

Advertise in the Big Lake Wildcat 2/12/26 and 2/19/26 (2 times)

BID NOTICE

Reagan County Commissioners are taking sealed bids for Santa Rita Golf Course Irrigation Project.

Sealed bids must be marked "Golf Course Irrigation" and are due by 12:00 p.m. (Central Time) on Friday, February 20, 2026, in the Office of the County Clerk, 300 N. Plaza, P.O. Box 100, Big Lake, Texas 76932.

Sealed bids will be opened in a public meeting of Commissioners' Court at 9:05 a.m. (Central Time) on Monday, February 23, 2026, at the Reagan County Courthouse, 300 North Plaza, Big Lake, Texas 76932.

The bidder must submit, along with the bid:

- A complete and fully executed Form 1295 Certificate of Interested Parties. (Form 1295 must be accessed online at www.ethics.state.tx.us).
- A complete and fully executed Form W-9. (Form W-9 is available online at www.irs.gov).
- **Proof of commercial general liability insurance with minimum coverage of \$1,000,000.00 per occurrence and \$2,000,000.00 aggregate, naming Reagan County as an additional insured.**
- **Proof of Workers' Compensation Insurance as required by Texas Labor Code Section 406.096, or a Certificate of Authority to Self-Insure issued by the Texas Department of Insurance, Division of Workers' Compensation, or a valid coverage agreement showing compliance with Texas workers' compensation requirements. Such coverage must be maintained throughout the duration of the contract.**
- **Performance Bond in an amount equal to 100% of the contract price, issued by a surety authorized to do business in Texas and acceptable to Reagan County**
- **Payment Bond in an amount equal to 100% of the contract price, issued by a surety authorized to do business in Texas and acceptable to Reagan County**

The bid documents and specifications may be obtained online at www.co.reagan.tx.us, in the Auditor's Office, Reagan County Courthouse, 300 N. Plaza, Big Lake, Texas, or by calling 325-884-2233.

In compliance with House Bill 1612, 66th Legislature, regular session, the County reserves the right to waive any formalities in bids or bidding. The County may accept any bid deemed to be advantageous.

*Reagan County Golf
Course Big Lake, Texas*

Reagan County Golf Course Irrigation Project

Project Manual

November 2025

SPECIFICATIONS

Please provide proof of the following with your bid

- **Proof of liability insurance.**
- **Proof of Workers' Compensation Insurance**
- **Performance Bond**
- **Payment Bond**

Specifications

for

MATERIAL AND INSTALLATION

for the

Irrigation System

for

Reagan County Golf

Course Big Lake, Texas

TABLE OF CONTENTS

SECTION 1 – GENERAL SPECIFICATIONS.....

- 1.0 Purpose
- 1.1 Contractor Qualifications
- 1.2 Definitions
- 1.3 Scope of Work
- 1.5 Guarantee
- 1.6 Permits and Codes
- 1.7 Utilities
- 1.8 Damages and Termination
- 1.9 Scheduling
- 1.10 Insurance
- 1.11 Payments and Compensation
- 1.12 Changes in the Work

SECTION 2 – STAKING and RECORD DRAWINGS.....

- 2.0 General
- 2.1 Staking
- 2.2 Construction Record Drawings

SECTION 3 – PIPING AND CONNECTIONS.....

- 3.0 Handling
- 3.1 Pipe Materials and Installation
- 3.2 Fittings and Valves
- 3.3 Valve Boxes
- 3.4 Flushing
- 3.5 Inspection and Testing
- 3.6 Balance and Adjustment

SECTION 4 – SPRINKLERS AND IRRIGATION VALVES.....

- 4.0 Sprinklers
- 4.1 Sprinkler Installation
- 4.2 Quick Coupling Valves
- 4.3 Automatic Valves

SECTION 5 – CONTROLS AND ELECTRICAL.....

5.0 Central Controller

SECTION 6 – EXCAVATION.....

6.0 Excavation

6.1 Trenching

6.2 Backfill

SECTION 7 – CONSTRUCTION GUIDELINES.....

7.0 General

7.1 Supervision and Workmanship

7.2 Existing Facilities and Structures

7.3 Materials

7.4 Cleanup

7.5 Programming and Training

SECTION 8 – BILL OF MATERIALS.....

SECTION 10 – BIDDING INFORMATION.....

SECTION 1 – GENERAL SPECIFICATIONS

1.0 Purpose

The objective of these specifications is to ensure a properly assembled, installed, and fully functioning automatic irrigation system which will efficiently irrigate all desired areas of the golf course to be covered and, upon completion, will be acceptable in all aspects to the Owner. These specifications and design details are to be considered part of the Contract, and the Contractor shall follow the specifications and design with due perseverance.

1.1 Contractor Qualifications

The irrigation system must be installed by a contractor who is a current Licensed Irrigator in the State of Texas or who arranges for a Texas Licensed Irrigator to be on site at all working times during installation. Licensed Irrigator must have at least 3 years of experience installing golf course irrigation systems. The contractor shall have successfully installed HDPE (high density polyethylene) pipe in golf/turf irrigation projects and must have HDPE manufacturer's certification. If a contractor has not previously successfully installed HDPE pipe for golf/turf irrigation projects, he/she will be required to have a qualified fusion technician from the pipe supplier for a period of three to five day (at the expense of the contractor). The length of time required for HDPE pipe (fusion and mechanical) training shall be determined by the owner or representative. The technician must have been trained and have fusion certification. The training must have been completed within the past twelve months. A designated person or persons will be trained by the technician. The training will include the following: 1. Butt fusion 2. Socket fusion 3. Electro-fusion 4. Attachment of fuse saddles. 5. If electro-fused or side wall fusion is required, this training must also be complete while the technician is on site.

References will be required. These reference(s) must provide a satisfactory response or the experience will not be accepted.

1.2 Definitions

The following parties shall be represented as:

CONTRACTOR – TBD

OWNER – Reagan County Golf Course, Big
Lake, Texas DISTRIBUTOR – TBD

1.3 Scope of Work

The project location is near Big Lake, Texas, County of Reagan.

The Contractor shall install a new underground irrigation system as indicated on the drawings and in these specifications and shall furnish all supervision, labor, equipment, tools, and materials required for all work described herein. No deviation from these specifications, accompanying drawings, the contract, or other general conditions is allowed, unless authorized in writing by the Owner in advance.

Unless otherwise specified, the design and specifications are intended to include everything obviously requisite and necessary for the proper installation and completion of the work whether each necessary item is mentioned herein or not. Any and all items not specifically identified either in the design drawings or in the specifications that are required for or can be reasonably anticipated for completion of the irrigation system shall be furnished by the Contractor at no additional cost to the Owner. The design and specifications are intended to be cooperative, and

any item called for in one and not the other shall be as binding as if called for in both. All materials shall be installed according to manufacturers' and industry specifications.

1.4 Drawings

The drawings show the extent and general arrangement of the irrigation system. The irrigation design is essentially diagrammatic, with size and location of equipment and materials drawn to scale whenever possible. Due to the scale of the design, it may not be possible to show all offsets, fittings, accessories, and other materials necessary for complete construction. Before commencing the project, the Contractor shall check and verify all dimensions on site and shall report any discrepancies or conflicts in the drawings and/or specifications to Owner and Designer. The Contractor shall also investigate with due care the structural and site conditions to become thoroughly familiar with all details of the project and working conditions.

All drawings, specifications, detail drawings, and other drawings furnished by the Owner are the property of the Designer and are not to be used on other work.

1.5 Guarantee

The Contractor shall guarantee all work against faulty and improper workmanship for a period of one (1) year from the date of final acceptance by the Owner. Contractor shall provide service necessary to maintain the system for a period of one (1) year from date of final acceptance by the Owner and shall correct any deficiencies which occur during the guarantee period, including repairing the settling of backfilled trenches and sprinkler heads, and complete restoration of any damaged planting, paving or other improvements of any kind, at no additional cost to the Owner. All materials and products furnished under this contract shall be guaranteed by the Manufacturer(s) for a minimum of one (1) year from date of final acceptance by the Owner unless otherwise specified.

The Distributor shall furnish the Owner with all written warranties provided by the Manufacturer(s) of any equipment or materials installed under this contract. Any necessary repairs and/or replacements in the guarantee period shall be made in a timely manner by the Contractor at no additional expense to the Owner. Owner may make emergency repairs to the irrigation system without affecting the guarantee agreement with the Contractor. Owner has the responsibility to maintain the system in proper working order during the warranty period. If Owner requests emergency repair work under this guarantee and Contractor does not respond within seventy-two (72) hours, Owner may make necessary repairs at the full expense of the Contractor.

1.6 Permits and Codes

The entire installation shall fully comply with all governing laws, regulations, and ordinances of the State of Texas, the County of Reagan, and/or any other authority having jurisdiction over the work. Compliance includes any licensing for installers and service personnel. The Contractor shall obtain all required permits and licenses necessary for the commencement of this project, pay all Manufacturers' taxes, use taxes, processing taxes, and insurance, arrange for all necessary inspections, and pay any fees and expenses at his sole cost in conjunction with the same as part of the work under this contract. Permits, licenses, and easements for permanent structures or permanent changes to existing facilities shall be obtained by the Owner unless otherwise specified.

at variance or conflict with existing ordinances, regulations, or codes, he shall promptly notify the Owner in writing, who shall authorize any changes in writing. If Contractor performs any work knowing it to be contrary to such laws, ordinances, regulations, or codes, and without notice to the owner, he shall bear all resulting costs, including but not limited to the change and correction thereof, so as to comply.

1.7 Utilities

The Owner shall make available to the Contractor all necessary information regarding the known locations of existing utilities or drainage lines within the site's property lines. Before beginning any work, the Contractor shall mark locations of such utilities and/or underground obstructions at the site. The Contractor shall be fully liable for the damages to and cost of repairing any buried conduit, cables, or piping encountered during installation, unless it was not previously informed of such underground utilities. If the Contractor is aware of such buried lines, he shall immediately have the incurred damages repaired at his own expense. Conversely, the Owner shall be liable for the cost of replacing or repairing damages to any of those existing utilities of which the Contractor had not been previously informed.

1.8 Damages and Termination

If the Contractor or Owner should suffer damage in any manner due to any wrongful act or neglect of the other party or of anyone in his employ, whether as his employee, agent, or subcontractor, and such damage is not adequately covered by insurance, he shall be reimbursed by the other party for such damage. Any claim for damage shall be made in writing to the party liable within a reasonable time of observance of such damage and not later than the time of final payment. All claims for damage are subject to negotiation and in no way shall hold up the progress of the work or of progress payments.

If the Contractor should default in the performance of the work causing delays to the project, he shall be liable for any and all loss and damages including liquidating damages sustained by the Owner. The Contractor shall not be liable under this paragraph if such default is caused by others who are not party to this contract but whose act or action must precede work performed under this contract, acts of God, labor disputes, or other reasons beyond the control of the Contractor. Severe inclement weather conditions which may prohibit the Contractor from performing quality installation techniques may be considered legitimate delays after mutual agreement by Owner and Contractor.

Owner retains the right, after giving seventy-two (72) hours written notice to the Contractor, to provide any such labor and materials in the event that the Contractor at any time:

- A. Fails to provide a sufficient number of properly skilled workers.
- B. Becomes adjudicated as bankrupt, files an arrangement proceeding, commits any acts of insolvency or makes an assignment for benefit of creditors without the consent of the Owner.
- C. Fails to make prompt payment to material suppliers or workers.
- D. Fails, in any respect, or refuses to properly execute the work covered by this contract with such diligence as will ensure its completion within the time specified herein.
- E. Becomes delinquent in respect to payments or contributions required for health and welfare, pension, or other employee benefit programs or trusts.
- F. Stops work due to a court order or public authority for a period exceeding thirty (30)

calendar days.

G. Persistently disregards codes, regulations, and laws including safety laws.

H. Is unable to obtain materials due to poor credit.

In the event any of the above occurs, the Owner may, by written notice to the Contractor, terminate the Contractor's right to proceed with the work. The Owner shall have the right in that event to enter the premises of the project and take possession of all materials, tools and appliance thereof. The Owner may employ any other person or persons to finish the work and provide materials thereof for the purpose of completing the work under this contract.

In such case, the Contractor shall not be entitled to any further payment under this contract until the work undertaken by the Owner is complete. If the unpaid balance to be paid under this contract does not exceed the expenses incurred by the Owner in completing the Contractor's work, the remaining balance will be paid to the Contractor by the Owner. If the Owner's expenses exceed the unpaid balance, the Contractor shall promptly pay the Owner the amount by which such expenses exceed the unpaid balance. The expense for finishing the work by the Owner, and the damages incurred by the Owner by reason of Contractor default, shall be charged to the Contractor, and appliances and equipment taken possession of used to secure payment thereof.

1.9 Scheduling

The Contractor will be required to complete all the work within 75 calendar days from the date of commencement. The contract work shall commence the date specified by a written Notice to Proceed issued to the Contractor by the Owner.

A work schedule shall be submitted by the Contractor to the Owner for approval prior to the commencement of any work showing the approximate dates the various items of work will begin and end. The work of the Contractor must proceed in an orderly and efficient manner in accordance with said schedule so as not to delay or interfere with other construction work.

The Owner reserves the right to occupy portions of the work prior to completion and to install equipment provided it does not interfere with the work of the Contractor.

1.10 Insurance

The Contractor shall protect the Owner against all liabilities, claims, or demands for injuries or damages to any person or property arising from the performance of the work under this contract. Contractor shall accomplish this protection by acquiring, at his own expense, prior to the commencement of any work under this contract, Public Liability and Property Damage Insurance. He shall furnish a Certificate of Insurance to the Owner with an insurance carrier satisfactory to the Owner, with limits specified, and a thirty (30) day cancellation clause prior to commencement of work.

The Contractor's insurance shall also protect the Owner against all claims arising from the use of automobiles, trucks, and other motor vehicles. The insurance shall include an endorsement naming the Owner as an additional insured under the policy or policies. The insurance shall provide that should the policy be cancelled or reduced in coverage afforded thereunder before the expiration thereof, the issuing company will mail written notice of not less than thirty (30) days prior to such cancellation or reduction to the Owner.

All Public Liability and Property Damage insurance shall be maintained by the Contractor in full force and effect during the entire period of performance under this contract. The amounts of coverage shall be not less than:

- A. Worker's Compensation - Statutory Limits
- B. Commercial General Liability
 - 1. Occurrence - \$1,000,000
 - 2. Product and Completed Operations - \$1,000,000

3. Personal and Advertising - \$1,000,000
4. General Aggregate - \$2,000,000
- C. Automobile and Vehicle Liability
 1. Combined Single Limit - \$1,000,000

1.11 Payment and Compensation

Payment requests shall be made per the General Contract. No payments are made until material is received on site.

A 10% retention will be held by the Owner. Payment will be in the amount of 90% of the invoiced amount.

The 10% reduction will be paid in 2 payments of 5% each. The first 5% payment after final acceptance of the system will be made after complete checkout of the system has been completed and the Contractor has presented the Owner with waiver of lien in form and substance satisfactory to the Owner and with such other instruments as may be reasonably required by the Owner in order to effectively waive Mechanic's and Materials Liens, in compliance with the laws of the State of Texas. The Contractor will hold the Owner harmless from any liens, indebtedness or liabilities to subcontractors or other parties hired by the Contractor. The final 5% will be paid after the Contractor has corrected any trench settlement, re-set sprinklers and valve boxes, performed clean-up, and corrected any and all malfunctions in the system after the three (3) month settling period.

1.12 Changes in the Work

The Owner shall have the right to require alterations of, additions to, and deductions from the work shown on the drawing(s) or described in the specifications without rendering void the Contract. All such changes shall be in the form of a Change Order prepared by the Contractor. The Contractor will compute a value of the work and submit in proposal form, but will not proceed with the changes until signed authorization has been given by the Owner. In each case the price agreed to be paid for the work under the Contract shall be increased or decreased for the work added or omitted. All authorized changes in the work shall be completed per the conditions of the Contract except that any claim for extension of time caused by additions shall be adjusted at the time of ordering such change. In the event the value of the work or cost adjustment furnished by the Contractor is unacceptable to the Owner, the Contract shall be performed without reference to said Change Order. Minor changes in the work that do not involve extra cost and are not inconsistent with the purpose of the work can be ordered by the Owner and no claim for an addition to the Contract sum will be considered.

SECTION 2 - STAKING AND RECORD DRAWINGS

2.0 General

The Contractor may be required to make field adjustments from the initial design in order to effectively irrigate the golf course as a result of adjustments before or during construction. These minor adjustments will not be compensated. However, significant changes in quantities or routings will be compensated as per the unit prices.

The Designer reserves the right to change the pipe routing or depth of trench in order to compensate for rock or other obstacles. Field changes of this minor extent will in no way affect the contract price except where changes alter the quantity of materials or increase the depth of

trench and backfill required. The routing of pipe should otherwise generally follow the irrigation design. Any changes require the prior approval of the Owner or Designer.

2.1 Staking

All existing utilities shall be located and staked by the Contractor. Owner will assist in locating said utilities.

The locations of the sprinklers and valves on the design are essentially diagrammatic. At the Owner's discretion, the Owner, Designer, or Contractor shall flag the exact locations of all sprinklers to assure proper coverage. In no instance shall the spacing of sprinklers exceed the distances shown on the drawings. The Contractor or Owner will be required to provide three (3) assistants to help in flagging/staking. All flagging materials for staking shall be provided by the Owner. The system will be flagged in separate phases, not less than three holes per phase, in advance of construction.

The flags will be replaced by the Contractor with clearly marked stakes or items painted on the ground in order to clearly designate the equipment to be installed at each marked or staked location. Stakes/hubs shall be placed accurately and components shall be located within one (1) foot of the flagged/staked/marked position. Any offset from the base position shall be clearly indicated to insure accurate installation. The Contractor shall maintain this staking and have the Owner replace any stakes that have been disturbed or removed to the correct position until the equipment is installed and identified by the Contractor on the revised as-staked drawings.

2.2 Construction Record Drawings

The Contractor shall account for all sprinklers, valves, pipe routing, wire splices, satellite controllers, grounding, air release valves, and quick coupler valves installed in the project. All in-ground fittings, wire splices, valves, capped lateral lines, plugged service tees, and other buried components shall be marked with a 3/4" x 3' PVC stake or approved equivalent to provide for GPS mapping after project completion if GPS mapping is to be utilized.

During installation, the Contractor shall maintain an ongoing as-built drawing of the system gathered from the above-mentioned procedures, updated daily. These drawings will include all pertinent information to the final as-built drawings including pipe size and routing; mainline fitting angles; all sprinklers by model/nozzle number and controller assignment; location of all water and electrical sources; wire sizes, runs, and splices; valve locations and sizes; notes of any special construction conditions or equipment.

There shall be one qualified person designated by the Contractor responsible for updating and maintaining the ongoing as-built drawings, whose name shall be attached to the drawings. These progress as-built drawings (along with GPS data if used) will be the basis for the final as-built drawing. As-built fees will be provided to and paid by the Owner.

SECTION 3 - PIPING AND CONNECTIONS

3.0 Handling

All HDPE pipe, fittings, and related components shall at all times be handled with due and utmost care. Pipe shall be delivered to the job site on equipment suitable for shipping HDPE products and which meets industry standards. Any damaged pipe shall be removed from the job site immediately so it will not be used. Pipe shall be carried within the project on suitable trailers or vehicle with the bed of substantial length to allow the complete length of the pipe to be supported. The trailer or truck rack shall have no sharp edges which may damage the pipe during hauling. A backhoe shall not be used to transport pipe in any instance.

The Contractor shall provide effective protection at all times to prevent sand, rubbish, or any other debris from entering the piping. When work is stopped at night or at any other time, the

3.1 Pipe Materials and Installation - HDPE

A. Pipe Materials - All piping on the project of a similar type shall be of one manufacturer and installed as called for in the specifications and as called for by the manufacturer. All pipe shall be as indicated on the drawings and meet the following criteria: Mainline - HDPE PE4710 - SDR 13.5. Laterals - HDPE PE4710 - SDR 13.5

B. HDPE Pipe Materials Pipe shall be manufactured from a PE 3408/3608 or PE4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D3350-05 with a cell classification of PE 345464C. Pipe shall be manufactured to the dimensions and requirements of ASTM F714. All 2" pipe and above shall be SDR 13.5 or as specified on the plans. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. All HDPE pipe shall be in straight lengths. (HDPE pipe can be in coils if contractor straighten and re-rounds pipe with a Line Tamer Machine). The Pipe shall be supplied by CMF Global, ISCO Industries, JM Eagle, or approved equivalent. The distributor of the HDPE pipe and fittings must comply with the following requirements:

1. The distributor must be capable of supplying both the pipe and fittings.
2. The supplier must have the capability to train the contractor's employees in butt fusion, electro-fusion and socket fusion of HDPE pipe and fittings.
3. The supplier must be capable of providing a "Hot Line" phone number to assist in fusion and fusion equipment questions.
4. The supplier must be capable of providing a trained representative on site upon the request of the contractor, owner or consultant to address any problems that are encountered during the installation.

All lateral pipes shall be installed by pulling with vibratory plow or by trenching and laying of pipe, backfilling and compacting according to accepted industry standards and the requirements for mainline installation set forth above. Bottom of trench shall be free from rocks and sharp debris. Piping shall be flushed completely prior to operation of sprinklers. For all pipe, mainline or lateral, trenches shall be deep enough to provide pipe 2" with a minimum of 15" cover. Pipe 3" and 4" shall have a minimum of 18" cover. Pipe 6" shall have a minimum of 24" cover.

3.2 Fittings and Valves

All fittings shall be HDPE DR11. Fittings and valves shall be line sized as called for in the plans unless stated elsewhere in the plans or specifications. Fittings and valves shall be used that are compatible with the pipe utilized on the project. All fittings and valves of a similar style and type shall be purchased from the same manufacturer.

Lateral Ball Valves

Lateral isolation valves shall be a SLO-CLOSE full block true union ball valves with HDPE 3408 Spigot DR11 end connections, as manufactured by CMF Global AquaFuse, LASCO V2010HD-SC or approved equivalent. They are to be joined to HDPE pipe using standard butt fusion equipment, socket coupling, electro-fusion couplings, following equipment manufacturer's recommendations. The valve assembly shall be attached to mainline 4" and above beginning with a FRIALEN or CENTRAL electro-fusion branch saddle by mainline size followed by a FRIALEN or CENTRAL electro-fusion coupling (if needed), followed, HDPE pipe length required to raise the assembly to the specified lateral pipe depth (if needed), followed by an IPS molded HDPE 90 degree elbow, the SLO CLOSE Valve butt fused to the lateral pipe

Big Lake Golf Course – Materials and Installation Specifications

or socket coupling. Assembly shall be installed in a 10" round valve box with a 4" corrugated plastic sleeve around valve skirt. SLO-CLOSE valves must be installed following the flow arrow located on the side of the valve.

Air release valves shall be installed as indicated on the design plan at the highest elevation point(s) in the project area. The valves shall be mounted on a two-inch (2") swing assembly, length required to service the assembly, followed by a two inch (2") brass elbow and nipple, a two inch (2") 200 psi brass gate valve, followed by a two inch (2") I.P.S. brass nipple, and two inch (2") 200 psi wye strainer shall precede the installation of the air release valve. All fittings shall be of brass or bronze construction. This assembly shall be installed in a 12" by 18" minimum valve box with lid mounted at grade level to allow for access and maintenance. Air release valves shall be 2" BERMAD IR-C15-P or approved equivalent.

3.3 Valve Boxes

The Contractor shall install all gate valves, isolation valves, remote control valves, drain valves, air release valves, ground rods, electrical splices, etc. in high impact plastic valve boxes. Valve boxes shall be manufactured by Ametek or approved equivalent.

Quick Coupling valves - 10", marked "Irrigation"

Electrical splices - 12" rectangular, gray, marked "Irrigation," locking lid

Air release valves - minimum 12" x 18" rectangular, marked "Irrigation"

Valve boxes shall be installed so that position of valve box allows full open and full close of shut-off valves. Valve boxes shall be installed with the appropriate extension per the manufacturer to bring the valve box to grade level. A minimum 4" layer of pea gravel shall be applied to the floor of each valve box.

3.4 Flushing

Due care shall be taken at all times during flushing of the system and pressurization. Mainlines shall be flushed as each section is added to the system and a gate valve installed. Lateral lines should not be connected to the mainline prior to flushing of the mainline. Laterals must be flushed prior to installation and operation of sprinklers. If this is not done and any sprinkler is then damaged, it will be replaced at Contractor's expense.

3.5 Inspection and Testing

The Owner reserves the right and access to inspections of the installation whenever necessary. The Contractor shall provide any labor and equipment required to successfully test and inspect the work. Inspections may include, but may not be limited to, the following:

- A. Inspection of materials to be used in the project.
- B. General inspection of the installation by the Owner's Representative.
- C. Proper sprinkler location, coverage patterns, and performance.
- D. Leakage testing of the piping and valves.
- E. Inspection for trench settlement, proper grading and compaction of trenches, sprinklers, valve boxes, and all components upon completion of the project installation.
- F. Inspection for satisfactory repair of any asphalt surfaces, roadways, and/or landscaping damaged during installation.
- G. Testing of automatic operation of all irrigation equipment.

When the Contractor is satisfied that the system is complete and operating properly and that cleanup is complete, he shall issue the notice of completion to the Owner. Notice of Completion shall include the Request for Final Inspection with date and time included.

The Owner and other required authorities shall be notified at least 48 hours in advance of all tests, and all tests shall be conducted in their presence and to their satisfaction. The entire irrigation system shall be tested at the normal system working pressure and upon visual inspection of the ground. Any leaks found shall be promptly repaired and the affected section retested until satisfactory. Any inconsistencies in regard to the specifications shall be noted by the Owner's Representative and a written copy of correction shall be given to the Contractor.

3.6 Balance and Adjustment

The Contractor shall balance and adjust the various components of the irrigation system so that its overall operation is optimum. This includes synchronization of the controllers, adjustments to any pressure regulators, pressure relief valves, part circle sprinklers, and individual station adjustments on the controllers. Contractor may request Owner's Representative to assist in these procedures.

SECTION 4 - SPRINKLERS AND IRRIGATION VALVES

4.0 Sprinklers

The installation of sprinklers shall include the furnishing of all equipment and components necessary to completely install the sprinkler and shall include, but not be limited to, excavation and backfill, swing joint assembly, sprinkler heads, 2-wire system, and restoration to grade in accordance with these plans and specifications.

Sprinkler heads shall be of the types, nozzles, and sizes indicated on the plans and shall be capable of producing the radius of throw, flow, pressure, and any other designations as indicated in the design. All sprinklers in the project shall be manufactured by Rain Bird and will be considered pending equivalent materials. Sprinkler heads shall be marked with the manufacturer's name and other identifications for easy identification while installed at grade. Sprinklers shall meet the following requirements:

- A. All valve-in-head sprinklers, if used, shall be normally closed electric type.
- B. Cases shall be constructed of high impact molded plastic.
- C. All serviceable components of the sprinkler shall be completely serviceable from the top, including pilot valve, pressure regulator, solenoid, valve seat and rock screen.
- D. All sprinklers shall carry a minimum three (3) year unconditional warranty.
- E. ACME inlet threads are acceptable.

4.1 Sprinkler Installation

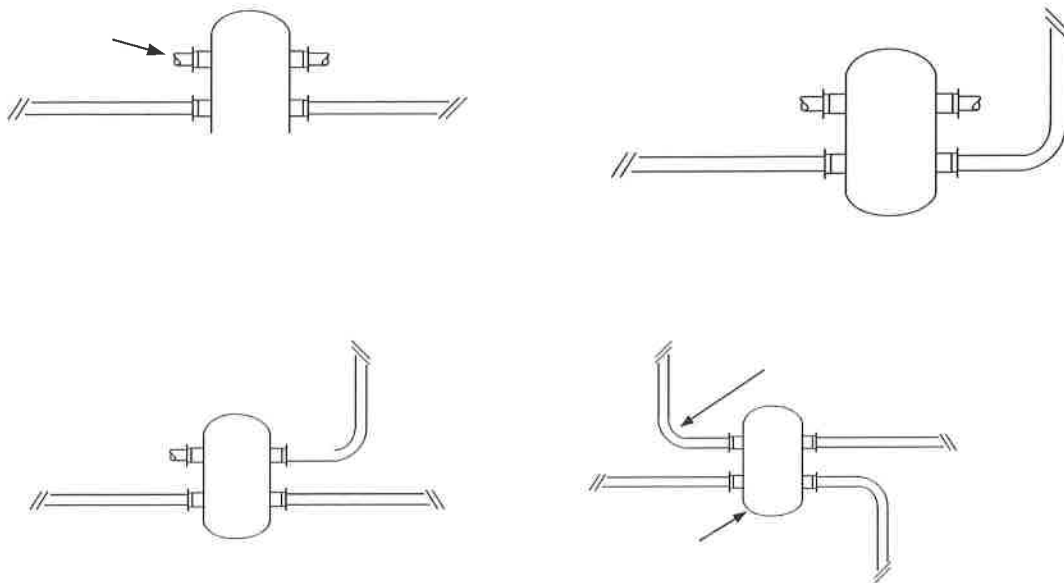
Sprinklers shall be installed exactly as staked at finished grade. All sprinklers shall be backfilled and hand-tamped to 95% compaction to avoid future settling. Swing joint installation shall be consistent throughout the project with the sprinklers laying away from the green. Due care shall be taken to prevent trash from entering the piping and swing joints during installation of the sprinklers. Three (3) months after project completion, the Contractor shall return and reset any sprinklers that may have settled. Sprinklers in areas of excessive slope shall be adjusted level for maximum sprinkler performance without exposing the sprinkler case to damage from mowers and other equipment.

The Contractor shall be responsible for all adjustments necessary to ensure that all sprinklers, at both full- and part-circle settings, are regulated to the proper design pressure and are equipped with the correct nozzle. All sprinklers having adjustable pin nozzles shall have such pin adjusted for proper distribution prior to final checkout of the system.

4.2 Quick Coupling (QC) Valves

Quick coupling valves shall be installed near a sprinkler at each green as located on the design and meet the following requirements:

- A. One piece brass construction with 1" inlet thread minimum.
- B. Install in a 10" round valve box, immediately adjacent to a sprinkler.
- C. Valves and keys shall be supplied by the same manufacturer as the valve-in-head sprinklers.
- D. QC valves shall be installed using Lasco brass insert swing joint with stabilizing elbow. 2' rebar will be installed in the stabilizing insert.



SECTION 6 - EXCAVATION

6.0 General

The Contractor shall do all excavating, backfilling, and compaction required for proper installation of the work according to standard acceptable industry practices.

6.1 Trenching

All trenches shall be neatly aligned with trench bottoms as level as possible. Trenches shall be of adequate width to allow installation of wiring as detailed in the design.

Trenching shall be avoided within the drip lines of existing trees. The Contractor shall provide proper root pruning to meet arboricultural standards or as directed by the Owner.

The Contractor shall provide any necessary pumps for removing water from trenches and other parts of the work to prevent trenches from caving in.

6.2 Backfill

All backfill material shall be free of rock or other unsuitable material to prevent damage to pipe and wire. All backfill material shall be compacted to 90%-95% compaction in 6-inch layers as it is brought up to finish grade so as to ensure that no settling results. Excessive trench material shall be removed to a readily accessible location as designated by the Owner, at the Contractor's expense.

6.3 Cart Path Crossings

If trenching is necessary through existing cart paths to remain, with the Owner's permission, the Contractor shall cut the pavement in a straight line to the width of the trench prior to trenching, or if possible, bore under the paved area, leaving enough material undisturbed under the pavement to prevent collapse. Removal and replacement of pavement is the Contractor's responsibility. These trenches shall be treated like all other trenches in the project.

SECTION 7 - CONSTRUCTION GUIDELINES

7.0 General

Before submitting a bid, the Contractor should become familiar with all drawings, specifications and all other Bid and Contract documents, and should visit the project site (but is not required to) and become fully acquainted with the nature and location of the project, the conformity of the ground, the nature, quality, and quantity of materials to be used, local and general conditions, and all other factors which might affect the performance of this Contract. The Contract shall not be affected or modified by any verbal agreement or conversation with any officer, agent, or employees of the Owner, either before, during, or after the execution of this Contract.

Installation of the irrigation system shall proceed from the pump station with the installation of the mainline and proceed as follows, per nine holes:

- A. Flag all sprinklers by Owner, Contractor, and/or Designer.
- B. Install central computer upon delivery.
- C. Install mainline piping, power wire, fittings and valves, starting at the pump station as indicated on design drawing.
- D. Flush mainline pipe.
- E. Install lateral piping (after flushing of connecting mainline sections), fittings, swing joints, and isolation valves.
- F. Flush lateral pipe and valves.
- G. Install sprinklers to grade.
- H. Cleanup and final backfilling of trenches.
- I. Submit Contractor revised-as-staked drawings to Owner indicating pipe routing, pipe size, station numbers, dimensions, and verifying all components installed to date.
- J. Cleanup.
- K. Coordinate for final as-built drawing with owner.
- L. Reset sprinklers, valve boxes, etc., to grade and install yardage tags after 6-month settling period.

The Contractor shall follow all standard construction methods and complete all aspects of the work in a professional manner. All methods shall comply with OSHA standards. The Contractor shall provide for proper worker safety at all times during construction. Contractor will assist Superintendent in removing any existing sprinkler heads in good working order.

7.1 Supervision and Workmanship

The Owner shall designate in writing to the Contractor one person as the Owner's Representative (Golf Course Superintendent) to work with the Contractor. This appointed representative shall have full authority to approve work performed by the Contractor, make and/or approve field changes that are necessary, and approve progress payments as each phase is completed.

The Contractor shall make no effort to impede the free movement of the Owner's Representative. The Owner's Representative will act as the inspector on the project and will have all such authority vested in an inspector. Owner's Representative has the authority to stop work whenever such stoppage may be necessary to insure the proper execution of the Contract. He also will have the authority to reject all work and materials that do not conform to the contract.

If the Contractor disagrees with any decision made by the Owner's Representative, the Contractor may file a written complaint with the Owner within seven (7) days, and the Owner will notify the Contractor in writing of his decision to support or override the decision of the Owner's Representative.

Neither the Owner nor the Owner's Representative will be responsible for acts or omissions of the Contractor, any subcontractors, or of their agents, employees, or other persons performing the work.

The Contractor shall keep on the project throughout construction a qualified supervisor and any necessary assistants, all satisfactory to the Owner and Designer. The Supervisor shall represent the Contractor in his absence, and all directions given to him shall be as binding as if given to the Contractor. The Supervisor and his work experience shall be identified in the bidding documents.

All aspects of the work of the project shall be performed in an exemplary and workmanlike manner, in accordance with industry standards and the terms of the Contract. All materials, equipment, and labor shall be furnished in quantities sufficient to fulfill the requirements for quality installation and the timeframe of the Contract.

If at any time prior to final acceptance of the irrigation system it is found that the Contractor improperly located equipment, he shall move or remove and reinstall such equipment in the proper location(s) at his expense per the design and to the satisfaction of the Owner.

The Designer will be, in the first instance, the interpreter of the Specifications and Drawings for the irrigation system. All interpretations and decisions by the Designer shall be consistent with the intent of the Contract Documents. The Designer will at all times have access to the work.

7.2 Existing Facilities and Structures

The Contractor shall exercise due and diligent care in protecting all existing golf facilities, buildings, equipment, piping, pipe coverings, utilities, roads, sidewalks, landscaping, trees, wetlands, native areas, archeological areas, or other existing structures or Owner's property of any kind. The Contractor shall be liable for any damage to any of the Owner's property.

Should there be any damage from leaks in the piping system being installed by the Contractor or his employees or assigns during the course of the work, whether through negligence or otherwise, The Contractor has the responsibility to repair and/or replace the damaged property. Such repair or replacement shall be a condition precedent to the Owner's obligation to make final payment under the Contract.

The Contractor shall perform all cutting, patching, and fitting of his work required to match to the work of others or existing piping, structures, or utilities either shown in the drawings, implied

in the specifications, or necessary to complete the installation and to make parts of his work whole.

No native or environmentally sensitive areas shall be disturbed at all. The Contractor must emphasize this provision of the Contract strongly to all his employees, subcontractors, assigns, and any others associated with this project under the Contractor's supervision. Hunting, exploring, camping, recreation, or other activities not related to the performance of the work by the Contractor is prohibited on the Owner's property. Employees in violation of this policy shall be subject to dismissal.

7.3 Materials

All materials for the project are to be supplied by the Owner or Contractor (whichever is in the best interest of the Owner). All materials for this project as called for in the specifications and drawings shall be new and the best available without defects, except such materials as may be expressly provided in the Contract to be otherwise. All equipment shall be supported by a local service organization.

All materials shall be suitable for the pressures and temperatures to be encountered. Any materials or equipment found to be defective or not as specified shall be removed from the site by the Contractor, and proper materials shall be installed by the Contractor, as ordered by the Owner, at the expense of the materials supplier.

All materials shall be approved by the Owner before installation.

Owner shall coordinate delivery of all materials and equipment to avoid delay in the progress of the work. Owner is responsible for providing any and all means including equipment, labor, etc., for the complete delivery and proper unloading of all materials from suppliers.

All materials and installation shall be specified and approved by the Designer. If materials have no reference of "or approved equivalent," Contractor shall bid on specified materials. No changes to plans or specifications will be made prior to bidding unless Contractors have received a written addendum.

Owner shall provide a suitable location in which all materials to be used on the project shall be stored when not in use. Provision of the space is for the purpose of keeping the property neat and orderly and in no way waives any requirements of the Contractor to protect his equipment and materials from damage by the elements or from theft or vandalism. Facilities for the storage of materials subject to damage from exposure to weather shall be of adequate size and water tight, with floors raised above ground level. Other materials shall be stored on blocks off the ground. Materials shall be located so as to allow easy access for inspection and identification. All materials storage shall conform with pertinent local laws.

The storage location shall be supplied with adequate security to the satisfaction of the Owner in order to protect the materials stored therein. Owner may enter the material storage area for inspection, inventory, or any other purpose he deems necessary. Any material that has become damaged and is deemed unfit for use shall not be used in the project.

The Contractor shall remove the storage facility upon completion of the project as directed by the Owner.

In the event that materials may be furnished by the Owner, the Contractor has the responsibility to examine the items and handle and store items as specified above or per the recommendations of the manufacturer(s). Loss or damage to Owner-supplied materials due to acts of the Contractor shall be charged to the account of the Contractor and deducted from moneys due under this Contract.

The Contractor shall coordinate with the Owner on the necessary delivery dates for any Owner-supplied materials, and the Owner shall facilitate said deliveries to comply with the agreed-upon materials delivery schedule.

Owner shall provide all electrical power disconnects for the project at locations as noted in the

plans. Contractor shall make all connections and provide labor to make connections to the irrigation system control power wiring from the Owner-supplied disconnect panels. Where necessary, the Contractor will provide and install all voltage regulating/stabilizer units at required electrical supply points. All connections to the meters/hook-ups/disconnects at any location shall be made by a licensed electrical contractor per all applicable codes.

The Contractor shall use due diligence and care in the loading, unloading, stacking, transporting, and handling of all materials. All materials shall be handled using correct procedures, and rough handling that could affect the usefulness of equipment and materials shall be avoided. Pipe and other materials shall be handled according to manufacturers' recommendations on loading, unloading, and storage.

7.4 Cleanup

Contractor shall remove waste materials from the site during the entire course of the project, as is necessary to maintain the premises in a clean and orderly fashion. Upon completion of the work, the Contractor shall promptly remove from the site all temporary structures, field office, debris, and waste incidental to his operation and shall clean and prepare all fixtures and surfaces relative to the Contract.

Failure to perform a cleanup operation within seventy-two (72) hours of notification by the Owner may result in the work performed by others in a manner that the Owner deems expedient. The cost of this additional service shall be charged to the Contractor and deducted from moneys due under this Contract.

7.5 Programming and Training

Programming and training for the computer central system is to be provided by the irrigation Distributor. Programming training will include all data base entry, flow management data entry, programs and schedules conversion of GPS/CAD data to computer base map image and training. This training is up to 30 hours.

SECTION 10 – BIDDING INFORMATION

Company Name/Address/Phone/Fax/E-mail Address

Company History and Profile, including key supervisory personnel, crew profiles

List three (3) similar projects, including date of installation, project name and address, construction and golf course contact personnel, type of control and pump systems, type and number of heads, and any other pertinent information about the projects.

Texas Licensed Irrigator

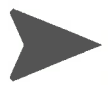


Fig. 1.10 - MAIN



Legend
● Valve
● Point

1:25000