



**Request for Proposal for:
Emergency Backup Generator
Implementation**

February 2026

Mandatory Pre-Bid Meeting: Tuesday, February 17th, 2026 @ 2:00 p.m.
Proposals Due: Tuesday, March 10th @ 5:00 p.m.

**City of Louisville
749 Main Street
Louisville CO 80027**

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INTRODUCTION

The City of Louisville (City) is inviting proposals from highly qualified Consultants for a load evaluation and generator implementation project.

- Step 1 – Electrical Load Evaluation
- Step 2 – Emergency Backup Generator Design and Construction Oversight

The emergency backup generators will be installed at the Howard Berry Water Treatment Plant (HBWTP), the Recreation and Senior Center (RSC), and the Police and Municipal Building (PMB) to ensure these essential City facilities may remain fully operational during power blackouts and emergency situations. Note that HBWTP has an existing generator that is being replaced.

Background

On December 30, 2021, the Marshall Fire swept through Louisville, Superior, and unincorporated Boulder County, becoming the most destructive wildfire in Colorado's history. Louisville alone lost 550 structures, including homes, commercial properties, and apartment complexes, leaving deep emotional and physical impact across the community. In response to this unprecedented devastation, the City of Louisville determined that upgrading the existing natural gas generators at HBWTP and PMB to diesel and installing a new diesel generator at RSC would strengthen the City's preparedness for and resiliency against future hazards like fires, floods, high winds, and winter storms, among others.

Funding

To fund portions of this project, the City applied for and received a Hazard Mitigation Grant Program (HMGP) grant from the Federal Emergency Management Agency (FEMA). Consultant oversight is required to ensure that the project is executed in accordance with terms, conditions, and specifications outlined in the professional services agreement, Attachment 1, and the FEMA grant award documentation in Attachment 2.

It is important to note that FEMA requires the selected consultant to be in good standing with SAM.gov and to remain in good standing for the duration of the project. Please include your Unique Entity Identifier (UEI) in your submission. The selected Consultant shall meet all applicable FEMA HMGP requirements, policies and guidance, including eligibility, documentation, cost reasonableness and audit standards to ensure continued eligibility for federal funding.

This project was supported by grant #HMGP4634-04R-LOU, issued by the Colorado Division of Homeland Security and Emergency Management.

The selected consultant shall demonstrate familiarity with FEMA HMGP processes and shall perform work in a manner that supports project eligibility, approval, reimbursement, and closeout.

Design Criteria

The electrical load evaluation will be performed at all three locations listed in Table 1, but diesel generator design will only be completed for the PMB and the RSC. The HBWTP diesel generator has already been designed, and the construction drawings and specifications are included in Attachment 3 and Attachment 4. Note that the generator design criteria included in

Table 1 is an estimation used for the FEMA grant application. Sizing is to be confirmed or revised based on findings in Step 1 and Step 2.

Table 1. FEMA Approved Generator Size

LOCATION	EXISTING GENERATOR SIZE	PROPOSED GENERATOR SIZE ¹
Howard Berry Water Treatment Plant ²	325kW	450kW
Police and Municipal Building	150kW	550kW
Recreation and Senior Center	N/A	2,000kW

Notes:

1. Estimated generator size determined as part of FEMA grant application. To be confirmed during design
2. HBWTP generator has already been designed and will only be part of Step 1 for this project until construction services are needed as part of Step 2.

OBJECTIVE

Consultant services will consist of necessary work to perform the technical analysis, design, construction management, and engineering services as identified in the scope of work. Services include, but are not limited to, design, permitting, and construction management services. The project must meet Louisville design criteria and industry standards and be performed in full compliance with FEMA HMGP requirements.

It is assumed that the electrical load analysis, Step 1, will be completed in 2026. Step 2 is expected to be completed in late 2026/early 2027. Construction activities are anticipated to be completed in 2027.

Step 1 of the project will be completed first as a separate task, as this deliverable will inform the implementation of Step 2.

SCOPE OF SERVICES

Step 1 – Electrical Load Evaluation

The consultant shall evaluate the existing electrical systems at the City facilities listed in Table 2 to determine existing capacity, existing maximum load, future load and a recommended reasonable contingency for future capacity.

Tasks

- Existing Backup System Assessment – HBWTP and PMB only
 - Assess the performance and working conditions of the existing backup systems.
 - Meet with building maintenance staff for an overview of systems conditions
 - Review existing electrical system points of connection, meters, panels, and subpanels

- Memorialize each facility's general building, power platform, and electrical distribution layout
- Document the existing related mechanical, electrical, and plumbing (MEP) layout
- Document any major deficiencies or remarks
- Power Needs Assessment – PMB, RSC, and HBWTP
 - Review and document the inventory of current equipment and apparatus in-place which relies on electrical power.
 - Interview City staff on operations at each facility to determine current power needs.
 - Determine future power demands based on ongoing and future projects.
 - Establish each facility's power needs based on a backup power system to meet the full power demands of the entire operational programs housed at each facility.
 - Develop probable cost at each facility and set up a meeting with the City Project Manager and other essential City staff to discuss probable costs.
 - Sizing recommendations based on existing and future power demands.
- Grant Coordination
 - Invoices shall be itemized and submitted in a format consistent with FEMA HMGP requirements, including labor hours by task, labor classifications, rates, direct expenses, and supporting documentation necessary to support reimbursement and audit compliance.
 - The consultant shall maintain appropriate records related to the project and shall provide such records upon request to support monitoring, audit, or closeout activities. The consultant shall comply with applicable procurement requirements and ensure that any subconsultants adhere to the same standards.
 - Project status summary reports consistent with FEMA HMGP requirements.

Deliverables

- Meeting minutes from each meeting and site visit
- Draft report detailing findings from backup system and power needs assessments
 - Include drawings of facilities, buildings, and generator platform layouts
 - Include drawings of MEP systems related to generators
- Final report incorporating comments from the City
- Comment response matrix
- Hours tracking logs for FEMA

Table 2. Electrical Load Evaluation Facility

LOCATION	ADDRESS
Howard Berry Water Treatment Plant	7000 Marshall Rd Louisville, CO 80027
Police and Municipal Building	992 W. Via Appia Wy Louisville, CO 80027
Recreation and Senior Center	900 W. Via Appia Wy Louisville, CO 80027

Step 2 – Emergency Backup Generator Design and Construction Support

The Consultant shall develop conceptual plans, construction drawings, specifications, and cost estimates for the RSC and PMB diesel generators based on future electrical loads determined in Step 1 with recommended revisions to existing building layouts, renderings of building enclosures with material samples, recommended equipment layout, generator run time analysis and cost feasibility assessment, generator platform revisions (as needed), and an outline of MEP modifications. The consultant shall recommend concepts with consideration for space requirements needed for access for repairs and ease of maintenance, expandability, and ability to meet new building codes or new legal operational requirements that may arise in the future. The conceptual plans shall be accompanied by planning-level cost estimates for each of the two installations. A key option the City desires is a layout incorporating Transfer Switches for each facility's backup generator system, not only in terms of physical room and access to bring in supplementary equipment, but also accommodations for the hardware, devices, and electrical/electronic connections.

Tasks

- **Conceptual Plans**
 - Develop conceptual plans with recommended revisions to the existing building layout
 - Develop drawings showing changes to the generator equipment platform (as needed)
 - Develop a layout that accommodates external equipment to connect emergency power from an outside supplementary source
 - Develop specifications table of contents
 - Outlines and diagrams of the recommended MEP modifications
 - Develop planning-level preliminary cost estimates based on the conceptual plans
- **Design**
 - Develop design drawings including instructions to contractor for abandonment, removal of existing infrastructure, and restoration.
 - Develop specifications for backup generator and related equipment including typical operating and maintenance procedures, and layouts showing outside equipment access to transfer switches, required hardware, devices, and electrical/electronic connections.
 - Fine tune cost estimates including generator equipment, hardware, building modification, and installation and construction costs.
 - Generator run time and cost feasibility analysis for run times from 48 hours up to 120 hours (48 hour run times for existing generators, but looking to extend to improve resiliency during fire, windstorms, etc.)
 - Monitoring Capabilities - Implement a centralized Generator Monitoring Platform to continuously monitor the operational status, performance, and health of standby and emergency generators across City facilities. The system shall improve reliability, reduce downtime, support preventive maintenance, and provide real-time visibility to Facilities staff.
 - Provide a software solution capable of monitoring generator operation, capturing operational data, issuing alerts, and presenting actionable information through a secure web-based platform.
- **Construction Management Services**
 - Prepare a Construction Bid Package
 - Attend pre-bid meeting

- Advise the City on the appropriate response to bidder's questions.
- Log questions and responses to bidders' questions regarding the bid documents
- Evaluate need for addendum to bid documents in response to bidders' questions and prepare an addendum if required.
- Attend the pre-construction meeting, job walk, and site visits as required over the course of construction.
- Respond to requests for information (RFI) and submittals regarding plans and specifications.
- Grant Coordination
 - Invoices shall be itemized and submitted in a format consistent with FEMA HMGP requirements, including labor hours by task, labor classifications, rates, direct expenses, and supporting documentation necessary to support reimbursement and audit compliance.
 - The consultant shall maintain appropriate records related to the project and shall provide such records upon request to support monitoring, audit, or closeout activities. The consultant shall comply with applicable procurement requirements and ensure that any subconsultants adhere to the same standards.
 - Project status summary reports consistent with FEMA HMGP requirements.

Deliverables

- Conceptual Plans, Specifications List, Preliminary Cost Estimate in PDF format and Word and Excel format as applicable.
- 60% Construction Drawings, Specifications List, and Cost Estimate, Comment Response Matrix in PDF format and CAD, Word, and Excel format as applicable
- 90% Construction Drawings, Specifications, and Cost Estimate, Comment Response Matrix in PDF format and CAD, Word, and Excel format as applicable
- 100% Construction Drawings, Specifications, and Cost Estimate, Comment Response Matrix in PDF format and CAD, Word, and Excel format as applicable
- Construction Bid Package
- Construction Bid Addenda, as necessary
- Log of construction bidder inquiries
- Log RFIs and track submittal progress and reviews
- Field design recommendations
- Hours tracking logs for FEMA

Permitting

The Consultant must produce plans and specifications that incorporate State and local building code requirements, air emission standards, and any other applicable code requirements. The Consultant shall fully manage and obtain all required plan checks, reviews and permits. This will include determining required environmental and safety equipment, and any operational procedures which may be required to be implemented.

Agencies and other 3rd parties that the design consultant needs to coordinate with and/or obtain approvals and permits from include City of Louisville Building Department/Building Official and City of Louisville Community Development Dept Utility Companies, City of Louisville Environmental Compliance Department and other applicable stakeholders.

Tasks

- Maintain a contacts log of agencies and 3rd parties that are contacted.

- Submit 90% plans for plan check to City of Louisville Building Department and other agencies as required for review and approval. Respond to comments and obtain final approvals.
- Keep a log attributing probable costs of any legally required equipment or operation procedures for each facility.

Deliverables

- Provide the City Project Manager with access to the contacts log on an ongoing basis during this task.
- Log of recommended hardware, safety equipment, and procedures to operate the new backup power systems.
- All required permits for construction.
- Once all tasks are completed, transmit logs and records to the City Project Manager which shall include relevant meeting minutes, relevant agency rosters, etc.

Project Management

The Consultant Project Manager shall fully manage the development and coordination of the power systems needs assessment and subsequent development of engineering design and specification documents, including, but not limited to, ensuring coordination of all conceptual layouts, plans, estimated costs, coordination and ensuring conformance with the City of Louisville Building Department, Utility Companies, and State and local agencies.

Consultant shall supervise, coordinate, monitor and design review for conformance with City Standards, policies, and procedures. The Consultant shall be responsible for project administration and coordination efforts.

Tasks

- Maintain continuous communication with the City Project Manager and coordination of project design/layout development, meetings with City and all affected parties identified by City staff, utility coordination, State and outside agency coordination, cost estimation, quality control, and scheduling.
- Set-up and manage meetings for assessment of each facility's existing backup power generator system, establishing the power needs of each facility, clarifying legal requirements, restrictions, necessary code upgrades, etc.
- Communicate conceptual layouts as needed for the facility's building, utility rooms, general access, MEP layout and proposed changes needed.
- Communicate and substantiate MEP system required changes if any.
- Communicate and coordinate the design drawings and technical specifications for the equipment and backup power facilities.
- Coordinate development of cost estimates so that full backup power is provided.
- Provide a Monthly Project Status Report on the status of each project tasks development.

- Prepare an agenda and meeting minutes with an action item matrix to distribute to the City, and other attendees or organizations, before and after each meeting, respectively.
- Ensure project delivery progresses on schedule and within budget.
- Manage project schedules and project reporting for each sub-project.

Deliverables

- Detailed project schedule update on a monthly basis
- Meeting agendas
- Meeting minutes including attendees, and action item matrix
- Monthly project reports

STANDARD TERMS AND CONDITIONS

When preparing a proposal for submission in response to this RFP, consultants should be aware of the following terms and conditions which have been established by the City of Louisville:

- This request for proposals is not an offer to contract. The provisions in this RFP and any purchasing policies or procedures of the City are solely for the fiscal responsibility of the City, and confer no rights, duties or entitlements to any party submitting proposals. The City of Louisville reserves the right to reject any and all proposals, to consider alternatives, to waive any informalities and irregularities, to abandon the project and this RFP at any time, and to re-solicit proposals.
- Consultant acknowledges that any potential expenditure incurred by selected firm outside the current fiscal year is contingent upon appropriation, budgeting, and availability of specific funds for such proposed expenditure. The project needs to estimate a timeline for each period – six to nine months. The project should have a determined starting date and end within a year.
- The City of Louisville reserves the right to conduct such investigations of and discussions with those who have submitted proposals or other entities, as they deem necessary or appropriate to assist in the evaluation of any proposal or to secure maximum clarification and completeness of any proposal.
- The successful proposer shall be required to sign a contract with the City in a form provided by and acceptable to the City. The consultant shall be an independent contractor of the City.
- The City of Louisville assumes no responsibility for payment of any expenses incurred by any proponent as part of the RFP process.
- The following criteria will be used to evaluate all proposals:
 - The consultant's interest in the services which are the subject of this RFP, as well as their understanding of the scope of such services and the specific requirements of the City of Louisville.
 - The reputation, experience, and efficiency of the consultant.

- The ability of the consultant to provide quality services within time and funding constraints.
 - The general organization of the proposal: Special consideration will be given to submittals which are appropriate, address the goals; and provide in a clear and concise format the requested information.
 - Other selection factors within this RFP or the City's purchasing policies, or that City determines are relevant to consideration of the best interests of the City.
- All responses to this RFP become the property of the City upon receipt and regardless of selection or rejection, and will not be returned, except that the City may return late responses submitted after the response deadline. Any trade secrets or confidential commercial or financial information submitted with any response is subject to potential disclosure, and submitting it constitutes proposer's waiver of any recourse against the City in respect to disclosure and proposer's agreement to indemnify the City for any costs, legal fees or expenses incurred in relation to any proceeding concerning disclosure of such information. Any trade secrets or confidential commercial or financial information submitted with a response shall be clearly segregated and marked; provided; however, that neither cost information nor the total RFP will be considered proprietary. The City will notify the vendor of any request for disclosure of information so segregated and marked that may be subject to nondisclosure, and it will be the responsibility of the vendor to object and to pursue any legal actions pursuant to Colorado law. A vendor shall notify the City within 24 hours of notification by City of request for disclosure of the vendor's objections to disclosure and the vendor's intent to pursue lawful protection under Colorado law.

PROPOSAL REQUIREMENTS

The consultant is encouraged to follow the outline and page distribution, as outlined below. Difficulty in finding desired information may be considered as non-responsive with a corresponding score. Brevity and clarity in explaining your key concepts are encouraged.

Proposal should contain the following elements:

- Cover or Introductory Letter (2 page limit)
- Project Team (5 page limit)
- A Work Plan Section (8 page limit)
- Commendation Section (5 page limit)
- References (5 page limit)
- Fee Proposal (two (2) page limit)

CONTENT

The following is a general description to aid in preparing the proposal. The discussion of the specific elements should be determined by interpretation of the specific project. The listed elements are presented to help determine the discussion content. The selection committee will evaluate the interpretation of the most important factors to address for this project to arrive at its rating.

1. Cover Letter

- Include the project title.
- Include a certification that the information and data submitted is true and complete to the best knowledge of the individual signing the letter.
- Include the name, email address, telephone and fax number of the individual to contact regarding their proposal.
- City of Louisville requires an original signature signed in ink, by a representative of the firm fully authorized to submit proposals and sign contracts on the firm's behalf. The letter shall include a statement to that effect.
- Unique Entity Identifier (UEI) (available through Sam.gov)

2. Project Team

- Identify your Project Principal, Project Manager, Key Staff and any Sub-consultants
- Present a brief discussion of the firm's size, team's qualifications and experience related to this project.
- Include the level of involvement and availability of key staff members with existing and upcoming project workloads.
- Include experience on similar projects as a team.
- Include a list of current and past projects completed within the past five years with the City of Louisville or other Local Agencies. Include a name, telephone number, and email address of the owner's Project Manager for every project listed and describe your firm's role for all the projects listed. Demonstrate your firm's ability to control costs, meet schedules, and provide quality work on the listed projects.
- Include unique knowledge of team members related to this project.
- Include length of time with the firm for each key team member.

3. Work Plan

- Describe a clear understanding of the project goals and briefly describe the actions you plan to take to achieve these goals.
- Include a list of deliverables required on the project.
- Describe issues you see as critical and possible solutions.

4. Commendation Section

Letters commendation or awards for similar previous work completed within the last five years. These letters should be of reasonable length and pertinent to the project.

5. Fee Proposal

- Provide breakdown of costs including all insurances, labor and incidentals required to complete the work. Fee proposal shall be divided into the tasks outlined in the Scope of Services.
- An hourly rate sheet is requested.

PROPOSAL SUBMISSION INFORMATION

No Proposal may be withdrawn within a period of sixty (60) days after the proposal deadline.

The City reserves the right to award the contract by sections, to reject any or all proposals, and to waive any informalities and irregularities therein.

Proposals should be prepared and submitted using the provided instructions which address the needs outlined herein. Proposals will be accepted until **5:00 p.m. Mountain Time on Tuesday, March 10th, 2026**. Late proposals will not be accepted. Proposals shall be submitted electronically via email to:

Taylor McCauley

Civil Engineer III

Office: 303-335-4616

Cell: 408-896-0370

tmccauley@louisvilleco.gov

A mandatory Pre-Proposal meeting will be held on **Tuesday, February 17th, 2026, at 2:00 p.m. meeting at Howard Berry Water Treatment Plant (7000 Marshall Rd, Louisville, CO 80027)**. Please reserve 2 hours for this meeting.

In addition to the written electronic submission, the City reserves the right to request an interview with some or all of the proposers.

All costs incurred in preparing for, printing, and delivering a submittal, along with any costs associated with travel or time spent in interviews or negotiation with the City are solely the responsibility of the submitter. The City is not liable for any costs incurred prior to issuance of a legally executed contract and/or purchase order.

All submittals become the property of the City, a matter of public record, and will not be returned. Proprietary information included in submittals must be clearly identified and will be protected, if possible. Unit pricing and total cost information will not be considered proprietary.

All material submitted regarding this RFP becomes the property of the City of Louisville and will only be returned to the proposer at the City's option. The City of Louisville has the right to use any or all ideas presented in reply to this RFP. Disqualification of proposer does not eliminate this right.

This Request for Proposal (RFP) is posted on-line through Rocky Mountain Bid System at <https://www.bidnetdirect.com> or located on the City of Louisville's website:

<https://www.louisvilleco.gov/doing-business/bidding-opportunities-requests-for-proposals>.

Any addendums or relevant communications will be posted through BidNet.

SELECTION CRITERIA

Proposals will only be accepted from Consultants who attended the mandatory pre-proposal conference. Proposals that are considered competitive will be evaluated by an evaluation team. The City reserves the right to select the proposal that is most advantageous to the City, even if it is not the least expensive.

Table 3 lists the evaluation criteria and the corresponding total number of points available.

Table 3. Selection Criteria Breakdown

CRITERION	IMPACT	POINTS
Pricing	Project affordability and realistic cost that takes FEMA funding into account	50
Schedule	Ability to meet project timelines and critical milestones	15
References	Demonstrates past performance and likelihood of successful delivery	5
Qualifications	Reflects technical expertise and capacity to perform work	15
Submittal Accuracy/Completion	Indicates attention to detail and responsiveness	15

CONTRACT

A sample copy of the Agreement and exhibits is included with the proposal documents. Note that this is a lump sum contract per FEMA requirements. In addition, the following documents must be submitted with the proposal:

1. Schedule of Subcontractors/consultants (if any)

Prospective Consultants must meet the following minimum qualifications:

- Minimum Insurance Requirements: The Consultant must provide proof of insurance as required in the attached Professional Services Agreement.

INQUIRIES

Prospective submitters may make written inquiries by e-mail before the inquiry deadline concerning this Request for Proposal. Inquiries will also be accepted at the pre-proposal meeting. An addendum will be released to all pre-proposal meeting attendees with any required clarifications or revisions to this request or the associated construction documents within two days of the Inquiry Deadline. Prospective proposers are advised to contact the City prior to the inquiry deadline to ensure they are included in any addendum posting.

Inquires may be sent to:

Taylor McCauley
Civil Engineer III
Email address: tmccauley@louisvilleco.gov
Phone Office: 303-335-4616

TIMELINE

The City reserves the right to modify the proposal submittal and acceptance timeline outlined in Table 4 at any time at its sole discretion.

Table 4. Proposal Submittal and Acceptance Timeline

MILESTONE	DATE
Publication of Advertisement (Posted publicly to BidNet)	Monday, February 9 th , 2026
Pre-Bid Meeting (Meet at Howard Berry Water Treatment Plant 7000 Marshall Rd Louisville, CO 80027)	Tuesday, February 17 th , 2026 @ 2:00 p.m.
Inquiry Deadline	Tuesday, February 24 th , 2026 @ 5:00 p.m.
Proposal Due Date	Tuesday, March 10 th , 2026 @ 5:00 p.m.
Notice of Conditional Award	Estimated Late April 2026

ATTACHMENTS

ATTACHMENT 1: PROFESSIONAL SERVICES AGREEMENT

**AN AGREEMENT BY AND BETWEEN THE CITY OF LOUISVILLE
AND _____
FOR CONSULTING SERVICES**

1.0 PARTIES

This AGREEMENT FOR CONSULTING SERVICES (this "Agreement") is made and entered into this ____ day of _____, 20____ (the "Effective Date"), by and between the **City of Louisville**, a Colorado home rule municipal corporation, hereinafter referred to as the "City", and _____, a Colorado [entity type], hereinafter referred to as the "Consultant".

2.0 RECITALS AND PURPOSE

- 2.1 The City desires to engage the Consultant for the purpose of [_____] as further set forth in the Consultant's Scope of Services (which services are hereinafter referred to as the "Services").
- 2.2 The Consultant represents that it has the special expertise, qualifications and background necessary to complete the Services.

3.0 SCOPE OF SERVICES

The Consultant agrees to provide the City with the specific Services and to perform the specific tasks, duties and responsibilities set forth in Scope of Services attached hereto as **Exhibit A** and incorporated herein by reference.

4.0 COMPENSATION

- 4.1 The City shall pay the Consultant for services under this agreement _____ **Dollars (\$_____)** as set forth in **Exhibit A** attached hereto and incorporated herein by this reference. The City shall not pay mileage and other reimbursable expenses (such as meals, parking, travel expenses, necessary memberships, etc.), unless such expenses are (1) clearly set forth in the Scope of Services, and (2) necessary for performance of the Services ("Pre-Approved Expenses"). The foregoing amounts of compensation shall be inclusive of all costs of whatsoever nature associated with the Consultant's efforts, including but not limited to salaries, benefits, overhead, administration, profits, expenses, and outside consultant fees. The Scope of Services and payment therefor shall only be changed by a properly authorized amendment to this Agreement. No City employee has the authority to bind the City with regard to any payment for any services which exceeds the amount payable under the terms of this Agreement.

- 4.2 Compensation under this Contract shall be on a lump sum basis. The lump sum amount shall constitute full compensation for the Services performed and the Pre-Approved Expenses incurred during the applicable phase of work. The Consultant shall submit invoices in accordance with the payment schedule set forth in Exhibit _____. Each invoice shall reference the applicable milestone or deliverable and certify that the Services invoiced have been completed in accordance with the Agreement requirements. The Consultant shall provide additional backup documentation as may be required by the City. No additional compensation shall be paid for Services performed beyond the agreed-upon lump sum amount unless authorized in advance through a written contract amendment executed by the parties. The City shall pay the invoice within thirty (30) days of receipt unless the Services or the documentation therefor are unsatisfactory. Payments made after thirty (30) days may be assessed an interest charge of one percent (1%) per month unless the delay in payment resulted from unsatisfactory work or documentation therefor. Payment of invoices is subject to review and approval by the Owner.

5.0 PROJECT REPRESENTATION

- 5.1 The City designates _____ as the responsible City staff to provide direction to the Consultant during the conduct of the Services. The Consultant shall comply with the directions given by such person and such person's designees.
- 5.2 The Consultant designates _____ as its project manager and as the principal in charge who shall be providing the Services under this Agreement. Should any of the representatives of Consultant be replaced, and such replacement require the City or the Consultant to undertake additional reevaluations, coordination, orientations, etc., the Consultant shall be fully responsible for all such additional costs and services.

6.0 TERM

- 6.1 The term of this Agreement shall be from the Effective Date until all the Services have been fully performed, unless sooner terminated pursuant to Section 13, below. The Consultant's Services under this Agreement shall commence on the Effective Date and Consultant shall proceed with diligence and promptness so that the Services are completed in a timely fashion consistent with the City's requirements.
- 6.2 Nothing in this Agreement is intended or shall be deemed or construed as creating any multiple-fiscal year direct or indirect debt or financial obligation on the part of the City within the meaning of Colorado Constitution Article X, Section 20 or any other constitutional or statutory provision. All financial obligations of the City under this Agreement are subject to annual budgeting and appropriation by the Louisville City Council, in its sole discretion. Notwithstanding anything in this Agreement to

the contrary, in the event of non-appropriation, this Agreement shall terminate effective December 31 of the then-current fiscal year.

7.0 INSURANCE

7.1 The Consultant agrees to procure and maintain, at its own cost, the policies of insurance set forth in Subsections 7.1.1 through 7.1.4. The Consultant shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to this Agreement by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types. The coverages required below shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained from the date of commencement of services hereunder. The required coverages are:

7.1.1 Workers' Compensation insurance as required by the Labor Code of the State of Colorado and Employers Liability Insurance. Evidence of qualified self-insured status may be substituted.

7.1.2 General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and TWO MILLION DOLLARS (\$2,000,000) aggregate. The policy shall include the City of Louisville, its officers and its employees, as additional insureds, with primary coverage as respects the City of Louisville, its officers and its employees, and shall contain a severability of interests provision.

i) 7.1.3 Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than FOUR HUNDRED THOUSAND DOLLARS (\$400,000) per person in any one occurrence and ONE MILLION DOLLARS (\$1,000,000) for two or more persons in any one occurrence, and auto property damage insurance of at least FIFTY THOUSAND DOLLARS (\$50,000) per occurrence, with respect to each of Consultant's owned, hired or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision. If the Consultant has no owned automobiles, the requirements of this paragraph shall be met by each employee of the Consultant providing services to the City of Louisville under this Agreement.

7.1.4 Professional Liability coverage with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate.

7.2 The Consultant's general liability insurance, automobile liability and physical damage insurance, and professional liability insurance shall be endorsed to include the City, and its elected and appointed officers and employees, as additional insureds, unless the City in its sole discretion waives such requirement.

Every policy required above shall be primary insurance, and any insurance carried by the City, its officers, or its employees, shall be excess and not contributory insurance to that provided by the Consultant. Such policies shall contain a severability of interests provision. The Consultant shall be solely responsible for any deductible losses under each of the policies required above.

- 7.3 Certificates of insurance shall be provided by the Consultant as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be subject to review and approval by the City. No required coverage shall be cancelled, terminated or materially changed until at least 30 days' prior written notice has been given to the City. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.
- 7.4 Failure on the part of the Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the City may immediately terminate this Agreement, or at its discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Consultant to the City upon demand, or the City may offset the cost of the premiums against any monies due to Consultant from the City.
- 7.5 The parties understand and agree that the City is relying on, and does not waive or intend to waive by any provision of this Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, § 24-10-101 et seq., C.R.S., as from time to time amended, or otherwise available to the City, its officers, or its employees.

8.0 INDEMNIFICATION

- 8.1 To the fullest extent permitted by law, the Consultant agrees to indemnify and hold harmless the City, and its elected and appointed officers and its employees, from and against all liability, claims, and demands, on account of any injury, loss, or damage, which arise out of or are connected with the services hereunder, if and to the extent such injury, loss, or damage is caused by the negligent act, omission, or other fault of the Consultant or any subcontractor of the Consultant, or any officer, employee, or agent of the Consultant or any subcontractor, or any other person for whom Consultant is responsible. The Consultant shall investigate, handle, respond to, and provide defense for and defend against any such liability, claims, and demands. The Consultant shall further bear all other costs and expenses incurred by the City or Consultant and related to any such liability, claims and demands, including but not limited to court costs, expert witness fees and attorneys' fees if the court determines that these incurred costs and expenses are related to such negligent acts, errors, and omissions or other fault of the Consultant.

- 8.2 The City shall be entitled to its costs and attorneys' fees incurred in any action to enforce the provisions of this Section 8.0. The Consultant's indemnification obligation shall not be construed to extend to any injury, loss, or damage which is caused by the act, omission, or other fault of the City.
- 8.3 If the Consultant is providing architectural, engineering, surveying or other design services under this Agreement, the extent of the Consultant's obligation to indemnify and hold harmless the Town may be determined only after the Consultant's liability or fault has been determined by adjudication, alternative dispute resolution or otherwise resolved by mutual agreement between the parties, as provided by C.R.S. § 13-50.5-102(8)(c).

9.0 QUALITY OF WORK

Consultant's professional services shall be in accordance with the prevailing standard of practice normally exercised in the performance of services of a similar nature in the Denver metropolitan area.

10.0 INDEPENDENT CONTRACTOR

It is the expressed intent of the parties that the Consultant is an independent contractor and not the agent, employee or servant of the City, and that:

- 10.1. Consultant shall satisfy all tax and other governmentally imposed responsibilities including but not limited to, payment of state, federal, and social security taxes, unemployment taxes, worker's compensation and self-employment taxes. No state, federal or local taxes of any kind shall be withheld or paid by the City.
- 10.2. **Consultant is not entitled to worker's compensation benefits except as may be provided by the Consultant nor to unemployment insurance benefits unless unemployment compensation coverage is provided by the Consultant or some entity other than the City.**
- 10.3. Consultant does not have the authority to act for the City, or to bind the City in any respect whatsoever, or to incur any debts or liabilities in the name of or on behalf of the City.
- 10.4. Consultant has and retains control of and supervision over the performance of Consultant's obligations hereunder and control over any persons employed by Consultant for performing the Services hereunder.
- 10.5. The City will not provide training or instruction to Consultant or any of its employees regarding the performance of the Services hereunder.

- 10.6. Neither the Consultant nor any of its officers or employees will receive benefits of any type from the City.
- 10.7. Consultant represents that it is engaged in providing similar services to other clients and/or the general public and is not required to work exclusively for the City.
- 10.8. All Services are to be performed solely at the risk of Consultant and Consultant shall take all precautions necessary for the proper and sole performance thereof.
- 10.9. Consultant will not combine its business operations in any way with the City's business operations and each party shall maintain their operations as separate and distinct.

11.0 ASSIGNMENT

Consultant shall not assign or delegate this Agreement or any portion thereof, or any monies due or to become due hereunder without the City's prior written consent.

12.0 DEFAULT

Each and every term and condition hereof shall be deemed to be a material element of this Agreement. In the event either party should fail or refuse to perform according to the terms of this Agreement, such party may be declared in default.

13.0 TERMINATION

- 13.1 This Agreement may be terminated by either party for material breach or default of this Agreement by the other party not caused by any action or omission of the other party by giving the other party written notice at least thirty (30) days in advance of the termination date. Termination pursuant to this subsection shall not prevent either party from exercising any other legal remedies which may be available to it.
- 13.2 In addition to the foregoing, this Agreement may be terminated by the City for its convenience and without cause of any nature by giving written notice at least fifteen (15) days in advance of the termination date. In the event of such termination, the Consultant will be paid for the reasonable value of the services rendered to the date of termination, not to exceed a pro-rated daily rate, for the services rendered to the date of termination, and upon such payment, all obligations of the City to the Consultant under this Agreement will cease. Termination pursuant to this subsection shall not prevent either party from exercising any other legal remedies which may be available to it.

14.0 INSPECTION AND AUDIT

The City and its duly authorized representatives shall have access to any books, documents, papers, and records of the Consultant that are related to this Agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

15.0 DOCUMENTS

All computer input and output, analyses, plans, documents photographic images, tests, maps, surveys, electronic files and written material of any kind generated in the performance of this Agreement or developed for the City in performance of the Services are and shall remain the sole and exclusive property of the City. All such materials shall be promptly provided to the City upon request therefor and at the time of termination of this Agreement, without further charge or expense to the City. Consultant shall not provide copies of any such material to any other party without the prior written consent of the City.

16.0 ENFORCEMENT

- 16.1 In the event that suit is brought upon this Agreement to enforce its terms, the prevailing party shall be entitled to its reasonable attorneys' fees and related court costs.
- 16.2 This Agreement shall be deemed entered into in Boulder County, Colorado, and shall be governed by and interpreted under the laws of the State of Colorado. Any action arising out of, in connection with, or relating to this Agreement shall be filed in the District Court of Boulder County of the State of Colorado, and in no other court. Consultant hereby waives its right to challenge the personal jurisdiction of the District Court of Boulder County of the State of Colorado over it.

17.0 COMPLIANCE WITH LAWS

- 17.1 Consultant shall be solely responsible for compliance with all applicable federal, state, and local laws, including the ordinances, resolutions, rules, and regulations of the City; for payment of all applicable taxes; and obtaining and keeping in force all applicable permits and approvals.
- 17.2 Consultant acknowledges that the City of Louisville Code of Ethics provides that independent contractors who perform official actions on behalf of the City which involve the use of discretionary authority shall not receive any gifts seeking to influence their official actions on behalf of the City, and that City officers and employees similarly shall not receive such gifts. Consultant agrees to abide by the gift restrictions of the City's Code of Ethics.

18.0 INTEGRATION AND AMENDMENT

This Agreement represents the entire Agreement between the parties and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties.

19.0 NOTICES

All notices required or permitted under this Agreement shall be in writing and shall be given by hand delivery, by United States first class mail, postage prepaid, registered or certified, return receipt requested, by national overnight carrier, or by facsimile transmission, addressed to the party for whom it is intended at the following address:

If to the City:

City of Louisville
Attn: City Manager
749 Main Street
Louisville, Colorado 80027
Telephone: (303) 335-4533
Email: dlangleyle@louisvilleco.gov

If to the Consultant:

Email:

Any such notice or other communication shall be effective when received as indicated on the delivery receipt, if by hand delivery or overnight carrier; on the United States mail return receipt, if by United States mail; or on facsimile transmission receipt. Either party may by similar notice given, change the address to which future notices or other communications shall be sent.

20.0 EQUAL OPPORTUNITY EMPLOYER

- 20.1 Consultant will not discriminate against any employee or applicant for employment because of race, color, religion, age, sex, disability or national origin. Consultant will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, age, sex, disability, national origin, sexual orientation, gender identify or expression, marital status or any other protected basis. Such action shall include but not be limited to the following: 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. Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notice to be provided by an agency of the federal government, setting forth the provisions of the Equal Opportunity Laws.

- 20.2 Consultant shall be in compliance with the applicable provisions of the American with Disabilities Act of 1990 as enacted and from time to time amended and any other applicable federal, state, or local laws and regulations. A signed, written certificate stating compliance with the Americans with Disabilities Act may be requested at any time during the life of this Agreement or any renewal thereof.

21.0 NO THIRD PARTY BENEFICIARIES

It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to City and Consultant, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the parties that any person other than City or Consultant receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

22.0 SUBCONTRACTORS

Consultant may utilize subcontractors identified in its qualifications submittal to assist with non-specialized works as necessary to complete projects. Consultant will submit any proposed subcontractor and the description of its services to the City for approval. The City will not work directly with subcontractors.

23.0 FEMA REQUIREMENTS

The Consultant shall at all times during the term of Agreement strictly adhere and comply with the applicable provisions set forth in Exhibit B, attached hereto and incorporated herein by reference.

24.0 AUTHORITY TO BIND

Each of the persons signing below on behalf of any party hereby represents and warrants that such person is signing with full and complete authority to bind the party on whose behalf of whom such person is signing, to each and every term of this Agreement.

In witness whereof, the parties have executed this Agreement to be effective on the date first above written.

CITY OF LOUISVILLE,
a Colorado Municipal Corporation

By: _____

Attest: _____

CONSULTANT:

By: _____

Name: _____

Title: _____

ATTACHMENTS

Exhibit A – Scope of Services

Exhibit B – FEMA Hazard Mitigation Grant Program Requirements Addendum

EXHIBIT A
SCOPE OF SERVICES

EXHIBIT B

FEMA HAZARD MITIGATION GRANT PROGRAM REQUIREMENTS ADDENDUM

This Addendum is hereby expressly incorporated into the foregoing agreement (the “Contractor”) between the City and the Consultant (referred to as “Contractor” in this Addendum). Regardless of any conflict of provisions language contained in the Contract, to the extent that the terms of the Agreement and this Addendum conflict, the terms of this Addendum shall control.

The applicability of the following contract provisions is described in brackets below. As applicable, the following provisions are added and incorporated into the Agreement:

Section 1: Additional FEMA Requirements [*All contracts*]

- 1) **Changes:** To be effective, any change to the Contract, including the alteration of any method, price, or schedule of work must be authorized pursuant to a written amendment executed by the parties.
- 2) **DHS Deal, Logo, and Flags:** Contractor shall not use the Department of Homeland Security (DHS) seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.
- 3) **Compliance with Federal Law, Regulations, and Executive Orders:** This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. Contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.
- 4) **No Obligation by Federal Government:** The United States Federal Government is not a party to the Contract and is not subject to any obligations or liabilities to City, Contractor, or any other party pertaining to any matter resulting from the contract.
- 5) **Program Fraud and False or Fraudulent Statements or Related Acts:** Contractor acknowledges that 31 U.S.C. Chapter 38 (Administrative Remedies for False Claims and Statements) applies to Contractor’s actions pertaining to the Contract.
- 6) **Access to Records:** The following access to records requirements apply to this Contract:
 - a) Contractor agrees to provide City, the State of Colorado, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
 - b) Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

- c) Contractor agrees to provide the FEMA Administrator or their authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
 - d) In compliance with the Disaster Recovery Act of 2018, City and Contractor acknowledge and agree that no language in this Contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.
- 7) **Affirmative Socioeconomic Steps:** If subcontracts are to be let, the prime contractor is required to take all necessary steps identified in 2 C.F.R. § 200.321 to ensure that small and minority businesses, women's business enterprises, and labor surplus area firms are used when possible.
- 8) **Unexpected Discoveries, Previously Unidentified Historic Properties, or Unexpected Effects on Historic Properties:** Upon notification by a Subrecipient of an unexpected discovery, or if it appears that a Undertaking has affected a previously unidentified property or affected a known historic property in an unanticipated manner, in accordance with Programmatic Agreement: National Historic Preservation Act, Section 106 compliance) Stipulation I.B.3(e), Recipient(s) Roles and Responsibilities, the Recipient(s) shall immediately notify FEMA and require the Subrecipient to:
- a) Stop construction activities in the vicinity of the discovery.
 - b) Take all reasonable measures to avoid or minimize harm to the property until FEMA has completed consultation with the SHPO, participating Tribe(s), and any other consulting parties. Upon notification by the Recipient of a discovery, FEMA shall immediately notify the SHPO, participating Tribe(s), and other consulting parties that may have an interest in the discovery, previously unidentified property or unexpected effects, and consult to evaluate the discovery for National Register eligibility and/or the effects of the undertaking on historic properties.
 - c) If human remains are discovered, notify the local law enforcement office and coroner/medical examiner in accordance with applicable State statute(s), such as SDCL 34-27, and protect the remains from any harm.
 - d) Assist FEMA in completing the following actions, as required:
 - i) FEMA shall consult with the SHPO, participating Tribe(s), and other consulting parties in accordance with the consultation process outlined in Stipulation II, Project Review (Programmatic Agreement: National Historic Preservation Act, Section 106 compliance), to develop a mutually agreeable action plan with timeframes to identify the discovery or previously unidentified property, take into account the effects of the Undertaking, resolve adverse effects if necessary, and ensure compliance with applicable Federal, State, and local statutes.
 - ii) FEMA shall coordinate with the Recipient(s) and the Subrecipient regarding any needed modification to the scope of work for the Undertaking necessary to implement recommendations of the consultation and facilitate proceeding with the Undertaking.

- iii) In cases where discovered human remains are determined to be Native American, FEMA shall consult with the appropriate Tribal representatives and SHPO. In addition, FEMA shall follow the guidelines outlined in the ACHP's Policy Statement Regarding the Treatment of Burial Sites, Human Remains, and Funerary Objects (2007) and any state-specific policies that may be in force.

Section 2: Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

(A) *[For contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908]*

Breach. Any breach of the Contract by Contractor shall be governed by the termination and remedies provisions of the Contract. Additionally, in the event that the City incurs damages as a result of Contractor's breach, the City may pursue recovery of such damages from Contractor. The City further retains the right to seek specific performance of the Contract at any time as authorized by law. The City further retains the right to otherwise pursue any remedies available to the City as a result of the Contractor's breach, including but not limited to administrative, contractual, or legal remedies, as well as any applicable sanctions and penalties. Termination for cause and convenience are governed by the provisions of the Contract.

(B) *[All contracts in excess of \$10,000]*

Termination. Termination for cause and convenience are governed by the Termination provision of the Contract.

(C) *[For contract awards in excess of \$25,000 (see 2 CFR 180.220)]*

Debarment and Suspension (Executive Orders 12549 and 12689). This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. Contractor attests that it is not listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. This certification is a material representation of fact relied upon by the City. If it is later determined that the contractor did not comply with 2 C.F.R. pt.

180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower-tier-covered transactions.

(D) *[For contracts exceeding \$100,000]*

Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. 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 who in turn will forward the certification(s) to the awarding agency.

a. Required Certification. If applicable, contractors must sign and submit to the non-federal entity the following certification.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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.

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.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

(E) *[Where applicable, all contracts awarded by the non-Federal entity in excess of \$100,000 that involve the employment of mechanics or laborers]*

Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708).

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 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 workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(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 (b)(1) of this section, in the sum of \$33 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 (b)(1) of this section.

3. Withholding for unpaid wages and liquidated damages. The City 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 (b)(2) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(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 (b)(1) through (4) of this section.

(F) *[Contracts and subgrants of amounts in excess of \$150,000]*

Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended. All parties agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). All parties shall report violations to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(G) *[Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3]*

Equal Employment Opportunity. Contractor agrees to comply with the Equal Opportunity Clause provided under 41 CFR 60-1.4(a) (Government Contracts) and 41 CFR 60-1.4(b) (Federal Assisted Construction Contracts), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." Contractor further agrees to include this provision, including the Equal Opportunity Clause or a reference thereto, in any subcontracts it enters into pursuant to the Contract.

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, 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:
 - a) 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 their 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:
 - a) 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.
 - b) The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.
 - c) The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future

compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

(H) *[If the Federal award meets the definition of “funding agreement” under 37 CFR §401.2 (a)]*

Rights to Inventions Made Under a Contract or Contract. For contracts entered into by the Contractor or the City with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the parties must comply with the requirements of 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Contracts,” and any implementing regulations issued by the awarding agency.

(I) *[All contracts]*

Procurement of recovered materials (2 CFR §200.322). All parties agree to comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired— 1. Competitively within a timeframe providing for compliance with the contract performance schedule; 2. Meeting contract performance requirements; or 3. At a reasonable price. Information about this requirement, along with the list of EPA- designated items, is available at EPA’s Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

Prohibition on certain telecommunications and video surveillance services or equipment (2 CFR §200.216).

(a) Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services, as used in this clause.

(b) Prohibitions.

(1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

(2) Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:

- i. Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
- ii. Enter, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
- iii. Enter, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or
- iv. Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Exceptions.

(1) This clause does not prohibit contractors from providing—

- i. A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
- ii. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) By necessary implication and regulation, the prohibitions also do not apply to:

- i. Covered telecommunications equipment or services that: a. Are not used as a substantial or essential component of any system; and b. Are not used as critical technology of any system.
- ii. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

(d) Reporting requirement.

(1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

(2) The Contractor shall report the following information pursuant to paragraph

(d)(1) of this clause:

i. Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

ii. Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments.

2 C.F.R. Part 25 Universal Identifier and System for Award Management.

Subrecipient must obtain and provide to City a unique entity identifier pursuant to 2 CFR Part 25.

2 C.F.R. § 200.322 Domestic preferences for procurements. As appropriate and to the extent consistent with law, Contractor should, to the greatest extent practicable, prefer the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this clause: *Produced in the United States* means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

Civil Rights Requirements

Subrecipient shall comply with all statutes and regulations prohibiting discrimination applicable to this award, which include, without limitation, the following:

i. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.) and Treasury's implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;

ii. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.), which prohibits discrimination in housing on the basis of race, color,

religion, national origin, sex, familial status, or disability;

iii. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;

iv. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and

v. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.

Assurances of Compliance with Civil Rights Requirements

1. Subrecipient ensures its current and future compliance with Title VI of the Civil Rights Act of 1964, as amended, which prohibits exclusion from participation, denial of the benefits of, or subjection to discrimination under programs and activities receiving federal financial assistance, of any person in the United States on the ground of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury Title VI regulations at 31 CFR Part 22 and other pertinent executive orders such as Executive Order 13166, directives, circulars, policies, memoranda, and/or guidance documents.

2. Subrecipient acknowledges that Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency," seeks to improve access to federally assisted programs and activities for individuals who, because of national origin, have Limited English proficiency (LEP). Subrecipient understands that denying a person access to its programs, services, and activities because of LEP is a form of national origin discrimination prohibited under Title VI of the Civil Rights Act of 1964 and the Department of the Treasury's implementing regulations. Accordingly, Subrecipient shall initiate reasonable steps, or comply with the Department of the Treasury's directives, to ensure that LEP persons have meaningful access to its programs, services, and activities. Subrecipient understands and agrees that meaningful access may entail providing language assistance services, including oral interpretation and written translation where necessary, to ensure effective communication in the Subrecipient's programs, services, and activities.

3. Subrecipient agrees to consider the need for language services for LEP persons when Subrecipient develops applicable budgets and conducts programs, services, and activities. As a resource, the Department of the Treasury has published its LEP guidance at 70 FR 6067. For more information on taking reasonable steps to provide meaningful access for LEP persons, please visit <http://www.lep.gov>.

4. Subrecipient acknowledges and agrees that compliance with the assurances constitutes a condition of continued receipt of federal financial assistance and is binding upon Subrecipient and Subrecipient's successors, transferees, and assignees for the period in which such assistance is provided.

5. Subrecipient 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.

Requirements for Drug-Free Workplace, 31 C.F.R. Part 20

As a Subrecipient, you agree to comply with the requirements of the portion of the Drug-Free Workplace Act of 1988 (41 U.S.C. 701 et seq., as amended) that applies to grants. Specifically, Subrecipient agrees to:

(a) First, make a good faith effort, on a continuing basis, to maintain a drug-free workplace. You must agree to do so as a condition for receiving any award covered by this part. The specific measures that you must take in this regard are described in more detail in subsequent sections of this subpart. Briefly, those measures are to -

(1) Publish a drug-free workplace statement and establish a drug-free awareness program for your employees (see §§ 20.205 through 20.220); and

(2) Take actions concerning employees who are convicted of violating drug statutes in the workplace (see § 20.225).

(b) Second, identify all known workplaces under your Federal awards (see § 20.230).

New Restrictions on Lobbying, 31 C.F.R. Part 21

Subrecipient certifies, to the best of its knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Subrecipient, 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 Subrecipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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.

Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms (2 C.F.R. § 200.321).

If subcontracts are to be let, Contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. As set forth in 2 C.F.R. § 200.321(b)(1)-(5), such affirmative steps must include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

Federal Bonding Requirements

Contractor to meet the following minimum bond requirements:

1. The Federal agency or pass-through entity may accept the recipient's or subrecipient's bonding policy and requirements for construction or facility

improvement contracts or subcontracts exceeding the simplified acquisition threshold. Before doing so, the Federal agency or pass-through entity must determine that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows:

- (a) A bid guarantee from each bidder equivalent to five percent of the bid price. The bid guarantee must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute any required contractual documents within the specified timeframe.
- (b) A performance bond on the contractor's part for 100 percent of the contract price. A performance bond is a bond executed in connection with a contract to secure the fulfillment of all the contractor's requirements under a contract.
- (c) A payment bond on the contractor's part for 100 percent of the contract price. A payment bond is a bond executed in connection with a contract to assure payment as required by the law of all persons supplying labor and material in the execution of the work provided for under a contract.

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

A Federal award, as defined in 2 C.F.R. § 200.1, is being used to fund the Contract. Accordingly, the parties acknowledge that the above-referenced contract is subject to applicable provisions of 2 C.F.R. § 200 et seq., Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, and all other federal requirements identified in the award terms, assistance listing, and any other related federal guidance as any of these requirements may be amended. To the extent federal requirements are not included below or in the event of a conflict between federal guidance and the below, the terms of the federal requirements shall control.

ATTACHMENT 2: FEMA GRANT AWARD DOCUMENTATION

Hazard Mitigation Assistance Grant Kick-off Meeting

City of Louisville
HMGP4634
Generators



COLORADO
Division of Homeland Security
& Emergency Management
Department of Public Safety

Agenda

- Grant Agreement Review
- Main Project
- Project Reporting
- Procurement
- Requests for Reimbursement
- Project Closeout
- Records Retention

Language

- The State is the applicant, and you are the subapplicant.
- The State is the recipient, and you are the subrecipient.

Grant Agreement

- Federal Award – November 26, 2024 *Request for Reimbursements (RFR) will not be accepted until the Grant Agreement has been fully signed by both parties)*
- Grant Expiration Date – June 29, 2026
- State Agency – Department of Public Safety
- Grantee – City of Louisville
- Encumbrance – DR-4634-4R-CO
- Maximum Amount – Federal Share \$3,730,360.04
- Match Amount – Local Share \$449,727.59

Grant Agreement – SOW, Expenses & Match

Statement of Work:

1. General Description of the Project.

Brief description of the scope of work (SOW)

1.1 Project Description: Grantee is awarded by FEMA to use Hazard Mitigation Grant Program (Marshall Fire/Straight-Line Winds) 2024 funds for the purchase and installation of three (3) generators to be placed at: (1) South Water Treatment Plant located at 7000 Marshall Road, (2) Police/Court Building at 992 W. Via Appia Way and (3) the Recreation Center at 900 Via Appia Way in Louisville, CO.

1.2 Project Expenses: Project expenses for the purchase and installation of three (3) generators to be placed at three separate locations within the City of Louisville. Expenses shall include, but are not limited to the design and engineering of the generators and for any permits needed. All materials, construction, electrical, concrete, screening/fencing, site restoration, erosion control, labor and utility transformer and utility company development along with other tasks as described in §2.1 and as described in §2.5 of the Grant Agreement. All eligible expenses are listed in the budget table in Exhibit B.

Non-Federal Match Requirement

1.3 Non-Federal Match: this non-federal match section applies to this Grant. This Grant requires a non-federal match contribution of appx. 11.3% of the total Grant budget. Documentation of expenditures for the non-federal match contribution is required with each request for reimbursement (RFR). If applicable the match may include in-kind match, if shown in the subapplication.

Grant Agreement - Exhibits

Exhibits and Order of Precedence

The following Exhibits and attachments are included with the Grant Agreement:

1. Statement of Work
2. Budget Agreement
3. Record of Environmental Consideration (REC)
4. Grant Agreement

Grant Agreement – Budget Table

Project Activity / Line Item	Federal Share	Local Share	Total Project
Generator – South Water Treatment Plant	\$ 414,313.60	\$ 52,764.65	\$ 467,078.25
Generator – Police/Courthouse	\$ 878,024.92	\$ 111,820.33	\$ 989,845.25
Generator – Recreation Center	\$ 1,917,941.71	\$ 244,258.29	\$ 2,162,200.00
Project Supervisors	\$ 160,514.01	\$ 20,442.16	\$ 180,956.17
Contingency (up to 5%)	\$ 160,514.01	\$ 20,442.16	\$ 180,956.17
Subtotal	\$ 3,531,308.25	\$ 449,727.59	\$ 3,981,035.84
<i>Subrecipient Management Costs (SRMC)</i>	\$ 199,051.79	\$ 0.00	\$ 199,051.79
Total Budget	\$ 3,730,360.04	\$ 449,727.59	\$ 4,180,087.63
TOTAL AWARD AMOUNT	\$ 3,730,360.04		

Grant Agreement – Pre-Award Costs

Pre-award costs must be eligible, applicable, and authorized by the State and FEMA. *Unapproved pre-award costs are the responsibility of the subrecipient.*

This project does not have Pre-award costs.

Main Project

Program Guidance:

- Hazard Mitigation Assistance (HMA) Guidance, July 30, 2024 for HMGP
<https://www.fema.gov/grants/mitigation/guide> (click on **Print Full Guidance**)
- High level guidance for subapplicants on eligible and ineligible activities, cost sharing, cost-effectiveness and award process
<https://www.fema.gov/grants/mitigation/guide/part>
- Notices of Funding Opportunities for Hazard Mitigation Assistance Grants
<https://www.fema.gov/grants/mitigation/notice-funding-opportunities>

Main Project – Designated Agent

- The Designated Agent is responsible for reviewing and certifying requests for reimbursement (RFR), SOW/Budget changes and quarterly reporting.
- If the primary project contact changes at any time, the subrecipient must submit a new designated agent form.
- Please contact your Mitigation Project Specialist if your Authorized Agent changes.

Statement of Work / Budget Changes

- Project SOW and Budget Table must be followed, this comes directly from the application.
- Any changes to the SOW or Budget must be submitted in writing to the State prior to any changes made.
- Changes to the SOW or Budget cannot be implemented without formal approval by FEMA.
- Any changes in the SOW or Budget may require a Grant modification.

Statement of Work / Budget - Revisions

Some examples of SOW/Budget revisions include:

- Project Area Changes (inaccessible terrain)
- Design Implications (unexpected engineering costs)
- Unexpected Construction Issues (soil, geology, etc.)
- HAZMAT Alterations (property demolition – asbestos)
- Environmental Impacts (need for studies/assessments)
- Archeological Site Discovery (fossils, artifacts, etc.).

SOW changes must be consistent with intent of project and demonstrate the need for a modification.

Period of Performance Extensions

- If unforeseen circumstances occur that delay the project, the subrecipient can request an extension.
- The request must be provided in writing to the State 90-days prior to Grant closing date or as soon as a delay is expected.
- State approved extensions are limited to the FEMA Period of Performance (PoP).
- With approval, HMA projects can be extended up to 12 months from the original grant performance period by FEMA Region VIII⁽¹⁾.
- ⁽¹⁾Extensions beyond 12 months require FEMA Headquarters approval.

Permits & Public Notices

Permitting & Public Notices:

- Follow applicable Local, State, and Federal requirements for permitting and public notices.
- Permitting and public notices are dependent upon the project.
- Understand your permitting and public notice obligations before initiation of your project.

Project - Monitoring

Monitoring:

- Regular project monitoring is necessary to ensure project performance, accurate record keeping and financial management.

Monitoring activities may include:

- Consistent Communication
- Desk & Documentation Reviews (e.g., procurement documents)
- EHP Reporting (Environmental & Historical Preservation)
- Request for Reimbursements
- Site Visits
- Audits

Quarterly Report – Due Dates

Reporting:

- FEMA and DHSEM require quarterly reporting on all HMA projects.

Report Period	Due Date
October – December	January 15
January – March	April 15
April – June	July 15
July – September	October 15

- CO.EMGrants.com is the grant management portal used for completing quarterly reports.

Project Reporting on Quarterly Reports

CO.EMGrants.com

- Project Progress (___% complete)
- Anticipated Completion Date
- Financial Accounting
- Work Status
- Cost Status
- EHP Compliance
- Comments on Projects Developments
- FEMA relies on these reports for budget updates and time extensions

The screenshot shows the CO.EMGrants.com web application interface. The top navigation bar includes links for ACCOUNTS, PROJECTS, and FINANCES, along with a user profile for Scott Baldwin. A sidebar on the left contains a menu with options: Summary, Projects, Form (highlighted with a red star), Notes, Documents, Workflow, and History. The main content area is titled 'General' and contains several input fields and dropdown menus. The 'Current Percent Complete' field is set to 0%. The 'Total Funds Expended to Date' and 'Anticipated Final Amount' fields are both set to \$0.00. The 'Has Insurance Considerations?' dropdown is set to 'Select One'. The 'Special Considerations (Permits, Environmental, Historical)' field is empty, with a note below it stating 'Please provide status of special conditions required on implementation of projects (as provided on the last page of the FEMA Record of Environmental Consideration (REC))'. The 'Anticipated Completion Date' field is empty, with a note below it stating 'The date you expect the work to be completed'. The 'Projected Funds to be Requested for Reimbursement' section includes an 'Estimated Jul 1, 2015 - Sep 30, 2015' field set to \$0. The 'Status' section includes 'Work Status' and 'Cost Status' dropdowns, both set to 'Select One', and a 'Comments' text area. A 'State Use Only' section is at the bottom with a 'State Comments' text area.

Procurement

- Procurement must meet or exceed the most **stringent** guidelines (Local, State or Federal).
- If the estimated project cost is more than \$25, 000 the subrecipient should list in the solicitation as a requirement that each “bidder” needs to provide their UEI number (Unique Entity Identifier) with their bid proposal.
- Subrecipients must ensure selected contractors are not debarred from State and Federal programs as outlined in the Grant, check **SAM.GOV** for verification.

Procurement - Federal Procurement Thresholds

- **Micro Purchases (contracts < \$10,000)**, may be awarded without a solicitation
 - *Competitive Price
 - *Quotes – reasonable cost based upon subrecipient research or experience
- Public Solicitation: Newspapers, Websites, Local Jurisdictional, BidNet, Planet Bids, etc.**
- **Small Purchases (contracts \$10,001 - \$249,999)**, solicitation is mandatory
 - *Price or Rate Quotations Required
 - *Full and open competition
- **Simplified Acquisition (contracts > \$250,000)**, solicitation is mandatory. Formal procurement methods are required for contracts that exceed \$250,000, inclusive of both federal and non-federal share
 - *Public Solicitation Required
 - *Full and open competition
 - *Sealed Bids
 - *Request for Proposals (RFP)
 - *Request for Qualifications (RFQ)

Procurement:

Minority, Diversity & Veteran Owned Businesses

- Federal procurement regulations require the 6 affirmative steps to advertise contracts to minority, diversity and Veteran owned businesses <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR45ddd4419ad436d/section-200.321>
- Sub-recipients must demonstrate how they performed affirmative outreach to these types of businesses.
- Lists of minority & diversity owned businesses can be found through the State, your county office, or local Small Business Administration office.
- Local Minority Business Development Agency contact:
Minority Business Development Agency (MBDA) - Denver Business Center
6025 South Quebec Street - Suite 135, Centennial, CO 80111
Contact: (720) 772-0459 or email: etrue@denvermbdacenter.com
link: www.mbda.gov/business-center/Colorado-mbda-business-center
For more information about MBDA, refer to: oedit.colorado.gov/minority-business-office-of-Colorado
- Service-Disabled Veteran Owned Small Business at (303) 712-5830, link: <https://www.vetbiz.va.gov/>
(proof of certification is required and must be submitted with bid response)

Procurement – Best Practices

- Ensure fair and competitive bidding practices.
- Debarred contractor verification.
- Identify and avoid Conflicts of Interest.
- Know bonding requirements for construction activities.
- Time & Materials Contracts are most commonly used for Professional Services. Detailed billing must be presented showing proof of hours/hourly rate/date etc.
- **Cost-Plus Percentage Contracting is PROHIBITED.**
- Include Contract Provisions in your Contract/Agreement with the awarded Vendor, refer to 1–13 in the following link:

[Contract Provisions Guide: Navigating Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards](#)

Procurement - 2 CFR 200: Key Sections

- 200.317: Procurement by states
- 200.318: General procurement standards
- 200.319: Competition
- 200.320: Methods of procurement to be followed
- 200.321: Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms
- 200.322: Domestic preferences for procurements
- 200.323: Procurement of recovered materials
- 200.324: Contract cost and price
- 200.325: Federal awarding agency or pass-through agency review
- 200.326: Bonding requirements
- 200.327: Contract provisions *Required on the Subrecipient Agreement/Contract with the awarded Vendor*

NOTE: it a best practice to use the eCFR instead of a hard copy

Procurement – Conflict of Interest (COI)

- COI occurs when the subrecipient is unable or appears to be unable to be impartial in conducting a procurement action involving a related organization.
- An organizational conflict of interest can also occur when contractors compete for awards for which they have developed or drafted specifications, requirements, statements of work, invitations for bids, or requests for proposals.
 - In order to ensure objective contractor performance and eliminate unfair competitive advantage, contractors that have developed or drafted the documents listed above must be excluded from competing for such requirements.
- A conflict of interest may exist when a contractor supports a subapplicant with subapplication development, project plans, or a project budget and subsequently wins the contract to implement the project.
 - Unless the non-federal entity solicits for and awards a contract covering both development and execution of specifications, federal funds cannot be used to pay a contractor to carry out the work if that contractor also worked on the development of those specifications.

Procurement - Resources

- FEMA help guides:
 - FEMA Procurement Guidance
 - Field Manual-Procurement Disaster Assistance
 - FEMA Procurement Checklist
 - FEMA Required Contract Provisions
 - Top 10 Procurement Mistakes
 - Federal Register :: Guidance for Federal Financial Assistance

Procurement Documentation

Prior to the 1st RFR, submit the following package for review. Please upload all procurement documents to EMGrants and inform your Mitigation Project Specialist so that they can review *asap*, to avoid delays in reimbursements.

- Jurisdiction's Procurement Policy & Procedures
- Copy of Invitation for Bid/Request for Proposals/Request for Qualifications/Quotes Utilized
- Contract Selection Process
- Documentation of Publication of IFB/RFP/RFQ (Newspaper, Rocky Mountain BidNet, Website etc.)
- Copy of all received bids/proposals with costs/prices/rate sheets
- Letter of justification for selected firm
- BOCC/County Administrator/Mayor/City Council/City Manager approval
- Bid Tab/Ranking/Scoresheets and Copies of original scoresheets with evaluators' names
- Verify selection criteria in RFP/RFQ matches evaluations
- Copy of vendor Contract/Agreement signed & dated by both parties
- Small and Minority Businesses & Women's Business Enterprises / Service-Disabled Veteran Owned Small Business were placed on your solicitation list. If not chosen within the solicitation were they notified electronically at:
<https://www.mbda.gov/business-center/colorado-mbda-business-center> and <https://www.vetbiz.va.gov/> If **NO**, send an explanation
- Other: Design, Drawings & Engineering Documentation etc. (if applicable)

****** Reimbursement cannot be submitted until the Grant Agreement is **fully signed** and dated by both parties

Request for Reimbursement (RFR)

- CO.EMGrants.com is the grant management portal used for submitting Requests for Reimbursements (RFRs).
- RFRs may be submitted at any time during the project's life cycle.
- DHSEM recommends submitting RFRs at least once per quarter.
- 5% of each reimbursement will be retained until project closeout.
- RFRs that are incomplete, incorrect, or require additional documentation will be put on-hold or returned to subrecipient for completion.

Reimbursement - Invoice & Detailed Billing

- Project Name and Description of Task.
- Employee Name, Title, Date & Hours Worked with Hourly Rate.
- Number of hours worked and Total Amount Paid.

Example Invoice

Project Name _____ Services Rendered March 1, 2024 – March 31, 2024

1.1.1 – Engineering Management; Permit Specialist, Jane Doe

Date	Description of task performed	Hours	Hourly Rate	Amount
3/14/2024	Completed City Permit Form	1.75	135.00	\$236.25
3/21/2024	Picked up Permit & delivered to site	0.50	135.00	\$ 67.50
Total Permit Specialist				\$303.75

Invoice Amount \$303.75

Project Closeout

Subrecipient shall:

- Notify DHSEM when the project is nearing completion (>80% complete).
- Start gathering documentation outlined in Closeout Checklist (Mitigation Project Specialist will email to you).
- Provide closeout and de-obligation (if applicable) request letter.
- Conduct a final site inspection with DHSEM Mitigation Project Specialist
- Respond to any Requests for Information (RFI).

Project Closeout – Checklist & Site Visit

DHSEM shall:

- Send the subrecipient a closeout checklist
<https://www.fema.gov/grants/mitigation/monitoring-closeout-guidance>
- Conduct a final site inspection.
- Review of submitted project documents.
- Send out Request for Information (RFI) if needed.
- If all documentation for closeout has been satisfactorily provided and RFIs responded to, State will approve payment for the release of retainage that was withheld.

Records Retention

- All records related to the Grant must be retained for a minimum period of three (3) years from FEMA's closeout date.

Examples of Required Documentation:

- Grant Applications
- Contracts
- Agreements
- Grant Status, Narrative & Financial Reports
- Supporting Documents
- Record for all Subcontracts
- Procurement
- Financial & Expenditure Documentation
- Permits, Deliverables, Schematics, As-Built Drawings & EHP
- Any project specific documents
- Important State & Federal Correspondence

Contacts

Debbie Goerlitz – Mitigation Projects Specialist

debbie.goerlitz@state.co.us

Emily Drosselmeyer – Deputy State Hazard Mitigation Officer & Mitigation Projects Team Supervisor

emily.drosselmeyer@state.co.us

Julie Beyers – Mitigation Technical Specialist

julie.beyers@state.co.us

Lydia Marker – Risk and GIS Specialist

lydia.marker@state.co.us

SINGLE USE TABLE
Louisville Generators - HMGP4634
F #4R

Replacement Generator @ Water Treatment Plant 7000 Marshall Road	COST	Recreation Center - 900 Via Appia Way	COST	Police Station/Courthouse - 992 Via Appia Way	COST	
Generator Size	450kW	Generator Size	2000kVA	Generator Size	2000kVA	
Mobilization, Bonds & Insurance	20,000.00	Mobilization, Bonds & Insurance	160,000.00	Mobilization, Bonds & Insurance	61,360.00	
Cummins 450DFEJ 1700 Enclosure	250,000.00	Cost of Generator, includes: Enclosure: Retaining Wall & Bollards and Screening/Fencing 8' high	1,965,000.00	Cost of Generator	767,000.00	
Demolition of existing generator pad and concrete paving	6,217.50	Site concrete	incl. in price	Site concrete	1,875.00	
New Generator Pad	9,000.00	Site restoration	4,400.00	Site restoration & erosion control	5,500.00	
Site Concrete 6" thick	8,937.50	Utility transformer & primary service	1,000.00	Electrical engineering & design	10,000.00	
Site restoration & erosion control	12,000.00	Utility company development for temp./permanent service & consumption	10,000.00	Utility transformer & primary service	5,000.00	
Electrical & Control systems	100,000.00	Electrical engineering & design	6,800.00	Utility company development for temp./permanent service & consumption	10,000.00	
Contractor OH&P (15%) price was incorrect on Quote	60,923.25		15,000.00			
Consor Engineers quote #12/08/2022	\$467,078.25	Weifield quote #01/16/2023	\$2,162,200.00	Contractor OH&P (15%)	129,110.25	
TOTAL	\$467,078.25	TOTAL	\$2,162,200.00	Weifield quote #01/16/2023	\$989,845.25	
				TOTAL	\$989,845.25	\$3,619,123.50

Cost - 3 Generators	\$3,619,123.50	Percentages	
Contingency @ 5% - Louisville	180,956.17	(Federal Share) \$3,981,035.85 x 88.703251915%	\$3,531,308.25
Louisville Project Supervision (internal)	180,956.17	(Local Share) \$3,981,035.85 x 11.296748307%	\$449,727.59
Generator Total	\$3,981,035.84	Total	\$3,981,035.84

Generator Total	3,981,035.84	SRMC (5%)	\$199,051.79
Subrecipient Management Cost (up to 5%) 100% Federally Funded / \$3,981,035.84 x 5%	199,051.79	Project Total w/SRMC	\$4,180,087.63

Federal Share (maximum amount)	\$3,531,308.25
SRMC (5% Federally Funded)	\$199,051.79
All Federal Share / Potential Award Amount	\$3,730,360.04

HMGP #F4 LOUISVILLE GENERATOR PROJECT COST NARRATIVE

Post Award

All vendors must be procured in line with 2 CFR 200, State, and local procurement policies, most stringent applies.

Generator Battery Backup

Internal Staff (or procured contractor) to manage the installation of the battery backup system. Duties of the project will include but not limited to: overall project coordination, review of technical deliverables, scheduling, production & meetings, etc.

Water Treatment Plant, Recreation Center & Police Station/Courthouse

As of August 2024, the City of Louisville has decided to opt out of the battery backup service at this time.

Mobilization, Bonds & Insurance

Permit Fees are costs associated with necessary fees paid to obtain construction permits regulatory approvals for the project. These costs are based on historical costs of permitting in similar projects in the region. Also list out the dollar amounts for Bonds & Insurance per generator and site

The cost per permit: \$0.00. The list of cost from the City website does not have any project associated fees. Mobilization, bonds and insurance was estimated off of the ROM for each generators.

Water Treatment Plant - quote provided by Consor Engineers, Inc., estimated \$20,000

Recreation Center – quote provided by Wiefeld ROM, estimated \$160,000

Police/Courthouse – quote provided by Wiefeld ROM, estimated \$61,360

Generator Cost (per site)

The generator cost was estimated based off of contractor ROMs for each generator location. No fees were incurred during this estimate period. The total estimated cost per site includes:

Water Treatment Plant – quote provided by Consor Engineers, Inc. \$250,000

Cummins 450DFEJ 1700 Enclosure

Recreation Center – quote provided by Wiefeld ROM, estimated \$1,965,000

Generator, retaining wall and bollards and screening/fencing 8' high

Police/Courthouse – quote provided by Wiefeld ROM, estimated \$767,000

Generator

Demolition/Clear & Grub

This work will be scoped and completed by a hired licensed contractor once the grant is awarded.

Water Treatment Plant – quote provided by Consor Engineers, Inc.

Demolition of existing generator pad: 3 cy @ \$1,000 each = \$3,000

Demolition of concrete paving 6" thick: 715 sf @ \$4.50 = \$3,217.50

Concrete Pad

Cost per pad for the Water Treatment Plant, based off of estimated cost per square footage. The final cost and pad specifications will require a scope by a hired licensed engineer.

Water Treatment Plant – quote provided by Consor Engineers, Inc.

New pad, estimated 715 sf @ \$4.50 = \$9,000

Site Work – Concrete

Cost per site work, was based off of estimated cost per square footage. The final cost and site specifications will require a scope by a hired licensed engineer.

Water Treatment Plant – quote provided by Consor Engineers, Inc.

Site concrete, estimated 6" thick: 715 sy @ \$12.50 = \$8,937.50

Recreation Center – quote provided by Wiefeld ROM

Site concrete, estimated 6" thick: 352 sf @ \$12.50 = \$4,400

Police/Courthouse – quote provided by Wiefeld ROM

Site concrete, estimated 6" thick: 150 sf @ \$12.50 = \$1,875

Site Restoration/Erosion Control

Cost per site restoration and erosion control work, was based off of estimated cost per square footage. The final cost and specifications will require a scope by a hired licensed engineer.

Water Treatment Plant – quote provided by Consor Engineers, Inc.

Site restoration, estimated 140 sy @ \$50 = \$7,000

Erosion control, estimated \$5,000

Recreation Center – quote provided by Wiefeld ROM

Site restoration, estimated 20 sy @ \$50 = \$1,000

Police/Courthouse – quote provided by Wiefeld ROM

Site restoration, estimated 10 sy @ \$50 = \$500

Erosion control, estimated \$5,000

Electrical & Control Systems

When the project is awarded, the City of Louisville will hire scoping and engineering to determine the electrical and control systems for each generator at three locations.

Water Treatment Plant – quote provided by Consor Engineers, Inc.

Electrical & Control systems; estimated \$100,000

Electrical Engineering & Design

The generator electrical engineering and design was calculated based off of past engineering proposals and ROMs for each location. The final cost and specifications will require a scope by a hired licensed engineer.

Police/Courthouse – quote provided by Wiefeld ROM; estimated \$10,000

Recreation Center – quote provided by Wiefeld ROM; estimated \$15,000

Utility Transformer & Primary Service

The utility fees were estimated based from the Fort Collins Electric Development Fee calculator for two locations. The quantity of the work will be based off of a design plan and scope for each location site by a certified engineer. Based off of the calculator:

Recreation Center - estimated cost is \$10,000 per Wiefield ROM quote

Police/Courthouse - estimated cost is \$5,000 per Wiefield ROM quote

Utility Fees for permanent & temporary service and consumption

The utility fees were estimated based from the Fort Collins Electric Development Fee calculator for two locations. The quantity of the work will be based off of a design plan and scope for each location site by a certified engineer. Based off of the calculator:

Recreation Center - estimated cost is \$6,800

Police/Courthouse - estimated \$10,000

OH&P

Overhead and Profit: costs added to the project's direct cost to account for services of the general contractor or construction manager.

Water Treatment Plant – quote provided by Consor Engineers, Inc., estimated \$60,923.25

Police/Courthouse – quote provided by Wiefield ROM, estimated \$129,110.25

Contingency (Louisville)

Account for various risks that may not be accounted for in a schedule of values.

Louisville (5%) - \$180,956.17

Project Supervision Fees (Louisville)

Estimated project supervision costs for staff and contractors. This includes implementation resulting in total project costs of \$180,956.17. Final costs and specifications will be determined from scope of the project.

Facilities & Public Works – Superintendent – 160 hrs- 58.60/hr = \$9,376

Facilities & Public Works – Manager – 100 hrs- 50.00/hr = \$5,000 Technician &

Public Works – 200 -36.50/hr = \$7,300

Contractor supervision costs – 160 hrs - 50.00/hr = \$8,000

Total: \$29,676 *3 generators = \$89,028*(2 years) = \$178,056

+Contractor Overhead costs (one time) – \$2,900.17

TOTAL \$180,956.17

Project Total \$3,981,035.84

Subrecipient Management Costs (up to 5%, federally funded)

Management costs are intended to cover costs associated with the administrative duties of managing the grant (i.e., drafting and submitting quarterly reports, submitting requests for reimbursement, grant closeout). Costs associated with oversight of project implementation / management are not eligible for management costs and must be included in the overall project budget through project management. The total cost which is 100% funded by FEMA for subrecipient managements costs is \$199,051.79

Admin – Recovery & Resilience Manager – 160 hrs- 54.00/hr = \$8,640

Admin – Facilities Project Manager - 120 hrs- 50.00/hr = \$6,000

Admin – Finance & Invoicing – 120 hrs – 52.00/hr = \$6,240

Admin – Deputy City Manager – 100 hrs – 80.00/hr = \$8,000

Total = \$28,880 *3 generators = \$86,640 * 2years = \$173,280

Additional admin support (one time) - \$25,771.79

TOTAL \$199,051.79

Project Cost: \$3,981,035.84

SRMC: \$ 199,051.79

GRAND TOTAL: \$4,180,087.63



COLORADO

**Division of Homeland Security
& Emergency Management**

Department of Public Safety

Office of Grants Management
8000 South Chester Street, Suite 575
Centennial, CO 80112

**Samma Fox
Interim City Manager
City of Louisville
749 Main Street
Louisville, CO 80027**

January 23, 2025

HMGP4634-04R-LOU

We are pleased to inform you that the Colorado Department of Public Safety, Division of Homeland Security and Emergency Management (DHSEM) received approval for the City of Louisville Generators Project application for funding pursuant to the Hazard Mitigation Grant Program (HMGP) in the amount of \$3,531,308.26 (Federal Share) plus Subrecipient Management Costs (SRMC) in the amount of \$199,051.79 (100% Federal Share) and \$449,727.59 (Local Match). This letter authorizes you to proceed with Generators Project of the approved application project (City of Louisville-Generators) in accordance with the terms of this Grant Award Letter.

Attached to this letter are the terms and conditions of your Grant. Please review these terms and conditions as they are requirements of this Grant to which you, the Grantee, agree by accepting the Grant Funds.

If you have questions regarding this Grant, please contact: Debbie Goerlitz at either Debbie.Goerlitz@state.co.us or (720) 584-1958.

Sincerely,

Mark W Thompson

Mark Thompson

State Hazard Mitigation Officer

Colorado Department of Public Safety

Division of Homeland Security and Emergency Management

CC: Emily Drosselmeyer, Deputy State Hazard Mitigation Officer
Debbie Goerlitz, Mitigation Project Specialist
Grant File



COLORADO

Department of Public Safety

700 Kipling Street, Lakewood, CO 80215 | www.colorado.gov/publicsafety

Jared Polis, Governor | Stan Hilkey, Executive Director

State of Colorado Intergovernmental Grant Agreement

Cover Page

State Agency

Department of Public Safety, Division of
Homeland Security and Emergency Management

Grantee

City of Louisville

Grantee UEI

QWGUQ6YPC8Z8

Agreement Number

HMGP4634-04R-LOU

Grant Issuance Date

November 26, 2024

Grant Expiration Date

June 29, 2026

Grant Amount

\$3,730,360.04

Local Match Amount

\$449,727.59

Federal Award Information

Federal Award ID # (FAIN)

DR-4634-4R-CO

Federal Award Date

November 26, 2024

Federal Awarding Agency

DHS / FEMA

Assistance Listing (CFDA)

97.039

Hazard Mitigation Grant Program (HMGP)

Identification if the Award is for R&D:

No

Grant Authority

For grant agreements that are 100% General Fund as a result of HB24-1466, all references to federal requirements in the grant template are not applicable, except for Exhibit D, Federal Provisions.

- A. Federal Authority to enter into this Grant exists in Section 404 of the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (Stafford Act) and implemented in regulations at 44 Code of Federal Regulations (CFR) §§ 206.430-440;
- B. State Authority: to enter this Grant exists in CRS §24-1-128.6.

Grant Purpose

Ensure the completion of the proposed project to purchase and install three (3) generators at three (3) separate locations within the City of Louisville.

Exhibits and Order of Precedence

The following Exhibits and attachments are included with this Agreement:

- A. Exhibit A, Statement of Work.
- B. Exhibit B, Sample Option Letter.
- C. Exhibit C, Budget.
- D. Exhibit D, Federal Provisions.
- E. Exhibit E, PII Certification.
- F. Exhibit F, HIPAA BAA.
- G. Exhibit G, FEMA Record of Environmental Consideration (REC).

In the event of a conflict of inconsistency between this Agreement and any Exhibit or attachment, such conflict or inconsistency shall be resolved by reference to the documents in the following order of priority:

- A. Exhibit F, HIPAA BAA.
- B. Exhibit D, Federal Provisions.
- C. Colorado Special Provisions in §17 of the main body of this Agreement.
- D. The provisions of the other sections of the main body of this Agreement.
- E. Exhibit A, Statement of Work.
- F. Exhibit E, PII Certification.
- G. Exhibit B, Sample Option Letter.
- H. Exhibit C, Budget.

Principal Representatives

For the State:

Emily Drosselmeyer, Deputy State Hazard
Mitigation Officer
Department of Public Safety, Division of
Homeland Security & Emergency Management
9195 East Mineral Avenue, Suite 200
Centennial, CO 80112
Emily.Drosselmeyer@state.co.us

For Grantee:

Samma Fox, Interim City Manager
City of Louisville
749 Main Street
Louisville, CO 80027
sfox@louisvilleco.gov

Signature Page

The Signatories Listed Below Authorize this Grant

City of Louisville

Samma Fox, Interim City Manager



By: Samma Fox, Interim City Manager

Date: 2/4/2025

2nd Grantee Signature
(If Needed)

By: Name & Title of Person Signing for Grantee

Date: _____

STATE OF COLORADO

Jared S. Polis, Governor

Colorado Department of Public Safety,
Division of Homeland Security and Emergency
Management Stan Hilkey, Executive Director

By: Kevin R. Klein, Director , DHSEM,
or DHSEM Director Delegate

Date: _____

In accordance with §24-30-202, C.R.S., this
Agreement is not valid until signed and dated
below by the State Controller or an authorized
delegate.

STATE CONTROLLER

Robert Jaros, CPA, MBA, JD

Colorado Department of Public Safety

Robert Jaros, CPA, MBA, JD

or CDPS Controller Delegate

Date: _____

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1. Grant

As of the Grant Issuance Date, the State Agency shown on the first page of this Grant Award Letter (the "State") hereby obligates and awards to Grantee shown on the first page of this Grant Award Letter (the "Grantee") an award of Grant Funds in the amounts shown on the first page of this Grant Award Letter. By accepting the Grant Funds provided under this Grant Award Letter, Grantee agrees to comply with the terms and conditions of this Grant Award Letter and requirements and provisions of all Exhibits to this Grant Award Letter.

2. Term

A. Initial Grant Term and Extension

The Parties' respective performances under this Grant Award Letter shall commence on the Grant Issuance Date and shall terminate on the Grant Expiration Date unless sooner terminated or further extended in accordance with the terms of this Grant Award Letter. Upon request of Grantee, the State may, in its sole discretion, extend the term of this Grant Award Letter by providing Grantee with an updated Grant Award Letter showing the new Grant Expiration Date.

B. Early Termination in the Public Interest

The State is entering into this Grant Award Letter to serve the public interest of the State of Colorado as determined by its Governor, General Assembly, or Courts. If this Grant Award Letter ceases to further the public interest of the State or if State, Federal or other funds used for this Grant Award Letter are not appropriated, or otherwise become unavailable to fund this Grant Award Letter, the State, in its discretion, may terminate this Grant Award Letter in whole or in part by providing written notice to Grantee that includes, to the extent practicable, the public interest justification for the termination. If the State terminates this Grant Award Letter in the public interest, the State shall pay Grantee an amount equal to the percentage of the total reimbursement payable under this Grant Award Letter that corresponds to the percentage of Work satisfactorily completed, as determined by the State, less payments previously made. Additionally, the State, in its discretion, may reimburse Grantee for a portion of actual, out-of-pocket expenses not otherwise reimbursed under this Grant Award Letter that are incurred by Grantee and are directly attributable to the uncompleted portion of Grantee's obligations, provided that the sum of any and all reimbursements shall not exceed the maximum amount payable to Grantee hereunder. This subsection shall not apply to a termination of this Grant Award Letter by the State for breach by Grantee.

C. Grantee's Termination Under Federal Requirements

Grantee may request termination of this Grant by sending notice to the State, or to the Federal Awarding Agency with a copy to the State, which includes the reasons for the termination and the effective date of the termination. If this Grant is terminated in this manner, then Grantee shall return any advanced payments made for work that will not be performed prior to the effective date of the termination.

3. **Definitions**

The following terms shall be construed and interpreted as follows:

- A. **"Agreement"** means this agreement, including all attached Exhibits, all documents incorporated by reference, all referenced statutes, rules and cited authorities, and any future modifications thereto.
- B. **"Award"** means an award by a Recipient to a Subrecipient funded in whole or in part by a Federal Award. The terms and conditions of the Federal Award flow down to the Award unless the terms and conditions of the Federal Award specifically indicate otherwise.
- C. **"Breach of Agreement"** means the failure of a Party to perform any of its obligations in accordance with this Agreement, in whole or in part or in a timely or satisfactory manner. The institution of proceedings under any bankruptcy, insolvency, reorganization or similar law, by or against Grantee, or the appointment of a receiver or similar officer for Grantee or any of its property, which is not vacated or fully stayed within 30 days after the institution of such proceeding, shall also constitute a breach. If Grantee is debarred or suspended under §24-109-105, C.R.S. at any time during the term of this Agreement, then such debarment or suspension shall constitute a breach.
- D. **"Budget"** means the budget for the Work described in Exhibit C.
- E. **"Business Day"** means any day in which the State is open and conducting business, but shall not include Saturday, Sunday or any day on which the State observes one of the holidays listed in §24-11-101(1) C.R.S.
- F. **"CJI"** means criminal justice information collected by criminal justice agencies needed for the performance of their authorized functions, including, without limitation, all information defined as criminal justice information by the U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Security Policy, as amended and all Criminal Justice Records as defined under §24-72-302 C.R.S.

- G. **"CORA"** means the Colorado Open Records Act, §§24-72-200.1, *et seq.*, C.R.S.
- H. **"Cost Sharing"** means a portion of project costs not paid under this Subaward. This includes match which refers to required levels of cost share that must be provided (2 CFR 200.306).
- I. **"Exhibits"** exhibits and attachments included with this Grant as shown on the first page of this Grant.
- J. **"Extension Term"** means the period of time by which the Grant Expiration Date is extended by the State through delivery of an updated Grant Award Letter.
- K. **"Federal Award"** means an award of Federal financial assistance or a cost-reimbursement contract under the Federal Acquisition Regulations by a Federal Awarding Agency to the Recipient. "Federal Award" also means an agreement setting forth the terms and conditions of the Federal Award. The term does not include payments to a contractor or payments to an individual that is a beneficiary of a Federal program.
- L. **"Federal Awarding Agency"** means a Federal agency providing a Federal Award to a Recipient. The Federal Emergency Management Agency (FEMA) is the Federal Awarding Agency for the Federal Award which is the subject of this Grant.
- M. **"Goods"** means any movable material acquired, produced, or delivered by Grantee as set forth in this Grant Award Letter and shall include any movable material acquired, produced, or delivered by Grantee in connection with the Services.
- N. **"Grant Award Letter"** means this letter which offers Grant Funds to Grantee, including all attached Exhibits, all documents incorporated by reference, all referenced statutes, rules and cited authorities, and any future updates thereto.
- O. **"Grant Funds"** means the funds that have been appropriated, designated, encumbered, or otherwise made available for payment by the State under this Grant Award Letter.
- P. **"Grant Expiration Date"** means the Grant Expiration Date shown on the first page of this Grant Award Letter.
- Q. **"Grant Issuance Date"** means the Grant Issuance Date shown on the first page of this Grant Award Letter.
- R. **"Incident"** means any accidental or deliberate event that results in or constitutes an imminent threat of the unauthorized access or disclosure of State Confidential Information or of the unauthorized modification, disruption, or destruction of any State Records.

- S. **"Initial Term"** means the time period between the Grant Issuance Date and the Grant Expiration Date.
- T. **"Party"** means the State or Grantee, and "Parties" means both the State and Grantee.
- U. **"PCI"** means payment card information including any data related to credit card holders' names, credit card numbers, or the other credit card information as may be protected by state or federal law.
- V. **"PII"** means personally identifiable information including, without limitation, any information maintained by the State about an individual that can be used to distinguish or trace an individual's identity, such as name, social security number, date and place of birth, mother's maiden name, or biometric records; and any other information that is linked or linkable to an individual, such as medical, educational, financial, and employment information. PII includes, but is not limited to, all information defined as personally identifiable information in §§24-72-501 and 24-73-101 C.R.S. "PII" shall also mean "personal identifying information" as set forth at § 24-74-102, et. seq., C.R.S.
- W. **"PHI"** means any protected health information, including, without limitation any information whether oral or recorded in any form or medium: (i) that relates to the past, present or future physical or mental condition of an individual; the provision of health care to an individual; or the past, present or future payment for the provision of health care to an individual; and (ii) that identifies the individual or with respect to which there is a reasonable basis to believe the information can be used to identify the individual. PHI includes, but is not limited to, any information defined as Individually Identifiable Health Information by the federal Health Insurance Portability and Accountability Act.
- X. **"Recipient"** means the State Agency shown on the first page of this Grant Award Letter, for the purposes of the Federal Award.
- Y. **"Services"** means the services to be performed by Grantee as set forth in this Grant Award Letter, and shall include any services to be rendered by Grantee in connection with the Goods.
- Z. **"State Confidential Information"** means any and all State Records not subject to disclosure under CORA. State Confidential Information shall include, but is not limited to, PII, PHI, PCI, Tax Information, CJI, and State personnel records not subject to disclosure under CORA. State Confidential Information shall not include information or data concerning individuals that is not deemed confidential but nevertheless belongs to the State, which has

been communicated, furnished, or disclosed by the State to Contractor which (i) is subject to disclosure pursuant to CORA; (ii) is already known to Contractor without restrictions at the time of its disclosure to Contractor; (iii) is or subsequently becomes publicly available without breach of any obligation owed by Contractor to the State; (iv) is disclosed to Contractor, without confidentiality obligations, by a third party who has the right to disclose such information; or (v) was independently developed without reliance on any State Confidential Information.

- AA. **"State Fiscal Rules"** means the fiscal rules promulgated by the Colorado State Controller pursuant to §24-30-202(13)(a) C.R.S.
- BB. **"State Fiscal Year"** means a 12-month period beginning on July 1 of each calendar year and ending on June 30 of the following calendar year. If a single calendar year follows the term, then it means the State Fiscal Year ending in that calendar year.
- CC. **"State Records"** means any and all State data, information, and records, regardless of physical form, including, but not limited to, information subject to disclosure under CORA.
- DD. **"Sub-Award"** means this grant by the State (a Recipient) to Grantee (a Subrecipient) funded in whole or in part by a Federal Award. The terms and conditions of the Federal Award flow down to this Sub-Award unless the terms and conditions of the Federal Award specifically indicate otherwise.
- EE. **"Subcontractor"** means third-parties, if any, engaged by Grantee to aid in performance of the Work. "Subcontractor" also includes sub-grantees.
- FF. **"Subrecipient"** means an entity that receives a Sub-Award from a pass-through entity to carry out part of a Federal award., The term subrecipient does not a beneficiary or participant. A Subrecipient may also be a recipient of other Federal Awards directly from a Federal Awarding Agency. For the purposes of this Grant, Grantee is a Subrecipient.
- GG. **"Tax Information"** means Federal and State of Colorado tax information including, without limitation, Federal and State tax returns, return information, and such other tax-related information as may be protected by Federal and State law and regulation. Tax Information includes, but is not limited to all information defined as Federal tax information in Internal Revenue Service Publication 1075.
- HH. **"Uniform Guidance"** means the Office of Management and Budget Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. The terms and

conditions of the Uniform Guidance flow down to the Awards to Subrecipients unless the Uniform Guidance or the terms and conditions of the Federal Award specifically indicate otherwise.

- II. **"Work"** means the delivery of the Goods and performance of the Services described in this Grant Award Letter.
- JJ. **"Work Product"** means the tangible and intangible results of the Work, whether finished or unfinished, including drafts. Work Product includes, but is not limited to, documents, text, software (including source code), research, reports, proposals, specifications, plans, notes, studies, data, images, photographs, negatives, pictures, drawings, designs, models, surveys, maps, materials, ideas, concepts, know-how, and any other results of the Work. "Work Product" does not include any material that was developed prior to the Grant Issuance Date that is used, without modification, in the performance of the Work.

Any other term used in this Grant Award Letter that is defined in an Exhibit shall be construed and interpreted as defined in that Exhibit.

4. **Statement of Work**

Grantee shall complete the Work as described in this Grant Award Letter and in accordance with the provisions of Exhibit A. The State shall have no liability to compensate or reimburse Grantee for the delivery of any goods or the performance of any services that are not specifically set forth in this Grant Award Letter.

5. **Payments to Grantee**

A. **Maximum Amount**

Payments to Grantee are limited to the unpaid, obligated balance of the Grant Funds. The State shall not pay Grantee any amount under this Grant that exceeds the Grant Amount for each State Fiscal Year shown on the first page of this Grant Award Letter. Financial obligations of the State payable after the current State Fiscal Year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available. The State shall not be liable to pay or reimburse Grantee for any Work performed or expense incurred before the Grant Issuance Date or after the Grant Expiration Date; provided, however, that Work performed and expenses incurred by Grantee before the Grant Issuance Date that are chargeable to an active Federal Award may be submitted for reimbursement as permitted by the terms of the Federal Award.

B. Federal Recovery

The close-out of a Federal Award does not affect the right of the Federal Awarding Agency or the State to disallow costs and recover funds on the basis of a later audit or other review. Any cost disallowance recovery is to be made within the Record Retention Period, as defined below.

C. Matching Funds

Grantee shall provide the Local Match Amount shown on the first page of this Grant Award Letter and described in Exhibit A (the "Local Match Amount"). Grantee's obligation to pay all or part of any matching funds, whether direct or contingent, only extends to funds duly and lawfully appropriated for the purpose of this Agreement by the authorized representatives of Grantee and paid into Grantee's treasury or bank account. Grantee shall appropriate and allocate all Local Match Amounts to the purpose of this Grant Award Letter each fiscal year prior to accepting any Grant Funds for that fiscal year. Grantee does not by accepting this Grant Award Letter irrevocably pledge present cash reserves for payments in future fiscal years, and this Grant Award Letter is not intended to create a multiple-fiscal year debt of Grantee. Grantee shall not pay or be liable for any claimed interest, late charges, fees, taxes or penalties of any nature, except as required by Grantee's laws or policies.

D. Reimbursement of Grantee Costs

Upon prior written approval, the State shall reimburse Grantee's allowable costs, not exceeding the maximum total amount described in this Grant Award Letter for all allowable costs described in this Grant Award Letter and shown in the Budget, except that Grantee may adjust the amounts between each line item of the Budget without formal modification to this Agreement as long as the Grantee provides notice to the State of the change, the change does not modify the total maximum amount of this Grant Award Letter or the maximum amount for any state fiscal year, and the change does not modify any requirements of the Work. The State shall reimburse Grantee for the Federal share of properly documented allowable costs related to the Work after the State's review and approval thereof, subject to the provisions of this Grant. The State shall only reimburse allowable costs if those costs are: (i) reasonable and necessary to accomplish the Work and for the Goods and Services provided; and (ii) equal to the actual net cost to Grantee (i.e. the price paid minus any items of value received by Grantee that reduce the cost actually incurred).

E. Close-Out

Grantee shall close out this Grant within 45 days after the Grant Expiration Date. To complete close out, Grantee shall submit to the State all deliverables (including documentation) as defined in this Grant Award Letter and Grantee's final reimbursement request or invoice. The State will withhold 5% of allowable costs until all final documentation has been submitted and accepted by the State as substantially complete. If the Federal Awarding Agency has not closed this Federal Award within 1 year and 90 days after the Grant Expiration Date due to Grantee's failure to submit required documentation, then Grantee may be prohibited from applying for new Federal Awards through the State until such documentation is submitted and accepted.

6. Reporting - Notification

A. Performance and Final Status

Grantee shall submit all financial, performance and other reports to the State no later than the end of the close out described in §5.E, containing an evaluation and review of Grantee's performance and the final status of Grantee's obligations hereunder.

B. Violations Reporting

Grantee shall disclose, in a timely manner, in writing to the State and the Federal Awarding Agency, all violations of federal or State criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal Award. The State or the Federal Awarding Agency may impose any penalties for noncompliance allowed under 2 CFR Part 180 and 31 U.S.C. 3321, which may include, without limitation, suspension or debarment.

7. Grantee Records

A. Maintenance and Inspection

Grantee shall make, keep, and maintain, all records, documents, communications, notes and other written materials, electronic media files, and communications, pertaining in any manner to this Grant for a period of three years following the completion of the close out of this Grant. Grantee shall permit the State to audit, inspect, examine, excerpt, copy and transcribe all such records during normal business hours at Grantee's office or place of business, unless the State determines that an audit or inspection is required without notice at a different time to protect the interests of the State.

B. Monitoring

The State will monitor Grantee's performance of its obligations under this Grant Award Letter using procedures as determined by the State. Grantee shall allow the State to perform all monitoring required by the Uniform Guidance, based on the State's risk analysis of Grantee. The State shall have the right, in its sole discretion, to change its monitoring procedures and requirements at any time during the term of this Agreement. The State shall monitor Grantee's performance in a manner that does not unduly interfere with Grantee's performance of the Work. If Grantee enters into a subcontract or subgrant with an entity that would also be considered a Subrecipient, then the subcontract or subgrant entered into by Grantee shall contain provisions permitting both Grantee and the State to perform all monitoring of that Subcontractor in accordance with the Uniform Guidance.

C. Final Audit Report

Grantee shall promptly submit to the State a copy of any final audit report of an audit performed on Grantee's records that relates to or affects this Grant or the Work, whether the audit is conducted by Grantee or a third party. Additionally, if Grantee is required to perform a single audit under 2 CFR 200.501, et seq., then Grantee shall submit a copy of the results of that audit to the State within the same timelines as the submission to the federal government.

8. Confidential Information-State Records

A. Confidentiality

Grantee shall hold and maintain, and cause all Subcontractors to hold and maintain, any and all State Records that the State provides or makes available to Grantee for the sole and exclusive benefit of the State, unless those State Records are otherwise publicly available at the time of disclosure or are subject to disclosure by Grantee under CORA. Grantee shall not, without prior written approval of the State, use for Grantee's own benefit, publish, copy, or otherwise disclose to any third party, or permit the use by any third party for its benefit or to the detriment of the State, any State Records, except as otherwise stated in this Grant Award Letter. Grantee shall provide for the security of all State Confidential Information in accordance with all policies promulgated by the Colorado Office of Information Security and all applicable laws, rules, policies, publications, and guidelines. If Grantee or any of its Subcontractors will or may receive the following types of data, Grantee or its Subcontractors shall provide for the security of such data according to the following: (i) the most recently promulgated IRS Publication 1075 for all Tax Information and in accordance with the

Safeguarding Requirements for Federal Tax Information attached to this Grant as an Exhibit, if applicable, (ii) the most recently updated PCI Data Security Standard from the PCI Security Standards Council for all PCI, (iii) the most recently issued version of the U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Security Policy for all CJII, and (iv) the federal Health Insurance Portability and Accountability Act for all PHI and the HIPAA Business Associate Agreement attached to this Grant, if applicable. Grantee shall immediately forward any request or demand for State Records to the State's principal representative.

B. Other Entity Access and Nondisclosure Agreements

Grantee may provide State Records to its agents, employees, assigns and Subcontractors as necessary to perform the Work, but shall restrict access to State Confidential Information to those agents, employees, assigns and Subcontractors who require access to perform their obligations under this Grant Award Letter. Grantee shall ensure all such agents, employees, assigns, and Subcontractors sign nondisclosure agreements with provisions at least as protective as those in this Grant, and that the nondisclosure agreements are in force at all times the agent, employee, assign or Subcontractor has access to any State Confidential Information. Grantee shall provide copies of those signed nondisclosure restrictions to the State upon request.

C. Use, Security, and Retention

Grantee shall use, hold and maintain State Confidential Information in compliance with any and all applicable laws and regulations in facilities located within the United States, and shall maintain a secure environment that ensures confidentiality of all State Confidential Information wherever located. Grantee shall provide the State with access, subject to Grantee's reasonable security requirements, for purposes of inspecting and monitoring access and use of State Confidential Information and evaluating security control effectiveness. Upon the expiration or termination of this Grant, Grantee shall return State Records provided to Grantee or destroy such State Records and certify to the State that it has done so, as directed by the State. If Grantee is prevented by law or regulation from returning or destroying State Confidential Information, Grantee warrants it will guarantee the confidentiality of, and cease to use, such State Confidential Information.

D. Incident Notice and Remediation

If Grantee becomes aware of any Incident, it shall notify the State immediately and cooperate with the State regarding recovery, remediation, and the necessity to involve law

enforcement, as determined by the State. After an Incident, Grantee shall take steps to reduce the risk of incurring a similar type of Incident in the future as directed by the State, which may include, but is not limited to, developing and implementing a remediation plan that is approved by the State at no additional cost to the State.

E. **Safeguarding PII**

If Grantee or any of its Subcontractors will or may receive PII under this Agreement, Grantee shall provide for the security of such PII, in a manner and form acceptable to the State, including, without limitation, State non-disclosure requirements, use of appropriate technology, security practices, computer access security, data access security, data storage encryption, data transmission encryption, security inspections, and audits. Grantee shall be a "Third-Party Service Provider" as defined in §24-73-103(1)(i), C.R.S. and shall maintain security procedures and practices consistent with §§24-73-101 et seq., C.R.S. In addition, as set forth in § 24-74-102, et. seq., C.R.S., Contractor, including, but not limited to, Contractor's employees, agents and Subcontractors, agrees not to share any PII with any third parties for the purpose of investigating for, participating in, cooperating with, or assisting with Federal immigration enforcement. If Contractor is given direct access to any State databases containing PII, Contractor shall execute, on behalf of itself and its employees, the certification attached hereto as Exhibit E on an annual basis Contractor's duty and obligation to certify as set forth in Exhibit E shall continue as long as Contractor has direct access to any State databases containing PII. If Contractor uses any Subcontractors to perform services requiring direct access to State databases containing PII, the Contractor shall require such Subcontractors to execute and deliver the certification to the State on an annual basis, so long as the Subcontractor has access to State databases containing PII.

9. Conflicts of Interest

Grantee shall not engage in any business or activities, or maintain any relationships that conflict in any way with the full performance of the obligations of Grantee under this Grant. Grantee acknowledges that, with respect to this Grant, even the appearance of a conflict of interest shall be harmful to the State's interests and absent the State's prior written approval, Grantee shall refrain from any practices, activities or relationships that reasonably appear to be in conflict with the full performance of Grantee's obligations under this Grant. If a conflict or the appearance of a conflict arises, or if Grantee is uncertain whether a conflict or the appearance of a conflict has arisen, Grantee shall submit to the State a disclosure statement setting forth the relevant details

for the State's consideration. Grantee acknowledges that all State employees are subject to the ethical principles described in §24-18-105, C.R.S. Grantee further acknowledges that State employees may be subject to the requirements of §24-18-105, C.R.S. with regard to this Grant.

10. Insurance

Grantee shall maintain at all times during the term of this Grant such liability insurance, by commercial policy or self-insurance, as is necessary to meet its liabilities under the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S. (the "GIA"). Grantee shall ensure that any Subcontractors maintain all insurance customary for the completion of the Work done by that Subcontractor and as required by the State or the GIA.

11. Breach of Agreement

In the event of a breach of agreement, the aggrieved party shall give written notice of breach of agreement to the other party. If the notified party does not cure the breach, at its sole expense, within 30 days after the delivery of written notice, the party may exercise any of the remedies as described in §12 for that party. Notwithstanding any provision of this agreement to the contrary, the state, in its discretion, need not provide notice or a cure period and may immediately terminate this agreement in whole or in part or institute any other remedy in this agreement in order to protect the public interest of the state; or if grantee is debarred or suspended under §24-109-105, C.R.S., the state, in its discretion, need not provide notice or cure period and may terminate this agreement in whole or in part or institute any other remedy in this agreement as of the date that the debarment or suspension takes effect.

12. Remedies

A. State's Remedies

In addition to any remedies available under any exhibit to this grant agreement, if grantee is in breach under any provision of this agreement and fails to cure such breach, the state, following the notice and cure period set forth in §11, shall have all of the remedies listed in this section in addition to all other remedies set forth in this agreement or at law. The state may exercise any or all of the remedies available to it, in its discretion, concurrently or consecutively.

I. Termination for Breach

In the event of grantee's uncured breach, the state may terminate this entire agreement or any part of this agreement. Additionally, if grantee fails to comply with any terms of the federal award, then the state may, in its discretion or at the direction of a federal

awarding agency, terminate this entire agreement or any part of this agreement. Grantee shall continue performance of this agreement to the extent not terminated, if any.

The State may also terminate this grant agreement at any time if the State has determined, in its sole discretion, that Grantee has ceased performing the Work without intent to resume performance, prior to the completion of the Work.

a. Obligation and Rights

To the extent specified in any termination notice, Grantee shall not incur further obligations or render further performance past the effective date of such notice, and shall terminate outstanding orders and subcontracts with third parties. However, Grantee shall complete and deliver to the State all Work not cancelled by the termination notice, and may incur obligations as necessary to do so within this Agreement's terms. At the request of the State, Grantee shall assign to the State all of Grantee's rights, title, and interest in and to such terminated orders or subcontracts. Upon termination, Grantee shall take timely, reasonable and necessary action to protect and preserve property in the possession of Grantee but in which the State has an interest. At the State's request, Grantee shall return materials owned by the State in Grantee's possession at the time of any termination. Grantee shall deliver all completed Work Product and all Work Product that was in the process of completion to the State at the State's request.

b. Payments

Notwithstanding anything to the contrary, the State shall only pay Grantee for accepted Work received as of the date of termination. If, after termination by the State, the State agrees that Grantee was not in breach or that Grantee's action or inaction was excusable, such termination shall be treated as a termination in the public interest, and the rights and obligations of the Parties shall be as if this Agreement had been terminated in the public interest under §2.B.

c. Damages and Withholding

Notwithstanding any other remedial action by the State, Grantee shall remain liable to the State for any damages sustained by the State in connection with any breach by Grantee, and the State may withhold payment to Grantee for the purpose of mitigating the State's damages until such time as the exact amount of damages due to the State from Grantee is determined. The State may withhold

any amount that may be due Grantee as the State deems necessary to protect the State against loss including, without limitation, loss as a result of outstanding liens and excess costs incurred by the State in procuring from third parties replacement Work as cover.

II. Remedies Not Involving Termination

a. Suspend Performance

Suspend Grantee's performance with respect to all or any portion of the Work pending corrective action as specified by the State without entitling Grantee to an adjustment in price or cost or an adjustment in the performance schedule. Grantee shall promptly cease performing Work and incurring costs in accordance with the State's directive, and the State shall not be liable for costs incurred by Grantee after the suspension of performance.

b. Withhold Payment

Withhold payment to Grantee until Grantee corrects its Work.

c. Deny Payment

Deny payment for Work not performed, or that due to Grantee's actions or inactions, cannot be performed or if they were performed are reasonably of no value to the state; provided, that any denial of payment shall be equal to the value of the obligations not performed.

d. Removal

Demand immediate removal of any of grantee's employees, agents, or subcontractors from the work whom the state deems incompetent, careless, insubordinate, unsuitable, or otherwise unacceptable or whose continued relation to this agreement is deemed by the state to be contrary to the public interest or the state's best interest.

e. Intellectual Property

If any work infringes, or if the state in its sole discretion determines that any work is likely to infringe, a patent, copyright, trademark, trade secret or other intellectual property right, grantee shall, as approved by the state (i) secure that right to use such work for the state and grantee; (ii) replace the work with non-infringing work or modify the work so that it becomes non-infringing; or, (iii)

remove any infringing work and refund the amount paid for such work to the state

f. Collection of Unallowable Costs (2 CFR 200.410)

Payments made for costs determined to be unallowable by either the awarding Federal agency, cognizant agency for indirect costs, or pass-through entity must be refunded with interest to the Federal Government. Unless directed by Federal statute or regulation, repayments must be made in accordance with the instructions provided by the Federal agency or pass-through entity that made the allowability determination. See §§ 200.300 through 200.309, and § 200.346.

B. Grantee's Remedies

If the State is in breach of any provision of this Agreement and does not cure such breach, Grantee, following the notice and cure period in §11 and the dispute resolution process in §13 shall have all remedies available at law and equity.

13. Dispute Resolution

Except as herein specifically provided otherwise or as required or permitted by federal regulations related to any Federal Award that provided any of the Grant Funds, disputes concerning the performance of this Grant that cannot be resolved by the designated Party representatives shall be referred in writing to a senior departmental management staff member designated by the State and a senior manager or official designated by Grantee for resolution.

14. Notices and Representatives

Each Party shall identify an individual to be the principal representative of the designating Party and shall provide this information to the other Party. All notices required or permitted to be given under this Grant Award Letter shall be in writing, and shall be delivered either in hard copy or by email to the representative of the other Party. Either Party may change its principal representative or principal representative contact information by notice submitted in accordance with this §13.

15. Rights in Work Product and Other Information

Grantee hereby grants to the State a perpetual, irrevocable, non-exclusive, royalty free license, with the right to sublicense, to make, use, reproduce, distribute, perform, display, create derivatives of and otherwise exploit all intellectual property created by Grantee or any Subcontractors or Subgrantees and paid for with Grant Funds provided by the State pursuant to this Grant.

16. Governmental Immunity

Liability for claims for injuries to persons or property arising from the negligence of the Parties, their departments, boards, commissions committees, bureaus, offices, employees and officials shall be controlled and limited by the provisions of the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S.; the Federal Tort Claims Act, 28 U.S.C. Pt. VI, Ch. 171 and 28 U.S.C. 1346(b), and the State's risk management statutes, §§24-30-1501, et seq. C.R.S. No term or condition of this Contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, contained in these statutes.

17. General Provisions

A. Assignment

Grantee's rights and obligations under this Grant are personal and may not be transferred or assigned without the prior, written consent of the State. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of Grantee's rights and obligations approved by the State shall be subject to the provisions of this Grant Award Letter.

B. Captions and References

The captions and headings in this Grant Award Letter are for convenience of reference only, and shall not be used to interpret, define, or limit its provisions. All references in this Grant Award Letter to sections (whether spelled out or using the § symbol), subsections, exhibits or other attachments, are references to sections, subsections, exhibits or other attachments contained herein or incorporated as a part hereof, unless otherwise noted.

C. Entire Understanding

This Grant Award Letter represents the complete integration of all understandings between the Parties related to the Work, and all prior representations and understandings related to the Work, oral or written, are merged into this Grant Award Letter.

D. Modification

The State may modify the terms and conditions of this Grant by issuance of an updated Grant Award Letter, which shall be effective if Grantee accepts Grant Funds following receipt of the updated letter. The Parties may also agree to modification of the terms and conditions of the Grant in a formal amendment to this Grant, properly executed and approved in accordance with applicable Colorado State law and State Fiscal Rules.

E. Statutes, Regulations, Fiscal Rules, and Other Authority

Any reference in this Grant Award Letter to a statute, regulation, State Fiscal Rule, fiscal policy or other authority shall be interpreted to refer to such authority then current, as may have been changed or amended since the Grant Issuance Date. Grantee shall strictly comply with all applicable Federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

F. Digital Signatures

If any signatory signs this agreement using a digital signature in accordance with the Colorado State Controller Contract, Grant and Purchase Order Policies regarding the use of digital signatures issued under the State Fiscal Rules, then any agreement or consent to use digital signatures within the electronic system through which that signatory signed shall be incorporated into this Contract by reference.

G. Severability

The invalidity or unenforceability of any provision of this Grant Award Letter shall not affect the validity or enforceability of any other provision of this Grant Award Letter, which shall remain in full force and effect, provided that the Parties can continue to perform their obligations under the Grant in accordance with the intent of the Grant.

H. Survival of Certain Grant Award Letter Terms

Any provision of this Grant Award Letter that imposes an obligation on a Party after termination or expiration of the Grant shall survive the termination or expiration of the Grant and shall be enforceable by the other Party.

I. Third Party Beneficiaries

Except for the Parties' respective successors and assigns described above, this Grant Award Letter does not and is not intended to confer any rights or remedies upon any person or entity other than the Parties. Any services or benefits which third parties receive as a result of this Grant are incidental to the Grant, and do not create any rights for such third parties.

J. Waiver

A Party's failure or delay in exercising any right, power, or privilege under this Grant Award Letter, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power, or privilege.

K. Accessibility

- i. Contractor shall comply with and the Work Product provided under this Contract shall be in compliance with all applicable provisions of §§24-85-101, et seq., C.R.S., and the Accessibility Standards for Individuals with a Disability, as established by OIT pursuant to Section §24-85-103 (2.5), C.R.S. Contractor shall also comply with all State of Colorado technology standards related to technology accessibility and with Level AA of the most current version of the Web Content Accessibility Guidelines (WCAG), incorporated in the State of Colorado technology standards.
- ii. The State may require Contractor's compliance to the State's Accessibility Standards to be determined by a third party selected by the State to attest to Contractor's Work Product and software is in compliance with §§24-85-101, et seq., C.R.S., and the Accessibility Standards for Individuals with a Disability as established by OIT pursuant to Section §24-85-103 (2.5), C.R.S.

L. Federal Provisions

Grantee shall comply with all applicable requirements of Exhibit C at all times during the term of this Grant.

18. Colorado Special Provisions (Colorado Fiscal Rule 3-3)

A. Statutory Approval. §24-30-202(1) C.R.S.

This Contract shall not be valid until it has been approved by the Colorado State Controller or designee. If this Contract is for a Major Information Technology Project, as defined in §24-37.5-102(2.6), then this Contract shall not be valid until it has been approved by the State's Chief Information Officer or designee.

B. Fund Availability. §24-30-202(5.5) C.R.S.

Financial obligations of the State payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

C. Governmental Immunity.

Liability for claims for injuries to persons or property arising from the negligence of the State, its departments, boards, commissions committees, bureaus, offices, employees and officials shall be controlled and limited by the provisions of the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S.; the Federal Tort Claims Act, 28 U.S.C. Pt. VI, Ch. 171 and 28 U.S.C. 1346(b), and the State's risk management statutes, §§24-30-1501, et

seq. C.R.S. No term or condition of this Contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, contained in these statutes.

D. Independent Contractor.

Contractor shall perform its duties hereunder as an independent contractor and not as an employee. Neither Contractor nor any agent or employee of Contractor shall be deemed to be an agent or employee of the State. Contractor shall not have authorization, express or implied, to bind the State to any agreement, liability, or understanding, except as expressly set forth herein. Contractor and its employees and agents are not entitled to unemployment insurance or workers compensation benefits through the State and the State shall not pay for or otherwise provide such coverage for Contractor or any of its agents or employees. Contractor shall pay when due all applicable employment taxes and income taxes and local head taxes incurred pursuant to this Contract. Contractor shall (a) provide and keep in force workers' compensation and unemployment compensation insurance in the amounts required by law, (b) provide proof thereof when requested by the State, and (c) be solely responsible for its acts and those of its employees and agents.

E. Compliance with Law.

Contractor shall comply with all applicable federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

F. Choice of Law, Jurisdiction, and Venue.

Colorado law, and rules and regulations issued pursuant thereto, shall be applied in the interpretation, execution, and enforcement of this Contract. Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. All suits or actions related to this Contract shall be filed and proceedings held in the State of Colorado and exclusive venue shall be in the City and County of Denver.

G. Prohibited Terms.

Any term included in this Contract that requires the State to indemnify or hold Contractor harmless; requires the State to agree to binding arbitration; limits Contractor's liability for damages resulting from death, bodily injury, or damage to tangible property; or that conflicts with this provision in any way shall be void ab initio. Nothing in this Contract shall be construed as a waiver of any provision of §24-106-109 C.R.S.

H. Software Piracy Prohibition.

State or other public funds payable under this Contract shall not be used for the acquisition, operation, or maintenance of computer software in violation of federal copyright laws or applicable licensing restrictions. Contractor hereby certifies and warrants that, during the term of this Contract and any extensions, Contractor has and shall maintain in place appropriate systems and controls to prevent such improper use of public funds. If the State determines that Contractor is in violation of this provision, the State may exercise any remedy available at law or in equity or under this Contract, including, without limitation, immediate termination of this Contract and any remedy consistent with federal copyright laws or applicable licensing restrictions.

I. Employee Financial Interest/Conflict of Interest. §§24-18-201 and 24-50-507 C.R.S.

The signatories aver that to their knowledge, no employee of the State has any personal or beneficial interest whatsoever in the service or property described in this Contract. Contractor has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance of Contractor's services and Contractor shall not employ any person having such known interests.

Exhibit A, Statement of Work

1. General Description of the Project(s).

1.1 Project Description. Grantee is awarded by the Federal Emergency Management Agency (FEMA) to use 2024 Hazard Mitigation Grant Program (HMGP) 4634 'Marshall Fire/Straight-Line Winds' funds for the purchase and installation of three (3) generators to be placed at the following three (3) locations:

- 1)** South Water Treatment Plant located at 7000 Marshall Road,
- 2)** Police/Court Building located at 992 W. Via Appia Way, and
- 3)** the Recreation Center located at 900 Via Appia Way in Louisville, CO.

The City shall solicit for design and engineer of the generators and apply for any permits needed. All permits, materials, construction, electrical, concrete, generators, screening/fencing, site restoration, erosion control, labor and utility transformer and utility company development to be included.

1.2 All items listed in §1.5 Deliverables must be completed unless otherwise noted with a Scope of Work revision request approved by FEMA. The Division of Homeland Security and Emergency Management (DHSEM) and FEMA will review all tasks during the closeout of the grant.

1.3 Project Expenses. Project expenses for the purchase and installation of three (3) generators to be placed at three separate locations within the City of Louisville. Expenses shall include, but are not limited to the design and engineering of the generators and for any permits needed. All materials, construction, electrical, concrete, screening/fencing, site restoration, erosion control, labor and utility transformer and utility company development along with other tasks as described in §1.1 and §1.5 of this Exhibit A. All eligible expenses are listed in the budget table in Exhibit C.

1.4 Non-Federal Match. This non-federal match section does apply to this Grant and may include in-kind match. This Grant requires a non-federal match contribution as illustrated in the budget table in Exhibit C. Documentation of expenditures for the non-federal match contribution is required with each drawdown request.

1.5 Deliverables.

Project Number: HMGP-4634-04R

Project Title: City of Louisville – Generators

Project Type: Generators

1.5.1 Final designs of generators, including sizing for all sites.

1.5.2 Update run times of generators when the generator designs are finalized.

1.5.3 Update refueling plan when the generator designs are finalized.

1.5.4 Update the Single-Use Table (budget) based on the finalized generator designs and contractor(s).

1.5.5 Construction and generators installation cannot begin until FEMA verifies the above requested “deliverables” and approves the final designs.

1.5.6 Record of Environmental Consideration (REC). Please fully review. REC Deliverables, reference Exhibit G.

Special Conditions required on implantation of Projects:

1.5.6.1 All work, including project staging, must be confined to the previously disturbed existing hard topped surfaces.

1.5.6.2 If cultural materials are inadvertently discovered during construction, the applicant must cease activity and contact FEMA and the CO SHPO immediately.

1.5.6.3 All waste material associated with the project must be disposed of properly and not placed in identified floodway or wetland areas.

1.5.6.4 In the unlikely event a spill or leak would occur from the construction equipment within the project area, construction activities must cease, and Colorado Department of Public Health and Environment must be contacted regarding the appropriate procedure for handling any contaminated soils or water.

1.5.6.5 The Grantee must obtain a National Pollutant Discharge Elimination System Construction Stormwater permit, as applicable.

1.5.6.6 Appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

1.5.6.7 Areas of ground disturbance will be re-vegetated with native grasses to minimize and/or control the potential spreading of noxious weeds.

Construction equipment must be decontaminated before and after construction activities to prevent spread of invasive species.

1.5.6.8 Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.

2. Principal Representatives:

For the State:

Emily Drosselmeyer, Deputy State Hazard
Mitigation Officer
Department of Public Safety, Division of
Homeland Security & Emergency Management
9195 East Mineral Avenue, Suite 200
Centennial, CO 80112
Emily.Drosselmeyer@state.co.us

For Grantee:

Samma Fox, Interim City Manager
City of Louisville
749 Main Street
Louisville, CO 80027
sfox@louisvilleco.gov

3. Administrative Requirements:

3.2 The Grantee must request approval in advance for any change to this Grant Agreement, using the forms and procedures established by the DHSEM.

3.3 Required Documentation: Grantees shall retain all procurement and payment documentation on site for inspection. This shall include, but not be limited to, purchase orders, receiving documents, invoices, vouchers, equipment/services identification, and time and effort reports.

Sufficient detail shall be provided with reimbursement requests to demonstrate that expenses are allowable and appropriate as detailed below:

3.3.1 Equipment or tangible goods. When requesting reimbursement for equipment items with a purchase price of or exceeding \$10,000, and a useful life of more than one year, the Grantee shall provide a unique identifying number for the equipment, with a copy of the Grantee's invoice and proof of payment. The unique identifying number can be the manufacturer's serial number or, if the Grantee has its own existing inventory numbering system, that number may be used. The location of the equipment shall also be provided. In addition to ongoing tracking requirements, Grantee shall ensure that equipment items with per unit cost of \$10,000 or more are prominently marked in a manner similar to the following:

Purchased with funds provided by the U.S. Department of Homeland Security.

3.3.2 Services. Grantees shall include contract/purchase order number(s) or employee names, the date(s) the services were provided and the nature of the services.

3.4 Non-Supplanting Requirement: Grantees receiving federal financial assistance awards made under programs that prohibit supplanting by law must ensure that federal funds do not replace (supplant) funds that have been budgeted for the same purpose through non-federal sources.

3.5 Procurement: A Grantee shall ensure its procurement policies meet or exceed local, state, and federal requirements. Grantees should refer to local, state, and federal guidance prior to making decisions regarding competitive bids, sole source or other procurement issues. In addition:

3.5.1 Any sole source transaction shall be approved in advance by the DHSEM.

3.5.2 Grantees shall ensure that: (a) All procurement transactions, whether negotiated or competitively bid, and without regard to dollar value, are conducted in a manner that provides maximum open and free competition; (b) Grantee shall be alert to organizational conflicts of interest and/or non-competitive practices among contractors that may restrict or eliminate competition or otherwise restrain trade; (c) Contractors who develop or draft specifications, requirements, statements of work, and/or Requests for Proposals (RFPs) for a proposed procurement shall be excluded from bidding or submitting a proposal to compete for the award of such procurement; and (d) Any request for exemption of item a-c within this subsection shall be submitted in writing to, and be approved by the authorized Grantee official.

3.5.3 Grantee shall verify Contractor(s) is/are not debarred from participation in state and federal programs by reviewing contractor debarment information on <http://www.sam.gov>.

3.5.4 When issuing requests for proposals, bid solicitations, and other published documents describing projects or programs funded in whole or in part with these grant funds, Grantee and Subgrantees shall use the following phrase in the request listing:

"This project was supported by grant #HMGP4634-04R-LOU, issued by the Colorado Division of Homeland Security and Emergency Management."

3.5.5 Grantee shall ensure that no rights or duties exercised under this grant, or equipment purchased with Grant Funds having a purchase value of \$10,000 or more, are assigned without the prior written consent of the DHSEM.

3.6 Additional Administrative Requirements:

3.6.1 All of the instructions, guidance, limitations, terms and conditions, scope of work, and other conditions set forth in the Notice of Funding Opportunity (NOFO) and the Notice of Award (NOA) for this federal award are incorporated by reference. See also [DHS Standard Terms and Conditions](#).

3.6.2 Grantees of FEMA financial assistance for programs that are subject to the [Build America, Buy America Act \(BABAA\)](#) must include a Buy America preference contract provision as noted in 2 C.F.R. § 184.4 and a self-certification as required by the FEMA Buy America Preference in FEMA Financial Assistance Programs for Infrastructure (FEMA Interim Policy #207-22-0001). This requirement applies to all subawards, contracts, and purchase orders for work performed or products supplied under the FEMA award subject to BABAA.

3.6.3 Grantee shall ensure all purchases are listed or referenced in **§1 or §3** of this Exhibit A. Equipment purchases, if any, shall be for items listed in the [Approved Equipment List](#) (A.E.L) during the grant period. Additionally, funds used to support emergency communications activities should comply with the appropriate fiscal year for [SAFECOM Guidance for Emergency Communication Grants](#).

3.6.4 Environmental Planning and Historic Preservation (EHP) Review: DHS/FEMA funded activities that may require an EHP review are subject to the FEMA Environmental Planning and Historic Preservation (EHP) review process. This review does not address all federal, state, and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state, and local laws.

DHS/FEMA is required to consider the potential impacts to natural and cultural resources of all projects funded by DHS/FEMA grant funds, through its EHP Review process, as mandated by the National Environmental Policy Act; National Historic Preservation Act of 1966, as amended; National Flood Insurance Program regulations; and, any other applicable laws and Executive Orders. Click this [link](#) to access the FEMA EHP screening form and instructions.

In order to initiate EHP review of the project(s) requires completion of all relevant sections of the [EHP form](#) and submit it to DHSEM, along with all other pertinent project information. The EHP review process must be completed and approved by DHS/FEMA before funds are released to carry out the proposed project; otherwise, DHS/FEMA

and DHSEM may not be able to fund the project due to noncompliance with EHP laws, executive order, regulations, and policies.

If ground disturbing activities occur during construction, Grantee will monitor ground disturbance, and if any potential archeological resources are discovered, Grantee will immediately cease work in that area and notify DHSEM, which will immediately notify DHS/FEMA for further action.

3.6.5 All applicant agencies that own resources that could deploy must be on a [Colorado Resource Rate Form in WebEOC](#).

3.6.6 Regardless of exercise type or scope, After Action Reports/Improvement Plans are due to the State Training and Exercise Program Manager within 45 days of the exercise. All funding related to exercises must be managed and executed in accordance with the Homeland Security Exercise and Evaluation Program (HSEEP), and must be National Incident Management System (NIMS) compliant.

4. Reporting Requirements:

4.1 Quarterly Progress Reports. The project(s) approved in this Grant are to be completed on or before the termination date stated on the agreement's Grant Award Letter of this grant agreement. Grantee shall submit quarterly progress reports for each project identified in this agreement using the format provided by the DHSEM throughout the life of the grant.

Grantee shall submit narrative and financial reports describing project progress and accomplishments, and/or any delays in meeting project objectives and expenditures, to date as described in §4 of this Exhibit A.

Reports shall be submitted in accordance with the schedule table below. The order of the reporting period quarters below is irrelevant to the grant. Reports for the respective period are due on or before the due dates listed below if the grant is open during the "report period" time, and for every quarter that the grant remains open.

Report Period	Due Date
January, February, March	due April 15 th
April, May, June	due July 15 th
July, August, September	due October 15 th
October, November, December	due January 15 th

4.2 Final Reports: Grantee shall submit final progress reports that provide final financial reconciliation and final cumulative grant/project accomplishments within 45 days of the end of the project/grant period of performance. The final report may not include unliquidated obligations and must indicate the exact balance of unobligated funds. The final reports may substitute for the quarterly reports for the final quarter of the grant period.

If all projects are completed before the end of the grant period, the final report may be submitted at any time during the period of performance. Further reports are not due after the DHSEM has received, and sent notice of acceptance, of the final grant report.

5. Payment:

5.1 Payment Schedule: Grantee shall submit requests for reimbursement using the DHSEM's provided form, submission preference, and quarterly at minimum. One original or electronically signed/submitted copy of the reimbursement request is due on the same dates as the required progress reports outlined in §4.1 of this Exhibit A.

All requests shall be for eligible actual expenses incurred by Grantee, and as described in detail in the budget table(s) of Exhibit C. Requests shall be accompanied by supporting documentation totaling at least the amount requested for reimbursement and any required non-federal match contribution as outlined in §1.4 and Exhibit C.

If any progress reports are delinquent at the time of a payment request, the DHSEM may withhold such reimbursement until the required reports have been submitted.

5.2 Payment Amount: If non-federal match is required, such match shall be documented with every payment request. Excess match documented and submitted with one reimbursement request shall be applied to subsequent requests as necessary to maximize the allowable reimbursement.

5.3 Payment Returns: Any grant funds from this award not expended by the Agreement Expiration Date, or deemed ineligible under the grant program, must be returned to the State within 10 days of the Agreement Expiration Date, or notification from the DHSEM of ineligibility. Such grant funds returned to the State must be via check repayment issued to 'Colorado Department of Public Safety' with a memo line stating 'refund for [encumbrance number*]' and remit to:

**Colorado Department of Public Safety
Attn: EDO Accountant
700 Kipling Street, Suite 4000
Lakewood, CO 80215**

*Encumbrance number for this award is found at the bottom of each page of this Agreement.

6. Testing and Acceptance Criteria:

The DHSEM shall evaluate Project(s) through the review of Grantee submitted financial and progress reports, and may also conduct on-site monitoring to determine whether the Grantee is meeting/has met the performance goals, administrative standards, financial management, and other requirements of this grant. The DHSEM will notify Grantee in advance of such on-site monitoring.

Exhibit B, Sample Option Letter

State of Colorado Agreement Modification Option Letter

State Agency

Insert Department's or IHE's Full Legal Name

Grantee

Insert Agreement's Full Legal Name

Original Agreement Number

Insert Encumbrance Number

Option Letter Number

Insert the Option Number (e.g. "1" for the first option)

Agreement Performance Beginning Date

Month Day, Year

Current Agreement Expiration Date

Month Day, Year

Current Agreement Maximum Amount

\$0.00

Current Agreement Match Amount

\$0.00

1. OPTIONS:

- A. Option to extend for an Extension Term
- B. Option to modify Agreement rates
- C. Option to initiate next phase of the Agreement

2. REQUIRED PROVISIONS:

- A. For use with Option 1(A)
In accordance with Section(s) Number of the Original Agreement referenced above, the State hereby exercises its option for an additional term, beginning Insert start date and ending on the current Agreement expiration date shown above, at the rates stated in the Original Agreement, as amended.
- B. For use with Option 1(B)
In accordance with Section(s) Number of the Original Agreement referenced above, the State hereby exercises its option to modify the Agreement rates specified in Exhibit/Section Number/Letter. The Agreement rates attached to this Option Letter replace the rates in the Original Agreement as of the Option Effective Date of this Option Letter.
- C. For use with Option 1(C)
In accordance with Section(s) Number of the Original Agreement referenced above, the State hereby exercises its option to initiate Phase indicate which Phase: 2, 3, 4, etc., which shall begin on Insert start date and end on Insert ending date at the cost/price specified in Section Number.
- D. For use with all Options that modify the Agreement Maximum Amount
The Agreement Maximum Amount table on the Agreement's Signature and Cover Page is hereby deleted and replaced with the Current Agreement Maximum Amount table shown above.

3. OPTION EFFECTIVE DATE:

The effective date of this Option Letter is upon approval of the State Controller.

STATE OF COLORADO
Jared S. Polis, Governor
Department of Public Safety, Division of Homeland
Security and Emergency Management
Stan Hilkey, Executive Director

In accordance with §24-30-202, C.R.S., this Option
is not valid until signed and dated above by the
State Controller or an authorized delegate.

STATE CONTROLLER
Robert Jaros, CPA, MBA, JD

By: Kevin R. Klein, Director, DHSEM,
or DHSEM Director Delegate

Date: _____

By: Robert Jaros, CPA, MBA, JD
or State Controller Delegate

Option Effective Date: _____

Exhibit C, Budget

Budget:

The following budget table contains amounts for the categories and/or project activities for this grant award.

<i>Project Activity/Line Item</i>	<i>Federal Share</i>	<i>Local Share</i>	<i>Total Project</i>
Generator - South Water Treatment Plant	\$ 414,313.60	\$ 52,764.65	\$ 467,078.25
Generator – Police/Court Building	\$ 878,024.92	\$ 111,820.33	\$ 989,845.25
Generator – Recreation Center	\$ 1,917,941.71	\$ 244,258.29	\$ 2,162,200.00
Project Supervisors	\$ 160,514.01	\$ 20,442.16	\$ 180,956.17
Project Contingency (up to 5%)	\$ 160,514.01	\$ 20,442.16	\$ 180,956.17
<i>Project Activity Subtotal</i>	<i>\$3,531,308.25</i>	<i>\$ 449,727.59</i>	<i>\$3,981,035.84</i>
Subrecipient Management Costs (SRMC up to 5%)	\$ 199,051.79	\$ 0.00	\$ 199,051.79
Total Budget	\$3,730,360.04	\$ 449,727.59	\$4,180,087.63
Total Award Amount	\$ 3,730,360.04		

Exhibit D, Federal Provisions

1. Applicability of Provisions.

- 1.1. The Grant to which these Federal Provisions are attached has been funded, in whole or in part, with an Award of Federal funds. In the event of a conflict between the provisions of these Federal Provisions, the Special Provisions, the body of the Grant, or any attachments or exhibits incorporated into and made a part of the Grant, the provisions of these Federal Provisions shall control.

These Federal Provisions are subject to the Award as defined in §2 of these Federal Provisions, as may be revised pursuant to ongoing guidance from the relevant Federal or State of Colorado agency or institutions of higher education.

2. Definitions.

- 2.1. For the purposes of these Federal Provisions, the following terms shall have the meanings ascribed to them below. For a full list of definitions (as of October 1, 2024) under the Uniform Guidance, see 2 CFR 200.1.
 - 2.1.1. "Award" means an award of Federal financial assistance, and the Grant setting forth the terms and conditions of that financial assistance, that a non-Federal Entity receives or administers.
 - 2.1.2. "Entity" means:
 - 2.1.2.1. a Non-Federal Entity;
 - 2.1.2.2. a non-profit organization or for-profit organization.
 - 2.1.3. "Executive" means an officer, managing partner or any other employee in a management position.
 - 2.1.4. "Federal Awarding Agency" means a Federal agency providing a Federal Award to a Recipient as described in 2 CFR 200.1
 - 2.1.5. "Grant" means the Grant to which these Federal Provisions are attached.
 - 2.1.6. "Grantee" means the party or parties identified as such in the Grant to which these Federal Provisions are attached. Grantee also means Subrecipient.
 - 2.1.7. "Non-Federal Entity" means a State, local government, Indian tribe, institution of higher education, or nonprofit organization that carries out a Federal Award as a Recipient or a Subrecipient.

- 2.1.8. "Nonprofit Organization" organization that:
- 2.1.8.1. Is operated primarily for scientific, educational, service, charitable, or similar purposes in the public interest;
 - 2.1.8.2. Is not organized primarily for profit; and
 - 2.1.8.3. Uses net proceeds to maintain, improve, or expand the organization's operations; and
 - 2.1.8.4. Is not an IHE.
- 2.1.9. "OMB" means the Executive Office of the President, Office of Management and Budget.
- 2.1.10. "Pass-through Entity" means a recipient or subrecipient that provides a Subaward to a Subrecipient (including lower tier subrecipients) to carry out part of a Federal program. The authority of the pass-through entity under this part flows through the Subaward agreements between the pass-through entity and subrecipient.
- 2.1.11. "Recipient" means the Colorado State agency or institution of higher education identified as the Grantor in the Grant to which these Federal Provisions are attached.
- 2.1.12. "Subaward" means an award provided by a pass-through entity to a Subrecipient to contribute to the goals and objectives of the project by carrying out part of a Federal award received by the pass-through entity. The term does not include payments to a contractor, beneficiary or participant.
- 2.1.13. "Subrecipient" means an entity that receives a subaward from a pass-through entity to carry out part of a Federal award. The term subrecipient does not include a beneficiary or participant. A subrecipient may also be a recipient of other Federal awards directly from a Federal agency. Subrecipient also means Grantee.
- 2.1.14. "System for Award Management (SAM)" means the Federal repository into which an Entity must enter the information required under the Transparency Act, which may be found at <http://www.sam.gov>.

- 2.1.15. "Total Compensation" means the cash and noncash dollar value an Executive earns during the entity's preceding fiscal year. This includes all items of compensation as prescribed in 17 CFR 229.402(c)(2).
- 2.1.16. "Transparency Act" means the Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), as amended by §6202 of Public Law 110-252.
- 2.1.17. "Unique Entity ID (UEI)" is the universal identifier for federal financial assistance applicants, as well as recipients and their direct subrecipients (first tier subrecipients).
- 2.1.18. "Uniform Guidance" means the Office of Management and Budget Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. The terms and conditions of the Uniform Guidance flow down to Awards to Subrecipients unless the Uniform Guidance or the terms and conditions of the Federal Award specifically indicate otherwise.

3. Compliance.

- 3.1. Subrecipient shall comply with all applicable provisions of the Transparency Act and the regulations issued pursuant thereto, all applicable provisions of the Uniform Guidance, and all applicable Federal Laws and regulations required by this Federal Award. Any revisions to such provisions or regulations shall automatically become a part of these Federal Provisions, without the necessity of either party executing any further instrument. The State of Colorado, at its discretion, may provide written notification to Subrecipient of such revisions, but such notice shall not be a condition precedent to the effectiveness of such revisions.

4. System for Award Management (SAM) and UNIQUE ENTITY ID (UEI) Requirements.

- 4.1. SAM. Subrecipient must obtain a UEI but are not required to fully register in SAM.gov. Subrecipient shall maintain the currency of its information in SAM until the Subrecipient submits the final financial report required under the Award or receives final payment, whichever is later. Subrecipient shall review and update SAM information at least annually after the initial registration, and more frequently if required by changes in its information.
- 4.2. Unique Entity ID. Subrecipient shall provide its Unique Entity ID to its Recipient, and shall update Subrecipient's information at [SAM.gov](https://sam.gov) at least annually after the initial registration, and more frequently if required by changes in Subrecipient's information.

5. Total Compensation.

5.1. Subrecipient shall include Total Compensation in SAM for each of its five most highly compensated Executives for the preceding fiscal year if:

5.1.1. The total Federal funding authorized to date under the Award is \$30,000 or more; and

5.1.2. In the preceding fiscal year, Subrecipient received:

5.1.2.1. 80% or more of its annual gross revenues from Federal procurement contracts and subcontracts and/or Federal financial assistance Awards or Subawards subject to the Transparency Act; and

5.1.2.2. \$25,000,000 or more in annual gross revenues from Federal procurement contracts and subcontracts and/or Federal financial assistance Awards or Subawards subject to the Transparency Act; and

5.1.2.3. The public does not have access to information about the compensation of such Executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d) or § 6104 of the Internal Revenue Code of 1986.

6. Reporting.

6.1. Pursuant to the Transparency Act, Subrecipient shall report data elements to SAM and to the Recipient as required in this Exhibit. No direct payment shall be made to Subrecipient for providing any reports required under these Federal Provisions and the cost of producing such reports shall be included in the Grant price. The reporting requirements in this Exhibit are based on guidance from the OMB, and as such are subject to change at any time by OMB. Any such changes shall be automatically incorporated into this Grant and shall become part of Subrecipient's obligations under this Grant.

7. Effective Date and Dollar Threshold for Reporting.

7.1. Reporting requirements in §8 below apply to new Awards as of October 1, 2010, if the initial award is \$30,000 or more. If the initial Award is below \$30,000 but subsequent Award modifications result in a total Award of \$30,000 or more, the Award is subject to the reporting requirements as of the date the Award exceeds \$30,000. If the initial

Award is \$30,000 or more, but funding is subsequently de-obligated such that the total award amount falls below \$30,000, the Award shall continue to be subject to the reporting requirements.

- 7.2. The procurement standards in §9 below are applicable to new Awards made by Recipient as of December 26, 2015. The standards set forth in §11 below are applicable to audits of fiscal years beginning on or after December 26, 2014.

8. Subrecipient Reporting Requirements.

- 8.1. Subrecipient shall report as set forth below.

8.1.1. To SAM. A Subrecipient shall report the following data elements in SAM for each Federal Award Identification Number (FAIN) assigned by a Federal agency to a Recipient no later than the end of the month following the month in which the Subaward was made:

- 8.1.1.1. Subrecipient Unique Entity ID;
- 8.1.1.2. Subrecipient Unique Entity ID if more than one electronic funds transfer (EFT) account;
- 8.1.1.3. Subrecipient parent's organization Unique Entity ID;
- 8.1.1.4. Subrecipient's address, including: Street Address, City, State, Country, Zip + 4, and Congressional District;
- 8.1.1.5. Subrecipient's top 5 most highly compensated Executives if the criteria in §4 above are met; and
- 8.1.1.6. Subrecipient's Total Compensation of top 5 most highly compensated Executives if the criteria in §4 above met.

8.1.2. To Recipient. A Subrecipient shall report to its Recipient, upon the effective date of the Grant, the following data elements:

- 8.1.2.1. Subrecipient's Unique Entity ID as registered in SAM.
- 8.1.2.2. Primary Place of Performance Information, including: Street Address, City, State, Country, Zip code + 4, and Congressional District.

9. Procurement Standards.

- 9.1. Procurement Procedures. A Subrecipient shall use its own documented procurement procedures which reflect applicable State, local, and Tribal laws and applicable regulations, provided that the procurements conform to applicable Federal law and the standards identified in the Uniform Guidance, including without limitation, 2 CFR 200.318 through 200.327 thereof.
- 9.2. Domestic preference for procurements (2 CFR 200.322). As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.
- 9.3. Procurement of Recovered Materials. If a Subrecipient is a State Agency or an agency of a political subdivision of the State, its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247, that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.
- 9.4. Never contract with the enemy (2 CFR 200.215). Federal awarding agencies and recipients are subject to the regulations implementing "Never contract with the enemy" in 2 CFR part 183. The regulations in 2 CFR part 183 affect covered contracts, grants and cooperative agreements that are expected to exceed \$50,000 during the period of performance, are performed outside the United States and its territories, and are in support of a contingency operation in which members of the Armed Forces are actively engaged in hostilities.

- 9.5. Prohibition on certain telecommunications and video surveillance equipment or services (2 CFR 200.216). Subrecipient is prohibited from obligating or expending loan or grant funds on certain telecommunications and video surveillance services or equipment pursuant to 2 CFR 200.216.

10. Access to Records.

- 10.1. A Subrecipient shall permit Recipient and its auditors to have access to Subrecipient's records and financial statements as necessary for Recipient to meet the requirements of 2 CFR 200.332 (Requirements for pass-through entities), 2 CFR 200.300 (Statutory and national policy requirements) through 2 CFR 200.309 (Modification to period of performance), 2 CFR 200.337 (Access to Records) and Subpart F-Audit Requirements of the Uniform Guidance.
- 10.2. A Subrecipient must collect, transmit, and store information related to this Subaward in open and machine-readable formats (2 CFR 200.336).

11. Single Audit Requirements.

- 11.1. If a Subrecipient expends \$1,000,000 or more in Federal Awards during the Subrecipient's fiscal year, the Subrecipient shall procure or arrange for a single or program-specific audit conducted for that year in accordance with the provisions of Subpart F-Audit Requirements of the Uniform Guidance, issued pursuant to the Single Audit Act Amendments of 1996, (31 U.S.C. 7501-7507). 2 CFR 200.501.
- 11.1.1. Election. A Subrecipient shall have a single audit conducted in accordance with Uniform Guidance 2 CFR 200.514 (Scope of audit), except when it elects to have a program-specific audit conducted in accordance with 2 CFR 200.507 (Program-specific audits). The Subrecipient may elect to have a program-specific audit if Subrecipient expends Federal Awards under only one Federal program (excluding research and development) and the Federal program's statutes, regulations, or the terms and conditions of the Federal award do not require a financial statement audit of Recipient. A program-specific audit may not be elected for research and development unless all of the Federal Awards expended were received from Recipient and Recipient approves in advance a program-specific audit.
- 11.1.2. Exemption. If a Subrecipient expends less than \$1,000,000 in Federal Awards during its fiscal year, the Subrecipient shall be exempt from Federal audit

requirements for that year, except as noted in 2 CFR 200.503 (Relation to other audit requirements), but records shall be available for review or audit by appropriate officials of the Federal agency, the State, and the Government Accountability Office.

- 11.1.3. Subrecipient Compliance Responsibility. A Subrecipient shall procure or otherwise arrange for the audit required by Subpart F of the Uniform Guidance and ensure it is properly performed and submitted when due in accordance with the Uniform Guidance. Subrecipient shall prepare appropriate financial statements, including the schedule of expenditures of Federal awards in accordance with 2 CFR 200.510 (Financial statements) and provide the auditor with access to personnel, accounts, books, records, supporting documentation, and other information as needed for the auditor to perform the audit required by Uniform Guidance Subpart F-Audit Requirements.

12. Grant Provisions for Subrecipient Contracts.

- 12.1. In addition to other provisions required by the Federal Awarding Agency or the Recipient, Subrecipients shall include all of the following applicable provisions.
 - 12.1.1. For agreements with Subrecipients – Include the terms in the Grant Federal Provisions Exhibit (this exhibit).
 - 12.1.2. For contracts with Subcontractors – Include the terms in the Contract Federal Provisions Exhibit.

13. Certifications.

- 13.1. Unless prohibited by Federal statutes or regulations, Recipient may require Subrecipient to submit certifications and representations required by Federal statutes or regulations on an annual basis. 2 CFR 200.415. Submission may be required more frequently if Subrecipient fails to meet a requirement of the Federal award. Subrecipient shall certify in writing to the State at the end of the Award that the project or activity was completed or the level of effort was expended. If the required level of activity or effort was not carried out, the amount of the Award must be adjusted.

14. Exemptions.

- 14.1. These Federal Provisions do not apply to an individual who receives an Award as a natural person, unrelated to any business or non-profit organization he or she may own or operate in his or her name.
- 14.2. A Subrecipient with gross income from all sources of less than \$300,000 in the previous tax year is exempt from the requirements to report Subawards and the Total Compensation of its most highly compensated Executives.

15. Event of Default and Termination.

- 15.1. Failure to comply with these Federal Provisions shall constitute an event of default under the Grant and the State of Colorado may terminate the Grant upon 30 days prior written notice if the default remains uncured five calendar days following the termination of the 30-day notice period. This remedy will be in addition to any other remedy available to the State of Colorado under the Grant, at law or in equity.
- 15.2. Termination (2 CFR 200.340). The Federal Award may be terminated in whole or in part as follows:
 - 15.2.1. By the Federal Awarding Agency or Pass-through Entity, if a Non-Federal Entity fails to comply with the terms and conditions of a Federal Award;
 - 15.2.2. By the Federal awarding agency or Pass-through Entity with the consent of the Non-Federal Entity, in which case the two parties must agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated;
 - 15.2.3. By the Non-Federal Entity upon sending to the Federal Awarding Agency or Pass-through Entity written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. However, if the Federal Awarding Agency or Pass-through Entity determines in the case of partial termination that the reduced or modified portion of the Federal Award or Subaward will not accomplish the purposes for which the Federal Award was made, the Federal Awarding Agency or Pass-through Entity may terminate the Federal Award in its entirety; or
 - 15.2.4. By the Federal Awarding Agency or Pass-through Entity pursuant to termination provisions included in the Federal Award.

16. Additional Federal Requirements

16.1. Whistle Blower Protections

An employee of a subrecipient must not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing to a person or body described in paragraph (a)(2) of 41 U.S.C. 4712 information that the employee reasonably believes is evidence of gross mismanagement of a Federal contract or grant, a gross waste of Federal funds, an abuse of authority relating to a Federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a Federal contract (including the competition for or negotiation of a contract) or grant. The subrecipient must inform their employees in writing of employee whistleblower rights and protections under 41 U.S.C. 4712. See statutory requirements for whistleblower protections at 10 U.S.C. 4701, 41 U.S.C. 4712, 41 U.S.C. 4304, and 10 U.S.C. 4310.

Exhibit E, PII Certification

State of Colorado

Third Party Individual Certification for Access TO PII through a Database or Automated Network

Pursuant to § 24-74-105, C.R.S., I hereby certify under the penalty of perjury that I have not and will not use or disclose any Personal Identifying Information, as defined by § 24-74-102(1), C.R.S., for the purpose of investigating for, participating in, cooperating with, or assisting Federal Immigration Enforcement, including the enforcement of civil immigration laws, and the Illegal Immigration and Immigrant Responsibility Act, which is codified at 8 U.S.C. §§ 1325 and 1326, unless required to do so to comply with Federal or State law, or to comply with a court-issued subpoena, warrant or order.

Signature: _____

Printed Name: _____

Date: _____

Exhibit E, PII Certification

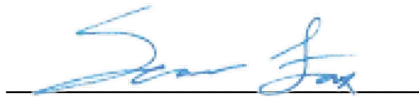
State of Colorado

Third Party Entity/Organization Certification for Access TO PII through a Database or Automated Network

Pursuant to § 24-74-105, C.R.S., I, Samma Fox, on behalf of The City of Louisville (legal name of entity / organization) (the "Organization"), hereby certify under the penalty of perjury that the Organization has not and will not use or disclose any Personal Identifying Information, as defined by § 24-74-102(1), C.R.S., for the purpose of investigating for, participating in, cooperating with, or assisting Federal Immigration Enforcement, including the enforcement of civil immigration laws, and the Illegal Immigration and Immigrant Responsibility Act, which is codified at 8 U.S.C. §§ 1325 and 1326, unless required to do so to comply with Federal or State law, or to comply with a court-issued subpoena, warrant or order.

I hereby represent and certify that I have full legal authority to execute this certification on behalf of the Organization.

Signature:



Printed Name:

Samma Fox

Title:

Interim City Manager

Date:

2/4/2005

Exhibit F, HIPAA Business Associate Agreement

This HIPAA Business Associate Agreement ("Agreement") between the State and Contractor is agreed to in connection with, and as an exhibit to, the Contract. For purposes of this Agreement, the State is referred to as "Covered Entity" and the Contractor is referred to as "Business Associate". Unless the context clearly requires a distinction between the Contract and this Agreement, all references to "Contract" shall include this Agreement.

1. Purpose

Covered Entity wishes to disclose information to Business Associate, which may include Protected Health Information ("PHI"). The Parties intend to protect the privacy and security of the disclosed PHI in compliance with the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), Pub. L. No. 104-191 (1996) as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH Act") enacted under the American Recovery and Reinvestment Act of 2009 ("ARRA") Pub. L. No. 111-5 (2009), implementing regulations promulgated by the U.S. Department of Health and Human Services at 45 C.F.R. Parts 160, 162 and 164 (the "HIPAA Rules") and other applicable laws, as amended. Prior to the disclosure of PHI, Covered Entity is required to enter into an agreement with Business Associate containing specific requirements as set forth in, but not limited to, Title 45, Sections 160.103, 164.502(e) and 164.504(e) of the Code of Federal Regulations ("C.F.R.") and all other applicable laws and regulations, all as may be amended.

2. Definitions

The following terms used in this Agreement shall have the same meanings as in the HIPAA Rules: Breach, Data Aggregation, Designated Record Set, Disclosure, Health Care Operations, Individual, Minimum Necessary, Notice of Privacy Practices, Protected Health Information, Required by Law, Secretary, Security Incident, Subcontractor, Unsecured Protected Health Information, and Use.

The following terms used in this Agreement shall have the meanings set forth below:

- a. Business Associate. "Business Associate" shall have the same meaning as the term "business associate" at 45 C.F.R. 160.103, and shall refer to Contractor.
- b. Covered Entity. "Covered Entity" shall have the same meaning as the term "covered entity" at 45 C.F.R. 160.103, and shall refer to the State.

- c. Information Technology and Information Security. "Information Technology" and "Information Security" shall have the same meanings as the terms "information technology" and "information security", respectively, in §24-37.5-102, C.R.S.

Capitalized terms used herein and not otherwise defined herein or in the HIPAA Rules shall have the meanings ascribed to them in the Contract.

3. Obligations and Activities of Business Associate

- a. Permitted Uses and Disclosures.
- b. Business Associate shall use and disclose PHI only to accomplish Business Associate's obligations under the Contract.
 - i. To the extent Business Associate carries out one or more of Covered Entity's obligations under Subpart E of 45 C.F.R. Part 164, Business Associate shall comply with any and all requirements of Subpart E that apply to Covered Entity in the performance of such obligation.
 - ii. Business Associate may disclose PHI to carry out the legal responsibilities of Business Associate, provided, that the disclosure is Required by Law or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that:
 - A. the information will remain confidential and will be used or disclosed only as Required by Law or for the purpose for which Business Associate originally disclosed the information to that person, and;
 - B. the person notifies Business Associate of any Breach involving PHI of which it is aware.
 - iii. Business Associate may provide Data Aggregation services relating to the Health Care Operations of Covered Entity. Business Associate may de-identify any or all PHI created or received by Business Associate under this Agreement, provided the de-identification conforms to the requirements of the HIPAA Rules.
- c. Minimum Necessary. Business Associate, its Subcontractors and agents, shall access, use, and disclose only the minimum amount of PHI necessary to accomplish the objectives of the Contract, in accordance with the Minimum Necessary Requirements of the HIPAA Rules including, but not limited to, 45 C.F.R. 164.502(b) and 164.514(d).

- d. Impermissible Uses and Disclosures.
 - i. Business Associate shall not disclose the PHI of Covered Entity to another covered entity without the written authorization of Covered Entity.
 - ii. Business Associate shall not share, use, disclose or make available any Covered Entity PHI in any form via any medium with or to any person or entity beyond the boundaries or jurisdiction of the United States without express written authorization from Covered Entity.
- e. Business Associate's Subcontractors.
 - i. Business Associate shall, in accordance with 45 C.F.R. 164.502(e)(1)(ii) and 164.308(b)(2), ensure that any Subcontractors who create, receive, maintain, or transmit PHI on behalf of Business Associate agree in writing to the same restrictions, conditions, and requirements that apply to Business Associate with respect to safeguarding PHI.
 - ii. Business Associate shall provide to Covered Entity, on Covered Entity's request, a list of Subcontractors who have entered into any such agreement with Business Associate.
 - iii. Business Associate shall provide to Covered Entity, on Covered Entity's request, copies of any such agreements Business Associate has entered into with Subcontractors.
- f. Access to System. If Business Associate needs access to a Covered Entity Information Technology system to comply with its obligations under the Contract or this Agreement, Business Associate shall request, review, and comply with any and all policies applicable to Covered Entity regarding such system including, but not limited to, any policies promulgated by the Office of Information Technology and available at <http://oit.state.co.us/about/policies>.
- g. Access to PHI. Business Associate shall, within ten days of receiving a written request from Covered Entity, make available PHI in a Designated Record Set to Covered Entity as necessary to satisfy Covered Entity's obligations under 45 C.F.R. 164.524.

- h. Amendment of PHI.
 - i. Business Associate shall within ten days of receiving a written request from Covered Entity make any amendment to PHI in a Designated Record Set as directed by or agreed to by Covered Entity pursuant to 45 C.F.R. 164.526, or take other measures as necessary to satisfy Covered Entity's obligations under 45 C.F.R. 164.526.
 - ii. Business Associate shall promptly forward to Covered Entity any request for amendment of PHI that Business Associate receives directly from an Individual.
- i. Accounting Rights. Business Associate shall, within ten days of receiving a written request from Covered Entity, maintain and make available to Covered Entity the information necessary for Covered Entity to satisfy its obligations to provide an accounting of Disclosure under 45 C.F.R. 164.528.
- j. Restrictions and Confidential Communications.
 - i. Business Associate shall restrict the Use or Disclosure of an Individual's PHI within ten days of notice from Covered Entity of:
 - A. a restriction on Use or Disclosure of PHI pursuant to 45 C.F.R. 164.522; or
 - B. a request for confidential communication of PHI pursuant to 45 C.F.R. 164.522.
 - ii. Business Associate shall not respond directly to an Individual's requests to restrict the Use or Disclosure of PHI or to send all communication of PHI to an alternate address.
 - iii. Business Associate shall refer such requests to Covered Entity so that Covered Entity can coordinate and prepare a timely response to the requesting Individual and provide direction to Business Associate.
- k. Governmental Access to Records. Business Associate shall make its facilities, internal practices, books, records, and other sources of information, including PHI, available to the Secretary for purposes of determining compliance with the HIPAA Rules in accordance with 45 C.F.R. 160.310.
- l. Audit, Inspection and Enforcement.
 - i. Business Associate shall obtain and update at least annually a written assessment performed by an independent third party reasonably acceptable to Covered Entity, which evaluates the Information Security of the applications, infrastructure, and

processes that interact with the Covered Entity data Business Associate receives, manipulates, stores and distributes. Upon request by Covered Entity, Business Associate shall provide to Covered Entity the executive summary of the assessment.

- ii. Business Associate, upon the request of Covered Entity, shall fully cooperate with Covered Entity's efforts to audit Business Associate's compliance with applicable HIPAA Rules. If, through audit or inspection, Covered Entity determines that Business Associate's conduct would result in violation of the HIPAA Rules or is in violation of the Contract or this Agreement, Business Associate shall promptly remedy any such violation and shall certify completion of its remedy in writing to Covered Entity.

m. Appropriate Safeguards.

- i. Business Associate shall use appropriate safeguards and comply with Subpart C of 45 C.F.R. Part 164 with respect to electronic PHI to prevent use or disclosure of PHI other than as provided in this Agreement.
- ii. Business Associate shall safeguard the PHI from tampering and unauthorized disclosures.
- iii. Business Associate shall maintain the confidentiality of passwords and other data required for accessing this information.
- iv. Business Associate shall extend protection beyond the initial information obtained from Covered Entity to any databases or collections of PHI containing information derived from the PHI. The provisions of this section shall be in force unless PHI is de-identified in conformance to the requirements of the HIPAA Rules.

n. Safeguard During Transmission.

- i. Business Associate shall use reasonable and appropriate safeguards including, without limitation, Information Security measures to ensure that all transmissions of PHI are authorized and to prevent use or disclosure of PHI other than as provided for by this Agreement.
- ii. Business Associate shall not transmit PHI over the internet or any other insecure or open communication channel unless the PHI is encrypted or otherwise safeguarded with a FIPS-compliant encryption algorithm.

o. Reporting of Improper Use or Disclosure and Notification of Breach.

- i. Business Associate shall, as soon as reasonably possible, but immediately after discovery of a Breach, notify Covered Entity of any use or disclosure of PHI not provided for by this Agreement, including a Breach of Unsecured Protected Health Information as such notice is required by 45 C.F.R. 164.410 or a breach for which notice is required under §24-73-103, C.R.S.
 - ii. Such notice shall include the identification of each Individual whose Unsecured Protected Health Information has been, or is reasonably believed by Business Associate to have been, accessed, acquired, or disclosed during such Breach.
 - iii. Business Associate shall, as soon as reasonably possible, but immediately after discovery of any Security Incident that does not constitute a Breach, notify Covered Entity of such incident.
 - iv. Business Associate shall have the burden of demonstrating that all notifications were made as required, including evidence demonstrating the necessity of any delay.
- p. Business Associate's Insurance and Notification Costs.
- i. Business Associate shall bear all costs of a Breach response including, without limitation, notifications, and shall maintain insurance to cover:
 - A. loss of PHI data;
 - B. Breach notification requirements specified in HIPAA Rules and in §24-73-103, C.R.S.; and
 - C. claims based upon alleged violations of privacy rights through improper use or disclosure of PHI.
 - ii. All such policies shall meet or exceed the minimum insurance requirements of the Contract or otherwise as may be approved by Covered Entity (e.g., occurrence basis, combined single dollar limits, annual aggregate dollar limits, additional insured status, and notice of cancellation).
 - iii. Business Associate shall provide Covered Entity a point of contact who possesses relevant Information Security knowledge and is accessible 24 hours per day, 7 days per week to assist with incident handling.
 - iv. Business Associate, to the extent practicable, shall mitigate any harmful effect known to Business Associate of a Use or Disclosure of PHI by Business Associate in violation of this Agreement.

q. Subcontractors and Breaches.

- i. Business Associate shall enter into a written agreement with each of its Subcontractors and agents, who create, receive, maintain, or transmit PHI on behalf of Business Associate. The agreements shall require such Subcontractors and agents to report to Business Associate any use or disclosure of PHI not provided for by this Agreement, including Security Incidents and Breaches of Unsecured Protected Health Information, on the first day such Subcontractor or agent knows or should have known of the Breach as required by 45 C.F.R. 164.410.
- ii. Business Associate shall notify Covered Entity of any such report and shall provide copies of any such agreements to Covered Entity on request.

r. Data Ownership.

- i. Business Associate acknowledges that Business Associate has no ownership rights with respect to the PHI.
 - ii. Upon request by Covered Entity, Business Associate immediately shall provide Covered Entity with any keys to decrypt information that the Business Association has encrypted and maintains in encrypted form, or shall provide such information in unencrypted usable form.
- s. Retention of PHI. Except upon termination of this Agreement as provided in Section 5 below, Business Associate and its Subcontractors or agents shall retain all PHI throughout the term of this Agreement, and shall continue to maintain the accounting of disclosures required under Section 1.i above, for a period of six years.

4. Obligations of Covered Entity

- c. Safeguards During Transmission. Covered Entity shall be responsible for using appropriate safeguards including encryption of PHI, to maintain and ensure the confidentiality, integrity, and security of PHI transmitted pursuant to this Agreement, in accordance with the standards and requirements of the HIPAA Rules.

d. Notice of Changes.

- i. Covered Entity maintains a copy of its Notice of Privacy Practices on its website. Covered Entity shall provide Business Associate with any changes in, or revocation of, permission to use or disclose PHI, to the extent that it may affect Business Associate's permitted or required uses or disclosures.
- ii. Covered Entity shall notify Business Associate of any restriction on the use or disclosure of PHI to which Covered Entity has agreed in accordance with 45 C.F.R. 164.522, to the extent that it may affect Business Associate's permitted use or disclosure of PHI.

5. Termination

e. Breach.

- i. In addition to any Contract provision regarding remedies for breach, Covered Entity shall have the right, in the event of a breach by Business Associate of any provision of this Agreement, to terminate immediately the Contract, or this Agreement, or both.
- ii. Subject to any directions from Covered Entity, upon termination of the Contract, this Agreement, or both, Business Associate shall take timely, reasonable, and necessary action to protect and preserve property in the possession of Business Associate in which Covered Entity has an interest.

b. Effect of Termination.

- i. Upon termination of this Agreement for any reason, Business Associate, at the option of Covered Entity, shall return or destroy all PHI that Business Associate, its agents, or its Subcontractors maintain in any form, and shall not retain any copies of such PHI.
- ii. If Covered Entity directs Business Associate to destroy the PHI, Business Associate shall certify in writing to Covered Entity that such PHI has been destroyed.
- iii. If Business Associate believes that returning or destroying the PHI is not feasible, Business Associate shall promptly provide Covered Entity with notice of the conditions making return or destruction infeasible. Business Associate shall continue to extend the protections of Section 3 of this Agreement to such PHI, and shall limit further use of such PHI to those purposes that make the return or destruction of such PHI infeasible.

6. Injunctive Relief

Covered Entity and Business Associate agree that irreparable damage would occur in the event Business Associate or any of its Subcontractors or agents use or disclosure of PHI in violation of this Agreement, the HIPAA Rules or any applicable law. Covered Entity and Business Associate further agree that money damages would not provide an adequate remedy for such Breach. Accordingly, Covered Entity and Business Associate agree that Covered Entity shall be entitled to injunctive relief, specific performance, and other equitable relief to prevent or restrain any Breach or threatened Breach of and to enforce specifically the terms and provisions of this Agreement.

6. Limitation of Liability

Any provision in the Contract limiting Contractor's liability shall not apply to Business Associate's liability under this Agreement, which shall not be limited.

7. Disclaimer

Covered Entity makes no warranty or representation that compliance by Business Associate with this Agreement or the HIPAA Rules will be adequate or satisfactory for Business Associate's own purposes. Business Associate is solely responsible for all decisions made and actions taken by Business Associate regarding the safeguarding of PHI.

8. Certification

Covered Entity has a legal obligation under HIPAA Rules to certify as to Business Associate's Information Security practices. Covered Entity or its authorized agent or contractor shall have the right to examine Business Associate's facilities, systems, procedures, and records, at Covered Entity's expense, if Covered Entity determines that examination is necessary to certify that Business Associate's Information Security safeguards comply with the HIPAA Rules or this Agreement.

9. Amendment

- f.** Amendment to Comply with Law. The Parties acknowledge that state and federal laws and regulations relating to data security and privacy are rapidly evolving and that amendment of this Agreement may be required to provide procedures to ensure compliance with such developments.

- i.** In the event of any change to state or federal laws and regulations relating to data

security and privacy affecting this Agreement, the Parties shall take such action as is necessary to implement the changes to the standards and requirements of HIPAA, the HIPAA Rules and other applicable rules relating to the confidentiality, integrity, availability and security of PHI with respect to this Agreement.

- ii. Business Associate shall provide to Covered Entity written assurance satisfactory to Covered Entity that Business Associate shall adequately safeguard all PHI, and obtain written assurance satisfactory to Covered Entity from Business Associate's Subcontractors and agents that they shall adequately safeguard all PHI.
- iii. Upon the request of either Party, the other Party promptly shall negotiate in good faith the terms of an amendment to the Contract embodying written assurances consistent with the standards and requirements of HIPAA, the HIPAA Rules, or other applicable rules.
- iv. Covered Entity may terminate this Agreement upon 30 days' prior written notice in the event that:
 - A. Business Associate does not promptly enter into negotiations to amend the Contract and this Agreement when requested by Covered Entity pursuant to this Section; or
 - B. Business Associate does not enter into an amendment to the Contract and this Agreement, which provides assurances regarding the safeguarding of PHI sufficient, in Covered Entity's sole discretion, to satisfy the standards and requirements of the HIPAA, the HIPAA Rules and applicable law.
- c. Amendment of Appendix. The Appendix to this Agreement may be modified or amended by the mutual written agreement of the Parties, without amendment of this Agreement. Any modified or amended Appendix agreed to in writing by the Parties shall supersede and replace any prior version of the Appendix.

10. Assistance in Litigation or Administrative Proceedings

Covered Entity shall provide written notice to Business Associate if litigation or administrative proceeding is commenced against Covered Entity, its directors, officers, or employees, based on a claimed violation by Business Associate of HIPAA, the HIPAA Rules or other laws relating to security and privacy or PHI. Upon receipt of such notice and to the extent requested by Covered Entity, Business Associate shall, and shall cause its employees, Subcontractors, or

agents assisting Business Associate in the performance of its obligations under the Contract to, assist Covered Entity in the defense of such litigation or proceedings. Business Associate shall, and shall cause its employees, Subcontractor's and agents to, provide assistance, to Covered Entity, which may include testifying as a witness at such proceedings. Business Associate or any of its employees, Subcontractors or agents shall not be required to provide such assistance if Business Associate is a named adverse party.

11. Interpretation and Order of Precedence

Any ambiguity in this Agreement shall be resolved in favor of a meaning that complies and is consistent with the HIPAA Rules. In the event of an inconsistency between the Contract and this Agreement, this Agreement shall control. This Agreement supersedes and replaces any previous, separately executed HIPAA business associate agreement between the Parties.

12. Survival

Provisions of this Agreement requiring continued performance, compliance, or effect after termination shall survive termination of this contract or this agreement and shall be enforceable by Covered Entity.

Appendix to HIPPA Business Associate Agreement

This Appendix ("Appendix") to the HIPAA Business Associate Agreement ("Agreement") is an appendix to the Contract and the Agreement. For the purposes of this Appendix, defined terms shall have the meanings ascribed to them in the Agreement and the Contract.

Unless the context clearly requires a distinction between the Contract, the Agreement, and this Appendix, all references to "Contract" or "Agreement" shall include this Appendix.

1. Purpose

This Appendix sets forth additional terms to the Agreement. Any sub-section of this Appendix marked as "Reserved" shall be construed as setting forth no additional terms.

2. Additional Terms

- a. Additional Permitted Uses. In addition to those purposes set forth in the Agreement, Business Associate may use PHI for the following additional purposes:
 - i. Reserved.
- b. Additional Permitted Disclosures. In addition to those purposes set forth in the Agreement, Business Associate may disclose PHI for the following additional purposes:
 - i. Reserved.
- c. Approved Subcontractors. Covered Entity agrees that the following Subcontractors or agents of Business Associate may receive PHI under the Agreement:
 - ii. Reserved.
- d. Definition of Receipt of PHI. Business Associate's receipt of PHI under this Contract shall be deemed to occur, and Business Associate's obligations under the Agreement shall commence, as follows:
 - i. Reserved.
- e. Additional Restrictions on Business Associate. Business Associate agrees to comply with the following additional restrictions on Business Associate's use and disclosure of PHI under the Contract:
 - i. Reserved.
- f. Additional Terms. Business Associate agrees to comply with the following additional terms under the Agreement:
 - i. Reserved.

Exhibit G, FEMA Record of Environmental Consideration (REC)

FEDERAL EMERGENCY MANAGEMENT AGENCY

REC-01

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP-4634-0004-CO (R) (1)

Title: Louisville Generators Project, Boulder County, CO

NEPA DETERMINATION

Non Compliant Flag: No
EA Draft Date: EA Final Date:
EA Public Notice Date: EA Fonsi Level: CATEX
EIS Notice of Intent EIS ROD Date:

Comment The Water Treatment Plant located at 7000 Marshall Road, Louisville, CO Lat. 39.96295 / Long. - 105.18615 provides potable water to all community members. A replacement generator to be placed on the east side of the building that was constructed in 1993.
The Recreation Center located at 900 Via Appia Way in Louisville, CO; Lat.39.97523 / Long. -105.15744 serves as a designated emergency shelter. Depending on the magnitude of the situation, use of the facility as a shelter could range anywhere from 10,000 sq. ft. to 75,000 sq. ft. The facility will also serve as a shelter for any pets. The new generator to be placed on the north side of the building that was constructed in 1990 and was renovated/expanded in 2018.
The Police Station/Courthouse located at 992 W. Via Appia Way, Louisville, CO Lat. 39.97274 / Long. - 105.16354. A new generator will be placed on the west side of the building that was constructed in 2004.
Security fencing or impact barriers will be installed around each generator site during construction. The City will employ best management practices to prevent any fuel spills or leaks. This will include routine preventative maintenance, inspections and installation of materials to contain any fluids.

See project conditions. - mhansen6 - 10/02/2024 18:37:09 GMT

CATEX CATEGORIES

Catex Category Code	Description	Selected
*n18	(*n18) Federal Assistance for Construction or Installation of Structures, Facilities, or Equipment to Ensure Continuity of Operations. Federal assistance for the construction or installation of measures for the purpose of ensuring the continuity of operations during incidents such as emergencies, disasters, flooding, and power outages involving less than one acre of ground disturbance. Examples include the installation of generators, installation of storage tanks of up to 10,000 gallons, installation of pumps, construction of structures to house emergency equipment, and utility line installation. This CATEX covers associated ground disturbing activities, such as trenching, excavation, and vegetation removal of less than one acre, as well as modification of existing structures.	Yes

EXTRAORDINARY

Extraordinary Circumstance Code	Description	Selected ?
	No Extraordinary Circumstances were selected	

ENVIRONMENTAL LAW / EXECUTIVE ORDER

Environmental Law/ Executive Order	Status	Description	Comment
Clean Air Act (CAA)	Completed	Project will not result in permanent air emissions - Review concluded	

FEDERAL EMERGENCY MANAGEMENT AGENCY

REC-01

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP-4634-0004-CO (R) (1)

Title: Louisville Generators Project, Boulder County, CO

Environmental Law/ Executive Order	Status	Description	Comment
Coastal Barrier Resources Act (CBRA)	Not Applicable	Project is not on or connected to CBRA Unit or otherwise protected area - Review concluded	
Clean Water Act (CWA)	Completed	Project would not affect any water of the U.S. - Review concluded	
Coastal Zone Management Act (CZMA)	Not Applicable	Project is not located in a coastal zone area and does not affect a coastal zone area - Review concluded	
Executive Order 11988 - Floodplains	Completed	No effect on floodplain/flood levels and project outside floodplain - Review concluded	The project is located in a unshaded zone X (area of minimal flood hazard), per FIRM panels numbered 08013CO583K, 08013CO579K (eff. 8/15/2019), and 08013CO581J (eff. 12/18/12). Based on the project scope of work, the project does not have the potential to impact the floodplain function or resources. No further floodplain review is required under the 8-step process. - mhansen6 - 10/02/2024 18:49:36 GMT
Executive Order 11990 - Wetlands	Completed	No effects on wetlands and project outside wetlands - Review concluded	Based on the National Wetlands Mapper database, portions of the project area are not within mapped wetlands. Project construction activities are not likely to result in permanent adverse impacts to wetlands based on the project scope of work. No further wetland review is required under the 8-step process. - mhansen6 - 10/02/2024 18:49:48 GMT
Executive Order 12898 - Environmental Justice for Low Income and Minority Populations	Completed	Low income or minority population in or near project area	Minority or low-income populations were identified through program coordination and public involvement, state EJ community lists or maps, or EJSCREEN reports for the area around the project sites in Louisville, CO. Review of the project scope of work revealed no adverse effects on these populations. Therefore, no additional review for potential EJ concerns is required. The maps, reports, and other information are saved to the project files. - mhansen6 - 10/02/2024 18:50:04 GMT
	Completed	No disproportionately high and adverse impact on low income or minority population - Review concluded	
Endangered Species Act (ESA)	Completed	Listed species and/or designated critical habitat present in areas affected directly or indirectly by the federal action	The USFWS Information for Planning and Conservation System (IPaC) was accessed to obtain a list of federally listed threatened and endangered species that have the potential to occur in the project areas. The following listed threatened, endangered, and candidate species have the potential to occur at the project site: Preble's Meadow Jumping Mouse, Piping

NOTE: All times are GMT using a 24-hour clock.

Page 2 of 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

REC-01

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP-4634-0004-CO (R) (1)

Title: Louisville Generators Project, Boulder County, CO

Environmental Law/ Executive Order	Status	Description	Comment
			Plover, Whooping Crane, Monarch Butterfly Ute Ladies'-tresses, Western Prairie Fringed Orchid. Based on the project location and individual scope of work, FEMA has determined that the proposed projects will have no effect on listed threatened, endangered, and candidate species. - mhansen6 - 10/02/2024 18:45:55 GMT
	Completed	No effect to species or designated critical habitat (See comments for justification) - Review concluded	
Farmland Protection Policy Act (FPPA)	Completed	Project does not affect designated prime or unique farmland - Review concluded	
Migratory Bird Treaty Act (MBTA)	Completed	Project located within a flyway zone	
	Completed	Project does not have potential to take migratory birds - Review concluded	
Magnuson-Stevens Fishery Conservation and Management Act (MSA)	Completed	Project not located in or near Essential Fish Habitat - Review concluded	
National Historic Preservation Act (NHPA)	Completed	Applicable executed Programmatic Agreement. Activity meets Programmatic Allowance (enter date and # in comments) - Review concluded	The scope of work has been reviewed and meets the criteria of the February 5, 2022 FEMA, CO SHPO Programmatic Agreement, Appendix B: Programmatic Allowances. Project fits Allowances Tier II.D.2.a. (installation of generator in previously disturbed soils). As approved by SOI-Qualified architectural historian, Margaret Hansen. See project conditions. - mhansen6 - 10/02/2024 18:37:43 GMT
State Hazardous Materials and Solid Waste Laws	Completed	Review concluded	See project conditions. - mhansen6 - 10/02/2024 18:48:30 GMT
State Water and Soil Laws	Completed	Review concluded	See project conditions. - mhansen6 - 10/02/2024 18:48:59 GMT
Wild and Scenic Rivers Act (WSR)	Completed	Project is not along and does not affect Wild and Scenic River - Review concluded	

CONDITIONS

FEDERAL EMERGENCY MANAGEMENT AGENCY

REC-01

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

Project HMGP-4634-0004-CO (R) (1)

Title: Louisville Generators Project, Boulder County, CO

Special Conditions required on implementation of Projects:

1. All work, including project staging, must be confined to the previously disturbed existing hard topped surfaces.
2. If cultural materials are inadvertently discovered during construction, the applicant must cease activity and contact FEMA and the CO SHPO immediately.

Source of condition: National Historic Preservation Act (NHPA)

Monitoring Required: No

1. All waste material associated with the project must be disposed of properly and not placed in identified floodway or wetland areas.
2. In the unlikely event a spill or leak would occur from the construction equipment within the project area, construction activities must cease, and Colorado Department of Public Health and Environment must be contacted regarding the appropriate procedure for handling any contaminated soils or water.

Source of condition: State Hazardous Materials and Solid Waste Laws

Monitoring Required: No

1. The Applicant must obtain a National Pollutant Discharge Elimination System Construction Stormwater permit, as applicable. Appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.
2. Areas of ground disturbance will be re-vegetated with native grasses to minimize and/or control the potential spreading of noxious weeds. Construction equipment must be decontaminated before and after construction activities to prevent spread of invasive species.

Source of condition: State Water and Soil Laws

Monitoring Required: No

Standard Conditions:

Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.

This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.

If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

Conditions of Award - Deliverables

Project Number	4634-4R
Project Title	Louisville Generators Project
Project Type	Generators

Upon completion of the final designs and prior to construction and generators installation, please submit the following information to FEMA:

1. Final designs of generators, including sizing, for all sites.
2. Updated run times of generators when the generator designs are finalized.
3. Updated refueling plan when the generator designs are finalized.
4. Updated Single-Use Table (budget) based on the finalized generator designs and contractor(s).

Construction and generators installation cannot begin until FEMA verifies the above requested information and approves the final designs.

Please review the Record of Environmental Consider (REC) fully.

Special Conditions required on implementation of Projects:

- All work, including project staging, must be confined to the previously disturbed existing hard topped surfaces.
- If cultural materials are inadvertently discovered during construction, the applicant must cease activity and contact FEMA and the CO SHPO immediately.
- All waste material associated with the project must be disposed of properly and not placed in identified floodway or wetland areas.
- In the unlikely event a spill or leak would occur from the construction equipment within the project area, construction activities must cease, and Colorado Department of Public Health and Environment must be contacted regarding the appropriate procedure for handling any contaminated soils or water.
- The Applicant must obtain a National Pollutant Discharge Elimination System Construction Stormwater permit, as applicable.
- Appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.
- Areas of ground disturbance will be re-vegetated with native grasses to minimize and/or control the potential spreading of noxious weeds. Construction equipment must be decontaminated before and after construction activities to prevent spread of invasive species.
- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.

Procurement Policy Checklist

Note: If you respond “no” to any of the questions below, your procurement may not be in compliance with the federal procurement standards. It is recommended that you visit the [Purchasing Under a FEMA Award Resource Library](#) for assistance with compliance matters.

General Procurement Standards Mandatory Rules	Supporting Documentation
Does your organization have and use its own documented procurement procedures which reflect applicable state, local, tribal and territorial laws and regulations, provided the procurement conforms to applicable Federal law and the standards set forth in 2 C.F.R. Part 200? See 2 C.F.R. § 200.318(a). Yes ☐ No ☐	Documented procurement policies and procedures
Does your organization have policies and procedures requiring contractor oversight to ensure that contractors perform in accordance with the terms, conditions, and specifications of the contract or purchase order? See 2 C.F.R. § 200.318(b). Yes ☐ No ☐	Procurement policies and procedures should contain: Procedures describing oversight ☐ Details of payment/invoice process ☐ Receiving/acceptance of good and services ☐ Reporting requirements ☐
Does your organization have written standards of conduct covering conflicts of interest and the actions of employee engaged in the selection, award, and administration of contracts? See 2 C.F.R. § 200.318(c). Yes ☐ No ☐	Written standards of conduct policies ☐
Does your organization have policies to ensure officers, employees, and agents of non-state entities may neither solicit nor accept gifts or gratuities, favors, or anything of monetary value from contractors or parties to subcontracts? See 2 C.F.R. § 200.318(c)(1). Yes ☐ No ☐	Review your organization's procurement policies and procedures to ensure that there is a prohibition on gifts. Examples of gifts may include: Entertainment and hospitality; ☐ Loans and forbearance; ☐ Travel, lodging and meals; and/or ☐ Apparel and training offerings. ☐

Roadmap to Procurement Compliance: Micro-Purchase Procurement Checklist

	Note: Non-state entities may set standards for accepting gratuities when the financial interest is not substantial. See De Minimus Gift Exception.
Does your organization have policies to ensure no employee, officer, or agent may participate in the selection, award, or administration of a contract supported by federal award if they have a real or apparent conflict of interest? See 2 C.F.R. § 200.318(c)(1). Yes ☐ No ☐ Note: Policies may outline recusal process by officers, employees or agents of a non-state entity involved in the awarding and administration in order to mitigate or avoid conflict of interest.	Review your organization's procurement policies and procedures for rules related to: Real conflict of interest; ☐ Apparent conflict of interest; and ☐ Organizational Conflict of Interest. ☐
Does your organization have procedures to avoid the acquisition of unnecessary or duplicative items and procedures to procure good and services using the most economical approach when feasible? See 2 C.F.R. § 200.318(d). Yes ☐ No ☐	Written procedures to avoid unnecessary or duplicative items ☐
Did your organization award a contract only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement? See 2 C.F.R. § 200.318(h). Yes ☐ No ☐	Review your organization's policies and procedures to ensure that contractor responsibility determination is required. Non-state entities must determine that selected contractors are responsible by documenting: Contractor integrity; ☐ Compliance with public policy; ☐ Record of past performance; ☐ Copy of certification; ☐ Contract with applicable; Clause; ☐ Financial and technical resources; ☐ and Contractor is not suspended or debarred by checking SAM.gov. ☐

Roadmap to Procurement Compliance: Micro-Purchase Procurement Checklist

Does your organization have procedures to settle all contractual and administrative issues arising out of procurements? See 2 C.F.R. § 200.318(k). Yes ☐ No ☐	Procurement policies and procedures to ensure they document how issues will be settled between the non-state entity and their contractor. ☐

Proposals Checklist

For more information on small purchases see [2 C.F.R. § 200.320\(b\)\(2\)](#).

Note: If you respond “no” to any of the questions below, your procurement may not be in compliance with the federal procurement standards. It is recommended that you visit the [Purchasing Under a FEMA Award Resource Library](#) for assistance with compliance matters.

Requirement	Supporting Documentation
If contract price exceeds \$250,000, was an independent cost estimate completed before issuing the RFP? See 2 C.F.R. § 200.324(a). Yes ☐ No ☐ N/A ☐	Evidence of Market Research ☐ Historical Data ☐ Other: ☐
Does your organization maintain records sufficient to detail the history of a procurement? See 2 C.F.R. § 200.318(i). Yes ☐ No ☐	Review your organization's procurement file and records for: Rationale for the method of procurement; ☐ Selection of the contract type; ☐ Contractor selection or rejection; and ☐ Basis for contract price. ☐ Note: Contract document must include any contract modifications with signatures (or acceptance) by all parties.
Did your organization document its rationale for contractor selection or rejection? See 2 C.F.R. § 200.318(i). Yes ☐ No ☐	Check for procurement file for: Scope of Work; ☐ List of sources solicited; and ☐ Copies of bid, performance, payment, and other documents. ☐
Did your organization enter into a Time and Materials (T&M) Contract? Note: If your organization did not enter into a T&M contract this question can be skipped. For more information on T&M contracts see Chapter 3, Section 2 of the PDAT Field Manual. Yes ☐ No ☐	Review T&M contracts documents for: Justification explanation of why a T&M contract was the only suitable contract type; ☐

Roadmap to Procurement Compliance: Proposals Checklist

		A contract ceiling price (that the contractor exceeds at own risk) clearly defined in the contract; ☐ How your organization maintained a high degree of oversight of this contract type (including daily or weekly logs, records of performance meetings, etc.); and ☐ A transition to a more appropriate contract type as soon as possible (if applicable). ☐
Does the RFP contain a clear and accurate description of the technical requirements?	Yes ☐ No ☐	RFP ☐
Does the RFP identify all evaluation factors and their relative importance, with price as one of the factors? See 2 C.F.R. § 200.320(b)(2)(iii) .	Yes ☐ No ☐	RFP ☐ Other: _____
Did your organization publicly advertise the RFP? See 2 C.F.R. § 200.320(b)(2)(i) .	Yes ☐ No ☐	Advertisement ☐
Did your organization solicit enough proposals from an adequate number of qualified offerors to satisfy the full an open competition requirement? See 2 C.F.R. § 200.320(b)(2)(i) .	Yes ☐ No ☐	Indicate the number you determine to be an adequate number of qualified offerors: _____
If contract price exceeds \$250,000, was a price or cost analysis conducted after receiving proposals? See 2 C.F.R. § 200.324(a) .	Yes ☐ No ☐ N/A ☐	Bid Tabulation ☐ Cost Analysis ☐
Did you ensure you did not enter into a cost plus a percentage of cost contract type? Cost-plus-percentage-of-cost (CPPC) contracts are prohibited by the federal procurement rules. See 2 C.F.R. § 200.324(d) .	Yes ☐ No ☐	Review the below to ensure they do not contain elements of CPPC contracts: Contract ☐ Pricing schedule ☐
If the contract exceeds \$250,000 and for construction or facility improvement work, does the solicitation outline and require all applicable federal bonding requirements? See 2 C.F.R. § 200.326 for additional information.	Yes ☐ No ☐ N/A ☐	Bond Certificates ☐

Roadmap to Procurement Compliance: Proposals Checklist

Competition Requirements	
For more information on competition requirements see 2 C.F.R. § 200.319 .	
Did you ensure that your non-state entity didn't restrict competition by having unreasonable requirements. Examples of this include: ○ Solicitation documents must reflect actual needs and not place unreasonable requirements on firms to qualify to do business. ○ Unnecessary levels or years of experience for contractors to do business must not be required. ○ Excessive bonding increases the costs incurred by the contractor and limits the opportunity for target firms to compete for a contract under a FEMA award. ○ Specifying only a "brand name" product instead of allowing an "equivalent" or "compatible" product. See 2 C.F.R. § 200.319(b).	Review the following solicitation and advertising documents to include to determine if the non-state entity restricted competition by setting parameters or evaluation factors determined to be unreasonable and therefore restrictive of competition. Request for Proposal (RFP) ☐ Invitation for Bid (IFB) ☐ Request for Quote (RFQ) ☐ Advertisements ☐ Other: (ex: bonds, evaluations, scoring, etc.) ☐
Did you ensure that your non- state entities didn't use geographic preference in evaluating bids or proposals. There are four exceptions to the prohibition for the use of geographic preferences: ○ State licensing requirements; ○ Architectural and engineering contracts; ○ Mandated by federal law; and ○ Indian Self-Determination and Education Assistance Act. See 2 C.F.R. § 200.319(c).	Review your non-state entity's solicitation documents to ensure they did not use geographic preference in the evaluation of bids or proposals. Ensure the following common forms of prohibited geographic preference are excluded from solicitation documents or evaluation: Exclusion of contractors from outside a geographic area; ☐ Allowing price matching from a local vendor; ☐ Reducing the bids submitted by local businesses; ☐ Adding point or percentage weight to evaluation factors; and ☐ Set aside contracts only for resident companies. ☐
Required Contract Provisions	
Note: the federal rules require that NFE contracts contain the applicable provisions described in Appendix II to Part 200 of the Uniform Rules (Contract Provisions for Non-Federal Entity Contracts Under Federal Awards).	
If the contract exceeds \$250,000,did your organization include a Remedies clause? Note: AFG must include a penalty clause in all contracts for any AFG-funded vehicle.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:

Roadmap to Procurement Compliance: Proposals Checklist

If the contract exceeds \$10,000, did your organization include a Termination for Cause and Convenience clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction work, did your organization include the required Equal Employment Opportunity clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction work and more than \$2,000, did your organization include the required Davis-Bacon Act Clause? Yes ☐ No ☐ N/A ☐ Note: This clause only applies to the EMPG, HSGP, NSGP, THSGP, PSGP, IPR, HHPD, and TSGP.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction or repair work more than \$2,000, did your organization include the required Copeland Anti-Kickback Act Clause? Yes ☐ No ☐ N/A ☐ Note: This clause is only required in situations where the Davis Bacon Act also applies.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract meets the definition of “funding agreement”, did your organization include the required Rights to Inventions Made Under a Contract or Agreement clause? Yes ☐ No ☐ N/A ☐ Note: This clause is not required under the PA, HMGP, FMAG, CCP, DCM or IHP-ONA programs, as FEMA Awards under these programs do not meet the definition of “funding agreement”.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract involves the employment of mechanics or laborers, and exceeds \$100,000, did your organization include the required Contract Work Hours and Safety Standards Act clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract exceeds \$150,000, did your organization include a Clean Air Act clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:

Roadmap to Procurement Compliance: Proposals Checklist

If the contract exceeds \$150,000, did your organization include a Federal Water Pollution Control Act clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract exceeds \$25,000, did your organization include a Suspension and Debarment clause? Yes ☐ No ☐ See 2 C.F.R. § 180 for additional requirements. N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is in excess of \$100,000, did your organization include the required clause and Byrd Anti-Lobbying Certification to be signed and filed by the contractor? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Did your organization include a Recovered Materials clause? See 2 C.F.R. § 200.323. Note: This clause is only applicable to state agencies and political subdivisions of a state. Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Did your organization include a clause restricting use of covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system? Yes ☐ No ☐ See 2 C.F.R. § 200.216 for additional requirements.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for the purchase of goods, materials, or products, did your organization include a domestic preference clause? See 2 C.F.R. § 200.322. Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Did your organization consider including the FEMA recommended provisions outlined in PDAT's Contract Provision's Guide? Note: This is not a requirement and contracts will not be deemed noncompliant for failure to include these provisions.	
Socioeconomic Affirmative Steps Requirements	Supporting Documentation
Note: NFEs must, at a minimum, take the following six “affirmative steps” to assure that target firms are used when possible. Target firms are minority firms, small businesses, women’s business enterprises, and Labor Surplus Areas (LSA) firms. See 2 C.F.R. § 200.321.	

Roadmap to Procurement Compliance: Proposals Checklist

Were target firms included on your organization's solicitation lists? Yes ☐ No ☐ N/A ☐	Procurement File includes prequalified lists or solicitation lists which include target firms ☐ Note: NFEs can use SBA, MBDA, or similar resources to develop these lists.
Were target firms solicited whenever they were potential sources? Yes ☐ No ☐ N/A ☐	Procurement File includes documentation demonstrating direct solicitation to target firms ☐ Ex: Proof of communication and solicitation (i.e., call Notes, emails, etc.
Did your organization divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by target firms? Yes ☐ No ☐ N/A ☐	Review contract documents that demonstrate compliance with dividing requirements or procurements or justification of why this was not feasible. ☐
Did your organization establish delivery schedules, where the requirement permits, which encourage participation by target firms? Yes ☐ No ☐ N/A ☐	Review contract documents that demonstrate compliance with establishing delivery schedules or justification of why this was not feasible. ☐
Did your organization use the services and assistance, as appropriate, of such organizations as the Small Business Administration (SBA) and the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce? Yes ☐ No ☐ N/A ☐	Search results on SBA and MBDA websites ☐ Search results from state databases for target firms ☐ See FEMA's Fact Sheet on Utilizing SBA Resources for more assistance on complying with this requirement.
Did your organization require prime contractors that award subcontracts, to also take the steps listed in the five previous boxes above? Yes ☐ No ☐ N/A ☐	FEMA recommends that NFEs include a contract clause requiring prime contractors to take previous five affirmative steps. See PDAT Contract Provisions Guide. ☐

Sealed Bids Checklist

For more information on small purchases see [2 C.F.R. § 200.320\(b\)\(1\)](#).

Note: If you respond “no” to any of the questions below, your procurement may not be in compliance with the federal procurement standards. It is recommended that you visit the [Purchasing Under a FEMA Award Resource Library](#) for assistance with compliance matters.

Requirement	Supporting Documentation
If contract price exceeds \$250,000, was an independent cost estimate completed before issuing the Invitation for Bids (IFB)/Invitation to Bid (ITB)? See 2 C.F.R. § 200.324(a) . Yes ☐ No ☐ N/A ☐	Evidence of Market Research ☐ Historical Data ☐ Other: ☐
Did your organization ensure that a cost plus a percentage of cost contract (CPPC) type was not used? CPPC contracts are prohibited by the federal procurement rules. See 2 C.F.R. § 200.324(d) . Yes ☐ No ☐	Review the below to ensure they do not contain elements of CPPC contracts: Contract ☐ Pricing schedule ☐
Does your organization maintain records sufficient to detail the history of a procurement? See 2 C.F.R. § 200.318(i) . Yes ☐ No ☐	Review your organization’s procurement file and records for: Rationale for the method of procurement; ☐ Selection of the contract type; ☐ Contractor selection or rejection; and ☐ Basis for contract price. ☐ Note: Contract document must include any contract modifications with signatures (or acceptance) by all parties.
Did your organization document its rationale for contractor selection or rejection? See 2 C.F.R. § 200.318(i) . Yes ☐ No ☐	Check for procurement file for: Scope of Work; ☐ List of sources solicited; and ☐ Copies of bid, performance, payment, and other documents. ☐

Roadmap to Procurement Compliance: Proposals Checklist

Did your organization enter into a Time and Materials (T&M) Contract? Yes ☐ No ☐ Note: If your organization did not enter into a T&M contract this question can be skipped. For more information on T&M contracts see Chapter 3, Section 2 of the PDAT Field Manual.	If yes, did you include the following? ☐ Justification explanation of why a T&M contract was the only suitable contract type; ☐ A contract ceiling price (that the contractor exceeds at own risk) clearly defined in the contract; ☐ How your organization maintained a high degree of oversight of this contract type (including daily or weekly logs, records of performance meetings, etc.); and ☐ A transition to a more appropriate contract type as soon as possible (if applicable). ☐
Does the IFB/ITB contain a clear and accurate description of the goods/services to be procured? See 2 C.F.R. § 200.320(b)(1)(i)(A). Yes ☐ No ☐	Solicitation Document ☐
If your organization is a local or tribal government, was the IFB/ITB publicly advertised? See 2 C.F.R. § 200.320(b)(1)(ii)(A). Yes ☐ No ☐ N/A ☐	Advertisement ☐
Did your organization solicit enough bids from an adequate number of qualified sources to satisfy the full an open competition requirement? See 2 C.F.R. § 200.320(b)(1)(ii)(A). Yes ☐ No ☐	Indicate the number of contractors solicited and the number you determine to be an adequate number of qualified sources: _____
If the contract exceeds \$250,000 and for construction or facility improvement work, does the solicitation outline and require all applicable federal bonding requirements? See 2 C.F.R. § 200.326. Yes ☐ No ☐	Bond Certificates ☐
Did your organization provide enough time for contractors to prepare and submit bids? See 2 C.F.R. § 200.320(b)(1)(ii)(A). Yes ☐ The federal rules do not provide a time frame. This determination is subject to any relevant local, state, and/or Tribal requirements. No ☐	Indicate how long contractors had to prepare and submit their bids: _____
Did your organization establish the date, time, and location where the bids will be opened? See 2 C.F.R. § 200.320(b)(1)(ii)(C). Yes ☐ No ☐ Note: If your organization is a local or tribal government, bids must be opened publicly.	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:

Roadmap to Procurement Compliance: Proposals Checklist

If the contract exceeds \$250,000, was a cost or price analysis performed after receiving bids? See 2 C.F.R. § 200.324(a).	Yes ☐ No ☐ N/A ☐	Bid Tabulation ☐ Cost Analysis ☐
Did your organization award a fixed-price contract to the lowest responsible, responsive bid? See 2 C.F.R. § 200.320(b)(1)(ii)(D).	Yes ☐ No ☐	Bid Tabulation ☐ Contract ☐ If no, provide narrative detailing how you determine the bid to be unresponsive and/or irresponsible. ☐
Competition Requirements		
For more information on competition requirements see 2 C.F.R. § 200.319.		
Did your organization ensure that it did not restrict competition by having unreasonable requirements. Examples of this include: ○ Solicitation documents must reflect actual needs and not place unreasonable requirements on firms to qualify to do business. ○ Unnecessary levels or years of experience for contractors to do business must not be required. ○ Excessive bonding increases the costs incurred by the contractor and limits the opportunity for target firms to compete for a contract under a FEMA award. ○ Specifying only a “brand name” product instead of allowing an “equivalent” or “compatible” product. See 2 C.F.R. § 200.319(b).	Yes ☐ No ☐	Review the following solicitation and advertising documents to include to determine if the non-state entity restricted competition by setting parameters or evaluation factors determined to be unreasonable and therefore restrictive of competition. Request for Proposal (RFP) ☐ Invitation for Bid (IFB) ☐ Request for Quote (RFQ) ☐ Advertisements ☐ Other: (ex: bonds, evaluations, scoring, etc.) ☐
Did your organization ensure that it did not use geographic preference in evaluating bids or proposals. There are four exceptions to the prohibition for the use of geographic preferences: ○ State licensing requirements; ○ Architectural and engineering contracts; ○ Mandated by federal law; and ○ Indian Self-Determination and Education Assistance Act. For more information see 2 C.F.R. § 200.319(c)	Yes ☐ No ☐	Review your organization’s solicitation documents to ensure it did not use geographic preference in the evaluation of bids or proposals. Ensure the following common forms of prohibited geographic preference are excluded from solicitation documents or evaluation: Exclusion of contractors from outside a geographic area; ☐ Allowing price matching from a local vendor; ☐ Reducing the bids submitted by local businesses; ☐ Adding point or percentage weight to evaluation factors; and ☐ Set aside contracts only for resident companies ☐

Roadmap to Procurement Compliance: Proposals Checklist

Required Contract Provisions		
Note: the federal rules require that NFE contracts contain the applicable provisions described in Appendix II to Part 200 of the Uniform Rules (Contract Provisions for Non-Federal Entity Contracts Under Federal Awards) .		
If the contract exceeds \$250,000, did your organization include a Remedies clause? Note: AFG must include a penalty clause in all contracts for any AFG-funded vehicle.	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is more than \$10,000, did your organization include a Termination for Cause and Convenience clause?	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction work, did your organization include the required Equal Employment Opportunity clause?	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction work and more than \$2,000, did your organization include the required Davis-Bacon Act Clause? Note: This clause only applies to the EMPG , HSGP , NSGP , THSGP , PSGP , IPR , HHPD , and TSGP .	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for construction or repair work more than \$2,000, did your organization include the required Copeland Anti-Kickback Act Clause? Note: This clause is only required in situations where the Davis Bacon Act also applies.	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract meets the definition of “funding agreement”, did your organization include the required Rights to Inventions Made Under a Contract or Agreement clause? Note: This clause is not required under the PA , HMGP , FMAG , CCP , DCM , or IHP-ONA programs, as FEMA Awards under these programs do not meet the definition of “funding agreement”.	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract involves the employment of mechanics or laborers, and exceeds \$100,000, did your organization include the required Contract Work Hours and Safety Standards Act clause?	Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:

Roadmap to Procurement Compliance: Proposals Checklist

If the contract exceeds \$150,000, did your organization include a Clean Air Act clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract exceeds \$150,000, did your organization include a Federal Water Pollution Control Act clause? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract exceeds \$25,000, did your organization include a Suspension and Debarment clause? See 2 C.F.R. § 180 for additional requirements. Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is in excess of \$100,000, did your organization include the required clause and Byrd Anti-Lobbying Certification to be signed and filed by the contractor? Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Did your organization include a Recovered Materials clause? See 2 C.F.R. § 200.323. Note: This clause is only applicable to state agencies and political subdivisions of a state. Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Did your organization include a clause restricting use of covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system? See 2 C.F.R. § 200.216 for additional requirements. Yes ☐ No ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
If the contract is for the purchase of goods, materials, or products, did your organization include a domestic preference clause? See 2 C.F.R. § 200.322. Yes ☐ No ☐ N/A ☐	Indicate the page number where a FEMA representative can locate the clause in contract document. Pg.:
Note: Did your organization consider including the FEMA recommended provisions outlined in PDAT's Contract Provision's Guide? Note: This is not a requirement and contracts will not be deemed noncompliant for failure to include these provisions.	

Roadmap to Procurement Compliance: Proposals Checklist

Socioeconomic Affirmative Steps Requirements	Supporting Documentation
Note: NFEs must, at a minimum, take the following six “affirmative steps” to assure that target firms are used when possible. Target firms are minority firms, small businesses, women’s business enterprises, and Labor Surplus Areas (LSA) firms. See 2 C.F.R. § 200.321.	
Were target firms included on your organization’s solicitation lists? Yes ☐ No ☐ N/A ☐	Procurement File includes prequalified lists or solicitation lists which include target firms ☐ Note: NFEs can use SBA, MBDA or similar resources to develop these lists.
Were target firms solicited whenever they were potential sources? Yes ☐ No ☐ N/A ☐	Procurement File includes documentation demonstrating direct solicitation to target firms ☐ Ex: Proof of communication and solicitation (i.e., call Notes, emails, etc.).
Did your organization divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by target firms? Yes ☐ No ☐ N/A ☐	Review contract documents that demonstrate compliance with dividing requirements or procurements or justification of why this was not feasible. ☐
Did your organization establish delivery schedules, where the requirement permits, which encourage participation by target firms? Yes ☐ No ☐ N/A ☐	Review contract documents that demonstrate compliance with establishing delivery schedules or justification of why this was not feasible. ☐
Did your organization use the services and assistance, as appropriate, of such organizations as the Small Business Administration (SBA) and the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce? Yes ☐ No ☐ N/A ☐	Search results on SBA and MBDA websites ☐ Search results from state databases for target firms ☐ See FEMA’s Fact Sheet on Utilizing SBA Resources for more assistance on complying with this requirement.
Did your organization require prime contractors that award subcontracts, to also take the steps listed in the five previous boxes above? Yes ☐ No ☐ N/A ☐	FEMA recommends that NFEs include a contract clause requiring prime contractors to take previous five affirmative steps. See PDAT Contract Provisions Guide.



Displaying title 2, up to date as of 1/02/2025. Title 2 was last amended 12/20/2024. [i](#)

Title 2 —Federal Financial Assistance

Subtitle A —Office of Management and Budget Guidance for Federal Financial Assistance

Chapter II —Office of Management and Budget Guidance

Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Subpart D —Post Federal Award Requirements

Procurement Standards

§ 200.321 Contracting with small businesses, minority businesses, women's business enterprises, veteran-owned businesses, and labor surplus area firms.

- (a) When possible, the recipient or subrecipient should ensure that small businesses, minority businesses, women's business enterprises, veteran-owned businesses, and labor surplus area firms (See U.S. Department of Labor's list) are considered as set forth below.
- (b) Such consideration means:
 - (1) These business types are included on solicitation lists;
 - (2) These business types are solicited whenever they are deemed eligible as potential sources;
 - (3) Dividing procurement transactions into separate procurements to permit maximum participation by these business types;
 - (4) Establishing delivery schedules (for example, the percentage of an order to be delivered by a given date of each month) that encourage participation by these business types;
 - (5) Utilizing organizations such as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
 - (6) Requiring a contractor under a Federal award to apply this section to subcontracts.



Displaying title 2, up to date as of 1/02/2025. Title 2 was last amended 12/20/2024. [i](#)

Title 2 —Federal Financial Assistance

Subtitle A —Office of Management and Budget Guidance for Federal Financial Assistance

Chapter II —Office of Management and Budget Guidance

Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Subpart D —Post Federal Award Requirements

Procurement Standards

§ 200.324 Contract cost and price.

- (a) The recipient or subrecipient must perform a cost or price analysis for every procurement transaction, including contract modifications, in excess of the simplified acquisition threshold. The method and degree of analysis conducted depend on the facts surrounding the particular procurement transaction. For example, the recipient or subrecipient should consider potential workforce impacts in their analysis if the procurement transaction will displace public sector employees. However, as a starting point, the recipient or subrecipient must make independent estimates before receiving bids or proposals.
- (b) Costs or prices based on estimated costs for contracts under the Federal award are allowable only to the extent that the costs incurred or cost estimates included in negotiated prices would be allowable for the recipient or subrecipient under subpart E of this part. The recipient or subrecipient may reference its own cost principles as long as they comply with subpart E of this part.
- (c) The recipient or subrecipient must not use the “cost plus a percentage of cost” and “percentage of construction costs” methods of contracting.

VENDOR DIRECT DEPOSIT / EFT ACH AUTHORIZATION FORM



COLORADO

Office of the State Controller

Department of Personnel & Administration

SECTION I (AGENCY USE) - PAYOR, STATE INFORMATION

STATE AGENCY Colorado Department of Public Safety VENDOR CODE _____
MAILING ADDRESS 700 Kipling Street ADDRESS ID _____
CITY, STATE, ZIP Lakewood, CO 80215 VERIFIED BY** _____
AGENCY CONTACT/EMAIL _____ VERIFICATION METHOD:
VENDOR/VERIFICATION CONTACT _____ ☐ **PHONE** ☐ **EMAIL**

** State employee who performed independent verification per the EFT Setup/Change guidance (step 8) on the CORE site

SECTION II - PAYEE, VENDOR INFORMATION

PAYEE NAME _____ PHONE _____
DOING BUSINESS AS (DBA, OPTIONAL) _____
MAILING ADDRESS _____
CITY, STATE, ZIP _____
EMAIL (FOR REMITTANCE ADVICE) _____

SECTION III - DEPOSITORY FINANCIAL INSTITUTION AND ACCOUNT INFORMATION

PLEASE INCLUDE A VOIDED CHECK (NOT A TEMPORARY CHECK OR DEPOSIT SLIP) OR
SIGNED BANK LETTER THAT INCLUDES ALL INFORMATION REQUESTED IN THIS SECTION

BANK NAME _____ BRANCH ADDRESS _____
ROUTING NUMBER _____ ACCOUNT NUMBER _____
ACCOUNT TYPE ☐ **CHECKING** ☐ **SAVINGS** FOR FURTHER CREDIT (OPTIONAL) _____
PAYEE TAXPAYER ID NUMBER (SSN OR EIN, NO DASHES) _____
SHOULD ALL STATE OF COLORADO PAYMENTS TO THIS TAXPAYER ID USE THIS BANK ACCOUNT? ☐ **YES** ☐ **NO**
IF NO, PLEASE EXPLAIN _____

SECTION IV - AUTHORIZATION FOR ACH / DIRECT DEPOSIT SETUP, CHANGE, OR CANCEL

☐ **SETUP** ☐ **CHANGE** ☐ **CANCEL** **FOR CHANGES ONLY**, PLEASE PROVIDE EXISTING ROUTING & ACCOUNT NUMBER
ROUTING NUMBER _____ EXISTING ACCOUNT NUMBER _____

I certify that I have the authority to execute this authorization. I hereby authorize the State of Colorado to initiate ACH credit entries (deposits) and if necessary to reverse any incorrect ACH payments made in error to the above bank account. In the event a reversal cannot be implemented, I understand the State will utilize any other lawful means to recover the deposited funds to which the payee was not entitled. This authorization is to remain in full force until the state has received written notification of cancellation in such time as to afford a reasonable opportunity to act on it.

PRINTED NAME _____ TITLE _____
SIGNATURE _____ DATE _____

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency

**CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION
AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE
REQUIREMENTS**

O.M.B NO. 1660-0025
Expires September 30, 2017

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing, and submitting the form. This collection of information is required to obtain or retain benefits. You are not required to submit to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20472-3100, and Paperwork Reduction Project (1660-0025). **NOTE: Do not send your completed form to this address.**

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 44 CFR Part 18, "New Restrictions on Lobbying" and 28 CFR Part 17, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Federal Emergency Management Agency (FEMA) determines to award the transaction, grant, or cooperative agreement.

1. LOBBYING

As required by section 1352, Title 31 of the U.S. Code, and implemented at 44 CFR Part 18, for persons entering into a grant or cooperating agreement over \$ 100,000, as defined at 44 CFR Part 18, the applicant certifies that:

(a) 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 any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement.

(b) If any other funds than Federal appropriated funds have been paid or will be paid to any other person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or an employee of Congress, or employee of a member of Congress in connection with this Federal Grant or cooperative agreement, the undersigned shall complete and submit Stand Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts) and that all subrecipients shall certify and disclose accordingly.

Standard Form-LLL "Disclosure of Lobbying Activities" attached

☐ (This form must be attached to certification if non-appropriated funds are to be used to influence activities.)

**2. DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS (DIRECT RECIPIENT)**

As required by Executive Order 12549, Debarment and Suspension, and implemented at 44 CFR Part 67, for prospective participants in primary covered transactions, as defined at 44 CFR Part 17, Section 17.510-A.

A. The applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted of a or had a civilian judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public 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;

(c) Are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

(d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause of default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

**3. DRUG-FREE WORKPLACE (GRANTEE OTHER THAN
INDIVIDUALS)**

As required by the Drug-Free Workplace Act of 1988, and implemented at 44 CFR Part 17, Subpart F, for grantees, as defined at 44 CFR Part 17.615 and 17.620-

A. The applicant certifies that it will continue to provide a drug-free workplace by;

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an on-going drug free awareness program to inform employees about-

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant to be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will-

(1) Abide by the term of the statement; and

(2) Notify the employee in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such convictions;

(e) Notifying the agency, in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position, title, to the applicable FEMA awarding office, i.e., regional office or FEMA office.

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is convicted-

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation act of 1973, as amended; or

(2) Requiring such an employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, City, County, State, Zip code)

7000 Marshall Road, Louisville, Boulder County, CO, 80027
992 W Via Appia, Louisville, Boulder County, CO, 80027
900 Via Appia, Louisville, Boulder County, CO, 80027

☐

There are workplaces on file that are not identified

Sections 17.630 of the regulations provide that a grantee that is a State may elect to make one certification in each Federal fiscal year. A copy of which should be included with each application for FEMA funding. States and State agencies may elect to use a state wide certification.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
	Assistant City Manager
APPLICANT ORGANIZATION	DATE SUBMITTED
City of Louisville	March 3, 2023

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

Print or type See Specific Instructions on page 2.	Name (as shown on your income tax return)		
	Business name/disregarded entity name, if different from above		
	Check appropriate box for federal tax classification:		Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ (Applies to accounts maintained outside the U.S.)
	☐ Individual/Sole Proprietor or single member LLC	☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate	
	☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.		
☐ Other (see instructions) ▶	☐ Government		
Address (number, street, and apt. or suite no.)		Purchase Order address if different (optional)	
City, state, and ZIP code			
List account number(s) here (optional)		Contact name	Contact Email

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Employer identification number

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below), and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶

Have you ever worked for the State of Colorado? ☐ Yes ☐ No

Have you ever worked for a PERA Employer? ☐ Yes ☐ No

Business Types (check all that apply):

☐ CO Location/HQ in CO	☐ Veteran Owned
☐ CO Location/HQ out of CO	☐ Disabled Vet Business Enterprise
☐ No CO Location/HQ in US	☐ Disadvantaged Veteran Enterprise
☐ No CO Location/HQ out of US	☐ Service Disabled Veteran
☐ Has Paid Compensation Tax	☐ Vietnam Veteran
☐ Has Not Paid Compensation Tax	☐ Veteran Business Enterprise
☐ African American	☐ Disadvantaged Business Enterprise
☐ Asian Pacific American	☐ Small Disadvantaged Business
☐ Subcontinent Asian American	☐ Disabled Owned
☐ Hispanic American	☐ 8(A) Designation
☐ Native American	☐ HUBZone Certified
☐ CDOT Certified Emerging Small Business	☐ Labor Surplus
☐ CDOT Certified Disadvantaged Small Business	☐ Historical Black Colleges & Universities
☐ Women Owned	☐ Small Business
☐ Woman Business Enterprise	☐ Airport Concession Disadvantaged Business

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at www.irs.gov/w9. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a

U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity,
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust, and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present

in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS a percentage of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* on page 1.

What is FATCA reporting? The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

Sole proprietor. Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

Partnership, C Corporation, or S Corporation. Enter the entity's name on the "Name" line and any business, trade, or "doing business as (DBA) name" on the "Business name/disregarded entity name" line.

Disregarded entity. For U.S. federal tax purposes, an entity that is disregarded as

an entity separate from its owner is treated as a "disregarded entity." See Regulation section 301.7701-2(c)(2)(iii). Enter the owner's name on the "Name" line. The name of the entity entered on the "Name" line should never be a disregarded entity. The name on the "Name" line must be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on the "Name" line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the "Business name/disregarded entity name" line. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Note. Check the appropriate box for the U.S. federal tax classification of the person whose name is entered on the "Name" line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

Limited Liability Company (LLC). If the person identified on the "Name" line is an LLC, check the "Limited liability company" box only and enter the appropriate code for the U.S. federal tax classification in the space provided. If you are an LLC that is treated as a partnership for U.S. federal tax purposes, enter "P" for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter "C" for C corporation or "S" for S corporation, as appropriate. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the "Name" line) is another LLC that is not disregarded for U.S. federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the "Name" line.

Other entities. Enter your business name as shown on required U.S. federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name/disregarded entity name" line.

Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the *Exemptions* box, any code(s) that may apply to you. See *Exempt payee code and Exemption from FATCA reporting code* on page 3.

Exempt payee code. Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends. Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

Note. If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

- The following codes identify payees that are exempt from backup withholding:
- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
 - 2—The United States or any of its agencies or instrumentalities
 - 3—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
 - 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
 - 5—A corporation
 - 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States
 - 7—A futures commission merchant registered with the Commodity Futures Trading Commission
 - 8—A real estate investment trust
 - 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
 - 10—A common trust fund operated by a bank under section 584(a) 11—A financial institution
 - 12—A middleman known in the investment community as a nominee or custodian
 - 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.

Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.
² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney, and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements.

- A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)
- B—The United States or any of its agencies or instrumentalities
- C—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
- D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Reg. section 1.1472-1(c)(1)(i)
- E—A corporation that is a member of the same expanded affiliated group as a corporation described in Reg. section 1.1472-1(c)(1)(i)
- F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state
- G—A real estate investment trust
- H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940
- I—A common trust fund as defined in section 584(a) J—A bank as defined in section 581
- K—A broker
- L—A trust exempt from tax under section 664 or described in section 4947(a)(1)
- M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on page 2), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at www.ssa.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if

items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on the "Name" line must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
5. Sole proprietorship or disregarded entity owned by an individual	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulation section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulation section 1.671-4(b)(2)(i)(B))	The trust

Visit [IRS.gov](https://www.irs.gov) to learn more about identity theft and how to reduce your risk

1

List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

2

Circle the minor's name and furnish the minor's SSN.

3

You must show your individual name and you may also enter your business or "DBA" name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

4

List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see Special rules for partnerships on page 1.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, social security number (SSN), or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: spam@uce.gov or contact them at www.ftc.gov/idtheft or 1-877-IDTHEFT (1-877-438-4338).

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.
A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)
B—The United States or any of its agencies or instrumentalities
C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)
E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)
F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state
G—A real estate investment trust
H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940
I—A common trust fund as defined in section 584(a)
J—A bank as defined in section 581
K—A broker
L—A trust exempt from tax under section 664 or described in section 4947(a)(1)
M—A tax exempt trust under a section 403(b) plan or section 457(g) plan
Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

ATTACHMENT 3: HBWTP GENERATOR CONSTRUCTION DRAWINGS

I:\BOL_Projects\22\3504 - Louisville, CO - HBWTP Emergency Generator Replacement\CAD\Sheets\22-3504-CO-G.dwg G-1 10/6/2023 10:12 AM NICK CAMPBELL 23.0s (LMS Tech)



HBWTP EMERGENCY GENERATOR REPLACEMENT (22-3504)

OCTOBER 2023

BID SET

INDEX OF DRAWINGS

GENERAL

1	G-1	INDEX OF DRAWINGS & VICINITY MAP
2	G-2	SYMBOLS AND LEGEND
3	G-3	EXISTING SITE CONDITION PHOTOS

CIVIL

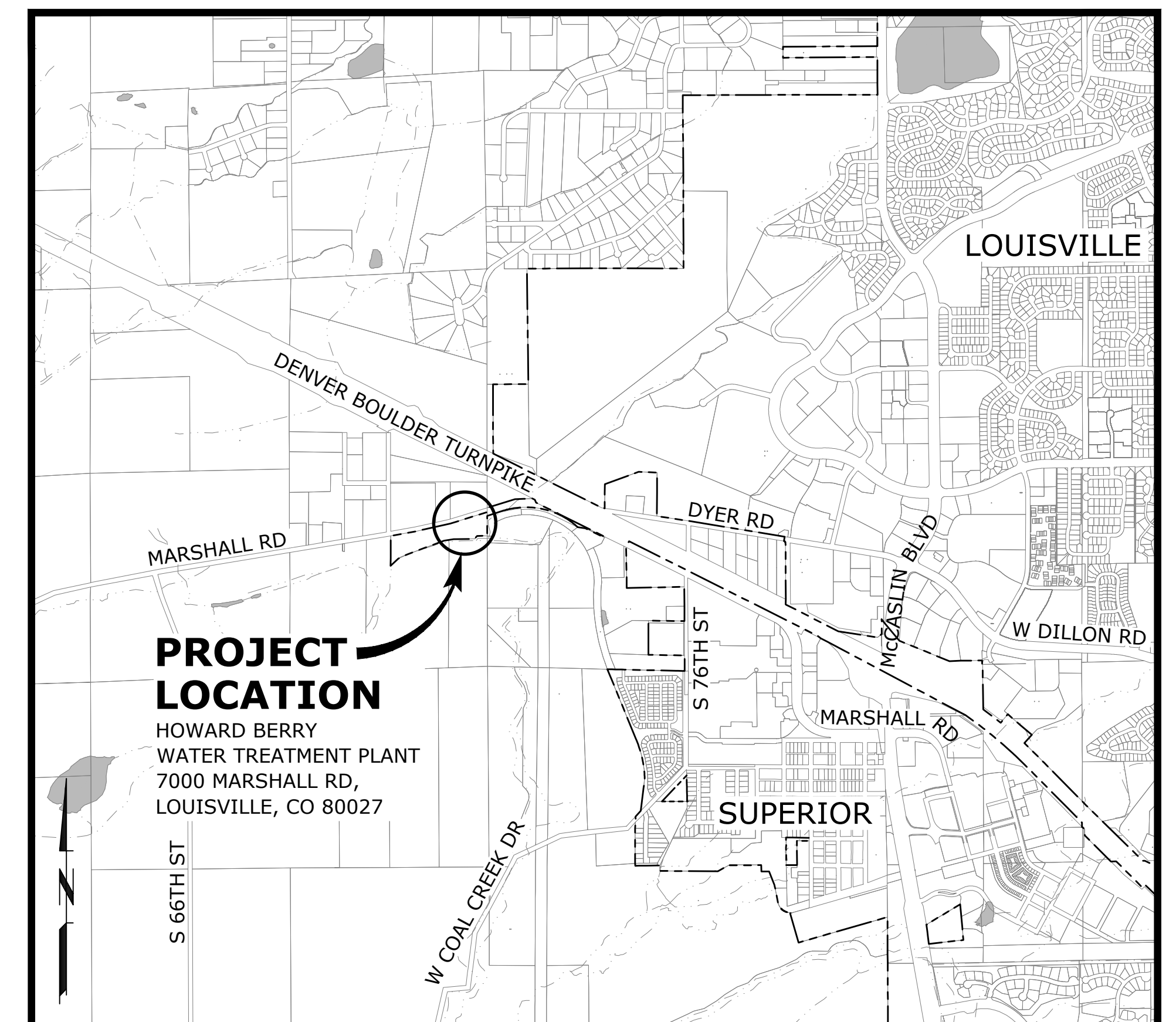
4	C-1	EXISTING SITE AND DEMOLITION PLAN
5	C-2	PROPOSED SITE PLAN
6	C-3	CIVIL DETAILS
7	C-4	GENERATOR DETAILS - 1
8	C-5	GENERATOR DETAILS - 2

STRUCTURAL

9	S-1	GENERATOR PAD PLAN

ELECTRICAL

10	E-1	LEGEND
11	E-2	ONE LINE DIAGRAMS



VICINITY MAP
SCALE: 1"=1500'

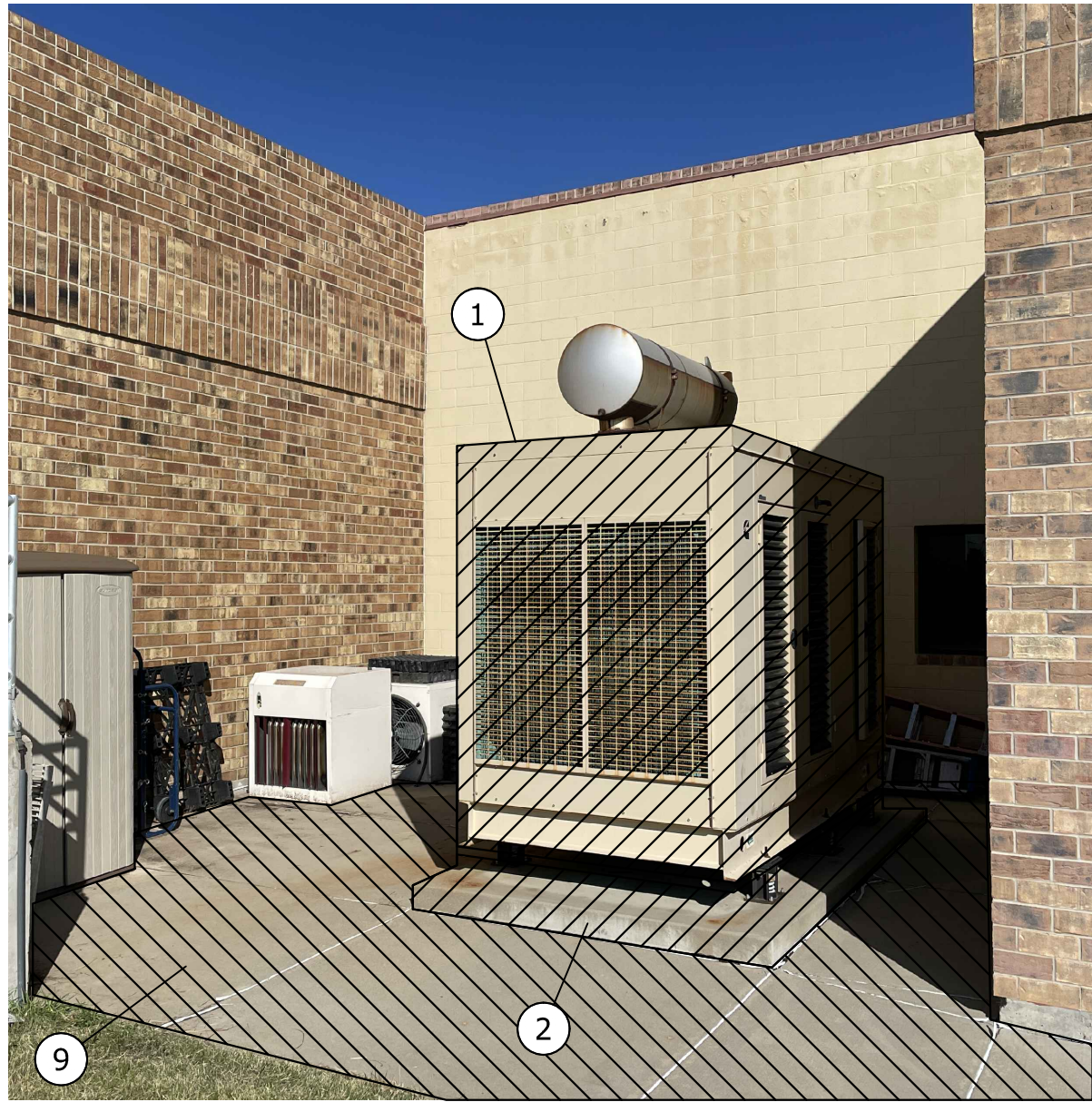


ATTENTION: COLORADO LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE COLORADO UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN THE 2017 PROCEDURES GUIDE, EXCAVATION HANDBOOK & TITLE 9 SAFETY- INDUSTRIAL AND COMMERCIAL ARTICLE 1.5 EXCAVATION REQUIREMENTS 9-1.5-101 THROUGH 9-1.5-107. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY DOWNLOADING FROM THE WEB SITE [HTTP://COLORADO811.ORG/EDUCATION_CONSOLIDATED/](http://colorado811.org/education_consolidated/) OR CALLING UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE COLORADO UTILITY NOTIFICATION CENTER IS 800-922-1987.)

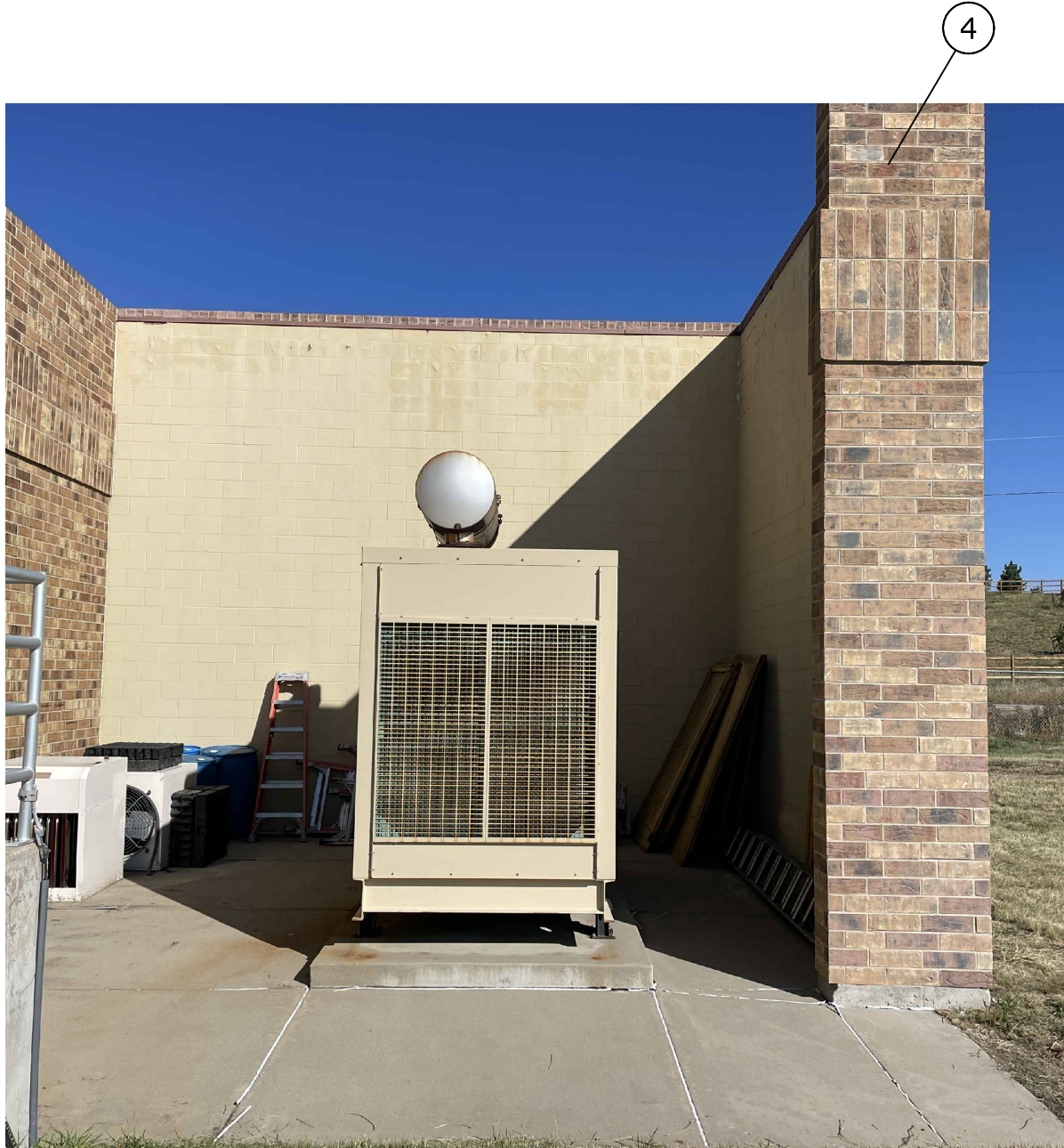


Know what's below.
Call before you dig.

I:\VOL Projects\22\3504 - Louisville, CO - HBWTP Emergency Generator Replacement\CAD\Sheets\22-3504-CO-C.dwg G-3 10/6/2023 10:13 AM NICK.CAMPBELL 23.0s (LMS Tech)



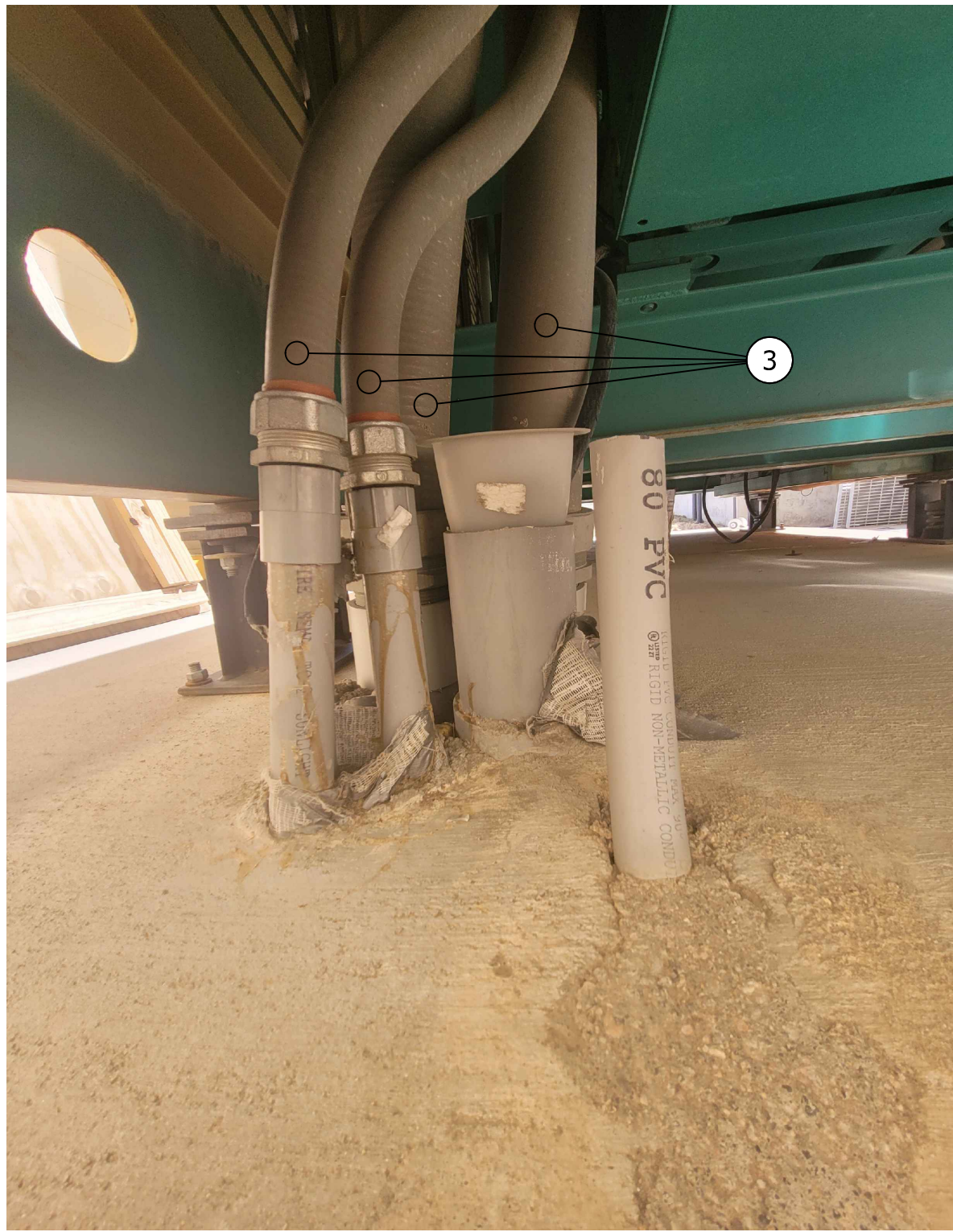
EXISTING GENERATOR



EXISTING STEM WALL



EXISTING RAPID MIXING BASIN



EXISTING GENERATOR ELECTRICAL CONNECTION

- KEY NOTES**
- ① REMOVE AND SALVAGE EXISTING GENERATOR. COORDINATE WITH CITY FOR ON-SITE RELOCATION OF GENERATOR
 - ② DEMO EXISTING GENERATOR PAD
 - ③ DEMO EXISTING GENERATOR CONNECTIONS AND PROTECT EXISTING CONDUIT BLOCK OUTS
 - ④ PROTECT EXISTING STEM WALL
 - ⑤ PROTECT EXISTING RAPID MIXING BASIN AND ELECTRICAL SERVICES AND APPURTANCES
 - ⑥ PROTECT EXISTING BOLLARDS
 - ⑦ PROTECT EXISTING FIRE HYDRANT
 - ⑧ PROTECT EXISTING SIDEWALK
 - ⑨ DEMO EXISTING SLAB ON GRADE



EXISTING FIRE HYDRANT AND BOLLARDS

BID SET

NO.	DATE	BY	REVISION

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

NJC
DESIGNED
MBE
DRAWN
CMJ
CHECKED

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 **City of Louisville**

HBWTP EMERGENCY GENERATOR REPLACEMENT

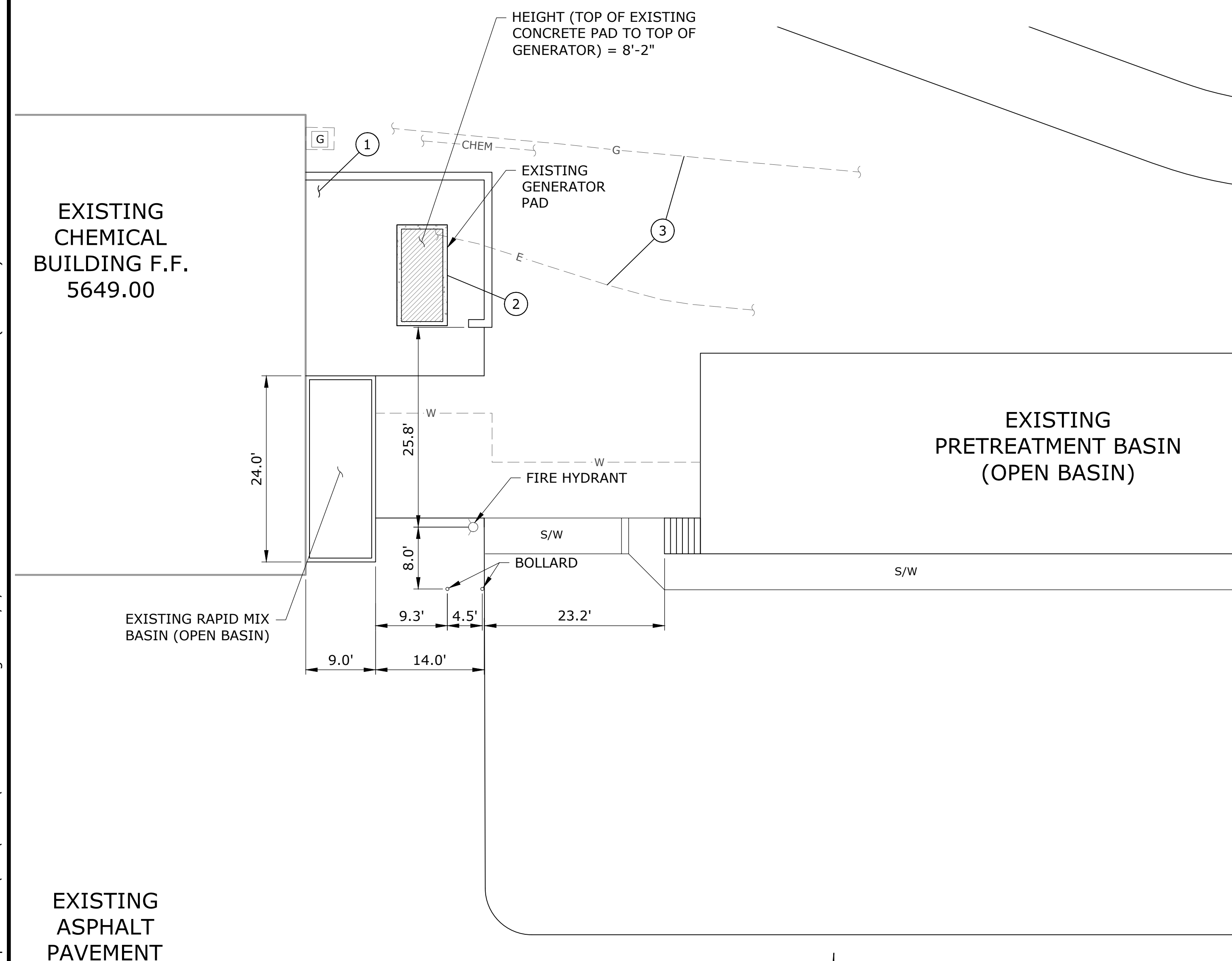
EXISTING SITE CONDITION PHOTOS

PROJECT NO.: 22-3504 SCALE: AS SHOWN DATE: OCTOBER 2023

SHEET

G-3

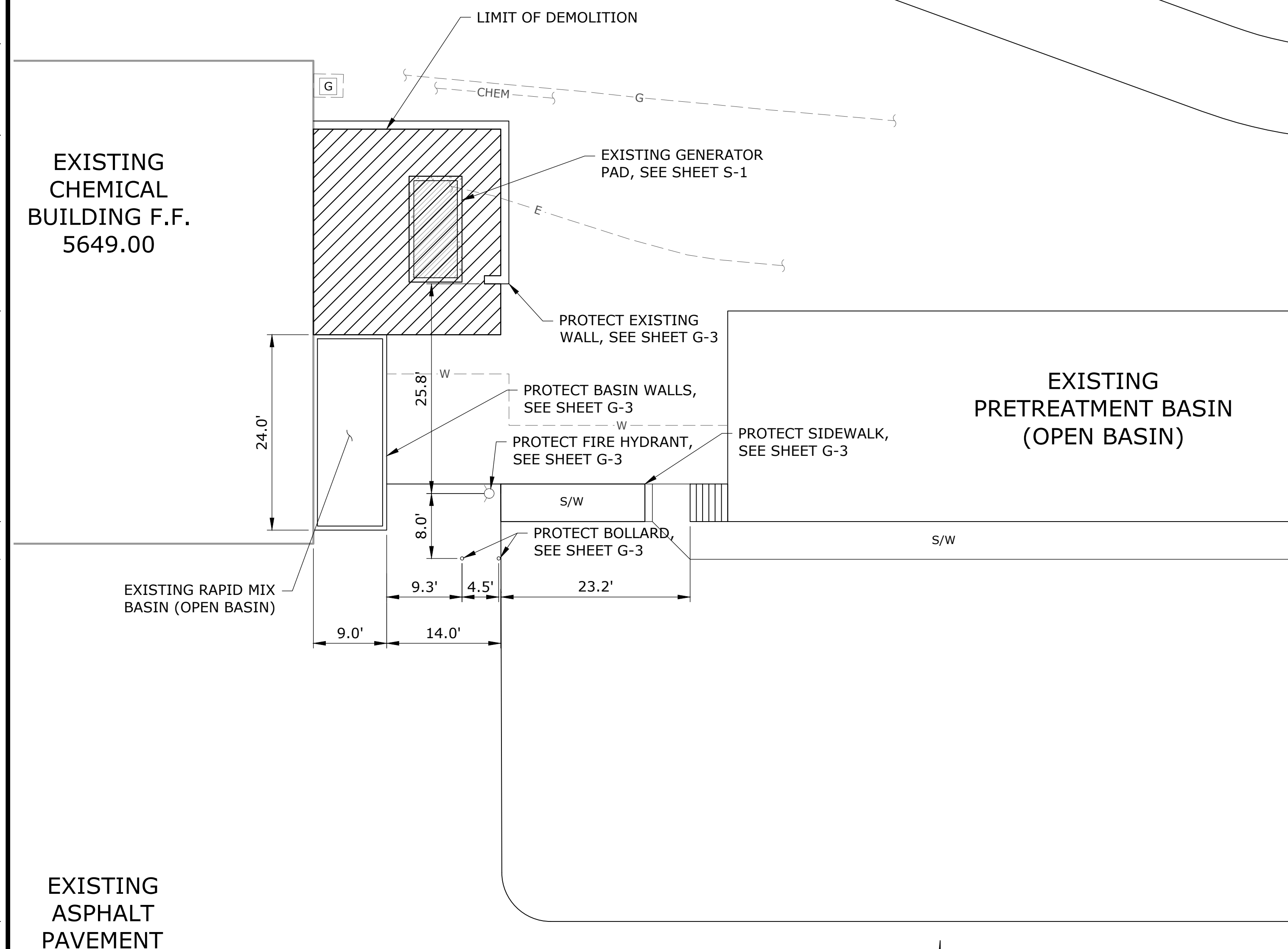
3 of 11



KEY NOTES

- ① MISCELLANEOUS ITEMS TO BE REMOVED PRIOR TO CONSTRUCTION BY CITY
- ② SALVAGE EXISTING GENERATOR
- ③ COORDINATE ALL MODIFICATIONS TO EXISTING ELECTRICAL AND GAS LINES WITH XCEL ENERGY AND GENERATOR MANUFACTURER

EXISTING SITE PLAN
SCALE: 1"=10'



DEMOLITION PLAN

SCALE: 1"=10'



BID SET

NO.	DATE	BY	REVISION

NOTICE



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**HBWTP EMERGENCY GENERATOR
REPLACEMENT**

EXISTING SITE AND DEMOLITION PLAN

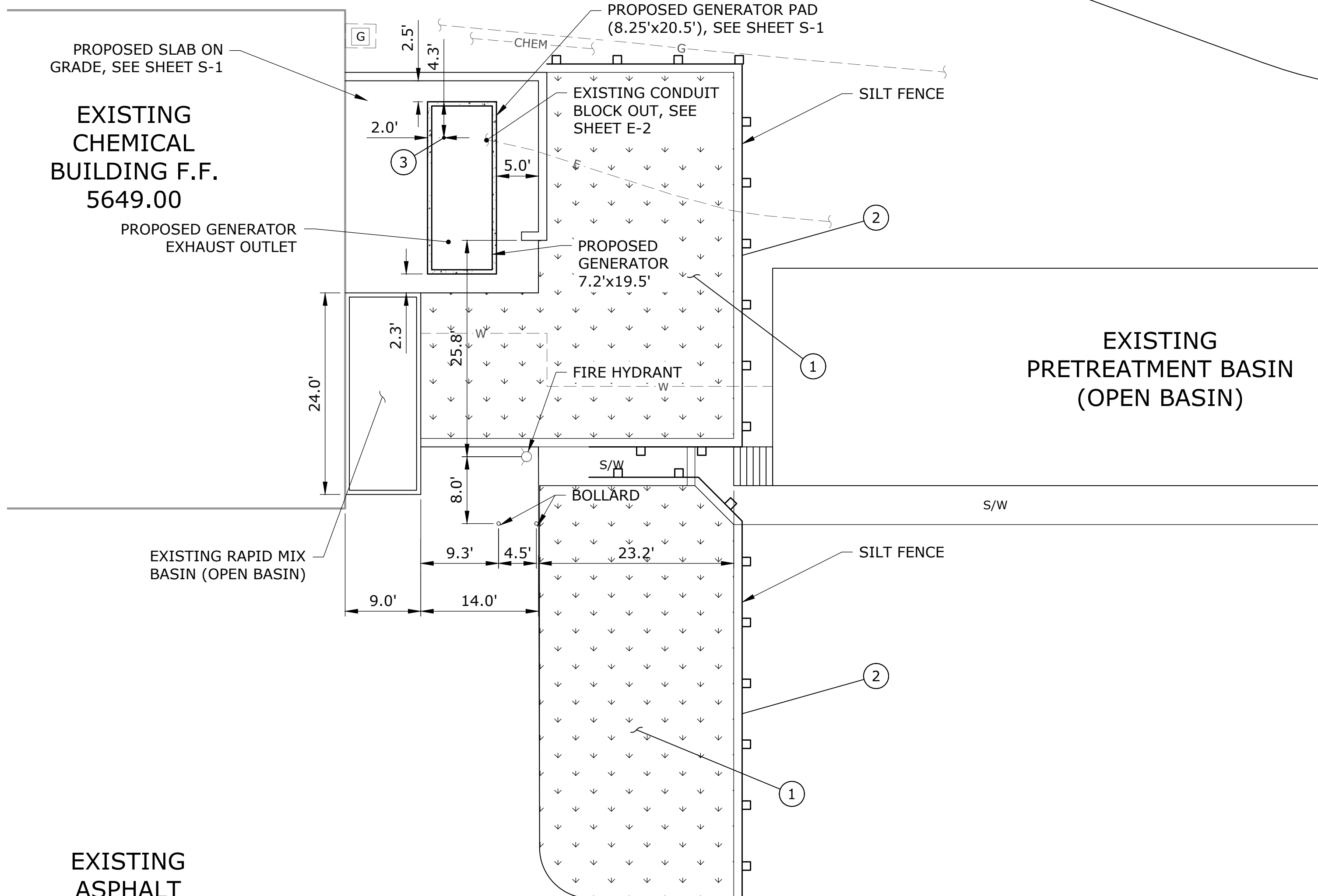
PROJECT NO.:	22-3504	SCALE:	AS SHOWN	DATE:	OCTOBER 2023

SHEET

C-1

4 of 11

I:\BOL_Projects\22\3504 - Louisville, CO - HBWTP Emergency Generator Replacement\CAD\Sheets\22-3504-CO-C.dwg C-2 10/6/2023 11:41 AM NICK.CAMPBELL 23.0s (LMS Tech)

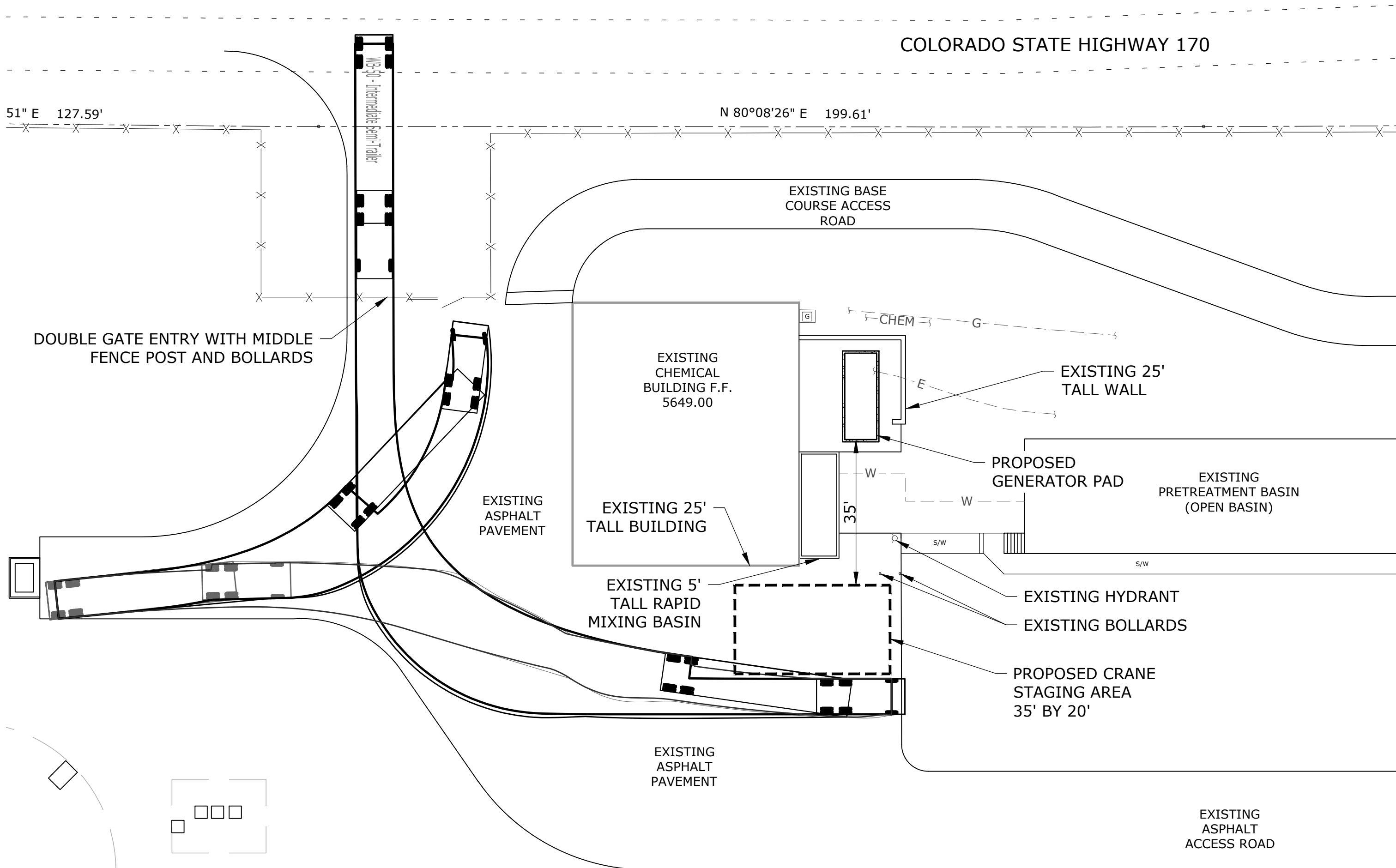
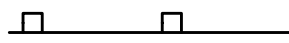
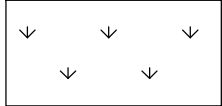


EXISTING ASPHALT PAVEMENT

KEY NOTES/ LEGEND

- ① SITE RESTORATION AREA. RESTORE AND RESEED ALL DISTURBED LANDSCAPE AREAS
- ② SILT FENCE
- ③ APPROX LOCATION OF NEW CIRCUIT BREAKER / ENTRANCE BOX STUB UP. REMOVE EXISTING ELECTRICAL CONDUIT SWEEPS AND STUB UPS. INSTALL AND EXTEND (APPROX 5' TO 6') NEW ELECTRICAL CONDUITS UNDER PROPOSED SLAB. INSTALL SWEEPS AND STUB UPS AS NECESSARY AT PROPER LOCATION FOR NEW GENERATOR CONNECTION. COORDINATE LOCATION OF BLOCK OUT / STUB-UPS WITH GENERATOR MANUFACTURER PRIOR TO INSTALLATION OF NEW CONCRETE PAD. CONTRACTOR SHALL NOT MOVE GENERATOR FROM LOCATION SHOWN ON PLANS, UNLESS DIRECTED BY OWNER OR ENGINEER.

PROPOSED SITE PLAN
SCALE: 1"=10'



PROPOSED TRUCK ROUTE PLAN
SCALE: 1"=20'



BID SET

NO.	DATE	BY	REVISION

NOTICE	NJC
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	CHECKED

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PROJECT NO.:	22-3504	SCALE:	AS SHOWN	DATE:	OCTOBER 2023

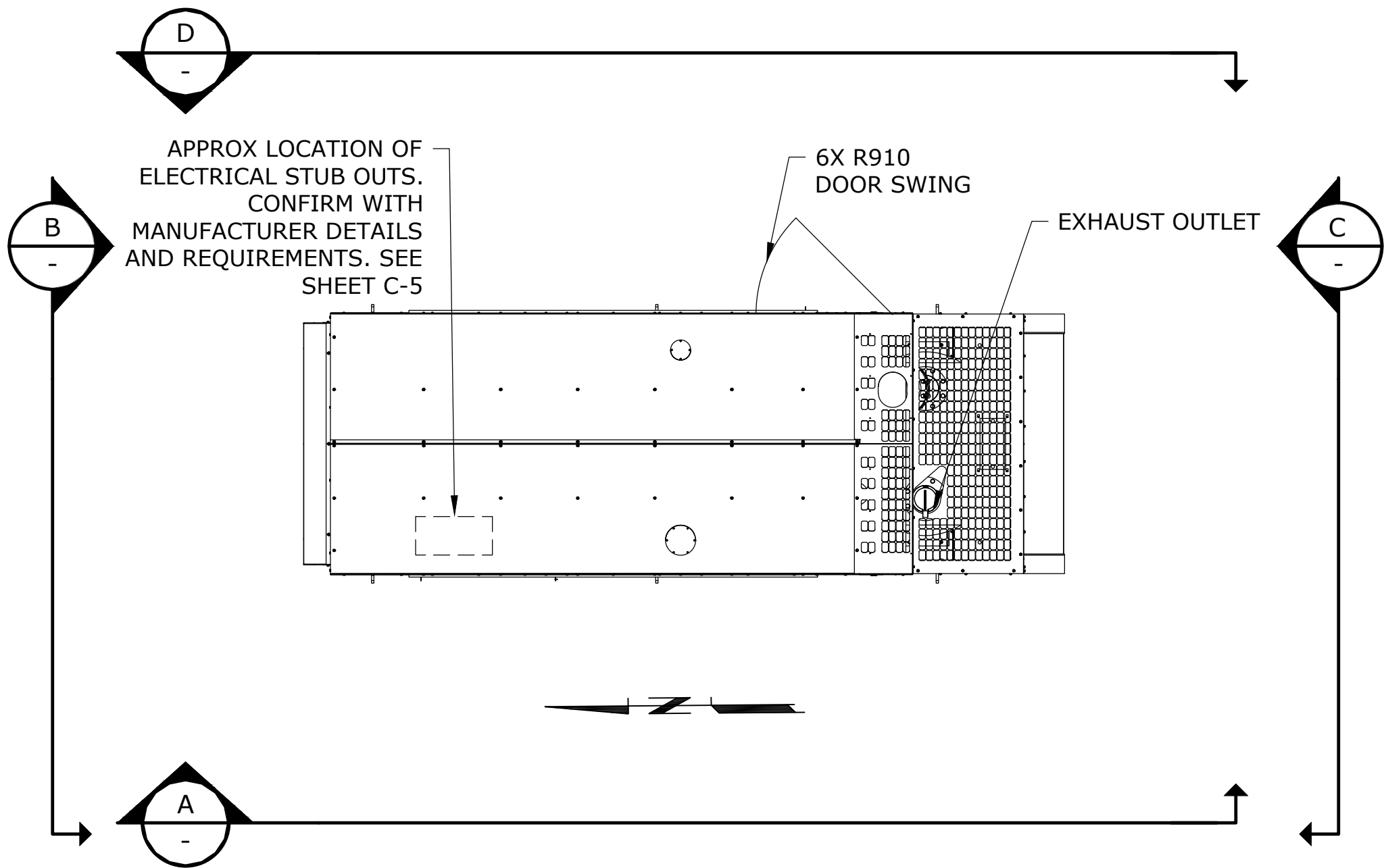
SHEET
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5 of 11

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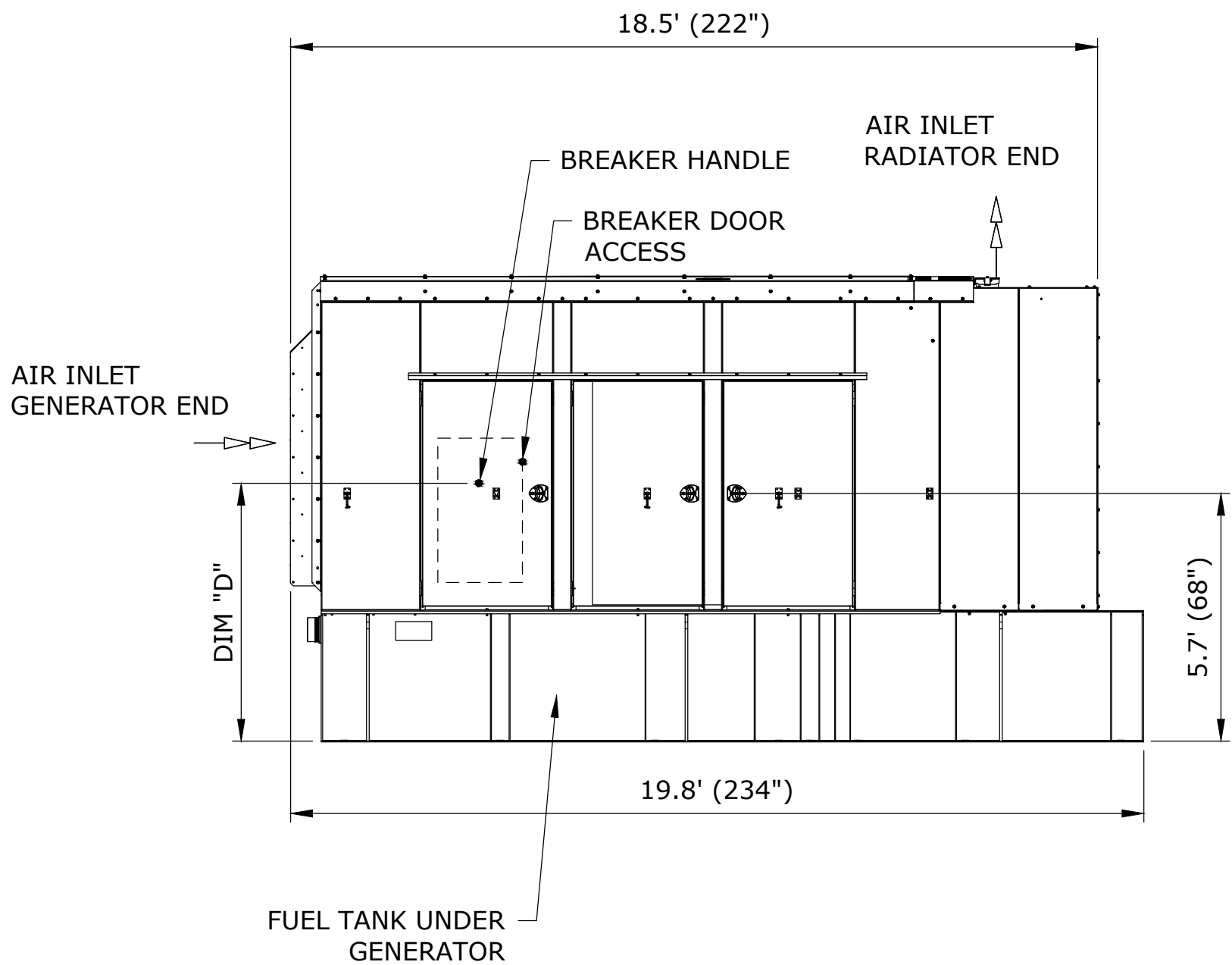
TABULATION		
TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	TANK WEIGHT DRY KG (LBS)
C209	1700	2022 (4458)

TABULATION					
MODEL	KW	CG DIM "A"	CG DIM "B"	CG DIM "D"	STEEL ENCLOSURE WEIGHT KG (LBS) ±5%
DFEJ	450	2118 [83.4]	1041 [41]	681 [26.8]	8413 [18548]

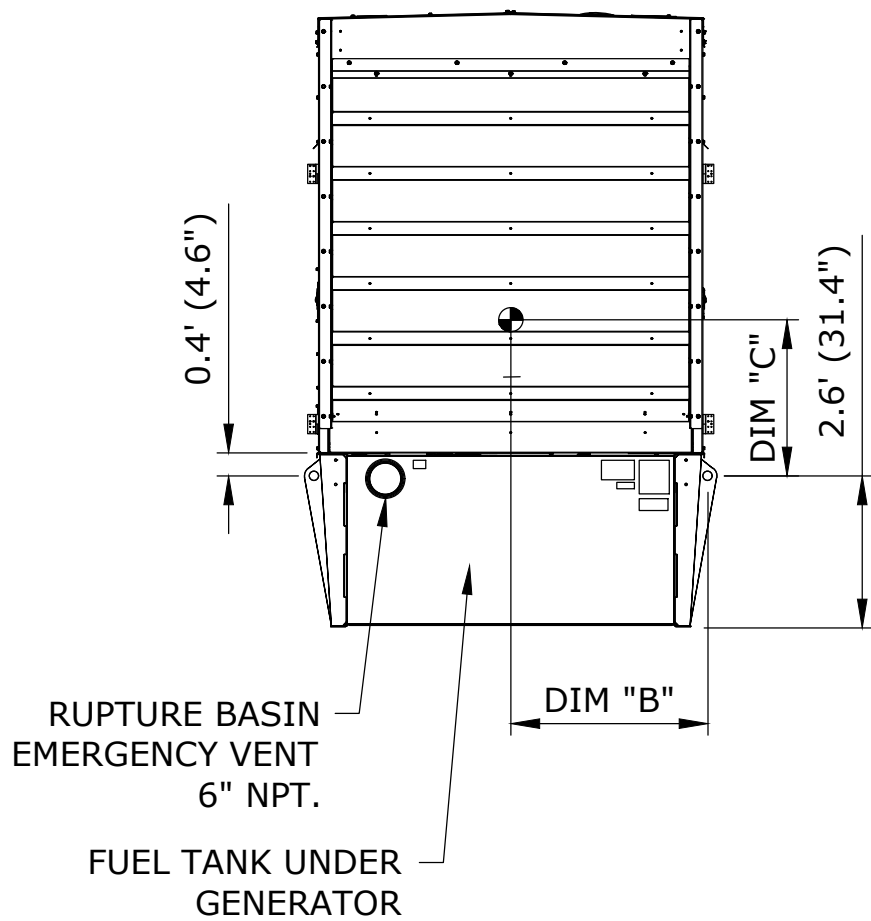
*** WEIGHT & CG'S ARE SHOWN WITH 1700 GALLON FUEL TANK ENCLOSURE, AND STANDARD WET GENSET. ADDITION OF OTHER FEATURES MAY CHANGE THE WEIGHT.



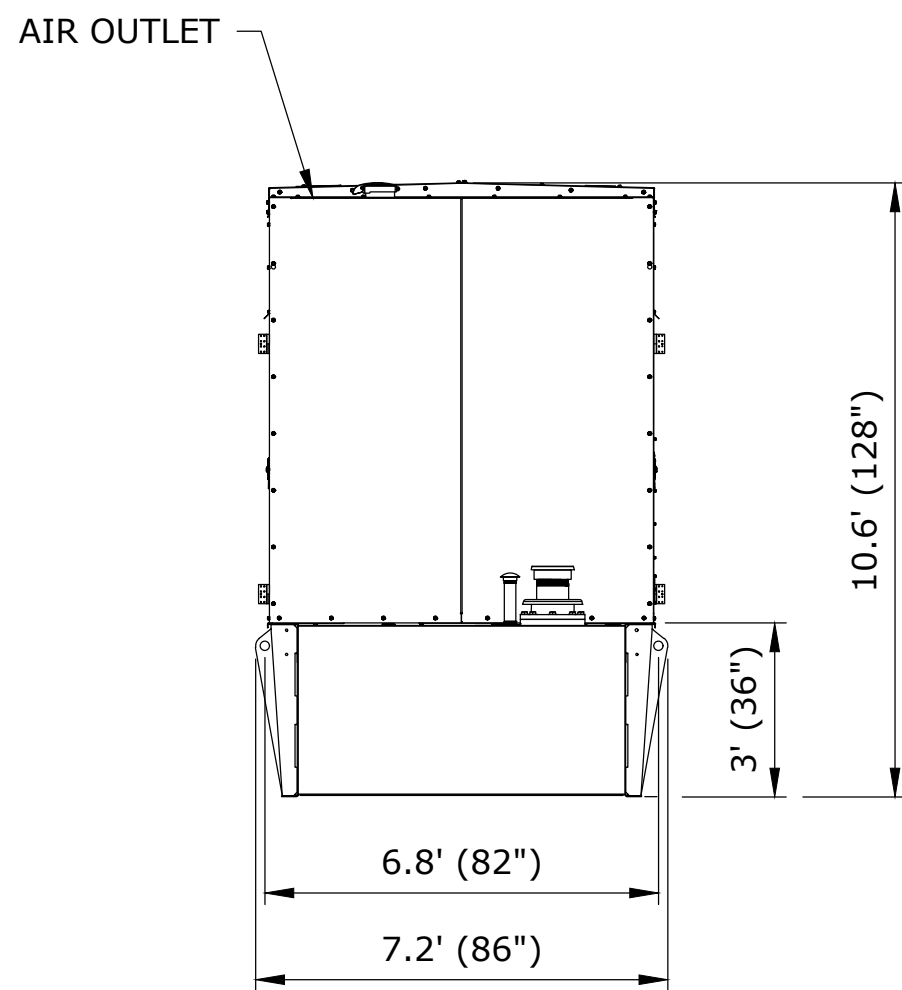
GENERATOR PLAN
SCALE: NTS



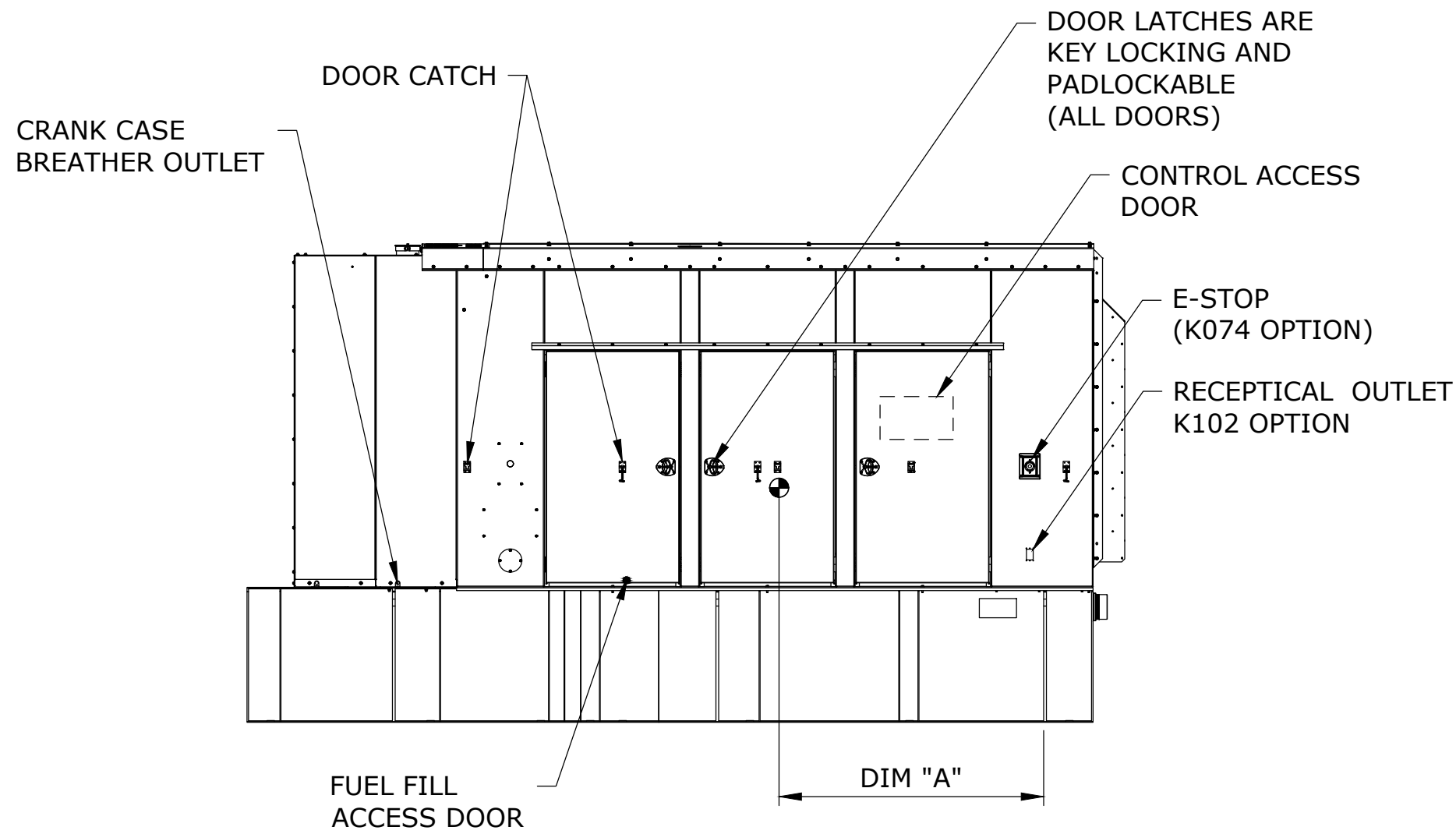
GENERATOR ELEVATION
SCALE: NTS



SECTION
SCALE: NTS



SECTION
SCALE: NTS



GENERATOR ELEVATION
SCALE: NTS

BID SET

NO.	DATE	BY	REVISION

NOTICE
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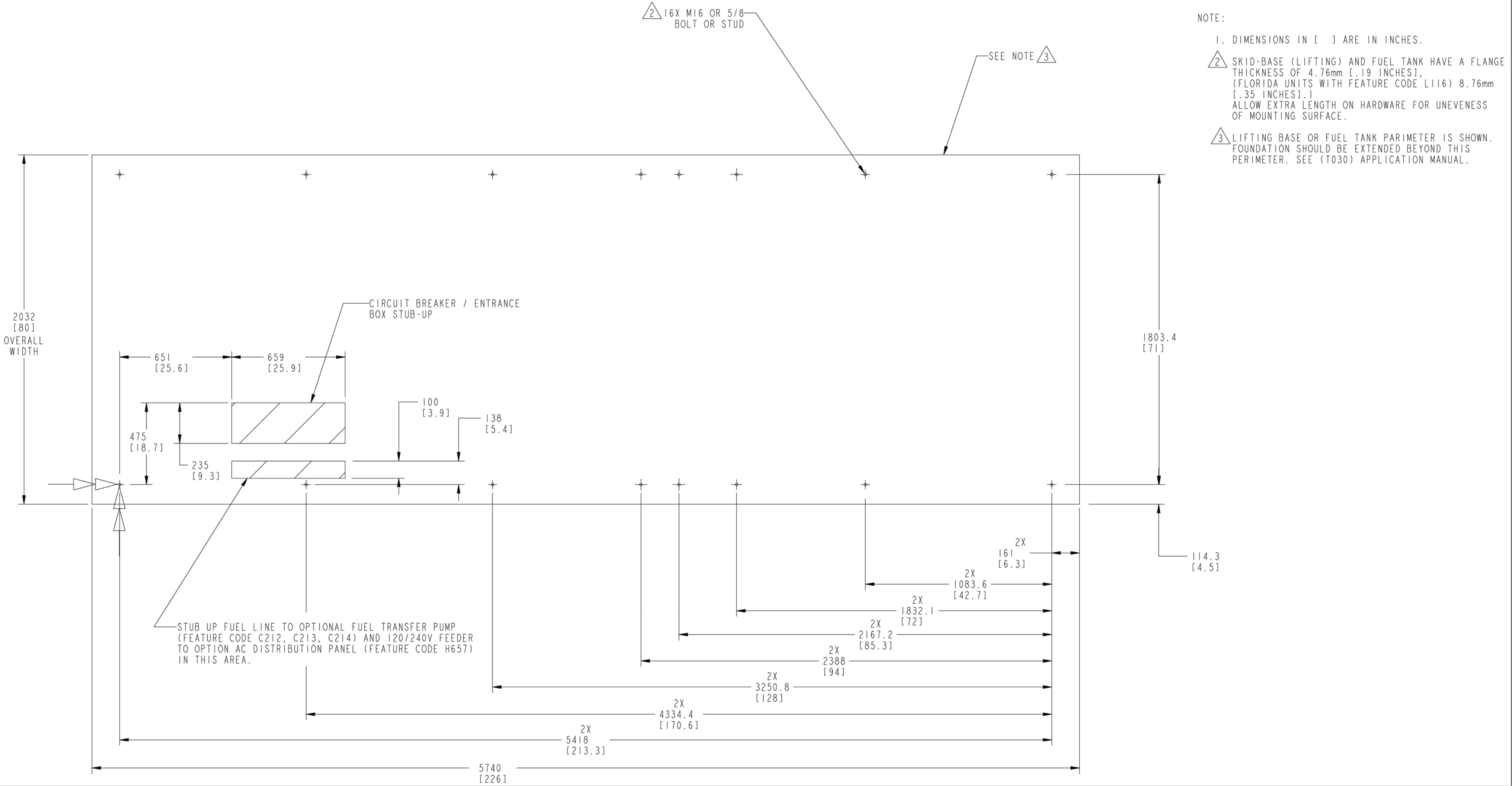


City of Louisville
HBWTP EMERGENCY GENERATOR REPLACEMENT

GENERATOR DETAILS - 1			
PROJECT NO.:	22-3504	SCALE:	AS SHOWN
DATE:	OCTOBER 2023		

SHEET
C-4
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- ADDITIONAL NOTES:
- GENERATOR INSTALLATION PLAN IS FOR REFERENCE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INSTALLATION PLAN AS PART OF GENERATOR PROCUREMENT AND FOR CONSTRUCTING GENERATOR PAD AND INSTALLING GENERATOR ACCORDINGLY.

BID SET

NO.	DATE	BY	REVISION

NOTICE

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

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DRAWN

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HBWTP EMERGENCY GENERATOR REPLACEMENT

GENERATOR DETAILS - 2

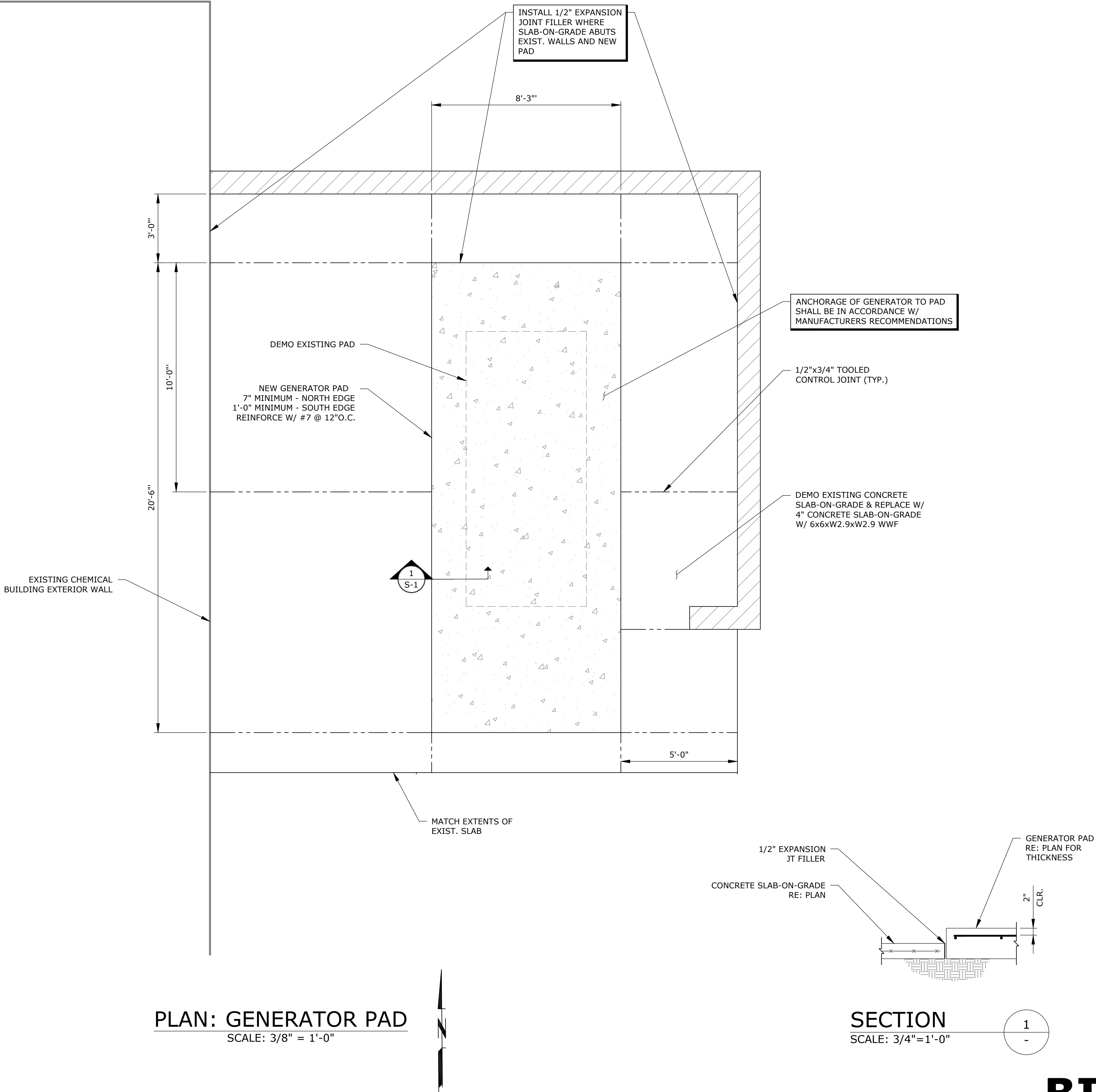
PROJECT NO.:	22-3504	SCALE:	AS SHOWN	DATE:	OCTOBER 2023

SHEET

C-5

8 of 11

C:\Drafting Projects\Repella\2022\MS-2207 Louisville Generator Replacement\Design\Drawings\22-3504-CO-S001.dwg S-001 6/13/2023 8:30 PM MTHOM 24.2s (LMS Tech)



STRUCTURAL NOTES:

DESIGN CRITERIA

- 2018 IBC

GENERAL NOTES

- THE CONTRACTOR SHALL REVIEW EXISTING CONDITIONS ON THE SITE DURING THE BIDDING.
- THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS ON ALL DRAWINGS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO PROCEEDING.
- REFERENCE ARCHITECTURAL, CIVIL, PROCESS, MECHANICAL, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
 - SIZE AND LOCATIONS OF SPOOLS IN CONCRETE WALLS AND SLABS.
 - SIZE AND LOCATIONS OF ALL OPENINGS
 - SIZE AND LOCATIONS OF ALL NON-BEARING PARTITIONS
 - SIZE AND LOCATION OF ALL CONCRETE CURBS, WALKS, ROOF AND FLOOR DRAINS, SLOPES, DEPRESSED SLAB AREAS, ETC.
 - FLOOR AND ROOF FINISHES
 - COVERINGS (HATCHES, GRATING, ETC.) OVER OPENINGS.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT LIFE AND THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING AND SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, WIND, ETC.

REINFORCING STEEL

- FABRICATE AND PLACE REINFORCING BARS IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE" AND CRSI "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS".
- REINFORCING STEEL TO COMPLY WITH ASTM A615, AS FOLLOWS:
 - NO. 4 BARS AND LARGER GRADE 60.
 - NO. 3 BARS AND SMALLER, GRADE 40.
- WELDED WIRE MESH SHALL CONFORM TO ASTM A185 OR A497.
- LAP HORIZONTAL BARS 40 DIAMETERS BUT NOT LESS THAN 2'-0", TYP. U.N.O.
- PROVIDE REINFORCING STEEL WITH THE FOLLOWING PROTECTIVE COVERING OF CONCRETE:
 - SLAB-ON-GRADE AND PAD
 - TOP = 2"
- DO NOT USE BRICK OR POROUS MATERIAL TO SUPPORT FOOTING STEEL OFF THE GROUND.
- SUBMIT SHOP DRAWINGS AS SPECIFIED.

CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL BUILDINGS," EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS CONTAINED HERIN OR SHOWN ON THE DRAWINGS, AND AS SPECIFIED IN DIVISION 3 SPECIFICATIONS.
- SEE ARCHITECTURAL DRAWINGS FOR THE LOCATION OF ARCHITECTURAL FINISHES.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS 4,000 PSI.
- CEMENT SHALL CONFORM TO ASTM C 150, TYPE III; CONTRACTOR SHALL SUBSTITUTE 20% OF CLASS F FLYASH FOR CEMENT.
- AGGREGATES ASTM C 33.
- CONCRETE SHALL CONTAIN 6" AIR ENTRAINMENT, ±1%.
- PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES.
- ROUGHEN SURFACE, CLEAN FREE OF DEBRIS, AND APPLY BONDING AGENT PRIOR TO CONCRETE PLACEMENT AGAINST EXISTING CONCRETE SURFACES. EPOXY ADHESIVE FOR DOWELS SHALL BE HILTI HIT-HY 200
- WATER CEMENT RATIO SHALL BE 0.45 MAX.

BID SET



Phone 303.471.1900
Highlands Ranch, CO

NO.	DATE	BY	REVISION

NOTICE
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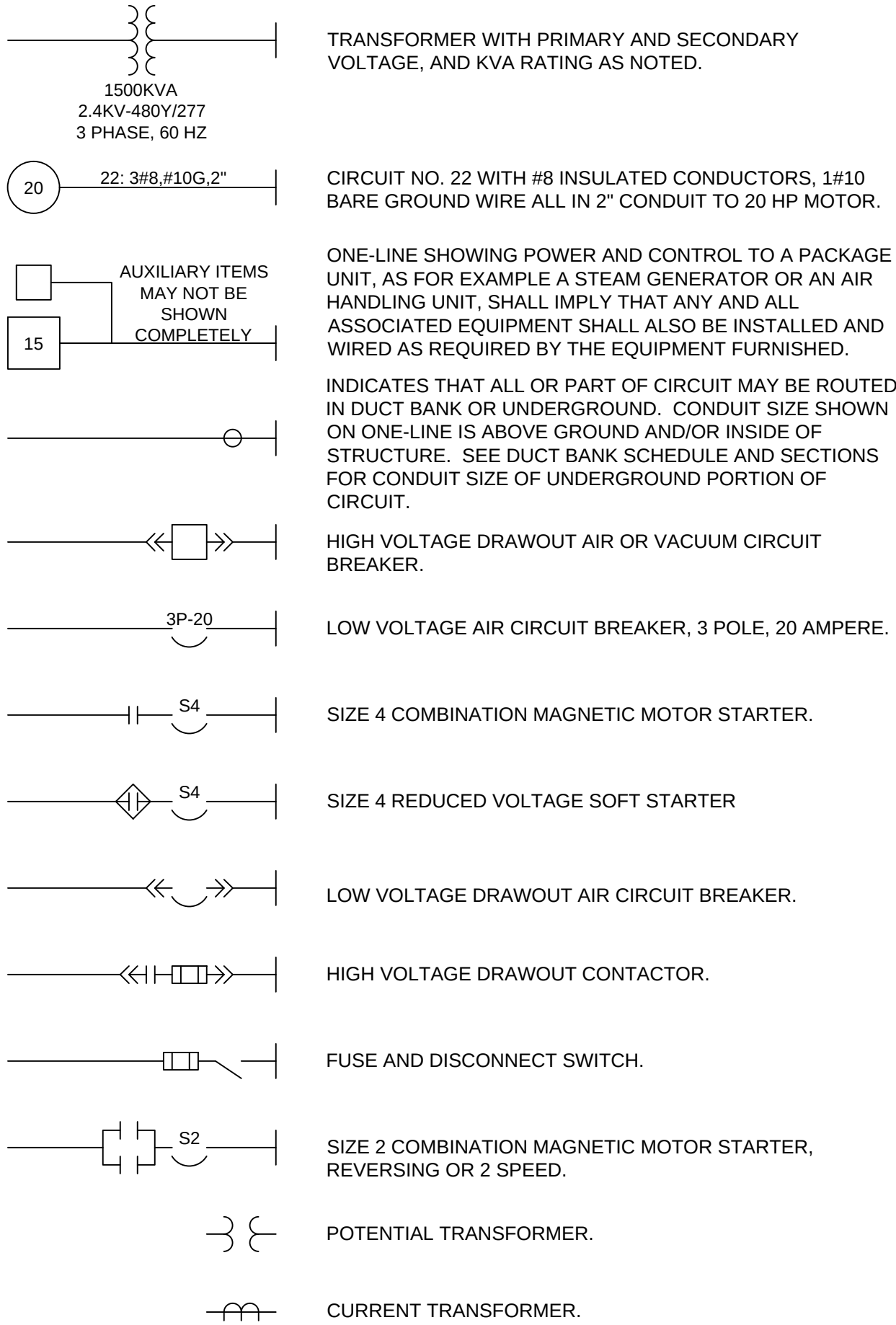
City of Louisville
HBWTP EMERGENCY GENERATOR REPLACEMENT

GENERATOR PAD PLAN			
PROJECT NO.:	22-3504	SCALE:	AS SHOWN
DATE:	OCTOBER 2023		

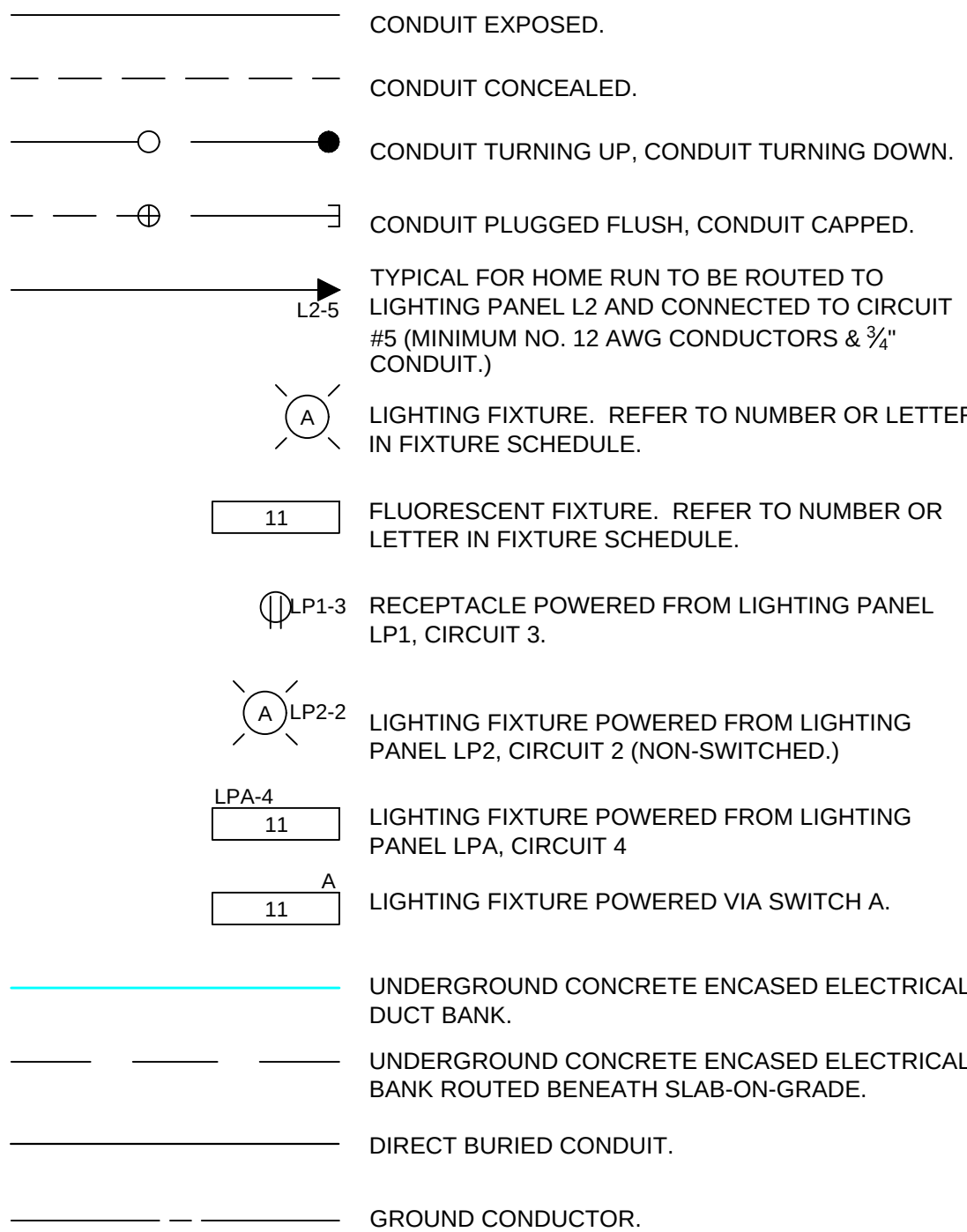
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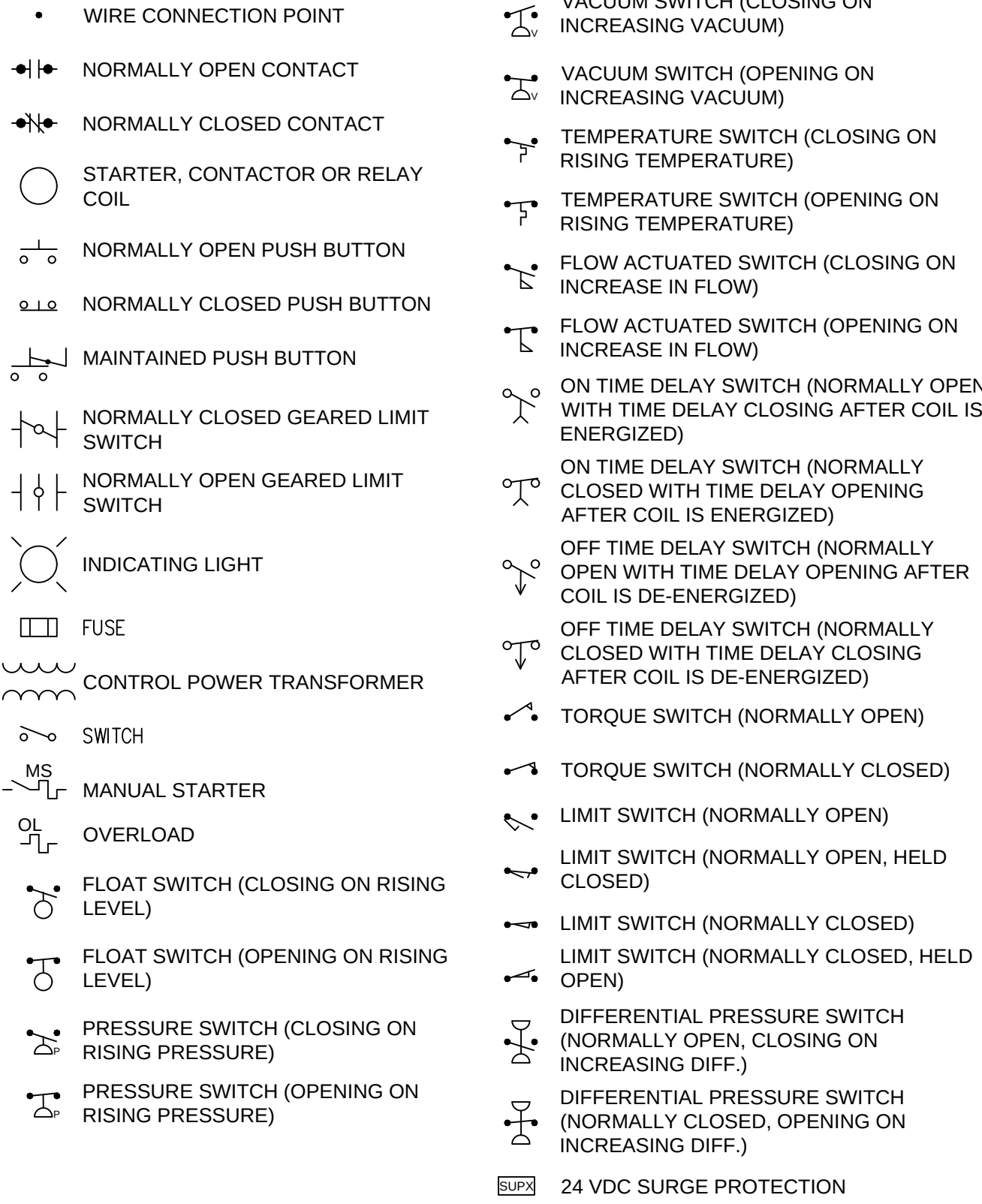
ONE LINE DIAGRAM LEGEND



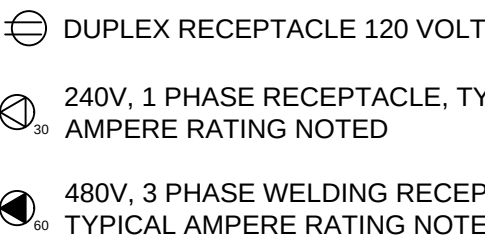
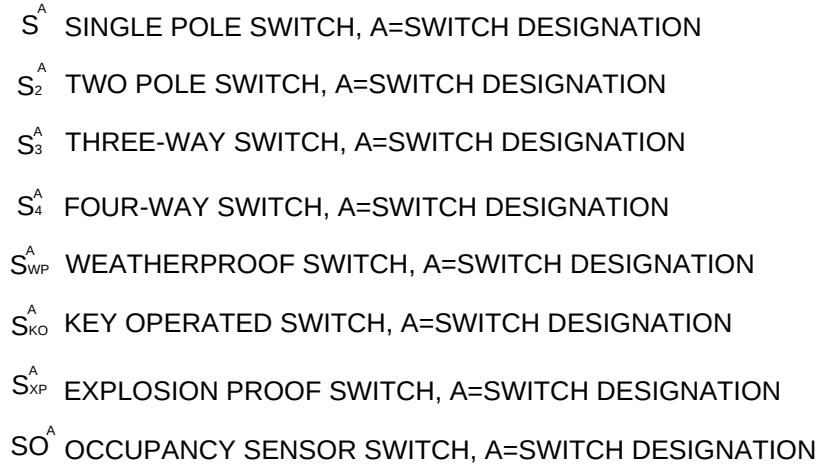
CONDUIT & WIRING INSTALLATION LEGEND



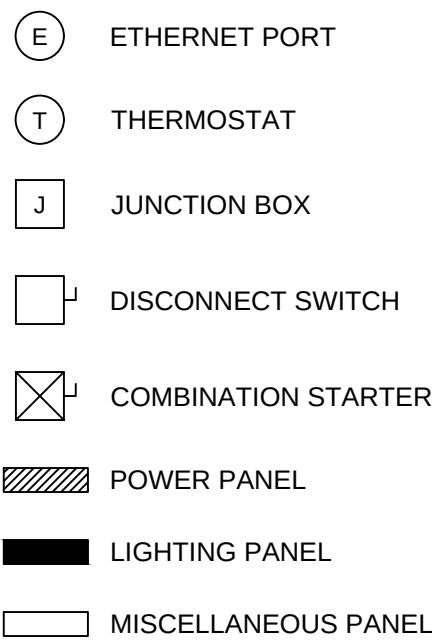
SCHEMATIC SYMBOLS



SWITCH & OUTLET SYMBOLS



MISCELLANEOUS SYMBOLS



ABBREVIATIONS

A	AMBER, AMPERE, ALARM	RECP	RECEPTACLE
AC	ALTERNATING CURRENT	RGS	RIGID GALVANIZED STEEL
AFD	ADJUSTABLE FREQUENCY DRIVE	RTD	RESISTANCE TYPE TEMP DETECTOR
AFF	ABOVE FINISHED FLOOR	RTU	REMOTE TERMINAL UNIT
AM	AMMETER	RVSS	REDUCED VOLTAGE SOLID STATE STARTER
ATO	AUTOMATIC THROWOVER	S2	SIZE 2 STARTER
AWG	AMERICAN WIRE GAUGE	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
C	CLOSE, COUNTER, CONTACTOR	SP	SINGLE POLE
CAP	CAPACITOR	SPDT	SINGLE POLE DOUBLE THROW
CB	CIRCUIT BREAKER	SPST	SINGLE POLE SINGLE THROW
CD	CONTROL DAMPER	SS	SELECTOR SWITCH
CKT	CIRCUIT	SV	SOLENOID VALVE
CL2	CHLORINE	SWB	SWITCHBOARD
CP	CONTROL PANEL	SWGR	SWITCHGEAR
CPT	CONTROL POWER TRANSFORMER	T	THERMOSTAT, TIMER, TOTALIZER
CS	CONTROL STATION	TACH	TACHOMETER
CT	CYCLE TIMER, CURRENT TRANSFORMER	TB	TERMINAL BLOCK
CTM	CYCLE TIMER MOTOR	TD	TIME DELAY RELAY
2/C	2 CONDUCTOR	TEMP	TEMPERATURE
4"C	4" CONDUIT	TQ	TORQUE
DC	DIRECT CURRENT	TS	TEMPERATURE SWITCH
DM	DAMPER MOTOR, DEMAND METER	UG	UNDERGROUND
DPDT	DOUBLE POLE DOUBLE THROW	UPS	UNINTERRUPTIBLE POWER SUPPLY
DPST	DOUBLE POLE SINGLE THROW	V	VOLTS
DPS	DIFFERENTIAL PRESSURE SWITCH	VA	VOLT AMPERE
DS	DISCONNECT SWITCH	VLS	VALVE LIMIT SWITCH
E	ELECTRIC OPERATOR FOR CONTROL DAMPER OR VALVE	VM	VOLTMETER
EMH	ELECTRICAL MANHOLE	W	WHITE, WATTS
ETM	ELAPSED TIME METER	WH	WATTHOUR METER
EX	EXISTING	WM	WATT METER
F	FORWARD	WP	WEATHERPROOF TRANSFORMER
FS	FLOW SWITCH	XFMR	EXPLOSION PROOF
G	GREEN, GROUND	XP	YELLOW
GFI	GROUND FAULT INTERRUPTER	Z	AUXILIARY RELAY
GLS	GEARED LIMIT SWITCH	ZS	POSITION SWITCH
#8G	#8 GROUND WIRE		
H	HIGH, HUMIDISTAT		
HH	HANDHOLE		
HMT	HIGH MOTOR TEMPERATURE		
HOA	HAND-OFF-AUTO		
HOR	HAND-OFF-REMOTE		
HP	HORSEPOWER		
HWCO	HIGH WATER CUTOFF		
HZ	HERTZ (CYCLE)		
I/O	INPUT/OUTPUT		
J	JUNCTION BOX		
KV	KILOVOLT		
KVA	KILOVOLT AMPERE		
KVAR	KILOVAR		
KW	KILOWATT		
KWH	KILOWATT HOUR		
L	LOW, LEVEL		
LA	LIGHTNING ARRESTOR		
LAN	LOCAL AREA NETWORK		
LP	LIGHTING PANEL		
LS	LIMIT SWITCH, LEVEL SWITCH		
LWCO	LOW WATER CUTOFF		
M	MAGNETIC MOTOR STARTER		
MA	MILLIAMPERE		
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MCM	THOUSAND CIRCULAR MIL		
MD	MOISTURE DETECTOR		
MH	MANHOLE, MOUNTING HEIGHT		
MOV	MOTOR OPERATED VALVE		
MS	MANUAL MOTOR STARTER		
MSH	MOTOR SPACE HEATER		
N	NEUTRAL		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN, NUMBER		
O	OPEN		
OL	OVERLOAD		
PB	PUSH BUTTON, PULL BOX		
PF	POWER FACTOR METER		
PH	PHASE (CHEMICAL TERM)		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PP	POWER PANEL		
PS	PRESSURE SWITCH		
PT	POTENTIAL TRANSFORMER, PROGRAM TIMER		
2P	2 POLE		
R	RED, RAISE, RELAY, REVERSE		

AREA DESIGNATIONS

THE SPECIAL AREA DESIGNATION BOXES, AS DEFINED BELOW, ARE LOCATED ON THE PLAN DRAWINGS TO DEFINE ELECTRICAL INSTALLATION REQUIREMENTS. DESIGNATION BOXES ARE LOCATED WITHIN ROOM OR BELOW ROOM NUMBER. ALL INDOOR AREAS NOT INDICATED OTHERWISE ARE AREA TYPE 1 AND MINIMUM NEMA TYPE 1 ENCLOSURES.

AREA TYPE 1	INDOOR AND DRY AREA. REQUIRES MINIMUM NEMA TYP 1 ENCLOSURES FOR ALL EQUIPMENT AND GASKETED FITTINGS IN CONDUIT SYSTEMS.
AREA TYPE 1A	CORROSIVE CHEMICAL FEED AND STORAGE ROOMS. CONDUIT SYSTEM SHALL BE EXPOSED PVC COATED CONDUIT WITH FITTINGS, AND ACCESSORIES.
AREA TYPE 4	INDOOR WET LOCATIONS SUCH AS VAULTS, HOSEDOWN AREAS, BASEMENTS, ETC. MINIMUM NEMA TYPE 4 ENCLOSURE FOR EQUIPMENT AND GASKETED FITTINGS IN A CONDUIT SYSTEM.
AREA TYPE 7A	CLASS 1, DIVISION 1 AREA AS DEFINED BY NEC. ALL EQUIPMENT AND CONDUIT SYSTEMS SHALL BE RATED FOR USE IN THIS AREA.
AREA TYPE 7B	CLASS 1, DIVISION 2, GROUP C AND D (METHANE, GASOLINE) AS DEFINED BY NEC. EQUIPMENT AND CONDUIT SYSTEMS SHALL BE RATED FOR USE IN THIS AREA.
AREA TYPE 12	INDOOR, DRY, DIRTY AREA. REQUIRES MINIMUM NEMA TYPE 12 GASKETED ENCLOSURES FOR ALL EQUIPMENT AND GASKETED FITTINGS IN CONDUIT SYSTEMS.
AREA TYPE 4X	OUTDOOR AND INDOOR WET LOCATIONS SUBJECT TO CORROSION. CONDUIT SYSTEM SHOULD BE PVC COATED RIGID GALVANIZED STEEL WITH PVC COATED FITTINGS, BOXES, AND STAINLESS STEEL HARDWARE.

GENERAL REQUIREMENTS

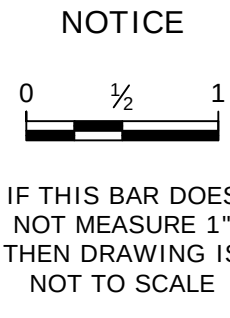
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS. THIS SHALL INCLUDE ALL CONDUITS SHOWN ON THE ONE-LINES AND HOME-RUNS SHOWN ON THE PLAN DRAWINGS. CONDUITS SHALL BE ROUTED AS DEFINED IN THE SPECIFICATIONS.
- SPARE WIRES SHALL BE TAPED AND COILED.
- IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN VALUE SHOWN, THE CABLE CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE ENLARGED, AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING PROPERLY SIZED STARTER OVERLOADS FOR EQUIPMENT FURNISHED.
- LIGHTING AND RECEPTACLE CIRCUITS DESIGNATED ON THE FLOOR PLANS ARE NOT SHOWN ON THE ONE-LINES. CONDUCTORS FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM NO. 12 AWG. CONDUIT FOR LIGHTING, RECEPTACLES, AND MISCELLANEOUS 120VAC CIRCUITS SHALL BE MINIMUM 3/4".
- IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT.

GENERAL NOTES

- SOLID LINES ——— INDICATE NEW WORK OR EQUIPMENT.
- DOTTED LINES INDICATE EXISTING WORK OR EQUIPMENT.
- DASHED LINES - - - - INDICATE FUTURE WORK OR EQUIPMENT.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- INFORMATION RELATED TO CIRCUIT IDENTIFICATION, WIRE & CONDUIT SIZES, AND ROUTING, IS ON THE FOLLOWING DRAWING TYPES.
 - ONE-LINE DIAGRAMS SHOW CIRCUIT IDENTIFICATION, WIRE QUANTITY AND SIZES, AND CONDUIT SIZE WITHIN STRUCTURES. ONE-LINE DIAGRAMS ALSO INDICATE ORIGIN AND DESTINATION OF CIRCUITS, AND IDENTIFY CIRCUITS ROUTED UNDERGROUND.
 - FOR CIRCUITS WITHOUT UNDERGROUND PORTIONS, BUILDING FLOOR PLANS SHOW LOCATION OF EQUIPMENT FOR DETERMINING CIRCUIT LENGTH WITHIN THE STRUCTURE. FOR CIRCUITS WITH UNDERGROUND PORTIONS, ANTICIPATED PENETRATION OF UNDERGROUND CONDUITS ARE SHOWN ON STRUCTURE PLANS FOR DETERMINING THE LENGTH OF IN-STRUCTURE PORTIONS OF CIRCUITS. BUILDING FLOOR PLANS MAY ALSO SHOW HOME RUNS FOR LIGHTING, RECEPTACLE, AND OTHER MISCELLANEOUS EQUIPMENT CIRCUITS.
- SITE PLANS INDICATE THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS. CIRCUITS ROUTED IN UNDERGROUND CONDUITS OR DUCT BANKS ARE INDICATED IN DUCT BANK SECTIONS REFERENCED ON THE SITE PLAN.
- DUCT BANK SECTIONS AND SCHEDULES IDENTIFY CONDUIT SIZE, CONDUIT MATERIAL, ARRANGEMENT OF THE UNDERGROUND CONDUITS, AND CIRCUITS ROUTED IN EACH UNDERGROUND CONDUIT.
- CLOUDED MARKINGS INDICATE WORK IN EXISTING AREAS THAT IS NEW OR NEW WORK ON AN EXISTING PIECE OF EQUIPMENT.

BID SET

NO.	DATE	BY	REVISION



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HBWTP EMERGENCY GENERATOR REPLACEMENT

LEGEND
ELECTRICAL

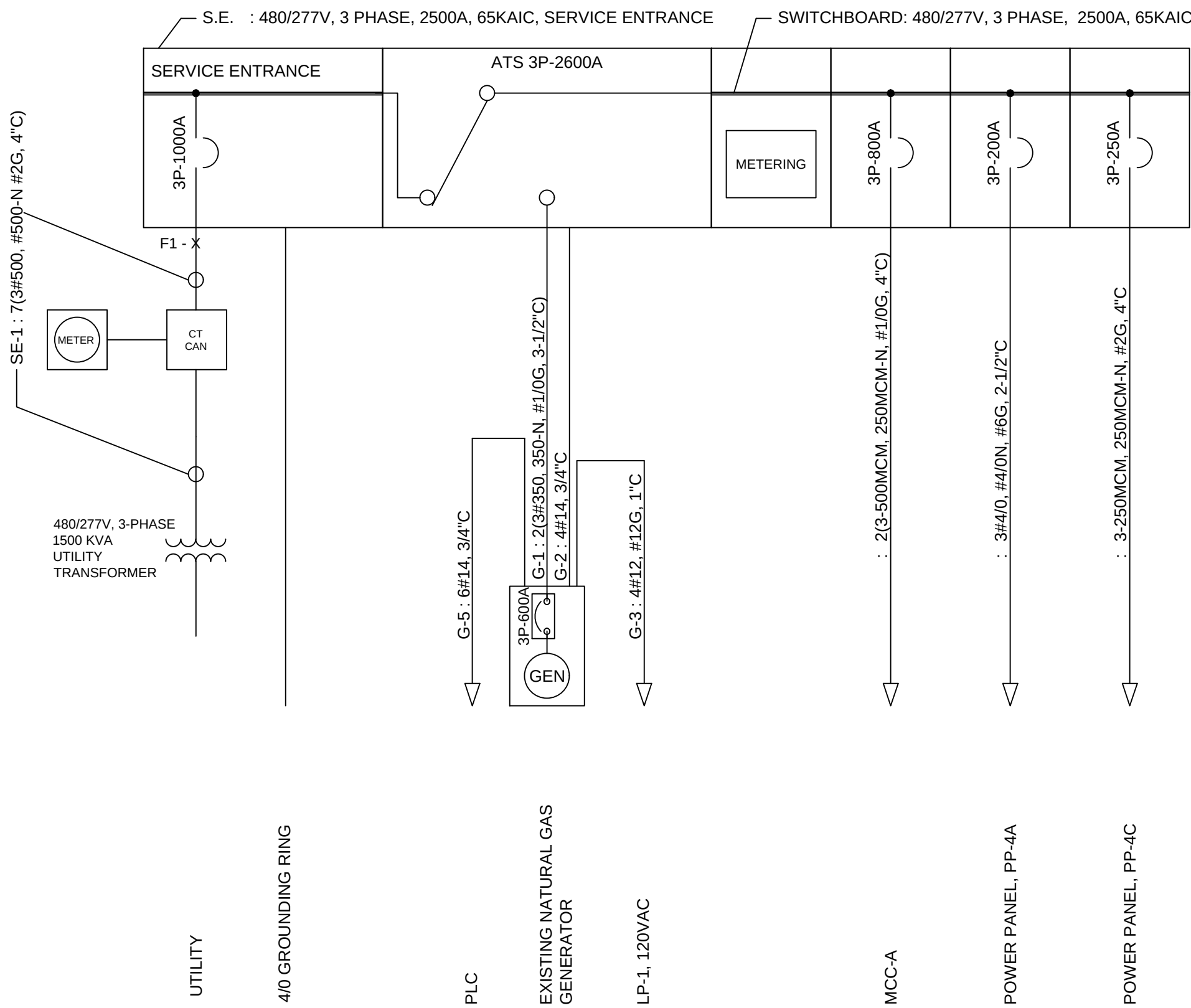
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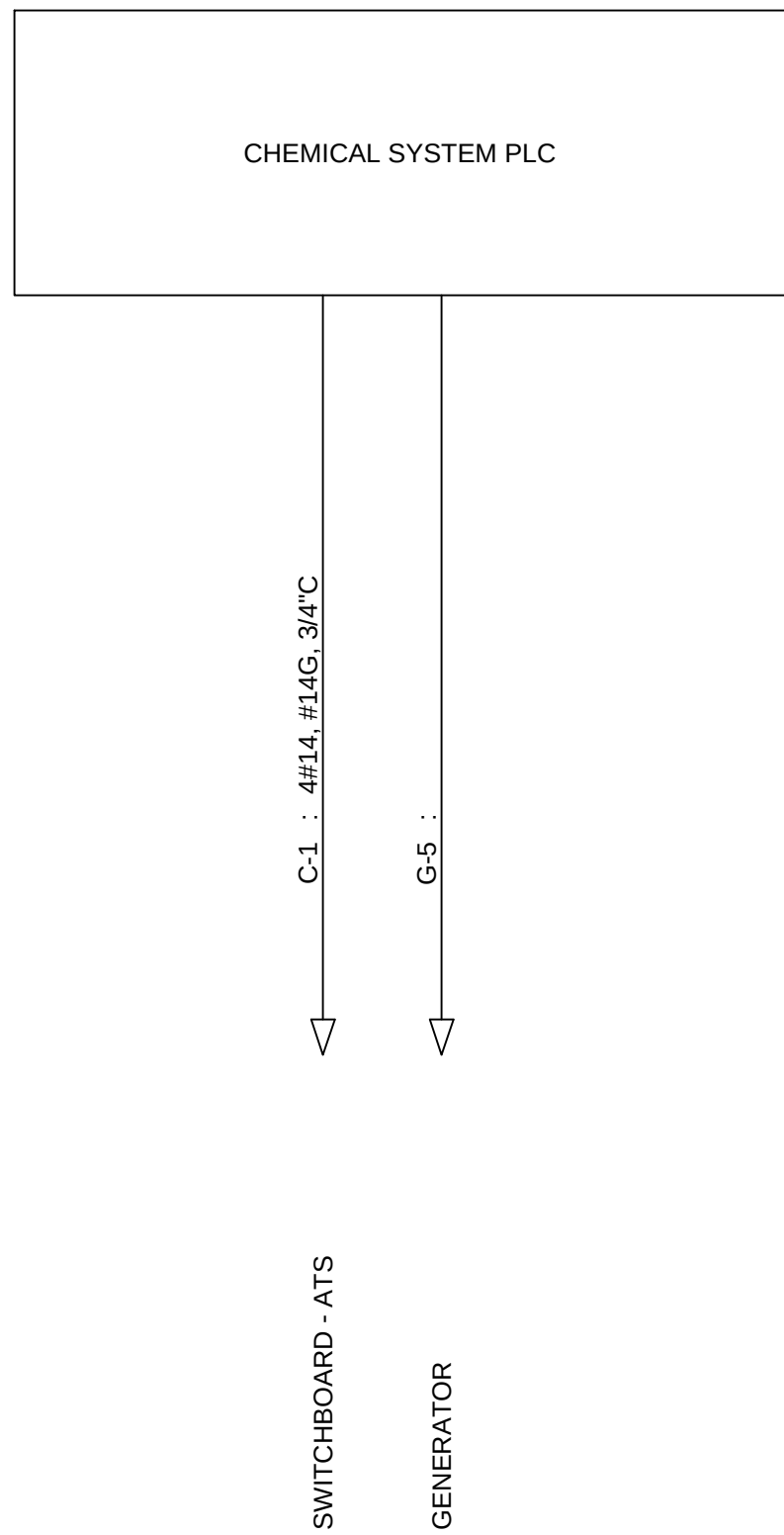
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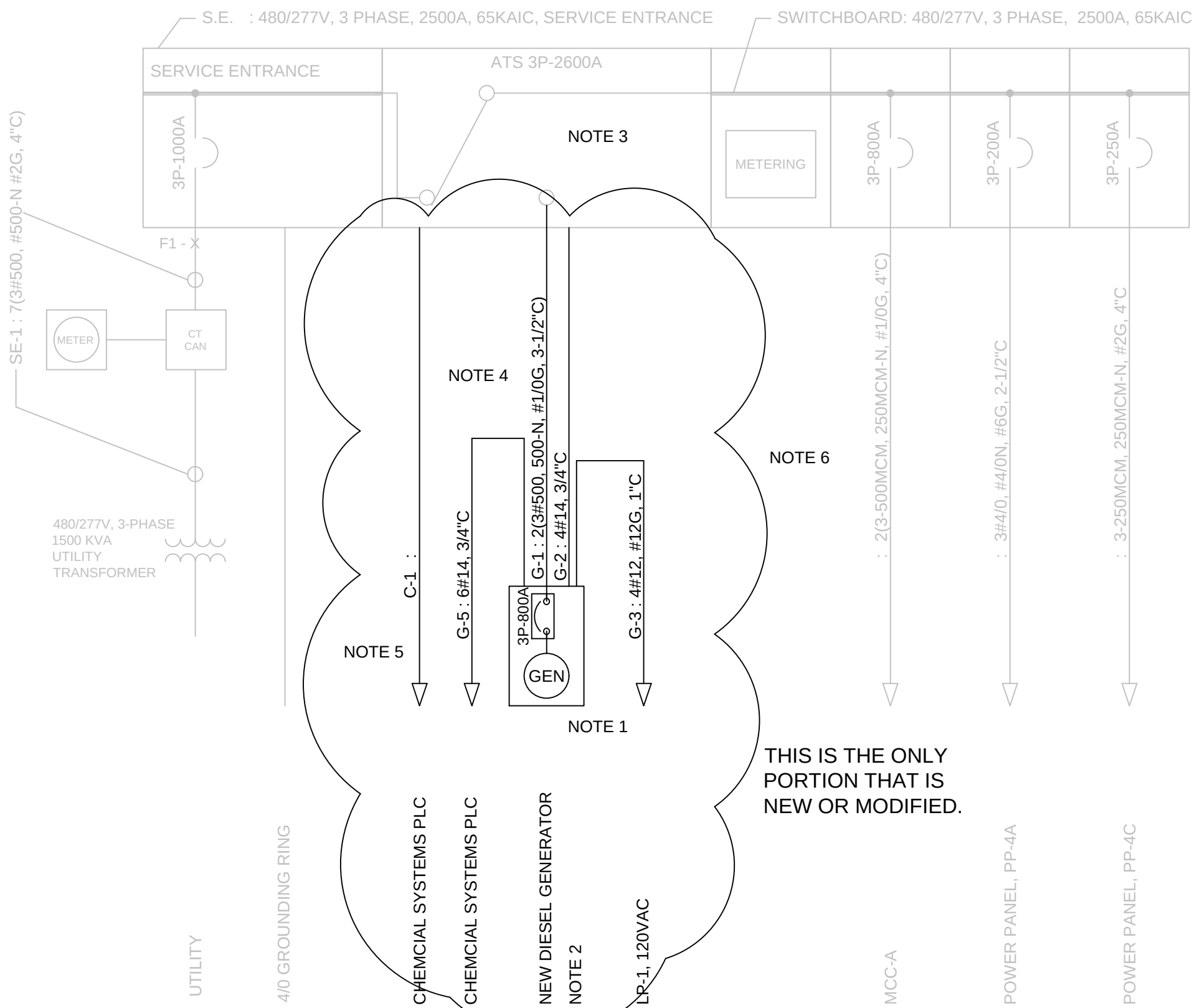
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EXISTING SERVICE ENTRANCE & MAIN SWITCHBOARD
ONE-LINE DIAGRAM



CHEMICAL SYSTEM PLC PANEL (EXISTING)
ONE-LINE DIAGRAM
ONLY NEW OR MODIFIED CIRCUITS ARE SHOWN



MODIFIED SERVICE ENTRANCE & MAIN SWITCHBOARD
ONE-LINE DIAGRAM

- NOTES:
1. RECONNECT THE EXISTING GENERATOR'S GROUNDING TO THE NEW GENERATOR.
 2. THE EXISTING CONDUITS SHALL BE REUSED. EXISTING CABLE SHALL BE REMOVED, THE INSIDE OF THE EXISTING CONDUITS SHALL BE CLEANED, AND THE NEW WIRE INSTALLED.
 3. DRY CONTACTS FOR THE POSITION OF THE TRANSFER SWITCH SHALL BE WIRED TO THE PLC.
 4. THE EXISTING CONDUIT FOR CIRCUITS G-1 & G-2 & G-3 SHALL BE REUSED. THE WIRE IN THESE CIRCUIT SHALL BE REPLACED. THE EXISTING CABLE SHALL BE REMOVED AND NEW CABLE PULLED IN TO CONNECT TO THE NEW GENERATOR. THE EXISTING SEALTITE THAT CURRENTLY CONNECTS THESE CIRCUITS TO THE EXISTING GENERATOR SHALL BE REPLACED IN ORDER FOR THE RACEWAY TO REACH TO THE NEW GENERATOR'S ELECTRICAL ENCLOSURES.
 5. CIRCUIT C-1 IS A NEW CIRCUIT.
 6. THE CLOUDED AREA IS THE EXTENT OF THE WORK UNDER THIS CONTRACT.

BID SET

NO.	DATE	BY	REVISION

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0 1/2 1	DESIGNED
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HBWTP EMERGENCY GENERATOR REPLACEMENT

ONE-LINE DIAGRAMS ELECTRICAL			
PROJECT NO.:	22-3504	SCALE:	AS SHOWN
DATE:	OCTOBER 2023		

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ATTACHMENT 4: HBWTP GENERATOR SPECIFICATIONS



COLORADO • SINCE 1878

HBWTP EMERGENCY GENERATOR REPLACEMENT PROJECT

PREPARED BY:
Conсор

OCTOBER 2023

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INVITATION TO BID

Sealed Bids will be received by the

CITY OF LOUISVILLE, STATE OF COLORADO

Hereinafter referred to as OWNER, at the office of the City Engineer, 749 Main Street, Louisville, Colorado 80027, until _____ a.m., Mountain Daylight Time, _____, 20____ for the **HOWARD BERRY WATER TREATMENT PLANT (HBWTP) EMERGENCY GENERATOR REPLACEMENT PROJECT.**

At said place and time, all Bids that have been duly received will be publicly opened and read aloud. Bids received after said closing time of _____ a.m., Mountain Daylight Time will not be accepted and be returned unopened. Bids shall be in a sealed envelope plainly marked with the Project Name and Date and addressed:

City of Louisville
Office of City Engineer
749 Main Street
Louisville, Colorado 80027

The Work for which the Bid is requested consists of the placement and related construction of a new generator at the Howard Barry Water Treatment Plant (HBWTP) within the City of Louisville, Colorado.

Digital copies of the Bidding Documents will be available beginning _____, 2023 on-line through Rocky Mountain Bid System located on the City of Louisville's website: www.louisvilleco.gov /current request for proposals and bids.

The Bidding Documents may also be examined at the office of the City Engineer at:

Louisville City Hall
Public Works Department
749 Main Street
Louisville, Colorado 80027

Bids will only be accepted from BIDDER's who are prequalified as a General Contractor by the City of Louisville City Engineer, and who are recorded by Rocky Mountain Bid System and by the City Engineer as having received the Bidding Documents. City Engineer will verify with Rocky Mountain Bid System for Plan Holder list. City of Louisville Pre-qualification forms must be received at the office of the City Engineer by close of business (5:00 p.m.) on _____, 20____. Pre-qualification forms received after this date and time are not guaranteed to be approved by the required date.

Bids will be received on a unit and lump sum price basis as described in the Bidding Documents.

When a BIDDER submits a Bid, that Bid shall include the Schedule of Subcontractors, which shall identify each element of the Work to be subcontracted. Traffic control subcontractors shall be prequalified by the City of Louisville. Subcontractors whose subcontract exceeds five percent of the Total Bid Price shall be prequalified by the City of Louisville, City Engineer for their specific portion of the Work.

Each Bid shall contain evidence of BIDDER'S qualification to do business in the state of Colorado or covenant to obtain such qualification.

Each Bid must be accompanied by a Bid security consisting of a properly Certified Check, Cashier's Check, or Bid Bond, in the amount of five (5) percent of BIDDER'S Total Bid Price, without conditions, payable to the City of Louisville. Bid security will be retained by the City until the seventh day after the Effective Date of the Agreement whereupon Bid security furnished by such Bidder's will be returned. Bid security with Bids, which are not competitive, will be returned within fourteen days after the Bid opening. No Bid will be considered unless accompanied by such Bid security.

The successful BIDDER will be required to furnish a performance bond and a labor and material payment bond to the City of Louisville guaranteeing faithful performance and the payment of all bills and obligations arising from the performance of the Contract.

No Bid may be withdrawn within a period of sixty (60) days after the date fixed for opening Bids.

The City of Louisville reserves the right to award the contract by sections, to reject any or all Bids, and to waive any informalities and irregularities therein.

The City of Louisville assumes no responsibility for payment of any expenses incurred by any respondent to this Invitation to Bid.

Preference is hereby given to materials, supplies, and provisions produced, manufactured, or grown in Colorado, quality and price being equal to articles offered by competitors outside of the State.

A pre-bid conference and job walk through with representatives of prospective BIDDERS will be held at _____ a.m., MDT at Louisville City Hall, 749 Main Street, Louisville, Colorado, on _____, 2023. Representatives of the City will be present to discuss the Project. Perspective BIDDERS are invited to attend and present their questions relative to this Bid at this conference. **Attendance at this pre-bid conference will be required to submit a Bid.**

The City of Louisville is an Equal Opportunity Employer.

City of Louisville, Colorado
City Engineer

1st Publication: _____

2nd Publication: _____

INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to BIDDERS, which are defined in the General Conditions of this Manual have the meanings assigned to them in the General Conditions.

Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

- 1.1 The term "BIDDER" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a BIDDER.
- 1.2 The term "ISSUING OFFICE" means the office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- 1.3 The term "SUCCESSFUL BIDDER" means the lowest, qualified, responsible and responsive BIDDER to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.
- 1.4 The term "Bidding Documents" includes the Invitation to Bid, Instructions to Bidders, the Bid Form, and the Contract Documents (including all Addenda issued prior to receipt of Bids).

2. COPIES OF BIDDING DOCUMENTS

- 2.1 Complete sets of Bidding Documents stated in the Invitation to Bid may be obtained from the Issuing Office. No partial sets will be issued. The Bidding Documents may be examined at the locations identified in the Invitation to Bid.
- 2.2 Complete sets of Bidding Documents shall be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

3. QUALIFICATION OF BIDDERS

- 3.1 Bids will only be accepted from qualified BIDDER's who are prequalified as a General contractor by the City of Louisville, City Engineer, and who are recorded by the City Engineer as having received the Bidding Documents. **City of Louisville Prequalification forms must be received at the office of the City Engineer by close of business (5:00 p.m.) on _____, 2023.** Prequalification forms received after this date and time are not guaranteed to be approved by the required date.
- 3.2 Each Bid shall contain evidence of BIDDER's qualification to do business in the state of Colorado or covenant to obtain such qualification.
- 3.3 The apparent low BIDDER shall be required to show that he has handled former work of similar type and that no just claims are pending against such work. No Bid will be awarded to a BIDDER who is engaged on any other work, which would impair his ability to perform or finance this Work.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1 It is the responsibility of each BIDDER before submitting a Bid:

- 4.1.1 To examine thoroughly the Contract Documents and related data identified in the Bidding Documents;
- 4.1.2 To visit the site to become familiar with and satisfy BIDDER as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work;
- 4.1.3 To consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;
- 4.1.4 To study and carefully correlate BIDDER's knowledge and observations with the Contract Documents and other related data; and
- 4.1.5 **To promptly notify ENGINEER of all conflicts, errors, ambiguities or discrepancies, which Bidder has discovered in or between the Contract Documents and such other related documents.**

4.2 BIDDERS are responsible for examining and determining for themselves the location and nature of the proposed Work, the amount and character of the labor and materials required therefor, and the difficulties, which may be encountered. BIDDERS may not rely on oral or written representations made by the OWNER, including any reports and drawings identified pursuant to paragraph 4.2.1 and subparagraphs thereof of the General Conditions, unless the OWNER has guaranteed in writing that such representation is factually accurate, and by submitting a Bid, each Bidder waives all liability for any error in any representation made by the OWNER to the BIDDER. BIDDERS shall, at BIDDER'S own expense, inspect the site and its surroundings and conduct such supplementary examinations, investigations, and tests concerning conditions at or contiguous to the site (including surface, and subsurface) which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by BIDDER and safety precautions and programs incident thereto for performing the Work in accordance with the Contract Documents. By failing to make such an inspection, the BIDDER waives all rights to claim extra payment or time extensions due to unexpected conditions, which could have been determined had the site been reasonably inspected. If concealed or unknown conditions differ materially from those ordinarily encountered and generally recognized as inherent in the Work, or differ materially from the conditions indicated in the Contract Documents, then an equitable adjustment in the Contract Price or in the Contract Time will be allowed by change order as provided in Article 11 or Article 12 respectively of the General Conditions. By submitting a Bid, the BIDDER represents that the BIDDER'S observations at the site are not inconsistent with the requirements of the proposed Contract Documents, unless otherwise noted by the BIDDER.

- 4.2.1 Refer to General Conditions for identification of those reports of explorations and tests of subsurface conditions at or contiguous to the site, which have been utilized by ENGINEER in preparation of the Contract Documents. BIDDER may not rely upon the general accuracy of the "technical data" contained in such reports or upon non-technical data, interpretations, opinions or information contained in such reports or otherwise relating to the subsurface conditions at the site, nor upon the completeness thereof for the purposes of bidding or

construction unless OWNER has guaranteed in writing that such data or representations are accurate.

- 4.2.2 Refer to General Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface conditions (except Underground Facilities) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. BIDDER may not rely upon the general accuracy of the "technical data" contained in such drawings or upon other data, interpretations, opinions or information shown or indicated in such drawings or otherwise relating to such structures, nor upon the completeness thereof for the purposes of bidding or construction unless OWNER has guaranteed in writing that such data or representations are accurate.

Copies of such reports and drawings will be made available by OWNER to any BIDDER on request. Those reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which BIDDER is entitled to rely upon as factually accurate as provided in Paragraphs 4.2.1 of the General Conditions. BIDDER is responsible for any interpretation or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.

- 4.3 Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER by OWNERS of such Underground Facilities or others, and OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof.
- 4.4 On request in advance, OWNER will provide each BIDDER access to the site to conduct such examinations, investigations, explorations, tests and studies as each BIDDER deems necessary for submission of a Bid. BIDDER shall fill all holes, clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.
- 4.5 Reference is made to the General Conditions for the identification of the general nature of work that is to be performed at the site by OWNER or others (such as utilities and other prime contractors) that relates to work for which a Bid is to be submitted. On request, OWNER will provide to each BIDDER for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.
- 4.6 The submission of a Bid will constitute an incontrovertible representation by BIDDER that BIDDER has complied with every requirement of this Article 4, that the BIDDER warrants that it is familiar with all provisions of the Contract Documents, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction that may be shown or indicated in or expressly required by the Contract Documents, **that BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities and discrepancies that BIDDER has discovered in the Contract Documents and the written resolutions thereof by ENGINEER is acceptable to BIDDER**, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing of the Work.
- 4.7 The provisions of 4.1 through 4.7 of this section, inclusive, do not apply to Asbestos, Polychlorinated biphenyl's (PCB's), Petroleum, Hazardous Waste or Radioactive Material covered by paragraph 4.5 of the General Conditions.

5. AVAILABILITY OF LANDS FOR WORK, ETC.

- 5.1 The lands upon which the Work is to be performed will be in the confines of the Water Treatment Plant site. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

6. INTERPRETATIONS AND ADDENDA

- 6.1 All questions about the meaning or intent of the Bidding Documents are to be submitted in writing to the ENGINEER. Interpretation or clarifications considered necessary by ENGINEER in response to such questions will be issued only by Addenda mailed or delivered to all parties recorded by ENGINEER as having received Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. **Oral and other interpretations or clarifications will be without legal effect.**
- 6.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by ENGINEER.

7. BID SECURITY

- 7.1 Each Bid must be accompanied by a Bid Security consisting of a properly Certified Check, Cashier's Check, or Bid Bond on the form enclosed herewith, in the amount of five (5) percent of BIDDER's Total Bid Price, without conditions, payable to the City of Louisville, Colorado. The Bid Bond must be executed by a surety meeting the requirements of Paragraph 5.3 of the General Conditions. The cost of the Bid Security shall be included in the bid. The submission of the Bid and Bid Security is a pledge by the BIDDER that he will enter into an Agreement with the Owner on the terms stated in his Bid and will, if required, furnish required insurance certificates and bonds, covering the faithful performance of the Agreement and the payment of all obligations arising thereunder.
- 7.2 The Bid Security of the Successful BIDDER will be retained until such BIDDER has executed the Agreement, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid Security will be returned. If the successful BIDDER fails to execute, enter into or deliver an Agreement in accordance with an accepted bid proposal, or fails to furnish the required bonds or certificates, within ten (10) days from the mailing of the Notice of Award, or if the BIDDER has been guilty of collusion with other BIDDERS in submitting the Bid, the OWNER may annul the Notice of Award and the Bid Security shall be forfeited to and retained by the OWNER as liquidated damages and not as a penalty. By submitting the Bid security with the bid proposal, the BIDDER agrees to liquidated damages in the event the BIDDER fails to enter into the Agreement with the OWNER. The OWNER shall not have to prove actual damages suffered in order to retain the Bid Security as liquidated damages. The OWNER and the BIDDER agree that liquidated damages are appropriate because the anticipated actual damages are uncertain in amount and difficult to forecast accurately. The OWNER and the BIDDER agree that the amount of the Bid Security is a reasonable estimate of damages and not disproportionate to the anticipated loss or injury. The Bid Security of other BIDDER'S whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the seventh day after the Effective Date of the Agreement whereupon Bid Security furnished by such BIDDER'S will be returned. Bid

Security with Bids, which are not competitive will be returned within fourteen days after the Bid opening.

8. CONTRACT TIME

- 8.1 The number of days within which, or the dates by which, the Work is to be completed (the Contract Time) is set forth in the Agreement.

9. LIQUIDATED DAMAGES

- 9.1 Provisions for liquidated damages, if any, are set forth in the Agreement and General Conditions.

10. SUBSTITUTE AND "OR-EQUAL" ITEMS

- 10.1 The Contract, if awarded, will be on the basis of materials and equipment described on the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items. Whenever it is indicated on the Drawings or specified in the Specifications that a substitute or "or - equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in the General Requirements.

11. SUBCONTRACTORS, SUPPLIERS AND OTHERS

- 11.1 **When a BIDDER submits a Bid, that Bid shall include the Schedule of Subcontractors, which shall identify each element of the Work to be subcontracted. Subcontractors whose subcontract exceeds five percent of the Total Bid Price shall be prequalified by the City of Louisville, City Engineer for their specific portion of the Work.**
- 11.2 If OWNER, who after due investigation has reasonable objection to any proposed Subcontractor, other person or organization, may before the Notice of Award is given, request the apparent Successful BIDDER to submit a substitute Subcontractor acceptable to the City without an increase in Bid price. If the apparent Successful BIDDER declines to make any such substitution, OWNER may award the contract to the next lowest BIDDER that proposes to use acceptable Subcontractors and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any BIDDER. Any Subcontractor or other person or organization listed and to whom OWNER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.8.2. of the General Conditions.
- 11.3 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.
- 11.4 The Contract Documents will take precedence over any nonconforming data submitted. Any Bid specifically conditioned upon furnishing equipment or materials, which are not responsive to the Contract Documents will not be considered.

12. BID FORM

- 12.1 The Bid Form is included in the Contract Documents.
- 12.2 All blanks on the Bid Form must be completed by printing in ink or by typewriter. All unit prices including lump sums in the unit price schedule are to be expressed in numerals only.
- 12.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The state of incorporation shall be shown below the corporate name.
- 12.4 Bids by partnerships must be executed in the partnership name and signed by a duly authorized general partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature. A partnership shall give the full names and addresses of all partners and their interest and role in the partnership business.
- 12.5 All names must be typed or printed in ink below the signature.
- 12.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).
- 12.7 The BIDDER's business address and telephone number for communications regarding the Bid must be shown.
- 12.8 Each Bid shall contain evidence of BIDDER's qualification to do business in the state of Colorado or covenant to obtain such qualification.
- 12.9 No alterations in Bids, or in the printed forms therefor, by erasures, interpolations, or otherwise will be accepted unless each such alteration is signed or initialed by the BIDDER; if initialed, OWNER may require the BIDDER to identify any alteration so initialed.
- 12.10 Bids will be based on a combination of unit price and lump sum schedules including alternatives. Unit price schedules shall be bid as provided in Paragraph 12.10.1 below. Lump sum schedules shall be bid as provided in paragraph 12.10.2 below.
 - 12.10.1 Bids for unit price schedules shall be based on a unit price basis. The Total Bid Price will be determined as the sum of the products of the estimated quantity of each item and the unit price set forth in the Schedule of Unit Prices. The final Contract Price will be subject to adjustment according to final measured, used or delivered quantities as provided in the Specifications and the unit prices in the Bid Form will apply to such final quantities except that unit prices may be subject to change by Change Order if quantities vary more than 25 percent.
 - 12.10.2 Bids for lump sum schedules shall be based on a lump sum basis for each lump sum item.

13. SUBMISSION OF BIDS

- 13.1 Bids shall be submitted at the time and place indicated in the Advertisement of Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the

Project Title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the BIDDER, and addressed to the City of Louisville as indicated in the Advertisement of Invitation to Bid accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system the sealed Bid shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of the separate sealed envelope.

13.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in the Invitation to Bid, or any extension thereof made by Addendum. Bids received after the time and date for receipt of Bids will be returned unopened. BIDDER shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

13.3 Oral, telephonic, or telegraphic Bids are invalid and will not receive consideration.

13.4 No BIDDER may submit more than one Bid. Multiple Bids under different names will not be accepted from one firm or association.

14. MODIFICATION AND WITHDRAWAL OF BIDS

14.1 Bids may be modified or withdrawn by an appropriate document duly executed (in a manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

14.2 Bids may also be modified or withdrawn in person by the BIDDER or an authorized representative provided he can prove his identity and authority.

14.3 Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to BIDDERS.

14.4 If, within twenty-four hours after Bids are opened, any BIDDER files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that BIDDER may withdraw its Bid and the Bid security will be returned. Thereafter, that BIDDER will be disqualified from further bidding on the Work to be provided under the Contract Documents.

15. OPENING OF BIDS

15.1 Bids will be opened and (unless obviously non-responsive) read aloud publicly as indicated in the Invitation to Bid. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to BIDDERS.

16. BIDS TO REMAIN OPEN SUBJECT TO ACCEPTANCE

16.1 All Bids shall remain open for sixty (60) days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid Security prior to that date.

17. AWARD OF CONTRACT

17.1 OWNER reserves the right to reject any or all Bids, including without limitation the rights to reject any or all irregular, nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any BIDDER if OWNER believes that it would not be in the best interest of the Project to make an award to that BIDDER, whether

because the Bid is not responsive or the BIDDER is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

- 17.2 In evaluating Bids, OWNER will consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 17.3 OWNER will consider the qualifications and experience of Subcontractors and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted. OWNER also will consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.
- 17.4 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the BIDDER, proposed Subcontractors and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to OWNER's satisfaction within the prescribed time.
- 17.5 If the contract is to be awarded, it will be awarded to the lowest responsible BIDDER based on the combination of Bid Schedules as determined by OWNER and whose evaluation by OWNER indicates to OWNER that the award will be in the best interest of the Project.
- 17.6 If the contract is to be awarded, OWNER will accept the Bid within sixty days after the Bid opening and will give the Successful BIDDER a Notice of Award within sixty-five days after the day of the Bid opening. The OWNER's acceptance of the Bid proposal shall bind the successful BIDDER to sign the Contract Documents within ten (10) days after the date of the receipt by the BIDDER of the Notice of Award. The rights and obligations set forth in the Contract Documents shall become effective only with the signature of the **MAYOR** on behalf of the City.
- 17.7 It is the OWNERS intention to award the entire contract as bid. The OWNER reserves the right to award a contract that is in the best interest of the OWNER and within the amount budgeted and that the OWNER has appropriated monies at least equal to the contract amount. The Total Bid Price shall be the basis of award. Quantities may be reduced in order to reach budget amount, in that case the unit prices shall govern to determine the lowest Total Bid Price, which shall then determine the basis of award. If quantity reductions are required, quantities may be reduced from any item.

The BIDDER acknowledges that the OWNER has the right to delete any item of the Schedule of Unit Prices or change quantities and locations in any item at OWNERS sole discretion without affecting the contract prices of any item of the Contract so long as the deletion or change does not exceed twenty-five (25) percent of the Total Bid Price.

Quantities listed in the Schedule of Unit Prices are approximate and are for the purpose of comparing bids. These quantities have been estimated and are for the general information of the BIDDER. Quantities are not guaranteed.

- 17.8 In addition to Paragraph 17.1 of the Instructions to Bidders, in evaluating Bids, the OWNER will consider Bids irregular, and intends to reject Bids, for any of the following substantial reasons:
- 17.8.1 Unsigned Bid Form;
 - 17.8.2 Bid Forms which have items omitted by the BIDDER;
 - 17.8.3 Altering a Bid as to specified time of commencement of completion of Work;
 - 17.8.4 Bid Forms not accompanied by a Bid Security of character indicated or of an amount less than indicated;
 - 17.8.5 If the Bid Form is on a form other than that provided in Contract Documents, or if the Bid Form is altered;
 - 17.8.6 If there are unauthorized additions, conditional or alternate Bids, or discrepancies of any nature that make the Bid Form incomplete, indefinite, or ambiguous as to its meaning;
 - 17.8.7 If the BIDDER adds any provisions reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award;
 - 17.8.8 If the Schedule of Unit Prices in the Bid Form does not contain a unit price for each item number listed; or,
 - 17.8.9 Submitting more than one Bid, where there is evidence that any BIDDER has an interest in more than one Bid for the same work, or where there is evidence of collusion or other illegal activities between BIDDERS. In addition to any other remedies the OWNER may have, the OWNER may retain as liquidated damages for the disruption of the bidding process the Bid Security of all bidders involved in collusion or other illegal activities. The BIDDER and the OWNER agree that the amount of the Bid Security is a reasonable estimate of damages for collusion and other illegal activities on the part of the BIDDER and not disproportionate to the anticipated loss or injury. A person or entity, which has quoted prices to a BIDDER is not hereby disqualified from quoting prices to other BIDDERS or from submitting a direct bid on its own behalf.
 - 17.9.0 In evaluating Bids, the OWNER may consider Bids informal, and may, in its sole discretion, elect to waive informalities for the following minor reasons:
 - 17.9.1 Omission of dates when signed, or title of person signing;
 - 17.9.2 Failure to acknowledge an addendum, which does not affect quantity, quality, time, or price;
 - 17.9.3 Submission of a Bid in an unsealed envelope;
 - 17.9.4 Unit price Bids which include reconcilable arithmetic errors may be corrected if it does not change the unit price; or,
 - 17.9.5 Unit price Bids which include reconcilable arithmetic errors may be corrected, if it does not change the amount on which the award will be based.

18. CONTRACT SECURITY

- 18.1 Paragraph 5.1 of the General Conditions set forth OWNER's requirements as to performance and payment Bonds. When the Successful BIDDER delivers the executed Agreement to OWNER it shall be accompanied by the required performance and payment Bonds.

19. SIGNING OF AGREEMENT

- 19.1 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 (10) days after CONTRACTOR's receipt of the Notice of Award, CONTRACTOR shall sign and have notarized the required number of counterparts of the Agreement and attached documents and return them to the OWNER along with the required Bonds, insurance certificates and power of attorney authorizations.

20. SPECIAL LEGAL REQUIREMENTS

- 20.1 OWNER's Finances. OWNER has made adequate financial arrangements for the completion of all Work required by the Contract Documents and welcomes inquiries from prospective BIDDERS on the prime contract.

21. SALES AND USE TAXES

- 21.1 OWNER is exempt from Colorado State Sales and Use Taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Contract Price. Refer to General Conditions 6.15 for additional information.

22. RETAINAGE

- 22.1 Provisions concerning retainage and CONTRACTORS' rights to deposit securities in lieu of retainage are set forth in the Agreement.

23. MISTAKES IN BIDDING INSTRUCTIONS

- 23.1 If the OWNER makes a mistake in drafting the Instructions to Bidders or any other Contract Documents, the OWNER reserves the right to reject any or all Bids, or to require that BIDDERS submit an alternate bid proposal with adjustments made to correct the error(s). Such errors will be set forth in an addendum. If the CONTRACTOR has already been selected and has started performing work under the contract, and the OWNER then discovers a mistake in the Contract Documents for which the OWNER is responsible, the OWNER may opt to reform the contract. If the mistake causes the Contractor to receive compensation for materials not used in the Work or for labor, which would not be required for the Work, the Contract Price shall be decreased proportionally. If the mistake causes the CONTRACTOR to fail to bid on work, which must be performed in order to properly complete the contract, the OWNER may increase the Contract Price to equal the proportionate increase in the cost of required materials and labor caused to the CONTRACTOR. In the alternative, the OWNER may solicit bids for such additional work, or the OWNER may reassign such additional work to another CONTRACTOR, as the OWNER deems appropriate. Nothing in this provision shall apply to mistakes made by the CONTRACTOR in completing the Bid Form or in performing the contract.

BID FORM

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

THIS BID IS SUBMITTED TO: THE CITY OF LOUISVILLE, COLORADO

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for sixty days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within ten days after the date of OWNER's Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - (a) BIDDER has examined copies of all the Bidding Documents and of the following Addenda receipt of all which is hereby acknowledged: (List Addenda by Addendum Number and Date):

Date	Number
_____	_____
_____	_____
 - (b) BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
 - (c) BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the General Conditions as provided in paragraph 4.2, and accepts the determination set forth in paragraph 4.2 of the General Conditions. BIDDER has inspected the site and has obtained conducted and carefully studied (or assumes responsibility for obtaining and carefully studying) all examinations, investigations, explorations, tests and studies which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by BIDDER for such purpose.

- (d) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.
 - (e) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
 - (f) BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
 - (g) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER.
4. BIDDER will complete the Work in accordance with Contract Documents for the following price(s):

SCHEDULE OF UNIT PRICES

PROJECT: HBWTP Emergency Generator Replacement Project
OWNERS PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

ITEM NO. and DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE

BASE BID

A	Mobilization, Bonds, Insurance, and Demobilization	LS	1		
B	Cummins 450 DFEJ 1700G with Enclosure (or approved equal)	LS	1		
C	Demolition of Existing Generator Pad	CY	3		
D	Demolition of Existing Concrete Paving	SF	575		
E	Concrete Pad for Generator	CY	4.5		
F	Site Concrete	SF	575		
G	Site Restoration	LS	1		
H	Erosion & Sediment Control	LS	1		
I	Electrical and Control Systems	LS	1		

BASE BID PRICE:

\$ _____
(figures)

THE BASIS OF AWARD SHALL BE BASE BID PRICE.

Unit Prices have been computed in accordance with paragraph 11.9.2 of the General Conditions.

BIDDER acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

5. BIDDER agrees that the Work;

will be substantially complete and completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions on or before the dates or within the number of Contract Days indicated in the Agreement.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

6. The following documents are attached to and made a condition of this Bid:

- (a) Required Bid Security;
- (b) A list of Subcontractors and other persons and organizations proposed to perform the Work are required to be identified on the Schedule of Subcontractors and submitted in this Bid;
- (c) Anti-Collusion Affidavit; and
- (d) If BIDDER is a partnership, a list of all partners, their addresses, and their interest and role in the partnership business.

7. Communications concerning this Bid shall be addressed to:
The address of BIDDER indicated below.

8. Terms used in this Bid, which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents, have the meanings assigned to them in the General Conditions.

SUBMITTED on _____, 2023.

If BIDDER is:

An Individual

By _____
(Individual's Name)

(SEAL)

doing business as _____

Business address: _____

Phone No.: _____

A Partnership

By _____
(Firm Name)

(SEAL)

(General Partner)

Business address: _____

Phone No.: _____

A Corporation

By _____
(Corporation Name)

(State of incorporation)

By _____
(Name of person authorized to sign)

(Title)

(CORPORATE SEAL)

Attest _____
(Secretary)

Business address: _____

Phone No.: _____

Date of Qualification to do business: _____

A Joint Venture

By _____
(Name)

(Address)

By _____
(Name)

(Address)

Phone Number and Address for receipt of official communications

(Each joint venturer must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

BID BOND

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

BID:

BID DUE DATE: _____
PROJECT (Brief Description Including Location): _____

BOND:

BOND NUMBER: _____
DATE: (Not later than Bid Due Date): _____
PENAL SUM: _____

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

_____(Seal)
Bidder's Name and Corporate Seal

By: _____
Signature and Title

Attest: _____
Signature and Title

SURETY

_____(Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Note: (1) Above addresses are to be used for giving requiring notice.
(2) Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents the properly executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents.
3. This obligation shall be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents, or
 - 3.2. All bids are rejected by Owner, or
 - 3.3. Owner fails to issue a notice of award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within thirty (30) calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by Owner and Bidder, provided that the time for issuing notice of award including extensions shall not in the aggregate exceed 120 days from Bid Due Date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to thirty (30) calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety, and in no case later than one year after Bid Due Date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notice required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirements of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of the Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "bid" as used herein includes a bid, offer or proposal as applicable.

SCHEDULE OF SUBCONTRACTORS

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

This Bid is based on subcontracting certain portions of the work to subcontractors as listed below.

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

Name: _____ Telephone No. _____
Address: _____
City: _____ State: _____ Zip Code: _____
Services/equipment to be provided: _____

ANTI-COLLUSION AFFIDAVIT

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

I hereby attest that I am the person responsible within my firm for the final decision as to the price(s) and amount of this Bid or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf of my firm.

I further attest that:

1. The price(s) and amount of this bid have been arrived at independently, without consultation, communication or agreement for the purpose or with the effect of restricting competition with any other firm or person who is a BIDDER or potential prime BIDDER.
- 2A. Neither the price(s) nor the amount of this Bid have been disclosed to any other firm or person who is a BIDDER or potential prime BIDDER on this project, and will not be so disclosed prior to bid opening.
- 2B. Neither the prices nor the amount of the Bid of any other firm or person who is a BIDDER or potential prime BIDDER on this project have been disclosed to me or my firm.
- 3A. No attempt has been made to solicit, cause or induce any firm or person who is BIDDER or potential prime BIDDER to refrain from bidding on this project, or to submit a Bid higher than the Bid of this firm, or any intentionally high or noncompetitive Bid or other form of complementary Bid.
- 3B. No agreement has been promised or solicited for any other firm or person who is a BIDDER or potential prime BIDDER on this project to submit an intentionally high, noncompetitive or other form of complementary bid on this project.
4. The Bid of my firm is made in good faith and not pursuant to any consultation, communication, agreement or discussion with, or inducement or solicitation by or from any firm or person to submit any intentionally high, noncompetitive or other form of complementary bid.
5. My firm has not offered or entered into a subcontract or agreement regarding the purchase or sale of materials or services from any firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by any firm or person to refrain from bidding or to submit any intentionally high, noncompetitive or other form of complementary bid or agreeing or promising to do so on this project.
6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any other project, in consideration for my firm's submitting any intentionally high, noncompetitive or other form of complementary bid, or agreeing or promising to do so, on this project.
7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's bid on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, or other conduct inconsistent with any of the statements and representations made in this affidavit.
8. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as a fraudulent concealment from the OWNER of the true facts relating to submission of bids for this contract.

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

CONTRACTOR'S FIRM OR COMPANY NAME

SECOND CONTRACTOR'S FIRM OR
COMPANY NAME (IF JOINT VENTURE)

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

SWORN BEFORE ME THIS _____ DAY OF, _____, 2018

NOTARY PUBLIC: _____ MY COMMISSION EXPIRES: _____

CERTIFICATION OF EEO COMPLIANCE

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

Instructions: BIDDER's and Subcontractors must complete and submit this form with the Bid Form. This is required by the Equal Employment Opportunity Regulations 41 CFR 1.7 (b) (1).

1. ☐ Yes ☐ No	I have developed and have on file at each establishment an affirmative action program as required by 41 CFR Chapter 60, Part 60-2.
2. ☐ Yes ☐ No	I have participated in a previous contract/subcontract subject to the equal opportunity clause.
3. ☐ Yes ☐ No	I have filed with the Joint Reporting Committee, the Director, or the Equal Employment Opportunity Commission all reports due under the applicable filing requirements.
-

I declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are true and complete to the best of my knowledge.

CONTRACTOR

☐ **BIDDER** ☐ **PROPOSED SUBCONTRACTOR**

BY: _____

TITLE: _____

DATE: _____

Prohibition Against Employing Illegal Aliens

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

Consultant shall not knowingly employ or contract with an illegal alien to perform work under this contract. Consultant shall not enter into a contract with a subcontractor that fails to certify to the Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract.

Contract has verified or attempted to verify through participating in the basic pilot program as defined in C.R.S. Section 8-17.5-101(1) ("Program") that Consultant does not employ any illegal aliens and, if Consultant is not accepted into the Program prior to entering into this contract, that Consultant shall apply to participate in the Program every three months until Consultant is accepted or the contract has been completed, whichever is earlier. This provision shall not be required or effective if the Program is discontinued. Consultant is prohibited from using the Program procedures to undertake pre-employment screening of job applicants while this contract is being performed.

If Consultant obtains actual knowledge that a subcontractor performing work under this contract for services knowingly employs or contracts with an illegal alien, Consultant shall:

- a. Notify the subcontractor and the City within three days that the Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and
- b. Terminate the subcontract with the subcontractor if within three days of receiving the notice required pursuant to this paragraph the subcontractor does not stop employing or contracting with the illegal alien; except that the Consultant shall not terminate the contract with the subcontractor if during such three days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Consultant shall comply with any reasonable request by the Department of Labor and Employment made in the course of an investigation that the Department is undertaking pursuant to the authority established in C.R.S. Section 8-17.5-102(5).

If Consultant violates a provision of this Contract required pursuant to C.R.S. Section 8-17.5-102, the City may terminate the contract for breach of contract. If the contract is so terminated, the Consultant shall be liable for actual and consequential damages to the City.

**Contractor's Pre-Contract Certification
Regarding Employing Illegal Aliens**

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

The proposer of public services to the City of Louisville identified below (hereafter "the Proposer"), hereby certifies as follows:

That at the time of providing this certification, Proposer does not knowingly employ or contract with an illegal alien; and that Proposer has participated in or attempted to participate in the Basic Pilot Program administered by the United States Department of Homeland Security in order to verify that it does not employ any illegal aliens.

Dated this ____ day of _____, 20____.

Proposer: _____

By: _____

Title: _____

AGREEMENT

THIS AGREEMENT is made and entered into this _____ day of _____ in the year 2023 by and between:

CITY OF LOUISVILLE, COLORADO
(hereinafter called OWNER)

and

(hereinafter called CONTRACTOR)

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows.

ARTICLE 1. WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504

ARTICLE 2. CONTRACT TIMES

- 2.1 The CONTRACTOR shall substantially complete all work by _____, 20__ and within **20 Contract Days** after the date when the Contract Time commences to run. The Work shall be completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions within **20 Contract Days** after the date when the Contract Times commence to run. The Contract Times shall commence to run on the day indicated in the Notice to Proceed.
- 2.2 **LIQUIDATED DAMAGES.** The OWNER and the CONTRACTOR agree and recognize that time is of the essence in this contract and that the OWNER will suffer financial loss if the Work is not substantially complete by the date specified in paragraph 2.1 above, plus any extensions thereof allowed in accordance with the Article 12 of the General Conditions. OWNER and CONTRACTOR also agree that such damages are uncertain in amount and difficult to measure accurately. Accordingly, the OWNER and CONTRACTOR agree that as liquidated damages, and not as a penalty, for delay in performance the CONTRACTOR shall pay the OWNER **TWO HUNDRED FIFTY DOLLARS (\$250)** for each and every **Contract Day** and portion thereof that expires after the time specified above for substantial completion of the Work until the same is finally complete and ready for final payment. The liquidated damages herein specified shall only apply to the CONTRACTOR's delay in performance, and shall not include litigation or attorneys' fees incurred by the OWNER, or other incidental or consequential damages suffered by the OWNER due to the CONTRACTOR's performance. If the OWNER charges liquidated damages to the CONTRACTOR, this shall not preclude the OWNER from commencing an action against the CONTRACTOR for other actual harm resulting from the CONTRACTOR's performance, which is not due to the CONTRACTOR's delay in performance.

ARTICLE 3. CONTRACT PRICE

- 3.1 The OWNER shall pay in current funds, and the CONTRACTOR agrees to accept in full payment for performance of the Work, subject to additions and deductions from extra and/or omitted work and determinations of actual quantities as provided in the Contract Documents, the Contract Price of _____ dollars (\$_____) as set forth in the Bid Form of the CONTRACTOR dated _____.

As provided in paragraph 11.9 of the General Conditions estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by ENGINEER as provided in paragraph 9.10 of the General Conditions. Unit prices have been computed as provided in paragraph 11.9 of the General Conditions.

ARTICLE 4. PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER as provided in the General Conditions.

- 4.1 PROGRESS PAYMENTS. OWNER shall make progress payments on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, on or about the third Wednesday of each month during construction as provided below. All progress payments will be on the basis of the progress of the Unit Price Work based on the number of units completed as provided in the General Conditions.

- 4.1.1.1 Prior to Substantial Completion, progress payments will be made in the amount equal to 90 percent of the completed Work, and/or 90 percent of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in 14.2 of the General Conditions), but in each case, less the aggregate of payments previously made and such less amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions.

If Work has been 50 percent completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER, OWNER may determine that as long as the character and progress of the Work remain satisfactory to them and no claims have been made by Subcontractors or material suppliers for unpaid work or materials, there will be no additional retainage on account of Work completed in which case the remaining progress payments prior to Substantial Completion may be in an amount equal to 100 percent of the Work completed.

Nothing contained in this provision shall preclude the OWNER and CONTRACTOR from making other arrangements consistent with C.R.S. 24-91-105 prior to contract award.

- 4.2 FINAL PAYMENT. Upon final completion and acceptance of the Work in accordance with paragraph 14.13 of the General Conditions, OWNER shall pay the remainder of the Contract Price as provided in said paragraph 14.13 of the General Conditions.

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- 5.1 CONTRACTOR has examined and carefully studied the Contract Documents, (including the Addenda listed in paragraph 6.10) and the other related data identified in the Bidding Documents including "technical".
- 5.2 CONTRACTOR has inspected the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.
- 5.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and furnishing of the Work.
- 5.4 CONTRACTOR has carefully studied all reports of exploration and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions relating to surface or subsurface structures at or contiguous to the site (Except Underground facilities) which have been identified in the General Conditions as provided in paragraph 4.2.1 of the General Conditions. CONTRACTOR accepts the determination set forth in paragraph 4.2 of the General Conditions. CONTRACTOR acknowledges that such reports and drawings are not Contract Documents and may not be complete for CONTRACTOR's purposes. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to such reports, drawings or to Underground Facilities at or contiguous to the site. CONTRACTOR has conducted, obtained and carefully studied (or assume responsibility for having done so) all necessary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.
- 5.5 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.
- 5.6 CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.
- 5.7 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests studies and data with the Contract Documents.
- 5.8 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract

Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing the Work.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents, which constitute the entire agreement between OWNER and CONTRACTOR concerning the Work, are all written documents, which define the Work and the obligations of the Contractor in performing the Work and the OWNER in providing compensation for the Work. The Contract Documents include the following:

- 6.1 Invitation to Bid.
- 6.2 Instruction to Bidders.
- 6.3 Bid Form.
- 6.4 This Agreement.
- 6.5 General Conditions.
- 6.6 Supplementary Conditions.
- 6.7 General Requirements.
- 6.8 Technical Specifications.
- 6.9 Drawings with each sheet bearing the title: **HBWTP Emergency Generator Replacement Project**
- 6.10 Change Orders, Addenda and other documents which may be required or specified including:
 - 6.10.1 Addenda No. 0 to 0 exclusive
 - 6.10.2 Documentation submitted by CONTRACTOR prior to Notice of Award.
 - 6.10.3 Schedule of Subcontractors
 - 6.10.4 Anti-Collusion Affidavit
 - 6.10.5 Certification of EEO Compliance
 - 6.10.6 Notice of Award
 - 6.10.7 Performance Bond
 - 6.10.8 Labor and Material Payment Bond
 - 6.10.9 Certificates of Insurance
 - 6.10.10 Notice to Proceed
 - 6.10.11 Contractor's Proposal Request
 - 6.10.12 Contractor's Overtime Request
 - 6.10.13 Field Order
 - 6.10.14 Work Change Directive
 - 6.10.15 Change Order
 - 6.10.16 Application for Payment
 - 6.10.17 Certificate of Substantial Completion
 - 6.10.18 Claim Release
 - 6.10.19 Final Inspection Report
 - 6.10.20 Certificate of Final Completion
 - 6.10.21 Guarantee Period Inspection Report

- 6.11 The following which may be delivered or issued after the Effective Date of the Agreement and are attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to paragraphs 3.5 and 3.6 of the General Conditions.
- 6.12 In the event of conflict between the above documents, the prevailing document shall be as follows:
1. Permits from other agencies as may be required.
 2. Special Provisions and Detail Drawings.
 3. Technical Specifications and Drawings. Drawings and Technical Specifications are intended to be complementary. Anything shown or called for in one and omitted in another is binding as if called for or shown by both.
 4. Supplementary Conditions.
 5. General Conditions.
 6. City of Louisville Design and Construction Standards.
 7. Reference Specifications.

In case of conflict between prevailing references above, the one having the more stringent requirements shall govern.

There are no Contract Documents other than those listed above in this Article 6. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.5 and 3.6 of the General Conditions.

ARTICLE 7. MISCELLANEOUS

- 7.1 Terms used in this Agreement, which are defined in Article 1 of the General Conditions, shall have the meanings indicated in the General Conditions.
- 7.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge that assignor from any duty or responsibility under the Contract Documents.
- 7.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

ARTICLE 8. OTHER PROVISIONS

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR.

This Agreement will be effective on _____, 20____.

**OWNER: CITY OF LOUISVILLE,
COLORADO**

CONTRACTOR: _____

By: _____
Jeff Durbin, City Manager

By: _____

(CORPORATE SEAL)

(CORPORATE SEAL)

Attest: _____
Meredyth Muth, City Clerk

Attest: _____

Address for giving notices:

Address for giving notices:

749 Main Street
Louisville, Colorado
80027

Attention: City Engineer

PERFORMANCE BOND

_____, as Principal, hereinafter called the Contractor,
and

_____, as Surety, with general offices
in

a Corporation organized under the laws of the State of _____, and
authorized to transact business in the State of Colorado, are hereby bound unto the City of
Louisville, Colorado, as Obligee, hereinafter called the City, in the penal sum of _____
(\$ _____) in the United States currency, for the payment of which sum the
Contractor and Surety bind themselves, their heirs, executors, administrators, successors and
assigns, jointly and severally.

WHEREAS, the Contractor has entered into a written contract with the City dated
_____, 20____, for _____ in accordance
with plans and specifications contained in the Contract, a copy of which Contract is attached
hereto and made a part hereof and is hereinafter referred to as the Contract;

NOW, THEREFORE, the conditions of this performance bond are such that, if the
Contractor shall satisfactorily perform the Contract, then this bond shall be null and void;
otherwise, the Surety shall promptly remedy the default, or shall promptly 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 City elects, upon determination by the City and the
Surety jointly of the lowest responsible bidder, arrange for a Contract between such Bidder and
the City, and make available as work progresses (even though there should be a default or a
succession of defaults under the Contract or Contracts of completion arranged under this
paragraph) sufficient funds to pay the costs of completion plus liquidated damages additional
costs pursuant to Section 12.2 of the General Conditions of the Contract less the balance of the
contract price, but not exceeding 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 the City to the Contractor under the Contract and any amendments thereto, less the amount
paid by the City to Contractor.

In addition, if the Contractor or a subcontractor shall fail to duly pay for any labor, materials,
team hire, sustenance, provisions, provender, or other supplies used or consumed by such
Contractor or subcontractor in performance of the Contract, or shall fail to duly pay any person
who supplies rental machinery, tools, or equipment, all amounts due as the result of the use of
such machinery, tools or equipment in the prosecution of the Work, then the Surety shall pay
the same in the amount not exceeding the sum specified in the bond together with interest at a
rate of eight percent per annum.

In addition to the other conditions hereof, this bond shall include all provisions set forth in
Section 38-26-106, C.R.S.

THE UNDERSIGNED SURETY for value received hereby agrees that no extension of time, change in, addition to, or other modification of the terms of the Contract of Work to be performed thereunder or the specifications of the Contract Documents shall in any way affect its obligation on this bond and the Surety does hereby waive notice of any such extension of time, change, addition, or modifications.

SIGNED AND SEALED this _____ day of _____, 20____.

(Contractor)

By: _____
(President)

(Surety Company)

Address: _____

(Attest)

By: _____
(Attorney-in-fact)

LABOR AND MATERIAL PAYMENT BOND

BOND NUMBER:

KNOW ALL MEN BY THESE PRESENCES: that

(Firm) _____

(Address) _____

(an Individual), (a Partnership), (a Corporation), hereinafter referred to as "the Principal", and

(Firm) _____

(Address) _____

hereinafter referred to as "the Surety", are held and firmly bound unto the
CITY OF LOUISVILLE, 749 MAIN STREET, LOUISVILLE, COLORADO a Municipal Corporation,
hereinafter referred to as "the Owner", in the penal sum of

_____ Dollars
(\$ _____) in lawful money of the United States, for the payment of which sum
well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by
these presents.

THE CONDITIONS OF THIS OBLIGATION are such that whereas the Principal entered into a
certain Agreement with the Owner, dated the _____ day of _____, 20____, a
copy of which is hereto attached and made a part hereof for the performance of

NOW, THEREFORE, if the Principal shall make payment to all persons, firms, subcontractors and
corporations furnishing materials for or performing labor in the prosecution of the Work provided for
in such Agreement, and any authorized extension or modification thereof, including all amounts due
for materials, lubricants, repairs on machinery, equipment and tools, consumed, rented or used in
connection with the construction of such work, and all insurance premiums on said Work, and for all
labor, performed in such Work whether by Subcontractor or otherwise, then this obligation shall be
void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that
no change, extension of time, alteration or addition to the terms of the Agreement or to the Work to
be performed thereunder or the specifications accompanying the same shall in any way affect its
obligation on this Bond; and it does hereby waive notice of any such change, extension of time,
alteration or addition to the terms of the Agreement or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall
abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

In addition to the other conditions hereof, this bond shall include all provisions set forth in Section
38-26-105, C.R.S.

IN WITNESS WHEREOF, this instrument is executed in (3) counterparts, each one of which shall be deemed an original, this _____ day of _____, 20__.

IN THE PRESENCE OF:

PRINCIPAL:

BY: _____

(Title)

(Corporate Seal)

Addresses:

IN THE PRESENCE OF:

OTHER PARTNERS:

By: _____

By: _____

IN THE PRESENCE OF:

SURETY:

By: _____
(Attorney-in fact)

(Surety Seal)

Address:

NOTE: Date of Bond must not be prior to date of Agreement.
If Contractor is a Partnership, all partners must execute Bond.

IMPORTANT: Surety Company must be authorized to transact business in the state of Colorado and be acceptable to the Owner.

NOTICE OF AWARD

DATED: _____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

Please be advised that on _____, 20____, the City of Louisville, Colorado City Council awarded the 20____ PROJECT to your company in the amount of \$_____ per your low unit price bid. In accordance with the Contract Documents, you are required to execute two copies of the Agreement and return both copies with the required bonds and certificates of insurance within **10 days** of the date of this Notice of Award by _____, 20____.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

CITY OF LOUISVILLE, COLORADO

ACCEPTANCE OF NOTICE

By: _____
Justin Ferron, P.E.

By: _____

Title: Civil Engineer III

Title: _____

NOTICE TO PROCEED

DATED: _____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

You are hereby notified that the Contract Time under the above Contract will commence to run on _____, **20**____. On that date, you are to begin performing the Work in accordance with the Contract Documents and you are to complete the Work within **20 Contract Days** thereafter. The date of substantial completion of all Work is therefore _____, **20**____.

CITY OF LOUISVILLE, COLORADO

By: _____
Justin Ferron, P.E.

Title: Civil Engineer III

ACKNOWLEDGEMENT

Receipt of the above Notice to Proceed in hereby acknowledged.

CONTRACTOR: _____

By: _____

Title: _____

Date: _____

CHANGE ORDER NO. _____

DATED: _____, 20__

PROJECT: HBWTP Emergency Generator Replacement Project

AGREEMENT DATE: _____ 20__

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

The following changes are hereby made to the Contract Documents:

Description: _____

Purpose: _____

Attachments: _____

ADJUSTMENT TO CONTRACT PRICE:

Original contract price	\$ _____
Set change previous Change Orders No. __ to __	\$ _____
Contract price prior to this Change Order	\$ _____
Net adjustment resulting from this Change Order (+/-)	\$ _____
Current contract price including this Change Order	\$ _____

ADJUSTMENT TO CONTRACT TIME:

Original contract time (days or date)
Net change previous Change Orders No. __ to __ (days)
Contract time prior to this Change Order (days or date)
Net Adjustment Resulting from this Change Order (days)
Current contract time including this Change Order (days or date)

Recommended:

Approved:

Accepted:

ENGINEER

CITY OF LOUISVILLE, COLORADO
OWNER

CONTRACTOR

By: _____

By: _____

By: _____

Date: _____

Date: _____

Date: _____

FIELD ORDER

No. _____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

DATE ISSUED: _____

You are hereby directed and instructed to execute promptly minor variations in the Work by this Field Order as follows:

Attachments:

This form shall be used to authorize minor variations in the Work from the requirements of the Contract Documents, which do not include an adjustment in the Contract Price or the Contract Times.

CITY OF LOUISVILLE

BY: _____

TITLE: _____

DATE: _____

ACCEPTED BY CONTRACTOR

BY: _____

TITLE: _____

DATE: _____

WORK CHANGE DIRECTIVE INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work that, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a possible change in the Contract Price or the contract Times a Field Order may be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE. Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated price is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable."

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIMES: Mark the method to be used in determining the change in Contract Times and the estimated increase or decrease in Contract Times. If the change involves an increase in the Contract Times and the estimated times are approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the times or Contractor may stop the changed Work when the estimated times are reached. If the Work Change Directive is not likely to change the Contract Times, the space for estimated increase (decrease) should be marked "Not Applicable".

Once authorized by Engineer a copy will be sent to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

WORK CHANGE DIRECTIVE

No. _____

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

DATE ISSUED: _____

EFFECTIVE DATE: _____

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments (List documents supporting change):

If a claim is made that the above change(s) have affected Contract Price of Contract Times any claim for a Change Order based thereon will involve one or more of the following methods of determining the effect of the change(s).

Method of determining change in
Contract Price:

____ Unit Prices
____ Lump Sum
____ Other _____

Method of determining change in
Contract Times:

____ Contractor's Records
____ Engineer's Records
____ Other _____

Estimated increase (decrease) in Contract Price:

\$ _____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Times

Substantial Completion: _____ days;

Ready for final payment: _____ days.

If the change involves an increase, the estimated times are not to be exceeded without further authorization.

RECOMMENDED:

ENGINEER

BY: _____

ACCEPTED:

CONTRACTOR

BY: _____

INSERT PAY APPLICATION HERE

CONTRACTOR'S PROPOSAL REQUEST
(Not a Change Order)

Date Submitted: _____, 20__

No. _____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

We hereby request the cost of the following proposed change in the Contract. A breakdown of the proposed cost is attached.

Description of the proposed change:

All work shall be in accordance with the terms, stipulations, and conditions of the Contract Documents. If the Work herein requested is approved by Change Order, the time of completion will be (increased), (decreased), (unchanged) by _____ calendar days.

New Substantial Completion Date: _____, 20__

This change will:

___ Increase the Contract by \$ _____
___ Decrease the Contract by \$ _____
___ No change in the Contract

SUBMITTED BY CONTRACTOR

BY: _____

DATE: _____

DATE: _____

CITY OF LOUISVILLE

___ Contractor's Proposal Request Accepted

___ Contractor's Proposal Request Not Accepted

BY: _____

DATE: _____

TITLE: _____

CONTRACTOR'S OVERTIME REQUEST

Date Submitted: _____, 20____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

We hereby request to perform work on overtime in accordance with the terms, stipulations, and conditions of the Contract Documents.

Requested date of overtime work: _____, 20____

Requested hours of overtime work: _____ (a. m./p. m.) to _____ (a. m./p. m.)

Description of proposed overtime work:

No extra payment will be paid to the CONTRACTOR by the OWNER due to labor overtime or other increased costs of performing the Work on Friday afternoons or at night. Should the CONTRACTOR desire to work on Friday afternoons or at night between the hours of 5:00 p.m. and 8:00 p.m., Monday-Thursday, or from 3:30 p.m. to 8:00 p.m. Friday, the CONTRACTOR shall submit a written request to the ENGINEER 24 hours prior. If approval is given by ENGINEER to CONTRACTOR for authorized overtime work, ENGINEERS and ENGINEER's authorized personnel will charge overtime and other incidental administrative expenses necessary for performing inspections on Friday afternoons, or at night between the hours of 5:00 p. m. and 8:00 p.m., Monday-Thursday and 3:30 p.m. to 8:00 p.m. Friday, the CONTRACTOR will be responsible to pay for all such rates and charges, and shall not be granted a Contract Price increase for such charges.

Hours of overtime work shall only be allowed from 5:00 p.m. to 8:00 p.m. Monday thru Thursday, and from 3:30 p.m. to 8:00 p.m. Friday.

SUBMITTED BY CONTRACTOR

BY: _____

DATE: _____

DATE: _____

CITY OF LOUISVILLE

____ Contractors Proposal Request Accepted

____ Contractors Proposal Request Not Accepted

BY: _____

DATE: _____

TITLE: _____

CLAIM RELEASE

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

Application for Payment Number: _____
Application for Payment Amount: _____
Application for Payment Date: _____

For valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned hereby releases the City of Louisville, Colorado, and waives all rights of the undersigned to file a claim for material, equipment, tools, machinery or services heretofore furnished for use in and for labor heretofore performed upon the construction, alteration, addition to or repair of the structure or improvements described in the Contract Documents as:

Project: City of Louisville Crack Seal
Description of Property: Miscellaneous Streets
Owner: City of Louisville, Colorado

We acknowledge that the foregoing is an adequate description of the real property and improvement inasmuch as the foregoing description is the description given in the Contract Documents, which govern the performance of the Work for which consideration has been received.

In executing this release, we certify that all claims for labor or materials, or both, furnished or performed by the undersigned or on our behalf by our material suppliers or subcontractors have been paid or that satisfactory arrangements for payment have been made.

In further consideration of the payment made or to be made to the undersigned and to induce said payment, we agree to defend and indemnify the City of Louisville from any claim or claims on the part of our material suppliers, laborers, employees, servants, and agents, or subcontractors arising from our work on this project, and we further agree to fully satisfy any such claim brought against the City of Louisville and reimburse the City of Louisville for any and all costs, including reasonable attorney fees, which it may incur as a result of such claims.

SUPPLIER OR SUBCONTRACTOR

By: _____
President

Date: _____

CONTRACTOR

By: _____
President

Date: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in the list does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within **ten (10)** days of the issuance of this Certificate of Substantial Completion.

CONTRACTOR shall maintain all contractual responsibilities until Final Acceptance.

The following documents are attached to and made a part of this Certificate of Substantial Completion:

Attachments:

None _____

(For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by the Contract Documents.)

This certificate does not constitute an acceptance of Work or start of the guarantee period nor its release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents. Issuance of Substantial Completion does not commence the guarantee period with this certificate.

CITY OF LOUISVILLE, COLORADO

ACCEPTED BY CONTRACTOR

BY: _____
Justin Ferron, P.E.

BY: _____

TITLE: Civil Engineer III

TITLE: _____

DATE: _____

DATE: _____

FINAL INSPECTION REPORT

DATE: _____

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project
PROJECT NUMBER: 22-3504
OWNER: CITY OF LOUISVILLE, COLORADO

The ENGINEER has performed final inspection of the Work, and accepts the Work subject to the Contractor's performance and completion of the following repairs, corrections and/or replacements:

None _____

The ENGINEER does/does not (circle one) hereby finally accept the Work and hereby certifies that the Contractor is eligible to receive final payment of the Work.

CITY OF LOUISVILLE, COLORADO

CONTRACTOR

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

CERTIFICATE OF FINAL COMPLETION

DATE: _____

TO:

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

This Certificate of Final Completion applies to all Work under the Contract Documents, or to the following specified parts thereof:

(specify) _____

The Work to which this Certificate applies has been inspected by authorized representatives of the ENGINEER and the Work is hereby declared to be complete in accordance with the Contract Documents on

DATE OF FINAL COMPLETION

In consideration therefore, the OWNER agrees to make Final Payment to Contractor of all amounts retained by OWNER, except such amounts that are subject to verified claims pursuant to Section 38-26-107, C.R.S, if any.

CITY OF LOUISVILLE, COLORADO

CONTRACTOR

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

GUARANTEE PERIOD INSPECTION REPORT

DATE:

TO: _____

PROJECT: HBWTP Emergency Generator Replacement Project

PROJECT NUMBER: 22-3504

OWNER: CITY OF LOUISVILLE, COLORADO

The ENGINEER's authorized representative performed the guarantee period inspection on _____, 20 ____, which guarantee was originally due to expire on _____, 20____.

The ENGINEER hereby determines that the project has ____/ has not ____ satisfactorily met the conditions required to pass the guarantee period inspection.

The identified following items of Work are defective and must be repaired, corrected and/or replaced:

The guarantee period shall be extended for the items listed above until the following date:

_____, 20____

CITY OF LOUISVILLE, COLORADO

CONTRACTOR

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

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

- 1.0 Abnormal Weather** - Snowfall, rainfall, freezing temperatures, or wind conditions, in excess of those encountered in the project area of Boulder County during the past 10 years that necessitates cessation of Work and causes consequence to the project.
- 1.1 Addenda** - Written or graphic instruments issued prior to the opening of Bids, which clarify, correct or change the Bidding Requirements or the Contract Documents.
- 1.2 Agreement** - The written contract 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 ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
- 1.4 Asbestos** - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
- 1.5 Bid** - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.6 Bidding Documents** - The advertisement or invitation to Bid, instructions to Bidders, the Bid form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).
- 1.7 Bidding Requirements** - The advertisement or invitation to Bid, instructions to bidders, and the Bid form.
- 1.8 Bonds** - Performance and Payment bonds and other instruments of security.
- 1.9 Change Order** - A document recommended by ENGINEER, 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 Times, issued on or after the Effective Date of the Agreement.
- 1.9.1 Contract Day** – A Contract Day specifies that construction will be completed Monday through Sunday, excluding OWNER-observed holidays and Abnormal Weather days.
- 1.10 Contract Documents** - The 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 Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work

Change Directives, Field Orders and ENGINEER's written interpretations and clarifications issued pursuant to paragraphs 3.5, 3.6.1, and 3.6.3 on or after the Effective Date of the Agreement. Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents.

- 1.11 Contract Price** - The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).
- 1.12 Contract Times** - The numbers of days or the dates stated in the Agreement: (i) to achieve Substantial Completion, and (ii) to complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13.
- 1.13 CONTRACTOR** - The person, firm or corporation with whom OWNER has entered into the Agreement.
- 1.14 Defective** - An adjective which when modifying the work refers to Work that is unsatisfactory, faulty or deficient, in that it 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 ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).
- 1.15 Drawings** - The drawings, which show the scope, extent and character of the Work to be furnished and performed by CONTRACTOR and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.
- 1.16 Effective Date of the Agreement** - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
- 1.17 ENGINEER** - The word "ENGINEER" refers to the City of Louisville, Director of Public Works or his authorized representative, designated by the OWNER as its Engineering representative.
- 1.18 OWNER'S Consultant** - A person, firm or corporation having a contract with OWNER to furnish services as OWNER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.
- 1.19 Field Order** - A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Times.
- 1.20 General Requirements** - Sections of Division 1 of the Specifications.
- 1.21 Hazardous Waste** - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

- 1.22 Laws and Regulation: Laws or Regulations** - Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
- 1.23 Liens** - Liens, charges, security interests or encumbrances upon real property or personal property.
- 1.24 Milestone** - A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
- 1.25 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 precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.
- 1.26 Notice to Proceed** - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.
- 1.27 OWNER** - The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.
- 1.28 Partial Utilization** - Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.
- 1.29 PCBs** - Polychlorinated biphenyls.
- 1.30 Petroleum** - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.
- 1.31 Plans** - The term plans as used in these Contract Documents shall have the same meaning as Drawings.
- 1.32 Product** - Includes materials, equipment and systems.
- 1.33 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.
- 1.34 Provide** - Furnish and install specified materials and equipment, unless the context requires otherwise.
- 1.35 Radioactive Material** - Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2013 et seq.) as amended from time to time.
- 1.36 Resident Project Representative** - The authorized representative of ENGINEER who may be assigned to the site or any part thereof.
- 1.37 Samples** - Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

- 1.38 Shop Drawings** - All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.
- 1.39 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.
- 1.40 Subcontractor** - An individual, firm or corporation having a contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.
- 1.41 Substantial Completion** - The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by ENGINEER's written recommendation of final payment in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
- 1.42 Supplementary Conditions** - The part of the Contract Documents, which amends or supplements these General Conditions.
- 1.43 Supplier** - A manufacturer, fabricator, supplier, distributor, material man or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.
- 1.44 Underground Facilities** - All pipeline, 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.
- 1.45 Unit Price Work** - Work to be paid for on the basis of unit prices.
- 1.46 Work** - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents.
- 1.47 Work Change Directive** - A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or emergencies under paragraph 6.23. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in paragraph 10.2.

- 1.48 Written Amendment** - A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

- 2.1 When CONTRACTOR delivers the executed Agreement to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds and Certificates of Insurance as CONTRACTOR may be required to furnish in accordance with Article 5.

Copies of Documents:

- 2.2 OWNER shall furnish to CONTRACTOR up to four copies of the contract documents for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Times; Notice to Proceed:

- 2.3 The Contract Times will commence to run on the day indicated in the Notice to Proceed. Timing and completion of the **22-3504 HBWTP Emergency Generator Replacement Project** is required on or prior to _____, 20____. The OWNER has set the proposed project schedule and plans to implement the following schedule for this project. The CONTRACTOR shall be required to start construction on or before the start date listed below:

PROPOSED PROJECT SCHEDULE:

Advertise
Bid Opening
Contract Award by City Council.....
Notice of Award Issued
Bonds & Insurance Certificates Due
Contract Agreement Executed
Notice to Proceed Issued.....
Pre-Construction Conference
Contract Time Commences to run
Substantial Completion
Final Completion

- 2.3.1 The Contractor shall substantially complete all work by _____, 20____ and within 20 contract days after the date when the Contract Time commences to run. Should work not be completed by the date and within the time period specified, the Owner shall assess the Contractor liquidated damages in conformance with the Agreement, Article 2 – Contract Times, paragraph 2.2 Liquidated Damages.

Starting the Work:

- 2.4 CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the site prior to the date on which the Contract Times commence to run.

Before Starting Construction:

- 2.5 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 ENGINEER any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.
- 2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:
- 2.6.1 a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestone specified in the Contract Documents;
- 2.6.2 a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal.

Preconstruction Conference:

- 2.7 Before any Work at the site is started, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.6, procedures for handling Shop Drawings and other submittal, processing Applications for Payment and maintaining required records.

Initially Acceptable Schedules:

- 2.8 Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to review the Application for Payment for acceptability to ENGINEER. No progress payment shall be made to CONTRACTOR until the schedules are submitted to and acceptable to ENGINEER as provided below. The progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within any specified Milestones and the Contract Times, but such acceptance will neither impose on ENGINEER responsibility for the sequencing, scheduling or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor. CONTRACTOR's schedule of Shop Drawing and Sample submissions will be acceptable to ENGINEER as providing a workable arrangement for reviewing and processing the required submittals.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

Intent:

- 3.1 The Contract Documents comprise the entire agreement 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 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 or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases, which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.
- 3.3 Reference to Standards & Specifications of Technical Societies; Reporting and Resolving Discrepancies:**
- 3.3.1. Reference to standards, 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 in the Contract Documents.
- 3.3.2 If, during the performance of the Work, CONTRACTOR discovers any conflict, error ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the Work or of any such standard, specification, manual or code or of any instruction of any Supplier referred to in paragraph 6.5, CONTRACTOR shall report it to ENGINEER in writing at once, and, CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by paragraph 6.23) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.5 or 3.6; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof. Upon notification to the ENGINEER, the CONTRACTOR shall proceed with other parts of the Work not affected by the conflict, error, ambiguity or discrepancy.
- 3.3.3 Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5 or 3.6, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:
- 3.3.3.1 the provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
- 3.3.3.2 the provisions of any such Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the

provisions of the Contract Documents would result in violation of such Law or Regulation).

No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to OWNER, ENGINEER or any of ENGINEER'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 inconsistent with the provisions of paragraph 9.13 or any other provision of the Contract Documents.

- 3.4 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 of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in 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 to ENGINEER 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 9.13 or any other provision of the Contract Documents.

Amending and Supplementing Contract Documents:

- 3.5 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:
- 3.5.1 a formal Written Amendment,
 - 3.5.2 a Change Order (pursuant to paragraph 10.4), or
 - 3.5.3 a Work Change Directive (pursuant to paragraph 10.1)
- 3.6 In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:
- 3.6.1 a Field Order (pursuant to paragraph 9.5)
 - 3.6.2 ENGINEER's approval of a Shop Drawing or Sample (pursuant to paragraphs 6.26 and 6.27), or
 - 3.6.3 ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

- 3.7 CONTRACTOR, and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER (i) shall not 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 Engineer or Engineer's Consultant, and (ii) shall not reuse any of such Drawings, Specifications, other documents or copies on extensions of the Project or any other project

without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

- 4.1 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. OWNER shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. 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 and OWNER are unable to agree on entitlement to or the amount or extent of any adjustments in the Contract Price or the Contract Times as a result of any delay in OWNER's furnishing these lands, rights-of-way or easements, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Subsurface and Physical Conditions:

- 4.2 BIDDER'S are responsible for examining and determining for themselves the location and nature of the proposed Work, the amount and character of the labor and materials required therefor, and the difficulties, which may be encountered. BIDDER's may not rely on oral or written representations made by the OWNER, including reports and drawings identified pursuant to 4.2.1 and subparagraphs thereof, unless the OWNER has guaranteed in writing that such representation is factually accurate, and by submitting a Bid, each BIDDER waives all liability for any error in any representation made by the OWNER to the BIDDER. BIDDER's shall inspect the site and its surroundings and conduct such supplementary examinations, investigations, and tests concerning conditions at or contiguous to the site (including surface, and subsurface) which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by BIDDER and safety precautions and programs incident thereto for performing the Work in accordance with the Contract Documents. By failing to make such an inspection, the BIDDER waives all rights to claim extra payment or time extensions due to unexpected conditions, which could have been determined had the site been reasonably inspected. If concealed or unknown conditions differ materially from those ordinarily encountered and generally recognized as inherent in the Work, or differ materially from the conditions indicated in the Contract Documents, then an equitable adjustment in the Contract Price or in the Contract Time will be allowed by change order as provided in Article 11 or Article 12 respectively. By submitting a Bid, the BIDDER represents that the BIDDER's observations at the site are not inconsistent with the requirements of the proposed Contract Documents, unless otherwise noted by the BIDDER.

- 4.2.1 **Reports and Drawings:** Reference is made to the Supplementary Conditions for identification of:

The following reports of explorations and tests of subsurface conditions at the site of the Work:

- 4.2.1.1 **Subsurface Conditions:** Those reports of explorations and tests of subsurface conditions at or contiguous to the site that have been utilized by ENGINEER in preparing the Contract Documents; and

Report dated **N/A** , prepared by **N/A** entitled:
N/A . The technical data contained in such report upon which CONTRACTOR may rely is **N/A** .

Copies of these reports that are not included with Bidding Documents may be examined at ENGINEER's office during regular business hours. Please call for appointment. Copies of such reports are not available for distribution. These reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which CONTRACTOR is entitled to rely as provided in GC-4.2 and as identified and established above are incorporated therein by reference.

- 4.2.1.2 **Physical Conditions:** Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) that have been utilized by ENGINEER in preparing the Contract Documents.

- 4.2.2 **Limited Reliance by CONTRACTOR authorized; Technical Data:** Reports and drawings identified pursuant to paragraph 4.2 are not Contract Documents. Unless otherwise set forth in the Contract Documents or OWNER has otherwise guaranteed in writing that such representation is factually accurate, CONTRACTOR may not rely upon or make any claim against the OWNER, ENGINEER or ENGINEER's consultants with respect to the accuracy of any "technical data" contained in reports and drawings and CONTRACTOR may not rely upon or make any claim against the OWNER, ENGINEER or ENGINEER's consultants with respect to:

- 4.2.2.1 The completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto, or

- 4.2.2.2 other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or

- 4.2.2.3 any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions or information.

- 4.2.3 CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Times if:

- 4.2.3.1 CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

- 4.2.3.2 the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment.

If OWNER and CONTRACTOR are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Price or Contract Times, a claim may be made therefor as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages sustained by CONTRACTOR on or in connection with any other project or anticipated project.

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 ENGINEER by the owners of such Underground Facilities or by others.
 - 4.3.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and
 - 4.3.1.2 The cost of all of the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for: (i) reviewing and checking all such information and data, (ii) locating all Underground Facilities shown or indicated in the Contract Documents, (iii) coordination of the Work with the owners of such Underground Facilities during construction, and (iv) the safety and protection of all such Underground Facilities as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work.
- 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, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.23), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times, 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 that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or the amount or length of any such adjustment in Contract Price or Contract Times, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. However, OWNER, ENGINEER and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses or damages incurred or sustained by CONTRACTOR on or in connection with any other project or anticipated project.

Reference Points:

- 4.4 OWNER shall provide engineering surveys to establish baseline and benchmarks for construction, which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, 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 ENGINEER 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 professionally qualified personnel.

OWNER shall provide survey reference points, construction stakes, lines and grades required for the completion of the work specified in the specifications, on the plans, or in the Special Conditions. Additional staking requested by the Contractor will be at the CONTRACTOR'S expense. When the CONTRACTOR requires staking, he shall notify the OWNER of his requirements in writing a reasonable length of time in advance of starting work that require construction staking. Under no circumstances, shall a notice of less than 2 contract days be considered a reasonable length of time. Failure of the CONTRACTOR to provide 2 contract days written notice to the OWNER of his staking requests shall relieve the OWNER from any responsibility for additional costs or delays caused by such failure. Stakes set by the OWNER shall be carefully preserved by the CONTRACTOR. When stakes are destroyed or damaged, the CONTRACTOR will be charged for the cost of necessary replacement or restoration of stakes. The charge for replacement and restoration of stakes will be deducted from any moneys due or to become due the CONTRACTOR.

4.5 Asbestos, PCB's Petroleum, Hazardous Waste or Radioactive Material:

- 4.5.1 OWNER shall be responsible for any Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the site. OWNER shall not be responsible for any such materials brought to the site by CONTRACTOR, Subcontractor, Suppliers or anyone else for whom CONTRACTOR is responsible.
- 4.5.2 CONTRACTOR shall immediately: (i) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by paragraph 6.23), and (ii) notify OWNER and ENGINEER (and thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. CONTRACTOR shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR special written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of such Work stoppage or such special conditions under which Work is

agreed by CONTRACTOR to be resumed, either party may make a claim therefor as provided Articles 11 and 12.

4.5.3 If after receipt of such special written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefor as provided in Articles 11 and 12. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

4.5.4 The provisions of paragraphs 4.2 and 4.3 are not intended to apply to Asbestos, PCB's, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site.

ARTICLE 5 - BONDS AND INSURANCE

Performance, Payment and Other Bonds:

5.1 CONTRACTOR shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act. The CONTRACTOR shall furnish the performance and payment bond in the form provided in the Contract Documents or approved by the OWNER; the earlier of ten (10) days after the OWNER has issued the notice of award or delivery of the executed Agreement. The OWNER reserves the right to exclude any Surety Company on any ground it deems appropriate. The cost of the bonds shall be included in the bid.

5.2 If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within ten days thereafter substitute another Bond and surety, both of which must be acceptable to OWNER.

5.3 Licensed Sureties and Insurers; Certificates of Insurance:

5.3.1 All Bonds and insurance required by the Contract Documents to be purchased and maintained by CONTRACTOR shall be obtained from surety or insurance companies acceptable to OWNER that are duly licensed to transact business in the State of Colorado and to issue Bonds or insurance policies for the limits and coverage so required. Such surety and insurance companies shall also meet such

additional requirements and qualifications as may be provided in the Supplementary Conditions.

- 5.3.2 CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain accordance with paragraph 5.4. The certificates shall be reviewed and approved by OWNER prior to execution of the Agreement. The OWNER shall have the right to request and obtain copies of any insurance policies required under paragraph 5.4 of the General Conditions. The completed certificates of insurance shall be sent to: City of Louisville, 749 Main Street, Louisville, Colorado 80027, attention: CITY ENGINEER.

CONTRACTOR's Liability Insurance:

- 5.4 (a) The CONTRACTOR agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the CONTRACTOR pursuant to paragraphs 6.12, 6.16, 6.31, 6.32 and 6.33, and 6.5 in addition to any other insurance requirements imposed by the Contract Documents or by law. The CONTRACTOR shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to paragraphs 6.12, 6.16, 6.31, and 6.33 by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.
- (b) CONTRACTOR shall procure and maintain, and shall cause any Subcontractor or Supplier of the CONTRACTOR to procure and maintain or insure the activity of his Subcontractors and Suppliers in his own policy, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the OWNER. All coverages shall be continuously maintained from the date of commencement of the Work to cover all liability, claims, demands, and other obligations assumed by the CONTRACTOR pursuant to paragraphs 6.31 and 6.33. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.
- (1) Workers' Compensation insurance to cover obligations imposed by the Workers' Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work under this contract, and Employers' Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease - policy limit, and FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease - each employee. Evidence of qualified self-insured status may be substituted for the Workers' Compensation requirements of this paragraph.
- (2) Comprehensive General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and TWO MILLION DOLLARS (\$2,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual,

independent contractors, products, and completed operations. The policy shall include coverage for explosion, collapse, and underground hazards. The policy shall contain a severability of interests' provision.

- (3) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate with respect to each of CONTRACTOR's owned, hired or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests' provision.
 - (4) The CONTRACTOR shall provide and maintain builder's risk insurance upon the entire project equal to one hundred percent (100%) of the insurable value thereof. Such insurance shall cover any and all physical damage including, without limitation, damage caused by fire, vandalism, malicious mischief, blasting, excessive surface runoff or storm water, high winds and other occurrences covered in a standard extended coverage endorsement. The policy shall remain in effect until the Work is accepted as substantially complete.
- (c) The policy required by paragraph (2) above, by paragraph (3) and by (4) above shall be endorsed to include the OWNER, the ENGINEER and its consultants, and each of their officers, agents and employees as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the OWNER, its officers, or its employees, shall be excess and not contributory insurance to that provided by CONTRACTOR. No additional insured endorsement to the policy required by paragraph (1) above shall contain any exclusion for bodily injury or property damage arising from completed operations. The CONTRACTOR shall be solely responsible for any deductible losses under any policy required above.
 - (d) The certificate of insurance provided to OWNER shall be completed by the CONTRACTOR's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the OWNER prior to commencement of the contract.
 - (e) Failure on the part of the CONTRACTOR to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the OWNER may immediately terminate this contract, or at its discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the OWNER shall be repaid by CONTRACTOR to the OWNER upon demand, or the OWNER may offset the cost of the premiums against any monies due to CONTRACTOR from the Owner.
 - (f) The OWNER reserves the right to request and receive a certified copy of any policy and any endorsement thereto.
 - (g) The parties hereto understand and agree that the OWNER, the City of Louisville, is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently \$150,000 per person and \$600,000 per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, § 24-10-101 et seq., 10 C.R.S., as from time to time amended, or otherwise available to the City of Louisville, its officers, or its employees.

OWNER's Liability Insurance:

- 5.5 In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.4, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

Property Insurance:

- 5.6 The OWNER shall be responsible for maintaining its own property insurance and, at its option, may maintain such insurance as will protect it against claims which may arise from operations under the Contract Documents.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

- 6.1 CONTRACTOR shall supervise, inspect 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 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 specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.
- 6.2 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 ENGINEER 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 to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

- 6.3 CONTRACTOR shall provide competent, suitably qualified personnel to survey, layout and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except as otherwise required for 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 ENGINEER. No extra payment will be paid to the CONTRACTOR by the OWNER due to labor overtime or other increased costs of performing the Work on Saturdays, Sundays, OWNER- observed holidays, or at night. Should the CONTRACTOR desire to work on Saturdays, Sundays, OWNER-observed holidays, or at night between the hours of 5:00 p.m. and 7:00 a.m. on **Contract Days** the CONTRACTOR shall submit a written request to the ENGINEER 24 hours prior. If approval is given by ENGINEER to CONTRACTOR for authorized overtime work, ENGINEER's and ENGINEER's authorized personnel will charge overtime and other incidental administrative expenses necessary for performing inspections on Saturdays, Sundays, OWNER-observed holidays, or at night between the hours of 5:00 p. m. and 7:00 a. m., the CONTRACTOR will be responsible to pay for all such rates and charges, and shall not be granted a Contract Price increase for such charges. Overtime and other incidental administrative expenses for Engineer and Engineer's authorized personnel are as follows:

DESCRIPTION	HOURLY RATE
Engineer	\$60.00
Construction Inspector	\$45.00
Operations Supervisor	\$45.00
Maintenance Worker	\$30.00

DESCRIPTION	HOURLY RATE
Clerical	\$25.00
Vehicle	\$15.00

- 6.4 Unless otherwise specified in the General Requirements, 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.
- 6.5 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, 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 instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

Progress Schedule:

- 6.6 CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.8 as it may be adjusted from time to time as provided below:
- 6.6.1 CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.8) proposed adjustments in the progress schedule that will not change the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.
- 6.6.2 Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of paragraph 12.1. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.7 Substitutes and "Or-Equal" Items:

- 6.7.1 Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment of other Suppliers may be accepted by ENGINEER under the following circumstances:
- 6.7.1.1 **"Or-Equal":** If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal"

item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for acceptance of proposed substitute items.

6.7.1.2 Substitute Items: If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under subparagraph 6.7.1.1, it will be considered a proposed substitute item. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. The procedure for review by the ENGINEER will include the following as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute items of material or equipment, CONTRACTOR shall first make written application to ENGINEER 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 in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice CONTRACTOR's achievement of Substantial 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 or credits 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 will be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute.

6.7.1.3 CONTRACTOR's Expense: All data to be provided by CONTRACTOR in support of any proposed "or-equal" or substitute item will be at CONTRACTOR's expense.

6.7.2 Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that

the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.7.1.2.

- 6.7.3 **ENGINEER's Evaluation:** ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.7.1.2 and 6.7.2. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without ENGINEER'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 "or-equal" or substitute. ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitutes proposed or submitted by CONTRACTOR pursuant to paragraphs 6.7.1.2 and 6.7.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER accepts a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute item.

6.8 Concerning Subcontractors, Suppliers and Others:

- 6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization, whether initially or as a substitute, against whom OWNER or ENGINEER 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.
- 6.8.2 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 or equipment) to be submitted to OWNER with the Bid in the Bid Form prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER, and if CONTRACTOR has submitted a list thereof in accordance with the Contract Documents, OWNER'S or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in 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 ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.
- 6.8.3 Subletting of Contract. The Contractor shall not sublet, sell, transfer, assign, or dispose of the Contract or Contracts, or any portion thereof without written consent of the Engineer. The Contractor will be permitted to sublet a portion of the Contract, however, the Contractor's organization shall perform work amounting to not less than 50 percent of the total contract cost.

The calculation of the percentage of subcontracted work shall be based on the prime contract unit prices rather than subcontract unit prices. Proportional value for a subcontracted partial contract item shall be verified by the Engineer. For the purpose of calculating the value of subcontracted work, the cost of procuring materials and manufactured products can be included in either the prime contract or

subcontract. However, when a firm both sells material to a prime contractor and performs the work of incorporating the materials into the project, these two phases shall be considered in combination and as constituting a single subcontract.

Subcontracts, or transfer of Contract shall not release the Contractor of liability under the Contract and bonds.

- 6.9.1 CONTRACTOR shall be fully responsible to OWNER and ENGINEER 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. OWNER or ENGINEER may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR in accordance with CONTRACTOR's Applications for Payment. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER 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.
- 6.9.2 CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR. CONTRACTOR shall require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with the ENGINEER through CONTRACTOR.
- 6.10 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.
- 6.11 All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier, which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER.

Patent Fees and Royalties:

- 6.12 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. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages arising out of or resulting from any infringement of patent rights or copyrights incident to the

use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents.

Permits:

- 6.13 Unless otherwise provided in the Supplementary 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.
- 6.13.1 Prior to the commencement date for the Work set forth in the Notice to Proceed, The CONTRACTOR and all subcontractors shall be or shall become a CONTRACTOR licensed in accordance with the applicable ordinance of the City of Louisville, Colorado.
- 6.13.2 If water is required for the project, CONTRACTOR shall obtain a bulk water permit from the City of Louisville, Public Works Department in accordance with the permit requirements.
- 6.13.3 CONTRACTOR shall obtain a Right-of-Way Permit from the City of Louisville, Public Works Department for all Work to be completed within the City right-of-way.
- 6.13.4 CONTRACTOR shall obtain and pay for all other necessary construction permits and licenses.

Laws and Regulations:

- 6.14.1 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 ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.
- 6.14.2 If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses and damages caused by, arising out of or resulting therefrom: however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.3.2.

Taxes:

- 6.15 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. City of Louisville municipal taxes shall be waived upon application for and acceptance of "tax exemption."

The CONTRACTOR shall apply for and receive a Certificate of Exemption from the Colorado Department of Revenue for construction materials to be physically incorporated into the Work. This Certificate of Exemption provides that the CONTRACTOR shall neither pay nor include in his bid prices Sales and Use Taxes collected by the State of Colorado on those building and construction materials physically incorporated into the Work. Sales and Use Taxes of the State of Colorado, RTD and the County are collected by the State of

Colorado. All applicable Sales and Use Taxes (including State collected taxes) on any items other than construction and building materials physically incorporated into the Work are to be paid by the Contractor and are to be included in the appropriate bid items. CONTRACTOR and any Subcontractor assume all liability for the nonpayment of taxes, or the payment of exempt taxes resulting from a failure to use the Certificate of Exemption required by this paragraph.

Use of Premises:

- 6.16 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the site and land and 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 adjacent land or areas, resulting from the performance of the Work. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant and anyone directly or indirectly employed by any of them from and against all claims, costs, losses and damages arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.
- 6.17 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. CONTRACTOR shall leave the site clean and ready for occupancy by OWNER at Substantial Completion of the Work. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.
- 6.18 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.

Record Documents:

- 6.19 CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, 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 ENGINEER for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to ENGINEER for OWNER.

Safety and Protection:

6.20 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1 all persons on the Work site or who may be affected by the Work:

6.20.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3 other property at the site or adjacent thereto, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures, fences, gates, ditches, utilities, and underground facilities not designated for removal, relocation, or replacement in and during the course of construction.

6.20.4 The CONTRACTOR shall take all measures necessary to mitigate the impact of weather so that the project may continue on schedule. In no event shall OWNER be liable for extra costs incurred on materials and any part of the Work due to CONTRACTOR's failing to take all measures necessary protect the Work from weather and CONTRACTOR shall not be entitled to such claims. Also, no extension of the Contract Time shall be allowed if the CONTRACTOR is able, notwithstanding the weather, to proceed with other Work of the Contract.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

Safety Representative:

6.21 CONTRACTOR shall designate a qualified and experienced safety representative at the site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

Hazard Communication Programs:

6.22 CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with Laws or Regulations.

Emergencies:

6.23 In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from OWNER or ENGINEER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change directive or Change order will be issued to document the consequences of such action.

6.24 Shop Drawings and Samples:

6.24.1 After checking and verifying all field measurements, CONTRACTOR shall submit to ENGINEER for review and approval in accordance with the accepted schedule of shop drawings and sample submittal (see paragraph 2.8), three copies (or at ENGINEERS option, one reproducible copy) of all shop drawings, which shall have been checked and approved by the CONTRACTOR. 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 show ENGINEER the materials and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.26.

6.24.2 CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.26. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.26 Submittal Procedures:

6.25.1 Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

- 6.25.1.1 all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto,
- 6.25.1.2 all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work, and
- 6.25.1.3 all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.

CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

- 6.25.2 Each submittal will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.
- 6.25.3 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.
- 6.26 ENGINEER will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by ENGINEER as required by paragraph 2.8. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence or procedure of construction is specifically and expressly called for 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 ENGINEER, 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 ENGINEER on previous submittals.
- 6.27 ENGINEER'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 ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.25.1.
- 6.28 Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by ENGINEER as required by paragraph 2.8, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

- 6.29 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 resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.30 CONTRACTOR's General Warranty and Guarantee:

- 6.30.1 CONTRACTOR warrants and guarantees to OWNER, ENGINEER and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents

and will not be **defective**. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

6.30.1.1 abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or

6.30.1.2 normal wear and tear under normal usage.

6.30.2 CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the work in accordance with the Contract Documents:

6.30.2.1 observations by ENGINEER;

6.30.2.2 recommendation of any progress or final payment by ENGINEER;

6.30.2.3 the issuance of a certificate of Substantial Completion or any payment by OWNER to CONTRACTOR under the Contract Documents;

6.30.2.4 use or occupancy of the Work or any part thereof by OWNER;

6.30.2.5 any acceptance by OWNER or any failure to do so;

6.30.2.6 any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13;

6.30.2.7 any inspection, test or approval by others; or

6.30.2.8 any correction of **defective** Work by OWNER.

6.30.3 The CONTRACTOR warrants that, unless otherwise specified in the Contract Documents, the materials and equipment installed in the Work will be new, merchantable, and fit for the purpose for which they are intended, and that the Work will be performed in a workmanlike manner. The CONTRACTOR also warrants the workers who perform the Work will be sufficiently skilled to produce a high quality product which is free of blemishes, (surface defects) and flaws (internal defects).

The CONTRACTOR is under a continuing duty to warn the OWNER and ENGINEER of any possible defect in the design of the Work and materials incorporated in the Work and against potentially unsafe uses of products incorporated in the Work which may cause personal injury or property damage, as soon as the CONTRACTOR discovers the possible defect or has notice that the product may be unsafe. The CONTRACTOR's duty under this paragraph shall be continuing, and shall not expire when the OWNER accepts the Work or when the CONTRACTOR's guarantee expires. If the CONTRACTOR fails to warn the Owner of a design or product defect of which the CONTRACTOR is aware, and if personal or property damage thereafter results from such design or product defect, the CONTRACTOR shall be liable jointly and severally with any other party responsible at law for all damages resulting from such defect.

6.31 Indemnification:

The CONTRACTOR agrees to indemnify and hold harmless the OWNER (City of Louisville), ENGINEER, ENGINEER's consultants, and their officers, employees, agents and insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this contract, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of the CONTRACTOR, any Subcontractor of the CONTRACTOR, or any officer, employee, representative, or agent of the CONTRACTOR or of any Subcontractor of the CONTRACTOR, or which arise out of any workers' compensation claim of any employee of the CONTRACTOR or of any employee of any subcontractor of the CONTRACTOR. The CONTRACTOR agrees to investigate, handle, respond to, and to provide defense for and defend against, any such liability, claims or demands at the sole expense of the CONTRACTOR. The CONTRACTOR also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent.

- 6.32 In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.31 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

Survival of Obligations:

- 6.33 All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the work and termination or completion of the Agreement.

ARTICLE 7 - OTHER WORK

Related Work at Site:

- 7.1 OWNER may perform other work related to the Project at the site by OWNER's own forces, or let other direct contracts therefor which shall contain General Conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, then: (i) written notice thereof will be given to CONTRACTOR prior to starting any such other work, and (ii) CONTRACTOR may make a claim therefor as provided in Articles 11 and 12 if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

- 7.2 CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and 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 other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, 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 ENGINEER 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.
- 7.3 If the proper execution or results of any part of CONTRACTOR's work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure so to report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in such other work.

Coordination:

- 7.4 Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

Should CONTRACTOR cause damage to the Work or property of any separate CONTRACTOR at the site, or should any claim arising out of CONTRACTOR's performance of the Work at the site be made by any separate contractor against CONTRACTOR, OWNER, ENGINEER, or any other person, CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws, and Regulations, indemnify and hold OWNER and ENGINEER 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 separate contractor against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work. Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of Work by any separate CONTRACTOR at the site give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER or ENGINEER or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from OWNER or ENGINEER on account of any such damage or claim. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Time attributable thereto, CONTRACTOR may make a claim for an extension of time in accordance with Article 12. An extension of the Contract Time shall be CONTRACTOR's exclusive remedy with respect to OWNER and ENGINEER for any delay, disruption, interference or hindrance cause by any separate contractor. This paragraph does not prevent recovery from OWNER or ENGINEER for activities that are their respective responsibilities.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

- 8.1 Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.
- 8.2 In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer whose status under the Contract Documents shall be that of the former ENGINEER.
- 8.3 OWNER shall furnish the data required of OWNER under the Contract documents promptly and shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.4 and 14.13.
- 8.4 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.
- 8.5 OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.
- 8.6 OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.
- 8.7 In connection with OWNER's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.
- 8.8 The OWNER shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.
- 8.9 OWNER's responsibility in respect of undisclosed Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Materials uncovered or revealed at the site is set forth in paragraph 4.5.
- 8.10 If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

OWNER's Representative:

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

Visits to Site:

- 9.2 ENGINEER will make visits to the site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER will endeavor for the benefit of OWNER to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against **defective** Work. ENGINEER's visits and on-site observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.13 and particularly, but without limitation, during or as a result of ENGINEER's on-site visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

Project Representative:

- 9.3 ENGINEER will furnish a Resident Project Representative, assistants and other field staff to assist ENGINEER in observing the performance of the Work of the CONTRACTOR. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.13 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other person will be as provided in the Supplementary Conditions.
- 9.3.1 Resident Project Representative is ENGINEER's Agent and will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding his actions. His dealings in matters pertaining to the on-site Work will in general be with ENGINEER and CONTRACTOR keeping the ENGINEER advised as necessary. His dealings with Subcontractors will only be through or with the full knowledge and approval of CONTRACTOR.

Duties and Responsibilities:

Resident Project Representative will:

Schedules:

Review the progress schedule, schedule of Shop Drawing submittal, schedule of values and other schedules prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.

Conferences and Meetings:

Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings and other job conferences and other project related meetings.

Liaison:

Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist him in understanding the intent of the Contract Documents. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.

Assist in obtaining from ENGINEER additional details or information, when required for proper execution of the Work.

Shop Drawings and Samples:

Record date of receipt of Shop Drawings and samples.

Receive samples, which are furnished at the site by CONTRACTOR for ENGINEER's review, and notify ENGINEER of their availability for examination.

Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample submission if the submission has not been approved by ENGINEER.

Review of Work, Rejection of Defective Work, Inspections and Tests:

Conduct on-site observations of the Work in progress to assist ENGINEER in determining that the Work is proceeding in accordance with the Contract Documents.

Report to ENGINEER whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made; and advise ENGINEER when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

Verify that tests, equipment and systems startups and operating and maintenance training are conducted in presence of the appropriate personnel, and that CONTRACTOR maintains adequate records thereof; observe, record and report to ENGINEER appropriate details relative to the test procedures and start-ups.

Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.

Interpretation of Contract Documents:

Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and Transmit to CONTRACTOR clarification and interpretation of the Contract Documents as issued by ENGINEER.

Modifications:

Consider and evaluate CONTRACTOR's suggestions for modification in Drawings or Specifications and report with his recommendations to ENGINEER. Transmit to CONTRACTOR decisions issued by ENGINEER.

Records:

Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions or original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Agreement, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports and other Project related documents.

Keep a diary, daily report form, or log book, recording hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders, or changed conditions, list of job site visitors, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures.

Record names, addresses and telephone numbers of all CONTRACTOR's, subcontractors and major suppliers of equipment and materials.

Reports:

Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawings and sample submittal.

Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the Work.

Draft proposed Change Orders and Work Directive Changes, obtaining backup material from CONTRACTOR and recommend to ENGINEER Change Orders, Work Directive Changes, and Field Orders.

Report immediately to ENGINEER upon the occurrence of any accident.

Payment Requests:

Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with his recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

Certificates, Maintenance and Operations Manuals:

During the Course of Work verify that certifications, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment of the Work.

Completion:

Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring correction or completion.

Conduct final inspection in the company of ENGINEER and CONTRACTOR and prepare a final list of items to be corrected or completed.

Observe that all items on final list have been corrected or completed and make recommendations to ENGINEER concerning acceptance.

Limitation of Authority:

Resident Project Representative shall not:

Authorize any deviations from the Contract Documents or accept any substitute materials or equipment, unless authorized by ENGINEER.

Exceed limitations of ENGINEER's authority as set forth in the Contract Documents.

Undertake any of the responsibilities of CONTRACTOR, Subcontractors, or CONTRACTOR's superintendent.

Advise on, or issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures for construction unless such is specifically called for in the Contract Documents.

Advise on or issue directions regarding or assume control over safety precautions and programs in connection with the Work.

Shall not accept Shop Drawings or sample submittals from anyone other than CONTRACTOR.

Authorize OWNER to occupy the Work in whole or in part.

Participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by ENGINEER.

Clarifications and Interpretations:

- 9.4 ENGINEER 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 ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price or the Contract Times and the parties are unable to agree to the amount or extent thereof, if any, OWNER or CONTRACTOR may make a written claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

- 9.5 ENGINEER 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 Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR who shall perform the Work involved promptly.

Rejecting Defective Work:

- 9.6 ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be **defective**, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the work as provided in paragraph 13.9, whether or not the work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

- 9.7 In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraphs 6.24 through 6.28 inclusive.
- 9.8 In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- 9.9 In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

Determinations for Unit Prices:

- 9.10 ENGINEER will have authority to determine the actual quantities and classifications of items of Unit Price Work performed by CONTRACTOR, and the written decisions of ENGINEER on such matters will be final, binding on OWNER and CONTRACTOR and not subject to appeal (except as modified by ENGINEER to reflect changed factual conditions).

Decisions on Disputes:

- 9.11 ENGINEER 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 11 and 12 in respect of changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph. Written notice of each such claim, dispute or other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than fifteen days) after the start of the occurrence or event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within thirty days after the start of such occurrence or event unless ENGINEER allows an additional period of time for the submission of additional or more accurate data in support of such claim, dispute of other matter. The opposing party shall submit any response to ENGINEER and the claimant within thirty days after receipt of the claimant's last submittal (unless ENGINEER allows additional time). ENGINEER will render a formal decision in writing within thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. ENGINEER's written decision on such claim, dispute or other matter will be final and binding upon OWNER and CONTRACTOR.

9.12 When functioning under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 or 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.15) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations.

9.13 Limitations on ENGINEER's Authority and Responsibilities:

9.13.1 Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by ENGINEER shall create, impose or give rise to any duty owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

9.13.2 ENGINEER will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.13.3 ENGINEER 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.

9.13.4 ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals and other documentation required to be delivered by paragraph 14.12 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals that the results certified indicate compliance with, the Contract Documents.

9.13.5 The limitations upon authority and responsibility set forth in this paragraph 9.13 shall also apply to ENGINEER's Consultants, Resident Project Representative and assistants.

ARTICLE 10 - CHANGES IN THE WORK

10.1 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. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, 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).

- 10.2 If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an adjustment in the Contract Price or an adjustment of the Contract Times that should be allowed as a result of a Work Change Directive, a claim may be made therefor as provided in Article 11 or Article 12.
- 10.3 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.5 and 3.6 except in the case of an emergency as provided in paragraph 6.23 or in the case of uncovering Work as provided in paragraph 13.9.
- 10.4 OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:
- 10.4.1 changes in the Work which are (i) ordered by OWNER pursuant to paragraph 10.1., (ii) required because of acceptance of **defective** Work under paragraph 13.13 or correcting **defective** Work under paragraph 13.14, or (iii) agreed to by the parties;
- 10.4.2 changes in the Contract Price or Contract Times which are agreed to by the parties; and
- 10.4.3 changes in the Contract Price or Contract Times, which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11;
- 10.5 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 Times) 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.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

- 11.1 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 CONTRACTOR's expense without change in the Contract Price.
- 11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than fifteen days) after the start of the occurrence or 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 thirty days after the start of such occurrence or event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the adjustment claimed covers all known amounts to which the claimant is entitled as a result of said occurrence or event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No claim for adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

- 11.3 The value of any Work covered by a Change Order or of any claim for an adjustment in the Contract Price will be determined as follows:
- 11.3.1 where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.3 inclusive);
 - 11.3.2 where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2);
 - 11.3.3 where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 11.3.2, on the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 11.6).

Cost of the Work:

11.4 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 11.5:

11.4.1 Certified payroll record costs for employees in the direct employment of CONTRACTOR in the performance of the Work under schedules of job classifications shall be submitted to the ENGINEER with the claim. Such employees shall include without limitation superintendents, foremen and other personnel employed full-time at the site. 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' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. 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.

11.4.2 Invoices for 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 shall be submitted to the ENGINEER with the claim. 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 returns from sale of surplus materials and equipment shall be in accordance with the State Department of Highways, Division of Highways, and State of Colorado Standard Specifications for Road and Bridge Construction 1991 Edition. If the materials used in performing the extra Work are taken from the CONTRACTOR's stock, then in lieu of invoices the CONTRACTOR shall furnish an affidavit, certifying that such materials were taken from its stock, that the quantity claimed was actually used in the Work, and that the price and transportation claimed represent the actual cost to the CONTRACTOR shall be submitted to the ENGINEER with the claim.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed or furnished by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids, if any, will be accepted. If any 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 and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in paragraphs 11.4, 11.5, 11.6 and 11.7. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 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.

11.4.5 Supplemental costs including the following:

- 11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.
- 11.4.5.2 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.
- 11.4.5.3 Rentals rates of all construction equipment and machinery and the parts thereof which has been authorized by the ENGINEER, the CONTRACTOR will be paid for the use of equipment in the manner hereinafter specified. Rental rates will be from the current edition of the Rental Rate Blue Book for Construction Equipment and will be determined as follows:

Hourly rate: $RR = (ADJ\ BB/176)(RF)(SAF) + EOC$

Where:

- RR = Hourly rental rate
- ADJ BB/176 = Blue Book Monthly Rate adjusted for year of manufacture/176
- RF = Regional Factor of 1.06
- SAF = State Adjustment Factor of 1.05
- EOC = Estimated Hourly Operating Costs from Blue Book

With each claim, the CONTRACTOR shall submit the rental rate calculations including copies of the appropriate pages of the Blue Book for each piece of equipment listed in the claim.

Rental of equipment not owned by the CONTRACTOR will be paid for by invoice cost plus operating cost (EOC). Copies of the applicable pages of the Rental Rate Blue Book for Construction Equipment shall be submitted to the ENGINEER with the claim.

The costs of transportation, loading, unloading, installation, dismantling, and removal thereof all in accordance with the terms of said rental agreements. If equipment is used intermittently and when not in use could be returned to its rental source at less expense to the OWNER than holding it at the Work site, it shall be returned unless the CONTRACTOR elects to keep it at the Work site at no expense to the OWNER. The rental of any such equipment, machinery or parts shall cease when the use of the equipment is no longer necessary for the Work. No payment will be made for the use of tools, which have a replacement value of \$200.00 or less. Operators will be paid for separately as provided in paragraph 11.4.1. Certified invoices for rental cost of all construction equipment and machinery incorporated in the Work shall be submitted to the ENGINEER with the claim.

- 11.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.
- 11.4.5.5 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.
- 11.4.5.6 Losses and damages (and related expenses) caused by damage to the work, not compensated by insurance 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 in accordance with paragraph 5.9), 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 for services a fee proportionate to that stated in paragraph 11.6.2.
- 11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.
- 11.4.5.8 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.

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

- 11.5.1 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 11.4.1 or specifically covered by paragraph 11.4.4--all of which are to be considered administrative costs covered by the CONTRACTOR's fee.
- 11.5.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.
- 11.5.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.
- 11.5.4 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 11.4.5.9 above).

11.5.5 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.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6 The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee; or

11.6.2 if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the work:

11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's fee shall be fifteen percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the CONTRACTOR's fee shall be five percent;

11.6.2.3 where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraphs 11.4.1, 11.4.2, 11.4.3 and 11.6.2 is that the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of fifteen percent of the costs incurred by such Subcontractor under paragraphs 11.4.1 and 11.4.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

11.6.2.4 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.5 the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

11.6.2.6 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 11.6.2.1 through 11.6.2.5, inclusive.

11.7 Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8 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 furnished and performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

11.8.1 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

11.8.2 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 and no demand for additional payment on account of any of the foregoing will be valid.

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

11.9 Unit Price Work:

11.9.1 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 price 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 ENGINEER in accordance with paragraph 9.10.

11.9.2 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.

11.9.3 OWNER or CONTRACTOR may make a claim for an adjustment in the contract Price in accordance with Article 11 if:

11.9.3.1 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

11.9.3.2 there is no corresponding adjustment with respect to any other item of Work; and

11.9.3.3 if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT TIMES

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- 12.1 The Contract Times (or Milestones) may only be changed by a Change Order or a Written Amendment. Any claim for an adjustment of the Contract Times (or Milestones) shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than fifteen 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 thirty days after such occurrence (unless ENGINEER 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 Times (or Milestones) shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Times (or Milestones) will be valid if not submitted in accordance with the requirements of this paragraph 12.1.
- 12.2 Liquidated damages. The OWNER and the CONTRACTOR agree and recognize that time is of the essence for every time period set forth in the Contract Documents and that the OWNER will suffer financial loss if the Work is not substantially complete within the time set forth in the Contract Documents, plus any extensions thereof allowed in accordance with this Article 12 of the General Conditions. If the CONTRACTOR fails to perform the Work within the specified time set forth in the Contract Documents as adjusted pursuant to Article 12, the OWNER and CONTRACTOR agree that as liquidated damages, and not as a penalty, for delay in performance the Contractor shall pay OWNER in the amount stipulated below for each and every contract day that expires after the time set forth in the Contract Documents for Substantial Completion of the Work until the same is finally complete and ready for Final Payment. The OWNER shall have the right to deduct liquidated damages from any amount due or that may become due to the CONTRACTOR, or to collect such liquidated damages from the CONTRACTOR or the Surety. The OWNER has the option to enforce liquidated damages or to waive such damages. The liquidated damages herein specified shall only apply to the CONTRACTOR's delay in performance. Liquidated damages are intended only to compensate the OWNER for additional OWNER personnel efforts in administering the Contract after normally scheduled completion dates, and for City governmental and citizen inconvenience, lost opportunities, and lost confidence in government and morale of government when work is not completed on time. Such damages are uncertain in amount and difficult to measure and prove accurately. By executing this contract, the CONTRACTOR agrees that the liquidated damages specified in the Contract Documents are reasonable in amount and are not disproportionate to actual anticipated damages. Liquidated damages do not include any sums of money to reimburse the OWNER for extra costs which the OWNER may become obligated to pay on other contracts which are delayed or extended because of CONTRACTOR's failure to complete the Work within the time periods set forth in the Contract Documents. Liquidated damages are not intended to include litigation or attorneys' fees incurred by the OWNER, or other incidental or consequential damages suffered by the OWNER due to the Contractor's performance. If the OWNER charges liquidated damages to the CONTRACTOR, this shall not preclude the Owner from commencing an action against the CONTRACTOR for other actual harm resulting from the CONTRACTOR's performance, which is not due to the CONTRACTOR's delay in performance. In order to recover liquidated damages, OWNER is under no obligation to prove the actual damages sustained by OWNER due to the CONTRACTOR's delay in performance. In no event shall the CONTRACTOR be assessed liquidated damages if the contract is suspended or terminated for events beyond the control of the CONTRACTOR for which a time extension beyond the original schedule of performance could be granted under 12.3.

The parties agree that liquidated damages shall be in the amount set forth in Article 2 of the Agreement.

- 12.3 Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a claim is made therefor as provided in paragraph 12.1. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.
- 12.4 The CONTRACTOR specifically waives any and all claims against the OWNER for damages resulting from any hindrance or delay caused by circumstances beyond the control of CONTRACTOR that prevents completing any part of the Work within the Contract Times (or Milestones), whether or not caused by the OWNER. The CONTRACTOR may instead be granted an extension of the Contract Times for which the OWNER will not claim liquidated damages, provided that the hindrance or delay is beyond the control of the CONTRACTOR. An extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall OWNER be liable to CONTRACTOR, any subcontractor, any supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from delays caused by or within the control of Contractor, or delays beyond the control of CONTRACTOR whether or not caused by the OWNER.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

- 13.1 **Notice of Defects:** Prompt notice of all **defective** Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All **defective** Work may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

- 13.2 OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

Tests and Inspections:

- 13.3 CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- 13.4 OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

- 13.4.1 for inspections, tests or approvals covered by paragraph 13.5 below:
- 13.4.2 that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.9 below shall be paid as provided in said paragraph 13.9; and
- 13.4.3 as otherwise specifically provided in the Contract Documents.
- 13.4.4 any and all retesting of soil necessitated by the CONTRACTOR's operations or inability to obtain specified density test results on the first attempt shall be the sole responsibility and costs of the CONTRACTOR to achieve required passing test results. Retesting required because of non-conformance to specified requirements shall be performed by the independent firm employed by the OWNER. Payment for retesting will be charged to the CONTRACTOR by deducting inspection, testing and administrative charges from the Contract Price.
- 13.5 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection, or approval. CONTRACTOR shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work.
- 13.6 If any Work (or the work of others) that is to be inspected, tested or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.
- 13.7 Uncovering Work as provided in paragraph 13.6 shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

Uncovering Work:

- 13.8 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.
- 13.9 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is **defective**, CONTRACTOR shall pay all claims, costs, losses and damages caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11.

OWNER May Stop the Work:

- 13.10 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 surety or other party.

Correction or Removal of Defective Work:

- 13.11 If required by ENGINEER, 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 ENGINEER, remove it from the site and replace it with Work that is not **defective**. CONTRACTOR shall pay all claims, costs, losses and damages caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.12 Correction Period:

- 13.12.1 If within one year after the date of Final 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 within seven calendar days after receiving notice from OWNER, without cost to OWNER and in accordance with OWNER's written instructions: (i) correct such defective Work, or if its has been rejected by OWNER, remove it from the site and replace it with WORK that is not defective, and (ii) satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If CONTRACTOR does not within seven calendar days after receiving notice from OWNER 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 claims, costs, losses and damages caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.
- 13.12.2 In special circumstances where a particular item of equipment is placed in continuous service before Substantial 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 Written Amendment.
- 13.12.3 Where **defective** Work (and damage to other Work resulting therefrom) has been corrected, removed or replaced under this paragraph 13.12, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Acceptance of Defective Work:

13.13 If, instead of requiring correction or removal and replacement of **defective** Work, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall play all claims, costs, losses and damages attributable to OWNER's evaluation of and determination to accept such **defective** Work (such costs to be approved by ENGINEER as to reasonableness). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, 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, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

OWNER May Correct Defective Work:

13.14 If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct **defective** Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, 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. In connection with such 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, OWNER's other contractors and ENGINEER and ENGINEER's Consultants access to the site to enable OWNER to exercise the rights and remedies under this paragraph. All claims, costs, losses and damages incurred or sustained by OWNER in exercising such rights and remedies will be charged against CONTRACTOR 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, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such claims, costs, losses and damages will include but not be limited to all costs of repair or 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 Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1 Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment:

14.2 At least twenty days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER 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, claims, security interests, or encumbrances 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. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. With each application for payment the CONTRACTOR shall submit a notarized waiver(s) of claim signed by the CONTRACTOR acceptable in form to the ENGINEER. The waiver of claim for payment for the work of the CONTRACTOR shall equal the amount of the previous payment distributed to the CONTRACTOR for work of the CONTRACTOR and the amount of the total previous payment distributed to the CONTRACTOR.

CONTRACTOR's Warranty of Title:

- 14.3 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.

Review of Applications for Progress Payment:

- 14.4 ENGINEER will, within ten days 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 ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.
- 14.5 ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:
- 14.5.1 the Work has progressed to the point indicated.
- 14.5.2 the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10 and to any other qualifications stated in the recommendation), and
- 14.5.3 the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled insofar as it is ENGINEER's responsibility to observe the Work.

However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

14.6 ENGINEER's recommendation of any payment, including final payment, shall not mean that ENGINEER is responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the furnishing or performance of Work, or for any failure of CONTRACTOR to perform or furnish Work in accordance with the Contract Documents.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.5. ENGINEER 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 ENGINEER's opinion to protect OWNER from loss because:

14.7.1 the Work is **defective**, or completed Work has been damaged requiring correction or replacement,

14.7.2 the Contract Price has been reduced by Written Amendment or Change Order,

14.7.3 OWNER has been required to correct **defective** Work or complete Work in accordance with paragraph 13.14, or

14.7.4 ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.3 inclusive.

In addition to the retainages set forth in the Contract Documents, the Owner may retain one hundred percent (100%) of all progress payments for any unsatisfactory performance of the Work and any payment recommended by the ENGINEER, including without limitation:

Defective work or failure to repair or replace defective work;

Claims filed against the CONTRACTOR, or reasonable evidence indicating probable filing of such claims;

Failure of the CONTRACTOR to make adequate or proper payments to subcontractors or suppliers for materials, equipment or labor;

Failure to obtain necessary permits or licenses, or to comply with applicable laws, ordinances, codes, or regulations, unless such noncompliance is due to reasons beyond the control of the CONTRACTOR, or due to act of the OWNER or and ENGINEER hired by the OWNER, or agents or employees thereof:

Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price then unpaid;

Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

Persistent failure to carry out the Work in accordance with the Contract Documents;

As a set off for amounts due the Owner on other items;

Collusion with other bidders in preparing the bid;

Actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.7.1 through 14.7.3 or paragraphs 15.2.1 through 15.2.3 inclusive.

When the above reasons for withholding payment are removed and corrected to the OWNER's satisfaction, OWNER shall make payment to the CONTRACTOR of the sums withheld pursuant to this paragraph, subject to the amounts required to be retained by the Contract Documents.

Progress Payments to Suppliers and Subcontractors. The CONTRACTOR shall make partial payments of the amount due to each of the CONTRACTOR's suppliers and subcontractors in the same manner as the OWNER is required to pay the CONTRACTOR under Article 4 of the Agreement and Article 14 of the General Conditions, provided that the suppliers and subcontractors are performing to the CONTRACTOR's satisfaction. If the OWNER is notified that the CONTRACTOR is in arrears in payments to the CONTRACTOR's suppliers or subcontractors, the OWNER shall notify the CONTRACTOR and determine why such funds are being withheld. If the OWNER determines that no legitimate basis exists for the CONTRACTOR's withholding of such payments, the OWNER may, five (5) days after the mailing of written notice to the CONTRACTOR, make such payments directly to the CONTRACTOR's suppliers or subcontractors from funds which otherwise would be due the CONTRACTOR.

Substantial Completion:

- 14.8 When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion, which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion, ENGINEER will deliver to OWNER and

CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion. ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

- 14.9 OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

- 14.10 Use by OWNER at OWNER's option of any substantially completed part of the Work which: (i) has specifically been identified in the Contract Documents, or (ii) OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

- 14.10.1 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 substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

Final Inspection:

- 14.11 Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and 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 complete such Work or remedy such deficiencies.

Final Application for Payment:

14.12 After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance required by paragraph 5.4, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents. CONTRACTOR may make application for final payment following the procedure for progress payments. The final application for payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence satisfactory to the OWNER of the continuation of completed operations insurance and any insurance coverage written on a claims-made basis at final payment and one year thereafter; (ii) the consent of surety to final payment and that the performance bond shall remain in effect throughout the guarantee period; (iii) complete and legally effective claim releases signed by all suppliers and subcontractors in the form provided in the Contract Documents certifying that all outstanding claims for payment have been paid. The CONTRACTOR shall not receive final payment due under the Agreement until the CONTRACTOR obtains and files the foregoing items (i), (ii), and (iii).

14.12.1 LIENS. Colorado Statutes do not provide for any right of lien against public buildings. In lieu thereof, §38-26-107, Colorado Revised Statutes, as amended, provides adequate relief for any claimant having furnished labor, materials, rental machinery, tools, equipment, or services toward construction of the particular public work in that final payment may not be made to a CONTRACTOR until all such creditors have been put on notice by publication of such pending payment and given opportunity to stop payment to the CONTRACTOR in the amount of such claims. Pursuant to §38-26-107, C.R.S., any supplier may bring a suit and file a notice of lis pendens against the OWNER within ninety (90) days after the date set for final settlement. If any such supplier or person files any such claim and notice of lis pendens, the OWNER shall withhold retained amounts from final payments to the CONTRACTOR as are necessary to satisfy fully such claims. References to liens appearing in Article 14 shall be deemed as references to claims made pursuant to C.R.S §38-26-101 et seq. unless the context requires otherwise.

Final Payment and Acceptance:

14.13 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.15. Otherwise, ENGINEER 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. Upon receipt of the ENGINEER's recommendation for payment and the final Application for Payment, OWNER shall order the publication of Notice of Final Payment as required by C.R.S. §38-26-107(1) and shall make final payment in accordance with C.R.S. 38-26-107(3).

14.14 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, 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 5.1, 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 ENGINEER 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.

Waiver of Claims:

14.15 The making and acceptance of final payment will constitute:

14.15.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from **defective** Work appearing after final inspection pursuant to paragraph 14.11, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

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

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

15.1 At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER, 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 adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

OWNER May Terminate:

15.2 Upon the occurrence of any one or more of the following events:

15.2.1 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 adjusted from time to time pursuant to paragraph 6.6);

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

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

OWNER may, after giving CONTRACTOR (and the surety, if any,) 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 all claims, costs, losses and damages sustained by OWNER arising out of or resulting from completing the Work such excess will be paid to CONTRACTOR. If such claims, costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and when so approved by ENGINEER incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3 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.

15.4 Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement. In such case, CONTRACTOR shall be paid (without duplication of any items):

15.4.1 for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

15.4.2 for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

15.4.3 for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and

15.4.4 for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

CONTRACTOR May Stop Work or Terminate:

15.5 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 ENGINEER fails to act on any Application for Payment within thirty days after it is submitted or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER,

and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Agreement and recover from OWNER payment on the same terms as provided in paragraph 15.4. In lieu of terminating the Agreement and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within thirty days after it is submitted, or OWNER has failed for thirty days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may upon seven days' written notice to OWNER and ENGINEER stop the Work until payment of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.5 are not intended to preclude CONTRACTOR from making claim under Articles 11 and 12 for an increase in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping Work as permitted by this paragraph.

ARTICLE 16 - MISCELLANEOUS

Giving Notice:

- 16.1 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.

Computation of Times:

- 16.2.1 When any period of time is referred to in the Contract Documents by days, it will be computed to include the first and the last day of such period.

Notice of Claim:

- 16.3 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 16.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

Cumulative Remedies:

- 16.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.12, 6.16, 6.30, 6.31, 6.32, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

Professional Fees and Court Costs Included:

- 16.5 Whenever reference is made to "claims, costs, losses and damages," it shall include in each case, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

Interest:

- 16.6 In the event that any payment of interest is to be made pursuant to any provision of the Contract Documents, excluding any bid bond, labor and materials bond or performance bond entered into by the CONTRACTOR, interest shall be paid at the average rate earned by the City of Louisville on its invested funds during the quarterly fiscal period prior to the period during which the interest was accrued.

Third Parties:

- 16.7 The contract is not intended to create any right in or for the public or any member thereof, any subcontractor or supplier, or any other third party, or to authorize anyone not a party to the contract to maintain a suit to enforce its terms. The duties, obligations, and responsibilities of the parties to the contract, with respect to third parties, shall remain as imposed by law. This paragraph shall not apply to any surety to the extent it is acting under any labor and materials bond or performance bond entered into by the CONTRACTOR.

Severability:

- 16.8 To the extent that the performance of the parties' obligations may be accomplished within the intent of the contract, the terms of the contract are severable, and should any term or provision of the contract be declared invalid or become inoperative for any reason, such invalidity or failure shall not affect the validity of any other contract term or provision.

Equal Opportunity Employer:

- 16.9 The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, age, sex, disability or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard for their race, color, religion, age, sex, disability or national origin. Such action shall include but not be limited to the following: 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, notice to be provided by an agency of the federal government, setting forth the provisions of the Equal Opportunity Laws.

The CONTRACTOR shall be in compliance with the appropriate areas of the Americans with Disabilities Act of 1990 as enacted and from time to time amended and any other applicable federal regulation. A signed, written certificate stating compliance with the Americans with Disabilities Act may be requested at any time during the life of any contract and with any contract entered by the OWNER.

END OF SECTION

SECTION 01 10 00 - SUMMARY OF WORK

PART 1 GENERAL

This Summary of Work supplements and amplifies certain sections of the General Conditions and Supplementary General Conditions. The General Conditions and Supplementary General Conditions shall apply except as modified herein. These Special Provisions and additional technical specifications may contain occasional requirements not pertinent to the project. However, these specifications shall apply in all particulars insofar as they are applicable to this project.

1.1 APPLICABLE STANDARD SPECIFICATIONS AND PLANS

City of Louisville Design and Construction Standards (including all revisions at date of bid opening), apply except as may be modified herein. In the case of discrepancy, unless noted otherwise herein, the more restrictive provisions shall apply.

1.2 SCOPE OF WORK

The work to be performed under these specifications and drawings includes, but is not limited to, the following:

- A. Removal and on-site relocation of existing natural gas-powered generator.
- B. Demolition and removal of existing concrete generator pad.
- C. Demolition and removal of existing concrete pavement.
- D. Modifications to existing electrical and natural gas lines to accommodate new generator connections. Modifications to existing electrical and natural gas lines to be coordinated with Xcel Energy as necessary.
- E. Installation of new concrete generator pad and new concrete pavement.
- F. Installation of new diesel generator.
- G. Electrical and controls system work for the new diesel generator.
- H. Startup and testing of new diesel generator.
- I. Reseeding and general site restoration to pre-construction conditions.

The above general outline of principal features of the work does not in any way limit the responsibility of the CONTRACTOR(s) to perform all work and furnish all equipment, labor and materials required by the specifications and drawings. The drawings and specifications shall be considered and used together. Anything appearing as a requirement of either shall be accepted as applicable to both even though not so stated therein or shown.

1.3 COORDINATION OF DRAWINGS AND SPECIFICATIONS

The drawings and specifications are intended to describe and provide for a complete work. Any requirement in one is as binding as if stated in all. The CONTRACTOR shall provide any work or materials clearly implied in the Contract Documents even if the Contract Documents

do not mention it specifically. If there is a conflict within the Contract Documents, it will be resolved by the following order of precedence:

- A. Permits for outside agencies required by law
- B. OWNER-CONTRACTOR Agreement
- C. Addenda to Contract Documents
- D. CONTRACTOR's Proposal
- E. Special Provisions
- F. Contract Drawings
- G. Technical Specifications
- H. Supplementary General Conditions
- I. General Conditions of the Contract
- J. Standard Specifications
- K. Standard Plans

Dimensions shown on the drawings or that can be computed shall take precedence over scaled dimensions. Notes on drawings are part of the drawings and govern in the order described above. Notes on drawings shall take precedence over drawing details.

The intent of the drawings and specifications is to prescribe the details for the construction and completion of the work which the CONTRACTOR undertakes to perform according to the terms of the Contract. Where the drawings or specifications describe portions of the work in general terms, but details are incomplete or silent, it is understood that only the best general practice is to prevail and that only materials and workmanship of the best quality are to be used. Unless otherwise specified, the CONTRACTOR shall furnish all labor, materials, tools, equipment, and incidentals, and do all the work involved in executing the Contract in a manner satisfactory to the ENGINEER.

The contract drawings are designated by general title, sheet number and sheet title. When reference is made to the drawings, the "Sheet Number" of the drawing will be used. Each drawing bears the ENGINEER's File No. 22-3504. and the general title:

Howard Berry Water Treatment Plant (HBWTP) Emergency Generator Replacement

1.4 CODE REQUIREMENTS

All work shall be done in strict compliance with the requirements of:

- A. International Building Code
- B. Uniform Mechanical Code
- C. Uniform Plumbing Code
- D. National Electric Code
- E. National Electric Safety Code
- F. City of Louisville
- G. Boulder County

In case of disagreement between codes or these specifications, the more restrictive shall prevail.

1.5 TIME OF COMPLETION/LIQUIDATED DAMAGES

The CONTRACTOR shall complete all work shown and specified within the time limits stated in the Agreement (See Section 01 33 00, Submittal Procedures, for project schedule submittal requirements). The written Notice to Proceed will be sent to the CONTRACTOR after the CONTRACTOR submits the signed Contract, Bonds and insurance certificates to the OWNER and those documents have been approved as to form and executed by the OWNER. The CONTRACTOR's attention is directed to Article 3 of the Agreement and the General Conditions as respects liquidated damages.

1.6 COORDINATION WITH OTHER CONTRACTORS AND WITH OWNER

Certain work within this contract may require connection to and coordination with the work of other contractors and OWNER. The CONTRACTOR under these specifications shall cooperate fully with all other contractors and OWNER and carefully fit its own work to such other work as may be directed by the ENGINEER. The CONTRACTOR shall not commit or permit any act to be committed which will interfere with the performance of work by any other contractor or the OWNER.

1.7 ACCESS TO WORK

Access to the work shall be provided as may be required by the OWNER or its representatives, and all authorized representatives of the state and federal governments and any other agencies having jurisdiction over any phase of the work, for inspection of the progress of the work, the methods of construction or any other required purposes.

1.8 TESTING AND OPERATION OF FACILITIES

It is the intent of the OWNER to have a complete and operable facility. All the work under this contract will be fully tested and inspected in accordance with the specifications. Upon completion of the work, the CONTRACTOR shall operate the completed facilities as required to test the equipment under the direction of the ENGINEER. During this period of operation by the CONTRACTOR, the new facilities will be tested thoroughly to determine their acceptance.

1.9 PUBLIC SAFETY AND CONVENIENCE

General Rule: The CONTRACTOR shall ensure the safety of the public during its performance of the Work and shall minimize any public inconvenience in addition to any other requirement imposed by law. These duties include, but are not limited to, the matters listed below.

Access: The CONTRACTOR shall not unreasonably restrict access to public facilities, commercial property, fire hydrants, residential property, and other areas where the public can be expected to be present, such as sidewalks and streets without first obtaining approval of the OWNER. Driveways shall be closed only with the approval of the OWNER or after obtaining specific permission from the property owner or owners. In addition, the CONTRACTOR shall not obstruct or interfere with travel over any public street or sidewalk without approval of the OWNER.

Public Transit: The CONTRACTOR shall not interfere with the normal operation of any public transit vehicles unless otherwise authorized.

Work Site: The CONTRACTOR shall keep the Project site safe in compliance with applicable law. Safety includes, but is not limited to: 1) providing an approved type of secured and adequate barricades or fences that are easily visible from a reasonable distance around open excavations; 2) closing up or covering with steel plates all open excavations at the end of each Working Day in all street areas and in all other areas when it is reasonably required for public safety; 3) marking all open work and obstructions by lights at night; 4) installing and maintaining all necessary signs, lights, flares, barricades, railings, runways, stairs, bridges, and facilities; 5) observing any and all safety instructions received from the OWNER; and 6) following all laws and regulations concerning worker and public safety. In the event that the law requires greater safety obligations than that imposed by the OWNER, the CONTRACTOR shall comply with the law.

Emergency: Emergency vehicles, including but not limited to police, fire, and disaster units shall be provided access to the work site at all times.

Cleanliness: The CONTRACTOR shall, on a continuing basis, keep the surfaces of all public and private roadways, sidewalks, and other pathways free of dirt, mud, cold plane grindings, and other matters that the CONTRACTOR may place upon the road. The cost of performing such work shall be included in the CONTRACTOR's Bid and no additional payment will be made for performing this task.

Parking: The CONTRACTOR shall make any necessary contacts with all applicable governmental bodies to arrange for the removal of parked automobiles, vehicles and other obstructions if they would interfere with the performance of the CONTRACTOR'S work.

Accidents: The CONTRACTOR'S Project Manager or superintendent shall be in charge of accident prevention. CONTRACTOR shall take all actions necessary to prevent damage, injury and loss to persons and property as a result of accidents.

Project Health and Safety Plan: CONTRACTOR shall develop, publish, and implement an overall Project Health and Safety Program for the Project. This Program shall conform to all applicable codes. Contractor shall submit the written Safety Program to the OWNER within 30 days after the receipt of the written Notice to Proceed. The Plan shall be assembled to address project specific health and safety issues to both the public and on-site personnel.

The plan shall include the following items when they apply:

- Employee Orientation
- Safety Inspections
- Instruction and Training
- Accident Reporting
- Signs and Barricades
- Fire Prevention and Protection
- Welding, Cutting, and Burning
- Painting and Surface Treatment
- Electricity
- Machinery and Mechanized Equipment
- Excavations
- Sanitation
- Chlorine Safety
- Hazardous Materials
- Hazardous Communications Program
- Job Hazard Analysis
- First Aid/Medical Facilities
- Personal Protective Equipment
- Confined Space Entry Plan
- Shoring Plan
- Fall Protection Plan
- Emergency Action Plan
- Housekeeping
- Safety Training Requirements and Certification
- Pedestrian Access Around Work Site During Construction and After Hours

If the project requires other health and safety issues to be addressed, they too shall be included in the Project Health and Safety Plan. The Program shall subsequently be distributed to and implemented by the CONTRACTOR's personnel as well as its Subcontractors and Suppliers. CONTRACTOR shall fully implement and comply with the Safety Program and shall submit to the OWNER a letter signed by CONTRACTOR'S owner/president affirming such implementation and compliance within 15 days after on-site work has started. CONTRACTOR shall notify the OWNER when safety meeting will be held so that Owner's personnel may attend. A copy of the approved Health and Safety Plan must be maintained on-site at all times during the life of the Project.

The OWNER has no responsibility for Work site safety. Work site safety is the responsibility of the CONTRACTOR. The CONTRACTOR is required to have a competent person on site at all times during construction activities.

1.10 WARRANTY PERIOD

The CONTRACTOR shall warrant all furnished materials and equipment for a period of two years from date of final acceptance of the Work by the OWNER. This warranty shall mean prompt attention to the correction and/or complete replacement of the faulty material or equipment. The expiration of the two-year warranty period shall not affect any other claims or remedy available to the OWNER. There may be other warranty provisions in these contract documents in addition to those noted above.

END OF SECTION

SECTION 01 12 16 - WORK SEQUENCE

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes general sequencing, project phasing and coordination requirements for the Work.
- B. Contract Requirements:
 - 1. Contractor is responsible for coordinating with Xcel Energy for any modifications to the existing electrical and gas lines that are required for the replacement of the existing generator.

1.2 RELATED SECTIONS

- A. None

1.3 SUBMITTALS

- A. Section 01 33 00, Submittal Procedures: Requirements for submittals.
- B. Work Sequencing Plan: At a minimum, to include the following:
 - 1. Complete sequence of construction for all activities contained herein.
 - 2. Major work activities to occur.
 - 3. Schedule of temporary shutdowns of treatment plant and estimated duration of shutdowns.
 - 4. Assistance to be required of Owner's operating personnel during shutdowns.
 - 5. Contingency plan identifying what action will be taken if activities during a shutdown cannot be completed within the allotted times.
 - 6. Name and contact information of individual in charge of activity during shutdown.

1.4 PROJECT SPECIFIC WORK CONSTRAINTS

- A. Constraints primarily relate to the need to continue to provide treated water during construction until all project work has been constructed, tested, commissioned and accepted by OWNER.

- B. CONTRACTOR shall make every effort to give proper attention to each of these items to avoid any delay if the constraints are not observed.
- C. Constraints listed below involve limits on activities during construction. These limits relate to the critical nature of the existing water treatment facility.
 - 1. Coordinate construction schedule and operation with OWNER.

1.5 GENERAL WORK CONSTRAINTS

- A. Constraints primarily relate to power supply, equipment, and other aspects of the operating water treatment facility.
- B. Make every effort to give proper attention to each of these items so as to minimize interruptions of the existing facilities and avoid delays that may result if the constraints are not observed.
- C. Constraints listed below involve limits on activities during construction. These limits relate to the critical nature of the existing pump station facility.
 - 1. Coordinate construction schedule and operation with Owner.
 - 2. Coordinate proposed work with Owner, Engineer, and facility operations personnel before implementing any shutdowns. Under no circumstances cease Work at the end of a normal working day if such actions may inadvertently cause a cessation of any facility operating process; in which case, remain on site until necessary Work and/or repairs are complete.
 - 3. Owner recognizes portions of the facility and facility operations will have to be interrupted or shut down or interfered with in order to accommodate construction activities. Owner will, through its personnel, attempt to accommodate Work, provided that proper notification is given. Owner reserves the right to deny permission for interruption or shutdown on any day.
 - 4. Do not operate any of the existing equipment without written permission from Owner naming the specific piece of equipment, operator(s), and dates equipment may be used. Contractor is liable for any loss or damage caused to property or equipment or any personal injury resulting from or related to this usage.
- D. Extended Working Hours: If it is desired to perform any Work outside the specified working hours, obtain written permission from Owner and all necessary permitting agencies, and make all necessary arrangements prior to commencing.

1.6 TEMPORARY SHUTDOWNS

- A. Provide 14-day minimum advance notice to request approval of a temporary shutdown of a facility.
- B. Each Notice of Request for Approval of a Temporary Shutdown submitted to Owner shall include the following:
 - 1. Dates, times, and duration of proposed shutdown.
 - 2. Work activities to be performed during the shutdown.
 - 3. Assistance required of Owner's personnel before, during, and after shutdown.
 - 4. Personnel to be on Site during shutdown.
 - 5. Contingency plan if work during shutdown is not completed during allotted time or critical equipment fails.
- C. Upon receipt of such request, Owner will decide what action(s) is required by Owner and if the requested shutdown is acceptable considering the flows through the water treatment facility at that time. The request from Contractor will be returned to Contractor with the Owner's written decision noted. If Owner deems that the requested shutdown is unacceptable, Owner will state such reasons, and Contractor shall reschedule the shutdown as required.
- D. It is hereby agreed between the Contractor and Owner that disapproval by Owner of the Contractor's shutdown request does not entitle Contractor to any time extension unless Contractor can demonstrate to the satisfaction of Owner, through an updated CPM schedule, that the overall Project completion date will not be met as a result of this disapproval.
- E. Owner may postpone a planned and approved shutdown at any time for treatment capacity, or safety reasons.
- F. The maximum length of temporary shut-downs will be determined by the Owner and facility operators on a case-by-case basis.

1.7 INTERRUPTION OF UTILITY SERVICE

- A. Indicate required shutdowns of existing utilities or interruptions of existing operations on Progress Schedule. Interruptions to utility service will be allowed to the extent that customer service will not be adversely compromised.
- B. Submit requests for interruptions to utility service not less than five business days in advance of the date scheduled for the interruption.

- C. Following receipt of the request, Engineer will notify Contractor if the requested date will be permitted. Evaluation of the request will be based upon the availability of the utility owner's personnel to assist and monitor utilities during the shutdown period and impact to customer service.
- D. Minimize the period of interruption by thorough advance planning. Procure and provide all required materials, equipment and labor on site during the shutdown.
- E. Do not begin interruption until written authorization is received from Engineer.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01 22 20 - UNIT PRICE MEASUREMENT AND PAYMENT

PART 1 GENERAL

Measurement and payment will be on a unit price basis in accordance with the prices set forth in the proposal for individual work items. Where work is required but does not appear as a separate item in the proposal, the cost for that work shall be included and absorbed in the unit prices named in the proposal. CONTRACTOR shall make a careful assessment when preparing the bid.

- A. Mobilization, Bonds, Insurance and Demobilization: Payment for mobilization, bonds, insurance and demobilization will be on a lump sum basis. The amounts paid for mobilization in the contract progress payment will be based on the percent of the original contract amount that is earned from other contract items, as follows:

1. When 5 percent is earned, either 100 percent of the amount for mobilization or 5 percent of the original contract amount, whichever is the least.
2. When all work is completed, amount of mobilization exceeding 5 percent of the original contract amount.

This schedule of mobilization progress payments will not limit or preclude progress payments otherwise provided by the contract.

- B. Cummins 450 DFEJ 1700G Generator with Enclosure: Payment for a new Cummins 450 DFEJ 1700G Generator with Enclosure or approved equal. If approve equal is requested, **Engineer shall approve before bid is submitted**. The generator is to be installed as defined in the specifications and drawings. The manufacturer is responsible for delivery, but the contractor is responsible for coordination. Payment for furnishing and installing the backup generator will be on a lump sum basis.
- C. Demolition of Existing Generator Pad: Payment for demolition of existing generator pad will be on a per cubic yard basis. Demolition to include demolition and removal of existing generator pad as shown on the drawings and gas service line as directed by the Owner and Engineer. Demolition shall also include the relocation of the existing generator to a new on-site location as directed by the Owner.
- D. Demolition of Existing Concrete Paving: Payment for demolition of existing concrete paving will be on a per square feet basis at 6-inch thick. Demolition to include demolition and removal of existing site concrete as defined in the drawings.
- E. Concrete Pad for Generator: Payment for installation of the concrete pad for the generator will be on a per cubic yard basis and compacted subgrade. The concrete pad is to be installed as defined in the specifications and drawings.

- F. Site Concrete: Payment for installation of concrete paving and slab on grade will be on a per square foot basis. The site concrete is to be installed as defined in the specifications and drawings at the thickness shown on the plans, and with fiber reinforcing. All subgrade scarification and compaction shall be included.
- G. Site Restoration: Payment for site restoration including stripping and stockpiling topsoil, regrading to original contours, installing sod or native seeding, and cleanup following construction as required including resurfacing as required, will be on a lump sum basis.
- H. Erosion and Sediment Control: Payment for installation of approved erosion and sedimentation control devices (silt fencing and reseeding), as required, including all labor, materials, and equipment, as required, will be on a lump sum basis. Additionally, this item shall include preparation and execution of the project's ESC Permit through City of Louisville, repair and/or replacement, and removal of temporary erosion control devices after construction and establishment of permanent erosion control features, as may be required by the project drawings.
- I. Electrical and Control Systems: The electrical and control systems work shall be on a lump sum basis. The electrical work shall be broken down by yard facilities and structures. Yard facilities shall be broken down by duct bank designation and substations. Structures electrical work shall be broken down into conduit and raceway installation, cable and wire installation, electrical equipment installation and terminations. Instrumentation and Control work shall be broken down by installation of field instruments, calibration and equipment testing, PLC hardware installation, and coordination with OWNER provided SCADA integration.

END OF SECTION

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. This Section contains administrative and procedural requirements for submittals for review, information, and for Project closeout.
- B. Section includes:
 - 1. Schedule of Submittals.
 - 2. Submittal requirements.
 - 3. Submittal procedures.
 - 4. Engineer review.
 - 5. Resubmittal procedures.
 - 6. Product data.
 - 7. Shop Drawings.
 - 8. Samples.
 - 9. Design data.
 - 10. Test reports.
 - 11. Certificates.
 - 12. Manufacturer's instructions.
 - 13. Manufacturer's field reports.
 - 14. Erection Drawings.
 - 15. Construction progress schedules.
 - 16. Breakdown of contract price.
 - 17. Construction photographs.
 - 18. Operation and maintenance (O&M) instructions.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action.
- B. Informational Submittals: Written and graphic information and physical Samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SCHEDULE OF SUBMITTALS

- A. Within 10 days after the Effective Date of the Contract, Contractor shall submit to Engineer a preliminary Schedule of Submittals, including proposed list of major products proposed for use, with specification section reference, name of

manufacturer, supplier, trade name, subcontractor and model number of each product. Provide a schedule of specific target dates for the submission and return of submittals and shop drawings required by the Contract Documents.

- B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.
- C. The list and schedule shall be updated and resubmitted when requested by the Engineer.
- D. Contractor's Schedule of Submittals will be acceptable to the Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

1.4 SHOP DRAWING AND SAMPLE SUBMITTAL REQUIREMENTS

- A. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - 1. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - 2. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - 3. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 4. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- B. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- C. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review of each such variation.

1.5 SUBMITTAL PROCEDURES

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review in accordance with the accepted Schedule of Submittals.
- B. Transmit each submittal with Engineer-accepted transmittal form certifying compliance with requirements of Contract Documents.
- C. Sequentially number transmittal forms. Mark transmittal forms for resubmittals with original number and sequential alphabetic suffix.
- D. Show each Submittal with the following numbering and tracking system:
 - 1. Submittals shall be numbered according to specification section. For example, the first product submittal for Section 05 50 00 would be "05 50 00-1". Resubmittals of that submittal would be "05 50 00-1.1", followed by "05 50 00-1.2", and so on. The second product submittal for that Section would be "05 50 00-2".
 - 2. Submittals containing product information from multiple sections of the specifications will not be reviewed. Contractor and/or their supplier shall divide submittals in a manner that meets the numbering and tracking system requirements stated herein.
 - 3. Alternative method of numbering may be used if acceptable to Engineer.
- E. Identify: Project, Contractor, subcontractor and supplier, pertinent drawing and detail number, and specification Section number appropriate to submittal.
- F. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.
- G. Coordinate submission of related items.
 - 1. All shop drawings for interrelated items shall be scheduled for submission at the same time.
 - 2. The Engineer may hold shop drawings in cases where partial submission cannot be reviewed until the complete submission has been received or where shop drawings cannot be reviewed until correlated items affected by them have been received. When such shop drawings are held, the Engineer will advise the Contractor in writing that the shop drawing submitted will not be reviewed until shop drawings for all related items have been received.

- H. When hard copies of submittals are provided by the Contractor, six copies of all materials shall be provided to the Engineer. Two copies of reviewed submittals will be kept by the Engineer, two copies of reviewed submittals will be transmitted to the Owner, and two copies of reviewed submittals will be returned to the Contractor. If the Contractor requests that more than two copies of the reviewed submittal be returned, then the Contractor shall submit the appropriate quantity of submittals.
- I. When electronic transmittals of submittals are provided by the Contractor under established protocols described elsewhere in the Contract Documents or as jointly developed by the Owner, Engineer and Contractor, provide electronic submittals in portable document format (PDF) in addition to the source document format (Word, Excel, AutoCAD, etc.). Reviewed submittals will be returned to the Contractor as PDF electronic files.
- J. For each submittal for review, allow not less than 14 days for Engineer review, excluding delivery time to and from Contractor.
- K. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- L. Allow space on submittals for Contractor and Engineer review stamps or comments.
- M. When revised for resubmission, the Contractor shall identify changes made since previous submission. A narrative of changes shall be provided, and shop drawings or calculations shall indicate that a revision was made.
- N. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with review comments.
- O. Submittals not requested will not be recognized nor processed.
- P. Incomplete Submittals: Engineer will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Engineer.

1.6 ENGINEER REVIEW

- A. Informational submittals and other similar data are for Engineer's information, do not require Engineer's responsive action, and will not be reviewed or returned with comment.
- B. The Engineer's review of submittals and shop drawings is not a check of any dimension or quantity and will not relieve the Contractor from responsibility for errors of any sort in the submittals and shop drawings.

- C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.
- D. The Engineer will review the submitted data and shop drawings and return to the Contractor with notations thereon indicating "No Exception Taken", "Make Corrections Noted", "Rejected", "Revise and Resubmit", or "Submit Specified Item".
- E. If more than two submissions of an item are required to meet the Project specifications, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.
- F. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
- G. Engineer's review will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
- H. Engineer's review of a separate item as such will not indicate approval of the assembly in which the item functions.
- I. Engineer's review of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 1.4.C and Engineer has given written acceptance of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such accepted variation from the requirements of the Contract Documents in a Field Order.
- J. Engineer's review of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 1.4 A. and B.
- K. Engineer's review of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
- L. Neither Engineer's receipt, review, return of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

- M. Contractor shall perform the Work in compliance with the requirements and commitments set forth in returned Shop Drawings and Samples, subject to the provisions of Paragraph 1.6.I.

1.7 RESUBMITTAL PROCEDURES

- A. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
- B. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required review of an item with no more than two submittals. Engineer will record Engineer's time for reviewing a third or subsequent submittal of a Shop Drawings, sample, or other item requiring review, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
- C. If Contractor requests a change of a previously reviewed submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

PART 2 PRODUCTS

2.1 BREAKDOWN OF CONTRACT PRICE

- A. Within 10 days after the Effective Date of the Contract, submit a complete breakdown of all lump sum bid items showing the value assigned to each part of the work, including an allowance for profit and overhead adding up to the total lump sum contract price.
- B. Breakdown of lump sum bids shall be coordinated with the items in the schedule and shall be in sufficient detail to serve as the basis for progress payments during construction.
- C. Engineer will review the contract price breakdown and may request items to be further broken down or for more items be added in order to facilitate tracking of work progress for payment.
- D. Preparatory work, bonds, and insurance required in setting up the job will be allowed as a separate entry on the cost breakdown but shall not exceed 5 percent of the total base bid.
- E. Upon acceptance of the breakdown of the contract price by the Engineer, it shall be used as the basis for all requests for payment.

2.2 PRODUCT DATA

- A. Product Data: Action Submittal: Submit to Engineer for review for assessing conformance with information given and design concept expressed in Contract Documents. Submitted data shall be sufficient in detail for determination of compliance with the Contract Documents.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
 - 1. Note submittal will be returned to Contractor without review of submittal if products, models, options, and other data are not clearly marked or identified.
- C. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. After review, produce copies and distribute according to Paragraph 1.5.M and for record documents.

2.3 SHOP DRAWINGS

- A. Shop Drawings: Action Submittal: Submit to Engineer for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer licensed in the state of Project responsible for designing components shown on Shop Drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. All dimensioned shop drawings shall be scalable and provided as full-sized (22-inch x 34-inch) sheets. PDF electronic files shall print as scalable full-sized sheets.
- E. After review, produce copies and distribute according to Paragraph 1.5.M and for record documents.

2.4 SAMPLES

- A. Samples: Action Submittal: Submit to Engineer for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Samples for Selection as Specified in Product Sections:
 - 1. Submit to Engineer for aesthetic, color, and finish selection.
 - 2. Submit Samples of finishes, textures, and patterns for Owner selection.
- C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- D. Include identification on each Sample, with full Project information.
- E. Submit number of Samples specified in individual Specification Sections; Engineer will retain one Sample.
- F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.
- G. Samples will not be used for testing purposes unless specifically stated in Specification Section.
- H. After review, produce copies and distribute according to Paragraph 1.5.M and for record documents.

2.5 DESIGN DATA

- A. Informational Submittal: Submit data for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

2.6 TEST REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge and records as Contract administrator or for Owner.
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

2.7 CERTIFICATES

- A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product but must be acceptable to Engineer.

2.8 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Engineer in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

2.9 MANUFACTURER'S FIELD REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge and records as Contract administrator or for Owner.
- B. Submit report within 48 hours of observation to Engineer for information.
- C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

2.10 OPERATION AND MAINTENANCE (O&M) INSTRUCTIONS

- A. Submit preliminary O&M materials for review by Engineer. The equipment manufacturer may furnish instruction manuals prepared specifically for the equipment furnished or standard manuals may be used if statements like "if your equipment has this accessory..." or listings of equipment not furnished are eliminated. O&M materials will be returned to the Contractor for resubmittal if the O&M materials do not clearly indicate what specific equipment was furnished and all items not provided being clearly crossed out. Poorly reproduced copies are not acceptable. Operation and maintenance instructions shall contain the following as a minimum:
 - 1. Reviewed shop drawings and submittal data;
 - 2. Model, type, size, and serial numbers of equipment furnished;

3. Equipment and driver nameplate data;
 4. List of parts showing replacement numbers;
 5. Recommended list of spare parts;
 6. Complete operating instructions including start-up, shutdown, adjustments, cleaning, etc.;
 7. Maintenance and repair requirements including frequency and detailed instructions; and
 8. Name, address and phone numbers of local representative and authorized repair service.
- B. Following review of the preliminary O&M materials by the Engineer and before acceptance of the Work, submit four copies of complete final operation and maintenance instructions for all equipment supplied. Submit items in 8-1/2 x 11-inch heavy-duty three-ring binders when appropriate, or in 8-1/2 x 11-inch file folders. All binders and folders shall have clear plastic pockets on the front of the cover and the spine to allow for insertion of identifying information.

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 45 00 - QUALITY CONTROL

PART 1 GENERAL

1.1 DESCRIPTION

- A. This Section covers quality control requirements supplementary to those of the General Conditions and Technical Specifications.

1.2 PROVISIONS

- A. Contractor's Responsibility for Testing

The CONTRACTOR shall be responsible for the cost of all testing as specified in this section. Additional information has been provided regarding the payment responsibility for the OWNER with regards to the Project.

- B. OWNER's Right to Perform Additional Tests

The OWNER or ENGINEER reserves the right to complete additional testing. In such cases, the CONTRACTOR shall provide safe access for the OWNER or ENGINEER and their inspectors to adequately inspect the quality of work and the conformance with project specifications.

1.3 QUALITY ASSURANCE

- A. Testing Requirements

An independently owned and operated laboratory approved by the ENGINEER shall perform all testing as specified herein.

- B. Testing

1. General

- a. All required testing of work and/or materials shall be conducted in the presence of the ENGINEER. The CONTRACTOR shall provide 48-hour notification to the OWNER and OWNER's REPRESENTATIVE prior to conducting any and all quality assurance testing. Where applicable, work and materials shall only be buried with the consent of the ENGINEER.
- b. Where such inspection and testing are to be conducted by an independent laboratory or agency, the sample or samples of material to be tested shall be selected by such laboratory or agency or by the ENGINEER. The CONTRACTOR shall furnish such samples of all materials without charge to OWNER.

- c. The results from any and all tests are made for the information of the OWNER. Regardless of any test results, the CONTRACTOR is solely responsible for the quality of workmanship and materials and for compliance with the requirements of the Drawings and Specifications.

2. Costs of Testing

- a. The CONTRACTOR shall be responsible for and shall pay for all tests as specified in Part 3 of this Section. Additional information has been provided regarding the payment responsibility for the OWNER with regards to the Project.
- b. With regards to all materials to be tested, where test results demonstrate that the material or workmanship does not meet the minimum requirements of the Contract Documents, additional testing shall be completed and shall be paid for by the CONTRACTOR with no reimbursement by the OWNER.

1.4 SPECIAL INSPECTIONS

Special inspections and testing as required by Chapter 17 of the IBC shall be conducted by OWNER-retained Special Inspectors and Testing Agencies as required and as indicated in the Contract Documents.

A. Special Inspectors and Testing Agencies Responsibilities

- 1. Verify that manufacturers maintain detailed fabrication and quality control procedures and review the completeness and adequacy of those procedures to perform the Work.
- 2. Promptly notify OWNER and CONTRACTOR of irregularities and deficiencies observed in the Work during performance of their services.
- 3. Submit certified written report of each test, inspection and similar quality control service to OWNER, CONTRACTOR and jurisdictional authorities. Interpret test results and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- 4. Submit final report of special inspections at Substantial Completion, including a list of unresolved deficiencies.
- 5. Re-test and re-inspect corrected work.

B. CONTRACTOR'S Responsibilities

- 1. Provide quality requirements to all subcontractors and enforce all requirements.

2. Notify OWNER, ENGINEER, Special Inspectors and Testing Agencies at least 48 hours in advance of time when Work that requires testing or special inspecting will be performed, unless otherwise indicated in the Contract Documents.
3. Pay for any CONTRACTOR requested testing and inspecting not required by the Contract Documents.
4. Pay for any re-testing or re-inspections by Special Inspectors and Testing Agencies for replacement work resulting from work that failed to comply with the Contract Documents. OWNER will deduct such costs from the Contract Price.
5. Submit copies of licenses, certifications, correspondence, records and similar documents used to establish compliance with standards and regulations that pertain to performance of the Work to the OWNER, ENGINEER and Special Inspectors.
6. Where Special Inspection requires pre-construction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - a. Provide test specimens representative of proposed products and construction in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - b. Provide information on configurations of test assemblies, testing procedures and laboratory test records to adequately demonstrate capability of products to comply with performance requirements.
7. Cooperate with Agencies performing required tests, special inspections, and similar quality control services. Notify Agencies in advance of operations to permit assignment of personnel. Provide the following:
 - a. Access to the Work.
 - b. Incidental labor, equipment, and materials necessary to facilitate tests and special inspections.
 - c. Adequate quantities of representative samples of materials that require testing and inspecting. Assist Agencies in obtaining samples.
 - d. Provide facilities for storage and field curing of test samples.
 - e. Deliver samples to Testing Agencies.

8. Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and special inspecting.
9. Schedule times for tests, special inspections, obtaining samples, and similar activities. Distribute schedule to OWNER, ENGINEER, Special Inspectors, Testing Agencies, and each party involved in portions of the work where tests and special inspections are required.

1.5 SUBMITTALS

A. Laboratory Test or Inspection Reports

Each report shall be signed and certified by the independently owned and operated testing laboratory. Unless otherwise specified, submit three copies of each report to the OWNER or OWNER's REPRESENTATIVE.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 FIELD TESTING SCHEDULE

- A. The CONTRACTOR shall complete field testing in accordance with the following schedule. Additional source material testing shall be completed as necessary to establish the basis of field tests. The frequency of testing listed in this schedule lists the minimum number of tests per quantity of work completed by the CONTRACTOR. Testing locations to be determined by the ENGINEER.

Material to be Tested	Payment Responsibility	Minimum Testing Frequency
Concrete	OWNER	As required when placed. See detailed requirements in Article 3.12, Concrete Tests of Section 03 11 00, Concrete Work.

END OF SECTION

SECTION 01 75 16 - TESTING, TRAINING, AND SYSTEM START-UP

GENERAL

1.1 SCOPE

This section specifies equipment and system testing and start-up, services of manufacturer's representatives, training of OWNER's personnel, and final testing requirements for the complete facility.

1.2 CONTRACT REQUIREMENTS

- A. Testing, training, and start-up are requisite to the satisfactory completion of the Contract.
- B. Complete all testing, training, and start-up within the Contract Time(s).
- C. Furnish all necessary labor, power, chemicals, tools, equipment, instruments, and services required for and incidental to completing functional testing, performance testing, and operational testing.
- D. Provide competent, experienced technical representatives of equipment manufacturers for assembly, installation, testing, and operator training.

1.3 START-UP PLAN

- A. Submit start-up plan for each piece of equipment and each system not less than 2 weeks prior to planned initial equipment or system start-up.
- B. Provide detailed Start-up Progress Schedule with the following activities identified:
 - 1. Manufacturer's services
 - 2. Installation certifications
 - 3. Operator training
 - 4. Submission of operation and maintenance manual
 - 5. Functional testing
 - 6. Performance testing
 - 7. Operational testing
- C. Provide testing plan with test logs for each item of equipment and/or system. Include testing of alarms, control circuits, capacities, speeds, flows, pressures, vibrations, sound levels, and other parameters.
- D. Provide summary of shutdown requirements for existing systems if required, which are necessary to complete start-up of new equipment and systems.

- E. Revise and update start-up plan based upon review comments, actual progress, or to accommodate changes in the sequence of activities.

1.4 GENERAL START-UP AND TESTING PROCEDURES

A. Mechanical Systems:

1. Remove rust preventatives and oils applied to protect equipment during construction.
2. Flush lubrication systems and dispose of flushing oils. Recharge lubrication system with lubricant recommended by manufacturer.
3. Flush fuel system and provide fuel for testing and start-up.
4. Install and adjust packing, mechanical seals, O-rings, and other seals. Replace defective seals.
5. Remove temporary supports, bracing, or other foreign objects installed to prevent damage during shipment, storage, and erection.
6. Check rotating machinery for correct direction of rotation and for freedom of moving parts before connecting driver.
7. Perform cold alignment and hot alignment to manufacturer's tolerances.
8. Adjust V-belt tension and variable pitch sheaves.
9. Inspect hand and motorized valves for proper adjustment. Tighten packing glands to ensure no leakage but permit valve stems to rotate without galling. Verify valve seats are positioned for proper flow direction.
10. Tighten leaking flanges or replace flange gasket. Inspect screwed joints for leakage.
11. Install gratings, safety chains, handrails, shaft guards, and sidewalks prior to operational testing.

B. Electrical Systems

1. Perform insulation resistance tests on wiring except 120-volt lighting, wiring, and control wiring inside electrical panels.
2. Perform continuity tests on grounding systems.
3. Test and set switchgear and circuit breaker relays for proper operation.

4. Perform direct current high potential tests on all cables that will operate at more than 2,000 volts. Obtain services of independent testing lab to perform tests.
5. Check motors for actual full load amperage draw. Compare to nameplate value.

C. Instrumentation Systems

1. Bench or field calibrate instruments and make required adjustments and control point settings.
2. Leak test pneumatic controls and instrument air piping.
3. Energize transmitting and control signal systems, verify proper operation, ranges, and settings.

1.5 FUNCTIONAL TESTING

- A. Functionally test mechanical and electrical equipment for proper operation after general start-up and testing tasks have been completed.
- B. Demonstrate proper rotation, alignment, speed, flow, pressure, vibration, sound level, adjustments, and calibration. Perform initial checks in the presence of and with the assistance of the manufacturer's representative.
- C. Demonstrate proper operation of each instrument loop function including alarms, local and remote controls, instrumentation, and other equipment functions. Generate signals with test equipment to simulate operating conditions in each control mode.
- D. Conduct continuous 8-hour test under full load conditions. Replace parts which operate improperly.

1.6 CERTIFICATE OF PROPER INSTALLATION

- A. At completion of functional testing, furnish written report prepared and signed by manufacturer's authorized representative, certifying equipment:
 1. Has been properly installed, aligned, adjusted, and lubricated.
 2. Is free of any stresses imposed by connecting piping or anchor bolts.
 3. Is suitable for satisfactory full-time operation under full load conditions.
 4. Operates within the allowable limits for vibration.
 5. Controls, protective devices, instrumentation, and control panels furnished as part of the equipment package are properly installed, calibrated, and functioning.

6. Control logic for start-up, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly functioning.
- B. Furnish written report prepared and signed by the electrical and/or instrumentation subcontractor certifying:
 1. Motor control logic that resides in motor control centers, control panels, and circuit boards furnished by the electrical and/or instrumentation subcontractor has been calibrated and tested and is properly operating.
 2. Control logic for equipment start-up, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating.
- C. Co-sign the reports along with the manufacturer's representative and subcontractors.

1.7 TRAINING OF OWNER'S PERSONNEL

- A. Provide operations and maintenance training for items of mechanical, electrical, and instrumentation equipment. Utilize manufacturer's representatives to conduct training sessions.
- B. Coordinate training schedule with City staff. Coordinate training sessions to prevent overlapping sessions. Arrange sessions so that individual operators and maintenance technicians do not attend more than two sessions per week.
- C. Provide Operation and Maintenance Manual for specific pieces of equipment or systems 2 weeks prior to training session for that piece of equipment or system.
- D. Satisfactorily complete functional testing before beginning operator training.
- E. The OWNER may videotape the training for later use with the OWNER's personnel.

1.8 OPERATIONAL TESTING

- A. Conduct operational test of the entire facility after completion of operator training. Demonstrate satisfactory operation of equipment and systems in actual operation.
- B. Conduct operational test for continuous 7-day period.
- C. Owner will provide operations personnel, power, fuel, and other consumables for duration of test.
- D. Immediately correct defects in material, workmanship, or equipment which became evident during operational test.
- E. Repeat operational test when malfunctions or deficiencies cause shutdown or partial operation of the facility or results in performance that is less than specified.

1.9 RECORD KEEPING

- A. Maintain and submit to ENGINEER the following records generated during start-up and testing phase of project:
1. Daily logs of equipment testing identifying all tests conducted and outcome.
 2. Logs of time spent by manufacturer's representatives performing services on the job site.
 3. Equipment lubrication records.
 4. Electrical phase, voltage, and amperage measurements.
 5. Insulation resistance measurements.
 6. Pump torsional and lateral vibration analysis report.
 7. Data sheets of control loop testing including testing and calibration of instrumentation devices and set points.

END OF SECTION

SECTION 02 41 00 - DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of existing facilities.
 - 2. Abandoning and removing utilities.
 - 3. Not Included

1.2 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Submit to Engineer a copy of written permission of private property owners, with copy of fill permit for said private property, as may be required for disposal of materials.

1.3 QUALITY ASSURANCE

- A. Existing Conditions: Determine the extent of work required and limitations before proceeding with Work.
- B. Conform to applicable local, state, and federal codes for environmental requirements in relation to disposal of debris.
 - 1. Burning at the Site for the disposal of refuse, debris, and waste materials resulting from demolition and site clearing operations shall not be permitted.
- C. Permits: The Contractor is responsible for obtaining all necessary permits required for completion of the Work described in this Section.
- D. Protection of Persons and Property: Meet all federal, state, and local safety requirements for the protection of workmen, other persons, and property in the vicinity of the Work and requirements of the General Provisions.
- E. If the existing material to be demolished and removed contains any hazardous materials which will require special handling upon removal, such as asbestos or lead, it is the responsibility of the Contractor to remove and dispose of the material in accordance with all applicable federal, state and local regulations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Existing Materials: All materials, equipment, miscellaneous items, and debris involved, occurring, or resulting from demolition, clearing, and grubbing work shall become the property of the Contractor at the place of origin, except as otherwise indicated in the Drawings or Specifications.

PART 3 EXECUTION

3.1 EXAMINATION

- A. The Owner assumes no responsibility for the actual condition of the facilities to be demolished. The Contractor shall visit the site, inspect all facilities and be familiar with all existing conditions and utilities.
- B. Demolition drawings identify major equipment and structures to be demolished only. Auxiliary utilities such as water, air, chemicals, drainage, lubrication oil, hydraulic power fluid, electrical wiring, controls, and instrumentation are not necessarily shown shall be considered incidental to all demolition work.
- C. Identify waste and salvage areas for placing removed materials.

3.2 PREPARATION

- A. Carefully coordinate the work of this Section with all other work and construction.
- B. Call Local Utility Line Information service Colorado 811 not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
 - 2. Disconnect or arrange for disconnection of utilities (if any) affected by required work.
 - 3. Keep all active utilities intact and in continuous operations.

3.3 PROTECTION

- A. Utilities: Locate, identify, and protect utilities located by utilities and indicated in the Drawings to remain from damage.
- B. Survey control: Protect benchmarks, survey control points, and existing structures from damage or displacement.

- C. Miscellaneous Site Features: Protect all existing miscellaneous site features from damage by excavating equipment and vehicular traffic, including but not limited to existing structures, fences, mailboxes, sidewalks, paving, guy wires, utility poles, and curbs.
- D. Repair and Replacement:
 - 1. Damaged items, including but not restricted to those noted above, shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of Work of this contract.
 - 2. Any damage to existing facilities or utilities to remain as caused by the Contractor's operations shall be repaired at the Contractor's expense.

3.4 DEMOLITION

- A. Carefully consider all bearing loads and capacities for placement of equipment and material on site. In the event of any questions as to whether an area to be loaded has adequate bearing capacity, consult with Engineer prior to the placement of such equipment or material.
- B. Demolition of Existing Structures:
 - 1. Excavate around existing structures as required to perform demolition operations and to plug associated existing pipelines where shown in the Drawing.
 - 2. Provide shoring, bracing, and supports, as required, to ensure adjacent structures are not damaged and structural elements of existing structure are not overloaded during demolition activities.
 - a. Increase structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this Contract.
 - b. Remove all temporary protection when the Work is complete or when so authorized by the Engineer.
 - 3. Any floors that are to remain in place shall be completely cracked through to allow for drainage. Cracking shall be accomplished by dropping a demolition ball or by other methods approved by the Engineer.
 - 4. Remove and dispose of all exposed and/or protruding metalwork, piping, plumbing, and conduits resulting from demolition activities, and all woodwork, roofing, and electrical and mechanical equipment removed from demolished structures.

- a. Reinforcing bars shall be cut flush with final wall elevations as shown in the Drawings.
- b. No detached metalwork, excluding concrete reinforcing bars, shall be buried with the concrete and masonry rubble.

C. Backfill at Demolished Structures:

- 1. For structures designated to be abandoned and/or demolished in place, concrete and/or masonry rubble and excavated soils resulting from demolition activities shall be used for backfill or placed in the bottoms of said structures only as directed by the Engineer.
- 2. Concrete and masonry rubble used for backfilling shall be broken into pieces no larger than 12 inches on any one side.
- 3. Materials resulting from abandonment/demolition activities approved for backfill shall be combined with imported filler sand to create a dense, compacted backfill.
- 4. Backfilling or placement of the excavated material in the structures shall meet the following requirements.
 - a. Furnish, place and compact filler sand along with the concrete and masonry rubble so that all voids are filled and a dense, compacted backfill is obtained.
 - b. Filler sand shall be placed in horizontal layers completely filling all voids between pieces of rubble and not exceeding 12 inches in thickness.
 - c. Each layer of filler sand shall be compacted to obtain at least 90 percent of maximum density as determined by ASTM Method D-698-78 (AASHTO T-99).
 - d. Water shall be furnished by the Contractor and added to each layer as required to maintain optimum moisture content.
 - e. The amount of filler sand used shall only be the amount needed to fill all voids created by placement of the concrete and asphalt rubble, as directed by the Engineer.
 - f. At locations where concrete and masonry rubble are used for backfill, they shall be placed such that a minimum of 3 feet of compacted non-rubble backfill material (crushed rock) exists between any rubble and finished grade. Protruding reinforcing bars shall be cut to lengths that allow granular backfill to be placed and compacted to required levels in and above the rubble.
- 5. Disposal of all materials not used for backfill shall be performed off-site and in compliance with applicable local, state, and federal codes and requirements.

- 6. In areas where new construction will take place, no trace of these structures shall remain prior to placing of backfill.
- D. Backfilling within the footprint of new structures with rubble material resulting from demolition activities will not be allowed.
- E. All existing improvements designated in the Drawings or specified to be removed, including but not limited to structures, pipelines, walls, footings, foundations, slabs, pavements, curbs, fencing, and similar structures occurring above, at, or below existing ground surface shall be included in the demolition work.
- F. Unless otherwise specified, any resulting voids shall be backfilled with suitable excavated or imported material compacted to the density of the adjacent soil.

3.5 REMOVAL

- A. Remove debris, rock, excavated materials, rubble, abandoned piping, and extracted plant life resulting from abandonment and/or demolition activities from site.
- B. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- C. Removal: All material resulting from demolition, clearing, and grubbing, and trimming operations shall be removed from the project site and disposed of in a lawful manner. Materials placed on property of private property owners shall be by written permission only.

3.6 GRADING

- A. Not used.

3.7 CLEANUP:

- A. During and upon completion of work, promptly remove all unused tools and equipment, surplus materials, debris, and dust and shall leave all areas affected by the work in a clean, condition, as may be subject to Engineer approval.
- B. Adjacent structures shall be cleaned of dust, dirt, and debris resulting from demolition.
- C. Adjacent areas shall be returned to their existing condition prior to the start of work.

END OF SECTION

SECTION 03 11 00 - CONCRETE WORK

PART 1 GENERAL

1.1 SUMMARY

- A. The extent of concrete work is shown on the Drawings.
- B. Work includes providing formwork and shoring for cast-in-place concrete and installation into formwork of items such as reinforcing steel bar (rebar), anchor bolts, setting plates, bearing plates, anchorages, inserts, reveals, frames, nosings, sleeves and other items to be embedded in concrete.

1.2 QUALITY ASSURANCE

A. Codes and Standards

Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified here:

ACI 301 "Specifications for Structural Concrete for Buildings"

ACI 311 "Recommended Practice for Concrete Inspection"

ACI 318 "Building Code Requirements for Reinforced Concrete"

ACI 347 "Recommended Practice for Concrete Formwork"

ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete"

Concrete Reinforcing Steel Institute, "Manual of Standard Practice"

Comply with building code requirements which are more stringent than the above and all Occupational Safety and Health Administration (OSHA) requirements.

B. ASTM International (ASTM)

- 1. C31, Making and Curing Concrete Test Specimens in the Field
- 2. C33, Specification for Concrete Aggregate
- 3. C39, Compressive Strength of Cylindrical Concrete Specimens
- 4. C40, Organic Impurities in Fine Aggregate for Concrete
- 5. C85, Cement Content of Hardened Portland Cement Concrete
- 6. C88, Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate
- 7. C94, Standard Specifications for Ready-Mixed Concrete

8. C131, Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
9. C136, Method for Sieve Analysis to Fine and Coarse Aggregate
10. C143, Slump of Portland Cement Concrete
11. C150, Standard Specification for Portland Cement
12. C156, Water Retention by Concrete Curing Materials
13. C173, Air Content of Freshly Mixed Concrete by the Volumetric Method
14. C231, Air Content of Freshly Mixed Concrete by the Pressure Method
15. C233, Standard Method of Testing Air-Entraining Admixtures for Concrete
16. C260, Standard Specifications for Air-Entraining Admixtures for Concrete
17. C289, Standard Test Method for Potential Reactivity of Aggregates (Chemical Method)
18. C441, Standard Test Method for Effectiveness of Mineral Admixtures in Preventing Excessive Expansion of Concrete Due to the Alkali-Aggregate Reaction
19. C457, Microscopical Determination of Air-Void Content and Parameters of the Air-Void System in Hardened Concrete
20. C494, Standard Specifications for Chemical Admixtures for Concrete
21. C670, Preparing Precision Statements for Test Methods for Construction Materials
22. C803, Penetration Resistance of Hardened Concrete

C. Workmanship

The Contractor is responsible for correction of concrete work that does not conform to the specified requirements, including strength, tolerances, and finishes. Correct deficient concrete as directed by the Engineer. The Contractor shall also be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.

D. Concrete Testing Service

Owner or a representative of the Owner will engage a special inspector/testing laboratory to perform material evaluation tests and to design concrete mixes. See detailed requirements in Part 3.14 "Quality Control Testing during Construction". Per the Owner or Engineer's requirements the Contractor shall notify the designated representative to schedule the special inspections and materials testing required by the Project documents. Coordinate with Owner prior to testing for specific requirements.

E. Testing Requirements

Materials and installed work may require testing and retesting, as directed by the Engineer, at any time during the progress of the work. Allow free access to material stockpiles and facilities

at all times. All testing, including the retesting of rejected materials and installed work shall be done at the Contractor's expense.

F. Tests for Concrete Materials

1. Test aggregates by the methods of sampling and testing of ASTM C33.
2. For Portland cement, sample the cement and determine the properties by the methods of test of ASTM C150.
3. Submit written reports to the Engineer, for each material sampled and tested prior to the start of work. Provide the Project identification name and number, date of report, name of Contractor, name of concrete testing service, source of concrete aggregates, Material Manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use.
4. Certificates of material properties and compliance with specified requirements may be submitted in lieu of testing. The materials producer and the Contractor must sign certificates of compliance.

G. Allowable Tolerances:

1. Construct formwork to provide completed cast-in-place concrete surfaces complying with the tolerances specified in ACI 347, and as follows:
 - a. Variation from plumb in lines and surfaces of columns, piers, walls and rises; 1/4-inch per 10 feet, but not more than 1-inch. For exposed corner columns, control joint grooves, and other conspicuous lines, 1/4-inch in any bay or 20 feet maximum; 1/2-inch maximum in 40 feet or more.
 - b. Variation from level or grade in slab soffits, ceilings, beam soffits, and rises 1/4-inch in 10 feet, 3/8-inch in any bay or 20 feet maximum, and 3/4-inch in 40 feet or more. For exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, 1/4-inch in any bay or 20 feet maximum and 1/2-inch in 40 feet or more.
 - c. Variation from position of the linear lines and related columns, walls, and partitions, 1/2-inch in any bay or 20 feet maximum, and 1-inch in 40 feet or more.
 - d. Variation in sizes and locations of sleeves, floor openings, and wall openings, 1/4-inch.
 - e. Variation in cross-sectional dimensions of columns and beams and thickness of slabs and walls, minus 1/4-inch and plus 1/2-inch.
 - f. Variations in footing plan dimensions, minus 1/2-inch and plus 2 inches; misplacement or eccentricity, 2 percent of the footing width in direction of misplacement but not more than 2 inches; thickness reduction, minus 5 percent.
 - g. Variation in steps - In a flight of stairs, 1/8-inch for rise and 1/4-inch for treads; in consecutive steps, 1/16-inch for rise and 1/8-inch for treads.

- h. Circular structures shall be constructed in a true circular form, with maximum variation of 1/4-inch from the dimensions shown on the plans.
 - 2. Before concrete placement check the lines and levels of erected formwork. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems.
 - 3. During concrete placement check formwork and related supports to ensure that forms are not displaced, and that completed work will be within specified tolerances.
- H. Quality Control Testing During Construction

See Section 3 - Execution.

1.3 SUBMITTALS

- A. For information only, submit six copies of Manufacturer's data with application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, water stops, joint systems, chemical floor hardeners, dry-shake finish materials, and others. Bind and submit in one submittal.
- B. Submit shop drawings for fabrication, bending and placement of concrete reinforcement. Comply with the ACE 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangements of concrete reinforcement. Include special reinforcement required at openings through concrete structures.
- C. Submit shop drawings for fabrication and erection of specific finished concrete surfaces as shown or specified. Show the general construction of forms including jointing, special formed joints or reveals, location and pattern of form tie placement, and other items which affect the exposed concrete visually. Submit form drawings for building columns, walls, fascias, and intersections, and concrete pan and joist system. Submit for typical sections only. Engineer's review is for general architectural applications and features only. Design of formwork for structural stability and efficiency is the Contractor's responsibility.
- D. Submit six copies of laboratory test reports for concrete materials and mix design tests as specified.
- E. Material Certificates may be provided in lieu of materials laboratory test reports. The Material Manufacturer and the Contractor, certifying that each material item complies with, or exceeds, the specified requirements shall sign material certificates.

1.4 CONCRETE MIX DESIGNS

- A. All concrete materials shall be proportioned so as to produce a workable mixture in which the water content will not exceed the maximum specified.
- B. If the concrete mix designs specified herein have not been used previously by the ready-mix supplier or if directed by the Engineer, mix proportions and concrete strength curves for regular cylinder tests, based on the relationship of 7-, 14- and 28-day strengths versus slump values of 2, 4, and 6 inches, all conforming to these Specifications, shall be established by an

approved ready-mix supplier or an independent testing laboratory. A laboratory, independent of the ready-mix supplier, shall be required to prepare and test all concrete cylinders. The costs for preparation of mix designs (if required by the Owner to be performed by an independent testing laboratory) and testing of concrete and materials shall be borne by the Owner, except when materials do not meet specified requirements, in which case such costs shall be borne by the Contractor.

- C. The exact proportions by weight of all materials entering into the concrete delivered to the jobsite shall conform to the approved mix design unless specifically so directed by the Engineer or Laboratory for improved specified strength or desired density, uniformity and workability.
- D. The proportions of such mix design shall be based on a full cubic yard of hardened concrete.
- E. Ready-mix companies or jobsite batch plants shall furnish delivery tickets, signed by a Certified Weighmaster, on which each shall state the weight of aggregates, sand, cement, admixtures and water, and the number of cubic yards of concrete furnished, which will be compared against the approved mix design.
- F. There shall be no variation in the weights and proportions of materials from the approved mix design.
- G. There shall be no variation in the quality and source of materials once they have been approved for the specific mix design.

1.5 READY-MIXED CONCRETE

Ready-mixed concrete shall conform to the requirements of ACI 301 and ASTM C 94. In case of conflict, ACI 301 shall govern.

1.6 SAMPLE

Contractor shall pour and finish one 2-foot square exposed aggregate concrete sample for Engineer's approval prior to construction if exposed aggregate is included on job.

1.7 JOB CONDITIONS

Maintain continuous traffic control and access for vehicular and pedestrian traffic as required for other construction activities as well as to adjoining facilities for regular operation. Utilize flagmen, barricades, warning signs and warning lights as required, to maintain a safe entrance and passage on all roads or drives abutting the Project.

PART 2 PRODUCTS

2.1 WALL FORMS

- A. Full Height Pours: The wall form design shall be such that wall sections can be poured full height without creating horizontal cold joints and without causing snapping of form ties which shall be of sufficient strength and number to prevent spreading of the forms during the placement of concrete and which shall permit ready removal of the forms without spalling or damaging the concrete.

B. Wall Form Ties

1. Form ties which remain in the wall of a subgrade water-retaining structure shall have waterstops and a 1-inch minimum break back or cone depth.
2. Snap ties, if used, shall not be broken until the concrete has reached the design concrete strength. Snap ties, designed so that the ends must be broken off before the forms can be removed, shall not be used. The use of tie wires as form ties will not be permitted. Fully threaded stub bolts may be used in lieu of smooth ties with waterstops.
3. Taper ties with plastic or rubber plugs of an approved and proven design may also be used. The plugs must be driven into the hole with a steel rod, placed in a cylindrical recess made therefore in the plug. At no time shall plugs be driven on the flat area outside the cylindrical recess. Plugs shall be **[A-58 SURE PLUG as manufactured by DAYTON SUPERIOR, Santa Fe Springs, CA; phone: (714) 522-3442]**.
4. Ties shall positively secure the wall to the required dimension and hold the wall to that dimension prior to and during concrete placement.

C. Wall Form Stiffeners

1. Horizontal walers shall consist of structural steel channels, angles, or tubing of adequate size to retain the concrete without deflecting.
2. The walers shall be rolled or welded to the proper radii or offset brackets shall be used for shaping the wall to the dimensions shown on the Drawings and shall be used both for inside and outside wall forms in direct contact with the wall panels and at vertical spacings of no more than 96 inches on center.
3. There shall be at least one such waler within 24 inches of the top and bottom of the wall.
4. The largest dimension of the steel waler shall be in the radial direction.
5. Vertical structural steel or wood members shall be used at a minimum horizontal spacing of 74 inches and shall have sufficient rigidity and strength to insure the proper vertical alignments with the aid of braces under all predictable stress conditions.
6. In lieu of the above, a different system and spacings may be used if it is satisfactorily demonstrated to the Engineer that it will be equally effective.

2.2 FORMS FOR EXPOSED FINISH CONCRETE

Unless otherwise shown or specified, construct all formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood-faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Finish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection. Use overlaid plywood complying with U.S. Product Standard PS-1 "B-B High Density Overlaid Concrete Form", Class I. Use flexible spring steel forms or laminated boards free of distortion and defects to form radius bends as required.

2.3 FORMS FOR UNEXPOSED FINISH CONCRETE

- A. Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

2.4 FORM MATERIALS

- A. Form Coatings

Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces requiring bond or adhesion, nor impede wetting of surfaces to be cured with water or curing compound. Petroleum based coatings shall not be used for structures in creeks and waterways. Biodegradable coatings shall be used which will not contaminate the creeks/waterways or an alternate method for stripping the form shall be proposed.

- B. Chamfers, Reveals, Drips

Provide preformed PVC or shaped wood or metal of size and profile as shown on drawings.

- C. Cylindrical Columns and Supports

Form round-section members with paper or fiber tubes, constructed of laminated plies using water-resistant type adhesive with wax-impregnated exterior for weather and moisture protection. Provide units with sufficient wall thickness to resist loads imposed by wet concrete without deformation. Provide units having "seamless" interior to minimize spiral gaps or seams.

- D. Pan Forms

Provide forms for concrete pan-type construction complete with covers and end enclosures to form a true, clean, smooth concrete surface. Design units for easy removal without damaging placed concrete. Block adjoining pan units if required to avoid lateral deflection of formwork during concrete placement and compaction. Provide standard or tapered end forms, as shown.

If required, factory-fabricate pan form units to required sizes and shapes of the following:

1. Steel – 16-gauge minimum, free of dents, irregularities, sag, and rust, or
2. Glass-Fiber Reinforced Plastic - Molded under pressure with matched dies, 0.11 inches minimum wall thickness.

- E. Inserts

Provide metal inserts for anchorage of materials or equipment to concrete construction, not supplied by other trades and as required for the work. Provide "Parabolt" by the Molly Company, "Phillips Red-Head", or "Burke" products. The Contractor is responsible for ensuring that all required anchorage not specified in the Project documents is installed per current building code and applicable ICC report requirements.

2.5 REINFORCING MATERIALS

- A. Reinforcing Bar (rebar): ASTM A615 and as follows below>

Stirrups and Ties Grade 60 (Grade 40 may be used for #3 and smaller)

All other Uses Grade 60

- B. Steel Wire: ASTM A82, plain, cold-drawn, steel.

- C. Welded Wire Fabric (WWF): ASTM A185, welded steel wire fabric.

- D. Supports for Reinforcement

Provide supports for reinforcement including bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars, and welded wire fabric in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise specified. Wood, brick, concrete blocks, and other devices will not be acceptable. For slabs-on-grade, use supports with sand plates or horizontal runners where wetted base materials will not support chair legs. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs that are hot-dip galvanized, after fabrication, or plastic protected or stainless steel protected.

- E. Fiber Reinforcement – Collated polypropylene fiber, 3/4-inch, manufactured from 100 percent virgin homopolymer polypropylene, hydrophobic, in compliance with ASTM C116.

2.6 CONCRETE MATERIALS

- A. Portland Cement

ASTM C150, Type II, unless otherwise acceptable to Engineer. Use only one brand of cement throughout the Project, unless otherwise acceptable to the Engineer. The use of ground granulated blast furnace slag is not allowed.

- B. Aggregates

ASTM C33 and as herein specified. Provide aggregates from a single source for all exposed concrete.

Local aggregates not complying with ASTM C33, but which have shown by special test or actual service to produce concrete of adequate strength and durability, may be used when acceptable to the Engineer.

1. Fine Aggregate - Clean, sharp, natural sand free from loam, clay, lumps, or other deleterious substances. Dune sand, bank-run sand and manufactured sand are not acceptable.
2. Coarse Aggregate - Clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
 - a. Crushed stone processed from natural rock or stone.

- b. Washed gravel, either natural or crushed. Use of pit or bank run gravel is not permitted.
 - c. Maximum Aggregate Size - Not larger than one-fifth of the narrowest dimensions between sides of forms, one-third of the depth of slabs, nor three-fourths of the minimum clear space between individual reinforcing bars or bundles of bars.
- 3. These limitations may be waived if, in the judgment of the Engineer, workability and methods of consolidation are such that concrete can be placed without honeycomb or voids.
- 4. In general, it is desired that normal commercial mixes using 1-1/2-inch or 3/4-inch maximum aggregate size be used.
- 5. Aggregate for exposed aggregate concrete shall consist of selected aggregate of washed clean river gravel in color range of medium to dark in browns and grays; material uniformly sized 5/8-inch to 3/4-inch.
- C. Water: Clean, fresh, drinkable.
- D. Air Entraining Admixture: ASTM C260.
- E. Water-Reducing Admixture: ASTM C494, Type A.
- F. Set-Control Admixtures: ASTM C494, as follows:
 - 1. Type B, Retarding
 - 2. Type C, Accelerating
 - 3. Type D, Water-reducing and Retarding
 - 4. Type E, Water-reducing and Accelerating

Calcium chloride will not be permitted in concrete, unless otherwise authorized in writing by the Engineer.

2.7 RELATED MATERIALS

A. Waterstops

Provide flat, dumbbell type, or centerbulb type waterstops at construction joints and other joints as shown. Size to suit joints or as shown. Provide PVC waterstops complying with Corps of Engineer's CRD-C 572. Waterstops to be Greenstreak 701 or equal. Split face waterstops will not be acceptable under any circumstances.

B. Bituminous and Fiber Joint Filler

Provide resilient and non-extruding type pre-molded bituminous impregnated fiberboard units complying with ASTM D1751, FS HH-F-341, Type 1 and AASHTO M 213. Provide one of the following products:

- 1. Elastite; Philip Carey/Celotex

2. Flexcell; Celotex Corp.
 3. Crane Fiber 1390; W.R. Grace & Co.
 4. Fibre; W.R. Meadows, Inc.
 5. Tex-Lite; J & P Petroleum Prod. Inc.
 6. Sonoflex; Sonneborn/Contech, Inc.
- C. Joint Sealing Compound: See Section 07 92 00, Sealants and Caulking
- D. Moisture Barrier
- Provide moisture barrier cover over all prepared base material. Use only materials that are resistant to decay when tested in accordance with ASTM E154. The moisture barrier consists of heavy Kraft papers laminated together with glass fiber reinforcement and overcoated with black polyethylene on each side. Provide Moistop, St. Regis, or equal.
- E. Form Ties (for forms other than wall forms)
- Factory-fabricated, adjustable-length, removable or snap off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal. Unless otherwise shown, provide ties so portion remaining within concrete after removal is at least 1-1/2 inches inside concrete. Unless otherwise shown, provide form ties, which will not leave holes larger than 1-inch in diameter in concrete surface.
- F. Concrete Curing Materials
- Acrylic curing and sealing compound - Water emulsion acrylic curing and sealing compound formulated of acrylic polymers of water-based carrier. W.R. Meadows, Inc. VOCOMP-20 or equal.
- G. Epoxy Adhesive
- Provide Sikadur Hi-Mod (Sikastik 370) or Sikadur Hi-Mod Gel (Sikastix 390) for application to wire-brushed and prepared existing concrete to be mated to new concrete. Apply per Manufacturer's recommendations.
- H. Chemical-Hardener Finish: Provide Hornolith from Tamms Industries or equal.
- I. Non-slip Aggregate Finish
- Provide fused aluminum oxide grits, or crushed emery, as abrasive aggregate for non-slip finish with emery aggregate containing not less than 40 percent aluminum oxide and not less than 25 percent ferric oxide. Use material that is factory-graded, packaged, rustproof and non-glazing, and is unaffected by freezing, moisture and cleaning materials.
- J. Non-shrink Grout: See Section 03 60 00, Grouting.

2.8 PROPORTIONING NORMAL CONCRETE

- A. Proportion mixes by either laboratory trial batch or field experience methods, using materials to be employed on the Project for each class of concrete required, complying with ACI 211.1. All measurements shall be by weight. All concrete admixtures will either be by the same supplier to insure compatibility. If different suppliers are used, a memorandum from EACH admixture supplier will be provided stating the compatibility of their product with the other supplier's products.
- B. The slump shall be between 2 inches and 4 inches when tested in accordance with ASTM Specifications C 143. Variations in the slump range may be allowed by the Engineer if admixtures, such as water reducers or superplasticizers, are utilized in the concrete mix. Regardless of the measured slump, the maximum allowable water-cement ratios as specified here-in, shall be strictly adhered to.
- C. Compressive Strength, Water and Cement Content

Notwithstanding what has been stated here-before, and unless shown otherwise on the Drawings, the concrete shall meet the following requirements. All concrete except as noted otherwise on the drawings shall have 4,000 pounds per square inch (psi) 28-day compressive strength. The maximum water content per 94-pound sack of cement is 4.5 gallons. The minimum cement content for the 4,000-psi mix is 6.0 sacks (94-pound sack of cement per cubic yard of concrete). Up to a maximum of 15 percent of cementitious material may be fly ash in accordance with ASTM C618. The use ground granulated blast furnace slag is not allowed.

- D. Retarding Densifiers
 - 1. All concrete (as defined in 2.9 below) used for wall construction shall also contain DARATARD-17, as manufactured by Grace Const. Products, Cambridge, MA or MBL-82, as manufactured by Master Builders, Cleveland, OH in the amounts recommended by the Additive Manufacturer whenever the air temperature during the pour exceeds 85 degrees Fahrenheit (F).
 - 2. To be considered as equal, any alternate product offered for consideration shall contain no calcium chloride and shall be compatible with air-entrained cements and air-entraining admixtures conforming to the applicable ASTM, AASHTO, ANSI and Federal specifications.
 - 3. Contractor shall certify that admixtures do not contain calcium chlorides or other corrosive materials.
- E. Air-Entraining Agents
 - 1. All concrete that that is specified to be air entrained or that may be exposed to freeze/thaw action either during construction or the service life of the structure must be air entrained. Sufficient air-entraining agent shall be used to provide total air content of 5 percent, +/- 1 percent.
 - 2. Air-entraining agents shall meet ASTM C 260, ASTM C 233 and ASTM C 457.
 - 3. The maximum total volumetric air content of the concrete before placement shall be 6 percent plus or minus one percent as determined by ASTM C 173 or ASTM 231.

4. Subject to these Specifications, consideration will be given to the following products: PROTEX "AES," GRACE "DAREX AEA," MASTER BUILDERS "MB-AE10," or SIKA CHEMICAL "AER."

F. Water Reducing Admixtures

1. In addition to air-entrainment, approved water reducing additives, which do not affect the ultimate performance of any steel in any way, may be added to maintain the maximum water content below that specified herein. Water reducing additives shall conform to ASTM C 494, Type A or D.
2. The use of water reducing additives shall not permit a reduction in the minimum specified cement content or in the specified amount of air-entrainment.
3. Admixtures shall contain no calcium chloride, tri-ethanolamine or fly ash. All admixtures shall be from the same manufacturer.
4. Superplasticizers, if allowed by the Engineer, shall conform to ASTM C 494, Type F or G, batch plant added using second or third generation only.
5. Set control admixtures if allowed by the Engineer, shall conform to ASTM C 494, Type B (retarding) or Type C (accelerating).

- G. Fiber reinforcement admixture shall be included in the ready-mix concrete design used for filling and channeling the wet well chambers. Fibers shall be used in strict accordance with the Manufacturer's directions.

2.9 CONCRETE MIXING

Ready-Mix Concrete - Comply with the requirements of ASTM C94, and as herein specified. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required. When the air temperature is between 85 degrees F and 90 degrees F, reduce the mixing and delivery time from 1-1/2 hours to 75 minutes, and when the air temperature is above 90 degrees F, reduce the mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 FORMS

- A. Design, erect, support, brace, and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by the concrete structure. Construct formworks so concrete members and structures are of correct size, shape, alignment, elevation, and position.
- B. Design formworks to be readily removable without impact shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- C. Construct forms complying with ACI 347, to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required

in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.

- D. Fabricate forms for easy removal without hammering or prying against the concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.
- E. Erect falsework and support; brace and maintain it to safely support vertical, lateral, and asymmetrical loads applied until such loads can be supported by in-place concrete structures.

Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof. Provide trussed supports when adequate foundations for shores and struts cannot be secured.

Support form facing materials by structural members spaced sufficiently close to prevent deflection. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities and within allowable tolerances.

- F. Forms for Exposed Concrete

Drill forms to suit ties used and to prevent leakage of concrete mortar around tie holes. Do not splinter forms by driving ties through improperly prepared holes. Do not use metal cover plates for patching holes or defects in forms. Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back joints with extra studs or girts to maintain true, square intersections. Use extra studs, walers, and bracing to prevent bowing of forms between studs and to avoid bowed appearance in concrete. Do not use narrow strips of form material, which will produce bow. Assemble forms so they may be readily removed without damage to exposed concrete surfaces. Form molding shapes, recesses and projections with smooth-finish materials, and install in forms with sealed joints to prevent displacement.

Corner Treatment - Form exposed corners of beams and columns to produce square, smooth, solid, unbroken lines, except as otherwise indicated.

- G. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings of forms at inconspicuous locations.
- H. Chamfer exposed corners and edges, reveals and drips as shown using wood, metal, PVC or rubber strips fabricated to produce uniform smooth lines and tight edge joints.
- I. Provisions for Other Trades - Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such ties. Accurately place and securely support items built into forms.
- J. Cleaning and Tightening - Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms after concrete placement if required to eliminate mortar leaks.

3.2 PLACING REINFORCEMENT

Detail and place according to ACI Manual SP-66. Unless otherwise noted, minimum cover shall be 1-1/2 inches for No. 5 and smaller bars, 2 inches for No. 6 and larger bars and 3 inches when poured against earth. Unless otherwise noted, bend all horizontals reinforcing a minimum of 2 feet at corners and wall intersections.

- A. Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.
- B. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- C. Place reinforcement to obtain at least the minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces. Do not place reinforcing bars more than 2 inches beyond the last leg of continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- D. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh plus 2 inches, and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.3 JOINTS

- A. Construction Joints - Locate and install construction joints, which are not shown on the drawings, so as not to impair the strength and appearance of the structure, as acceptable to the Engineer.
- B. Place construction joints perpendicular to the main reinforcement. Continue all reinforcement across construction joints. Unless otherwise specified, reinforcement shall be lapped in accordance with ACI Standards.
- C. Waterstops - Provide waterstops in construction joints as shown on the drawings. Install waterstops to form a continuous diaphragm in each joint. Make provisions to support and protect waterstops during the progress of the work. Fabricate field joints in waterstops in accordance with Manufacturer's printed instructions. Protect waterstop material from damage where it protrudes from any joint.
- D. Isolation Joints in Slabs-on-Ground - Construct isolation joints in slabs-on-ground at all points of contact between slabs on ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.
- E. Control Joints in Slabs-on-Ground - Construct control joints in slabs-on-ground to form panels of patterns as shown. Use inserts 1/4-inch wide by one-fifth to one-fourth of the slab depth, unless otherwise shown.

1. Form control joints by inserting a pre-molded hardboard or fiberboard strip into the fresh concrete until the top surface of the strip is flush with the slab surface. After the concrete has cured, remove inserts and clean groove of loose debris.
2. Joint sealant material shall be as specified above.

3.4 INSTALLATION OF EMBEDDED ITEMS

- A. General - Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of the items to be attached thereto.
- B. Edge Forms and Screed Strips for Slabs - Set edge forms or bulkheads and intermediate screed strips for slabs to obtain the required elevations and contours in the finished slab surface. Provide and secure units sufficiently strong to support the types of screed strips by the use of strike-off templates or accepted compacting type screeds.
- C. Cast in Place Reglets - Place in straight and continuous lines as detailed to enable flashing to be applied continuously without deviation at reglet joints more than 1/8-inch. Miter corners for continuous reglet joint where outside corners occur. At inside corners extend one section 1-inch past corner. Adequately anchor or secure reglets per Manufacturer's instructions prior to pouring and during construction to insure dimensional tolerances and alignment. Vibrate concrete to insure concrete cover adjacent to and around reglet. Visually inspect after pour and patch as required.

3.5 PREPARATION OF FORM SURFACES

Coat the contact surfaces of forms with a form-coating compound before reinforcement is placed. Thin formcoating compounds only with thinning agent of type, and in amount, and under conditions of the Form-coating Compound Manufacturer's directions. Use dissipating-type form oil at surfaces to receive cement plaster finish. Do not allow excess form-coating material to accumulate in the forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with Manufacturer's instructions. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.6 CONCRETE PLACEMENT

- A. Pre-Placement Inspection
 1. Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts involved in ample time to permit the installation of their work; cooperate with other trades in setting such work as required. Notify Engineer in time for inspection prior to pouring.
 2. Thoroughly wet wood forms immediately before placing concrete, as required where form coatings are not used.
 3. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

4. Concrete Curbs and Paving - Do not place concrete until subbase is completed and approved by the Engineer as required to provide uniform dampened condition at the time concrete is placed. Moisten subbase as required to provide uniform dampened condition at the time concrete is placed.
- B. Place concrete in compliance with the practices and recommendations of ACI 304 and as herein specified.
1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as herein specified. Perform concrete placing at such a rate that concrete, which is being integrated, with fresh concrete is still plastic. Deposit concrete as nearly as practicable to its final location to avoid segregation due to re-handling or flowing. Do not subject concrete to any procedure, which will cause segregation.
 2. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming or grouting.
 3. Do not use concrete which becomes non-plastic and unworkable or does not meet the required quality control limits or which has been contaminated by foreign materials. Do not use re-tempered concrete. Remove rejected concrete from the Project Site and dispose of in an acceptable location. Do not use concrete whose allowable mixing time has been exceeded.
- C. Concrete Conveying
1. Handle concrete from the point of delivery and transfer to the concrete conveying equipment and to the locations of final deposit as rapidly as practicable by methods, which will prevent segregation and loss of concrete mix materials.
 2. Provide mechanical equipment for conveying concrete to ensure a continuous flow of concrete at the delivery end. Provide runways for wheeled concrete conveying equipment from the concrete delivery point to the locations of final deposit. Keep interior surfaces of conveying equipment, including chutes, free of hardened concrete, debris, water, snow, ice, and other deleterious materials.
 3. The Contractor shall provide traffic control on the narrow access roads to the work sites.
 4. The Contractor shall not wash concrete trucks/chutes/equipment off at the Project Site unless plastic tarps and hay bales are employed to contain the concrete. The Contractor will be required to haul off-site all concrete contaminated soil.
- D. Placing Concrete into Forms
1. Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 2. Do not interrupt successive placement; do not permit cold joints to occur.

3. Remove temporary spreaders in forms when concrete placing has reached the elevation of such spreaders.
4. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309, to suit the type of concrete and Project conditions. Vibration of forms and reinforcing will not be permitted.
5. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the layer of concrete at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix.
6. Do not place concrete in supporting elements until the concrete previously placed in columns and walls is no longer plastic.

E. Placing Concrete Slabs

1. Deposit and consolidate concrete slabs in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed.
2. Consolidate concrete during placing operations using mechanical vibrating equipment so the concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Consolidate concrete placed in beams and girders of supported slabs and against bulkheads of slabs on ground, as specified for formed concrete structures. Consolidate concrete in the remainder of slabs by vibrating bridge screeds, roller pipe screeds, or other acceptable methods. Limit the time of vibrating consolidation to prevent bringing an excess of fine aggregate to the surface.
4. Bring slab surfaces to the correct level with a straight edge and strike off. Use bull floats or darbies to smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.
5. Maintain reinforcing steel in the proper position continuously during concrete placement operations.

F. Bonding

1. Roughen surfaces of set concrete at all joints except where bonding is obtained by use of concrete bonding agent, and clean surfaces of laitance, coatings, loose particles and foreign matter. Roughen surfaces in a manner to expose bonded aggregate uniformly and not to leave laitance, loose particles of aggregate or damaged concrete at the surface.
2. Prepare for bonding of fresh concrete to new concrete that has set but is not fully cured, as follows:

- a. At joints between footings and walls or columns, and between walls or columns and beams or slabs they support, and elsewhere unless otherwise specified herein, dampen, but do not saturate, the roughened and cleaned surface of set concrete immediately before placing fresh concrete.
 - b. At joints in exposed work; at vertical joints in walls; at joints in girders, beams, supported slabs and other structural members; and at joints designed to contain liquids; dampen, but do not saturate the roughened and cleaned surface of set concrete and apply a liberal coating of neat cement grout.
 - c. Use neat cement grout consisting of equal parts Portland cement and fine aggregate by weight and not more than 6 gallons of water per sack of cement. Apply with a stiff broom or brush to a minimum thickness of 1/16-inch. Deposit fresh concrete before cement grout has attained its initial set.
 - d. In lieu of neat cement grout, bonding grout may be a commercial bonding agent. Apply to cleaned concrete surfaces in accordance with the printed instructions of the Bonding Material Manufacturer.
3. Prepare for bonding of fresh concrete to fully cured hardened concrete or existing concrete by using an epoxy-resin-bonding agent as follows:
 - a. Handle and store epoxy-resin adhesive binder in compliance with the Manufacturer's printed instructions, including safety precautions.
 - b. Mix the epoxy-resin adhesive binder in the proportions recommended by the Manufacturer, carefully following directions for safety of personnel.
 - c. Before depositing fresh concrete, thoroughly roughen and clean hardened concrete surfaces and coat with epoxy-resin grout not less than 1/16-inch thick. Place fresh concrete while the epoxy-resin material is still tacky, without removing the in-place grout coat, and as directed by the Epoxy-resin Manufacturer.

G. Cold Weather Placing

1. Protect all concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 306 and as herein specified.
2. When the air temperature has fallen to or is expected to fall below 40 degrees F, provide adequate means to maintain the temperature in the area where concrete is being placed at either 70 degrees F for 3 days or 50 degrees F for 5 days after placing. Provide temporary housing or coverings including tarpaulins or plastic film. Keep protections in place and intact at least 24 hours after artificial heat is discontinued. Keep concrete moist. Avoid rapid dry-out of concrete due to over-heating and avoid thermal shock due to sudden cooling or heating.
3. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 50 degrees F, and not more than 80 degrees F, at point of placement.

4. Do not use frozen materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Ascertain that forms, reinforcing steel and adjacent concrete surfaces are entirely free of frost, snow and ice before placing concrete.
5. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

H. Hot Weather Placing

1. When hot weather conditions exist that would seriously impair the quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F. Mixing water may be chilled or chopped ice may be used to control the concrete temperature provided the water equivalent of the ice is calculated to the total amount of mixing water.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Wet forms thoroughly before placing concrete.
5. Do not use retarding admixtures unless otherwise accepted in mix designs.

3.7 FINISH OF FORMED SURFACES

A. Rough Form Finish

For formed concrete surfaces not exposed to view in the finish work or covered by other construction, unless otherwise shown or specified. This is the concrete surface having the texture imparted by the form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4-inch in height rubbed down or chipped off.

B. Smooth Form Finish

Provide as-cast smooth form finish for formed concrete surfaces that are to be exposed to view. Or that are to be covered with a coating material applied directly to the concrete, or a covering material bonded to the concrete such as waterproofing, damp proofing, painting or other similar system.

Produce smooth form finish by selecting form material to impart a smooth, hard, uniform texture and arranging them orderly and symmetrically with a minimum of seams. Repair and patch defective areas with all fins or other projections completely removed and smoothed.

C. Curb Finishes

Curbs shall be screeded off accurately to true lines and planes or warped surfaces as indicated or directed. Finish smooth. Arises shall be true and straight or properly eased where curved

and neatly rounded with approved tool. Smooth trowel finish with corners rounded to 3/4-inch radius.

D. Grout Cleaned Finish (Sacked)

Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment, and to all exposed to view interior and exterior building surfaces, typical.

Combine one part Portland cement to 1-1/2 parts fine sand by volume and mix with water to the consistency of thick paint. Blend standard Portland cement and white Portland cement, amounts determined by trial patches, so that final color of dry grout will closely match adjacent surfaces.

Thoroughly wet concrete surfaces and apply grout immediately to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

E. Related Unformed Surfaces

At tops of walls, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, strike off smooth and finish with a texture matching the adjacent formed surfaces. Continue the final surface treatment of formed surfaces uniformly across the adjacent unformed surfaces, unless otherwise shown.

3.8 MONOLITHIC SLAB FINISHES

A. Float Finish

1. Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing or sand bed terrazzo, and as otherwise shown on drawings or in schedules.
2. After placing concrete slabs, do not work the surface further until ready for floating. Begin floating when the surface water has disappeared or when the concrete has stiffened sufficiently to permit the operation of a power-driven float, or both. Consolidate the surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Check and level the surface plane to a tolerance not exceeding 1/4-inch in 10 feet when tested with a 10-foot straightedge placed on the surface at not less than two different angles. Cut down high spots and fill at low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat the surface to a uniform, smooth, granular texture.

B. Trowel Finish

1. Apply trowel finish to monolithic slab surfaces that are to be exposed to view, unless otherwise shown, and slab surfaces that are to be covered with resilient flooring, paint, or other thin-film finish coating system.

2. After floating, begin the first trowel finish operation using a power-driven trowel. Begin final troweling when the surface produces a ringing sound as the trowel is moved over the surface.
 3. Consolidate the concrete surface by the final hand troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8-inch in 10 feet when tested with a 10-foot straightedge. Grind smooth surface defects which would telegraph through applied floor covering system.
- C. Exposed Aggregate Finish
1. Screed to true plane, bullfloat surfaces, provide uniform double troweled finish. After troweling, let set until hard enough to wash without disturbing coarse aggregates. Simultaneously brush and spray with water to expose large aggregate and produce texture to match approved sample. Water cure or keep wet for 25 hours.
 2. Scrub surface after 24 hours with a 1-part muriatic acid to 10-part water solution. Rinse thoroughly.
- D. Broom Finish (Non-Slip)
1. Apply non-slip, broom finish to exterior concrete platforms, steps and ramps and elsewhere as shown on the drawings or in schedules.
 2. Immediately after trowel finish, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route or in the direction of water flow. Use fiber-bristle broom unless otherwise directed. Coordinate the required final finish with the Engineer before application.
- E. Chemical-Hardener Finish
1. Apply chemical curing-hardening compound or chemical-hardener to all interior concrete floors which will not receive applied finish materials. Mask adjacent work and surfaces to avoid over spray. Apply liquid chemical-hardener after complete curing and drying of the concrete surface.
 2. Dilute the liquid hardener with water and apply in accordance with the Manufacturer's printed directions. Evenly apply each coat and allow for drying between coats in accordance with Manufacturer's printed directions.
 3. After the final coat of chemical-hardener solution is applied and dried, remove surplus hardener by scrubbing and mopping with water.
- F. Non-slip Aggregate Finish
- Apply non-slip aggregate finish to concrete stair treads, platforms, ramps, and elsewhere as shown on the drawings or in schedules.
- After completion of float finishing and before starting trowel finish, uniformly spread 25 pounds of dampened non-slip aggregate per 100 square feet of surface. Tamp aggregate flush with surface using steel trowel, but do not force the non-slip aggregate particles below surface.

After broadcasting and tamping, apply trowel finish as herein specified. After curing, lightly work the surface with a steel wire brush, or an abrasive stone, and water to expose the non-slip aggregate.

3.9 SCHEDULE OF CONCRETE SURFACE FINISHES

Also see Section 09 90 00, Painting and Coating for protective coating requirements.

<u>Surface Description</u>	<u>Type</u>	<u>Finish Requirement</u>
A. Interior Horizontal Slabs	Slab	Trowel Finish
B. Exterior Horizontal Slabs	Slab	Broom Finish (Non-Slip)
C. Stair Treads, Platforms and Ramps	Slab	Non-Slip Aggregate
D. Interior Vertical Surfaces (including Wet Well)	Formed	Smooth Form
E. Exterior Vertical Surfaces Exposed to View	Formed	Smooth Form

3.10 CONCRETE CURING AND PROTECTION

A. General

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperature and maintain without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
2. Start initial curing as soon as free moisture has disappeared from the concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.
3. Begin final curing procedures immediately following initial curing and before the concrete has dried. Continue final curing for at least 7 days and in accordance with ACI 301 procedures. Avoid rapid drying at the end of the final curing period.

B. Curing Methods

Perform curing of concrete by moist curing, by moisture-retaining cover curing, by membrane curing, or by combinations thereof, as herein specified. Provide the curing methods indicated as follows:

1. For concrete floor slabs provide moisture curing, moisture cover curing, or liquid membrane/chemical curing-hardening curing. If liquid membrane curing is used, it must be compatible with concrete hardening compounds to be applied later.
2. For other concrete work, provide moisture curing or moisture cover curing. Do not use liquid membrane or chemical curing-hardening curing on any concrete work to receive any applied finishes.

3. For curing, use only water that is free of impurities, which could etch or discolor exposed, natural concrete surfaces.
4. Provide moisture curing by any of the following methods:
 - a. Keeping the surface of the concrete continuously wet by covering with water.
 - b. Continuous water-fog spray.
 - c. Covering the concrete surface with the specified absorptive cover thoroughly saturated with water and keeping the absorptive cover continuously wet. Place absorptive cover so as to provide coverage of the concrete surfaces and edges with a 4-inch lap over adjacent absorptive covers.
5. Provide moisture-cover curing as follows - Cover the concrete surfaces with the specified moisture-retaining cover for curing concrete placed in the widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during the curing period using cover material and waterproof tape.
6. Provide liquid membrane curing as follows:
 - a. Apply the specified membrane-forming curing compound to damp concrete surfaces as soon as the water film has disappeared. Apply uniformly in a coat continuous operation by power spray equipment in accordance with the Manufacturer's directions. Recoat areas, which are subjected to heavy rainfall within 3 hours after initial application. Maintain the continuity of the coating and repair damage to the coat during the entire curing period.
 - b. Do not use membrane-curing compounds on surfaces, which are to be covered with a coating material applied directly to the concrete or with a covering material bonded to the concrete. Such as other concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring, painting, and other coatings and finish materials, unless otherwise acceptable to the Engineer.
7. Curing Formed Surfaces - Cure formed concrete surfaces, including the undersides of girders, beams, supported slabs, and other similar surfaces by moist curing with the forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
8. Curing Unformed Surfaces
 - a. Initially cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by moist curing, whenever possible.
 - b. Final cure unformed surfaces, unless otherwise specified, by any of the methods specified above, as applicable.
 - c. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise acceptable to the Engineer.

9. Provide liquid curing-hardening compound as follows:

- a. Apply to horizontal surfaces when concrete is dry to touch by means of power spray, hand spray or hair broom in accordance with Manufacturer's directions.

C. Temperature of Concrete during Curing

1. When the atmospheric temperature is 40 degrees F and below, maintain the concrete temperature between 50 degrees F and 70 degrees F continuously throughout the curing period. When necessary, make arrangements before concrete placing for heating, covering, insulation, or housing as required to maintain the specified temperature and moisture conditions continuously for the concrete curing period. Provide cold weather protections complying with the requirements of ACI 306.
2. When the atmospheric temperature is 80 degrees F, and above, or during other climatic conditions which will cause too rapid drying of the concrete, make arrangements before the start of concrete placing for the installation wind breaks or shading, and for fog spraying, wet sprinkling, or moisture-retaining covering. Protect the concrete continuously for the concrete curing period. Provide hot weather protections complying with the requirements of ACI 305.
3. Maintain concrete temperature as uniformly as possible and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete, which exceed 5 degrees F in any 1-hour and 50 degrees F in any 24-hour period.

- D. Protection from Mechanical Injury - During the curing period, protect concrete from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water. Protect all finished concrete surfaces from damage by subsequent construction operations.

3.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In - Fill-in holes and openings in concrete structures for the passage of work by other trades, unless otherwise shown or directed, after the work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide all other miscellaneous concrete filling shown or required to complete the work.
- B. Curbs - Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations - Provide machine and equipment bases and foundations as shown on the drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of the Manufacturer furnishing the machines and equipment.

3.12 REMOVAL OF SHORES AND FORMS

- A. Remove shores and re-shore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate re-shoring to safely support the work without excessive stress or deflection.

Keep re-shores in place a minimum of 15 days after placing upper tier, and longer if required, until the concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

- B. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulative curing at not less than 50 degrees F for 24 hours after placing concrete. Providing the concrete is sufficiently hard to not be damaged by form removal operations and provided curing and protection operations are maintained.
- C. Formwork supporting weight of concrete, such as beam soffits, joints, slabs, and other structural elements, may not be removed in less than 14 days and until concrete has attained design minimum compressive strength at 28 days. Determine potential compressive strength of in place concrete by testing field-cured specimens representative of concrete location or members.
- D. Form facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.
- E. Re-Use of Forms

Clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated, or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.

When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to the Architect.

No forming material will be allowed to be built permanently into exposed visible surfaces.

3.13 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas
 - 1. Repair and patch defective areas with cement mortar immediately after removal of forms but only when directed by the Engineer.
 - 2. Cut out honeycomb, rock pockets, voids over 1/2-inch diameter, and holes left by tie rods and bolts down to solid concrete but, in no case, to a depth of less than 1-inch. Make edges of cuts perpendicular to the concrete surface. Before placing the cement mortar, thoroughly clean, dampen with water and brush-coat the area to be patched with neat cement grout. Proprietary patching compounds may be used when acceptable to the Engineer.
 - 3. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, the patching mortar will match the color of the surrounding concrete. Provide test areas at inconspicuous location to verify mixture and color match before

proceeding with the patching. Compact mortar in place and strike off slightly higher than the surrounding surface.

4. Fill holes extending through concrete by means of a plunger type gun or other suitable device from the least exposed face, using a flush stop held at the exposed face to ensure complete filling.

B. Repair of Formed Surfaces

1. Repair exposed-to-view formed concrete surfaces that contain defects, which adversely affect the appearance of the finish. Remove and replace the concrete having defective surfaces if the defects cannot be repaired to the satisfaction of the Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, and holes left by the rods and bolt; fins and other projections on the surface; and stains and other discolorations that cannot be removed by cleaning.
2. Repair concealed formed concrete surfaces that contain defects that adversely affect the durability of the concrete. If defects cannot be repaired, remove and replace the concrete having defective surfaces. Surface defects, as such, include cracks in excess of 0.01-inch wide, cracks or any width and other surface deficiencies which penetrate to the reinforcement or completely through non-reinforced sections, honeycomb, rock pockets, holes left by tie rods and bolts, and spalls except minor breakage at corners.

C. Repair of Unformed Surfaces

1. Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to the tolerances specified for each surface and finish. Correct low and high areas as herein specified.
2. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slope. Correct high and low areas as herein specified.
3. Repair finished unformed surfaces that contain defects, which adversely affect the durability of the concrete. Surface defects, as such, include crazing, cracks in excess of 0.01-inch wide or which penetrate to the reinforcement or completely through non-reinforced sections regardless of width, spalling, pop outs, honeycomb, rock pockets, and other objectionable conditions.
4. Correct high areas in unformed surfaces by grinding, after the concrete has cured sufficiently so those repairs can be made without damage to adjacent areas.
5. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out the low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to the Engineer.
6. Repair defective areas, except random cracks and single holes not exceeding 1-inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts, and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen all concrete surfaces in contact with patching concrete and brush with a neat cement grout coating or use concrete bonding agent. Place patching

concrete before grout takes its initial set. Mix patching concrete of the same material to provide concrete of the same type or class as the original adjacent concrete. Place, compact, and finish as required to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.

7. Repair isolated random cracks and single holes not over 1-inch in diameter by the dry-pack method. Groove the top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen all cleaned concrete surfaces and brush with a neat cement grout coating. Place dry-pack before the cement grout takes its initial set. Mix dry-pack, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched areas continuously moist for not less than 72 hours.
8. For repair of existing unformed surfaces, mechanically remove all loose concrete as required to expose sound aggregate. Clean concrete surfaces to achieve a contaminate free, open textured surface. Square cut or undercut perimeter to minimum depth as specified by the Repair Mortar Manufacturer. Remove all loose concrete around the exposed steel and hand tool or blast clean all portions of rebar with visible rust to near white metal finish. If half of the diameter of the reinforcing steel is exposed, chip out behind the reinforcing to a 1/2-inch minimum depth. Splice new reinforcing steel to existing where corrosion has depleted the cross-section area by 25 percent. Apply a corrosion inhibitor/primer/bonding agent to all exposed rebar and other steel components and to concrete surfaces to be repaired per Manufacturer's requirements, such as Sika Armatec 110. Apply a polymer-modified, cement-based, repair mortar, trowel applied as specified by the Manufacturer, such as Sika MonoTop 615.
9. Repair methods not specified above may be used subject to the acceptance of the Engineer.

3.14 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. The Owner or a representative of the Owner will engage a special inspector/testing laboratory to perform all tests and to submit test reports to the Engineer and the Contractor.
- B. Concrete shall be sampled and tested for quality control during the placement of concrete, as follows:
 1. Sampling Fresh Concrete - ASTM C172, except modified for slump to comply with ASTM C94.
 2. Slump - ASTM 143; one test for each concrete load at point of discharge; and one for each set of compressive strength test specimens.
 3. Air Content - ASTM C231, pressure method; one for each set of compressive strength test specimens.
 4. Compression Test Specimen - ASTM C31; one set of four standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

5. Concrete Temperature - Test hourly when air temperature is 40 degrees F and below, and when 80 degrees F and above; and each time a set of compression test specimens is made.
6. Compressive Strength Tests - ASTM C39; one set for each 100 cubic yards or fraction thereof, of each concrete class placed in any 1 day or for each 5,000 square feet of surface area placed; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 - a. When the frequency of testing will provide less than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
 - b. When the total quantity of a given class of concrete is less than 50 cubic yards, the strength tests may be waived by the Engineer if, in the Engineer's judgment, adequate evidence of satisfactory strength is provided.
 - c. If required by the building official, perform strength tests of cylinders cured under field conditions. Field cured cylinders shall be taken and molded at the same time and from the same samples as the laboratory cured test cylinders. When the strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
- C. Report test results in writing to the Engineer and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of Contractor, name of concrete supplier and truck number, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
- D. Additional tests - The testing service will make additional tests of in-place concrete when test results indicate the specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Engineer. The testing service shall conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.

END OF SECTION

**SECTION 26 00 00 -
BASIC ELECTRICAL MATERIALS AND METHODS**

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes basic electrical requirements for materials and methods applicable to electrical equipment specified under this section and other related sections.
 - 1. Conduit
 - 2. Boxes
 - 3. Duct Bank
 - 4. Wire and Cable
 - 5. Maintenance Materials
 - 6. Grounding Materials
- B. Related Sections:
 - 1. Division 01 – Shop Drawings and Product Data
 - 2. Division 01 – Materials and Equipment
 - 3. Division 31 – Earthwork

1.2 REFERENCES

- A. UL – All applicable standards
- B. IEEE – All applicable standards
- C. IPCEA – All applicable standards
- D. NEMA – All applicable standards
- E. ANSI/NFPA 70 – National Electrical Code
- F. ANSI C2 – National Electrical Safety Code
- G. ANSI/NEMA FB 1 – Fittings and Supports for Conduit and Cable Assemblies
- H. ANSI/NEMA OS 1 – Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports
- I. ANSI/NEMA OS 2 – Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports
- J. NEMA 250 – Enclosures for Electrical Equipment (1000 Volts Maximum)

1.3 SUBMITTALS

- A. Information covering all material that is to be used on this project shall be submitted.
- B. Each sheet of descriptive literature shall be clearly marked to identify the material or equipment for which it pertains.
- C. Equipment on submitted sheets that is not for this project shall be crossed out.
- D. As a minimum the following information shall be submitted:
 - 1. Equipment sheets shall identify what the equipment refers to by calling out the name of the equipment on the sheet.
 - 2. Schematics and connection diagrams for all electrical equipment shall be submitted.
 - 3. Submit all types of conduit and cables with manufacturer and sizes as well as all appurtenances.

1.4 QUALITY ASSURANCE

- A. Supplier's qualifications
 - 1. The entire system shall be designed, coordinated, and supplied by a qualified Electrical Contractor who is regularly engaged in the business of building electrical systems for water and wastewater projects. The Electrical Contractor shall provide a "Statement of Qualifications" indicating that they have successfully provided similar work for at least 5 years.
- B. Coordination
 - 1. The electrical equipment shall be designed and coordinated for proper operation with related equipment and materials furnished by other suppliers under other sections of these specifications. All devices shall be applied in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the instrument or device manufacturer and the manufacturer of related equipment.
 - 2. Installation drawings shall be prepared for interconnecting wiring and piping between the related equipment and the equipment furnished under this section. All interconnecting wiring shall be appropriate for the service and shall result in a properly functioning system.
 - 3. The Contractor shall provide coordination with other contractors and supervision of installation as required during construction.
 - 4. All service entrance work shall be in accordance with the local utility standards.
 - 5. The electrical contractor shall coordinate all service entrance work with the local utility. The local utility is Xcel Energy.
 - 6. Accurately record actual locations of conduit, duct banks, panels, and accessories.

1.5 REGULATORY REQUIREMENTS

- A. Conform to the applicable Building Code.

- B. Electrical: Conform to latest version of NFPA 70.
- C. Coordinate, obtain and pay for all permits, inspections and approvals of authority having jurisdiction.
- D. Comply with local electrical codes in force or in the absence of local electrical code, the latest edition of the National Electrical Code, ANSI C1.

1.6 WARRANTY

- A. The electrical contractor shall guarantee the supplied equipment and labor for a period of two years from the date of system acceptance.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. The work for this project is for a functioning city building. All new work shall be done in a way that allows the existing facility to maintain its operation.
- B. All equipment furnished under this Section shall be selected by the Contractor for its superior quality and intended performance. Unless indicated otherwise, all equipment and material shall be new, undamaged, and meet the requirements of UL. Where UL requirements are not applicable, equipment and material shall be identified as such by the supplier and approved by the Engineer before purchase and installation. Equipment and materials used shall be subject to review and shall comply with the following requirements.
 - 1. Conduit
 - a. Minimum Size: $\frac{3}{4}$ inch unless otherwise specified, or $\frac{1}{2}$ inch for luminaries pendants.
 - b. Underground Installations:
 - i) Over 100V: More than five feet from foundation wall: Use thick wall nonmetallic conduit.
 - ii) Within five feet from foundation wall: Use rigid steel conduit
 - iii) Under 100V: Use rigid steel conduit
 - iv) Minimum size: 1 inch.
 - c. Outdoor Locations, Above Grade: Use rigid steel conduit.
 - d. In Slab Above Grade:
 - i) Use rigid steel conduit for circuits that are 24V or less.
 - ii) Use rigid thick wall non-metallic conduit for 120V to 480V circuits.
 - iii) Maximum Size Conduit in Slab: 2-inch, 1 inch for conduits that cross over each other, or with structural engineer's approval.
 - iv) Conduits shall not be spaced closer than 3 conduit widths on center.

- v) Aluminum conduit shall not be embedded in concrete.
 - vi) Conduits shall not pass through a structural concrete beam without the structural engineer's approval.
- e. In or under slab on grade:
 - i) Use rigid steel conduit for circuits that are 24V or less.
 - ii) Use rigid thick wall non-metallic conduit.
- f. Wet and damp locations: Use rigid steel conduit or aluminum conduit.
- g. Dry locations:
 - i) Concealed: In walls or above ceilings, use rigid steel or aluminum conduit.
 - ii) Exposed: Use rigid steel conduit or aluminum conduit.
- h. Rigid Steel Conduit.
 - i) Rigid steel conduit shall be heavy wall, hot-dipped galvanized, and shall conform to Fed Spec WW-C-581 and ANSI C80.1, and shall be manufactured in accordance with UL 6.
- i. Rigid Nonmetallic Conduit (PVC).
 - i) PVC conduit shall be heavy wall, schedule 40, shall be UL labeled for aboveground and underground uses.
- j. PVC-Coated Rigid Steel Conduit.
 - i) The conduit shall be rigid steel and before the PVC coating is applied, the hot-dipped galvanized surfaces shall be coated with a primer to ensure a bond between the steel substrate and the coating. The PVC coating shall be bonded to the primed outer surface of the conduit at a thickness of at least 40 mils. A two part urethane chemically cured coating shall be applied at a nominal 2 mil thickness to the interior of all conduit and fittings.
 - ii) Manufacturers: Ocal, PermaCote, or Robroy Industries.
- k. Flexible connections
 - i) Conduit: Moisture proof vinyl jacketed, liquid-tight, hot-dipped galvanized flexible steel and shall be UL labeled.
 - ii) Connectors: Watertight, Appleton Type ST or STB, Crouse-Hinds Type LT or LTC, or equal.
- 2. Outlet Boxes
 - a. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, Galvanized.
 - i) Luminaries and equipment supporting boxes: rated for weight of equipment supported.
 - ii) Concealed installations.
 - b. Nonmetallic outlet boxes: ANSI/NEMA OS 2.
 - c. Cast Boxes: NEMA FB 1, Type FD, Cast Ferroalloy.
 - i) Provide gasketed cover by box manufacturer.
 - ii) Provide threaded hubs.
 - iii) Models VXF, GRFX as manufactured by Crouse-Hinds.
 - iv) Models SEH, JBDX, with mounting lugs as manufactured by Appleton.
- 3. Pull and Junction

- a. Sheet Metal Boxes: NEMA OS 1, Galvanized Steel.
- b. Surface-Mounted Cast Metal Box: NEMA 250, Type 4 flat-flanged, surface-mounted junction box.
 - i) Material: Galvanized cast iron Cast aluminum in corrosive areas.
 - ii) Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
 - iii) Model: WCB as manufactured by Crouse-Hinds.
- c. In-Ground Cast Metal Box: NEMA 250, Type 6, outside flanged, recessed cover box for flush mounting.
 - i) Material: Galvanized cast iron.
 - ii) Cover: Nonskid cover with neoprene gasket and stainless steel cover screws.
 - iii) Cover Legend: ELECTRIC.
 - iv) Model: WPD as manufactured by Crouse-Hinds.
- 4. Large Junction Boxes and Wiring Gutters
 - a. Indoor Locations:
 - i) Steel, NEMA 12.
 - b. Outdoors:
 - i) Stainless steel.
 - ii) Weather-tight NEMA 4.
 - c. Construction.
 - i) Provide rigid handles for box covers larger than 9 sq. ft. or heavier than 25 lbs.
 - ii) Provide split covers for covers larger than 12 sq. ft.
 - iii) Aluminum boxes in concrete not allowed.
- 5. Seal Fittings
 - a. Model ESU with Apelco sealing cement and fiber, as manufactured by Appleton.
 - b. Model EZS with Chico X Fiber and Chico A compound as manufactured by Crouse-Hinds.
- 6. Deflection Fittings
 - a. Locations:
 - i) Underground conduit runs.
 - ii) Runs between concrete sections subject to relative movement.
 - b. Material:
 - i) Ferroalloy hubs.
 - ii) Neoprene outer jacket.
 - iii) Stainless steel jacket clamps.
 - iv) Molded plastic inner sleeve.
 - v) Tinned copper braid grounding strap.
 - c. Model XD as Manufactured by Crouse-Hinds.
- 7. Expansion Fittings
 - a. Locations:
 - i) In long conduit runs, to permit linear movement caused by thermal expansion and contraction.

- ii) In long conduit runs to prevent conduit from buckling.
 - iii) Indoors and outdoors, where conduit expansion occurs or where there is a wide temperature range.
 - iv) At structural expansion joints.
- b. Material:
 - i) End fittings: Ferroalloy.
 - ii) Body: Steel conduit.
- c. Provide Bonding Strap When Used Outdoors.
- d. Model XJ, as Manufactured by Appleton and Crouse-Hinds.
- 8. Flexible Sealing Compound
 - a. "Duxseal" as Manufactured by Johns-Manville.
 - b. "Permagum" as Manufactured by In mount.
- 9. Coal Tar Epoxy Paint
- 10. Wire and Cable
 - a. 600 Volt Power Cable
 - i) General Use:
 - a) Conductors: Single, copper, 12 AWG minimum.
 - b) All conductors shall be stranded.
 - c) Insulation: 600V thermoplastic, UL Type THWN/THHN.
 - d) Suitability: Wet or dry locations at 75° C and 90° C copper temperature.
 - e) Or as specified for service entrances.
 - ii) Service entrance and 4 AWG and above:
 - a) Conductors: Single, stranded, copper.
 - b) Insulation: 600V cross-linked polyethylene, UL Type XHHW/USE or THHN.
 - c) Suitability: Wet or dry locations at 75°C and 90° C copper temperature.
 - iii) Terminations
 - a) Lugs, cup washers or pressure type; do not use wire nuts on stranded cable or wrap standard cable around screw type terminals
 - b. Lighting Circuits
 - i) General Use:
 - a) Conductors: Single, copper, 12 AWG minimum.
 - b) Conductors may be solid or stranded.
 - c) Insulation: 600V thermoplastic, UL Type THWN/THHN.
 - d) Suitability: Wet or dry locations at 75° C and 90° C copper temperature.
 - ii) Terminations:
 - a) Lugs, cup washers or pressure type; do not use wire nuts on stranded cable or wrap stranded cable around screw type terminals.
 - c. Control circuits
 - i) General Use:
 - a) Conductors: Single, tinned copper, 14 AWG
 - b) All conductors shall be stranded
 - c) Insulation: 600V thermoplastic, UL Type THWN/THHN.

- ii) Millivolt or Milliampere Instrumentation and Control.
 - a) Conductors: 18 AWG stranded copper, 2 or 3 as required.
 - b) Insulation: 15 mils, minimum, 90°C PVC.
 - c) Shield: Mylar aluminum tape with 20 AWG copper drain wire, fully covering conductors.
 - d) Jacket: 20 mils, minimum, 80°C PVC.
 - e) Suitability: Wet or dry steel conduit.
 - iii) Manufacturers: Belden "UL Instrumentation Cable – 1032A", Samuel Moore "Dekoron ICMX" No. 1852-686 and 1862-686, or equal.
11. Grounding and Bonding
- a. Provide rod electrodes, exothermic connections and mechanical connections.
 - b. Building perimeter ground cable shall be minimum of 4/0 AWG bare copper.
 - c. Duct bank ground cable shall be minimum of 4/0 AWG bare copper.
 - d. Other ground cable shall be as noted on the drawings.

PART 3 EXECUTION

3.1 INSTALLATION REQUIREMENTS

A. General Requirements

- 1. The instrumentation equipment shall be installed by the Contractor or his subcontractors in accordance with the manufacturers' instructions. The services of the system supplier's technical representative shall be provided as necessary to calibrate, test, and advise others of procedures for adjustment and operation.

B. Inspection

- 1. Inspect materials and equipment for signs of damage, deterioration or other deleterious effects of storage, transportation, handling, or defects in manufacture or assembly.
 - a. Replace with identical new materials or equipment or repair to like new condition any materials or equipment showing such effects to the satisfaction of the Engineer and Owner.

C. Equipment Installation

- 1. Handle, install, connect, clean, condition, align and adjust products and equipment in strict accordance with manufacturer's instructions and in conformity with specification requirements.
 - a. Separate sheet metal junction boxes, equipment enclosures, sheet metal raceways, etc., mounted on water or earth-bearing walls or wall-mounted outdoors ¼" from wall be corrosion resistant spacer.
 - b. Seal the base of all outdoor switchgear, motor control center, and similar equipment with grout.

- c. Screen or seal with flexible sealing compound all openings into outdoor equipment to prevent the entrance of rodents, wasps, and mud-daubers.
- d. Electrical work shall conform to the construction schedule and progress of other trades.
- e. Maintain one complete set of manufacturer's installation instructions at the jobsite during installation and until installation is accepted by the Engineer and Owner.
- f. Perform all work in accordance with manufacturer's instructions.
 - i) Do not omit any preparatory step or installation procedure unless specifically modified or exempted by contract documents.
 - ii) Should job conditions or specification requirements conflict with manufacturer's instructions, consult with Engineer prior to proceeding.
- g. Field Wiring. Field wiring materials and installation shall conform to the requirements of the electrical section.

D. Identification:

- 1. Conduit. All conduits shall be provided with identification tags. Tags shall be brass nameplates with 3/8" high lettering and attached to the conduits by means of stainless steel wire. Conduits shall be identified at both ends with the same identification number.
- 2. Cable. Except for lighting and receptacle circuits, each individual wire in power, control, indication, and instrumentation circuits shall be provided with identification markers at the point of termination. Power wires without individualized identification numbers shall be color coded with electrical tape or colored wire jacket. The wire markers shall be of the heat-shrinkable tube type.
- 3. Circuit Breakers. Circuit breakers shall be provided with nameplates identifying related equipment. Nameplates shall be laminated plastic, with 1/8 inch engraved letters, and shall be securely fastened to the circuit breakers.

E. Raceways:

- 1. General:
 - a. Except as otherwise indicated on drawings, conduit shall be concealed in finished areas and exposed in unfinished areas.
 - b. Rigid steel conduit and aluminum conduit connections and terminations shall be reamed, de-burred, threaded and provided with bushings.
 - c. Securely fasten conduit connections to sheet metal enclosures with locknuts inside and out. Conduit hubs outdoors and in wet locations.
 - d. Provide deflection fittings across structural joints where structural movement is allowed.
 - e. Keep conduit clear of structural openings and indicated future openings.
 - f. Provide flashing and seal watertight conduits through roofs and metal walls.
 - g. Neatly grout conduit into any opening cut into structure.

- h. Cap or plug conduits during construction to prevent the entrance of trash, dirt and water.
 - i. Minimum conduit size shall be $\frac{3}{4}$ ", except $\frac{1}{2}$ " for luminaries pendants or as noted on drawings.
 - j. Seal conduits with flexible sealing compound forced to a minimum depth equal to the conduit diameter after cable is installed.
 - i) At handholes, manholes, and vaults.
 - ii) Building entrance junction boxes.
 - iii) One inch or larger connections to equipment.
 - k. Provide flexible conduit where flexible connections are necessary, including each motor without flexible cord.
 - i) Keep length to a minimum, not to exceed 6' maximum.
 - ii) No sharp bends.
 - l. Provide suitable pull string in each empty or spare conduit.
2. Conduit exposed in structures:
- a. Install parallel to structural members and surface.
 - b. Install conduits of the same general routing parallel with symmetrical bends.
 - c. Arrange supports to prevent misalignment during wiring installation.
 - d. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
 - e. Group related conduits; support using conduit rack. Construct rack using steel channel provide space on each for 25 percent additional conduits.
 - f. Install no more than equivalent of three 90° bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2 inch size.
 - g. Provide suitable pull string in each empty conduit except sleeves and nipples.
 - h. Maintain 6" clearance to ducts, piping and flues.
 - i. Support rigidly with galvanized or cadmium-plated hardware and framing materials, including nuts and bolts.
 - j. Provide expansion fittings at 100' centers outdoors, 200' centers indoors; in each conduit run longer than 100' outdoors, 200' indoors.
 - k. Provide galvanized pipe caps on conduit stubs for future use.
 - l. Allow 7' headroom for horizontal conduit runs, except along structures, piping equipment or where not possible.
 - m. Except as otherwise indicated, do not install exposed conduit in water chambers.
 - n. Where allowed, coat conduit exposed in water chambers with 2 coats of coal tar paint with paint injuries repaired or use PVC coated conduit.
3. Conduit concealed in structure:
- a. Install between reinforcing steel in slabs with reinforcing in both faces.
 - b. Install under reinforcing steel in slabs where only a single layer is provided.
 - c. Terminate conduit for future use in equipment or by galvanized couplings and conduit plugs flush with structural surfaces. Seal plugs with self-leveling caulk.

- d. Maximum of two conduits crossing each other in slab.
- 4. Underground:
 - a. One inch minimum.
 - b. Encased in concrete.
 - i) Two inches between conduits.
 - ii) Three inches over conduit where not reinforced.
 - iii) Three inches over reinforcing.
 - iv) Reinforced at and 5' past portion on disturbed earth or subject to traffic.
 - v) Reinforced within 5' of a structure, manhole or vault.
 - vi) Reinforced for entire length and 2' beyond each adapter to steel conduit if non-metallic is used in duct bank.
 - vii) Where capped underground, reinforce the last 2' and extend steel and conduit 2' past end of duct bank. Paint all un-encased metal with 2 coats of coal tar paint.
 - viii) Continue encasement on outdoor risers to 3" above grade and crown and chamfer top.
 - c. Two foot minimum bend radius at vertical risers, 3 foot elsewhere.
 - d. Install underground conduit so that it does not drain to cable pulling access in buildings; where necessary, provide a handhole or manhole near or adjacent to building.
 - e. Provide 3 foot minimum earth cover.
 - f. Install underground conduits through buildings, manhole, handhole and vault walls in box outs as indicated on the drawings.
 - g. All steel inside manholes, handholes and vaults shall be galvanized with bared spots treated with zinc rich paint.
 - h. Provide $\frac{3}{4}$ " galvanized steel pulling eyes on opposite walls below the centerline of each duct bank.
 - i. Provide end bells at wall terminations and adapters for steel conduit continuations for non-metallic duct systems.
 - j. Isolate intercommunication and milliampere level instrumentation circuits from all power wiring raceways, conduits, boxes, vaults, manhole and handhole.
 - k. Provide a full-size extension for each underground conduit entering a building.
 - l. Rigid nonmetallic conduit (PVC) shall be fastened no less than every 4 feet.

F. Wire and Cable

- 1. General:
 - a. Protect the cable and avoid kinking conductors, cutting or puncturing jackets, contaminating by oil or grease or damaging in any manner.
 - b. Terminate stranded cable with lugs, cup washers, or pressure type connectors; do not wrap stranded cable around screw type terminals.
 - c. Splice stranded cable with pressure type connectors; do not use wire nut type connectors on stranded cable.

- d. Splice cables only at readily accessible locations.
 - e. Do not pull cable tight against bushings or press heavily against enclosures.
 - f. Use cable pulling lubricants as recommended by the cable manufacturer.
 - g. Use swab to clean conduits and ducts before pulling cables.
 - h. Install cable and accessories in accordance with manufacturer's instructions.
 - i. Where necessary to prevent heavy loading of cable connectors due to cable weight, support cables in vertical risers with woven cable grips.
 - j. Coil and tape spare cable ends.
 - k. Support each 250 MCM or larger cable, and each conduit group of smaller cables from manholes, handholes or vault walls.
 - l. Use Stranded conductor for feeders and branch circuits.
 - m. Use stranded conductors for control circuits.
 - n. Use conductor not smaller than 12 AWG for power and lighting circuits.
 - o. Use conductor not smaller than 16 AWG for control circuits.
 - p. Use 10 AWG conductors for 20 ampere, 120 Volt branch circuits longer than 100 feet.
 - q. Pull all conductors into raceway at same time.
 - r. Use suitable wire pulling lubricant for building wire 8 AWG and larger.
 - s. Protect exposed cable from damage.
 - t. Neatly train and lace wiring inside boxes, equipment, and panel boards.
 - u. Clean conductor surfaces before installing lugs and connectors.
 - v. Make splices, taps, and terminations to carry full ampacity of conductors.
2. Special cables:
- a. Isolate networking and milliampere level instrumentation cables from all power circuits.
 - b. Isolate telephone cables from all other circuits.
3. Conductor identification:
- a. Color code all service, feeder, and branch circuit conductors, 277/480 VAC and above as follow:
 - i) Phase A: Brown
 - ii) Phase B: Orange
 - iii) Phase C: Yellow
 - iv) Neutral: White
 - v) Ground: Bare or Green
 - b. Color code all feeder, and branch circuit conductors, 120/208 VAC as follows:
 - i) Phase A: Red.
 - ii) Phase B: Black.
 - iii) Phase C: Blue.
 - iv) Neutral: White.
 - v) Ground: Bare or Green.

- c. Identify single control conductors by color coding orange and by labeling each end of conductors by color coding orange and by labeling each end of conductor with heat shrink-tube type wire markers.
- d. Identify multi-conductor instrumentation and control cables with heat shrink-tube type wire markers.
- e. Contractor shall establish a control and instrumentation conductor and cable identification system acceptable to Engineer.

G. Grounding Materials:

- 1. Coordinate installation with other disciplines.
- 2. Verify that final backfill and compaction has been completed before driving rod electrodes.
- 3. Install Products in accordance with manufacturer's instructions.
- 4. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.
- 5. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing.
- 6. Provide bonding to meet Regulatory Requirements.
- 7. Install ground cable through building walls within 3' below finish grade and prepare a water stop.
- 8. Install ground rods and cables as deep in earth as possible and as far from structure as possible, not closer than 6".
- 9. All branch circuit and feeder circuits to include a copper ground conductor in addition to the conduit ground connection.
- 10. Connect ground conductors to equipment by ground lugs or clamps.
 - a. If no ground bus or terminal is provided and enclosure is not explosion-proof or submersible provide a clamp type lug under a permanent assembly bolt or by grounding locknuts or bushings.
 - b. If an explosion-proof or submersible enclosure is not provided with grounding means, provide an adjacent junction box with a ground lug.
 - c. Bond grounding system to station piping by connection to the first flange inside the building on either a suction or discharge pipe which will form a good ground connection:
 - i) Drill and tap the flange.
 - ii) Provide a bolted connection.
 - iii) Bond with a copper bar or strap.
 - d. Form ground conductors on equipment to the contours of the equipment.
 - e. Install main ground cables with encased underground conduit banks in earth at least 3" below 1 corner of the duct bank.
 - f. Bond ground cables in underground circuits to main ground cables at each manhole, handhole, and vault.

H. Networking – EtherNet/IP cabling

1. Install sufficient networking cable, as shown in the contract drawings, to provide a complete networked system.
2. Terminate all wiring with RJ-45 connectors rated for Cat 5e cable transmissions.
3. Test every communication cable, and provide a testing certificate with the results.

3.2 FIELD QUALITY CONTROL

A. Low Voltage Cable Testing

1. Test 600 V power cables for continuity and freedom from short circuits and ground, except where grounding is intentional immediately after installation.
2. Test all circuits with a 500 V megger or its equivalent.
3. Replace conductors which read less than 1.5 Megohms between conductors and ground.

3.3 PROTECTION AND STORAGE

A. Protection of equipment during storage:

1. During construction, all electrical equipment shall be protected against absorption of moisture, and metallic components shall be protected against corrosion. This protection shall be provided immediately upon receipt of the equipment and shall be maintained continuously. Any means necessary shall be used to protect the equipment at the Contractor's expense.

END OF SECTION

SECTION 26 32 00 - GENERATOR: DIESEL

PART 1 – GENERAL

1.1. Section Includes:

A. Engine-generator set

1. Howard Berry Water Treatment Plant Standby Generator

B. Provide engine generator set including but not necessarily limited to the following:

1. Engine.
2. Cooling system.
3. Exhaust system.
4. Starting system.
5. Generator.
6. Control equipment and accessories.
7. Outdoor housing.
8. Output circuit breaker.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. National Electrical Manufacturer's Association (NEMA).
2. National Fire Protection Association (NFPA)
3. Underwriter's Laboratories, Inc. (UL).

B. Testing:

1. Prototype Test: The manufacturer shall have successfully tested a prototype of each engine/generator set series offered. The tests performed shall include the following:
 - a. Maximum power test.
 - b. Maximum motor starting kVA.
 - c. Transient response, steady state governing, and voltage regulation.
 - d. Single step load pick-up per NFPA 110.
 - e. Three-phase short circuit test for mechanical and electrical strength.
 - f. Fuel consumption.
 - g. Cooling system test.

- h. Endurance run test.
- 2. Factory Tests: Prior to shipment, each unit shall be factory performance tested under load. Test results shall be certified and documented on a strip chart recorder. The tests shall be performed in accordance with the Manufacturer's standards and NFPA Standard 110. The following tests shall be performed:
 - a. Stepped load test at 1/2, 3/4, and full load for 5 minutes each step.
 - b. Full single step block load.
 - c. Results documented shall include steady-state voltage and frequency analysis, transient response, maximum power analysis, and fuel consumption.
- 3. Field Tests: Each complete installation shall be tested for compliance with the plans and specifications following completion of all site work. Testing shall be conducted by a representative of the supplier. The Contractor shall supply fuel, and other equipment required for the test. The Owner and Engineer shall be notified in advance and shall have the option to witness the tests. The tests shall be repeated until the equipment performs as specified. The tests to be conducted on site shall be as follows:
 - a. Cold Start Test: Perform a cold start test on the generator using the generator's actual load as a test load. A power failure shall be simulated by opening the normal power disconnect and the following information shall be recorded:
 - 1) Cranking on time.
 - 2) Time required to come up to speed.
 - 3) Voltage and frequency overshoot.
 - 4) Time to achieve steady state.
 - 5) Voltage, frequency, and amps at standby state.
 - 6) Oil pressure, water temperature, and battery charge rate at 5 minute intervals for the first 15 minutes and at 15 minute intervals thereafter for 2 hours.
 - b. Crank Cycle Test: Disable the generator from starting by a method approved by the Manufacturer and test the crank cycle by switching the generator to run.
 - c. Safety Shutdowns: Test all the generator safety shutdowns.

1.3 SUBMITTALS

- A. Verify dimensions, coordination and applicability of equipment furnished.
- B. Full detail for performing of engine testing required. Upon completion of engine testing prepare and submit final results along with all new data.

- C. Upon satisfactory completion of startup, secure a written statement from manufacturer that each engine generator is installed in accordance with manufacturer's recommendations, properly started up and is ready for operation by the Owner's personnel. Also certify that required operation and maintenance training has been fully satisfied.
- D. Wiring diagrams for each engine-generator set. Indicate clearly factory versus field wiring connections.
- E. Generator fault current at full rpm and main circuit breaker trip curves and fault interrupting rating.
- F. Operation and Maintenance Manuals

1.4 WARRANTY

- A. Minimum of two year warranty on all parts and labor.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
 - 1. Cummins Model 450 DFEJ 1700G w/ Enclosure.
 - 2. Approved equal.
- B. Assure engine, generator and accessories are provided by the engine manufacturer and its authorized dealer.
- C. Assure local availability of service and replacement parts.

2.2 PERFORMANCE AND OPERATING REQUIREMENTS

- A. Operating Conditions: Provide complete generator sets, controls and accessories rated for the following conditions:
 - 1. Location: Louisville, CO.
 - 2. Altitude: 5,650 FT AMSL.
 - 3. Fuel: Diesel.
 - 4. Enclosure rating: Outdoors.
- B. Performance: Establish net rating of each generator set under operating conditions specified when equipped and fully loaded with all necessary operating accessories. Substantiate ratings with manufacturer's standard published curves and data.
 - 1. Minimum ratings:

- a. Standby rating (at 0.8 PF): 450 kW
 - b. Frequency: 60 Hz
 - c. Voltage and phase: 480/3
 - d. Engine speed, max (rpm): 1800
 - e. Maximum voltage dip: 20%
2. The unit shall be required to maintain the above noted parameters while starting and running the loads listed at the end of this section. The loads will not be started simultaneously.

2.3 ENGINE

- A. Engine Construction: Provide a diesel type engine of heavy-duty construction, radiator and fan cooled.
1. Engines solid-state designed for cold quick start, capable of delivering full load output in 30 seconds.
 2. Engine must meet scheduled performance without turbo-charging or after-cooling.
 3. Provide exhaust manifolds.
- B. Lubrication:
1. Provide pressure-type lubrication system with gear-type oil pump and full flow filters fitted to engines. Provide level indicator or dipstick.
 2. Locate filter for convenient servicing.
 3. Oil drain piped to edge of skid with valve or cap.
- C. Air Cleaner:
1. Provide one or more dry-type replaceable element air cleaners suitable for high dust load operation.
 2. Equip each air cleaner with service indicator.
- D. Governor:
1. Provide a fully enclosed electronic governor.
 2. Frequency at any constant load shall not deviate more than plus or minus 0.5 percent of rated frequency.
 3. The governor to provide adjustable frequency regulation from isochronous to 5 percent drop.
- E. Fuel System:
1. Complete system for diesel.

2.4 GENERATOR

- A. Construction: Provide brushless, revolving field type, synchronous generator coupled directly to engine flywheel through a flexible driving disc for positive alignment.
 - 1. Bolt generator housing directly to engine flywheel housing.
 - 2. Provide volts-per type voltage regulator of solid state 3-phase sensing, construction matching characteristics of each unit. Provide no load to full load regulation within ± 0.5 percent at rated voltage during steady state conditions.
 - 3. Provide permanent magnet generator to provide excitation power to the automatic voltage regulator.
 - 4. Provide shock-resistant mounting of regulators.

2.5 COOLING SYSTEM

- A. Provide unit-mounted radiator cooling system with sufficient capacity for cooling generator set at full rated load and operating conditions specified.
 - 1. Equip engine with engine-driven centrifugal-type water circulating pumps and thermostatic valve to maintain coolant temperature below 200 DegF.
- B. Coolant:
 - 1. Flush and drain cooling system.
 - 2. Fill with minimum 50 percent ethylene glycol and water solution.
 - 3. Assure radiator, engine block and related items protected to minus 50 DegF.
 - 4. Coolant drain piped to edge of skid with valve or cap.
- C. Jacket Water Heaters: Furnish one or more engine mounted thermal circulation type water heaters to maintain engine jacket water at 70 DegF at minimum ambient temperature specified.
 - 1. Include integral thermostatic controls to maintain desired temperatures.
 - 2. Rate heaters for 240 V, 1 PH, 60 HZ.

2.6 NOT USED

2.7 STARTING SYSTEMS

- A. Starting Motors: Provide 24 V DC starting system with solenoid operated positive engagement drive.
- B. Batteries: Furnish lead acid batteries with each engine generator with sufficient capacity to crank engines for three 20-second cranking periods with a 30-second rest period between cranks without recharging.
 - 1. Provide battery rack appropriately sized for the batteries furnished, painted with alkaline-resistant paint.
 - 2. Provide constant voltage, current limiting, full wave rectifier type battery chargers using silicon controlled rectifiers as the power controlling elements.

3. Provide float and equalize charge rates. Rate charger for 120 V, 1 PH, 60 HZ with output current rating to recharge the battery from a 70 percent discharged condition to 95 percent charged condition in 12 HRS.
4. Battery charger shall be 120V and shall be hardwired.
5. Provide malfunction alarm contacts for actuation of alarm in the event of malfunction in the battery charging system.
6. Provide DC voltmeter and ammeter, ac input and dc output circuit breakers.
7. Provide cables, clamps and all other necessary connections.
8. Size main cables to exhibit total circuit resistant of 0.005 ohm or less.
9. Batteries and charger located in generator enclosure.
10. Starting shall be initiated by a normally open, dry contact closure.

2.8 CONTROLS

A. Control Panel:

1. Provide NEMA 1 enclosed control panel mounted on each generator terminal box with vibration isolators.
2. Construct dead front panel with 14 GA steel.
3. Include the following devices in panel:
 - a. Engine coolant temperature gage.
 - b. Engine lube oil pressure gage.
 - c. Engine lube oil temperature gage.
 - d. Engine running hour meter.
 - e. Battery charging indicators.
 - f. Voltmeter.
 - g. Ammeter with true RMS output, supplied by 3 CT's at generator output leads.
 - h. Ammeter and voltmeter phase selector switch or switches.
 - i. Frequency meter.
 - j. Manual and automatic starting controls.
 - k. Panel illumination lights and switch.
 - l. Voltage level adjustment rheostat.
 - m. Fault indicators including low oil pressure, high water temperature, overspeed and overcrank. Provide dry contacts for common annunciation of fault conditions.

4. Multifunction digital device incorporating all above functions will be acceptable.
- B. Main Line Circuit Breaker: Provide main circuit breaker for generator set, sized for appropriately to protect the generator.
1. Breakers are to operate both manually for normal switching function and automatically during overload and short circuit conditions.
 2. The trip unit for each pole of each breaker is to have elements providing inverse time delay during overload conditions and instantaneous magnetic tripping for short circuit protection.
 3. Provide breakers to interrupt bolted 3 PH fault from generator at full rpm at load terminals.
 4. Provide a NEMA 1 enclosure for circuit breakers and mount on generator using suitable vibration isolators.

2.10 SPARE PARTS

- A. Furnish Owner the following extra parts and supplies for each generator set:
1. One set of filters, i.e., fuel, oil, and air for each unit.
 3. Oil for one complete oil change for each unit.
 4. Complete replacement set of all fuses.
- B. Spare parts shall be packaged with labels indicating contents of each package.

PART 3 - EXECUTION

3.1 MOUNTING AND ENCLOSURE

- A. Base: Mount engine, generator and cooling system on a common structural steel subbase capable of maintaining unit. Equip subbase with spring-type vibration isolators between subbase and platform.
- B. Flexible Connections: Provide stainless steel flexible fittings on all engine piping and electrical conduits.
1. Engine control conduit.
 2. Fuel connection: Braided metallic.
 3. Exhaust connector bellows: Stainless steel.
 4. Coolant water pipes: Braided metallic.
- C. Enclosure:
1. Equip engine generator set with a factory assembled ventilated sheet steel enclosure.

2. Provide weatherproof enclosure with an external critical grade silencer with rain cap.
 - a. Provide housing with hinged side-access doors and a rear control door.
 - b. All access doors to be lockable.
 - c. Treat entire enclosure and skid tank assembly with an electro deposition primer process prior to finish painting for maximum durability.
 - d. Equip the set with lifting eye.
 - e. Enclosure shall be a sound attenuating enclosure and shall reduce the sound to a Level 1 sound attenuation. The level 1 sound attenuation shall reduce the sound to a maximum of 89dB at 7 meters distance with the generator fully loaded.

3.2 FIELD QUALITY CONTROL

- A. Employ and pay for services of equipment manufacturer's field service representative(s) to:
 1. Inspect equipment covered by these Specifications.
 2. Supervise any adjustments and installation checks.
 3. Conduct initial start-up of equipment and perform operational checks at jobsite. Conduct field tests as specified.
 4. Provide instruction to Owner's personnel on training in operation and maintenance of equipment for a 4 hour period.

END OF SECTION

SECTION 31 10 00 - SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes clearing site of incidental paving and curbs, debris, grass, trees, and other plant life in preparation for site or building excavation work.

1.2 RELATED SECTIONS:

- A. Section 02 41 00 - Demolition
- B. Section 31 22 13 - Rough Grading

1.3 DEFINITIONS

- A. Clearing: Removal of interfering or objectionable material lying on or protruding above ground surface.
- B. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots greater than 2-inch caliper to a depth of 12 inches below subgrade.
- C. Interfering or Objectionable Material: Trash, rubbish, and junk; vegetation and other organic matter, whether alive, dead, or decaying; topsoil.
- D. Limits of Disturbance: Work area boundary as shown on the Plans.
- E. Root Wad: Tree stump and root mass including all roots greater than 1-inch diameter.
- F. Stripping: Removal of topsoil remaining after applicable scalping is completed.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Clearing, Grubbing, and Stripping Plan: Drawings clearly showing proposed limits to clearing, grubbing, and stripping activities at Site.
- C. Certification or disposal permit for landfill and/or waste disposal site.
- D. A copy of written permission of private property owners, with copy of fill permit for said private property, as may be required for disposal of materials.

1.5 QUALITY ASSURANCE

- A. Existing Conditions: Determine the extent of Work required and limitations before proceeding with Work.
- B. Obtain Engineer's approval of staked clearing, grubbing, and stripping limits prior to commencing clearing, grubbing, and stripping.
- C. Conform to applicable local, state, and federal codes for environmental requirements and disposal of debris,
 - 1. Burning on project site will not be permitted.
 - 2. Use of herbicides will not be permitted.
- D. Permits: The Contractor is responsible for obtaining all necessary permits required for completion of the Work described in this Section.
- E. Protection of Persons and Property: Meet all federal, state, and local safety requirements for the protection of laborers, other persons, and property in the vicinity of the work and requirements of the General Provisions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Existing Materials: All materials, equipment, miscellaneous items, and debris involved, occurring or resulting from demolition, clearing, and grubbing work shall become the property of the Contractor at the place of origin, except as otherwise indicated in the Drawings or specifications.
- B. Wound Paint: Emulsified asphalt formulated for use on damaged plant tissues.

PART 3 EXECUTION

3.1 GENERAL

- A. Clear, grub, and strip areas needed for waste disposal, borrow, or Site improvements within limits shown in approved Clearing, Grubbing, and Stripping Plan.
- B. Remain within the property lines at all times.
- C. Do not injure or deface vegetation or structures that are not designated for removal.

3.2 EXAMINATION

- A. Verify existing plant life designated to remain is tagged or identified.
- B. Identify waste and salvage areas for placing removed materials.

3.3 PREPARATION

- A. Carefully coordinate the work of this Section with all other work and construction.
- B. Call Local Utility Line Information service Colorado 811 not less than three working days before performing Work.
- C. Request underground utilities to be located and marked within and surrounding construction areas.
 - 1. Disconnect or arrange for disconnection of utilities (if any) affected by required work.
 - 2. Keep all active utilities intact and in continuous operations.
- D. Prepare Site only after:
 - 1. Erosion and sediment controls are in place.
 - a. Limit areas exposed uncontrolled to erosion during installation of temporary erosion and sediment controls and in compliance with COP Erosion and Sediment Control Manual and ESC Permits.
 - 2. Tree and vegetation protection is installed.
 - a. Protect existing site improvements, trees, and shrubs to remain to preclude damage during construction.
 - b. Follow the provisions set forth in 01 56 39, Temporary Tree and Plant Protection for all temporary tree and plant protection measures.
 - 3. Temporary fencing is installed along the Limits of Disturbance.
 - 4. Notification of utility agencies; disconnect or arrange for disconnection of utilities (if any) affected by required work. Keep all active utilities intact and in continuous operation.

3.4 PROTECTION

- A. Utilities: Locate, identify, and protect utilities located by utilities and indicated in the Drawings to remain from damage.

- B. Survey control: Protect benchmarks, survey control points, and existing structures from damage or displacement.
- C. Preservation and Trimming of Trees, Shrubs, and Other Vegetation:
 - 1. Avoid injury to trees, shrubs, vines, plants, grasses, and other vegetation growing outside of the areas to be cleared and grubbed and those trees and shrubs designated to be preserved.
 - 2. Protect existing trees and shrubs against cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of roots by stockpiling construction materials, excavated materials, excess foot or vehicular traffic, and parking of vehicles within drip line.
 - 3. Provide temporary guards, as necessary, to protect trees and vegetation to be left standing.
 - 4. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
 - 5. Provide protection for roots and limbs over 1-1/2-inch diameter cut during construction operations. Coat cut faces with emulsified asphalt.
 - 6. Repairable damage to trees and shrubs designated to remain shall be made by a professional tree surgeon approved by the Engineer. Cost shall be borne by the Contractor.
- D. Landscaped Areas:
 - 1. When any portion of the Work crosses private property or landscaped areas, excavate topsoil separately and pile it on the opposite side of the trench from the subsoil.
 - 2. Conduct Work in a manner that will restore original conditions as nearly as practicable.
 - 3. Remove and replace any trees, shrubs, plants, sod, or other vegetative material as needed to complete Work.
 - 4. All shrubs or plants shall be balled by experienced workers, carefully handled and watered, and replaced in their original positions without damage. Sod shall be handled in a similar manner.
 - 5. Wherever sod cannot be saved and restored, the ground must be reseeded and cared for until a stand of grass is reestablished.

6. Plants or shrubs killed or destroyed shall be replaced and paid for by the Contractor.
 7. It is the intent of this paragraph that the Contractor shall leave the surface and plantings in substantially the same conditions as before the Work is undertaken.
- E. Miscellaneous Site Features: Protect all existing miscellaneous site features from damage by excavating equipment and vehicular traffic, including but not limited to existing structures, fences, mailboxes, sidewalks, paving, and curbs.
- F. Repair and Replacement:
1. Damaged items, including but not restricted to those noted above, shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of work of this contract.
 2. Any damage to existing facilities or utilities to remain as caused by the Contractor's operations shall be repaired at the Contractor's expense.

3.5 LIMITS

- A. As follows, but not to extend beyond Limits of Disturbance and within the approved disturbance limits in the Environmental Zones:
1. Excavation: 5 feet beyond top of cut slopes.
 2. Trench Excavation: 6 feet from trench centerline, regardless of actual trench width.
 3. Fill:
 - a. Clearing and Grubbing: 5 feet beyond toe of permanent fill.
 - b. Stripping: 2 feet beyond toe of permanent fill.
 4. Structures: 15 feet outside of new structures.
 5. Roadways: Clearing, grubbing, scalping, and stripping 5 feet from roadway shoulders.
 6. Other Areas: As shown.
- B. Remove rubbish, trash, and junk from entire area within the Limits of Disturbance as material is generated. Stockpiling shall not be permitted without written approval of Owner.

3.6 CLEARING AND GRUBBING

- A. Clear and grub areas within limits shown in approved Clearing, Grubbing, and Stripping Plan.
- B. Except in areas to be excavated, all holes resulting from the clearing and grubbing operations shall be backfilled and compacted in accordance with the applicable sections of these Specifications.
- C. Clearing:
 - 1. Remove trees, saplings, snags, stumps, shrubs, brush, vines, grasses, weeds, and other vegetative growth within the clearing limits shown in the Drawings, except those trees and shrubs noted to remain in the Drawings or as directed by the Engineer.
 - 2. Clearing shall be performed in such a manner as to remove all evidence of the presence of vegetative growth from the surface of the project site and shall be inclusive of sticks and branches of thickness or diameter greater than 3/8-inch and of grasses, weeds, exceeding 12 inches in height except as otherwise indicated.
 - 3. Clear undergrowth and deadwood, without disturbing subsoil.
- D. Grubbing: Clear areas required for access to site and execution of Work and remove all stumps, root wads, and roots over 1-inch diameter to the following depths:

1. Future Structures and Building Areas	24 Inches
2. Roads and Parking Areas	18 Inches
3. All other Areas	12 Inches

3.7 TREE REMOVAL

- A. Exercise care in cutting, felling, trimming, and handling of those trees shown for removal to prevent damage to neighboring trees and structures to remain.
- B. Tree Salvage: As shown on the Plans.
- C. No trees may be removed unless approved and permitted by the Engineer.
- D. Do not top trees unless otherwise specified or approved by Owner in writing.
- E. Refer to Section 01 56 39, Temporary Tree and Plant Protection for tree protection requirements.

3.8 REMOVAL AND DISPOSAL

- A. Native vegetation may be mulched and used on Site.

- B. Asphalt and Gravel Surfaces:
 - 1. Asphalt, concrete, and gravel surfaces designated for removal shall be done to full depth.
 - 2. Asphalt, concrete, and gravel removed at Site may be reused at Site where shown in the Drawings or following approval of the Engineer.
 - 3. Haul removed asphalt, concrete, and gravel which is unsuitable for reuse or that exceeds quantity required.
- C. Remove debris, rock, abandoned piping, and extracted plant life from Site.
- D. Remove from the Site all debris, materials, equipment, and items found thereon and materials and debris resulting from the Work, except as otherwise indicated.
 - 1. All existing improvements designated on the Drawings or specified to be removed including but not limited to structures, pipelines, walls, footings, foundations, slabs, pavements, curbs, fencing, and similar structures occurring above, at, or below existing ground surface shall be included in the Work.
 - 2. Unless otherwise specified, any resulting voids shall be thoroughly cracked out for drainage and backfilled with suitable excavated or imported material compacted to the density of the adjacent soil.
- E. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- F. Do not burn or bury materials on site. Leave site in clean condition.
- G. Removal: All material resulting from demolition, clearing and grubbing, and trimming operations shall be removed from the Site and disposed of in a lawful manner. Materials placed on property of private property owners shall be by written permission only.
- H. Cleanup: During and upon completion of work, promptly remove all unused tools and equipment, surplus materials, and debris.
- I. Adjacent areas shall be returned to their existing condition prior to the start of Work.

3.9 CLEANUP

- A. During the time Work is in progress, make every effort to maintain the Site in a neat and orderly condition.

- B. All refuse, broken pipe, excess fill material, cribbing, and debris shall be removed as soon as practicable.
- C. Should the Work not be maintained in a satisfactory condition, the Owner may cause the work to stop until the cleanup of the Work has been done to the satisfaction of the Engineer.
- D. The Work will not be considered complete or the final payment certificate issued until all rubbish, unused material, or equipment shall have been removed and the premises left in a condition satisfactory to the Owner and the Engineer.

END OF SECTION

SECTION 32 91 21 - FINISH GRADING AND SEEDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Soil Preparation
 - 2. Weed control
 - 3. Fertilizing
 - 4. Seeding
 - 5. Mulching
 - 6. Erosion Control Blanket
 - 7. Maintenance and Establishment Period
- B. Related Sections: NOT USED

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Grassed Areas:
 - 1. See Section 01 22 20 for Measurement and Payment.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM C602 - Standard Specification for Agricultural Liming Materials.
 - 2. 7 USC 1551-1611 - Federal Seed Act.

1.4 DEFINITIONS

- A. Certified Seed: A grass or legume seed named variety that has been reviewed and accepted into the State Certified Seed program. Currently certified seed is individually sold in bags with a Certification Tag.
- B. Pure Live Seed (PLS): Is a measure used to describe the percentage of a quantity of seed that will germinate. PLS is obtained by multiplying the purity percentage by the percentage of total viable seed, then dividing by 100.
- C. Establishment Period: A period when planting work has been performed and initially accepted, and there is a contract requirement to care for the planted areas in some way until the period ends.

- D. Sensitive Areas: Defined areas such as wetlands, natural water and riparian resources, special environmental zones, or where certain activities are restricted such as the use of chemicals.
- E. Weeds: Vegetative species other than specified species to be established in given area.
- F. Invasive Plants: Any species that appears on the City of Louisville current noxious weed list. The last crop plants (if listed as non-native on United States Department of Agriculture (USDA) Plants Database) are considered invasive if it comprises more than 15 percent in any newly established vegetation.
- G. Weed Control: Removal and prevent regrowth of specified weeds, weed parts, and weed seeds from area within the project limit.

1.5 SUBMITTALS

- A. Product Data: Submit data for seed mix, mulch, tackifier, erosion control blanket, soil amendment materials, pesticides, herbicides, and other accessories. The product should meet or exceeds all product requirements specified herein.
- B. Grass Seeds Manufacturer's Certificate: Certify products meet or exceed specified requirements.
 - 1. Certification of seed analysis, germination rate, and inoculation. Include the year of production and date of packaging. Certify that each lot of seed has been tested by a testing laboratory certified in seed testing within 12 months of delivery date. Also include:
 - a. Name and address of laboratory
 - b. Date of test
 - c. Lot number for each seed certified
 - d. Test Results: Name, percentages of purity and of germination, and weed content for each seed mix.
- C. Operation and Maintenance Data: Include maintenance instructions and weed control.

1.6 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.
- B. Pesticide shall not be used in this project.

1.7 QUALIFICATIONS

- A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum 3 years documented experience.
- B. Installer: Company specializing in performing work of this section with minimum 2 years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Deliver tackifier sealed containers showing weight, chemical analysis, and name of manufacturer.

1.9 MAINTENANCE SERVICE

- A. Maintain seeded areas immediately after placement for 12 months from Date of Substantial Completion. Grass shall be well established and exhibits vigorous growing condition.

PART 2 PRODUCTS

2.1 SEED MIXTURE

- A. Suppliers:
 - 1. NaturesSeed.com
 - 2. AVSeeds.com
 - 3. Western Native Seed, Coaldale, CO
- B. Types of Seed Mixes: Seed mixes, quantities, standards, and other information
 - 1. **Seed Mix 1:** Easy to establish, maintain, and native grasses for erosion protection. Suitable for dry areas with minimum or no irrigation.

SPECIES	COMMON NAME	VARIETY	% OF MIX	LBS/ACRE
BOUTELOUA CURTIPENDULA	SIDE OATS GRAMA	VAUGHN	12	2.19
BOUTELOUA GRACILIS	BLUE GRAMA	NATIVE/ALMA/HACHITA	13	0.55
ELYMUS CANADENSIS	CANADA WILDRYE	NATIVE	10	3.03
ELYMUS LANCEOLATUS	THICKSPIKE WHEATGRASS	CRITANA	10	2.26
ELYMUS TRACHYCAULUS	SLENDER WHEATGRASS	SAN LUIS	10	2.19
PASCOPIRUM SMITII	WESTERN WHEATGRASS	AMBA	8	2.53
PANICUM VIRGATUM	SWITCHGRASS	BLACKWELL/NEBRASKA 28	4	0.36
POA SECUNDA	SANDBERG'S BLUEGRASS	NATIVE	7	0.26
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	CIMARRON OR PASTURA	8	1.07
STIPA VIRIDULA	GREEN NEEDLEGRASS	NATIVE/LODORM	6	1.16
GAILLARDIA ARISTATE	BLANKETFLOWER	NOT STATED	3	0.79
RATIBIDA COUNIFERA	YELLOW CONEFLOWER	NOT STATED	5	0.14
ERICAMERIA NASUEOUSAS	RABBITBRUSH	NOT STATED	4	0.35

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2.2 ACCESSORIES

- A. Straw Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Wood and Bark Mulching Material: Chipped wood and bark, sawdust, and ground wood mulch should be free of growth or germination inhibiting ingredients.
- C. Compost: Commercially manufactured fine and medium compost materials.
- D. Tackifier: Commercial tackifier containing no agent toxic to plant life and exhibits no growth or germination inhibiting factors at one of the following forms:
 1. Liquid Stabilizer Emulsion - Tackifier with a base material of liquid containing not less than 55 percent total solids by weight. It should allow exchange of air and moisture to the seeds and have an effective life of 1 year or more.

2. Dry Powder Tackifier - Tackifier base consisting of one or more active hydrocolloids from natural plant sources, which hydrates in water and blends with other slurry materials, and upon application tacks the slurry particles to the Soil surface.
- E. Fertilizer: Commercial grade; recommended for grass to eliminate deficiencies of topsoil and suitable for application with equipment designed for that purpose.
1. Deliver fertilizers in separate or mixture containers that have the percentage of total nitrogen, available phosphoric acid, and water-soluble potash (NPK) in the amounts specified. Label each container with a quality compliance certificate.
 2. Application rate shall be determined by the soil conditions, as indicated in analysis to determine the proportions of Nitrogen percent, phosphoric acid percent, soluble potash percent.
- F. Lime: ASTM C602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
- G. Water: Clean, fresh, and free of substances or matter capable of inhibiting vigorous growth of grass.
- H. Erosion Control Blanket shall be open, flexible, and dimensionally stable network of fully-biodegradable, bonded, interlocking fibers. The blanket shall have a functional longevity of up to 12 months. Blanket fibers shall be turf green color or natural wood/straw color.
- I. Pesticides/Herbicide: Submit proposed pesticides and receive approval before using. Submit a copy of the manufacturer's federal registered label and, if requested, a Material Safety Data Sheet. The Agency reserves the right to restrict chemicals from being used on sensitive areas.
1. Pesticide registered and approved by the Environmental Protection Agency (EPA), acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application.
 2. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
 3. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the erosion control layer.
 4. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.3 SOURCE QUALITY CONTROL

- A. Analyze soil to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.
- B. Provide recommendation for fertilizer and lime application rates for specified seed mix as result of soil testing.
- C. Testing is not required when recent tests and certificates are available for imported topsoil. Submit these test results to testing laboratory. Indicate, by test results, information necessary to determine suitability.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Planting Season: Plant seeds when growing conditions are conducive to seed germination and quick but thorough establishment of seedlings.
 - 1. Avoid planting seed during the heat of summer or in late fall to avoid freezes that kill sprouting grass seeds.
- B. Weed Control Coordinator - Submit certification at the preconstruction conference that the weed control coordinator meets the following minimum requirements:
 - 1. Demonstrates ability to identify noxious and other weed species commonly seen in site location for at least 1 year conducting weed surveys.
 - 2. Has successful weed control experience, with similar duties to those stated under typical duties below, on at least three construction or vegetation management projects. Certification of Pesticide Consultant License is preferred.
 - 3. The weed control coordinator duties include:
 - a. Identify Specified Weeds.
 - b. Prepare and update the Weed Control Program.
 - c. Coordinate Contractor's weed removal Work and records.
 - d. Ensures the removed weeds are disposed of at an approved off-site facility.
- C. Pesticide Applicator - Submit certification before application of pesticide Work begins, that when chemical weed control is used, that each applicator possesses a Commercial Pesticide Applicator's License held in the individual's name. Submit a certification each time a new applicator begins application Work on the Project.

- D. Conduct soil analysis to determine soil fertility. The soil test should at least analyze the current nitrogen, phosphorus, potassium, and PH rates in the soil. Accordingly, the soil test result would suggest the proper soil amendment application including the rates of fertilizers and lime. Obtain the Engineer approval before applying soil amendment.
- E. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 2. Uniformly moisten excessively dry soil that is not workable, and which is too dusty.
 - 3. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.

3.2 SOIL PREPARATION

- A. Prepare area for seeding while generally considering the following:
 - 1. Remove any matter detrimental or toxic to the growth of plants, including weeds, clods, rocks, or debris.
 - 2. Application rates of fertilizer or lime shall be based on soil testing results.
 - 3. Prepare a tilled, fine, but firm seedbed.
 - 4. The soil shall have a pH range of 5.5 to 8.0.

3.3 WEED CONTROL

- A. Do not harm or disturb any vegetation that was planted as proposed on the planting plans. Do not compact soil with heavy equipment.
- B. Inspect the Project for new growth of specified weeds at least monthly during the plants growing season and apply weed control measures as appropriate.
 - 1. Inspect the area at least every 30 days after growing season has begun or as directed for continuing control of all vegetation considered as weeds.
 - 2. Provide schedule of weed control measures.
 - 3. Request to use wheeled or tracked construction equipment in sensitive areas.

- C. Remove and control weeds according to the following:
 - 1. Verify the weed control methods before proceeding with weed control activities.
 - 2. Remove all specified weeds and ensure that weed seeds or reproducing plant parts such as vines, runners, or rhizomes do not remain or become disbursed during control activities.
 - 3. Place weeds and related materials in an approved container and transport to an approved offsite disposal facility according to applicable laws and regulations.
 - 4. Keep the site weed free including weeds not initially documented.
- D. Weed Control at Sensitive Areas - as determined by The Engineer:
 - 1. Use only hand or light mechanical weed control methods within 50 feet of sensitive areas.
 - 2. Hand methods include the use of hand tools. Light mechanical methods include the use of hand carried, motorized machinery.
- E. Weed Control Corrective Work - If corrective work for areas identified as deficient by the Engineer, it should be completed within a 15 Calendar Day period,

3.4 SEEDING

- A. NOT USED.

3.5 HYDROSEEDING & HYDROMULCHING

- A. NOT USED.

3.6 MECHANICAL SEEDING

- A. Seeding, fertilizing, and covering: The following may be used to stabilize small disturbed areas that are 1,500 square feet or less and totaling no more than 0.5 acre:
 - 1. Seeds and fertilizer - Seed the disturbed area with the seed mix at the specified rate by mechanical spreader.
 - 2. Cover - Cover seeded areas with one of the following:
 - a. Straw mulch at a rate of 100 pounds per 1,000 square feet. Spread the mulch uniformly approximately 2 inches deep, in loose condition, which requires roughly 2-1/2 tons per acre of dry mulch. Do not use straw mulch on slopes of 1V:1.5H or steeper.

- b. Bark mulch spread uniformly at an approximate depth of 1/2-inch. Use well-decomposed mulch for seed mulching. Do not use bark mulch on slopes of 1V:1.5H or steeper.
- c. Suitable open-weave, biodegradable erosion control matting installed according to manufacturer's instructions.

3.7 SEEDING OVER MULCHED AREAS

- A. If an area has been previously mulched for erosion control or temporary seed and mulch is present on the soil surface, double the pound rate for each seed type used. Apply seed and fertilizer hydraulically or mechanically and add a green dye to the mixture to visibly aid uniform application. Upon approval, fertilizer and seed may only be applied after mulching if one of the following conditions apply:
 - 1. Mulch is punched into the soil by mechanized means. Avoid heavy equipment that may compact the soil. Roll seeded area with roller not exceeding 112 pounds/linear foot.
 - 2. Mulch that is held down with netting or like material
 - 3. Mulch is removed prior to seeding.

3.8 WORK QUALITY

- A. After application, apply water with fine spray immediately after each area has been hydroseeded. Apply water with fine spray immediately after each area has been mulched.
- B. Drift - Prevent drift and displacement of seed and fertilizer regardless of equipment and methods used.
- C. Displacement - Prevent seed, fertilizer, and mulch from falling or drifting onto other areas where grass is detrimental. Remove material that falls on plants, roadways, gravel shoulders, structures, and other surfaces where material is not specified.
- D. Damage - Prevent damage to prepared areas and to completed fertilizer, seed, and mulch work. Replace all material that becomes displaced before acceptance of the work.

3.9 MAINTENANCE

- A. Control growth of weeds. Remedy damage resulting from improper use of herbicides.
- B. Weed Control - Remove specified weeds prior to plants going to seed and keep weed control and seeded areas "Weed Free" throughout the Establishment Period.

- C. Immediately reseed areas showing bare spots.
- D. Repair washouts or gullies.
- E. Protect seeded areas with warning signs during maintenance period.
- F. Ensure that each seeded area has a uniform, healthy and weed-free stand of grass or other seeded plants growing at the end of the Establishment Period. The minimum living plant coverage standards for acceptance of seeding in a planted area are as follows:
 - 1. Temporary Seeding:
 - a. 50 percent coverage of ground surface.
 - 2. Permanent Seeding:
 - a. 70 percent coverage of ground surface or as indicated by CDPHE or City of Louisville Stormwater Permitting requirements, whichever is greater.
 - b. Should uniform, healthy and weed free stand of grass or other seeded plants not meet minimum plant cover standards by the end of the establishment/warranty period, Contractor shall reseed and maintain areas of deficient coverage until minimum coverage standards are met.
 - 3. Wetland Seeding - 70 percent coverage of ground surface.
 - 4. Water Quality Seeding - 100 percent of ground surface.
- G. Protection - Protect seeded areas from trespass and other hazards of damage. Use protective fences and signs at no additional cost to the Agency. Obtain approval of protective methods used.
- H. Fertilizing and Watering - Apply fertilizer according to grass and soil requirements. Apply water according to good horticultural practice under the prevailing conditions, as required to promote a healthy stand of plants. Obtain water at no additional cost to the Agency.
- I. Mowing – If mowing is required, do the first mowing of grass when soil is firm enough to prevent rutting and grass is about 3 inches tall. After mowing, leave grass that is approximately 2 inches tall. At each subsequent mowing, leave about 1-1/2 inches of growth. After the second mowing, grass clippings may be left in place upon written approval.

- J. Repair and Restore - Repair and restore soil grades and re-seed damaged, settled, or unproductive areas to the specified conditions of this Section at no additional cost to the Owner.
- K. Finishing and Cleaning Up Cleanup - Remove weeds, trash, debris, stones, and other extraneous matter from seeded areas as directed and dispose of.

END OF SECTION

SECTION 40 90 00 - INSTRUMENTATION AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. This section covers the furnishing and installation of metering and control equipment which shall include the following principal items:
 - 1. Metering and Control Systems. Principal components of the metering and control systems shall be as listed on the "Instrument List" at the end of this section and shall include the PLC system as is shown on the Drawings.
 - 2. Miscellaneous. One lot of test equipment, spare parts, and miscellaneous devices as set forth herein. Supplementing this section, the drawings indicate locations and arrangement of panels and instruments, and provide functional diagrams and schematics regarding connection and interaction with other equipment.
- B. Related Sections
 - 1. Division 01 – Materials and Equipment
 - 2. Section 26 00 00 – Electrical

1.2 REFERENCES

- A. Codes & Permits
 - 1. All work and materials shall comply with the National Electrical Code, the National Electrical Safety Code, and applicable local regulations and ordinances. All panels shall be listed by Underwriters Laboratories or other testing organizations acceptable to the governing authority. The Contractor shall, at his own expense, arrange for and obtain all necessary permits, inspections, and approval by the proper authorities in local jurisdiction of such work.

1.3 SUBMITTALS

- A. Complete fabrication, assembly, and installation drawings: wiring and schematic diagrams: and details, specifications, and data covering the materials used and the parts, devices, and accessories forming a part of the equipment furnished shall be submitted in accordance with the submittals section. Individual drawings and data sheets submitted at random intervals will not be accepted for review. Instrument tag numbers indicated on the contract drawings shall be referenced where applicable. Submittal data for multifunctional instruments shall include complete descriptions of the intended functions and configurations of the instruments.
 - 1. The submittal shall include the following items.
 - a. Product catalog cut sheets clearly marked to show the applicable model number, operational features, and intended service of the device.
 - b. A detailed list of any exceptions, functional differences, or discrepancies between the Supplier's proposed system and the contract requirements.

- c. Complete panel fabrication drawings and details of panel wiring, piping, and painting. Panel and subpanel drawings shall include overall dimensions, metal thickness, door swing, mounting details, and front of panel arrangement to show general appearance, with spacing and mounting height of instruments and control devices.
 - d. System wiring and installation drawings for all interconnecting wiring between components of the systems furnished and for all interconnecting wiring between the related equipment and the equipment furnished under this section. Wiring diagrams shall show complete circuits and indicate all connections.
 - e. If panel terminal designations, interdevice connections, device features and options, or other features are modified as a result of the fabrication process or factory testing, revised drawings shall be resubmitted.
 - f. The submittal shall be provided electronically.
2. O&M Manual Submittal. Complete system documentation, in the form of operation and maintenance manuals, shall be provided. Manuals shall include complete product instruction books for each item of equipment furnished.
- a. Where instruction booklets cover more than one specific model or range of instrument, product data sheets shall be included which indicate the instrument model number, calibrated range, and all other special features. A complete set of “as-built” wiring, fabrication, and interconnection drawings, calibration and startup sheets shall be included with the manuals.
 - b. A copy of all final O&M manuals shall be provided in PDF format.

1.4 QUALITY ASSURANCE

A. Supplier’s qualifications

- 1. The entire system shall be designed, coordinated, and supplied by a qualified system integrator (Integrator) who is regularly engaged in the business of designing and building instrument and control systems for water and wastewater projects.
 - a. The Integrator shall be: Browns Hill Engineering & Controls, LLC.

B. Coordination.

- 1. Instrument and control systems shall be designed and coordinated for proper operation with related equipment and materials furnished by other suppliers under other sections of these specifications. All instruments and control devices shall be applied in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the instrument or device manufactured and the manufacturer of related equipment.
- 2. Installation drawings shall be prepared for interconnecting wiring and piping between the related equipment and the equipment furnished under this section. All interconnecting wiring shall be appropriate for the service and shall result in a properly functioning system.
- 3. The Integrator shall provide coordination with other contractors and supervision of installation as required during construction.
- 4. Coordination shall be provided between the Integrator and the UV system supplier.

5. Instrument and control systems shall be designed and coordinated for proper operation with other sections of these specifications. These shall include but not be limited to Materials and Equipment – Division 01, Electrical – Section 26 00 00, and Programmable Logic Controllers – Section 40 95 00.

1.5 WARRANTY

- A. All suppliers shall warrant their hardware for a period of two years from the date of system acceptance.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. All equipment furnished under this section shall be selected by the system supplier for its superior quality and intended performance. Unless indicated otherwise, all equipment and material shall be new, undamaged and meet the requirements of UL. Where UL requirements are not applicable, equipment and material shall be identified as such by the supplier and approved by the Engineer before purchase and installation. Equipment and materials used shall be subject to review and shall comply with the following requirements.
 1. Power and Instrument Signals. Unless specified otherwise, electrical power supply to the instrumentation equipment will be unregulated 120 VAC at the locations noted on the one-line and functional diagrams. All transmitted electronic analog instrument signals shall be 4-20 mA DC and shall be linear with the measured variable.
 2. Metering Accuracy. System metering accuracy, as compared to the actual process value, shall be determined from the value read at the principal readout device such as the recorder or totalizer. System requirements shall not preclude any requirements specified herein for individual devices.
 - a. For systems where the primary measuring device, transmitter, and receiver are furnished under this section, the accuracies shall be within the following limits:
 - i) Flow Rate: magnetic or transit time ultrasonic metering: 1.5 percent of full scale between 1.0 and 100 percent of scale.
 3. Appurtenances. Signal converters, signal boosters, amplifiers, special power supplies, special cable, special grounding, and isolation requirements shall be furnished and installed as required for proper performance of the equipment.

2.2 PANEL FABRICATION

- A. General Fabrication Requirements. All panels furnished hereunder shall conform to the requirements of NEMA ICS-6-1988. The following paragraphs describe general fabrication requirements for the instrument panels, consoles, enclosures, and subpanels:
 1. Wiring.
 - a. All internal instrument and component device wiring shall be as normally furnished by the manufacturer. With the exception of electronic circuits, all

interconnecting wiring and wiring to terminals for external connection shall be stranded tinned copper, insulated for not less than 600 volts, with a moisture-resistant and flame-retardant covering rated for not less than 90°C.

- b. Power distribution wiring on the line side of the panel's protective devices shall be minimum 12 AWG. Secondary power distribution wiring shall be minimum 16 AWG. Wiring for control circuits shall be minimum 16 AWG. Electronic analog circuits shall be 18 AWG twisted and shielded pairs rated not less than 300 volts. Analog circuits shall be separated from ac power circuits. Wiring for ac power distribution, dc power distribution, and control circuits shall have different colors and shall agree with the color coding legend on the system supplier's panel wiring diagrams.
 - c. Terminal blocks for external connections shall be suitable for 12 AWG wire and shall be rated 30 amperes at not less than 300 volts. Terminal blocks shall be fabricated complete with a marking strip, covers, and pressure connectors. Terminals shall be labeled to agree with identification shown on the supplier's submittal circuits, plus one ground for each shielded cable. Not less than 8 inches of clearance shall be provided between the terminal strips and the base of vertical panels for conduit and wiring space. Not less than 20% percent spare terminals shall be provided. Each control loop or system shall be individually fused, and all fused or circuit breakers shall be clearly labeled and located for easy maintenance. Terminal block shall be Phoenix Contact UT 4-MTD series.
 - d. All wiring shall be grouped and firmly supported inside the panel. Wiring shall be routed in nonmetallic slotted wire duct or similar. Ducts shall be readily accessible within the panel with removable covers and shall have a space of at least 40 percent of the depth of the duct available for future use after installation is complete and all field wiring installed. Sufficient space shall be provided between cable groups or ducts and terminal blocks for easy installation or removal of cables. Wire duct shall be Thomas & Betts Ty Duct or approved equal.
 - e. Where signal or loop wiring must be routed to more than one panel or device, the required circuit routing shall be as indicated on the one-line diagrams.
 - f. All analog input signals coming from external from the building where the panel is located shall have surge protection.
 - g. The panel fabricator shall provide such additional circuits as may be indicated on the electrical schematic drawings.
 - h. All wires in the panel shall be identified at both ends of the wire. These labels shall agree with the labels shown on the wiring diagrams. The wire labels shall be of the heat-shrink tube type of wire marker as manufactured by Brady thermal labels.
 - i. All instruments that require 120vac power that have the signal from the instrument going to a panel, shall be provided 120vac from that panel. The 120vac circuit to these instruments shall be individually fused.
2. Nameplates. Nameplates shall be provided on the face of the panel or on the individual device as required. Panel nameplates shall have approximate dimensions and legends, as indicated on the drawings, letters approximately 3/16 inch high

extending through the black face into the white layer. Nameplates shall be secured firmly to the panel. Panel face nameplates do not replace the requirement for device identification tags as specified herein under the Device Tag Numbering System paragraph.

2.3 MATERIALS & EQUIPMENT

A. Panel Interior-Mounted Devices

1. POWER SUPPLIES. Regulated DC power supplies for instrument loops shall be provided as needed. Power supplies shall be suitable for input voltage variation of plus or minus 10 percent. The DC power supplies shall be Idec "PS5R Slim line", or Phoenix Contact "UNO".
2. RELAYS. Relays indicated to be provided in panels, enclosures, or systems furnished under this section shall be of the plug-in socket base type with dustproof plastic enclosures unless noted otherwise. Relays shall be UL listed. Relays shall have a minimum rating of 10 amperes at 120 VAC. Time-delay relays shall have dials or switch settings engraved in seconds and shall have timing repeatability of +/- 2.0 percent of setting. Latching and special purpose relays shall be as required for the specific application. Relays shall have a light to indicate when coil is energized. Relays shall be Idec "RH or RTE Series" or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION REQUIREMENTS

A. General Requirements

1. The instrumentation equipment shall be installed by the Contractor or his subcontractors in accordance with the manufacturers' instructions. The services of the system Supplier's technical representative shall be provided as necessary to calibrate, test, and advise others of procedures for adjustment and operation.

B. Inspection.

1. Inspect materials and equipment for signs of damage, deterioration or other deleterious effects of storage, transportation, handling, or defects in manufacture or assembly.
 - a. Replace with identical new materials or equipment or repair to like new condition any materials or equipment showing such effects to the satisfaction of the Engineer and Owner.

C. Equipment Installation.

1. Handle, install, connect, clean, condition, align and adjust products and equipment in strict accordance with manufacturer's instructions and in conformity with specification requirements.

- a. Maintain one complete set of manufacturer's installation instructions at the jobsite during installation and until installation is accepted by the Engineer and Owner.
 - b. Perform all work in accordance with manufacturer's instructions.
 - i) Do not omit any preparatory step or installation procedure unless specifically modified or exempted by contract documents.
 - ii) Should job conditions or specification requirements conflict with manufacturer's instructions, consult with Engineer prior to proceeding.
 - c. Field Wiring. Field wiring materials and installation shall conform to the requirements of the electrical section.
 - d. Field-Mounted Instruments. Instruments shall be mounted so they may be easily read and serviced and all appurtenant devices are easily operated. Installation details for some instruments are indicated on the drawings. Unless otherwise indicated on the drawings, instruments which include local indicators shall be mounted approximately 5 feet above the floor and shall be oriented for ease of viewing. Transmitters shall be mounted on corrosion-resistant pipe supports suitable for floor, wall, or bracket mounting.
- D. Field Calibration. A technical representative of the system supplier shall calibrate each instrument and shall provide a written calibration report for each instrument, indicating the results and final tuning adjustment settings. The adjustment of each calibrated instrument shall be sealed or marked, insofar as possible, to discourage tampering. Instruments shall be calibrated before checkout of the operation of the system.
- E. Systems Check. A technical representative of the system supplier shall participate in the checkout of metering and control systems. If interrelated devices furnished by other suppliers, such as valve actuators, motor controls, chemical feeders, or primary measuring devices, do not perform properly when placed in service, the technical representative shall use suitable test equipment to introduce simulated signals to verify or measure signals from such devices as required to locate the source of trouble or malfunction. A written report stating the results of such tests shall be furnished, if requested by the Engineer, to assign responsibility for corrective measures.
- 1. Installation Test Equipment. Unless specified otherwise, all test equipment for the calibration and checking of system components shall be provided by the Contractor for the duration of the testing work. Unless specified otherwise, test equipment will remain the property of the Contractor or the system Supplier.
- F. Adjustment and Cleaning
- 1. Perform all required adjustments, tests, operational checks, cleaning and other start-up activities required.
 - 2. Take precautions, as necessary, to properly protect all equipment from damage. Installed equipment to be protected from further construction operations.

3.2 CUSTOMER TRAINING

- A. The coordinating supplier shall provide a qualified representative at the job site to train the Owner's personnel in operating and maintenance of the equipment. The training session shall consist of one 1-hour session, and the schedule shall be arranged and coordinated with the Engineer.

END OF SECTION

SECTION 40 95 00 - PROGRAMMABLE LOGIC CONTROLLERS

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes the items listed below and all other components necessary for a complete system as noted herein and indicated on the drawings
 - 1. Programmable Logic Controllers (PLCs)
 - 2. Communication equipment
 - 3. HMI software
 - 4. Programming
- B. Related Sections
 - 1. Division 01 – Materials and Equipment
 - 2. Section 26 00 00 – Electrical
 - 3. Section 40 90 00 – Instrumentation & Controls
 - 4. I/O list

1.2 REFERENCES

- A. ISA 5.1 – Instrumentation Symbols and Identification
- B. NEMA ICS 1 – General Requirements for Industrial Control and Systems
- C. NEMA ICS 2 – Standards for Industrial Control and Systems: Controllers, Contactors, and Overload Relays, Rated 600 Volts
- D. DEMA ICS 3 – Industrial Control and Systems: Factory Built Assemblies

1.3 DESIGN REQUIREMENTS

- A. Discrete input/output signals shall all be 24VDC
- B. Analog input/output signals shall all be 4-20mA
- C. Analog signal isolators shall be independently powered units capable of driving two 4-20mA signals
- D. All required buffers, isolators, signal converter, and amplifiers for coordination with other equipment furnished under other sections, and between items of equipment needed for a complete system shall be furnished under this section of the specifications whether indicated on the Drawings or not or detailed in these specifications or not

1.4 SYSTEM DESCRIPTION

- A. Equipment furnished and installed under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the equipment manufacturer, unless exceptions are noted by Engineer.
 - 1. I/O List. An I/O list is attached at the end of this section

1.5 SUBMITTALS

- A. Submittals shall be required as noted in Section 40 90 00.

1.6 QUALITY ASSURANCE

- A. Supplier's qualifications
 - 1. The entire system shall be designed, coordinated, and supplied by the system integrator supplier.
- B. Coordination
 - 1. The PLCs and PLC system shall be designed and coordinated for proper operation with related equipment and materials furnished by other suppliers under other sections of these specifications. All devices shall be applied in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the instrument or device manufacturer and the manufacturer of related equipment.
 - 2. Installation drawings shall be prepared for interconnecting wiring and piping between the related equipment and the equipment furnished under this section. All interconnecting wiring shall be appropriate for the service and shall result in a properly functioning system.
 - 3. The Contractor shall provide coordination with other contractors and supervision of installation as required during construction.

1.7 WARRANTY

- A. The Supplier shall warrant the hardware, software, and configuration related to the operational performance of the facility for a period of two years from the date of system acceptance. The Supplier shall provide a two-year software service agreement to include any and all minor and/or major releases and upgrades, and shall correct any problems or "bugs" which prohibit the SCADA system from performing process operations in accordance with these specifications.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. All equipment furnished under this section shall be selected by the system supplier for its superior quality and intended performance. Unless indicated otherwise, all equipment and material shall be new, undamaged and meet the requirements of UL. Where UL

requirements are not applicable, equipment and material shall be identified as such by the supplier and approved by the Engineer before purchase and installation. Equipment and materials used shall be subject to review and shall comply with the following requirements.

1. Interchangeability. All PLC systems shall be products of the same manufacturer and of the same series or product line. Processors, local and remote input/output hardware, communications modules, and specialty modules shall be interchangeable among all I/O panels and systems.
2. Installed I/O requirements. Each PLC shall have I/O modules installed as noted.
3. Modules shall be added as indicated to provide for all the I/O required on the project. The modules shall be completely wired out to field terminal blocks. All terminal blocks and accessories shall be provided.
4. All Analog signals shall be logged in the system Historian.
5. Autodialer alarms shall be selected and configured per the owner's requirements.
6. The existing PLC panel wiring diagrams shall be updated for the changes done under this contract. The updates shall be done in AutoCad and the files shall be turned over to the owner.

2.2 MATERIALS AND EQUIPMENT

- A. Programmable Logic Controller (PLC)
 1. The existing PLC is a Control Wave by Bristol.
 2. The existing Chemical Systems PLC has 16 discrete inputs that are assigned to the generator that shall be used for the new generator and the ATS.
- B. HMI Software
 1. iFix software (existing)

PART 3 EXECUTION

3.1 INSTALLATION REQUIREMENTS

- A. General Requirements
 1. It shall be the Supplier's responsibility to ensure that the entire PLC system and HMI system is installed in a satisfactory condition per these specifications and the manufacturer's requirements.
- B. Inspection
 1. Inspect materials and equipment for signs of damage, deterioration or other deleterious effects of storage, transportation, handling, or defects in manufacture or assembly.
 - a. Replace with identical new materials or equipment or repair to like new condition any materials or equipment showing such effects to the satisfaction of the Engineer and Owner.

C. Equipment Installation

1. Handle, install, connect, clean, condition, align and adjust products and equipment in strict accordance with manufacturer's instructions and in conformity with specification requirements.
 - a. Maintain one complete set of manufacturer's installation instructions at the jobsite during installation and until installation is accepted by the Engineer and Owner.
 - b. Perform all work in accordance with manufacturer's instructions.
 - i) Do not omit any preparatory step or installation procedure unless specifically modified or exempted by contract documents.
 - ii) Should job conditions or specification requirements conflict with manufacturer's instructions, consult with Engineer prior to proceeding.

D. Adjustment and Cleaning

1. Perform all required adjustments, tests, operational checks, cleaning and other start-up activities required.
2. Take precautions, as necessary, to properly protect all equipment from damage. Installed equipment to be protected from further construction operations.

E. PLC and HMI Programming.

1. The Contractor shall be responsible for all PLC and HMI programming.
2. All signals shall be added to the existing HMI and displayed on the screens there.
3. New screens shall be developed to display all the generator information.
4. New alarms shall be added as requested by the owner for the generator.

3.2 CUSTOMER TRAINING

1. The system supplier shall provide a qualified representative at the job site to train the Owner's personnel in operating and maintenance of the equipment. The training session shall consist of one 2-hour session and the schedule shall be arranged and coordinated with the owner.

3.3 I/O LIST

(Only I/O points added or modified are shown)

<u>Tag #</u>	<u>Description</u>	<u>DI</u>	<u>DO</u>	<u>AI</u>	<u>AO</u>	<u>Scale</u>	<u>Notes</u>
	Generator – Run Status	1					Existing to be reused
	Generator – General Fault Status	1					Existing to be reused
	Generator – Loaded	1					Existing to be reused
	Generator – Not in Auto	1					Existing to be reused
	Generator – Low Temperature	1					Existing to be reused
	Generator – High Temperature	1					Existing to be reused

	Generator – Low Oil Pre Pressure	1					Existing to be reused
	Generator – Low Oil Pressure	1					Existing to be reused
	Generator – Overspeed	1					Existing to be reused
	Generator – Coolant Low Level	1					Existing to be reused
	Generator – Fuel Low	1					Existing to be reused
	Generator – Pre Temperature Alarm	1					Existing to be reused
	ATS in Normal Position	1					New signal
	ATS in Emergency Position	1					New signal

END OF SECTION