

TASK ORDER NO. 11230.F

Pursuant to the

MASTER AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN

CITY OF MERIDIAN (OWNER) AND BROWN AND CALDWELL (ENGINEER)

This Task Order is made this 26th day of July 2022 and entered into by and between the City of Meridian, a municipal corporation organized under the laws of the State of Idaho, hereinafter referred to as “City”, and accepted by BROWN AND CALDWELL, hereinafter referred to as “Consultant” pursuant to the mutual promises, covenant and conditions contained in the Master Agreement (category 2a) between the above mentioned parties dated October 1, 2020. The Project Name for this Task Order is as follows:

WRRF AERATION BASIN 1-4 RETROFIT AND 9-10 UPGRADE PROJECT

PROJECT UNDERSTANDING-SUMMARY

During this phase, Consultant will conduct final design engineering, develop the Final Design, and Bid Document submittals to retrofit the existing Aeration Basins 1-4 (ABs 1-4) and expand new Aeration Basins 9-10 (ABs 9-10). The retrofit and expansion of Aeration Basins will advance the general arrangement design developed during Preliminary Engineering.

The project will involve improvements related to the following WRRF processes:

- ABs 1-4 retrofit treatment capacity and associated hydraulic profile modifications including the Secondary Pump Station.
- A new blower building and blowers to service ABs 1-4 and the RAS/WAS Station 2 classifying selector zone. Electrical service in the new blower building will also supply existing treatment facilities including Secondary Clarifiers 4 and 5 and RAS/WAS Station 1.
- ABs 9-10 new treatment capacity will be planned based on expansion provided as part of the Liquid Stream Capacity Expansion project.
- Elutriation water redundant supply from the Post-Aeration tank.
- Secondary Pump Station and Primary Clarifier 3/4 Splitter Box re-coating.

SCOPE OF WORK

Task 1 – Final Design

- Focus on advancing planning concepts that have been developed in the *WRRF FP* (December 2018) and the ABs 1-4 Retrofit Alternatives Analysis and Preliminary Engineering task orders. Leading up to the Final Design milestone, elements of the work will be discussed and submitted separately for review by the City to confirm design direction (e.g., Coordination Meetings).
- Document the final design plans and specifications for the Project scope of work to achieve the following objectives:
 - Use information provided by the survey and geotechnical subconsultants to complete the detailed design.
 - Finalize details of design concepts documented in the Preliminary Engineering Report.
 - Complete detailed design and preparation of contract documents and obtain City approval on the proposed design.
 - Document compliance and approval with regulatory requirements that pertain to the design of sewage treatment facilities.
 - Obtain code compliance approval and a building permit from the City of Meridian Building Services.
 - Update construction cost and schedule estimates.
 - Serve as a vehicle for the City to solicit construction contractor bids.

1.1 Architectural Final Design

- Perform architectural design up to and including final drawings and specifications for public bidding of the Project.
- Final Design of the Blower Building 1 facility will match to the best extent possible architectural treatment and materials that exist on other WRRF campus buildings.

Deliverables

- Architectural (A) drawings and specifications will be included with the final design and bid document submittals.
- COMCheck Envelope Compliance Certificate for Blower Building 1.

1.2 Site-Civil Final Design

- Design general and civil site work up to and including final drawings and specifications for public bidding of the Project.
- Civil drawings and specifications will be based on new/existing topographic base mapping and as-built drawings of the existing facilities and buried utilities, engineering calculations, and new/existing background geotechnical information.
- This task also includes design of access roads, site excavation, grading, paving, yard piping and utilities, drainage conveyance, and erosion control.

Deliverables

- General (G) and civil (C) drawings and specifications will be submitted with the final design and bid document submittals.

- General drawings will include title sheet and vicinity maps, drawing index, general symbols, legends, and abbreviations, hydraulic profile, process flow diagram, and mass balance.
- Civil drawings will include site plan, site demolition, paving and grading plans, yard piping plans, miscellaneous details, temporary erosion/sedimentation control details, and various site plans and sections.

1.3 Structural Final Design

- Provide structural design, up to and including final drawings and specifications for public bidding of the Project.
- Structural drawings will be based on as-built drawings of the existing facilities, structural calculations, and new/existing background geotechnical information updated as part of the geotechnical investigations during preliminary design. The controlling code will be the 2018 International Building Code with local amendments.
- Structural drawings and specifications will be prepared for demolition, walls, footings, beams slabs, structural steel, concrete reinforcement, anchor bolts, bracing, miscellaneous metals, and other structural aspects of any new/existing facilities associated with the Project.

Deliverables

- Structural analysis and calculations associated with design of Blower Building 1.
- Structural (S) drawings and specifications will be submitted with the final and bid document submittals.

1.4 Process Mechanical Final Design

- Prepare process and instrumentation documents and mechanical design documents up to and including final drawings and specifications for public bidding of the Project.
- P&ID drawings will be based on as-built drawings of the existing facilities, engineering calculations, and the characteristics of new process equipment needed for this Project.
- Process mechanical drawings and specifications will include final process design, equipment sizing and selection for each process area, process piping layout, and the final mechanical plan views, mechanical sections, and process control narratives.

Deliverables

- P&ID (I) drawings and mechanical (D) drawings and specifications will be submitted with the final and bid document submittals.

1.5 Building Mechanical Final Design

- Prepare building mechanical design up to and including final drawings and specifications for public bidding of the Project.
- Plumbing and Mechanical HVAC drawings will be based on equipment sizing/selection associated with Blower Building 1 and ancillary systems required to support operation of the process mechanical and electrical equipment located in Blower Building 1.

Deliverables

- Plumbing (P) drawings and HVAC Mechanical (M) drawings and specifications will be submitted with the final and bid document submittals.
- COMCheck Mechanical Compliance Certificate for Blower Building 1.

1.6 Electrical Final Design

- Perform electrical design up to and including final drawings and specifications for public bidding of the Project.
- Electrical drawings will be based on power improvements required for the Project, including all raceway and cable schedules, and control schematics with reference to I&C-specified process instrumentation and control devices.
- Electrical drawings will show equipment locations and associated cable or raceways and indicate equipment connections as home-run type symbols with reference to which motor control center or electrical panel that a cable is to be connected.

Deliverables

- Electrical (E) drawings and specifications will be submitted with the final and bid document submittals
- COMCheck Interior and Exterior Lighting Compliance Certificates for Blower Building 1.

1.7 Instrumentation Final Design

- Develop instrumentation and controls drawings and specifications as required to monitor and control the Project up to and including final drawings and specifications for public bidding of the Project.
- Instrumentation drawings will include sensors and instruments to be used (coordinated with electrical for hazardous environments requirements), installation details for equipment, and control system network diagrams.
- Specifications will include control system hardware and software requirements and written narrative descriptions of control strategies and sequences.

Deliverables

- P&ID (I) drawings and specifications will be submitted with the final and bid document submittals.

1.8 Secondary Pump Station/Primary Clarifier Splitter Box Coating Evaluation

- Develop a coating system specification and construction details for the replacement of the existing linings for these two structures.
- Specification will provide requirements for removal of the existing lining, surface preparation standards, and new lining materials suitable for the replacement application.
- Construction details will be prepared specific to the applications of the linings for this project.

Deliverables

- Lining system specification and construction details will be submitted with the final and document submittals.

Task 2 – Project Management and Design Support Services

2.1 Document Preparation

- Prepare the Final Design and Bid Document submittal packages.
- Final Design and Bid Document submittals will be delivered to the City in electronic PDF and hard copy formats. The specifications will be prepared in Microsoft Word and drawings will be prepared using Revit 2021 and Civil 3D (for civil drawings). Hard copy bound documents of the specifications and drawings (11"x17" half-sized drawings) will be submitted for internal distribution to the City.

Deliverables

- Prepare the Final Design package (work products from Task 1 activities) for City and permitting agency review. One electronic PDF and four hard copies will be provided.
- After incorporating City and permitting agency review comments, a Bid Document package will be submitted to the City. One electronic PDF and four hard copies will be provided.

2.2 Project and Design Management

- Provide management, direction, coordination, and control of all work associated with Project schedule, budget, subconsultants, technical quality, and monthly progress reports and invoices for the Project.
- This task includes the following activities:
 - Update the Project Management Plan and Quality Plan for Final Design activities (internal use only).
 - Update the Health and Safety plan for Final Design activities (internal use only).
 - Maintain the Final Design project schedule.
 - Prepare monthly project status reports. Progress reports will identify budget status, progress status, and activities of the previous month.
 - Supervise project staff.
 - Manage Consultant budget and schedule.
 - Procure, supervise, and coordinate the activities of subconsultants providing specialized or supplemental engineering services.
 - Coordinate design disciplines.

Deliverables

- Monthly progress reports and invoices

2.3 Coordination Meetings

- Provide a regular forum for receipt, exchange, response, and documentation of Project planning, design, and management related issues and decisions during the Project.
- This task includes the following coordination meetings:
 - Six workshops up to 3-hours in duration on-site at the City's WRRF or via MS Teams with PM, DM, and up to four additional design engineers (discipline leads) to present and review findings, discuss design

issues/decision log progress, and obtain site access for information gathering.

- Bi-weekly internal Project team meetings during the Final Design phase (1-hour duration teleconference between Consultant disciplines) for a duration of up to seven months to discuss design issues, review schedule, and coordinate amongst discipline team members.

Deliverables

- Agenda and workshop presentation content to be distributed at all coordination meetings with City staff
- Issues/decision log updated following each coordination meeting with City staff
- Meeting notes for all coordination meetings with City staff

2.4 Construction Cost Estimate and Construction Schedule

- Provide the probable construction cost and construction schedule estimates based on the Final Design submittal. A Class 1 estimate will be submitted in accordance with the Association for the Advancement of Cost Engineering Estimate Classification System for the recommended alternative.

Deliverables

- Cost Estimate for the Final Design will subdivide the cost estimate by process areas and by major engineering disciplines.
- Construction Schedule will include a basic work breakdown structure schedule estimate based on the Final Design submittal.

2.5 Quality Assurance/Quality Control (QA/QC)

- Implement a QA/QC program as defined in the Quality Plan to review products from this scope. City and regulatory agency review comments will also be incorporated to prepare and complete the Bid Document submittal. Additionally, the City is assumed to participate in this process and provide independent review of products.
- Consultant will provide appropriate calculation and deliverable QA/QC reviews by in-house, senior staff members. No external value engineering reviews are included in this scope.

Deliverables

- Issues/decision log

2.6 Permitting Assistance

- Assist the City in preparing and submitting permits and other regulatory documents required for the Final Design associated with new facility construction.
- Based on prior project experience, Consultant has budgeted for the following permits and/or approvals to be included in this scope of work:
 - IDEQ
 - The Final Design submittal will be transmitted to IDEQ upon approval by the City.
 - Final Design submittal comments will be resolved by Consultant to the satisfaction of IDEQ. Any changes to drawings or specifications

because of this review will be issued as part of the Bid Document submittal.

- City Building Services Permits
 - Consultant will coordinate with City to set up an intake review meeting with the City Building Services Department in advance of submitting the Certificate of Zoning Compliance (CZC) checklist and Final Design permit review application.
 - The CZC checklist and supplemental information (project narrative, cover sheet, site-civil drawings, architectural elevations, and AutoCad files) will be submitted for City Building Services review/approval in advance of the Final Design submittal.
 - CZC submittal comments will be resolved by Consultant to the satisfaction of the City Building Services Department. Any changes to drawings or specifications because of this review will be issued as part of the Final Design submittal.
 - The Final Design submittal will be transmitted to the City Building Services Department following CZC approval.
 - Final Design submittal comments will be resolved by Consultant to the satisfaction of the City Building Services Department. Any changes to drawings or specifications because of this review will be issued as part of the Bid Document submittal.
- Stormwater Pollution Prevention Permit (SWPPP)
 - Consultant will include drawings for installation of best management practices (BMPs) facilities in the Final Design submittal.
 - Consultant will include a specification in the Final Design submittal outlining the construction contractor's responsibilities for using the drawings in support of developing the SWPPP and submitting a Notice of Intent (NOI) to the IDEQ for coverage under the construction general permit as site operator.
 - The Final Design submittal will be transmitted to the City for review of the drawing BMPs and SWPPP specification.
 - Final Design BMP and SWPPP specification submittal comments will be resolved by Consultant to the satisfaction of the City. Any changes to drawings or specifications because of this review will be issued as part of the Bid Document submittal.
- Other permits and regulatory documents may be identified during the Project and will be added to this scope and budget upon written authorization by the City. It is assumed that wetlands, biological assessments, or archaeological investigations and surveys will not be necessary. It is also assumed that the construction contractor will secure other Project-related permits such as the grading, building, electrical, and plumbing permits.

Deliverables

- CZC checklist and supplemental information
- Final Design submittal for IDEQ, City Building Services, and BMPs/SWPPP review and approval

2.7 Idaho Power Company Energy Savings Incentive Grant Application

- Assist in the preparation of the grant applications for Building Efficiency and Custom Wastewater Process Efficiency incentive programs.
- This task includes documenting energy efficient design measures included in the project that qualify for grant incentives as follows:
 - Building Efficiency:
 - Lighting
 - HVAC
 - Building envelope
 - Controls
 - Custom Wastewater Process Efficiency:
 - Motor Systems
 - Aeration Process Controls
 - Blower Efficiency
 - Variable Frequency Drives

Deliverables

- Building Efficiency grant application (Excel spreadsheet template).
- Custom wastewater process efficiency grant application including backup calculations and support documents (Excel spreadsheet template).

2.8 Bid Period Services

- Assist the City with obtaining construction bids for the Project. The City will be responsible for advertising and bidding the Project. This budget includes a labor allowance of 240 hours for assisting the City with the Project bidding.
- This task includes activities as follows:
 - Respond to bidder questions during the bid period.
 - Support addenda preparation for City distribution as required prior to bid closing.
 - Attend and participate in the City-led pre-bid conference.
 - Assist with bid evaluations.

Deliverables

- Answers to contractor questions and addendum documents (template for deliverable will be provided by the City and will be similar in format to prior projects).
- Pre-bid conference agenda (template for agenda deliverable will be provided by the City and will be similar in format to prior projects).
- Pre-bid conference technical presentation (MS Power Point) and Navisworks Building Information Model files will be transmitted to contractors via addendum following the pre-bid conference.

ASSUMPTIONS

While preparing our scope of services and fee schedule, Consultant has made the following assumptions:

Civil/Geotechnical

- Existing topographical survey information and base mapping will be utilized for the design of new facilities and modifications of existing facilities.
- Legal, easement, and plat surveys for the WRRF site will not be required.
- Civil site work plans will only be provided for areas of the site that involve disturbance to existing grading and where site restoration is needed after demolition and construction activities.
- Site drawings will only be prepared for areas in the WRRF where new facilities or major retrofits to existing aeration basins are to be constructed.
- It is assumed the site layout for new facilities associated with the Project will not require relocation of major utilities or structures required for continued or interim service of the WRRF.
- Landscaping plans will not be prepared.
- New access roadway work will be limited to the areas around new ABs 9-10 and existing ABs 1-4. No traffic analysis or traffic control design is required.
- The capacity of the existing fire protection system is adequate to handle the new construction and fire hydrant installation near the new Blower Building 1.
- The foundation design of new or modified facilities will be based on geotechnical information obtained by the City for this Project.
- In soils, foundation, groundwater, and other subsurface investigations, the actual characteristics may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect the Project cost and/or execution. The conditions and cost/execution effects are not the responsibility of Consultant.
- New groundwater pumping facilities are not required.

Structural/Architectural/Geotechnical

- Conventional spread foundations will be required for all new facilities. Over excavation, preload, or piles will not be required. Underdrain systems for Aeration Basins 9-10 will match those constructed for Aeration Basins 5-8.
- Building architecture (materials, construction) will be like existing structures.
- No landscape architect services will be required for this Project.
- No retaining walls will be required

Process/Mechanical

- Design concerning “plant-wide” utility systems such as basin drainage, water and in-plant waste collection/disposal will be limited to extension of and/or changes to existing piping. No new structures or equipment will be needed.
- Corrosion control provisions will not be required for buried piping.
- Active cathodic protection will not be required for buried piping.

- Piping two inches in diameter and smaller will be field-routed 5-feet from entry point and 5-feet from end point.
- Pipe supports, expansion/contraction control measures, and seismic bracing/control measures will be Contractor-designed based upon a performance specification which will be developed during the final design phase for all piping except for aeration pipe headers 20-inch or larger which will be designed by the Consultant.
- An odor control system will not be provided.
- Aeration blower type, diffusers, and other major aeration system process mechanical equipment will be designed to match the same type as the plant's existing aeration basin and blower building facilities.
- Manual valves two inches in diameter and below will not be tagged.
- Existing chemical (methanol and acetic acid) pumping, and storage is adequate to supply chemicals without additional pumps. New piping distribution system required for ABs 1-4 and ABs 9-10.

Electrical

- Electrical improvements associated with the new Blower Building 1 will include service to the ABs 1-4 retrofit, Secondary Clarifiers 4 and 5, and RAS/WAS Station 1. Space in the new Blower Building 1 electrical room will be reserved for future electrical improvements associated with process facilities with electrical service from the existing Mechanical Building.
- Electrical design will be based on existing record drawings provided by the City and Consultant observations of existing conditions; without benefit of field measurements and invasive investigation made undesirable by expense and inconvenience to the City. Unforeseen conditions uncovered during the progress of final design work may require an adjustment to the work scope subject to renegotiation with the City.
- Utility coordination will be provided during the Final Design phase for any modifications required to accommodate new loads.
- Fire alarm panel design is not included for the new Blower Building 1 servicing ABs 1-4 and the RAS/WAS Station 2 Classifying Selector zone.
- A comprehensive power system study will be provided during the Construction phase. Code review will be limited to the City-adopted version at the time of initiation of contract of NFPA Sections 70, 820 and 497.
- Public address system design or modification will not be included.

Instrumentation and Controls (I&C)

- I&C will match the existing system and components available during the Project.
- I&C will be similar in type and sophistication to what currently exists. Analog elements and components will be used, and no significant modifications to existing I&C equipment or systems will be needed.
- A design for replacing the existing Blower Building 1 and RAS/WAS Station 1 programmable logic controllers (PLCs)-based supervisory control and data

acquisition system will be provided for those process areas. Significant modifications to existing I&C equipment or systems are not anticipated.

- A design for expanding the existing Blower Building 2 PLC-based supervisory control and data acquisition system will be provided for the new ABs 9-10 expansion.
- The City will provide “as-built” documentation of the existing process instrumentation and control system. City-provided information will include, but not be limited to, existing motor and control circuit diagrams, panel shop drawings, process instrument information, and process control system software documentation.
- The new instrumentation and control system will be based on the use of PLCs. Plant status monitoring will be by the existing commercially available PC-based software package: Wonderware, by Schneider Electric Software. Remote access to plant components will not be provided.
- Programming is excluded from this scope of work. This effort will be deferred to the construction phase of this Project and will assume that a subcontractor will be hired by the City to perform this work during the construction Project.
- Security system and video system design are excluded as part of this scope of work.
- Vendor-supplied control system packages will be interfaced through hardwired signals or networked signals, when available.

Project Management/General

- Decisions will be reached in the workshop setting and summarized in detailed TMs and/or documented and maintained in an issues/decision log.
- Design deliverable milestone reviews will be streamlined by using presentations and structured Building Information Model (BIM) review meetings.
- The design will be based on federal, state, and local codes and standards in effect at the beginning of the Project. Any changes in these codes may necessitate a change in scope and will be subject to renegotiation. The existing plant facilities are assumed to be in full compliance with current drainage, electrical, building, mechanical, plumbing, seismic, and other codes that apply to these types of facilities. Revisions and rehabilitation of existing plant facilities to achieve compliance with current codes are specifically excluded from this scope of work.
- Preparation of contract design drawings will be based on the use of standard Consultant document protocols, CAD standards, and formats like those which have been used on previous projects with the City. All drawings will be prepared with Revit 2021, except for civil drawings, which will be prepared with Civil 3D.
- City will not seek state or federal funding.
- City pre-purchase of aeration blower equipment is anticipated for this project.
- Construction contractor bid period will be 6 weeks in duration.

- In providing opinions of probable cost, financial analyses, economic feasibility projections, and schedules for the Project, Consultant has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate Project cost or schedule. Therefore, Consultant makes no warranty the City's actual Project costs, financial aspects, economic feasibility, or schedules will not vary from Consultant's opinions, analyses, projections, or estimates.
- The City will provide computer files of all existing plant construction drawings. These drawings are considered record drawings and will be relied upon to be accurate for design purposes. City will provide to Consultant all data in City's possession relating to Consultant's services on the Project. Consultant will reasonably rely upon the accuracy, timeliness, and completeness of the information provided by City. If provided documents are found to be erroneous in content, an adjustment to the work scope subject to renegotiation with the City may be required.
- Any investigation and remediation of possible hazardous waste, asbestos, lead paint, or other types of contamination will be conducted as a separate contract.

CITY RESPONSIBILITIES

City's Responsibilities Include:

- Provide copies of available base maps, as-built data, and horizontal control and vertical datum points for the Project site.
- Contract for survey services directly from the City's consultant roster and assist field survey crew to gain access to WRRF site for safe collection of field data.
- Confirm site utility features through field locates or other methods where there are reasonable expectations the base map drawings may require additional information or verification.
- Provide copies of available geotechnical data for the Project site.
- Confirm or establish design criteria for site improvements using a decision/issues log. Criteria for the Final Design will be discussed during coordination meetings between the City and Consultant.
- Provide available historical plant data related to the liquid stream biological treatment systems.
- Provide all necessary shop drawings, submittals, records, and operation and maintenance information necessary to establish the facilities conditions that the design is based on.
- Provide input on preferred equipment vendors.
- Provide input on vehicle and maintenance access requirements.
- Provide as-built P&IDs for existing plant systems to be upgraded.

- Provide load trending data for the MCC's serving process areas to be upgraded.
- Supply current as-built drawings for all buried and exposed power supply cables, duct banks, raceways, instrument cables, communication cabling, yard piping, process piping, and structures at the plant.
- Review the Final Design submittal including summarized comments in a single file returned to Consultant, within 3 weeks of receipt of the Final Design from Consultant.
- Coordinate interaction with the Idaho Department of Environmental Quality (IDEQ) and City Building Services Department for review of the Final Design submittal.
- Attend all Project coordination meetings to provide timely input on issues/decision log progress.
- Review and provide comments on meeting notes.
- Review cost estimates and construction schedule.
- Participate in QA/QC reviews and provide written comments and feedback regarding review documents.
- Lead construction contractor bidding period efforts to electronically distribute plans, specifications, and addendum documents.

TIME OF COMPLETION and COMPENSATION SCHEDULE

COMPENSATION AND COMPLETION SCHEDULE			
Task	Description	Estimated Completion Date	Compensation
1	Final Design	<ul style="list-style-type: none"> ▪ 10 Months after Notice to Proceed 	\$1,168,592
2	Project Management and Design Support Services	<ul style="list-style-type: none"> ▪ 12 Months after Notice to Proceed 	\$372,038
TASK ORDER TOTAL:			\$1,540,630

The Not-To-Exceed amount to complete all services listed above for this Task Order is (one million five hundred forty thousand six hundred thirty dollars) (\$1,540,630). No compensation will be paid over the Not-to-Exceed amount without prior written approval by the City in the form of a Change Order. No travel or expenses will be reimbursed through this agreement. All costs must be incorporated in the individual tasks within the Compensation and Completion Schedule above.

CITY OF MERIDIAN

BROWN AND CALDWELL

BY: _____
 KEITH WATTS, Purchasing Manager

BY:  _____
 MARTHA KNOWLTON, Vice-President

Dated: _____

Dated: 7/19/22

City Project Manager:
Tyson Glock