



CITY OF TORRINGTON
REQUEST FOR BID

BID # TLI-032-091304 LANDSCAPE IRRIGATION AT TORO FIELD

Date of bid opening: Sept 13, 2004 Time: 10:00AM Location: Room 109A, City Hall

Bid Bond or Certified Check required with bid: 5%

Performance Bond required if awarded bid: 100 %

The City of Torrington reserves the right to accept or reject any or all bids or any portion thereof, to waive technicalities, and to award the contract as will best serve the public interest.

Omit State and Federal Taxes.

All prices must be F.O.B.: Destination (Torrington) unless otherwise requested.

Dated in Torrington: 8/20/04 Purchasing Agent _____
Charlene R. Antonelli, CPPB

Item	PRICE
FURNISH AND INSTALL IRRIGATION SYSTEM AT TORO PARK PER SPECIFICATIONS.	\$ _____

Bid Submitted By: _____

Name of Company _____

Address _____

Phone _____ Fax _____

Delivery Date _____

E-mail address _____

Comments: _____

Signature

Title

Date _____

Web Page _____

INSTRUCTIONS TO BIDDERS

Sealed bids will be received by the Purchasing Agent, Room 109A, 140 Main St., Torrington, CT until the time and date specified on the cover sheet and opened thereafter in the Purchasing Department, Room 110. Bids received later than the time specified will not be accepted. Amendments to or withdrawal of any section of the submitted bid received later than the time & date set for the bid opening will not be considered. Bid proposals must remain in effect for a minimum of 30 days unless otherwise noted elsewhere in the bid specifications.

BID DOCUMENTS: are available over the Internet on the City's web page, under "open bids", www.torrington-CT.org **Businesses Without Internet Access** may contact the Purchasing Department at 860-489-2224 for the bid documents.

BID BONDS: shall be in the amount of 5% of the total bid made out in favor of the City of Torrington and issued by a Surety company acceptable to the City of Torrington must accompany each bid. A certified check, cashier's check, Treasurer's check, or money order in the same amount may be submitted in lieu of the bid bond. Bids submitted without Certified Check or Bid Bond will not be accepted. On-line bid submission requires a bid bond be received at the Purchasing Office prior to the time of bid opening. The City of Torrington will not be held liable for the accrual of interest on any check held by the city in conjunction with this bid. All checks or bid bonds will be refunded to the unsuccessful bidders after award of the bid by the City Council. The deposit check or Bid Bond of the successful bidder will be held in escrow until such time as the city determines that the bidder has or will meet their obligations as stated by the bid. If the bidder fails or refuses within a reasonable time after due notice that the contract has been awarded to him, to execute the same, an amount representing a loss to the city by reason of such failure shall be retained and paid into the city treasury.

REPLIES: whether bid or no bid, must have the bid number clearly identified on the outside of the envelope. Bidders not marking the envelopes with the Bid number and date/time of opening on the envelope will have no recourse against the City of Torrington or its employees. Such bidders run the risk of the bid being opened prior to the scheduled Bid Opening time. Once opened such bids are public record. Any alleged oral agreement made by a bidder or contractor with any agency or employee of the City of Torrington will be disregarded.

FREIGHT: Prices quoted shall be net delivery **F.O.B. Torrington, CT.** All bid prices must include prepaid delivery, assembly, and/or installation (ready for operation and/or use) of all equipment and/ or materials to the individual location(s) as designated by the Purchasing Agent. All bid prices are to be submitted on the sheets provided on this bid. Quantities and pricing are to be listed in accordance with these sheets.

QUESTIONS: Request for interpretation of any portion of the bid may be made by telephone to the Purchasing Agent at (860)489-2225. All replies will be given verbally and a copy of any such inquiry and advice (if deemed vital to the bid by the Purchasing Agent) will be made available to each prospective bidder. Bidders should check the web site for addendums/updates 48 hours prior to the bid opening.

In the event of receipt of identical bids as to offerings, delivery, service, content, price, etc., the bid will be awarded in accordance with the information contained in the bid document, based on first received as to date and time of receipt of the bid.

NON-COLLUSION STATEMENTS: In order for bids to be considered, a non-collusive statement must be submitted with the bid. A sample non-collusive bid statement is attached. Bidders may elect to submit their own notarized non-collusion statement.

CONDITIONAL, QUALIFIED OR NON-RESPONSIVE BIDS/PROPOSALS: All bids/proposals shall be submitted in the form and manner as indicated by the bid documents and bid forms. Any proposal which is not submitted in the form and manner indicated by the bid documents or which contains information, statements, conditions, or qualifications which place conditions or qualifications on the proposal submittal for purposes of making an award, or which alter any proposal terms, conditions, specifications, or forms, which has not been previously approved by written addendum from the Purchasing Agent, or which does not meet legal requirements, shall be declared as a qualified, conditional, or non-responsive proposal and shall be rejected without further consideration. Any proposal response that does not fully respond to and comply with all detailed specifications or requests for information including execution of proposal forms, may be declared "non-responsive" and recommended for rejection. The City of Torrington shall not be responsible for any errors or omissions of the Offeror.

TAXES: Omit all State and Federal taxes from the bid. The City of Torrington is exempt from the payment of taxes imposed by Federal government and/or the State of Connecticut.

OWNERSHIP OF DOCUMENTS: All documents, including drawings, plans, specifications, videotapes, or other documents or maps prepared by a contractor pursuant to any agreement arising from this bid shall become the property of the City of Torrington upon completion of the project or any termination of the project prior to the completion of the project.

LEGALITY: All bid offers for commodities, work, materials, or equipment hereunder shall comply in every respect with the laws, specifications and requirements of the State of Connecticut and the Federal government. Contractor will comply with the provisions of the Connecticut Fair Employment Practices Law.

LANGUAGE DISPUTES: Any disputes over the interpretation and/or meaning of any individual terms, conditions, and/or language within this Request for Bid/Proposal document shall be resolved by and at the sole discretion of the City Purchasing Agent in a manner that is in the best interest of, and best advantage to, the City of Torrington, provided any such interpretation shall be reasonable. In the event that an individual term, condition, and/or language/wording is determined at any time, including after award, by the City Purchasing Agent to be "not applicable at all" to his contract, then the term, condition, and or language/wording may be disregarded, even though an addendum is not issued. However, if the Purchasing Agent

determines that the term, condition, and/or language/wording "is applicable in part", then the term, condition, and/or language/wording will apply to the degree applicable, even though an addendum is not issued.

RESPONSIBILITY: The Contractor shall save the City of Torrington, its agents or employees, harmless from liability of any kind for all claims of labor payments and materials furnished for this work, and for use of any copyrighted or uncopyrighted composition, secret process patented or unpatented invention, article or application furnished or used in the performance of the contract of which the Contractor is not the patentee, assignee, or licensee. The successful bidder agrees to indemnify and hold harmless the City of Torrington, its agents and employees from any and all liability arising out of the successful bidders' operations, functions and/or supplied items.

The successful bidder, vendor, and/or contractor must protect all property of the City of Torrington (i.e. all floors, furniture, grass, land, etc.) from injury or other damage. Any damage so caused must be repaired by contractor/vendor at his/her own expense. At the completion of work, the vendor and/or contractor must remove from the premises all surplus materials and all debris created by same. The premises must be left in a broom-clean and finished condition acceptable to the owner or its agents. Successful bidder will furnish adequate protection from damage for all work and to repair damage of any kind; for which he or his workers are responsible, to the premises or equipment to his own work or to the work of other contractors.

DEFAULT: It shall be understood that a bidder supplying equipment and/or supplies will be considered to be in default if/when they have not delivered the item(s) within the time constraints listed in this document or subsequent purchase orders and/or contract. Bidders providing a service and/or construction will be considered to be in default if/when they have failed to meet the completion date set forth in this document or its subsequent contract and/ or purchase orders and/ or they have ceased work on the project for a period of fifteen (15) working days, cumulative or consecutive.

TRADE NAME REFERENCES: Any and all references to trade names, types, styles, model numbers, stock numbers or catalogs are intended to be descriptive only and not restrictive. The intention is to indicate to bidders the type and quality of the articles and or materials that will be satisfactory. When reviewing the information, it is the responsibility of the prospective bidder to inform the City of Torrington of any discrepancy that is found (i.e. number listed does not fit item description) Bids received on other makes or models with reference to other catalogs will be considered. The bidder is to clearly state in his bid exactly what he intends to furnish and to furnish with his bid a cut or illustration or other descriptive matter that will clearly indicate and give specification as to the product he/she proposes to furnish. Where a bid is offered on an item other than the trade standard used in the specification the item should be identified on the bid form by entering the MAKE, TRADE NAME AND MODEL NUMBER. It is understood that any substitutes and/or alternates that might be offered are guaranteed by the bidder to be of equal or better quality than is reference in the bid. The item(s) must be equivalent as to function, basic design, type and quality of material, method of construction and any required dimensions. It shall be further understood that during original as well as subsequent shipments spot checks will be performed to insure that the items received are in fact the items offered in the bid. When received, should items/materials prove to be different from what was bid in any way, the bidder agrees to the return of the items and agrees to supply correct items (per bid specifications) at the bidders expense. In the event this return action is required, it is understood the bidder may be subject to removal from the city's approved bidder's list. Bidders are cautioned that surplus, seconds, factory rejects, floor samples, close outs or distressed items are not acceptable and shipments of substitutions, defective or shop-worn equipment will be returned for a full refund at the vendor's expense.

QUANTITY: The quantities and/or materials listed in the specifications/bid sheets may be increased or decreased by the City of Torrington or its designated representative based on actual need at the time the purchase orders are placed.

QUALITY: The City of Torrington reserves the right to reject any proposal in whole or in part offering equipment and/or materials and/or services that in its or its agents opinion does not meet the quality standards desired. Such decision is final and not subject to further recourse by the bidder.

SAMPLES: forwarded by the bidder will be returned to the bidder at his request and expense. Requests for return of samples must be submitted in writing at the time the sample is given to the City of Torrington or its representative. Samples not returned to the bidder will be disposed of at the discretion of the City of Torrington or its designated representative. Large pieces of equipment submitted for evaluation and inspection are to be picked up by the bidder within 30 days of the bid opening date. Items not picked up within 30 days will be disposed of by the City of Torrington or its designated agent.

AWARD: It is the intent to award this bid in its entirety to one bidder, however, the City reserves the right to award the bid line item by line item if it is deemed in its best interest to do so. In addition, bidders are advised that should budgetary constraints dictate, part, and/or all the items in this bid may be rejected. This decision shall be considered final and not subject to recourse by the bidder.

In determining the lowest or highest responsible bidder, the City reserves the right to consider, in addition to price, the compatibility, quality, cost of maintenance and availability of parts, experience and/or past performance of the bidder, sufficiency of the financial resources of the bidder as relates to the offerings as well as the ability of the bidder to provide future maintenance and service.

Documents previously submitted to the city of Torrington will not be considered as satisfying submission requirements for this bid.

No bidder can claim any contract rights by virtue of bidding alone. Awarding of the contract means actual written notice by letter and a properly executed purchase order to the bidder or bidders to whom the bid has been awarded.

OPTION TO RENEW: This contract may be extended for three (3) additional one (1) year periods, provided all terms and conditions remain in full force and effect except for the contract period being extended. This option, if exercised, is to executed in the form of a letter of agreement, to be issued no later than 30 days prior to the expiration of the then current contract period. This option to renew requires the mutual agreement of both parties. Refusal by either party to exercise this option to extend, will cause this contract to expire on the original or mutually agreed upon date. The total period of this contract, including all extensions as a result of exercising this option, will not exceed a maximum combined period of five (5) years.

BONDS:

Performance Bond: The Contractor, when awarded the Bid, must submit within 10 days of the bid award, and before beginning the work or signing a contract, a Performance Bond amounting to one hundred percent (100%) of the total amount of the bid. Said performance bond must be in favor of the City of Torrington and executed by a surety company authorized to do business in the State of Connecticut. The City of Torrington reserves the right to retain the Bid Bond or Certified Check on bids below \$25,000.00 as a Performance Bond. On bids of \$25,000.00 or more the Performance Bond may be furnished in the following manner: Performance Bond, Surety Bond, Certified Check, Bank Check, Savings Account in both the City & Vendor's name or Letter of Credit

Maintenance Bond: The contractor, upon signing a contract and before beginning the work, must submit to the Purchasing Agent a Maintenance Bond to guarantee that if defects in either labor or materials becomes evident within one year after completion and acceptance of work will be fixed at no cost to the City of Torrington. The maintenance bond may be included as a portion of the Performance bond or as a separate bond. If it is issued as a separate bond said maintenance bond must be in favor of the City of Torrington and issued by a surety company licensed and authorized to do business in the State of Connecticut.

Labor and Material Bonds: Per Section 49-41 of the Conn General Statutes, on Public Works project where the estimate is in excess of \$25,000.00, a labor (payment) and material bond must be furnished to the City. Said bonds must be filed with the Purchasing Agent prior to the commencement of work.

Consent for Release of Final Payment: AIA Document G707 & G706, or equivalent, must be signed and returned by the Surety Company before final payment will be released to the contractor.

INSURANCE:

Certificate of Insurance: All insurers must have an AM Best rating of A-V11 or better and admitted to do business in the State of Connecticut. All insurance policies must include a Waiver of Subrogation whereby the insured waives its right to subrogated against the City, its subsidiaries, employees, volunteers, directors and officers. Proof of proper insurance coverage, Workers Compensation Insurance, Liability and Property damage, and Vehicle Insurance shall be filed with the City of Torrington Purchasing Agent within 10 days after the award of the bid. The Certificate of Insurance must name the City of Torrington, 140 Main St., Torrington, CT, its subsidiaries, employees, volunteers, directors & officers as the additional insured and filed with the Purchasing Agent prior to commencement of work. Renewal Certificates of Insurance must be mailed to the Purchasing Agent 10 days prior to the expiration of the required coverage.

Workman's Compensation Insurance: The Contractor shall take out and maintain during the life of the contract adequate Workman's compensation Insurance for all the employees employed on said work. In case any class of employees or subcontractors is engaged in hazardous work under the contract at the site of the work is not protected under the Workman's Compensation statute, the contractor shall provide Workman's Compensation Insurance for the protection of employees not otherwise protected.

Liability Insurance: The Contractor shall take out and maintain for the life of the contract, adequate public liability insurance insuring against liability to persons not employed by him in an amount of not less than \$1,000,000.00 for injuries, wrongful death to any one person and subject to the limit for each person in an amount of not less than \$2,000,000.00 on account of one accident and property damage insurance in an amount of not less than \$1,000,000.00.

Vehicle Insurance: The Contractor shall take out and maintain for the life of the contract, adequate automotive/truck or other vehicle insurance with minimum coverages of \$1,000,000.00 each for both liability and under insured and uninsured motorist as well as any other coverages required by the State of Connecticut or requested by an official of the City of Torrington as relates to the contract.

Additional Security: The City of Torrington reserves the right to require successful bidders to enter into and such security arrangements as are deemed necessary to protect the City of Torrington, its property and goods.

PERMITS: The successful bidder agrees to obtain all work/building permits as might be required. The cost of obtaining such permits is the responsibility of the bidder. The City of Torrington reserves the right to waive local permit fees. In addition, it shall be understood that where property lines are to be considered, bidders are to verify said lines and measurements with proper City Officials prior to commencement of work.

It is to be understood that any/all specifications and/or plans or drawings contained in or developed as a result of the bid process are and shall be presented subject to the approval of the City of Torrington planning, zoning and building officials and that awards made prior to said approval are subject to cancellation.

PREVAILING WAGE: When the State of Connecticut Prevailing Wage Rate is applicable to the bid, the successful bidder must submit a Certified Payroll Record prior to any request and/or invoice for payment.

SAFETY:

Machine and/or Equipment Hazard Assessment and Safety Training: Upon delivery of machines and/or equipment, suppliers are required to provide to the end-user employees, at no additional charge, a training session which will emphasize hazard awareness and assessment and the safe use of such machinery/equipment.

Occupational Safety and Health Act of 1970: Seller shall warrant that the machinery, equipment or other materials covered hereby shall upon delivery to the City of Torrington, be in compliance with the standards required by said Act and any updates as pertain to or reference said Act as well as the standards required by comparable State and local laws, if any, for such machinery, equipment or other materials in effect at the time of delivery.

Machines and/or Equipment Lockout/Tagout: In an effort to comply with OSHA's final rule on the control of hazardous energy sources, vendors must warrant that any and all machines and/or equipment as is covered under this bid will be supplied and/or installed equipped with lockout/tagout devices as prescribed by OSHA.

Toxic Substance Control Act (PL94-469): Seller warrants that each and every chemical substance constituting or contained in the products sold or otherwise transferred to the City of Torrington under this bid and subsequent purchase orders is not on the list of

prohibited chemical substances compiled and published by the Administrator of the Environmental Protection Agency pursuant to Act PL94-469 and are otherwise in compliance with said Act.

Hazardous Materials: Any materials required by this bid and subsequent purchase orders that are hazardous under federal, state, or local statute, ordinance, regulation, or agency order will be packaged, labeled, marked and shipped by the seller to comply with all federal, state and local regulations then in effect including but limited to the provisions of the Hazardous Materials Transportation Act and Regulations promulgated thereunder and will further comply with any special requirements and any policies and procedures of the City of Torrington relating to the purchase of hazardous materials as might be noted on subsequent purchase orders or otherwise communicated to seller in writing.

Material Safety Data Sheets: Shall be provided by the Seller upon delivery to the City of Torrington of any goods having constituents listed in the following references - OSHA 1910, ACHIG Current Threshold Values, DOT HazMat Table 49, IARC Carcinogen List, National Toxicology Program Carcinogen List, and/or Radioactive Materials. These Material Safety Data Sheets must be consistent with and include information required by the OSHA Hazard Communication Standard published as 29 CFR 1910.1200, as the same may be amended or supplemented from time to time.

Asbestos: Bidders are advised that asbestos-containing material may be located in the boiler rooms, pipe tunnels, storage areas and various portions of City buildings. Before proceeding on any contractual work on City buildings or their interiors, it is mandatory that bidders familiarize themselves with the asbestos-containing material and that said material be considered as a health hazard and all precautionary measures according to the Ahera Rules & Regulations be observed. It is the bidder's responsibility to notify all employees and/or subcontractors of this notification.

SUBCONTRACTORS: The successful bidder shall not employ any subcontractor to fulfill any of the duties herein specified without express, prior written approval of the City of Torrington or its designated agent.

EEO: The successful bidder shall provide any/all additionally required, affirmative action statements, fair employment plans and non-discrimination programs and statement as might be required by the City of Torrington. In connection with the execution of this bid, subsequent purchase orders and/or contracts, the seller shall not discriminate against any employee or applicant for employment because of age, race, religion, color, sex or national origin. Bidders must comply with all rules & regulations of the Department of Labor with regard to Equal Employment Opportunities as pertains to municipalities.

TERMINATION OF CONTRACT: Any contract entered into by the City and the successful bidder shall provide that the City may terminate the contract upon thirty (30) days notice to the bidder.

The City of Torrington reserves the right to award or reject any or all bids, or any portion thereof, to waive technicalities, and to award the bid and/or contracts to one or more bidders submitting essentially identical proposals and, that in the city's judgment, will best serve the public interest.

The terms and conditions of these "Instructions To Bidders" are made a part this bid.

SAMPLE FORM

Bid # _____

NON-COLLUSION AFFIDAVIT

STATE OF _____ COUNTY OF _____

I, _____, being first duly sworn, deposes and says that:

1. I am _____ of _____, the bidder that has submitted the attached request for proposal for _____;
2. I am fully informed respecting the preparation and contents of the attached RFP and of all pertinent circumstances respecting such bid;
3. Such Bid is genuine and is not a collusive or sham Bid;
4. Neither the Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties of interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the work for which the attached Bid has been submitted nor has it in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the price of any Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Torrington or any person interested in the proposed Bid; and
5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of it agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed _____

Title _____

Subscribed and sworn to before this _____ day of _____, 20__.

Notary Public

My commission expires _____

SAMPLE FORM

BID # _____

**CONSENT OF SURETY COMPANY
TO RELEASE FINAL PAYMENT**

City
Architect
Contractor
Surety
Other

PROJECT/BID NUMBER :

TO: City of Torrington
 Attn: Purchasing Agent
 140 Main Street
 Torrington, CT 06790

CONTRACTOR: _____

In accordance with the provisions of the Contract between the City of Torrington and the Contractor as indicated above, the (insert name & address of Surety Co.)

SURETY COMPANY on bond of (insert name & address of Contractor) _____

CONTRACTOR, hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the CITY OF TORRINGTON as set forth in the Surety Company's bond.

before this
_____ day of _____, 20__.

Notary Public

Surety Company

Authorized Representative's Signature

My commission expires _____

Title

**LANDSCAPE IRRIGATION AT TORO FIELD
TECHNICAL SPECIFICATIONS
BID # TLI-032-091304**

SECTION 1 GENERAL

I. RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

II. DESCRIPTION OF WORK:

- A. The work contemplated by these specifications consists of the provisions of labor, material, equipment and services required for all work described herein.
- B. Unless otherwise specified, the plans and specifications are intended to include everything obviously requisite and necessary for proper installation and completion of the work whether each necessary item is mentioned herein or not.
- C. The plans and specifications are intended to be cooperative, and any item called for in one and not the other shall be as binding as if called for in both. If a discrepancy exists between an item called for in the plans and specifications, or within the plans or specifications, the most stringent shall apply.
- D. All work herein specified or called for on the drawings will be executed in accordance with all governing ordinances, laws and regulations that meet all local conditions. Additionally, any changes and/or additions in the work necessary to meet these ordinances, laws, regulations and/or conditions will be made without additional cost to the Owner.
- E. The work to be done under this contract includes, but is not limited to the following:
 - 1. Furnish and install new piping, fittings, isolation valves and necessary pipe line appurtenances including backflow assembly. Verify the pressure and provide a booster pump if the pressure is not adequate enough to supply the water supply.
 - 2. Furnish and install new electric control valve assemblies, sprinklers and swing joint assemblies.
 - 3. Furnish and install irrigation controllers including all necessary electrical connections with rain sensor and bypass.
 - 4. Provide one fall winterization of the system and one spring start-up.
 - 5. The City shall provide the water supply and power source at the existing building. The Irrigation Contractor shall provide any additional sleeving and conduit necessary to attach the irrigation system to the water supply and to the power source.

III. SITE INSPECTION:

- A. Each bidder shall visit the site of the proposed work and fully acquaint himself with the conditions there relating to construction and labor, and should fully inform himself as to the facilities involved, and the difficulties and restrictions attending the performance of the Contract. The bidder should thoroughly examine and familiarize himself with the drawings, technical specifications and all other bid and contract documents. The contractor, by the execution of the Contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal document or visit the site and acquaint himself with the conditions there existing and the Owner will be justified in rejecting any claim thereof.

IV. AS-BUILT DRAWINGS:

- A. After completion of the piping installation, the Contractor shall furnish as "as-built" drawing showing all sprinkler heads, valves, drains, and pipelines to scale with dimensions where required. Instruction sheets and parts lists covering all operating equipment will be bound into a folder and furnished to the Owner in duplicate.

V. INSTRUCTIONS:

- A. After completion and testing of system, the Contractor will instruct the Owner's personnel in the proper operations and maintenance of the system.

VI. GUARANTEE:

- A. For a period of one year from the date of final acceptance of the work performed under this contract, the Contractor shall promptly furnish, without cost to the Owner, any and all parts and labor which prove defective in material or workmanship. In the Fall following the installation, the Contractor shall winterize the system and the following Spring shall put the system back into operation. Winter damages due to improper winterization is the responsibility of the Contractor for that first year.

VII. SUBMITTALS:

- A. The Contractor shall submit the following samples, certifications or test results prior to use on the project.
 - 1. Shop Drawings: Indicate piping layout to water source, location of sleeves under pavement, location and coverage of sprinkler heads, plant and landscaping features, site structures, schedule of fittings to be used.
 - 2. Product Data: Provide component and control system and wiring diagrams.

VIII. OPERATION AND MAINTENANCE DATA:

- A. Provide instructions for operation and maintenance of system and controls, seasonal activation and shutdown and manufacturer's parts catalog.
- B. Provide schedule indicating length of time each valve is required to be open to provide a determined amount of water.

END OF SECTION

SECTION 2 PRODUCTS

The materials chosen for the design of the sprinkler system have been specifically referred to by the manufacturer so as to enable the Owner to establish the level of quality and performance required by the system design. Equipment by other manufacturers will be considered. Bidders shall supply documentation to prove their product equals or exceeds these specifications.

I. MATERIALS:

A. LARGE GEAR DRIVEN ROTARY SPRINKLER

1. The gear driven rotary sprinkler head shall be designed for in-ground installation. The sprinkler shall be capable of covering a 47 foot to 65 foot radius depending on the exact size of the nozzle. The sprinkler shall use 6.0 to 25.0 gallons per minute of water at 40 to 90 pounds per square inch of pressure.
2. Water distribution shall be via two nozzles mounted in a 1-1/2 inch diameter stainless steel nozzle turret. The nozzles shall be locked in the gear drive in a manner inaccessible to vandals. The nozzle assembly shall elevate approximately 2-3/8 inches when in operation and fully retract when not in use. A nozzle wiper seal shall be included in the sprinkler for continuous operation under the presence of sand and other foreign material.
3. Coverage shall be full or part circle. The part circle coverage shall be available in standard arcs of 90, 180, and 270 degrees. Rotation shall be accomplished by a sealed oil-packed gear assembly, with brass drive and bull gears, and totally isolated from the water supply. The thickness of the stainless steel drive assembly shall be no less than .024 inches.
4. The body of the sprinkler shall be constructed of non-corrosive high impact plastic with a thickness of no less than .2 inches. An integral check valve for the control of 15 feet elevation change shall also be included. All sprinkler parts shall be removable through the top of the unit in a manner that is inaccessible to vandals. The sprinkler shall have a one (1) inch I.P.S. water connection on the bottom of the sprinkler. This description is meant to describe the quality of product required but is not meant to eliminate other equal or better products. It is the responsibility of the Bidder to supply sufficient documentation to prove their product is equal or better than these specifications.
5. The coverage of the sprinkler shall have a minimum coefficient of uniformity of 91 and an R factor of 2.1.
6. The sprinkler shall have a 100 percent warranty for 5 years against defects in workmanship.
7. The sprinkler shall be a 640 series as manufactured by the Toro Company or equivalent.

B. ELECTRIC CONTROL VALVE

1. The automatic electric control valve shall be a 220 series as manufactured by the Toro Company or equal.
2. The control shall have a flow control to adjust flow volume or to manually close the valve. The valve shall have a manual bleed system for manual opening of the valve in the event of a loss of automatic operation.
3. A self-flushing filter screen shall be provided in the valve to filter the water supply to the actuator in the valve.
4. The control valve shall be operated automatically.
5. All component parts shall be serviceable without removing the valve from the line.

C. QUICK COUPLER VALVE

1. The quick coupler valve shall be a Toro model 470 series or equal.
2. The valve shall be constructed with a wall thickness guaranteed to withstand a normal working pressure of 150 psi without leakage.

D. AUTOMATIC CONTROLLER

1. The automatic controller shall offer at least four (4) independent programs for concurrent operation

capability:

- a. 7-day calendar
- b. Odd/even day
- c. Day interval options of 1 –30 days
- d. Excluded day option to allow selection of specific day(s) not to water.

2. **365 day clock/calendar with excluded day option ??? not necessary in Northeast**

3. Adjustable station run times of approximately 1 minute to 10 hours needed.
4. Seasonal adjustment settings from 10% to 200% in 10% increments and rain delay adjustment setting up to seven (7) days.
5. Programmable master valve with on/off for each program is required.
6. Automatic, semi-automatic, manual, and timed manual operations are required.
7. Easy removal of control module without disturbing the valve is required.
8. Non-volatile memory to retain program data due to power loss with 30 day or longer battery backup and a lightning surge protection system are required.
9. Metal case for automatic controller shall be weather resistant, locking cabinet with a heavy duty internal transformer.
10. Maximum output per station is 24 VAC, .5amps. Maximum output to valves is 24 VAC, 1.25 amps. Station capacity – up to 2 24 VAC, .25 amp solenoids per station plus master valve.
11. The automatic controller shall meet or exceed the specifications of a Custom Command Controller as manufactured by The Toro Company.

E. RAIN GAUGE

1. The rain gauge device shall be designed to prevent sprinkler operation during rainfall. The rain gauge shall be easily wired into any new or existing sprinkler control system.
2. The rain gauge shall be U.L. listed and warranted for 5 years.

F. BACKFLOW PREVENTER

1. The backflow preventer shall meet or exceed the specifications of a FEBCO 825Y reduced pressure backflow preventer.
2. Check valve and relief valve components shall be constructed so they may be serviced without removing the valve body from the line. Shut off valves shall be fully ported.
3. The device shall be rated to 175 psi water working pressure and water temperature range from 32 degrees F to 140 degrees F.

G. BOOSTER PUMP ASSEMBLY

1. The booster pump shall be specifically designed for booster service.
2. The pump shall meet or exceed the specifications of a J series pump as manufactured by Sta Rite Industries, Delavan, WI.
3. The pump shall be capable of 5 to 40 gpm at a 20 to 50 psi boost.
4. The pump start shall be either from a relay or from the Irrigation Controller.

H. VALVE ACCESS BOX

1. Valve boxes shall be a rigid construction especially designed for underground enclosures. It shall be chemically inert and normally unaffected by moisture, corrosion and temperature changes.
2. The contractor shall fill the entire area beneath the box with a minimum of 4 inches of pea gravel before the installation of each box.

3. The valve boxes shall meet or exceed the specifications of model BKS1419-12WC, NDS-212BC, and/or NDS-108BC as manufactured by Brooks Industries, Flora, MS.

I. PVC PIPE

1. All PVC pipe specified on the plan is virgin, high impact, PVC pipe with a minimum working pressure of Class 200.
2. All PVC pipe shall be continuously and permanently marked with manufacturer's name, material, size and schedule or type. The pipe shall be capable of withstanding a minimum 1000 hour long term pressure test of 420 psi and a quick term burst test of 630 psi.
3. The pipe shall conform to U.S. Dept. of Commerce Commercial Standard CS 207-60, latest revision.
4. Fittings for use with the PVS pipe shall be schedule 40 fittings produced from PVC Type 1. The fittings shall be listed by the National Safety Foundation for potable water services, the IAPMO for water service & gas yard piping and shall meet ASTM-D1784 and ASTM-D2466.
5. Cement for use on PVC fittings shall be NSF approved for Type I and II PVC pipe and schedule 40 fittings and meet ASTM-D2564 & F-493.

J. WIRE SPLICING KITS

1. Wire splicing kits for single U.F. wire connections shall be direct burial kits.
2. Direct burial kits shall have an application temperature range of 32 degrees F to 120 degrees F and service 600 VAC maximum.
3. Direct burial Y kits shall allow connections of two (2) to five (5) #18 AWG or two (2) # 12 AWG solid or stranded copper wire. Direct burial R kits shall allow connections of two (2) to five (5) #16 AWG or three (3) #10 AWG solid or stranded copper wires.

K. GATE VALVE

1. Bronze construction conforming to ASTM B62 with cast iron hand wheel conforming to ASTM A126 is preferred. Bidders submitting proposals using other materials are required to submit sufficient documentation that the proposed gate valve meets or exceeds the specification of the gate valve manufactured by Aqua Valve Co., Orinda, CA and the specifications listed in this section.
2. The gate valve shall have a working non-shock pressure of 125 psi for saturated steam and 200 psi for cold water, oil and gas. The body shall have a hydrostatic test pressure of 300 psi and the seat shall be at 200 psi.

L. CONTROL AND COMMON WIRE

1. All control and common wire shall be #14 U.F. direct burial. The wire shall be solid copper and insulated with PVC. Control wire shall be red and common wire white.
2. Expansion curls shall be provided within three (3) feet of each wire connection to a solenoid and at least every 300 feet in length. Expansion curls are formed by wrapping at least 5 turns of wire around a 1" or larger diameter rod or pipe, then withdrawing the pipe.

M. SWING JOINT ASSEMBLY

1. All 1" swing joint assemblies for sprinklers shall be pre-assemble units form the factory and made of Schedule 80 PVC. Swing joint consists of four (4) 90 degree elbows and one (1) 12" long nipple with 90 degree bend on one end. All swing joint assemblies shall be made from virgin PVC Type 1, Cell classification 12454-B material listed for potable water conveyance by NSF. Working pressure shall be 200 psi combined static and surge.
2. The 1" assemblies for quick coupling valves shall be made of Schedule 80 PVC swing joint equivalent in quality to those manufactured by Lasco.

END OF SECTION

SECTION 3 EXECUTION

I. DEPTH OF COVER

- A. Minimum depth of cover over piping used as lateral water distribution piping downstream of a control valve shall be twelve (12) inches. Main water distribution piping under continuous pressure shall have 12 to 18 inches of cover.

II. TESTING THE SYSTEM

- A. The entire system shall be tested at the normal system working pressure and upon visual inspection of the ground, should any leak be found, it shall be promptly repaired. The line shall then be retested until satisfactory.

III. TRENCH SETTLEMENT

- A. If within one year from completion date, major settlement occurs such that an adjustment in pipe, sprinkler heads, topsoil and seed or paving is needed to bring the system to the proper level of the permanent grade, the Contractor, as part of the work under this contract, shall make said adjustments without extra costs to the City.

IV. ADJUSTING AND BALANCING THE SYSTEM

- A. All areas of the irrigation shall be inspected to insure proper coverage. If necessary, the Contractor shall adjust or change nozzles of sprinkler heads to correct any over-coverage or under-coverage.

V. WATERLINE

- A. The alignment of water line, as shown on the plan, is only approximate and may be changed at the time of construction in order to avoid trees, shrubs, plantings, and/or other obstacles.

VI. ELECTRICAL INSTALLATION

- A. The contractor will be required to make connections to the building electrical system as is required for the proper operation of the automatic control system.
- B. All control circuitry, whether electrical or hydraulic, passing through the wall of the building or beneath a sidewalk, road, or drive shall be installed in a suitable sleeve; whereas in all other locations they shall be installed in the pipe trench and protected by the pipe whenever possible.
- C. The joining of all underground wires shall be by the use of wire nuts covered with Scotchlok or installation instruction provided by the manufacturer.
- D. Expansion curls shall be provided within three (3) feet of each wire connection to a solenoid and at least every 300 feet in length. Expansion curls are formed by wrapping 5 or more turns of wire around a 1" or larger diameter pipe or rod, then withdrawing the rod.

VII. HEAD INSTALLATION

- A. Install 1" inlet heads on Schedule 40 PVC (3) el joints with an 8" lay length.
- B. Backfill the head in clean, native material, Install flush with grade.
- C. Adjust the radius and arc to avoid spraying buildings or into the road.
- D. Attach to the pipe with fpt tees.

VIII. VALVE INSTALLATION

- A. Athletic field control valves: install on toe nipples, 6" inlet and outlet, 3" between the gate valve and the control valve. Install a gate valve before the control valve. Install in a standard valve box. Use direct burial Y splice kit for the wire attachment.
- B. Install a line sized gate valve on toe nipples in standard valve boxes.
- C. Install 1" quick coupler valve on a brass el before the backflow for winterization point. Install 1" coupler

valve on locking swing joint in standard box.

IX. WATER PIPING INSTALLATION

- A. Install pipe, valves, controls and outlets in accordance with manufacturer's instructions.
- B. Connect to water service.

X. PLANS

- A. The City will provide a hard copy of the plans referenced in this specification to potential bidders.
- B. Potential bidders may call the Purchasing Department (860) 489-2224 to request the plans be mailed to the bidder.
- C. Bidders may pick up a copy of the plans at the Purchasing Department, Room 109A, Torrington Municipal Building, 140 Main Street, Torrington, CT 06790 during business hours.
- D. The plans reference equipment manufactured by the Toro Company. This reference in no way prevents bidders from proposing other manufacturer's equipment/material. The reference is meant to be a guide for the level of material/equipment quality required for this project.
- E. Bidders submitting proposals using other manufacturers equipment/material must provide sufficient specification documentation for the City to determine that the quality of the proposed material/equipment equals or exceeds that manufactured by The Toro Company.

END OF SECTION