



REQUEST FOR BIDS

RFB-15-30

**BID DUE DATE: THURSDAY, NOVEMBER 5, 2015
BY 1:00 P.M. OUR CLOCK**

PANORAMA PARK IRRIGATION SYSTEM DESIGN

BID RESPONSE MAY BE MAILED OR DELIVERED TO:

City of Wheat Ridge Municipal Building
Attention: Jennifer Nellis, CPPB
BID - Purchasing & Contracting Division
7500 W 29th Avenue
Wheat Ridge, CO 80033
Phone: 303-235-2811 Fax: 303-234-5924

OR EMAILED TO:

jnellis@ci.wheatridge.co.us

DOCUMENTS PREPARED BY:

Parks, Forestry and Open Space Division
PURCHASING & CONTRACTING DIVISION

IMPORTANT: PLEASE READ ENTIRE DOCUMENT

Per the attached specifications, terms and conditions.

PLEASE DO NOT REMOVE ANY PAGES FROM THIS BID DOCUMENT

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ADVERTISEMENT FOR BIDS
RFB-15-30
Panorama Park Irrigation System Design

Bid Due Date: THURSDAY, NOVEMBER 5, 2015, BY 1:00 P.M. OUR CLOCK

Project Overview: The City is request bids from qualified individuals or firms to provide irrigation system design plans, bidding assistance and construction observation for Panorama Park. The anticipated start date for plan design is mid-November 2015, with final plans completed by December 11, 2015. The City has allocated approximately \$10,000 for the irrigation system design project.

Minimum Requirements: Awarded firm must obtain a valid City Business/Use Tax license prior to doing business in the City of Wheat Ridge. This service requires compliance with the Illegal Alien Provisions of CRS8-17.5-101 and Title IV Regulations at 49 CFR Part 21 (non-discrimination assurance). Interested firms must demonstrate experience managing and executing successful irrigation designs for projects of similar scope and complexity. Interested firms shall have been in business in the Denver area for a minimum of two years, and shall have adequate staff and expertise to begin work within two weeks of the bid due date, and commit to a completion date of December 11, 2015.

Deadline for Questions: WEDNESDAY, OCTOBER 28, 2015. Send email to jnellis@ci.wheatridge.co.us

Submit to: City of Wheat Ridge Municipal Building
Attn: Jennifer Nellis, CPPB
BID - Purchasing & Contracting Division
7500 W 29th Avenue
Wheat Ridge, CO 80033

Bid shall be submitted in a sealed envelope, plainly marked: RFB-15-30 Panorama Park Irrigation System Design or emailed to jnellis@ci.wheatridge.co.us and received/confirmed prior to 1:00 P.M. out clock.

Comments: Submit one original and one complete copy. Late receipt of bids will not be considered.

All bids shall be validated upon receipt. Bids received after the bid opening time will be filed unopened. The City of Wheat Ridge reserves the right to reject any and all bids—or any part—and to waive any formalities or informalities to make an award in the best interest of the City.

Bid Documents: This bid opportunity, addenda, and project updates will be posted on the City's website, www.ci.wheatridge.co.us .

Point of Contact: Jennifer Nellis, Purchasing Agent, jnellis@ci.wheatridge.co.us , fax 303-234-5924, or phone 303-235-2811. Do not contact the requesting department.

Publish Dates:

Jennifer Nellis, Purchasing Agent

City Website

October 22, 2015

CITY OF WHEAT RIDGE
RFB-15-30
Panorama Park Irrigation System Design

I. INTRODUCTION

A. General

The City of Wheat Ridge (the "City") Municipal Building is located in the northwest area of Denver metropolitan, 7500 W 29th Avenue, Wheat Ridge, CO 80033. The City's area consists of about nine square miles of rolling land adjacent to Interstate 70 transportation corridor between Denver and the Rocky Mountains. The topography is somewhat unique, with a natural ridge traversing the City. The City is a suburban community of approximately 33,000 residents. The City is a home-rule municipality with eight council members, city manager and mayor form of government.

B. Background

Panorama Park is located Wheat Ridge at 3400 Fenton Street. The park was originally built in 1951. The original irrigation system was replaced in 1988. The water provider for the park is the Wheat Ridge Water District (not affiliated with the City of Wheat Ridge). The irrigation system has two water taps; one 1 ½" located northwest of the basketball court on 35th Avenue and one 1 ½" located between the tennis courts and the southeast softball field on Depew Street. Approximate existing irrigated park area is 282,502 square feet. The current irrigation system needs to be redesigned and replaced.

C. Objectives

The purpose of this RFB is to contract with a qualified individual or firm to provide exceptional irrigation system design.

II. SPECIFICATIONS/ STATEMENT OF WORK

A. The actual services to be performed will be determined by the City to include but not limited to the following:

The irrigation system Designer will use the information contained within the Draft Construction scope of work to help create the design for the new irrigation system for Panorama Park. Design the system to account for all anticipated project needs. Panorama Park has ongoing issues with variable pressure highs and lows due to what the Parks Division assumes are neighborhood wide changes in water pressure. The existing park irrigation system seems to have higher pressure in the middle of the day and late night when the neighborhood use of water is lower and seems to have less pressure in the morning and evening when neighborhood usage is assumed to be higher.

The Designer scope of work to include:

- All irrigation system design for Panorama Park.
- Irrigation system pressure testing and coordination with Wheat Ridge Water.
- Meter pit to backflow device (2) design, and coordination with Wheat Ridge Water.
- Design of meter pit piping to attach meter pit piping to new backflow preventers.
- Revision of draft construction scope of work (Attachment B to this RFB) to be used to bid construction of irrigation system. Deliverable of the scope of work to be in Microsoft Word electronic form.
- Create a line item materials list and estimate materials/overall cost for each item and for the construction project. This line item sheet will be used as basis for the construction bid form.
- Provide 90% complete plans for review and 100% complete final construction plan set drawings.
- A PDF version and three full size copies of Construction plan set drawings ready to use for the construction bid of the irrigation system in 2016.

- Field verification of all measurements used for design of irrigation system.
 - Construction oversight including submittal/ RFI /material review, availability to answer contractor questions during construction, attendance and response to three one hour meetings pre-construction, mid-point and final walk through during the project.
- See Attachment B for the Draft construction scope of work.

III. BID SUBMISSION

A. Bid Submission

Submit one bid marked “original,” and one additional printed copies, for a total of two complete sets.

Address: City of Wheat Ridge Municipal Building
ATTN BID: Jennifer Nellis, CPPB
 7500 W 29th Avenue, Purchasing & Contracting Division
 Wheat Ridge, CO 80033

MARK OUTSIDE OF ENVELOPE: RFB-15-30, Panorama Park Irrigation System Design
 Or email to jnellis@ci.wheateridge.co.us (received and confirmed prior to 1:00 P.M. our clock)

BID DUE DATE: THURSDAY, NOVEMBER 5, 2015, BY 1:00 P.M. OUR CLOCK. NO EXCEPTIONS.

IV. EVALUATION AND AWARD

- A.** After thoroughly evaluating all bids received, the City will award to the lowest and/or most responsive and responsible bidder(s) whose bid meets the requirements and criteria set forth, establishes the ability of the bidder to provide quality goods and service, and conveys the willingness of the bidder to comply with City purchase order terms and conditions (available on our website). Do not qualify your bid nor alter the bid format.
- B.** The following is a partial list of criteria that may be used in determining the award:
- Price
 - Superior quality and adherence to specifications
 - Philosophy of design considerations regarding maintenance and service
 - Delivery and/or completion time
 - Guarantees and warranties
 - Firm reputation and financial status
 - Experience with same or similar equipment or service
- C.** The City reserves the right to base its evaluation on the “should-cost” analysis to reflect the real costs to the City arising out of or incidental to the award.

V. ANTICIPATED SCHEDULE OF EVENTS

All times are local and by our clock.

Event	Anticipated Date
RFB Issued	October 22, 2015
Site-Visit	Visiting the park is recommended prior to bidding.
Inquiry Deadline	October 28, 2015
Final Addendum Issued	October 30, 2015
Bid Due Date and Time	November 5, 2015 by 1:00 P.M.
Council Approval, if required	NA
Start Date	Mid-November
Completion Date	Final Designs by December 11, 2015

VI. TERMS AND CONDITIONS

- A. Term:** This irrigation system design project must be completed by December 11, 2015.
- B. Irrigation System Design Deliverables**
Delivery Address:
Municipal Building: 7500 W. 29th Avenue, Wheat Ridge, CO 80033 (if by mail)

Parks, Forestry and Open Space: 9110 W 44th Avenue, Wheat Ridge, CO 80033 (if in person, by appointment)
- C. Payment:** Payments will be made within thirty (30) days of receipt of approved delivery and invoice. Financial obligations of the City payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.
- D. Renewal:** Does Not Apply.
- E. Modification or Changes:** All modifications to the scope of work and design specifications must be in writing and signed by both parties.
- F. New Items and Warranties:** All items must be new product (not used, remanufactured, refurbished, rebuilt, reconditioned, etc.) and are not to contain components that are not newly manufactured unless specifically stated otherwise in the bid specifications. Product shall be in original container with new product warranty, and with a minimum shelf-life of one year. Bidder warrants all goods and services will meet or exceed applicable drawings, specifications, samples, and/or other descriptions given to the City, and will be free from defects. Any breach of warranty will be at the bidder's expense and at the discretion of the City.
- G. Assignment / Subcontract:** No portion of this bid may be assigned or subcontracted without the prior, written approval of the City.
- H. Equals:** The City makes the sole determination whether or not a similar product is deemed "equal."
- I. Bid Results:** Project status—including bid results—are posted on the City of Wheat Ridge website, www.ci.wheatridge.co.us. Click on the Bids and Proposals tab in the lower-left-hand corner of the home page.
- J. Funding:** There is in effect within the City of Wheat Ridge, Colorado, Section 2-4 of the City's Code of Laws, which limits the amount for which the City shall be liable to the amount expressly appropriated by the City Council—either through budgeted appropriation, or by contract or bid award. The Contractor is specifically advised of this Section 2-4 of the Code of Laws. The contract resulting from the bid award is specifically subject to the provisions of said Code Section. Funding of the contract for any time period after January 1st of the year succeeding the original contract date is expressly contingent upon appropriations being made by the Wheat Ridge City Council. No promise—expressed or implied—is made that such funding will be approved by the City Council, acting in its legislative discretion.
- K. Low-Tie Bids:** Low-tie bids shall be decided in accordance with the provision of C.R.S. Section 24-103-202.5 as it currently exists or is hereafter amended, which gives a preference to resident bidders. Any bidder who wishes to be considered a "resident bidder" for purposes of the tie-bid procedure provided in the above-referenced Section shall include with his bid proof that he meets the definition of "resident bidder" as set forth in either C.R.S. Section 24-103-111 (6) (a) or (b).
- L. Vendor Offset:** No award will be issued to any person, firm, or corporation that is in arrears to the City upon debt or contract, that is a defaulter—as surety or otherwise—upon any obligation to the City, or that is deemed irresponsible or unreliable by the City. If requested, bidders shall be required to submit satisfactory evidence that they have a practical knowledge of the particular good or service bid upon, and that they have the necessary financial resources to provide the proposed good or service as described in the specifications.

- M. Termination for Cause:** If the successful bidder shall fail to fulfill in a timely and proper manner its obligations, or violate any of the covenants, agreements, or stipulations of the award, the City shall have the right to terminate the agreement by giving written notice to the bidder of such termination. All completed or unfinished work, reports, materials, documents, and anything relating to the project shall become property of the City. The bidder shall not be relieved of liability to the City for any damages sustained by virtue of the breach. The City may withhold payments until the cost of damage(s) is assessed.
- N. Cancellation / Remedies:** The City reserves the right to cancel any order resulting from this RFB with a sixty (60) day written notice, if the vendor has failed to comply with the terms specified and has been notified in writing of three (3) such failures, and has failed to remedy the problem after each written notification. In the event of cancellation based on lack of contract compliance, the City will not be subject to any early termination or cancellation charges.
- O. Termination for Convenience:** The City may terminate the award at any time by giving written notice to the successful vendor of such termination and specifying the effective date at least thirty (30) working days prior to the effective date of such termination. In that event, all finished or unfinished services, reports, or materials prepared or furnished by the successful bidder under the award shall—at the option of the City—become its property.
- P. Indemnification:** The bidder agrees to indemnify, defend and to hold the City and its agents, officials, officers and employees harmless for, from, and against any and all claims, suits, expenses, damages, or other liabilities including reasonable attorney fees and court costs arising out of damage or injury to persons, entities, or property, or sustained by any person or persons to the extent caused by the negligent performance or failure of the bidder to provide services pursuant to the terms of this agreement.

VII. INSTRUCTIONS TO BIDDERS

- A.** Bids will only be accepted on the forms provided herein. Do not re-type or reformat forms. Provide all requested information and authorized signature in ink.
- B.** Bid unit prices and extended amounts when called for. In case of mathematical error in extensions, the unit price will prevail. If unable to bid, indicate “NO BID” in space provided.
- C. Do not submit an alternate or optional bid unless requested to do so.** If a vendor submits more than one (1) bid, all bids from said vendor will be deemed non-responsive and, therefore disqualified. This includes single bids that offer more than one price for a given item.
- D.** All changes or modifications (adds, deletes, additional information etc.) shall be distributed through written addenda provided to all interested bidders. Verbal responses to vendor questions will not be considered.
- E.** A bid with missing or inconsistent information may be considered non-responsive, and as such may not be evaluated. Do not qualify your bid or alter the bid format.
- F.** The bid price shall be exclusive of any Federal, State, or City taxes. Tax exempt numbers are as follows:
- Federal: 84-0595832
 - State: 98-03515
 - City: 70000
- Tax exemption certificates will be issued upon request.
- G.** All bids must be F.O.B. destination—freight prepaid—unless otherwise directed.
- H. SUBMIT ONE (1) MARKED “ORIGINAL” AND ONE (1) MARKED “COPY” OF YOUR BID.**
- I. Submit your bid no later than THURSDAY, NOVEMBER 5, 2015, by 1:00 P.M. local time** to the Wheat Ridge Municipal Building, 7500 W. 29th Avenue, Wheat Ridge, CO 80033, Attention: Jennifer Nellis, Purchasing Agent. Bids will be validated with time and date upon receipt. Bids submitted to any other location other than the Municipal Building or jnellis@ci.wheatridge.co.us email will not be accepted, and will be considered non-responsive.

J. Bids may be submitted in sealed envelopes or boxes marked with the bid number, RFB-15-30, and the bid due date and time on the outside of the envelope or box; or emailed bids will be accepted.

K. **VENDOR REQUIREMENTS:** Bids must be submitted with the following:

1. Signed **Bidder Information Form**, acknowledging vendor review of addenda. Check the City's website, www.ci.wheatridge.co.us or call the Purchasing Office, 303-235-2811, to confirm the number of addenda issued.
2. Acknowledgement of **warranties**, providing information regarding irrigation design warranties, if applicable.
3. Provide **pricing**, per Attachment A, Specifications and Price List. Bid shall be valid for sixty (60) calendar days after the bid opening date. Bids shall not be withdrawn after bid due date.
4. **Additional information** relating to this bid—such as detailed specifications for equals, standard agreement, brochures, etc., or may also be submitted with your bid.
5. Provide at least three (3) **references** relating to work similar in nature and size. Include client contact name, email and telephone number, as well as a detail of the service or product your firm provided.
6. Address guaranty of **response time and service** that is reasonable and responsive of the critical daily operation of the City.
7. Provide a statement assuring your ability and intent to provide a certificate of **insurance** for general liability, workers compensation, and automobile insurance as prescribed by City and State requirements and outlined in bid documents. Proof of insurance will be required at the time of project award.
8. Completed and signed forms:
 - a. Illegal Alien Compliance form
 - b. Non-Discrimination Assurance form
 - c. Non-Collusion form
 - d. Vendor Qualification form

DO NOT SUBMIT ABOVE TEXT PAGES



RFB-15-30

Panorama Park Irrigation System Design

BIDDER INFORMATION AND ADDENDA ACKNOWLEDGMENT FORM

FEIN / SSN (Required) _____
Federal ID number

COMPANY NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIPCODE _____

PHONE _____ FAX _____

AUTHORIZED SIGNATURE _____
REQUIRED—MUST BE IN INK

PRINTED NAME _____

TITLE _____ EMAIL _____

PROPOSER IS RESPONSIBLE FOR FOLLOWING UP ON ALL ADDENDA

ACKNOWLEDGE ADDENDA: Proposer is responsible for confirming receipt of each addendum; please initial as applicable.

#1 _____ #2 _____ #3 _____ #4 _____

DOES YOUR FIRM ACCEPT VISA FOR PAYMENT WITHOUT ADDITIONAL FEES? Yes No

POINT OF CONTACT: Jennifer Nellis, Purchasing Agent, jnellis@ci.wheatridge.co.us, fax 303-234-5924

DO NOT CONTACT THE REQUESTING DEPARTMENT OR MEMBERS OF THE EVALUATION COMMITTEE

Signature acknowledges that proposer:

- 1) Has read the RFB documents thoroughly prior to submitting a bid,
- 2) Will fulfill the obligations in accordance to the scope of work or specifications, terms, and conditions,
- 3) Is capable of performing quality work or providing required goods to achieve the City objectives, and
- 4) Is submitting without collusion with any other individual or firm.

Do not submit more than one bid from your firm, or both/all bids will be disqualified.

Bidder must complete and SUBMIT this form with your bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

**CITY OF WHEAT RIDGE, CO
CERTIFICATION STATEMENT FOR
ILLEGAL ALIENS, COMPLIANCE TO HB 1343**

The vendor, whose name and signature appear below, certifies and agrees as follows:

1. The vendor shall comply with the provision of CRS 8-17.5-101 et seq.
2. The vendor shall not knowingly employ or contract with an illegal alien to perform this work, or enter into a contract with a subcontractor who knowingly employs or contracts with an illegal alien.
3. The vendor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, or (ii) otherwise shall comply with the requirements of CRS 8-17.5-102(2)(b)(I).
4. The vendor shall comply with all reasonable requests made in the course of an investigation by the Colorado Department of Labor and Employment. If the vendor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the City may terminate an award for breach of contract, and the vendor shall be liable for actual and consequential damages to the City of Wheat Ridge.

CERTIFIED and AGREED to this _____ day of _____, 20____

RFP NUMBER AND TITLE: _____

FIRM SUBMITTING PROPOSAL: _____
(print full legal name)

Authorized Signature: _____

Printed Name: _____

Attestation: (a corporate attestation is required)

BY: _____
(Corporate secretary, or equivalent)

Place Corporate seal here, if applicable

Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsive and therefore disqualified from bidding.

CITY OF WHEAT RIDGE, CO
NON-DISCRIMINATION ASSURANCE FORM
TITLE VI REGULATIONS AT 49 CFR PART 21

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin by any entity receiving Federal financial assistance.

The City of Wheat Ridge is a recipient of Federal financial assistance and as such, it—as well as all of its responsible agents, contractors and consultants—is required by the United States Department of Transportation Title VI Regulations at 49 CFR Part 21 (the Regulations) to assure nondiscrimination. The City of Wheat Ridge assures that no person shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination on the grounds of race, color, or national origin under any program or activity conducted by the City.

All bidders are hereby notified that the City of Wheat Ridge will affirmatively ensure that disadvantaged business enterprises will be afforded full opportunity to submit bids in response to all invitations and will not be discriminated against on the grounds of race, color or national origin in consideration for an award. This applies to all solicitations for bids for work or material subject to the Regulations, and for all proposals for negotiated agreements.

The bidder, whose name and signature appear below, certifies and agrees as follows:

1. The bidder shall comply with the provisions of Title VI of the Civil Rights Act of 1964.
2. The bidder assures the City of Wheat Ridge that disadvantaged business enterprises are afforded full opportunity to submit bids as sub-contractors or sub-consultants and will not be discriminated against on the grounds of race, color or national origin in consideration for award.
3. The bidder shall comply with all reasonable requests made in the course of an investigation of Title VI, the Regulations and this assurance by the Colorado Department of Transportation, the US Department of Transportation or the City of Wheat Ridge, as a sub-recipient of Federal financial assistance.
4. The bidder agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under Title VI, the Regulations and this assurance.

FIRM: _____
(Print full legal name of company)

AUTHORIZED SIGNATURE: _____

Printed Name and Title: _____

Date Certified and Agreed: _____

Attestation: (A corporate attestation is required)

Place corporate seal below:

BY: _____
Corporate Secretary or Equivalent

Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsive and therefore disqualified from bidding.

**CITY OF WHEAT RIDGE, CO
NON-COLLUSION AFFIDAVIT
RFB-15-30
PANORAMA PARK IRRIGATION SYSTEM DESIGN**

COMPANY SUBMITTING BID _____

STATE OF: _____

COUNTY OF: _____

_____ of lawful age, being duly sworn, on oath says that (s)he is the agent authorized by the Bidder to submit the attached bid. Affidavit further states that the Bidder has not been a party of any collusion among Bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or any Federal, State or Municipal official or employees as to quantity, quality, or price in the prospective Contract, or any other items of said prospective Contract; or in any discussions between bidders and any Federal, State or Municipal official concerning exchange of money or other thing of value for special consideration in the letting of a Contract.

NAME _____

TITLE _____

Subscribed and sworn to before me this ____ day of _____, 2015

NOTARY PUBLIC SIGNATURE

My Commission Expires:

Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

**CITY OF WHEAT RIDGE, CO
VENDOR QUALIFICATION FORM
RFB-15-30
PANORAMA PARK IRRIGATION SYSTEM DESIGN**

The following information is considered the minimum required to evaluate the qualifications of vendors intending to provide services for the City of Wheat Ridge. Any additional information the vendor feels is pertinent, or which clarifies items below, is welcome and may be attached.

The City will contact previous clients and references as a part of the evaluation process; thus, letters of reference may shorten the evaluation period, if they are attached to this form.

1. **Name of firm:** _____

Address: _____

State: _____ Zip: _____ Phone: _____

Principal in Charge: _____

Email: _____

Type of business organization:

Sole Proprietorship _____ Corporation _____

Partnership _____ Limited Partnership _____

State in which incorporated: _____ Joint Venture _____

Name, position, and address of contact person regarding the information on this form:

Number of years your firm has done business under current name: _____

Previous firm names and / or partnerships (or firms you have had any interest in), and number of years of each name:

2. **Attach a list of similar projects in which you have designed an irrigation system for a park of a similar size during the past two (2) years. For each project indicate the following:**

- Original contract bid amount
- Owner (address, telephone number, and contact name)
- Project description
- Litigation or claims related to each project—state nature of claim(s), the parties, the dollar value, the status and outcome—including the value of any judgment(s) or settlement(s)
- Name, address, and phone number(s) of reference(s)

3. **List major equipment, facilities, number and type of employees available for City contract work. Specify type of work normally done by your forces, and type of work you normally subcontract.**

4. **Have you ever terminated or abandoned any work prior to completion, or had work completed by others?**

No Yes

If yes, describe the situation:

5. **Has your firm—or any firm you have had any interest in—ever been debarred or prohibited from contract work with any government or private institution?**

No Yes

If yes, describe the situation:

6. **Have any bonds been called on any of your projects?**

No Yes

If yes, describe the situation:

City Staff will evaluate all qualification forms. The evaluation will include the following:

- Verification of statements and information provided
- Ability to perform work of similar nature
- Financial stability and capability
- Any pattern of controversy, poor management, delayed claims, late completion, inferior service or equipment, or other undesirable characteristics

This qualification process is not intended to restrict competition. The intent is to protect the City's legitimate interests by ensuring that vendors are competent, capable of quality work, and financially able to complete the work awarded.

Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.

**ATTACHMENT A
RFB-15-30
Panorama Park Irrigation System Design**

PRICE SCHEDULE

SUBMIT ON THIS PAGE

Response time is critical. Work must be completely designed and accepted by December 11, 2015. All applicable State of Colorado and Federal laws, City and County ordinances, licenses, permits, and regulations shall apply to this award and the duration of the agreement.

Please provide a bid schedule showing individual, hourly rates and estimated number of hours needed to complete the project, and indicate associated cost, or lump sum (as specified) for each item listed below.

The irrigation system Designer will use the information contained within the Draft Construction scope of work to help create the design for the new irrigation system for Panorama Park. The Designer scope of work to include:

ITEM DESCRIPTION	HOURLY RATE	# of HOURS	BID PRICE TOTAL
1. All irrigation system design	_____	_____	\$ _____
2. Irrigation system pressure testing and coordination with Wheat Ridge Water	_____	_____	\$ _____
3. Meter pit to backflow device (2) design, and coordination with Wheat Ridge Water	_____	_____	\$ _____
4. Design of meter pit piping to attach meter pit piping to new backflow preventers	_____	_____	\$ _____
5. Revision of draft construction scope of work to be used to bid construction of irrigation system in Microsoft Word electronic form		Lump Sum	\$ _____
6. Create a line item bid materials list and estimate materials/overall cost for project		Lump Sum	\$ _____
7. Provide 90% complete plans for review and 100% complete final construction plan set drawings		Lump Sum	\$ _____

Continued next page

8. Provide a PDF version and three full-size copies of Construction plan set drawings ready to use for the construction bid of the irrigation system in 2016

Lump Sum \$ _____

9. Field verification of all measurements used for design of irrigation system

_____ \$ _____

10. Construction oversight including submittal/ RFI /material review; availability to answer contractor questions during construction; attendance and response to three one-hour meetings held at pre-construction, mid-point and final walk through during the project.

Lump Sum \$ _____

TOTAL, Not to Exceed \$ _____

For a Not-to-exceed total of:

_____ DOLLARS and
_____ CENTS.

By submitting this bid I agree to submit 100% complete, approved final design drawings by December 11, 2015, unless otherwise allowed more time (in writing) by the City.

This bid is submitted by _____ (name and title) of _____ (company).

ATTACHMENT B
RFB-15-30
Panorama Park Irrigation System Design

PANORAMA PARK IRRIGATION SYSTEM CONSTRUCTION SCOPE OF WORK - DRAFT

A. This work shall consist of installing an underground irrigation system as shown on the drawings. The Contractor shall include all labor, materials, permits, licenses, inspection tools, facilities, transportation and equipment necessary for the installation of an underground system according to the plans and specifications. No substitutions of material or the procedure shall be made concerning these documents without the written consent of an approved equal by the Consultant and or the City of Wheat Ridge. The work shall comply with the requirements of all legally constituted authorities having jurisdiction.

B. All work in this section shall be coordinated by the Contractor with all utilities and trades responsible for their installation.

C. Work called for on the drawings and details shall be furnished and installed whether or not specifically mentioned in the specifications.

QUALITY ASSURANCE

A. Irrigation Drawings:

The irrigation drawings are essentially diagrammatic. Due to the scale of the drawings, all characteristics of the system (i.e., sleeving, fittings, etc.) may not be represented. The Contractor shall carefully inspect the site and plan his work accordingly, supplying any materials and equipment necessary to install said characteristics. The Contractor shall notify Consultant/City of any discrepancies between site dimensions, grade differences, obstructions, etc., and those on the drawings that might not have been known during preparation of irrigation drawings. If such written notifications are not made, Contractor shall assume all expenses and responsibility for any revisions necessary.

Work called for on the Drawings by notes or on details shall be furnished and installed whether or not specifically mentioned in the specifications. Design locations of heads, valves and lines are approximate. Contractor shall make minor adjustments of locations to avoid conflicts with planting, existing trees/shrubs, buildings and other obstacles. All finish grades shall be approved prior to installation of the irrigation system.

B. Experience and Observations:

1. Work shall be performed in accordance with the best standards of practice relating to the various trades. The Contractor shall be highly skilled and proficient in the installation of irrigation systems of this magnitude. If requested by Owner or Consultant, Contractor shall submit a list of three (3) projects of equal complexity with references. Contractor must have a minimum of five (5) years of experience with projects of comparable size and scope (commercial systems install). The Contractor shall coordinate installation of irrigation system with other trades on the project. Superintendent approved by the City/Consultant shall oversee the irrigation system installation and shall be available on a daily basis. The superintendent shall not be changed unless approved by the Consultant/City.

2. No materials of any kind shall be installed on the project until they have been approved by the Consultant/City. The Consultant/City reserves the right to observe installation of the irrigation system at any time and to reject any and all materials or workmanship that does not meet project specifications and standards. Materials used without prior consent of the Consultant/City may be rejected and removed at Contractor's expense. Approval of materials is for design purposes only and shall indicate that materials visually meet specifications, but this acceptance shall not relieve Contractor of any guarantees. Contractor shall be responsible for the total performance of such substitution to equal or surpass the original design in every respect. Contractor shall replace substitution at his own expense.

3. Before final acceptance of the project, the Contractor shall show evidence to the Consultant that all submittals, etc., have been received by the owner.

4. Contractor shall give consultant forty-eight (48) hours' notice with request for staking or for field observation. Head and valve staking must be approved prior to commencement of installation. Contractor to verify site conditions before commencing work. The Contractor is to notify Consultant/City in written form of any site irregularities prior to commencing work. Initiation of irrigation installation implies contractor acceptance of existing conditions.

C. Ordinances and Regulations:

Contractor shall observe all state and local laws, ordinances, regulations and applicable codes concerning the materials and installation of the irrigation system. Should a conflict arise between ordinances, laws, codes, regulations and specifications, the most stringent requirements will prevail in any case.

B. Stormwater Compliance:

The Contractor is responsible to follow all BMPs Federal, State, and City of Wheat Ridge Storm Water regulations. Appropriate measures will be taken by the Contractor to prevent any discharge of soils and debris into the adjacent street, curb and gutter or Storm Water inlets. Erosion control measures will be inspected by the City representative weekly and maintained by the Contractor, and stay in place until the entire project has been sodded and accepted by the City. Contractor is responsible to clean the site and adjacent streets/curb and gutter daily. For storm water questions contact the City of Wheat Ridge Stormwater Coordinator Bill LaRow at 303-205-2871.

C. Noise Ordinance

Noise ordinance will allow work to be conducted between the hours of 7am and 5pm M-F. No work, startup/warming up of equipment before 7am or after 5pm. Saturday work could be allowed on a limited basis 8am-5pm with approval from the city representative.

SUBMITTALS

A. Material List:

1. A material list of all products and materials to be used in the project shall be submitted to the City/ Consultant prior to installation of irrigation system.
2. Consultant and or Owner reserves the right to reject any and all materials that have been brought on site and reserves the right to reject installed substitution if, in his opinion, it proves unsatisfactory. Contractor shall replace substitution at his own expense.

B. Operating/Maintenance Manuals and Training

Contractor is to deliver to Owner's representatives the following before final acceptance of the irrigation system:

1. Index sheet of Contractor's address and phone number.
2. List of materials and manufacturer's representatives with addresses and telephone numbers.
3. Electronic Operating and maintenance instructions (PDF) computer drawn only of all equipment with shutdown and start-up procedures for the irrigation system. No hand written procedures accepted.
4. City Staff training by the Contractor to be conducted on the operation of the irrigation system before final acceptance.
5. High quality, computer drawn only as-built drawings in electronic PDF and set of three 24" x 36" hard copies. All valves on the as-built will be marked with corresponding field valve numbers with arrows to valve location on final as-built plan. No hand drawings accepted.
6. The Contractor will provide a PDF/high quality computer produced numbered automatic valve/line schematic sealed in watertight plastic sheeting to fit inside the controller. No hand drawing accepted. The schematic will correspond with the in the field automatic valve numbers. Schematic will show valve number, location of valve, area to be watered, for example: seed, planter bed or turf and heads on line. For example Hunter I-20 rotors 360 degree or RainBird 1812 pop-ups Full circle. No hand written schematics accepted.

- a. Before final acceptance of the irrigation system, Contractor shall supply owner with a high quality reproducible PDF as-built drawing. No hand drawings/ revisions accepted. Drawing shall include dimensioned locations of all equipment and piping as listed in the irrigation schedule on the plans. Drawing to include dimensioned changes in location of sprinkler heads, zoning changes, connection to existing water lines, and any other items as requested. As-built drawings are to be updated weekly throughout the length of the project and to be made available to the Consultant.
- b. The owner shall not approve any pay requests if the As-built drawings are not current. If requested by Owner, Consultant shall review submitted As-built drawings and reject the drawings if they are not legible or correct.

C. Additional Equipment:

Equipment to be furnished as part of this contract to the Owner at the completion of the project before final acceptance of irrigation system:

1. Two (2) manual drain valve keys of appropriate length;
2. Two (2) gate valve or stop and waste valve keys of appropriate length;
3. Three (3) quick coupler keys and two (2) matching hose swivels;
4. Two (2) sets of special tools used for maintaining and adjusting each type of sprinkler head and valve supplied;
5. Two (2) keys for each automatic controller;
6. Two (2) sprinkler heads and nozzles for each type used.

PROTECTION OF PROPERTY AND SAFETY MEASURES

A. Property and Utilities:

1. All trees, shrubs, flowers, fences, buildings, walks, roadways, and other property shall be protected from damage. The Contractor will not encroach within any tree canopy with any trench unless approved by the Owner. Any damage to said property shall be repaired or replaced to the Owner's satisfaction at the Contractor's expense. Open trenches left exposed shall be flared and barricaded as per O.S.H.A. regulations by the Contractor. Contractor shall restore all areas to their original condition. Contractor shall be responsible to contact utility companies and the Owner's representative for staked locations of all utilities on the property. If staked utilities are damaged by the Contractor, the utilities shall be repaired at the Contractor's expense.
2. All cold weather or inclement weather protection will be the responsibility of the Contractor during the project. The Contractor will be responsible to protect all new and existing pipes, water taps, water meters, backflow devices, valves and heads during the construction process. The Contractor is also responsible to protect all new concrete and soils from freezing and provide/ install at their cost new back fill or topsoil. Any damage caused by weather or cold temperatures will be the responsibility of the Contractor to replace or repair at no cost to the City.
3. All approved by owner trenching and other work within the canopy diameter of existing trees shall be done by hand so as not to damage tree roots or limbs. All trenches shall be no less than six foot from the trunk of any tree.
4. Promptly notify Consultant of unexpected sub-surface conditions.

B. Replacement of Paving and Curbs:

1. Damage caused by trenching or construction activities of any kind etc. including crossing existing and/or proposed roadways, paths, curbing,., shall be kept to a minimum and all damaged areas shall be restored to their original condition at the Contractor's expense. This will include compaction of subgrade to ninety-five percent (95%) relative compaction. Restoration shall take the following course:

- a. Match existing paving sections for asphalt paving. Thoroughly compact sub-base, base course, and bituminous course, matching grade of existing paving. No rough or rolled grades will be allowed.
- b. Blacktop curbs - hot mix bituminous curb mix tamped and shaped to match adjoining curbs.
- c. Concrete paving - concrete to match adjoining concrete work, with expansion joints.
- d. Sidewalks - concrete to match adjoining concrete work.
- e. Construction/equipment causing marking of any kind will be removed at no cost to the Owner by the Contractor. The Contractor will be asked to remove markings multiple times if necessary by hand, pressure washer or any means required to remove construction marking. If marking cannot be removed the Contractor will replace the concrete or asphalt at no cost to the City.
- f. All asphalt and concrete repairs will be repaired to the City of Wheat Ridge Public Works standards and reviewed by Parks/ Public works staff before final acceptance.

MATERIAL HANDLING, STORAGE AND CLEAN UP

A. Material Handling and Storage:

Contractor shall be cautious in handling and installing pipe and materials from the premises leaving the area in a clean and acceptable condition. Surplus materials shall include unsuitable excavated materials, rock, trash, and debris. Any equipment or debris which is not removed shall be removed at the expense of the contractor. Any material stored on site will be kept inside a temporary construction fence and will be the responsibility of the Contractor. The contractor is responsible for all materials including vandalism and theft. No construction trash or debris will be allowed to be stockpiled on the ground overnight. The Contractor may bring on site a roll off container to fill with construction trash and debris.

FLUSHING, TESTING AND COVERAGE

A. Flushing:

1. All lines shall be thoroughly flushed to eliminate any foreign matter before sprinkler heads are installed.

B Testing:

1. In the presence of the Consultant, the Contractor shall conduct a pressure test on the mainline pipe at a pressure of 100 PSI for a period of two (2) hours. Any leaks or breaks during the test shall be repaired and the mainline will be tested until accepted. All test equipment and pumps shall be supplied by the Contractor as part of the contract.
2. The Contractor is responsible for providing the proper amount of water on sod and plant material to establish and sustain optimum plant growth. The watering program is to be included on as-built drawings.

C. Coverage:

After the sprinkler heads have been installed, and before installation of sod, the Contractor shall conduct a coverage test in the presence of the Consultant/Owner's Representative to determine if irrigated areas are receiving the proper amount of water. As directed by the Consultant, the Contractor shall make adjustments for proper coverage at no additional expense. This shall include changing of nozzle patterns and degrees of arc or moving pipe, heads, valves and wire run locations. Contractor shall perform, at no additional expense, the required work to correct any coverage problems due to deviations from irrigation plans or to problems caused by installing according to plans when it is obvious that the plans are inadequate, without bringing it first to the attention of the Consultant. No overspray is permitted on any structure, streets, sidewalks, ball fields or on court play surfaces.

Any areas which do not conform to the designed characteristics of the drawings and unauthorized changes or poor installation practices shall be repaired or replaced by the Contractor at his expense.

PRELIMINARY INSPECTION

- A. Preliminary inspection will occur after completion of entire irrigation system. Provide 48 hours' notice to Consultant for inspection.
- B. Preliminary inspection will evaluate the performance, coverage, appearance and conformance of the system to that of the drawings. Contractor shall rework or replace items that do not meet Consultant/Owner approval.
- C. Consultant/owner will provide punch list of items to be corrected.
- D. Contractor will correct all punch list items at their expense.

FINAL INSPECTION

- A. Upon completion of punch list items, Contractor will give Consultant 48 hours' notice to set up final inspection. Final inspection will take place after all as-built drawings, controller charts and submittals have been provided to and accepted by the owner.
- B. If, after inspection, the Consultant determines that all work conforms to the drawings, a written notice of acceptance will be issued.
- C. Final acceptance will not be given until all punch list items and subsequent new items are corrected. Funds shall be withheld from the Contractor to pay for any subsequent inspection as deemed necessary by the Owner to ensure compliance with contract drawings, specifications and details.
- D. Consultant/Owner will determine that the irrigation system is completed to warrant a final inspection.

WINTERIZATION

- A. Depending on project start date, Contractor shall be responsible for draining/blow out/startup of the irrigation system during the 2015/2016 irrigation season without being requested by Owner. The Contractor will give the Owner a three day notification to make arrangements to have City staff present. Contractor shall use compressed air or an acceptable equivalent to drain system. Use procedures that are industry standards. Contractor shall adjust system (sprinkler heads, coverage, etc.) as part of the startup procedures.

WARRANTY

- A. It shall be the responsibility of the Contractor to insure the satisfactory operation of the entire irrigation system and the workmanship and restoration of the project area.
- B. The entire system, including materials and any replaced or repaired infrastructure/ amenities and site conditions shall be guaranteed in writing to be complete, in original condition and remain operable in every detail by the Contractor for a period of one (1) year from date of substantial completion of project.
- C. Contractor agrees to make any adjustments or repair any defects occurring within the one-year guarantee period within seven (7) calendar days from receipt of notice of malfunction by the Owner. If Contractor neglects to perform these duties within the specified time, the Owner may make such repairs at the Contractor's expense; provided however, that in the case of an emergency, wherein the judgment of the Owner, delay would cause serious loss or damage, repairs or replacement may be made by verbal communication and without notice being sent to the contractor, and the Contractor shall pay the cost thereof.
- D. Any settling of irrigation trenches/backfill material during the guarantee period shall be repaired at Contractor's expense. Contract documents shall govern irrigation replacement the same as new work. Replacements are to be made at no cost to the Owner. Any vandalism to the irrigation system prior to final acceptance shall be repaired and/or replaced at Contractor's expense.

E. All irrigation parts shall be purchased (new) in the year construction occurs, carrying the full manufacturer's or supplier's warranty. Parts found to be expired or not having full manufacturer's or supplier's warranty shall be replaced at no additional cost to the Owner.

PART 2: PRODUCTS

MATERIALS

A.P.V.C. Pipe:

1. This specification describes the properties and performance required for polyvinyl chloride pipe. Pipe shall be suitable for use at maximum hydrostatic working pressure of 200 PSI or 160 PSI as noted on plans. Pipe shall be made from clean, virgin, NSF approved, type 1, grade 1 P.V.C., conforming to ASTM in Resin specification D1784-60 and project standard D2241 for P.V.C. 1120 SDR 26 or SDR 21. P.V.C. Pipe is to be belled end and solvent weld. Solvent cement and primer shall be of the type prescribed by the manufacturer. No compression fittings accepted for any PVC connections.

2. Marking and Declaration of Compliance Marking shall show the size, series, identification, and manufacturer's trade name at intervals of not more than 20 feet. Pipe shall include the seal of approval of the National Sanitation Foundation spaced at intervals required by NSF regulations.

B. P.V.C. Fittings:

All pipe fittings to be schedule 40 P.V.C. (ASTM D2466 and D1784) unless specifically noted otherwise. Solvent cement to conform to ASTM D2564.

C. Brass Pipe and Fittings:

1. Brass pipe shall be 85% red brass, (ANSI) Schedule 40.
2. Fittings shall be medium brass, 125 pound class, screwed type.
3. Use a dielectric union wherever a copper based metal (copper, brass, bronze) is connected to an iron based metal (iron, galvanized and stainless steel).

D. Copper Pipe:

Copper pipe shall have the requirements of Type K, ASTM B88. Fittings shall be copper or cast bronze. Silver solder shall be used for joints.

E. Sprinkler Heads:

Sprinkler heads shall be of the type and model as indicated on drawings, Hunter rotor heads and Rainbird 1800 series popup spray heads

F. Backflow Preventer:

Use existing backflow preventers.

G. Automatic Control Valves:

Automatic control valves shall be Rainbird brand, designed to operate with the specified controllers with size and model as listed on drawings. Control valve shall be normally closed type and shall have manual bleed nut and manual flow control.

H. Quick Couplers:

Quick coupler valves shall be Rainbird type, size and style as indicated on the drawings. Quick coupler valves shall be two piece with rubber locking cover.

I. Gate valves up to 2/1/2" and larger shall be brass with non-rising stem and I.P.S threads. Gate valves shall be as shown on drawings.

J. Automatic Controller:

The automatic controller(s) shall be a Hunter brand furnished and located as shown on the plans. The automatic controllers will have remote controlled with (2) remote hand held units provided. The contractor will provide all wiring, electrical connections and two hand held remote control units with the system. The controller shall be of the type, size and model number as shown. Controller shall be equipped with primary line surge protector. Install valve output surge protection arrestors for control wiring and common. The Contractor will also provide all paperwork and manuals for all controllers and remote control systems/ hand held remotes. Contractor will install appropriate battery backup on all controllers they install.

K. Control Valve Wiring:

Irrigation control wiring shall be #14 gauge solid A.W.G. and shall be U.F., U.L. approved. Control wires to be red, common wires to be white. Mainline wiring shall be taped every 20 feet.

L. Valve Boxes:

Valve boxes shall be of the type, size and style as indicated on the details. A Carson #910-12 box shall be used for control wire splices. Use one (1) valve box for each valve installed. Where multiple valve boxes occur, arrange in symmetric order and appearance. No valve box extensions will be accepted. On the underside of all control valve boxes shall be markings clearly indicating controller number and valve number.

M. Isolation Valves:

All mainline isolation valves will be located no deeper than 18-24 inches below the surface and be in large bow to allow for easy key/hand access and manipulation.

N. PVC Piping:

All PVC mainline, lateral and sleeve connections are to be glued with PVC glue and primer. No compression fitting of any kind will be accepted.

INSTALLATION

A. Trenching:

1. Trenching and installation of irrigation system shall not commence until final grading has been completed and approved by the Owner.
2. Trenches shall be cut to true line and grade, and shall be excavated so that the pipe shall drain uniformly toward the drain valves deemed necessary to properly drain the system. Minimum grade of piping to drain shall be 3"/100'. All debris and rocks shall be removed from trenches. For piping 3" and larger, trench width shall be sufficient for installation of pipe with a clearance of at least 4 inches horizontally on both sides of pipe within trench. All trenches are to be compacted and puddled to eliminate sinking.
3. Trees and shrub root systems will be protected during all trenching. No trenching will be performed under the drip line of any tree unless approved by the owner. Trenching in the general area of existing trees will be conducted in a manner that will minimize cross cutting of roots.
4. Pipe pulling may be used if soil conditions are acceptable to the Consultant.
5. Installation Depth of Piping:
 - a. Depth of mainline from top of pipe is 24"
 - b. Depth of lateral (rotor) from top of pipe is 18"
 - c. Depth of lateral (pop-up) from top of pipe is 12"
 - d. Depth of shrub (pop-up) from top of pipe is 18"
 - e. Depth of wiring – side of mainline with tape every 20 feet around wire bundle.

B. Plastic Pipe and Fittings:

1. All pipe and fittings shall be installed as per manufacturer's recommendations. No pipe shall be installed in temperatures of 40 degrees F or less. No pipe shall be installed on non-compacted fill dirt. Plastic pipe shall be snaked horizontally in trench and square cut with burrs removed from inside of pipe. Provide for thermal expansion and contraction. For threaded connections, use sealants that are recommended by the manufacturer for use with plastic.

Do not use oil based pipe joint compounds. Assemble threaded connections by tightening 1 to 1-1/2 turns beyond finger tight. Keep piping clear of dirt and pipe scale. Keep open ends of assembled piping capped. Teflon tape is to be used on all plastic threaded joints.

2. Solvent weld joints shall be made according to manufacturer's recommendations. Allow joints to set at least 24 hours before pressure is applied to the piping.

3. No compression fitting will be accepted.

C. Backfilling

1. All backfilling shall be done with clean soil, free of any debris including rock and debris 3/4" in diameter or larger, and shall be mechanically tamped and puddled to prevent settling. Backfilling shall not be done with frozen soils. Excess debris encountered during backfill process or frozen backfill soils shall be removed and replaced if needed at the Contractor's expense. Backfill shall be compacted to 95% standard proctor density (ASTM D698-78). Any backfill soil removed due to poor quality/unsuitability shall be replaced with new, approved soil at the contractor's expense. The top 6" of the trench will be filled and compacted with clean existing or imported topsoil at the Contractor's expense.

2. Any settling during the warranty period shall be repaired at the Contractor's expense, including any damage to other items affecting by the settling.

3. All lateral lines shall be installed in trenches with a minimum of 6" clearance.

4. Do not install lateral lines within 2' of lines of other trades.

5. Mainline is to be bedded in pea gravel

6. The contractor will be responsible to haul off site all excess soils and debris at no cost to the City.

D. Installation of Piping under Paving:

Contractor to coordinate installation of sleeving with other applicable trades. All piping that is to be located under areas where asphalt or concrete paving is to be installed shall at an 18" depth below top of road base. Piping is to be encased in sand 4" on all sides. Add backfill in 6" lifts and use mechanical tamping to reach 95% standard proctor density. Sleeves to extend a minimum of 6 inches beyond any concrete or asphalt and are to be taped shut around wire or sleeved piping.

Contractor is to match and install new paving and base with existing paving and base where cutting of paving is necessary for installation of piping. Contractor must obtain written approval from the Consultant/Owner for the process.

Installation of piping under existing walks is to be done with jacking or boring. Any cracking or breaking of the walk is to be repaired at Contractor's expense. Contractor shall repair or replace to its original condition any damage caused by settling of sleeving during the warranty period.

E. Sprinkler Heads:

All sprinkler heads located in turf areas shall be adjusted vertically to be flush with final finish grades. Install heads as per details with spacing according to plans. Install heads on double swing joint assemblies. Angle of nipples relative to lateral lines shall be no more than 45 degrees and no less than 15 degrees. Locate rotary sprinklers 6" (spray heads 3") away from walls, fences and paved areas. Under no circumstances shall the spacing exceed the maximum spacing recommended by the manufacturers. SAM heads installed as needed to prevent seepage due to elevation changes.

F. Gate Valves:

Installation of gate valves shall be as indicated on the details.

G. Automatic Control Valves:

Installation of automatic control valves shall be as indicated on the details. All control valves shall be installed as close as possible to the locations as shown on plans. Contractor to make sure that the top of the automatic valve clears the bottom of the valve box lid by a minimum of six inches. Each automatic control valve will include an isolation valve.

H. Quick Coupling Valves:

All quick coupling valves shall be installed as double swing joint assemblies of schedule 45 PVC. Angle of nipple relative to mainline shall be no more than 45 degrees and no less than 15 degrees. Install as per detail including anchoring quick coupler to additional support spike.

I. Automatic Controller:

1. Automatic controller(s) shall be installed as per manufacturer's recommendations and/or irrigation details. Each controller shall have its own separate ground wire and reduced, laminated as-built drawing installed in the door. Any new controller is to be connected to a copper ground rod either existing or installed by the contractor. Controller charts shall be good quality computer drawn (no hand drawn) and color coded to show valve numbers and their respective zones. Charts are to be hermetically sealed between two layers of 20 mil. thick plastic sheets that are water tight. Controllers will be wall mounted in water tight, metal lockable cabinets mounted in indoor location. All will be and approved by owner during submittals and prior to final acceptance.
2. All work performed as electrical installation shall conform to applicable codes. All high voltage electrical work shall be performed by a licensed electrician working under a electrical permit issued from the City of Wheat Ridge building Division provided by the Contractor as part of the contract. The Contractor shall be responsible for the electrical connection of the controller with the metered electrical line at the base of the controller as provided by the owner. Install one valve output surge protection arrestor on each control and common wire.
3. If needed install/update a circuit breaker and electrical on/off switch for each controller.

J. Control Wiring:

Installation of control wires shall be strung as close as possible to the mainline with such wires to be located on one side of mainline pipe. Wire to be taped every 20 foot. Wiring to be installed in separate trench if not along mainline. All underground electrical connections shall be made with Rainbird Pentite connectors. Any splices not within control valve boxes shall be installed in a Carson #910-12 valve box. The contractor shall leave a minimum loop of 24" at each control valve, each splice and every 100 feet of wiring. Wiring is to be bundled every 20 feet with one (1) control wire used for every control valve. Install four (4) spare #14-1 wires along complete entirety of mainline from controllers to farthest control valve on each and every branch of mainline. Spare wire color to be blue. Common wire is to be white.

K. Drain Valves:

Manual drain valves shall be installed as per details. Contractor shall supply, locate and install drain valves so as to drain entire mainline. Install drain valves at high and low points on main not further than 350 feet apart. Provide a 2 cubic foot gravel sump with geotextile wrap at each valve. Brand in 1" min. letters 'DV' on valve boxes containing drain valves.

L. New Sod and Existing Turf:

All construction damage to existing turf will be completed by the Contractor at their own cost. New sod used will be a Consultant and Owner approved good quality athletic use rated bluegrass mix sod. Turf/sod restoration will include repair of all trenches, holes, thin spots, tire/machine marks, grade changes, divots and ruts caused by construction.

1. All trenches, holes/damage will be compacted and puddled to 95%. Trenching on ballfield infield will require the Contractor to coordinate with the City representative. the Contractor shall:
 - a. Remove any debris, rock or non-infield mix soil from the infield.
 - b. Fill the top six inches of any trench with City supplied infield mix.
 - c. Compact and puddle all trenches on the infield to 95% compaction.
 - d. Final grade of trenches to match existing infield surface.
2. The top 6 inches of all trenches in turf and planting beds will have good clean existing or imported topsoil installed and prepped for sod.
3. All areas to receive new sod will be hand raked to $\frac{3}{4}$ " size material and match grade.
4. All valve boxes will be installed to grade and match existing sod grading.
5. Before new turf is installed the irrigation system will have been coverage tested and 100% operational.
6. All edges of existing turf where new sod is to be installed will be cut with a clean edge. Areas will be graded to allow for new sod to match existing grade after install.
7. All new sod will be laid flat match existing grade and have all seams pulled tight.
8. New sod will be installed within 8 hours of delivery to the site. No sod is to be left on pallets and installed the second day.
9. Newly installed sod will be watered within 2 hours of being installed. The Contractor work with City staff and will set the controllers to run on a new sod schedule.
10. All new turf will be rolled after the first watering and a second time cross direction if needed to achieve a flat and uniform new sod surface and even transitions between existing turf and new turf.
 1. Design Pressures: As indicated on Drawings, at connection to main pipe and at last head in circuit. Contractor to verify existing pressure prior to starting work.
 2. Location of Heads: Design location is approximate. Make minor adjustments as necessary to avoid plantings, existing trees and other obstructions.
 3. Minimum Water Coverage:
 - a. Turf Areas: 100% minimum
 - b. Other planting Areas: 100% or as indicated.

Project Specifics

Existing system issues are lack of pressure/volume and head to head rotor coverage in large turf areas. Automatic control valves do not include isolation valves. Section isolation valves are too deep and most are frozen in on position. Meter pits have 60 year old piping and valves that need replacing from the meter to the new back flow devices. Abandon all existing underground piping/wiring and remove all existing ground level heads, valve boxes, automatic control valves, wiring and quick couplers. Also remove existing controllers and wiring.

1. Use existing new back flow devices.
2. Use existing water meter pits. Use manhole covers. Remove and replace all piping and old shut off valves past the water meter to the backflow devices. New main shut off valve to be brass ball valve type or approved equal.

3. Replace mainline, all wiring, heads, section isolation valves, and valve boxes.
4. Mainline isolation valves no deeper than 18 inches. All isolation valves in easy access valve boxes.
5. Replace controllers with new remote control capable controllers. Include two hand held remote control remotes. Include watertight locking cabinets.
6. System to include automatic rain shut off. Rain shut off to be installed in location that is vandal resistant and preferred to be wireless.
7. All rotor heads to be Hunter brand. All valves to be Rainbird brand. Heads along play field surfaces to be rated for operation in dirt and sand.
8. East drinking fountain and piping are to be abandoned by contractor.
9. Drain valves and gravel sumps to be installed at each mainline run.
10. Quick couplers are to be installed at the following locations
 - (1) Playground
 - (1) Pavilion
 - (1) Restroom
 - (1) On each island on 33rd Ave.
 - (2) On each Ballfield by home plate bleachers and another location to be decided.
 - (3) Located by south fence of tennis courts spaced evenly
 - (1) Basketball court
 - (2) on park side of backflow devices
11. All valve boxes are to be branded including but not limited to controller number, valve numbers, quick couplers, isolation valves and extra wiring.