

Water Treatment Facility Earthquake Repairs at Three Facilities

INVITATION TO BID NO. 2023C001



**Municipality of Anchorage
Anchorage Water and Wastewater Utility
3000 Arctic Boulevard
Anchorage, AK 99503**



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2023 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

**AWWU PROJECT NUMBERS WR0000387482, WR0000387484
AND WR0000254699**

INVITATION TO BID NUMBER 2023C001

SPECIFICATIONS AND CONTRACT DOCUMENTS

Prepared For:
Municipality of Anchorage
Anchorage Water and Wastewater Utility
3000 Arctic Boulevard
Anchorage, Alaska 99503



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These documents were prepared under the supervision of a registered Professional Engineer.



12.19.22



Municipality of Anchorage

Anchorage Water and Wastewater Utility



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The most current version of the Municipality of Anchorage Standard Specifications (M.A.S.S.) is provided on the Municipality website at

http://www.muni.org/departments/project_management/pages/mass.aspx.

Notifications will be sent when updates are made to the document, but each user of M.A.S.S. is responsible to verify that they are using the most current version.



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION I

INVITATION TO BID

MUNICIPALITY OF ANCHORAGE PURCHASING DEPARTMENT

Invitation to Bid

No. 2023C001

Sealed bids will be received in accordance with the time schedule shown below by the Municipality of Anchorage at the Purchasing Department, 632 W. 6th Ave., Suite 520, Anchorage, Alaska 99501 for:

Water Treatment Facility Earthquake Repairs at Three Facilities

All proposed Work for the Water Treatment Facility Earthquake Repairs is located in Anchorage, Alaska, as shown on the Drawings. The Work included in this Contract consists of furnishing all labor, equipment, materials, supervision, and other facilities necessary to complete the Work set forth in the Plans, and Specifications, and terms of the Contract successfully.

The Work that is presented in the Bid Proposal for this Contract consists of the Contractor repairing earthquake damage at the Eklutna Facility, the Ship Creek Facility and Well Number 12. The work consists of crack and spall repair in concrete and masonry, tile repair, concrete slab repair, drain line repair, masonry mortar repointing, painting, crack injection, handrail repair, door adjustment, concrete corbel replacement, and rebar doweling.

Work of each schedule includes but is not limited to setup and removal of temporary access lifts, ladders, and/or scaffolding; selective demolition; temporary removal and replacement of building elements, furnish and/or fabricate and install new building systems elements, and restoration of all affected elements and/or systems. It shall be the responsibility of the bidder to prepare the bid so that all materials and working arrangements harmoniously conform to the intent of the Contract Specifications and Special Provisions.

ESTIMATED CONSTRUCTION COST: **Between: \$500,001 - \$1,000,000**

Mandatory Site Visit: 9:00 A.M. Local Time, 17 January 2023

Site Visit will begin at: 30001 Eklutna Lake Road

proceed to 8800 Bald Eagle Drive

and end at 4100 B Street

Pre-Bid Conference: N/A

Questions Due: 12 PM Noon, Local Time, January 19, 2023

Bid Opening: 2:00 P.M. Local Time, February 7, 2023

Municipality of Anchorage
ITB: 2023C001

All Pre-Bid Conferences and/or Bid Openings may be attended in person or via conference call at this number (907) 343-6089. You may call in five (5) minutes before any scheduled conference. EMAILED BIDS WILL NOT BE ACCEPTED.

ALL QUESTIONS SHALL BE SUBMITTED PRIOR TO THE QUESTION DUE DATE THIS WILL BE THE FINAL OPPORTUNITY TO ASK QUESTIONS OR REQUEST CLARIFICATIONS.

Requests for interpretation or clarification of the bidding Documents shall be made in writing to the Purchasing Office (wwpur@muni.org). Please reference the Invitation to Bid Number & Project Title. Do not contact the specified department directly.

To maintain the project schedule, Interpretations, corrections, or changes to the Bidding Documents shall be made by Addendum and shall not be binding unless included in the Addendum. It is your responsibility to periodically check the website for addenda.

At the above indicated time, the bids will be opened publicly and read. Bids must be received by the Purchasing Officer prior to the time fixed for opening of the bids to be considered. Time of receipt will be as determined by the time stamp in the Purchasing Office, Suite 520.

The Municipality of Anchorage reserves the right to reject any and all bids and to waive any informalities in the bids. No bidder may withdraw his bid after the hour set for the opening of bids or before the award of contract unless said award is delayed for a period exceeding sixty (60) days from the time of the opening.

The Municipality shall not be responsible for bid preparation costs, nor for costs, including attorney fees, associated with any (administrative, judicial or otherwise) challenge to the determination of the lowest responsive and responsible bidder and/or award of contract, and/or rejection of bids. By submitting a bid, each bidder agrees to be bound in this respect and waives all claims to such costs and fees.

Contracts shall be awarded by written notice issued by the Purchasing Officer to the lowest responsive and responsible bidder; however, preference will be given to local bidders in compliance with Anchorage Municipal Code Section 7.20.040.

The Municipality of Anchorage assumes no responsibility for any interpretations or presentations made by any of its officers or agents unless such interpretations or presentations are made by written addendum to this Invitation to Bid.

Municipality of Anchorage
ITB: 2023C001

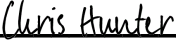
Bonding Requirements are per MASS/MASS B or as per special provisions

THE MUNICIPALITY OF ANCHORAGE IS AN “EQUAL OPPORTUNITY EMPLOYER”

PUBLISH ONE TIME

Date: January 9, 2023

Buyer Assigned to this Project:
Melanie A. Clark



Chris Hunter
Deputy Purchasing Director



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION II

SPECIAL PROVISIONS



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

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GENERAL PROVISIONS

GENERAL STATEMENT AND EXTENT OF WORK

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The Work that is presented in the Bid Proposal for this Contract consists of the Contractor repairing earthquake damage at the Eklutna Facility, the Ship Creek Facility and Well Number 12. The work consists of crack and spall repair in concrete and masonry, tile repair, concrete slab repair, drain line repair, masonry mortar repointing, painting, crack injection, handrail repair, door adjustment, concrete corbel replacement, and rebar doweling.

Work of each schedule includes but is not limited to: setup and removal of temporary access lifts, ladders, and/or scaffolding; selective demolition; temporary removal and replacement of building elements, furnish and/or fabricate and install new building systems elements, and restoration of all affected elements and/or systems.

It shall be the responsibility of the bidder to prepare the bid so that all materials and working arrangements harmoniously conform to the intent of the Contract Specifications and Special Provisions.

SPECIFICATIONS, CODES, ORDINANCES, AND STANDARDS

The Contractor shall perform all Work in accordance with the Contract Documents, which include the most current edition of the **Municipality of Anchorage Standard Specifications**, (hereinafter referred to as M.A.S.S.), and herein revised and supplemented as the Special Provisions.

The Contractor shall perform all Work in accordance with the latest edition of all applicable codes, ordinances, standards, and associated addenda including the AWWU Design and Construction Practices Manual (hereinafter referred to as D.C.P.M.).

The M.A.S.S. and D.C.P.M. are available for download at the following links:

M.A.S.S.

http://www.muni.org/departments/project_management/pages/mass.aspx

D.C.P.M.

<https://www.awwu.biz/about-us/reliable-infrastructure/design-and-construction-practices-manual>

CHANGES TO THE MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS (MASS)

The following enumerated provisions of MASS are amended as hereinafter stated.

DIVISION 10 STANDARD GENERAL PROVISIONS

SECTION 10.01 DEFINITIONS

Add the following item to the list of definitions:

Record Drawings – Detailed drawings that accurately depict all changes in location (both horizontal and vertical), material, equipment, and other elements of Work accomplished by the Contractor. The drawings shall also depict the horizontal and vertical locations of all other utilities and obstructions encountered during construction. Final elevations and locations shall be clearly marked with actual dimensions.

SECTION 10.03 AWARD AND EXECUTION OF CONTRACT

Article 3.7 Contractor's Warranty

Delete the first sentence of the first paragraph and replace with the following:

The Contractor shall warranty all materials and workmanship for two (2) years from the Final Acceptance Date.

SECTION 10.04 SCOPE OF WORK

Article 4.8 Work Incidental to the Contract

Delete the numbered item thirteen and replace with the following:

13. Securing, permitting, maintaining, and restoring a stockpile/materials staging area as necessary to complete the Work.
14. Other items indicated on the Drawings or in these Specifications, but not specifically listed as a bid item in these Contract Documents.

Article 4.17 Utilities

Add the following sentence to the end of the seventh paragraph:

Utility locates are the responsibility of the Contractor to request, coordinate with the Work, maintain, and protect.

Replace the list of Utility Companies in Article 4.17 with the following:

Alaska Communications (ACS) - Larry Smith, 564-1812

Anchorage Water & Wastewater Utility (AWWU) – Shawn Dooley, 564-2786

AT&T – Mike Barsalou 264-7325

Chugach Electric Association (CEA) – Gary Meadows, 242-2191

ENSTAR Natural Gas - Stan Staples 334-7777

GCI Cable – David Blehm, 868-6769

Municipal Street and Storm Drain Maintenance, Paul VanLandingham, 343-8372, or 317-7054

Municipal Street Light Maintenance– Kathy Bourque Parker, 343-8242

Municipal Traffic Signals Section – Mike Sickler, 343-8355

Solid Waste Services (SWS) – Evalu Filitaula, 343-6258 or 317-6863

Matanuska Electric Association (MEA) – Tom O’Hare, 761-9281

Matanuska Telephone Association (MTA) – Robbie Nash, 761-2704

Eagle River Street & Storm Drain Maintenance – Mark Littlefield, 343-1512

Alaska Waste – Josh James, 688-4446

Article 4.19 Record Documents

Add the following new Article:

Article 4.22 Responsibility of Contractor to Act in Emergency

In case of an emergency that threatens loss and/or injury of property and/or safety of life, the Contractor shall act, without previous instructions from the Engineer, as the situation may warrant. The Contractor shall notify the Engineer thereof immediately thereafter. Any claim for compensation by the Contractor, together with substantiating documents in regard to expense, shall be submitted to the Owner through the Engineer. The amount of compensation shall be determined by agreement.

The Contractor shall supply the Engineer, prior to commencement of Work, with an emergency telephone number through which a responsible Contractor's representative can be contacted on a twenty-four (24) hour a day basis.

Article 4.23 Daily Progress Reports

The Contractor shall submit daily progress reports to the Engineer. The reports for the current workweek shall be submitted no later than the following Monday by 12:00 p.m. The development, preparation, and presentation of all daily progress reports are incidental to the Contract and no separate payment shall be made. Each daily report shall include:

1. Names and hours worked for all personnel on site, including personnel for all subcontractors.
2. Construction equipment on hand, including utility vehicles such as pickup trucks, maintenance vehicles, etc.
3. Documentation of weather conditions and any resulting impacts to the Work.
4. General progress of the Work, including a list of activities started and completed, mobilization and demobilization of subcontractors, and major milestones achieved.
5. Contractor's plan for management of site (e.g., lay down and staging areas, construction traffic, etc.), utilization of construction equipment, buildup of trade labor, and identification of potential Contract changes.
6. Identification of new activities and sequences as a result of executed Contract changes (if any).
7. Description of actual or potential delays, including related causes, and the steps taken or anticipated to mitigate their impact.

8. Changes to activity logic.
9. Changes to the critical path.
10. Identification of, and accompanying reason for, any activities added or deleted since the last report.
11. Steps taken to recover the schedule from Contractor caused delays.
12. Updates to quantities of work items identified in Design Study Narrative (DSR)

SECTION 10.05 CONTROL OF WORK

Article 5.4 Non-Working Hours, Holidays, Saturdays, and Sundays

Add the following sentence to the end of the last paragraph:

A standard workday is a ten (10) hour workday (excluding meal times) within the timeframe of no earlier than 7:00 a.m. and no later than 7:00 p.m.

Article 5.5 Shop Drawings

Add the following sentence to the end of the last paragraph:

Reference Section 01 33 00 – Submittal Procedures of the Technical Specifications for Additional requirements.

Article 5.6 Product Data

Add the following sentence to the end of the last paragraph:

Reference Section 01 33 00 – Submittal Procedures of the Technical Specifications for additional requirements.

Article 5.22 Time for Completion of Work

Add the following sentence to the end of the first paragraph:

The Contractor shall complete all work under this Contract within three hundred and sixty (360) calendar days of the effective date of the "Notice to Proceed".

Article 5.27 Liquidated Damages

Delete the first two sentences of the first paragraph and replace with the following:

The Owner may deduct out of any progress payment the sum of Five Hundred Dollars (\$500.00) per day as Liquidated Damages for each and every calendar day that the Substantial Completion Date is delayed beyond the Substantial Completion Date specified in Article 5.22, Time for Completion of Work. The Owner may deduct out of any progress payment the sum of Two Hundred Fifty Dollars (\$250.00) per day as Liquidated Damages for each and every calendar day that the Final Acceptance Date is delayed beyond the Contract Completion Date.

SECTION 10.06 LEGAL RELATIONS AND RESPONSIBILITIES

Article 6.6 Permits

Add the following sentence to the end of the sixth paragraph:

The Contractor shall identify the "Anchorage Water and Wastewater Utility" as the applicant on any permit application forms.

Article 6.9 Insurance

Remove and replace the fifth sentence of the first paragraph with the following:

The insurance company must provide written notification to the MOA contract administrator of any material change, cancellation, or non-renewal of the insurance policies. If the insurer does not notify the MOA in these circumstances, it will be the contractor's responsibility to make that notification.

Article 6.23 American Iron and Steel Provisions

All iron and steel products used in the project shall be produced in the United States. The Contractor by signing the Contract acknowledges to and for the benefit of the Municipality and the State of Alaska (State) that it understands the goods and services under this Contract are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" (AIS) that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Contract.

The Contractor by signing the Contract represents and warrants to and for the benefit of the Municipality that:

- (a) the Contractor has reviewed and understands the AIS Requirement,
- (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the AIS Requirement, unless a waiver of the requirement is approved, and
- (c) the Contractor will provide any further verified information, certification or assurance of compliance with this Article, or information necessary to support a waiver of the AIS Requirement, as may be requested by the Municipality or the State.

Notwithstanding any other provision of this Contract, any failure to comply with this Article by the Contractor shall permit the Municipality or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Municipality or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Municipality). While the Contractor has no direct contractual privity with the State, as a lender to the Municipality for the funding of its project, the Municipality and the Contractor agree that the State is a third-party beneficiary and neither this Article (nor any other provision of this Contract necessary to give this Article force or effect) shall be amended or waived without the prior written consent of the State.

The successful Bidder will be required to comply with all record keeping and reporting requirements requiring information from the Contractor under the Clean Water Act/Safe Drinking Water Act, including certification letters for AIS compliance.

Sample certification forms are provided in the Section IV of the Contract Documents for use in ensuring compliance with the AIS requirement. The Contractor must provide a

completed form documenting compliance with the AIS Requirements to AWWU for all AIS products as a submittal prior to material shipment to the jobsite.

SECTION 10.07 MEASUREMENT AND PAYMENT

Article 7.5 Progress Payments

Add the following paragraphs after the second paragraph:

A. Applications for payment

1. Each application for payment shall be consistent with previous applications and payments as certified by the Owner's representative and paid for by the Owner.
 - a. The initial application for payment, the application for payment at time of Substantial Completion, and the final application for payment involve additional requirements.
2. Application preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor.
 - a. Entries shall match data on the schedule of values and the Contractor's construction schedule. Use updated schedules if revisions were made.
 - b. Include amounts of Change Orders and construction change directives issued prior to the last day of the construction period covered by the application.
3. Transmittal: Submit one (1) signed and notarized original copy of each application for payment to the Owner's representative by a method ensuring receipt within twenty-four (24) hours. One copy shall be complete, including OEO reports and similar attachments, when required.
 - a. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Engineer.
4. Initial application for payment: Administrative actions and submittals, that must precede or coincide with submittal of the first application for payment, include the following:
 - a. List of subcontractors.
 - b. List of principal suppliers and fabricators.
 - c. Schedule of values.
 - d. Contractor's construction schedule (preliminary if not final).
 - e. Schedule of principal products.
 - f. Schedule of unit prices.
 - g. Submittal schedule (preliminary if not final).
 - h. List of Contractor's staff assignments.

- i. List of Contractor's principal consultants.
 - j. Copies of permits.
 - k. Initial progress report.
5. Application for payment at substantial completion: Submit an application for payment following issuance of substantial completion.
- a. This application shall reflect certificates of partial substantial completion issued previously for Owner occupancy of designated portions of the Work.
 - b. Administrative actions and submittals that shall precede or coincide with this application include:
 - i. Occupancy permits and similar approvals.
 - ii. Warranties (guarantees) and maintenance agreements.
 - iii. Maintenance instructions.
 - iv. Changeover information related to Owner's occupancy, use, operation, and maintenance.
 - v. Final cleaning.
 - vi. List of incomplete Work, recognized as exceptions to Engineer's issuance of substantial completion.

Contractor shall submit, with the first application for payment, a copy of the Notice of Work executed by the State Department of Labor, Wage & Hour Administration. Failure to submit a copy of this form with the first application for payment will result in the withholding of \$5,000 from the progress payment. Additionally, a filing may be issued to the Wage & Hour Administration for failure to provide such notice.

Add the following to the list of Withholdings, the fourth paragraph:

6. Failure to submit the detailed Schedule of Values consisting of several elements as required. (The Engineer cannot pay on any of the items specified to be broken down until the breakdown is received and accepted).
7. A maximum of \$5,000 for failure to provide a Notice of Work and/or a Notice of Completion as required by Alaska Statute 36.05.045. For final payments, the difference between \$5,000 and the actual amount paid for the Notice of Work filing shall be withheld until such time as the Contractor provides a copy of the Notice of Completion executed by the Wage & Hour Administration to the Engineer.
8. The value of items missing by the contract documents. Examples include, but are not limited to, record drawings; operations and maintenance manuals; Department of Labor Notice of Work and/or Notice of Completion, ADEC Notice of Completion form, or other items as listed in the schedule of values or elsewhere required in the contract documents.

Add the following sentence to the end of the list of withholdings:

Monies withheld under Article 7.5 - Progress Payments, shall be paid to the Contractor by subsequent pay estimates that follow the date on which the Contractor satisfactorily corrects the deficiencies causing the withholding.

Delete the fifth paragraph and replace with the following:

The amount of any withholding for items one (1) through eight (8) above shall be the reasonable value of the Work or remedy to be accomplished as estimated by the Engineer, without regard to bid amount or cost to the Contractor. The amount of withholding for items nine (9) through eleven (11) shall be in accordance with the claimed amount or the applicable Contract provisions.

Add the following paragraph to the end of the Article:

The monthly pay estimate shall be computed on the basis of Work completed. All quantities shall be subject to review by the Engineer prior to approval for payment. Monthly price allocation for payment of lump sum items shall be based on the approved construction progress schedule and schedule of values.

The State of Alaska funds this Contract (in part); therefore, the provisions of Alaska Statute 36, Section 36.90, and Article 3 entitled "Public Construction Contract Payment" apply.

Article 7.7 Final Payment

Add the following paragraphs after the first paragraph:

Additional administrative actions and submittals that must precede or coincide with submittal of the final application for payment include the following:

1. Evidence of completion of project closeout requirements.
2. Completion of items specified for completion after substantial completion and all applicable punchlist(s) from the Engineer.
3. Proof that incomplete Work has been completed and accepted by the Owner.
4. Transmittal of required project construction records to the Owner's representative.
5. Removal of temporary facilities and services, surplus materials, rubbish, and similar elements.
6. Change of door and gate locks to Owner.
7. Approved redlines for record drawings.

Article 7.8 Correction of Work after Final Acceptance Date

Delete the first sentence of the first paragraph and replace with the following:

Placement of the Project on warranty shall not relieve the Contractor of his responsibility for paying all costs resulting from defects in materials or workmanship supplied under the terms of the Contract, and for correction of those defects, for a period of two (2) years following the Final Acceptance Date.

SECTION 10.08 FORMS

Delete this Section. All forms required for this Project are provided in Section IV of the Contract Documents.

DIVISION 70 MISCELLANEOUS

SECTION 70.01 GENERAL

Add the following new Article:

Article 1.3 Utility Facilities

Prior to commencing any Work covered under this division or impacting utility facilities, the Contractor shall contact the Utility and obtain any permits, approvals, or other conditions as required by the Utility to complete any Work on or in the vicinity of their facilities.

NTS: Coordinate with PM&E regarding any special requirements for Traffic Markings different from the MASS Section 70.10. Also, check the latest online version of the draft MASS Section 70.

SECTION 70.11 STANDARD SIGNS

NTS: Coordinate with PM&E or ADOT&PF regarding any special requirements for Standard Signs different from MASS Section 70.11.

END OF SPECIAL PROVISIONS



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION III

TECHNICAL SPECIFICATIONS



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

INDEX TO TECHNICAL SPECIFICATIONS

SPECIFICATIONS GROUP

FACILITY CONSTRUCTION SUBGROUP

Division 03 – Concrete

Division 04 – Masonry

Division 07 – Thermal and Moisture Protection

Division 08 – Openings

AWWU WTF EARTHQUAKE REPAIR PROJECT

WR0000387482

WR0000387484

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SECTION 03 10 00
CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.01 NOTIFICATION OF POTENTIAL HAZARDS

- A. Notification of Potential Hazards: Asbestos, lead and other potentially hazardous materials are present in the building that may impact the work of all trades. Regulated air contaminants, including asbestos and lead are also present in the settled and concealed dust in and on architectural, structural, mechanical and electrical components or systems throughout the building. All trades shall coordinate with other trades and conduct their work to prevent worker exposure or site contamination. Refer to Specification Divisions 0, 1 and 2 for specific information concerning disturbing, removing and disposing of these materials and the installation of new materials or components. This notification is provided in accordance with the EPA and OSHA requirements.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.03 SUMMARY

- A. Section Includes:
 - 1. Form-facing material for cast-in-place concrete.
 - 2. Shoring, bracing, and anchoring.
- B. Related Requirements:
 - 1. Section 03 30 00 "Cast-In-Place Concrete".

1.04 DEFINITIONS

- A. Form-Facing Material: Temporary structure or mold for the support of concrete while the concrete is setting and gaining sufficient strength to be self-supporting.
- B. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

AWWU WTF EARTHQUAKE REPAIR PROJECT

WR0000387482

WR0000387484

WR0000254699

1.05 QUALITY ASSURANCE

- A. Testing and Inspection Agency Qualifications: An independent agency, acceptable to the Municipality of Anchorage Building Safety Division, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

PART 2 - PRODUCTS

2.01 FORM-FACING MATERIALS

- A. Concealed Surface Form-Facing Material: Lumber, plywood, metal, plastic, or another approved material.
 - 1. Provide lumber dressed on at least two edges and one side for tight fit.
- B. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that produce surfaces without spiral or vertical seams not exceeding specified formwork surface class.
 - 1. Provide forms with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

2.02 RELATED MATERIALS

- A. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- B. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
 - 2. Form release agent for form liners shall be acceptable to form liner manufacturer.
- C. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

AWWU WTF EARTHQUAKE REPAIR PROJECT

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PART 3 - EXECUTION

3.01 INSTALLATION OF FORMWORK

- A. Comply with ACI 301.
- B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 and to comply with the Surface Finish designations specified in Section 03 30 00 "Cast-In-Place Concrete" for as-cast finishes.
- C. Limit concrete surface irregularities as follows:
 - 1. Surface Finish-3.0: ACI 117 Class A, 1/8 inch.
- D. Construct forms tight enough to prevent loss of concrete mortar.
 - 1. Minimize joints.
 - 2. Exposed Concrete: Symmetrically align joints in forms.
- E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.
 - 1. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
 - 2. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 3. Install keyways, reglets, recesses, and other accessories, for easy removal.
- F. Do not use rust-stained, steel, form-facing material.
- G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces.
 - 1. Provide and secure units to support screed strips
 - 2. Use strike-off templates or compacting-type screeds.
- H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible.
 - 1. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar.
 - 2. Locate temporary openings in forms at inconspicuous locations.
- I. Chamfer exterior corners and edges of permanently exposed concrete.
- J. At construction joints, overlap forms onto previously placed concrete not less than 12 inches.
- K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work.

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1. Determine sizes and locations from trades providing such items.
2. Obtain written approval of Architect prior to forming openings not indicated on Drawings.

L. Construction and Movement Joints:

1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.
 - a. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings.
 - a. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.

1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with inside face of form, and neatly fitted, so joints will not be apparent in exposed concrete surfaces.

N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

P. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.02 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

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3. Clean embedded items immediately prior to concrete placement.

3.03 REMOVING AND REUSING FORMS

- A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.
 1. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work.
 1. Split, frayed, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
 2. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.
 1. Align and secure joints to avoid offsets.
 2. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.04 SHORING AND RESHORING INSTALLATION

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.05 FIELD QUALITY CONTROL

- A. Special Inspections: Contractor will engage a special inspector to perform field tests and inspections and prepare test reports.
- B. Inspections:
 1. Inspect formwork for shape, location, and dimensions of the concrete member being formed.

END OF SECTION

SECTION 03 20 00
CONCRETE REINFORCING

PART 1 - GENERAL

1.01 NOTIFICATION OF POTENTIAL HAZARDS

- A. Notification of Potential Hazards: Asbestos, lead and other potentially hazardous materials are present in the building that may impact the work of all trades. Regulated air contaminants, including asbestos and lead are also present in the settled and concealed dust in and on architectural, structural, mechanical and electrical components or systems throughout the building. All trades shall coordinate with other trades and conduct their work to prevent worker exposure or site contamination. Refer to Specification Divisions 0, 1 and 2 for specific information concerning disturbing, removing and disposing of these materials and the installation of new materials or components. This notification is provided in accordance with the EPA and OSHA requirements.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.03 SUMMARY

- A. Section Includes:
1. Steel reinforcement bars.
- B. Related Requirements:
1. Section 03 30 00 "Cast-In-Place Concrete".

1.04 ACTION SUBMITTALS

- A. Product Data: For the following:
1. Each type of steel reinforcement.
 2. Bar supports.
 3. Mechanical splice couplers.
- B. Shop Drawings: Comply with ACI SP-066:
1. Include placing drawings that detail fabrication, bending, and placement.

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2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
 1. Store reinforcement to avoid contact with earth.

PART 2 - PRODUCTS

2.01 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615/A615M, Grade 60, deformed.

2.02 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A615/A615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place.
 1. Manufacture bar supports from steel wire, plastic, or precast concrete in accordance with CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - a. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire, all-plastic bar supports, or CRSI Class 2 stainless steel bar supports.
- C. Mechanical Splice Couplers: ACI 318 Type 2, same material of reinforcing bar being spliced; tension-compression type.
- D. Steel Tie Wire: ASTM A1064/A1064M, annealed steel, not less than 0.0508 inch in diameter.
 1. Finish: Plain.

2.03 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

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PART 3 - EXECUTION

3.01 PREPARATION

A. Protection of In-Place Conditions:

1. Do not cut or puncture vapor retarder.
2. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.02 INSTALLATION OF STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.

B. Accurately position, support, and secure reinforcement against displacement.

1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
2. Do not tack weld crossing reinforcing bars.

C. Preserve clearance between bars of not less than 1 inch, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.

D. Provide concrete coverage in accordance with ACI 318.

E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

F. Splices: Lap splices as indicated on Drawings.

1. Bars indicated to be continuous, and all vertical bars shall be lapped not less than 36 bar diameters at splices, or 24 inches, whichever is greater.
2. Stagger splices in accordance with ACI 318.
3. Mechanical Splice Couplers: Install in accordance with manufacturer's instructions.
4. Weld reinforcing bars in accordance with AWS D1.4/D 1.4M, where indicated on Drawings.

3.03 JOINTS

A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement.
2. Continue reinforcement across construction joints unless otherwise indicated.
3. Do not continue reinforcement through sides of strip placements of floors and slabs.

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- B. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length, to prevent concrete bonding to one side of joint.

3.04 INSTALLATION TOLERANCES

- A. Comply with ACI 117.

3.05 FIELD QUALITY CONTROL

- A. Special Inspections: Contractor will engage a special inspector to perform field tests and inspections and prepare test reports.
- B. Inspections:
 - 1. Steel-reinforcement placement, lapping & coupling.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 NOTIFICATION OF POTENTIAL HAZARDS

- A. Notification of Potential Hazards: Asbestos, lead and other potentially hazardous materials are present in the building that may impact the work of all trades. Regulated air contaminants, including asbestos and lead are also present in the settled and concealed dust in and on Engineerural, structural, mechanical and electrical components or systems throughout the building. All trades shall coordinate with other trades and conduct their work to prevent worker exposure or site contamination. Refer to Specification Divisions 0, 1 and 2 for specific information concerning disturbing, removing and disposing of these materials and the installation of new materials or components. This notification is provided in accordance with the EPA and OSHA requirements.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.03 SUMMARY

- A. Section Includes:
 - 1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

1.04 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.05 ACTION SUBMITTALS

- A. Product Data: For each of the following.
 - 1. Portland cement.
 - 2. Aggregates.

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3. Admixtures:
 - a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
4. Curing materials.
 - a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.
5. Joint fillers.
6. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Slump limit.
6. Air content.
7. Nominal maximum aggregate size.
8. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
9. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
10. Intended placement method.
11. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

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- B. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Curing compounds.
 - 4. Adhesives.
 - 5. Repair materials.
- C. Material Test Reports: For the following, from a qualified testing agency:
 - 1. Portland cement.
 - 2. Aggregates.
- D. Research Reports:
 - 1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
 - 2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.
- E. Preconstruction Test Reports: For each mix design.
- F. Field quality-control reports.

1.07 QUALITY ASSURANCE

- A. Concrete Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician.
- B. Post-Installed Anchors Installers: ACI-certified Adhesive Anchor Installer.
- C. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
 - 1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- D. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.
 - 1. Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.
- E. Field Quality Control Testing Agency Qualifications: An independent agency, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

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1. Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and ACI 301.

1.09 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

PART 2 - PRODUCTS

2.01 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

2.02 CONCRETE MATERIALS

- A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

- B. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M.

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- C. Normal-Weight Aggregates: ASTM C33/C33M, coarse aggregate or better, graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Air-Entraining Admixture: ASTM C260/C260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
 - 2. Retarding Admixture: ASTM C494/C494M, Type B.
 - 3. Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
 - 5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.

2.03 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.
- D. Curing Paper: Eight-foot-wide paper, consisting of two layers of fibered kraft paper laminated with double coating of asphalt.
- E. Water: Potable or complying with ASTM C1602/C1602M.
- F. Clear, Solvent-Borne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

2.04 RELATED MATERIALS

- A. Epoxy Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade and class to suit requirements, and as follows:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

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- B. Floor Slab Protective Covering: Eight-feet-wide cellulose fabric.

2.05 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with ASTM C109/C109M.

- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109/C109M.

2.06 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

- B. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in concrete with a w/cm below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Use permeability-reducing admixture in concrete mixtures where indicated.

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2.07 CONCRETE MIXTURE

A. Eklutna WTF Interior Concrete

1. Exposure Class: ACI 318 F2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.

B. Well Number 12 Exterior Concrete

1. Exposure Class: ACI 318 F3, C2.
2. Minimum Compressive Strength: 5000 psi at 28 days.
3. Maximum w/cm: 0.40.

2.08 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

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1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.03 INSTALLATION OF EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
 1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.

3.04 JOINTS

- A. Joints shall be true to line, with faces perpendicular to surface plane of concrete.
- B. Doweled Joints:
 1. Install dowel bars and support assemblies at joints where indicated on Drawings.
 2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

3.05 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
 1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
 2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.
- B. Notify Engineer and testing and inspection agencies 24 hours prior to commencement of concrete placement.
- C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer in writing, but not to exceed the amount indicated on the concrete delivery ticket.

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1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
1. If a section cannot be placed continuously, provide construction joints as indicated.
 2. Deposit concrete to avoid segregation.
 3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
 4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.
 - a. Do not use vibrators to transport concrete inside forms.
 - b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
 - c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
 - d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Do not place concrete floors and slabs in a checkerboard sequence.
 2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 3. Maintain reinforcement in position on chairs during concrete placement.
 4. Screed slab surfaces with a straightedge and strike off to correct elevations.
 5. Level concrete, cut high areas, and fill low areas.
 6. Slope surfaces uniformly to drains where required.
 7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
 8. Do not further disturb slab surfaces before starting finishing operations.

3.06 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:

1. ACI 301 Surface Finish SF-3.0: As-cast concrete texture imparted by form-facing material.

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- a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
- b. Remove projections larger than 1/8 inch.
- c. Tie holes do not require patching.
- d. Surface Tolerance: ACI 117 Class A, 1/8 inch.

B. Related Unformed Surfaces:

1. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a color and texture matching adjacent formed surfaces.
2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.07 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.08 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
2. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:

1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.
4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
 - a. Continuous Sprinkling: Maintain concrete surface continuously wet.
 - b. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.

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- c. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
- d. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
 - 1) Recoat areas subject to heavy rainfall within three hours after initial application.
 - 2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:

- 1. Begin curing immediately after finishing concrete.
- 2. Interior Concrete Floors:
 - a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:
 - 1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
 - a) Lap edges and ends of absorptive cover not less than 12-inches.
 - b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
 - 2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
 - a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
 - b) Cure for not less than seven days.
 - 3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
 - a) Water.

3.09 TOLERANCES

- A. Conform to ACI 117.

3.10 JOINT FILLING

- A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

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1. Defer joint filling until concrete has aged at least [one] [six] month(s).
 2. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.
- D. Overfill joint, and trim joint filler flush with top of joint after hardening.
- 3.11 CONCRETE SURFACE REPAIRS
- A. Defective Concrete:
1. Repair and patch defective areas when approved by Engineer.
 2. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.
 - a. Limit cut depth to 3/4 inch.
 - b. Make edges of cuts perpendicular to concrete surface.
 - c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
 - d. Fill and compact with patching mortar before bonding agent has dried.
 - e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.
 - a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
 - b. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces:

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1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.
 - a. Correct low and high areas.
 - b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.
 - a. Finish repaired areas to blend into adjacent concrete.
5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.
 - a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 - b. Feather edges to match adjacent floor elevations.
6. Correct other low areas scheduled to remain exposed with repair topping.
 - a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
 - b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.
 - a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
 - b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
 - c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
 - d. Place, compact, and finish to blend with adjacent finished concrete.
 - e. Cure in same manner as adjacent concrete.
8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.
 - a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
 - b. Dampen cleaned concrete surfaces and apply bonding agent.

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- c. Place patching mortar before bonding agent has dried.
 - d. Compact patching mortar and finish to match adjacent concrete.
 - e. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.12 FIELD QUALITY CONTROL

- A. Special Inspections: Contractor will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.
- B. Testing Agency: Contractor will engage a qualified testing agency to perform tests and to submit reports.
- 1. Testing agency shall be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
 - 2. Testing agency shall immediately report to Engineer, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
 - 3. Testing agency shall report results of tests and inspections, in writing, to Owner, Engineer, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
 - a. Test reports shall include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
 - 1) Project name.
 - 2) Name of testing agency.
 - 3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
 - 4) Name of concrete manufacturer.
 - 5) Date and time of inspection, sampling, and field testing.
 - 6) Date and time of concrete placement.
 - 7) Location in Work of concrete represented by samples.
 - 8) Date and time sample was obtained.
 - 9) Truck and batch ticket numbers.
 - 10) Design compressive strength at 28 days.
 - 11) Concrete mixture designation, proportions, and materials.
 - 12) Field test results.
 - 13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
 - 14) Type of fracture and compressive break strengths at seven days and 28 days.

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- C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.
- D. Inspections:
1. Headed bolts and studs.
 2. Verification of use of required design mixture.
 3. Concrete placement, including conveying and depositing.
 4. Curing procedures and maintenance of curing temperature.
 5. Verification of concrete strength before removal of shores and forms from beams and slabs.
- E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C143/C143M:
 - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - b. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete; .
 - a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C1064/C1064M:
 - a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C31/C31M:
 - a. Cast and laboratory cure two sets of two 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C39/C39M.

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- a. Test one set of two laboratory-cured specimens at seven days and one set of two specimens at 28 days.
- b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
8. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
9. Additional Tests:
 - a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.
 - b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Engineer.
 - 1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.
10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

3.13 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION

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SECTION 03 30 02
REPAIR OF CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. Repair damaged and deteriorated concrete.

1.2 RELATED SECTIONS

- A. Section 03303 – Grout

1.3 APPLICABLE PUBLICATIONS

- A. Publications listed form a part of the specifications. Publications may be listed in the text by basic designation only. In case of conflict, the most stringent shall apply. The most current version of each publication at the time of award of contract shall be used during construction.
- B. American Society for Testing and Materials (ASTM)
ASTM C881 Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 SUBMITTALS.
- B. Submit proposed epoxy products. Do not proceed without written review comments or approval.
- C. Submit proposed injection equipment operators names and qualifications.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout the work.

1.6 SPECIAL STRUCTURAL INSPECTION

- A. The Owner shall accomplish special inspection of concrete and concrete masonry reinforcement placement per IBC Chapter 17.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Epoxy Adhesive for Crack Sealing: ASTM C881, Type IV, Grade 3, Class B.
- B. Epoxy Adhesive for Crack Injection: ASTM C881, Type IV, Grade 1, Class B.

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PART 3 EXECUTION

3.1 CHIPPING AND REMOVING CONCRETE

- A. Where portions of the structure are to be chipped or removed, perform the chipping and removal operations without damage to any portion of the structure that is to remain in place. Repair all damage to existing concrete to the satisfaction of the Engineer at no additional cost to the Owner and no adjustment in Contract time.
- B. Before removing concrete, make a saw cut approximately one inch deep to a true line along the limits of removal on all faces of the element that will be visible in the completed work.
- C. Use water in removal operations that is clean and free of oil, salt, acid, alkali, sugar, vegetable or other substances injurious to the finished product. Meet the suggested requirements of AASHTO T 26. Water known to be of potable quality will not require testing. Where the source of water is relatively shallow, enclose the intake to exclude silt, mud, grass, or other foreign materials. If water is to be taken from a lake, stream, or other natural water body containing fish, and the pump intake hose is less than 2 inches in diameter, immerse the intake in a 5 gallon bucket perforated with 3/32 inch holes. For larger pumps, use a box with screen openings no more than 0.04 inches.
- D. Do not permit unfiltered water from removal operations to flow into gutters, other drainage facilities. Contain and filter wastewater from removal operations before being discharging it, such that the wastewater meets the standards given in the General Permit.

3.2 CRACK REPAIR

- A. Cracks less than 0.011 inches wide will be considered acceptable with no additional evaluation or repairs required.
- B. Where cracks exceed 0.011 inches wide or where cracks are seeping water, repair the entire crack by injecting epoxy and sealing the concrete surface.
- C. Perform crack repair procedures at the wall to floor construction joint from original installation. On interior common walls, perform the repair from both sides of the wall.
 1. After completing crack repair work, place a grout patch along the entire joint using chemically resistant grout in accordance with Specification Section 03303.
- D. Repair cracked concrete in accordance with the following requirements:
 1. Experience
 - a. Provide injection equipment operators that have a minimum of two years experience in the methods and materials of the selected system. Ensure injection equipment operators know the correct material selection and use and know the equipment operation, maintenance, and troubleshooting for application of epoxy injection system.
 2. Equipment
 - a. Use positive displacement plural component pumps, specifically designed to meter, mix, and inject low viscosity materials.
 3. Clean the crack.

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- a. Remove contaminants such as water, oil, grease, dirt, fine particles of concrete, and all other materials that reduce the effectiveness of repairs from the crack. Remove contamination by vacuuming, flushing with water, or cleaning solutions specifically intended for removing contaminants. Flush the solution using compressed air and a neutralizing agent. Allow adequate time for drying. If cleaning solutions are used, perform a trial test to determine the practical limitations and effectiveness of the contaminate removal procedure.
4. Install entry and venting ports.
 - a. Install entry/venting ports spaced approximately the thickness of the concrete member apart along one face of the crack. Acceptable types entry/venting ports are fittings inserted into drilled holes, bonded flush fittings, and interruptions in seal using special gasket devices that cover the unsealed portion of the crack and allow injection of the adhesive directly into the crack without leaking.
5. Seal the surfaces.
 - a. Seal the surface of the crack to prevent the epoxy from escaping. Apply an epoxy sealing material to the surface of the crack and allow it to harden. If extremely high injection pressures are needed, cut out the crack in a V-shape to a depth of 1/2 inch and width of 3/4 inch, fill with epoxy, and struck off flush with the surface.
 - b. Prepare the surface in accordance with the manufacturers written instructions.
6. Mix the epoxy.
 - a. Mix the epoxy to the volume ratio prescribed by the manufacturer within a tolerance of ± 5 percent by volume.
7. Inject the epoxy.
 - a. Do not use excessive pressure when injecting epoxy that can propagate the crack, or cause additional damage.
 - b. If the crack is vertical or inclined, begin the injection process by pumping epoxy into the entry port at the lowest elevation until the epoxy level reaches the entry port above. Close the lower injection port when epoxy reaches the entry port above. Move to the entry port above and repeat the process until the crack is completely filled and all ports are closed.
 - c. For horizontal cracks, proceed from one end of the crack to the other until the crack is completely filled and all ports are closed.
 - d. The crack is full if the pressure can be maintained. If the pressure cannot be maintained, the epoxy is still flowing into unfilled portions or leaking out of the crack.
8. Remove the surface seal.
 - a. After the injected epoxy has cured, remove the surface seal by grinding or other means as appropriate.

3.3 CLEAN UP

- A. Upon completion, thoroughly clean concrete surfaces. Remove laitance, surface dust and dirt, and visible efflorescence.
- B. Use acid only to clean particularly stubborn stains after brushing and water methods fail to work.
- C. Leave adjacent surfaces free from stains and materials resulting from concrete work. Leave concrete ready to receive the finishes scheduled and specified.

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3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Contractor will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

END OF SECTION

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SECTION 04 20 20
UNIT MASONRY CONSTRUCTION AND REPAIR

PART 1 - GENERAL

1.01 NOTIFICATION OF POTENTIAL HAZARDS

- A. Notification of Potential Hazards: Asbestos, lead and other potentially hazardous materials are present in the building that may impact the work of all trades. Regulated air contaminants, including asbestos and lead, are also present in the settled and concealed dust in and on architectural, structural, mechanical, and electrical components or systems throughout the building. All trades shall coordinate with other trades and conduct their work to prevent worker exposure or site contamination. Refer to Specification Divisions 0, 1 and 2 for specific information concerning disturbing, removing and disposing of these materials and the installation of new materials or components. This notification is provided in accordance with the EPA and OSHA requirements.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.03 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Mortar and grout.
 - 3. Steel reinforcing bars.

1.04 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.05 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.06 ACTION SUBMITTALS

- A. Product Data: For each type of product.

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B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.

1.07 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of the following:

1. Masonry units. Include data on material properties.
2. Cementitious materials. Include name of manufacturer, brand name, and type.
3. Integral water repellent used in CMUs.
4. Mortar admixtures.
5. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
6. Grout mixes. Include description of type and proportions of ingredients.
7. Reinforcing bars.
8. Anchors, ties, and metal accessories.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specifications. Test according to ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirements.

C. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to TMS 602/ACI 530.1/ASCE 6.

D. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.08 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C1093 for testing indicated.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

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- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.10 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

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PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.02 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.
 - 1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to TMS 602/ACI 530.1/ASCE 6.

2.03 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.

2.04 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
 - 1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 - 2. Provide square-edged units for outside corners unless otherwise indicated.
- B. Integral Water Repellent: Provide units made with integral water repellent for units exposed to moisture (shower walls, etc.).
 - 1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested according to ASTM E514/E514M as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive, with test period extended to 24 hours, shall show no visible water or leaks on the back of test specimen.

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C. CMUs: ASTM C90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi.
2. Density Classification: Normal weight.
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

2.05 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C91/C91M.

E. Mortar Cement: ASTM C1329/C1329M.

F. Aggregate for Mortar: ASTM C144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
3. White-Mortar Aggregates: Natural white sand or crushed white stone.
4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

G. Aggregate for Grout: ASTM C404.

H. Epoxy Pointing Mortar: ASTM C395, epoxy-resin-based material formulated for use as pointing mortar for glazed or pre-faced masonry units (and approved for such use by manufacturer of units); in color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's colors.

I. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

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J. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

K. Water: Potable.

2.06 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A615/A615M or ASTM A996/A996M, Grade 60.

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

2.07 TIES AND ANCHORS

A. General: Ties and anchors shall extend at least 1-1/2 inches into veneer but with at least a 5/8-inch cover on outside face.

B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Mill-Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A641/A641M, Class 1 coating.
2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.
3. Galvanized-Steel Sheet: ASTM A653/A653M, Commercial Steel, G60 zinc coating.
4. Steel Sheet, Galvanized after Fabrication: ASTM A1008/A1008M, Commercial Steel, with ASTM A153/A153M, Class B coating.
5. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Partition Top Anchors: 0.105-inch-thick metal plate with a 3/8-inch-diameter metal rod 6 inches long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

2.08 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane or PVC.

B. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D226/D226M, Type I (No. 15 asphalt felt).

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2.09 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

2.10 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. For reinforced masonry, use portland cement-lime masonry cement or mortar cement mortar.
 - 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
 - 1. For masonry below grade or in contact with earth, use Type M.
 - 2. For reinforced masonry, use Type S.
 - 3. For interior nonload-bearing partitions, Type O may be used instead of Type N.
- D. Grout for Unit Masonry: Comply with ASTM C476.
 - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
 - 2. Proportion grout in accordance with ASTM C476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
 - 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143/C143M.
- E. Epoxy Pointing Mortar: Mix epoxy pointing mortar to comply with mortar manufacturer's written instructions.
 - 1. Application: Use epoxy pointing mortar for repair of cracked CMU Joints.

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PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
 - 2. Verify that foundations are within tolerances specified.
 - 3. Verify that reinforcing dowels are properly placed.
 - 4. Verify that substrates are free of substances that impair mortar bond.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested according to ASTM C67. Allow units to absorb water so they are damp but not wet at time of laying.

3.03 TOLERANCES

- A. Dimensions and Locations of Elements:

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1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.04 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

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- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- E. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.
- G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- H. Build nonload-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 - 1. Install compressible filler in joint between top of partition and underside of structure above.
 - 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch clearance between end of anchor rod and end of tube. Space anchors 48 inches o.c. unless otherwise indicated.
 - 3. Wedge nonload-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
 - 4. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Section 07 84 10 "Firestopping."

3.05 MORTAR BEDDING AND JOINTING

- A. Lay CMUs as follows:
 - 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
 - 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
 - 3. Bed webs in mortar in grouted masonry, including starting course on footings.
 - 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
 - 5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

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- C. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.06 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:
 - 1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
 - 2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
 - 3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.07 CONTROL AND EXPANSION JOINTS

- A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using one of the following methods:
 - 1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout, and rake out joints in exposed faces for application of sealant.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar, or rake out joint for application of sealant.
 - 4. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.
- C. Provide horizontal, pressure-relieving joints by either leaving an airspace or inserting a compressible filler of width required for installing sealant and backer rod specified in Section 07 92 00 "Joint Sealants," but not less than 3/8 inch.
 - 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

3.08 REINFORCED UNIT MASONRY

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.

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2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and that of other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in TMS 602/ACI 530.1/ASCE 6.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than 60 inches.

3.09 FIELD QUALITY CONTROL

A. Testing and Inspecting: Contractor will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

B. Inspections: Special inspections according to Level B in TMS 402/ACI 530/ASCE 5.

1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
3. Place grout only after inspectors have verified proportions of site-prepared grout.

C. Testing Prior to Construction: One set of tests.

D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C140 for compressive strength.

F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C780.

G. Mortar Test (Property Specification): For each mix provided, according to ASTM C780. Test mortar for compressive strength.

H. Grout Test (Compressive Strength): For each mix provided, according to ASTM C1019.

I. Prism Test: For each type of construction provided, according to ASTM C1314 at 28 days.

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3.10 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 6. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.
 - 7. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
 - 8. Clean stone trim to comply with stone supplier's written instructions.
 - 9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.11 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches in each dimension.
 - 2. Mix masonry waste with at least two parts of fill material for each part of masonry waste.
 - 3. Do not dispose of masonry waste as fill within 18 inches of finished grade.
- C. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.

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- D. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION

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SECTION 07 90 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.
- D. Expansion and Seismic Joint sealants

1.02 REFERENCE STANDARDS

- A. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2015a.
- B. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.
- E. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2016.
- F. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- G. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- H. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- I. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).
- J. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.
- K. NSF/ANSI 61 – 2020 – Drinking Water System Components – Health Effects

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.

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1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 2. List of backing materials approved for use with the specific product.
 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 4. Substrates the product should not be used on.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

1.04 QUALITY ASSURANCE

- A. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
1. Adhesion Testing: In accordance with ASTM C794.
 2. Compatibility Testing: In accordance with ASTM C1087.
 3. Allow sufficient time for testing to avoid delaying the work.
 4. Deliver to manufacturer sufficient samples for testing.
 5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
 6. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

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PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

A. Scope:

1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door frames and adjacent construction.
 - b. Joints between different exposed materials.
 - c. Other joints indicated below.
2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door frames and adjacent construction.
 - b. Other joints indicated below.
3. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints where installation of sealant is specified in another section.

B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.

1. Wall and Ceiling Joints in Wet Areas: Non-sag polyurethane sealant for continuous liquid immersion.
2. Floor Joints in Wet Areas: Non-sag polyurethane "non-traffic-grade" sealant suitable for continuous liquid immersion.

2.02 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

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2.03 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 50 percent, minimum.
 - 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 4. Color: To be selected by Architect from manufacturer's standard range.
 - 5. Cure Type: Single-component, neutral moisture curing.
 - 6. Service Temperature Range: Minus 65 to 180 degrees F.

- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1. Color: White.

- C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's standard range.

- D. Type Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface .
 - 1. Movement Capability: Plus and minus 35 percent, minimum.

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2.04 SELF-LEVELING SEALANTS

2.06 EXPANSION AND SEISMIC JOINT SEALANTS

- A. Basis of Design: **All** joints shall be designed to meet the specified performance criteria of the project as manufactured by: (USA & International) EMSEAL JOINT SYSTEMS, LTD 25 Bridle Lane, Westborough, MA 01581-2603, Toll Free: 800-526-8365 www.emseal.com
- B. Alternate manufacturers must demonstrate that their products meet or exceed the design criteria and must submit certified performance test reports performed by nationally recognized independent laboratories as called for in section 1.03 Submittals. Submittal of alternates must be made three weeks prior o installation to allow proper evaluation time.
- C. General:
1. Provide traffic durable, watertight, expansion joint by EMSEAL Joint Systems or approved equal for expansion joints and isolation joints in submerged applications. Typical locations include, but are not limited to the following: applications for joints where continuous or intermittent immersion or contact with chlorinated (up to 5ppm), saline, or potable water is planned, over occupied space, construction, and structural expansion joints. System shall perform waterproofing, traffic bearing and movement-accommodation functions as the result of a single installation and without the addition of gutters, vapor barriers, bladders, or other devices suspended beneath or within the system in any way.
 2. Sealant system shall be comprised of three components: 1) cellular polyurethane foam impregnated with hydrophobic 100% acrylic, water-based emulsion, factory coated with chemically resistant, potable water safe silicone per NSF/ANSI Standard 61; NSF Standard 51, FDA Regulation CFR 177.2600; MIL-A-46146; an UL Flame Class 94 HB; 2) field-applied epoxy adhesive primer, 3) field-injected silicone sealant bands.
 3. System to be installed by qualified sub-contractors only according to detailed published installation procedures and/or in accordance with job-specific installation instructions of manufacturer's field technician.
 4. System shall be allowed to cure for a minimum of 8 calendar days based upon 75° F. System components must be fully cured before being put into service.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 2. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

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- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - 1. Width/depth ratio of 2:1.
 - 2. Neck dimension no greater than 1/3 of the joint width.
 - 3. Surface bond area on each side not less than 75 percent of joint width.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

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G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 CLEAN AND PROTECT

A. Protect the sealant system and its components during construction. Subsequent damage to the sealant or expansion joint system will be repaired at the general contractor's expense. After work is complete, clean exposed surfaces with a suitable cleaner that will not harm or attack the finish.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal of three existing exterior hollow metal doors and frames.
- B. Salvage all existing hardware for OWNER
- C. Remove and Reinstall Existing Surface Mount Door Position Switch
- D. Provide New thermally insulated hollow metal doors with full welded frames. Factory paint doors and frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware.

1.03 ABBREVIATIONS AND ACRONYMS

- A. HMMA - Hollow Metal Manufacturers Association.
- B. NAAMM - National Association of Architectural Metal Manufacturers.
- C. NFPA - National Fire Protection Association.
- D. SDI - Steel Door Institute.
- E. UL - Underwriters Laboratories.

1.04 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

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- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2015.
- H. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- L. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 DESIGN CRITERIA

- A. Requirements for Hollow Metal Doors and Frames:

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1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
4. Door Edge Profile: Manufacturers standard for application indicated.
5. Typical Door Face Sheets: Flush.
6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
8. Zinc Coating for Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.

2.02 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
 2. Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
 3. Door Thermal Resistance: R-Value of 8.7 minimum, for installed thickness of polystyrene.
 4. Door Thickness: 1-3/4 inch, nominal.
 5. Weatherstripping: Refer to Section 08 7100.

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2.03 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Exterior Door Frames: Full profile/continuously face welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvanized) in accordance with ASTM A6653/A653M with G90/Z275 coating
 - 2. Frame Metal Thickness: 16 gage, 0.053 inch min.
 - 3. Weatherstripping: Separate, see Section 08 7100.
 - 4. Size Frame header and jambs to fit existing masonry and framed openings with a minimum 6'-8" high door leaf

2.04 ACCESSORIES

- A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- B. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.
- C. Grout for Frames: Portland cement grout with max. 4 inch slump for hand trowling; pumpable grout is prohibited.

2.05 FINISHES

- A. Factory galvanized zinc coating: G90/Z275 galvanized coating; ASTM A653/A653M.
- B. Factory Paint Coating to be applied in the factory. Painting of doors and frames in the field other than touch-up is not acceptable. All surfaces of door and frame assemblies to be coated, including the inside of frames. Touch up coating after precutting door and frame for door hardware components.
 - 1. Basis of design coating: Sherwin-Williams Protective and Marine Coatings.
 - a. Surface Preparation: SSPC SP1
 - b. Primer: Dura-Plate 235 Multi-Purpose Epoxy
 - c. Intermediate Coat: Acrolon Ultra High-Performance Polyurethane (2.0-3.0 DFT)
 - d. Finish Coat: Acrolon Ultra High-Performance Polyurethane (2.0-3.0 DFT)
 - 2. Color: As selected by Architect from Manufacturer's full range of colors

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PART 3 EXECUTION

3.01 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Coordinate installation of hardware.
- D. Touch up damaged finishes.

3.02 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.03 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.04 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

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SECTION 08 71 00
DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. Work under this section includes the complete finish hardware requirements for the project. Quantities listed are for the contractor's convenience only and are not guaranteed. Items not specifically mentioned, but necessary to complete the work shall be furnished, matching the items specified in quality and finish.
- B. Electrically operated and controlled hardware.
- C. Related Sections:
 - 1. Section 08 11 13 Hollow Metal Doors and Frames

1.2 QUALITY ASSURANCE

- A. Product Qualification:
 - 1. To assure a uniform high quality of materials for the project, it is intended that only specified items be furnished. Comparable products may be accepted upon prior approval of architect.
 - 2. Hardware to be new, free of defects, blemishes and excessive play. Obtain each kind of hardware (Mechanical latch and locksets, exit devices, hinges and closers) from one manufacturer except where specified.
- B. Supplier Qualifications:
 - 1. Hardware supplier will be a direct factory contract supplier who employs a certified Architectural Hardware Consultant (AHC) available at all reasonable times during the course of the work for project hardware consultation to owner, architect and contractor.
 - 2. Supplier will be responsible for detailing, scheduling and ordering of finish hardware.
 - 3. Conduct pre-installation conference at jobsite. Initiate and conduct with supplier, installer and related trades. Coordinate materials and techniques and sequence complex hardware items and systems installation.
 - 4. Key Conference shall be initiated and conducted with owner to determine system, keyway(s) and structure.
- C. Installer Qualifications:
 - 1. Installer to have not less than 3 years' experience specializing in installation of work in this section. Company must maintain qualified personnel trained and experienced in installing hardware.

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1.3 REFERENCES

- A. NFPA101 – Life Safety Code
- B. ANSI A117.1 Accessible and Usable Buildings and Facilities

1.4 SUBMITTALS

- A. Hardware schedule: Submit digital copies of schedule. Organize vertically formatted schedule into Hardware Sets with index of doors and headings, indication complete designations of every item required for each door or opening. Include the following:
 - 1. Type, style, function, size, quantity and finish of hardware items.
 - 2. Name, part number and manufacture of each item.
 - 3. Fastenings and other pertinent information.
 - 4. Explanation of abbreviations, symbols and codes contained in schedule.
 - 5. Door and frame sizes, materials and degrees of swing.
- B. Product Data: Submit digital copies for each product indicated.
- C. Templates: Obtain and distribute templates for doors, frames, and other works specified to be prepared for installing door hardware.
- D. Wiring/Riser diagrams: As required for electric hardware indicated.
- E. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division 1.
- F. Keying Schedule: Prepared by or under the supervision of supplier, after receipt of the approved finish hardware schedule, detailing Owner’s final keying instructions for locks.
- G. Samples: Upon request submit material samples.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle and protect products to project site under provisions of Division 1 and as specified herein.
- B. Tag each item or package separately, with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

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1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Years from date of Substantial Completion, for durations indicated.
 - a. Exit Devices: Three years
 - b. Locksets: Three years

PART 2 - PRODUCTS

2.1 MATERIAL AND FABRICATION

- A. Provide all door hardware for complete work, in accordance with the drawings and as specified herein.
- B. Provide items and quantities not specifically mentioned to ensure a proper and complete operational installation.
- C. Electrically Operated and/or controlled Hardware: Provide necessary power supplies, power transfer hinges, relays and interfaces as required for proper operation utilizing existing AWWU access control software and protocols. Provide wiring raceways between hardware and control components and to building power connection in compliance with NFPA 70.

2.2 MANUFACTURERS

- A. Approval of products from manufacturers indicated as "Acceptable Manufacturer" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.

ITEM	SCHEDULED MANUFACTURER	ACCEPTABLE MANUFACTURER
Hinges	Ives (IVE)	Hager, Stanley
Locksets & Deadlocks	Schlage (SCH)	Best
Exit Devices & Mullions	Von Duprin (VON)	None
Cylinders & Keying	Schlage (SCH)	Best
Door Closers	LCN (LCN)	None
Door Trim	Ives (IVE)	Trimco, Burns
Protection Plates	Ives (IVE)	Trimco, Burns
Overhead Stops	Glynn-Johnson (GLY)	Rixson, Sargent
Thresholds & Weatherstrip	National Guard Products (NGP)	Reese, Pemko

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2.3 HANGING

- A. Conventional Hinges: Hinge open width minimum, but of sufficient throw to permit maximum door swing. Stainless-steel pins:
1. Three hinges per leaf to 7 feet, 6-inch height. Add one for each additional 30 inches in height or any fraction thereof.
 1. Provide 4 ½ x 4 ½ for 1 ¾” thick doors up to 3’5”. Provide 5 x 4 ½ on doors 36” and over.
 2. Exterior outswing doors to have non removable (NRP) pins.
 3. Pin tips, flat button, finish to match leaves

2.4 MANUAL AND ELECTROMECHANICAL LOCKSETS,

- A. Heavy Duty Mortise Locks and Latches: Schlage L9000 Series
1. Provide mortise locks certified as ANSI A156.13, Grade 1 Operational, Grade 1 Security 1000 Series.
 2. Provide lock case that is multi-function and field reversible for handing without opening case, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
 3. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
 4. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
 5. Provide matching trim electrified solenoid-driven mortise latch bolt locks with strike that is applicable to frame as scheduled in the hardware sets.
 6. Lever Trim: Solid stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
 - a. Lever Design: Schlage 06A

2.5 EXIT DEVICES

- A. Panic and Fire Rated Exit Devices: Von Duprin 98/99 Series
1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1, AND UL listed for Panic Exit Hardware.
 2. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
 3. Quiet Operation: Incorporate fluid damper or other device that eliminates noise of exit device operation.
 4. Touchpad: Extend minimum of one half of door width, but not the full length of exit device rail. Provide end-cap with two-point attachment to door. Provide compression springs in devices, latches, and outside trims or controls; tension springs prohibited.
 5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrical requirements.
 6. Provide exit devices with manufacturer’s approved strikes.

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7. Provide exit devices cut to door width and height. Locate exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
8. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
9. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion that is removed by use of a keyed cylinder, which is self-locking when re-installed.
10. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
11. Where lever handles are specified as outside trim for exit devices, provide heavy-duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.
 - a. Lever Style: Match lever style of locksets.

2.6 KEYS, KEYING, AND KEY CONTROL

A. Key lock box

1. Relocate existing KNOX box to entrance side of building at location selected by Owner.
2. Manufacturer: Knox Company, 1-800-552-5669.
 - a. Model: 3200 series
 - b. Size: 4 inch high x 5 inch wide x 3 ¼ inch deep and suitable for security key card.
 - c. Lock: UL Listed, double action rotating tumblers, hardened steel pins.
 - d. Housing: ¼ inch steel plate.
 - e. Door: ½ inch thick, hinged steel door with interior gasket.
 - f. Finish: Black, TGIC polyester powder coat, factory applied.

2.7 CLOSERS

A. Surface Closers: LCN 4010/4110 Series

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Certify surface mounted mechanical closers to meet fifteen million (15,000,000) full load cycles. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 11/16 inch (17 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.

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7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers. When closers are parallel arm mounted, provide closers which mount within 6-inch (152 mm) top rail without use of mounting plate so that closer is not visible through vision panel from pull side.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI/BHMA Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.8 OTHER HARDWARE

- A. Door stops: Provide stops to protect walls, casework or other hardware.
 1. Except as otherwise indicated, provide wall stops with manual hold open at every swinging door leaf.
 2. Where wall or floor stops are not appropriate, provide overhead holders.
- B. Weatherstrip and Gasket
 1. Provide continuous weather-strip gasketing and drip bottom sweeps on exterior.
 2. Provide stainless steel fasteners as recommended by the manufacturer for application indicated.
- C. Thresholds
 1. Except as otherwise indicated, provide stainless steel threshold unit of type, size and profile to match existing.
- D. Silencers
 1. Interior hollow metal frames, 3 for single doors, 2 for pairs of doors.
- E. Kickplates
 1. Four beveled edges, .050 inches minimum thickness, 10 high at doors where panic hardware is scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.

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2.9 HARDWARE FINISH

A. Provide the following finishes unless noted differently in hardware groups:

Hinges	630 Stainless Steel Exterior
Locksets	626 Dull Chrome
Exit Devices	626 Dull Chrome
Closers	689 Aluminum
Kickplates	630 Stainless Steel
Other Hardware	626 Dull Chrome
Thresholds	Stainless Steel
Weatherstrip/Sweeps	Stainless Steel

2.10 KEYING REQUIREMENTS

- A. All keyed cylinders shall be subject to existing Best Master key system.
- B. Furnish cylinders with construction cores. Following construction supply permanent keyed cores.
- C. Cylinders to be furnished with visual key control with key code. Stamped on the face of the keys and marked on the back or side of the cylinders.
- D. Key Quantities
Reuse existing BEST key cores.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Ensure that walls and frames are square and plumb before hardware installation.
- B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes. Notify Architect of any code conflicts before ordering materials.

3.2 INSTALLATION

- A. Do not install surface mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation.
- B. Locate floor stops not more than 4 inches from the wall.
- C. Drill pilot holes for fasteners in wood doors and/or frames.

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3.3 ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
- B. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to Owner's satisfaction.

3.4 FOLLOW UP INSPECTION

- A. Installer to provide letter of agreement to Owner that approximately 6 months after substantial completion, installer will visit project with representative of the manufacturers of the locking devices and door closers to accomplish the following:
 - 1. Re-adjust locks and closers
 - 2. Evaluate maintenance procedures and recommend changes or additions, and instruct Owner's personnel.
 - 3. Identify items that have deteriorated or failed.
 - 4. Submit written report identifying problems and likely future problems.

3.5 DEMONSTRATION

- A. Demonstrate electrical, electronic and pneumatic hardware system including adjustment and maintenance procedures

3.6 PROTECTION/CLEANING

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

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3.7 DOOR HARDWARE GROUPS

HW SET: 01 (DOORS 02)

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06A	626	SCH
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WEATHER STRIP H & J	296 CPK		PEM
1	EA	DRIP BOTTOM SWEEP	345 ANB		PEM
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 02 (DOOR 03)

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ELECTRIC LOCKSET	L9080BDEU 06	626	SCH
1	EA	OH STOP	104H	630	GLY
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	POWER TRANSFER	EPT2		VD
1	EA	POWER SUPPLY	BY ELECTRICAL		
1	EA	CARD READER	BY ELECTRICAL		
1	EA	CONTACT	RE USE EXISTING		
1	EA	WEATHER STRIP H & J	296 CPK		PEM
1	EA	DRIP BOTTOM SWEEP	345 ANB		PEM
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 03 (DOOR 01)

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	EXIT DEVICE	9875-BE-F/996L-BE-F	626	SCH
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WEATHER STRIP H & J	296 CPK		PEM
1	EA	DRIP BOTTOM SWEEP	345 ANB		PEM
3	EA	SILENCER	SR64	GRY	IVE

END OF SECTION



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION IV

SUBMITTAL LIST AND STANDARD FORMS

Submittal List

Submittal Transmittal

Certificate of Compliance

Design Clarification & Verification Request

Deviation Request

Substitution Request

Subcontractor & Supplier List



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

Job WR0000387482, Contractor: _____
 #: WR0000387484
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Submittal No.	Description	Submittal Schedule
10.03.2	Bid Submittals	Prior to the time of opening specified in the Invitation to Bid and the exact date and time of receipt of Bids shall be recorded.
10.04.9	Waste disposal on private property	Prior to construction.
10.04.13	Traffic Control Plan (TCP)	Within ten (10) days of NTP, or five (5) days before commencement of work, whichever is earlier.
10.04.19	Record Documents	Within thirty (30) days after Substantial Completion or prior to Final Acceptance of the project, whichever is earlier.
10.05.3	Construction Progress Schedule	Within ten (10) days of the effective Notice to Proceed, and prior to the commencement of Work.
10.05.3	Critical Path Method (CPM) Schedule	No later than twenty-one (21) days from the effective date of the Notice to Proceed and at least monthly thereafter.
10.05.4	Unusual Working Hours	At least forty-eight (48) hours advance notice.
10.05.5	Shop Drawings	Within reason and in such sequence as to cause no delay in the Work or in the work of the Owner or any other contractor.
10.05.6	Product Data	Within reason and in such sequence as to cause no delay in the Work or in



Municipality of Anchorage

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2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

		the work of the Owner or any other contractor.
10.05.7	Materials Substitutions	Within ten (10) calendar days of the effective date of the Notice-to-Proceed (or such time as may be approved in writing by the Engineer.)
10.05.10	Subcontractor List	Within ten (10) days after the effective date of the Notice-To-Proceed, and prior to the commencement of the Work.
10.05.18	Changed Conditions	No later than two (2) working days, and before such conditions are disturbed.
10.05.20	Change Order Proposal	Prior to payment of changed Work
10.05.21	Claims for Additional Compensation	Initial Notification - Immediately.
10.05.26	Pre-Final Inspection Notification	After completion of Work After code compliance inspections
10.05.29	Termination of Work for Owners Convenience	Immediately after receiving a Notice of Termination.
10.06.8	24-Hour Emergency Contact Number*	Prior to commencement of work * Found in Construction Specifications
10.06.9	Insurance	Prior to execution of the Contract.
10.07.4	Change Order Proposal/ Negotiated Changes	Prior to payment of the changed Work.
10.07.5	Application for Partial Payment	
10.07.7	Final Payment	Upon completion of the Work and issuance of a certificate of completion by the Engineer.
20.02.4.B	Hazardous Material Control Plan (HMCP), Spill Prevention, Control, and	No less than ten (10) business days prior to the beginning of excavation.



Municipality of Anchorage

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2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

	Countermeasure Plan (SPCC)	
30.01.7	Ready-Mixed Concrete	Prior to unloading the concrete mix at the construction site.
<p>NOTE: The above list of submittals is not all-inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans, Special Provisions, Technical Specifications, MASS, or as directed by the Engineer. (See Division 10, Section 10.04, Article 4.3.)</p>		

SUBMITTAL TRANSMITTAL

PROJECT: _____ SUBMITTAL NO.: _____
 CONTRACTOR: _____ CONTRACT NO.: _____
 ORIGINATOR: _____ SPEC. SECTION: _____
 DATE SUBMITTED: _____ DRAWING NO.: _____ SHEET _____ OF _____

TO: ANCHORAGE WATER & WASTEWATER UTILITY
 Engineering Division
 3000 Arctic Boulevard

ATTN: _____

ITEM: _____		REVIEW ACTION						
		COPIES SENT	NO EXCEPTION TAKEN	MAKE CORRECTIONS AS NOTED	AMEND AND RESUBMIT	REJECTED RESUBMIT	COPIES RETURNED	NOTES ATTACHED
SUPPLIER/CONTRACTOR: <input type="checkbox"/> Original Submittal <input type="checkbox"/> 3rd <input type="checkbox"/> 2nd <input type="checkbox"/> 4th								
ID. NO.	DETAILED DESCRIPTION (Provide Itemized List of Contents of this Submittal)		A	B	C	D		

Complete either (a) or (b), following:

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions).

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (list deviations, attach a separate sheet if necessary).

Corrections or comments made relative to submittals during this review do not relieve the Contractor from compliance with the requirements of the drawings and specifications. This submittal is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The Contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.

CONTRACTOR: _____
(Signature)

ENGINEER: _____
(Signature)

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

CERTIFICATE OF COMPLIANCE

Project Name: _____ Contract No. C-_____

I (WE) CERTIFY THAT ALL WORK HAS BEEN PERFORMED AND MATERIALS SUPPLIED IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE ABOVE WORK, AND THAT:

- A. Not less that the prevailing rates of wages as ascertained by the governing body of the contracting agency has been paid to laborers, workmen, and mechanics employed on this work;
- B. There have been no unauthorized substitutions of subcontractors; nor have any subcontracts been entered into without the names of the subcontractors having been submitted to the Engineer prior to the start of such subcontracted work;
- C. No subcontract was assigned or transferred or performed by any subcontractor other than the original subcontractor, without prior notice having been submitted to the Engineer together with the names of all subcontractors;
- D. All claims for material and labor and other services performed in connection with these specifications have been paid;
- E. All monies due the State Industrial Accident Fund, the State Unemployment Compensation Trust Fund, the State Tax Commission, hospital associations and/or other have been paid.

(Company Name)

(Contractor's Signature) (Date)

STATE OF ALASKA)
)ss.
THIRD JUDICIAL DISTRICT)

The foregoing instrument was acknowledged before me this _____ day of _____, 20 ____, by _____ to be the _____ of the company.

Notary Public
My commission expires: _____

DESIGN CLARIFICATION/VERIFICATION REQUEST (DC/VR)

PROJECT _____ DC/VR NO. _____
 CONTRACTOR _____ CONTRACT NO. _____
 ORIGINATOR _____ SPEC. SECTION _____
 DATE SUBMITTED _____ DRAWING NO. _____ SHEET _____ OF _____

DESCRIPTION OF DC/VR

RESPONSE REQUESTED BY (Date) _____

RESPONSE TO DC/VR

RESPONSE BY (Name/Company) _____

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

DIRECTION

- Proceed per Engineers Response. No change in contract price or time is recognized.
- Do not proceed until _____
- _____

DEVIATION REQUEST (DR)

PROJECT _____ DR NO. _____
 CONTRACTOR _____ CONTRACT NO. _____
 ORIGINATOR _____ SPEC. SECTION _____
 DATE SUBMITTED _____ DRAWING NO. _____ SHEET _____ OF _____

DESCRIPTION OF DR

A. Original Contract Requirements:

B. Reason for Deviation Request:

C. Proposed Deviation:

D. Any Changes in Contract Time or Cost YES NO

CONTRACTOR SIGNATURE - _____ RESPONSE
 Date _____ REQUIRED BY (Date) _____

RESPONSE TO DR

RESPONSE BY (Name/Company) _____

ROUTING	RECEIVED BY NAME / COMPANY	DATE RECEIVED	DATE FORWARDED	COMMENTS
Project Manager				
Designer				
Project Manager				
Contractor				

DIRECTION

Approved

Approved as Noted

Disapproved

BY _____
(Signature)

SUBSTITUTION REQUEST (SR)

PROJECT _____ SR NO. _____
 CONTRACTOR _____ CONTRACT NO. _____
 ORIGINATOR _____ SPEC. SECTION _____
 DATE SUBMITTED _____ DRAWING NO. _____ SHEET _____ OF _____

SPECIFIED ITEM:

SECTION	PAGE	PARAGRAPH	DESCRIPTION
---------	------	-----------	-------------

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

Attached data includes product description, specifications, drawings, photographs and performance and test adequate for evaluation of the request. Applicable portions of the data are clearly identified.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitution does not affect dimensions shown on Drawings and will not require any change in any of the Contract Documents.
2. The undersigned will pay for changes to the design, including engineering design, detailing, and construction costs caused by the requested substitution which is estimated to be \$_____.
3. The proposed substitution will have no adverse affect on other contractors, the construction schedule (specifically the date of substantial completion), or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The incorporation or use of the substitution in connection with the work is not subject to payment of any license fee or royalty.

The undersigned further states that the function, appearance, and quality of the Proposed Substitution are equivalent or superior to the Specified Item.

Submitted by CONTRACTOR

Signature: _____

Firm: _____

Date: _____

Telephone: _____

Attachments

:

Reviewed by ENGINEER Accepted Accepted as Noted Not Accepted Received too Late

By: _____

Title: _____

Date: _____

Remarks: _____

ANCHORAGE WATER AND WASTEWATER UTILITY

Subcontractor/Supplier List

Project Name:

Project Number:

List all suppliers, subcontractors, their mailing addresses and a summary of the extent and character of the work to be performed by each:

Supplier/Subcontractor	Address	Extent/Character of Work
-------------------------------	----------------	---------------------------------



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION V

CONTRACT AND BID DOCUMENTS

Contract

Bid Bond

Performance & Payment Bond

Certificate of Insurance

Bidder's Checklist

Responsible Contractor Questionnaire

CONTRACT

Invitation to Bid No. **2022C**_____

Contract No. **C-2022**_____

NAME AND ADDRESS OF CONTRACTOR:

Check appropriate box:

Incorporated in the State of

MUNICIPALITY OF ANCHORAGE, acting through _____ (hereinafter the Owner).

Contract for _____

BID SCHEDULES

ITEMS

PLAN SHEET
FILE NUMBERS

AMOUNT

\$ _____

Total Amount : \$ _____

THIS CONTRACT, entered into by the MUNICIPALITY OF ANCHORAGE, ALASKA, acting through the Owner named above, and the individual, partnership, or corporation named above, hereinafter called the Contractor, WITNESSETH that the parties hereto do mutually agree as follows:

Statement of Work: The Contractor shall furnish all labor, equipment and materials and perform the Work above described, for the amount stated, in strict accordance with the Contract Documents.

CONTRACT DOCUMENTS

- I. This CONTRACT consisting of 4 pages.
- II. The Bid Proposal Section ___ consisting of ___ pages numbered as ___, **as contained in ITB 2022C**_____.
- III. The Contract Performance and Payment Bond _____.
- IV. The Contractor's Certificate of Insurance Dated _____.
- V. Municipality of Anchorage Standard Specifications dated 2015 (MASS) Incorporated by Reference, **as contained in ITB 2022C**_____.
- VI. Specifications consisting of the following:

Supplemental Provisions Section _____ consisting of _____ pages, with attachments Exhibit A through F, **as contained in ITB 2022C**_____.
- VII. Equal Opportunity Special Provisions and Forms Section _____ consisting of _____ pages, **as contained in ITB 2022C**_____.
- VIII. Disadvantaged/Women-Owned Business Enterprise (DBE/WBE) Specification Section _____ consisting of _____ pages, **as contained in ITB 2022C**_____.
- IX. The Laborers' and Mechanics' Minimum Rates of Pay dated September 1, 2015 Section _____ consisting of _____ pages, **as contained in ITB 2022C**_____.
- X. Submittal List Section _____ consisting of _____ page, **as contained in ITB 2022C**_____.
- XI. The Drawings consisting of _____ sheets numbered _____, **as contained in ITB 2022C**_____.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the Contract Date entered below.

MUNICIPALITY OF ANCHORAGE, ALASKA

VENDOR _____

BY _____
Signature

BY _____
Signature

Purchasing Officer or designee
Title

Printed Name

Title

Date of Signature

Date of Signature and Contract Date:

SAMPLE

**CONTRACT AND PERFORMANCE AND PAYMENT
BOND SIGNATURE INSTRUCTIONS**

1. The full name and business of the Contractor shall be inserted on Page 1 of the Contract and on the Performance and Payment Bond, hereinafter the Bond.
2. Two copies of the Contract and the Bond shall be manually signed by the Contractor. If the Contractor is a partnership or joint venture, all partners or joint ventures shall sign the Contract and the Bond except that one partner or one joint venturer may sign for the partnership or joint venture when all other partners or joint venturers have executed a Power-of-Attorney authorizing one partner or joint venturer to sign. The Power-of-Attorney shall accompany the executed contract and the Bond.
3. If the Contractor is a corporation, the President of the corporation shall execute the Contract and the Bond unless a Power-of-Attorney or corporate resolution shall accompany the executed Contract and Bond.
4. The Bond shall be returned to the Purchasing Division undated. The Contract Date shall be inserted on the Contract when the Municipality signs the Contract and the Bond shall be dated the same as the Contract Date.

SAMPLE

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, _____
 as Principal, and _____ a
 corporation organized under the laws of the _____ and
 authorized to transact surety business in the State of Alaska, of _____
 _____ as Surety, are held and firmly bound unto the MUNICIPALITY OF
 ANCHORAGE, as Oblige, in the full and just sum of _____
 _____ (\$ _____) Dollars, lawful
 money of the UNITED STATES, for the payment of which sum, well and truly to be made, we bind
 ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly
 by the presents.

WHEREAS, the said Principle is herewith submitting its proposal for _____
 _____.

The condition of this obligation is such that if the aforesaid Principal will, within the time required enter
 into a formal contract and give a good and sufficient bond to secure the performance of the terms and
 conditions of the contract, then this Obligation to be void; otherwise the Principal and Surety will pay
 unto to the Oblige the amount stated above.

Signed, sealed, and delivered _____, 20_____.

WITNESS AS TO PRINCIPAL:

 Contractor Name

 Contractor Signature

(AFFIX CORPORATE SEAL)

 Corporate Surety

 Surety Business Address

BY: _____
 (Attorney-In-Fact)

(AFFIX SURETY SEAL)

CONTRACT PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That we _____
 _____ of _____
 as Principal, and _____
 a corporation organized under the laws of the _____
 _____ and authorized to transact surety business in the State of Alaska,
 of _____
 as Surety, are held and firmly bound unto the MUNICIPALITY OF ANCHORAGE, as Obligee, in the full and
 just sum of _____
 (\$ _____) Dollars, lawful money of the UNITED STATES, for the payment
 which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and
 assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH, that whereas the principal has entered into a certain
 contract dated the _____ date of _____ 20 _____, with the Obligee for the
 construction of _____

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at
 length herein.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants,
 terms, conditions, and agreements of said contract, and shall promptly make payments to all persons
 supplying labor and material in the prosecution of the work provided for in said contract, during the original
 term of said contract and any extensions of modifications thereof that may be granted by the Municipality, with
 or without notice to the Surety, then this obligation to be void; otherwise to remain in full force and effect.

This obligation is made for the use of said Obligee and also for use and benefit of all persons who may perform
 any work or labor or furnish any material in the execution of said Contract and may be sued on thereby in the
 name of said Obligee.

This said Surety, for the value received, hereby stipulates and agrees that no change, extension of time,
 alteration or addition to the terms of the contract or to the work to be performed thereunder or the
 specifications accompanying the same, shall in anywise affect its obligations on this bond, and it does hereby
 waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the
 work or to the specifications.

Whenever Principal shall be, and declared by Obligee to be in default under the Contract the Obligee having performed Obligee's obligations thereunder, the Surety may 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 submission to Obligee for completing the Contract in accordance with its terms and conditions and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by Obligee and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee 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 cost of completion less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph, shall mean the total amount payable by Obligee to Principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to Principal.

IN TESTIMONY WHEREOF, the parties hereunto have caused the execution hererof in _____
_____ original counterparts as of the _____ day of _____, 20_____.

WITNESS AS TO PRINCIPAL:

(AFFIX CORPORATE SEAL)

(AFFIX SURETY SEAL)

Principal Name

Principal Signature

Corporate Surety

Surety Business Address

BY:

(Attorney-In-Fact)

INSURANCE

By submitting a bid, the bidder agrees, if they are the successful bidder, to obtain and maintain the insurance required by this section. The bidder also agrees to provide the Municipality a copy of their Certificate of Liability Insurance prior to signing the contract and prior to commencement of any work under this contract.

GENERAL: The Contractor will not allow any subcontractor to commence work until the subcontractor has obtained insurance as listed in this section. The contractor and each subcontractor shall maintain this insurance throughout the life of this contract, including any maintenance and/or guarantee/warranty period. The contractor shall obtain separate insurance certificates for each contract.

ADDITIONAL INSURED: The Municipality of Anchorage shall be listed as an additional insured on all General and Auto Liability policies required by this contract. All policies shall contain a waiver of subrogation against the Municipality, except Professional Liability. All policies shall remain in effect during the life of the contract. The Contractors insurance certificate shall also indicate the Municipality of Anchorage as a certificate holder of the policy.

WORKERS COMPENSATION: The Contractor shall purchase and maintain during the life of this contract, workers compensation insurance for all employees who will work on this project and, if any work is sublet, the Contractor shall require the subcontractor similarly to provide such insurance. Employers' Liability with a minimum limit of \$500,000 shall be maintained and Workers Compensation with minimum limits as required by Alaska State Workers Compensation Statutes. The policy shall contain a waiver of subrogation against the Municipality.

NOTICE TO "OUT-OF-STATE" CONTRACTORS WORKING IN ALASKA: The Contractor shall provide evidence of Workers Compensation insurance, either State of Alaska Workers Compensation coverage or an endorsement to the Contractor's home state Workers Compensation policy, evidencing coverage for "other states" including Alaska, prior to execution of a contract or, if approved, before commencement of contract performance in Alaska.

GENERAL LIABILITY: The Contractor shall purchase and maintain, in force, during the life of this contract such general liability insurance as shall protect the Owner and the Contractor against losses which may result from claims for damages for bodily injury, including accidental death, as well as from claims for property damages which may arise from any operations under this contract whether such operations be those of the Contractor, a subcontractor or anyone directly or indirectly employed by either of them.

<u>Commercial General Liability</u>	<u>Minimum Limits</u>
Products/Completed Operations	\$2,000,000
Personal & Advertising Injury	\$1,000,000
Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000
Medical Payments	\$5,000
<u>Commercial Auto Liability</u>	<u>Minimum Limits</u>
Combined single limit (Bodily Injury and Property Damage)	\$1,000,000
Including all owned, hired, and non-owned	
<u>Workers Compensation and Employers Liability</u>	<u>Minimum Limits</u>
Per Alaska statute	\$500,000
<u>Errors and Omissions</u>	<u>Minimum Limits</u>
Professional Liability (Not required unless limits appear in space provided)	
<u>Umbrella Liability</u>	<u>Minimum Limits</u>
(Not required unless limits appear in space provided)	
\$ _____ S.I.R.	

Each insurance policy required by this section shall require the insurer to give advance notice to the MOA/Contract Administrator prior to the cancellation of the policy. IF the insurer does not notify the MOA upon policy cancellation, it shall be the Contractor's responsibility to notify the MOA of such cancellation.

COMPLIANCE WITH LAWS

The Contractor shall observe and abide by all applicable laws, regulations, ordinances and other rules of the State of Alaska and/or any political subdivisions thereof, or any other duly constituted public authority wherein work is done or services performed, and further agrees to indemnify and save the Municipality of Anchorage harmless from any and all liability or penalty which may be imposed or asserted by reason of the Contractor's failure or alleged failure to observe and abide thereby.

(Remainder of Page Initially left Blank)



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) shall be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: PHONE (A/C, No, Ext): _____ FAX (A/C, _____ E-MAIL ADDRESS: _____ <table style="width: 100%; border: none;"> <tr> <td style="width: 80%; text-align: center; border: none;">INSURER(S) AFFORDING COVERAGE</td> <td style="width: 20%; text-align: center; border: none;">NAIC #</td> </tr> <tr> <td style="border: none;">INSURER A :</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">INSURER B :</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">INSURER C :</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">INSURER D :</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">INSURER E :</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;">INSURER F :</td> <td style="border: none;"></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A :		INSURER B :		INSURER C :		INSURER D :		INSURER E :		INSURER F :	
INSURER(S) AFFORDING COVERAGE	NAIC #														
INSURER A :															
INSURER B :															
INSURER C :															
INSURER D :															
INSURER E :															
INSURER F :															
INSURED															

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS												
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO <input type="checkbox"/> LOC						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$												
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULE D AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$												
	UMBRELLA LIAB OCCUR EXCESS LIAB CLAIMS- DED RETENTIONS \$						EACH OCCURRENCE \$ AGGREGATE \$ \$												
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE Y / N <input type="checkbox"/> N / A OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						<table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"></td> <td style="width: 15%; text-align: center;">WC STATUTORY LIMITS</td> <td style="width: 15%; text-align: center;">OTHER</td> </tr> <tr> <td>E.L. EACH ACCIDENT</td> <td></td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - EA</td> <td></td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - POLICY LIMIT</td> <td></td> <td>\$</td> </tr> </table>		WC STATUTORY LIMITS	OTHER	E.L. EACH ACCIDENT		\$	E.L. DISEASE - EA		\$	E.L. DISEASE - POLICY LIMIT		\$
	WC STATUTORY LIMITS	OTHER																	
E.L. EACH ACCIDENT		\$																	
E.L. DISEASE - EA		\$																	
E.L. DISEASE - POLICY LIMIT		\$																	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

1. The Municipality of Anchorage is an additional insured on Auto and General Liability policies. All policies, including workers compensation, contain a WAIVER OF SUBROGATION against the Municipality, except Professional Liability, .
2. CANCELLATION: "Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the Policy Provisions."

CERTIFICATE HOLDER

CANCELLATION

	<p style="text-align: center; margin: 0;">SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.</p> <p style="margin: 0;">Authorized Representative</p>
--	---

Municipality of Anchorage
ITB: 2023C001

BIDDER'S CHECKLIST

INSTRUCTION TO BIDDER

I. GENERAL:

Bidders are advised that notwithstanding any instructions or implications elsewhere in this Invitation to Bid only the documents shown and detailed on this sheet need be submitted with and made part of their bid. Other documents may be required to be submitted after bid time, but prior to award. Bidders are hereby advised that failure to submit the documents shown and detailed on this sheet shall be justification for rendering the bid nonresponsive. Evaluation of bids for responsiveness shall be accomplished in accordance with Anchorage Municipal Code, Title 7.

II. REQUIRED DOCUMENTS FOR BID

NOTE: "Only the following listed items as marked with an "X" are required to be completely filled out and submitted with the bid."

- X Bid Proposal consisting of seven (7) pages numbered BP-1 of 7 through BP-7 of BP 7. Bid Proposal Page **BP-2 of 7** must be manually signed.
- X Erasures or other changes made to the Bid Proposal Sheet must be initialed by the person signing the bid.
- X Bid Bond, certified check, cashier's check, money order or cash shall be submitted with the bid in the amount indicated.
- X All Addenda issued shall be acknowledged in the space provided on the Bid Proposal sheet or by manually signing the Addenda sheet and submitting it prior to the bid opening in accordance with Anchorage Municipal Code 7.20.020C.
- X Subcontractor Information (See Section V).
- X USEPA Certification of Nonsegregated Facilities (See Section V).
- X USEPA Certification Regarding Debarment, Suspension, and Other Responsibility Matters (See Section V).
- X ADEC DBE Compliance Statement (See Section IX, Appendix B).
- X DBE Subcontractor Performance Form (AWWU FORM 6100-3), **FOR EACH PROPOSED DBE SUBCONTRACTOR.** If no DBE subcontractors are proposed, the form must still be signed by the bidder (See Section IX, Appendix C).

Municipality of Anchorage
ITB: 2023C001

BIDDER'S CHECKLIST
INSTRUCTION TO BIDDER

CONTINUED

III. REQUIRED DOCUMENTS AFTER BID OPENING

The following documents are required within **five (5)** working days of notification by the Purchasing Office. Failure, in whole or in part, to submit the documents required below may be grounds to determine the Bidder as non-responsible.

- X** DBE Subcontractor Utilization Form (AWWU FORM 6100-4) (See Section IX, Appendix D)

- X** State of Alaska Department of Environmental Conservation Equal Employment Opportunity Statement of Acknowledgement Form for the bidder and each proposed subcontractor, **REGARDLESS OF DBE PARTICIPATION** (See Section X, first page).

- X** In accordance with AO No. 2019-130 (S), Anchorage Municipal Code 7.20.030 and 7.20.070, Contractor Questionnaire consisting of three (3) Pages, Prime Contractor Form Filled out by Prime Contractor and all known subcontractors. **Please review AO NO. 2019-130 (S), AMC 7.20.030 and 7.20.070, and the attached Contractor Questionnaire before submitting a bid.**

Municipality of Anchorage Contractor Questionnaire

Contractors/Vendors wishing to qualify for award of a bid or proposal offered by the Municipality of Anchorage shall submit this completed form and any supplemental information requested by this form within five days following a request by the Purchasing Officer.

This form is to be filled out by the prime, and subcontractors that perform work "on-site". On-site is defined as the physical place or places where the building or work called for in the contract will remain, and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project.

Contractor/Vendor Name: _____

Owner(s) of Company (if sole proprietorship or partnership): _____

List all Alaska construction contractor's registration numbers, registration types and expiration dates of the Alaska business licenses held by your company in the past three years:

Has your company changed names, business license number, or contractor registration number in the past three years?

Yes No

If "Yes," explain on a separate signed page, including the reason for the change.

Has any owner, partner or (for corporations) officer of your company operated any business offering similar services outlined in the bid or proposal under any other name in the past three years?

Yes No

If "Yes," explain on a separate signed page, including the reason for the change.

Certifications & Disclosures

For these questions & certifications, "company" includes any entity that shares or has shared majority ownership or control with your company. "Determination of violation" includes any citations, orders or recommendations issued to or against the company.

Debarment

1. In the last three years has your company been debarred from bidding on, or being awarded, a state or federal project?

Yes No

Certifications and Disclosures – Prime and Sub Contractor Form

Occupational Safety & Health

Note: Only willful violations of state or federal occupational safety and health laws will result in disqualification; disclosure of other violations does not lead to automatic disqualification.

2. In the last three years has your company been determined to have committed a **willful violation** of state or federal occupational safety and health law? For purposes of this question, a state or federal occupational safety and health law includes laws enforced by the Occupational Safety and Health Administration (OSHA), Alaska Occupational Safety and Health (AKOSH), or another state’s occupational safety and health agency.

Yes No

3. In the last three years, has the federal Occupational Safety and Health Administration (OSHA), Alaska Occupational Safety and Health (AKOSH), or another state’s occupational safety and health agency, made a determination of violation against your company?

Note: If you have filed an appeal of a citation and the appropriate appeals board has not yet ruled on your appeal, you need not include information about it.

Yes No

If “Yes,” attach a separate signed page describing each citation.

Wage & Hour

Note: Only willful violations of state or federal wage and hour laws will result in disqualification; disclosure of other violations does not lead to automatic disqualification.

4. In the last three years has your company been determined to have committed a **willful violation** of state or federal wage and hour law?

Yes No

5. In the last three years has there been a determination of violation of wage and hour laws against your company? Wage and hour violations include failure to pay minimum wages, overtime, or prevailing wages.

Yes No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

Unemployment Insurance & Workers’ Compensation

6. In the last three years has there been a determination of violation of unemployment insurance or workers’ compensation requirements against your company?

Yes No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

Certifications and Disclosures – Prime and Sub Contractor Form

Licensing & Registration

7. If a license or certificate of fitness is required to perform any services provided by your company, has there been a determination of violation of any certificate of fitness requirements against your company in the last three years?

Yes No

If “Yes,” attach a separate signed page describing each violation, identifying the claim by claimant, date, and status/outcome.

Subcontracting

8. I certify that all independent subcontractors engaged by my company meet the definition of an independent contractor under Alaska Statute 23.30.230.

Yes No

9. I understand that my company is responsible for ensuring that each subcontractor my company uses on the project completes this form and associated documentation. I will submit any disclosures required by Anchorage Municipal Code.

I understand

10. I understand that my company is responsible for providing this form and any associated documentation for each subcontractor hired after award within 30 days of hire, and that the subcontractor may not begin work on the project until such information is provided.

I understand

11. I understand that my company is responsible for ensuring that if any event, such as a violation or loss of coverage, causes the information submitted by the subcontractor to change, the subcontractor shall submit updated certifications or disclosures within 30 days of occurrence to the department contract administrator.

I understand

I declare under penalty of perjury that the foregoing is true and correct.

Dated: _____ (Signature)

_____ (Printed name and title)

Right to Appeal: Anchorage Municipal Code provides that any person adversely affected in connection with the award of a municipal contract, including the Municipality’s determination on responsibility, may request that the mayor or assembly refer the matter to the bidding review board.



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION VI

BID PROPOSAL

BID PROPOSAL
(CERTIFICATION)

TO: MUNICIPALITY OF ANCHORAGE
PURCHASING DEPARTMENT
632 W. 6TH AVENUE, SUITE 520
ANCHORAGE, ALASKA 99501

January 9, 2023

SUBJECT: Invitation to Bid No. 2023C001

PROJECT TITLE: Water Treatment Facility Earthquake Repairs at Three Facilities

Pursuant to and in compliance with subject Invitation to Bid, and other bid documents relating thereto, the bidder hereby proposes to furnish all labor and materials and to perform all work for the construction of the above referenced project in strict accordance with the bid documents at the prices established in the Bid Proposal, page **BP- 1 of 7 through BP- 7 of 7** submitted herewith.

The bidder agrees, if awarded the contract, to commence and complete the work within the time specified in the bid documents.

UNIT PRICE BID TOTAL: \$ _____

The bidder acknowledges receipt of the following addenda:

Addenda No. _____	Addenda No. _____
Addenda No. _____	Addenda No. _____
Addenda No. _____	Addenda No. _____

Enclosed is a Bid Bond in the amount of _____.
(Dollar Amount or Percentage of Bid)

Type of Business Organization

The bidder, by checking the applicable box, represents that it operates as () a corporation incorporated under the laws of the State of _____, () an individual, () an LLC, () a partnership, () a nonprofit organization, or () a joint venture. If a partnership or joint venture, identify all parties on a separate page.

Is this project Federally Funded?

Yes
No

Company Name

BID PROPOSAL
(CERTIFICATION)
Continued

SUBJECT: Invitation to Bid No. 2023C001

PROJECT TITLE: Water Treatment Facility Earthquake Repairs at Three Facilities

Date

Alaska Contractor's License Number

Company Name (Printed)

Employer's Tax Identification Number

Authorized Representative Signature

Printed Name & Title

Company **Mailing** Address

Company Phone Number

City, State, Zip Code

Company Fax Number

Company **Physical** Address
(if different from mailing address)

Company Email Address

City, State, Zip Code

Bid Proposal (Continued)

SUBJECT: Invitation to Bid No. 2023C001PROJECT TITLE: Water Treatment Facility Earthquake Repairs at Three Facilities.**BID SCHEDULE – EARTHQUAKE REPAIRS** – Items per Specifications, Design Study Reports and Drawings.

UNIT PRICE

Bid Item Number	Facility	DSR Item Number	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Well 12	a.1	Cracked CMU Joint, SE Corner	linear foot	20	\$_____ per linear foot	\$_____
2	Well 12	a.2	Cracked CMU Joint, SW Corner	linear foot	10	\$_____ per linear foot	\$_____
3	Well 12	n/a	Remove and replace two drain lines; incl new concrete slab and foundation wall demo and repair, repair of stairs and ladders, removal and reinstallation of stairs and ladders	each	1	\$_____ each	\$_____
4	Well 12	n/a	Remove existing door and install new exterior door	each	3	\$_____ each	\$_____
5	Ship Creek	A1	Cracked Concrete	linear foot	2568	\$_____ per linear foot	\$_____
6	Ship Creek	A2	Cracked Concrete Corbel	linear foot	14	\$_____ per linear foot	\$_____

UNIT PRICE							
Bid Item Number	Facility	DSR Item Number	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
7	Ship Creek	B1	Damaged Concrete, 6" x 6"	square feet	3	\$_____ per square foot	\$_____
8	Ship Creek	B2	Cracked Tiles, 7.5" x 7.5"	each	10	\$_____ each	\$_____
9	Ship Creek	B4	Cracked Tiles, 16" x 8"	each	18	\$_____ each	\$_____
10	Ship Creek	C1	Cracked Concrete (throughout outside of window)	linear foot	194	\$_____ per linear foot	\$_____
11	Ship Creek	C2	RegROUT of Exterior Concrete Wall	linear foot	48	\$_____ per linear foot	\$_____
12	Ship Creek	D1.i	Tile RegROUTing	linear foot	85	\$_____ per linear foot	\$_____
13	Ship Creek	D1.ii	CMU Corner RegROUTing	linear foot	138	\$_____ per linear foot	\$_____
14	Ship Creek	D2	Cracked CMU	linear foot	9	\$_____ per linear foot	\$_____
15	Ship Creek	D4	Damaged Concrete Wall, Exterior	square feet	6	\$_____ per square foot	\$_____

UNIT PRICE							
Bid Item Number	Facility	DSR Item Number	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
16	Ship Creek	D5	Split Concrete Support	linear foot	31	\$_____ per linear foot	\$_____
17	Eklutna	A1	Cracked Ceramic Tiles, 6" x 6"	each	80	\$_____ each	\$_____
18	Eklutna	A2/A3/A6	Cracked Concrete floor, 12" and 24" thick	linear foot	1853	\$_____ per linear foot	\$_____
19	Eklutna	A4	Cracked Concrete Support Beam, 20"x20"	each	88	\$_____ each	\$_____
20	Eklutna	A5	Handrails, 3/4" wide joint	each	8	\$_____ each	\$_____
21	Eklutna	B1	Cracked Ceramic Tiles, 16" x 7"	each	6	\$_____ each	\$_____
22	Eklutna	B2&3	Cracked Caulking at Expansion Joint (painted)	linear foot	357	\$_____ per linear foot	\$_____
23	Eklutna	B4	Cracked CMU Mortar Joints	linear foot	1080	\$_____ per linear foot	\$_____
24	Eklutna	B5	Cracked CMU Face Shells (diagonal)	linear foot	179	\$_____ per linear foot	\$_____

UNIT PRICE							
Bid Item Number	Facility	DSR Item Number	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
25	Eklutna	B6	Cracked of Missing Caulk at Purlin Ledge	linear foot	50	\$ _____ per linear foot	\$ _____
26	Eklutna	B7	Cracked Concrete at Wall Corner	linear foot	28	\$ _____ per linear foot	\$ _____
27	Eklutna	B8	Cracked Concrete Walls	linear foot	1176	\$ _____ per linear foot	\$ _____
28	Eklutna	B9	Loose Bracket supporting 6" Roof Drainpipe	each	1	\$ _____ each	\$ _____
29	Eklutna	B10	Sheered Concrete Ledge	each	1	\$ _____ each	\$ _____
30	Eklutna	B11	Dropped Concrete Beam Ledge Support	each	1	\$ _____ each	\$ _____
31	Eklutna	B12	Cracked Concrete Beam	each	1	\$ _____ each	\$ _____
32	Eklutna	B13	Missing Fire Caulk	each	6	\$ _____ each	\$ _____
33	Eklutna	C1	Doors out of plumb	each	2	\$ _____ each	\$ _____

UNIT PRICE							
Bid Item Number	Facility	DSR Item Number	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
34	Eklutna	C2	Caulking Cracked around door frames	linear foot	51	\$ _____ per linear foot	\$ _____
35	Eklutna	D1	Cracked Caulking at Seismic Joint (painted);	linear foot	170	\$ _____ per linear foot	\$ _____
36	Eklutna	D2	Cracked or missing grout at roof to wall panel connection	linear foot	891	\$ _____ per linear foot	\$ _____
37	Eklutna	D3	Loose Bracket supporting 2" natural gas piping, painted	each	9	\$ _____ each	\$ _____
38	Eklutna	D5	Cracked Concrete ceiling	linear foot	72	\$ _____ per linear foot	\$ _____

Bidder acknowledges that each Bid Unit Price includes an amount considered by bidder to be adequate to cover overhead and profit for each separately identified item, and there are no additional lump sum costs to cover overhead, profit, premium time, overtime, inspections, management, or any other miscellaneous costs.

Company Name _____



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION VII

OTHER UTILITY REQUIREMENTS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION VIII

MINIMUM RATES OF PAY

State of Alaska Wage Rate

Laborers' & Mechanics' Minimum Rates of Pay

Title 36. Public Contracts AS 36.05 & AS 36.10 Wage & Hour Administration Pamphlet No. 600 (Pamphlet 600) is hereby incorporated in its entirety. Pamphlet 600 is available for free download at <http://labor.alaska.gov/lss/forms/pamp600-090115.pdf>

The Municipality of Anchorage will include a paper copy of the wage rates in the signed Contract.



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION VIII

MINIMUM RATES OF PAY

Federal Wage Determination with Attachments

"General Decision Number: AK20220001 12/16/2022

Superseded General Decision Number: AK20210001

State: Alaska

Construction Types: Building and Heavy

Counties: Alaska Statewide.

BUILDING AND HEAVY CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

1	02/18/2022
2	02/25/2022
3	03/11/2022
4	03/18/2022
5	04/15/2022
6	07/08/2022
7	09/09/2022
8	09/23/2022
9	10/14/2022
10	12/16/2022

ASBE0097-001 06/01/2021

	Rates	Fringes
Asbestos Workers/Insulator (includes application of all insulating materials protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 38.68	21.57
HAZARDOUS MATERIAL HANDLER (includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging, and disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....	\$ 37.38	19.55

BOIL0502-002 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 47.03	30.59

BRAK0001-002 07/01/2020

	Rates	Fringes
Bricklayer, Blocklayer, Stonemason, Marble Mason, Tile Setter, Terrazzo Worker.....	\$ 42.16	19.67
Tile & Terrazzo Finisher.....	\$ 35.99	19.67

* CARP1281-001 09/01/2022

	Rates	Fringes
CARPENTER Including Lather and Drywall Hanging.....	\$ 43.34	28.86

CARP1501-001 09/01/2019

	Rates	Fringes
MILLWRIGHT.....	\$ 37.64	23.46

* CARP2520-003 09/01/2022

Rates	Fringes
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Diver

Stand-by.....	\$ 47.65	28.32
Tender.....	\$ 46.65	28.32
Working.....	\$ 87.45	28.32
Piledriver		
Piledriver; Skiff Operator		
and Rigger.....	\$ 38.34	26.51
Sheet Stabber.....	\$ 38.34	26.51
Welder.....	\$ 43.90	26.51

DEPTH PAY PREMIUM FOR DIVERS BELOW WATER SURFACE:

50-100 feet	\$1.00 per foot
101 feet and deeper	\$2.00 per foot

ENCLOSURE PAY PREMIUM WITH NO VERTICAL ASCENT:

5-50 FEET	\$1.00 PER FOOT/DAY
51-100 FEET	\$2.00 PER FOOT/DAY
101 FEET AND ABOVE	\$3.00 PER FOOT/DAY

SATURATION DIVING:

The standby rate applies until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. the diver rate shall be paid for all saturation hours.

WORK IN COMBINATION OF CLASSIFICATIONS:

Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

ELEC1547-004 04/01/2022

	Rates	Fringes
CABLE SPLICER.....	\$ 42.77	3% + 27.97
ELECTRICIAN.....	\$ 42.44	3% + 28.22

ELEC1547-005 04/01/2022

Line Construction

	Rates	Fringes
CABLE SPLICER.....	\$ 62.29	3%+32.37
Linemen (Including Equipment		
Operators, Technician).....	\$ 61.29	3%+30.98
Powderman.....	\$ 59.29	3%+32.37
TREE TRIMMER.....	\$ 38.05	3%+27.01

ELEV0019-002 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 63.16	36.885+a+b

FOOTNOTE: a. Employer contributes 8% of the basic hourly rate for over 5 year's service and 6% of the basic hourly rate for 6 months to 5 years' of service as vacation paid credit. b. Eight paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day; Friday after Thanksgiving, and Christmas Day

ENGI0302-002 01/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 43.53	25.95
GROUP 1A.....	\$ 45.29	25.95
GROUP 2.....	\$ 42.76	25.95
GROUP 3.....	\$ 42.76	25.95
GROUP 4.....	\$ 35.83	25.95
TUNNEL WORK		
GROUP 1.....	\$ 47.88	25.95
GROUP 1A.....	\$ 49.82	25.95
GROUP 2.....	\$ 47.04	25.95
GROUP 3.....	\$ 46.24	25.95
GROUP 4.....	\$ 39.41	25.95

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Roller: Breakdown, Intermediate, and Finish; Back Filler; Barrier Machine (Zipper); Beltcrete with power pack and similar conveyors; Bending Machine; Boat Coxwains; Bulldozers; Cableways, Highlines and Cablecars; Cleaning Machine; Coating Machine; Concrete Hydro Blaster; Cranes-45 tons and under or 150 foot boom and under (including jib and attachments): (a) Hydralifts or Transporters, all track or truck type,(b) Derricks; Crushers; Deck Winches-Double Drum; Ditching or Trenching Machine (16 inch or over); Drilling Machines, core, cable, rotary and exploration; Finishing Machine Operator, Concrete Paving, Laser Screed, Sidewalk, Curb and Gutter Machine; Helicopters; Hover Craft, Flex Craft, Loadmaster, Air Cushion, All Terrain Vehicle, Rollagon, Bargecable, Nodwell, and Snow Cat; Hydro Ax: Feller Buncher and similar; Loaders (2 1/2 yards through 5 yards, including all attachments): Forklifts with telescopic boom and swing attachment, Overhead and front end, 2 1/2 yards through 5 yards, Loaders with forks or pipe clamps; Loaders, elevating belt type, Euclid and similar types; Mechanics, Bodyman; Micro Tunneling Machine; Mixers: Mobile type w/hoist combination; Motor Patrol Grader; Mucking Machines: Mole, Tunnel Drill, Horizontal/Directional Drill Operator, and/or Shield; Operator on Dredges; Piledriver Engineers, L. B. Foster, Puller or similar Paving Breaker; Power Plant, Turbine Operator, 200 k.w. and over (power plants or combination of power units over 300 k.w.); Scrapers-through 40 yards; Service Oiler/Service Engineer; Sidebooms-under 45 tons; Shot Blast Machine; Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards and under), Spreaders, Blaw Knox, Cedarapids, Barber Greene, Slurry Machine; Sub-grader (Gurries, Reclaimer, and similar types); Tack tractor; Truck mounted Concrete Pumps, Conveyor, Creter; Water Kote Machine; Unlicensed off road hauler

GROUP 1A: Camera/Tool/Video Operator (Slipline), Cranes-over 45 tons or 150 foot (including jib and attachments): (a) Clamshells and Draglines (over 3 yards), (b) Tower cranes; Licensed Water/Waste Water Treatment Operator; Loaders over 5 yds.; Certified Welder, Electrical Mechanic, Camp Maintenance Engineer, Mechanic (over 10,000 hours); Motor Patrol Grader, Dozer, Grade Tractor, Roto-mill/Profiler (finish: when finishing to final grade and/or to hubs, or for asphalt); Power Plants: 1000 k.w.

and over; Quad; Screed; Shovels, Backhoes, Excavators with all attachments (over 3 yards), Sidebooms over 45 tons; Slip Form Paver, C.M.I. and similar types; Scrapers over 40 yards;

GROUP 2: Boiler-fireman; Cement Hog and Concrete Pump Operator; Conveyors (except as listed in group 1); Hoist on steel erection; Towermobiles and Air Tuggers; Horizontal/Directional Drill Locator; Licensed Grade Technician; Loaders, (i.e., Elevating Grader and Material Transfer Vehicle); Locomotives: rod and geared engines; Mixers; Screening, Washing Plant; Sideboom (cradling rock drill regardless of size); Skidder; Trenching Machine under 16 inches; Waste/ Waste Water Treatment Operator.

GROUP 3: "A" Frame Trucks, Deck Winches: single power drum; Bombardier (tack or tow rig); Boring Machine; Brooms-power; Bump Cutter; Compressor; Farm tractor; Forklift, industrial type; Gin Truck or Winch Truck with poles when used for hoisting; Grade Checker and Stake Hopper; Hoist, Air Tuggers, Elevators; Loaders: (a) Elevating-Athey, Barber Green and similar types (b) Forklifts or Lumber Carrier (on construction job site) (c) Forklifts with Tower (d) Overhead and Front-end, under 2 1/2 yds. Locomotives: Dinkey (air, steam, gas and electric) Speeders; Mechanics (light duty); Oil, Blower Distribution; Post Hole Diggers, mechanical; Pot Fireman (power agitated); Power Plant, Turbine Operator, under 200 k.w.; Pumps-water; Roller-other than Plantmix; Saws, concrete; Skid Steer with all attachments; Straightening Machine; Tow Tractor

GROUP 4: Rig Oiler/Crane Assistant Engineer; Parts and Equipment Coordinator; Swamper (on trenching machines or shovel type equipment); Spotter; Steam Cleaner; Drill Helper.

FOOTNOTE: Groups 1-4 receive 10% premium while performing tunnel or underground work. Rig Oiler/Crane Assistant Engineer shall be required on cranes over 85 tons or over 100 feet of boom.

IRON0751-003 07/01/2022

	Rates	Fringes
IRONWORKER		
BENDER OPERATOR.....	\$ 41.49	34.86
BRIDGE, STRUCTURAL,		
ORNAMENTAL,		
REINFORCING		
MACHINERY MOVER,		
RIGGER,		
SHEETER, STAGE		
RIGGER,		
BENDER OPERATOR.....	\$ 41.49	34.86
BRIDGE, STRUCTURAL,		
ORNAMENTAL, REINFORCING		
MACHINERY MOVER, RIGGER,		
SHEETER, STAGE RIGGER,		
BENDER OPERATOR.....	\$ 38.75	32.63

FENCE, BARRIER INSTALLER....	\$ 37.99	34.86
GUARDRAIL INSTALLERS.....	\$ 38.99	34.86
GUARDRAIL LAYOUT MAN.....	\$ 38.72	34.86
HELICOPTER, TOWER.....	\$ 42.49	34.86

LAB00341-001 04/01/2021

	Rates	Fringes
LABORER (South of the 63rd Parallel & West of Longitude 138 Degrees)		
GROUP 1.....	\$ 32.00	31.11
GROUP 2.....	\$ 33.00	31.11
GROUP 3.....	\$ 33.90	31.11
GROUP 3A.....	\$ 37.18	31.11
GROUP 3B.....	\$ 40.97	28.40
GROUP 4.....	\$ 21.57	31.11
TUNNELS, SHAFTS, AND RAISES		
GROUP 1.....	\$ 35.20	31.11
GROUP 2.....	\$ 36.30	31.11
GROUP 3.....	\$ 37.29	31.11
GROUP 3A.....	\$ 40.90	31.11
GROUP 3B.....	\$ 45.07	28.40

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer (curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer; Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds); Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

LAB00942-001 04/01/2022

	Rates	Fringes
Laborers: North of the 63rd Parallel & East of Longitude 138 Degrees		
GROUP 1.....	\$ 33.00	31.37
GROUP 2.....	\$ 34.00	31.37
GROUP 3.....	\$ 34.90	31.37
GROUP 3A.....	\$ 38.18	31.37
GROUP 3B.....	\$ 41.97	29.00
GROUP 4.....	\$ 22.57	31.37
TUNNELS, SHAFTS, AND RAISES		
GROUP 1.....	\$ 36.20	31.37
GROUP 2.....	\$ 37.40	31.37
GROUP 3.....	\$ 38.39	31.37
GROUP 3A.....	\$ 42.00	31.37
GROUP 3B.....	\$ 46.17	29.00

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer(curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer;

Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer; Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds); Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transferring of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transferring of grade

marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

 PAIN1959-001 07/01/2022

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
PAINTER		
BRUSH/ROLLER PAINT OR WALL COVERER.....	\$ 36.08	25.45
TAPING, TEXTURING, STRUCTURAL PAINTING, SANDBLASTING, POT TENDER, FINISH METAL, SPRAY, BUFFER OPERATOR, RADON MITIGATION, LEAD BASED PAINT ABATEMENT, HAZARDOUS MATERIAL HANDLER.....	\$ 36.60	25.45

 PAIN1959-002 12/01/2021

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes
PAINTER		
General Painter.....	\$ 32.64	25.95
Industrial Painter.....	\$ 32.74	25.95
Taper / Paper & Vinyl Hanger.....	\$ 32.64	25.95

 PAIN1959-003 12/01/2021

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER.....	\$ 41.16	28.16

 PAIN1959-004 07/01/2019

	Rates	Fringes
FLOOR LAYER: Carpet.....	\$ 28.75	14.44

 PAIN1959-006 12/01/2021

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER.....	\$ 41.37	27.25

 PLUM0262-002 07/01/2022

East of the 141st Meridian

	Rates	Fringes
Plumber; Steamfitter.....	\$ 41.32	27.62

PLUM0367-002 07/01/2021

South of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter.....	\$ 41.00	27.95

PLUM0375-002 07/01/2021

North of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter.....	\$ 42.91	31.25

PLUM0669-002 04/01/2019

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.25	26.49

ROOF0189-006 04/01/2021

	Rates	Fringes
ROOFER.....	\$ 44.62	17.63

SHEE0023-003 08/01/2022

South of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER.....	\$ 45.35	29.19

SHEE0023-004 07/01/2022

North of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER.....	\$ 50.83	29.03

TEAM0959-003 04/01/2021

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 41.94	26.12
GROUP 1A.....	\$ 43.21	26.12
GROUP 2.....	\$ 40.68	26.12
GROUP 3.....	\$ 39.86	26.12
GROUP 4.....	\$ 39.28	26.12
GROUP 5.....	\$ 38.52	26.12

GROUP 1: Semi with Double Box Mixer; Dump Trucks (including rockbuggy and trucks with pups) over 40 yards up to and including 60 yards; Deltas, Commanders, Rollogans and similar equipment when pulling sleds, trailers or similar equipment; Boat Coxswain; Lowboys including attached trailers and jeeps, up to and including 12 axles; Ready-mix over 12 yards up to and including 15 yards); Water Wagon (250 Bbls and above); Tireman, Heavy Duty/Fueler

GROUP 1A: Dump Trucks (including Rockbuggy and Trucks with pups) over 60 yards up to and including 100 yards; Jeeps (driver under load)

GROUP 2: Turn-O-Wagon or DW-10 not self-loading; All Deltas, Commanders, Rollogans, and similar equipment; Mechanics; Dump Trucks (including Rockbuggy and Trucks with pups) over 20 yards up to and including 40 yards; Lowboys including attached trailers and jeeps up to and including 8 axles; Super vac truck/cacasco truck/heat stress truck; Ready-mix over 7 yards up to and including 12 yards; Partsman; Stringing Truck

GROUP 3: Dump Trucks (including Rockbuggy and Trucks with pups) over 10 yards up to and including 20 yards; batch trucks 8 yards and up; Oil distributor drivers; Oil Distributor Drivers; Trucks/Jeeps (push or pull); Traffic Control Technician

GROUP 4: Buggymobile; Semi or Truck and trailer; Dumpster; Tireman (light duty); Dump Trucks (including Rockbuggy and Truck with pups) up to and including 10 yards; Track Truck Equipment; Grease Truck; Flat Beds, dual rear axle; Hyster Operators (handling bulk aggregate); Lumber Carrier; Water Wagon, semi; Water Truck, dual axle; Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame manufactured rating over 5 tons; Bull Lifts and Fork Lifts with Power Boom and Swing attachments, over 5 tons; Front End Loader with Forks; Bus Operator over 30 passengers; All Terrain Vehicles; Boom Truck/Knuckle Truck over 5 tons; Foam Distributor Truck/dual axle; Hydro-seeders, dual axle; Vacuum Trucks, Truck Vacuum Sweepers; Loadmaster (air and water); Air Cushion or similar type vehicle; Fire Truck/Ambulance Driver; Combination Truck-fuel and grease; Compactor (when pulled by rubber tired equipment); Rigger (air/water/oilfield); Ready Mix, up to and including 7 yards;

GROUP 5: Gravel Spreader Box Operator on Truck; Flat Beds, single rear axle; Boom Truck/Knuckle Truck up to and including 5 tons; Pickups (Pilot Cars and all light duty vehicles); Water Wagon (Below 250 Bbls); Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted "A" Frame, manufactured rating 5 tons and under; Bull Lifts and Fork Lifts (fork lifts with power broom and swing attachments up to and including 5 tons); Buffer Truck; Tack Truck; Farm type Rubber Tired Tractor (when material handling or pulling wagons on a construction project); Foam Distributor, single axle; Hydro-Seeders, single axle; Team Drivers (horses, mules and similar equipment); Fuel Handler (station/bulk attendant); Batch Truck, up to and including 7 yards; Gear/Supply Truck; Bus Operator, Up to 30 Passengers; Rigger/Swamper

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any

solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates

the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION IX

AWWU DISADVANTAGED BUSINESS ENTERPRISE PROGRAM (MBE/WBE) (NOT USED)

AWWU DBE Specifications

Minority and Women-Owned Business Enterprises Contact

Documentation

Alaska DEC Disadvantaged Business Enterprises Compliance Statement

DBE Subcontractor Performance Form

DBE Subcontractor/Prime Utilization Form

DBE Subcontractor/Prime Participation Form



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION X

EEO CONTRACT COMPLIANCE SPECIFICATIONS

EEO Statement of Acknowledgement

EEO Special Provisions

**STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**EQUAL EMPLOYMENT OPPORTUNITY
STATEMENT OF ACKNOWLEDGEMENT**

This statement of acknowledgement is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)) and must be completed by each Bidder and proposed Subcontractor participating in this contract.

PLEASE CHECK THE APPROPRIATE BOXES

THE Bidder proposed Subcontractor **hereby CERTIFIES:**

PART A. Bidders and proposed subcontractors with 50 or more employees and a federal contract amounting to \$50,000 or more are required to submit one federal EEO-1 report during each year the two conditions (50 employees and a \$50,000 federal contract) exist.

The company named below (Part C) is exempt from the requirements of submitting an EEO-1 report this year.

NO (go to PART B) YES (go to PART C)

PART B. The company named below (Part C) has submitted an EEO-1 report this year:

YES (go to PART C) NO (following reporting and instructions below)

On-line EEO-1 report filing may be accessed at the following web address:

<https://egov.eeoc.gov/eeo1/eeo1.jsp> , after EEO-1 go to PART C

EEO-1 reporting and instructions may be obtained by writing or e-mail to, although must be completed before proceeding to PART C:

EEO-1 Joint Reporting Committee
P.O. Box 78040
Washington, DC 20013-8040
Telephone 1-866-286-6440
Email: e1.techassistance@eeoc.gov

PART C.

Signature of Authorized Representative of Company

Date

Name of Company

(_____)_____
Telephone No.

Address of Company

Zip Code

Project Name

Contract Number

EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS CONTRACT COMPLIANCE SPECIFICATIONS

Every municipal contract shall include language substantially the same as the following: The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability. The contract will comply with all laws concerning the prohibition of discrimination including, but not limited to, Title 5 and Title 7 of the Anchorage Municipal Code.

Every municipal contract shall state, in all solicitations or advertisements for employees to work under the contract, that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability.



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XI

FEMA FUNDING REQUIREMENTS

Exhibit "E"

FEDERAL PROVISIONS

I. DEFINITIONS

- A. Government** means the United States of America and any executive department or agency thereof.
- B. FEMA** means the Federal Emergency Management Agency.
- C. Third Party Subcontract** means a subcontract at any tier entered into by Contractor or subcontractor, financed in whole or in part with Federal assistance originally derived from the Federal Emergency Management Agency.
- D. "MOA"** means Municipality of Anchorage.

II. FEDERAL CHANGES

- A.** Contractor shall at all times comply with all applicable regulations, policies, procedures, and FEMA Directives as they may be amended or promulgated from time to time during the term of this Agreement, including but not limited to those requirements of 2 CFR 200.317 through 200.326 and more fully set forth in Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards, which is included herein by reference. Contractor's failure to so comply shall constitute a material breach of this contract.
- B.** The Contractor agrees to include the above clause in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

III. ACCESS TO RECORDS

- A.** The Contractor agrees to provide the MOA, FEMA, the Comptroller General of the United States or any their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Agreement for the purposes of making audits, examinations, excerpts, and transcriptions.
- B.** The 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.** The Contractor agrees to maintain all books, records, accounts, and reports required under this Agreement for a period of not less than three years after the later of: (a) the date of termination or expiration of this Agreement or (b) the date MOA makes final payment under this Agreement, except in the event of litigation or settlement of claims arising from the performance of this Agreement, in which case, Contractor agrees to maintain same until the MOA, FEMA, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims, or exceptions related thereto.
- D.** The requirements set for in paragraphs A, B, and C above are all in addition to, and should not be considered to be in lieu of, those requirements set forth in Section 21 of the Agreement.

IV. DEBARMENT AND SUSPENSION

- A.** 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, its 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).
- B.** Contractor represents and warrants that it is not debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension" or on the USEPA's List of Violating Facilities. Contractor agrees that neither Contractor nor any of its third party subcontractors shall enter into any third party subcontracts for any of the work under this Agreement with a third party subcontractor who is debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs under executive Order 12549 or on the USEPA's List of Violating Facilities. Gov. Code § 4477.
- C.** 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 agrees to the provisions of Attachment 1, Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion—Lower Tier Covered Transactions, attached hereto and incorporated herein. For purposes of this Agreement and Attachment 1, Contractor is the “prospective lower tier participant.”
- D.** The Contractor agrees to include paragraphs A and B above in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the paragraphs shall not be modified, except to identify the subcontractor who will be subject to its provisions.
- E.** This certification is a material representation of fact relied upon by MOA. 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 the State of California, the MOA, and the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- F.** 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.”

V. NO FEDERAL GOVERNMENT OBLIGATIONS TO CONTRACTOR

- A.** The MOA and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Government, the Government is not a party to this contract and shall not be subject to any obligations or liabilities to the MOA, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.
- B.** The Contractor agrees to include the above clause in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further

agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

VI. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE (applicable to all construction contracts awarded meeting the definition of “federally assisted construction contract” under 41 CFR 61-1.3)

Contractor agrees to comply with Executive Order 11246 of September 24, 1965, entitled “Equal Employment Opportunity,” as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR Part 60). 41 CFR 60.14 is hereby incorporated by reference.

- A. Contractors and subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave.
- B. Contractors, and subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.
- C. Contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code, § 12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full.
- D. Contractors, and subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.

VII. ANTI-KICKBACK ACT COMPLIANCE (applicable to all contracts and subgrants for construction or repair; 44 CFR §13.36(i)(4))

Contractor agrees to comply with the Copeland “Anti-Kickback” Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3).

VIII. DAVIS-BACON ACT COMPLIANCE (applicable to construction contracts in excess of \$2,000 awarded by grantees and subgrantees when required by Federal grant program legislation;)

To the extent required by any Federal grant programs applicable to expected funding or reimbursement of MOA’s expenses incurred in connection with the services provided under this Agreement, Contractor agrees to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a–7) as supplemented by Department of Labor regulations (29 CFR Part 5) as set forth below. These requirements are in addition to the requirements set forth in Section 19(b) of the Agreement.

- A. The Contractor shall be bound to the provisions of the Davis-Bacon Act, and agrees to be bound by all the provisions of Labor Code section 1771 regarding prevailing wages. All labor on this project shall be paid neither less than the greater of the minimum wage

rates established by the U.S. Secretary of Labor (Federal Wage Rates), or by the State of California Director of Department of Industrial Relations (State Wage Rates). Current DIR requirements may be found at <http://www.dir.ca.gov/lcp.asp>.

- B.** The general prevailing wage rates may be accessed at the Department of Labor Home Page at www.wdol.gov. Under the Davis Bacon heading, click on “Selecting DBA WDs.” In the drop down menu for State, select, “California.” In the drop down menu for MOA, select “Napa.” In the drop down menu for Construction Type, make the appropriate selection. Then, click Search.

IX. CONTRACT WORK HOURS AND SAFETY STANDARDS (applicable to all contracts in excess of \$100,000 that involve the employment of mechanics or laborers, but not to purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence)

- A. Compliance:** Contractor agrees that it shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327–330) as supplemented by Department of Labor regulations (29 CFR Part 5), which are incorporated herein.
- B. Overtime:** No contractor or subcontractor contracting for any part of the work under this Agreement 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.
- C. Violation; liability for unpaid wages; liquidated damages:** In the event of any violation of the provisions of Paragraph B, the Contractor and any subcontractor responsible therefore shall be liable to any affected employee for his unpaid wages. In additions, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph B in the sum of \$10 for each calendar day on which such employee was required or permitted to be employed on such work in excess of eight hours or in excess of his standard workweek of forty hours without payment of the overtime wages required by paragraph B.
- D. Withholding for unpaid wages and liquidated damages:** The MOA 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 for in paragraph C of this section.
- E. Subcontracts:** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs A through D 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 A through D of this section.

X. NOTICE OF REPORTING REQUIREMENTS

- A. Contractor acknowledges that it has read and understands the reporting requirements of FEMA in Part III of Chapter 11 of the United States Department of Justice's Office of Justice Programs Financial Guide, and agrees to comply with any such applicable requirements.
- B. The Contractor agrees to include the above clause in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

XI. NOTICE OF REQUIREMENTS PERTAINING TO COPYRIGHTS

- A. Contractor agrees that FEMA shall have a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for government purposes:
 - 1) The copyright in any work developed with the assistance of funds provided under this Agreement;
 - 2) Any rights of copyright to which Contractor purchases ownership with the assistance of funds provided under this Agreement.
- B. The Contractor agrees to include paragraph A above in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

XII. PATENT RIGHTS (applicable to contracts for experimental, research, or development projects financed by FEMA; 44 CFR §13.36(i)(8))

- A. General. If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under this Agreement, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the MOA and Contractor agree to take actions necessary to provide immediate notice and a detailed report to FEMA.
- B. Unless the Government later makes a contrary determination in writing, irrespective of Contractor's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the MOA and Contractor agree to take the necessary actions to provide, through FEMA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 CFR, Part 401.
- C. The Contractor agrees to include paragraphs A and B above in each third party subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FEMA.

XIII. ENERGY CONSERVATION REQUIREMENTS

- A. The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 USC 6201).
- B. The Contractor agrees to include paragraph A above in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

XIV. CLEAN AIR AND WATER REQUIREMENTS (applicable to all contracts and subcontracts in excess \$100,000, including indefinite quantities where the amount is expected to exceed \$100,000 in any year)

- A. Contractor agrees 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), and will report violations to FEMA and the Regional Office of the Environmental Protection Agency (EPA).
- B. Contractor agrees to report each violation of these requirements to the MOA and understands and agrees that the MOA will, in turn, report each violation as required to assure notification to FEMA and the appropriate EPA regional office.
- C. The Contractor agrees to include paragraph A and B above in each third party subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FEMA.

XV. TERMINATION FOR CONVENIENCE OF MOA (applicable to all contracts in excess of \$10,000)

See Section 10.5 -Article - 5.39 of MASS.

XVI. TERMINATION FOR DEFAULT (applicable to all contracts in excess of \$10,000)

Contractor's failure to perform or observe any term, covenant or condition of this Agreement shall constitute an event of default under this Agreement. See Section 10.5 -Article - 5.3 of MASS.

XVII. LOBBYING (Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended).)

- A. Contractor shall not use or pay any funds received under this Agreement to influence or attempt 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 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.
- B. Contractor agrees to the provisions of Attachment 2, Certification Regarding Lobbying, attached hereto and incorporated herein (applicable for contracts or subcontracts in excess of \$100,000).

- C. Contractor agrees to include paragraphs A and B above in each third party subcontract financed in whole or in part with Federal assistance provided by FEMA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

XVIII. MBE / WBE REQUIREMENTS

The MOA intends to seek reimbursement of its costs incurred in connection with this project from FEMA. Accordingly, the CONTRACTOR shall make every effort to procure Minority and Women's Business Enterprises ("DBEs") through the "Good Faith Effort" process as required in 2 CFR 200.321. Failure to perform the "Good Faith Effort" process and submit the forms listed below with the bid shall be cause for a bid to be rejected as non-responsive and/or be considered as a material breach of the contract.

PRIME CONTRACTOR RESPONSIBILITIES

All recipients of this grant funding, as well as their prime contractors and subcontractors, must take all affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible make every effort to solicit bids from eligible DBEs. This information must be documented and reported.

"GOOD FAITH" EFFORT PROCESS

Any public or private entity receiving federal funds must demonstrate that efforts were made to attract MBE/WBEs. The process to attract MBE/WBEs is referred to as the "Good Faith" effort. This effort requires the recipient, prime contractor and any subcontractors to take the steps listed below to assure that MBE/WBEs are used whenever possible as sources of supplies, construction, equipment, or services. If a CONTRACTOR fails to take the steps outlined below shall cause the bid to be rejected as non-responsive and/or be deemed a material breach of the contract.

- A. Place qualified small and minority businesses and women's business enterprises on solicitation lists;
- B. Assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- C. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;
- D. Establish delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises; and
- E. Use the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce.
- F. If subcontracts are to be let, Contractor shall take the affirmative steps listed in 2 CFR 200.321.

XIX. PROCUREMENT OF RECOVERED MATERIALS (2 CFR 200.322)

Contractor shall 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.

XX. INCORPORATION OF UNIFORM ADMINISTRATIVE REQUIREMENTS

The preceding provisions include, in part, certain standard terms and conditions required by FEMA, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by FEMA are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FEMA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. Contractor shall not perform any act, fail to perform any act, or refuse to comply with any MOA requests that would cause MOA to be in violation of the FEMA terms and conditions.

XXI. DHS SEAL, LOGO, AND FLAGS

The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

Attachment D1

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION – LOWER TIER COVERED TRANSACTIONS

(Lower Tier refers to the agency or contractor receiving Federal funds, as well as any subcontractors that the agency or contractor enters into contract with using those funds)

As required by Executive Order 12549, Debarment and Suspension, as defined at 44 CFR Part 17, MOA may not enter into contract with any entity that is debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by the Federal Government from participating in transactions involving Federal funds. Contractor is required to sign the certification below which specifies that neither Contractor nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by the Federal agency. It also certifies that Contractor will not use, directly or indirectly, any of these funds to employ, award contracts to, engage the services of, or fund any contractor that is debarred, suspended, or ineligible under 44 CFR Part 17.

Instruction for Certification

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to whom this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances.
4. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definition and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this agreement that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR Part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and

Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility an Voluntary Exclusion – Lower Tier Covered Transactions

1. The prospective lower tier participant certifies, by submission of its proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Contractor Signature

Date

Attachment D2

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, loan, 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.

Contractor Signature

Date

DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract.

Prime Contractor Name		Project Name
Bid/Proposal No.	Assistance Agreement ID No. (If known)	Point of Contact
Address		
Telephone No.	Email Address	
Issuing/Funding Entity:		

I have identified potential DBE certified subcontractors	○ YES	○ NO	
Subcontractor Name/ Company Name	Company Address/Phone/Email	Est. Dollar Amt	Currently DBE Certified?

¹ A DBE is a Disadvantaged, Minority, Small or Woman Business Enterprise that has been certified as described in 40 CFR 33.204-33.205.

² Subcontractor is defined as a company, firm, joint venture or individual who enters into an agreement with a contractor to provide services.

DBE Subcontractor Performance

I certify under penalty of perjury that the foregoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CRF Part 33 Section 33.302(c).

Prime Contractor Signature	Print Name
Title	Date

DBE Subcontractor Performance

This form is intended to capture the DBE³ subcontractors'⁴ description of work to be performed and the price of the work submitted to the prime contractor. Prime contractor is required to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package unless subcontractors will not be used.

Subcontractor Name		Project Name
Bid/Proposal No.	Assistance Agreement ID No. (If known)	Point of Contact
Address		
Telephone No.		Email Address
Prime Contractor Name		Issuing/Funding Entity:

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
BDE Certified by <input type="radio"/> DOT <input type="radio"/> SBA		Meets/ exceeds FEMA certification standards:
O Other: _____		<input type="checkbox"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

³ A DBE is a Disadvantaged, Minority, Small or Woman Business Enterprise that has been certified as described in 40 CFR 33.204-33.205

⁴ Subcontractor is defined as a company, firm, joint venture or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

DBE Subcontractor Performance

I certify under penalty of perjury that the foregoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CRF Part 33 Section 33.302(c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XII

RECORD DRAWINGS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XIII

SOIL BORING LOGS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XIV

TEMPORARY CONSTRUCTION PERMITS AND EASEMENTS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XV

PERMITS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XVI

TRAFFIC CONTROL PLANS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XVII

ANNOTATED SITE PHOTOGRAPHS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XVIII

HAZARDOUS MATERIALS SURVEY REPORT (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XIX

MAXIMO ASSET REPORTS (NOT USED)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XX

DESIGN STUDY REPORTS (UNDER SEPARATE COVER)



Municipality of Anchorage

Anchorage Water and Wastewater Utility



2022 WATER IMPROVEMENTS

WATER TREATMENT FACILITY EARTHQUAKE REPAIRS AT THREE FACILITIES

SECTION XXI

DRAWINGS (UNDER SEPARATE COVER)