

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

BASE BID SCHEDULE

BID ITEM NUMBER	QUANTITIES AND UNITS	DESCRIPTION AND UNIT BID PRICES (WRITTEN IN WORDS)	EXTENSION (IN FIGURES)
FOC-1	1 LUMP SUM	MOBILIZATION, TRAFFIC CONTROLS, INSURANCE AND BONDING FOR_____Dollars AND_____Cents per Unit	
FOC-2	942 LINEAR FEET	DIRECTIONAL BORING INCLUDING ALL MATERIALS, EQUIPMENT AND CLEAN UP FOR_____Dollars AND_____Cents per Unit	
FOC-3	5 EACH	PULL BOX 17" x 30" x 28" WITH TRAFFIC LID OR OWNER APPROVED EQUIVALENT INCLUDING, EXCAVATION, BACKFILLING AND ALL FITTINGS AND TIE-INS FOR_____Dollars AND_____Cents per Unit	
FOC-4	942 EACH	4" SDR 13.5 HDPE CONDUIT WITH RED STRIPE WITH PULL STRINGS INSTALLED FOR_____Dollars AND_____Cents per Unit	
		PROJECT BASE BID TOTAL	

ALTERNATE BID

BID ITEM NUMBER	QUANTITIES AND UNITS	DESCRIPTION AND UNIT BID PRICES (WRITTEN IN WORDS)	EXTENSION (IN FIGURES)
ALT – 1	42 LINEAR FEET	DIRECTIONAL BORING INCLUDING ALL MATERIALS, EQUIPMENT AND CLEAN UP FOR_____Dollars AND_____Cents per Unit	
ALT - 2	42 LINEAR FEET	4" SDR 13.5 HDPE CONDUIT WITH RED STRIPE WITH PULL STRING INSTALLED FOR_____Dollars AND_____Cents per Unit	
		PROJECT ALTERNATE BID TOTAL	
	COMBINED PROJECTS (BASE & ALTERNATE BID) TOTAL		

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

CONTRACT

The project bid amounts shall include all labor, materials, overhead, profit, insurance, etc. to cover the finished work of the several kinds call for. Further, the undersigned agrees, if this bid is accepted, to furnish any and all items upon which prices are offered, at the price(s) and upon the terms and conditions contained in the specifications.

The work proposed to be done shall be accepted when fully complete and finished in accordance with the plans and specifications to the satisfaction of the County.

The undersigned Bidder hereby declares that he has visited the site of the work and has carefully examined the contract documents pertaining to the work covered in the above bid, and that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final.

The undersigned, by his/her signature, affirms and represents that he/she is duly authorized to execute this contract and bind the vendor to fully comply with terms and conditions of the attached documents for the amount(s) shown on the accompanying bid. Further, the undersigned affirms and represents that this bid has not been prepared in collusion with any other vendor, and that the contents of this bid have not been communicated to any other vendor prior to the official opening of this bid.

By signing below, you affirm that you have read the entire document and agree to the terms therein.

_____ _____

Signature of Person Authorized to Sign Bid Date

Printed Name and Title of Signer:_____

Mailing Address:_____

City:_____ State:_____ Zip:_____

E-mail:_____ Phone No.:_____ Fax No.:_____

The Commissioners Court of Guadalupe County, Texas does hereby agree to contract with _____ to provide a **FIBER OPTIC CONDUIT EXTENSION**, inclusive, in accordance with the bid submissions set forth hereto.

PASSED THIS _____ DAY OF _____, 2009.

APPROVED: ATTEST:

_____ _____

MIKE WIGGINS, COUNTY JUDGE TERESA KIEL, COUNTY CLERK

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

AFFIDAVIT

STATE OF TEXAS
COUNTY OF GUADALUPE

BEFORE ME, the undersigned authority, on this day personally appeared _____ _____known to me to be the person whose name is subscribed to the following, who upon oath, says:

I am the Manager, Secretary or other agent or officer or the principal of the vendor in the matter of the bids to which this affidavit is attached, and I have full knowledge of the relations of the vendor with the other firms in this same line of business, and the vendor is not a member of any trust, pool or combination to control the price of supplies proposed on, or to influence any person to propose or not to propose thereon.

I further affirm that the vendor has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted bid.

_____
Affiant

SWORN TO AND SUBSCRIBED BEFORE ME by the above Affiant, who, on oath states that the facts contained in the above are true and correct, this _____ day of _____, 2009.

_____
Notary Public in and for _____County, Texas

Name of Vendor: _____

Signed by: _____

Name/Title: _____

Date: _____

NOTE: BIDS NOT ACCOMPANIED BY THIS AFFIDAVIT WILL NOT BE CONSIDERED

The County of Guadalupe does not discriminate on the basis of race, color, national origin, sex, religion, age and disability in employment or the provision of services.

CONFLICT OF INTEREST QUESTIONNAIRE — FORM CIQ

For vendor or other person doing business with local governmental entity

This questionnaire is being filed in accordance with chapter 176 of the Local Government Code by a person doing business with the governmental entity.

By law this questionnaire must be filed with the records administrator of the local government not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person committs an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY
Date Received

1 **Name of person doing business with local governmental entity.**

2

☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than September 1 of the year for which an activity described in Section 176.006(a), Local Government Code, is pending and not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name each employee or contractor of the local governmental entity who makes recommendations to a local government officer of the governmental entity with respect to expenditures of money AND describe the affiliation or business relationship.**

4 **Name each local government officer who appoints or employs local government officers of the governmental entity for which this questionnaire is filed AND describe the affiliation or business relationship.**

Adopted 11/02/2005

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ
Page 2

For vendor or other person doing business with local governmental entity

5 **Name of local government officer with whom filer has affilitation or business relationship. (Complete this section only if the answer to A, B, or C is YES.**

This section, item 5 including subparts A, B, C & D, must be completed for each officer with whom the filer has affiliation or other relationship. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income from the filer of the questionnaire?

☐ Yes ☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income from or at the direction of the local government officer named in this section AND the taxable income is not from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire affiliated with a corporation or other business entity that the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each affiliation or business relationship.

6

_____ _____

Signature of person doing business with the governmental entity Date

Adopted 11/02/2005

GUADALUPE COUNTY REQUEST FOR BID

FIBER OPTIC CONDUIT EXTENSION

I M P O R T A N T

BIDDER'S / PROPOSER'S CHECKLIST

Check off each of the following as the necessary action is completed.

[ ] The prices have been checked.

[ ] The VENDOR IDENTIFICATION PAGE (Page 1) has been completed, including all the requested information, and is included in your bid.

[ ] The BID SUBMISSION (Page 25) has been completed, including all requested information, and is included in your bid package.

[ ] The CONTRACT (Page 26) has been completed, signed, dated and included in your bid package.

[ ] The AFFIDAVIT (Page 27) signed and notarized and included in your bid package.

[ ] The CONFLICT OF INTEREST QUESSIONAIRE (Page 28-29) has been completed, signed, dated and included in your bid package.

[ ] The mailing envelope has been addressed to:

County Judge Mike Wiggins
Guadalupe County
307 West Court Street, Suite 200
Seguin, Texas 78155

[ ] The mailing envelope contains the original and **two (2)** copies.

[ ] The mailing envelope has been sealed and marked:

A. Bid number
B. Name of bid
C. Opening date and time

GUADALUPE COUNTY WISHES TO THANK ALL VENDORS FOR THEIR PARTICIPATION.