

CITY OF LEANDER

REQUEST FOR QUOTE

CITY OF LEANDER – PUBLIC WORKS
LANDSCAPE AND DRIP IRRIGATION INSTALLATION

DUE 12/10/15

PART I

GENERAL

1. **PURPOSE:** The City of Leander, herein after “City”, seeks to establish a contract with a qualified person, firm or corporation, herein after “Respondent”, to provide full, turnkey services inclusive of necessary equipment and labor to install landscape materials and design and installation of a drip irrigation system at the City of Leander Public Works Facility, 607 Municipal Drive.
2. **SCOPE OF WORK:** The project includes removal of existing vegetation and soil, placement of plants, shrubs, trees, metal edging, design and installation of a drip irrigation system. The Drip Irrigation System must be designed by a licensed Irrigator according to applicable TCEQ and City of Leander Codes and Regulations. The respondent must obtain a commercial irrigation permit from the City’s Building Inspections Department. Contact Linda Alger, the Building Official at 512-528-2746 regarding the irrigation permit.
3. **Budget for the Scope of Work outlined herein is \$40,000.**
4. **DEFINITIONS, TERMS AND CONDITIONS:** By submitting a response to this solicitation, the Respondent agrees that the City’s standard Definitions, Terms and Conditions, in effect at the time of release of the solicitation, shall govern but shall be superseded by those terms and conditions specifically provided for otherwise within this solicitation, in a separate agreement or on the face of a purchase order. The City’s Definitions, Terms and Conditions are herein made a part of this solicitation and can be found on the City’s website by visiting <http://www.leandertx.gov/finance/page/purchasing>.
 - 4.1. Any acceptance to or additional terms and conditions attached to the response will not be considered unless respondent specifically references them on the front of the response document. WARNING: Exception to or additional terms and conditions may result in disqualification of the response.
5. **ATTACHMENTS:** Attachment A through G are herein made a part of this solicitation:
 - 5.1. Attachment A: Reference Sheet
 - 5.2. Attachment B: Conflict of Interest Questionnaire (CIQ)
 - 5.3. Attachment C: Quote Sheet
 - 5.4. Attachment D: Planting and Irrigation Specifications
 - 5.5. Attachment E: Landscape and Irrigation Plans for Leander Public Works
 - 5.6. Attachment F: Insurance Requirements
 - 5.7. Attachment G: TXDOT Traffic Controls

6. **CLARIFICATION:** For questions or clarifications of the plans or specifications, you may contact:

Patrick A. Womack, P.E.
Public Works Director
City of Leander
Telephone: 512-528-2783
pwomack@leandertx.gov

The individual listed above may be contacted by telephone, email, or visited for clarification of the plans and specifications only. No authority is intended or implied that specifications may be amended or alterations accepted prior to solicitation opening without written approval of the City through the Purchasing Department.

7. **REQUIREMENTS:** The opening of a solicitation shall not be construed as the City's acceptance of such as qualified and responsive. All Respondents shall:

- 7.1. Be firms, corporations, individuals or partnerships normally engaged in the sale and distribution of commodity or provision of the services as specified herein.
- 7.2. Have adequate organization, facilities, equipment and personnel to ensure prompt and efficient service to the City.
- 7.3. Identify any subcontractors to be used for this project. The City reserves the right to approve or disapprove all subcontractors prior to any work being performed.

8. **AGREEMENT TERM AND CANCELLATION:** The term "agreement" shall mean the executed contract awarded as a result of this solicitation and all exhibits thereto.

- 8.1. At a minimum, the following documents will be incorporated into the agreement:

- 8.1.1. Solicitation document, attachments and exhibits;
- 8.1.2. Solicitation addendums, if applicable;
- 8.1.3. City's Definitions, Terms and Conditions;
- 8.1.4. Successful Respondent's response documents.

- 8.2. The initial term of the resulting agreement shall be substantial completion of the project sixty (60) days and final completion seventy-five (75) days from the notice to proceed. The agreement may be extended, provided both parties agree in writing prior to the expiration of the current term.

- 8.3. If the Respondent fails to perform its duties in a reasonable and competent manner, the City shall give written notice the Respondent of the deficiencies and the Respondent shall have fifteen (15) days to correct such deficiencies. If the Respondent fails to correct the deficiencies with the fifteen (15) days, the City may terminate the agreement by giving the Respondent written notice of termination and the reason for the termination.

- 8.4. If the agreement is terminated, for any reason, the Respondent shall turn over all records, to include but not be limited to the following: records of repairs, services, deliveries, and replacement parts, to the City within fifteen (15) working days after completion of duties contained in the agreement.

9. **PRICE INCREASE OR DECREASE:** A price increase shall not be permitted, without prior approval by the City.

10. **BUDGET AND QUANTITY:** The quantities shown on the Bid Form are estimates only.

11. **AWARD:** The City reserves the right to enter into an agreement or a purchase order with a single award, split award, non-award, use any combination that best serves the interest and at the sole discretion of the City. Award announcement will be made upon City Manager Council approval of staff recommendation and executed agreement. Award announcement will appear on the City's website at <http://www.leandertx.gov/finance/page/purchasing>.
 - 11.1. Chapter 176, Texas Local Government Code requires that disclosures of certain relationships be made in relation to certain contracts with the City. Local government officers are the members of the City Council, the City Manager, and other City employees or agents who exercise discretion in planning, recommending, selecting and contracting of a vendor. Please contact the City Secretary for a list of additional City employees and agents who may qualify as local government officers. Click here [Chapter 176, Texas Local Government Code](#), to review this requirement.
 - 11.1.1. The Local Government Officers that may be involved in the selection and recommendation of this award are:
 - Christopher Fielder, Mayor
 - Andrea Navarrette, Council Member Place 1
 - Michelle Stephenson, Council Member Place 2
 - Shanan Shepherd, Council Member, Place 3
 - Ron Abruzzese, Council Member Place 4
 - Jeff Seiler, Council Member Place 5
 - Troy Hill, Council Member Place 6
 - Kent Cagle, City Manager
 - Tom Yantis, Assistant City Manager
 - Joy Simonton, Purchasing Agent
 - Paige Saenz, City Attorney
 - Patrick Womack, Director of Public Works
 - Michael Riley, Streets Supervisor
 - Albert Wininger, Public Works Superintendent
 - 11.1.2. A completed CIQ Form, herein Attachment B, is required with each response.
12. **ACCEPTANCE:** Acceptance inspection should not take more than ten (10) working days after performance of Services. The vendor will be notified within this time frame if the goods delivered or services performed are not in full compliance with the specifications. If any agreement or purchase order is canceled for non-acceptance, the needed good or service may be purchased elsewhere and the vendor may be charged full increase, if any, in cost and handling.
13. **DAMAGE:** The successful Respondent shall be responsible for damage to all City, State, Federal or private equipment and/or property, the workplace and its contents by its work, negligence in work, its personnel and equipment. The Vendor shall be responsible and liable for the safety; injury and health of its working personnel while its employees are performing service work.
14. **ENVIRONMENT:** It is the intent of the City to purchase goods and services having the least adverse environmental impact, within the constraints of statutory purchasing requirements, departmental needs, availability, and sound economic considerations. Suggested changes and environmental enhancements for possible inclusion in future revisions of this specification are encouraged.

PART II

SCHEDULE

1. **SOLICITATION SCHEDULE:** It is the City's intention to comply with the following solicitation timeline:
 - 1.1. Quotes due by **5:00 PM** **December 10, 2015**

PART III

SPECIFICATIONS

1. **SCOPE OF WORK:** The scope of work is as described above in Part I, paragraph 2 and in accordance with the attached Specifications (Attachment D) and Plans (Attachment E).
2. **SERVICE REQUIREMENTS:** The successful Respondent shall:
 - 2.1. Obtain and provide all supervision, labor, equipment, services, fuel, oil, incidentals, permits, notifications and related items necessary to complete the Project specified herein;
 - 2.2. Furnish all tools, hard hats, safety vests, rubber boots, gloves, transportation to and from the work area, and all other safety materials or devices necessary for workers to perform the work in a safe and orderly manner;
 - 2.3. Provide all traffic control signage in accordance with TXDOT requirements specified in Attachment G;
 - 2.4. Have an on-site supervisor at the site any time work is performed;
 - 2.5. Protect all existing and newly installed work, materials, equipment, improvements, utilities, structures, and vegetation. Any property or incidentals damaged shall be repaired or replaced by the successful Respondent to the satisfaction of the City;
 - 2.6. Perform on a schedule defined by the City to the specifications defined herein;
 - 2.7. Perform in a professional workmanlike manner;
 - 2.8. Submit invoice along with all supporting documentation specified herein.
3. **CITY RESPONSIBILITY:** The City shall:
 - 3.1. Appoint a designated City representative;
 - 3.2. Monitor and inspect the ground maintenance at designated sites;
 - 3.3. Coordinate all work and scheduling with the successful Respondent.
4. **EQUIPMENT:** Prior to start of Services, all equipment may be examined and approved by City. The City reserves the right to randomly inspect all equipment at any time during the term of the agreement or any extension period. The following equipment requirements shall apply:
 - 4.1. Insufficient and/or inadequate equipment as determined by the City is cause for rejection of any and all proposals;
 - 4.2. Equipment may be stored on Project Areas overnight, outside of the rights-of-way.
5. **SCHEDULING:** The Project shall be completed from 60 calendar days from the Notice to Proceed not to exceed complete installation by April 1, 2016.
 - 5.1. Work shall be performed Monday through Saturday between the hours of 7:00 AM and 9:00 PM;
6. **PROJECT AREA PREPARATION:** Prior to installation, the contractor must
 - 6.1. Remove trash, litter and debris within the limits of the construction area(s);
 - 6.2. Remove foreign growth such as weeds, thickets and noxious plants;
 - 6.3. Remove dead plant material;

7. **DAMAGE:** Damage caused to City, State, Federal or private property as a result of performance of Services shall be remedied at the expense of the successful Respondent.
 - 7.1. The successful Respondent shall inspect all areas, structures and utilities for any existing damage prior to conducting any work activity in the assigned Project Areas. Observed damage shall be documented to the City prior to beginning any Services. Project Areas may be checked for damage by the City prior to commencement of Services, and randomly during the Agreement term at the option of the City. Repair or replacement of fences, structures and utilities shall be at the expense of the successful Respondent.
 - 7.2. Successful Respondent shall, at his own expense, carefully protect all trees, structures and utilities within Project Areas so that there shall be no damage or utility service loss.
 - 7.3. The City shall be notified immediately of any damage.
 - 7.4. The successful Respondent shall be responsible for all claims of car or windshield damage as result of performing Services.
 - 7.5. The successful Respondent shall designate a contact person for damage claims.
8. **WORK CREW:** Only qualified, trained, competent and reliable personnel shall perform Services.
 - 8.1. The City shall have the right to request the immediate removal from its premises of any crew member or subcontractor crew member if they are not in compliance with this specification.
 - 8.2. Each work crew shall have a designated, English-speaking or bi-lingual Supervisor attending the work site with the authority to direct Service and respond to crew inquiries about Service details or priorities.
9. **SAFETY OF WORK CREW:** Due to the high traffic areas and visibility of work crews from the roadways, safety of the work crews shall include but not be limited to the following:
 - 9.1. Successful respondent's crew shall wear and display proper warning devices (safety vest, flashers, strobe lights and warning signs) in order to ensure both employee and public safety. Crew shall dress and remain dressed in a presentable fashion. Inappropriate dress includes, but is not limited to, bare chest (no shirt) or shorts or the improper use of safety clothing and devices.
 - 9.2. Crew shall wear protective eye and ear wear.
 - 9.3. The successful Respondent shall be responsible for furnishing all signs and traffic controls as required by TXDOT on Attachment E and make adjustments as required by City.
 - 9.4. All signs shall be mounted on their own stands and be mounted not less than three feet (3 ft.) from the bottom of the sign to the natural ground line. Each sign shall have two brightly colored safety flags attached to it. It will not be permissible to hang or lean these signs. The signs shall be erected in such a manner that they shall not obstruct the traveling public view of the normal roadway signing.
 - 9.5. All mowers shall display a slow-moving vehicle emblem affixed to rear of mower;
 - 9.6. All trucks shall display a highly-visible, 5-inch in diameter, omni-directional amber flashing light.
10. **VEHICLE IDENTIFICATION AND PARKING:** Successful respondent vehicles shall be licensed for travel on public roads, and shall have the name of the successful Respondent clearly displayed on each side of the vehicle.
 - 10.1. Vehicles shall park in areas that do not create potentially hazardous traffic situations;

11. **COMMUNICATION:** The successful Respondent shall provide communication equipment as necessary to perform the Services. This may include 2-way radios, pagers, cellular phones, telephone answering devices, and fax machine.
 - 11.1. The successful Respondent shall respond to communication requests from the City within three (3) hours during the normal working hours of 7:00 a.m. to 4:00 p.m.
 - 11.2. The successful Respondent shall make contact with the City, at a time mutually agreed upon by the City and the successful Respondent. This contact is for the purpose of discussing areas to be maintained, Successful Respondent's work schedule for the day, areas to be inspected for approval, and Work Authorizations that need to be signed. **Failure to contact the City's authorized designee, or designee, per the agreed upon schedule may constitute a breach of Contract and termination of Agreement.**
12. **WORK AUTHORIZATION, INSPECTION OF WORK AND WORK RECORD SUMMARY:**
 - 12.1. A Work Authorization or Notice to Proceed shall be issued from the City as notification to begin Services in the designated Project Areas.

PART IV

RESPONSE REQUIREMENTS

The City of Leander makes no warranty that this checklist is a full comprehensive listing of every requirement specified in the solicitation. This list is only a tool to assist participating Respondents in compiling their final responses. Respondents are encouraged to carefully read the entire solicitation.

Respondent shall submit one (1) executed (signed) original and two (2) copies of each response.

For your bid to be responsive, all required attachments identified below shall be submitted with your proposal. The Samples and/or copies shall be provided at the Respondent's expense, and shall become the property of the City unless the Respondent provides a return envelope and postage.

1. Responses shall be submitted on itemized, signed Quote Sheet provided herein. Failure to itemize or sign solicitation may result in disqualification. Submission of responses on forms other than the City's Solicitation Document may result in disqualification of the response.
 - 1.1. In the event of errors in extension pricing, unit prices shall govern.
2. Attachment A: Reference sheet that shall include the name, address, active telephone number and **valid E-mail** of at least three (3) Municipal and Government agencies or firms of comparable size that have utilized similar services within the last two (2) years.
3. Attachment B: Conflict of Interest Questionnaire (CIQ)

PART V

1. **CONFIDENTIALITY OF CONTENT:** All documents submitted in response to a solicitation shall be subject to the Texas Public Information Act. Following an award, responses are subject to release as public information unless the response or specific parts of the response can be shown to be exempt from the Texas Public Information Act. Pricing is not considered to be confidential under any circumstances.

- 1.1 Information in a submittal that is legally protected as a trade secret or otherwise confidential must be clearly indicated with stamped, bold red letters stating "CONFIDENTIAL" on that section of the document. The City will not be responsible for any public disclosure of confidential information if it is not clearly marked as such.
- 1.2 If a request is made under the Texas Public Information Act to inspect information designated as confidential, the Respondent shall, upon request from the City, furnish sufficient written reasons and information as to why the information should be protected from disclosure. The matter will then be presented to the Attorney General of Texas for final determination.

2. **ETHICS ORDINANCE AND DISCLOSURE STATEMENTS:** The City's Ethics Ordinance requires persons seeking to enter discretionary contracts with the City or appearing before the City Council or another City board or body to disclose certain conflicts of interest. The relevant sections of the Ethics Ordinance are set forth below. The Ethics Ordinance can be found in Article 9.05, Chapter 9 of the City's Code of Ordinances at the following link:
<http://z2codes.franklinlegal.net/franklin/Z2Browser2.html?showset=leanderset>

Sec. 9.05.007 Persons doing business with the city

(a) Persons seeking discretionary contracts.

- (1) For the purpose of assisting the city in the enforcement of provisions contained in this article, an individual or business entity seeking a discretionary contract from the city is required to disclose in connection with a proposal for a discretionary contract any conflict of interest. This is set forth in [sections 9.05.004](#) and [9.05.005](#) of this article. Further, the individual or business entity agree to abide by the same ethical standards as set forth for public servants in this article.
- (2) Subsection (a) of this section will become a permanent footnote on documents contained in city bid packets for discretionary contracts.

(b) Disclosure of conflicts of interest by persons appearing before a board or city body. A person appearing before any city board or other city body for the purpose of doing business with the city shall disclose to that board or body any facts known to such person which may show or establish that:

- (1) An employee or officer of the city that advises or makes presentations to the board or city body; or
- (2) Any member of the board or city body; has or may have a conflict of interest pursuant to chapter 171, Tex. Loc. Gov't. Code, or an interest which would violate the ethical standards set forth in this article, if he or she were to participate in the processing or consideration of the subject matter.

Sec. 9.05.009(f) Disclosure by persons appearing before a city body. Any person who appears before any city body who has had business dealings within the preceding 12-month period involving one or more transactions of five hundred dollars (\$500.00) or more each quarter, or for a total of twenty-five hundred dollars (\$2,500.00) or more, within the preceding 12-month period with a councilmember, commissioner, or business entity in which a councilmember or commissioner has a substantial interest, shall disclose such business dealings at the time of the appearance. Any person who shall intentionally or knowingly fail to make the aforesaid disclosure shall be guilty of a misdemeanor and shall be fined in accordance with this article.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

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

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information in this section is being disclosed.

Name of Officer

This section (item 3 including subparts A, B, C, & D) must be completed for each officer with whom the vendor has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

Yes No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more?

Yes No

D. Describe each employment or business and family relationship with the local government officer named in this section.

4

Signature of vendor doing business with the governmental entity

Date

ATTACHMENT C – QUOTE FORM

TABLE OF CONTENTS

	Page
Article 1 – Bid Recipient	1
Article 2 – Bidder’s Acknowledgements	1
Article 3 – Bidder’s Representations	1
Article 4 – Bidder’s Certification	2
Article 5 – Basis of Bid.....	3
Article 6 – Time of Completion	7
Article 7 – Attachments to This Bid	4
Article 8 – Defined Terms.....	4
Article 9 – Bid Submittal	4

ATTACHMENT C – QUOTE FORM

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Patrick A. Womack, Public Works Director, City of Leander, at 200 W. Willis, Leander, Texas 78646

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified as containing reliable "technical data." Note: Record Drawings of recent Municipal Drive Improvement will be given to the Contractor with the Notice of Award.

ATTACHMENT C – QUOTE FORM

- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
 - F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
1. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices

ATTACHMENT C – QUOTE FORM

at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Base Bid:					
Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Shade Tree Installation Only (tree provided by owner)	EA	12		
2	Shade Trees	EA	25		
3	Ornamental Grasses (5 gal.)	EA	155		
4	Ornamental Grasses (1 gal.)	EA	48		
5	Shrubs/Perennials (5 gal.)	EA	34		
6	Shrubs/Perennials (1 gal.)	EA	59		
7	Vines (1 gal.)	EA	27		
8	Steel Edging	LF	913		
9	Planting Bed Mix (8 in. depth)	CY	142		
10	Hardwood Mulch (3 in. depth)	CY	69		
11	Irrigation (drip beds, tree bubblers, main line, laterals, valves, wire, controller, backflow preventer, etc.)	LS	1		
Total of All Bid Prices					\$

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14 (Part I).
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ATTACHMENT C – QUOTE FORM

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Bid security;
 - B. Complete responses to information required in Bid;
 - C. Entire Bid with all blanks filled in completely.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

ATTACHMENT C – QUOTE FORM

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in [State where Project is located] is
____/____/____.

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of first joint venture partner -- attach evidence of authority to

sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of second joint venture partner -- attach evidence of authority to

sign)

Name (typed or printed): _____

ATTACHMENT C – QUOTE FORM

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address _____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20____.

State Contractor License No. _____. *[If applicable]*

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

SECTION 32 84 00 – IRRIGATION SYSTEM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Furnish all work and materials, appliances, tools, equipment, facilities, transportation, point of connection and all other services required for the installation of a complete underground permanent, as shown on drawings and/or specified herein. When the term "Contractor" is used in this section, it shall refer to the Irrigation Contractor.

1.2 QUALITY ASSURANCE

- A. The following Codes, Regulations, Reference Standards, and Specifications apply to work included in this section: ASTM: D2241, D2464, D2466, D2564, and D855.

1.3 WARRANTY AND MAINTENANCE

- A. The Contractor shall warranty material and workmanship for one year after final acceptance including repair and replacement of defective materials, workmanship, and labor.
- B. Maintenance during warranty shall include, but not necessarily be limited to, the following:
 - 1. Adjustment of sprinkler height and plumb to compensate for settlement and/or plant growth.
 - 2. Backfilling of all trenches.
 - 3. Adjustment of head coverage (arc of spray) as necessary.
 - 4. Unstopping heads plugged by foreign material.
 - 5. Drip System:
 - a. Remove disc stack and rinse with water and replace every 6 months.
 - b. Compare the controller runtimes and frequency to the to the application rate for Techline CV at the spacing used. If the amount of water in inches/hour is insufficient or exceeds the requirement of the plant, adjust accordingly.
 - c. Refer to "Techline Design Manual" by Netafimusa.com.
 - 6. Adjustment of controller as necessary to insure proper sequence and watering time.
 - 7. All maintenance necessary to keep the system in good operating order. Repair of damage caused by vandals, other contractors or weather conditions shall be considered extra to these specifications.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. Warranty and maintenance after final acceptance does not include alterations as necessitated by re-landscaping, re-grading, addition of trees or the addition, and/or changes in sidewalks, walls, driveways, etc.
- D. Contractor must declare compliance with section 1903.251, Texas Occupations Code.

1.4 SUBMITTALS

- A. The Contractor shall submit shop drawings or manufacturer's "cut sheet" for each type of sprinkler head, nozzle, pipe, controller, valves, check valve assemblies, valve boxes, wire, conduit, fittings, drip irrigation lines and components, and all other types of fixtures and equipment proposed to install on the job. The submittal shall include the manufacturer's name, model number, equipment capacity, and manufacturer's installation recommendation, if applicable, for each proposed item.
- B. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Owner's Representative.
- C. Shop drawings shall include dimensions, elevations, construction, details, arrangements, and capacity of equipment, as well as manufacturer's installation recommendations.

1.5 "APPROVED EQUAL" SUBSTITUTIONS

- A. Several items in this section and on the plans are specified by a manufacturer's brand name and catalog number, followed by the phrase "or approved equal". This is not intended to unduly restrict competitive procurements or bidding, but is done to assure a minimum standard of quality which is believed to be best for the item specified.

1.6 CODES/PERMITS

- A. All work under this section shall comply with the provisions of these Specifications, as illustrated on the accompanying drawings, or as directed by the Owner's Representative and shall satisfy all applicable local codes, ordinances, or regulations of the governing bodies and all authorities having jurisdiction over this Project.
- B. Installation of equipment and materials shall be done in accordance with requirements of the National Electrical Code, Applicable City Plumbing Code, and standard plumbing procedures. The drawings and these Specifications are intended to comply with all the necessary rules and regulations; however, some discrepancies may occur, the Contractor shall immediately notify the Owner's Representative in writing of the discrepancies and apply for an interpretation. Should the discovery and notification occur after the execution of a contract, any additional work required for compliance with the regulations shall be paid for as covered by these Contract Documents.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. The Contractor shall give all necessary notices, obtain all permits, and pay all costs in connection with his work; file with all governmental departments having jurisdiction; obtain all required certificates of inspection for his work and deliver to the Owner's Representative.
- D. The Contractor shall include in the work any labor, materials, services, apparatus, or drawings in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on the drawings and/or specified.
- E. The installation of the irrigation system shall be made by an individual or firm duly qualified with a minimum of five years experience installing systems of similar size and scope, and licensed under Article No. 8751 VTCS, Titled "Licensed Irrigators Act", S.B. No. 259 as passed by the 66th Texas Legislature.

1.7 EXISTING UTILITIES

- A. Locations and elevations of various utilities included with the scope of this work have been obtained from the most reliable sources available and should serve as a general guide without guarantee to accuracy. The Contractor shall examine the Site and verify to his own satisfaction the locations and elevation of all utilities and availability of utilities and services required. The Contractor shall inform himself as to their relation to the work and the submission of bids shall be deemed as evidence thereof. The Contractor shall repair at his own expense, and to the satisfaction of the Owner, for damage to any utility shown or not shown on the plans.
- B. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify the Landscape Architect for instructions as to further action.
- C. Contractor shall make necessary adjustments in the layout as may be required to connect to existing stub-outs, should such stub-outs not be located exactly as shown and as may be required to work around existing work, at no increase in cost to the Owner. All such work will be recorded on record drawings and turned over to the Owner prior to final acceptance.

1.8 RECORD DRAWINGS

- A. Record dimensioned locations and depths for each of the following:
 - 1. Point of connection to proposed backflow device as shown on plan.
 - 2. Sprinkler pressure line routing (provide dimensions for each 100 lineal feet (maximum) along each routing, and for each change in directions).
 - 3. Gate valves.
 - 4. Sprinkler control valves (buried only).
 - 5. Control wire routing.
 - 6. Drip irrigation assemblies.
 - 7. Other related items as may be directed by the Owner's Representative.
- B. Locate all dimensions from two permanent points (buildings, monuments, sidewalks, curbs, or pavements).

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. Record all changes which are made from the Contract drawings, including changes in the pressure and non-pressure lines.
- D. Record all required information on a set of blackline prints of the Contract drawings. Do not use these prints for any other purpose.
- E. Maintain information daily. Keep Contract drawings at the Worksite at all times and available for review by the Owner's Representative.

1.10 CONTROLLER CHART

- A. Do not prepare chart until record drawings have been approved by the Owner's Representative.
- B. Provide one controller chart for the stations used on the automatic controller(s).
 - 1. Chart may be a reproduction of the record drawing, if the scale permits fitting within the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
 - 2. Chart shall be blackline print of the actual system, showing the area covered by that controller.
- C. Identify the area of coverage of each remote control valve, using a distinctly different pastel color, drawn over the entire area of coverage.
- D. Following approval of chart by the Owner's Representative, it shall be hermetically sealed between two layers of 20 mil. thick plastic sheet.
- E. Chart must be completed and approved prior to final acceptance of the irrigation system.

1.11 OPERATING AND MAINTENANCE MANUALS

- A. Provide individual bound manuals detailing operating and maintenance requirements for irrigation systems.
- B. Manuals shall be delivered to the Owner's representative for review and approval no later than 10 days prior to completion of work. Revise manual as required.
- C. Provide descriptions of all installed materials and systems in sufficient detail to permit maintenance personnel to understand, operate, and maintain the equipment.
- D. Provide the following in each manual:
 - 1. Index sheet, stating Irrigation Contractor's name, address, telephone number, and name of person to contact.
 - 2. Duration of guarantee period.
 - 3. Equipment list providing the following for each item:

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- a. Manufacturer's name.
 - b. Make and model number.
 - c. Name and address of local manufacturer's representative.
 - d. Spare parts list in detail.
 - e. Detailed operating and maintenance instructions of major equipment.
4. Recommended programs for watering by season.

1.12 CHECKLIST

- A. Provide a signed and dated checklist, and deliver to the Owner's Representative prior to final acceptance of the work.
- B. Use the following format:
1. Plumbing permits: if none required, so note.
 2. Material approvals: approved by and date.
 3. Pressure line tests: by whom and date.
 4. Record Drawings: received by and date.
 5. Controller charts: received by and date.
 6. Materials furnished: received by and date.
 7. Operation and maintenance manuals: received by and date.
 8. System and equipment operation instructions: received by and date.
 9. Manufacturer's warranties if required: received by and date.
 10. Written guarantee: received by and date.
 11. Lowering of heads in lawn areas: if incomplete, so state.

1.13 ELECTRIC POWER

- A. Electric power to operate the controller shall be furnished by the Electrical Contractor unless otherwise noted on the plans. Service wiring to the controller cabinet shall be furnished by the Irrigation Contractor.

1.14 WATER FOR TESTING

- A. Unless noted otherwise on the plans or elsewhere, water is available on the site necessary for testing, flushing, and jetting.

1.15 BORINGS, SLEEVES AND ELECTRICAL CONDUITS

- A. Sleeves and electrical conduits are the responsibility of the Irrigation Contractor to install prior to paving or related construction and should be installed as noted on the approved irrigation plan. Contractors shall be responsible for locating all sleeves and conduits at no additional cost to the Authority. Borings under existing paving will be required where noted on the drawings and shall be provided at no additional cost to the Owner. Borings shall be a minimum of 18 inch depth and new pipes shall be incased in Schedule 40 PCV sleeves.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

1.16 ATTIC STOCK - SPARE PARTS

- A. The Contractor shall supply the Owner with five parts each of irrigation system components excluding controller, mainline pipe and lateral pipe. These items will be kept for use by the Owner after the Landscape Maintenance for One (1) Year period is **completed**.

1.17 COMMISSIONING

- A. This Section specifies a system which will be commissioned as part of the construction process. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with the Owner's Commissioning Coordinator.
- B. Commissioning requires the participation of this Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents. This Contractor shall be familiar with all parts of the Commissioning Section and the commissioning plan issued by the Commissioning Coordinator and shall execute all commissioning responsibilities assigned to them in the Contract Documents.

1.18 POINT OF CONNECTION

- A. Verify main, meter location, and water pressure at the site, if minimum residual water pressure is less than required, notify owner's representative prior to construction. Contractor shall notify the owner's representative of such and shall receive owners' approval prior to any construction.
- B. Follow all state and local codes.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Unless otherwise noted on the plans, all materials shall be new and unused. The irrigation equipment catalog numbers used for reference in these Specifications are to establish minimum quality standards and may be substituted with an "approved equal" as outlined in Paragraph 1.06 of this section, unless specifically requested by the campus maintenance staff and noted as having no "approved equal" to be accepted.

2.2 POLYVINYL CHLORIDE PIPE (PVC PIPE)

- A. PVC pipe manufactured in accordance with ASTM Standards noted herein.
- B. Marking and Identification: PVC pipe shall be continuously and permanently marked with following information: Manufacturer's name, size, type of pipe, and material, PVC number, Product Standard number, and the NSF (National Sanitation Foundation) Seal.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. PVC pipe fittings: Shall be of the same material as the PVC pipe specified and compatible with PVC pipe furnished. Solvent weld type shall be for Schedule 40.
- D. PVC Pipe: Lateral line pipe shall be Class 200 solvent weld, SDR-21, PS 22-70 for all sizes 1" - 3". Mainline pipe shall be Class 200.
- E. Flexible PVC Risers (Nipples): All flexible PVC nipples shall be made from virgin PVC material, and shall comply with ASTM D2287, shall be tested at 200 P.S.I. static pressure for 2 hours and have a quick burst rating of a minimum 400 P.S.I. Flexible PVC pipe nipples shall be factory assembled only.

2.3 SWING JOINTS

- A. Swing joints shall be O-ring seal type. Use Lasco or approved equal.

2.4 WIRE AND SPLICES

- A. All wire shall be single strand solid copper, minimum 14 gauge with type UF insulation which is Underwriters Laboratory approved for direct underground burial when used in a National Electrical Code Class II Circuit (30 volts AC or less) as per Articles 725 and 300. Voltage drop shall be taken into consideration.
- B. All wire shall be color coded so that the common wire shall have white insulation and the signal wires shall have red insulation.
- C. All splices shall be made with King one step Dry splices Tan or Larger.
- D. All connectors shall be UL listed, rated 600 volt, for PVC insulated wire. No wire splices shall be buried.

2.5 MANUAL VALVES

- A. Manual valves 2 ½" and smaller shall be all brass, globe type with composition disc rated at 150 pounds W.O.G.
- B. All valves shall have wheel handles unless cross handles are called for on the plan.

2.6 VALVE BOXES

- A. A box shall be provided for all valves.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- B. Valve boxes shall be made of high-strength plastic suitable for turf irrigation purposes.
- C. Boxes shall be suitable in size and configuration for the operability and adjustment of the valve.
- D. Extension sections will be used as appropriate to the depth of piping.
- E. All valve box covers shall bolt down or have locking mechanisms and shall be colored green.

2.7 POP-UP SPRAY, MICRO SPRAY, ROTOR AND BUBBLER HEADS

- A. Pop-up spray, rotor and bubbler heads are specified on the drawings.
- B. Two bubbler head shall be provided per each tree per locations as shown on the plans.
- C. Spray heads shall have a minimum 4" pop-up or 12" pop-up as designated on the drawings. The sprinkler body and all related parts shall be plastic cyclac or polycarbonate. They shall have a spring retraction for positive return action of the pop-up nozzle. The spring for retraction and the adjustable nozzle screw shall be made of corrosion resistant materials.
- D. All heads are to be operated and site adjusted to match precipitation rate of all heads in the zone with proper nozzle selection and arc adjustments.
- E. MICRO-SPRAYS -The nozzle shall be constructed of corrosion and UV-resistant plastic. The nozzle shall have a pop-up stem that when under water pressure, pops up an additional inch. It shall also have a stainless steel retraction spring to retract the stem when water pressure is released. The stem shall have an integral elastomeric flow bushing for maintaining a constant flow rate over the operating pressure range of 25 to 60 PSI (1.7 to 4.1 bars; 172 to 413 kPa). The nozzle shall be protected from debris by a stainless steel screen that is integral to the pop-up stem. The nozzle shall have standard female threads that are compatible with the threaded riser on Hunter spray heads as well as some other manufacturer's spray heads. The nozzle shall carry a two-year, exchange warranty (not prorated). Must be installed in Institutional spray body.

2.8 DRIP IRRIGATION

- A. The dripperline shall be Techline CV as manufactured by Netafim Irrigation, Inc. Dripper flow rate and spacing shall be as indicated on drawings.
- B. Soil Staples (TLS6): All on-surface/under mulch Techline CV/Techline Techlite installations shall be held in place with Techline Soil Staples spaced evenly every 3' to 5' on center, and with two staples on each change of location.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. Line Flushing Valves: All Techline/Techlite systems shall be installed with Netafim Automatic Line Flushing Valves as indicated on drawings. Techline CV zones do not require an automatic line flushing valve but must have a manual flushing port(s) in the position that an automatic flush valve would be positioned.
- D. Pressure Regulator: A pressure regulator shall be installed at each zone valve or on the main line to ensure operating pressures do not exceed system requirements. The pressure regulator shall be a Netafim Pressure Regulator.
- E. Disc Filter: A disc filter shall be installed at each zone valve or on the main line to ensure proper filtration. The filter shall be a Netafim Disc Filter. Model number and mesh as indicated on drawings.

2.9 ELECTRIC CONTROLLER (PERMANENT IRRIGATION)

- A. Electric irrigation controller shall be capable of operating the number of stations as indicated on the drawings. The system is designed to operate only one section valve at a time, unless otherwise noted. The controller will be specified on the irrigation plan.
- B. Power source shall be standard 117= \pm volt 60 Cycle AC. Output for operation of companion solenoid actuated valves shall be 24 volts 60 Cycle AC.
- C. Operation of the controller shall be full automatic, incorporating one 24 hour clock and 14 day calendar per controlled number of electric valves shown on the plan to start the sprinkling cycle any hour or hours of the day or night of any day or days over a repeating 14 day period.
- D. The controller shall be capable of repeating watering cycles as required with a maximum delay between the ending of one cycle and the beginning of the next not to exceed 2 hours. Control shall provide optional semi-automatic operation whereby the automatic cycle may be started independent of the clock and manual operation whereby any station may be operated by hand independent of all timing mechanism. The choice of automatic day or hour programming shall be available to the operator on the face of the control panel without the use of tools.
- E. The automatic controller shall be equipped with rainproof housing.
- F. Provide automatic rain/freeze shutoff with controller.

2.10 ELECTRIC REMOTE CONTROL GLOBE VALVES

- A. Electric remote control valves shall have plastic bodies and covers and shall be globe-type diaphragm valves of normally closed design.
- B. A flow stem adjustment shall be included in each valve.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

2.11 BACKFLOW PREVENTER

- A. A double-check assembly shall be located and sized as shown on the plans.
- B. This assembly shall be installed in a box and shall conform to the City Plumbing Codes.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Design Pressure: This irrigation system has been designed to operate with a minimum static inlet water pressure as indicated on the drawing. The Contractor shall take a pressure reading prior to beginning construction. If the pressure reading is 5% less than indicated, the Contractor shall notify the Owner's Representative.
- B. Contractor Responsibility: The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or water pressure exist that might not have been considered in the engineering. Such obstructions or differences shall be brought to the attention of the Owner's Representative in writing. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
- C. Staking: Before installation is started, place a stake or flag where each sprinkler is to be located, in accordance with drawing. Staking shall be approved by the Owner's Representative before proceeding.
- D. Piping Layout: Piping layout is diagrammatic. Route piping around existing trees and root zones in such a manner as to avoid damage to plantings. Where access is restricted, bore under large existing trees to avoid damage and exposure of the root system. Do not dig within the ball of newly planted trees or shrubs.
- E. In areas where trees are present, trenches will be adjusted on site to provide a minimum clearance of four times the trunk diameter of the tree (at its base) between any tree and any trench.
- F. All material and equipment shall be delivered to the Worksite in unbroken reels, cartons or other packaging to demonstrate that such material is new and of a quality and grade in keeping with the intent of these Specifications.
- G. Refer to plan details for drip installation.
- H. Spray heads and Rotor heads cannot be located closer than 4" of any sidewalk, driveway or foundation.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

3.2 EXCAVATION AND TRENCHING

- A. The Contractor shall perform all excavation to the depth indicated in these Specifications and Contract drawings. The banks of trenches shall be kept as nearly vertical as practicable. Trenches shall be wide enough to allow a minimum of 4" between parallel pipelines or electrical wiring. Where rock excavation is required, or where stones are encountered in the bottom of the trench that would create a concentrated pressure on the pipe, the rock or stones shall be removed to a depth of six (6) inches minimum below the trench depth indicated. The over depth rock excavation and all excess trench excavation shall be backfilled with loose, moist earth or sand, thoroughly tamped. Whenever wet or otherwise unstable soil that is incapable of properly supporting the pipe is encountered in the trench bottom, such shall be removed to a depth and length required, and the trench backfilled to trench bottom grade as hereinafter specified, with course sand, fine gravel or other suitable material.
- B. Bottom of trench grade shall be continued past ground surface deviations to avoid air pockets and low collection points in the line. The minimum cover specifications shall govern regardless of variations in ground surface profile and the occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary.
- C. Trench excavation shall comprise the satisfactory removal and disposition of all materials, and shall include all shoring and sheeting required to protect the excavation and to safeguard employees.
- D. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave-ins. Material unsuitable for backfilling shall be wasted as directed by the Owner's Representative. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.
- E. All excavations and backfill shall be unclassified and covered in the basic bid. No additional compensation will be allowed for rock encountered.
- F. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Owner's Representative.

3.3 PIPE INSTALLATION

- A. Sprinkler Mains: Sprinkler mains are that portion of piping from water source to electric valves. This portion of piping is subject to surges since it is a closed portion of the sprinkler system. Sprinkler mains shall be installed in a trench with a minimum of 18 inches of cover.
- B. Lateral Piping: Lateral piping is that portion of piping from electrical valve to sprinkler heads. This portion of piping is not subject to surges since it is an "open end" portion of the sprinkler system. Lateral piping shall be installed in a trench with a minimum of 12 inches of cover.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. Remove lumber, rubbish, and rocks from trenches. Provide firm, uniform bearing for entire length of each pipeline to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding, and keep piping clean during and after laying pipe.
- D. PVC pipe shall not be installed where there is water in the trench, nor shall PVC pipe be laid when temperature is 40 deg. F or below or when rain is imminent. PVC pipe will expand and contract as the temperature changes. Therefore, pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction.

3.4 PVC PIPE AND FITTING ASSEMBLY

- A. Solvent: Make solvent-welded joints following standards noted herein. Thoroughly clean pipe and fittings of dirt, dust, and moisture with an approved PVC primer before applying solvent.
- B. PVC to Metal Connection: Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 or "Teflon" tape on threaded PVC to metal joints. Use only light wrench pressure.
- C. Threaded PVC Connections: Where required, use threaded PVC adapters into which pipe may be welded.

3.5 HYDROSTATIC TESTS

- A. Pressure Test: After the pipe is laid, the joints completed, and the trench partially backfilled, leaving the joints exposed for examination, the newly laid piping or any valved section of main pressure line piping shall, unless otherwise specified, be subjected for four hours to a hydrostatic pressure test of normal city water pressure. Each valve shall be opened and closed during the test. Enclosed pipe, joints, fittings, and valves shall be carefully examined during the partially open trench test. Joints showing visible leakage shall be replaced or remade, as necessary. Cracked or defective pipe, joints, fittings, or valves discovered in consequence of this pressure test shall be repeated until the test results are satisfactory. All replacement and repair shall be at contractor's cost.

3.6 CONTROL WIRE INSTALLATION

- A. All control wire less than 500 feet in length shall be continuous without splices or joints from the controller to the valves. Connections to the electric valves shall be made within 18 inches of the valve using connectors specified in Paragraph 2.4 of this section, unless otherwise approved by the Owner's Representative in writing.
- B. All control wires shall be installed at least 18 inches deep. Contractor shall obtain the Owner's Representative's approval for wire routing when installed in a separate ditch. Control wires may be installed in a common ditch with piping; however, wires must be installed a minimum of 4 inches below or to one side of piping.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- C. All wire passing under existing or future paving, sidewalk, construction, etc., shall be encased in PVC Schedule 40 conduit extending at least 2 feet beyond edges of paving, sidewalks, or construction.

3.7 POP-UP SPRAY, MICRO-SPRAY, ROTORY AND BUBBLER HEADS

- A. Provide heads and nozzles as specified and install in locations as shown on the Contract Drawings.
- B. Pop-up spray and micro-spray heads shall be installed on a poly riser pipe connector as detailed. Rotary heads shall be installed on a double swing joint connected to the lateral pipe. Bubbler shall be a po-up spray head on a poly riser. Keep heads a minimum of 4 inches from paved surfaces.
- C. Heads shall be installed with underside of flange flush with the finished grade.
- D. Contractor will be required to adjust heads as necessary after establishment of grass or other plant material.

3.8 QUICK COUPLING VALVES

- A. Quick coupling valves shall be installed as indicated on the plans along mainline with a ball valve preceding the QC for shut off.
- B. Quick coupling valves shall be installed with the underside of flange flush with the finished grade.
- C. Quick coupling valves shall be installed on a swing joint assembly as detailed on the submitted and approved shop drawings.
- D. Under the warranty, the Contractor shall return after grass is established and adjust valves and valve boxes to proper grade.

3.9 MANUAL VALVES

- A. Manual valves shall be sized and located where shown on the Contract drawings.
- B. Valve boxes shall be adjusted to be flush with finished grade.
- C. Valve boxes shall be properly supported and of sufficient construction that tractors, mowers or other equipment crossing over the boxes will not push boxes down and crush the pipe, valve, or box.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

3.10 VALVE AND VALVE BOX PLACEMENT

- A. A ball valve shall precede each valve to provide shut off for repair of valves.
- B. All manual, electric, and quick coupling valves shall be in boxes as specified in Paragraph 2.6 of this section, and shall be set with a minimum of six (6) inches of space between their top surface and the bottom of the valve box. The base of the box shall be filled with pea gravel per manufacturer's installation instructions.
- C. Valves shall be fully opened and fully closed to ensure that all parts are in operating condition.
- D. Valve boxes shall be set plumb, vertical, and concentric with the valve stem.
- E. Any valve box which has moved from this required position so as to prevent the use of the operating wheel of the valve shall be reset by the Contractor at his own expense.

3.11 ELECTRIC CONTROLLER

- A. Electric controller shall be located as shown on the plans and shall be capable of operating the number of stations indicated.
- B. The system is designed to operate only one section at a time, unless otherwise noted on the plans in strict accordance with the manufacturer's published installation instructions.

3.12 ELECTRIC REMOTE CONTROL VALVES

- A. Remote control valves shall be located and sized as shown on the plans. All electrical connections shall be made when the weather is dry with connection kits as specified in Paragraph 2.4 of this section in strict accordance with manufacturer's recommended procedures. All remote control valves shall be installed in a horizontal position, in accordance to the manufacturer's published installation instructions.
- B. It shall be the responsibility of the Contractor to furnish and install the proper size wire on each of the low voltage circuits from the master control center to the various electric remote control valves.
- C. Consideration shall be given to each circuit for allowance of voltage drop and economy consistent with accepted practices of electrical installation. Under no circumstances shall the voltage of any branch circuit be reduced more than proper due to length of run exceeding the maximum allowable for the wire size used.

3.13 BACKFILL AND COMPACTION

- A. After system is operating and required tests and inspections have been made, the trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth,

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

loam, sandy clay, sand, gravel, soft shale, or other approved materials, free from large clods of earth or stone. Rock, broken concrete, or pavement, and large boulders shall not be used as backfill material. The backfill shall be thoroughly compacted and evened with the adjacent soil level.

- B. Compact trenches in areas to be planted by thoroughly flooding the backfill. Compact all other areas by flooding or hand tamping. The jetting process may be used in areas when flooding.
- C. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to a minimum of 90% density.
- D. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for compaction, then refilled and compacted with the surface restored to the required grade and left in a completed surface condition as described above.
- E. Specifically tamp backfill under heads and around the flange of heads for one foot (1') by a suitable means after trench backfill has dried from flooding to prevent heads loosening in the ground.

3.14 FINAL ADJUSTMENT

- A. After installation has been completed, make final adjustment of sprinkler system prior to Owner's Representative's final inspection.
- B. Completely flush system to remove debris from lines by removing nozzle from heads on ends of lines and turning on system.
- C. Check sprinklers for proper operation and proper alignment for direction of throw.
- D. Check each new section for operating pressure and balance to other sections by use of flow adjustment on top of each valve.
- E. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arc or angle of spray should be other than as shown on drawings. In this case, change nozzles to provide correct coverage and furnish record data to Owner's Representative with each change.
- F. After system is thoroughly flushed and ready for operation, each section of sprinklers shall be adjusted to control pressure at heads. Use the following method, one section at a time:
 - 1. Remove last head on section and install a temporary riser above grade. Install tee with pressure gauge attached on top of riser and re-install head with nipple onto tee.
 - 2. Correct operating pressure at last head of each section as follows: Spray Heads - 20-25 psi; rotor heads - 30 to 40 psi (and as recommended by the manufacturer).
 - 3. After replacing head, at grade, tamp thoroughly around head.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

3.15 CLEAN-UP

- A. The Worksite shall be thoroughly cleaned of all waste materials and all unused or salvaged materials, equipment, tools, etc.
- B. After completion of the work, areas disturbed shall be leveled and the Worksite shall be raked clean and left in an orderly condition.

PART 4 - METHOD OF MEASUREMENT

4.1 MEASUREMENT

- A. Landscape Irrigation Systems described in this section will be paid for on a lump sum basis wherein no measurement will be made.

PART 5 - PAYMENT

5.1 PAYMENT

- A. Landscape Irrigation Systems will be paid for at the Contract lump sum, which price will be full compensation for furnishing and installing equipment; shop drawings; providing all submittals and warranties; furnishing all labor, materials, tools, equipment; and incidentals necessary to complete the work as described in this section and related other sections of these Specifications and plans, as well as maintenance until final acceptance.

END OF SECTION 32 84 00

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

SECTION 32 93 00 – PLANTING

PART 1 – GENERAL

1.01 GENERAL CONDITIONS

The requirements of the "General Conditions of the Contract" and General Requirements, shall apply to all work of this Section with the same force and effect as though repeated in full herein.

1.02 SCOPE OF WORK

Furnish all labor, material, equipment and services necessary to provide all landscape planting, complete in place, as shown and specified.

1.03 QUALITY ASSURANCE

A. Source Quality Control:

1. Submit documentation to Project landscape architect within fifteen (15) days after award of Contract that all plant material is available and has been purchased, contracted to be grown, or reserved. Contractor shall be responsible for all material listed on plant list. Any and all substitutions due to unavailability must be requested in writing prior to commencement of installation. All materials shall be subject to inspection by Project Landscape Architect at any time after confirmation of ordering.
2. Plants shall be subject to inspection and approval of Project landscape architect at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of the work. Plant materials approved by the Project Landscape Architect shall be tagged with non-removable tags supplied by contractor with the project name. Tags shall remain until approval and acceptance of plant material on site.
3. Inspection and tagging of plant material by the Project Landscape Architect is for design intent only and does not constitute the Project Landscape Architect's approval of the plant materials in regards to their health and vigor as specified in Section 2. The health and vigor of the plant material is the sole responsibility of the Contractor.
4. The Contractor shall submit samples and/or specifications of any item being used on site as listed in section 2 herein.
5. Applicable standards for plant material shall be:
 - a. American Standard for Nursery Stock, latest edition.
 - b. American Joint Committee on Horticultural Nomenclature, latest edition.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery

1. Deliver fertilizer and other packaged materials to site in original unopened containers bearing manufacturers guaranteed chemical analysis, name, trademark, and conform-

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

ance to State Law.

2. The Contractor shall furnish Project Landscape Architect with copies of receipts for all amendments specified in this Section.
 3. Deliver all plants with legible identification labels stating proper botanical names and sizes indicated on plant list.
 4. Protect plant material during delivery to prevent damage to root ball, trunks or branches, or desiccation of leaves.
 5. The Contractor shall notify the Project Landscape Architect seven (7) days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery.
 6. Department of Agriculture certificate shall accompany all grass seed and each delivery of sod used for solid sod or plugging to certify genetic identity and shall be furnished to the Owner.
- B. Storage:
1. Maintain and protect plant material, including solid sod, not to be planted within twenty-four (24) hours in a healthy, vigorous condition.
 2. Store plant material, including solid sod, in shade and protect from weather. Contractor to provide all water and protection necessary to keep plant material from freezing or drying.
 3. Tree delivery and installation shall be coordinated such that they are completed on the same day. Should planting be unavoidably delayed, Contractor shall protect rootballs with a covering material such as sand or mulch, keeping trees in an upright or inclined manner, or other manner acceptable to the Project Landscape Architect.
- C. Handling:
1. The Contractor is cautioned to exercise care in handling, loading, unloading and storing of plant materials. Plant materials that have been damaged in any way will be discarded and if installed, shall be replaced with undamaged materials at the Contractor's expense.
 2. Under no circumstances is plant material to be handled by stem or trunk. All trees are to be handled with flexible straps secured around rootball.
 3. Contractor to protect tree trunks and tree limbs from damage during planting with carpet or burlap strips.

1.05 JOB CONDITIONS

- A. Work continuously on the site with exception of bad weather delays until the project is completed and as called for in the General Conditions.
- B. Schedule: Install trees, shrubs, and liner stock plant material before lawn installation has commenced. Contractor to coordinate work with all other trades as stated in General Conditions.

1.06 GUARANTEE AND REPLACEMENT

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- A. All plant material installed under the Contract shall be guaranteed to remain alive and in healthy, vigorous condition for a period of one year after date of written Final Acceptance of project landscape installation.
- B. Replace all plant materials that are dead, dying, unhealthy or unsightly as determined by the Project Landscape Architect. Replacements shall be in accordance with the drawings and specifications and shall be guaranteed as set forth in Section A above. The cost of replacements is at the Contractor's expense. Material is to be replaced within fifteen (15) days of written notice by Owner or Project Landscape Architect.
- C. Warranty shall not include damage or loss of plants due to acts of God, theft, fire, acts of vandalism, or negligence on the part of the Owner, as determined by the Project Landscape Architect.
- D. Contractor shall remove all staking, guying and wrapping materials at the end of the guarantee period.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: All materials shall be of standard, approved and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original unopened container bearing the manufacturer's guaranteed analysis. Contractor shall supply Project Landscape Architect with a sample of all supplied materials accompanied by analytical data from an approved laboratory source illustrating compliance or bearing the manufacturer's guaranteed analysis. Contractor shall submit a list and manufacturer's product information, including MSDS sheets, of all chemicals to be used on site to Owner for approval prior to any chemical application.
- B. Organic Amendment to be composted mulch as manufactured by "Garden-Ville", "Living Earth Technology", or approved equal. Submit sample and analysis for approval.
- C. Soil Amendments:
 - 1. Soil sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).
 - 2. Iron sulfate: 20% Iron (expressed as metallic iron), derived from ferric and ferrous sulfate, 10% sulfur (expressed as elemental).
 - 3. Gypsum: Agricultural grade product containing 98% minimum calcium sulfate.
 - 4. Pre-Emergent Herbicide: Surflan or approved equal.
- D. Fertilizer: EZ-Green slow release tablets, percentages by weight, (Nitrogen, Phosphoric acid, Potash), mixed by a commercial fertilizer supplier. Fertilizers for lawns shall be slow release fertilizers. Submit sample and analysis for approval.
- E. Import Topsoil: Contractor to supply high quality imported topsoil of loamy character, high in humus and organic content from local agricultural source. Topsoil to be reasonably free from clay lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements. Red or Orange "sandy loam" will not be acceptable. Submit sample and analysis for approval.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- F. Import Backfill for Berms: Contractor to supply high quality, select imported backfill from local approved source. Backfill to be reasonably free from clay lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements. Submit samples to Project Landscape Architect for approval.
- G. Plant Material: Plants shall be in accordance with the Texas State Department of Agriculture's regulation for nursery inspections, rules and rating. All plants shall have a normal habit of growth and shall be full, well branched, well-proportioned and symmetrical. Plants shall be sound, healthy, vigorous and free of insect infestations, plant diseases, sunscalds, and fresh abrasions of the bark, excessive abrasions, or other objectionable disfigurements. Tree trunks shall be sturdy and have well shaped branching systems and vigorous and fibrous root systems that are not root or pot-bound. The Project Landscape Architect reserves the right to examine the roots of any plant material he determines questionable. Samples to be chosen randomly and shall be at Contractor's expense.
1. Nursery Grown and Collected Stock: All material shall have been grown under climatic and soil conditions similar to those in locality of project. Container-grown stock shall be in vigorous, healthy condition, not root-bound or with root system hardened off, and shall have grown in container from seedling. Containerized stock shall be in vigorous, healthy condition, not root-bound or with root system hardened off, and shall have grown in container for a minimum of 8 months. Use only liner stock plant material that is well established in removable containers or formed homogeneous soil sections.
 2. All ball and burlap trees shall have firm, natural root balls or sufficient size to encompass the fibrous and feeding root system necessary for full recovery and establishment of the plant. Cracked or soft or "mushroomed" rootballs will be unacceptable. Ball size shall conform to the latest edition of the American Standard for Nursery Stock. B&B materials shall be firmly wrapped with biodegradable burlap.
 3. Specimen Stock: When detailed on the Plant List, specimen shall mean exceptionally fully developed, bushy, and heavily branched plants that have been grown individually in the nursery. They shall surpass the normal standard for nursery stock in their density and maturity, and shall form a symmetrical, tightly knit plant or picturesque characteristic if indicated.
- H. Lawn Seed: All seed used shall be high quality, extra fancy, treated lawn type seed at the purity and germination specified, and shall be furnished in sealed standard containers with signed copies of a statement from the vendor certifying that each container of seed delivered is fully labeled in accordance with the Texas State Agricultural Code and is equal to or better than the requirements of these specifications. Lawn seed to be free of weed or noxious grass seeds. Submit sample and analysis for approval.
- I. Native Grass Seeding for Erosion Control: Refer Specification 02932-N.
- J. Non-Native Grass Seeding for Erosion Control: Refer Specification 02932-NN.
- K. Native Grass and Wildflower Seeding for Erosion Control: Refer Specification 02932-NW.
- L. Guying and Staking Materials: Reference plans for tree staking details that apply to portions of the project.
1. 8'-0" ht. Metal "T" stakes, dark green or black in color, approved by Project landscape architect. Contractor to install per detail on plans.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

2. Wire & Cable: 10 gauge multi-strand galvanized wire or plastic chain ties will be used for all trees with a caliper of 1" to 3". 1/8" diameter aircraft cable with cable clamps will be installed with all tree calipers greater than 3".
 3. Trunk Protection: 1/2" diameter rubber hose, length as needed to protect trunk and branches of tree when wire and cable are used. Black in color.
- M. Tree Paint: Morrison Tree Seal, Cabort Tree Paint, or approved equal.
- N. Water: Furnished by Owner on site through irrigation system at hose bib locations; all hoses, transportation across site and other necessary distribution to be provide by Contractor. If irrigation system is not functional or part of contract upon completion of planting, provide whatever means necessary to insure that all material is watered and maintained.
- O. Mulch:
1. Tree and Pit Planted shrubs: Mulch shall consist of shredded cedar or hardwood bark mixture of varied lengths (1"-3") such that when installed will form a mat resistant to erosion. Mulch to be partially decomposed and shall be free of sticks, stones, clay or other foreign materials.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Obtain Owner's certifications that rough grades to plus or minus 0.10' have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. Landscape Contractor shall be responsible for shaping and fine grading all planting areas as indicated on plans or as directed by Project Landscape Architect.
- B. Verify location of all utilities prior to pit excavation and grading. Contractor is responsible for any damage to utilities and Owner's property. Coordinate with all other site contractors.
- C. Inspect trees, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning. Do not begin planting of trees until deficiencies are corrected or plants replaced.
- D. Quantities shown on the plans are for the convenience of the Contractor. In case of discrepancy between the plant list and the plans, the plans shall govern. The Contractor is also responsible for determining the quantities needed to complete the installation to the full extent dimensioned on the drawings.
- D. An automatic underground irrigation system may be part of the Contract. Contractor may coordinate the work to allow for the use of the system to irrigate the work in progress. Failure to adequately coordinate the work shall not relieve the Contractor of the need to provide water to landscape material up until Final Acceptance of the work.

3.02 PREPARATION

- A. Soil Preparation:
 1. Grades: Contractor to receive site at approximately finish grade unless otherwise noted

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

on plan. Minor modifications to grade may be required by Contractor to establish final grade. Contractor will be responsible for removal of minor rocks and debris.

2. Soil Testing: The Owner and Project Landscape Architect reserve the right to require soil testing and results listing pH, fertility levels and percentages of sand, silt, and clay. From this, the contractor may be required to submit to the Owner and Project Landscape Architect recommendations for soil amendments and fertilizers if different than those listed below. For bid purposes, use the soil amendment procedures listed.
- B. Excavation:
1. Continuous planting beds, depth of excavation:
4 - 8 inches minimum below finish grade
One-gallon shrubs - 12 inches minimum below finish grade
Five-gallon shrubs –16 inches minimum below finish grade
 2. Tree and shrub pit dimensions:
depth: 1-1/2 times the root ball (vertical sides)
width: 1 foot wider than the diameter of the rootball
 3. All excess soil excavated from beds to be disposed of in a lawful manner off site unless by written consent, the Project Landscape Architect directs the Contractor to supplement lawn area with approved excavated soil or provides a spoil disposal area on site.
 4. Contractor shall fracture and break rock or clay if encountered in excavation and perform a drainage test. The tree, shrub, or planting pits shall be filled with water and shall drain completely within a 24-hour period to be acceptable for planting. Notify Project Landscape Architect upon such occurrences.
 5. Contractor to scarify bottom and sides of pit to ensure that glazing of clay pit does not occur. Contractor to be responsible to provide adequate drainage through shrub beds to prevent water logging of plants. Notify Project Landscape Architect if inadequate drainage in shrub beds occurs.
- C. Backfill Mix for planting is to be provided; the standard plant bed mix as manufactured by "Living Earth Technology", "Gardenville" or approved equal.
1. Contractor to provide 48 hours' notice to Project Landscape Architect prior to mixing of any soil on site for approval of amendments and mixed soil.
 2. If soils are mixed off site, contractor shall submit location of pre-mix and mix analysis for Project Landscape Architect.
- D. Pre-Plant Weed Control:
1. Spray weeds with a nonselective systemic contact herbicide, as recommended and applied by an approved licensed applicator.
 2. Clear and remove these existing weeds upon herbicide's completed action by grubbing off all plant parts at least 1/2" below the surface of the soil.

3.03 PLANT INSTALLATION

- A. Coordination:

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

1. If part of contract, Contractor to coordinate with Irrigation Contractor to insure functional irrigation system prior to any tree, shrub and groundcover installation.

- B. Layout of Major Plantings: Tree locations and outlines of planting beds shall be marked on the ground by the Contractor before any plant pits are dug. The Project Landscape Architect shall approve all such locations. If underground construction or utility line is encountered in the excavation of planting areas, other location for planting may be selected by the Project Landscape Architect.

- C. Planting of Trees and Shrubs:
 1. Protect all areas from excessive compaction when trucking plants or other material to the planting site. Protect existing site amenities during landscape operations.

 2. Removal of containers:
 - a. Remove bottom of plant boxes before planting. Remove sides of box without damage to root ball after positioning plant and partially backfilling.
 - b. Remove top 1/3 of burlap from balled and burlap materials after setting plant.
 - c. Remove all plastic fabrics, containers, ropes and wires from shrub and tree canopies and root balls.

 3. All plants shall be set upright and plumb in center of hole. Plants or trees in formal plantings shall be laid out according to dimensions on plans. Plants shall be set to give best appearance. All plants shall be set slightly above (no more than 2"), or level with finished grade upon completion of planting operations. Adjust tree and shrub elevations should settlement occur.

 4. Backfill pits immediately upon setting until hole or trench is one-half full. Hole should then be filled with water and tamped sufficiently to remove any air pockets.

 5. Plant Tablets:
 - a. After the water has completely drained, planting tablets shall be placed as indicated below:

Three tablets per 15-gallon container
Four tablets per 24" box or 2" tree
Five tablets per 30" box or 3" tree
Six tablets per 36" box or 4" tree
Seven tablets per 42" box or 5" tree
Eight tablets per 48" box or 6" tree

Planting tablets shall be set with each plant on the top of the root ball while the plants are still in their containers so the required number of tablets to be used in each hole can be easily verified by the Project Landscape Architect.

 6. Complete backfilling operations. Construct a 4" ht. water retention basin around plant pit with topsoil. Apply pre-emergent herbicide. Spread minimum 3" deep specified mulch within tree basins and all pit planted shrubs. Spread minimum 3" deep specified mulch within all planting beds.

 7. Pruning: Trees shall be pruned and thinned out if there are too many internal branches. The

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

- trees should be open to allow more sunlight into the entire tree and to shape the tree. Weak crotches are to be removed. Remove dead or injured twigs and branches. Pruning may not be done prior to delivery of plants. Cuts over 3/4" in diameter shall be painted with specified tree paint. Trees that do not have a central leader will be rejected.
8. Staking: Staking of all trees shall be completed immediately after planting. All stakes shall be installed plumb and as indicated in details.
 9. Planting of Shrubs (mass), ground covers and annuals:
 - a. After excavation and scarification of planting bed, Contractor to fill bed with 4" specified backfill mix and apply Agricultural Gypsum at the rate of 50 lbs./1000 S.F. complete backfilling with specified mix to finished grade. Edging, if specified, shall be installed at this time.
 - b. Plants shall be installed in straight rows and evenly spaced to fill bed, unless otherwise noted, and at intervals called out in the drawings. Triangular spacing shall be used unless otherwise noted on the drawings.
 - c. After installation of all shrubs, groundcover and annuals, plantings shall be watered thoroughly. Any settling of plants or finished grade that occurs shall be repaired prior to installation of mulch. Finished grade of planting beds to be 1/2" below finished grade of adjacent pavement or curb.
 - d. After water has drained from planting, but not more than 24 hours later, Contractor to apply pre-emergent weed control according to manufacturer's specifications.
 - e. Following pre-emergent weed control applications, Contractor to install specified mulch to full 3" depth over entire bed area.

3.04 LAWN APPLICATION

- A. Coordination:
 1. Install hydromulch, plug or sod after tree, shrub and groundcover installation is complete.
 2. If part of contract, Contractor to coordinate with Irrigation Contractor to insure functional irrigation system prior to any lawn installation.
- B. Preparation:
 1. Pre-Plant Weed Control:
 - a. If weeds exist within proposed landscape areas at the beginning of work, spray with a nonselective systemic contact herbicide, as recommended and applied by an approved licensed applicator.
 - b. Clear and remove these existing weeds upon herbicide's completed action by grubbing off all plant parts at least 1/2"-1" below the surface of the soil.
 2. Contractor to scarify ground surface to a minimum 2" depth remove all sticks, trash, rocks and other debris and dispose off site prior to seeding/sodding. When solid rock is exposed or encountered within the first 2" depth of existing soil, place a minimum of 4" imported topsoil. All proposed berms shall have a minimum of 4" imported topsoil.

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

3. Contractor to rake entire area, leveling any imperfections in the grades left by site work contractor. Landscape contractor to ensure that there will be positive drainage and no ponding on site. Finished grade of lawn areas to be 1/2" below top of curbs, sidewalks and other pavements. Remove any large (greater than 1") dirt clods, rocks, and trash and prepare a smooth, level, loose and coarse surface. Project Landscape Architect to approve fine grading prior to any lawn installation. Lawn bed shall be moist (but not muddy) to receive seed, sod and plugs.

C. Hydromulch Application (when applicable):

1. Lawn areas to be seeded immediately after preparation of the bed. Do not use pre-emergent herbicide in areas to be seeded. Apply a uniform coat of hydromulch at the rates specified in Specification Item 604S – Seeding for Erosion Control and Item 604W – Seeding for Wildflowers.
2. Seed areas within seeding limits indicated on the plan and areas disturbed by construction operations.
3. Protect existing utilities (including irrigation system), plantings, paving and other site amenities from damage caused by hydromulching operations.
4. Immediately following application of hydromulch, the Contractor shall wash excess hydromulching material from previously planted materials, architectural features, etc. Care shall be exercised to avoid washing or eroding mulch materials from lawn area.

D. Sod Installation (if required):

1. Incorporate specified starter fertilizer at 2 pounds Nitrogen per 1000 square feet of lawn area for sodded areas.
2. Apply specified pre-emergent herbicide to fine graded areas prior to installation of solid sod. Do not use any Pre-emergent in areas to be overseeded with Rye Grass within three months. Use care to avoid wind drift or runoff to adjacent ornamental tree or shrub plantings.
3. Lay sod within 24 hours from time of harvesting.
4. Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work sifted soil into minor cracks between pieces of sod; remove excess sod to avoid smothering adjacent grass.
5. Sod pads shall be of fullest size possible-no sod slivers or scraps will be permitted.
6. Finished grade of new sod shall be flush with adjacent lawn and pavement. Ensure positive drainage off all adjacent walkways and pavement.
7. Roll entire sodded area with sod roller. Water sod thoroughly.

3.05 CLEAN-UP

- A. After all planting operations have been completed; remove all trash, excess soil, empty plant containers and rubbish from the property. All scars, ruts or other marks in the ground caused by this

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

work shall be repaired and the ground left in a neat and orderly condition throughout the site. Contractor shall pick up all trash resulting from this work no less frequently than each Friday before leaving the site, once a week, and/or the last working day of each week. All trash shall be removed completely from the site.

- B. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.

3.06 MAINTENANCE

A. General:

1. Maintain plant materials and lawn areas until final acceptance of the project.
2. Correct defective work as soon as apparent or as directed by Project Landscape Architect.
3. All debris (including clippings, leaves, etc.) shall be removed from project site.
4. Coordinate with irrigation contractor to ensure functional irrigation system. Notify Project landscape architect should any conflicts arise. Hand water all areas that do not have automatic irrigation system until fully established.

B. Trees, Shrubs, Groundcover and Annuals:

1. Maintenance shall include litter removal, watering, pruning, fertilizing, weeding and the application of appropriate herbicides, insecticides, and fungicides as necessary. Under no conditions shall shrubs be sheared (unless Contractor obtains written consent of Owner).
2. Corrective measures - tighten and repair guying and staking work, reset settled plants, re-mulch in order to maintain specified depths of mulch.

C. Lawn Areas:

1. Maintain lawn areas, including watering, fertilizing, rolling, weeding, and application of appropriate insecticides, herbicides and fungicides, and reseeding, plugging or sodding per plan until a full uniform stand of specified grass is achieved.
2. Repair, re-grade and reseed/replug/resod washed out or bare areas as required per original plan.

3.07 ACCEPTANCE

- A. The landscape will be reviewed provided all work is in compliance with specifications and drawings and all plants and lawns are in healthy vigorous condition. Inspection to determine substantial completion of planted areas and lawns will be made by Project Landscape Architect upon Contractors request.
- B. Substantial Completion will be granted when all plant material has been installed, hydromulching and sodding has been completed, and clean up on site has occurred.
- C. Final Acceptance will be granted when:

ATTACHMENT D
LEANDER PUBLIC WORKS
LANDSCAPE AND IRRIGATION

1. All trees planted on site that are deemed unacceptable have been replaced and a fresh layer of mulch has been installed in all mulch beds.
2. All shrubs and groundcovers planted on site that are deemed unacceptable have been replaced and a fresh layer of mulch has been installed in all bed areas disturbed by replacements.
3. Seeded or plugged lawns shall be considered acceptable when established grass has grown at least 1-1/2 inches high with cover exceeding 95% of lawn area and no bare spots greater than two (2) square feet exist. Lawn areas not meeting these criteria shall be repaired with original materials/methods specified on plans. Provide re-grading as necessary.
4. All items listed on punch lists and field reports have been completed.

3.08 OBSERVATION SCHEDULE

1. Refer to Division 1- General Requirements for schedule of meetings, conferences, and inspection schedule.

3.09 EXPIRATION OF GUARANTEE PERIOD

The Contractor shall be responsible for notifying the Owner 30 days prior to the expiration of the guarantee period (see section 1.06, A). The Contractor shall coordinate a meeting at such time with the Owner to inspect all plant material for its health. All plant material deemed dead or unhealthy is to be replaced at the contractor's expense and shall be guaranteed for a time period equal to that of the original guarantee. Contractor shall remove and dispose of all staking, guying and wrapping materials at the end of the guarantee period.

END OF SECTION 32 93 00

ATTACHMENT F

INSURANCE REQUIREMENTS

1. Required Insurance Coverage: The Contractor shall procure and maintain at its sole cost and expense for the duration of this Agreement insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, volunteers, employees, or Subcontractors. The Contractor's insurance coverage shall be primary insurance with respect to the City, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officials, employees, or volunteers shall be considered in excess of the Contractor's insurance and shall not contribute to the coverage required to be provided by Contractor or to any claim made against the Contractor or any Subcontractor or any suppliers of the Contractor. Further, the Contractor shall include all Subcontractors as additional insured's under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverage's for Subcontractors shall be subject to all of the requirements stated herein. All Certificates of Insurance and endorsements shall be furnished to the City's Representative at the time of execution of this Agreement, which shall be incorporated herein by reference as part of this Agreement, and approved by the City before work commences.
2. Standard Insurance Policies Required:
 - a) Commercial General Liability Policy
 - b) Business Automobile Liability Policy
 - c) Excess/Umbrella Liability Policy
 - d) Workers' Compensation Policy
3. General Requirements Applicable to All Policies
 - a) Only Insurance Carriers licensed and admitted to do business in the State of Texas will be accepted.
 - b) Deductibles shall be listed on the Certificate of Insurance and are acceptable only on a per occurrence basis for property damage only.
 - c) "Claims Made" policies will not be accepted.
 - d) Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City of Leander, Texas.
 - e) Upon request, certified copies of all insurance policies shall be furnished to the City of Leander, Texas.
 - f) The City of Leander, Texas, its officials, employees, and volunteers, are to be added as "Additional Insured" to the General and Business Automobile Liability policy. The coverage shall contain no special limitations on the scope of protection afforded to the City, its officials, employees, or volunteers.
4. Commercial General Liability
 - a) General Liability insurance shall be written by a carrier with an A:VII or better rating in accordance with the current Best Key Rating Guide.
 - b) Minimum of \$1,000,000.00 per occurrence for bodily injury and property damage; \$2,000,000.00 aggregate.
 - c) Coverage shall be at least as broad as Insurance Service's Office Number CG 0001.

- d) No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.
- e) The coverage shall include but not be limited to the following: premises/operations; independent contracts; products/completed operations; contractual liability (insuring the indemnity provided herein); and where exposures exist, "Explosion, Collapse, and Underground" coverage.

5. Business Automobile Liability

- a) Business Automobile Liability insurance shall be written by a carrier with an A:VII or better rating in accordance with the current Best Key Rating Guide.
- b) Minimum Combined Single Limit of \$1,000,000.00 per occurrence for bodily injury and property damage.
- c) The Business Auto Policy must show Symbol 1 in the Covered Autos Portion of the liability section in item 2 of the declaration page.
- d) The coverage shall include owned or leased autos, non-owned autos, and hired cars.

6. Umbrella/Excess Liability

- a) In addition to all other liability insurance coverage required to be provided by the Contractor pursuant to this Section 27, the Contractor shall provide an umbrella/excess liability policy. The coverage limit minimum shall not be less than \$1,000,000.00.

7. Workers' Compensation Insurance

- a) Pursuant to the requirements set forth in *Title 28, section 110.110, Texas Administrative Code*, all employees of the Contractor, all employees of any and all Subcontractors, and all other persons providing services on the Project must be covered by a workers' compensation insurance policy; either by directly through their employer's policy (the Contractor or Subcontractor's policy) or through an executed coverage agreement on an approved TWCC form. Accordingly, if a Subcontractor does not have his or her own policy and a coverage agreement is used, Contractors and Subcontractors must use that portion of the form whereby the hiring Contractor agrees to provide coverage to the employees of the Subcontractor. The portion of the form that would otherwise allow them not to provide coverage for the employees of an independent Contractor may not be used.
- b) The workers' compensation insurance shall include the following terms:
 - (i) Employer's liability limit of \$1,000,000.00 for each accident is required.
 - (ii) "Texas Waiver of Our Right to Recover From Others Endorsement, WC 42 03 04", shall be included in this policy
 - (iii) Texas must appear in Item 3A of the Worker' Compensation coverage or Item 3C must contain the following: All States except those listed in Item 3A and the States of NV, ND, OH, WA, WV, and WY.
- c) The following shall be a requirement of this Agreement and, pursuant to the explicit terms of *Title 28, Section 110.110(c)(7),-Texas Administrative Code*, the bid specifications, and this Agreement, all subcontracts on this Project must include the following terms and conditions in the following language, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

Definitions

- A. Certificates of Coverage (“Certificate”) – A copy of a Certificate of Insurance, a Certificate of Authority to Self-Insure issued by the Texas Workers’ Compensation Commission, or a Coverage Agreement (TWCC-81, TWCC-83, or TWCC-84), showing statutory workers’ compensation insurance coverage for the person’s or entity’s employees providing services on a project, for the duration of the project.

Duration of the project – Includes the time from the beginning of the work on the project until the Contractor’s/person’s work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project (“Subcontractors” in §406.096, Texas Labor Code) – Includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent Contractors, Subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. “Services” include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. “Services” does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- B. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.
- C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- D. If the coverage period shown on the Contractor’s current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- E. The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity.
- 1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - 2) no later than seven calendar days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period

shown on the current certificate of coverage ends during the duration of the project.

- F. The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the Contractor knew or should have known, or any change that materially affects the provision of coverage of any person providing services on the project.
- H. The Contractor shall post on each project site a notice, in the text form, and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The Contractor shall contractually require each person with whom it contracts to provide services on a project, to;
 - 1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - 2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the Project, for the duration of the Project;
 - 3) provide the Contractor prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 4) obtain from each other person with whom it contracts, and provide to the Contractor:
 - a) a certificate of coverage, prior to the other person beginning work on the project, and
 - b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - 6) notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the person knew or should have know, of any change that materially affects the provision of coverage of any person providing services on the project; and

- 7) contractually require each person with whom it contracts, to perform as required by paragraphs (a) – (g) with the certificates of coverage to be provided to the person for whom they are providing services
- J. By signing this contract, or providing, or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the Contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of self-insured, with the Commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- K. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor that entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten calendar days after receipt of notice of breach from the governmental entity.

Certificates of Insurance: Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent and shall contain the following provisions and warranties;

- 11.8.1 The company is licensed and admitted to do business in the State of Texas.
- 11.8.2 The insurance policies provided by the insurance company are underwritten on forms that have been provided by the Texas State Board of Insurance or ISO.
- 11.8.3 All endorsements and insurance coverage are provided according to requirements and instructions contained herein.
- 11.8.4 The form of the notice of cancellation, termination, or change in coverage provisions to the City of Leander.

Original endorsements affecting coverage required by this section shall be furnished with the certificates of insurance.