1. **SCOPE OF SERVICES**
   1. Provide electrical and mechanical engineering services for assigned tasks related to but not limited to reviewing existing floor plans and existing conditions, design implementation and maintenance of any infrastructure related to wetland rehabilitation, lakes/canal/river systems including dams, locks and weirs along with related water treatment facilities or equipment. To advise the Lake County Water Authority (LCWA) on issues of concern regarding design, material selection, cost estimation as well as life-cycle analysis of electrical and mechanical services related to the LCWA’s mission and purpose. LCWA works in partnership with the Lake County Board of County Commissioners and staff to ensure all related elements of its mission are addressed.
   2. Any project contracted for feasibility, other study, a schematic, or preliminary design shall not include the right to extend the Consultant’s scope of services to include full design and construction period services. However, the Consultant will not be prohibited from participating in a competitive negotiation procurement for such services.
   3. Provide Electrical Engineering services
      1. Electrical systems design inclusive but not limited to:
         1. Power distribution calculations and system design.
         2. Lightning protection (hardening) design.
         3. SCADA (Supervisory Control and Data Acquisition) system integration and installation related to control units, pumps, monitors, etc.
         4. Lighting design and engineering.
         5. Redundancy design and solutions.
      2. Equipment selections and specifications inclusive but not limited to:
         1. Ensuring industry standards and compliance with regulatory entities.
         2. Selection and specification of electrical parts and components.
         3. Researching and integrating energy efficient equipment.
      3. Control Systems design inclusive but not limited to:
         1. Pumps, motors, monitoring equipment, etc.
         2. Design and specifications for PLC’s (Programmable Logic Controllers) and interface systems utilized for systems control and management.
      4. Ensure compliance with regulatory entities/agencies and standards of code such as the National Electrical Code (NEC), International Electrical Commission (IEC), Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), Code of Federal Regulations (CFR), Underwriters Laboratories (UL), along with any other relevant state or local codes and standards.
   4. Provide Mechanical Engineering services
      1. Mechanical system design for related LCWA needs such as pipes and piping, valves, motors, pumps, etc., factoring operational specifications, flow rates, pressures and any other related requirement for delivery systems.
      2. Design of water treatment systems and facilities such as filtration, aeration, sedimentation, chemical and/or mechanical processing, etc.
      3. Component and system design for water control structures such as 00dams and locks or other less conventional means.
      4. HVAC (Heating, Ventilation and Air Conditioning) systems design and maintenance protocols as needed.
      5. Equipment investigation and specifications appropriate for conditions and use.
      6. Design and analysis of existing systems related to fluid dynamics and hydraulic systems.
      7. Develop protocols and maintenance schedules for pre-existing and planned mechanical systems for preventative maintenance to ensure sustainability and reliability of the system while minimizing downtimes.
      8. Ensure compliance with regulatory entities/agencies and standards of code such as the American Society of Mechanical Engineers (ASME), American National Standards Institute (ANSI), Occupational Health and Safety Administration (OSHA), Code of Federal Regulations (CFR), along with any other relevant state or local codes and standards.
   5. Feasibility studies on proposed projects, including studies of client’s needs, analyses of conditions or methods of operation, development of alternative concepts, economic analyses, and site locations studies.
   6. Collecting utility data such as provider, distribution size, availability, and location.
   7. Development of preliminary design reports, including outline specifications, preliminary cost estimates, and similar related efforts.
   8. Schematic design development for mechanical and electrical bid documents, and detailed cost estimate at each phase.
   9. Any other preliminary engineering efforts including public meeting support.
   10. Coordinating engineers and/or other design services groups.
   11. Examination and investigation of existing systems to develop, repair, and design new components to ensure continued and reliable use.
   12. Preparing detailed calculations, design drawings, specifications and contract documents.
   13. Preparing or collaborating with others responsible for preparing estimates of the cost of the work.
   14. Preparation of bid packages along with providing support for bid assistance, including but not limited to providing written response to all questions which may arise during the bidding process for the addendums.
   15. Provide assistance and advice to the LCWA to resolve design and/or permitting requirements, discrepancies, and/or clarifications.
   16. Provide construction and/or project management services including but not limited to:
       1. Review and approve or deny submitted shop drawings, product data and/or samples as required by the Contract Documents.
       2. Respond to contractor’s request for information (RFI’s) during construction of facilities.
   17. Presenting/providing public meeting support.
   18. Providing inspection and as-build Certifications.
   19. Consultant acknowledges and shall provide/comply with all requirements of this Scope of Services (written and implied) at no additional cost to the County. This Scope of Services must be part of the consultant proposal.

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