



**TOWN OF STRATFORD
PURCHASING DEPARTMENT
STRATFORD, CONNECTICUT**

BID No. 2009-037

Issued : March 27, 2009

Subject : King Street Borings

The Town of Stratford through the Office of the Purchasing Agent, will receive SEALED BIDS for furnishing the equipment described in the accompanying specifications, in accordance with the instructions, conditions and reservations that follow:

A. CLOSING DATE:

Bids will be received until 2:00 pm April 7, 2009, at which time they will be publicly opened and read. All bidders are invited to attend this public opening, which will be held immediately following the closing time specified above, in the Office of the Purchasing Agent, Room 202, Town Hall, 2725 Main Street, Stratford, CT 06615.

Any bid may be withdrawn prior to the above-scheduled time for receiving bids or authorized postponement thereof. Any bids received after the date and time specified shall NOT be considered. No bidder may withdraw a bid within 45 days after the actual opening thereof.

B. INSTRUCTIONS:

All proposals must be addressed to the attention of the Purchasing Agent, in a sealed envelope with bid subject and number on the face thereof. Proposals may be mailed or submitted in person. FAXED PROPOSALS ARE NOT ACCEPTED.

C. CONDITIONS:

Bidders must state specifically what equipment they propose to supply, giving manufacturer's name, model number, etc. A detailed description should accompany your bid. Any exceptions to Town Specifications should be listed in your bid response.

Bid Surety:

No Bid Surety is required for this bid.

Performance Bond

No Performance Bond is required for this bid.

The following information should also be covered in your bid:

Payment: Final payment will be made upon the acceptance of the completed work by an authorized representative of the Town of Stratford. NO partial payments will be made. Invoices covering the work specified herein should be forwarded to the Purchasing Department upon completion of the project.

Delivery: Please state as accurately as possible how long it will take to complete delivery after receipt of order, if you are the successful bidder.

Warranty: All proposals must state the exact nature and duration of any warranty applicable to the equipment you propose to sell to the Town.

Taxes: The Town of Stratford is exempt from all State and Federal taxes. Do not include these amounts in your quotation.

Terms: All quotations must be F.O.B. Stratford, Conn., to the department indicated.

Bid Award: The bid award will be determined by a combination of price, references and equipment proposed.

D. RESERVATIONS:

The Town of Stratford may consider informal any proposal not prepared and submitted to the Town in accordance with the provisions herein stated. The Town of Stratford reserves the right to reject any or all proposals or parts of proposals; to waive defects in same proposals; or to accept any proposal or part thereof deemed to be in the best interests of the Town of Stratford.

Michael Bonnar, Purchasing Agent

For additional information, contact John Casey, Town Engineer, at 203-385-4013

SPECIFICATIONS: See next page.

BID #2009-037
King Street Borings

PART 1 – GENERAL

1.01 Scope of Work:

- A. Work specified in this Section includes sampled borings in soil and rock, installation of observation wells, and associated work.
- B. Provide all supervision, labor, equipment, tools, instruments, materials, transportation and supplies to properly perform the work.
- C. The contractor is to secure and pay for all permits, fees, police protection, flagmen and maintenance and protection of traffic etc. required in the execution of the work.
- D. The work includes, but is not limited to:
 - 1. Obtain required permits.
 - 2. Clear utilities.
 - 3. Provide a survey plan of completed borings.
 - 4. Make borings at the locations and to the depths indicated.
 - 5. Take soils and rock samples as required.
 - 6. Provide accurate logs of completed borings and wells.
 - 7. Store, care for and deliver the samples.
 - 8. Backfill boreholes and clean up the site.
 - 9. Maintenance and protection of traffic.

1.02 References:

- A. The current editions and addenda of the following publications(s) are part of this Section and are applicable to the extent indicated by the reference:

American Society for Testing and Materials (ASTM):

C33	Concrete Aggregate
C150	Portland Cement
D1586	Penetration Test and Spit-Barrel Sampling of Soils

1.03 Records and Submittals:

- A. Prepare and submit a log of each boring and observation well installation. All logs shall be accurate and complete at the end of each day. Each log shall contain the following data:
 - 1. Boring and well identification, location, and ground surface elevation;
 - 2. Date(s) and times of drilling, observation well installation and weather conditions;
 - 3. Method(s) and equipment used to advance the boreholes;

4. Diameter, total length and description of casings, and size and description of drill bits;
5. Weight and description of drop hammers used for sampling and casing;
6. Number of blows required to advance casing successive 12-inch increments of depth;
7. Number of blows required to drive a dry-sampler successive 6-inch increments of depth;
8. Method and force used to push a sampler when not driven;
9. Depth of hole and bottom of sampler at start and finish of sampling;
10. Length of sample recovered;
11. Description of each soil and rock sample;
12. Depth and thickness of void(s) encountered;
13. Depths of sudden drop of drill rods or loss of circulation water;
14. Relevant circumstances of sampling;
15. Groundwater levels encountered during drilling and in observation wells;

B. Boring Location Plan:

1. The Contractor shall provide a sketch plan showing the final position in U.S. feet of all completed borings in relation to permanent and well-defined reference points or to the site co-ordinate system, where available.
2. All borings shall be accurately located to a horizontal precision of 1 foot and a vertical precision of 0.2 feet.
3. The Town of Stratford will obtain a survey elev. At the point of the actual boring.

C. Sample Identification

1. Split-spoon sample jars shall be clearly, accurately and permanently labeled to show the borehole number; sample number and depth; and resistances to penetration of the sampler. Cartons containing dry sample jars shall be marked on the outside to indicate the boring(s), samples, and the site location.
2. Undisturbed sample tubes shall be clearly, accurately and permanently marked to show the borehole number; sample number, depth, and recovery; and any other information which may be helpful in determining subsurface conditions.
3. Core boxes shall be clearly, accurately and permanently marked on the inside to show the borehole number(s), core run(s), depths of the run(s), measured recoveries, and direction of coring. Core boxes shall be marked on the outside top and one end with the borehole number(s) core run(s), and depths of the run(s). Place wooden blocks in the box to separate the core runs and to mark core depths. When fragmented core

is recovered, pack resilient material between core pieces so they are prevented from movement and damage during transport.

1.04 Job Conditions:

- A. Obtain all permits required by law prior to commencement of the work. Maintain lights and other safety devices as required by public authorities or local conditions.
- B. Protect adjacent property as provided by law. Take all necessary precautions needed to avoid known or indicated underground or overhead utilities, structures, tanks, etc. Promptly repair any damage caused by work performed under this contract.
- C. Gasoline or diesel motors, that are operated within enclosed spaces, shall be fitted with proper exhaust hoses to discharge motor fumes safely to the outside. When using gasoline operated equipment, provide emergency fire extinguishers or other approved fire-fighting apparatus.

1.05 Quality Assurance:

- A. Furnish equipment and facilities of adequate size, capacity and type to properly perform the work. Maintain the equipment and facilities in satisfactory condition. Furnish all necessary, qualified and experienced field personnel necessary to adequately perform the work.
- B. Provide the Engineer, Architect and Owner and their representative with access to the site for inspection of the work, and with proper facilities for such access.
 - 1. The Engineer or his representative may continuously or intermittently inspect the borings. The Contractor shall not request inspection at hours other than the regular day shift, unless approved prior to starting work or in an emergency.

PART 2 – PRODUCTS

2.01 Borings:

- A. Flush joint casing shall be N-size (3 inch ID) or larger for dry-sample holes and H-size (4 inch ID) for undisturbed sampling. Hollow stem auger casing shall be B-size (2-¾ inch ID) or larger for dry sample holes and N-size (3-¼ inch ID) or larger for undisturbed sampling. Where the borehole, as drilled by any method, is in excess of 4 inches, sampling shall be performed through a temporary casing having a 4-inch ID or less.
- B. Drilling fluids may be water, or water weighted with bentonite or other additives such as “revert” where permitted. Bentonite shall not be used in borings intended for subsequent installation of observation wells or piezometers.

- C. Clean out tools shall be designed to remove soil from the borehole in a manner that does not disturb soil to be sampled, or causes loss of outside ground. The clean out tool used in the last four inches above undisturbed sampling shall be a shielded, jet auger wherein the wash water is fully deflected in an upward direction with no downward jets permitted.
- D. Casing hammers shall be of a size and weight selected by the Contractor. Only one type of casing hammer shall be used for the work.

2.02 Dry-Sampling:

- A. Take dry samples with a standard split spoon sampler, as per ASTM D-1586. Maintain the bevel edge of the drive shoe in good condition. Use a retainer basket and the sampler's ball check valve throughout the work, unless otherwise permitted by the inspector. Trap doors of flap valves shall not protrude into the inside diameter of the sample.
- B. Use A-rods for split-spoon sampling. N-rods may be used if approved by the Geotechnical Consultant prior to the start of work. Only one type of rods shall be used for sampling.
- C. Lower, don't drop, the sampler slowly to the bottom of the hole.
- D. Drive the sampler with a 140-pound hammer free falling 30 inches. Use only one type of drop hammer for the work.
- E. Provide transparent glass jars, a minimum of 3.5 inches high and 1.75 inches inside diameter at the mouth of the jar. Supply each jar with a screw cap and gasket. Place all jars in containers and protect from damage.

2.03 Undisturbed Sampling:

- A. Take undisturbed samples with a thin walled brass or steel Shelby tube. Brass Shelby tubes shall be 16-gauge and seamless. Steel Shelby tubes shall be 16- or 18-gauge, fully coated with lacquer inside and out. Tubes shall have a machine-prepared sharp cutting edge with a flat bevel to the outside wall of the tube. The cutting edge shall be drawn in to provide an inside clearance beyond the cutting edge, or over cut, of 0.015 inches \pm 0.005 inches.
- B. Push the sampling tube with a hydraulic or pneumatic actuated piston sampler head, such as an Osterberg Sampler, or a mechanically fixed piston sampler. Use a non-piston, fixed Shelby head only if specifically shown or directed by the Geotechnical Consultant.

2.04 Coring:

- A. Use a double-tube core barrel with a diamond bit to recover N-size (approx. 2-1/8 inch diameter) core.

2.05 Borehole Backfill:

- A. Backfill completed borings that do not receive observation wells with a sand/cement grout. Use ASTM C150, Type I or II cement, and ASTM C33 normal weight fine aggregate. Provide Bituminous Concrete Class 2 for the top 6 inches.

PART 3 – EXECUTION

3.01 Number and Location of Borings:

- A. The Boring Location Plan for this Contract shows the approximate number, type(s), and locations of boreholes. Make the boreholes in any order, or concurrently, unless otherwise shown or directed.
- B. The Engineer reserves the right to add, delete or offset boreholes within the site area.

3.02 Layout:

- A. The Engineer shall layout the boreholes. Boring locations will be marked clearly and distinctly with paint or stakes as suitable.
- B. Upon completion of the borings the Contractor shall re-survey the horizontal location and provide a sketch.

3.03 Advancing Boreholes:

- A. Boreholes shall be stabilized in their upper 10 feet by using casing. Borings below that depth shall be stabilized as required by the introduction of drilling fluid and /or other methods that maintain an open hole without loss of ground into the borehole. Where drilling fluid is used, keep the top of the fluid continuously at or above the ground surface level, by adding fluid to the top of the casing while advancing and extracting down hole tools and casing.
- B. Do not advance the boring, or install casing below the depth of the next sample.
- C. Do not advance augers through silts or fine sands below the ground water level. Do not use a center plug while advancing augers.

3.04 Clean out:

- A. Clean out the borehole prior to sampling by removing all loose material to the sampling depth.
- B. Do not clean out by washing through a sampling spoon or an open-ended drill rod, unless such a method is approved prior to the start of work.
- C. Clean out the last 4 inches prior to taking an undisturbed sample shield-jet auger and performed so that the soil at the top to the sample is nearly undisturbed.
- D. If an auger plug is not used in advancing hollow stem borings, then the casing shall be cleaned out to the bottom of the hollow stem prior to sampling.

3.05 Abandoned Boring:

- A. Do not abandon a boring before reaching the final depth shown or directed by the Geotechnical Engineer unless the boring is obstructed in its progress such that it can not proceed to the required depth.
- B. An abandoned boring shall be replaced by a supplemental boring adjacent to the original and carried to the required depth. Penetration to the completed depth of the original boring may be made by any means selected and approved by the Geotechnical Engineer. Samples shall be taken in the supplemental boring from the depth of the abandoned boring.

3.06 Dry-Sampling:

- A. Take continuous split spoon samples in the soil above the top of rock elevation. Continuous sampling entails driving the split spoon sampler and cleaning out before the next sample in successive two-foot increments of depth.
- B. Drive the sampler by the specified hammer. Use two turns of rope around the cathead to raise the hammer for each blow. At a minimum, drive the sampler the lesser of :
 - 1. A total of 24 inches, or
 - 2. 50 blows total over a 6-inch interval.
- C. Remove the sample from the sampler in a manner to provide a true specimen of the soil formation from which it was recovered.
- D. An attempted sample that retains no material or a sample consisting of washed borehole sediments will not be an accepted sample. A second sample attempt that retains material from the bottom of the borehole, other than washed sediments, may be accepted.

3.07 Undisturbed Sampling:

- A. Take undisturbed samples at locations selected by the Geotechnical Consultant.
- B. Connect the sampler tube to the sampler head and lower the assembly slowly to the bottom of the hole. If a Shelby head is used, install a ball check in the valve to prevent water pressure on the top of the sample during removal.
- C. Push the sampler into the soil at a rate of 4 to 5 inches per second for a distance not less than 24 inches or more than 27 inches. Do not drive the sampler with a hammer unless it can not be pushed and only as approved by the Geotechnical Consultant.
- D. After pushing the sampler into the soil, allow it to rest for five minutes. Give the sampler one to two full revolutions and slowly extract it from the borehole. Keep the borehole full of drilling fluid while extracting the sampler. Cap the bottom of the tube just before the tip rises above the surface of the drilling fluid. Detach the sampler from the drive head and stand the tube upright. Do not extrude the soil from the tube. Carefully square the ends of the soil sample not less than $\frac{1}{4}$ inch back from the tip of the tube. Fill the ends with hot paraffin or wax, cap and tape securely. Then dip the ends in hot paraffin or wax to make airtight seals.
- E. When fixed piston samplers are used, properly control the piston head during sampling:
 - 1. Provide a locking cone in the apparatus to keep the piston in the extended position as it is lowered in the borehole.
 - 2. Lock the piston (spaghetti) rods to the drill rig mast so that the piston does not move upwards or downwards as the tube is pressed into the soil by the drive rods. Block and anchor the rig to the ground to prevent vertical movement of the rig during sampling.
 - 3. Lock the piston rods to the drill rods at the surface as the sampler is raised.
 - 4. Locked to piston rods to the rig as the drill rods are removed.
- F. Disturbed samples and samples less than 6 inches long will not be accepted.

3.08 Coring:

- A. Make every effort to retrieve the least disturbed core. The core barrel and bit shall be in good condition. The drill rods shall be straight and equipment properly aligned so the head does not oscillate during coring. Control the rate of rotation and downward force on the barrel and pressure of the circulation fluid to keep continuous contact between the core bit and the rock being drilled to produce optimum recovery

- B. Individual core runs shall not exceed 15 feet in length, nor exceed lengths that would provide maximum core recovery.
- C. Coring shall begin immediately after encountering a standard penetration resistance of 60 blows per 2 inches. If no core is recovered, take the next sample with a split-spoon sampler.

3.09 Securing Borings:

- A. Each boring shall be filled upon completion with a bentonite-cement/sand grout mixture tremied or pumped from a pipe placed to the bottom of the hole. Limit grout take for each hole to two times its nominal volume.
- B. Borings made through concrete floors or roadway pavements shall be patched with 6 inches of mortar or bituminous concrete at their completion.

3.10 Storage and Delivery:

- A. Provide a suitable space on site to store samples for examination by the boring inspector. Undisturbed tube samples shall be protected from extreme heat, freezing and excessive vibration.
- B. Store and transport jar samples in pre-paid cartons properly labeled for shipping that soil samples are included. Tube samples shall be protected from freezing and depressurization during transport.
- C. Deliver all samples to STV, Inc. office at 80 Ferry Boulevard, Stratford, CT as requested.

3.11 Clean Up:

- A. Upon completion of the work, remove all rigs, surplus and unused material, used drilling fluids and materials removed from holes. Leave the space in clean condition to the satisfaction of the Owner and Engineer.
- B. Cut off and remove all casings to one foot below the ground surface, or as required by local law, whichever is deeper. In either case, the casing may be completely removed if desired. Cut off and remove all casings in water to the level of the mud line, or to the depths required by authorities controlling the use of waterways, which ever is deeper

PART 4 – MEASUREMENT AND PAYMENT

4.01 Measurement:

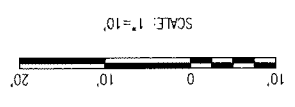
- A. Dry-sample borings 2.5 inches in diameter, including the recovery of split spoon samples, will be measured:

1. From the ground surface to the bottom of the hole or to the depth at which core drilling begins, but
 2. Not more than 2 times the number of accepted samples recovered from the upper 10 feet of the boring and not more than 5 times the number of samples obtained thereafter.
 3. For water borings, depths will be measured from mean water level.
- B. Dry-sample borings 3.5-inches in diameter will be measured separately from, but in the same manner as, 2.5-inch diameter dry-sample holes from the ground surface to the deepest undisturbed soil sample recovered. . Extensions of such borings in soil below the depth of the deepest undisturbed sample will be measured as dry-sample borings, 2.5-inch diameter.
- C. Successfully recovered, approved undisturbed samples will be measured as the total number of piston and fixed head samples
- D. Core drilling will be measured by the actual length of hole cored, starting from the depth at which coring begins.
- E. An abandoned boring will be measured to its completed, approved depth. Its supplemental boring will be measured from the measured depth of the abandoned boring to the final, approved depth of the supplemental boring. Borings abandoned due to accident, negligence attributed to the Contractor, and unwillingness to perform the work shall not be measured for payment.
- F. Borings added to the program by the Engineer shall be measured for payment in the same manner as the original contract borings. Only those borings made according to these Specifications and accepted by the Engineer will be measured for payment
- G. Moving equipment, tools, supplies to and from the job and from boring to boring, including any required rentals, shall be measured as a lump sum item "Mobilization and Demobilization".

4.02 Payment:

- A. Payment shall be made for the total number of items measured and accepted, at the unit prices agreed to.
- B. The unit prices in the Proposal shall include all payments due on account of work performed under this contract.
- C. No claim for extra work will be allowed except as directed in writing by the Engineer.

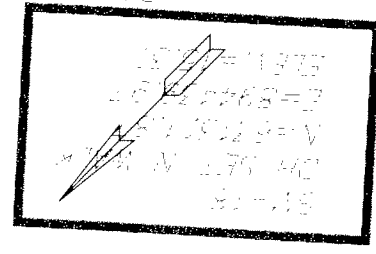
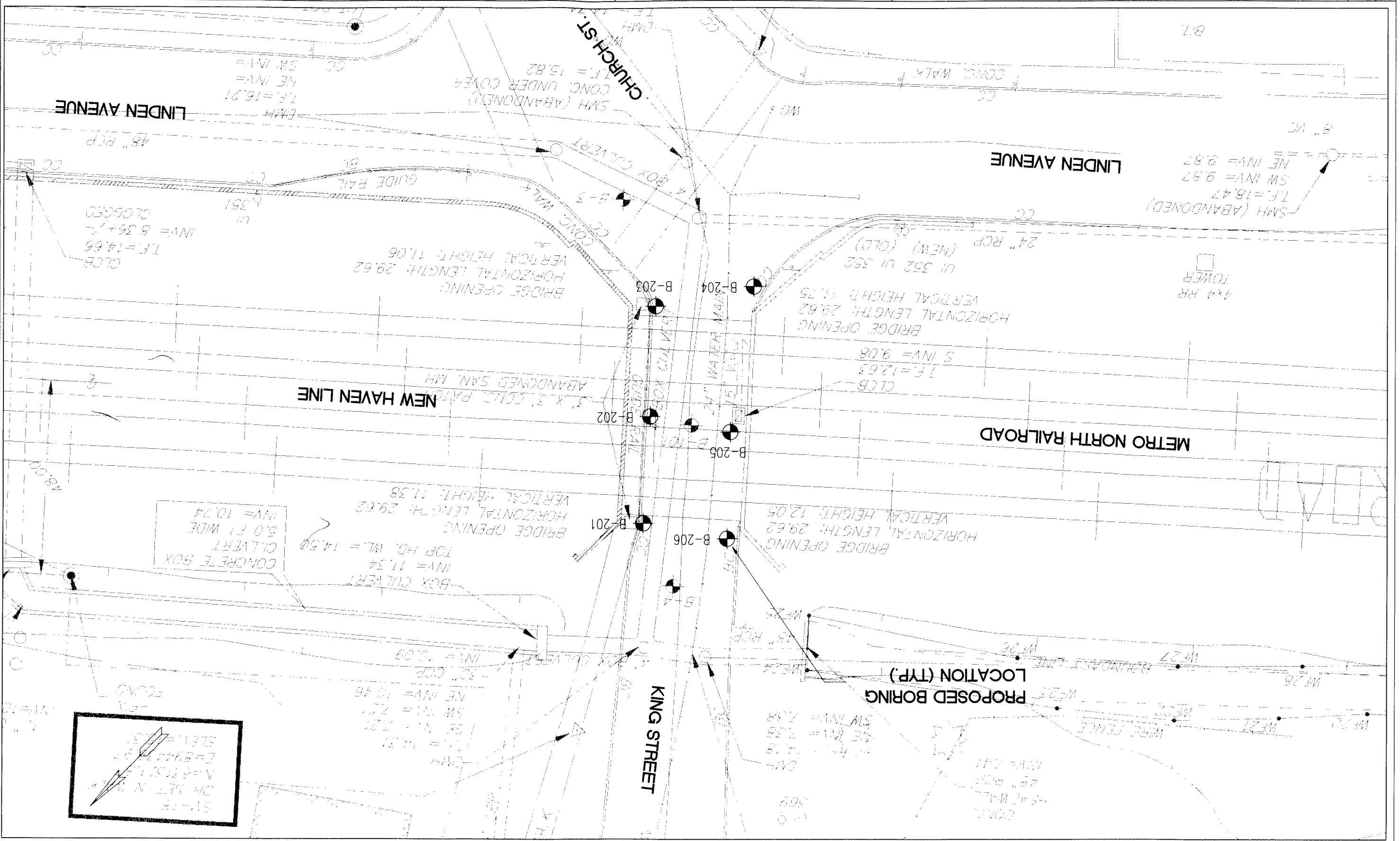
REV.	DATE	DESCRIPTION



STV INCORPORATED
 80 FERRY BOULEVARD
 STRATFORD, CT 06615

PROJECT TITLE: **DRAINAGE IMPROVEMENTS
 W. BROAD ST., KING ST., MAIN ST.**

TOWN: TOWN OF STRATFORD
 DRAWING TITLE: BORING PLAN
 SHEET NO.: 1
 DRAWING NO.: BP-1
 PROJECT NO.:



PROJECT: STRATFORD 06615 001 Drawing: CIVIL/Plan/Drainage/BORING PLAN Date: 11/15/2008 1:00:15 PM, Version: 1.1

**TOWN OF STRATFORD
BID #2009-037
King Street Borings**

BID SHEET

1. The undersigned,

(Insert full legal name)

(Insert address and state and country of incorporation, if any)

(Boring Contractor) acknowledges that it has carefully examined the entire Contract, including the Addenda hereinafter identified, and offers to perform, in strict conformity with each and every provision of the Contract, all Work as defined in the Contract at the prices set forth in this Form of Quotation and within the period of time specified for completion in the Contract.

All prices shall be given in both words and figures. In case of a discrepancy between the words and the figures of the Quotation prices, the words shall govern, unless it is apparent from the schedule of Quotation prices (as determined by The Town of Stratford) that the price expressed in figures is the actual price Quote.

BID PROPOSAL
BID #2009-037
King Street Borings

Item No.	Description	Estimated Quantity	Unit Price Bid	Amount Bid
1	Skid Mounted Equipment and Crew, (Maximum Head Room = 11') \$ _____ Dollars and _____ per day	5 Days	\$	\$
2	Linear Feet of 2 ¾" min. dia Soil Boring-B Size \$ _____ Dollars and _____ Cents per LF	50 Linear Foot	\$	\$
3	1 ½" I.D. Split Tube Samples, for \$ _____ Dollars and _____ Cents per EA	20 Each	\$	\$
4	Linear Feet of Rock Coring – N Size, for \$ _____ Dollars and _____ Cents per LF	90 Linear Foot	\$	\$
5	Mobilization and Dismantling, \$ _____ Dollars and _____ per Lump Sum	Lump Sum	\$	\$

