

SECTION J
SPECIAL CONDITIONS

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SC-1 GENERAL

Subject to modifications as herein contained, the Benbrook Water and Sewer Authority General Contract Documents and Standard Specifications, are made a part of the Contract Documents for this project. The Plans, these Special Conditions, and the rules, regulations, requirements, instructions, drawings or details referred to by manufacturer's name, number or identification included therein as specifying, referring or implying product control, performance, quality, or other shall be binding upon the Contractor. The specifications and drawings shall be considered cooperative; therefore, work or material called for by one and not shown or mentioned in the other shall be accomplished or furnished in a faithful manner as though required by all.

The order or precedence in case of conflicts or discrepancies between various parts of the Contract Documents subject to the ruling of the Engineer shall generally, but not necessarily, follow the guidelines listed below:

- A. Plans.
- B. Special Conditions.
- C. General Contract Documents and Standard Specifications.

The following Special Conditions shall be applicable to this project and shall govern over any conflicts with the General Contract Documents under the provisions stated above.

SC-2 DEFINITIONS

The word "OWNER" in these documents shall be understood as referring to: Benbrook Water and Sewer Authority.

The word "ENGINEER" in these documents shall be understood as referring to the individual, firm or such other Engineer, Supervisor or Inspector as may be authorized by the Owner to act in any particular position.

The word "CONTRACTOR" in these documents shall be understood as referring to the person, firm or corporation with whom the Owner has executed the contract or agreement.

SC-3 INSURANCE

Refer to GENERAL CONDITION 5.02 Licensed Sureties and Insurers; Certificate of Insurance.

A Certificate of Insurance shall be filed with the Owner with coverage limits not less than the following:

- A. Worker's compensation as required by Texas law, with the policy endorsed to provide a waiver of subrogation as to the Owner; employers liability insurance of not less than \$100,000 for each accident, \$100,000 disease - each employee, \$500,000 disease policy limit.

- B. Commercial General Liability Insurance, including independent contractor's liability, completed operations and contractual liability, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring Contractor's (or subcontractor's) liability for injury to or death of Owner's employees and third parties, extended to include personal injury liability coverage with damage to property of third parties, with minimum limits as set forth below:

General Aggregate	\$1,000,000.00
Products - Components/Operations Aggregate	\$1,000,000.00
Personal and Advertising Injury	\$ 600,000.00
Each Occurrence	\$ 600,000.00
Fire Damage (any one fire)	\$ 50,000.00
Medical Expense (any one person)	\$ 5,000.00

The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after final completion and acceptance of the work, with evidence of same filed with Owner.

- C. Comprehensive Automobile and Truck Liability Insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of \$600,000.00 per occurrence; or separate limits of \$250,000.00 for bodily injury (per person), \$500,000.00 bodily injury (per accident) and \$100,000.00 for property damage. Such insurance shall include coverage for loading and unloading hazards.
- D. Owner's Protective Liability Insurance: Contractor shall obtain, pay for and maintain at all times during the prosecution of the work under this contract, an Owner's protective liability insurance policy naming the Owner and the Engineer as insured for property damage and bodily injury, which may arise in the prosecution of the work and Contractor's operations under this contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the Contractor's liability insurance with a combined bodily injury and property damage minimum limit of \$600,000.00 per occurrence and \$1,000,000.00 aggregate.

SC-4 MINIMUM WAGE RATES

The prevailing wage rates determined applicable for this project are attached and made a part of these Contract Documents. Wages less than these rates must not be paid on this project.

SC-5 TRADE NAMES AND MATERIALS

Wherever materials or equipment are specified by a trade or brand name, it is quoted as an example of the standard of quality or of performance and is not intended to discriminate against an equal product by another manufacturer. Substitutions shall be in accordance with Item 100 and General Conditions, Article 6, Section 6.05-Substitutes and "or equals".

Where the words "OR EQUAL" are used, they shall be understood to mean that the item referred to is the equivalent of or equal to in the judgment of the Engineer. All materials shall be

the best of their respective kinds and must have the approval of the Engineer before being used or incorporated in the project.

SC-6 QUALIFICATION REQUIREMENTS

Prospective bidders that have not been pre-qualified by the Benbrook Water and Sewer Authority shall provide the following qualification requirements at the time of bids.

- A. A current financial statement, an acceptable experience record and an acceptable equipment schedule must be filed at the time of bids, along with a check for \$200.00. All prospective bidders must agree to sign an authorization permitting the Owner to run a full credit check as well as making a determination as to bonding ability.
- B. The financial statement shall have been prepared by an independent certified public accountant or a public accountant holding a valid permit issued by an appropriate state licensing agency, and it shall have been so prepared as to reflect the current financial status of the bidder. Properly prepared and certified annual statements, updated quarterly will be acceptable if they reflect the current financial status at the quarter ending immediately prior to the date of opening bids. The prospective bidder shall show evidence of his financial responsibility and at time of award of a contract with the Owner shall have liquid assets of a minimum of the total contract cost, divided by the contract performance period, in months.
- C. The experience record must show that the bidder has performed work of the same nature and magnitude as this project and such experience must have been on projects completed within 3 years of the date bids are to be received. The experience record shall also show a list of all projects currently under construction, showing the location, award date, amount bid, percentage complete and estimated completion date. The Owner shall be the sole judge as to the acceptability of experience for qualification to bid.
- D. The equipment schedule shall be a statement that the bidder has or will rent or acquire such equipment as may be required to complete any project on which he submits a bid.

Prospective bidders whose qualifications are not deemed to be appropriate to the nature or magnitude of this project will be so notified.

SC-7 PERMITS AND LICENSES

The Contractor shall procure, at his expense, all permits and licenses necessary, pay all charges and fees, and give all notices necessary and incident to the performance of the work.

SC-8 ROYALTIES AND PATENT FEES

All costs of royalties or patent fees in connection with any equipment item or operation employee by the Contractor shall be included in the bid price and no other compensation will be allowed.

SC-9 STATE AND CITY SALES TAX

Amendment No. 7 to Section 6A, Article 20.01, Chapter 20, Title 122A, Taxation-General of the Revised Civil Statutes of Texas provides that all items used or consumed by a Contractor whether incorporated into a project or not, can be purchased free of State and City sales tax when the project is being performed for an exempt agency.

On a contract issued by an organization which is qualified for exemption pursuant to the provisions of Article 20.04(F) of the Texas Limited Sales, Excise and Use Tax, the Contractor may purchase, rent or lease all materials, supplies, equipment used or consumed in the performance of the contract by issuing to his supplier an exemption certificate in lieu of the tax, said exemption certificate complying with State Comptrollers ruling #95-007. Any exemption certificate issued by the Contractor in lieu of the tax shall be subject to the provisions of the State Comptroller's ruling #95-0.09 as amended.

Limited sales, excise and use tax permits can be obtained from:

Comptroller of Public Accounts
Sales Tax Division
Capitol Station
Austin, Texas 78774
(800) 252-5555

SC-10 COPIES OF PLANS AND SPECIFICATIONS FURNISHED

Five (5) sets of plans and specifications shall be furnished to the Contractor at no charge for construction purposes. Additional sets may be obtained from the Engineer at the cost quoted in the Notice to Bidders.

SC-11 INFORMATION CONCERNING CONDITION

Prospective bidders shall make a careful examination of the entire site of the project and shall make such explorations as may be necessary to determine the subsoil and water conditions to be encountered, improvements and obstructions which may be encountered, especially those to be protected; methods of providing ingress and egress to private as well as public property; method of handling traffic during construction and maintenance of the entire project as well as any section thereof; protection of all existing structures both above and below ground; and how the plans fit the proposed project and especially if any discrepancies exist.

SC-12 MATERIALS FURNISHED BY OWNER

As a part of this contract, certain materials and items of equipment, as shown on the Plans or elsewhere specified, are to be furnished by the Owner for installation by the Contractor.

After the execution of the Contract Documents, the Owner will assign to the Contractor the materials, equipment, or purchase order for same, after which the Contractor shall assume all responsibility for scheduling of delivery, receiving of equipment, storage, installation and payment. The Contractor shall consummate with the supplier all details of any pre-purchased items in the same manner as for items purchased directly by the Contractor.

Any and all costs involved shall be included in the original bid proposal and no additional payments will be allowed.

SC-13 INCREASED OR DECREASED QUANTITIES OF WORK

The Owner reserves the right to alter the quantities of the work to be performed or to extend or shorten the improvements at any time when and as found necessary, and the Contractor shall perform the work as altered, increased, or decreased, at the contract unit prices.

No allowances will be made for any change in anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the Contract and Bond.

SC-14 COMPLETION TIME AND LIQUIDATED DAMAGES

The Owner has determined that the number of days quoted in the bid proposal is reasonable and adequate for the completion of all work on this project. It is anticipated that a work order for the start of work will be issued within ten (10) days after the execution of the Contract.

The time of completion is an essential element of this project. For each day of delay beyond the number of days specified in the Contract Documents, the Owner shall withhold payment in the amount indicated in the Special Instructions to Bidders. Such sums will be deducted from dollars due the Contractor, not as a penalty but as liquidated damages suffered by the Owner.

Amount of Contract	Amount of Liquidated Damages Per Day
\$ 0 to \$25,000	\$100
\$ 25,000 to \$100,000	\$200
\$100,000 to \$500,000	\$300
\$500,000 to \$1,000,000	\$450
\$1,000,000 and over	\$600

SC-15 BREAKDOWN OF BID PROPOSAL

When requested by the Engineer, the Bidder shall furnish a cost breakdown of those Bid Items shown in the proposal as Lump Sum Items. This information is for use in the preparation of a recommendation to the Owner for award of contract or progress payment to Contractor.

SC-16 GENERAL GUARANTEE OR WARRANTY

The Contractor shall remedy within 10 days after written notification any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of two years from the date of final acceptance of the work, as a part of the performance of the General Guarantee. The two-year guarantee shall be considered to be an integral part of the work and fully covered by the Maintenance Bond.

Neither the final certificate of payment nor any partial or entire occupancy of the premises by the Owner nor any provisions in the Contract Documents shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of his responsibilities or obligations of the General Guarantee. Before final acceptance, the Contractor shall furnish such additional bonds, guarantees, etc., as specified, and these guarantees shall in no way relieve the Contractor of his obligations under the General Guarantee.

SC-17 CONSTRUCTION AND PROGRESS SCHEDULE

Prior to the start of work, the Contractor shall submit to the Engineer a construction and a practical progress schedule in accordance with the GENERAL CONDITION 6.04. The construction schedule shall show major features of the work, length of work periods, times of completion, etc. The Contractor shall also provide a schedule of anticipated monthly earnings, including materials on hand, to assist in finance projections.

The progress schedule shall show the date of starting work, the time schedules of the major activities and contemplated completion dates. The schedule shall also show a progress chart to indicate graphically the percentage of work scheduled for completion at any time.

As the work progresses, the Contractor shall chart the actual progress of the work at the end of each partial payment period and revise and update the schedule to reflect any adjustments in completion times. Two (2) copies of updated progress schedules shall be delivered to the Engineer at such times as he requests.

SC-18 SHOP DRAWINGS

Procedures for the submittal of shop drawings are outlined in Paragraph 6.17 of the GENERAL CONDITIONS. When submitted for the Engineer's review, shop drawings shall bear the Contractor's certification that he has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

The Contractor's approval stamp must show the name of the Contractor, the date of his approval and transmittal to the Engineer and a statement that represents by approving and submitting shop drawings he has determined and verified all field measurements and quantities, construction criteria, materials, catalogue numbers and similar data and he has reviewed and coordinated the information in the shop drawings with the requirements of the Contract Documents. Regardless of any requirements to the contrary that may appear in other parts of these specifications, the Contractor shall in all instances furnish six (6) copies of all shop drawings after correction and approval.

If a product is installed prior to approval of shop drawings, test certificates, etc., by the Engineer, the Engineer may require the Contractor to remove such products and reinstall the facility in a manner acceptable to the Engineer. Removal and reinstallation shall be at the Contractor's expense.

Upon completion of the project, the Contractor shall furnish to the Owner copies of all final approved shop drawings, samples, test certificates and other submittals as may be required. Such submittals shall correctly indicate any changes that may have been made in the field.

SC-19 OPERATION AND MAINTENANCE MANUALS

The Contractor shall prepare and assemble for submittal to the Owner's Engineer, six (6) copies of data for inclusion in an Operation and Maintenance Manual. The data shall be bound in 3-ring notebooks, and shall consist of the following items:

1. Maintenance and Operation instruction, including routine adjustments and lubrication for all controls and instrumentation equipment, flow metering equipment, chlorination equipment, wastewater treatment equipment, laboratory equipment, pumping equipment, and all other functional equipment provided in this contract. Special emphasis shall be placed on preventive maintenance and safety recommendations.
2. Annual man-hour estimates for the routine and preventive maintenance of the equipment in Item 1 above.
3. Manufacturer's manuals and parts list for all equipment in Item 1 above.
4. Shop drawings as approved by the Engineer.

All Operation and Maintenance Manual data shall be submitted at one time and not later than the time at which the contract becomes seventy-five (75%) percent complete.

SC-20 FIELD OFFICE

The contractor may elect to have a field office. Location of the field office shall be coordinated with Benbrook Water and Sewer Authority and all local zoning ordinances. The field office shall be provided by the Contractor at no additional cost to the Owner.

SC-21 RESIDENT PROJECT REPRESENTATIVE

The Owner may elect to have a Resident Project Representative (RPR) who will be authorized to observe all work done and to be done and all materials furnished. Such observation may extend to all or any part of the work, and the preparation or manufacturing of materials to be used or equipment to be installed. A RPR may be stationed on the work to report to the Engineer as to the progress of the work and the manner in which it is being performed; also, to report any evidence that the materials being furnished or the work being performed by the Contractor fails to fulfill the requirements of the Contract Documents; and to call the attention of the Contractor to any such failure or other infringement. Such observation, or lack of same, will not relieve the Contractor from any obligation to perform the work in accordance with the requirements of the Contract Documents.

In case of any dispute arising between the Contractor and the RPR as to the materials or equipment furnished, or the manner of performing the work, the RPR will have authority to reject materials or equipment or suspend work until the question at issue can be referred to and decided by the Engineer. The RPR will not, however, be authorized to revoke, alter, enlarge or release any requirement of these Contract Documents, nor to approve or accept any portion or section of the work nor to issue any instruction contrary to the requirements of the Contract Documents. He will in no case act as superintendent or foreman or perform any other duties for the Contractor, nor interfere with the management or operation of the work. He will not accept from the Contractor any compensation in any form for performing any duties.

SC-22 INSPECTION AND TESTING

Inspections and tests as required shall be paid for by the Contractor unless otherwise specified. The Contractor shall furnish, at his expense, all necessary specimens and samples for testing including water bacteriological testing for new water pipe.

All new and rehabilitated sewer lines shall require Closed Circuit Television (CCTV) inspection of lines (refer to SC-46). This item shall be considered subsidiary to pipe installation bid item. New water and sewer lines shall be poly-pigged to remove dirt and debris from pipe.

SC-23 RIGHT-OF-WAY

Without cost to the Contractor, the Owner shall provide the necessary right-of-way or easements required for the project. However, the Contractor may require additional temporary easements for the duration of the work for his construction, storage or access. All such temporary easements shall be obtained by the Contractor at no additional cost to the Owner.

SC-24 LIMITS OF CONTRACTOR'S OPERATIONS

The working operations of the Contractor shall at all times be conducted so as to create a minimum of inconvenience to the Owner or to the public. Stringing of pipe, stockpiling of materials, etc., will be allowed only where no inconvenience is caused and only in amounts that can be readily used by the Contractor.

SC-25 SUBCONTRACTORS AND SUPPLIERS

The successful low bidder shall provide to the Owner the identity of all subcontractors, suppliers and other persons who are to furnish principal items of material or equipment prior to execution of the Agreement.

SC-26 COORDINATION WITH OTHERS

The Contractor shall schedule and coordinate his work so that there is the minimum of interference and conflict with the work of other contractors or the Owner's personnel.

The Contractor shall cooperate with others in all reasonable and proper ways to assure the steady progress of his and other's work. In case of any conflicts, the Engineer shall determine the responsibility and priority of the work and his decision shall be final. **If the Contractor has a foreman or job superintendent that is uncooperative, BWSA may elect to have that person removed from the job site.**

Weekly meetings at the job site may be required to maintain the project on the desired schedule. It is at the discretion of the BWSA to hold these progress meetings. The Contractor shall be present at all meetings.

SC-27 TRENCH SAFETY

In the event that trench excavation is required, the trench excavation safety protection system shall be used for all trench excavations deeper than five (5) feet. The Excavation and Trenching Operation Manual of the Occupational Safety and Health Administration, U.S. Department of Labor, shall be the minimum governing requirement of the item and is here by made a part of the Specification. The design of the trench excavation safety protection system shall be performed by or under the supervision of a Professional Engineer licensed to practice in the State of Texas (Refer to SC-55 for Confined Space Entry Program requirements).

All methods used for a trench excavation safety protection system shall be measured by the linear foot of trench and paid at the unit price in the bid form, which shall be total compensation for furnishing design, materials, tools, labor, equipment and incidentals necessary, including removal of the system. Measurement for pipeline trench excavation safety protection system shall be based on the linear feet along the centerline of the pipeline trench.

SC-28 OCCUPATIONAL SAFETY AND HEALTH ACT

All work performed under this Contract shall meet the requirements of the Occupational Safety and Health Act. It is the responsibility of the Contractor to familiarize himself with the latest provisions of regulations published by the Occupational Safety and Health Administration in the Federal Register and to perform all of his responsibilities thereunder.

SC-29 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

Where excavation or construction activities endangers adjacent structures (including fences) and utilities, the Contractor shall at his own expense carefully support and protect all such structures and/or utilities so that failure or settlement will not occur. Where it is necessary to move services, poles, guy wires, pipelines or other obstructions, the Contractor shall notify and cooperate with the utility owner in the prosecution of these items. If damage to an existing structure or utility occurs, whether failure, settlement, etc., the Contractor shall restore the structure or utility to its original condition and position without compensation from the Owner. The Contractor shall protect any equipment in construction areas, which remain in service during construction.

The Contractor shall repair or replace all damaged street surfaces, driveways, sidewalks, curb and gutter, fences, drainage structures, sprinkler system lines and heads, or other structures, to the satisfaction of the Engineer and the Owner. Structures shall be restored to a condition equal to or better than the original condition and of a similar material and design. The costs of such repair or replacement shall be borne by the Contractor and shall be included in the Proposal.

The Plans show the locations of all known surface and subsurface structures and utilities. However, the Owner and the Engineer assume no responsibility for failure to show any or all of these structures or utilities on the Plans, or to show them in their exact locations. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for extra work or for increasing the pay quantities in any manner whatsoever, unless the obstruction encountered is such as to necessitate changes in the lines or grades, or require the building of special work, provisions for which are not made in the Plans and Proposal, in which case the provisions in these Specifications for extra work shall apply. No additional payment will be made for pipe fittings the Contractor purchases but is unable to use

due to piping conflicts. Contractor shall confirm the required pipe and fittings prior to ordering materials.

It is anticipated that some utilities exist which are not shown on the Plans. The Contractor, prior to ordering material and beginning work, shall make an independent survey to locate and identify the type and size of all existing piping and valves in the construction area, using hand excavation if necessary. The Contractor shall keep an accurate record of the location, depth, size, type of material and type of service of all underground utilities encountered during construction. All piping, valves, electrical conduits, etc., in the construction area shall be protected as necessary, in a manner acceptable to the Engineer. No additional compensation will be considered for the protection of any of these items whether shown on the Plans or not. Also, no claims for delays will be considered as a result of encountering obstructions or conflicts not shown on the Plans. It is the sole responsibility of the Contractor to confirm the location of all subsurface piping, electrical conduits, etc., which affect the prosecution of his work prior to ordering materials or beginning work.

SC-30 PROTECTION OF TREES, PLANTS AND SOIL

All property along and adjacent to the Contractor's operations including lawns, yards, shrubs, trees, etc., shall be preserved or restored after completion of the work, to a condition equal to or better than existing prior to start of work.

Any trees or other landscape features scarred or damaged by the Contractor's operations shall be restored or repaired at the Contractor's expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in a manner approved by Engineer. Pruned limbs of one (1) inch diameter or larger shall be thoroughly treated as soon as possible with a tree wound dressing.

The Contractor shall take all precautions required to prevent soil erosion during the construction. If excessive erosion occurs, the Contractor shall take immediate measure to prevent further erosion and restore the disturbed surface with topsoil at completion of work (Refer to SC-51 for soil erosion control).

SC-31 BARRICADES, WARNING SIGNS AND WATCHMEN

The Contractor shall, at his own expense, furnish, erect and maintain all necessary barricades, lights and warning signs in accordance with the Texas Manual on Uniform Traffic Control Devices. In addition, the Contractor shall provide watchmen and take necessary precautionary measures for the protection of persons, property and the work.

A sufficient number and size of barricades shall be erected and maintained to keep pedestrians and vehicular traffic separated from the work under construction, material stockpiles and equipment. Barricades shall be color painted and easily visible at night and from sunset to sunrise. Each barricade shall have an easily visible burning light.

The Contractor shall be responsible for all damage to the work, persons or the public, due to failure or inadequacy of barricades, warning signs, lights or watchmen. The Contractor's responsibilities for the maintenance of barricades, warning signs, lights and watchmen, shall not cease until the project has been completed and accepted by the Owner.

No compensation will be paid to the Contractor for the furnishing, maintaining or removal of any

of the required precautionary measures for the protection of the work or the public.

SC-32 EXPLOSIVES, BLASTING, ETC.

No Blasting.

SC-33 PROJECT SIGNS

At BWSA's discretion, the Contractor shall furnish a project sign and install it at a location designated by the Engineer and approved by BWSA, and maintain it throughout the time of the project. The Contractor shall submit a shop drawing or detailed sketch of the proposed project sign for the Engineer's approval prior to fabrication.

No additional payment will be allowed for the furnishing and installation of the project sign.

SC-34 FEDERAL PROJECT SIGNS

The Contractor shall furnish two project signs in accordance with the project sign details shown in the Federal Contract Requirements that are attached to these documents. The Contractor will be required to install the signs at locations designated by the Engineer and approved by BWSA and maintain them throughout the project. On completion of the project, the Contractor shall remove the signs. No additional payment shall be made for furnishing, installing, maintaining or removing these project signs.

SC-35 SUBSURFACE EXPLORATION

Subsurface exploration, to ascertain the nature of the soil at the project site, including the amount of rock, if any, is to be the responsibility of any and all prospective bidders. Whether prospective bidders perform this subsurface exploration jointly or independently, it shall be left to the discretion of such prospective bidders. Subsurface exploration shall not be attempted without the approval of the Engineer.

Any test hole data supplied by the Owner or Engineer is for information only and not intended to be a part of the Contract Documents.

SC-36 LINES AND GRADES

All work under this contract shall be constructed in accordance with the lines and grades shown on the Plans or as given by the Engineer. The Contractor shall be solely responsible for verifying that the lines and grades furnished are correct.

The Contractor shall, at his own expense, establish all working and construction lines and grades as required, determined from the baseline and control points set by the Engineer, and the Contractor shall be solely responsible for the accuracy of all lines, grades, control points, etc.

The Contractor shall be responsible for the protection and maintenance of all property corners, baselines and control points throughout the time of the contract.

Prior to the Utility Contractor beginning work, the street subgrade and parkways shall be excavated and/or graded to within 0.1' (±) of plan grade.

SC-37 USE OF A SECTION OF THE WORK

Whenever, in the opinion of the Engineer, any section or portion of the work, or any structure is in suitable condition, it may be put into use upon written order of the Engineer of Owner, and such use shall in no way be interpreted as acceptance of said work or waive any of the provisions of the Contract.

All repairs or replacements required on any section of the work put to use shall be performed by the Contractor at no additional cost.

SC-38 CLEAN UP

During construction, the Contractor shall at all times keep the job site free from waste, debris and rubbish, and shall maintain a daily routine of clean up.

All trees, stumps, slashing, brush or other debris to be removed from the site shall be disposed of in a manner approved by the Engineer. Burning of trash, etc., will only be permitted where allowed by Local Ordinance and State Pollution Regulations.

Surplus dirt or earth shall be removed from the site and satisfactorily disposed of unless otherwise directed by the Engineer.

Upon the completion of the work as a whole and prior to final acceptance, the Contractor shall clean and remove from the site all surplus and discarded materials, temporary structures and all debris. He shall leave the site in a neat and orderly condition with an appearance satisfactory to the Engineer and Owner. Method and location of disposal of surplus and waste materials shall be satisfactory to the Engineer.

The Contractor shall then thoroughly clean all equipment and materials installed by him and shall present for final inspection materials and equipment in a clean, bright and new condition.

No extra payment will be made for any clean up required on the project.

SC-39 Traffic Control Plan

The Contractor shall be responsible for providing traffic control during the construction of this project consistent with the provisions set forth in the "Latest Edition Texas Manual on Uniform Traffic Control Devices for Streets and Highways" issued under the authority of the "State of Texas Uniform Act Regulating Traffic on Highways," codified as Article 6701d Vernon's Civil Statutes, pertinent sections being Section Nos. 27, 29, 30 and 31.

A traffic control plan shall be submitted for review to the ENGINEER at least 10 working days prior to the pre-construction conference. Although work will not begin until the traffic control plan has been reviewed, the Contractor's time will begin in accordance with the time frame established in the Notice to the Contractor.

The Contractor will not remove any regulatory sign, instructional sign, street name sign or other sign, which has been erected by the City of Benbrook. If it is determined that a sign must be

removed to permit required construction, the Contractor shall contact the Benbrook Water & Sewer Authority, (Phone Number 817-249-1250) to remove the sign. In the case of regulatory signs, the Contractor must replace the permanent sign with a temporary sign meeting the requirements of the above-referenced manual and such temporary sign must be installed prior to the removal of the permanent sign. If the temporary sign is not installed correctly or if it does not meet the required specifications, the permanent sign shall be left in place until the temporary sign requirements are met. When construction work is completed to the extent that the permanent sign can be reinstalled, the Contractor shall again contact the Benbrook Water & Sewer Authority to reinstall the permanent sign and shall leave his temporary sign in place until such reinstallation is completed.

The Contractor shall limit his work within one continuous lane of traffic at a time to minimize interruption to the flow of traffic.

Work shall not be performed on certain locations/streets during "peak traffic periods" as determined by the Engineer.

The cost of the traffic control plan shall be included in the bid proposal.

SC-40 ZONING COMPLIANCE

During construction, the Contractor shall comply with present zoning requirements of the City of Benbrook in the use of vacant property for storage purposes.

SC-41 WATER FOR CONSTRUCTION

Contractor shall be required to secure the use of a fire hydrant meter for construction. Water used for construction for a BWSA financed project may have the fee waived for water use.

SC-42 SAFETY RESTRICTIONS – WORK NEAR HIGH VOLTAGE LINES

The following procedures will be followed regarding the subject item on this contract:

1. When necessary to work within six feet of high voltage electric lines, notification shall be given the power company (Oncor) who will erect temporary mechanical barriers, de-energize the lines, or raise or lower the lines. The work done by the electric company shall not be at the expense of the Benbrook Water and Sewer Authority. The Contractor shall maintain an accurate log of all such calls to Oncor, and shall record action taken in each case.
2. The Contractor is responsible for making arrangements with Oncor for the relocation of existing high voltage lines at the Contractor's sole expense.

SC-43 CUTTING OF CONCRETE AND ASPHALT

When existing concrete or asphalt is cut, such cuts shall be made with a concrete saw. All sawing shall be subsidiary to the unit cost of the respective item. The city of Benbrook will inspect and approve all pavement repairs.

SC-44 CONCRETE SIDEWALK AND DRIVEWAY REPLACEMENT

At locations in the project where mains are required to be placed under existing sidewalks, driveways, and curb and/or gutter such sidewalks, driveways, and curb and/or gutter shall be completely replaced for the full existing width, between existing construction or expansion joints with 3000 psi concrete with reinforcing steel on a sand cushion. Such replacement shall match type and geometry of the removed section and be installed in accordance with City of Benbrook standards.

Payment for cutting, backfill, concrete, forming materials and all other associated appurtenances required, shall be included in the square yard price of the bid item for concrete sidewalk or driveway, or curb and/or gutter repair.

SC-45 DETECTABLE WARNING TAPES

Detectable underground utility warning tapes that can be located from the surface by a pipe detector shall be installed directly above non-metallic water and sanitary sewer pipe. The detectable tape shall be "Detect Tape" manufactured by Allen Systems, Inc. or approved equal, and shall consist of a minimum thickness 0.35 mils solid aluminum foil encased in a protective inert plastic jacket that is impervious to all known alkalis, acids, chemical reagents and solvents found in the soil. The minimum overall thickness of the tape shall be 5.5 mils, and the width shall not be less than two inches with a minimum unit weight of 2½ pounds/1 inch/100'. The tape shall be color coded and imprinted with the message as follows:

<u>Type of Utility</u>	<u>Color Code</u>	<u>Legends</u>
Water	Safety Blue	Caution! Buried Water Line Below
Sewer	Safety Green	Caution! Buried Sewer Line Below

Installation of detectable tapes shall be per manufacturer's recommendations and shall be as close to the grade as is practical for optimum protection and detectability. Allow a minimum of 18 inches between the tape and the pipe. Payment for work such as backfill, bedding, blocking, detectable tapes, and all other associated appurtenances required shall be included in the unit price bid for the appropriate bid item(s).

SC-46 PRE-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER

- A. GENERAL: Prior to the reconstruction, ALL sections of existing sanitary sewer lines to be abandoned, removed (except where being replaced in the same location), or rehabilitated (pipe enlargement, cured-in-place pipe, fold and form pipe, slip-line, etc.), shall be cleaned, and a television inspection performed to identify any active sewer service taps, other sewer laterals and their location. Work shall consist of furnishing all labor, material, and equipment necessary for the cleaning and inspection of the sewer lines by means of closed circuit television. Satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment.
1. HIGH VELOCITY JET (HYDROCLEANING) EQUIPMENT: The high-velocity sewer line cleaning equipment shall be constructed for easy and safe operation.

The equipment shall also have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel.

Hydraulically Propelled Equipment shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal in diameter around the outer periphery to ensure removal of grease. If sewer cleaning balls or other equipment, which cannot be collapsed, is used, special precautions to prevent flooding of the sewers and public or private property shall be taken. The flow of sewage present in the sewer lines shall be utilized to provide necessary fluid for hydraulic cleaning devices whenever possible.

2. **CLEANING PROCEDURES:** The designated sewer manholes shall be cleaned using high-velocity jet equipment. The equipment shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists, and the cleaning effort shall be abandoned. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant. Before using any water from the Benbrook Water & Sewer Authority (BWSA) Distribution System, the Contractor shall apply for and receive permission from the BWSA. The Contractor shall be responsible for the water meter and related charges for the setup, including the water usage bill. All expenses shall be considered incidental to cleaning.
3. **DEBRIS REMOVAL AND DISPOSAL:** All sludge, dirt, sand, rock, grease, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to manhole section, which could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment, shall not be permitted.
4. All solids or semisolid resulting from the cleaning operations shall be removed from the site and disposed of at a site designated by the Engineer. All materials shall be removed from the site no less often than at the end of each workday and disposed of at no additional cost to the BWSA.
5. **UNDER NO CIRCUMSTANCE SHALL SEWAGE OR SOLIDS REMOVED THEREFROM BE DUMPED ONTO STREETS OR INTO DITCHES, CATCH**

BASINS, STORM DRAINS OR SANITARY SEWER MANHOLES.

6. TELEVISION INSPECTION EQUIPMENT: The television camera used for the inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Engineer; and if unsatisfactory, equipment shall be removed and no payment will be made for an unsatisfactory inspection.

B. EXECUTION:

1. TELEVISION INSPECTION: The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of any sewer service taps. In no case will the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation shall be used to move the camera through the sewer line.

When manually operated winches are used to pull the television camera through the line, telephones or other suitable means of communications shall be set up between the two manholes of the section being inspected to ensure good communications between members of the crew.

The importance of accurate distance measurements is emphasized. All television inspection videotapes shall have a footage counter. Measurement for location of sewer service taps shall be above ground by means of meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device, and the accuracy shall be satisfactory to the Engineer.

BWSA makes no guarantee that all of the sanitary sewers to be entered are clear for the passage of a camera. The methods used for securing passage of the camera are to be at the option of the Contractor. The cost of retrieving the Television camera, under all circumstances, when it becomes lodged during inspection, shall be incidental to Television inspection.

2. DOCUMENTATION: Television Inspection Logs: Printed location records shall be kept by the Contractor and will clearly show the location in relation to an adjacent manhole of each sewer service taps observed during inspection. In addition, other points of significance such as locations of unusual conditions, roots, storm sewer connections, broken pipe, presence of scale and corrosion, and other discernible features will be recorded, and a copy of such records will be supplied to BWSA.

3. VIDEOTAPE RECORDINGS: The purpose of tape recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Video tape recording playback shall be at the same speed that it was recorded. The television tapes shall be furnished to BWSA for review immediately upon completion of the television inspection and may be retained a maximum of 30 calendar days.

Equipment shall be provided to BWSA by the Contractor for review of the tapes. Tapes shall not be erased without the permission of BWSA. If the tapes are of such poor quality that the BWSA inspector is unable to evaluate the condition of the sewer line or to locate service connections, the Contractor shall be required to re-televisize and provide a good tape of the line at no additional cost to BWSA

THE TAPES SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION FOR REVIEW AND DETERMINATION OF SAGS. Upon completion of review of the tapes by the Engineer, the Contractor will be notified as to which sections of the sanitary sewer are to be corrected. The Engineer will return tapes to the Contractor upon completion of review.

C. PAYMENT

This item shall be subsidiary to pipe installed or as indicated in the bid proposal.

SC-47 VACUUM TESTING OF NEW AND REHABILITATED SANITARY SEWER MANHOLES

- A. GENERAL: This item shall govern the vacuum testing of all newly constructed AND rehabilitated sanitary sewer manholes.

- B. EXECUTION:

1. TEST PROCEDURE: Manholes shall be vacuum tested prior to any interior grouting with all connections in place. Lift holes shall be plugged, and all drop-connections and gas sealing connections shall be installed prior to testing.

The sewer lines entering the manhole shall be plugged and braced to prevent the plugs from being drawn into the manhole. The plugs shall be installed in the lines beyond the drop-connections, gas sealing connections, etc. The test head shall be placed inside the frame at the top of the manhole and inflated in accordance with the manufacturer's recommendations. A vacuum of ten inches of mercury (10"Hg) shall be drawn and the vacuum pump will be turned off. With the valve closed, the level of vacuum shall be read after the required test time. The required test time shall be determined from the Table I below in accordance with ASTM C1244-93:

Table I
MINIMUM TIME REQUIRED FOR VACUUM DROP
OF 1" Hg (10"Hg - 9"Hg) (SEC)

Depth of MH. (FT.)	48-Inch Dia. Manhole	60-Inch Dia. Manhole
0 to 16'	40 sec.	52 sec.
18'	45 sec.	59 sec.
20'	50 sec.	65 sec.
22'	55 sec.	72 sec.
24'	59 sec.	78 sec.
26'	64 sec.	85 sec.
28'	69 sec.	91 sec.
30'	74 sec.	98 sec.
For Each Additional 2'	5 sec.	6 sec.

2. ACCEPTANCE: The manhole shall be considered acceptable, if the drop in the level of vacuum is less than one-inch of mercury (1" Hg) after the required test time. Any manhole, which fails to pass the initial test, must be repaired by either pressure grouting through the manhole wall or digging to expose the exterior wall of the manhole in order to locate the leak and seal it with an epoxy sealant. The manhole shall be retested as described above until it has successfully passed the test.

Following completion of a successful test, the manhole shall be restored to its normal condition, all temporary plugs shall be removed, and all braces, equipment, and debris shall be removed and disposed of in a manner satisfactory to the Engineer.

- C. PAYMENT: Payment for vacuum testing of sanitary sewer manholes shall be subsidiary to the unit price of new or rehabilitated manhole. This price shall include all material, labor, equipment, and all incidentals, including all bypass pumping, required to complete the test as specified herein.

SC-48 BYPASS PUMPING

The Contractor shall bypass the sewage around the section or sections of sewer to be rehabilitated and/or replaced. The bypass shall be made by plugging existing upstream manhole and pumping the sewage into a downstream manhole or adjacent system or other method as may be approved by the Engineer. The pump and bypass lines shall be of adequate capacity and size to handle the flow without sewage backup occurring to facilities connected to the sewer. Provisions shall be made at driveways and street crossings to permit safe vehicular travel without interrupting flow in the bypass system. Under no circumstances will the Contractor be permitted to discharge sewage into the trenches. Payment shall be incidental to rehabilitation or replacement of the sewer line.

SC-49 POST-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER

- A. GENERAL: After construction, ALL sections of sanitary sewer lines shall have a television inspection performed by an independent sub-Contractor hired by the prime Contractor. Work shall consist of furnishing all labor, material, and equipment necessary for inspection of the sewer lines by means of closed circuit television. Satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment.
- B. TELEVISION INSPECTION EQUIPMENT: The television camera used for the inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be operative in 100% humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Engineer; and if unsatisfactory, equipment shall be removed and no payment will be made for an unsatisfactory inspection.
- C. EXECUTION:
1. TELEVISION INSPECTION: The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of any sewer service taps. In no case will the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation shall be used to move the camera through the sewer line. No more than 2000 linear feet of pipe will be televised at one time for review by the Engineer.

When manually operated winches are used to pull the television camera through the line, telephones or other suitable means of communications shall be set up between the two manholes of the section being inspected to ensure good communications between members of the crew.

The importance of accurate distance measurements is emphasized. All television inspection videotapes shall have a footage counter. Measurement for location of sewer service taps shall be above ground by means of meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device, and the accuracy shall be satisfactory to the Engineer.

BWSA makes no guarantee that all of the sanitary sewers to be entered are clear for the passage of a camera. The methods used for securing passage of the camera are to be at the option of the Contractor. The cost for retrieving the Television camera, under all circumstances, when it becomes lodged during inspection, shall be incidental to Television inspection.

Sanitary sewer mains must be laced with enough water to fill all low points. The television inspection must be done immediately following the lacing of the main with no water flow. If sewer is active, flow must be restricted to provide a clear

image of sewer being inspected.

2. DOCUMENTATION: Television Inspection Logs: Printed location records shall be kept by the Contractor and will clearly show the location in relation to an adjacent manhole of each sewer service tap observed during inspection. All television logs shall be referenced to stationing as shown on the plans. A copy of these television logs will be supplied to BWSA.
3. VIDEOTAPE RECORDINGS: The purpose of tape recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Video tape recording playback shall be at the same speed that it was recorded. The television tapes shall be furnished to BWSA inspector for review immediately upon completion of the television inspection and may be retained a maximum of 30 calendar days. Equipment shall be provided to BWSA by the Contractor for review of the tapes. Tapes will be returned to the Contractor upon completion of review by the Inspector. Tapes shall not be erased without the permission of BWSA.

If the tapes are of such poor quality that the Inspector is unable to evaluate the condition of the sewer line or to locate service connections, the Contractor shall be required to re-televise and provide a good tape of the line at no additional cost to BWSA.

- D. PAYMENT OF POST-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWERS:
The cost for post-construction Television Inspection of sanitary sewers shall be subsidiary to pipe installation. All associated costs for post construction CCTV is included. By-pass pumping shall also be subsidiary to pipe installation.

SC-50 SAMPLES AND QUALITY CONTROL TESTING

- A. The Contractor shall furnish, at its own expense, certifications by a private laboratory for all materials proposed to be used on the project, including a mix design for any asphaltic and/or Portland cement concrete to be used, and gradation analysis for sand and crushed stone to be used along with the name of the pit from which the material was taken. The contractor shall provide manufacturer's certifications for all manufactured items to be used in the project and will bear any expense related thereto.
- B. Tests of the design concrete mix shall be made by the contractor's laboratory at least nine days prior to the placing of concrete using the same aggregate, cement, and mortar which are to be used later in the concrete. The Contractor shall provide a certified copy of the test results to the BWSA.
- C. Quality control testing of in-place material on this project will be performed by the BWSA at its own expense. Any retesting required as a result of failure of the material to meet project specifications will be at the expense of the contractor and will be billed at commercial rates as determined by the BWSA. The failure of the BWSA to make any tests of materials shall in no way relieve the contractor of its responsibility to furnish materials and equipment conforming to the requirements of the contract.

- D. Not less than 24 hours notice shall be provided to the BWSA by the Contractor for operations requiring testing. The Contractor shall provide access and trench safety system (if required) for the site to be tested, and any work effort involved is deemed to be included in the unit price for the item being tested.
- E. The Contractor shall provide a copy of the trip ticket for each load of fill material delivered to the job site. The ticket shall specify the name of the pit supplying the fill material.

SC-51 TEMPORARY EROSION, SEDIMENT, AND WATER POLLUTION CONTROL

- A. DESCRIPTION: This item shall consist of temporary soil erosion sediment and water pollution control measures deemed necessary by the Engineer for the duration of the contract. These control measures shall at no time be used as a substitute for the permanent control measures unless otherwise directed by the Engineer and they shall not include measures taken by the CONTRACTOR to control conditions created by his construction operations. The temporary measures shall include dikes, dams, berms, sediment basins, fiber mats, jute netting, temporary seeding, straw mulch, asphalt mulch, plastic liners, rubble liners, baled-hay retards, dikes, slope drains and other devices (Refer to SC-66 for Storm Water Pollution Prevention Plan requirements)
- B. CONSTRUCTION REQUIREMENTS: The Engineer has the authority to define erodible earth and the authority to limit the surface area of erodible-earth material exposed by preparing right-of-way, clearing and grubbing, the surface area of erodible-earth material exposed by excavation, borrow and to direct the CONTRACTOR to provide temporary pollution-control measures to prevent contamination of adjacent streams, other water courses, lakes, ponds or other areas of water impoundment. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains and use of temporary mulches, mats, seeding, or other control devices or methods directed by the Engineer as necessary to control soil erosion. Temporary pollution-control measures shall be used to prevent or correct erosion that may develop during construction prior to installation of permanent pollution control features, but are not associated with permanent control features on the project. The Engineer will limit the area of preparing right-of-way, clearing and grubbing, excavation and borrow to be proportional to the CONTRACTOR'S capability and progress in keeping the finish grading, mulching, seeding, and other such permanent pollution-control measures current in accordance with the accepted schedule. Should seasonal conditions make such limitations unrealistic, temporary soil-erosion-control measures shall be performed as directed by the Engineer.
 - 1. Waste or disposal areas and construction roads shall be located and constructed in a manner that will minimize the amount of sediment entering streams.
 - 2. Frequent fordings of live streams will not be permitted; therefore, temporary bridges or other structures shall be used wherever an appreciable number of stream crossings are necessary. Unless otherwise approved in writing by the Engineer, mechanized equipment shall not be operated in live streams.

3. When work areas or material sources are located in or adjacent to live streams, such areas shall be separated from the stream by a dike or other barrier to keep sediment from entering a flowing stream. Care shall be taken during the construction and removal of such barriers to minimize the muddying of a stream.
4. All waterways shall be cleared as soon as practicable of false work, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.
5. The Contractor shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumen, calcium chloride or other harmful materials. He shall conduct and schedule his operations so as to avoid or minimize siltation of streams, lakes and reservoirs and to avoid interference with movement of migratory fish.

C. MEASUREMENT AND PAYMENT: All work, materials and equipment necessary to provide temporary erosion control shall be considered subsidiary to the contract and no extra pay will be given for this work.

SC-52 INGRESS AND EGRESS/OBSTRUCTION OF ACCESS TO DRIVES

The Contractor shall provide ingress and egress to the property being crossed by this construction and adjacent property when construction is not in progress and at night. Drives shall be left accessible at night, on weekends, and during holidays. The Contractor shall conduct his activities to minimize obstruction of access to drives and property during the progress of construction. Notification shall be made to an owner prior to his driveway being removed and/or rebuilt.

SC-53 SITE RESTORATION

The contractor shall be responsible for restoring the site to original grade and condition after completion of his operations subject to approval of the Engineer. The basis for approval by the Engineer will be grade restoration to plus minus one-tenth (0.1) of a foot.

SC-54 TOPSOIL, SODDING, SEEDING & HYDROMULCHING

1. TOPSOIL

DESCRIPTION: This item will consist of furnishing and placing a minimum of six (6) inches of topsoil, free from rock and foreign material, in all parkways and medians to the lines and grades as established by the Engineer.

CONSTRUCTION METHODS: Topsoil will be secured from borrow sources as required to supplement material secured from street excavation. All excavated materials from streets which is suitable for topsoil will be used in the parkways and medians before any topsoil is obtained from a borrow source. Topsoil material secured from street excavation shall be stockpiled at locations approved by the Engineer, and at completion of grading and paving operations topsoil shall be placed on parkway areas so as to provide a minimum six (6) inches of compacted depth of topsoil parkways.

2. SODDING

DESCRIPTION: Sodding will consist of furnishing and planting Bermuda, Buffalo or St. Augustine grass in the areas between the curbs and walks, on terraces, in median strips, on embankments or cut slopes, or in such areas as designated on the Drawings and in accordance with the requirements of this Specification. Recommended Buffalo grass varieties for sodding are Prairie and 609.

MATERIALS: Sod shall consist of live and growing Bermuda, Buffalo or St. Augustine grass secured from sources where the soil is fertile. Sod to be placed during the dormant state of these grasses shall be alive and acceptable. Bermuda and Buffalo grass sod shall have a healthy, virile root system of dense, thickly matted roots throughout a two (2) inch minimum thickness of native soil attached to the roots. St. Augustine grass sod shall have a healthy, virile root system of dense, thickly matted roots throughout a one (1) inch minimum thickness of native soil attached to the roots.

The sod shall be free from obnoxious weeds or other grasses and shall not contain any matter deleterious to its growth or which might affect its subsistence or hardiness when transplanted. Sod to be placed between curb and walk and on terraces shall be the same type grass as adjacent grass or existing lawn.

Care shall be taken at all times to retain native soil on the roots of the sod during the process of excavating, hauling, and planting. Sod material shall be kept moist from the time it is dug until planted. When so directed by the Engineer, the sod existing at the source shall be watered to the extent required prior to excavating. Sod material shall be planted within three days after it is excavated.

CONSTRUCTION METHODS: After the designated areas have been completed to the lines, grades, and cross-sections shown on the Drawings and as provided for in other items of the contract, sodding of the type specified shall be performed in accordance with the requirements hereinafter described. Sodding shall be either "spot" or "block"; either Bermuda, Buffalo or St. Augustine grass.

a. Spot Sodding

Furrows parallel to the curb line or sidewalk lines, twelve (12) inches on centers or to the dimensions shown on the Drawings, shall be opened on areas to be sodded. In all furrows, sod approximately three (3) inches square shall be placed on twelve (12) inch centers at proper depth so that the top of the sod shall not be more than one-half (1/2) inch below the finished grade. Holes of equivalent depth and spacing may be used instead of furrows. The soil shall be firm around each block and then the entire sodded area shall be carefully rolled with a heavy, hand roller developing fifteen (15) to twenty-five (25) pounds per square inch compression. Hand tamping may be required on terraces.

b. Block Sodding.

At locations on the Drawings or where directed, sod blocks shall be carefully placed on

the prepared areas. The sod shall be so placed that the entire designated area shall be covered, and any voids left in the block sodding shall be filled with additional sod and tamped. The entire sodded area shall be rolled and tamped to form a thoroughly compact solid mass. Surfaces of block sod, which, in the opinion of the Engineer, may slide due to the height or slope of the surface or nature of the soil, shall upon direction of the Engineer, be pegged with wooden pegs driven through the sod block to the firm earth, sufficiently close to hold the block sod firmly in place.

When necessary, the sodded areas shall be smoothed after planting has been completed and shaped to conform to the cross-section previously provided and existing at the time sodding operations were begun. Any excess dirt from planting operations shall be spread uniformly over the adjacent areas or disposed of as directed by the Engineer so that the completed surface will present a slightly appearance.

The sodded areas shall be thoroughly watered immediately after they are planted and shall be subsequently watered at such times and in a manner and quantity directed by the Engineer until completion and final acceptance of the project by BWSA.

3. SEEDING

DESCRIPTION: "Seeding" will consist of preparing ground, providing and planting seed or a mixture of seed of the kind specified along and across such areas as may be designated on the Drawings and in accordance with these Specifications.

MATERIALS:

- a. General. All seed used must carry a Texas Testing Seed label showing purity and germination, name, type of seed, and that the seed meets all requirements of the Texas Seed Law. Seed furnished shall be of the previous season's crop and the date of analysis shown on each tag shall be within nine (9) months of time of delivery to the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer.

The specified seed shall equal or exceed the following percentages of Purity and germination:

<u>Common Name</u>	<u>Purity</u>	<u>Germination</u>
Common Bermuda Grass	95%	90%
Annual Rye Grass	95%	95%
Tall Fescue	95%	90%
Western Wheatgrass	95%	90%
Buffalo Grass Varieties		
Top Gun	95%	90%
Cody	95%	90%

**Table 120.2.(2)a.
URBAN AREA WARM-SEASON SEEDING RATE (lbs.); Pure Live Seed (PLS)**

<u>Dates</u>	<u>Mixture for Clay or Tight Soils</u>		<u>Mixture for Sandy Soils</u>	
	<u>(Eastern Sections)</u>	<u>(Western Sections)</u>	<u>(All Sections)</u>	
Feb 1	Bermuda grass 40	Buffalo grass 80	Bermuda grass 60	
to	Buffalo grass 60	Bermuda grass 20	Buffalo grass 40	
May 1				
	Total:	100	Total:	100
			Total:	100

**Table, 120.2.(2)b
TEMPORARY COOL-SEASON SEEDING RATE; (lb.) Pure Live Seed (PLS)**

<u>Dates</u>	<u>(All Sections)</u>	
Aug 15	Tall Fescue	50
to	Western Wheatgrass	50
May 1	Annual Rye	50
	Total:	100

CONSTRUCTION METHODS: After the designated areas have been completed to the lines, grades, and cross-sections shown on the Drawings and as provided for in other items of this Contract, seeding of the type specified shall be performed in accordance with the requirements hereinafter described.

- a. Watering. Seeded areas shall be watered as directed by the Engineer so as to prevent washing of the slopes or dislodgment of the seed.
- b. Finishing. Where applicable, the shoulders, slopes, and ditches shall be smoothed after seed bed preparation has been completed and shaped to conform to the cross-section previously provided and existing at the time planting operations were begun.

BROADCAST SEEDING: The seed or seed mixture in the quantity specified shall be uniformly distributed over the areas shown on the Drawings and where directed. If the sowing of seed is by hand, rather than by mechanical methods, the seed shall be sown in two directions at right angles to each other. Seed and fertilizer shall be distributed at the same time provided the specified uniform rate of application for both is obtained.

DISCED SEEDING: Soil over the area shown on the Drawings as directed to be seeded shall be loosened to a minimum depth of three (3) inches and all particles in the seed bed shall be reduced to less than one (1) inch in diameter or they shall be removed. The area shall then be finished to line and grade.

The seed, or seed mixture, specified shall then be planted at the rate required and the application shall be made uniformly. If the sowing of seed is by hand rather than by mechanical methods, seed shall be raked or harrowed into the soil to a depth of approximately one-eighth (1/8) inch. The planted area shall be rolled with a corrugated roller of the "Cultipacker" type. All rolling of the slope areas shall be on the contour.

ASPHALT MULCH SEEDING: The soil over the area shown on the Drawings, or as directed to be seeded, shall be loosened to the minimum depth of three (3) inches and all particles in the seed bed shall be reduced to less than one (1) inch in diameter, or they shall be removed. The area shall then be finished to line and grade.

Water shall then be applied to the cultivated area of the seedbed until a minimum depth of six (6) inches is thoroughly moistened.

After the watering, when the ground has become sufficiently dry to be loose and pliable, the seed, or seed mixture specified, shall then be planted at the rate required and the application shall be made uniformly. If the sowing of seed is by hand, rather than mechanical methods, the seed shall be sown in two directions at right angles to each other. Seed and fertilizer may be distributed at the same time, provided the specified uniform rate of application for both is obtained. After planting, the seed shall be raked or harrowed into the soil to a depth of approximately one-quarter (1/4) inch. The planted surface area and giving a smooth surface without ruts or tracks. In between the time compacting is completed and the asphalt is applied, the planted area shall be watered sufficiently to assure uniform moisture from the surface to a minimum of six (6) inches in depth.

The application of asphalt shall follow the last watering as rapidly as possible. Asphalt shall be of the type and grade as shown on the Drawings and shall conform to the requirements of the city of Benbrook. It shall be applied to the area in such a manner so that a complete film is obtained and the finished surface shall be comparatively smooth.

RE-SEEDING OF AREAS PLANTED WITH COOL SEASONS SPECIES: Areas where temporary cool season species have been planted may be replanted beginning February 1 with warm season species as listed in Table 120.2(2)a. The re-seeding will be achieved in the following manner. The cool season species shall be mowed down to a height of one (1) inch to insure that slit-seeding equipment will be able to cut through the turf and achieve adequate soil penetration.

* Slit-seeding, is achieved through the use of an implement, which cuts a furrow (slit) in the soil and places the seed in the slit, which is then pressed close with a cult packer wheel.

4. HYDROMULCH SEEDING:

If hydro mulch seeding is provided, seed mix shall have 95% purity of Bermuda grass and have a germination rate of 90%. Contractor shall ensure that the grass establishes.

5. CONSTRUCTION WITHIN PARK AREAS

TURF RESTORATION OF PARK AREAS: FERTILIZER

DESCRIPTION: "Fertilizer" will consist of providing and distributing fertilizer over such areas as are designated on the Drawings and in accordance with these Specifications.

In the event it is necessary to substitute a fertilizer of a different analysis, it shall be a pelleted or granulated fertilizer with a lower concentration. Total amount of nutrients furnished and applied per acre shall equal or exceed that specified for each nutrient.

CONSTRUCTION METHODS: When an item for fertilizer is included in the Drawings and proposal, pelleted or granulated fertilizer shall be applied uniformly over the area specified to be fertilized and in the manner directed for the particular item of work. Fertilizer shall be dry and in good physical condition. Fertilizer that is powdered to caked will be rejected. Distribution of fertilizer as a particular item of work shall meet the approval of the Engineer.

Unless otherwise indicated on the Drawings, fertilizer shall be applied uniformly at the average rate of three hundred (300) pounds per acre for all types of "Sodding" and four hundred (400) pounds per acre for all types of "Seeding".

MEASUREMENT: Topsoil secured from borrow sources will be measured by the square yard in place on the project site. Measurement will be made only on topsoils secured from borrow sources.

Acceptable material for "Seeding" will be measured by the linear foot, complete in place.

Acceptable material for "Sodding" will be measured by the linear foot, complete in place.

Acceptable material for "Fertilizer" shall be subsidiary to the price of sodding or seeding.

PAYMENT: All work performed as ordered and measured shall be subsidiary to the contract unless and otherwise noted in the plans and bid documents to be paid for at the unit price bid for each item of work. Its price shall be full compensation for excavating (except as noted below), loading, hauling, placing and furnishing all labor, equipment, tools, supplies, and incidentals necessary to complete work.

All labor, equipment, tools and incidentals necessary to supply, transport, stockpile and place topsoil or salvage topsoil as specified shall be included in "Seeding" or "Sodding" bid items and will not be paid for directly.

"Spot sodding" or "block sodding" as the case may be, will be paid for at the contract unit price per square yard, complete in place, as provided in the proposal and contract. The contract unit price shall be the total compensation for furnishing and placing all sod; for all rolling and tamping; for all watering; for disposal of all surplus materials; and for all materials, labor, equipment, tools and incidentals necessary to complete the work, all in accordance with the Drawings and these Specifications.

The work performed and materials furnished and measured as provided under "Measurement" shall be paid for at the unit price for "Seeding", or "Sodding", of the type specified, as the case may be, which price shall each be full compensation for furnishing all materials and for performing all operations necessary to complete the work accepted as follows:

Fertilizer material and application will not be measured or paid for directly, but is considered subsidiary to Sodding and Seeding.

SC-55 CONFINED SPACE ENTRY PROGRAM

It shall be the responsibility of the contractor to implement and maintain a variable "CONFINED SPACE ENTRY PROGRAM" which must meet OSHA requirements for all its employees and subcontractors at all times during construction. All active sewer manholes, regardless of depth, are defined by OSHA, as "permit required confined spaces". Contractors shall submit an acceptable "CONFINED SPACE ENTRY PROGRAM" for all applicable manholes and maintain an active file for these manholes. The cost of complying with this program shall be subsidiary to the pay items involving work in confined spaces.

SC-56 SUBSTANTIAL COMPLETION INSPECTION/FINAL INSPECTION

1. Prior to the final inspection being conducted for the project, the contractor shall contact the BWSA inspector in writing when the entire project or a designated portion of the project is substantially complete.
2. The inspector along with appropriate BWSA staff and BWSA's consultant shall make an inspection of the substantially completed work and prepare and submit to the contractor a list of items needing to be completed or corrected.
3. The contractor shall take immediate steps to rectify the listed deficiencies and notify the owner in writing when all the items have been completed or corrected.
4. Payment for substantial completion inspection as well as final inspection shall be subsidiary to the project price. Contractor shall still be required to address all other deficiencies, which are discovered at the time of final inspection by BWSA Inspector.

SC-57 CONCRETE ENCASEMENT OF SEWER PIPE

Concrete encasement of sewers shall be paid for at the Contract Unit Price per linear foot of concrete encasement as measured in place along the centerline of the pipe for each pipe diameter indicated. The Contract Unit Price shall include all costs associated with installation and reinforcement of the concrete encasement.

SC-58 CLAY DAM

Clay dam construction shall be performed in accordance with the Wastewater Clay Dam Construction, figure in the Drawings in these Specifications, at locations indicated on the Drawings or as directed by the BWSA. Clay dams shall be keyed into undisturbed soil to make an impervious barrier to reduce groundwater percolation through the pipeline trench. Construction material shall consist of compacted bentonite clay or 2 sacks per cubic yard concrete. Payment for work such as forming, placing and finishing shall be subsidiary to the price bid for pipe installation.

SC-59 EXPLORATORY EXCAVATION (D-HOLE)

The Contractor shall be responsible for verifying the locations of all existing utilities prior to construction. At locations identified on the drawings, contractor shall conduct an exploratory excavation (D-Hole), to locate and verify the location and elevation of the existing underground

utility where it may be in potential conflict with a proposed facility alignment. The exploratory excavation shall be conducted **prior to construction of the entire project** only at locations denoted on the plans or as directed by the engineer. Contractor shall submit a report of findings (including surveyed elevations of existing conflicting utilities) to the BWSA prior to the start of construction of the entire project. If the contractor determines an existing utility is in conflict with the proposed facility, the contractor shall contact the engineer immediately for appropriate design modifications.

The contractor shall make the necessary repairs at the exploratory excavation (D-Hole) to obtain a safe and proper driving surface to ensure the safety of the general public and to meet the approval of the BWSA inspector. The contractor shall be liable for any and all damages incurred due to the exploratory excavation (D-Hole).

Payment for exploratory excavation (D-Hole), at locations identified on the plans or as directed by the Engineer, shall be subsidiary.

SC-60 INSTALLATION OF WATER FACILITIES

60.1 Polyvinyl Chloride (PVC) Water Pipe
POLYVINYL Chloride Plastic Water Pipe and fittings on this Project shall be in accordance with the material standard contained in the General Contract Documents. Payment for work such as backfill, bedding, blocking, detectable tapes and all other associated appurtenant required, shall be included in the linear foot price bid of the appropriate BID ITEM(S).

60.2 Blocking
Concrete blocking on this Project will necessarily be required as shown on the Plans and shall be installed in accordance with the General Contract Documents. All valves shall have concrete blocking provided for supporting. No separate payment will be made for any of the work involved for the item and all costs incurred will be considered to be included in the linear foot bid price of the pipe or the bid price of the valve.

60.3 Tie-Ins
The Contractor shall be responsible for making tie-ins to the existing water mains. It shall be the responsibility of the Contractor to verify the exact location and elevation of the existing line tie-ins. And any differences in locations and elevation of existing line tie-ins between the contract drawings and what may be encountered in the field shall be considered as incidental to construction. The cost of making tie-ins to existing water or sanitary sewer mains shall be included in the linear foot bid price of the pipe.

60.4 Connection of Existing Mains
The Contractor shall determine the exact location, elevation, configuration and angulation of existing water or sanitary sewer lines prior to manufacturing of the connecting piece. Any differences in locations, elevation, configuration, and or angulation of existing lines between the contract drawings and what may be encountered in the said work shall be considered as incidental to construction. Where it is required to shut down existing mains in order to make proposed connections, such down time shall be coordinated with the BWSA, and all efforts shall be made to keep this down time to a minimum. In case of shutting down an existing main, the Contractor shall notify the customer both personally and in writing as to the location, time, and schedule of the service interruption.

The cost of removing any existing concrete blocking shall be included in the cost of connection. Unless bid separately all cost incurred shall be included in the linear foot price bid for the appropriate pipe size.

60.5 Valve Cut-Ins

It may be necessary to cut-in gate valves to isolate the water main from which the extension and/or replacement is to be connected. This may require closing valves in other lines and putting consumers out of service for that period of time necessary to cut in the new valve; the work must be expedited to the utmost and all such cut-ins must be coordinated with the engineer in charge of inspection. All consumers shall be individually advised prior to the shut out and advised of the approximate length of time they may be without service.

Payment for work such as backfill, bedding, fittings, blocking and all other associated appurtenants required, shall be included in the price of the appropriate bid items.

60.6 Water Services

The relocation, replacement, or reconnection of water services will be required as shown on the plans, and/or as described in these Special Contract Documents in addition to those located in the field and identified by the Engineer or BWSA.

All service's shall be constructed by the contractor utilizing approved factory manufactured Bronze Double Strap tap saddles and corporation stops, type K copper water tubing, curb stops with lock wings, meter boxes, and if required approved manufactured service branches.

All water services to be replaced shall be installed at a minimum depth of 36 inches below final grade.

All existing 3/4-inch water service lines which are to be replaced shall be replaced with 1-inch Type K copper, 1-inch diameter tap saddle, and 1-inch corporation from the main line to the meter box.

All services which are to be replaced or relocated shall be installed with the service main tap and service line being in line with the service meter unless otherwise directed by the Engineer.

A minimum of 24 hours advance notice shall be given when service interruption will be required.

All water service meters shall be removed, tagged, and collected by the contractor for pickup by the Water Department for reconditioning or replacement. The meter box shall be concrete T-37 meter box Fort Worth Spec or as determined by BWSA Inspector. After installation of the water service in the proposed location and receipt of a meter from the project inspector the contractor shall install the meter. The meter box shall be reset as necessary to be flush with existing ground or as otherwise directed by the BWSA Inspector.

All such work on the outlet side of the service meter shall be performed by a licensed plumber.

60.7 Ductile Iron Fittings

Reference Sections 102 & 105 Material Specifications: Ductile Iron Fittings and Ductile Iron Pipe and Fittings.

SC-61 DEWATERING

The Contractor shall be responsible for determining the method of dewatering operation for the water or sewage flows from the existing mains and ground water. The Contractor shall be responsible for damage of any nature resulting from the dewatering operations.

The DISCHARGE from any dewatering operation shall be conducted as approved by the Engineer or BWSA Inspector. Ground water shall not be discharged into sanitary sewers.

Dewatering shall be considered as incidental to a construction and all costs incurred will be considered to be included in the project price.

SC-62 TREE REMOVAL

Trees to be removed shall be removed using applicable methods, including stump and root ball removal, loading, hauling and dumping. Extra caution shall be taken to not disrupt existing utilities both overhead and buried. The Contractor shall immediately repair or replace any damage to utilities and private property including, but not limited to, water and sewer services, pavement, fences, walls, sprinkler system piping, etc., at no cost to the Owner. All costs for tree removal, including temporary service costs, shall be considered subsidiary to the project contract price and no additional payment will be allowed.

SC-63 PUBLIC NOTIFICATION

Prior to beginning construction on any block in the project, the contractor shall, on a block by block basis, prepare and deliver a notice or flyer of the pending construction to the front door of each residence or business that will be impacted by construction. The notice shall be prepared as follows:

The notification notice or flyer shall be posted seven (7) days prior to beginning any construction activity on each block in the project area. The flyer shall be prepared on the Contractor's letterhead and shall include the following information: Name of Project, Scope of Project (i.e. type of construction activity), actual construction duration within the block, the name of the contractor's foreman and his phone number, the name of the BWSA's inspector and his phone number and the BWSA's after-hours phone number.

The contractor shall submit a schedule showing the construction start and finish time for each block of the project to the inspector. In addition, a copy of the flyer shall be delivered to the BWSA Inspector for his review prior to being distributed. The contractor will not be allowed to begin construction on any block until the flyer is delivered to all residents of the block.

In the event it becomes necessary to temporarily shut down water service to residents or businesses during construction, the contractor shall prepare and deliver a notice or flyer of the pending interruption to the front door of each affected resident. The notice shall be prepared as follows:

The notification or flyer shall be posted twenty-four (24) prior to the temporary interruption. The flyer shall be prepared on the contractor's letterhead and shall include the following information: Name of the project, the date of the interruption of service, the period the interruption will take place, the name of the contractor's foreman and his phone number and the name of the BWSA's inspector and his phone number. A sample of the temporary water service interruption notification is attached.

A copy of the temporary interruption notification shall be delivered to the inspector for his review prior to being distributed. The contractor shall not be permitted to proceed with interruption of water service until the flyer has been delivered to all affected residents and businesses.

All work involved with the notification flyers shall be considered subsidiary to the contract price and no additional compensation shall be made.

SC-64 TEMPORARY PAVEMENT REPAIR

The Contractor shall provide a temporary pavement repair approved by the city of Benbrook immediately after trench backfill and compaction using a minimum of 2-inches of hot mix asphalt over a minimum of 6-inches of compacted flex base. The existing asphalt shall be saw cut to provide a uniform edge and the temporary repair shall be rolled with an asphalt roller to provide a smooth transition between the existing pavement and the temporary repair. The unit price bid under the appropriate bid item of the proposal shall cover all costs for providing temporary pavement repair for all street saw cutting prior to street reconstruction.

SC-65 EASEMENTS AND PERMITS

The performance of this contract requires certain temporary construction, right-of-entry agreements, and/or permits to perform work on private property.

The BWSA has attempted to obtain the temporary construction and/or right-of-entry agreements for properties where construction activity is necessary on BWSA owned facilities, such as sewer lines or manholes. For locations where the BWSA was unable to obtain the easement or right-of-entry, it shall be the Contractor's responsibility to obtain the agreement prior to beginning work on subject property. This shall be subsidiary to the contract.

The easements and/or private property shall be cleaned up after use and restored to its original condition or better. In event additional work room is required by the Contractor, it shall be the Contractor's responsibility to obtain written permission from the property owners involved for the use of additional property required. No additional payment will be allowed for this item.

The BWSA has obtained the necessary documentation for railroad and/or highway permits required for construction of this project. The Contractor shall be responsible for complying with all provisions of such permits, including obtaining the requisite insurance, and shall pay any and all costs associated with or required by the permit(s). It is the Contractor's responsibility to provide the required flagmen and/or provide payment to the appropriate railroad/agency for all flagmen during construction in railroad/agency right-of-way. Any and all costs associated with compliance with permits(s) including payment for flagmen shall be subsidiary to the project price. No additional payment will be allowed for this item.

SC-66 STORM WATER POLLUTION PREVENTION

PERMIT: As defined by Texas Commission on Environmental Quality (TCEQ) regulations, a Texas Pollutant Discharge Elimination System (TPDES) General Construction Permit is required for all construction activities that result in the disturbance of one to five acres (Small Construction Activity) or five or more acres of total land (Large Construction Activity). The contractor is defined as an "operator" by state regulations and is required to obtain a permit. Information concerning the permit can be obtained through the Internet at http://www.tnrcc.state.tx.us/permitting/water_perm/wwperm/construct.html. Soil stabilization and structural practices have been selected and designed in accordance with North Central Texas Council of Governments Best Management Practices and Erosion Control Manual for Construction Activities (BMP Manual). This manual can be obtained through the Internet at www.dfwstormwater.com/runoff.html. Not all of the structural controls discussed in the BMP Manual will necessarily apply to this project. Best Management Practices are construction management techniques that, if properly utilized, can minimize the need for physical controls and possibly reduce costs. The methods of control shall result in minimum sediment retention of not less than 70%.

NOTICE OF INTENT (NOI): If the project will result in a total land disturbance equal to or greater than 5 acres, the contractor shall sign at the pre-construction meeting a TCEQ Notice of Intent (NOI) form prepared by the engineer. It serves as a notification to the TCEQ of construction activity as well as a commitment that the contractor understands the requirements of the permit for storm water discharges from construction activities and that measures will be taken to implement and maintain storm water pollution prevention at the site. The NOI shall be submitted to the TCEQ at least 48 hours prior to the contractor moving on site and shall include the required \$100 application fee.

The NOI shall be mailed to:

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC-228
P.O. Box 13087
Austin, TX 78711-3087

A copy of the NOI shall be sent to:

City of Benbrook
City Manager's Office
911 Winscott Road
Benbrook, TX 76126

NOTICE OF TERMINATION (NOT): For all sites that qualify as Large Construction Activity, the contractor shall sign, prior to final payment, a TCEQ Notice of Termination (NOT) form prepared by the engineer. It serves as a notice that the site is no longer subject to the requirement of the permit.

The NOT should be mailed to:

Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC-228
P.O. Box 13087
Austin, TX 78711-3087

STORM WATER POLLUTION PREVENTION PLAN (SWPPP): A document consisting of an erosion control and toxic waste management plan and a narrative defining site parameters and techniques to be employed to reduce the release of sediment and pollution from the construction site. The selected Contractor shall be provided with three copies of the SWPPP after award of contract, along with unbounded copies of all forms to be submitted to the Texas Commission on Environmental Quality.

LARGE CONSTRUCTION ACTIVITY – DISTURBED AREA EQUAL TO OR GREATER THAN 5 ACRES: A Notice of Intent (NOI) form shall be completed and submitted to the TCEQ including payment of the TCEQ required fee. A SWPPP that meets all TCEQ requirements prepared by the Engineer shall be prepared and implemented at least 48 hours before the commencement of construction activities. The SWPPP shall be incorporated into in the contract documents. The contractor shall submit a schedule for implementation of the SWPPP. Deviations from the plan must be submitted to the engineer for approval. The SWPPP is not warranted to meet all the conditions of the permit since the actual construction activities may vary from those anticipated during the preparation of the SWPPP. Modifications may be required to fully conform to the requirements of the Permit. The contractor must keep a copy of the most current SWPPP at the construction site. Any alterations to the SWPPP proposed by the contractor must be prepared and submitted by the contractor to the engineer for review and approval. A Notice of Termination (NOT) form shall be submitted within 30 days after final stabilization has been achieved on all portions of the site that is the responsibility of the permittee, or, when another permitted operator assumes control over all areas of the site that have not been finally stabilized.

SMALL CONSTRUCTION ACTIVITY - DISTURBED AREA EQUAL TO OR GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES: Submission of a NOI form is not required. However, a TCEQ Site Notice form must be completed and posted at the site. A copy of the completed Site Notice must be sent to the City of Benbrook City Manager's Office at the address listed above. A SWPPP, prepared as described above, shall be implemented at least 48 hours before the commencement of construction activities. The SWPPP must include descriptions of control measures necessary to prevent and control soil erosion, sedimentation and water pollution and will be included in the contract documents. The control measures shall be installed and maintained throughout the construction to assure effective and continuous water pollution control. The controls may include, but not be limited to, silt fences, straw bale dikes, rock berms, diversion dikes, interceptor swales, sediment traps and basins, pipe slope drain, inlet protection, stabilized construction entrances, seeding, sodding, mulching, soil retention blankets, or other structural or non-structural storm water pollution controls. The method of control shall result in a minimum sediment retention of 70% as defined by the NCTCOG "BMP Manual." Deviations from the proposed control measures must be submitted to the engineer for approval.

PAYMENT FOR SWPPP IMPLEMENTATION: Payment shall be made per lump sum as shown on the proposal as full compensation for all items contained in the project SWPPP.

SC-67 COORDINATION WITH THE BWSA REPRESENTATIVE FOR OPERATIONS OF EXISTING WATER SYSTEMS

It is the Contractor's responsibility to coordinate any event that will require connecting to or the

operation of an existing BWSA water line system with the BWSA's representative. The Contractor may obtain a hydrant water meter from the BWSA staff for use during the life of named project. In the event the Contractor requires that a water valve on an existing live system be turned off and on to accommodate the construction of the project, the Contractor must coordinate this activity through the appropriate BWSA representative. The Contractor shall not operate water line valves of existing water system. Failure to comply will render the Contractor in violation of Texas Penal Code Title 7, Chapter 28.03 (Criminal Mischief) and the Contractor will be prosecuted to the full extent of the law. In addition, the Contractor will assume all liabilities and responsibilities as a result of these actions.

SC-68 ADDITIONAL SUBMITTALS FOR CONTRACT AWARD

The BWSA reserves the right to require any pre-qualified contractor who is the apparent low bidder(s) for a project to submit such additional information as the BWSA, in sole discretion may require, including but not limited to manpower and equipment records, information about key personnel to be assigned to the project, and construction schedule, to assist the BWSA in evaluating and assessing the ability of the apparent low bidder(s) to deliver a quality product and successfully complete projects for the amount bid within the stipulated time frame. Based upon the BWSA's assessment of the submitted information, a recommendation regarding the award of a contract will be made to the BWSA Board of Directors. Failure to submit the additional information if requested may be grounds for rejecting the apparent low bidder as non-responsive. Affected contractors will be notified in writing of a recommendation to the BWSA Board.

SC-69 EARLY WARNING SYSTEM FOR CONSTRUCTION

Time is of the essence in the completion of this contract. In order to insure that the contractor is responsive when notified of unsatisfactory performance and/or of failure to maintain the contract schedule, the following process shall be applicable:

The work progress on all construction projects will be closely monitored. On a bi-monthly basis the percentage of work completed will be compared to the percentage of time charged to the contract. If the amount of work performed by the contractor is less than the percentage of time allowed by 20% or more (example: 10% of the work completed in 30% of the stated contract time as may be amended by change order), the following proactive measures will be taken:

1. A letter will be mailed to the contractor by certified mail, with a return receipt requested demanding that, within 10 days from the date that the letter is received, it provide sufficient equipment, materials and labor to ensure completion of the work within the contract time. In the event the contractor receives such a letter, the contractor shall provide to the BWSA an updated schedule showing how the project will be completed within the contract time.
2. The Project Engineer and the BWSA Board of may also be informed.
5. If the contractor fails to provide an acceptable schedule or fails to perform satisfactorily a second time prior to the completion of the contract, the bonding company will be notified appropriately.

SC-70 AWARD OF CONTRACT FOR PROJECTS WITH MULTIPLE UNITS

The BWSA reserves the right to abandon without obligation to the contractor, any part of the project, or the entire project, at any time before the contractor begins any construction work authorized by the BWSA. Award, if made, shall be to the lowest responsible bidder.

The following shall apply for contract documents with multiple units of work. Each unit represents a separate project, each with a proposal section. The proposal sections are arranged to allow prospective bidders to submit bids on one unit, some of the units, or all of the units. Award of contract(s), if made, shall be to the lowest responsible bidder for each individual unit. If a contractor is the low bidder on two units or more, a single set of contract documents consisting of all applicable units will be created and one single award of contract shall be made.

Construction time on all units will run concurrently. For situations involving approved contracts with multiple units, the total allowable construction completion time period for all the units shall be the same as the unit with the longest construction time period.

SC-71 SPECIFICATION REFERENCES

When reference is made in these specifications to a particular ASTM, AWWA, ANSI or other specification, it shall be understood that the latest revision of such specification, prior to the date of these general specifications or revisions thereof, shall apply.

SC-72 RELOCATION OF SPRINKLER SYSTEM BACK-FLOW PREVENTER/CONTROL VALVE AND BOX

The relocation and reconnection of sprinkler system control valve and box will be required as shown on the plans, and/or as described in these Special Contract Documents in addition to those located in the field and identified by the Engineer.

A minimum of twenty-four (24) hours advance notice shall be given when service interruption will be required. When the relocation is required, separate payment will be allowed for the relocation of sprinkler back-flow preventer or control valve and box. Payment for all work and material such as back-fill, fittings, five (5) feet of PVC Schedule 40 and all material labor, and equipment used by and for the licensed plumber shall be included in the price bid for the relocation of sprinkler back-flow preventer or control valve and box. All other costs will be included in other appropriate bid item(s).

SC-73 EMERGENCY SITUATION, JOB MOVE-IN

BWSA or Engineer shall determine when an emergency situation shall exist. When water emergency work is required, the Contractor shall mobilize to the said location within twenty-four (24) hours after given notification from the Inspector and/or Project Manager. The Contractor shall make all necessary arrangements for bypass pumping, setting up barricades, notifying citizens, etc., while waiting for other utilities to be located as directed by the Engineer. The Contractor shall work continuously until the emergency work order has been completed at a time agreed to by the Project Manager, Inspector, and Contractor. After the emergency work order has been completed, there will be no additional "Job Move-In" charges paid to remobilize back to the previous project location site.

SC-74 1 ½" & 2" COPPER SERVICES

All fittings used for 1 ½" and 2" water services lines shall be compression fittings of the type produced with an internal "gripper ring" as manufactured by the Ford Meter Box Co., Inc., Mueller Company, or approved equal. Approved equal products shall submit shop drawings and manufacturer's catalog information for approval.

Contractor shall make all cuts to the copper tubing with a copper tubing cutter tool specifically designed for this purpose in order to provide a clean, square cut. The use of hacksaws or any other type of cutter will not be allowed.

Prior to installing the compression fittings, the copper tubing will be made round by the use of a "rounding tube" specifically made for that purpose.

Payment for all work and materials associated with 1 ½ " and 2" copper services shall be included in the price of the appropriate bid item.

END OF SECTION