

Municipality of Anchorage

Port of Alaska

PORT OF ALASKA MODERNIZATION PROGRAM DESIGN/BUILD SERVICES FOR HELIPAD AND ACCESS ROAD

REQUEST FOR PROPOSAL NO. 2026P002

SECTION V

Sample Contract

Exhibit C

Owner's Project Criteria Documents

Part II.C

Design Management Manual - Design/Build



PORT OF ALASKA MODERNIZATION PROGRAM

Appendix B-3: Design Management Manual – Design-Build



Revised October 2022

Prepared for
Port of Alaska

Jacobs **HR**

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Acronyms and Abbreviations

CADD	computer-aided drafting and design
CH2M	CH2M HILL Engineers, Inc.
CM	construction manager
D/B	design build
DM	design manager
DOR	Designer of Record
EBS	estimate breakdown structure
EDMS	electronic document management system
GIS	geographical information system
IFC	issued for construction
MLLW	Mean Lower-Low-Water
MOA	Municipality of Anchorage
MSA	master service agreement
NES1	North Extension Stabilization Step 1
OCSP®	Open Cell Sheet Pile ®
PAMP	Port of Alaska Modernization Program
PMO	Program Management Office
POA	Port of Alaska
POL	petroleum, oil, and lubricant
QA	quality assurance
QC	quality control
QM	quality manager
SDC	Services During Construction
TM	technical memorandum
U.S.	United States
USACE	US Army Corps of Engineers



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Introduction and Purpose

This Design Management Manual is a reference document of design management standards and procedures to support the design/build (D/B) process for the Port of Alaska Modernization Program (PAMP). This manual is intended to provide consistent guidelines and procedures for use by all parties performing design and design management services.

This manual provides project background information, defines D/B team roles and responsibilities, defines the design process through each stage, defines the requirements for design quality assurance (QA) and quality control (QC), outlines the communication requirements during the D/B process, defines the requirements for project documentation, and summarizes the change management process. Finally, this manual sets expectations for sustainability and environmental stewardship and compliance. The role of the designer during the construction phase is also included in this manual.



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General Project Information

2.1 Goals Requirements and Project Description

The Port of Alaska (POA) has established overall project goals that provide the major objectives for the PAMP:

- The PAMP will modernize the Port in multiple phases while remaining in operation. The project will replace the four main terminals (POL1, POL2, T1 and T2), demolish the old terminals, stabilize the North Extension and relocate the POA Administration Building.
- Provide a modern, safe, and efficient regional port that stimulates economic development and the movement of goods into and out of the POA.
- Allow for future growth of the POA.
- Protect the environment and promote sustainability.

The POA has identified measures of success for the PAMP, including the following four items, which fall into the categories of cost control and schedule control:

1. Complete the PAMP on time and within budget.
2. Create a PAMP design that maximizes the use of available funding.
3. Achieve the best value for the POA with new and improved infrastructure.
4. Avoid litigation; confirm that there are no unsolvable issues through planning, design, and construction.

2.2 Background Information, Physical Environment, and Constraints

The POA is located in the Knik Arm of upper Cook Inlet with the existing terminal locations within Tract H, Port of Anchorage Subdivision, Anchorage, Alaska. The POA provides critical infrastructure for Anchorage and a majority of the State of Alaska, with over 74 percent of the nonpetroleum (food and other commodities) and 95 percent of the refined petroleum shipments into south-central Alaska imported through the POA (McDowell Group, 2015). The majority of consumer goods arrive by container; however, critical POA functions include providing transportation and distribution of POL products, including all of the jet fuel and much of the gasoline used in those portions of Alaska west of Cordova. The POA also serves as the transportation hub for most Portland Cement used in Alaska. In addition, the POA is designated as a strategic seaport by the U.S. Department of Defense, supporting the transit of deployable military equipment.

The existing marine-side infrastructure includes three general-purpose cargo container terminals, two of which are supported by three 38-gauge container cranes, and the third configured with trestles to support RO-RO operations. There are also two POL terminals. Because of their age, condition, design, and functional obsolescence, all of the aforementioned marine facilities must be replaced as soon as practicable. Moreover, the earthen-filled sheet pile structure referred to as the North Extension, a partially constructed artifact of the previous PIEP, has been determined to be structurally unstable under design static and seismic loads and must be modified. The area designated as the South Backlands, located adjacent to the proposed PCT is eroding and needs shore protection. Finally, support facilities and infrastructure at the POA are in need of repair or replacement.

A subarctic location, the POA is located in a harsh climate with high winds, low temperatures, abundant snowfall, and limited daylight during the winter season. The harsh climate provides significant challenges to building envelope design, and the climate combined with limited seasonal daylight produces challenges to construction productivity. The POA's marine environment includes tidal swings up to 40 feet and currents from flood and ebb tides that routinely run from 2 to 4 knots. This environment may contain significant pan ice present from late November through early April.

The POA ship berths experience significant siltation that routinely threatens spring mooring operations until the commencement of the annual dredging operations under the U.S. Army Corps of Engineers (USACE) Federal Dredging Project, which typically begins in April.

Challenging seismic and geotechnical conditions are present at the POA site and must be addressed in all infrastructure considerations.

The National Marine Fisheries Service (NMFS) has listed the Cook Inlet beluga whale population as endangered under the Endangered Species Act (73 Federal Register 62919). Future construction activities associated with the PAMP have the potential to disturb or displace small numbers of these marine mammals. Specifically, proposed construction activities may result in Level B harassment (that is, behavioral disturbance) from underwater sounds generated from impact and vibratory pile driving.

2.3 Permitting

During the permitting process for the PAMP, the POA will coordinate with stakeholders and regulatory agencies at the federal, state, and local level to comply with applicable environmental regulations. The resulting permits and approvals will enable the POA to build, manage, and operate one of the state's most critical pieces of infrastructure while acting as a good steward of public safety and the environment. The design/build team will provide support for permitting.

Anticipated environmental permitting documents include biological assessments, incidental harassment authorizations, essential fish habitat evaluations, archeological and historical evaluations, and environmental assessments. The design will be depicted on schematic drawings, geographic information system (GIS) exhibits, and other media to facilitate permit review and agency and stakeholder evaluation.

The environmental permitting process is completed by meeting and complying with statutory timelines for public and agency review. Comments received during the public review process will be adjudicated and adjustments to the proposed design solution that are brought to light during the process will be considered. Ultimately, approved permitting documents and authorizations will allow for the implementation of the PAMP design strategies. Permit applications with supporting design documents will be submitted through the PMC and POA to the appropriate authority having jurisdiction.

The design/builder DOR will make application and obtain all permits required to complete the design deliverables and ensure constructability (such as building safety, utility connections). DOR will also provide assistance to PMC permitting applications as they may relate to the design solution. The design/builder construction contractors shall be responsible for all permits required for construction.

Design Team Roles and Responsibilities

3.1 Project Management Consultant Team

As set forth in a master service agreement (MSA), Jacobs Engineer, Inc. (Jacobs) and subconsultant HDR, Inc. lead the program management office (PMO) role throughout the PAMP D/B process. For this project, the PMC will:

- Prepare D/B Request for Proposal documents for selected tasks and:
 - Assist the POA with selection of and contracting with D/B contractors
 - Develop the necessary procurement documents to secure these services
- Perform Contract Administration on behalf of the MOA as the designated Owner's Representative
- Coordinate the work of the POA's D/B contractors with Port Stakeholders
- Provide existing information and technical standards to the selected delivery team members
- Monitor and support the work of DOR teams, by:
 - Distributing design submittals and requests for information to stakeholder reviewers
 - Participating in meetings to discuss the review comments
 - Performing review of design submittals, including plans and specifications for completeness, accuracy, and consistency with the D/B Contract (not a code and or building permit review)
 - Reviewing the team's progress against the project schedule, and recommending corrective action as needed to the POA
- Provide technical expertise when needed to advise the POA on key decisions during design
- Provide value engineering reviews when required by the POA
- Develop a logical sequence of construction procurement packages that keeps the Port operational and in regulatory compliance during construction.

In addition, the PMC will manage requirements, scope, and quality as follows:

- Capture and document stakeholder requirements and verify these have been approved by the MOA before they are included as scope elements.
- Confirm that the DOR will provide for a minimum 75-year design life, without impressed current cathodic protection systems.
- Verify that the DOR properly applies seismic design considerations in accordance with the latest version of the *Port of Alaska Modernization Program Seismic Design Manual*.
- Manage design project issues, scope changes and product scope changes using the process described in the PAMP Program Management Plan.
- Verify that design project interim and final products undergo QA/QC reviews in accordance with the PAMP Program Management Plan.
- Inform, and consult with, required regulatory agencies regarding the works and likely construction techniques that will be required to build the individual design subprojects, and produce information to the quality and on the schedule required to support associated permitting activities.

- Confirm that the designs are coordinated with the POA operational requirements for ship and cargo operations.

3.2 Design/Build Team

3.2.1 Project Manager

The D/B team project manager (PM) will have overall responsibility for interfacing with the Owner's Representative to develop the design work scope, schedule, and budget for the project. The PM will be responsible for assembling the project team, managing scope, schedule, and budget and ensuring that all required resources of the D/B team are available to complete the project. The PM will be the main point of contact with the Owner's Representative and will manage all aspects of the design including changes to the work scope, project schedule and budget. The PM has overall responsibility to ensure the design meets all the project requirements and that a quality work product is completed and delivered to the POA. It is expected that the PM will be an employee of the prime contractor.

3.2.2 Design Manager

The D/B team's design manager (DM) has overall responsibility for the design content, quality, budget, and schedule. The DM works with the PM to select the appropriate design team members and to develop the project instructions that provide guidance to the design team over the course of the design effort. The project instructions define the project scope, schedule, budget, communication paths, design tools, and documentation requirements. They also define the QA/QC process and other specific information the team members will need to successfully execute the project.

The DM is responsible for leading the effort to estimate the resources required to complete the design in the required time frame and to meet the design budget. Project task leaders and lead designers assist in this effort. If during the course of the work the DM believes that the project schedule or budget are not sufficient to complete the work, the DM shall immediately notify the PM.

During the design, the DM leads internal and external meetings to review project progress, helps to resolve design issues, tracks design budgets and progress against schedule and documents changes to the work scope through the change management process.

The DM provides progress updates on the design to the PM and the Owner's Representative. The DM is also responsible for tracking the design QC process and working with the QC manager to confirm that resources are available to implement the QC process and that QC documentation meets the requirements.

The DM is responsible for coordinating design phase review meetings, documenting the issues raised during the review process and working with the PM and design leads to resolve each of the issues. At the end of the design process, the DM is responsible for confirming that contract-required design deliverables have been completed and are delivered to the Owner's Representative.

During the period of construction, the DM coordinates all of the construction Requests for Information (RFIs) with the appropriate members of the design team as well as directs submittals to team members for review and approval. The DM also coordinates field inspections for the various elements of the work that are required to be performed by members of the design team.

3.2.3 Design Leads (Designers of Record)

Discipline design leads report to the DM and are responsible for the design efforts and products of their specific discipline. They work with the DM at the beginning of the design process to develop the budget for their design effort and to assemble the resources required to complete their work. At the beginning of the design process, they estimate the number of drawings that will be required to convey the design information to the owner, review agencies, and the D/B construction manager. They also assemble an

outline list of specifications that will be required to convey the design intent and a list of the codes and standards that must be followed in the design effort.

They are responsible for reviewing the work developed in their discipline for the design and for coordinating the QC effort for their design product. They must approve selections of materials and equipment. They confirm that project protocols are followed and that design documentation for the work is in order and in accordance with the project instructions.

The design leads also serve as the Designer of Record (DOR) for their discipline and are responsible for sealing and signing the final Issued for Construction (IFC) drawings and specifications.

In addition, the design leads are responsible for the following tasks:

- Carry forward the individual design packages required to advance to 100% design complete and ready for construction
- Accept professional responsibility to comply with relevant laws, regulations, standards, and contract requirements
- Review those work products developed by the PMC or others in predecessor planning and preliminary design actions and address technical concerns within the work products during the work
- Apply best engineering practices in the development of the design
- Apply life-cycle cost consideration in design and material selections, documenting this analysis
- Apply sustainable design considerations throughout product development, documenting this analysis
- Perform constructability reviews and analysis during design development
- Make timely communications regarding design issues with the DM and PM, and work with the DM and PM toward their successful resolution
- Develop project schedules in cooperation and coordination with the DM and PM, providing realistic schedules that incorporate adequate time for design reviews and QA/QC processes
- Record decisions during design meetings through assisting in the development of meeting minutes
- During construction, respond to RFI's and review submittals for their area of design responsibility

The DM and DL of a specific discipline may be the same individual

3.2.4 Quality Manager

The quality manager (QM) is selected by the DM and PM and is responsible for managing the overall QA/QC process during the design process. The QM provides the documentation requirements and templates for the QC process, selects the senior QC reviewers for each discipline with the help of the DM, sets the QC review discipline and cross discipline coordination meetings, and reviews the QC process to confirm that QC efforts have been coordinated between the design leads and the senior reviewers and that documentation is in place. It is also the QM's responsibility to put into place the process for dispute resolution, in the event that design personnel and review personnel cannot reach an agreement over a specific design issue.

The QM shall not also be the PM, the DM, or a design lead.



Section 3. Design Team Roles and Responsibilities

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Design Process

4.1 Project Initiation Meeting

The project initiation meeting is facilitated by the PM and DM and is the first step in the design process. It is intended to provide the D/B team with the following project design objectives: project schedule and budget, owner's expectations, communication protocols, documentation requirements, and design platforms and tools. At a minimum, participants should include the Owner's Representative and the design/builder's PM, DM, Construction Manager (CM), design leads, and the design QM. During the course of the meeting, the project scope definition and design concept should be fully understood by each of the participants, as well as the schedule for design completion. At this time, the design leads should discuss their basic approaches to the design task and raise concerns about the existing design concept, code issues, or other technical issues.

4.1.1 Deliverables

The project initiation meeting deliverable will be a technical memorandum (TM) that defines the project scope and budget, provides a risk register, summarizes the design concept, identifies the key team members and communication protocols, defines the estimate breakdown structure (EBS), and defines the project schedule complete with project deliverable milestone dates. Significant project challenges or code and environmental issues should be documented in the TM, and it is to be approved by the Owner's Representative and the D/B team's PM, CM, DM, and design leads.

4.2 35% Design

The 35% design phase is intended to take the design to a level that solidifies the concept and alignment, defines the major features of work, and defines the codes and standards with which the remaining design effort will comply. The 35% design must incorporate consideration for the requirement that POA operations must be maintained throughout construction. Care should be exercised to verify compliance with all scope and relevant prescriptive design requirements established by the Request for Proposal and the accepted Proposal, governing codes, and or regulatory requirements. Depending upon the circumstances, design charrettes and value engineering workshops may be appropriate to support the development of the 35% design. No significant changes to the design should occur past this design stage. At this stage, the design level is generally defined as a preliminary design package.

4.2.1 Deliverables

- Design Narrative describing the elements of the design package, including major system components and material selections, for each discipline
- Workplans for proposed field investigations and laboratory testing if required by the DOR
- All QC Review/comment forms
- Outline list of Specifications
- Draft Safety in Design Analysis
- Permit List
- Updated Project Schedule and Schedule Narrative
- Preliminary Construction work plans that contain, contractors means and methods for executing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor

stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings including but not limited to:

- Civil
 - Title Sheet and Index
 - Project location and Vicinity Maps
 - Project Symbols Legends and Abbreviations Sheet
 - General Site overview plan
 - Geometric Layout Plan
 - Grading and Storm Drain Plan
 - Demolition and Removal Plan
 - Typical Section Sheets
 - Composite Utility Plan
 - Existing Site Topographical Survey and Utilities Plan
 - Special Project Phasing Requirements
 - Project site plan, including topography, borehole locations, egress and circulation, utility routing, parking and snow storage areas, fencing and site security features, and site drainage features

4.2.2 Internal Review

Before submission to the Owner's Representative, a QC review will be conducted and appropriately documented. At this stage of the design process, senior reviewers in each discipline should be engaged to maintain compliance of the design with applicable codes and standards and to confirm that the scope and relevant prescriptive design requirements established by the Request for Proposal and the accepted Proposal have been met. Interdisciplinary communication will be required at this stage, but a thorough cross-discipline design review is not required at this time.

4.2.3 PMC Review

The review by the PMC at this stage should verify that the concept proposed meets the the scope and relevant prescriptive design requirements established by the Contract and that proposed design is acceptable. Specific comments should be developed and forwarded to the D/B team for incorporation into the 65% design package.

4.3 65% Design

The 65% design stage should produce a well-developed design package for all disciplines. A complete drawing list for all disciplines should be available at this stage (not all drawings will be in progress at this time), and the majority of required calculation packages for each discipline should be complete. In addition, a draft of each of the specifications listed in the 35% design should be available for review at this stage.

4.3.1 Deliverables

- Design Narrative update describing the details of specific elements of the design package, including major system components, material selections, management of soil treatment details, management of sheetpile demolition details, soil handling details, management and disposition of salvage sheetpile materials, management and disposition of soil treatment swell
- All QC Review/Comment Forms
 - Draft Specifications
 - Draft Safety in Design Analysis
 - Constructability Review
 - Fast Lagrangian Analysis of Continual Model Analysis results verification and soil improvement criteria
 - Civil and Coastal Engineering Calculations
 - Permit List and Status
 - Updated Project Schedule and Schedule Narrative
 - Updated construction work plans that contain, contractors means and methods for executing the work for the excavation/sheet removal/soil improvements/bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings:

- General
 - Title sheet and Index
 - Project location and Vicinity Maps
 - Project Symbols Legends and Abbreviations SheetGeneral Site overview plan
 - Geometric Layout Plan
 - Schedule of drawings
 - Code summary
- Civil
 - Haul routes
 - Demolition and Removal Plan
 - Grading and Storm Drain Plan
 - Storm Drain Profile sheets
 - Soil improvement plan and section
 - Drying Bed layout
 - Typical Section Sheets
 - Construction Details
 - Composite Utility Plan
 - Existing Site Topographical Survey and Utilities Plan
 - Project Construction Phasing plan
 - Survey control
 - Excavation and Grading plans and sections
 - Utility plans and profiles

- Utility details
- Miscellaneous details
- Erosion and sediment control plan
- Landscaping plans and details
- Electrical
 - Legend and abbreviations
 - Site plan
 - Power plan
 - Lighting plan
 - Enlarged plan electrical room
 - Details
 - Site power one-line diagram
 - Luminaire schedule
 - Connection schedule
 - Panelboard schedules
 - Communication room plan
 - Communication details
 - Heat trace plan and details
 - Backbone diagram

4.3.2 Internal Review

A QC review will be conducted and appropriately documented. The 65% design stage internal reviews require complete drawing, specification, and calculation reviews in each discipline, as well as a formal cross-discipline review to confirm that designs are compatible across the disciplines and to minimize omission of systems or items to support other discipline requirements.

4.3.3 PMC Review

The PMC will conduct detailed technical reviews of the design documents for technical content, constructability, and cross-discipline coordination issues. Specific comments will be developed and forwarded to the D/B team for adjudication. All responses will be incorporated into the 95% design package.

4.4 95% Design

The 95% design package will incorporate all previous review comments and is the last stage for PMC review. It will include the drawings listed in the 65% design package developed to the 95% completion level. At this stage, only minor details will require completion, as this deliverable will be considered construction ready. A complete drawing and specification package will be included in this design package.

4.4.1 Deliverables

- Design Narrative describing the elements of their design package, including major system components, material selections
- All QC Review/Comment Forms
- Complete Drawings
- Complete Specifications
- Safety in Design Analysis

- Constructability Review
- Permit List and Status
- Calculations
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans that contain, contractors means and methods for executing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified).

Drawings:

- General
 - Title sheet and Index
 - Project location and Vicinity Map(s)
 - Project Symbols Legends and Abbreviations SheetGeneral Site overview plan
 - Geometric Layout Plan
 - General Site Overview Plan
 - Schedule of drawings
 - Code summary
- Civil
 - Haul routes
 - Demolition and Removal Plan
 - Grading and Storm Drain Plan
 - Storm Drain Profile sheet (s)
 - Typical Section Sheets
 - Construction Detail (s) and Enlargement Plans
 - Composite Utility Plan (s)
 - Existing Site Topographical Survey and Utilities Plan
 - Project Final Construction Phasing plan
 - Survey control
 - Excavation and Grading plans and sections
 - Utility plans and profiles
 - Utility details
 - Miscellaneous details
 - Final Erosion and sediment control plan
 - Landscaping plans and details
- Electrical
 - Legend and abbreviations
 - Site plan
 - Power plan
 - Lighting plan
 - Enlarged plan electrical room
 - Details
 - Site power one-line diagram
 - Luminaire schedule
 - Connection schedule

- Panelboard schedules
- Communication room plan
- Communication details
- Heat trace plan and details
- Backbone diagram

4.4.2 Internal Review

The internal review of the 95% design package should include a complete QC review by the QC team to confirm that final design details are correct and constructable. At this stage, it is also necessary to complete a full cross-discipline design review to minimize the possibility of conflicts and omissions. Full documentation of the cross-discipline design process and the senior QC review must be completed by the QM.

4.4.3 PMC Review

The PMC review at this stage should focus on ensuring that previous PMC design review comments have been addressed and that the design package is ready to be issued for Construction (IFC). Specific comments will be developed and forwarded to the D/B team for adjudication. All responses will be incorporated into the IFC design package.

4.5 Issue for Construction

The Issue for Construction package will incorporate all previous review comments. It will address all comments from previous submissions and all documents. A Draft IFC package shall be submitted for review indicating all comments have been adjudicated. A Final IFC package shall then be issued once all comments are confirmed to be addressed and shall be signed and sealed by the DOR.

4.5.1 Deliverables

- Final Design Narrative
- Final QC Review/Comment Forms
- Sealed Drawings
- Sealed Specifications
- Inspection and Testing Plan for all materials incorporated into the work, and to show conformance to the requirements of permits, plans, specifications and this document
- Safety in Design Analysis
- Final Constructability Review
- Final Permit List and Status
- Updated Project Schedule and Schedule Narrative
- Updated Construction work plans updated that contain, contractors means and methods for executing the work for the excavation/ sheet removal/ soil improvements/ bedding material, filter rock, and armor stone placement, dredging dump plan, dredging plan, equipment placement for marine work, which includes anchor plans indicating layout of Anchor's to secure floating equipment. Each Anchor shall have latitude and longitude locations identified as well as equipment locations (that is, barge corners identified). Please note: Contractor will be required to submit workplans in accordance with permitting requirements found in the permitting matrix.

4.5.2 PMC Review

The PMC review at this stage will focus on ensuring that previous PMC design review comments have been addressed and that the design package is ready to be issued for construction.

4.6 Services During Construction

During the construction phase of the work, the D/B design team will engage in the following tasks:

- Respond to Requests for Information (RFIs) from the construction team. This flow of information will serve to clarify design intent and details provided on the drawings and specifications, respond to changes in the design requested by the construction team, and respond to challenges posed by changed conditions in the field different than assumed at the time of initial design.
- Review and approve submittals and shop drawings. The design team will review all material and equipment submittals for consistency with the design intent and the specifications, approve changes in materials and equipment that differ from that specified in the design if the change meets or exceeds the design intent, and review shop drawings of structure and equipment for code compliance and compliance with the design intent and geometry of the project.
- Perform construction observations. The design team will perform periodic reviews of the construction in progress to verify that materials and workmanship are consistent with the design intent and required long term performance of the project. If discrepancies are noted in any element of the project by the design team during periodic observations, the project and construction managers shall be immediately notified so that the issue can be resolved prior to execution of further stages of construction. At completion of construction, the design team shall participate in a final inspection of the work to verify the project is compliant with the design drawings and specification and is ready to be turned over to the owner.
- Record Documents. The design team shall receive the red-line project documents (drawings and specifications) marked up by the project construction engineer and produce the final set of record documents for the project. The design team will verify that the changes to the original “issued for construction” set are consistent with the RFI, and submittal logs and also consistent with what they observed in the field during periodic observations.
- Certificate of Completion. The D/B DOR shall provide a Certificate of Completion, indicating that the work has been performed in accordance with the construction documents.



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Quality Assurance and Quality Control Process

Quality requirements are detailed in the PMP Quality Management Plan.



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Communication and Reporting

6.1 Communication Protocols

Communications between the PMC and the D/B team should be directed through the D/B team PM and the Owner's Representative. The PM may decide to transfer this line of communication to the DM for issues related solely to the technical content of the design. Communications that change the direction of the design or that have impacts on elements of the design should be documented in writing through TMs, meeting notes, or phone conversation records. All project correspondence shall be initiated in Aconex (see Section 7)

6.2 Review Meetings

Each review meeting will be conducted by the DM and will be documented by a meeting summary that includes the following information:

- Design stage of the review meeting
- Date of the meeting
- List of attendees
- Itemized list of issues discussed and outcomes
- Action items

The draft meeting summary shall be reviewed by the PM and DM and then distributed via the project electronic document management system (Aconex) for review and comment by all meeting attendees. The final meeting summary shall be issued by the PM within five (5) business days of the meeting.

6.3 Progress Reports

Most significant design efforts are of a duration to warrant progress reports on a monthly basis. More frequent reporting may be required for very fast-paced efforts, but this is generally not required. Progress reports should be developed by the PM in conjunction with the DM and should provide the following information to the Owner's Representative:

- General narrative of the design work accomplished during the reporting period by discipline
- Identification of items that could affect the project budget or schedule
- Identification of technical issues that require resolution
- Identification of changes in personnel assignments that could affect project schedule or communication paths
- Project schedule update: if the updated schedule indicates that is a schedule slip, this should be accompanied by a narrative that describes the reason for the anticipated delay and what actions can be taken to bring the design process back to the original schedule
- Progress Report: if the design effort is being conducted on a time and expenses basis, the progress report should provide a summary of the expenditures to date, detailed to the design discipline level, as well as a forecasted expenditure effort to complete the design on a discipline-level basis.
- Narrative outlining the expected design progress during the coming reporting period

Progress reports shall be signed by the D/B team PM.



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Project Documentation

7.1 Information Sharing

The electronic document management system (EDMS) selected for this program is Aconex. Aconex will be used to allow information sharing between members of the D/B team, the PMC, and the POA. This can facilitate the review of drawings, calculations, and specifications, as well as provide for security and back-up of project documentation.

Aconex provides the following functionality:

- Version control
- Ability to store attributes (or metadata)
- Multi-level security
- Search capability

The following key functional requirements will be met by the Aconex environment:

- Provide a reliable EDMS that will be maintained throughout the duration of the PAMP.
- Retain electronic copies of all project documents, including correspondence, photographs, drawings, specifications, submittals, review comments, reports, contracts, change orders, invoices, as-built drawings, and other project records.
- Implement and maintain a platform that allows the project team to easily share project documents while maintaining necessary security protocols
- Provide durable backup of all project documents.

Upon NTP, a copy of the *Port of Alaska Modernization Program Document and Record Management Plan* will be provided.



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Change Management

8.1 Scope Change Initiation

Changes in the scope of the design result mainly from the following: changes required by the owner, changes required as the result of code assessments, changes required by permitting agencies, or changes resulting from the design process that identify design concept problems or improvements identified during the design process that will enhance the final work product. Other factors can also initiate scope changes.

When a scope change is identified for a valid reason, the DM and the PM must document the nature of the scope change and the impact(s) it has on the project schedule and budget. This information then needs to be shared with the Owner's Representative so that an assessment can be made as to whether the scope change is warranted and will be accepted. This communication must be transmitted in a written scope change request document in a timely fashion, so that the overall project schedule is impacted to the minimum extent possible.

8.2 Approvals

Once a scope change request has been reviewed and accepted by the PMC and the POA, and it has been determined that the change affects the D/B contract, a change order for the work will be drafted by the PMC for execution by the MOA and the D/B contractor.



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References

CH2M HILL, Inc. (CH2M). 2015a. *Port of Alaska Modernization Program CADD Manual*. October 22.

CH2M HILL, Inc. (CH2M). 2015b. *Port of Alaska Modernization Program Document and Record Management Plan*. December 9.

CH2M HILL, Inc. (CH2M). 2015c. *Port of Alaska Modernization Program Survey Manual* July 23.

CH2M HILL, Inc. (CH2M). 2016b. *Port of Alaska Modernization Program Seismic Design Manual*. January 22.



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