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PART 1

ADVERTISEMENT FOR BIDS

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PART 1

ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the **Lakeside Golf Course Irrigation Replacement** will be received by the Lexington-Fayette Urban County Government (LFUCG) via Ion Wave until 2:00 p.m., local time, **March 22, 2022**, for furnishing all labor and/or materials and performing all work as set forth by this advertisement, Ion Wave Q&A, conditions (general and special), specifications, and/or the drawings prepared by **C-Tech Solutions Inc** for Lexington-Fayette Urban County Government. Immediately following the scheduled closing time for reception of bids, all proposals which have been submitted in accordance with the above will be opened electronically and a bid tab sheet will be posted via Ion Wave.

Due to the current environment and recommendations for social distancing, LFUCG will only be accepting bids on-line through Ion Wave for this solicitation. Base bid and alternate totals (if required) should be provided on the appropriate line items tab on Ion Wave. Submissions without line item totals (if required) may be rejected and deemed non-responsive. All forms normally provided with bid submission should be downloaded from Ion Wave, filled out and attached with bid submission. All notary requirements are waived for this solicitation. A copy of bid bond must be included with submission. THESE INSTRUCTIONS SUPERCEDE ALL OTHER BID SUBMISSION INSTRUCTIONS PROVIDED IN THIS PACKAGE. PLEASE SUBMIT ALL QUESTIONS VIA THE Q&A MODULE ON ION WAVE.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-6, Part III, Form of Proposal, of this document, for the **Lakeside Golf Course Irrigation Replacement**, Lexington-Fayette County, Kentucky.

Specs and drawings are available on Ion Wave only.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Plans, Specifications, and Contract Documents shall be obtained from Ion Wave (LFUCG's electronic bidding system). Ion Wave can be accessed at <https://lexingtonky.ionwave.net>

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a **Unit Price/Lump Sum** for total Project. Bidder must include a price for all bid items to be considered. **Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Instruction to Bidders and Special Conditions.**

Bids/proposals should be submitted online via Ion Wave.

5. METHOD OF AWARD

The Contract, if awarded, will be to the lowest responsive and responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. The OWNER reserves the right to reject the Bid of any Bidder that is deemed to be unbalanced or front loaded. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

6. BID WITHDRAWAL

No bidder may withdraw his bid for a period of one hundred twenty (120) calendar days after the closing date for receipt of bids. Errors and omissions will not be cause for withdrawal of bid without forfeit of bid bond.

7. BID SECURITY

If the bid is \$50,000 or greater, bid shall be accompanied by a certified check or bid bond payable to the Lexington-Fayette Urban County Government in an amount not less than Five Percent (5%) of the base bid. Bid bond shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Bid Bonds are not required for bids under \$50,000. A cashier's check or irrevocable letter of credit is an acceptable form of bid security.

8. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids via Ion Wave not later than 2:00 p.m. local time, **March 22, 2022**. Bids will remain sealed until **March 22, 2022**, 2:00 pm, the official Bid closure time. Bids received after the scheduled closing time for receipt of bids will not be

accepted. Bid submittals and bid tab sheet will be immediately available after bid opening, under the Documents link on Ion Wave.

9. RIGHT TO REJECT

The Lexington-Fayette Urban County Government reserves the right to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the Lexington-Fayette Urban County Government may be served.

10. NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE

The successful bidder must submit the following to the Lexington-Fayette Urban County Government:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form

Failure to submit this as required herein may result in disqualification of the Bidder from the award of the contract.

11. NOTICE CONCERNING MWDBE and Veteran Goals

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs, and set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-Owned Small Businesses. The goals for the utilization of Disadvantaged Business Enterprises and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractor(s) who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprise and Veteran-Owned Small Businesses as Subcontractors contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
859-258-3323
smiller@lexingtonky.gov

12. AMERICAN RESCUE PLAN ACT

CERTIFICATION OF COMPLIANCE FOR AMERICAN RESCUE PLAN ACT EXPENDITURES

The Lexington-Fayette Urban County Government (“LFUCG”) may classify the subject matter of this bid as an expenditure under the American Rescue Plan Act of 2021. Expenditures under the American Rescue Plan Act of 2021 require evidence of the contractor’s compliance with Federal law. Therefore, by the signature below of an authorized company representative, you certify that the information below is understood, agreed, and correct. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

The bidder agrees and understands that in addition to all conditions stated within the attached bid documents, the following conditions will also apply to any Agreement entered between bidder and LFUCG, if LFUCG classifies the subject matter of this bid as an expenditure under the American Rescue Plan Act. The bidder further certifies that it can and will comply with these conditions, if this bid is accepted and an Agreement is executed:

1. Any Agreement executed as a result of acceptance of this bid may be governed in accordance with 2 CFR Part 200 and all other applicable Federal law and regulations and guidance issued by the U.S. Department of the Treasury.
2. Pursuant to 24 CFR 85.43, any Agreement executed as a result of acceptance of this bid can be terminated if the contractor fails to comply with any term of the award. This Agreement may be terminated for convenience in accordance with 24 CFR 85.44 upon written notice by LFUCG. Either party may terminate this Agreement with thirty (30) days written notice to the other party, in which case the Agreement shall terminate on the thirtieth day. In the event of termination, the contractor shall be entitled to that portion of total compensation due under this Agreement as the services rendered bears to the services required. Either party may terminate this Agreement for good cause shown with forty-five (45) days written notice, which shall explain the party’s cause for the termination. If the parties do not reach a settlement before the end of the 45 days, then the Agreement shall terminate on the forty-fifth day.
3. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will

take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

- (1) Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order

unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event a contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. If fulfillment of the contract requires the contractor to employ mechanic's or laborers, the contractor further agrees that it can and will comply with the following:

- (1) *Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such a workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such a workweek.*
- (2) *Violation: liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.*
- (3) *Withholding for unpaid wages and liquidated damages. LFUCG shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.*
- (4) *Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.*

5. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

6. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

7. The contractor shall include these requirements in numerical paragraphs 5 and 6 in each subcontract exceeding \$100,000 financed in whole or in part with American Rescue Plan Act funding.

8. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

9. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

10. The contractor shall include these requirements in numerical paragraphs 8 and 9 in each subcontract exceeding \$100,000 financed in whole or in part with American Rescue Plan Act funds.

11. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

12. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency regional office.

13. *The contractor shall include these requirements in numerical paragraphs 11 and 12 in each subcontract exceeding \$100,000 financed in whole or in part with American Rescue Plan Act funds.*

14. The contractor shall include this language in any subcontract it executes to fulfill the terms of this bid: “the sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury’s Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with ‘Limited English Proficiency’ in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury’s Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement.”

15. *Contractors who apply or bid for an award of \$100,000 or more shall file the required certification that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier, up to the recipient. The required certification is included here:*

- a. The undersigned certifies, to the best of his or her knowledge and belief, that:
 - (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.
 - (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and

contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

- b. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Signature

Date

13. PRE-BID CONFERENCE

A pre-bid conference will be held March 10, 2022, 1:00 pm at 3725 Richmond Rd, Lexington, KY.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

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PART II

INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids via Ion Wave, at the time and in the manner set forth in the Advertisement for Bids, and the Bids. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 120 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not delivered as indicated above.

2. PREPARATION OF BID

The bid must be submitted with the entire proposal and include all pages. All blank spaces for the bid prices must be filled in, either in ink or typewritten, for both unit prices and extensions. Totals for each bid item must be added to show the total amount of the bid.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in order or combination. The contract, if awarded, will be awarded to the lowest responsive and qualified, responsible BIDDER based upon OWNER'S evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the Urban County Government of the above listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the bidder may provide its current certified financial statement(s) for the required time interval.
- B. Corporate firms are required to be registered with the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of CONTRACTOR - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- D. Optional OWNER Requirements - The OWNER, at its discretion, may require the BIDDER/CONTRACTOR to provide: (1) A current detailed financial statement for a period including up to 3 prior years. (2) Financial security or insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the CONTRACTOR to indemnify the OWNER. (3) Additional information and/or DBE work force data, as well as DBE participation data.

Each bidder agrees to waive any claim it has or may have against the Owner and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Central Purchasing within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay \$200.00 per day thereafter deadline for final completion.

Given the uncertainty caused by the Covid-19 pandemic, following contract award, a Notice to Proceed will be issued on a date mutually agreed upon by both parties within 90 days of contract award. Contractors will be required to follow any state or local Healthy At Work guidelines.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Owner of all conflicts, errors or discrepancies in the Contract Documents.

- B. Bidders should examine the requirements of Section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Director of Central Purchasing, who in turn will have an addendum issued under signature of the Project Manager for the Lexington-Fayette Urban County Government, and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested, faxed or emailed to all prospective bidders. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of

this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.

- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
- C. **Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later).**

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal wage rates and regulations, if required for this Project, will be as described in the Special Conditions.

16. AFFIRMATIVE ACTION PLAN

The successful Bidder must submit the entire proposal with their bid, the following items to the Urban County Government:

1. Certification of Bid Proposal/DBE – see Part III
2. KYTC DBE Provisions – see Part III
3. DBE Subcontractor Bidders List – see Part III

A Work Force Analysis Form shall be submitted for each Contract. Failure to submit any of these items as required herein may result in disqualification of the Bidder from award of the Contract.

17. CONTRACT TIME

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Contract Agreement.

18. SUBSTITUTE OR "APPROVED EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "approved equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "approved equal" item of material or equipment may be furnished or used by the CONTRACTOR if acceptable to the OWNER, application for such acceptance will not be considered by the OWNER until after the effective date of the Agreement. The procedure for submission of any such application by the CONTRACTOR and consideration by the OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS AND VETERAN OWNED SMALL BUSINESSES

A. Outreach for MWDBE(s) and Veteran Owned Small Businesses (VOSB)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and Veteran Owned Small Businesses. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lexingtonky.ionwave.net>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE contractor database, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a "Letter of Certification" which is accepted by the LFUCG's Division of Purchasing, in lieu of a bid bond. The "Letter of Certification" must be included in the bid package when it is submitted to the Division of Purchasing. The "Letter of Certification" will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government's Division of Central Purchasing.

C. Eligibility for Bid Bond Assistance for MWDBE(s)

In order to be eligible for any Bid bonding assistance, a MWDBE construction company must be owned or controlled at the level of 51% or more by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the Owner or corporate officer and by an attorney or accountant submitted to:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

D. MWDBE and Veteran Subcontractors

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE subcontractors in an effort to achieve a 10% minimum MWDBE and a 3% minimum Veteran goal.

For a list of eligible subcontractors, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

END OF SECTION

PART III

Invitation to Bid No. 29-2022

Lakeside Golf Course Irrigation Replacement

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: _____

The following Form of Proposal shall be followed exactly in submitting a proposal for this Work.

This Proposal Submitted by George E. Ley Company

130 Devereux Dr, Glenmoore, PA 19343

(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of Pennsylvania, doing business as George E. Ley Company "a corporation," "a partnership", or an "individual" as applicable.

To: Lexington-Fayette Urban County Government
(Hereinafter called "OWNER")
Office of the Director of Purchasing
200 East Main Street, 3rd Floor
Lexington, KY 40507

Gentlemen:

The Bidder, in compliance with your Invitation for Bids for the **Lakeside Golf Course Irrigation Replacement** having examined the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. <u>1</u>	Date <u>March 14, 2022</u>
Addendum No. <u>2</u>	Date <u>March 14, 2022</u>
Addendum No. _____	Date <u>NONE</u>
Addendum No. _____	Date <u>NONE</u>
Addendum No. _____	Date <u>NONE</u>
Addendum No. _____	Date <u>NONE</u>
Addendum No. _____	Date <u>NONE</u>
Addendum No. _____	Date <u>NONE</u>

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

2. LEGAL STATUS OF BIDDER

Bidder George E. Ley Company

Date _____

* 1. A corporation duly organized and doing business under the laws of the State of Pennsylvania, for whom Brian D. Ley, bearing the official title of President, whose signature is affixed to this Bid/Proposal, is duly authorized to execute contracts.

* 2. A Partnership, all of the members of which, with addresses are: (Designate general partners as such)

NOT APPLICABLE -----

* 3. An individual, whose signature is affixed to this Bid/Proposal (please print name)

NOT APPLICABLE -----

*(The Bidder shall fill out the appropriate form and strike out the other two.)

3.

BIDDERS AFFIDAVIT

Comes the Affiant, Brian D. Ley, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Brian D. Ley and he/she is the individual submitting the bid or is the authorized representative of George E. Ley Company, the entity submitting the bid (hereinafter referred to as "Bidder").
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."
6. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Brian D. Ley
 Signature
President
 Title

Brian D. Ley
 Printed Name
3-24-2022
 Date

Company Name George E. Ley Company

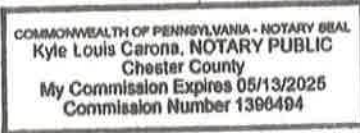
Address 130 Devereux Dr, Glenmoore, PA 19343

Subscribed and sworn to before me by Brian D. Ley
 (Affiant)
President
 (Title)

of George E. Ley Co. this 24th day of March, 2022
 (Company Name)

Kyle Louis Carona
 Notary Public
 [seal of notary]

My commission expires: 5-13-2025



4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. If unit prices are applicable, Bidder must make the extensions and additions showing the total amount of bid.

Form of proposal must include unit bid prices written in words, unit price written in numbers and total amount bid (unit price x quantity) per line item OR bid may be considered non-responsive. In case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.

If a discrepancy between the unit price and the item total exists, the unit price prevails except: If the unit price is illegible, omitted, or the same as the item total, item total prevails and the unit price is the quotient of the item total and the quantity.

If the unit price and the item total are illegible or are omitted, the bid may be determined nonresponsive. If a lump sum total price is illegible or is omitted, the bid may be determined nonresponsive.

For a unit price based bid, the sum of the item totals is the bid amount the Division uses for bid comparison.

The LFUCG's decision on the bid amount is final.

Item No.	Description	Unit	Quantity	Price
1a.	Base Bid Option 1, Rain Bird IC System as per specs for <u>one million two hundred forty-nine thousand nine hundred nineteen dollars</u> Dollars <u>forty-nine</u> Cents	LS	1	\$ <u>1,249,919.49</u>
1b.	Base Bid Option 2, Toro 2-wire LSM System as per specs for <u>one million four hundred forty-one thousand nine hundred fifty-five</u> Dollars <u>ninety-seven</u> Cents	LS	1	\$ <u>1,441,955.97</u>
2.	Alternate 1 – Contractor to remove existing equipment as per specs for <u>ten thousand</u> Dollars <u>zero</u> Cents	LS	1	\$ <u>10,000.00</u>

Unit Cost

Bidder is required to provide a Labor + Material and a Labor Only bid for each item listed in this section. This list may be used for additions or deletions for the purpose of bid comparisons and/or evaluations, as well as initial contract adjustments. Successful Bidder may be required to provide a more comprehensive list for computing additions to or deletions from the contract.

Item - General	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
2-Wire Cable added to Plowed Pipe ¹	\$2.11	\$1.67	lf.
2-Wire Cable added to Trenched Pipe ¹	\$2.11	\$1.67	lf.
2-Wire Cable only, Plowed	\$3.61	\$2.98	lf.
Ground Rod ² with all requisite items per Detail #23, excluding plate items	\$280.57	\$148.50	ea.
Ground Plate ² with all requisite items per Detail #23, excluding rod items	\$667.03	\$368.50	ea.
500 VA Power Line Conditioner/Stabilizer per specification 4.17	\$1,671.34	\$550.00	ea.
12" Mainline Isolation Valve ² per Detail #11	\$3,816.20	\$423.50	ea.
10" Mainline Isolation Valve ² per Detail #11	\$2,889.86	\$423.50	ea.
8" Mainline Isolation Valve ² per Detail #11	\$1,848.12	\$423.50	ea.
6" Mainline Isolation Valve ² per Detail #11	\$1,553.12	\$313.50	ea.
4" Mainline Isolation Valve ² per Detail #11	\$907.74	\$258.50	ea.
2" Lat x 10" Main Conn ² per Detail #13 (No Valve Items)	\$566.42	\$148.50	ea.
2" Lat x 8" Main Conn ² per Detail #13 (No Valve Items)	\$468.11	\$148.50	ea.
2" Lat x 6" Main Conn ² per Detail #13 (No Valve Items)	\$390.09	\$148.50	ea.
2" Lat x 4" Main Conn ² per Detail #13 (No Valve Items)	\$373.82	\$148.50	ea.
3" Lat x 10" Main Conn ² per Detail #12 (No Valve Items)	\$822.27	\$148.50	ea.
3" Lat x 8" Main Conn ² per Detail #12 (No Valve Items)	\$685.23	\$148.50	ea.
3" Lat x 6" Main Conn ² per Detail #12 (No Valve Items)	\$539.55	\$148.50	ea.
3" Lat x 4" Main Conn ² per Detail #12 (No Valve Items)	\$504.53	\$148.50	ea.
3" PE Lateral Valve ³ per Detail #12 (Valve, box & sleeve items Only)	\$600.00	\$181.50	ea.

¹ Include adding wire to pipe being installed (Pipe installation under separate unit price)

² Include all requisite items per Specifications and Detail indicated

³ Include all requisite items per Specifications and Detail indicated

Item - General	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
2" PE Lateral Valve ³ per Detail #13 (Valve, box & sleeve items Only)	\$436.19	\$181.50	ea.
2" Drain Valves ³ per Detail #9 (Valve, box, Sleeve items Only), (added to 2" Lat x X" Main connections above)	\$468.92	\$181.0	ea.
Combination Air Valves ² per Detail #10	\$1,053.99	\$220.00	ea.
1-1/2" Acme Outlet SS Saddle on 2" Pipe	\$136.85	\$0.00	ea.
1-1/2" Acme Outlet SS Saddle on 3" Pipe	\$179.60	\$0.00	ea.

Item - General	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
12" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
10" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
8" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
6" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
4" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
3" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$4.00	lf.
2" DR 13.5 HDPE Pipe ⁴ , trenched	N/A	\$3.00	lf.
2" DR 13.5 HDPE Pipe ⁴ , plowed	N/A	\$3.00	lf.
12" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
10" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
8" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
6" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
4" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
3" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$99.00	lf.
2" DR 13.5 HDPE Pipe ⁵ , Rock Sawed	N/A	\$98.00	lf.

⁴ Include all labor to install pipe, including all fusing, backfilling, compaction, and restoration. (Wire under separate unit price)

⁵ In areas that fall under Rock Classification per Specs, include all labor to install pipe, including all fusing, backfilling, compaction, and restoration

Item – Rain Bird Specific	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
A702-IC-80-XX Sprinkler ⁶ , less Saddle connection	\$323.19	\$55.00	ea.
A752-IC-80-XX Sprinkler ⁶ , less Saddle connection	\$338.74	\$55.00	ea.
A900-IC-70-XX Sprinkler ⁶ , less Saddle connection	\$329.49	\$55.00	ea.
A950-IC-70-XX Sprinkler ⁶ , less Saddle connection	\$338.20	\$55.00	ea.
Tail nozzle added to any part circle sprinkler above	\$234.06	\$0.00	ea.
5RC Quick Coupling Valve ⁶	\$312.66	\$93.50	ea.
1-1/2" PEB Electric Valve ⁷ per Detail #14	\$754.70	\$264.00	ea.
2" PEB Electric Valve ⁷ per Detail #14			ea.
ICSD with grounding ⁷ per Detail #22-23, (Rod Only, with 3 Terminal Polaris Connectors)	\$287.95	\$176.00	ea.
ICSD with grounding ⁷ per Detail #22-23, (Rod Only, with 4 Terminal Polaris Connectors)	\$292.51	\$176.00	ea.
ICSD with grounding ⁷ per Detail #22-23, (Rod Only, with 6 Terminal Polaris Connectors)	\$312.76	\$176.00	ea.
Replace 10" Round to be used on ICSD with 12" x 20" Rectangular Box	\$40.49	\$0.00	ea.
IC module replacement in field			ea.

Item – Toro Specific	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
FLX34-3X6-6 Sprinkler ⁶ , less Saddle connection	\$354.87	\$55.00	ea.
FLX35-3X6-6 Sprinkler ⁶ , less Saddle connection	\$377.82	\$55.00	ea.
FLX34-306-6 Sprinkler ⁶ , less Saddle connection	\$389.97	\$55.00	ea.
FLX35-306-66 Sprinkler ⁶ , less Saddle connection	\$389.97	\$55.00	ea.
INF34-3X6-6 Sprinkler ⁶ , less Saddle connection	\$445.87	\$55.00	ea.
INF35-3X6-6 Sprinkler ⁶ , less Saddle connection	\$468.82	\$55.00	ea.
INF34 -306-6 Sprinkler ⁶ , less Saddle connection	\$425.97	\$55.00	ea.
INF35 -306-66 Sprinkler ⁶ , less Saddle connection	\$425.97	\$55.00	ea.
Tail nozzle added to any part circle sprinkler above	\$4.11	\$0.00	ea.
474-00 Quick Coupling Valve ⁶	\$313.09	\$93.50	ea.

⁶ Include all labor to install all requisite items per Details and Specifications, less lateral pipe, less Saddle connection to Pipe (Saddle installation under separate unit price)

⁷ Include all requisite items per Specifications and Detail indicated

Item – Toro Specific	Unit Cost (Labor + Mat.)	Unit Cost (Labor Only)	Unit
1-1/2" P220 Electric Valve ⁸ per Detail #15	\$745.67	\$198.00	ea.
2" P220 Electric Valve ⁸ per Detail #15			ea.
DEC-SG-LINE with grounding ⁸ per Detail #22-23, (Rod and Plate, with 3 Terminal Polaris Connectors)	\$774.13	\$423.50	ea.
DEC-SG-LINE with grounding ⁸ per Detail #22-23, (Rod and Plate, with 4 Terminal Polaris Connectors)	\$753.88	\$423.50	ea.
DEC-SG-LINE with grounding ⁸ per Detail #22-23, (Rod and Plate, with 6 Terminal Polaris Connectors)	\$749.32	\$423.50	ea.
Replace 10" Round to be used on DEC-SG-LINE with 12" x 20" Rectangular Box	\$40.49	\$0.00	ea
LSM replacement	\$1,283.56	\$550.00	ea.

⁸ Include all requisite items per Specifications and Detail indicated

Submitted by: George E. Ley Company
Firm
130 Devereux Rd
Address
Glenmoore, PA 19343
City, State & Zip
Brian D. Ley
Signature of Authorized Company Representative – Title
Brian D. Ley
Representative/s Name (Typed or Printed)
484-883-2947
Area Code – Phone –Fax #
bley@gelcogolf.com
E-Mail Address

OFFICIAL ADDRESS:
130 Devereux Rd
Glenmoore PA 19343

_____ (Seal if Bid is by Corporation)

By signing this form you agree to ALL terms, conditions, and associated forms in this bid package

5. STATEMENT OF BIDDER'S QUALIFICATIONS

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal:

- 1. Name of Bidder: George E. Ley Co.
- 2. Permanent Place of Business: 130 Devereux Rd, Glenmoore, PA 19343
- 3. When Organized: 1969
- 4. Where Incorporated: Pennsylvania.
- 5. Construction Plant and Equipment Available for this Project:
See next page

(Attach Separate Sheet If Necessary)

6. Financial Condition:

If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Central Purchasing within seven (7) calendar days following the bid opening.

7. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by:

Endurance Assurance Corporation (Surety)
Signed:  (Representative of Surety)
John R. Waite, Jr., Attorney-in-Fact

EQUIPMENT LISTING

1/19/2022

EQUIP NO.	DESCRIPTION	YEAR	EQUIP NO.	DESCRIPTION	YEAR
	AIR COMPRESSOR, INGERSOLL RAND			Tamper, BS50-2	07
	AIR COMPRESSOR, INGERSOLL RAND P130WJD	1997		Tamper, BS50-2	07
	AMIAD LIGHT PLANT			Tamper, BS50-2	07
	ATV, YAMAHA	1986		Tamper, BS50-2	07
88	ATV, CUSHMAN WITH DUMP BODY, MODEL 898658			TAMPER NEUSON BS50-4A	2018
	BACKHOE, 310D JD	93		TAMPER NEUSON BS50-4A	2018
	BACKHOE/LOADER JD 710D			TAMPER NEUSON BS50-4A	2020
	BACKHOE POWER TILT PT7 ATTACHMENT	07		TAMPER NEUSON BS50-4A	2020
	BLECAVATOR 180-71", Model BV180	98		TRACK LOADER, MUSTANG 1650RT	18
	BRUSH CHIPPER, 1250A VERMEER	99		TRACK LOADER, MUSTANG 1650RT	18
	BRUSH HOG, BRADCO EQ0028719 72" STANDARD	2018		TRACK LOADER, MUSTANG 1650	18
	BULLDOZER, JD 26G	2020		TRACK LOADER, MUSTANG 2100RTNXT3	19
86	BULLDOZER, JD 450H			TRACK LOADER, MUSTANG 2100RT	19
97	BULLDOZER, JD 450H			Tractor Implement, Perfecta II, STP-8-A	99
	BULLDOZER, JD 700KLG	2017	58	TRACTOR, JD 1070, 4WD	94
66	BULLDOZER, JD 750B		60	TRACTOR, JD 2155	90
	BULLDOZER, JD 85G	2016	556	TRACTOR, JD 2150 w/shuttle	
	CONVEYOR, TURFCO C-10	07		TRACTOR, JD 2355/245 LOADER	
	CRAWLER/LOADER CAT 953C	2007		TRACTOR, KUBOTA L3600DT	
	DISC HARROW			TRACTOR, KUBOTA M4700	
155	DUMP CART, TORO 07200			TRACTOR, MF 231	02
	DUMP CART, TORO 07200			TRACTOR, MF 1540 W/ HYD FOR LOADER	07
	DUMPER, BENFORD 6000	2005	129	TRACTOR, MF 1440 W 1466 LOADER	04
	DUMPER, BENFORD 6003PTFA	2005		TRACTOR, MF 1540 HL	07
	DUMP TRAILER MORGAN		127	TRACTOR, MF 1540 Attachement, Loader MF 1525	07
	DUMP TRAILER TEREX P6000-237			TRACTOR, MF 1734 E/SKID STEER BUCKET	
	DUMP TRAILER TEREX P6000-247			TRACTOR, MF 1735MHL	2020
	DUMP TRAILER, PROVONOST	07		TRACTOR, MF 1739E/SKID STEER BUCKET	
	DUMP WAGON (NEW), AGRO TREND			TRACTOR, MF 1750MHL	2020
	DUMP TRAILER, TAYLOR-WAY 4000T SINGLE AXEL	08		TRACTOR, MF 1750MHL	2019
	EXCAVATOR, Case CX330 w/Aux Hydro. Quick Coupler	2003	104	TRACTOR, MF 263 4 X 4	00
112	EXCAVATOR Case 9007B	00		TRACTOR, LOADER MF 2705E/L135E	2016
100	EXCAVATOR Case 9020B, with attachments	97	103	TRACTOR, MF 281 4 X 4	00
	EXCAVATOR, COMPACT JC 26G	17	117	TRACTOR, MF 451,2ND TURF TIRES, 8X8 SHUTTLE	USED
	EXCAVATOR, COMPACT JD 26G	2019		TRACTOR/LOADER MUSTANG 160RT	18
152	EXCAVATOR, COMPACT, JD 50G/2016 TAG BUCKET	14		TRACTOR/LOADER, MF 1540HL	07
89	EXCAVATOR, JD 490E	94	60	TRACK SKID LOADER,, COMPACT, GEHL CTL 60	07
	FORKLIFT, INGERSOLL-RAND TELESCOPIC			TREE SPADE, VERMEER 3300	
	FUSION MACHIN A430101	2018	5PA	-TRAILER, SP CONSTR UTILITY	80
	FUSION MACHINE, GAS, ISCO MODEL 412	07	0PA	-TRAILER, SP CONSTR UTILITY	75
	FUSION PROCESSOR, ELKTRA LIGHT ELECTRIC		6PA	-TRAILER, SP CONSTR UTILITY	70
	FUSION UNIT 2LC	18	82	TRENCH COMPACTOR TC-4A, VERMEER	98
	FUSION UNIT 2LC	15		TRENCH COMPACTOR TC-4A, VERMEER	96
	GATOR JD HPX 4X4			TRENCH COMPACTOR TC-4A, VERMEER	94
	GENERATOR	19		TRENCHER, CASE 360 W/PLOW	93
	GENERATOR, CHAMPION 10219 439-CC	2020		TRENCHER, CASE 360 W/PLOW	95
	GENERATOR, BLACK MAX BM907500BT	2018		TRENCHER, CASE 360 W/PLOW	
	GENERATOR, HONDA BLACK MAX GX390RT2	2020		TRENCHER, CASE 360 W/PLOW	
	GOLF CART, TORO OLE 7273		50	TRENCHER, CASE 360 W/PLOW	00
	GOLF CART, TORO OLE 7273		63	TRENCHER, CASE 580	96
	GRADING SYSTEM, GRADEMASTER Model SLGM-7		23	TRENCHER, CASE 580	95
	GRADING BOX, LEVEL BEST TD72			TRENCHER, CASE 580	
	HYDRAULIC HAMMER, ALLIED MODEL 88	00	92	TRENCHER, CASE 580	95
62	LOADER, 444E JOHN DEERE	90	76	TRENCHER, CASE 580	95
	MOWER, TORO 3500-D SIDEWINDER DIESEL WIDE AREA		56	TRENCHER, CASE 580	95
	PACKER WHEEL, VERMEER TC4A		57	TRENCHER, CASE 580	95
	ROCK HOUND, EDGE	06	69	TRENCHER, CASE 580	96
	ROCKHOUND			TRENCHER, CASE 580	01
	ROCKWHEEL, RIVER CITY HD524	95	101	TRENCHER, Case 560	00
	ROLLER, BOMAG MODEL 75 AD			TRENCHER, Case 560	03
	ROLLER, BOMAG MODEL 75 AD			TRENCHER, Case 560	
94	ROLLER, BOMAG MODEL BW120A		51	TRENCHER, CASE 660	93
	ROLLER, BOMAD 130 AD			TRENCHER, Case 660	04
78	ROLLER, VIBROMAX 2000, MODEL 263	98	93	TRENCHER, Case 660	00
	SAND PRO	2000		TRENCHER, Case 660	92
	SAND PRO, TORO		114	TRENCHER, CASE 860	
	SEEDER BRILLIOON 10' SEEDER with Tractor	2002	80	TRENCHER, CASE V760	93
	SEEDER BRILLION SL 10 FT. LANDSCAPE	1998		TRENCHER DITCH WITCH Model R100D w/ ES30 72" Saw	85
	SKID LOADER NEW HOLLAND LS170with 72" Rockaway 7415H	02		TRENCHER, DITCH WITCH WALK BEHIND, #1020	
	Sod Cutter, 18" Ryan Jr.# 544945	07		TRENCHER BAR, DITCH WITCH 8'	
	Sod Cutter, 18" Ryan Jr.# 544945	07		TRENCHER TORO RT600	
	SOD ROLL (LARGE) INSTALLER, BUCYRUS M4826D			TURF RAKE, BARBER MODEL 600HD	
77	STRAW BLOWER, FIN	90	98	UNILoader/PREPARATOR, CASE 1845C	97
	STUMP GRINDER, CASE ALITEC CG40	97		UTILITY VEHICLE, TORO 2110	2003
79	SWEEPER , GRAVELY	98		UTILITY VEHICLE, TORO 2110	2003
95	SWEEPER, MODEL 985117	00		UTILITY VEHICLE, TORO 2110	2003
38	TAMPER TC-4, VERMEER	90		Welder, Lincoln	
53	TAMPER TC-4, VERMEER	94		Welder, Lincoln	
64	TAMPER TC-4, VERMEER	93		WORKMAN, TORO 3200-G	
	Tamper, Power			WORKMAN, TORO MD - GAS 07266	
	Tamper, Power				

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we **George E. Ley Company**
(Here insert full name and address or legal title of Contractor)
130 Devereux Road, Glenmoore, PA 19343

as **Principal, hereinafter called the Principal,** and **Endurance Assurance Corporation**
(Here insert full name and address or legal title of Surety)
12890 Lebanon Road, Mt. Juliet, TN 37122

a corporation duly organized under the laws of the State of Delaware
as **Surety, hereinafter called the Surety, are held and firmly bound unto** Lexington-Fayette Urban County
(Here insert full name and address or legal title of Owner)
Government (LFUCG), 200 East Main Street, 3rd Floor, Room 338, Lexington, KY 40507

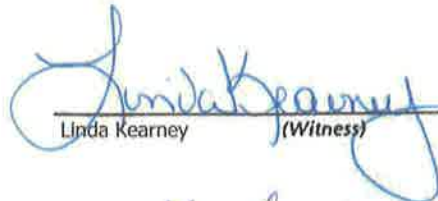
as **Obligee, hereinafter called the Obligee, in the sum of** Five Percent of Amount Bid
Dollars (\$ 5%),

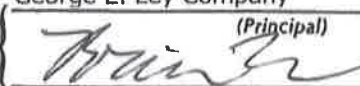
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for
(Here insert full name, address and description of project)
Lakeside Golf Course Irrigation Replacement, Lexington-Fayette County, Kentucky, Bid No. 29-2022


NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 24th day of March 2022


Linda Kearney (Witness)

George E. Ley Company
(Principal) (Seal)

Brian D. Ley (Title) President


Kimberly Burton (Witness)

Endurance Assurance Corporation
(Surety) (Seal)

John R. Waite, Jr., Attorney-in-Fact (Title)

CONSENT OF SURETY

KNOW ALL MEN BY THESE PRESENTS, that for and in consideration of the sum of \$1.00,
lawful money of the United States of America, the receipt whereof is hereby acknowledged, paid
the undersigned corporation, and for other valuable consideration, the

Endurance Assurance Corporation


organized and existing under the laws of the State of Delaware and licensed to do
business in the State of Kentucky certifies and agrees, that if contract for
Lakeside Golf Course Irrigation Replacement, Lexington-Fayette County, Kentucky, Bid No. 29-2022

for Lexington-Fayette Urban County Government (LFUCG)

is awarded to George E. Ley Company the undersigned
Corporation will execute the bond or bonds as required of the contract documents and will
become Surety in the full amount set forth in the contract documents for the faithful performance
of all obligations of the Contractor.

Signed and Sealed this 24th day of March , 2022

Endurance Assurance Corporation



John R. Waite, Jr., Attorney-in-Fact



MATTHEW G. BEVIN

**GOVERNOR
DEPARTMENT OF INSURANCE**

CERTIFICATE OF AUTHORITY

Corrected

Satisfactory evidence has been furnished to me showing that **Endurance Assurance Corporation** organized in the State of **Delaware**, and having its principal office at **Wilmington, DE**, is in sound and solvent condition, and has fully complied with all the provisions of the Insurance Laws of the Commonwealth of Kentucky that are applicable thereto. Now, therefore, on behalf of the Department of Insurance of the Commonwealth of Kentucky, I do hereby authorize the said insurance company to transact the business of

Health, Property, Surety, Casualty (limited to vehicle, liability, workers' compensation & employer's liability, burglary & theft, personal property floater, glass, boiler & machinery, leakage & fire extinguishing equipment, credit, malpractice, elevator, congenital defects, livestock, entertainments, failure of certain institutions to record documents, automobile guaranty, miscellaneous), Marine & Transportation Insurance

in this Commonwealth for the period beginning on the date shown below and to continue in force as long as the insurer is entitled thereto.



H. Brian Maynard

Commissioner, Department of Insurance

This Certificate of Authority shall, at all times, be the property of the Commonwealth of Kentucky, and upon any expiration, suspension, revocation, or termination thereof, the insurer shall promptly deliver this Certificate to the Department of Insurance.

CERTIFICATE NO: 35-2293075

DATE: 08/11/2016

EFFECTIVE DATE: 08/11/2016



POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that Endurance Assurance Corporation, a Delaware corporation, Endurance American Insurance Company, a Delaware corporation, Lexon Insurance Company, a Texas corporation, and/or Bond Safeguard Insurance Company, a South Dakota corporation, each, a "Company" and collectively, "Sompo International," do hereby constitute and appoint: John R. Waite, Jr., William L. Rushton, Vincent Giorgio as true and lawful Attorney(s)-In-Fact to make, execute, seal, and deliver for, and on its behalf as surety or co-surety; bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking so made, executed and delivered shall obligate the Company for any portion of the penal sum thereof in excess of the sum of TWENTY MILLION DOLLARS (\$20,000,000.00).

Such bonds and undertakings for said purposes, when duly executed by said attorney(s)-in-fact, shall be binding upon the Company as fully and to the same extent as if signed by the President of the Company under its corporate seal attested by its Corporate Secretary.

This appointment is made under and by authority of certain resolutions adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019, a copy of which appears below under the heading entitled "Certificate".

This Power of Attorney is signed and sealed by facsimile under and by authority of the following resolution adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019 and said resolution has not since been revoked, amended or repealed:

RESOLVED, that the signature of an individual named above and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signature or seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, each Company has caused this instrument to be signed by the following officers, and its corporate seal to be affixed this 15th day of June, 2019.

Endurance Assurance Corporation
By: Richard M Appel, SVP & Senior Counsel

Endurance American Insurance Company
By: Richard Appel, SVP & Senior Counsel

Lexon Insurance Company
By: Richard Appel, SVP & Senior Counsel

Bond Safeguard Insurance Company
By: Richard Appel, SVP & Senior Counsel



ACKNOWLEDGEMENT

On this 15th day of June, 2019, before me, personally came the above signatories known to me, who being duly sworn, did depose and say that he/she is an officer of each of the Companies; and that he executed said instrument on behalf of each Company by authority of his office under the by-laws of each Company.

By: Amy Taylor, Notary Public - My Commission Expires 5/9/23



CERTIFICATE

I, the undersigned Officer of each Company, DO HEREBY CERTIFY that:

- 1. That the original power of attorney of which the foregoing is a copy was duly executed on behalf of each Company and has not since been revoked, amended or modified; that the undersigned has compared the foregoing copy thereof with the original power of attorney, and that the same is a true and correct copy of the original power of attorney and of the whole thereof;
2. The following are resolutions which were adopted by the sole shareholder of each Company by unanimous written consent effective June 15, 2019 and said resolutions have not since been revoked, amended or modified:

*RESOLVED, that each of the individuals named below is authorized to make, execute, seal and deliver for and on behalf of the Company any and all bonds, undertakings or obligations in surety or co-surety with others: RICHARD M. APPEL, BRIAN J. BEGGS, CHRISTOPHER DONELAN, SHARON L. SIMS, CHRISTOPHER L. SPARRO, MARIANNE L. WILBERT ; and be it further

RESOLVED, that each of the individuals named above is authorized to appoint attorneys-in-fact for the purpose of making, executing, sealing and delivering bonds, undertakings or obligations in surety or co-surety for and on behalf of the Company."

- 3. The undersigned further certifies that the above resolutions are true and correct copies of the resolutions as so recorded and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal this 24th day of March, 2022.

By: Daniel S. Lunde, Secretary

NOTICE: U. S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL (OFAC)

No coverage is provided by this Notice nor can it be construed to replace any provisions of any surety bond or other surety coverage provided. This Notice provides information concerning possible impact on your surety coverage due to directives issued by OFAC. Please read this Notice carefully.

The Office of Foreign Assets Control (OFAC) administers and enforces sanctions policy, based on Presidential declarations of "national emergency". OFAC has identified and listed numerous foreign agents, front organizations, terrorists, terrorist organizations, and narcotics traffickers as "Specially Designated Nationals and Blocked Persons". This list can be located on the United States Treasury's website - https://www.treasury.gov/resource-center/sanctions/SDN-List.

In accordance with OFAC regulations, if it is determined that you or any other person or entity claiming the benefits of any coverage has violated U.S. sanctions law or is a Specially Designated National and Blocked Person, as identified by OFAC, any coverage will be considered a blocked or frozen contract and all provisions of any coverage provided are immediately subject to OFAC. When a surety bond or other form of surety coverage is considered to be such a blocked or frozen contract, no payments nor premium refunds may be made without authorization from OFAC. Other limitations on the premiums and payments may also apply.

**ENDURANCE ASSURANCE CORPORATION
FINANCIAL STATEMENT SUMMARY - STATUTORY BASIS**

As of December 31, 2020

ASSETS:

Bonds	\$ 2,157,544,757
Stocks	\$ 1,621,290,435
Other Invested Assets	\$ 118,574,006
Cash and Cash Equivalents	\$ 345,153,160
Receivable for Securities	\$ 7,175,643
Total Cash and Invested Assets	\$ 4,249,738,000

Agents' Balances or Uncollected Premiums	\$ 721,677,754
Reinsurance Recoverable on Loss and Loss Adjustment Expense Payments	\$ 61,486,657
Funds Held By or Deposited With Reinsurance Companies	\$ 10,857,763
Federal & Foreign Income Tax Recoverable & Interest Thereon	\$ -
Net Deferred Tax Assets	\$ 60,206,396
Receivables From Parent, Subsidiaries & Affiliates	\$ 5,938,967
Aggregate Write-Ins for Other Than Invested Assets	\$ 13,008,369
Investment Income Due and Accrued	\$ 12,757,244
Total Admitted Assets	\$ 5,135,671,150

LIABILITIES:

Losses	\$ 1,447,946,516
Loss Adjustment Expenses	\$ 143,637,396
Reinsurance Payable on Paid Loss and Loss Adjustment Expenses	\$ 45,439,533
Taxes Licenses and Fees	\$ 7,837,697
Current Federal & Foreign Income Taxes	\$ 9,117,279
Unearned Premiums	\$ 1,023,124,284
Ceded Reinsurance Premiums Payable	\$ 113,211,464
Commissions Payable, Contingent Commissions and Similar Items	\$ 9,769,054
Amounts Withheld or Retained by Company for Account of Others	\$ 128,135,326
Other Expenses Payable	\$ 34,798,384
Payable to Parents, Subsidiaries and Affiliates	\$ 58,648,996
Payable for Securities	\$ 8,613,627
Provision for Reinsurance	\$ 18,312,751
Other Liabilities	\$ 42,078,886
Total Liabilities	\$ 3,090,671,193

CAPITAL AND SURPLUS:

Special Surplus Funds - Retroactive Reinsurance Gain	\$ 1,328,606
Common Capital Stock	\$ 5,000,000
Gross Paid In and Contributed Surplus	\$ 2,159,282,258
Unassigned Funds (Surplus)	\$ (120,610,907)
Total Capital and Surplus	\$ 2,044,999,957

Total Liabilities and Capital and Surplus	\$ 5,135,671,150
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I, Entela Hana, Treasurer of Endurance Assurance Corporation (the "Company") do hereby certify that to the best of my knowledge and belief, the foregoing is a full and true Statutory Statement of Admitted Assets, Liabilities, Capital and Surplus of the Company as of December 31, 2020 prepared in conformity with accounting practices prescribed or permitted by the State of Delaware Department of Insurance. The foregoing statement should not be taken as a complete statement of financial condition of the Company. Such a statement is available upon request at the Company's office located at 4 Manhattanville Road, 3rd Floor; Purchase, NY 10577.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company at Purchase, New York:

Entela Hana

Entela Hana, Treasurer

Subscribed and sworn to before me this 3rd day of March, 2021:

DocuSigned by:
Fiona McNamara

Notary Public Seal

Notary Public, State of New York
Qualified in Rockland County
No. 01MC5081895
My commission expires July 14, 2021

11. DBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS</u> <u>(LIST)</u>	<u>PROJECT</u> <u>(SPECIFIC TYPE)</u>	<u>DBE</u>	<u>% of WORK</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	N/A	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(USE ADDITIONAL SHEETS IF NECESSARY)

12. We acknowledge that, if we are the apparent low Bidder, we will submit to the OWNER within 7 calendar days following the Bid Opening, a sworn statement on the OWNER'S form regarding all current work on hand and under contract, and a statement on the OWNER'S form of the experience of our officers, office management and field management personnel. Additionally, if requested by the OWNER, we will within 7 days following the request submit audited financial statements and loss history for insurance claims for the 3 most recent years (or a lesser period stipulated by the OWNER)—all in accordance with the Bid Documents.

Respectfully submitted:

George E. Ley Co.
(Name of Contracting Firm)

BY: Brian Ley

TITLE: President.

DATE 3-24-2022

6. LIST OF PROPOSED SUBCONTRACTORS

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

BRANCH OF WORK-LIST

DBE
Work

% of EACH MAJOR ITEM

None

LIST OF MATERIALS/ SUPPLIERS

Bidders are hereby advised that this list must be complete and submitted with the Bid.

Listing "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.

Category	Manufacturer/Supplier	Date Quoted/Good Thru
Sprinkler/Controls	Toro/ Rainbird	
Swing Joints	Toro/ Rainbird	
Pipe	NA - Under Previous Contract	NA
Wire	Toro/ Rainbird	
Misc. Electrical	Toro/ Rainbird	
SS Sprinkler Saddles	Toro/ Rainbird	
HDPE Fittings	Toro/ Rainbird	
Butt Fusion	Toro/ Rainbird	
Electrofusion	Toro/ Rainbird	
Other	Toro/ Rainbird	
Poly Valves	Toro/ Rainbird	
CI Valves	Toro/ Rainbird	
Valves Boxes	Toro/ Rainbird	

**7. Lexington-Fayette Urban County Government
MWDBE PARTICIPATION GOALS**

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as



Bid/RFP/Quote Reference # 29-2022

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.	N	O	N	E
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

George E. Ley Company

Company

3-24-2022

Date

Brian D. Ley

Company Representative

President

Title



Bid/RFP/Quote Reference # 29-2022

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.	N	O	N	E	
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

George E. Ley Company

Company

3-24-2022

Date

Brian D. Ley

Company Representative

President

Title



Bid/RFP/Quote Reference # 29-2022

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name George E. Ley Company	Contact Person Brian D. Ley
Address/Phone/Email 130 Devereux Rd, Glenmoore, PA 19343 484-883-2947 / bley@gelcogolf.com	Bid Package / Bid Date 29-2022 3-24-2022 14:00

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran
		N	O	N	E			

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

George E. Ley Company
Company
3-24-2022
Date

Brian D. Ley
Company Representative
President
Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS
Bid/RFP/Quote # 29-2022

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

BL Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

BL Included documentation of advertising in the above publications with the bidders good faith efforts package

BL Attended LFUCG Central Purchasing Economic Inclusion Outreach event

BL Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

BL Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

BL Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

BL Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

BL Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

BL Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

BL Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

BL Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation,

even when the prime contractor may otherwise perform these work items with its own workforce

BL Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

BL Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

BL Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

BL Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

BL Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

BL Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

George E. Ley Company

Company

3-24-2022

Date

Brian D. Ley

Company Representative

President

Title

8. **AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION, NON-CONFLICT OF INTEREST**

I hereby swear (or affirm) under the penalty for false swearing:

1. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);
2. That the attached bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition;
3. That the contents of the bid or bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the bid or bids, and will not be communicated to any such person, prior to the official opening of the bid or bids;
4. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;
5. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State X or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky _____. Check the statement applicable.
6. This offer is for 60 calendar days from the date this bid is opened. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items bid above, a contract shall thereby be created with respect to the items accepted.
7. That I have fully informed myself regarding the accuracy of the statements made in this statement.
8. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

10. EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:
The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

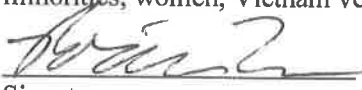
The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In

following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.



Signature

George E. Ley Company

Name of Business

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, religion, sex (including pregnancy, sexual orientation or gender identity), national origin, disability, age, genetic information, political affiliation, or veteran status, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any count, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contract will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the*

11. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of George E. Ley Company

to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

12. WORKFORCE ANALYSIS FORM

Name of Organization: George E. Ley Company

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators	1	1														1	0
Professionals	2	1	1													1	1
Superintendents	5	4		1												5	0
Supervisors																0	0
Foremen	6	1		5												6	0
Technicians																0	0
Protective Service																0	0
Para-Professionals																0	0
Office/Clerical	4	2	2													0	0
Skilled Craft	34	1		33												2	2
Service/Maintenance	3		1	2												34	0
Total:																52	3

Prepared by: Brian Ley

(Name and Title)

Date: 3/24/2022

Revised 2015-Dec-15

13. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT
(Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured: George E. Ley Co. Employee ID: _____
 Address: 130 Devereux Rd. Glenmoore, PA 19343 Phone: 484-883-2947

Project to be insured: Lakeside Golf Course

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the Insurance and Risk Management of Part V (Special Conditions), including all requirements, and conditions:

Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's Code	Rating
SC-2 – see provisions	CGL	\$1,000,000 per occ. And \$2,000,000 aggregate	\$ 1,000,000 / 3,000,000	Selective Insurance Co		
SC-2 – see provisions	AUTO	\$1,000,000/per occ.	\$ 1,000,000	Selective Insurance Co		
SC-2 – see provisions	WC	Statutory w /endorsement as noted	\$ 1,000,000	AmTrust Insurance Co of KS		
SC-2 – see provisions	EXC	\$2,000,000 per occ.	\$ 10,000,000	AmTrust Insurance Co of KS		

Section 2 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

Univest Insurance LLC
 Agency or Brokerage
 521 West Main Street, PO Box 391
 Name of Authorized Representative
 Senior Account Manager

Street Address: Lansdale PA 19446
 City: Lansdale State: PA Zip: 19446
 Telephone Number: 267-646-0984
 Date: _____

DocuSigned by:
 Title
Cynthia Stauffer
 457573053571F406... Authorized Signature
 3/23/2022 15:55 EDT

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.
IMPORTANT: Contract may not be awarded if a completed and signed copy of this form for all coverage's listed above is not provided with the bid.

14. DEBARRED FIRMS

PROJECT NAME: George E. Ley Company

BID NUMBER: 29-2022

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
LEXINGTON, KY

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All bidders shall complete the attached certification in duplicate and submit both copies to the Owner with the bid proposal. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development, within fourteen (14) days after bid opening.

The undersigned hereby certifies that the firm of George E Ley Company has not and will not award a subcontract, in connection with any contract award to it as the result of this bid, to any firm that has been debarred for noncompliance with the Federal labor Standards, Title VI of the civil Rights Act of 1964, Executive Order 11246 as amended or any Federal Law.

George E. Ley Company

Name of Firm Submitting Bid



Signature of Authorized Official

President

Title

3-24-2022

Date

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: George E. Ley Company

Project: Lakeside Golf Course Irrigation (bid 29-2022)

Printed Name and Title of Authorized Representative: Brian Ley, President

Signature: 

Date: 3-24-2022

END OF SECTION

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: _____

Project: _____

Printed Name and Title of Authorized Representative: _____

Signature: _____

Date: _____

END OF SECTION

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END OF SECTION

PART IV
GENERAL CONDITIONS

1. DEFINITIONS

Wherever used in these General Conditions or the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.1 Addenda

Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.

1.2 Agreement

The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 Application for Payment

The form accepted by CONSULTANT which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

1.4 Bid

The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.5 Bidder

An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.

1.6 Bonds

Bid, performance and payment bonds and other instruments of security.

1.7 Calendar Day

A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

1.8 Change Order

A document recommended by CONSULTANT, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

- 1.9 Contract Documents**
The Advertisement for Bidders, Information for Bidders, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Special Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements.
- 1.10 Contract Unit Price**
The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement. Unit Prices are to be firm for the term of this Contract.
- 1.11 Contract Time**
The number of consecutive calendar days between the date of issuance of the Notice to Proceed and the contract completion date.
- 1.12 CONTRACTOR**
The person, firm or corporation with whom OWNER has entered into the Agreement.
- 1.13 Defective**
An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to CONSULTANT'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER).
- 1.14 Drawings**
The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by CONSULTANT and are referred to in the Contract Documents.
- 1.15 Effective Date of the Agreement**
The date indicated in the Agreement on which it becomes effective.
- 1.16 CONSULTANT**
The Lexington-Fayette Urban County Government or its authorized representative.
- 1.17 Field Order**
A documented order issued by CONSULTANT which orders minor changes in the Work, but which does not involve a change in the Contract Price or the Contract Time.

1.18 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

1.19 Laws and Regulations

Laws, rules, regulations, ordinances, codes and/or orders.

1.20 Notice of Award

The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.21 Notice to Proceed

A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.

1.24 Project

The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.25 Inspector

The authorized representative who is assigned to the site or any part thereof.

1.26 Shop Drawings

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.27 Specifications

Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and

workmanship as applied to the Work and certain administrative details applicable thereto.

1.28 Standard Specifications

The "Standard Specifications for Road and Bridge Construction", Transportation Cabinet, Department of Highways, Commonwealth of Kentucky, current edition. MUTCD shall refer to the "Manual of Uniform Traffic Control Devices.

1.29 Subcontractor

An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.30 Special Conditions

The part of the Contract Documents which amends or supplements these General Conditions.

1.31 Supplier

A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.32 Underground Facilities

All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.33 Unit Price Work

An amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

1.34 Work

The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

1.35 Time Period

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to CONSULTANT any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from CONSULTANT before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to CONSULTANT for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into costs per labor and materials by specification

section to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission. Schedule of values shall be submitted on AIA G702/703 forms, or approved equal.

2.7 Preconstruction Conference

Before CONTRACTOR starts the Work at the proposed site, a conference attended by CONTRACTOR, CONSULTANT, EEO-Affirmative Action Officer, and other appropriate parties will be held to discuss the following issues: (1) The scheduling of the Work to be completed; (2) The procedures for handling shop drawings and other submittals; (3) The processing of applications for payment; (4) The establishment of an understanding among the involved parties in regard to the proposed project; (5) The establishment of procedures for effectively implementing the LFUCG's 10% minimum DBE goals; and (6) Requirement for Mechanic's Lien on Partial Applications for Payment.

2.8 Finalizing Schedules

At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, CONSULTANT and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to CONSULTANT as providing orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on CONSULTANT responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to CONSULTANT as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to CONSULTANT as to form and substance.

3. CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE

3.1 General

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 Intent

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used

to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or CONSULTANT, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by CONSULTANT as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to CONSULTANT in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from CONSULTANT; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

1. Agreement
2. Field and Change Orders
3. Addenda
4. Special Conditions
5. Instruction to Bidders
6. General Conditions
7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

3.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by means of a Change Order or a Field Order. Contract Price and Contract Time may only be changed by a Change Order.

3.5 Reuse of Documents

Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of CONSULTANT; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and CONSULTANT and specific written verification or adaptation by CONSULTANT.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11. CONSULTANT shall determine if the claim is legitimate or not. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Physical Conditions

4.2.1 Explorations and Reports

Reference is made to the Special Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures

Reference is made to the Special Conditions for identification of those drawings of physical conditions in or relating to existing surface and

subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and CONSULTANT in writing about the inaccuracy or difference.

4.2.4 CONSULTANT'S Review

CONSULTANT will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of CONSULTANT'S findings and conclusions.

4.2.5 Possible Document Change

If CONSULTANT concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change I the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is

based on information and data furnished to OWNER or CONSULTANT by the owners of such underground facilities or by others. Unless it is otherwise expressly provided in the Special Conditions:

4.3.1.1 OWNER and CONSULTANT shall not be responsible for the accuracy or completeness of any such information or data; and,

4.2.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data; for locating all underground facilities shown or indicated in the Contract Documents; for coordination of the Work with the owners of such underground facilities during construction; and for the safety and protection thereof and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated

If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and CONSULTANT. CONSULTANT will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of.

4.4 Reference Points

OWNER shall provide engineering surveys to establish reference points for construction which in CONSULTANT'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to CONSULTANT whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by a Registered Land Surveyor.

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the CONSULTANT and the general public. CONTRACTOR shall keep at the Project Site during the progress of the Work a competent project manager/superintendent and all necessary assistants, all of whom shall be satisfactory to OWNER. OWNER reserves the right to reject CONTRACTOR'S construction superintendent and project management personnel if they are unsatisfactory to OWNER and upon such rejection CONTRACTOR shall designate and provide competent successors. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section 14). CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and CONSULTANT except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. OWNER reserves the right to require CONTRACTOR to remove from the Project any of it's personnel, or subcontractor's personnel for violating LFUCG Policies, Rules or Regulations. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to CONSULTANT.

5.4 Start-Up and Completion of Work

Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

5.5 Materials and Equipment

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by CONSULTANT, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

5.5.1 Not Clearly Specified or Indicated

In all instances where materials specified are obtainable in different sizes, weights, trade grades, qualities or finishes, etc., whose weights, trade grades, qualities or finishes, etc., are not clearly specified or indicated on the Drawings, the CONTRACTOR shall notify the CONSULTANT of all such instances at least five (5) days in advance of receiving the proposals. The CONSULTANT will then determine which size, weight, trade grade, quality, finish, etc., is required.

5.5.2 Coordination of Work

The CONTRACTOR shall see that for his own Work and for the work of each subcontractor, proper templates and patterns necessary for the coordination of the various parts of the Work are prepared. The CONTRACTOR shall furnish or require the Subcontractor to furnish such duplicates as will enable the Subcontractors to fit together and execute fully their respective portions of the Work.

5.6 Adjusting Progress Schedule

CONTRACTOR shall submit to CONSULTANT for acceptance (to the extent indicated in paragraph 2.8) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Contract Documents applicable thereto.

5.7 Substitutes or “Or-Equal” Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/CONSULTANT if sufficient information is submitted by CONTRACTOR to allow OWNER/CONSULTANT to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/CONSULTANT will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/CONSULTANT from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to OWNER/CONSULTANT for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR’S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/CONSULTANT in evaluating the proposed substitute. OWNER/CONSULTANT may require CONTRACTOR to furnish at CONTRACTOR’S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/CONSULTANT, if CONTRACTOR submits sufficient information to allow OWNER/CONSULTANT to determine that the substitute proposed is equivalent to that indicated or required by the Contract

Documents. The procedure for review by OWNER/CONSULTANT will be similar to that provided in paragraph 5.7.1 as applied by OWNER/CONSULTANT.

5.7.3 OWNER/CONSULTANT'S Approval

OWNER/CONSULTANT will be allowed a reasonable time within which to evaluate each proposed substitute. OWNER/CONSULTANT will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without OWNER/CONSULTANT'S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute. OWNER/CONSULTANT will record time required by OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not OWNER/CONSULTANT accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants for evaluating each proposed substitute.

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and CONSULTANT as indicated in paragraph 5.8.2), whether initially or as a substitute, against whom OWNER or CONSULTANT may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

5.8.2 Objection After Due Investigation

If the Contract Documents require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and CONSULTANT and if CONTRACTOR has submitted a list thereof, OWNER'S or CONSULTANT'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute. No acceptance by

OWNER or CONSULTANT of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or CONSULTANT to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County project manager determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and CONSULTANT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or CONSULTANT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or CONSULTANT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and CONSULTANT.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as

to the project scope, nature, intention, design, or construction method to any third party or parties without the explicit written consent of the OWNER.

Any third party requesting such information shall be referred to the OWNER or his representative.

Should there be any change from the original intent of the project as a result of any statement or comment by the contractor, his employees or subcontractors, contractor shall be held liable for any change in the scope, nature, design, or construction method and shall bear the full cost for the previously mentioned changes.

5.9 Patent Fees and Royalties

CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others.

5.10 Permits

Unless otherwise provided in the Special conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor CONSULTANT shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give CONSULTANT prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to CONSULTANT, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such

land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or CONSULTANT by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and CONSULTANT harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or CONSULTANT to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

5.13.2 Clean UP

During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

5.13.1 Loading of Structures

CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

5.14 **Record Drawings**

CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to CONSULTANT for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to CONSULTANT for OWNER.

5.15 **Shop Drawings and Samples**

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

with applicable procedures specified, CONTRACTOR shall submit to CONSULTANT for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as CONSULTANT may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable CONSULTANT to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to CONSULTANT for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give CONSULTANT specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to CONSULTANT for review and approval of each such variation.

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or

procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by CONSULTANT, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by CONSULTANT on previous submittals.

5.15.6 Responsibility for Errors and Omissions

CONSULTANT'S review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called CONSULTANT'S attention to each such variation at the time of submission as required by paragraph 5.15.4 and CONSULTANT has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by CONSULTANT relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 5.15.3.

5.15.7 Cost of Related Work

Where a Shop or sample is required by the Specifications, any related Work performed prior to CONSULTANT'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

5.16 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolutions of any disputes or disagreements, except as permitted by paragraph 14.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits.

Any fines or penalties resulting from the failure to comply with the terms of the federal, state or local permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

5.17.2 Stormwater Pollution Prevention

A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.

B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:

- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.

C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.

D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

E. Any fines or penalties resulting from the failure to comply with the terms of the state or local stormwater permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

6. OTHER WORK

6.1 Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if such performance will involve additional expense to CONTRACTOR or requires additional time, a Change Order to the Contract will be negotiated.

6.2 Other Contractors or Utility Owners

CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of CONSULTANT and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

6.3 Delays Caused by Others

If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to CONSULTANT in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

6.4 Coordination

If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Special Conditions, and the specific matters to be covered by such authority and

responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by CONSULTANT in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

CONSULTANT will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of CONSULTANT as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and CONSULTANT.

8.2 Visits to Site

CONSULTANT will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CONSULTANT will not be required to make exhaustive or

continuous on-site inspections to check the quality or quantity of the Work. CONSULTANT'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations, CONSULTANT will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

8.3 Project Representation

CONSULTANT will provide an Inspector to assist CONSULTANT in observing the performance of the Work. If OWNER designates another agent to represent OWNER at the site who is not CONSULTANT'S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Special Conditions.

8.4 Clarifications and Interpretations

CONSULTANT will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as CONSULTANT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

8.5 Authorized Variations in Work

CONSULTANT may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order.

8.6 Rejecting Defective Work

CONSULTANT will have authority to disapprove or reject Work which CONSULTANT believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 12.3, whether or not the Work is fabricated, installed or completed.

8.7 Shop Drawings

In connection with CONSULTANT'S responsibility for Shop Drawings and samples, see paragraphs 5.15.1 through 5.16 inclusive.

8.8 Change Orders

In connection with CONSULTANT'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

8.9 Payments

In connection with CONSULTANT'S responsibilities with respect to Applications for Payment, etc., see Article 13.

8.10 Determinations for Unit Prices

CONSULTANT will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

CONSULTANT will review with CONTRACTOR CONSULTANT'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

CONSULTANT will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to CONSULTANT in writing with a request for a formal decision in accordance with this paragraph, which CONSULTANT will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to CONSULTANT within sixty days after such occurrence unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on CONSULTANT'S Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither CONSULTANT'S authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by CONSULTANT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of CONSULTANT to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of CONSULTANT as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign CONSULTANT any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

8.12.3 CONTRACTOR'S Means, Methods, Etc.

CONSULTANT will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and CONSULTANT will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

CONSULTANT will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order. Upon receipt of such notice, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

9.2 Claims

Claims for an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Change Order will be settled as provided for in Article 10 or Article 11.

9.3 Work Not in Contract Documents

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraph 3.4, except in the case of an emergency and except in the case of uncovering Work as provided in paragraph 12.3.4.

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

9.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 9.1, are required because of acceptance of defective Work under paragraph 12.7 or corrective defective Work under paragraph 12.8, or are agreed to by the parties;

9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by CONSULTANT pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of

the items involved (subject to the provisions of paragraphs 10.9.1. through 10.9.3, inclusive).

10.3.2 Lump Sum

By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.6.2.1).

10.3.3 Cost Plus Fee

On the basis of the Cost of the Work (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraphs 10.6 and 10.7).

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items; and shall not include any of the costs itemized in paragraph 10.5:

10.4.1 Payroll Costs

Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of CONSULTANT, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of CONSULTANT, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

10.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.

10.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

10.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

The term Cost of the Work shall not include any of the following:

10.5.1 Costs of Officers and Executives

Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general

managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 Contractor's Fee

The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

10.6.1 a mutually acceptable fixed fee; or if none can be agreed upon,

10.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

10.6.2.1 for costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR'S fee shall be fifteen percent;

10.6.2.2 for costs incurred under paragraph 10.4.3, the CONTRACTOR'S fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

10.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;

10.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

10.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.1 through 10.6.2.4, inclusive.

10.7 Itemized Cost Breakdown

Whenever the cost of any Work is to be determined pursuant to paragraph 10.4 or 10.5, CONTRACTOR will submit in form acceptable to CONSULTANT an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to CONSULTANT, CONTRACTOR agrees that:

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by CONSULTANT to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by CONSULTANT in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

11. CHANGE OF CONTRACT TIME

11.1 Change Order

The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by CONSULTANT in accordance with paragraph 8.11. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 11.1.

11.2 Justification for Time Extensions

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 11.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 6, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

11.3 Time Limits

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.

12. WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and CONSULTANT that all Work will be in accordance with the Contract Documents and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 12.

12.2 Access to Work

CONSULTANT and CONSULTANT'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give CONSULTANT timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The CONSULTANT may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the CONSULTANT or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the CONSULTANT.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by CONSULTANT if so specified).

12.3.4 Covered Work

If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of CONSULTANT, it must, if requested by CONSULTANT, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given CONSULTANT timely notice of CONTRACTOR'S intention to cover the same and CONSULTANT has not acted with reasonable promptness in response to such notice.

12.3.5 CONTRACTOR'S Obligation

Neither observations by CONSULTANT nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

12.4 OWNER May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

12.5 Correction or Removal of Defective Work

If required by CONSULTANT, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by CONSULTANT, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.6 One Year Correction Period

If within one year after the date of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement

(including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by CONSULTANT as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of CONSULTANT to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by CONSULTANT in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by CONSULTANT, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

The schedule of values established as provided in paragraph 2.8 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to CONSULTANT. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Application for Progress Payment

At least ten days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to CONSULTANT for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. OWNER shall, within thirty (30) calendar days of presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by CONSULTANT. Monthly progress payments shall be ninety (90) percent of the sum obtained by applying the respective bid unit prices to the approved estimated quantities of work completed by the Contractor during the preceding month. The remaining ten (10) percent will be held by the Owner, as retainage. At such time as the CONSULTANT deems appropriate - based on the quality of work performed, progress of cleanup, and other pertinent factors - the rate of retainage, or the total amount retained, may be reduced; although, any reduction in retainage, below the ten (10) percent level, is made solely at the CONSULTANT's discretion. All remaining retainage held will be included in the final payment to the Contractor.

13.2.1 Waivers of Mechanic's Lien

With each Application for Payment OWNER may require CONTRACTOR to submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

13.2.1.1 Requirement for waivers of Mechanic's Lien on Partial Applications for Payment will be determined and communicated at the Preconstruction Conference.

13.2.1.2 Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

13.2.1.3 When an application shows completion of an item, submit conditional final or full waivers.

13.2.1.4 Owner reserves the right to designate which entities involved in the Work must submit waivers.

13.2.1.5 Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

CONSULTANT will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing CONSULTANT'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

13.4.2 CONSULTANT'S Recommendation

CONSULTANT may refuse to recommend the whole or any part of any payment, if, in CONSULTANT'S opinion, it would be incorrect to make such representations to OWNER. CONSULTANT may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in CONSULTANT'S opinion to protect OWNER from loss because:

13.4.2.1 the Work is defective, or completed Work has been damaged requiring correction or replacement;

13.4.2.2 the Contract Price has been reduced by Written Amendment or Change Order;

13.4.2.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 12.8; or

13.4.2.4 of CONSULTANT's actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1 through 14.2.9 inclusive.

13.5 Partial Utilization

OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and has been completed. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER that said part of the Work is complete and request that a Certificate of Completion be issued for that part of the Work.

13.6 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, CONSULTANT will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

13.7 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of CONSULTANT and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 5.14) and other documents - all as required by the Contract Documents, and after CONSULTANT has indicated that the Work is acceptable (subject to the provisions of paragraph 13.10), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to

furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

If, on the basis of CONSULTANT'S observation of the Work during construction and final inspection, and CONSULTANT'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, CONSULTANT is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, CONSULTANT will, after receipt of the final Application for Payment, indicate in writing CONSULTANT'S recommendation of payment and present the Application to OWNER for payment. Thereupon CONSULTANT will give written notice to OWNER and CONTRACTOR that the Work is acceptable, subject to the provisions of paragraph 13.10. Otherwise, CONSULTANT will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of CONSULTANT, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, Information for Bidders, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to CONSULTANT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and

approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

13.10.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

13.10.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and CONSULTANT which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 10 and 11.

14.2 OWNER May Terminate

The OWNER may terminate the Work upon the occurrence of any one or more of the following events:

14.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against

CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

14.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

14.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);

14.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

14.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the

difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by CONSULTANT and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

14.2.10 If safety violations are observed and brought to the Contractors attention and Contractor fails to take immediate corrective measures any repeat of similar safety violations, Owner will order an immediate termination of contract. Note: it is the Contractor's responsibility to know proper safety measures as they pertain to construction and OSHA.

14.2.11 This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

14.2.12 This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

14.3 CONTRACTOR'S Services Terminated

Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

14.4 Payment After Termination

Upon seven days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

14.5 CONTRACTOR May Stop Work or Terminate

If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or CONSULTANT fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and CONSULTANT, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if CONSULTANT has failed to act on an Application

for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in KRS 344.010) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.

e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of BIDDER/CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If BIDDER/CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, BIDDER/CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.

- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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PART VI
CONTRACT AGREEMENT

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PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and **George E. Ley Company**, doing business as a corporation located in the City of Glenmoore, County of Chester, and State of Pennsylvania, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of one million two hundred fifty-nine thousand nine hundred nineteen Dollars and forty-nine Cents (\$1,259,919.49) quoted in the proposal by the CONTRACTOR, dated March 24, 2022, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by C-Tech Solutions Inc. for the Lakeside Golf Course Irrigation Replacement project.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as one hundred fifty (150) days to final completion. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, and Proposal, Ion Wave Q&A, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

SECTION NO.	TITLE	PAGES
I	Advertisement for Bids	AB 1 thru 5
II	Information for Bidders	IB 1 thru 10
III	Form of Proposal	P 1 thru 38
IV	General Conditions	GC 1 thru 52
V	Special Conditions	SC 1 thru 8
VI	Contract Agreement	CA 1 thru 5
VII	Performance and Payment Bonds	PB 1 thru 7
VIII	Addenda	AD 1 thru 1
IX	Technical Specifications and Drawings	

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government.
Lexington, Kentucky
(Owner)

ATTEST:

Marilyn Stock
Clerk of the Urban County Council

BY: Linda Gorton
MAYOR

Michelle Nelson
(Witness)

Mayor
(Title)

(Seal)

George E. Ley Company
(Contractor)

Boin
(Secretary)*

BY: Boin
PRESIDENT

Kymc
(Witness)

ESTIMATOR
(Title)

130 DEVEREUX RD, GLENMOORE, PA
(Address and Zip Code) 19343

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.

- (1) Complete the Contract in accordance with its terms and conditions or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Contract and any amendments thereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREOF, this instrument is executed in three (3) each one of which shall be
(number)
deemed an original, this the 19th day of April, 2022.

ATTEST:

[Signature]
(Principal) Secretary

George E. Ley Company
Principal

BY: [Signature] (s)
Brian Ley, President

130 Devereux Road
(Address)
Glenmoore, PA 19343

[Signature]
Witness as to Principal Kyle Carona

130 Devereux Road
(Address)
Glenmoore, PA 19343

Endurance Assurance Corporation
Surety

ATTEST:

N/A
(Surety) Secretary

BY: [Signature]
John R. Waite, Jr. Attorney-in-Fact
12890 Lebanon Road
(Address)
Mt. Juliet, TN 37122

(SEAL)

[Signature]
Witness as to Surety Kimberly Burton
12890 Lebanon Road
(Address)
Mt. Juliet, TN 37122

TITLE: _____
Surety

BY: _____

TITLE: _____

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the Work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the Work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
 - (b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of (number)

which shall be deemed an original, this the 19th day of April, 2022.

ATTEST:

[Signature]
(Principal) Secretary

George E. Ley Company
(Principal)

(SEAL)

BY: [Signature] (s)
Brian Ley, President
130 Devereux Road
(Address)
Glenmoore, PA 19343

[Signature]
(Witness to Principal) Kyle Carona
130 Devereux Road
(Address)
Glenmoore, PA 19343

Endurance Assurance Corporation
(Surety)

ATTEST:

N/A
(Surety) Secretary

BY: [Signature]
John R. Waite, Jr. (Attorney-in-Fact)

(SEAL)
[Signature]
Witness as to Surety Kimberly Burton
12890 Lebanon Road
(Address)
Mt. Juliet, TN 37122

12890 Lebanon Road
(Address)
Mt. Juliet, TN 37122

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

END OF SECTION



MATTHEW G. BEVIN

**GOVERNOR
DEPARTMENT OF INSURANCE**

CERTIFICATE OF AUTHORITY

Corrected

Satisfactory evidence has been furnished to me showing that **Endurance Assurance Corporation** organized in the State of **Delaware**, and having its principal office at **Wilmington, DE**, is in sound and solvent condition, and has fully complied with all the provisions of the Insurance Laws of the Commonwealth of Kentucky that are applicable thereto. Now, therefore, on behalf of the Department of Insurance of the Commonwealth of Kentucky, I do hereby authorize the said insurance company to transact the business of

Health, Property, Surety, Casualty (limited to vehicle, liability, workers' compensation & employer's liability, burglary & theft, personal property floater, glass, boiler & machinery, leakage & fire extinguishing equipment, credit, malpractice, elevator, congenital defects, livestock, entertainments, failure of certain institutions to record documents, automobile guaranty, miscellaneous), Marine & Transportation Insurance

in this Commonwealth for the period beginning on the date shown below and to continue in force as long as the insurer is entitled thereto.



H. Brian Maynard

Commissioner, Department of Insurance

This Certificate of Authority shall, at all times, be the property of the Commonwealth of Kentucky, and upon any expiration, suspension, revocation, or termination thereof, the insurer shall promptly deliver this Certificate to the Department of Insurance.

CERTIFICATE NO: 35-2293075

DATE: 08/11/2016

EFFECTIVE DATE: 08/11/2016



POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that Endurance Assurance Corporation, a Delaware corporation, Endurance American Insurance Company, a Delaware corporation, Lexon Insurance Company, a Texas corporation, and/or Bond Safeguard Insurance Company, a South Dakota corporation, each, a "Company" and collectively, "Sompo International," do hereby constitute and appoint: John R. Waite, Jr., William L. Rushton, Vincent Giorgio as true and lawful Attorney(s)-In-Fact to make, execute, seal, and deliver for, and on its behalf as surety or co-surety; bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking so made, executed and delivered shall obligate the Company for any portion of the penal sum thereof in excess of the sum of TWENTY MILLION DOLLARS (\$20,000,000.00).

Such bonds and undertakings for said purposes, when duly executed by said attorney(s)-in-fact, shall be binding upon the Company as fully and to the same extent as if signed by the President of the Company under its corporate seal attested by its Corporate Secretary.

This appointment is made under and by authority of certain resolutions adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019, a copy of which appears below under the heading entitled "Certificate".

This Power of Attorney is signed and sealed by facsimile under and by authority of the following resolution adopted by the sole shareholder of each Company by unanimous written consent effective the 15th day of June, 2019 and said resolution has not since been revoked, amended or repealed:

RESOLVED, that the signature of an individual named above and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signature or seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, each Company has caused this instrument to be signed by the following officers, and its corporate seal to be affixed this 15th day of June, 2019.

Four columns of signatures and corporate seals for Endurance Assurance Corporation, Endurance American Insurance Company, Lexon Insurance Company, and Bond Safeguard Insurance Company. Each entry includes the name of the signatory (Richard Appel), their title (SVP & Senior Counsel), and the company's corporate seal.

ACKNOWLEDGEMENT

On this 15th day of June, 2019, before me, personally came the above signatories known to me, who being duly sworn, did depose and say that he/she is an officer of each of the Companies; and that he executed said instrument on behalf of each Company by authority of his office under the by-laws of each Company.

Notary signature of Amy Taylor and the notary seal for the State of Tennessee, Notary Public, Davidson County, My Commission Expires 5/9/23.

CERTIFICATE

I, the undersigned Officer of each Company, DO HEREBY CERTIFY that:

- 1. That the original power of attorney of which the foregoing is a copy was duly executed on behalf of each Company and has not since been revoked, amended or modified; that the undersigned has compared the foregoing copy thereof with the original power of attorney, and that the same is a true and correct copy of the original power of attorney and of the whole thereof,
2. The following are resolutions which were adopted by the sole shareholder of each Company by unanimous written consent effective June 15, 2019 and said resolutions have not since been revoked, amended or modified:

"RESOLVED, that each of the individuals named below is authorized to make, execute, seal and deliver for and on behalf of the Company any and all bonds, undertakings or obligations in surety or co-surety with others: RICHARD M. APPEL, BRIAN J. BEGGS, CHRISTOPHER DONELAN, SHARON L. SIMS, CHRISTOPHER L. SPARRO, MARIANNE L. WILBERT

; and be it further

RESOLVED, that each of the individuals named above is authorized to appoint attorneys-in-fact for the purpose of making, executing, sealing and delivering bonds, undertakings or obligations in surety or co-surety for and on behalf of the Company."

- 3. The undersigned further certifies that the above resolutions are true and correct copies of the resolutions as so recorded and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal this 19th day of April, 2022.

Signature of Daniel S. Lurie, Secretary

NOTICE: U. S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL (OFAC)

No coverage is provided by this Notice nor can it be construed to replace any provisions of any surety bond or other surety coverage provided. This Notice provides information concerning possible impact on your surety coverage due to directives issued by OFAC. Please read this Notice carefully.

The Office of Foreign Assets Control (OFAC) administers and enforces sanctions policy, based on Presidential declarations of "national emergency". OFAC has identified and listed numerous foreign agents, front organizations, terrorists, terrorist organizations, and narcotics traffickers as "Specially Designated Nationals and Blocked Persons". This list can be located on the United States Treasury's website - https://www.treasury.gov/resource-center/sanctions/SDN-List.

In accordance with OFAC regulations, if it is determined that you or any other person or entity claiming the benefits of any coverage has violated U.S. sanctions law or is a Specially Designated National and Blocked Person, as identified by OFAC, any coverage will be considered a blocked or frozen contract and all provisions of any coverage provided are immediately subject to OFAC. When a surety bond or other form of surety coverage is considered to be such a blocked or frozen contract, no payments nor premium refunds may be made without authorization from OFAC. Other limitations on the premiums and payments may also apply.

Any reproductions are void.

Surety Claims Submission: LexonClaimAdministration@sompo-intl.com

Telephone: 615-553-9500 Mailing Address: Sompo International; 12890 Lebanon Road; Mount Juliet, TN 37122-2870

ENDURANCE ASSURANCE CORPORATION
FINANCIAL STATEMENT SUMMARY - STATUTORY BASIS
As of December 31, 2021


ASSETS:	
Bonds	\$ 2,826,199,095
Stocks	\$ 1,862,910,577
Other Invested Assets	\$ 288,834,583
Cash, Cash Equivalents and Short-Term Investments	\$ 602,391,796
Receivable for Securities	\$ 298,591
Total Cash and Invested Assets	\$ 5,580,634,641
Agents' Balances or Uncollected Premiums	\$ 831,289,744
Reinsurance Recoverable on Loss and Loss Adjustment Expense Payments	\$ 91,567,812
Funds Held By or Deposited With Reinsurance Companies	\$ 11,294,677
Federal & Foreign Income Tax Recoverable & Interest Thereon	\$ 1,297,141
Net Deferred Tax Assets	\$ 68,936,380
Receivables From Parent, Subsidiaries & Affiliates	\$ 21,730,483
Aggregate Write-Ins for Other Than Invested Assets	\$ 13,110,774
Investment Income Due and Accrued	\$ 14,267,012
Total Admitted Assets	\$ 6,634,128,664
LIABILITIES:	
Losses	\$ 2,004,519,544
Loss Adjustment Expenses	\$ 187,364,921
Reinsurance Payable on Paid Loss and Loss Adjustment Expenses	\$ 68,046,631
Taxes Licenses and Fees	\$ 7,951,006
Current Federal & Foreign Income Taxes	\$ -
Unearned Premiums	\$ 1,199,480,124
Ceded Reinsurance Premiums Payable	\$ 103,198,615
Funds Held Under Reinsurance Treaties	\$ 697,440
Commissions Payable, Contingent Commissions and Similar Items	\$ 11,862,683
Amounts Withheld or Retained by Company for Account of Others	\$ 175,617,518
Remittances and Items Not Allocated	\$ 48,907,615
Other Expenses Payable	\$ 31,428,386
Payable to Parents, Subsidiaries and Affiliates	\$ 64,784,043
Payable for Securities	\$ 5,359,709
Provision for Reinsurance	\$ 29,827,400
Other Liabilities	\$ 2,734,603
Total Liabilities	\$ 3,941,780,238
CAPITAL AND SURPLUS:	
Special Surplus Funds - Retroactive Reinsurance Gain	\$ 1,665,571
Common Capital Stock	\$ 5,000,000
Gross Paid In and Contributed Surplus	\$ 2,474,282,258
Unassigned Funds (Surplus)	\$ 211,400,597
Total Capital and Surplus	\$ 2,692,348,426
Total Liabilities and Capital and Surplus	\$ 6,634,128,664

I, Entela Hana, Treasurer of Endurance Assurance Corporation (the "Company") do hereby certify that to the best of my knowledge and belief, the foregoing is a full and true Statutory Statement of Admitted Assets, Liabilities, Capital and Surplus of the Company as of December 31, 2021 prepared in conformity with accounting practices prescribed or permitted by the State of Delaware Department of Insurance. The foregoing statement should not be taken as a complete statement of financial condition of the Company. Such a statement is available upon request at the Company's office located at 4 Manhattanville Road, 3rd Floor; Purchase, NY 10577.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Company at Purchase, New York:


Entela Hana, Treasurer

Subscribed and sworn to before me this 3rd day
of March, 2022:


Notary Public & Seal

DARLENE A. GIBSON
NOTARY PUBLIC-STATE OF NEW YORK
No. 01GI6114191
Qualified in Westchester County
My Commission Expires 08-09-2024

IX. TECHNICAL SPECIFICATIONS

Irrigation Specifications for



Lakeside Golf Course

**3725 Richmond Road
Lexington, KY 40509**

**Provided by
C-Tech Solutions, Inc.**

February 19, 2022

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1 MATERIALS

1.1 General

The Consultant shall decide on acceptability of materials submitted for installation. All materials shall be as specified, of recent manufacture, and shall be new and unused. Bidders shall submit, with their Bid Proposal, a complete list of components (with brand name and model number) they propose to install.

Contractor shall promptly remove equipment or materials found to be defective or not as specified, and install proper materials as directed by Owner's Representative or Consultant.

1.2 Pipe and Fittings

HDPE pipe, HDPE fittings and their components parts shall be warranted to be free from defects in manufacturing and workmanship for a period of five years from the date of installation.

1.2.1 Pipe

All Irrigation Pipe not specifically indicated otherwise shall be DR 13.5, IPS diameters, of a 4710 Bimodal Resin with a Slow Crack Growth Resistance (PENT) of >1500 hours per ASTM F1473. Pipe shall comply with ASTM D3035-14a or ASTM F714-13

Pipe shall be supplied in lengths of 40' or 50'. 2" and smaller may be supplied in up to 2,000' coils. **However, coils must be straightened and re-rounded to meet or exceed ASTM D2513 ovality requirements by the contractor prior to use with a McElroy LineTamer or equal as approved by Consultant.**

Each length of pipe shall bear markings to identify manufacturer, size, grade, pressure rating and date of manufacture. All piping shall show no evidence of blisters, grooves or other extrusion marks. The Contractor shall provide three (3) samples of each size, 3' in length for approval prior to supply and installation.

Pipe and fittings shall be installed such that pipe curvature is not less than the minimum bending radius recommended by the pipe manufacturer. Bends in Pipe at the point of installation of any fitting shall be avoided.

Installation of pipe by horizontal directional drilling shall be in accordance with ASTM F1962 or PPI TR-46 and the pipe manufacturer's recommendations.

Pipe sizing shall be as indicated on the Plans, Detail, and these specifications.

Manufacturer shall be Dura-Line, Flying W, ISCO Industries, LLC, AquaFuse or equal as approved by Consultant

1.2.2 HDPE Fittings

Fusion joints shall be considered as the primary method of connection for HDPE Pipe and Fittings.

All HDPE fittings shall be IPS diameters made from PE 4710 resin with a cell classification of 445574C per ASTM D3350 and shall have a pressure rating not less than that of the pipe they are used with unless otherwise specified on the plans.

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1.2.2.1 Butt Fusion Fittings

Butt fusion fittings shall be of the same material as listed under section 4.2.2. Butt fusion fittings shall be DR 11 with their ends machined to DR 13.5. No step in wall thickness across a butt fusion joint is permitted. Prior to machining of their ends they shall comply with ASTM D3261.

Reductions on run and/or branch tee's shall be such that the size of the "main body" is that of the largest leg of the tee.

Fabricated fittings are not permitted without prior written approval of Consultant. Any such approval shall be limited to the specific circumstance listed in the approval. If approval is granted, fabricated fittings shall comply with ASTM F2206 or AWWA C906 for fabricated butt fusion fittings. The use of Data Logger is required during the fabrication process. Reference to the Data Logger Quality Control records should be indicated by an indented stamp in each fusion bead of each fitting. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records.

1.2.2.2 Electrofusion Fittings

Electrofusion fittings including Electrofusion Couplings, Electrofusion Branch Saddles, Electrofusion x FNPT Saddles, and Electrofusion Swivel Saddles shall be rated DR 11, of the same material as listed under section 4.2.2 and have a manufacturing standard of ASTM F1055. They shall provide a monolithic connection between HDPE pipes and/or fittings.

Each fitting shall be equipped with a manufacturer's barcode. The barcode, with the appropriate Electrofusion Processor shall allow a fully automatic fusion process, as well as, automatic documentation of the fusion for the fitting.

Fittings shall have a pressure rating not less than that of the pipe unless otherwise specified on the plans.

1.2.2.3 Socket Fusion Fittings

Butt fusion and Electrofusion are the preferred methods to join HDPE pipe and fittings; however socket fusion may be used when either expressly specified in the plans and/or specification or with prior written approval of Consultant

Socket fusion fittings shall be of the same material as listed under section 4.2.2. Socket Fusion Fittings shall be manufactured in compliance with ASTM D2683 and have a pressure rating not less than that of the pipe unless otherwise specified on the plans.

1.2.2.4 Sidewall and Saddle Fittings

Sidewall and saddle fusion of PE4710 pipe and fittings shall be in accordance with ASTM F2620 and shall be installed in accordance with the manufacturer's recommended joining procedure.

Fittings shall have a pressure rating not less than that of the pipe unless otherwise specified on the plans.

1.2.3 Polypropylene compression fittings

Polypropylene compression fittings are a secondary choice, however they may be used when either expressly specified in the plans and/or specification or with prior written approval of Consultant.

Polypropylene compression fittings must be suitable for use on HDPE pipe per ASTM D3035 (IPS diameter, OD controlled). Fittings shall be rated for 230 psi complying with ISO 14236 and meet the dimensional and performance requirements of AWWA C800. Fitting "Bodies" shall be Polypropylene. Fitting "Compression Nuts" shall be Acetal. Joint seal activation shall be

82 accomplished solely by the Compression Nut. Joint "Seals" shall not "interfere" with pipe
83 insertion. No bevelling or lubrication of pipe shall be required. Fitting components shall not
84 require dismantling prior to assembly on to pipe. Compression fittings shall be Philmac or
85 approved equal.

86 **1.2.4 Mechanical Joint (MJ) Fittings**

87 MJ fittings are a secondary and limiting choice and may only be used with the direct approval of
88 the Owner's Representative or Consultant.

89 Polyethylene pipe and fittings may be joined together using Flanges or Mechanical Joint (MJ)
90 adapters when absolutely necessary and approved by the Consultant. These fittings shall be of
91 the same material as listed under section 4.2.2. Flanged and MJ adapters shall have a
92 manufacturing standard of ASTM D3261. They shall have a pressure rating not less than that of
93 the pipe unless otherwise specified on the plans.

94 MJ fittings shall conform to ANSI/AWWA C110/A21.10, with pressure rating of Class 350 for 3" to
95 24" and shall be ductile iron standard ANSI/AWWA C110/A21.10. All fittings shall be bituminous
96 coated inside and outside and shall be furnished complete with necessary accessories including
97 plain rubber gaskets, ductile iron glands, NSS Cor-Blue bolts and nuts. All MJ fittings shall be
98 completely wrapped with polyethylene sheeting as per ANSI/AWWA C105/A21.5.

99 Any Mechanical joint connection shall be made with stiffeners, see further specification listed
100 under 4.2.4.2

101 **1.2.4.1 Primary MJ Connection Method**

102 The primary method connection of the HDPE to the MJ fitting shall be with butt fusion on the
103 HDPE side and with the use of a MJ Adapter Kit on the fitting side. The kit shall include the
104 HDPE MJ Adapter with metal insert, Metal Gland, Gasket, and attachment Bolts and Nuts.

105 **1.2.4.2 Alternate MJ Connection Method**

106 When circumstances will not allow butt fusion, the following method for connection and restraint
107 shall be utilized

108 Mechanical joints shall be made with stiffeners which are inserted into the HDPE pipe. Stiffener
109 manufacturer's directions shall be followed when installing stiffeners and mechanical joints.

110 Pipe Stiffeners are designed for use with mechanical couplings, clamps and fittings where
111 stiffening of the pipe is necessary for proper gasket seal. Caution needs to be taken to prevent
112 (1) shear loading on the joint, (2) migration of the stiffener out of the end of the pipe from lack of
113 a back load on stiffener rim or load on the stiffener. Applications in which pipe may move out of
114 the fitting, correct anchorage of the pipe must be provided.

115 The stiffening insert is to be used on the inside of HDPE pipe when utilized in conjunction with
116 mechanical joints and compression couplings. Stiffeners are suitable for use with HDPE pipe
117 made in accordance with ANSI/AWWA C906, SDR 9 through 26, and standard mechanical joint
118 pipe or fittings made in accordance with ANSI/AWWA C111/A21.11, or ANSI/AWWA
119 C153/A21.53 of the latest revision.

120 Restraint for HDPE MJ Joints 12" and smaller shall be provided by mechanical means separate
121 from the MJ gasket sealing gland. The restrainer shall provide wide, supportive contact around
122 the full circumference of the pipe and be equal to the listed widths. Means of restraint shall be
123 machined serrations on the inside surface of the restrainer equal to or greater than the listed
124 serrations per inch and width. Loading of the restrainer shall be by a ductile iron follower that
125 provides even circumferential loading over the entire restrainer. Design shall be such that
126 restraint shall be increased with increases in line pressure. Serrated restrainer shall be Ductile
127 Iron ASTM A-536-80 with a ductile iron follower; bolts and nuts shall be corrosion resistant, high

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strength alloy steel. The restrainers shall have a pressure rating of, or equal to that of the pipe on which it is used, whichever is lesser, and be capable of withstanding a minimum test pressure of 2 times the pressure rating.

Nominal Size (inch)	Restraint Width (inch)	Serrations (per inch)
4", 6"	1-1/2"	8 / 3
8", 10", 12"	1 - 3/4"	8 / 3

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Restrainers for HDPE MJ Joints Pipe 14" and larger shall be provided by mechanical means separate from the MJ gasket sealing gland. The restrainer shall be a split, two piece configuration with a serrated inside surface and provide a wide supportive contact around the full circumference of the pipe. Restraint body shall be manufactured from steel per ASTM A-285 Grade C and be fusion epoxy coated on all surfaces except the serrations. Width and serrations per inch shall be as listed. The restrainer fasteners shall be per AWWA C-111, ANSI 21.11. Restrainers shall have a pressure rating equal to that of the pipe on which it is used and be capable of withstanding a minimum test pressure of 2 times the pressure rating.

Nominal Size (inch)	Restraint Width (inch)	Serrations (per inch)
14", 16", 18"	5"	6 / 2
20", 24"	7"	6 / 2

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1.2.5 Lateral Connections to Mainline

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Connections on HDPE pipe for 2" and 3" laterals shall be made as follows (As shown on the Irrigation Detail Sheet):

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Connections to lateral shall incorporate PE Lateral Isolation Valves as specified in section 4.7.3

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Valve shall have a pressure rating not less than that of the pipe they are used with unless otherwise specified on the plans.

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Valve shall be connected to the Main as follows

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- Sidewall or Electrofusion branch saddle or molded butt fusion reducing tee (main line size x lateral size) installed vertically with outlet turned upward, perpendicular to grade on the HDPE pipe.
- Fusion Coupling and/or length of pipe as required for depth
- Fusion 90° elbow(s) turned to match the direction of the lateral

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For installations where the connection begins at the Valve, the valve shall be installed so that the outlet is inline and square with the lateral. Assure that enough of the lateral is excavated along the plow/trench line to safeguard that no undue stress is exerted on the pipe and/or the Valve.

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For installations where the connection intersects the lateral crossing over the main at the Valve, the Valve shall be installed so that the branch outlet is offset by a minimum of 18" and turned parallel with the lateral. A fused 90° elbow shall be installed between the valve outlet and a fused tee installed on the lateral.

160 All fittings used shall meet the requirements as listed under section 4.2.2

161 The valve shall be accessible by a 10" round valve box with access lid as shown on the Irrigation
162 Detail Sheet.

163 **1.2.6 Drain Valve Connections to Mainline**

164 Connections on HDPE pipe for drain valves shall be made as follows (As shown on the Irrigation
165 Detail Sheet):

- 166 ▪ Molded butt fusion reducing tee fused inline or sidewall fusion fitting (main line sized x 2")
167 turned downward perpendicular to grade
- 168 ▪ Fused 90° elbow turned to match the direction of the irrigation drain piping
- 169 ▪ 2" PE IPS Ball Valve (as listed under section 4.7.2) connected to fusion 90° elbow and to 2"
170 HDPE Piping leading to open air at water body or Drain Basin
- 171

172 All fittings used shall meet the requirements as listed under section 4.2.2

173 The valve shall be accessible by a 10" round valve box with access lid as shown on the Irrigation
174 Detail Sheet.

175 **1.2.7 Combination Air Valve Connections to Mainline**

176 Connections on HDPE pipe for Air Valves shall be made as follows (As shown on the Irrigation
177 Detail Sheet):

- 178 ▪ Electrofusion branch saddle, sidewall fusion or molded butt fusion reducing tee (main line
179 size x lateral size) installed vertically with outlet turned upward, perpendicular to grade on
180 the HDPE pipe.
- 181 ▪ Fusion Coupling and/or length of pipe as required for depth
- 182 ▪ Fused 90° elbow turned perpendicular to the Main
- 183 ▪ HDPE Transition Union HDPE x MPT, Lasco Model P896020, or approved equal.
- 184 ▪ 2" stainless steel Gate Valve with cross handle. Leemco Model LGT-02SS or approved
185 equal.
- 186 ▪ HDPE Transition Union HDPE x MPT, Lasco Model P896020, or approved equal.
- 187 ▪ Fused 90° elbow turned upward
- 188 ▪ 2" HDPE x MPT Stainless Steel Transition Fitting, Harco Model 65-323202, or approved
189 equal.
- 190 ▪ 2" NPT FPT, Polypropylene Y Strainer, 50 Mesh, Banjo Model LS200-50, or approved equal.
- 191 ▪ 2" Combination Air Valve (as listed under section 4.9). Bermad Model IR-2-C10-P-T, or
192 approved equal'
- 193 ▪

194 All HDPE fittings used shall meet the requirements as listed under section 4.2.2

195 The air valve shall be accessible by a 17" x 30" Rectangular valve box with extensions and with
196 access lid as shown on the Irrigation Detail Sheet.

197 **1.2.8 Threaded Connections to Mainline**

198 Threaded connections on HDPE pipe mains when called for in the documents or when requested
199 by the Consultant shall be accomplished with the use of a PE IPS Molded Electrofusion Service
200 Saddle with stainless steel FNPT. Model numbers shall be HARCO 70-54XXXXXS (where the
201 XXXX indicates the size of main and outlet) or approved equal.

202 All fittings used shall meet the requirements as listed under section 4.2.2

203

1.2.9 Sprinkler and QCV Connections to Lateral Piping

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Mechanical taps on HDPE pipe for Inline Sprinkler and QCV connections, as a part of the base bid, shall be made using lateral sized x 1-1/2" ACME stainless steel IPS saddle. Model numbers shall be Leemco RSST-X15A (where X indicates lateral size) or approved equal.

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Saddle construction shall be made of 316 stainless steel. Saddle shall have a round anti-rotation device that is built within the saddle and made to insert into a 1-1/2" cored out hole. Saddles shall have a built on joint restraint system. Gasket seal shall be made of high-grade EPDM rubber per ANSI/AWWA C111/A21.11. The branch connection shall consist of a 1-1/2" female ACME thread and shall have special engineered (S.E.) diameters and clearances to allow full circle (360°) movement and to reduce stress concentrations and joint fracture at thread roots. Teflon® thread sealant is not required or recommended.

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Mechanical taps on HDPE pipe for end of line Sprinkler and QCV connections, as a part of the base bid, shall be made using a PE IPS Molded fusion x stainless steel 1-1/2" Acme Elbow. Model numbers shall be HARCO 66-31240X06S (where X indicates lateral size) or approved equal.

218

Leemco SS Saddles shall be warranted for 10 Years.

219

1.3 Swing Joints

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All Swing Joints shall be 3-elbow, factory pre-assembled "Unitized" units as manufactured by Toro, Rainbird, or approved equal.

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They shall be molded of rigid poly(vinyl) chloride (PVC). Type I, Cell classification 12454-B per ASTM specification D 1784, with pipe sockets per ASTM D 2464 and D2466, respectively. Each rotating joint shall be sealed with an elastomeric O-ring, installed precompressed in a sealing groove free of parting lines to prevent leakage. Each rotating joint shall have modified stub ACME threads and shall have special engineered (S.E.) diameters and clearances to allow full circle (360°) movement and to reduce stress concentrations and joint fracture at thread roots.

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Swing joints shall be pressure rated at 315 PSI maximum working pressure @ 73° F when tested in accordance with ASTM D3139, including internal hydrostatic pressure @ 787 psi. for 60 minutes and short-term pressure of 1008 psi. without leakage or failure. Individual component parts shall be warranted to be free from defects in manufacturing and workmanship for a period of five years from the date of installation.

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The lay length of the swing riser assemble shall be of length sufficient to ensure that the center leg of the swing joint assembly is not installed at an angle greater than 45 degrees to the supply pipe. However, the minimum length shall be 12"

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Swing joints for sprinklers shall utilize a 1-1/2" acme threaded connection to the lateral piping and an acme threaded connection of equal size to the inlet of the connected head. The nominal diameter of the riser itself shall be 1-1/4" or larger to match the inlet for the connected head, whichever is greater.

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Swing joints for quick coupling valves shall be "Unitized" units with a one-piece brass MIPT nipple molded to the top elbow. Street elbows and close nipples are not acceptable. Swing joints shall be sized to match the inlet of the connected quick coupler and shall utilize a 1-1/2" acme threaded connection to the lateral piping. Lay lengths shall have a minimum 18" for quick coupling valves.

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All Quick Coupling valves shall include the Lasco "Snap-Lok" stabilizer. Stabilizer shall be 1" Sch 80 PVC of at least 18" in length to prevent rotational and vertical motion during use of the valve.

245

1.4 Sprinklers

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Sprinkler heads considered as a part of the base bid shall be Toro Flex800 Series or Rain Bird 700 series Golf Rotors. A line item shall be provided on the bid documents for substitution of the Toro

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Infinity series for the Toro Flex Series Sprinkler. Toro sprinkler heads shall contain the Toro Smart Module; Rain Bird sprinkler heads shall be equipped with the IC module. Sprinkler types shall be as follows:

Sprinkler Type	Special Nozzle	Rain Bird Model (Base Bid)	Toro Flex Model (Base Bid)	Toro Infinity Model (Alt Bid)
75' Full Circle		A702-IC-70-56	FLX34-368-6	INF34-368-6
75' Part Circle		A950-IC-70-28	FLX35-378-6	INF35-378-6
75' Part Circle	Tail	A950-IC-70-282	FLX35-378-6	INF35-378-6
70' Full Circle		A702-IC-80-48 ¹	FLX34-356-6	INF34-346-6
70' Part Circle		A752-IC-80-48 ¹	FLX35-356-6	INF35-356-6
70' Part Circle	Tail	A752-IC-80-48 ²	FLX35-356-6	INF35-356-6
65' Full Circle		A702-IC-80-40	FLX34-346-6	INF34-346-6
65' Part Circle		A752-IC-80-40	FLX35-356-6	INF35-356-6
65' Part Circle	Tail	A752-IC-80-40 ²	FLX35-356-6	INF35-356-6
60' Full Circle		A702-IC-80-32	FLX34-336-6	INF34-336-6
60' Part Circle		A752-IC-80-36	FLX35-346-6	INF35-346-6
60' Part Circle	Tail	A752-IC-80-36 ²	FLX35-346-6	INF35-346-6
55' Full Circle		A702-IC-80-28	FLX34-326-6	INF34-326-6
55' Part Circle		A752-IC-80-32	FLX35-326-6	INF35-326-6
55' Part Circle	Tail	A752-IC-80-32 ²	FLX35-326-6	INF35-326-6
30'-50' Full Circle		A752-IC-x0-xx ³	FLX34-306-6 ⁴	INF34-306-6 ⁴
30'-50' Part Circle		A752-IC-x0-xx ³	FLX35-306-66 ⁴	INF35-306-66 ⁴
8-30' Popup with Rotator Nozzle		1804 – SAM	590GF-4	
¹ Will require increasing Factor PSI setting to 95-100 psi ² Will require addition of back nozzle to be determined in the field ³ PSI and Nozzle dependent upon Spacing, counts at various spacing can be provided prior to order placement ⁴ Will require 118-1521 adaptor and additional inner/intermediate nozzle.				

251 **1.5 Electric Valves**

252 Automatic valves shall be Toro series P220 valves with the EZReg® option installed or Rain Bird
 253 series PEB and fitted with a PRS-Dial for pressure regulation. All Toro valves shall be equipped with a
 254 Toro Smart Module. All Rain Bird valves shall be equipped with a Rain Bird IC module.

255 All electric valves shall be sized per requirement of GPM of Zone, include a manual isolation valve and
 256 be installed in a 17" x 30" valve box per detail sheet.

257 **1.6 Quick Coupling Valves and Keys**

258 Quick coupling valves shall be Toro model 474-40 or Rain Bird model 5RC one-piece units.

259 All quick coupler valves shall be housed in a 7" round valve box with cover unless otherwise directed
260 by the Owner's Representative or Consultant. Approximately 6" of dense grade crushed stone shall fill
261 the bottom of the valve box to secure the QCV. The stone should surround the 1" pipe.

262 Six (6) quick coupling keys with swivel hose elbows (1" MPT x 1" MHT) shall be provided with the
263 system.

264 All Quick Coupling valves shall include the Lasco "Snap-Lok" stabilizer previously established in
265 section 4.3

266 All QCV locations shall be approved by Owner' Representative.

267 **1.7 Isolation Valves**

268 **1.7.1 Mainline Isolation Valves**

269 Mainline isolation valves shall be epoxy coated inside and out, iron body units which meet AWWA
270 specifications C509 of similar construction to NIBCO Model P-619-RW. Valve shall be as
271 manufactured by NIBCO, Clow, Kennedy or other approved manufactures. They shall be resilient
272 wedge gate valves with "push-on" ends specifically designed for use with IPS diameter pipe.
273 Valves shall open counter-clockwise equipped with non-rising stems and 2" square cast iron
274 operating nut and shall have a working pressure rating for cold water of at least 200 PSI.

275 Connections to HDPE shall be accomplished with the use of Harco PJ adapters made from PE
276 4710. Adapters shall be restrained from movement with back up rings and restraint rods made
277 from low alloy steel AWWA/ANSI C111/A21.1 or Ductile Iron to ASTM A536. HARCO model 65-
278 32750X PJ Adapters with appropriate PJ Adapter Accessory Kits

279 All HDPE components shall meet the requirements as listed under section 4.2.2

280 PJ Adapters shall be Harco model 65-3275XX (where XX indicates valve size) with appropriate
281 Accessory Kits

282 All mainline valves shall be completely wrapped with polyethylene sheeting as per ANSI/AWWA
283 C105/A21.5

284 Two 60" long "T" handle valve wrenches shall be supplied for valve operation.

285 **1.7.2 PE Lateral Isolation Valves**

286 Lateral Isolation Valves shall be a PE IPS Ball Valve, full bore with 2" square operating nut, and of
287 same size as the lateral pipe. Valve body shall be a minimum of DR 11, of the same material as
288 listed under section 4.2.2 with fusion ends machined to DR 13.5 and comply with the relevant
289 fitting's clauses of AWWA C906. Model numbers shall be HARCO 74-325102 for 2" lateral,
290 HARCO 74-325103 for 3" lateral or approved equal

291 Valve shall have a pressure rating not less than that of the pipe they are used with unless
292 otherwise specified on the plans.

293 Connection to HDPE pipe shall be made as previously established in section 4.2.5

294 **1.8 Drain Valves**

295 Drain valves shall be a 2" PE IPS Ball Valve, full bore with 2" square operating nut. Valve body shall
296 be a minimum of DR 11, of the same material as listed under section 4.2.2 with fusion ends machined

297 to DR 13.5 and comply with the relevant fittings clauses of AWWA C906. Model number shall be
 298 HARCO 74-325102 or approved equal

299 Connection to HDPE pipe shall be made as previously established in section 4.2.6.

300 The valve shall be accessible by a 10" round valve box with access lid as shown on the Irrigation
 301 Detail Sheet.

302 1.9 Combination Air Valves

303 The valves shall be installed at the high points in the system or at points selected by the Consultant.
 304 This will permit discharging the surge of air from an empty line when filling, and relieve the vacuum
 305 when draining the system. The valves shall also release an accumulation of air when the system is
 306 under pressure. This shall be accomplished in a single valve body.

307 The valve shall have a 2" NPT screwed inlet connection, a Glass-reinforced Nylon body,
 308 polypropylene float. Glass Reinforced Nylon Kinetic Plug, EPDM Automatic Orifice Seal and o-ring.

309 The valve shall be a Bermad IR-2-C10-P-T or approved equal.

310 Connection to HDPE Mainline shall be made as previously established in section 4.2.7.

311 1.10 Valve Boxes

312 All isolation valves, remote control valves, air release valves, drain valves, QCVs, ground rods,
 313 electrical splices, etc. shall be installed in high impact plastic valve boxes with T-type Covers to
 314 provide easy access to the installed component. Green/Tan Boxes installed in waste areas or flower
 315 beds shall have tan covers, those installed in turf areas shall use green covers.

316 Valve boxes shall be manufactured by Carson, Ametek, or approved equal. Box type shall be as
 317 follows:

Usage	Box Type	Other Notes
Isolation Valves Main & Greens	10" Round Carson 910 Series	Green/Tan Cover, Use PVC sleeve as riser extension
Isolation Valves Laterals	10" Round Carson 910 Series	Green/Tan Cover, Use PVC sleeves as riser extension
Electric Valve	17" x 30" Rectangular Carson 1730 Series	Green/Tan Cover, Use 6" rectangular extension when required
Air Release Valve	17" x 30" Rectangular Fibrelyte FL36 Series	Green/Tan Cover, Use 8" rectangular extension when required
PRV	17" x 30" Rectangular Fibrelyte FL36 Series	Green Cover, Use (2) 8" rectangular extensions
Drain Valve	10" Round Carson 910 Series	Green/Tan Cover, Use PVC sleeve as riser extension
QCV	7" Round Carson 809 Series	Green/Tan Cover

Usage	Box Type	Other Notes
Ground Rods	7" Round Carson 910 Series	Black Cover
Surge Devices	10" Round Carson 910 Series	Black Cover
Electrical Splices using Resin Kits or WC100s	7" Round Carson 809 Series	Black Cover
Electrical Splices using Re-enterable Connectors	10" Round Carson 910 Series	Black Cover

318 **1.11 Control Equipment**

319 Toro controls shall be the Lynx Smart Module 2-Wire Control System (LSM).

320 Rain Bird controls shall be the Rain Bird Integrated Control System (IC System).

321 All related control equipment shall be designed to function directly with the particular systems
322 identified above.

323 **1.11.1 Field Control Units**

324 Toro Field control unit(s) shall be LYNX Smart Hub, Pedestal Mount Model DEC-RSP-1000-DR

325 Rain Bird Field control unit(s) shall be Integrated Control Interface "ICI" Units, Model ICI-
326 750/1500).

327 Toro Smart hub mounting pads for field control units shall constructed as per the Irrigation
328 Details. Allow for 6" of concrete around the enclosure with a 30" allowance on the operational side
329 of the enclosure to allow for stable footing of operator during operation and maintenance.

330 Rain Bird ICI units shall be mounted at the maintenance facility at a location agreeable to Owner
331 and Consultant.

332 Field control units shall be grounded per manufacture's most stringent recommendation, as per
333 indicated on the detail page.

334 **1.11.2 Central Controller/Computer**

335 Central control PC systems shall include the most current "Standard" Hardware and "Premium"
336 software available from each manufacturer. A minimum 5 year service plan shall be included with
337 each central control PC from the manufacturer's PC support program (Toro NSN, Rain Bird GSP)

338 In addition, hardware provided with central packages each manufacturer will include the following
339 equipment.

- 340 ▪ ViewSonic VX4380-4K 43 Inch Frameless Widescreen IPS 4K Monitor for Map, include all
341 cables, hardware, etc for connection and mounting of unit to wall.
- 342 ▪ One Apple iPad Pro 10.5", 64GB WiFi + Cellular, Space Gray with Otterbox Defender Series
343 Case, Unit shall be configured to allow install of SIM card for use with "Bring Your Own
344 Device" plan from cellular service plan provided by Owner.
- 345 ▪ All available "Apps" for the central control package for a minimum of 3 users. (Rain Bird MI®
346 Series Mobile Controller - Toro Lynx Handheld® and Lynx Map®).

347 ▪ Advanced Central Software training classes for two personnel shall be included.

348 **1.11.2.1 Toro Central Control**

349 The Toro central shall be the latest version of model LX-01-5-08 LYNX® CE for two wire with
350 Standard Computer, which includes all necessary computer hardware, software, cables and
351 connectors, a FIU-2011DR – FIU with digital radio for communication to Smart Hubs and five
352 years of NSN (National Support Network) support.

353 The Toro central controller shall include EATON/Powerware 5S1500LCD UPS 1500 on a
354 dedicated circuit which supplies 120 VAC power to the Central system hardware only. No other
355 equipment or outlets shall be on this circuit.

356 **1.11.2.2 Rain Bird Central Control**

357 The Rain Bird central control system shall be the latest version of Cirrus, model H95001G1, with
358 Premium Computer, which shall include all necessary computer hardware, software, cables and
359 connectors, and 1 year of GSP support

360 The Rain Bird Central shall include an APC Smart C 1500VA LCD UPS, and a model Z-1 Zap
361 Trap surge arrester (Tyte-wadd Power Filters) on a dedicated circuit which supplies 120 VAC
362 power to the Central system hardware only. No other equipment or outlets shall be on this
363 circuit.

364 **1.12 Wire/Cable**

365 All wire shall be manufactured by Paige Electric, Regency Wire, or approved equal. All wire shall have
366 copper conductors. The Contractor shall insure that all wire is in strict accordance with all local codes

367 Any trenches that contain only power cable shall have Underground warning tape installed 12" above
368 the wire. The tape shall be red striped, 2" wide, have aluminum core for easy underground detection
369 and shall be imprinted with "CAUTION ELECTRIC LINE BURIED BELOW". Blackburn Model
370 21TLRE, or approved equal.

371 **1.12.1 120 VAC Power (If required)**

372 All 120 VAC power cables shall be type Tray Cable (TC) Paige Electric Co., LP specification
373 number P7266D for 10 AWG and smaller and specification number P7267D for 8 AWG and
374 larger. The cables are to be UL listed for direct burial, and rated at 600 volts. Each cable shall
375 include 3 conductors, which are to be colored per wire industry standard.

376 The sizes of the "hot" and "common" conductors are as shown on the irrigation plans, and the
377 size of the "equipment ground" conductor as required by the National Electrical Code, or larger.
378 The inner copper conductors shall be insulated with high dielectric PVC and Nylon. The outer
379 jacket shall be black PVC and is to be sunlight resistant.

380 The cables shall be installed in accordance with all applicable national and local electrical codes
381 at a minimum depth of 24".

382 It is the intent of the design that all 120 V.A.C. splices in the power wire shall be made within the
383 Field control unit itself. However, in the event that an underground field splice becomes
384 unavoidable, use specified method listed below.

- 385 ▪ All 120 V.A.C. splices for wire sized #12 AWG -#4 AWG shall be made using a Paige
386 Electric DB14-4 Direct Burial Connector.
387 ▪ Splice kits for #2 AWG and larger wire shall be 3M model 82-Ax, correctly sized for the
388 cable.
389 ▪ All underground field splices shall be located in valve boxes marked as "Electrical" as
390 indicated in section 4.10, and shall be indicated on the field notes.

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1.12.2 2-Wire Cable

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Wiring for connection from the field control unit to the sprinkler heads in the field shall be in accordance with the system manufacturer's specifications.

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Rain Bird Maxi Wire and Toro 2-Wire Cable shall be a 2-conductor control cable design consisting of tin coated copper conductors, insulated with PVC, listed as type UF/TWU by UL or ETL or CSA and having a direct burial jacket of pressure extruded high density PE conforming to ICEA S-61-402, and NEMA WC5 jacket thickness 3/64". dual rip cords shall be inserted between the inner conductors and the outer jacket. the two conductors shall be color-coded (one red the other black). Cable shall be suitable for direct burial. Paige P7072D - rev 17, or approved equal

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A different color wire will need to be used for each specified run of cable as indicated on the plan as follows:

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- Path 1: ORANGE
- Path 2: BLUE
- Path 3: PURPLE
- Path 4: GREEN

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1.12.3 Trace Wire

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A single 14 AWG tracer wire shall be installed in any pipe trench without power wire or secondary wire (2-wire control wire).

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Trace wire shall be single solid copper conductor, type PE, utilizing low density high molecular weight polyethylene insulation with a minimum thickness of 0.045 inches, Pink or Gray in color. The wire shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC as manufactured by Paige Electric specification number P7079D Rev 14 or approved equal.

413

1.13 Splices

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1.13.1 Re-enterable Connectors

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Re-enterable connector shall be manufactured from high strength 6061-T6 aluminum alloy to provide premium electrical and mechanical performance. The connector shall be rubber encapsulated with a nominal thickness of 125 mils, dual rated for copper or aluminum conductors, meet or exceed ANSI C119.1 specification for a submersible connection, rated for 600 Volts, UL listed for wet or damp locations, direct burial and submersible per UL486D. The connector shall accommodate copper or aluminum wires from 14AWG to 2/0AWG.

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The re-enterable connector shall be manufactured by Paige Electric specification number P7408D Model number 270RC(X) or Polaris Electrical Connectors Model SLWB2/0-(X)P where (X) indicates the number of connections available.

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Re-enterable connector shall be installed as indicated in the detail drawings, using a re-enterable connector with the correct number of positions determined by the number of wires at each location.

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1.13.2 Epoxy Resin Connector Sealing Pack (Toro System Only)

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The connector sealing pack shall insulate and provide protection for electrical spring connectors against dust, soil, water, and other environmental elements. It shall be packaged in a two-part plastic composite closed mixing pouch. The resin shall be mixed within the closed mixing pouch simply by separating the barrier between the two parts of the bag and working the contents back and forth within the bag.

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434

The sealing pack shall accommodate one 3M™ Performance Plus Wire Connector O/B+ , R/Y+ , T/R+ , or T/Y+

435 The Sealing Pack shall be a Scotchcast™ Epoxy Resin Connector Sealing Pack model 3570G-N
436 as manufactured 3M™, no substitutions will be permitted.

437 Connector Sealing Pack shall be installed as indicated in the detail drawings and described in the
438 Specifications.s

439 **1.13.3 Direct Bury Wire Connectors (Rain Bird System Only)**

440 The Wire Connector shall accommodate wire combinations ranging from 22ga to 8ga, provide
441 strain relief to ensures wires are secure and will not pull apart, be rated for use on connections
442 from 24VAC to 600VAC, utilize waterproof silicone sealant to protects against corrosion and be
443 UL 486D certified for direct burial. The connector shall use UV-material that ensures product
444 performance does not degrade even after long periods of exposure to sunlight.

445 The direct bury wire connector shall be a model WC100 as manufactured by Rain Bird
446 Corporation.

447 **1.13.4 Sprinkler Head Connection to Cable**

448 Toro sprinkler heads shall be connected to the 2-wire cable using 3M Type R/Y+ wire connectors
449 and 3M Scotchlok™ 3570G-N resin sealing pack. All wire connectors shall be installed per
450 manufacturer's recommendations and Scotchlok resin sealing packs shall be installed per
451 manufacturer's Datasheet.

452 Rain Bird sprinkler heads shall be connected to the 2-wire cable using Rain Bird WC100 wire
453 connectors. WC100 wire connectors shall be installed per manufacturer's specifications.
454 Document #D37453EO.

455 **1.14 2-Wire Surge Devices**

456 Surge Devices shall be supplied and installed on the 2-Wire cables as recommended by the system
457 manufacture and reflected on the plans and Detail Drawings.

458 The Toro Surge device shall be a Model DEC-SG-LINE, Lightning Arrester.

459 The Rain Bird Surge device shall be a Model ICSD, Integrated Control Surge Device.

460 Grounding of Surge Devices shall be as indicated in section 4.16.2.

461 **1.15 PVC Conduit & Fittings (If required)**

462 **1.15.1 Conduit**

463 Conduit shall be constructed of polyvinyl chloride (PVC)schedule 40, gray in color, 10' or 20' in
464 length with an integral belled end, tested and listed for underground direct-burial and concrete
465 encasement. It shall be rated for use with 90° C conductors, UL Listed shall comply with
466 specifications NEMA TC-2 and UL 651. Conduit shall carry a UL label on each length and shall be
467 identified for type and manufacturer and shall be traceable to location of plant and date
468 manufactured. The markings shall be legible and permanent.

469 The conduit shall be homogeneous plastic material free from visible cracks, holes or foreign
470 inclusions. The conduit bore shall be smooth and free of blisters, nicks or other imperfections
471 which could mar conductors or cables. Material shall have a minimum tensile strength of 7,000
472 psi at 73.4°F; flexural strength of at least 11,000 psi and a minimum compressive strength of
473 8,600 psi. All joints shall be solvent welded in accordance with the manufacturer's
474 recommendations.

475 **1.15.2 Conduit Fittings**

476 Fittings shall be constructed of polyvinyl chloride (PVC), schedule 40, gray in color, tested and
477 listed for underground direct-burial and concrete encasement. It shall be rated for use with 90° C
478 conductors, UL Listed shall comply with specifications NEMA TC-3 and UL 514b. Fittings shall
479 carry a UL label on each and shall be identified for type and manufacturer and shall be traceable
480 to location of plant and date manufactured. The markings shall be legible and permanent.

481 The fittings shall be homogeneous plastic material free from visible cracks, holes or foreign
482 inclusions. The fittings bore shall be smooth and free of blisters, nicks or other imperfections
483 which could mar conductors or cables. All joints shall be solvent welded in accordance with the
484 manufacturer's recommendations.

485 **1.16 Grounding**

486 **1.16.1 General Grounding Requirements – 120/240 VAC Equipment**

487 It is the responsibility of the Contractor to connect all electronic irrigation equipment for which he
488 is responsible to earth ground in accordance with Article 250 of the National Electrical Code
489 (NEC) and/or Local governing Body. Grounding components will include the items described in
490 the following paragraphs, at a minimum.

491 Grounding shall be completed simultaneously with the equipment installation. All grounding shall
492 be installed in accordance with the plans and specifications. The grounding shall also comply with
493 any minimum standards established by local codes as well as manufacturer's recommendations
494 prior to connection of the power or communication cables to the equipment.

495 The earth-to-ground resistance of grounding system (grid) is to be measured using an Megger, or
496 other similar approved instrument, and the reading is to be no more than 10 ohms. Testing shall
497 be performed with the grounding grid connected to the electronic equipment. Performing
498 measurements with a clamp-on type meter on an intact ground system, also verifies the quality of
499 the grounding connections and bonds.

500 If the resistance is more than 10 ohms, additional ground plates and PowerFill® are to be
501 installed in the direction of an irrigated area at a distance of 10', 12', 14', etc. If proper resistance
502 is otherwise unattainable, It is required that the soil surrounding copper electrodes be kept at a
503 minimum moisture level of 15% at all times by dedicating an irrigation station at each controller
504 location. The irrigated area should include a circle with a 10' (3,05m) radius around the ground
505 rod and a rectangle measuring 1' X 24' around the plate. Any additional unforeseen labor and
506 materials necessary to get acceptable values shall follow the previously established procedure for
507 changes in compensation.

508 A written report of the ground ohm readings shall be provided to the Owner's Representative, as
509 well as the Consultant.

510 **1.16.2 Grounding 2-Wire Equipment**

511 Grounding for the Toro system shall be per manufactures recommendations shown in "Toro's
512 Recommended Grounding, Spec 373-0906_revA 2016" document and reflected in the Irrigation
513 Details.

514 Grounding for the Rain Bird system shall be per manufactures recommendations shown in the
515 "Specs_Field_Hardware_IC_System_05-2014" document and reflected in the Irrigation Details.

516 **1.16.3 Earth Grounding**

517 Use grounding electrodes that are UL listed or manufactured to meet the minimum requirements
518 of Article 250-52 of the 1999 NEC. At the very minimum, the grounding system will include a

519 copper clad steel ground rod and/or a solid copper ground plate and 100 pounds of PowerFill®
520 earth contact material, as defined below and as indicated on the Irrigation Details Plan.

521 Ground rods are to have a minimum diameter of 5/8" and a minimum length of 8'. These are to be
522 driven into the ground in a vertical position or an oblique angle not to exceed 45 degrees at a
523 location per manufacture's recommendation. The rod is to be stamped with the UL logo. The rod
524 shall be Paige Electric model 182007 or approved equal.

525 The copper grounding plate assemblies, Paige Electric Model 182199IC, or approved equal, must
526 meet the minimum requirements of Article 250-52(d) of the 1999 NEC. They shall be made of a
527 copper alloy intended for grounding applications and will have minimum dimensions of 4"x 96" x
528 0.06". A 25' continuous length (no splices allowed unless using exothermic welding process) of 6
529 AWG solid copper wire is to be attached to the plate using an approved welding process. This
530 wire is to be connected to and through the top of the ground rod using a Cadweld GT1161G
531 "One-Shot" welding kit, Paige Electric part number 1820039P, terminating at the electronic
532 equipment. The ground plate is to be installed to a minimum depth of 30", or below the frost line if
533 it is lower than 30", at a location per manufacture's recommendation. Two 50-pound bags of
534 PoweFill, Paige Electric Model 182005, earth contact material must be spread so that it surrounds
535 the copper plate evenly along its length within a 6" wide (min.) trench.

536 Salts, fertilizers and other chemicals are not to be used to improve soil conductivity because
537 these materials are corrosive and will cause the copper electrodes to erode and become less
538 effective with time.

539 Install all grounding system components in straight lines. When necessary to make bends, do not
540 make sharp turns. To prevent the electrode-discharged energy from re-entering the underground
541 wires and cables, all electrodes shall be installed away from said wires and cables. The spacing
542 between any two electrodes shall be as shown on the Irrigation Details Plan, so that they don't
543 compete for the same soil.

544 All underground grounding system connections are to be made using an exothermic welding
545 process by utilizing products such as the Cadweld "One-Shot" kits. Solder shall not be allowed to
546 make connections. In order to ensure proper ignition of the "One-Shot", the Cadweld T-320 igniter
547 must be utilized, Paige Electric Model 1820040.

548 The ground wires are to be installed in as straight a line as possible, and if it is necessary to make
549 a turn or a bend it shall be done in a sweeping curve with a minimum radius of 10" and a
550 minimum included angle of less than 90°. Mechanical clamps shall be permitted temporarily
551 during the resistance test process, but are to be replaced with Cadweld "One-Shot" kits
552 immediately thereafter.

553 **1.16.4 Bonding (If Required)**

554 The above grounding system is referred-to as "supplementary grounding" in the NEC. And for
555 safety reasons, the NEC requires that all supplementary grounds be "bonded" to each other and
556 to the service entrance ground (power source). This is also "recommended practice" of IEEE
557 Standard 1100-1999. Note that this is in addition to the equipment ground, which is commonly
558 referred-to as "the green wire." The Black, White and Green wires must always be kept together
559 in a trench/conduit/tray/etc.

560 The bonding conductors are to be 6 AWG solid bare copper unless the system power conductors
561 are larger than 1/0 AWG, in which case they are to be 4 AWG solid bare copper. All splices to the
562 bonding conductors shall be made using a Cadweld "One-Shot" kit, Paige Electric Model
563 1820074P.

564 **1.17 Power Line Conditioner/Stabilizer**

565 Line conditioners shall be Sola Group IV - MCR Series, 50 Hz as manufactured by EGS Electrical
566 Group. A unit, sized as indicated on the Wiring plan, shall be installed at each 120 power source.

567 Line conditioners shall be UL Listed and shall protect wiring from odd-order harmonics, regulate
568 voltage and provide surge suppression and isolation. Output shall remain within +5 or -10 % for input
569 voltages as low as 75% of nominal. Conditioners shall have 120 volt input and output.

570 Each line conditioner shall be grounded as described in section 4.16 and have a SPD (Surge
571 Protection Device) install on both the input and output side of the unit. The SPD shall be a model
572 LA302 as manufactured by Delta Lightning Arrestors, Inc. or approved equal. The output side of the
573 conditioner shall be routed into a separate circuit breaker panel and be equipped with a individual
574 breaker for each power wire leg originating from that location. The Line conditioner and breaker panel
575 shall be used exclusively to supply power to irrigation satellite controllers and/or central components.

576 All circuits leaving line conditioner and feeding the field hardware shall have a circuit breaker installed
577 on each individual circuit. Circuit breaker type will be Square D QO series or approved equal and
578 each circuit shall have a 20 amp standard trip breaker installed in the appropriate Square D QO Series
579 main lug load center or approved equal. Main Lug load center shall be rated for either indoor or
580 outdoor use as determined by mounting location.

2 SITE MAINTENANCE / PROTECTION, MATERIALS STORAGE & CLEAN-UP

2.1 Protection of Work and Property

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with work on this contract. The Contractor shall take care to avoid damage to any existing buildings, paving, bridges, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, landscaping, grounds, above ground or underground installations or structures of any kind, and shall be held responsible for any damage that does occur. Damage includes not only mechanical damage but also damage from leaks in the irrigation system being installed by the Contractor, whether through negligence or otherwise. The Contractor shall adequately protect adjacent property as provided by law and shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by the Public Authority for local conditions. The Contractor shall securely cover all openings into the section of the system he is working on and components of the system as it is being installed to prevent obstruction in the pipe and the breakage, misuse, or disfigurement of the equipment.

2.2 Lands for Material Storage

The Owner shall provide a specified area in which all material to be used on the project shall be stored when not in use. Provision of this land 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. The Contractor has the right to erect approved temporary construction facilities for storage and protection of his materials and equipment on the lands set aside by the Owner for material storage.

2.3 Handling of Materials

The Contractor shall be responsible for correct procedures in loading, unloading, stacking, transporting, and handling all materials to be used in the system. The Contractor shall avoid rough handling which could affect the useful life of equipment. Pipe shall be handled in accordance with the manufacturer's recommendation on loading, unloading, and storage.

2.4 Cleaning Premises

The Contractor shall continuously keep a neat and orderly area in which he is installing the system. Disposal of rubbish and waste material resulting from the installation shall be continual. Upon completion of the system, the Contractor shall remove from the owner's property, at his own expense, all temporary structures, rubbish, and waste materials resulting from the installation of said system.

2.5 Sanitation

The Contractor shall provide an adequate number of sanitary portable toilet facilities for his workmen.

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3 INSTALLATION AND INSPECTION

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3.1 General

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The overall construction of the system shall provide for proper worker safety as well as desired improvements as called for on the plans. Some specific details related to installation are addressed within the individual material's specifications listed under section 4. The Contractor shall install all components, whether specifically listed herein or not, in strict accordance with the manufacturer's recommended procedures, standard industry practices, these specifications and the directions of Consultant.

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The Contractor shall accept the responsibility for damaged parts which are incorporated into the irrigation system which later fail during normal operation, and the repair of any such faulty components.

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Construction shall proceed in the sequence as called for by the Consultant at the direction of the Owner's Representative.

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3.2 Inspection of Work In Progress

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Contractor is responsible for inspection and control of his work and any observation made or not made by others does not relieve his responsibility to comply with the specifications.

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The Owner's Representative may at any time inspect the contractor work. In the event, the Owner's Representative discovers any work which does not meet the specifications of this contract; he shall bring it to the attention of the Consultant. The Consultant shall notify the Contractor and the Contractor shall correct such work immediately.

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Subsequent to final inspection and acceptance, "work in progress" inspections shall not constitute any form of acceptance of work completed.

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3.3 Adjustment to the Plans

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It shall be recognized that the irrigation system as staked in the field may differ substantially from design plans. Contractor shall be prepared to adjust the installation of the irrigation system to accommodate these changes.

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The plans and these specifications will be used as a guide in selecting final locations for component placement. However, the locations of the equipment on the plans are to a large extent diagrammatic. Changes to the layout of each golf hole will have a dramatic effect on the overall location of each of the components of the irrigation system. Therefore, when laying out the irrigation system, it is extremely important that the original intent of the design is taken into consideration. With that in mind, the Contractor, Consultant, and Owner's Representative shall schedule a preconstruction conference, at which the original intent of the design and the system layout process shall be discussed.

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The Contractor shall accept that changes to overall layout of the system in itself shall not necessitate an adjustment in the contract price. Instead, it shall be understood that any necessary changes in work shall follow the previously established procedure for changes in compensation.

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3.4 System Field Layout

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3.4.1 Designation of Golf Features

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Due to the nature of the irrigation design, it is essential that any expected modifications to the grassing lines and golf features be defined prior to the staking out of the system. Designation of these features shall be the responsibility of the Owner's Representative. It shall be understood

656 that any necessary changes required to installed irrigation as a result of changes to previously
657 designated features shall follow the established procedure for changes in compensation.

658 **3.4.2 Staking of Sprinklers and Other Equipment**

659 The Consultant shall be responsible for staking out the irrigation component locations in advance
660 of the commencement of work in any area of the installation. Components shall include sprinklers,
661 quick couplers, field control units, valves, etc., mainline routing, as well as lateral pipe routing in
662 sensitive areas, such as, green and tee complexes.

663 The consultant shall adhere to the sprinkler spacing as defined by type, nozzle and trajectory on
664 the plans, as well as, any other original intent of the design as previously established at the
665 preconstruction conference.

666 The locations shall be marked temporary with colored wire flags. After initial staking, the positions
667 shall be immediately marked with 6" Marking Whiskers. (Similar to Presco W6-#-753, where #
668 indicates the color) Whiskers shall be secured to ground with 60-penny nails.

669 Contractor shall provide flags and whiskers as follows:

- 670 ▪ A separate solid color for each type of equipment.
- 671 ▪ A separate solid color for each sprinkler type and nozzle configuration based on spacing

672 Once colors have been established, the contractor shall maintain the same color code throughout
673 the project.

674 Contractor shall be responsible for maintaining these stakes until equipment is installed.

675 On staking days, Contractor, if requested shall be required to provide at least 3 men in addition to
676 Project Superintendent to assist Consultant and Owner in staking.

677 **3.4.3 "As Staked" Record**

678 The Consultant shall collect staked positions as defined in 6.4.2 with high accuracy Survey Grade
679 GPS equipment to create a digital record. The data shall be processed into a digital record of
680 each layout on a hole-by-hole basis. After an agronomic/environmental review and approval of
681 the staking by the Owner's representative, the Consultant will provide the layouts to the contractor
682 for his use during the installation.

683 **3.5 Excavation / Trenching**

684 **3.5.1 General Excavation**

685 Installation of the main line piping shall be by open-cut trenching. Vibratory plowing shall be
686 permitted for lateral sizes 2" and smaller. If Owner determines that soil conditions in a given area
687 prevent vibratory plowing, the pipe and/or wire shall also be installed by open-cut trenching. In
688 this case unit price in Bid Proposal will apply.

689 All excavation shall be unclassified and shall include all materials, which can be excavated by
690 normally employed mechanical means. Such exceptions shall be brought to the attention of the
691 Owner's Representative and approval given for special means to be taken before excavation of
692 these areas proceed. The price for rock removal shall be as stipulated in the Contractor's
693 proposal. Such price adjustments and agreement shall include responsibility for the disposal of
694 the unsuitable materials removed from the trench and the acquiring of additional backfill
695 materials.

696 The contractor shall not open more trench than can be backfilled the same day.

697 In rough areas, if in the opinion of the Owner's Representative or Consultant, the equipment is
698 ripping or tearing turf or if it leaves depressions in turf greater than what is able to be reasonably

699 repaired, the Contractor shall stop installation until plywood sheets are available for equipment to
700 drive on. In Fairway areas, the Contractor shall use plywood as indicated above unless it is
701 determined by the Owner's Representative or Consultant that conditions do not required it. At any
702 time the contractor is working on tees or green collars, the Contractor shall use plywood as
703 indicated above regardless of conditions.

704 Contractor shall have vibratory roller on-site for duration of project or until suitable finish grades
705 for main line trenches and pipe/wire pulls are accepted by Owner and Consultant.

706 **3.5.2 Vibratory Plowing of Lateral Piping**

707 Lateral pipe sizes 2" and smaller may be pulled into the soil utilizing a vibratory plow device
708 specifically manufactured for pipe pulling. Plow Blade must be designed for pulling of pipe and
709 placement of wire simultaneously.

710 The "Mole" or "Bullet" which precedes the pipe and is used to form the opening for the pipe shall
711 be not less than 1" larger in diameter than the outside diameter of the pipe.

712 Wire chute must be of adequate size as to avoid excessive drag on the wire as it is fed into the
713 chute.

714 The length of pipe that may be pulled in a single run shall be determined by Consultant and shall
715 be based on soil conditions and tensile stress on the pipe

716 Minimum burial depths as defined in section 6.5.4 shall apply.

717 **3.5.3 Normally Employed Mechanical Means**

718 For the purposes of these specifications "normally employed mechanical" means shall include the
719 use of all power equipment normally used in the construction of golf course irrigation systems,
720 including chain trenchers with small backhoe units and rubber-tired backhoe units equipped with
721 buckets up to and including 24" wide. Equipment beyond this including blasting equipment, jack
722 hammers, larger backhoes (than those described above), backhoe type machines equipped with
723 jack hammer units, or the like shall be considered as being beyond "normally employed
724 mechanical means". However, the use of track-type excavators to facilitate excavation of larger
725 diameter mainlines shall not be considered grounds for additional payment.

726 **3.5.4 Depth, Width and Routing**

727 All excavation shall be neatly aligned with trench bottoms as level as possible. The minimum
728 depth of cover over various components shall be as per local code or as further indicated within
729 the specifications and/or drawings. In the event that a difference exists between local codes, the
730 specifications and/or drawings the most stringent requirement shall be used.

Size	Min Depth of Cover
2-Wire Cable	16"
120 VAC	24"
3" and smaller	18"
4" - 8"	24"
10" and larger	30"

731 The excavation shall be of sufficient depth to achieve the aforementioned depth of cover. The
732 contractor shall ensure that bottom of the trench is clean and smooth with all rock, and organic

733 matter removed, and that there are no conditions in trench that could damage pipe or wires. In the
734 event that material at trench bottom is unsuitable, Contractor shall excavate an addition 4" of
735 material and bed trench with select backfill (approved by Owner's Representative) to raise to
736 required depth.

737 Excavation shall be of adequate width to allow installation of the various components as detailed
738 in the drawings, as well as, to permit the easy flow and compaction of backfill material around the
739 components.

740 Excavation shall be avoided within the drip lines of existing trees. The Contractor shall provide
741 proper root pruning to meet arboricultural standards or as directed by the Owner's
742 Representative.

743 No excavation shall be done within 10' of proposed or existing streets, walks, drives or structures
744 unless prior approval has been received in writing from the Owner's Representative

745 The routing of all excavation shall be in accordance with the drawings except that the Owner's
746 Representative and/or Consultant reserve the right to change the routing from that shown on the
747 plan and to change the depth of trench and cover over the top of the various components in case
748 of rock or other obstacles. In no event shall field changes of this nature affect the overall cost of
749 the project except where these changes may alter the quantity of materials to be provided
750 according to the plan.

751 **3.5.5 Sod Removal and Turf Restoration**

752 Where trenching or excavation occurs on or around existing turf, the sod is to be cut, rolled,
753 maintained and replaced. Process shall be as follows:

- 754 ▪ Cut sod a minimum of 18" wide and a minimum depth of 3/4".
- 755 ▪ Ensure that all sod is replaced no more than 48 hours after it is lifted.
- 756 ▪ Replace sod neat and tight, with strips being laid in the same place from which they were
757 lifted.
- 758 ▪ Any void between the replaced sod and existing turf will be filled with topdressing mix and
759 reseeded with a seed mix provided by the Owner.
- 760 ▪ Sod shall be trimmed around any newly installed items.
- 761 ▪ Sod shall be rolled or lightly tamped into place.
- 762 ▪ Where sod is to be lifted and re-laid, the Contractor is responsible for the first sod watering.
- 763 ▪ After the first watering, maintenance of the replaced sod, including watering, is to be the
764 responsibility of the Owner.
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766 Any sod, which in the opinion of Owner's Representative, is not viable due to failure to follow
767 established procedures or improper care shall be removed and replaced at Contractor's expense

768 Where cutting and lifting of the turf is not possible, or Owner agrees that turf quality does not
769 warrant it, the disturbed areas will be brought to grade with clean topsoil and raked free of all
770 debris including twigs, rocks and stones. Once inspected by the Owner's Representative and
771 deemed satisfactory, the Contractor shall then seed the area using methods, seed mix and rate
772 per the Owner'

773 **3.5.6 Placement of components in trench**

774 The various components shall be placed in the trench in accordance with the typical Trench
775 Cross Sections show on the Irrigation Detail Sheet. The Contractor shall preserve any intended
776 separation of components at the specified distances required by Consultant as indicated.

777 **3.5.7 Existing Utilities or Structures**

778 The Contractor shall notify the appropriate Public Utility Locating Services prior to commencing
779 with any excavation. The Contractor shall exercise reasonable care to avoid causing damage to
780 any and all underground utilities or structures. The Owner's Representative shall advise the
781 Contractor and mark the location of any existing underground utilities or structures of which he is
782 aware. If it becomes necessary for utilities privately held by the Owner to be located, a utility
783 locating service shall be called upon to pinpoint location, any related cost shall be paid by the
784 Owner.

785 The Contractor shall be responsible for any and all costs associated to repair any underground
786 utilities or structures of which he is so advised by Owner's Representative or is marked by Utility
787 Locating Services.

788 **3.5.8 Maintain Existing Irrigation**

789 It is essential that the Contractor maintain all components of the existing irrigation system in full
790 operational and working order as long as they are needed to irrigate any part of the course.

791 The Owner's Representative shall advise the Contractor and mark the location of any existing
792 irrigation of which he is aware. However, in any event, the Contractor shall immediately repair any
793 component of existing system he damages. The Contractor shall be responsible for any and all
794 costs associated to repair of existing system.

795 **3.5.9 Existing Irrigation Component Removal**

796 Even as new system becomes operational, seal any existing pipes broken during installation to
797 prevent ground water from entering and moving through them. Sealing methods shall be
798 approved by the Consultant.

799 Removal of the sprinklers/QCVs and capping of the connecting pipes, removal of valve boxes and
800 existing field satellites (with concrete pad) and restoration of related areas are the responsibilities
801 of the Contractor. The salvaged parts are to remain the property of the Owner.

802 **3.6 Installation of Piping and Fittings**

803 **3.6.1 General**

804 Pipe shall be sized and routed according to Drawings.

805 Installation of the piping system shall be in accordance with the manufacturer's recommendations
806 and these specifications. Pipe shall not be installed in a trench that contains standing water.
807 Whenever feasible the mains shall proceed from the point of connection for the system pumping
808 station. It is Contractor's responsibility to inspect any and all Pipe for proper condition without
809 damage, nicks, cuts, cracks or other deficiencies prior to installation. Owner reserves the right to
810 inspect and/or reject any pipe that appears to have such damage, and to instruct Contractor to
811 remove any such pipe.

812 Extreme care shall be taken at all times to prevent contamination of the pipe with debris and dirt
813 during storage, transport and installation. The open ends of the pipe shall be sealed at all times
814 when installation is not in progress.

815 **3.6.2 Handling, Loading, Unloading**

816 During loading, transportation and unloading, every precaution shall be taken to prevent injury to
817 the pipe. No pipe shall be dropped from vehicles or allowed to roll down slides without proper
818 retaining ropes. During transportation, each pipe shall rest on suitable pads, strips, skids or
819 blocks securely wedged or tied in place. Any pipe damaged shall be replaced.

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3.6.3 HDPE Fusion

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Sections of polyethylene pipe should be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe supplier's recommendations. The fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe supplier, including, but not limited to, temperature requirements of 400° Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The fusion equipment used shall be manufactured by McElroy Manufacturing, or equal. The fusion joining will produce joint weld strength equal to or greater than the tensile strength of the pipe itself.

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Electrofusion and Socket fusion may be used under certain conditions as specified in section 4.2.2.2 and 4.2.2.3 respectively.

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3.6.4 HDPE Quality Control Testing (On Site Bend Back Test)

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Prior to HDPE pipe being installed in the trench, at the beginning of the job, the contractor shall cut out the first butt fusion of each pipe size. The contractor shall prepare the sample for the test in accordance with the "Job Aid/ Bend Back Testing" procedure document prepared by ISCO Industries, LLC dated Oct. 26, 06 or as revised, and in accordance with ASTM D 2657. The samples shall be tested in the presence of the owner's representative and / or the irrigation consultant, all in accordance with testing procedures outlined in the ISCO document. All samples shall be labeled and saved. Testing must be done at 73° Fahrenheit plus or minus 5° Fahrenheit. The test temperature and sample size are critical to testing.

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The purpose of the test is to determine if a good weld was made using the equipment and personnel onsite responsible for HDPE fusing. A pass means no failures during the bend back test. This means a good weld. A break means a bad weld. Any failure shall require additional testing. This procedure shall be repeated if either the equipment or personnel responsible for HDPE fusing operations change at any point during the installation of the system.

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3.6.5 Contractor HDPE Fusing Qualifications

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The contractor shall have successfully installed high density polyethylene pipe in golf/turf irrigation projects of similar scope to this project. References will be required. These reference(s) must provide a satisfactory response or the experience will not be accepted.

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If a contractor has not previously successfully installed HDPE pipe for golf/turf irrigation projects of similar scope to this project, he 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 Consultant. 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:

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- Butt fusion
- Socket Fusion
- Electrofusion
- Attachment of saddles
- Sidewall Branch Fusion

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3.6.6 Fusing Equipment Qualifications

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If the contractor owns fusion equipment, the equipment must be serviced prior to use for this project. The machine must be environmentally friendly and satisfactory working order. The hydraulic system must be leak free. The pressure gage and thermometer must be checked for accuracy.

866 If a fusion machine is rented, it must be rented from a company that has a fusion machine service
867 center or centers certified by the fusion machine manufacturer. The machine must arrive with
868 certification and verification that the pressure gage and heater thermometer were accurate when
869 shipped.

870 Before fusing pipe, both the pipe and the inserts of the machine must be cleaned with 96%
871 isopropyl alcohol pads or wipes, or with acetone and a clean lint-free rag. Fusing of pipe should
872 be done out of winds or in a tented area when there is no rain, dust or other contaminants.

873 **3.6.7 Fusion Datalogging**

874 As each fusion joint is constructed the contractor is required to perform MANUAL
875 DATALOGGING on all fusions. This is written next to all fusions with a metallic ink marker (such
876 as Sharpie or equivalent) that will include fusion technician's name or initials, date and exact time
877 at completion of fusion process. Once the technician has completed this process, they are
878 confirming that they followed all safety and fusion procedures for the fusion machine used.

879 **3.7 Backfill and Compaction**

880 Backfill shall be suitable materials; free of rocks, or other material potentially harmful (as defined by
881 the manufacture's installation instructions) to installed components. Final determination of what is
882 suitable material shall be the responsibility of the Consultant in conjunction with Owner's
883 Representative.

884 If backfill generated from trench excavation is determined to be unsuitable, use select backfill
885 (approved by Owner's Representative) to bed 4" below and 6" overtop the pipe/wire and around swing
886 joints, fittings, sprinklers and other components. At the discretion of the Owner's Representative, The
887 remainder of the backfill shall contain no lumps or rocks larger than 2", except the top 6", which shall
888 be free of rocks over 1". The price for removal of unsuitable material shall be as stipulated in the
889 Contractor's proposal. Such price adjustments and agreement shall include responsibility for the
890 disposal of the unsuitable materials removed from the trench and the acquiring of additional select
891 backfill materials.

892 Initial backfill shall be placed by hand filling under, around, and above pipe/wire/conduits to a depth of
893 6". This material should then be stepped and/or hand tamped into place. The remaining backfill may
894 be machine filled in lifts as described herein.

895 All trench excavation shall be compacted by mechanical means in lifts of 8" or less. Lift depths shall,
896 however, take into consideration various component depths, in order that the final result is in
897 adherence to the specification and/or the drawing details.

898 A Vermeer TC4 compactor with appropriately sized pad widths shall be required on all trenches 18"
899 wide and smaller. Larger trenches may be compacted with rammers, excavator or backhoe mounted
900 sheepsfoot wheels, or other suitable means at the discretion and approval of the Owner's
901 Representative and Consultant.

902 The final grade shall tie smoothly into adjacent surfaces. Backfill shall not be compacted excessively.
903 The intent is to achieve the same compaction as exists in the adjacent undisturbed soil. The
904 Contractor shall be required to repair any trench settling occurring within two years after acceptance of
905 the warranty, including replacement of sod and/or reseeding if required.

906 **3.8 Road, Creek and Cart Path Crossing**

907 The Contractor shall obtain any necessary authorization and/or permits for any such crossings. The
908 contractor shall be responsible to perform crossings in accordance with the governing agency's
909 guidelines. At a minimum, the crossing shall achieve the excavation standards set forth in section
910 6.5.4 and on the Irrigation Detail Plan.

911 At any crossing, in addition to maintaining any irrigation piping, potable water lines, spare conduits,
912 etc., the Contractor shall install HDPE conduits of sufficient size and quantity to accommodate any and
913 all wires, as well as, preserving any separation required by Consultant's plans and/or details.

914 When called for, the Contractor shall also install an additional 2" PVC conduit capped at each end for
915 future use. All conduits shall extend a minimum of 10' before and after the crossing. The location of
916 the ends of each conduit shall be precisely located on the record drawing by means as indicated in
917 section 3.10.

918 **3.8.1 Road and Creek Crossings**

919 Road and Creek Crossings shall be accomplished by hydraulic directional drilling. Crossing shall
920 be installed as indicated on Irrigation Detail Sheet and/or in accordance with requirements of local
921 authority. In the event that a difference exists between the Details and the requirements of the
922 local authority, the most stringent requirement shall be used provided it satisfies the requirements
923 of said authority.

924 **3.8.2 Asphalt Cart Path Crossings**

925 Asphalt Cart Path crossings shall be accomplished by open cutting. Prior to trenching, Contractor
926 shall cut asphalt with road saw or abrasive cutter in a straight line on each side of intended path.
927 Cut shall be at least 4" wider than width of the trencher cut.

928 The trenches in the asphalt shall be backfilled to grade, adequately compacted and maintained
929 until new pavement or asphalt is replaced. The final repair shall be completed with materials of
930 same type and structure as has been removed. "Cold Patching" is prohibited.

931 Removal of cut asphalt and replacement with materials shall be the responsibility of Contractor.

932 **3.9 Sprinkler Heads**

933 All sprinklers shall be installed within 1' of their staked position

934 All sprinklers shall be installed on pre-assembled "Unitized" Swing joint units as defined in section 4.3
935 and connected to the pipe using method indicated in section 4.2.10 (Base Bid) or Section 4.2.11
936 (Alternate Bid).

937 Once the lateral pipe has been installed by vibratory plowing, after first properly removing the sod, the
938 sprinkler location shall be excavated to a sufficient size to install saddle and riser, the precise location
939 of the saddle shall be marked on the pipe, the hole drilled, and the saddle installed onto the Pipe as
940 indicated on the Irrigation Detail Drawings. Once the saddle has been properly installed, install the
941 riser and appropriate Sprinkler.

942 Sprinklers shall be installed in a consistent manner as indicated in the following chart:

Lateral Type	Sprinkler to be installed On
Laterals running mostly perpendicular to the Hole's centerline	Tee side of pipe, laying towards the main
Laterals running mostly parallel to the Hole's centerline	Right side of pipe (Tee to Green), laying towards the Green
Green Loops	When possible on the outside of the pipe, opposite the Green, laying clockwise

Lateral Type	Sprinkler to be installed On
Tee Piping	On the outside of the pipe, opposite the Tee, laying towards the Green
Laterals - indeterminate direction	Right side of pipe (Source to End), laying towards end of line.

943 The Sprinkler shall be set slightly below grade level and in areas of excessive slope the level shall be
944 adjusted for maximum sprinkler performance without exposing the sprinkler case to damage from
945 mowers or other equipment.

946 Connect control wires for VIH models as specified in section 6.14.6.

947 Upon initial installation, the Contractor shall verify the proper nozzle and pilot valve pressure settings
948 (where applicable), as well as, make preliminary settings to the sprinkler trajectory and a coarse arc
949 adjustment for the intended coverage area. Ultimately, the Contractor shall be responsible for all final
950 sprinklers adjustments necessary to insure the proper coverage and operation as defined in section
951 7.1.

952 The area around the sprinkler shall be backfilled by hand with clean suitable materials; free of rocks,
953 frozen earth, or other material potentially harmful. The area shall be hand tamped firmly but carefully
954 so as to not damage any components in lifts no greater than 6". The sod shall be replaced and lightly
955 tamped into place. The Contractor shall be required to reset any sprinkler and/or excavated area
956 around the sprinkler that settles below finished grade within the warranty period.

957 **3.10 Quick Coupling Valve**

958 All QCVs shall be installed within 1' of their staked position

959 All QCVs shall be installed on pre-assembled "unitized" Swing joint units with a one-piece brass MIPT
960 nipple molded to the top elbow. as defined in section 4.3 and connected to the pipe using method
961 indicated in section 4.2.10 (Base Bid) or Section 4.2.11 (Alternate Bid).

962 All Quick Coupling valves shall include the Lasco "Snap-Lok" stabilizer. Stabilizer shall prevent
963 rotational and vertical motion during use of the valve.

964 The installation of the QCV and riser shall be performed in the same manner as sprinkler listed in
965 Section 6.9

966 **3.11 Valve Boxes**

967 All isolation valves, remote control valves, air release valves, drain valves, QCVs, ground rods,
968 electrical splices, etc. shall be installed in valve boxes as previously define in section 4.10.

969 10" Round Valve boxes shall be installed with 8" PVC pipe as riser extensions to bring the valve box
970 level with existing grade.

971 Rectangular boxes shall be installed on concrete blocks and properly notched so they will not damage
972 pipe or wire if pushed down. The appropriate extensions per the manufacturer shall be used to bring
973 the valve box level with existing grade.

974 Install valve boxes so that the box lid is flush with surrounding grade when it is properly seated and
975 ensure that the lid will not be obstructed in any way by its contents.

976 To minimize their impact on golf play, whenever possible valve boxes shall be located in natural areas
977 and shall under no circumstances be located in fairways, green approaches, within 25' of collars or

978 putting surfaces, on the tops or slopes of tees or in swales without the Owner's Representative's case
979 by case approval.

980 **3.12 Valves**

981 Proposed valves shall be as described under sections 4.7 - 4.9 and installed as represented on the
982 Irrigation Details Sheet.

983 Isolation valves shall be line sized as shown on the plans and unless otherwise indicated, installed in
984 an upright and initially closed position.

985 Restraint rods on Push joint adaptors for main Isolation valves shall be tightened in strict accordance
986 with the specifications listed in manufacturer's installation specifications.

987 Valves shall be afforded access through a valve box as indicated in section 6.11.

988 **3.13 Control Equipment**

989 **3.13.1 Field control units**

990 Each field control item shall be installed per manufacturer's specifications, as per indicated on the
991 Irrigation Detail page. Locations shall be staked by Consultant and approved by Owner's
992 Representative prior to installation.

993 Where required, mounting pads for field control units shall allow for 6" of concrete around the
994 enclosure with a 30" allowance on the operational side of the enclosure to allow for stable footing
995 of operator during operation and maintenance.

996 Each field control unit shall have appropriate grounding installed to meet manufacture's most
997 stringent recommendation.

998 Feeds from all power sources must be in the same phase, and there must be a bonded neutral
999 throughout the power wire network from each power source. Proper polarity must be observed.

1000 Throughout the construction process, the Contractor shall make every effort to minimize dust and
1001 pest infiltration inside the controller by keeping cabinets doors on and locked accept when work is
1002 being performed within controller, as well as, backfilling around open conduits immediately upon
1003 completion of wire installation.

1004 All wire shall be installed neatly within enclosure. To ensure that each 2-wire cable is capable of
1005 being relocated to any terminal, each wire shall be cut to the same length, slightly longer than
1006 necessary to reach to farthest terminal connection.

1007 **3.13.2 Central**

1008 The Contractor shall, in accordance with manufacturer's recommendations, install the central
1009 control computer and all other related components as defined in section 4.11.2

1010 The Contractor shall install central related components. The location of all the various
1011 components, as well as, the routing of all cabling shall be at the discretion of the Owner's
1012 Representative.

1013 The contractor shall be responsible verifying proper communication from the central computer to
1014 all field units, and all other control and/or monitoring equipment, such as, the weather station,
1015 Pump station, etc. Any communication problems shall be corrected by Contractor prior to final
1016 acceptance of the irrigation system.

1017 A Radio Site Survey, as defined in section 4.11.3.1, shall be conducted prior to any installation of
1018 radio equipment.

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3.13.3 Grounding

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Prior to connecting field wires to any component, the Contractor shall install grounding in accordance with the manufacturer's recommendations, Local codes, Irrigation Detail drawings and/or these specifications. In the event that a difference exists, the most stringent requirement shall be used.

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3.14 Installation of Wiring

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3.14.1 General

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Install all wiring in accordance with Wiring Plans, the specifications, manufacturer's recommendations, and Local Codes.

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Wires installed in trenches of similar voltage and function shall be bundled together every 8' - 12' with electrical tape. Contractor shall maintain consistency throughout the project with respect to location of various wire paths in relation to pipe and other cable paths as indicated in the following chart:

Condition	Positioning in Trench / plow line
With Main running mostly perpendicular to the Hole's centerline	Power - Green side of trench, at springline of pipe 2-Wire Cable – Tee side of trench, at springline of pipe
With Main running mostly Parallel to the Hole's centerline	Power - Far right side of trench, at springline of pipe 2-Wire Cable – Far left Side of trench, at springline of pipe
Wire only trench running mostly perpendicular to the Hole's centerline	Power - Green side, bottom of trench 2-Wire Cable – Tee Side, bottom of trench
Wire only trench running mostly Parallel to the Hole's centerline	Power - Far right side, bottom of trench 2-Wire Cable – Far left side, bottom of trench
Lateral Piping	Power – Not allowed 2-Wire Cable – Directly above the pipe 2", placed into slit through wire chute
Right Side / Left Side is based on view from Tee to Green	

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Slack must be provided for and tensile stress must be avoided during the wire installation. Wires shall be laid loosely in trenches/plow lines and never pulled tight. Wire shall not be permitted to run underneath pipe. An expansion coil, 12" at a minimum, shall be installed in each 100' of wire, and enough slack at splices to allow raising splices at least 24" above grade. Wire paths going around 45 degrees and 90 degree bends shall be looped and taped to avoid pulling into the corners for the trench. Adequate slack shall also be provided beside fittings to afford future access to fitting if a repair is ever required.

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In the event a cable passes underneath a roadway or stream, wiring shall be protected by passing it through a sleeve as indicated in section 6.8.

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Wire shall be kept out of direct sunlight until it is to be installed. To avoid accidental damage from construction equipment and extend exposure to sunlight, wires shall be laid out just prior to installation in the trench.

1044 Whenever wires are not installed in mainline trenches, the lines shall run in straight segments,
1045 directly from and to components that are easily identifiable above ground and referenced on the
1046 record drawing. Acceptable components are sprinklers, valve boxes and controllers. If a change
1047 in direction is absolutely required, it shall be an angle formed between two intersecting straight
1048 segments and not an indiscriminate curve. The intersection shall be recorded in the field notes
1049 and on the record drawing as required in section 3.10.1.

1050 Routing of cables shall not be modified without prior approval of Consultant.

1051 **3.14.2 Trace Wire**

1052 To facilitate the detection and tracing of pipe mains and laterals, the Contractor shall furnish and
1053 install a "Trace Wire" in all trenched and/or plow lines that do not contain any other type of wire
1054 conducive to tracing. End of wire shall be terminated and accessible at closed valve box location.
1055 The terminating location and route shall be noted on record drawing as required in section 3.10.1.

1056 The Trace wire shall be the size, type and color as referenced in section 4.12.4.

1057 **3.14.3 Field Unit 120 VAC Power Wire**

1058 The Field Units requires 120 VAC of wire type as indicated in 4.12.1. The Contractor shall check
1059 all applicable local codes prior to bidding to determine if any special installation techniques,
1060 materials or limitations exist for direct burial 120volt service that conflict with these specifications.
1061 If any such conflicts exist, the most stringent requirement shall take precedence and the
1062 Contractor's bid shall reflect any required changes.

1063 All power wire shall be sized and routed as indicated on the wire plans. The Owner shall provide
1064 properly sized and fused electrical disconnects and/or panels for the irrigation system at each of
1065 the power sources indicated on the wire plan.

1066 The Contractor shall be responsible for all materials and installation of connections from the field
1067 wiring to the panel provided by the Owner. This shall include line conditioners and related
1068 electrical service equipment as required in section 4.17.

1069 It is the intent of the design that all 120 V.A.C. splices shall be made within the pedestal itself.
1070 However, in the event that an underground field splice becomes unavoidable, 120 V.A.C. wire
1071 sized #12 AWG - #4 AWG shall be spliced using a Paige Electric DB14-4 Direct Burial Connector.
1072 Splice kits for #2 AWG and larger wire shall be 3M model 82-Ax, correctly sized for the cable.

1073 Any underground field splices shall be located in valve boxes marked as "Electrical" as indicated
1074 in section 4.10, and shall be indicated on the field notes.

1075 Whenever power wire must cross 2-Wire Cables, a minimum of 6" earth shall separate the
1076 different wire types. .

1077 **3.14.4 2-Wire Cable**

1078 The 2-Wire Cable shall be the size, type and color as referenced in section 4.12.2.

1079 Once the color code of the 2-Wire Cable is established and the project in underway, the
1080 contractor shall maintain the same color code throughout the project. Changing the color within a
1081 given wire path is prohibited.

1082 Splicing of the 2-Wire Cable, except at sprinklers, lateral valves or predetermined 3-way splice
1083 points should be avoided whenever possible.

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3.14.5 Wire Labeling

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As indicated in the Details, at each 2-Wire starting point, termination point and/or splice point, Contractor shall clearly mark each wire in the splice box with a tag, Paige Electric Model 270WMT, using a Paige Electric Model 270WMP pen.

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Substitution of Paige Electric Tags or Marker with any other materials is prohibited.

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3.14.6 2-Wire Connections

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The various connections to equipment and required splices shall be accomplished as indicated on the Irrigation Detail Drawing. Any connections not specifically designated shall conform to general intent of its closest equivalent. Any variance from the methods indicated shall be prohibited without the expressed written consent of the Consultant.

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Any 2-Wire Cable splices shall be accomplished as indicated on the Irrigation Detail Drawings. Splices shall be located in valve boxes marked as "Electrical" as indicated in section 4.10, and shall be indicated on the field notes.

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The process for making a 2-Wire Cable splice that incorporate a wire nut shall be as follows:

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- Multiple solid conductors - Strip a minimum of 1" off each end, align ends, twist CW with flat-nosed pliers, cut off excess, screw on wire nut and insert into splice kit.
- Multiple solid conductors with stranded - Strip a minimum of 1" off each end of solids and 1.5" off stranded, wrap stranded around a solid in CW direction, align solid ends, twist CW with flat-nosed pliers, cut off excess, screw on wire nut and insert into splice kit.
- Single solid conductors with stranded – Add scrap piece of a solid, strip a minimum of 1" off each end of solids and 1.5" off stranded, wrap stranded around a solid in CW direction, align solid ends, twist CW with flat-nosed pliers, cut off excess, screw on wire nut, cut off scrap, just outside wire nut, so end is contained within waterproof material and insert into splice kit.

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The processes listed above are designed to ensure that the connection is accomplished by the twisting of solid conductors, locking in any stranded wires. Under no circumstance shall the connection be made solely by combining the wires and twisting on the wire nut.

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3.14.6.1 Connections at Surge Devices

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Transition between Trunk and Sub-Line wire paths at surge devices shall be accomplished by installation of re-enterable connectors per the Details at locations as indicated on the plans. The purpose of the device is to provide segmentation of various areas of the 2-wire system for troubleshooting of electrical problems as well as isolation.

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The re-enterable connectors shall be as indicated in section 4.13.1.

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3.14.6.2 Connections to Sprinkler heads and Electric Valve

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Toro sprinkler heads and electric valves shall be connected to the 2-wire cable using 3M Type R/Y+ wire connectors and 3M Scotchlok™ 3570G-N resin sealing pack as referenced in section 4.13.2. Connectors shall be installed per the Details and per manufacturer's recommendations and Scotchlok resin sealing packs shall be installed per manufacturer's Datasheet.

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Rain Bird sprinkler heads and electric valves shall be connected to the 2-wire cable using Rain Bird WC100 wire connectors as referenced in section 4.13.3. WC100 wire connectors shall be installed per manufacturer's specifications. Document #D37453EO.

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3.14.6.3 Other Connections

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Cable splices should be kept to a minimum whenever possible. However, Cable splices at "other" (non-surge / sprinkler) locations shall be accomplished as follows:

Number of Conductors	Allowable at "Other" locations
2	Toro: 3M Scotchlok™ 3570G-N Rain Bird: WC100 Either: Re-enterable Connector
3	Toro: 3M Scotchlok™ 3570G-N Rain Bird: WC100 Either: Re-enterable Connector
4	Toro: 3M Scotchlok™ 3570G-N Rain Bird: WC100 Either: Re-enterable Connector
5	Toro: Re-enterable Connector Rain Bird WC100 Either: Re-enterable Connector
6	Either: Re-enterable Connector

1128 **3.15 Flushing**

1129 All piping shall be thoroughly flushed prior to operation of any sprinklers, quick coupling valves, hose
1130 reels, and/or electric valves. The flushing process shall be completed on a hole-by-hole basis.

1131 As indicated previously all valves shall be installed in the closed position. With this in mind, the
1132 mainline shall first be flushed and pressurized prior to opening any lateral valves. Once the main has
1133 been cleared, each lateral shall be flushed and then each electric valve zone. Lateral and electric
1134 valve zones shall be flushed through the sprinkler risers at any dead ends.

1135 Flushing through the sprinkler nozzle is not acceptable; the internal components of the sprinkler and
1136 its valve and rock screen shall be removed prior to flushing. If the rock screen is not removable from
1137 the top, the sprinkler shall be completely removed from the riser and a temporary extension placed on
1138 the riser, along with any necessary pipe to divert the water away from the sprinkler location.

1139 **3.16 Clean-Up and Restoration of Work Areas**

1140 Immediately following the installation of irrigation pipe and equipment on each golf hole, the Contractor
1141 shall restore the physical condition of the hole to the same state it was in before irrigation work
1142 commenced. Trench / plow lines shall be graded level or slightly crowned, and any excess material
1143 graded out or removed. Contours of the ground and any earth features—mounds, shells of excavated
1144 greens, etc.—which have been disturbed by the Contractor shall be returned to their original condition.
1145 In particular, any rock or organic debris brought to the surface by trenching operations shall be picked
1146 up and disposed of in areas designated by the owner's representative.

1147 All open holes shall be closed, except where work must be left exposed for future connection to an
1148 unfinished area of the course. Open excavations shall be clearly marked with stakes and caution tape.

1149 All components shall be marked as previously defined in section 6.4.2.

1150 All excess material, pipe, wire spools, empty cartons and trash, shall be removed and properly
1151 disposed.

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4 TESTING AND ACCEPTANCE OF SYSTEM

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4.1 Balancing and Adjustment

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At the direction of the Owner's Representative or Consultant, the Contractor shall balance and adjust the various components of the sprinkler system so that the overall operation of the system is the most efficient. This may include minor nozzle changeouts, changes to sprinkler trajectory settings and/or adjustments to part circle sprinkler arcs.

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4.2 Testing System

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Upon completion of the irrigation system, the entire system shall be tested for proper operation. All air will be flushed from the system and all components will be checked for proper operation by the Contractor and Owner's Representative.

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4.2.1 Piping

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Contractor shall perform pressure and leakage tests of sections of pipe, as separated by line valves, at pressures not to exceed 140 pounds on gauge at low point of section or sections being tested. Consultant shall determine proper pressure and section size. All tests shall be executed in accordance with recommendations of the pipe manufacturer and as directed by Consultant, whichever is more restrictive.

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The leak test shall be performed over a 5-hour period and shall not exceed 10 psi loss throughout the section tested. Contractor shall keep a record of testing, including Date, Time, Description of Section being tested, starting PSI and PSI at end of Test.

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4.2.2 Wiring

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All wiring shall be tested by contractor for voltage and amperage draw prior to system acceptance. Each manufacturer has an allowable amperage draw per device connected to the system. Contractor shall be required to test every wire splice and each Decoder Cable Fuse Device and be within manufacturer's specifications for amperage draw. Any location found not to be within tolerance shall be repaired at the Contractor's expense

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4.2.3 Sprinklers

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Contractor shall execute a central run cycle with each sprinkler sequential running for 5 minutes. Contractor shall confirm that each sprinkler activates, turns, shuts off and proper setting of part circle sprinkler arcs. Contractor shall note and correct any sprinkler malfunctions.

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4.3 Notice of Completion

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When the Contractor is satisfied that the system is "substantially completed", he shall issue a written notice to the Owner's Representative and Consultant.

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"Substantially completed" shall be defined as follows:

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- Initial balancing and adjustments have been completed as defined under section 7.1
- System fully pressurized, operational and tested as defined under section 7.1.
- All cleanup and restoration work has been completed as defined under section 6.16

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If the Owner's Representative and Consultant are in agreement then arrangements shall be made for a final inspection of the work as described in 7.4.

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4.4 Final Inspection

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The Consultant, with approval from the Owner's Representative will respond to the notice of completion and shall schedule a time for a "walk-through" of the project with the purpose of making it the final inspection. The Consultant and Owner's Representative will conduct the "walk-through" and the Contractor shall have his Project Supervisor in attendance throughout the inspection. All components will be inspected as to their adherence to original intent of the plans and these specifications, as well as, the manufacture's recommendation and industry standards.

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Inspections shall include, but not be limited to the following:

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- Visual inspection of all sprinkler heads, valves, field control units, splices, grounding equipment, pump station, bridge crossings and any other irrigation system components.
- Settlement of trenches, as well as, any other excavation
- Operation of each sprinkler and electric valve
- Sprinklers will also be inspected for proper performance and adjustment
- Communication to field control units, pump station, and weather station
- Pump station operation

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Any items found in need of modification, additional work, and/or repair or replacement shall be flagged and noted in writing. The written notes shall then be compiled into a formal "punch list" of items to be addressed by the Contractor. It is the responsibility of the Contractor to complete all punch list items to the satisfaction of the Owner's Representative prior to final acceptance of the system and release of any final payments.

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4.5 Warranty and Guarantee Certificate

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The Contractor shall furnish a certificate of warranty registration and a guarantee of workmanship and materials for a one-year period from date of final acceptance of the system. The time period shall be extended in cases where a longer period has been specifically stated in these specifications or declared in a manufacture's written warranty. The Contractor's guarantee of workmanship shall also be extended by the same time period listed. Neither the final acceptance nor the final payment shall relieve the Contractor of responsibility for negligence or faulty materials

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Final payment for the system shall not be made unless this certification is presented to the Owner.

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If a warranty item has been identified, the Owner shall notify the Contractor by telephone, email or in writing through standard postal service. Critical repairs including, but not limited to, leaks, pipe breakage, controller failures, faulty wiring and other critical system components shall be repaired by Contractor within 48 hours of notification. Other non-critical repair items including, but not limited to, trench settlement, equipment settlement, cleanup and restoration issues and/or improperly installed or missing equipment shall be repaired by the Contractor within ten days of notification. If the Contractor does not address warranty repairs within the time period herein specified, the Owner may arrange for another contractor or his own staff to complete such repairs and bill the Contractor for the full expense of such repairs.

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The Contractor shall use the same materials and methods described in the original plans and specifications for all warranty work. Inspection of warranty work shall fall under the same requirements listed in section 6.2

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4.6 Final Acceptance of the System

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Prior to Final Acceptance, the Contractor shall submit to the Owner and Consultant, a "Certificate of Project Completion" affidavit, stating that the work under this Project, including all amendments thereto, has been satisfactorily completed; that all charges or bills for labor or services performed or materials furnished, and other charges against the Project, including those incurred by the Subcontractors, have been paid in full and in accordance with the project documents and all local governing bodies; that no liens have been attached against the property and/or improvements of the

1237 Owner; that no notice of intention to claim liens is outstanding; that no suits are pending by reason of
1238 work on the Project; that all Workers' Compensation claims have been settled and that no public
1239 liability claims are pending.

1240 A letter of "Final Acceptance" shall be issued by the Owner upon satisfactory completion of all items
1241 listed under section 7. The date of this letter shall be deemed the date of final acceptance and shall be
1242 signed by the Contractor and the Owner's Representative.

1243 The owner may accept the system even though the corrections on the final inspection have not been
1244 made by the Contractor. In such a case, there will be deductions for the incomplete or non-corrected
1245 work based on the previous provisions set out in these specifications. Such deductions shall be made
1246 from the final payment.

1247 Barring any unresolved disputes, the entire balance found to be due the Contractor, including the
1248 retained percentage, shall be paid to the Contractor by the Owner within 30 days after the date of said
1249 final letter.

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5 PUMP STATION

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It is the intention of this section to describe an automatic, prefabricated pump station. Design, fabrication, testing and service shall be the sole responsibility of the pump station manufacturer. The pump station shall provide water while simultaneously maintaining a constant discharge pressure by using a prefabricated pump station with a variable frequency drive (VFD) for pressure regulation, under varying flow conditions up to the maximum specified capacity of 700 GPM at 110 PSI.

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5.1 General

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The prefabricated pump station shall have a minimum capacity and discharge pressure at skid edge as described in the technical specifications. The pumps shall operate at no more than 3600 RPM.

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The station shall be completely wired, piped, hydraulically, electrically, and flow tested to full station capacity at factory prior to shipment to job site. Documentation of dynamic test shall be verified by owner prior to pump station shipment upon request.

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Construction shall include a fabricated steel plate and skid assembly to support all components during shipping and to serve as the installation mounting base.

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The discharge manifold from the pump station shall terminate at or near the pump station skid edge and be provided by the pump station manufacturer.

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FCC Statement of Compliance

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Control panel will be designed, tested, and certified to comply with FCC requirement Part 15 standards for electromagnetic compliance for EMC emissions. System to comply with both conducted and radiated emissions so that the system will not interfere with electrical, communication, SCADA, and security systems

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The pumping station shall be model number HCBVE-1-25V/25V/5VMSV-460-3-700-110 as manufactured by WATERTRONICS, INC. or approved equal.

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5.2 Manufacturer Requirements

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The pump station shall be manufactured by Watertronics, Inc., Hartland, Wisconsin. Or approved equal.

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For consideration as an equal brand, the following information must be furnished by the contractor or manufacturer's representative within 10 days before bid date, to the Consultant/Engineer:

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- A complete specification and submittal of all major components for the proposed pump station with individual pump performance verification.
- A detailed pumping station proposal drawing complete with component location, sizes and dimensions specific to the installation.
- Pump station manufacturers U.L. file number for the electrical controls and pump station.
- A copy of the manufacturer's certificate of insurance.
- Product support technicians shall be capable of accessing all information pertaining to the pumping equipment, e.g. electrical schematics, pump curves, program data, bill of materials, etc. The manufacturer shall have no less than two technicians on call seven days a week.
- The pump station manufacturer shall provide factory authorized or factory direct service personnel for the set, start-up, preventative maintenance, and general service of the pump system. A factory authorized or factory direct service technician must be located within one hundred (100) mile radius of the project site. The pump systems technician must have a minimum of 5 years' experience. The pump station manufacturer shall provide technical phone support twenty-four hours a day seven days a week.

1293 **5.3 U.L. Listed Control Panel, Logic and Sensors**

1294 **5.3.1 General**

1295 The pumping station electrical controls shall be mounted in a self-containing NEMA 4 enclosure
1296 fabricated from not less than 12-gauge steel. Door gasket seals shall be neoprene sponge,
1297 sufficient to protect interior components from weather and dust. The electrical panel doors shall
1298 be constructed from 12-gauge steel with integral latches.

1299 All external operating devices shall be dust and weatherproof. All internal components of the
1300 enclosure shall be mounted on a removable back panel. Mounting screws for components shall
1301 not be tapped into the enclosure wall. No pressure gauges, pressure switches, water activated
1302 devices, or water lines of any sort shall be installed in any electrical control panel.

1303 A closed type cooling system shall be included to cool the enclosure and reject heat from the
1304 VFD. Open type cooling systems allowing outside ambient air to enter the panel are not
1305 acceptable. No water line connections shall be permitted inside of the control enclosure.

1306 The control panel shall be designed, built, tested and U.L. listed by the pump station
1307 manufacturer.

1308 **5.3.2 Main Service Disconnect**

1309 A three-pole, main station disconnect shall be contained within the NEMA 4 control enclosure. An
1310 externally mounted service disconnect shall not be acceptable. Disconnect shall be fused and
1311 isolate all power to the control enclosure. The disconnect shall have an operating handle mounted
1312 in the enclosure door, mechanically interlocked to prevent entry while disconnect is in ON
1313 position.

1314 **5.3.3 Motor Combination Starters- Breaker**

1315 Each motor shall be protected by a MSP combination starter and breaker. Device will be UL 508
1316 Type F. Motor starter protector and contactor are electrically and mechanically linked by means of
1317 a link module and adapter plate. All starters are suitable for use in a group installation application
1318 according to NEC-430-53(c).

1319 **5.3.4 Variable Frequency Drive (Vfd) Per Pump**

1320 The variable frequency drive shall be IGBT based with selectable carrier frequency up to 15 KHZ.
1321 The VFD shall include terminals for incoming power, motor output power and control terminals.

1322 The VFD shall generate a sine-coded, variable voltage/ frequency, three-phase output for
1323 optimum speed control. The VFD shall incorporate power loss ride-through for a minimum of 2
1324 seconds. VFD protective features shall include current limit, auto restart, short circuit protection,
1325 electronic motor overload protection and ground fault protection. The VFD shall have a push
1326 button programming display for easy access to operation parameters. The VFD shall be protected
1327 on the primary side a breaker of the appropriate amperage. Overload capacity: 120% rated output
1328 current for one minute. Voltage Fluctuation: +10%, -15%. Sine wave, PWM, with full range,
1329 automatic torque boost. Frequency Control Range: 0.5 to 500Hz. Frequency Accuracy: Digital,
1330 0.01Hz, Analog, .1%. Motor overload protection, Instantaneous over current of 180% of rated
1331 output current. Over voltage at 820VDC if 460V input. Under voltage: user adjustable. Momentary
1332 Power Loss: up to 2 second ride through. Electronic Ground Fault. LED capacitor charge
1333 indicator. Input Phase loss alarm. Ambient temperature range of + 0 to 50 degrees C. Humidity of
1334 95% non-condensing.

1515 manufactured from high grade steel and of reduced length to increase shaft rigidity, extend
1516 bearing life, and reduce the overall length of the pump and motor assembly. The pump shaft shall
1517 be protected with a replaceable stainless-steel sleeve.

1518 The pump motor and impeller shall be removable from the back of volute case for service without
1519 disturbing the plumbing.

1520 **5.5.2 Vertical Centrifugal Pressure Maintenance Pump**

1521 To maintain system pressure during non-irrigation periods, a pressure maintenance pump shall
1522 be incorporated in the system. The pressure maintenance pump shall be vertical type constructed
1523 of stainless steel. The pressure maintenance pump shall perform as specified by the Technical
1524 Specifications.

1525 **5.6 Motors**

1526 **5.6.1 Main Irrigation Pump Motor**

1527 Each pump motor shall be a squirrel cage induction horizontal solid shaft type. The pump impeller
1528 shall be direct mounted and keyed to the motor shaft with a stainless-steel protective sleeve. The
1529 temperature rise of the motor shall be to NEMA Standard MG 1 12.42 for class B or Class F
1530 insulation.

1531 Radial and thrust bearings of ample capacity to accommodate the hydraulic thrust of the pump
1532 shall be incorporated into the motor. The motor shall be of proper size to drive the pump at any
1533 point on its operation curve without exceeding the percent of motor horsepower nameplate rating.

1534 **5.6.2 Main Motor Winding Condensate Heater**

1535 Each main pump motor will be supplied with a 120-volt space heater in the motor windings to
1536 prevent condensation during non-use times. The heaters will be deactivated when motors are
1537 running.

1538 **5.6.3 Pressure Maintenance Pump Motor**

1539 The pressure maintenance pump shall be equipped with a 3600 RPM, high efficiency motor. The
1540 pressure maintenance pump shall perform as specified by the Technical Specifications.

1541 **5.7 Skid, Piping, Valves, Gauges, & Mechanical Equipment**

1542 **5.7.1 Base Construction**

1543 Pump station base shall be formed from a single sheet of 3/8" steel, continuous welded and
1544 smooth ground at all corners resulting in a seamless, one-piece structure 6-3/8" or 8-3/8" tall with
1545 rounded edges and corners. Two 3" holes shall be located at each corner of the base, on the
1546 sidewall, for the purpose of lifting the pump station. The base shall be strategically reinforced
1547 underneath with structural channel iron to support pumps, manifold control enclosure and
1548 periphery. Flat steel, diamond or checker plate welded over structural steel shall not be permitted.
1549 The finished base height shall be 6-3/8" or 8". The base shall be drilled and tapped for mounting
1550 of pumps, manifolds, tanks, relief valves and other equipment. All tolerances shall permit direct
1551 bolting of pump station components to base. No slotted holes shall be permitted in the pump
1552 station base and no nuts or bolt heads shall be permitted on the underside of the base. The base
1553 shall be primed and painted per enclosed specifications on both top and bottom.

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5.7.2 Fabricated Piping

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All fabricated piping shall conform to ASTM specifications A53 for Grade B welded or seamless pipe. Discharge piping shall be Schedule 40. All welded flanges shall be forged steel slip on or weld neck type. All welded fittings shall be seamless, conforming to ASTM Specification A234, with pressure rating not less than 150 PSI.

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5.7.3 Drains

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Drains are to be provided from any possible low point in the system and are to be equipped with 3/8 A or 1/4" brass valves. Drains shall include, but are not limited to, the following:

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- Drain for each pump discharge check valve
- Drain in discharge manifold upstream of station discharge isolation valve.
- A wash down 3/4" brass hose bib on the discharge manifold, upstream of the main station isolation valve.

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5.7.4 Pump Check Valve

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Pump check valves shall be located on the discharge of the pump and sized per the technical data sheet. They shall be of the silent operating type that begins to close as forward velocity diminishes and be fully closed at zero velocity preventing flow reversal. Valve bodies shall be cast from ASTM-126C cast-iron or better and shall be free from blow holes, sand holes, and other impurities. The valve design shall incorporate a center guided, spring loaded poppet, guided at opposite ends and having a short linear stroke that generates a flow area equal to the pipe diameter. Internals shall be machined bronze disc, seat, and stem guide. Valves shall be sized to permit full pump capacity to discharge through them without exceeding a pressure drop of 2.5 PSI... Valves 4" and smaller to be pressure rated for 250 PSI, 6" to 10" to be pressure rated to 150 PSI. Valves 12" and larger check valves to be globe style with 150-PSI rating, iron bodied with bronze trim.

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5.7.5 Isolation Valve

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Each Pump shall be isolated by means of a butterfly valve after the check valve and before the discharge manifold. The discharge manifold shall also have an isolation valve at the skid edge. Isolation valves shall be butterfly type with ten position lever for valves 4" and smaller or gear operators for valves 5" and larger, rated for 200 PSI WOG working pressure. Trim shall include stainless steel stem, bronze or nickel coated iron streamlined disk with full faced resilient seat design to eliminate need for flange gaskets.

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5.7.6 Pressure Relief Valve

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A pressure relief valve shall be installed on the discharge piping downstream of the pressure regulating valves and check valves. The valve shall be sized to bypass sufficient water back to the water source to avoid the discharge pressure from exceeding the maximum programmed pressure set point by more than 10 PSI. A butterfly isolation valve will be installed upstream of the relief valve to facilitate service.

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5.7.7 Pressure Gauge

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A pressure gauge shall be located on the discharge manifold for measuring regulated, downstream pressure. Pressure gauge shall be 304 stainless-steel case and bezel construction. Gauge shall be 4" diameter, liquid filled. Pressure sensing connection shall be 1/4" NPT lower gauge connection.

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6 SPARE PARTS / REPAIR PARTS AND TOOLS

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Provide the following spare/repair parts and special tools (no installation required) to Owner at completion of project. All items shall be provided in new condition when given to the Owner.

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6.1 Misc Repair Items

Item	Qty	Unit
Saddle, 2" x 1-1/2 Acme, Per Base or Alternate	6	each
Lateral Isolation Valve, 2"	2	each
Lateral Isolation Valve, 3"	2	each
HDPE Transition Union HDPE x MPT, Lasco P896020	2	each
2" NPT FPT, Wye Strainer, Banjo LS200-50	1	each
2" Combination Air Valve, Bermad IR-2-C10-P-T	1	each
Harco/Philmac 2" Compression Coupling	6	each
Harco/Philmac 2" Compression Cap	6	each
Harco/Philmac 2" Compression 90 deg Elbow	2	each
60" long valve wrenches, "T" handle, Mains, 2" Operating Nut	2	each
48" long valve wrenches, Laterals, Cross Handle	3	each
Paige Electric Re-enterable Connector, 270RC6	4	each
Paige Electric Re-enterable Connector, 270RC4	4	each
Paige Electric Re-enterable Connector, 270RC3	3	each
Paige Electric Re-enterable Connector, 270RC2	2	each
Paige Electric Cadweld One-Shot, 1820039P	6	each
Paige Electric Cadweld One-Shot, 1820074P	4	each
Paige Electric Cadweld igniter, 1820040	1	each

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6.2 Toro Repair Items

Item	Qty	Unit
75' FC Sprinkler, FLX34-346-6 / INF34-368-6, Per Base or Alt	5	each
75' PC Sprinkler, FLX35-356-6 / INF35-378-6, Per Base or Alt	2	each
60' FC Sprinkler, FLX34-336-6 / INF34-336-6, Per Base or Alt	4	each
60' PC Sprinkler, FLX35-346-6 / INF35-346-6, Per Base or Alt	5	each
Swing Joint Riser Assembly, 1-1/2"x1-1/4" (12") x Sprinkler Inlet	10	each
Swing Joint Riser Assembly, 1-1/2"x1" (18") x 1" MIPT (Brass)	4	each
Lasco "Snap-Lok" stabilizer	4	each
Lync Smart Control module replacement	6	each
DEC-SG-LINE Surge Arrestor	4	each

Item	Qty	Unit
474-40 Quick Coupling Valve	4	each
464-03 Coupler Key	6	each
477-02 Hose Swivel	6	each
3M Type R/Y+ wire connectors	40	each
3M Scotchlok™ 3570G-N resin sealing pack	20	each
995-08 Valve Removal Tool	2	each
995-15 VIH Selector Tool	6	each
995-76 / 118-1844 Valve Insertion Tool, Per Base or Alt	2	each
995-82 3/32" Allen Wrench	2	each
995-83 Multi-Purpose Tool	2	each
995-99 Nut Driver	2	each
995-105 Nut Driver	2	each
995-100 Valve Snap Ring Pliers	2	each
118-0954 Riser Hold-up Tool	2	each

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6.3 Rain Bird Repair Items

Item	Qty	Unit
75' FC Sprinkler, A702-IC-70-56	4	each
75' PC Sprinkler, A752-IC-70-28	2	each
60' FC Sprinkler, A702-IC-80-36	4	each
60' PC Sprinkler, A752-IC-80-36	6	each
Swing Joint Riser Assembly, 1-1/2"x1-1/4" (12") x Sprinkler Inlet	10	each
Swing Joint Riser Assembly, 1-1/2"x1" (18") x 1" MIPT (Brass)	4	each
Lasco "Snap-Lok" stabilizer	4	each
IC module replacement	6	each
ICSD Surge Device	4	each
5RC Quick Coupling Valve	3	each
55K1 Coupler Key	6	each
SH-3 Hose Swivel	6	each
D02221 18" Selector Valve Key	2	each
D02215 7" Selector Valve Key	2	each
D 02236 Snap Ring Pliers	2	each
D 02237 Socket for TSRS	2	each
B41710 Valve Insertion Tool	2	each

Item	Qty	Unit
B41720 EAGLE Selector Tool/Key	6	each
Rain Bird WC100	40	each

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A. Revision History

Date	Revision	Changes Made

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