

MEMORANDUM

State of Alaska

Department of Transportation and Public Facilities

TO: Distribution

DATE: April 30, 2025

FROM: Matthew Hansen, P.E.
Contracts Section
(907) 269-0602

FILE NO.: CSAPT01228

SUBJECT: ANC PFAS Remediation
PS&E Review

Attached for final review and comments is the contract assembly and design analysis for this project.

Comments are due by 5:00 pm Tuesday, May 27, 2025.

For DOT&PF Employees, navigate to http://web.dot.state.ak.us/nreg/design/des_com/index.cfm, enter your employee name and password as if you are logging into your computer each morning, enter your region, and section, then the program number **CSAPT01228**. Click on the PS&E tab and follow the instructions to enter your comments. See the following page for instructions on how to enter your comments. Please follow the instructions so that review meetings can proceed in an orderly fashion.

For reviewers outside of DOT&PF, please forward your comments to jennifer.lombardo@alaska.gov using the Excel comment spreadsheet attached to the Outlook meeting invitation.

Review documents (project manual and plan set) are available for viewing and/or download at the following location:

<https://dot.alaska.gov/creg/design/aviation/review/CSAPT01228>

A review meeting is scheduled for 1:30 p.m. on Thursday, May 29, 2025, in the Planning Conference Room at 4111 Aviation Avenue. This is an in-person meeting only. There will be no option for Microsoft Teams participation.

The following specific replies are requested in addition to any other comments:

Right of Way	Status of project ROW, material agreements, easements, etc.
Utilities	Utility agreement status.
Project Control	Status of funding considering the current estimate.
Environmental	Permits required and an estimated date when they will be acquired.

Please charge review time to Program No.: CSAPT01228, Phase: T02NON, Template: TTPJ001, and Activity Code __ _N (insert your own activity code in the blank spaces).

Instructions for entering comments into the On-line Review Comment System

Front End Document Comments

Cover: Choose General Category and enter “Cover” in the Item field

Table of Contents: Choose General Category and enter “TOC” in the Item field

Invitation to Bid: Choose General Category and enter “ITB” in the Item field

Special Notice to Bidders: Choose General Category and enter “SNB” in the Item field

Engineers Estimate Comments

Engineers Estimate: In the Category field, choose “Engineer’s Estimate” and enter Pay Item numbers exactly as they appear in the engineer’s estimate in the Pay Item field such as “P165.010.0000” or “D751.010.0048” (without quotation marks). DO NOT enter words. DO NOT enter “Item P165.010.0000” or “Item D751.010.0048 Manhole”. Place any other descriptions in the comment field.

Specifications Comments

Standard Mod and special provision: Use specification page only such as: “GCP-20-4” or “P-152-3” NOT “P 152a” or “P-152-2.3e”. Describe in the comment field the exact location in the section to which the comment applies. For appendices, Appendix A would be entered as: “Z-A” Appendix B would be: “Z-B”, etc. Describe in the comment field where within the appendix your comment applies.

Plans Comments

Plans: In the Category field, choose “Plans” and then enter the plan sheet number only in the Sheet Number field such as “01” or “10” (no quotes) or “E10” or “D-04.21”. DO NOT enter words. DO NOT enter: “Sheet 10” or “Plan 10” or “Safety Plan”. If your comment extends to other sheets, enter the first sheet the comment applies to in the Sheet Number field and then list the other sheets the comment applies to in the comment. For Standard Plans use the Plan number such as “D-01.02”. For Standard Plans with multiple sheets, tell reviewers which sheet in the series the comment refers to in the comment itself.

Engineer’s Design Report (EDR) Comments

EDR: Choose the “EDR” tab (If available, there is a pdf document to view/download on the review comment website)

Geotechnical Comments

Geo: Choose the “Geo” tab (If available there is a pdf document to view/download on the review comment website)

Modification to Construction Standards (MCS) Comments

MCS: Choose General Category and enter “MCS” in the Item field. Describe exact location of comment in the comment field.

Plans In Hand Comment Response (PIHCR) Comments

PIHCR: Choose General Category and enter “PIHCR) in the item field. Describe exact location comment refers to in the comment field (ie comment number and name of PIH commenter).

Cross Section (XC) Comments

XC: Choose General Category and enter “XC” Describe what cross section comment refers to in comment field.

Quantity Calculations (QC) Comments

QC: Chose General Category and enter “QC” Describe what location in the Quantity Calculations comment applies to.

**ANC PFAS Remediation
CSAPT01228**

PS&E Review

COMMENTS DUE: Tuesday, May 27, 2025
REVIEW MEETING: Thursday, May 29, 2025 – 1:30 p.m.

Distribution, (1 copy, MS 2525 unless otherwise noted)

Aviation Design:

- *Luke Bowland, Preconstruction Engineer
- *Steven Rzepka, Aviation Design Chief
- *Michael Hansmeyer, Specifications Engineer
- *Jeff Burnett, Drafting Technician

Central Region Materials (MS 2526):

Mike Yerkes, Regional Materials Eng. (2)

Statewide Materials (MS 2538)

- *Mike San Angelo, State Materials Engineer

Traffic Safety & Utilities:

Cynthia Ferguson, TS&U Group Chief
David Freese, Acting Regional Utilities Eng.
Michael Mancill, Geographic Utilities Lead
*Anna Bosin, Regional Traffic Engineer

ANC:

Jennifer Lombardo, Project Manager (10)

Construction:

- *Joel G. St. Aubin, Regional Constr. Engineer
- Eric Desentis, Constr. Group Chief
- Talisa Rodrigues, Constr. Project Manager
- Frank Lee, Constr. Project Engineer (3)
- *Laren Meyer, Construction Office Engineer
- *Athena Marinkovic, ESCP Coordinator

* Electronic Only

Mail/FedEx/ZendTo

Shane Blanchard
CRW, 3940 Arctic Blvd, Suite 300, Anchorage, AK 99517 (2)

Quality Assurance:

Mahear Abou Eid, Concurrent Review Engineer
Jim Klebesadel, Lead Materials Rover

Contracts:

Sharon Smith, Section Chief
Matthew Hansen, Review Engineer

PD&E:

- *Alex Read, PD&E Group Chief
- *Brian Elliot, Environmental Manager
- Orion LeCroy, Regional Hydraulics Engineer
- Elliott Smith, Hydraulics Engineer

Right-of-Way

Melanie Arnolds, Right-of-Way Group Chief
Bob Keiner, ROW Engineering Supervisor
*James Sowerwine, Proj. Coordination Supervisor

Surveys

- *Travis Test, Survey Manager

Project Control

- *Jennifer Coisman, Project Control Chief



PROJECT MANUAL FOR:

**ANC PFAS Remediation
Program No. CSAPT01228**

**AS ADVERTISED: TBD
Document Fee: \$50.00**

www.dot.state.ak.us – Procurement

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5. State Wage Rates

State wage rates can be obtained at <http://www.labor.state.ak.us/lss/pamp600.htm>. Use the State wage rates that are in effect 10 days before Bid Opening. The Department will include a paper copy of the State wage rates in the signed Contract.



STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

INVITATION TO BID

for Construction Contract

Date TBD

**ANC PFAS Remediation
Program No. CSAPT01228**

The Department invites bidders to submit bids for furnishing all labor, equipment, and materials and performing all work for the project described below. The Department will only consider bids received **before 2:00 PM local time (per the Department's time source) on the TBD day of Month 2025**. On that date, the Department will assemble, open, and then publicly announce the timely-received bids at Anchorage, Alaska at 2:15 PM, or as soon thereafter as practicable.

Location of Project: Anchorage, Alaska

Contracting Officer: Sean L. Holland, P.E., Regional Director

Issuing Office: Central Region

State Funded ☒

Federal Aid ☐

Description of Work:

This state funded project will construct an activated carbon barrier to capture PFAS compounds within the Ted Stevens Anchorage International Airport. Work includes excavation, geotextile, contaminated soil separation liner, subbase course, storm drain manholes, underdrain, canal gates, activated carbon backfill, riprap, topsoil and seeding.

The Engineer's Estimate is between \$500,000 and \$1,000,000

All work shall be completed by **July 15, 2026**.

The Department will identify interim completion dates, if any, in the Special Provisions.

The apparent successful bidder must furnish a payment bond in the amount of 100% of the contract and a performance bond in the amount of 100% of the contract as security conditioned for the full, complete and faithful performance of the contract. The apparent successful bidder must execute the said contract and bonds within **ten (10)** calendar days, or such further time as may be allowed in writing by the Contracting Officer, after receiving notification of the acceptance of their bid.

Submission of Bidding Documents

Bidders may submit bidding documents electronically via the Department's approved online bidding service, through the mail or hand delivered. For mailed or hand delivered bids and for electronically submitted bids with a paper bid guaranty, documents shall be submitted in a sealed envelope marked as follows:

**Bidding Documents for Project:
ANC PFAS Remediation
Program No. CSAPT01228**

**ATTN:
State of Alaska
Department of Transportation & Public Facilities
PO Box 196900
4111 Aviation Avenue
Anchorage, AK 99519-6900**

It is incumbent upon the bidder to ensure its bid, any amendments, and/or withdrawal arrive, in its entirety, at the location and before the deadline stated above. A bidder sending a bid amendment or withdrawal via email must transmit its documentation to the Department at this email address: crdotpfcontracts@alaska.gov.

To be responsive, a bid must include a bid guaranty equal to 5% of the amount bid. *(When calculating the bid amount for purposes of determining the 5% value of the bid guaranty, a bidder shall include its base bid amount, plus the amount bid for alternate and supplemental bid items, if any.)*

The Department hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this Invitation, Disadvantaged Business Enterprises will be afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

NOTICE TO BIDDERS

Bidders must have a Vendor ID or your bid may not be accepted. More information can be obtained at the following website: <http://dot.alaska.gov/aashtoware/docs/AWP-Vendor-List-Guidance.pdf>

The following data may assist a bidder in preparing its bid:

See attached Special Notice to Bidders for this project.

A bidder may obtain hard copy project plans and specifications for the price of **\$50.00** from:

State of Alaska, Department of Transportation & Public Facilities

Plans Room

4111 Aviation Avenue

PO Box 196900

Anchorage, AK 99519-6900

Phone: (907) 269-0408

If a bidder has a question relating to design features, constructability, quantities, or other technical aspects of the project, it may direct its inquiry to the questions and answers area of the Bid Express proposal page: <https://www.bidx.com/ak/lettings>

A bidder requesting assistance in viewing the project site must make arrangements at least 48 hours in advance.

The point of contract for inquiries for this project is **Jennifer Lombardo, P.E.**

Email: jennifer.lombardo@alaska.gov

Phone: (907) 266-2731

For questions relating to electronic bidding or for assistance with your Bid Express account, contact Bid Express customer support at customer.support@bidx.com or call toll free (888)352-BIDX(2439) Monday through Friday 7:00am to 8:00pm (Eastern).

A bidder may direct questions concerning bidding procedures and requirements to:

Sharon L. Smith, P.E.

Chief of Contracts

PO Box 196900

Anchorage, AK 99519-6900

Email: sharon.smith@alaska.gov

Phone: (907) 269-0414

Other Information:

The Bid Calendar, Plan Holder lists, Bid Results and DBE information are available on the Internet at: www.dot.alaska.gov under **Procurement**.

Reminder: Alaska Statute AS 36.30.110 requires all Bidders to have a valid Alaska Business License and an Alaska Contractor's Certificate of Registration prior to award. To qualify as an Alaska bidder under AS 36.30.321, a bidder shall have a valid Alaska business license at time designated in the invitation to bid for bid opening.

Special Notice to Bidders

1. Bidders are hereby notified that data to assist in preparing bids is available for viewing on the Bid Express advertising web site as follows:
 - a. Erosion and Sediment Control Plan
 - b. Quantity Calculations
2. The Alaska Storm Water Pollution Prevention Plan Guide, March 2021 is available online at:
<https://dot.alaska.gov/stwddes/desenviron/resources/stormwater.shtml>
3. The Alaska Test Methods Manual effective September 1, 2024 is available online at: https://dot.alaska.gov/stwddes/desmaterials/mat_resource.shtml
4. The Governor's emergency declaration and mandates relating to COVID-19 expired on February 14, 2021. However, contractors are encouraged to review COVID-19 Response and Recovery Health Advisories that can be accessed at:

<https://covid19.alaska.gov/health-advisories/>

Contractors will still be required to meet any applicable local ordinances or requirements currently in effect, and comply with any future federal, state, or local declarations or mandates that might be adopted while work on the project is ongoing.

Consistent with Section 70-01 of the *Standard Specifications for Airport Construction*, the Contractor will be responsible for paying all costs and expenses incurred to comply with any COVID-19 Health Mandates or Health Advisories in effect during times when the Contractor is performing project-related work activities. The Contractor will additionally be responsible for preparing any general or site-specific mitigation and response plans required for its forces, along with any attendant schedule delays or impacts.

5. Certified payroll must be submitted electronically through AASHTOWare for contracts awarded after January 1, 2021. In order to submit certified payroll, Contractors, Subcontractors, and lower tier Subcontractors must be active in AASHTOWare, which requires they have a valid Vendor ID with a 913 commodity code. To obtain a Vendor ID, register with the state of Alaska via the Vendor Self-Serve (VSS). Instructions for creating a new account in the VSS system can be found under the Reference Guides and Forms at the following link: <https://iris-vss.alaska.gov/PRDVSS1X1/Advantage4>. For information on certified payroll contact the Department of Labor and Workforce Development, Wage and Hour Administration:

Juneau	(907) 465-4842
Anchorage	(907) 269-4900
Fairbanks	(907) 451-2886

DOT&PF AASHTOWare Project Guidance, including schedule, FAQs, training options: <http://dot.alaska.gov/aashtoware/>

6. Bidders are cautioned to pay special attention to the modification of Item G-100 Mobilization and Demobilization where the payment distribution has been modified.
7. Contract Price Adjustment(s): The Department will not provide cost escalation or de-escalation price adjustment for this contract, except for specific items described in the bid package at the time of bid opening.
8. Issuance of a Notice to Proceed cannot occur until an approved FAA Form 7460-1 is obtained by the Contractor (see Subsection 80-03). Approval may take up to 45 working days and Contractor is advised to submit the form as soon as practicable after contract award.

**STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES**



**STANDARD SPECIFICATIONS
FOR
AIRPORT CONSTRUCTION**

**ANC PFAS REMEDIATION
PROJECT No. CSAPT01228**

**(Advisory Circular 150/5370-10H, Standard Specifications for Construction of Airports,
as modified, and approved by the Federal Aviation Administration
for Airport Improvement Program contracts in Alaska)**

**Revised 3/25
Original Issue Date 12/21
US Customary**

NOTE: Special Provisions for each project are marked as changes to the text of the Standard Specifications. Deleted text is identified by strikethrough. Additions are underlined. The location of each Special Provision is shown by a vertical bar in the margin.

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Effective
Date

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PART I

GENERAL CONTRACT PROVISIONS

SECTION 10 DEFINITION OF TERMS

10-01 GENERAL. The following terms and definitions apply in these Specifications. If a term is not defined, the ordinary, technical, or trade meanings for that term shall apply, within the context in which it is used.

Titles and headings of sections, subsections, and subparts are intended for convenience of reference and will not govern their interpretation. Working titles which have a masculine gender, such as "workman" and "flagman" and the pronouns and adjectives "he", "his" and "him" are utilized in the contract documents for the sake of brevity, and are intended to refer to persons of either sex. Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.

Cited publications refer to the most recent issue, including interim publications, in effect on the date of the Invitation To Bid, unless specified by year or date.

These Specifications are written to the Bidder or Contractor. Unless otherwise noted, all actions required by the specifications are to be performed by the Bidder, the Contractor, or the Contractor's agent.

Some portions of these Specifications are written using imperative mood, abbreviated format, incomplete sentences and/or active voice to communicate the Contractor's responsibilities in a direct and concise manner. Omission of words or phrases such as "a," "an," "the," "the Contractor shall," "unless otherwise specified," or "unless otherwise directed" is intentional. Interpret the Contract as if they were included.

For all Specification language except the General Contract Provisions, whenever anything is, or is to be, done, if, as, or, when, or where "acceptable, accepted, approval, approved, authorized, determined, designated, directed, disapproved, ordered, permitted, rejected, required, satisfactory, specified, submit, sufficient, suitable, suspended, unacceptable, unsatisfactory, or unsuitable," the expression is to be interpreted as if it were followed by the words "by the Engineer" or "to the Engineer."

10-02 ACRONYMS. Wherever the following abbreviations are used in these Specifications or on the Plans, they are to be construed the same as the respective expression represented. :

AAC	<i>Alaska Administrative Code</i>
AASHTO	American Association of State Highway and Transportation Officials
AC	<i>FAA Advisory Circular</i>
ACI	American Concrete Institute
ADEC	<u>Alaska Department of Environmental Conservation</u>
AIA	American Institute of Architects
AIP	Airport Improvement Program
AKOSH	Alaska Occupational Safety and Health
ANC	<u>Ted Stevens Anchorage International Airport</u>
ANSI	American National Standards Institute
AOA	Air Operations Area
AS	<i>Alaska Statute</i>
ASDS	<i>Alaska Sign Design Specifications</i>
ASTM	American Society for Testing & Materials
ATM	Alaska Test Method
ATMM	<i>Alaska Test Methods Manual</i>
CFR	<i>Code of Federal Regulations</i>
CSPP	Construction Safety and Phasing Plan
CTAF	Common Traffic Advisory Frequency
DOLWD	Alaska Department of Labor and Workforce Development
DOT&PF	Alaska Department of Transportation and Public Facilities

DRO	Diesel Range Organics
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FM	Factory Mutual
FOP	Field Operating Procedure (See <i>Alaska Test Methods Manual</i>)
FSS	Flight Service Station
GCP	General Contract Provision(s)
GRO	Gasoline Range Organics
ICEA	Insulated Cable Engineers Association (formerly IPCEA)
MCL	Materials Certification List
MRP	Mining and Reclamation Plan
NEC	<i>National Electrical Code</i>
NEMA	National Electrical Manufacturers Association
NOTAMs	<i>Notices to Airmen</i>
PFAS	<u>Per- and Polyfluoroalkyl substances</u>
PFOA	<u>Perfluorooctanoic acid</u>
PFOS	<u>Perfluorooctanesulfonic acid</u>
RASSO	Regional Airport Safety and Security Officer
SPCC	<i>Spill Prevention, Control, and Countermeasure (Plan)</i>
SPCD	Safety Plan Compliance Document
SSAC	<i>DOT&PF Standard Specifications for Airport Construction</i>
SSPC	Society for Protective Coatings
SWPPP	<i>Storm Water Pollution Prevention Plan</i>
TCP	<i>Traffic Control Plan</i>
UL	Underwriters Laboratory
WAQTC	Western Alliance for Quality in Transportation Construction (See <i>Alaska Test Methods Manual</i>)

10-03 DEFINITIONS.

ACCEPTANCE SAMPLING AND TESTING. Sampling and testing performed by the State of Alaska, or its designated agent, to evaluate acceptability of the final product.

ACCESS ROAD. The right-of-way, the roadway, and all improvements constructed thereon connecting the airport to another public thoroughfare.

ADDENDA. Clarifications, corrections, or changes to the Plans, Specifications, or other Contract documents issued graphically or in writing by the Department after the advertisement but prior to bid opening.

ADVERTISEMENT. The public announcement, as required by law, inviting bids for specified work or materials.

ADVISORY CIRCULAR (AC). FAA standards and guidance for their Airport Improvement Program.

AGREED PRICE. An amount negotiated between the Department and the Contractor after Contract award for additional work performed or additional materials supplied under the Contract.

AIR OPERATIONS AREA (AOA). Any area of the airport used or intended to be used for the landing, takeoff, surface maneuvering, or parking of aircraft. An air operation area shall include such paved or unpaved areas, that are used or intended to be used for the unobstructed movement of aircraft, in addition to its associated runway, taxiway, or apron.

AIRPORT. An area of land or water that is used or intended for use for the landing and takeoff of aircraft, and any appurtenant areas that are used or intended for use for airport buildings or other airport facilities or right of way, together with airport buildings and facilities.

AIRPORT IMPROVEMENT PROGRAM (AIP). A grant-in-aid program, administered by the FAA.

ALASKA STANDARD PLAN. Detail drawing adopted by the Department for repetitive use, showing details to be used where appropriate. Alaska Standard Plans are adopted as Alaska's accepted standards, in accordance with AS 19.10.160(a), and for use in conformity with 12 AAC 36.185(a)(2).

ALASKA TEST METHODS MANUAL (ATMM). The materials testing manual used by the Department. It contains Alaska Test Methods, WAQTC Test Methods, WAQTC FOPs for AASHTO Test Methods, and Alaska Standard Practices for evaluating test results and calibrating testing equipment.

ALASKA TRAFFIC MANUAL. The standard for traffic control devices on Alaska roads, per AS 28.01.010(d). The Alaska Traffic Manual is comprised of the Manual on Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration as modified by the Alaska Traffic Manual Supplement, and any adopted revisions or interim addenda issued subsequently and corrections to known errors in either document.

APPENDICES. Supplemental Contract Documents.

AVIATION MATERIALS CERTIFICATION LIST. See Materials Certification List.

AWARD. Acceptance of the successful bid by the Department. The award is effective upon execution of the Contract by the Contracting Officer.

BASE COURSE. One or more layers of specified material placed on a subbase or subgrade to support a surface course.

BID (OR PROPOSAL). The bidder's offer, on the prescribed forms, to perform the specified work at the prices quoted.

BID BOND. A type of bid guaranty.

BIDDER. An individual, firm, corporation, joint venture, or any acceptable combination of individuals and entities submitting a bid for the advertised work.

BID FORMS. Department-furnished forms that a bidder must complete and submit when making a bid in response to an advertised project. Bid forms may include a bid schedule, certification forms, acknowledgment forms, and other documents.

BID GUARANTY. The security furnished with a bid to guarantee that the bidder will enter into a contract if the Department accepts the bid.

CALENDAR DAY. Every day shown on the calendar, beginning and ending at midnight.

CHANGE ORDER. A written order by the Department to the Contractor making changes to the Contract, within its general scope, and establishing the basis of payment and time adjustment, if any, for the work affected.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF). A designated frequency for the purpose of carrying out airport advisory practices while operating to or from an airport that does not have a control tower or an airport where the control tower is not operational. CTAF is identified in appropriate aeronautical publications such as the current *FAA Chart Flight Information Supplement Alaska*, a civil/military flight information publication issued by FAA every 56 days.

COMPLETION DATE. The date on which all Contract work is specified to be completed.

CONSTRUCTION. Physical activity by the Contractor or any Subcontractor using labor, materials or equipment within the Project, or within material sources planned for use on the Project.

CONSTRUCTION SAFETY AND PHASING PLAN (CSPP). The overall plan for safety and phasing of a construction project developed by the Department and approved by the FAA. It is included in the appendix invitation for bids and becomes part of the project specifications.

CONTINGENT SUM. A method for paying for a Contract bid item reserved by the Department for specified contingencies. The Contractor shall perform Contingent Sum work only upon the Directive of the Engineer. The basis of payment for Contingent Sum work shall be specified in the Contract or the Directive.

CONTRACT. The written agreement between the Department and the Contractor setting forth the obligations of the parties for the performance and completion of the work.

The Contract includes the Invitation To Bid, Bid Form, Standard Specifications, Special Provisions, Appendices, Plans, Bid Schedule, Contract Forms, Contract Bonds, Addenda, and any Change Orders, Interim Work Authorizations, Directives, or Supplemental Agreements that are required to complete the work in an acceptable manner, all of which constitute one instrument.

CONTRACTING OFFICER (PROCUREMENT OFFICER). The person authorized by the Commissioner of the Department to enter into and administer the Contract on behalf of the Department. The Contracting Officer has authority to make findings, determinations, and decisions with respect to the Contract and, when necessary, to modify or terminate the Contract. The Contracting Officer is identified on the Invitation To Bid.

CONTRACT ITEM (PAY ITEM). A specifically described item of Contract work listed on the Bid Schedule or in a Change Order.

CONTRACTOR. The individual, firm, corporation, joint venture, or any acceptable combination of individuals and entities contracting with the Department for performance of the Contract.

CONTRACT TIME. The time allowed under the Contract, including authorized time extensions, for the completion of all work by the Contractor.

CONTROLLING ITEM. Any feature of the work considered at the time by the Engineer: (1) essential to the orderly completion of the work and (2) a feature which, if delayed, will delay the time of completion of the Contract (such as an item of work on the critical path of a network schedule).

COST. Amounts actually incurred by the Contractor in the performance of the Contract that are (a) actually reflected in contemporaneously maintained accounting or other financial records and (b) supported by original source documentation. Costs are to be stated in U.S. dollars.

CULVERT. A pipe or arch half pipe, that provides an opening under the embankment.

DAY. Calendar day unless preceded by the word "working".

DEPARTMENT. The State of Alaska Department of Transportation and Public Facilities.

DIGITAL SIGNATURE. An electronic signature that conforms to the Uniform Electronic Transactions Act, AS 09.80.010 et seq.

DIRECTIVE. A written communication to the Contractor from the Engineer enforcing or interpreting a Contract requirement or ordering commencement or suspension of an item of work already established in the Contract.

DRAINAGE SYSTEM. The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.

ELECTRONIC BID. A bid that a bidder (i) prepares on the Department's bid forms accessed through the Department's approved online bidding service and (ii) submits to the Department through use of that bidding service's online submittal process.

ELECTRONIC MAIL (EMAIL). A system for sending messages from one person to another via telecommunications links between computers or terminals using dedicated software.

ENGINEER. The authorized representative of the Department's Contracting Officer. The Engineer is responsible for administration of the Contract.

EQUIPMENT. All machinery, tools, apparatus, and supplies necessary to preserve, maintain, construct, and complete the work.

EQUITABLE ADJUSTMENT. An increase or decrease in Contract price or time calculated according to the terms of this Contract.

EXTRA WORK. An item of work not provided for in the Contract as awarded but found essential by the Engineer for the satisfactory completion of the Contract within its intended scope.

FEDERAL AVIATION ADMINISTRATION (FAA). Branch of the U.S. Department of Transportation. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.

FEDERAL SPECIFICATIONS. The most current version of the Federal Specifications and Standards, Commercial Item Descriptions, and supplements, amendments, and indices thereto which are prepared and issued by the General Services Administration (GSA) of the Federal Government in effect on the date bids are opened.

FOREIGN OBJECT DEBRIS (FOD). Any object, live or not, located in an inappropriate location in the airport environment that has the capacity to injure airport or air carrier personnel and damage aircraft.

HIGHWAY, STREET, OR ROAD. A general term denoting a public way used by vehicles and pedestrians, including the entire area within the right-of-way.

HIGHWAY TRAFFIC CONTROL PLAN. See traffic control plan.

HOLIDAYS. State of Alaska legal holidays are:

- a. New Year's Day - January 1
- b. Martin Luther King, Jr. Day - Third Monday in January
- c. Presidents' Day - Third Monday in February
- d. Seward's Day - Last Monday in March
- e. Memorial Day - Last Monday in May
- f. Juneteenth – June 19th
- ~~f.g.~~ Independence Day - July 4
- ~~g.h.~~ Labor Day - First Monday in September
- ~~h.i.~~ Alaska Day - October 18
- ~~i.j.~~ Veteran's Day - November 11
- ~~j.k.~~ Thanksgiving Day - Fourth Thursday in November
- ~~k.l.~~ Christmas Day - December 25
- ~~l.m.~~ Every Sunday
- ~~m.n.~~ Every day designated by public proclamation by the President of the United States or the governor as a legal holiday.

If a holiday listed above falls on a Saturday then that Saturday and the preceding Friday are both legal holidays for officers and employees of the state. If the holiday falls on a Sunday, except (m42) above, then that Sunday and the following Monday are both legal holidays.

INSPECTOR. An authorized representative of the Engineer assigned to make all necessary inspections, observations, and/or tests, observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.

INTERIM WORK AUTHORIZATION. A written order by the Engineer initiating changes to the Contract, within its general scope, until a subsequent Change Order is executed.

INVITATION TO BID. The advertisement for bids for all work or materials on which bids are required.

LABORATORY. The official testing laboratories of the Department or such other laboratories as may be designated by the Engineer.

LIGHTING. A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.

MAJOR CONTRACT ITEM. A Contract item for which the Contractor's Bid Amount is 5 percent or more of the total Contract award amount. Determination of a Major Contract Item is made at the time of Award.

MANUAL BID. A bid that a bidder (i) prepares on the Department's bid forms accessed either through the Department's approved online bidding service or obtained from the Department's Regional Contracts Office and (ii) submits to the Department in physical paper form by hand delivery, U.S. Mail, or courier service.

MATERIALLY UNBALANCED BID. A mathematically unbalanced bid that either (a) gives rise to a reasonable doubt that it will ultimately result in the lowest overall cost to the Department, even though it may be the lowest bid or (b) is so unbalanced as to be tantamount to allowing a significant advance payment.

MATERIALS. Substances specified for use in the construction of the project.

MATERIALS CERTIFICATION LIST (MCL). Also referred to as "Aviation Materials Certification List". A list of materials for which the Contractor shall submit certifications to the Engineer. The MCL will also designate electrical products requiring listing by an approved independent electrical testing laboratory. The MCL is included in the Contract documents as an appendix.

MATHEMATICALLY UNBALANCED BID. A bid (a) where each pay item fails to carry its share of the cost of the work plus the bidder's overhead and profit, or (b) based on nominal prices for some pay items and enhanced prices for other pay items.

MINOR CONTRACT ITEM. A Contract item with a total value of less than 5 percent of the Contract award amount.

NON-FROST SUSCEPTIBLE. Stone, gravel or sand, that contains 6 percent or less material passing the No. 200 screen as determined by sieve analysis performed with ATM 304 on the minus 3-inch material, and has a plastic index of 6 or less as determined by ATM 205.

NOTICE OF INTENT TO AWARD. The written notice by the Department announcing the apparent successful bidder and establishing the Department's intent to award the Contract when all required conditions are met.

NOTICE TO PROCEED. Written notice to the Contractor to begin the Contract work.

ORIGINAL GROUND (OG). The ground surface prior to the start of work.

PAVEMENT STRUCTURE. The combination of subbase, base course, and surface course placed on a subgrade to support and distribute the traffic load. Some layers may not be present, see Plans.

PAYMENT BOND. The security furnished by the Contractor and the Contractor's Surety to guarantee payment of all persons who supply labor and material in prosecution of the work provided for in the contract.

PERFORMANCE BOND. The security furnished by the Contractor and the Contractor's Surety to guarantee performance and completion of the work provided for in the contract.

PLANS. The Department's contract drawings, profiles, typical cross sections, and supplemental drawings or reproductions showing the location, character, dimensions, and details of the work.

PRECONSTRUCTION CONFERENCE. A meeting between the Contractor and the Engineer to discuss the project before the Contractor begins the work.

PROCESS CONTROL. See quality control.

PROCUREMENT OFFICER. See contracting officer.

PROFILE. The vertical elevation of the surface of the layer at the location indicated. It is typically indicated at the longitudinal centerline of the top layer of pavement on the runway, taxiway, apron, or roadway. On a material or fabrication it may be used to indicate a shape, or a thickness of material or thickness of a coating.

PROJECT. (a) The specific section of the airport or other property and related facilities on which construction is to be performed, or (b) the work that is to be performed under the Contract whether completed or partially completed.

QUALIFIED PRODUCTS LIST. A list of products that the Department has found conforms to the SSAC, except for Buy American and Alaska Agricultural/Wood Products. The Department makes no guarantee that any product on the Qualified Products List meets the requirements of Subsection 60-09 Buy American Steel and Manufactured Products, or Alaska Agricultural/Wood Products.

QUALITY CONTROL (QC) also called **PROCESS CONTROL.** The system used by a contractor to monitor, assess and adjust their production or placement processes to ensure that the final product will meet the specified level of quality. Quality control includes sampling, testing, inspection and corrective action (where required) to maintain continuous control of a production or placement process.

RESOURCES. Labor, equipment, materials, supplies, tools, transportation, and supervision necessary to perform the work.

RESPONSIBLE BIDDER. A bidder that the Department determines has the skill, ability, financial resources, legal capacity to contract, equipment, required licenses, integrity, satisfactory record of performance and that is otherwise fully capable of performing the Contract.

RESPONSIVE BID. A bid that the Department determines conforms in all material respects with the solicitation for bids.

RETAINAGE. A percentage of a payment established in advance under a contract or subcontract to be withheld from a progress payment due on the contract or subcontract. Payment or a percentage of payment withheld for unsatisfactory performance is not retainage.

RIGHT-OF-WAY. Land or property or an interest in property available for a project. The uses allowed in portions of right-of-way may be restricted.

RUNWAY. The area of the airport prepared for the landing and takeoff of aircraft.

RUNWAY SAFETY AREA (RSA). A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event an aircraft undershoots, overshoots, or departs from the runway.

SAFETY PLAN COMPLIANCE DOCUMENT (SPCD). A document prepared by the Contractor that details how the Contractor will comply with the CSPP, and approved by the Department.

SECURITY PLAN. A Contract document that specifies methods of controlling the operations of the Contractor, subcontractors, and suppliers so as to provide for (1) security of workers, equipment, and public, (2) security of aircraft in the Air Operations Areas of the airport, and (3) security of the Airport property.

SPECIAL PROVISION. Addition or revision that amends or supersedes the Standard Specifications and is applicable to an individual project.

SPECIALTY ITEM. A Contract item identified in the Contract that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract.

SPECIFICATIONS. General term applied to all Contract terms, conditions, directions, provisions, and requirements.

STANDARD SPECIFICATIONS. A book or electronic file of specifications approved by the Department for general application and repetitive use.

STATE. The State of Alaska, acting through its authorized representative.

STRUCTURE. Bridge, building, catch basin or inlet, cribbing, culvert, electrical duct, flexible and rigid pavements, handholes, junction boxes, lighting fixture and base, manhole, navigational aid, retaining wall, storm and sanitary sewer lines, transformer, underdrain, vault, visual aid, water line, and other manmade features of the airport that may be encountered in the work and not otherwise classified herein.

SUBBASE. Layer of specified material between the subgrade and base course.

SUBCONTRACTOR. Individual or legal entity to whom or to which the Contractor sublets part of the Contract.

SUBGRADE. The soil or embankment upon which the pavement structure is constructed.

SUBSIDIARY. Work or material not measured or paid for directly. Compensation for such work is included in the payment for other items of work.

SUBSTANTIAL COMPLETION. The point at which the project (1) can be safely and effectively used by the public without further delays, disruption, or other impediments; and (2) pavement structure, shoulder, drainage, sidewalk, permanent signing and markings, guardrail and other traffic barrier, fencing, safety appurtenance, structures, utilities, lighting, bridge deck and parapet work, and guidance systems for aircraft is complete.

For projects built in phases the work is substantially complete when it is ready for the subsequent phase project.

SUPERINTENDENT. The Contractor's authorized representative in responsible charge of the work.

SUPPLEMENTAL AGREEMENT. Negotiated written agreement between the Department and the Contractor authorizing performance of work beyond the general scope of, but in conjunction with, the original Contract. Supplemental agreements are new procurements under the State Procurement Code, AS 36.30.

SURETY. Corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.

SURFACE COURSE. Top homogenous layer of the pavement structure. It is designed to withstand the wear of traffic and the disintegrating effects of climate. Sometimes called the wearing course.

TAXIWAY. The portion of the air operations area of an airport that has been designated for movement of aircraft to and from runways or aircraft parking areas.

TAXIWAY SAFETY AREA (TSA). A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

TRAFFIC CONTROL PLAN (TCP). Also referred to as "Highway Traffic Control Plan". A drawing or drawings indicating the method for safely guiding and protecting motorists, pedestrians, bicyclists, and workers in a highway traffic control zone. The TCP depicts the highway traffic control devices and their placement and times of use.

UTILITY. Line, facility, or system for producing, transmitting, or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage, or other similar commodity, including a publicly owned fire or police signal system, street lighting system, or railroad which directly or indirectly serves the public. Also means lighting as defined in this subsection. Also means a utility company, inclusive of any subsidiary.

VERIFICATION SAMPLING AND TESTING. See ACCEPTANCE SAMPLING AND TESTING.

WORK. Depending on the context, (a) The act of furnishing all resources for the project and performing all duties and obligations required by the Contract or (b) the physical construction, facility or end-product that is contemplated under the Contract, whether completed or partially completed.

WORKING DAYS. Calendar days, except Saturdays and state holidays.

WORKING DRAWINGS. Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, wiring diagrams and schematics, traffic control plans, or any other supplementary plans or similar data which the Contractor is required to submit to the Engineer for approval.

SECTION 20 PROPOSAL REQUIREMENTS AND CONDITIONS

20-01 QUALIFICATION OF BIDDERS. A bidder shall:

- a. When requested, submit a completed Contractor's Questionnaire (Form 25D-8) stating previous experience in performing comparable work, business and technical organization, financial resources, and equipment available to be used in performing the work;
- b. On wholly state-funded projects, submit evidence of a valid Department of Commerce, Community, and Economic Development certificate of Contractor Registration (Contractor Registration) under AS 08.18, and submit evidence of a valid Alaska Business License prior to award under AS 36.30.110(b); and
- c. On federal-aid projects, submit evidence of Alaska Business License and Contractor Registration prior to award.

All firms desiring to participate in DOT&PF construction projects must register annually by submitting a completed Bidder Registration (Form 25D-6).

20-02 CONTENTS OF BID PACKAGE. Upon request, the Department will furnish prospective bidders with a bid package, at the price stated in the Invitation To Bid.

The bid package includes the following:

- a. Location and description of the project;
- b. Estimates of quantities of work and materials to be furnished;
- c. Schedule of contract items for which bid prices are invited;
- d. Time in which the work must be completed
- e. Amount of the bid guaranty;
- f. Date, time, and place for the bid opening;
- g. Plans and specifications; and
- h. Bid forms.

Unless otherwise stated in the bid package, the Plans, Specifications, permits, forms and any other documents designated in the bid package are considered a part of the bid whether attached or not.

20-03 INTERPRETATION OF QUANTITIES IN BID SCHEDULE. Bid prices shall be based on the estimated quantities shown in the bid schedule. Quantities of work to be done and materials to be furnished are approximate and are prepared only for the comparison of bids. These quantities may increase, decrease, or be eliminated. Payment for unit price items will be made for the actual accepted quantities of work performed and materials furnished under the Contract, as determined using the method of measurement specified in the Contract.

20-04 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND WORK SITE. Bidders shall examine the work site and all Contract documents before preparing a bid. Submitting a bid is a binding representation that the bidder has examined the work site, is aware of the conditions to be encountered, and has examined and understands all of the Contract documents.

Department records of subsurface and hydrological investigations, including but not limited to, boring logs, test results, soil investigation reports, material reports, and other supplemental information are made

available for information purposes only. These records are not part of the Contract. These records indicate subsurface conditions only at specific locations at the time sampled, and only to the depths penetrated. They do not necessarily reflect frozen state, or variations in soil, rock or hydrology that may exist between or outside such locations or at other times. Actual conditions, including ground water levels and saturation, may differ from what is shown in the records.

Material sources referenced in Department records may not contain materials of sufficient quantity or quality to meet project requirements. Sources may be subject to operational restrictions. The availability of these records does not constitute approval, nor guarantee suitability of soils or sources, or the right to use sources referenced in these records for this project. Department records shall not substitute for independent investigation, interpretation, or judgment of the bidder. The Department is not responsible for any interpretation or conclusion drawn from its records by the bidder. Bidders shall examine Subsection 60-02 Material Sources for further information.

Geotechnical reports referenced in the Notice to Bidders, or otherwise made available, may contain data, discussions, and references to material sources. The inclusion of material source information in these reports does not mean they are a Mandatory, Designated, or Available Source as described in Subsection 60-02. For a material source to be considered Mandatory, Designated, or Available, it must be included in the Special Provisions, or so described on the Plans.

Any questions about bidding procedures, site conditions, or Contract requirements must be submitted in writing according to the Invitation To Bid (Form 25D-7). Questions must be submitted in sufficient time to get a reply before submitting a bid. No oral responses or other oral statements are binding on the Department. Any response to a material question shall be issued by addendum sent to all bidders.

20-05 PREPARATION OF BID. A bidder shall prepare its bid using either the Department approved bid preparation software or the Department provided bid forms or legible copies of the Department's forms. All entries shall be legible and in ink or type. Bidders shall:

- a. Enter all prices required on the Bid Schedule, in figures;
- b. Enter a unit price for each contract item for which a quantity is given;
- c. Enter the products of the respective unit prices and quantities in the column provided;
- d. Enter lump sum prices for lump sum contract items in the column(s) provided; and
- e. Enter the total amount of all contract items for the basic bid and, when specified, any alternates.

When a bid item contains a choice to be made by the bidder, the bidder shall indicate a choice according to the Specifications for that item. No further choice is permitted.

The bid must be signed in ink or by digital signature by the person or persons authorized to sign the Contract for the bidder. If a bidder is a corporation, the bid must be signed by a corporate officer or agent with authority to bind the corporation. If a bidder is a partnership, a partner must sign. If the bidder is a joint venture, the bid must be signed by an officer or agent with authority to bind the joint venture. If a bidder is a sole proprietorship, the owner must sign. Each person signing the bid must initial any changes made to entries on the bid forms.

A bidder submitting an electronic bid agrees that its digital signature constitutes a binding signature.

The bidder shall make no claim against the Department in the event it is unable to submit its bid through approved online bidding service and/or approved online bidding service is unable to submit the bid(s) to the Department. The Department reserves the right to postpone the public bid opening in the event of technical problems.

For multiple-project bid openings, the bidder may limit the total dollar amount or number of projects to be accepted by completing and attaching the following statement with its bid for at least one of the projects. The Department will then determine which of the low bids it will accept, up to the total indicated.

"We wish to disqualify all of our successful bids at this bid opening which exceed the total of \$_____ or _____ contracts and hereby authorize the Department to determine which bids to disqualify, based on this limit."

20-06 NONRESPONSIVE BIDS.

- a. A bid shall be rejected as nonresponsive if it:
 - (1) Is not properly signed by an authorized representative of the bidder and in a legally binding manner;
 - (2) Contains unauthorized additions, conditional or alternative bids, or other irregularities that make the bid incomplete, indefinite, or ambiguous;
 - (3) Includes a reservation of the right to accept or reject any award, or to enter into a contract pursuant to an award, except for an award limitation under Subsection 20-05;
 - (4) Fails to include an acceptable bid guaranty with the bid;
 - (5) Is materially unbalanced
 - (6) Fails to meet any other material requirement of the Invitation To Bid; or
 - (7) Fails to include a materially complete Certification of Buy American Compliance (Form 25D-151 or Form 25D-152), except on wholly state-funded projects.
- b. A bid may be rejected as nonresponsive, in the Department's discretion, if it:
 - (1) Is not typed or completed in ink;
 - (2) Fails to include an acknowledgement of receipt of each addendum by assigned number and date of issue; or
 - (3) Is missing a bid price for any pay item, except when alternate pay items are authorized.

20-07 BID GUARANTY. Bids shall be accompanied by a bid guaranty in the amount specified on the Invitation To Bid. The guaranty shall be unconditionally payable to the State of Alaska and shall be in the form of an acceptable paper Bid Bond (Form 25D-14), an electronic bid bond acceptable to the Department and verified through its online bidding service, a certified check, a cashier's check, or a money order.

The surety of a Bid Bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. A legible power of attorney shall be included with each paper Bid Bond (Form 25D-14).

An individual surety will not be accepted as a bid guaranty.

20-08 RESERVED.

20-09 DELIVERY OF BIDS. Bids shall be submitted electronically through the online bidding service, or shall be submitted in a sealed envelope. When bids are submitted in a sealed envelope, the envelope shall clearly indicate its contents and the designated address, as specified on the Invitation to Bid. Bids for other work may not be included in the envelope. In the event of a bid delay, electronic bidders that

have already submitted their bid prior to the bid delay must resubmit their bid utilizing all Bid Forms EBSX Files or their bid will not be received.

The Department will not accept a bid submitted by email or fax unless specifically called for in the Invitation to Bid.

20-10 WITHDRAWAL OR REVISION OF BIDS. Manual Bids may be withdrawn or revised in writing delivered by mail, fax, or email, provided that the designated office receives the withdrawal or revision before the deadline stated in the in the Invitation To Bid. Withdraw requests must be signed and submitted by the bidder's duly appointed representative who is legally authorized to bind the bidder. Revisions shall include both the modification of the unit bid price and the total modification of each item modified but shall not reveal the amount of the total original or revised bids.

Electronic Bids may be withdrawn or resubmitted through the online bidding service. Revisions to electronic bids delivered by mail, fax, or email will not be permitted. If electronic bid withdrawal is unsuccessful, electronic bids may be withdrawn in writing delivered by mail, fax, or email provided that the designated office receives the withdrawal before the deadline stated in the Invitation To Bid. Written withdrawal requests must be signed and submitted by the bidder's duly appointed representative who is legally authorized to bind the bidder.

20-11 PROTEST OF INVITATION TO BID. An interested party, as defined in AS 36.30.699, may protest an Invitation to Bid before the bid opening according to AS 36.30.560 and AS 36.30.565. Submit a protest to the Contracting Officer.

20-12 ADDENDA REQUIREMENTS. The Department will issue addenda if it determines, in its discretion, that clarifications or changes to the Contract documents or bid opening date are needed. The Department may send addenda by any reasonable method such as fax, email, or may post the addenda on its website or online bidding service. Unless picked up in person or included with the bid documents, addenda or notice that an addendum has been issued will be addressed to the individual or company to whom bidding documents were issued and sent to the email address or fax number on the plan holders' list. Notwithstanding the Department's efforts to distribute addenda, bidders are responsible for ensuring that they have received all addenda affecting the Invitation To Bid. Bidders must acknowledge all addenda on the Bid Forms, by fax, or by email before the deadline stated in the Invitation to Bid.

20-13 RECEIPT AND OPENING OF BIDS. The Department will only consider bids, revisions, and withdrawals received before the scheduled deadline stated in the Invitation to Bid.

The Department will assemble, open, and publicly announce timely-received bids at the time and place indicated in the Invitation to Bid, or as soon thereafter as practicable. The Department is not responsible for prematurely opening or failing to open bids that are improperly addressed or identified.

20-14 RESPONSIBILITY OF BIDDERS. The Department may find a bidder is nonresponsible for any one of the following reasons, but is not limited in its responsibility analysis to the following factors:

- a. Evidence of bid rigging or collusion;
- b. Fraud or dishonesty in the performance of previous contracts;
- c. More than one bid for the same work from an individual, firm, or corporation under the same or different name;
- d. Unsatisfactory performance on previous or current contracts;
- e. Failure to pay, or satisfactorily settle, all bills due for labor and material on previous contracts;
- f. Uncompleted work that, in the judgment of the Department, might hinder or prevent the bidder's prompt completion of additional work, if awarded;

- g. Failure to reimburse the state for monies owed on any previous contracts;
- h. Default under previous contracts;
- i. Failure to submit evidence of registration and licensing;
- j. Failure to comply with any qualification requirements of the Department;
- k. Engaging in any activity that constitutes a cause for debarment or suspension under the State Procurement Code (AS 36.30) or submitting a bid during a period of debarment;
- l. Failure to satisfy the responsibility standards set out in state regulations;
- m. Lack of skill, ability, financial resources, or equipment required to perform the contract; or
- n. Lack of legal capacity to contract.

Nothing contained in this section deprives the Department of its discretion in determining the lowest responsible bidder.

20-15 FOREIGN TRADE RESTRICTION. The Contractor by submission of an offer and/or execution of a contract, certifies that it:

- a. Is not owned or controlled by one or more citizens or nationals of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- b. Has not knowingly entered into any contract or subcontract for this project with a contractor that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list; and
- c. Has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation according to 49 CFR 30.17, no contract shall be awarded to a contractor who is unable to certify to the above. If the Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on the said list for use on the project, the FAA may direct, through the Department, cancellation of the contract at no cost to and with no damages available from the Department or the Federal government.

The Contractor shall incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The Contractor shall require subcontractors to provide immediate written notice to it if the subcontractor learns that its certification was erroneous, or has become erroneous, by reason of changed circumstances. The Contractor may rely upon the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The Contractor shall provide immediate written notice to the Department if the Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the FAA may direct, through the Department, cancellation of the contract or subcontract for default at no cost to, and with no damages available from, the Department or the Federal Government.

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 provision. The knowledge and information

of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

20-16 ELECTRONIC MAIL. Within its submitted bid, a bidder must include a current electronic mail (email) address of bidder's representative who possesses authority to receive, process, and respond to Department emails regarding the advertised project.

The Department may send notices and information to a bidder by using the furnished email address of the bidder's authorized representative.

A bidder shall notify the Department if the bidder requests the Department to send email notices or information to an address different from the email address initially provided in its bid forms. The bidder shall notify the Department of such change by sending a request in writing to the Contract's point of contact identified on the Invitation to Bid that is signed by a representative who is authorized and empowered to legally bind the bidder.

Delivery of an email sent by the Department is complete upon receipt in the addressee's email account. An email sent after 4:30 pm shall be deemed to have occurred at the opening of business on the next working day.

If needed, the Department may demonstrate proof of email delivery by affidavit or certification that includes the following:

- a. The date and time that the Department sent the email message;
- b. The email address from which the Department sent the message;
- c. The name and email address to which the Department sent the message;
- d. A statement that the Department sent the email message and that the person signing the affidavit or certification believes the transmission to have been complete and without error; and
- e. An attached copy of the subject email.

SECTION 30

AWARD AND EXECUTION OF CONTRACT

30-01 CONSIDERATION OF BIDS. After the bids are opened and read, the bids will be mathematically checked and compared on the basis of the sum of the products of the bid schedule quantities and the unit bid prices. The unit bid prices govern if there is an error in extending the unit bid prices, or in totaling the extensions, or if an extension is missing. The results of the bid comparisons will be made available to the public as soon as practicable.

Until the Award, the Department may reject any or all bids, waive minor informalities or advertise for new bids without liability to any bidder if the Department, in its discretion, determines that to do so is in the best interests of the state.

A bidder may request withdrawal of a bid after opening and before the Award only according to AS 36.30.160(b) and State procurement regulations. Submit the request to the Contracting Officer.

An interested party, as defined in AS 36.30.699, may protest a proposed Award of contract as per AS 36.30.560 and AS 36.30.565. Submit the protest to the Contracting Officer.

WHOLLY STATE-FUNDED PROJECTS. On wholly state-funded projects, determination of the low bidder will include bidder preferences as required under AS 36.30.321, according to subsections a. – d. below. Alaska Bidder Preference, Alaska Veteran Preference, Alaska Product Preference, and Alaska Military Skills Preference, are not applicable on projects with federal funding.

- a. Alaska Bidder Preference:** A bidder claiming this preference shall provide with their bid an Alaska Bidder Preference Certification, certifying they qualify as an Alaska bidder eligible for Alaska Bidder Preference according to AS 36.30.

If the bidder qualifies as an Alaska Bidder, a five percent (5%) preference will be applied to the price of the bid. "Alaska bidder" means a person who:

- (1) holds a current Alaska business license;
- (2) submits a bid for goods, services, or construction under the name appearing on the person's current Alaska business license;
- (3) has maintained a place of business within the state staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the bid;
- (4) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship and the proprietor is a resident of the state, is a limited liability company organized under AS 10.50 and all members are residents of the state, or is a partnership under former AS 32.05, AS 32.06, or AS 32.11 and all partners are residents of the state; and
- (5) If a joint venture, is composed entirely of ventures that qualify under (1) through (4), above.

- b. Alaska Veteran Preference:** A bidder claiming this preference shall provide an Alaska Veteran Preference Certification, certifying they qualify as an Alaska bidder eligible for Alaska Veteran preference according to AS 36.30.

If a bidder qualifies as an Alaska bidder and is a qualifying entity, an Alaska Veteran Preference of five percent shall be applied to the bid price. The preference may not exceed \$5,000 (AS 36.30.321). A "qualifying entity" means an entity that:

- (1) sole proprietorship owned by an Alaska veteran;
- (2) partnership under AS 32.06 or AS 32.11 if a majority of the partners are Alaska veterans;

- (3) limited liability company organized under AS 10.50 if a majority of the members are Alaska veterans; or
- (4) corporation that is wholly owned by individuals, and a majority of the individuals are Alaska veterans.

A preference under this section is in addition to any other preference for which the bidder qualifies.

To qualify for this preference, the bidder must add value by the bidder itself actually performing, controlling, managing and supervising a significant part of the services provided or the bidder must have sold supplies of the general nature solicited to other state agencies, governments, or the general public.

An Alaska veteran is a resident of Alaska who:

- (1) served in the Armed forces of the United States, including a reserve unit of the United States armed forces; or the Alaska Territorial Guard, the Alaska Army National Guard, the Alaska Air National Guard, or the Alaska Naval Militia; and
- (2) was separated from service under a condition that was not dishonorable.

- c. **Alaska Product Preference:** A bidder claiming this preference shall complete and sign the Alaska Product Preference Worksheet, according to the worksheet instructions, and submit the completed worksheet with their bid.

Except for timber, lumber and manufactured lumber products used in the construction project under AS 36.30.322(b), an Alaska products preference will be given as required under AS 36.30.326 - 36.30.332 when the bidder designates the use of Alaska products.

If the successful bidder/contractor proposes to use an Alaska product and does not do so, a penalty will be assessed against the successful bidder/contractor according to AS 36.30.330(a).

Each Alaska product declared on the Alaska Product Preference Worksheet must have an "Approval" date on the Alaska Product Preference Program List, that is on or before the bid opening date for this contract, and that does not expire before the bid opening date for this contract.

- d. **Alaska Military Skills Preference:** A bidder claiming this preference shall provide an Alaska Military Skills Preference Certification, Form 25D-21, certifying they qualify as an Alaska bidder eligible for Alaska Military Skills preference according to AS 36.30.321.

If a bidder qualifies as an Alaska bidder and is a qualifying entity, an Alaska Military Skills Preference of 2 percent shall be applied to the bid price. The preference may not exceed \$5,000 (AS 36.30.321(f)). A "qualifying entity" means an entity that:

- (1) employs at least one person who is currently enrolled in, or within the previous two years graduated from, a United States Department of Defense SkillBridge or United States Army Career Skills Program for service members or spouses of service members that offers civilian work experience through specific industry training, pre-apprenticeships, registered apprenticeships, or internships during the last 180 days before a service member separates or retires from the service; or
- (2) has an active partnership with an entity that employs an apprentice through a program described in (1) of this subsection.

A preference under this section is in addition to any other preference for which the bidder qualifies.

To qualify for this preference, the bidder must add value by the bidder itself actually performing, controlling, managing and supervising a significant part of the services provided or the bidder must have sold supplies of the general nature solicited to other state agencies, governments, or the general public.

30-02 SUBCONTRACTOR LIST. The apparent low bidder shall submit a completed Subcontractor List, Form 25D-5, within five working days following receipt of written notification by the Department that it is the low bidder.

An apparent low bidder who fails to submit a completed Subcontractor List form within the time allowed will be declared nonresponsible and may be required to forfeit the bid security. The Department will then consider the next lowest bidder for award of the Contract.

If a bidder fails to list a subcontractor, or lists more than one subcontractor for the same portion of work, and the value of that work is in excess of one-half of one percent of the total bid amount, the bidder agrees to perform that portion of work without a subcontractor and represents that it is qualified to perform that work.

A bidder who lists as a subcontractor another contractor who, in turn, sublets the majority of the work required under the Contract, violates this subsection.

On federal-aid projects, subcontractors must obtain an Alaska business license and certificate of contractor registration prior to award of the Contract.

On wholly state-funded projects, all subcontractors listed by the Contractor shall have a valid Alaska business license and a valid certificate of registration as a contractor, as defined in AS 08.18, at the time the bid is opened. If a subcontractor listed by the Contractor does not have a valid business license and certificate of registration at the time the bid is opened, the Contractor shall replace the subcontractor with a subcontractor that had a valid Alaska business license and a valid certificate of registration as a contractor under AS 08.18 at the time the bid was opened.

A bidder or Contractor may, without penalty, replace a listed subcontractor who:

- a. Fails to comply with licensing and registration requirements of AS 08.18;
- b. Fails to obtain a valid Alaska business license;
- c. Files for bankruptcy or becomes insolvent;
- d. Fails to execute a subcontract for performance of the work for which the subcontractor was listed, and the bidder acted in good faith;
- e. Fails to obtain bonding acceptable to the Department;
- f. Fails to obtain insurance acceptable to the Department;
- g. Fails to perform the subcontract work for which the subcontractor was listed;
- h. Must be replaced to meet the bidder's required state or federal affirmative action requirements;
- i. Refuses to agree or abide with the bidder's labor agreement; or
- j. Is determined by the Department to be not responsible.

In addition to the circumstances described above, a Contractor may in writing request permission from the Department to add a new subcontractor or replace a listed subcontractor. The Department will approve the request if it determines in writing that allowing the addition or replacement is in the best interest of the State.

A bidder or Contractor shall submit a written request to add a new subcontractor or replace a listed subcontractor to the Contracting Officer a minimum of five working days before the date the new subcontractor is scheduled to begin work on the construction site. The request must state the basis for the request and include supporting documentation acceptable to the Contracting Officer.

If a bidder or Contractor violates this subsection, the Contracting Officer may:

- a. Cancel the Contract after Award without any damages accruing to the Department; or
- b. After notice and a hearing, assess a penalty on the bidder or Contractor in an amount not exceeding 10 percent of the value of the subcontract at issue.

30-03 AWARD OF CONTRACT. The Department will award the Contract to the lowest responsible and responsive bidder unless it rejects all bids. The Department will notify all bidders in writing via email, fax, or U.S. Mail of its intent to award.

The Department will notify the successful bidder in writing of its intent to award the Contract and request that certain required documents, including the Contract Form, bonds, insurance and, except on wholly state-funded projects, a completed Form 25D-159 (Certification for Tax Delinquency and Felony Convictions) be submitted within the time specified. The successful bidder's refusal to sign the Contract and provide the requested documents within the time specified may result in cancellation of the notice of intent to award and forfeiture of the bid security.

If an award is made, it will be made as soon as practicable and usually within 40 days after bid opening. Award may be delayed due to bid irregularities or a bid protest, or if the award date is extended by mutual consent. Bids shall be valid for 120 days after bid opening, and may be extended by mutual consent.

For AIP contracts, no award shall be made until the FAA has concurred in the Department's recommendation to make such award and has approved the Department's proposed contract to the extent that such concurrence and approval are required by 49 CFR Part 18.

30-04 RETURN OF BID GUARANTY. The Department will return bid guaranties, other than bid bonds:

- a. To all except the two lowest responsive and responsible bidders, as soon as practicable after the opening of bids; and
- b. To the two lowest responsive and responsible bidders immediately after Contract award.

30-05 PERFORMANCE AND PAYMENT BONDS. The successful bidder shall furnish all required Performance and Payment Bonds on forms provided by the Department for the sums specified in the Contract. If no sum is specified, the successful bidder shall comply with AS 36.25.010. The Surety on each bond may be any corporation or partnership authorized to do business in the state as an insurer under AS 21.09 or two individual sureties approved by the Contracting Officer.

If individual sureties are used, two individual sureties must each provide the Department with security assets located in Alaska equal to the penal amount of either the performance bond or the payment bond. Any costs incurred by the Contractor and the individual Surety are subsidiary and shall be borne by the Contractor or the individual Surety. In no event will the Department be liable for these costs.

Individual sureties shall provide security by one, or a combination, of the following methods:

- a. **Escrow Account.** An escrow account with a federally insured financial institution, in the name of the Department. Acceptable securities include, but are not limited to, cash, treasury notes, bearer instruments having a specific value, or money market certificates.
- b. **Irrevocable Letters of Credit.** Irrevocable letters of credit with a financial institution approved by the Contracting Officer, with the Department named as beneficiary.

- c. **Cashiers or Certified Check.** A cashier's check or certified check made payable to the State of Alaska issued by financial institutions approved by the Contracting Officer.

These bonds and security assets, as applicable, shall remain in effect for 12 months after the date of final payment or, if longer, until all obligations and liens under this Contract are satisfied, including, but not limited to, obligations under Subsection 70-19.

The Department may, in its discretion, notify the bonding company or Surety of any potential default or liability.

The Contractor shall substitute, within five working days, another bond or surety acceptable to the Department if an individual Surety or the Surety on any bond furnished in connection with the Contract:

- a. Becomes insolvent or is declared bankrupt;
- b. Loses its right to do business in any state affecting the work;
- c. Ceases to meet Contract requirements;
- d. Fails to furnish reports of financial condition upon request; or
- e. Otherwise becomes unacceptable to the Department.

When approved by the Contracting Officer, the Contractor may replace:

- a. An individual surety with a corporate surety; or
- b. Posted collateral with substitute collateral.

Failure to maintain the specified bonds or to provide substitute bonds when required under this section may be grounds for withholding contract payments until substitute bonding is obtained, and may, in the Department's discretion, be grounds for declaring the Contractor in default.

30-06 INSURANCE REQUIREMENTS. The Contractor shall provide evidence of insurance with an insurance carrier or carriers satisfactory to the Department covering injury to persons and property suffered by the State of Alaska or by a third party as a result of operations under this contract by the Contractor or by any subcontractor. The Contractor's insurance shall provide protection against injuries to all employees of the Contractor and the employees of any subcontractor engaged in work under this Contract. All insurance policies shall be issued by insurers that (i) are permitted to transact the business of insurance in the State of Alaska under Title 21 of the Alaska Statutes and (ii) have a financial rating acceptable to the Department. A certificate of insurance must be furnished to the Department prior to award. The certificate of insurance must provide for notice of cancellation or non-renewal in accordance with policy provisions.

Where specific limits and coverages are shown, it is understood that they shall be the minimum acceptable. The requirements of this subsection shall not limit the Contractor's indemnity responsibility under Subsection 70-13. Additional insurance requirements specific to this contract are contained in the Special Provisions, when applicable.

The Contractor shall maintain the following policies of insurance with the specified minimum coverages and limits in force at all times during the performance of the Contract:

- a. **Workers' Compensation:** as required by AS 23.30.045, for all employees of the Contractor engaged in work under this Contract. The Contractor shall be responsible for Workers' Compensation Insurance for any subcontractor who performs work under this Contract. The coverage shall include:

- (1) Waiver of subrogation against the state;

- (2) Employer's Liability Protection at \$500,000 each accident/each employee and \$500,000 policy limit;
 - (3) "Other States" endorsement if the Contractor directly utilizes labor outside of the State of Alaska;
 - (4) United States Longshore and Harbor Workers' Act Endorsement, whenever the work involves activity over or about navigable water; and
 - (5) Maritime Employer's Liability (Jones Act) Endorsement with a minimum limit of \$1,000,000, whenever the work involves activity from or on a vessel on navigable water.
- b. **Commercial General Liability:** on an occurrence policy form covering all operations, including contractual liability and products-completed operations, with combined single limits not less than:
- (1) \$1,000,000 Each Occurrence;
 - (2) \$1,000,000 Personal Injury;
 - (3) \$2,000,000 General Aggregate; and
 - (4) \$2,000,000 Products-Completed Operations Aggregate.
- c. **Automobile Liability:** covering all vehicles used in Contract work, with combined single limits not less than \$1,000,000 each occurrence.
- d. **Umbrella Coverage:** for Contract amounts over \$5,000,000 not less than \$5,000,000 umbrella or excess liability. Umbrella or excess policy shall include products-completed operations coverage and may be subject to \$5,000,000 aggregate limits. Further, the umbrella or excess policy shall contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.

The State of Alaska shall be named as an additional insured on policies required by paragraphs **b** thru **d** above. All of the above insurance coverages shall be considered to be primary and non-contributory to any other insurance carried by the State of Alaska, whether through self-insurance or otherwise.

In any contract or agreement with subcontractors performing work, the Contractor shall require that all indemnities and waivers of subrogation it obtains, and any stipulation to be named as an additional insured it obtains, shall also be extended to waive rights of subrogation against the State of Alaska and to add the State of Alaska as an additional named indemnitee and as an additional insured.

The apparent low bidder shall furnish evidence of insurance to the Department before award of the Contract. The evidence shall be issued to the Department and shall be either a certificate of insurance or the policy declaration page with all required endorsements attached and must:

- a. Denote the type, amount, and class of operations covered;
- b. Show the effective (and retroactive) dates of the policy;
- c. Show the expiration date of the policy;
- d. Include all required endorsements;
- e. Be executed by the carrier's representative; and
- f. Provide that the Department shall receive written notice of cancellation or non-renewal in accordance with policy provisions.

The Department's acceptance of deficient evidence of insurance does not constitute a waiver of Contract requirements.

Failure to maintain the specified insurance or to provide substitute insurance if an insurance carrier becomes insolvent, is placed in receivership, declares bankruptcy, or cancels a policy may be grounds for withholding Contract payments until substitute insurance is obtained, and may, in the Department's discretion, be sufficient grounds for declaring the Contractor in default.

30-07 EXECUTION AND APPROVAL OF CONTRACT. The successful bidder shall execute and return the Contract Form and all other required documents to the Department within the time specified, or within 15 days after receipt by the bidder if no time is specified. A contract is awarded only after it has been signed by the Contracting Officer.

30-08 FAILURE TO EXECUTE CONTRACT. If the successful bidder fails to appropriately execute and return the Contract Form and other documents within time specified, as required above, the Department may cancel the intent to award and keep the bid guaranty. The Department will then, in its discretion, award the Contract to the next lowest responsive and responsible bidder or readvertise the work.

30-09 ORAL STATEMENTS. The written terms of the Contract are binding. No oral statement of any person shall, in any manner or degree, modify or otherwise affect, change, or amend the terms of the Contract.

30-10 INTEGRATED CONTRACT. This Contract is an integrated document and contains the complete agreement and understanding of the parties. There are no unwritten agreements or understandings between the parties. Changes ordered or agreed upon, Directives given, or Equitable Adjustments issued under this Contract, and all other matters affecting the Contract, must be in writing in order to be binding and effective.

SECTION 40 SCOPE OF WORK

40-01 INTENT OF CONTRACT. The intent of the Contract is to provide for the construction and completion of every detail of the described work. The Contractor shall furnish all labor, material, supervision, equipment, tools, transportation, supplies, and other resources required to complete the work in the time specified and according to the Contract.

The Contractor is responsible for the means, methods, techniques, sequence, and procedures of construction, safety, and quality control, and is responsible to perform and furnish the work in accordance with the Contract documents and any applicable federal, state, and local laws, rules, regulations, and ordinances.

40-02 CHANGES.

- a. **Within Contract Scope.** The Engineer may order changes within the general scope of the Contract at any time, and without notice to sureties, including altering, ordering additions to, or ordering deletions of quantities of any item or portion of the work. These changes shall be made by a written Change Order and shall not invalidate the Contract or release the sureties.
 - (1) If the change does not materially differ in character or unit cost from specified Contract work, the Contractor shall perform the work at the original contract measurement methods and prices, subject to the provisions of Subsection 90-04.
 - (2) If the change is materially different in character or unit cost from that specified in the Contract, a new Contract Item will be established, and an equitable adjustment to Contract price and Contract time shall be calculated by one of the following methods:
 - (a) The Engineer and Contractor agree upon an adjustment to Contract price and Contract time, and the Engineer issues a change order for the described work;
 - (b) The Engineer requires the Contractor to proceed with the described work, with an adjustment to contract price and contract time, calculated by time and materials basis under Subsection 90-05, and the Engineer issues a change order for the work. The Contractor shall keep complete daily records of the cost of such work; or
 - (c) The Engineer may issue a unilateral Change Order requiring the Contractor to proceed with the work with an adjustment to the payment amount or Contract time based on the Engineer's estimate of reasonable value. The Contractor shall keep complete daily records of the cost of such work.
 - (3) If the Engineer eliminates a Contract item, the Contractor shall accept compensation under Subsection 90-09.
- b. **Outside Contract Scope.** Changes determined to be outside the general scope of the Contract shall be made only by Supplemental Agreement issued according to AS 36.30 and the State's procurement regulations. Additional bonding or insurance may be required.
- c. **Cost and Pricing Data.** Before a Change Order or Supplemental Agreement covering work for which there is no established Contract price will be written, the Contractor shall submit detailed cost or pricing data regarding the changed work. The cost or pricing data shall include an itemization of production rates and all costs including labor, materials, and equipment required for the work. The Contractor shall certify that the data submitted are, to the best of its knowledge and belief, accurate, complete, and current as of a mutually agreed date and that the data will continue to be accurate and complete during the performance of the changed work.

- d. **Time Analysis.** Before a Change Order or Supplemental Agreement that adds or subtracts time from the Contract will be written, the Contractor shall provide an analysis and documentation demonstrating changes to controlling items of work that affect Contract time. The Contractor shall certify that the data submitted are, to the best of its knowledge and belief, accurate, complete, and current as of a mutually agreed date and that the data will continue to be accurate and complete during the performance of the changed work.

40-03 DIFFERING SITE CONDITIONS. If, during the progress of the work, a differing site condition is discovered, the party discovering the differing site condition shall promptly notify the other party in writing of the specific differing conditions. The written notification shall occur before the site is further disturbed and before the affected work is performed. A differing site condition is defined as:

- a. Subsurface or latent physical conditions at the site, differing materially from those shown in the Contract documents, that could not have been discovered by a careful examination of the site; or
- b. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

When the Contractor is the discovering party, failure of the Contractor to give the Engineer prompt written notice of the alleged differing site condition as required under this section constitutes a waiver of any future claim arising from or relating to the alleged differing site condition.

Unless otherwise directed by the Engineer, the Contractor shall leave the affected area undisturbed and suspend work in that area until the Engineer investigates the conditions.

The Engineer will notify the Contractor of the determination whether or not an adjustment of the contract is warranted. If the Engineer finds that such conditions differ materially and increase or decrease the cost of, or the time required for, performance of the Contract, the Engineer will prepare a Change Order for an Equitable Adjustment to the Contract. The Contractor shall cooperate with the Engineer's preparation of the Change Order, and submit data for actual costs and time to perform differing site work according to Subsection 40-02.

The Change Order will provide an equitable adjustment to Contract price and Contract time, as agreed, to perform the work under a differing site condition. The Change Order will not include expected reimbursement, or anticipated profits suffered or claimed, for the work affected by the differing site condition.

If the Contractor and the Engineer are unable to reach an agreement concerning the alleged differing site condition, the Contractor may file a claim under Subsection 50-17.

The Contractor shall keep accurate and detailed records of the actual cost of the work done as a result of the alleged differing site condition and shall allow the Engineer access to those records. Failure to keep records, to provide the Engineer with access to those records, or to give the notice required above will bar any recovery for the alleged differing site condition.

40-04 USE OF MATERIALS FOUND ON THE WORK. Before using borrow, the Contractor shall utilize Useable Excavation to construct the embankment layer on the project. Useable Excavation is material encountered within the lines and grades of the project that is determined suitable by the Engineer under P-152-2.3, Suitable Material. For excavating the Useable Excavation and constructing the embankment with Useable Excavation, the Contractor shall be paid only the unit bid price for excavation. Hauling, placing, compacting and other activities required to construct the embankment with Useable Excavation shall be subsidiary to excavation, and the Contractor shall not be paid additional sums for those activities. The Engineer may approve the use of borrow when Useable Excavation is not available.

The Engineer may authorize the Contractor to use the Useable Excavation for Contract items other than construction of embankment, and the Contractor shall be paid both for the excavation of the Useable

Excavation and for the other Contract Item for which it is acceptably used. If this action results in a shortage of embankment material:

- a. The Contractor shall replace the Useable Excavation used for Contract items other than embankment, on a yard for yard basis with borrow acceptable to the Engineer; and
- b. This replacement shall be at the Contractor's expense and at no additional cost to the Department. The Contractor shall pay any royalties required for the borrow.

The Contractor shall not excavate or remove any material that is within the project limits but outside the lines and grades, without written authorization from the Engineer.

In the event the Contractor has processed material from state-furnished sources in excess of the quantities required for performance of the Contract, the Department may retain possession of the surplus processed materials, including any waste material produced as a by-product, without obligation to pay the Contractor for processing costs. When the surplus materials are in a stockpile, the Engineer may direct the Contractor to leave the materials in the stockpile, level the stockpile(s) or remove the materials and restore the premises to a satisfactory condition at no additional cost to the Department.

The Contractor may temporarily use material from a structure that is designated to be removed to erect a new structure, but shall not cut or otherwise damage such material without the Engineer's approval.

40-05 MAINTENANCE OF TRAFFIC. It is the explicit intention of the Contract that the safety of aircraft, the public, the airport's equipment and personnel, and the Contractor's equipment and personnel, shall be the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport, except as specifically provided in this Contract or in the SPCD, with respect to its own operations and the operations of all its subcontractors. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft, whenever the airport is open to the arrival or departure of aircraft as detailed on the plans, CSPP, and SPCD.

With respect to the Contractor's own operations and the operations of all the Contractor's subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying: personnel; equipment; vehicles; storage areas; and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, maintenance vehicles, or support vehicles at the airport.

When the Contract requires the maintenance of vehicular traffic on an existing roadway, the Contractor shall keep such roadway open to all traffic, and shall provide such maintenance as may be required to accommodate traffic and to keep the roadway smooth and even. The Contractor shall furnish, erect, and maintain barricades, warning signs, flaggers, and other traffic control devices in reasonable conformity with the *Manual on Uniform Traffic Control Devices for Streets and Highways* (published by the United States Government Printing Office) and the *Alaska Traffic Manual Supplement*, unless otherwise specified by the Department. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roadways, and as required in Subsection 50-13.

The Contractor shall make their own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of aircraft and vehicular traffic as specified in this subsection.

The cost of maintaining the aircraft and vehicular traffic specified in this subsection shall not be measured or paid for directly, but shall be subsidiary to the various contract items, except when pay items are included in the bid schedule that directly pay for traffic control measures. The traffic control measures included for payment will be specifically described under those items.

40-06 REMOVAL OF EXISTING STRUCTURES. The Contractor shall leave in place, work around and protect from damage existing structures encountered within the project lines and grades; unless such existing structures are to be removed, demolished, relocated, or salvaged.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the Plans, the Contractor shall notify the Engineer prior to disturbing such structure. The Engineer will determine the disposition of existing structures so encountered according to the provisions of the contract.

The cost of working around and protecting existing structures, or removing existing structures including landfill waste fees, shall not be measured or paid for directly, but shall be subsidiary to the various contract items.

Structures that may be encountered within the project lines and grades shall be utilized in the work, and shall remain the property of the owner when so utilized in the work, unless otherwise indicated in the Contract.

40-07 CLEANUP. The Contractor shall remove all rubbish, solid waste, temporary structures, excess materials, and equipment from the project site, from state owned materials sources, and from all work areas before project completion, or seasonal suspension of construction activities.

SECTION 50 CONTROL OF WORK

50-01 AUTHORITY OF THE ENGINEER. The Engineer has immediate charge of the engineering details of the project and is responsible for Contract administration. The Engineer has authority to reject defective material and suspend work not performed in accordance with the Contract. The Engineer has authority to accept completed work, issue Directives, Interim Work Authorizations, and Change Orders, and recommend Contract payments.

The Engineer will decide all questions about the quality and acceptability of the materials furnished and whether the work performed by the Contractor was in accordance with the Contract, the Contractor's rate of progress, Contract interpretation and all other questions relating to Contract compliance.

The Engineer has authority to suspend work for reasons listed under Subsection 80-06. If the suspension is to protect the traveling public from imminent harm, the Engineer may orally order the suspension of work. Following an oral order of suspension, the Engineer will promptly give written notice of suspension to the Contractor. In other circumstances, the Engineer will give the Contractor written notice of suspension before suspension of work. A notice of suspension will state the defects or reasons for a suspension, the corrective actions required to stop suspension, and the time allowed to complete corrective actions. If the Contractor fails to take the corrective action within the specified time, the Engineer may:

- a. Suspend the work until it is corrected; and
- b. Employ others to correct the condition and deduct the cost from the Contract amount.

The Engineer may, at reasonable times, inspect any part of the plant or place of business of the Contractor or any subcontractor that is related to Contract performance, including private or commercial plants, shops, offices, or other places of business.

The Engineer may audit all books and records related to performance of the Contract, whether kept by the Contractor or a subcontractor, including cost or pricing data submitted under Subsection 40-02.

50-02 PLANS AND WORKING DRAWINGS. The Department shall provide the Contractor at least two full size sets of the conformed Plans and Contract including Special Provisions. If cross-sections are available, one set will be provided if requested in writing by the Contractor. The Contractor shall keep a complete set of these documents available on the project site at all times.

The Contractor shall supplement structure plans with working drawings that include all details that may be required to adequately control the work and that are not included in the Plans furnished by the Department. The Contractor shall not perform work or order materials until the working drawings for such work, or for changes, are approved by the Engineer. The Engineer's approval of working drawings or changes shall not be deemed a determination that the working drawings or changes comply with federal, state or local laws, rules, regulations and ordinances. It is Contractor's duty to ensure the working drawings comply with the Contract and any applicable federal, state or local laws, rules, regulations, and ordinances.

The Contractor shall submit to the Engineer for approval any required preliminary detail or working drawings. The project name and number shall be stated in the title block for all drawings, as shall the state bridge number, when applicable. The Contractor shall submit drawings in either an electronic or paper format that is acceptable to the Engineer. When paper copies are submitted, provide three sets.

The Contractor shall submit drawings to the Engineer in time to allow for review and correction before beginning the work detailed in the drawing. The Engineer shall return one set of these drawings, either approved or marked with corrections to be made, and shall retain the other sets. The Engineer's approval of working drawings does not change the Contract requirements or release the Contractor of the responsibility for successful completion of the work.

The Contractor is responsible for the accuracy of dimensions and details and for conformity of the working drawings with the Plans and Specifications. The Contractor shall indicate clearly on the working drawings any intended deviations from the Plans and Specifications and itemize and explain each deviation in the Contractor's transmittal letter. The Engineer may order the Contractor to comply with the Plans and Specifications at the Contractor's sole expense if the approved working drawings deviate from the Plans and Specifications and the Contractor failed to itemize and explain the deviations in the Contractor's transmittal letter.

Once the Contractor receives approval of the working drawings, the Contractor shall furnish to the Engineer:

- a. Enough additional copies to provide eight approved sets of prints;
- b. One set of reproducible transparencies (polyester film); and
- c. If requested, an electronic file in AutoCAD drawing interchange format (.DXF).

The Contractor shall include the cost of furnishing all working drawings in the Contract price.

50-03 CONFORMITY WITH PLANS AND SPECIFICATIONS. Work performed and materials furnished shall conform to the Plans, Specifications and approved Working Drawings, and be within specified tolerances. When tolerances are not specified, the Engineer will determine the limits allowed in each case.

All work or material not conforming to the Plans, Specifications, and approved Working Drawings is considered unacceptable unless the Engineer finds that reasonably acceptable work has been produced. In this event, the Engineer may allow non-conforming work or material to remain in place, but at a reduced price. The Engineer will document the basis of acceptance and payment by Change Order, unless the contract specifies a method to adjust the price of that item.

The failure of the Department to strictly enforce the Contract in one or more instances does not waive its right to do so in other or future instances.

50-04 COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS. These Standard Specifications, Plans, Special Provisions, and all supplementary documents are essential parts of the Contract. They are intended to complement each other and describe and provide for a complete project. A requirement occurring in one is as binding as if occurring in all.

In case of conflict, calculated dimensions will govern over scaled dimensions. In the event that any of the following listed contract documents conflict with another listed contract document, the order of precedence is (with **a.** having precedence over **b.**, and **b.** having precedence over **c.**, etc.):

- a. Special Provisions
- b. Plans
- c. Standard Specifications
- d. Materials testing standards
- e. FAA Advisory Circulars

The Contractor shall not take advantage of any apparent error or omission in the Contract documents. The Contractor may not base a claim for additional compensation or Contract time on a patent error, omission, or conflict in the Contract documents. The Contractor shall notify the Engineer immediately of any apparent errors or omissions in the Contract documents. The Engineer will make any corrections or interpretations necessary to fulfill the intent of the Contract.

50-05 COOPERATION BY CONTRACTOR. The Contractor shall give the work the constant attention necessary for its progress, and shall cooperate fully with the Engineer, Department staff, and other contractors in every way possible.

Either the Contractor's Superintendent or an acting Superintendent with authority to represent and act for the Contractor shall be available within the proximity of the project whenever work is occurring. The Contractor shall employ, as its agent, a competent superintendent thoroughly experienced in the type of work being performed and capable of reading and thoroughly understanding the Plans and Specifications. The Contractor shall provide 24-hour contact information for the Superintendent. The Contractor shall ensure that the superintendent is available at all times to receive and execute Directives and other instructions from the Engineer, to supervise workers and to coordinate the work of subcontractors. The Contractor shall give the superintendent full authority to supply the resources required. The Contractor shall furnish superintendence regardless of the amount of work sublet.

50-06 UTILITIES.

a. Bid Considerations. Bidders shall include in their bid the cost of:

- (1) Providing uninterrupted operation of all visual and electronic signals, including power supplies and Lighting used in the guidance of aircraft, except as specified in the CSPP and SPCD;
- (2) All utility work that is specified in the Contract as work to be performed by the Contractor;
- (3) Working around or through all permanent and temporary utilities shown on the Plans, in both their present and adjusted positions;
- (4) Accommodating the removal, adjustment, or relocation of utilities shown on the Plans by entities other than the Contractor;
- (5) Construction and removal of temporary utilities, to provide temporary utility service during the construction or repair of a permanent utility; and
- (6) Other utility work not specifically identified as compensable in Subparagraph d Compensation.

The Department will show the approximate locations of utilities it knows to be within the work zone on the Plans. Bidders shall expect that the location, elevation and nature of utilities may vary from what is shown on the Plans and shall factor those contingencies into the bid price. Additional utilities may exist that are not shown on the Plans. Compensation related to utilities not shown on the plans will only be available according to Subparagraph d Compensation.

When an entity other than the Contractor is to remove, adjust, or relocate any utility, or perform other utility related work within the project boundaries, the applicable completion dates or specific calendar days to complete the removal, adjustment, relocation, or other utility related work may be stated in the Special Provisions. If no date is stated in the Special Provisions, the Contractor shall work cooperatively with the utility owner during the Project.

b. Cooperation with Utility Owners. The Contractor assumes the obligation of coordinating their activities with utility owners, and shall cooperate with utility owners to facilitate removal, adjustment, or relocation operations, avoid duplication of work, and prevent unnecessary interruption of services. When a utility owner is identified in the Contract as being responsible for removing, adjusting, or relocating a utility, the Contractor shall give the utility owner 15 days advance written notice regarding the dates when the utility owner is required to begin and end operations. The Contractor shall allow the utility up to 15 additional working days to secure a contractor, if needed, to begin operations.

The Contractor shall cooperate with utility owners to determine a utility progress schedule for all parties' utility work. The Contractor shall submit the schedule to the Engineer before beginning

that portion of utility work. The Contractor shall update the utility progress schedule monthly and shall note time delays and their cause.

Utility owners are not required to work in more than one location at a time, and shall be allowed to complete a specific section of work prior to commencing another section. Utility owners will not normally perform adjustment or relocation of underground utilities when the ground is frozen. Utility owners may prohibit the Contractor, through the Engineer, from working near utilities when the ground is frozen.

The Department has sole discretion to grant permits for utility work within the state right-of-way. The Contractor shall allow parties with utility permits to work and make excavations in the project.

If utility owners do not complete their work in a timely manner, the Engineer may direct the Contractor to temporarily relocate the utilities, to construct new utilities, or to make necessary repairs to complete the utility work.

Contractor shall comply with all provisions of subsection GCP 80-04g.

c. Utility Work. The Contractor shall:

The Contractor is responsible for requesting locates from all utilities having facilities in the area. Initiate locates for the following utilities by contacting the Locate Call Center at 278-3121 or 800-478-3121:

Alaska communications (ACS)
Anchorage Water & Wastewater Utility (AWWU)
Chugach Electric Association (CEA)
Enstar Natural Gas Company (Enstar)
General Communications, Inc. (GCI)
Menzies Aviation

In addition, contact the following utilities separately and individually for locates of their utility lines. All costs associated with this work are considered subsidiary to other pay items and no separate payment will be made.

<u>ANC Field Maintenance</u>	<u>266-2425</u>
<u>ANC Field Maintenance, Electric</u>	<u>266-2423</u>
<u>FAA Anchorage SSC</u>	<u>271-6783</u>
<u>FAA Turnagain SSC</u>	<u>271-6780</u>

When operations are anticipated to occur within 3 feet of an underground utility line according to locates provided by the owning Utility, advise the owning Utility in writing at least 24 hours in advance of the work. In the notice, indicate the location and duration of the work to be performed.

When the Contractor's equipment is operating in such a way that any part is capable of reaching within 10 feet of an underground fuel line, according to locates provided by the owning Utility, advise the owning Utility in writing at least 14 days in advance of the work. In the notice, indicate the location and duration of the work to be performed.

Contact the FAA for locates prior to excavation. The FAA has various navigational aids and other equipment in operation at ANC. The approximate location of the power cable, control cables and equipment is shown on the plans. There may be cables and equipment that are not shown on the plans.

- (1)** Make all necessary arrangements with utility owners to locate all utilities that may be within an area of work before excavation in that area, according to AS 42.30.400;

- (2) Provide right-of-way staking and construction staking with lines and grades before excavation in that area;
- (3) Prevent damage to utilities or utility property within or adjacent to the project;
- (4) Carefully uncover utilities where they intersect the work;

Work around existing underground utilities. When utility lines are found in areas of excavation, hand dig pot-holes every 100 feet along the line to maintain visibility of the line. Excavations shall be hand dug when within 2 feet of an underground utility. This hand work is subsidiary to the applicable item(s) of work being performed that require this service.

Survey the horizontal location, elevation, and depth below ground of all utilities exposed by potholing and project excavations as described in Section G-150.

- (5) Immediately stop excavating in the vicinity of a utility and notify the Engineer and the utility owner if an underground utility is discovered that was not field marked or was inaccurately field marked;
- (6) Promptly notify the utility owner, the Engineer, and the Airport Manager in the event of accidental interruption of utility service, and cooperate with the utility owner and the Engineer until service is restored;
- (7) Take all precautions necessary to protect the safety of workers and the public when performing work involving utilities;
- (8) Follow an approved TCP;
- (9) Keep the length of open trench excavation to a minimum, backfill trenches as work is completed;
- (10) Cover open trenches with metal plates capable of bearing traffic where traffic will cross trenches;
- (11) Maintain continuous utility service and install temporary utility systems where needed;
- (12) Ensure all excavation conforms to AS 42.30.400 – 42.30.490;
- (13) Ensure all excavation and utility work conforms to excavation requirements in 29 CFR 1926, Subpart P, and confined space requirements in 29 CFR 1926.21(b)(6);
- (14) Ensure all work undertaken near energized high voltage overhead electrical lines or conductors conforms to AS 18.60.670, AS 18.60.675, AS 18.60.680 or other applicable law;
- (15) Ensure all work undertaken near gas lines, fuel lines, and energized high voltage underground electric lines or conductors, or any other utility lines conforms to all applicable laws and safety requirements of the utility owner;

When working near Chugach Electric Association facilities, adhere to the requirements in *Electrical Facility Clearance Requirements* attached to these specifications as an appendix or available from the utility owner.

When working near ENSTAR Natural Gas Company facilities, adhere to the requirements in *Safety Requirements for Excavation Adjacent to Natural Gas Pipelines* attached to these specifications as an appendix or available from the utility owner.

- (16) When required by the utility owner, provide for a cable watch of overhead power, underground power, telephone, and gas;

Provide an attendant, employed by and representing the utility owner, whose sole responsibility is to perform as a safety observer while equipment is operating such that any part is capable of reaching within 10 feet of an electrical, gas, or fuel line. Providing a safety observer for a utility watch will not be paid for separately, but is considered subsidiary to the item(s) of work being performed that require these services.

- (17) Obtain plan approval from the local fire authority, and provide for the continued service of fire hydrants, before working around fire hydrants;
- (18) Do all pressure testing or camera testing required to verify utility acceptance in a timely manner; and
- (19) Coordinate the Storm Water Pollution Prevention Plan (SWPPP) (Item P-641) with their work and the utility companies' work.

d. Compensation.

- (1) Except as otherwise specifically provided in this Subparagraph d, no equitable adjustment will be paid by the Department:
 - (a) Due to any variations in location, elevation, and nature of utilities shown on the Plans, or the operation of removing, adjusting, or relocating them;
 - (b) For any delays, inconvenience, or damage sustained as a result of interference from utility owners, interference from utilities, or interference from the operation of removing, adjusting, or relocating utilities; or
 - (c) For any adjustments or relocations of utilities requested for the Contractor's convenience.
- (2) Except as otherwise specifically provided in this Subparagraph d, the Engineer will issue a Change Order with equitable adjustment if:
 - (a) Utilities not shown on the Plans require removal, adjustment, or relocation;
 - (b) Conflicts occur between utilities not shown on the Plans and other necessary work; or
 - (c) Conflicts due to the required elevation of a utility occur between new and existing utilities that are both shown on the Plans.
- (3) When the Contractor damages utilities, the utility owner may choose to repair the damage or require the Contractor to repair the damage. When the Contractor damages utilities:
 - (a) No equitable adjustment will be paid by the Department, and the Contractor shall be solely responsible for repair costs and expenses, when:
 - 1. The Contractor failed to obtain field locates before performing the work that resulted in the damage;
 - 2. The utility was field located by the utility owner or operator, and the field locate is accurate within 24 horizontal inches if the utility is buried 10 feet deep or less, or the field locate is accurate within 30 horizontal inches if the utility is buried deeper than 10 feet;
 - 3. The plan profile or the field locate does not indicate or inaccurately indicates the elevation of a buried utility;
 - 4. The utility is visible in the field; or

5. The Contractor could otherwise reasonably have been aware of the utility.
- (b) The Engineer will issue a Change Order with an equitable adjustment for the cost of repairing damage if:
1. The field locate by the owner or operator of a buried utility erred by more than 24 horizontal inches if the utility is buried 10 feet deep or less, or 30 horizontal inches if the utility is buried deeper than 10 feet;
 2. The utility was not shown on the Plans or other Contract documents, and the Contractor could not reasonably have been expected to be aware of the utility's existence; or
 3. The Contractor made a written request for a field locate according to AS 42.30.400, the utility owner did not locate the utility according to AS 42.30.410, and the Contractor could not reasonably have been expected to be aware of the utility's existence or location.
- (4) If a delay is caused by a utility owner, is beyond the control of the Contractor, and is not the result of the Contractor's fault or negligence, the Engineer may issue a Change Order with an equitable adjustment to contract time, but no equitable adjustment will be made for the cost of delay, inconvenience or damage. Additional contract time may be granted if the cause of delay is because a utility owner is to perform utility work:
- (a) By dates stated in the Special Provisions, and the utility work is not completed by the dates stated; or
 - (b) In cooperation with the Contractor and the utility owner does not complete the work in a timely manner, based on a written progress schedule agreed upon by the Contractor, the utility owner, and the Engineer.
- (5) If the Engineer orders the Contractor to make necessary construction or repairs due to incomplete utility work by utility owners, the Contractor will be paid as specifically provided for in the Contract, or the Engineer will issue a Change Order with equitable adjustment.
- e. **Cooperation with Airport Operations CenterManagement and FAA.** The Contractor shall coordinate their activities and cooperate with the Airport Operations CenterManagement and the FAA, and shall provide 45 days advance written notice to them before working on utilities in the Air Operations Area. All coordination with Airport Operations CenterManagement and the FAA shall be through the Engineer. Refer to the CSPP for coordination requirements. The Contractor shall include and cooperate with Airport Operations CenterManagement, the FAA, and the Engineer, in determining a utility progress schedule for work on the Airport Property.

The Contractor shall submit a written plan to repair damaged utilities to the Engineer, and shall follow the plan when repairing damaged utilities. The plan shall identify repair personnel or subcontractors. The Contractor shall not work on or adjacent to utilities unless repair personnel are available to repair damaged utilities. Personnel repairing utilities shall be licensed for the work required, and shall have the tools and material required to repair damaged utilities within the time limits required.

When damage affects, or may in the Engineer's opinion affect, the function of navigational or visual aids, the Contractor shall repair damage within two hours. When damage affects, or may in the Engineer's opinion affect, the function of utilities, the Contractor shall repair the damage within 24 hours.

50-07 COOPERATION BETWEEN CONTRACTORS. The Department may, at any time, contract for and perform other or additional work on or near the Project. The Contractor shall allow other contractors reasonable access across or through the Project.

The Contractor shall cooperate with other contractors working on or near the Project, and shall conduct work without interrupting or inhibiting the work of other contractors. All contractors working on or near the Project shall accept all liability, financial or otherwise, in connection with their Contract. No claim shall be made by the Contractor or paid by the Department for any inconvenience, delay, damage or loss of any kind to the Contractor due to the presence or work of other contractors working on or near the Project.

The Contractor shall coordinate and sequence the work with other contractors working within the same project limits. The Contractor shall properly join the work with work performed by other contractors and shall perform the work in the proper sequence to that of the others. The Contractor shall arrange, place, and dispose of materials without interfering with the operations of other contractors on the same project. The Contractor shall defend, indemnify and save harmless the Department from any damages or claims caused by inconvenience, delay, or loss that the Contractor causes to other contractors.

The following state owned projects may be under construction concurrently with this project.

<u>Project Name:</u>	<u>Project No.:</u>
<u>ANC Taxiway R North Improvements</u>	<u>CFAPT00880</u>
<u>ANC North Terminal Aprons & Taxilane Reconstruction</u>	<u>CFAPT00881</u>
<u>LHD Aircraft and Lakeshore Drive Repairs</u>	<u>CFAPT00882</u>
<u>ANC Access Gate & HBO Installation</u>	<u>CSAPT00931</u>
<u>ANC Terminal Water Main Improvements</u>	<u>CFAPT00993</u>
<u>ANC Taxilane E and M Improvements</u>	<u>CFAPT01002</u>
<u>ANC RON `12-14 Rehabilitation</u>	<u>CFAPT01192</u>
<u>ANC Taxilane V Gate Reconstruction</u>	<u>CFAPT01278</u>
<u>ANC ATCT Replacement Parking</u>	<u>CRMBS00831</u>

50-08 SURVEY CONTROL. The Department will provide sufficient horizontal and vertical control data to establish the planned lines, grades, slopes, shapes, and structures. The Contractor shall provide all additional survey work to maintain control during the project.

50-09 DUTIES OF THE INSPECTOR. The Department's inspectors are authorized to examine all work done and materials furnished, but cannot approve work or materials. Only the Engineer can approve work or materials. The inspectors can reject work or materials until any issues can be referred to and decided by the Engineer. The inspectors may not alter or waive any Contract requirements, issue instructions contrary to the Contract or act as foremen for the Contractor.

50-10 INSPECTION OF WORK. All materials and each part and detail of the work shall be subject to inspection by the Department for compliance with the Contract. The Contractor shall allow safe access to all parts of the work and provide information and assistance to the Engineer to ensure a complete and detailed inspection.

Any work done or materials used without inspection by an authorized Department representative may be ordered removed and replaced at the Contractor's expense, unless the Department failed to inspect after being given reasonable written notice that the work was to be performed.

The Contractor shall remove and uncover portions of finished work when directed. After inspection, the Contractor shall restore the work to Contract requirements. The cost to uncover and restore work shall be at the Contractor's expense, except the Department will pay the cost to uncover and restore work if (1) an authorized Department representative had previously inspected the work or the Contractor had provided

reasonable prior written notice that the work was to be performed and (2) the Department finds the uncovered work to be acceptable. If the Department finds the uncovered work to be unacceptable, the cost to correct the work, or remove and replace the work, shall be at the Contractor's expense.

Representatives of Contract funding agencies have the right to inspect the work. This right does not make that entity a party to the Contract and does not interfere with the rights of parties to the Contract.

The Department's observations, inspections, tests and approvals shall not relieve the Contractor from properly fulfilling its Contract obligations and performing the work according to the Contract. Work that has been inspected but contains latent or hidden defects shall not be deemed acceptable even though it has been inspected and found to be according to the Contract.

The State of Alaska Department of Labor may require electrical inspection of Public Structures. The Contractor shall request inspection by contacting the Electrical Inspector in Anchorage, Alaska, Phone (907) 269-4925. The Contractor shall request inspection a minimum of two weeks prior to the expected date of inspection being needed. If more than one item requires inspection, the Contractor shall submit a list to the Engineer and Electrical Inspector, with dates for all stages that requires inspection. The Department has no control over or responsibility for the timing of inspections by the Electrical Inspector.

50-11 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK. All work that does not conform to the requirements of the Contract shall be deemed unacceptable by the Engineer, unless otherwise determined acceptable under Subsection 50–03. The Contractor shall correct, or remove and replace, work or material that the Engineer deems unacceptable, as ordered by the Engineer and at no additional cost to the Department.

The Contractor shall establish necessary lines and grades before performing work. Work done before necessary lines and grades are established, work done contrary to the Department's instructions, work done beyond the limits shown in the Contract, or any extra work done without authority, will be considered as unauthorized and shall not be paid for by the Department, and may be ordered removed or replaced at no additional cost to the Department.

If the Contractor fails to promptly correct, remove, or replace unacceptable or unauthorized work as ordered by the Engineer, the Engineer may employ others to remedy or remove and replace the work and will deduct the cost from the Contract payment.

50-12 LOAD RESTRICTIONS. The Contractor shall comply with all vehicle legal size and weight regulations of 17 AAC 25 and the *Administrative Permit Manual*, and shall obtain permits from the DOT&PF Division of Measurement Standards & Commercial Vehicle Enforcement before moving oversize or overweight equipment on a state highway. Overweight vehicle movements must also be approved by ANC Engineering, through the Engineer.

The Engineer may permit oversize and overweight vehicle movements within the project limits provided the Contractor submits a written request and an acceptable Traffic Control Plan. No overloads will be permitted on a pavement, base or structure that will remain in place in the completed project. The Contractor shall be responsible for all damage done by their equipment due to overloads, and for damage done by a load placed on a material that is curing and has not reached adequate strength to support the load.

50-13 MAINTENANCE DURING CONSTRUCTION. The Contractor shall maintain the airport and related airport facilities located within the project from the date construction begins until the Contractor receives a letter of project completion. The Contractor shall maintain these areas continually and effectively on a daily basis, with adequate resources to keep them in satisfactory condition at all times. The Contractor shall maintain those areas outside the project that are affected by the work, such as haul routes, detour routes, structures, material sites, and equipment storage sites during periods of their use.

Do not place foreign objects and debris (FOD) or any debris capable of causing damage to aircraft landing gears or propellers or of being ingested in jet engines on surfaces in active aircraft movement

areas. Ensure that all loose material and debris has been removed from the sides of equipment and haul vehicles prior to travel on airport or road surfaces. Keep all active runway, taxiway, and apron areas free of materials spilled by the Contractor's operations. Clean spilled materials off of closed runways, taxiways, or aprons prior to opening these areas to aircraft. If FOD is spilled on an active runway, taxiway, or apron, remove it immediately. The Engineer reserves the right to suspend all hauling operations until FOD is removed from active aircraft movement areas. Hauling time lost due to the suspended haul will not be considered reason to extend contract time or reason for a claim. The Engineer will allow hauling to continue when the spilled material is cleaned up to his satisfaction. FOD preventive measures and FOD cleanup of runways, taxiways, haul routes, and equipment is subsidiary to the contract and no additional payment will be made. Refer to GCP 80-04f for hauling routes and restrictions.

The Engineer may relieve the Contractor of this maintenance responsibility for specified portions of the project:

- a. During a seasonal suspension of work. Approximately one month prior to seasonal suspension of work, the Contractor shall hold a preliminary meeting with the Engineer and Airport Management to outline the work the Contractor expects to complete before shut down and the condition the project is to be left in. The Contractor shall then schedule a field review for acceptance by the Department for winter maintenance. At the field review a punch list shall be prepared for implementation prior to acceptance. In order for the Contractor to be relieved of winter maintenance responsibility, the surface of all embankments shall be properly crowned for drainage, all edge lighting shall be in good working order, and all NAVAIDS installed by the Contractor shall first have been accepted by the FAA. After acceptance for winter maintenance and until the Contractor resumes construction operations, maintenance of the facility agreed upon will be the responsibility of the Department; or
- b. Following partial completion (Subsection 50-14); or
- c. Following project completion (Subsection 50-15).

The Department is responsible for routine snow removal and ice control only on those portions of the project that the Department accepts for maintenance.

The Contractor shall maintain previously constructed work until a subsequent course, layer, or structure covers that work. The Contractor shall repair damage done to the work as described in Subsection 70-15.

All costs of maintenance work shall be subsidiary to the prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

If in the Engineer's opinion, the Contractor at any time fails to provide adequate maintenance, the Engineer will notify the Contractor of such noncompliance. The notification will specify the areas or structures for which there is inadequate maintenance, the corrective maintenance required, and the time allowed to complete corrective maintenance. If the Contractor fails to take the corrective action within the specified time, the Engineer may:

- a. Suspend the work until corrective maintenance is completed;
- b. Assess a traffic price adjustment against the Contract Amount when an adjustment rate is specified in the Contract; and
- c. Employ others for corrective maintenance and deduct the cost from the Contract amount.

50-14 PARTIAL COMPLETION. The Contractor may submit a written request for partial acceptance of a substantially complete geographically separate portion of the project. The Engineer will accept the portion in writing before project completion and relieve the Contractor of further maintenance responsibility for the completed work, if the Engineer inspects the portion and finds that it is substantially complete to Contract requirements, and acceptance is in the best interest of the State.

Partial completion of the portion neither voids nor alters any Contract terms.

50-15 PROJECT COMPLETION. The Contractor shall notify the Engineer, in writing, upon substantial completion of all work provided for under the Contract. The Engineer will then schedule and conduct the final inspection. If the inspection discloses that any work is incomplete or unsatisfactory, the Engineer will give the Contractor a list of work items that must be completed or corrected to reach substantial completion and to reach final completion. The Contractor shall promptly complete or correct any work determined unsatisfactory by the final inspection and request a re-inspection.

The Engineer will identify the date of substantial completion in a letter of substantial completion. The letter of substantial completion will relieve the Contractor of further maintenance responsibility of the completed work. The letter of substantial completion will not stop Contract time or relieve the Contractor of the obligation to fully complete the work as required by the Contract specifications.

When all physical work and cleanup provided for under the Contract is found to be complete, the Engineer will issue a letter of project completion. Project completion stops the Contract time, but does not relieve the Contractor of any other Contract obligations.

50-16 FINAL ACCEPTANCE AND RECORD RETENTION. The Department will issue the letter of Final Acceptance after all of the following:

- a. Project completion;
- b. Receipt of all certificates, as-builts, warranties, and other required documents;
- c. Receipt of the Contractor's Release, with no exceptions;
- d. Certification of payment of payroll and revenue taxes by DOLWD and State Dept. of Revenue; and
- e. Final payment under the Contract.

Final Acceptance will release the Contractor from further Contract obligations, except those:

- a. Specified under Subsection 70-19;
- b. Required by law or regulation; or
- c. Continuing obligations established by provisions of this Contract, such as warranty, guaranty, indemnity, insurance, or bond.

The Contractor and the subcontractors shall maintain all books and records relating to performance of the Contract for three years after the date of final payment of the Contract and each subcontract.

50-17 CLAIMS. The Contractor shall notify the Engineer as soon as the Contractor becomes aware of any act or occurrence that may form the basis of a claim for additional compensation or an extension of Contract time or of any dispute regarding a question of fact or interpretation of the Contract. The Engineer has no obligation to investigate any fact or occurrence that might form the basis of a claim or to provide any additional compensation or extension of Contract time unless the Contractor notifies the Engineer in a timely manner of all facts the Contractor believes form the basis for the claim.

If the Contractor believes that he is entitled to an extension of Contract time, the Contractor must state the contract section on which the extension request is based, provide the Engineer with sufficient information to demonstrate that the Contractor has suffered excusable delay, and show the specific amount of time to which the Contractor is claiming entitlement. The Department will not grant an extension of Contract Time if the Contractor does not timely submit revised schedules in accordance with Subsection 80-03.

If the basis of claim or dispute is not resolved by agreement within seven days of the date the Engineer is notified by the Contractor, the Contractor shall within the next fourteen days submit a Contractor Intent to Claim (Form 25D-18) to the Engineer. Failure to submit a Contractor Intent to Claim as required under this section constitutes a waiver of any future claim arising from or relating to the alleged act or occurrence.

If the Contractor believes additional compensation or time is warranted, the Contractor shall immediately begin keeping complete, accurate, and specific daily records concerning every detail of the potential claim including actual costs incurred, and shall give the Engineer access to any such records and furnish the Engineer copies, if requested. Equipment costs must be based on the Contractor's internal rates for ownership, depreciation, and operating expenses and not on published rental rates. In computing damages, or costs claimed for a change order, or for any other claim against the Department for additional time, compensation or both, the contractor must establish actual damages based on internal costs for equipment, labor or efficiencies. Total cost, modified total cost or jury verdict forms of presentation of damage claims are not permitted. Labor inefficiencies must be shown to actually have occurred and can be proven solely based on job records. Theoretical studies are not a permissible means of showing labor inefficiencies. Home office overhead will not be allowed as a component of any claim against the Department.

The Contractor shall submit a written claim to the Contracting Officer within 90 days after the date the Contractor became aware of the basis of the claim or should have known of the basis of the claim, whichever is earlier. Any Claim not filed within this 90-day period will be deemed irrevocably waived by the Contractor, regardless of whether the requested relief is sought for the ultimate benefit of the Contractor or its subcontractor(s). The Contracting Officer will issue a written acknowledgement upon receipt of the claim.

The Contractor waives any right to claim if the Engineer was not notified properly or afforded the opportunity to inspect conditions or monitor actual costs or if the Claim is not filed on the date required.

a. The written Claim must include all of the following:

- (1)** The act, event, or condition giving rise to the claim;
- (2)** The Contract provisions that apply to the claim and that provide for the requested relief;
- (3)** The item or items of Contract work affected and how they were affected;
- (4)** The specific relief requested, including Contract time if applicable, and the basis upon which it was calculated;
- (5)** Revised progress schedules under Subsection 80-03; and
- (6)** A certification signed by the Contractor that to the best of the contractor's knowledge and belief, the data submitted is accurate, complete, and current and is the actual cost to the contractor or additional time for performing the additional work or supplying the additional materials.

b. The claim, in order to be considered, must show:

- (1)** That the Contractor suffered damages or delay;
- (2)** The damages or delay were caused by the act, event, or condition listed in the claim; and
- (3)** That the Contract entitled the Contractor for relief due to the act, event, or condition specified in the Claim.

The Department may request the Contractor to provide additional information relating to the claim at any time before issuing a decision. The Contractor shall provide the Department with the requested additional

information within 30 days of receiving a request. Failure to furnish the additional information may be regarded as a waiver of the claim.

The Contracting Officer will issue a decision within 90 days of receipt of all information relating to the claim. The time for the Contracting Officer to issue a decision may be extended according to AS 36.30.620.

The Contracting Officer's decision is final and conclusive unless the Contractor delivers a notice of appeal to the Commissioner within 14 days of receipt of the decision. The Contractor shall also serve a copy of the notice of appeal on the Contracting Officer.

Appeals from a Contracting Officer's decision shall be decided according to the State Procurement Code's appeal procedures, including AS 36.30.625, AS 36.30.627, AS 36.30.630, and AS 36.30.631.

Criminal and civil penalties authorized under AS 36.30.687 (including, but not limited to, forfeiture of all claimed amounts) may be imposed on the Contractor if the Contractor makes or uses a misrepresentation in support of a claim, or defrauds or attempts to defraud the Department at any stage of prosecuting a claim under this Contract.

SECTION 60 CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS. The Contractor shall furnish all materials required to complete the work except those specified to be furnished by the Department. The Contractor shall supply materials that are new and that meet Contract requirements. All manufactured materials shall be delivered and stored in their original containers and shall show the manufacturer's name, brand, and identifying number.

The Contractor shall furnish airport lighting equipment that conforms to the requirements of cited materials specifications. In addition, where an FAA specification for airport lighting equipment is cited in the Plans or Specifications, the Contractor shall furnish such equipment that is certified and listed under AC 150/5345-53, *Airport Lighting Equipment Certification Program*.

The Contractor shall notify the Engineer of proposed sources of materials at least 30 days before shipment, and shall submit to the Engineer and to the Department's State Materials Engineer a complete list of materials to be purchased from suppliers sufficiently in advance of fabrication or shipment to permit the Department to inspect the materials.

The Department's inspectors may inspect any materials, including those originating outside Alaska, at the supply source or other locations. Materials may be conditionally approved at the supply source or other location, but are subject to field inspection and may be ordered removed under Subsection 50-11 if they do not conform to Contract requirements. Inspectors are authorized to reject materials that do not conform to specifications until any issues can be referred to and decided by the Engineer. Inspectors will report their actions to the Engineer.

The Contractor shall submit a manufacturer's certificate of compliance for each item listed on the Material Certification List. The Engineer may authorize the use of materials based on a manufacturer's certificate of compliance, see Subsection 60-05. Materials incorporated into the project on the basis of a manufacturer's certificate of compliance may be tested at any time, whether in place or not, and, if they do not conform to Contract specifications, they may be rejected and ordered removed under Subsection 50-11.

The Engineer may authorize the use of materials listed in the Department's *Qualified Products List*. Materials incorporated into the project on the basis of the *Qualified Products List* may be tested at any time, whether in place or not, and, if they do not conform to Contract specifications, they may be rejected and ordered removed under Subsection 50-11.

The Contractor may request substitution of specified materials with equivalent materials. Requests for substitution shall be submitted to the Engineer, and shall include a manufacturer's statement that certifies, for each lot delivered:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and
- b. Suitability for the use intended in the Contract work.

The Engineer will determine the acceptability of a proposed substitute for use in the project. If a substitute is approved, a Change Order will be executed. The Department is never required to accept substitution. The Contractor shall not incorporate substitute materials into the project without written approval from the Engineer. The Engineer may test substitute materials at any time, whether in place or not, and, if the substitute materials do not meet Contract specifications, they may be rejected and ordered removed under Subsection 50-11.

PROHIBITION ON CERTAIN TELECOMMUNICATION AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT. On projects using federal funds, the Contractor shall comply with the requirements of 2 CFR 200.216, Prohibition on certain telecommunication and video surveillance services or equipment, including any future amendments thereto that are applicable to the project.

By submitting a bid or by execution of the contract, the Contractor certifies that it has not entered into a contract nor extended or renewed a contract to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- Any entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

The Contractor further certifies that it has complied with the requirements of 2 CFR 200.216 and that it will continue to do so throughout the term of the Contract.

60-02 MATERIAL SOURCES.

a. General. The Contractor shall:

- (1) Utilize Useable Excavation according to Subsection 40-04 before using material sources listed in Subsection 60-02.d. When there is insufficient useable excavation furnish additional required materials from sources of the Contractor's choice, except that the Contractor shall use a mandatory source when identified in the Contract;
- (2) Produce a sufficient quantity of materials meeting the specifications to complete the project;
- (3) As a subsidiary cost: clear and grub, strip, drill and blast, excavate, crush, sort, blend, screen, wash, stockpile, haul, and rehandle material as needed to produce and deliver the specified product;
- (4) Determine the type of equipment and methods to be used;
- (5) Expect variations in material quality within the deposits, and procure material only from acceptable portions of the deposit, regardless of source ownership; and
- (6) Prevent erosion, sedimentation, and pollution within a materials source.

The Contractor agrees that:

- (7) The costs to explore and develop material sources, including all production effort, are subsidiary to the cost of providing the specified material;
- (8) The Engineer may order the Contractor to procure material only from certain portions of the source and may reject material from other portions of the source that does not conform to the specifications; and
- (9) All material required may not be procurable from any one source and the Contractor may need to change between sources. That contingency is to be factored into the unit bid price for the Contract Item.

b. Inspection and Acceptance. The Contractor shall perform sampling and testing during materials processing and placement according to its Quality Control Plan (Subsection 60-03.a.) and shall obtain acceptable material samples from locations designated within the source.

The Department will sample and test materials to determine the quality of the source, at its expense, as part of its Acceptance Testing (Subsection 60-03.b.). The Department will reject materials when

the samples do not meet specifications. The Department may reject a proposed materials site when samples do not meet specifications.

- c. **Awareness Training.** The operator of the Contractor's sand and gravel surface mine or other similar materials source shall provide Site-Specific Hazard Awareness Training in compliance with 30 CFR 46.11 for all the Engineer's personnel before beginning operations. All other workers shall be given training in compliance with 30 CFR 46 before exposure to mine hazards. The training must be offered at each surface mine that will be used to supply processed aggregates. A qualified person must provide the training. The training shall be according to the operator's written training plan approved by the Mine Safety and Health Administration, covering the following items:

- (1) Site-specific health and safety risks;
- (2) Recognition and avoidance of hazards;
- (3) Restricted areas;
- (4) Warning and evacuation signals;
- (5) Evacuation and emergency procedures;
- (6) Other special safety procedures; and
- (7) A site tour.

The Contractor shall require the Engineer's personnel to sign the *Visitor's Log Book* upon completion of the training to indicate that training was provided. Training is a subsidiary cost.

d. **Type of Sources.**

When there is insufficient Useable Excavation, as defined in Subsection 40-04, the Contractor shall supply additional required material from one or more of the following sources:

- (1) **Contractor-Furnished Sources.** For a material source that is a commercial plant as defined in Subsection 80-01.d.(1) the Contractor shall:

- (a) Acquire the necessary rights and permits to obtain material from a commercial plant;
- (b) Pay as subsidiary costs all related costs to obtain and use material from the source; and
- (c) Be solely responsible for the quality and quantity of materials.

For all Contractor-Furnished sources that are not a commercial plant, the Contractor shall:

- (d) Acquire the necessary rights and permits to take materials from the sources including state-owned sources that are not under the Department's control;
- (e) Pay as subsidiary:
 1. all related costs to obtain, develop, and use the sources, including but not limited to permit costs and mineral royalties;
 2. the material costs identified in the Material Sales Agreement you obtain for State owned sources where an existing or draft Material Sales Agreement is not included in the contract; and
 3. the material costs identified in the Material Sales Agreement for material obtained from State owned sources for which an existing or draft Material Sales Agreement is included in the contract;

- (f) Be solely responsible for quality and quantity of materials; and
- (g) Obtain all necessary rights, permits, and plan approvals before clearing or disturbing the ground in the material source. The contractor shall certify in writing to the Engineer that all permits and clearances relating to the use of the material source have been obtained prior to any clearing or ground disturbance in the materials source.

No equitable adjustment or other compensation will be made for any additional costs, including increased length of haul, if the Contractor:

- (h) Chooses to change material sources for any reason;
- (i) Is unable to produce a sufficient quantity or quality of materials from Contractor-Furnished sources; or
- (j) Encounters unexpected, unforeseen, or unusual conditions within Contractor-Furnished sources.

- (2) **Mandatory Sources.** The Department may identify material sources in the Contract from which the Contractor is required to take a specified quantity of material. No other source will be permitted for that portion of material unless prior approval is obtained from the Engineer. The Contract will specifically define these sources as Mandatory Sources and define rights and stipulations for each site. The Department will provide a materials report for these sources.

The Contractor acknowledges that samples from within a source may not be representative of the entire source. The Contractor must expect variations of quality and quantity within the source and shall factor that contingency into the unit bid price for the material. No equitable adjustment will be paid for variations encountered within the source.

When using a Mandatory Source, if it is found that the quality or quantity of material producible from the Mandatory Source does not meet project requirements and a change of source is necessary for that reason alone, a Change Order with equitable adjustment will be made.

- (3) **Designated Sources.** The Department may identify material sources in the Contract which are available to the Contractor but which the Contractor is not required to use. The Contract will specifically define these sources as Designated Sources and define rights and stipulations for each site. The Department will provide a materials report for these sources.

The Contractor acknowledges that samples from within a source may not be representative of the entire source. The Contractor must expect variations of quality and quantity within the source and shall factor that contingency into the unit bid price for the material. No equitable adjustment will be paid for variations encountered within the source.

If the Contractor elects to use a Designated Source, and it is found that the quality or quantity of material producible from the Designated Source does not meet project requirements and a change of source is necessary for that reason alone, a Change Order with equitable adjustment will be made. If the Contractor chooses to change between or among sources for any other reason than quantity or quality of material, no equitable adjustment will be paid.

- (4) **Available Sources.** The Department may identify other material sources that are available for use for the project by the Contractor. The Contract will specifically define these sources as Available Sources. The Department makes no guarantee as to quality or quantity of material in Available Sources. The Contractor is responsible for determining the quality and quantity of material, and if additional sources are needed. The Contractor shall be responsible for identifying the rights and stipulations for each site with the owner of the site.

When the Department furnishes copies of existing boring logs, test results, or other data in its possession concerning Available Sources, the Contractor is responsible for determining the

accuracy and completeness of this data, for any assumptions the Contractor makes based on this data, and for exploring all Available Sources to the Contractor's satisfaction.

The Department makes no representation, guarantees, or warranty whatsoever, expressed or implied, as to:

- (a) The quality or quantity of materials producible from an Available Source, even if such information is indicated in a Materials Report or Soils Investigation Report;
- (b) Whether boring logs, test results or data reliably represent current existing subsurface conditions;
- (c) Whether interpretations of the boring logs, test results, or other data are correct;
- (d) Whether moisture conditions and indicated water tables vary from those found at the time borings were made;
- (e) Whether the ground at the location of the borings was physically disturbed or altered after the boring was made; and
- (f) The condition, materials, or proportions of the materials between borings, regardless of any subsurface information the Department may make available.

The availability of subsurface information from the Department shall not relieve the Contractor from any risks, or of any duty to make on-site examinations and investigations, or of any other responsibility under the Contract or as may be required by law.

No equitable adjustment will be made if the quality and quantity of material available from an Available Source is not as represented in any information provided by the Department, nor if a change of source is necessary for any other reason whatsoever. The use of Available Sources is entirely at the Contractor's option and the Contractor bears all risk associated with their decision to use an Available Source.

- (5) Excluded Material Sources.** Department owned, managed, or permitted material sources not identified in the Contract are excluded from use for the project. This exclusion does not prevent the Contractor from considering material sources as provided for under Subsection 60-02.d.(1) Contractor-Furnished Sources, nor does it prevent post-award consideration of other material sources as provided under Subsection 40-08.

- e. Rights, Permits and Plan Approvals for Material Sources.** Before disturbing the site of a material source, the Contractor shall acquire and pay for all necessary rights, permits and plan approvals indicated in this subsection and in subsection 70-02. For each material site the Contractor shall:

- (1)** Acquire approval for a Mining and Reclamation Plan (MRP) or receive an exemption, according to AS 27.19. The MRP shall include:
 - (a) Plan and cross-sectional views of the site;
 - (b) Applicable boundaries or property lines;
 - (c) Areas and depths to be developed;
 - (d) Locations of access roads, stripping, sorting, and waste piles, crushing and plant sites, stockpile sites, drainage features, erosion and pollution control features; and
 - (e) Condition the Contractor will leave the site after the materials extraction is completed, including reseeded.

(2) Submit a SWPPP as required by Item P-641.

- f. **Reclamation.** After completing work in a materials source, the Contractor shall finish and grade work areas to a neat, acceptable condition according to the approved MRP. Reclamation of a Contractor-furnished source will be in accord with the Contractor's MRP.

60-03 TESTING AND ACCEPTANCE. Materials are subject to inspection and testing by the Department at any time before, during, or after they are incorporated into the project. Use of untested materials is at the Contractor's risk. The Contractor shall remove and replace unacceptable material according to Subsection 50-11.

- a. **QUALITY CONTROL.** The Contractor is responsible for the quality of construction and materials used in the work. Quality control is process control, and includes all activities that ensure that a product meets Contract specifications. Contractor quality control is subsidiary to the applicable items unless a contract item for Quality Control is established on the bid schedule.

The Contractor shall implement a Quality Control Program in conformance with Section 100, Contractor Quality Control Program.

- b. **ACCEPTANCE TESTING.** The Department has the exclusive right and responsibility for determining the acceptability of the construction and incorporated materials.

The Department will sample materials and perform acceptance tests at its expense. Copies of tests will be furnished to the Contractor upon request. When material is sampled by other than DOT&PF personnel or their agent(s), the sampling must be witnessed by, and possession of the sample immediately transferred to, DOT&PF personnel or their agent(s).

The Contractor shall not rely on the Department's acceptance testing for its quality control. The Department's acceptance testing is not a substitute for the Contractor's quality control. The Engineer may retest materials that have failed the Department's acceptance test, but is not required to do so.

Acceptance sampling and testing frequencies may be located in the Appendix to these Specifications, and are incorporated into the Contract.

60-04 PLANT INSPECTION. The Department may periodically inspect manufacturing methods, manufactured lots and materials at the source of production. The Department may approve, conditionally approve, or reject them.

The Contractor shall:

- a. Notify the Department of the production and fabrication schedule at least 30 days before beginning work on any item requiring inspection, and notify the Department 48 hours before beginning production or fabrication;
- b. Give the inspector full and safe access to all parts of the plant used to manufacture or produce materials; and
- c. Cooperate fully and assist the inspector during the inspection.

Materials may be rejected if the Department requests a plant inspection and the materials are produced or fabricated without a plant inspection. The materials may be tested at any time before final acceptance, whether in place or not and whether approved at a plant inspection or not. If the materials do not meet Contract specifications, they may be rejected and ordered removed under Subsection 50-11. If rejected materials are incorporated into the project, the Department may require those materials to be removed and replaced at the Contractor's expense under Subsection 50-11.

60-05 CERTIFICATES OF COMPLIANCE. The submittal requirements of this subsection are in addition to the submittal requirements of Subsection 60-09 Buy American Steel and Manufactured Products.

The Engineer may authorize the use of certain materials or assemblies based on either a manufacturer's certificate of compliance or based on a Contractor's summary sheet with applicable documentation attached.

- a. If by manufacturer's certification, the certificate must include the project name and number, the signature of the manufacturer, and must include information that clearly demonstrates the material or assembly fully complies with the Contract requirements.
- b. If by Contractor's summary sheet, the summary sheet must include the project name and number, the signature of the contractor, and must include attached documentation that clearly demonstrates the material or assembly fully complies with the Contract requirements.

Electronic submittals that are submitted by email from the Contractor's email account are considered signed.

The Contractor shall submit additional certificates of compliance or test data if required by the Contract or by the Engineer. The Engineer may refuse permission to incorporate materials or products into the project based on a certificate of compliance that does not meet the Contract requirements.

60-06 STORAGE OF MATERIALS. Materials shall be stored to preserve their quality and fitness for the work, and so they can be readily inspected. Materials inspected before storage may be inspected again, before or after being incorporated into the project. The Contractor shall:

- a. Use only approved portions of the project site for storage of materials and equipment or plant operations;
- b. Provide any additional space needed for such purposes without extra compensation;
- c. Restore Department-owned or controlled storage and plant sites to their original condition without extra compensation;
- d. Obtain the landowner's or lessee's written permission before storing material on private property, and furnish copies of the permission to the Engineer, if requested; and
- e. Restore privately owned or leased storage sites, without extra compensation from the Department, to their original condition or as agreed to between the Contractor and the private owner.

60-07 DEPARTMENT-FURNISHED MATERIAL. Material furnished by the Department will be made available to the Contractor at a state yard or delivered at the locations specified in the Special Provisions.

The Contractor shall include the cost of handling and placing all materials after they are delivered in the Contract price for the item in connection with which they are used. The Contractor is responsible for all material delivered to the Contractor. Deductions will be made from any monies due the Contractor to make good shortages and deficiencies from any cause whatsoever, for any damage that may occur after delivery, and for demurrage charges.

60-08 SUBMITTAL PROCEDURE. The Contractor shall complete a Submittal Register, and shall submit it to the Engineer on forms provided by the Department or similar forms of the Contractor's choice as approved by the Engineer. The intent of the Submittal Register is to provide a blueprint for the smooth flow of specified project documents. The Contractor shall fill it out sequentially by bid item and allow at least three spaces between bid items. The Submittal Register shall list all working drawings, schedules of work, and other items required to be submitted to the Department by the Contractor including but not limited to: Progress Schedule, anticipated dates of material procurement, SPCD, TCP, SWPPP, Quality Control Program, Utility Progress Schedule, Blasting Plan, Mining Plan, annual EEO reports, DBE payment documentation and subcontracts.

The Contractor shall submit materials (product) information to the Engineer for review, as required by the Contract.

Unless otherwise specified, provide all submittals in an electronic format acceptable to the Engineer.

If the Contract has a duration of 180 days or less, the Contractor shall, within fifteen days after the date of the Notice to Proceed, submit to the Department for review all submittals and the submittal register. If the Contract has a duration greater than 180 days, the Contractor shall, within fifteen days after the date of the Notice to Proceed, submit to the Department for review, an anticipated schedule for transmitting submittals.

Each submittal shall include a Submittal Summary sheet. The Contractor shall sign submittals and submit them to the Engineer. Electronic submittals that are submitted by email from the Contractor's email account are considered signed. The Department will return submittals to the Contractor as either: approved, conditionally approved with the conditions listed, or rejected with the reasons listed. The Contractor may resubmit a rejected submittal to the Engineer with more information or corrections. The Department's approval of a submittal in no way relieves the Contractor of its responsibility for the means, methods, techniques, sequence, and procedures of construction, safety, and quality control.

The Contractor shall be responsible for timely submittals. Failure by the Department to review submittals within 30 days or as otherwise provided in the applicable subsection may be the basis for a request for extension of Contract time but not for additional compensation.

Payment for a specific contract item will not be made until the Department has received the Submittal Register for all items and approved all required submittals for that specific contract item.

When material invoices, freight bills, and mill certificates are submitted, they shall provide sufficient information for the Engineer to identify: the date, supplier and origin of invoice (bill, certificate); project name and number where material will be incorporated; manufacturer, product number, quantity, cost and bid item.

60-09 BUY AMERICAN PREFERENCE.

- a. **GENERAL.** The requirements of this subsection do not apply to wholly state-funded projects. Appendix A4 of the *FAA Contract Provision Guidelines for Obligated Sponsors and Airport Improvement Program Projects* shall be used in interpreting the requirements of this subsection.
- b. **CERTIFICATION OF COMPLIANCE WITH FAA BUY AMERICAN PREFERENCE STATEMENT.** The bidder certifies that its bid is in compliance with 49 USC Section 50101, Build America Buy America (BABA), and other related Made in America Laws, U.S. statutes, guidance, and FAA policies, which provide that Federal funds may not be obligated unless all iron, steel, manufactured goods, and construction materials used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as a Non-Available Article in Federal Acquisition Regulations subpart 25.104; or has a current FAA Nationwide Buy American Waiver.

Per Executive Order 14005 "Made in America Laws" means all statutes, regulations, rules, and Executive Orders relating to federal financial assistance awards or federal procurement, including those that refer to "Buy America" or "Buy American," that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.

The bidder must complete and submit the Certificate of Buy American Compliance (Form 25D-151) with their bid. The Department will reject as nonresponsive any bid that does not include a completed Certificate of Buy American Compliance.

- c. **WAIVER SUBMITTAL.** The apparent low bidder who indicates they will request a Type 3 waiver on the Certificate of Buy American Compliance, must complete FAA Form 5100-136 Buy American Product Content Percentage Worksheet and FAA Form 5100-137 Buy American Final Assembly

Questionnaire. Submit FAA Form 5100-136 and associated documentation within 5 working days after date of notification of apparent low bidder.

Structural iron and structural steel are not eligible for a Type 3 waiver.

- d. **MATERIAL SUBMITTALS.** During performance of the Contract, the Contractor must provide a Material Submittal for Buy American Compliance (Form 25D-154), from the supplier for each iron, steel, manufactured good, or construction material prior to incorporating any iron, steel, manufactured good, or construction material into the project. The supplier certifying Form 25D-154 may be the original manufacturer, fabricator, vendor, contractor, or subcontractor; provided the supplier has sufficient control and knowledge of the manufacturing process to accept responsibility and certify full and complete conformance with 49 USC Section 50101. Provide mill certificates or other material documentation when required by the Engineer. False statements may result in criminal penalties prescribed under AS 36.30.687 and Title 18 USC Section 1001.

60-10 OPERATION AND MAINTENANCE MANUALS. The Contractor shall provide operation and maintenance manuals for equipment and systems incorporated in the work. The Contractor shall submit one set of all manuals 60 days prior to substantial completion for review by the Department. The Contractor shall make corrections noted by the Department, and submit 5 complete sets of manuals 14 days prior to substantial completion.

The Contractor shall submit the manuals in neatly bound hard cover loose-leaf three ring binders. Include project name, Contractor's/Subcontractor's name, address and telephone number on each cover. Prepare data in the form of an instruction manual with a table of contents and a tabbed fly leaf for each section.

The Contractor shall provide a separate section for each product or system installed which includes the following:

- a. Description of each unit or system and the component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests. Systems shall include:
- (1) Heating System
 - (2) Fuel Oil Storage and Supply System
 - (3) Runway Lighting System
- b. Product data with each sheet marked to clearly identify the specific products, component parts, and data applicable to installation. Delete inapplicable information. Product data shall include:
- (1) Lighting Fixtures
 - (2) Wiring Devices
 - (3) Electric Power Distribution Components
 - (4) Runway Lighting System Components
 - (5) Thaw Wire and Heat Trace System Components
- c. Include drawings to supplement product data and illustrate relations of component parts of equipment and systems. Show control and flow diagrams. Provide copies of all approved shop drawings. Drawings shall include:
- (1) Equipment Storage Building Plans
 - (2) Electrical Equipment Enclosure Plans

- (3) Runway Lighting One-line Control and Power Diagrams
- (4) Electric Power One-line Diagrams
- (5) Electric Power Panel Directories
- (6) Thaw Wire and Heat Trace Systems
- d. Type text as required to supplement product data and show logical sequence of operations for each procedure, incorporating the manufacturer's instructions.
- e. Operating procedures to include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include any special operating instructions. Include reprogramming instructions for all programmable equipment. Systems shall include:
 - (1) Runway Lighting System
 - (2) Heating System
 - (3) Fuel Oil Storage and Distribution System
- f. Maintenance requirements and repair data. Include routine procedures. Provide a guide for troubleshooting, disassembly, repair, and reassembly. Provide alignment, adjusting, and checking instructions. Maintenance and repair data shall include:
 - (1) Heating System
 - (2) Fuel Oil Storage and Distribution System
- g. Supplies and replacement parts. For each item of equipment and each system list names, addresses, and telephone numbers of subcontractors and suppliers. Provide local source of supplies and replacement parts with complete nomenclature and commercial number of replacement parts. Provide a copy of manufacturer's recommended spare parts list for applicable equipment. Provide data for:
 - (1) Lamps for Runway Lighting System
 - (2) Lamps for Lighting Fixtures
 - (3) Fuel Oil System
- h. Warranties. Include copies of warranties.
- i. Tests. Include logs of all tests performed.

60-11 ALASKA AGRICULTURAL/WOOD PRODUCTS. On wholly state-funded projects, agricultural/wood products harvested in Alaska shall be used pursuant to AS 36.15.050 and AS 36.30.322 whenever they are priced no more than seven percent above agricultural/wood products harvested outside the state and are of a like quality as compared with agricultural/wood products harvested outside the state.

The Contractor shall maintain records which establish the type and extent of agricultural/wood products utilized. When such products are not utilized, the Contractor shall document the efforts he made towards obtaining agricultural/wood products harvested in Alaska and include in this documentation a written statement that he contacted the manufacturers and suppliers identified on the Department of Commerce and Economic Development's list of suppliers of Alaska forest products concerning the availability of agricultural/wood products harvested in Alaska and, if available, the product prices. The Contractor shall complete this documentation at a time determined by the Contracting Officer.

The Contractor's use of agricultural/wood products that fail to meet the requirements of this Subsection shall be removed and replaced in accordance with Subsection 50-03, Conformity with Plans and Specifications.

SECTION 70

LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-01 LAWS TO BE OBSERVED. The Contractor shall keep fully informed of, observe, and comply with all federal, state, and local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority, that in any manner affect those engaged or employed on the work or which in any way affect the conduct of the work.

The Contractor and the Surety shall defend, indemnify, and hold harmless the state and its representatives against any claim or liability related to violations of any laws, ordinances, regulations, orders, decrees or permits by the Contractor, the Contractor's agents, the Contractor's employees, a subcontractor at any tier, or a supplier or service provider.

The Contractor has the affirmative duty to keep informed of and comply with all laws. The Contractor is not entitled to and shall not rely on any Department employee's interpretation, whether oral or written, of any law, ordinance, regulation, order, or decree, or any permit issued by an agency other than the Department.

The Contractor is responsible for conspicuously displaying required posters in an area readily accessible to workers.

- a. For wholly state-funded projects, display all posters listed on the Department of Labor and Workforce Development website at <http://labor.alaska.gov/lss/posters.htm>.
- b. For projects using federal funds, display posters required by law or funding agency including posters listed under Related Information on the FAA website <http://www.faa.gov/airports/engineering>.

70-02 PERMITS, LICENSES, AND TAXES. The terms, conditions, and stipulations in permits obtained either by the Department or by the Contractor are made a part of this Contract. Permits obtained by the Department for this project are attached to these Specifications as appendices. Contact names and phone numbers for permits obtained by the Department are shown on the individual permits.

The Department will:

- a. Secure permits and licenses that the Department determines are required for the construction of the proposed project, and the use of mandatory sources, designated sources and designated waste disposal areas for the proposed project; and
- b. Modify Department-acquired permits during the performance of the contract, if deemed necessary by the Engineer.

The Contractor shall:

- ~~a-c.~~ Acquire any permits and licenses required to complete the project that are not acquired by the Department;
- ~~b-d.~~ Provide qualified professionals to collect data or perform studies necessary to acquire permits for the use of sites not previously permitted;
- ~~c-e.~~ Give all notices required for the prosecution of the work;
- ~~d-f.~~ Abide by all permits and licenses whether acquired by the Department or by the Contractor;
- ~~e-g.~~ Notify the Engineer promptly if any activity cannot be performed as specified in the permits, and cease conducting the activity until permit modifications or any required additional permits are obtained;
- ~~f-h.~~ Obtain modifications to permits acquired by the Contractor;

~~g.i.~~ Pay all charges, fees and taxes; and

~~h.i.~~ Provide proof of payment of all taxes before the Department makes final payment.

~~i.k.~~ Provide the information necessary to comply with the Alaska Department of Environmental Conservation, Alaska Pollutant Discharge Elimination System (APDES) to discharge stormwater from the construction site. Requirements for this permit are given under P-641, Erosion, Sediment, and Pollution Control.

I. Complete work in accordance with the United States Army Corps of Engineers (USACE) Nationwide Permit #XX (Provided at Final).

The provisions of permits acquired by the Contractor, and of notices and information under this section does not shift or create responsibility for compliance with Federal or State law to the Department, or otherwise impose a duty for oversight or review.

In addition, before using an area on or off project site not previously permitted for use by the Contract, the Contractor shall:

~~a.m.~~ Contact all government agencies having possible or apparent permit authority over that area;

~~b.n.~~ Obtain all required permits, clearances, and licenses from those agencies;

~~c.o.~~ Obtain permission from any property owners or lessees with an interest in the property; and

~~d.p.~~ Provide all of the following to the Engineer:

- (1) All permits or clearances necessary to use the site for its intended purpose(s);
- (2) A written statement that all permits or clearances necessary have been obtained;
- (3) Written evidence that the Contractor has contacted all of the relevant agencies and that no additional permits are required on the part of the Contractor, including at a minimum the name of the agency and staff person contacted, the date contacted, and result of coordination; and
- (4) A plan that identifies how the site will be finally stabilized and protected.

The Engineer may reject a proposed site if the Contractor fails to provide any of the above information or to demonstrate that a proposed site can be finally stabilized to eliminate future adverse impacts on natural resources and the environment.

70-03 PATENTED DEVICES, MATERIALS AND PROCESSES. If the Contractor employs any design, device, material, or process covered by patent, trademark, or copyright, the Contractor shall obtain and provide the Engineer with a copy of a suitable legal agreement with the patentee or owner.

The Contractor and the Surety shall defend, indemnify, and hold harmless the state and its representatives and any affected third party or political subdivision from any claim, cause of action, and damages for infringement arising from or relating to the Contractor's use of a patented design, device, material, process, trademark, or copyright.

70-04 WAGE RATES. The Contractor and all subcontractors shall pay the current prevailing rate of wages as per AS 36.05.010 and this Contract. On federally funded projects the Contractor and all subcontractors shall pay the higher of the appropriate wage rates published by the Alaska Department of Labor and the U.S. Department of Labor, for each individual job classification. The Contractor and all subcontractors shall file certified payroll with the Alaska Department of Labor and Workforce Development (DOLWD) and with the Engineer for all work performed on the project. Submit signed and certified payrolls electronically to the DOLWD and the Engineer.

Before beginning work the Contractor shall file a Notice of Work with DOLWD and pay all required fees. After finishing work the Contractor shall file a Notice of Completion with DOLWD and pay all additional fees required by increases in the Contract amount.

70-05 FEDERAL PROVISIONS. The Contractor shall:

- a. Observe all federal laws, rules, regulations, and requirements applicable to the project; and
- b. Allow appropriate federal officials access to inspect the work.

The federal government is not a party to the Contract. The Contractor agrees that federal inspections will not form the basis for any claim against the federal government or the State for interference with the rights of the Contract parties.

70-06 SANITARY, HEALTH, AND SAFETY PROVISIONS. The Contractor shall provide and maintain neat and sanitary accommodations for employees that meet all federal, state and local requirements.

The Contractor shall comply with federal, state, and local laws, rules, and regulations concerning construction safety and health standards, including U.S. Mine Safety and Health Administration rules when the project includes pit or quarry operations.

The Contractor shall not expose the public to, or require any workers to work under, conditions that are unsanitary, hazardous, or dangerous to health or safety.

The Contractor is responsible for ensuring all workers are adequately protected. The Contractor shall have a safety and health management program that complies with AKOSH requirements, and includes:

- a. A worksite hazard analysis;
- b. A hazard prevention and control plan including personal protective equipment and safe work procedures required for specific tasks;
- c. New employee training and periodic worker training regarding safety and health;
- d. Regular safety meetings with written documentation of attendance, safety topics discussed, worker safety complaints, and corrective actions taken; and
- e. A designated safety officer, employed by the Contractor, who monitors the construction site and is responsible for implementing the safety and health management program.

The Contractor shall implement measures to comply with the following:

- f. Executive Order 13513 - Federal leadership on reducing text messaging while driving, dated October 1, 2009, and DOT Order 3902.10 - Text messaging while driving, dated December 30, 2009; and
- g. Alaska Statute 28.35.161 - Driving a motor vehicle with a screen device operating; unlawful installation of television, monitor, or similar device.

The Contractor and Surety shall defend, indemnify and hold harmless the State of Alaska from all claims, causes of action and judgments arising from or relating to the Contractor's failure to comply with any applicable federal, state or local safety requirement, regulation or practice, whether or not listed above.

70-07 ARCHAEOLOGICAL OR HISTORICAL DISCOVERIES. When the Contractor's operation encounters prehistoric artifacts, burials, remains of dwelling sites, paleontological remains, shell heaps, land or sea mammal bones, tusks, or other items of historical significance, the Contractor shall:

- a. Immediately cease operations at the site of the find;

- b. Immediately notify the Engineer of the find; and
- c. Not disturb or remove the finds or perform further operations at the site of the finds until directed by the Engineer.

The Engineer will issue an appropriate Change Order if the Engineer orders suspension of the Contractor's operations or orders the Contractor to perform extra work in order to protect an archaeological or historical find.

70-08 PUBLIC CONVENIENCE AND SAFETY, AND RAILWAY PROVISIONS. The Contractor shall control its operations and those of its subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft, airport personnel and vehicular traffic in the AOA, except as specifically provided in this Contract. The Contractor's operations and those of its subcontractors and all suppliers, shall be done according to Subsection 40-05 and shall limit operations for the convenience and safety of the traveling public as specified in Subsection 80-04.

The Contractor shall conduct all operations on or near a railroad according to the Contract, any contract between the Department and the railroad, and any permits issued by the railroad. The Department shall obtain permits for hauling materials across railroad tracks at locations specified in the Contract. If the Contractor desires additional crossings, the Contractor shall obtain any required permits at the Contractor's expense.

70-09 BARRICADES, WARNING SIGNS AND HAZARD MARKINGS, AND TRAFFIC CONTROL PLAN.

The Contractor shall furnish, erect, and maintain all barricades, warning signs and markings for hazards necessary to protect the public and the work. It shall be the Contractor's responsibility to maintain markers at all times to separate areas closed to aircraft from adjacent areas that are open to aircraft.

For public vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in conformity with the *Manual on Uniform Traffic Control Devices for Streets and Highways* (published by the United States Government Printing Office) and the *Alaska Traffic Manual Supplement*, and according to the approved TCP.

When the work requires closing an airport operations area of the airport or portion of such area, the Contractor shall furnish, erect and maintain temporary markings and associated lighting conforming to the requirements of AC 150/5340-1, *Standards for Airport Markings*, and according to the CSPP and SPCD.

For work within the airport property, the Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stockpiles, and parked construction equipment that may be hazardous to the operation of emergency, fire-rescue, maintenance or support vehicles on the airport in conformance to AC 150/5370-2, *Operational Safety on Airports During Construction*.

The Contractor shall identify each motorized vehicle or piece of construction equipment in conformance to AC150/5370-2 and 150/5210-5.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their removal is directed by the Engineer.

Open-flame type lights shall not be permitted within the air operations areas of the airport.

70-10 USE OF EXPLOSIVES. ~~The use of explosives will not be permitted on airport property. The Contractor shall obey all laws, regulations and permits applicable to using, handling, loading, transporting, or storing explosives. When using explosives, the Contractor shall take utmost care not to endanger life, property, new construction, or existing portions of the project and facilities that are to remain in place after the project is complete.~~

~~The Contractor shall provide notice to property owners, the traveling public, and utility companies in the vicinity before using explosives. The Contractor shall provide a minimum of three working days' notice to the Federal Aviation Administration and the airport manager. The Contractor shall notify police and fire authorities in the vicinity before transporting or using explosives. The Contractor shall provide notice sufficiently in advance to enable all potentially affected parties to take whatever steps they may deem necessary to protect themselves and their property from injury or damage. The Contractor shall not use explosives on or near airport property until a Notices to Airmen (NOTAMs) has been issued. Each new use of explosives may require a separate NOTAMs to be issued. The Contractor shall not use electric blasting caps within 1,000 feet of the airport property.~~

~~The Contractor is liable for all property damage, injury, or death resulting from the use of explosives on the project. The Contractor and Surety shall indemnify, hold harmless, and defend the State of Alaska from all claims related to the use of explosives on the project, including claims from government agencies alleging that explosives were handled, loaded, transported, used, or stored improperly.~~

70-11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

- a. Restoring Areas.** Areas used by the Contractor, including haul routes, shall be restored to their original condition after the Contractor's operations are completed. The original condition of an area shall be determined as follows: Prior to commencement of operations, the Engineer and the Contractor shall inspect each area and haul route that will be used by the Contractor and take photographs to document their condition. After construction operations are completed or prior to seasonal suspension of work, the condition of each area and haul route will be compared to the earlier photographs. Prior to demobilization or seasonal suspension of work, the Contractor shall repair damages attributed to its operations. The Contractor agrees that all costs associated with repairs shall be subsidiary to other items of work and will not be paid for directly.
- b. Material Disposal Sites.** Offsite disposal areas may be at locations of the Contractor's choice, provided the Contractor obtains from the owner of such land written permission for such disposal and a waiver of all claims against the State for any damage to such land which may result therefrom, together with all permits required by law for such disposal. A copy of such permission, waiver of claims, and permits shall be filed with the Engineer before commencing work on private property. The Contractor's selected disposal sites shall also be inspected and approved by the Engineer prior to use of the sites.
- c. Property marks.** The Contractor shall:
 - (1) Be responsible for and protect from disturbance all land monuments and property marks until the Engineer has approved the witnessing or otherwise referenced their locations; and
 - (2) Not move such monuments or marks without the Engineer's approval.
- d. Damage to property.** The Contractor shall:
 - (1) Be responsible for all damage to public or private property resulting from any act, omission, neglect, or misconduct in the manner or method of executing the work;
 - (2) Be responsible for all damage to public or private property resulting from defective work or materials at any time, before, during, or after project completion; and
 - (3) Restore all such damaged property to a condition similar or equal to that existing before the damage occurred, at no additional cost to the Department.
- e. Protection of natural resources.** The Contractor shall:
 - (1) Conduct work in a manner that minimizes disturbance to and protects natural resources in compliance with all federal, state, and local laws and regulations;

- (2) When working near designated wetlands, as defined by the Corps of Engineers, place no fill, nor operate equipment outside the permitted area; and
- (3) When working in or near designated anadromous fish streams, as defined by AS 41.14.840 and AS 41.14.870, place no fill or dredge material, nor operate equipment, within or on the banks of the stream (including fording) except as permitted by the State Fish Habitat Permit issued for the project.

- (4) Eagles are protected under 16 USC 668-668c Protection of Bald and Golden Eagles (The Act) that prohibits "takes" of eagles, their eggs, nests, or any part of the bird. The Act defines "taking" as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

The Contractor shall follow the current National Bald Eagle Management Guidelines: <https://www.fws.gov/media/national-bald-eagle-management-guidelines>

Do not disturb a nesting eagle. Notify the Engineer when an active eagle nest is within 660 feet of the project limits.

Delays caused by the presence of nesting eagles may entitle the Contractor to an extension of time, but no additional compensation will be made.

- f. **Hazardous materials.** Hazardous materials include but are not limited to petroleum products, oils, solvents, paints, lead based paints, asbestos, and chemicals that are toxic, corrosive, explosive, or flammable. Except as otherwise specified in this Contract, the Contractor shall:

- (1) Not excavate, nor use for fill, any material at any site suspected of or found to contain hazardous materials or petroleum fuels;
- (2) Not raze and remove, or dispose of structures that contain asbestos or lead-based paints;
- (3) Not stockpile, nor dispose of, any material at any site suspected of or found to contain hazardous materials or petroleum;
- (4) Report immediately to the Engineer any known or suspected hazardous material discovered, exposed, or released into the air, ground, or water during construction of the project;
- (5) Report any containment, cleanup, or restoration activities anticipated or performed as a result of such release or discovery;
- (6) Handle and dispose of hazardous material with properly trained and licensed personnel who follow an approved Hazardous Material Control Plan as per Item P-641.

- g. **Protected areas.** The Contractor shall not use land from any park, recreation area, wildlife or waterfowl refuge, or any historical site located inside or outside of the project limits for excess fill disposal, staging activities, equipment or material storage, or for any other purposes unless permitted by the Contract or unless all permits and clearances necessary for such work have been obtained by the Contractor as detailed in Subsection 70-02.

- h. **Solid waste.** The Contractor shall remove all debris, trash, and other solid waste from the project site as soon as possible and according to the Alaska Department of Environmental Conservation Solid Waste Program.

70-12 FOREST PROTECTION. The Contractor shall:

- a. Comply with all laws and regulations of the United States and the State of Alaska, local governments, or other authorities governing the protection of forests and the carrying out of work within forests;

- b. Keep forest areas in an orderly condition;
- c. Dispose of all refuse and obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures according to the requirements of the supervising authorities;
- d. Take all reasonable precautions to prevent and suppress forest fires;
- e. Require workers and subcontractors, both independently and at the request of officials, to do all reasonably within their power to prevent and suppress and to assist in preventing and suppressing forest fires; and
- f. Make every possible effort to notify the appropriate forestry agency at the earliest moment of the location and extent of any forest fire.

70-13 RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, hold harmless, and defend the State of Alaska and its agents and employees from any and all claims or actions for injuries or damages whatsoever sustained by any person or property that arise from or relate to, directly or indirectly, the Contractor's performance of the Contract; however, this provision has no effect if, but only if, the sole proximate cause of the injury or damage is the Department's negligence.

This Contract does not create a third party benefit to the public or any member of the public, nor does it authorize any person or entity not a party to this Contract to maintain a suit based on this Contract or any term or provision of the Contract, whether for personal injuries, property damage, or any other claim or cause of action.

70-14 OPENING SECTIONS OF THE PROJECT TO TRAFFIC. Unless prohibited by the CSPP, the Engineer may, at his discretion, order the Contractor to open sections of the work to traffic prior to completion of the entire project. Openings under this section shall not constitute (a) acceptance of the opened sections or any other part of the work or (b) a waiver of any other provision of the Contract.

The Engineer may establish a time period for completing any features of the opened section of work that are behind schedule.

The Contractor shall:

- a. Maintain the opened portions of the work without additional compensation;
- b. Perform all necessary repairs or renewals on the opened sections of the work without additional compensation;
- c. Conduct the remainder of the work with minimum interference to traffic; and
- d. Maintain barricades and other safety devices required by AC 150/5370-2, *Operational Safety on Airports During Construction*, to provide separation of opened and closed sections of the project.

70-15 CONTRACTOR'S RESPONSIBILITY FOR WORK. The Contractor shall be responsible for implementing all preventative measures necessary to protect, prevent damage, and repair damage to the work from all causes at no additional cost to the Department. This duty continues from the date construction begins until the date specified in a letter of Substantial Completion or Partial Acceptance of a specific section of the project. Where there is a Partial Acceptance, the duty ends only as to the accepted portion of the work. This duty continues during periods of suspended work, except in specific sections the Department has agreed to maintain under Subsection 50-13.a. Seasonal Suspension of Work.

The Contractor shall rebuild, repair, restore, and make good all losses or damages to any portion of the work including that caused by vandalism, theft, accommodation of public traffic, and weather. The Department will only be responsible for loss or damage due to unforeseeable causes beyond the control

of and without the Contractor's fault or negligence, such as Acts of God, the public enemy, and governmental authorities.

In case of suspension of work from any cause, the Contractor shall take such precautions as may be necessary to prevent damage to the work or facilities affected by the work. This will include providing for drainage and erecting any necessary temporary structures, signs, or other facilities and maintaining all living material such as plantings, seedings, and soddings.

70-16 RESERVED.

70-17 FURNISHING RIGHT-OF-WAY. The Department will secure all necessary right-of-way or property in advance of construction. Any exceptions will be indicated in the Contract.

70-18 PERSONAL LIABILITY OF PUBLIC OFFICIALS. There shall be no liability upon the Engineer and their authorized representatives, either personally or as officials of the state, in carrying out any of the provisions of this Contract, or in exercising any power or authority granted to them by or within the scope of the Contract, it being understood that in all such matters the Engineer and their authorized representatives act solely as agents and representatives of the State. The Contractor shall bring no suit related to or arising under this Contract naming as defendants any State officer, employee or representative in either their personal or official capacities, and shall include a prohibition to that effect in all subcontracts entered into for this Project.

70-19 NO WAIVER OF LEGAL RIGHTS. The Department shall not be precluded nor estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment, from showing the true amount and character of the work performed and materials furnished by the Contractor, nor from showing that any measurement, estimate, or certificate is untrue or is incorrectly made, nor that the work or materials do not in fact conform to the Contract.

The Department shall not be precluded nor estopped, notwithstanding any measurement, estimate, or certificate and payment, from recovering from the Contractor or the Contractor's Sureties, or both, such damages as it may sustain by reason of the Contractor's failure to comply with the terms of the Contract.

Neither the acceptance by the Department, or by any representative of the Department, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Department, shall operate as a waiver by the Department of any portion of the Contract or of any right of the Department to damages. A waiver by the Department of any breach of the Contract shall not be held to be a waiver of any other subsequent breach.

70-20 GRATUITY AND CONFLICT OF INTEREST. The Contractor shall not extend any loan, gratuity, or gift of money of any form whatsoever to any employee of the Department, nor will the Contractor rent or purchase any equipment or materials from any employee of the Department or to the best of the Contractor's knowledge from any agent of any employee of the Department. The Contractor shall execute and furnish the Department an affidavit certifying that the Contractor has complied with this section before final acceptance.

70-21 FEDERAL AFFIRMATIVE ACTION (RESERVED).

70-22 SECURITY.

a. Security Program

The following information will guide you through the security requirements and procedures at Ted Stevens Anchorage International Airport (ANC). ANC has assigned oversight for compliance with all security requirements and procedures to Airport Operations. Departments within Airport Operations have specific responsibilities which are defined in greater detail below.

Note: Important Contact Phone Numbers

Airport Operations: 266-2600
Airport Security Manager 782-5419
Airport Badge Office: 266-2409
Airport Communications Center 266-2415

Prior to commencement of a project, the Contractor will meet with the Airport Construction Coordinator and/or the Airport Security Manager for a security briefing covering security requirements and procedures specific to the project.

The terms and conditions relating to security at ANC rely, in part, on requirements imposed by the Transportation Security Administration (TSA) under 49 C.F.R. Part 1542. The badging, training, and access control measures noted herein implement federal, state and airport requirements that are anticipated to cover the Contractor's operations. However, ANC reserves the right to impose any further security measures required by the TSA such as in emergency situations, and the Contractor will be required to comply at no additional cost to the State of Alaska. Although Contractor will receive training as described below, and a packet of materials further outlining applicable security requirements and procedures, not every security scenario can be covered. In any situation not clearly covered herein, the Contractor shall contact the Airport Security Manager at 782-5419 for guidance or clarification.

b. Air Operations Area Entry Control

The Contractor is responsible for preventing unauthorized access to the Air Operations Area (AOA) by way of the construction site. This includes ensuring ANC perimeter gates and doors are locked or attended by appropriately badged individuals who allow only authorized personnel or vehicles to enter the AOA. Opening/closing of gates within the AOA perimeter fence requires coordination with Airport Operations. Contact Airport Operations at 266-2600.

Those individuals designated to control access points into the AOA shall be instructed by Airport Operations regarding the proper identification requirements for persons and vehicles wishing to enter the AOA. These requirements are specific to each project and may change during different phases of the project.

The Contractor will provide those individuals designated to control access points into the AOA with the capability to communicate with Airport Operations and the Airport Communications Center.

The Contractor will maintain a minimum six (6) foot clear zone on both sides of any perimeter fencing affected by the project.

c. Airport Identification Badges

The airport identification badge, developed and adopted by ANC, is the only identification system recognized as authority to enter the Security Identification Display Area (SIDA), Secured Areas and Sterile Areas of the airport. Only individuals identified by this system are allowed unescorted access to these areas. Airport identification badges must be worn at all times on the individual's outermost garment, above the waist.

Any individual found in the SIDA, Secured Areas or Sterile Area of the airport who are not in compliance with identification requirements will be removed from the area and appropriate action will be taken in accordance with Federal, State and Municipal regulations, statutes and codes.

d. Control Authority

ANC has delegated authority for approving issuance, system control, implementation and accountability of the badging system to the Airport Badge Office. The Airport Badge Office may be contacted at 266-2409.

An airport identification badge will be used by each Contractor employee requiring unescorted access to the SIDA, Secured Areas or Sterile Areas for the project. The airport identification badge is only valid within the project area and the approved travel routes to and from the project.

e. Airport Identification Badge Issuance

The Contractor is responsible for ensuring that all background checks, security training and badging will be accomplished in time to staff the project as necessary.

To obtain an airport identification badge, individuals must first pass a fingerprint based Criminal History Records Check (CHRC) and a Security Threat Assessment (STA). Individuals must have no disqualifying criminal offenses in the previous ten (10) years to qualify for an airport identification badge. The Department will be notified of the results of the background checks within seven (7) to ten (10) business days.

Once background check clearances are received, individuals must attend Security Training and, if they will be driving within the AOA, Ramp Driver Training. Security Training lasts approximately 45 minutes. Ramp Driver Training is an additional 45 minutes. Individuals requesting Ramp Driver Training must have a driver's license valid in the State of Alaska (verified by the Alaska Public Safety Information Network) and must pass a test.

Detailed instructions and applicable request templates will be distributed to the Contractor by the Department.

(1) Airport Badge Office General Information

Most Badge Office services are now by appointment.

<https://www.picktime.com/eb608fd0-2ec0-40a0-8463-a005cfd71c45>

No appointment is necessary for picking up/dropping off permits, keys, etc, replacement of defective badges, general questions.

The Badge Office sign in computer is located in the North Terminal lobby. Customers sign in and wait in the lobby until called into the office via intercom.

- Location: North Terminal, 4600 Postmark Drive, Room NA165
- Hours: Monday through Friday 7:00 am to 4:00 pm. Closed State and Federal holidays.
- Phone: 266-2409
- Security Training: Monday through Friday anytime between the hours of 7:00 am and 1:30 pm..
- Fees: CHRC - \$40.00, STA - \$20.00, Airport Identification Badge - \$40.00, Lost Badge Not Replaced - \$200.00, Lost Badge Replaced - \$40.00, Non-returned Badge Fee - \$200.00.

(2) Miscellaneous Badging Requirements

The Contractor and all Subcontractors and employees receiving airport identification badges shall review and strictly comply with the provisions of all training materials and instructional booklets provided as part of the Security Training.

Whenever a badge-holder ceases work on the project for any reason, whether because of project completion or completion of that portion of the project on which the badge-holder was

working, reassignment to another project or task with no plan for return, separation from employment, or for any other reason, the Contractor shall immediately contact the Airport Badge Office and request deactivation of the airport identification badge(s). After hours, contact the Airport Communications Center. Badges will be returned within five business days after badge-holder ceases work on the project.

Lost badges must be reported to the Airport Badge Office immediately upon discovery that the badge is lost. After hours, contact the Airport Communications Center. Lost badges may be replaced upon submission of the Airport Badge Office's badge replacement request form and payment of the then-applicable fee. The Airport Badge Office's current badge replacement fee is \$200.00.

f. Vehicle Access to the AOA

Contractor vehicles are not allowed into the AOA except within the project area, including access routes to and from the construction site. Vehicle permits must be properly displayed and all occupants must have the required airport identification properly displayed.

Vehicles operated in the AOA must be operated by authorized personnel holding an airport identification badge with a ramp driving endorsement. Vehicles must display applicable vehicle permits.

Vehicles must display a company logo on each side of the vehicle. The overall dimensions of the company logo must be a minimum of 5" x 5" and letters must be a minimum of 1.5" in height.

Non-permitted vehicles operated by non-badged contractors may be allowed entry to the AOA under certain conditions. These conditions will be discussed at the pre-construction security briefing.

g. Inspections and Fines

Project personnel are subject to random checks for compliance with security requirements and procedures. These checks may be made by Airport Police, Airport Operations or the Transportation Security Administration (TSA).

The Contractor is responsible for and shall indemnify, defend, and hold the Department and State of Alaska harmless for any liability, including fines levied by the State of Alaska or the TSA, resulting from the failure of the Contractor, its employees, or its subcontractors, to comply with the requirements of this subsection 70-21.

A non-refundable fee of up to \$300.00 will be levied against the Contractor if the Department is unable, because of Contractor conduct, to return each badge to the Airport Badge Office within five (5) business days of completion of the project.

A non-refundable fee of \$50.00 will be levied against the Contractor for each vehicle permit not returned to the Airport Badge Office within five (5) business days of completion of the contract.

Final payment to the Contractor will be withheld pending return of all airport identification badges and vehicle permits to the Airport Badge Office and settlement of all fees due with Anchorage Airport Accounting.

SECTION 80 EXECUTION AND PROGRESS

80-01 SUBCONTRACTING OF CONTRACT. The Contractor shall submit a Contractor Self Certification, Form 25D-042, and, except on wholly state-funded projects, a completed Certification for Tax Delinquency and Felony Convictions, Form 25D-159, for each Subcontractor and each Lower Tier Subcontractor, before the Contractor or any subcontractor subcontracts, sells, transfers, assigns, or otherwise disposes of the Contract or any portion of the Contract. The Department has authority to review subcontracts and to deny permission to subcontract work. The Department may penalize the Contractor for false statements or omissions made in connection with Form 25D-042.

The Contractor shall perform, with the Contractor's own organization, work amounting to at least 30 percent of the difference between the original Contract price and the price of designated Specialty Items. For the purpose of this subsection, work is defined as the dollar value of the services, equipment, materials, and manufactured products furnished under the Contract. The Engineer will determine the value of the subcontracts based on Contract unit prices or upon reasonable value, if entire items are not subcontracted.

The Department's consent to the subcontracting, sale, transfer, assignment, or disposal of all or a part of the Contract shall not relieve the Contractor and the Surety of responsibility for fulfillment of the Contract or for liability under the bonds regardless of the terms of the transfer or sublet approvals.

- a. The Contractor shall ensure that for all subcontracts (agreements):
 - (1) The Department is furnished with one completed Contractor Self Certification, Form 25D-042, for each subcontract;
 - (2) The subcontractors have submitted a Bidder Registration, Form 25D-6;
 - (3) The required prompt payment provisions of AS 36.90.210 are included in all subcontracts;
 - (4) A clause is included requiring the Contractor to pay the subcontractor for satisfactory performance according to AS 36.90.210 and within eight (8) working days after receiving payment from which the subcontractor is to be paid;
 - (5) A clause is included requiring the Contractor to pay the subcontractor interest, according to AS 45.45.010(a), for the period beginning the day after the required payment date and ending on the day payment of the amount due is made;
 - (6) A clause is included requiring the Contractor to pay the subcontractor all retainage due under the subcontract, within eight (8) working days after final payment is received from the Department, or after the notice period under AS 36.25.020(b) expires, whichever is later;
 - (7) A clause is included requiring the Contractor to pay interest on retainage, according to AS 36.90.250 and AS 45.45.010(a);
 - (8) Other required items listed in Form 25D-042, including but not limited to Form 25D-55A, are included in the subcontracts;
 - (9) The subcontractors pay current prevailing rate of wages as per Subsection 70-04 and file signed and certified payrolls with the Engineer and DOLWD for all work performed on the project; and
 - (10) Upon receipt of a request for more information regarding subcontracts, the requested information is provided to the Department within 5 calendar days.
- b. The Contractor shall ensure that for all lower tier subcontracts (agreements between subcontractors and lower tier subcontractors):

- (1) The Department is furnished with one completed Contractor Self Certification, Form 25D-042, for each lower tier subcontract;
 - (2) The required prompt payment provisions of AS 36.90.210 are included in all lower tier subcontracts;
 - (3) A clause is included requiring the subcontractor to pay the lower tier subcontractor for satisfactory performance according to AS 36.90.210, and within eight (8) working days after receiving payment from which the subcontractor is to be paid;
 - (4) A clause is included requiring the subcontractor to pay the lower tier subcontractor interest, according to AS 45.45.010(a), for the period beginning the day after the required payment date and ending on the day payment of the amount due is made;
 - (5) A clause is included requiring the subcontractor to pay the lower tier subcontractor all retainage due under the subcontract, within eight (8) working days after final payment is received, or after the notice period under AS 36.25.020(b) expires, whichever is later;
 - (6) A clause is included requiring the subcontractor to pay the lower tier subcontractor interest on retainage, according to AS 36.90.250 and AS 45.45.010(a);
 - (7) Other required items listed in Form 25D-042, including but not limited to Form 25D-55A, are included in the lower tier subcontracts;
 - (8) The lower tier subcontractors pay current prevailing rate of wages as per Subsection 70-04 and file signed and certified payrolls with the Engineer and DOLWD for all work performed on the project; and
 - (9) Upon receipt of a request for more information regarding lower tier subcontracts, the requested information is provided to the Department within 5 calendar days.
- c. The following will be considered as subcontracting, unless performed by the Contractor:
- (1) Roadside Production. Roadside production of crushed stone, gravel, and other materials with portable or semi-portable crushing, screening, or washing plants set up or reopened in the vicinity of the project to supply materials for the project, including borrow pits used exclusively or nearly exclusively for the project.
 - (2) Temporary Plants. Production of aggregate mix, concrete mix, asphalt mix, other materials, or fabricated items from temporary batching plants, temporary mixing plants, or temporary factories that are set up or reopened in the vicinity of the project to supply materials exclusively or nearly exclusively for the project.
 - (3) Hauling. Hauling from the project to roadside production, temporary plants, or commercial plants, from roadside production or temporary plants to the project, from roadside production or temporary plants to commercial plants, and all other hauling not specifically excluded in this subsection.
 - (4) Other Contractors. All other contractors working on the project site under contract with the Contractor are considered subcontractors unless specifically excluded in this subsection.
- d. The following will not be considered as subcontracting, but the Contractor shall comply with the prompt payment provisions of AS 36.90:
- (1) Commercial Plants. The purchase of sand, gravel, crushed stone, crushed slag, batched concrete aggregates, ready-mixed concrete, asphalt paving mix, and any other material or fabrication produced at and furnished from established and recognized commercial plants that sell to both public and private purchasers.

- (2) Hauling. Delivery of materials from a commercial plant to a different commercial plant, and delivery from a commercial plant to the project site by vehicles owned and operated by the commercial plants or by commercial freight companies that have a contract with the commercial plant. Commercial freight companies are trucking or hauling companies that deliver multiple types of materials to multiple clients, both public and private, on an established route and on a recurrent basis.
 - (3) Contractors' General Business. Work within permanent home offices, branch plants, fabrication plants, tool yards, and other establishments that are part of a contractor's or subcontractor's general business operations.
- e. Owner-Operators. Hauling of materials for the project by bona fide truck owner-operators who are listed as such on the signed and certified payroll of the Contractor or approved subcontractor is not considered subcontracting for purposes of AS 36.30.115.

The Contractor shall ensure that the required prompt payment provisions of AS 36.90.210 are included in contracts with owner-operators.

The Contractor shall collect and maintain at the project site current and valid copies of the following to prove that each trucker listed is a bona fide owner-operator:

- (1) Alaska Driver's License with appropriate CDL class and endorsements;
- (2) Business license for trucking with supporting documents that list the driver as the business owner or corporate officer;
- (3) Documents showing the driver's ownership interest in the truck, including copies of:
 - (a) Truck registration; and
 - (b) Lease (if truck is not registered in driver's name or in the name of the driver's company).

The Contractor shall maintain legible copies of these records for a period of at least three years after final acceptance of the project.

Owner-operators must qualify as independent contractors under the current Alaska Department of Labor's criteria. Owner-operators may be required to show:

- (4) The owner-operator's right to control the manner in which the work is to be performed;
- (5) The owner-operator's opportunity for profit or loss depending upon their managerial skill;
- (6) The owner-operator's investment in equipment or materials required for their task, or the employment of helpers;
- (7) Whether the service rendered requires a special skill;
- (8) The degree of permanence of the working relationship; and
- (9) Whether the service rendered is an integral part of the owner-operator's business.

The status of owner-operators is subject to evaluation throughout the project period. If the criteria for an independent contractor are not met, the Contractor shall submit amended payrolls listing the driver as an employee subject to all labor provisions of the Contract.

The Contractor shall issue each owner-operator a placard in a form approved by the Engineer that identifies both the truck driver and the vehicle. The placard shall be prominently displayed on the vehicle so that it is visible to scale operators and inspectors.

Notwithstanding the Department's definitions of contracting and subcontracting, the Contractor shall be responsible for determining and complying with all federal and state laws and regulations regarding contracting, subcontracting, and payment of wages. The Contractor shall promptly pay any fines or penalties assessed for violations of those laws and regulations, and shall promptly comply with the directives of any government agency having jurisdiction over those matters.

80-02 NOTICE TO PROCEED. The Department will issue a Notice to Proceed authorizing construction to begin and indicating the date when Contract time will begin. The Contractor shall not begin construction before the effective date of the Notice to Proceed. The Notice to Proceed may include limits or restrictions on allowable activities. The Department will, in its sole discretion, refuse to pay for construction begun before the effective date of the Notice to Proceed. The Contractor shall notify the Engineer at least 48 hours before construction begins at the project site.

80-03 PROSECUTION AND PROGRESS. The Contractor shall meet with the Engineer at the regional construction office for a preconstruction conference before beginning construction. The Engineer will schedule the Preconstruction Conference no less than five days after the following have been received:

- a. ~~A Critical Path Method (CPM) Schedule is required as described in Section G-300. A progress schedule, in a format acceptable to the Engineer, showing the order in which the Contractor proposes to carry out the work and the contemplated dates on which the Contractor and the subcontractors will start and finish each of the salient features of the work, including any scheduled periods of shutdown. The schedule shall indicate the anticipated hours of operation and any anticipated periods of multiple shift work.~~
- b. A list showing anticipated dates for procurement of materials and equipment, ordering of articles of special manufacture, furnishing of plans, drawings and other data required under Subsections 50-02 and 60-08, and for other events such as inspection of structural steel fabrication
- c. A list showing all subcontractors and material suppliers
- d. A Storm Water Pollution Prevention Plan, a Hazardous Material Control Plan, and a Spill Prevention Control and Countermeasure Plan, with the line of authority and designated field representatives, as required under Item P-641 (see submittal deadlines under P-641-1.3)
- e. A letter designating the Contractor's Project Superintendent, defining that person's responsibility and authority, and providing a specimen signature
- f. A letter designating an Equal Employment Opportunity Officer and a Disadvantaged Business Enterprise Officer, and designating those person's responsibilities and authority
- g. A Quality Control Program, as required under Subsection 60-03 and Section 100
- h. An approved Safety Plan Compliance Document (SPCD), as required under Subsection 80-04
- i. A Traffic Control Plan, as required under Subsection 70-09 and Item G-710
- j. A Utility Repair Plan, as required under Subsection 50-06.e.

Provide suitable proof of filing and subsequent approval of a completed FAA Form 7460-1 Notice of Proposed Construction or Alteration, at least 45 days before the start date of work occurring on the project. Coordinate with the RASSO and Engineer when filing Form 7460-1. The Contractor is encouraged to file the form electronically. The FAA 7460-1 form and the electronic submittal instructions may be found at: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>

The Contractor shall provide adequate materials, labor and equipment to ensure the completion of the project according to the Plans and Specifications. The work shall be performed as vigorously and as continuously as weather conditions or other interferences may permit. The Contractor shall take into consideration and make due allowances at the Contractor's expense for foreseeable delays and

interruptions to the work such as unfavorable weather, frozen ground, equipment breakdowns, shipping delays, quantity overruns, utility work, permit restrictions, and other foreseeable delays and interruptions. The Contractor shall identify these allowances on the progress schedule.

The Contractor shall adjust forces, equipment and work schedules as necessary to ensure completion of the work within the Contract time, and shall notify the Engineer at least 24 hours before resuming suspended operations. Upon a substantial change to the work schedule or when directed by the Engineer, the Contractor shall submit a revised progress schedule in the form required, including a written explanation for each revision made in the schedule or methods of operation.

The Engineer's review or approval of the documents, plans, and schedules provided by the Contractor under this section shall not change the Contract requirements, release the Contractor of the responsibility for successful completion of the work or relieve the Contractor of the duty to comply with applicable laws. The Engineer's review or approval of schedules shall not indicate agreement with any assertions of delay or claims by the Contractor.

It is the Contractor's responsibility to prepare and submit documents that satisfy all applicable contract requirements. By reviewing and approving the Contractor's documents, the Department does not warrant that following the Contractor's documents will result in successful performance of the work. The Department's failure to discover defects in the Contractor's documents, the assumptions upon which they are based or conditions that prevent the Contractor from performing the work as indicated in the documents will not entitle the Contractor to additional compensation or time. If the Contractor becomes aware of any act or occurrence that may form the basis of a claim for additional compensation or an extension of time, it must specifically advise the Engineer of these conditions according to Subsection 50-17.

80-04 LIMITATION OF OPERATIONS. The Contractor shall not open up work to the detriment of work already started. The Contractor shall minimize interference with traffic within the project. The Contractor shall not stop or otherwise impede traffic outside the project limits without the Engineer's prior written permission. The Engineer may require the Contractor to finish a section of work in progress before starting additional sections if the Engineer determines it is necessary for the convenience of the public or the Department.

The Contractor shall control its operations and the operations of its subcontractors and all suppliers, so as to provide for the least inconvenience to traffic and the free and unobstructed movement of aircraft in the Air Operations Areas of the airport, except as specifically provided in this Contract. Under all circumstances, safety shall be the most important consideration.

a. Environmental Limitations. The Contractor shall comply with all environmental commitments, permit stipulations, and construction limitations, in the Contract permits and specifications. These may include time periods in which certain construction activities are not allowed. The Contractor shall avoid disturbing wetlands unless permitted to do so. The Contractor shall avoid disturbing threatened and endangered species, historic sites, and hazardous materials sites.

b. Construction Safety.

(1) Construction Safety and Phasing Plan (CSPP). This document is included within the contract documents when attached as an appendix to this document. The CSPP specifies minimum requirements for operational safety during construction activities.

(2) Safety Plan Compliance Document (SPCD). When the contract documents include a CSPP, the Contractor shall submit to the Engineer a SPCD in accordance with the provisions set forth within the current version of AC 150/5370-2, *Operational Safety on Airports During Construction*. The SPCD shall include a general statement that the Contractor has read and will abide by the CSPP and shall include the Contractor's name, the title of the project CSPP, the approval date of the CSPP, and a reference to any supplemental information (example statement: "I, Name of Contractor, have read the Title of the Project CSPP, approved on Date, and will abide by it as written and with the following additions as noted."). The supplemental

information in the SPCD should be written to match the format of the CSPP indicating each subject by corresponding CSPP subject number and title. If no supplemental information is necessary for any specific subject, the statement, "No supplemental information," should be written after the corresponding subject title. The SPCD should not merely duplicate information in the CSPP. No deviations or modifications may be made to the approved CSPP or SPCD unless approved in writing by the Engineer.

The Contractor shall implement all necessary CSPP and SPCD measures prior to commencement of any work activity. The Contractor shall conduct daily checks of its workers, equipment, and construction methods to assure compliance with the CSPP and SPCD measures. The Contractor shall document the checks in writing and sign them. Documented checks shall be available for inspection by the Engineer.

The Contractor is responsible for the conduct of all subcontractors and suppliers it employs on the project. The Contractor shall assure that all subcontractors and suppliers are made aware of the requirements of the CSPP and SPCD, and that the subcontractors and suppliers implement and maintain all necessary safety measures.

The CSPP and SPCD will indicate areas within airport property boundaries that may be used for material stockpile, and will indicate the maximum height of stockpile allowed. The Contractor shall obtain prior approval from the Engineer before using other areas within airport property. The Engineer may limit stockpile heights or equipment heights in any area, either inside or outside of airport property, based on requirements in the ACs or other factors necessary to ensure the free and unobstructed operation of aircraft.

- c. **Security Plan.** When required by the Contract, the Contractor shall control its operations and the operations of its subcontractors and all suppliers so as to provide for the security of the Airport. The Contractor's operations shall be conducted according to the Security Plan and the provisions set forth within the current version of DOT/FAA/AR-00/52, *Recommended Security Guidelines for Airport Planning and Construction*. No deviations or modifications may be made to the approved Security Plan unless approved in writing by the Engineer. The Security Plan for this project is incorporated into the CSPP, Appendix C.
- d. **Notification.** When the work requires the Contractor to conduct its operations within an Air Operations Area of the airport, the work shall be coordinated in accordance with the requirements of the CSPP. The Contractor shall begin coordination through the Engineer with the Airport Operations Center Manager, FAA, other project stakeholders, at least 45 days before working in the Air Operations Area. When written correspondence is approved by the Engineer the Contractor shall copy to the Engineer all correspondence with the Airport Operations Center Manager, the FAA, and other project stakeholders.

The Contractor shall provide information and coordinate with the Airport Operations Center Manager, through the Engineer, for all required NOTAMs. Begin coordination at least 14 days prior to the date that the NOTAM needs to be issued by. Provide final information on a form provided by the Department, and submit the form through the Engineer to the Airport Operations Center Manager at least 72 hours prior to: closure or change in the Air Operations Area; or startup, resumption, cessation of, or change in construction activity that affects aircraft operations.

The Contractor shall not begin work for any Phase that requires issuance of a NOTAM until all of the following have been met:

- (1) Coordination required by the CSPP and the SPCD has been accomplished;
- (2) The NOTAM has been authorized by Airport Manager and its issuance by the FAA has been confirmed;
- (3) The necessary temporary marking and associated lighting are accepted;

(4) The necessary NAVAIDS have been modified as specified in the CSPP, SPCD, and Subsection 70-09; and

(5) The Engineer has authorized the Contractor to begin work.

Coordinate all questions to the FAA through the Engineer.

Contact the FAA Systems Operations Control Center at least 45 days prior to:

(1) Closing a runway

(2) Re-opening a closed runway

(3) Interrupting service or removing visual or navigational aids

(4) Displacing a runway threshold

Notify Airport Operations through the Engineer to coordinate construction and haul activities and comply with their instructions concerning apron closures and the movement of construction equipment, men, and materials in the vicinity of existing ramp areas, runways, or taxiways. Notification is required at least 1 week in advance of any planned closure or change.

Contacts. Except as provided in GCP 50-06e, all contacts with the ANC Operations Center and the FAA will be through the Engineer.

Project Engineer
Frank Lee
DOT&PF Aviation Construction
P.O. Box 196900
Anchorage, Alaska 99519-6900
Telephone (907) 243-4169
Cellular (907) 727-4808
FAX (907) 243-4597

Airport Operations Center
Tim Lufkin, Airport Operations Construction Coordinator
Ted Stevens Anchorage International Airport
P.O. Box 196960
Anchorage, Alaska 99519-6960
Telephone (907) 266-2615 (24 hr)
Cellular (907) 306-5023
FAX (907) 266-2646

Other Contacts (Note: primary contact is Airport Operations Center through the Engineer):

Zaramie Lindseth, Airfield Maintenance Manager
Ted Stevens Anchorage International Airport
P.O. Box 196960
Anchorage, Alaska 99519-6960
Telephone (907) 266-2427
Cellular (907) 250-9491
FAX (907) 266-2677

Dennis "Beav" Deering, Airfield Electrician Foreman
Ted Stevens Anchorage International Airport
P.O. Box 196960
Anchorage, Alaska 99519-6960

Telephone (907) 266-2423
Cellular (907) 748-2310
FAX (907) 266-2164

e. Work Procedures and Communications within the Airport Operations Area.

Vehicles, equipment and materials shall never be parked or left standing on runways, runways safety areas, and taxiways open to aircraft. In Air Operations Areas, all vehicles shall be equipped with a functional flashing amber hazard light and all obstructions except stakes or hazard markers shall be removed during non-working hours. The Contractor shall remove construction equipment from and otherwise clear the runway and the designated Runway Safety Areas for operation of regularly scheduled airline flights. The Contractor shall remain continuously informed regarding flight schedule times.

The Contractor shall not allow their labor force or equipment to interfere with the operation of aircraft on any runway or taxiway. Aircraft always have the right of way. The Contractor shall not park vehicles or equipment or leave materials standing within 300 feet of an active runway or within 150 feet of an active taxiway or taxi lane. When work is to be performed within the limits specified, the Contractor shall ensure that the runway or taxiway is closed to aircraft; or maintain radio contact with the tower. Time shall be minimized in restricted areas. The Contractor shall provide responsible personnel, such as a foreman, for radio communication.

When the contract work requires the Contractor to work within an Air Operations Area of the airport on an intermittent basis (intermittent opening and closing of all or a portion of the Air Operations Area), the Contractor shall maintain constant communications as hereinafter specified, immediately obey all instructions to vacate the Air Operations Area, and immediately obey all instructions to resume work in such Air Operations Area. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the Air Operations Area, with no damages available from the Department, until the satisfactory conditions are provided. The Contractor shall establish and maintain communication or monitor communications with the appropriate radio facility as prescribed in the following:

- (1) Airports With Control Towers:** At those airports with control towers, the Contractor shall comply with the instructions of the airport controller. The Contractor shall continuously monitor 2-way radio communication on the appropriate ground control frequency. The Contractor shall furnish a liaison radio operator and 2-way radio communication with each work party located within the Air Operations Area. Ensure that all persons communicating with the control tower are trained by Airport Operations in radio communication procedures.
- (2) Airports Without Control Towers:** At those airports without control towers, the Contractor shall comply with the instructions of a FSS Employee, a pilot, or a pilot's representative. The Contractor shall continuously monitor by 2-way radio, the CTAF published in the current *FAA Chart Supplement Alaska*. The Contractor shall furnish a liaison radio operator and 2-way radio communication with each work party located within the Air Operations Area.

f. Haul Routes and Hauling Restrictions. Reconstruction of roads affecting access to areas around ANC may take place during the duration of this project. Haul routes may require adjustment and delays may be encountered. Plan your work accordingly. No additional compensation shall be paid. Claims due to delays caused by such projects will not be considered. Confine your vehicles to the haul routes and work areas shown on the plans. Alternate haul routes require approval by the Engineer and the Airport Operations Center prior to use. The operator of any vehicle hauling material or equipment on the project is required to possess an Engineer approved map of the designated project haul route. The operator is required to present the map to any Department employee upon request. Any driver failing to display the map will be required to cease work until their vehicle is equipped with a copy of the approved map.

Any person working on the project that hauls material or equipment outside of the designated haul route will have their Ramp Operator's License suspended for the duration of the project. Any vehicle used on the project to haul material or equipment outside of the designated haul route will have its Ramp Access Permit suspended for the duration of the project. For the purposes of this subsection (f), operating unloaded vehicles is considered a haul.

Photographs, video recordings, or the testimony of residents living near Northern Lights Boulevard will be considered adequate proof of individual vehicles hauling outside of the project's designated haul route. This paragraph does not preclude proof by other means. For this project, the legal load on Northern Lights Boulevard is zero (0).

Refer to GCP subsection 50-12 for additional legal load restrictions.

The Contractor is responsible for the maintenance and restoration of all roads that are utilized for hauling purposes in the construction of this project. Condition of haul routes before and after construction will be documented in accordance with GCP subsection 70-11 and by a joint inspection with the Engineer, Contractor, and ANC Operations. Return road conditions to at least their original condition upon completing the work. The Department will not make final payment until all haul routes are restored to at least their original condition. Provide water or other dust palliative using appropriate distribution equipment as required for dust control on haul routes and work areas.

Excess material must be hand-swept from each truck before leaving the work area.

Avoid placing foreign objects and debris (FOD) or any debris capable of causing damage to aircraft landing gears or propellers or of being ingested in jet engines on surfaces in active aircraft movement areas. Refer to GCP subsection 50-13 for Contractor's responsibility. Maintain a sweeper truck at the job site at all times to clean loose material immediately if it is spilled on any runway or taxiway. Cleaning spilled material from adjacent taxiways, taxi lanes or ramp areas is of primary concern to the ANC Operations Center. Therefore, upon discovery of spilled material on the haul route that you are not cleaning up, the Engineer or his representative will present a hand written memo to your on-site foreman or superintendent stating the location of the spilled material and the time of the memo. You will then have thirty (30) minutes to complete cleanup operations after being notified of the spill. Failure to complete cleanup operations within thirty (30) minutes of receipt of the memo or failure to maintain a sweeper truck at the job site will result in institution of an order from the Engineer for you to cease all hauling operations. If you fail to meet these conditions, the Department reserves the right to hire another contractor to accomplish cleanup activities and to reduce the contract amount by this cost plus costs incurred by the Department to implement the cleanup contract.

Clean all runway and taxiway lights prior to opening to aircraft.

- g. Utilities.** Refer to GCP subsection 50-06 for Contractor's responsibility to notify utilities, secure all utility locates, and maintain uninterrupted service of existing utilities as a subsidiary obligation for which no additional payments shall be made. Ensure that all lighting systems, telecommunications, and control cables remain in operation continuously throughout the construction period except as noted in the plans and specifications. Facilities that are directly related to work items for this project may be placed out of service only as long as necessary to make the alterations as shown on the plans. Obtain permission from the Engineer before taking any of the above facilities out of service. Provide at least 72 hours final notice to the Airport Operations Center through the Engineer before placing any airport lighting or NAVAIDS out of service. Notify ANC Airfield Maintenance (266-2425) when work is expected to begin for de-energizing any circuit. Upon completion of each stage, notify ANC Airfield Maintenance before energizing that portion of the system.

Coordinate requests to temporarily remove any other underground utilities from service with the Engineer.

h. After Hours. During non-working hours, remove all materials that are subject to being blown onto active areas of the airport.

Thirty (30) minutes before shutting down construction operations for each day, coordinate through the Engineer, a joint inspection of the construction site with the Airport Operations Center.

i. Staging Areas. Locations for Contractor staging areas are shown on the construction safety and phasing plans. These locations are for your exclusive use for the full time that you are working on the project. No utilities are available at the sites.

Use of staging areas is limited to the storage of construction equipment and supplies used for construction under this contract. Drip pans are required for all powered equipment parked on unpaved surfaces.

Prior to occupying a staging area, mark the staging area limits with lath and flagging. Arrange for a joint inspection with the Engineer and ANC Operations to record the original condition of the staging area. Marking of the staging areas is subsidiary to Pay Item G135.010.0000, Construction Surveying by the Contractor. Final payment is subject to the stipulation that each staging area is regraded and reseeded as required to restore to original condition as noted in the initial joint inspection or as approved by the Engineer.

Site preparation, improvements, maintenance and restoration of staging areas is considered subsidiary, and no additional payment will be made.

Erosion, sediment, and pollution control and prevention as required by Section P-641 shall be fully implemented for staging areas.

Concrete and asphalt plants or crushers are permitted on airport property as approved by the Engineer.

j. Storage Areas. Locations for materials storage areas are shown on the plans. These locations shall be used for the short- and long-term storage of aggregate materials as approved by the Engineer.

Prior to occupying a storage area, mark the storage area limits with lath and flagging. Arrange for a joint inspection with the Engineer and ANC Operations to record the original condition of the storage area. Marking of the storage areas is subsidiary to Pay Item G.135.010.0000, Construction Surveying by the Contractor. Final payment is subject to the stipulation that each storage area is regraded and reseeded as required to restore to original condition as noted in the initial joint inspection or as approved by the Engineer.

Site preparation, improvements, maintenance and restoration of storage areas is considered subsidiary, and no additional payment will be made.

Erosion, sediment and pollution control and prevention as required by Item P-641 shall be fully implemented for storage areas.

80-05 CHARACTER OF WORKERS, METHODS, AND EQUIPMENT. The Contractor shall employ sufficient labor and equipment to complete the work required under the Contract and to complete it on time.

The Contractor shall ensure that all workers on the project have the skills and experience necessary to properly perform their assigned work. Workers engaged in special work or skilled work shall have sufficient experience in that work and in the operation of the equipment required to properly perform that work.

The Contractor shall comply with any written order by the Engineer to remove workers, who, in the opinion of the Engineer, violate operational regulations, violate CSPP requirements, violate SPCD requirements, perform the work in an unskilled manner, create risk of imminent harm for the traveling public, who are intemperate or disorderly, or who fail to perform the work in accordance with the Contract and any and all

applicable federal, state, and local laws, rules, regulations, and ordinances. The Contractor shall allow removed workers to return to the project only with the Engineer's written permission. The Engineer may suspend the work if the Contractor fails to furnish suitable and sufficient personnel necessary to perform the work, or fails to remove any worker at the Engineer's order.

The Contractor shall not use prisoner labor on the project.

The Contractor shall use equipment of the appropriate size and mechanical condition to produce the specified quality and quantity of work by the means specified in the Contract, if any, and shall ensure that the equipment does not damage roadways or property.

The Contractor shall ensure all equipment, materials, and articles incorporated into the work are new and of the specified quality, unless the Contract specifically permits otherwise.

The Contractor shall provide the Engineer with a list of all powered equipment that will be used on the project, showing the make, model, year, capacity, horsepower, and related information. The Contractor shall update this list when equipment is added or removed from the work site, but need not update more frequently than weekly.

When the methods and equipment to be used by the Contractor are not prescribed by the contract, the Contractor is free to use any method, means or equipment that is satisfactory to produce the specified work in conformity with the Contract, except as provided above. At the request of the Engineer, the Contractor shall demonstrate that the method, means and equipment chosen will produce the work specified in the Contract in the time allowed under the Contract. The Contractor shall bear all costs and impacts associated with any means, methods and equipment chosen by the Contractor. No suggestion, statement or observation from the Engineer or other Department representatives shall alter this responsibility.

If the Contract specifies a particular method, means or type of equipment for performance of the work, the Contractor must use that method, means or equipment unless the Contractor first requests, in writing, permission to alter the Contract requirement and receives prior written approval from the Engineer. The written request shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the contract items involved, nor in contract time, as a result of authorizing a change in methods or equipment under this subsection, except as specifically provided under Subsection 40-08.

80-06 CONTRACT TIME, EXTENSION OF CONTRACT TIME AND SUSPENSION OF WORK. Contract time will be specified in Calendar Days, by Completion Date, or both.

- a. **Calendar Days.** When the contract time is specified on a calendar days basis, all work under the Contract shall be completed within the number of calendar days specified. If no starting day is specified in the Contract, the count of Contract time begins on the day following receipt of the Notice to Proceed by the Contractor.

Calendar days shall continue to be counted against Contract time until and including the date of project completion. Calendar days shall not be counted during the period from November 1 through April 30, except for days that the Contractor is working on the project site.

- b. **Completion Date.** When the contract time is specified on a completion date basis, all work under the Contract shall be completed by the specified completion date.

- c. Reasons for Suspension of Work and Extension of Contract Time.** The Department may order a suspension of work for any reason listed in this subparagraph c., items (1) through (16).

The Department shall not pay additional compensation, but may extend Contract time only, if there are delays in the completion of controlling items of work from unforeseeable causes that are beyond the Contractor's control and are not the result of the Contractor's fault or negligence, including:

- (1) Acts of God;
- (2) Acts of the public enemy;
- (3) Fires;
- (4) Floods;
- (5) Epidemics;
- (6) Quarantine restrictions;
- (7) Strikes;
- (8) Freight embargoes;
- (9) Unusually severe weather;
- (10) According to Subsection 50-06.d.(4), delays by utility owners beyond completion dates specified in the Special Provisions for relocating or adjusting utilities and related facilities; or
- (11) Delays of subcontractors, suppliers and fabricators from unforeseeable causes beyond the control of the subcontractors, suppliers or fabricators and that are not the fault of the subcontractors, suppliers or fabricators, including those causes listed in this Subparagraph c, Items (1) through (10).

No additional Contract time or additional compensation will be allowed due to delays caused by or suspensions ordered due to:

- (12) Failure to correct conditions that create risk of imminent harm for the traveling public, violations of the Contract or any applicable federal, state, and local laws, rules, regulations, and ordinances;
- (13) Adverse weather that is not unusually severe;
- (14) Failure to carry out Contract provisions;
- (15) Failure to carry out orders given by the Engineer; or
- (16) Failure to timely obtain materials, equipment, or services.

The Contractor shall notify the Engineer as soon as the Contractor becomes aware of any act or occurrence that may form the basis of a request for a time extension under this section. The Contractor shall submit a request for a time extension to the Engineer within 10 days of the act or occurrence, and if an agreement is not reached, the Contractor may submit a Claim under Subsection 50-17.

The time allowed in the Contract, as awarded, is based on performing the original estimated quantities of work set out in the bid schedule. An assertion that insufficient time was originally specified shall not constitute a valid reason for extension of contract time.

If satisfactory fulfillment of the Contract requires extra work, the Department may extend Contract time according to Subsection 40-02.

- d. Suspension of Work.** The Engineer will suspend work on the project, in whole or in part, for such periods and for such reasons as the Engineer determines to be reasonable, necessary, in the public interest, or for the convenience of the Department.
- (1) The Engineer will issue a written order to suspend, delay, or interrupt all or any part of the work. The Contractor shall not be compensated for the suspension, delay, or interruption if it is imposed for a reasonable time under the circumstances.
 - (2) Unless another Contract section specifically provides otherwise, the Contractor will be compensated by equitable adjustment for a suspension, delay, or interruption of the work only if:
 - (a) The period of suspension, delay, or interruption is for an unreasonable time under the circumstances and another Contract section allows compensation in the event of a suspension, delay, or interruption of the work under the circumstances that actually caused the suspension, delay, or interruption; or
 - (b) The delay, suspension, or interruption results from the Department's failure to fulfill a contractual obligation to the Contractor within the time period specified in the Contract or, if no time period is specified, within a reasonable time.
 - (3) No equitable adjustment will be made under this subsection for any suspension, delay, or interruption of the work if the Contractor's performance would have been suspended, delayed, or interrupted by any other cause for which:
 - (a) The Department is not responsible under the Contract, including the Contractor's fault or negligence; or
 - (b) An equitable adjustment is either provided for or excluded under any other section of this Contract.
 - (4) Claims for equitable adjustments under this section shall be filed under Subsection 50-17 except that:
 - (a) The Contractor must give written notice of intent to claim no later than 20 days after the event giving rise to the delay, suspension, or interruption;
 - (b) The claim may not include any costs incurred more than 20 days before the Contractor files the Contractor's written notice of intent to claim;
 - (c) The contractor must submit a written request for adjustment within 7 calendar days of receipt of the notice to resume work;
 - (d) No profit will be allowed on an increase in cost necessarily caused by the suspension, delay, or interruption.

80-07 FAILURE TO COMPLETE ON TIME. For each calendar day that the work is not substantially complete after the expiration of the Contract time or the completion date has passed, the Engineer shall deduct the full daily charge corresponding to the original Contract amount shown in Table 80-1 from progress payments.

For each calendar day that the work is substantially complete but the project is not complete, after the expiration of the Contract time or the completion date has passed, the Engineer shall deduct 20 percent of the daily charge corresponding to the original Contract amount shown in Table 80-1 from progress payments.

If no money is due the Contractor, the Department may recover these sums from the Contractor, from the Surety, or from both. These are liquidated damages and not penalties. These charges shall reimburse the Department for its additional administrative expenses incurred due to the Contractor's failure to complete the work within the time specified.

Table 80-1
DAILY CHARGE FOR LIQUIDATED DAMAGES
FOR EACH CALENDAR DAY OF DELAY

Original Contract Amount		Daily Charge
From More Than	To and Including	
\$ 0	1,000,000	\$1,500
1,000,000	5,000,000	2,900
5,000,000	25,000,000	5,500
25,000,000	-----	6,600

Permitting the Contractor to continue work after the durations, dates, and times specified in the Contract have elapsed, or after the Contract time has elapsed or the completion date has passed does not waive the Department's rights to collect liquidated damages under this section.

In addition to the overall project liquidated damages defined above, liquidated damages will be assessed if substantial completion of a phase of work is delayed beyond the date shown in the Construction Phasing Schedule shown in the Plans. For every calendar day that the operational use of the phase is delayed beyond the duration shown in the Construction Phasing Schedule, a sum of \$1,500 per day will be assessed and deducted from the monies due.

80-08 DEFAULT OF CONTRACT. The Contracting Officer will give a written Notice of Default to the Contractor and the Surety if the Contractor:

- a. Fails to begin work under the Contract within the time specified;
- b. Fails to perform the work with sufficient workers, equipment, or materials to ensure the prompt completion of the work;
- c. Performs the work unsuitably or neglects or refuses to remove materials or to replace rejected work;
- d. Discontinues the prosecution of the work;
- e. Fails to resume work that has been discontinued within a reasonable time after notice to do so;
- f. Becomes insolvent except that if the Contractor declares bankruptcy, termination shall be according to the Federal Bankruptcy Code. In the event that the Contractor declares bankruptcy, the Contractor agrees that the Contract will be assumed by the Surety in a timely manner so as to complete the Contract by the date specified in the Contract;
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 60 days;
- h. Makes an assignment for the benefit of creditors, without the consent of the Engineer;
- i. Fails to comply with applicable minimum wage or civil rights requirements;
- j. Is a party to fraud, deceit, misrepresentation, or malfeasance in connection with the Contract; or
- k. Fails to perform the work in an acceptable manner for any other cause whatsoever.

The written Notice of Default will include a notice to cure and will establish a date by which the cure must be completed. The Contracting Officer may allow more time to cure than originally stated in the Notice of Default if the Contracting Officer deems it to be in the best interests of the Department. Failure to cure the delay, neglect, or default within the time specified in the Contracting Officer's Notice of Default authorizes the Department to terminate the contract. The Department will provide the Contractor and the Contractor's Surety with a written Notice of Termination.

After the Notice of Termination is issued, the Department may take over the work without further notice; may complete it by itself, by contract or otherwise; and may take possession of and use materials, appliances, equipment, or plant on the work site necessary for completing the work.

The Department may transfer the obligation to perform the work from the Contractor to the Surety. In that event, the Surety shall submit its plan for completion of the work, including any contracts or agreements with third parties for completion, to the Department for approval before beginning work. The Surety must follow the Contract requirements for approval of subcontracts, except that the limitation on percent of work subcontracted will not apply. On receipt of the transfer notice, the Surety shall take possession of all materials, tools, equipment, and appliances at the work site, employ an appropriate work force, and complete the Contract work as specified. The Contract specifications and requirements shall remain in effect, except that the Department will make subsequent Contract payments directly to the Surety. The Contractor forfeits any right to claim for the work and is not entitled to receive any further balance of the amount to be paid under the Contract.

The Contractor and the Contractor's Surety are jointly and severally liable for any damage to the Department resulting from the Contractor's delay, neglect, or default, whether or not the Department terminates the Contractor's right to prosecute the work. The Department's damages include any increased costs incurred by the Department in completing the work or paying for the work to be completed. The Department's rights and remedies are in addition to any other rights and remedies provided by law or under the Contract.

If, after notice of termination of the Contractor's right to proceed under this clause, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties will be determined under Subsection 80-09, Termination for Convenience.

80-09 TERMINATION FOR CONVENIENCE.

a. Notice. The Contracting Officer may terminate the Contract in whole or in part due to:

- (1) Executive Orders of the President of the United States or the Governor of the State of Alaska with respect to the prosecution of war or the interest of national defense, or any disaster declaration.
- (2) Restraining orders or injunctions by a court of competent jurisdiction affecting prosecution of the work based on acts or omissions of persons or agencies other than the Contractor.
- (3) Any reason determined by the Contracting Officer to be in the best interest of the Department.

The Contracting Officer will issue a written Notice of Termination to the Contractor. The Notice of Termination shall state the extent to which performance of work under the Contract is terminated, the effective date of the termination, and for which of the above-listed reasons the Contract is terminated.

b. Required Actions. Unless otherwise directed by the Contracting Officer, upon receipt of a Notice of Termination the Contractor shall immediately:

- (1) Stop work as directed in the Notice.
- (2) Place no further orders or subcontracts for materials, services, or facilities except as approved to complete work not terminated.

(3) Terminate all orders and subcontracts for the terminated work.

(4) Accomplish either (a) or (b) below as directed by the Contracting Officer:

(a) Assign to the Department all right, title and interest in any terminated orders or subcontracts. The Contracting Officer will settle all claims on the terminated orders or subcontracts.

(b) Settle any outstanding liabilities and claims arising from termination of orders and subcontracts. Settlements must be limited to costs allowed under this section.

(5) Submit to the Contracting Officer a list, certified as to quantity and quality, of all materials acquired or produced for incorporation into the project and that are properly allocable to the terminated portion of the project, exclusive of items disposed of under Subsection 80-09.b.(6), below.

(6) Dispose of materials in the Contractor's possession or control that were acquired or produced but not incorporated into the project as of the termination date as directed by the Contracting Officer under either (a) or (b) below:

(a) Transfer title and deliver the materials to the Department. The Department will pay for the materials at the actual cost delivered to the project or storage site, including transportation charges, to which cost 15% will be added.

(b) Sell the materials. Credit will not have to be extended to prospective purchasers.

The Contractor may acquire the materials if the Contracting Officer approves the sale price and the Contractor meets any other conditions prescribed by the Contracting Officer.

At the sole discretion of the Contracting Officer, the proceeds of any sale, transfer, or disposition of materials may be:

(c) Applied to reduce any payments to be made by the Department under the Contract;

(d) Credited to the cost of the work; or

(e) Paid in any other manner as directed.

(7) Deliver to the Department completed or partially completed plans, drawings, information, and other property required to be furnished under the Contract.

(8) Take all necessary actions and comply with all directives to protect contract-related property in which the Department has or may acquire an interest.

(9) Complete work not terminated.

The Contractor shall proceed immediately with performance of the above obligations notwithstanding any delay in determining or adjusting the amount of any item or reimbursable cost under this clause.

c. **Claim.** The Contractor shall submit any termination claim to the Contracting Officer within 90 days after the effective date of termination, unless the date for submitting a claim is extended in writing by the Contracting Officer.

(1) Without duplication of any amount paid for under Subsection 80-09.b., the claim may be for the total of:

- (a) Costs incurred in performing the terminated work from the date of Contract award to the effective date of the termination subject to the provisions of 80-09.c.(2) regarding reimbursement of equipment costs and 80-09.c.(3) regarding unallowable items.
 - (b) Payments approved by the Contracting Officer under 80-09.b.(4)(b) to settle the termination claims of suppliers and subcontractors to the extent not covered under 80-09.c.(1)(a).
 - (c) Reasonably incurred costs for:
 - (i) Accounting, legal, clerical, and other costs reasonably necessary for preparation of the termination claim and settlement negotiations, excluding costs incurred after the date an appeal is filed with the Appeals Officer under 80-09.h.
 - (ii) Settling subcontractor and supplier claims, excluding the amounts of those settlements paid under 80-09.c.(1)(b).
 - (d) Reasonable profit on the costs included in Subsection 80-09.c.(1)(a) based on the Contractor's bid rate for profit or as determined under any other reasonable accounting method. However, if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, the Contracting Officer will allow no profit and will reduce the settlement to reflect the indicated rate of loss under Subsection 80-09.d. The Department will not pay profit on costs included in Subsections 80-09.c.(1)(b) and 80-09.c.(1)(c).
- (2) Equipment claims will be reimbursed as follows:
- (a) Contractor-owned equipment usage, based on the Contractor's ownership and operating costs for each piece of equipment as determined from the Contractor's accounting records. Do not base equipment claims on published rental rates.
 - (b) Idle time for Contractor-owned equipment, based on the Contractor's internal ownership and depreciation costs. Idle equipment time is limited to the actual period of time equipment is idle as a direct result of the termination, not to exceed 30 days. Operating expenses will not be included for payment of idle equipment time.
 - (c) Rented equipment, based on reasonable, actual rental costs. Equipment leased under "capital leases" as defined in Financial Accounting Standard No. 13 will be considered Contractor-owned equipment. Equipment leased from an affiliate, division, subsidiary or other organization under common control with the Contractor will be considered Contractor-owned equipment.
- (3) The following costs are not payable under a termination settlement agreement or Contracting Officer's determination of the termination claim, or on appeal:
- (a) Anticipated profits on work that is not performed prior to issuance of the Notice of Termination, or any consequential or compensatory damages.
 - (b) Unabsorbed home office overhead (also termed "General & Administrative Expense") related to ongoing business operations.
 - (c) Bidding and project investigative costs.
 - (d) Direct costs of repairing equipment to render it operable for use on the terminated work.
- d. **Adjustment for Loss.** If the Contractor would have sustained a loss on the entire Contract had it been completed, the Department will not pay the Contractor more than the total of:

- (1) The amount due for termination claim costs under Subsection 80-09.c.(1)(c); plus
 - (2) The remainder of the total allowable claim amount due reduced by multiplying the remainder by the ratio of (a) the total contract price to (b) the remainder plus the estimated cost to complete the entire Contract; minus
 - (3) All disposals and other credits, all advance and progress payments and all other amounts previously paid under the Contract.
- e. **Deductions.** In arriving at the amount due under this subsection, the Department will deduct:
- (1) All previous payments made before termination;
 - (2) Any claim which the Department may have against the Contractor;
 - (3) The proceeds of the sale or transfer of any materials, supplies, or other items acquired for the terminated work and not otherwise recovered by or credited to the Department;
 - (4) All partial payments made under this section; and
 - (5) Any adjustment for loss determined under Subsection 80-09.d.
- f. **Agreed Settlement.** The Contractor shall make every effort to arrive at a claim settlement with the Contracting Officer that is fair to both parties, that reflects the reasonable and allocable incurred costs allowable under Subsection 80-09.c, that includes a profit under Subsection 80-09.c.(1)(d) or, where appropriate, a loss adjustment under Subsection 80-09.d., and that takes into account the Contractor's reasonable business judgment in performing the work.
- The total settlement, whether determined under this Subsection 80-09.f. or under Subsection 80-09.g., exclusive of the costs listed in Subsection 80-09.c.(1)(c), may not exceed the total contract price as reduced by previous payments made and the contract price of work not terminated.
- If an agreement is reached in whole or in part, the Department will amend the contract and will pay the agreed amount.
- g. **Determined Settlement.** If the Contractor fails to submit a termination claim within the time allowed, or if an agreement is not reached on the amount due, the Contracting Officer may determine in a Contracting Officer's Decision, the amount due under Subsection 80-09 on the basis of information available to the Department.
- h. **Right of Appeal.** The Contractor may appeal a Contracting Officer's Decision within the time and in the manner specified in Subsection 50-17.
- i. **Partial Payments.** In the sole discretion of the Contracting Officer, the Department may make partial payments against costs incurred by the Contractor in connection with the terminated portion of the Contract. The sum of these partial payments will not exceed the Contracting Officer's estimate of the total amount that will be due as a result of the termination. The estimate will be based on available information. The Contracting Officer may adjust the estimate as additional information becomes available. If the Contracting Officer orders an audit of the Contractor's financial or project records, the Contracting Officer may decline to make partial payments until the audit is completed.
- j. **No Waiver of Rights.** The termination of work by the Department does not affect or extinguish any of the rights of the Department against the Contractor or the Contractor's Surety then existing or which may thereafter accrue. Any retention or payment of monies by the Department due under the terms of the Contract will not release the Contractor or the Contractor's Surety from the contractual obligations or warranties made under Subsection 70-19 or elsewhere in the Contract.

- k. Retaining Records.** The Contractor shall unless otherwise provided for in the Contract or by applicable statute, keep all books, records, documents, and other evidence bearing on the Contractor's cost and expenses under the Contract and relating to the work terminated for a period of 3 years after final settlement under this Contract. Records must be made available to the Department at the Contractor's office and at all reasonable times.
- l. Definitions.** In this Subsection 80-09, the term "cost" and the term "expense" mean a monetary amount in U.S. Dollars actually incurred by the Contractor, actually reflected in the Contractor's contemporaneously maintained accounting or other financial records and supported by original source documentation.
- m. Cost Principles.** The Department may use the federal cost principles at 48 CFR §§ 31.201-1 to 31.205-52 (or succeeding cost principles for fixed price contracts) as guidelines in determining allowable costs under this subsection to the extent they are applicable to airport construction contracts and consistent with the specifications of this Contract. The provisions of this contract control where they are more restrictive than, or inconsistent with, these federal cost principles.

SECTION 90 MEASUREMENT AND PAYMENT

90-01 GENERAL. Wherever the Contract provides that certain work is subsidiary or it is without extra compensation, the payment for that work is included in the payment for other items of work, and no further or additional payment shall be made for that work.

When more than one type of material or work is specified for a pay item, the pay item and the proposal line number are used to differentiate the material or work.

Lump sum items will not be measured for payment. The Contractor shall accept the bid amount for a lump sum item as complete payment for all work necessary to complete that item. Quantities shown for lump sum items are approximate. No adjustment in the lump sum price will be made if the quantity furnished is more or less than the estimated quantity unless the Contract specifically states otherwise.

90-02 MEASUREMENT OF QUANTITIES. All work completed under the Contract will be measured using the U.S. Customary system of measure. The Engineer may agree for purposes of making progress payments to use a method of measurement other than the methods described below. However, all final payments for quantities will be calculated using one or more of the methods of measurement described below and in the applicable pay item section. Unless otherwise specified, work will be measured as follows:

- a. **Acre (43,560 ft²).** Horizontally, unless specified on the ground surface. No deductions will be made for individual fixtures with an area of 500 ft² or less.
- b. **Contingent Sum.** Measured as specified in the Contract or Directive authorizing the work. The method of payment may include: (1) a lump sum basis, (2) a price multiplied by the units of work performed, (3) a pay adjustment based on the quality of work, or (4) a deduction from the contract amount.
- c. **Cubic Yard (yd³).** At the location specified using method (1), below. Methods (2) through (5) may be used with written approval of the Engineer.
 - (1) **Average End Area.** End area is the calculated area between original ground cross section and either the design cross section or at the Engineer's discretion the final cross section. Volume of material is calculated using the average of end areas multiplied by the distance along centerline between end areas. In extreme cases where most of the earthwork lies along a single horizontal curve the Engineer may compute volume using the average of end areas multiplied by the distance along centroid of cross section between end areas.
 - (2) **Three-Dimensional.** Where it is impractical to measure material by cross sectioning due to erratic location of isolated deposits, acceptable methods involving three-dimensional measurements may be used.
 - (3) **Neat Line.** Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.
 - (4) **Nominal.** Volume calculated as nominal width times nominal thickness times the average length of each piece.
 - (5) **Weight.** With the Engineer's written approval, material that is specified to be measured by volume may be weighed and converted to volume for payment purposes. The Engineer will determine the appropriate conversion factors. When liquid asphalt is a pay item, ASTM D4311 will be used to convert from weight to volume at 60 °F.
- d. **Cubic Yard Vehicle Measure (CYVM).** Material measured by volume in the hauling vehicle will be measured at the point of delivery. Vehicles may be of any acceptable size or type provided

that the volume of the actual contents may be readily and accurately determined. Vehicles shall be loaded to the measured vehicle volume. If vehicles are not loaded to the measured vehicle volume, the Engineer at their discretion, may apply a percentage of full factor to the measured volume. Loads shall be leveled when directed. No payment will be made for loads that exceed the legal capacity of the vehicle.

- e. **Linear Foot (LF).** From end to end, in place, parallel to the centerline of the item or ground surface on which the items are placed.
- f. **Thousand Feet Board Measure (MBM).** Nominal volume based on nominal widths and thickness times actual extreme length of each piece. One thousand feet board measure = 1,000 ft² X 1 inch thick.
- g. **Thousand Gallon (MGal).** By using method (1), below. Methods (2) or (3) may be used with written approval of the Engineer:
 - (1) Measured or calibrated volume tank;
 - (2) Metered volume, using a certified calibrated meter; or
 - (3) Weighed under this subsection and converted to volume, using a specified or approved conversion factor.
- h. **Mile.** From end to end, measured horizontally along centerline.
- i. **Pound.** Using a certified scale or the net weight of packaged material as labeled by the manufacturer. The Engineer will accept nominal weights for standard manufactured items, unless otherwise specified. The Engineer will accept industry-established manufacturing tolerances, unless otherwise specified.
- j. **Square Foot (ft²).** Parallel to the surface being measured. No deductions will be made for individual fixtures with an area of 1 ft² or less. Transverse measurement for area computations will be the neat dimensions shown on the Plans or as directed by the Engineer.
- k. **Square Yard (yd²).** Parallel to the surface being measured. No deductions will be made for individual fixtures with an area of 1 yd² or less. Transverse measurement for area computations will be the neat dimensions shown on the Plans or as directed by the Engineer.
- l. **Station (100 feet).** Horizontally, parallel to centerline.
- m. **Ton (2,000 pounds).** By using method (1) or (2), below. Method (3), below, may be used with written approval of the Engineer:
 - (1) **Commercial Weighing System.** Permanently installed and certified commercial scale that meets the requirements for the project weighing system.
 - (2) **Project Weighing System.** Approved automatic digital scale and scale house. All scales are subject to approval according to the Weights and Measures Act, AS 45.75.

Spring balances and belt conveyor scales shall not be used to determine pay weight.

The Contractor may use proportioning (batch) scales for weighing material for payment when the batching equipment includes an approved and certified automatic weighing, cycling, and monitoring system.

Weigh scales used with a storage silo may be used to weigh the final product for payment, provided the scales are approved and certified.

Vehicle scales shall be maintained with the platform level and rigid bulkheads at each end. The platform must be long enough to permit simultaneous weighing of the hauling vehicle including coupled vehicles, in a single draft. Double draft weighing is not allowed.

(a) Scale Requirements. The Contractor shall:

1. Ensure that vehicle scale(s) are installed and maintained to the standards listed in the National Institute of Standards and Technology (NIST), Handbook 44, Specifications, Tolerances and other Technical Requirements for Commercial Weighing and Measuring Devices, as adopted by AS 45.75.050(d);
2. Contact the Division of Measurement Standards/Commercial Vehicle Enforcement (MSCVE) to coordinate scale inspections before use, at required intervals or as directed by the Engineer and for clarification or possible exceptions to this section;
3. Ensure that a weatherproof housing is provided to protect the scale indicating/recording equipment and allows the scale operator convenient access to the weigh indicator, scale computer, ticket printer, and sequential printer;
4. Use competent personnel to operate the scale system;
5. Furnish and maintain on-site, NIST Class-F cast iron test weights in denominations of 500-lb and/or 1000-lb. The required minimum for vehicle scales is 4000-lb; the required minimum for hopper scales is 2000-lb. Test weights shall have a recognized calibration certificate on file which is dated no more than two years from date of Notice to Proceed. Test weights will be used as directed by the Engineer or MSCVE for initial accuracy calibration testing and may be used for subsequent scale testing or inspection. Projects accessible by direct road access from the communities identified on the dot.alaska.gov/mscve website, 5 days before bid opening, are exempt from the requirement to furnish and maintain on-site test weights;
6. Provide the following information on any scale used to weigh materials for payment:
 - (a) Owner of the scales and scale locations;
 - (b) Manufacturer's name, model serial number, maximum capacity, and type of scales (single beam, double beam, self-reading, etc.);
 - (c) Date(s) the scales were installed and/or adjusted;
 - (d) Scale service company inspections and accuracy checks (attach copy);
 - (e) Division of Measurement Standards inspections and accuracy checks (attach copy); and
 - (f) Time and dates of notification of any malfunctions.

(b) Electronic Computerized Weighing System. The Contractor shall provide and use an electronic computerized weighing system (ECWS) with the following minimum capabilities:

1. **Computer.** A computer with a self-reading scale system that includes the scale load cell, a sealed direct reading weight indicator, scale computer, ticket printer, and sequential printer, and that can record a complete shift's transaction in an electronic format approved by the Engineer.

The computer must store project numbers, all pay item descriptions for multiple projects and products that are weighed, and the following information for each hauling vehicle used on the project:

- (a) Vehicle identification number marked on the vehicle;
- (b) Tare weight; and
- (c) Maximum allowable gross vehicle weight (MAVW).

During weighing operations, the ECWS must compare each vehicle's gross weight to its MAVW. If the vehicle exceeds its MAVW, the system must alert the scale operator that an "overload" exists. The system must not issue a ticket for an overload.

The computer must have a battery backup and protection for power surges or brown outs. The computer system must retain all stored data during a power outage and must operate during a power outage to allow the scale operator to shut down the hard drive without losing information.

2. **Tickets.** The ECWS must have a ticket printer that prints a legible, serially numbered weigh ticket for the Engineer with the following information on each ticket in the order listed:

- (a) Project number;
- (b) Item number and description;
- (c) Date weighed;
- (d) Time weighed;
- (e) Ticket number;
- (f) Vehicle Identification Number;
- (g) Maximum allowable gross vehicle weight;
- (h) Gross weight;
- (i) Tare weight;
- (j) Net weight;
- (k) Subtotal item net weight for each haul unit since start of shift; and
- (l) Accumulated item net weight for all haul units since start of shift.

Tickets must show all weights in pounds in accordance to NIST Handbook 44, and in tons reported to two decimal places.

After printing, the weigh ticket must automatically advance to a perforation so it can be torn off and handed to the driver. Each ticket shall be initialed by the scale operator before handoff to the driver.

3. **Sequential Printer.** A sequential printer that prints out all transactions (keystrokes) made by the computer concurrently with the ticket printer. For permanent commercial scales, the printer may print at the end of the company's daily shift with the Engineer's approval. The printer must print all scales transactions including tares, voided tickets, and data changes made by the scale operator. The printer must allow for advancing the paper manually so that the scale operator can write notes on the paper when special situations occur, such as voided tickets, incorrect vehicle identification number used, etc. The scale operator shall also note these special situations in the Scales Diary.

The sequential printout shall be submitted to the Engineer at the end of each shift.

4. **Data Files.** Submit electronic data files to the Engineer at the end of each shift, with all ticket information produced during the shift recorded. These Data files must be complete and correct without conversion or manipulation.
5. **Scale Diary.** The scale operator shall keep a Scale Diary in an electronic format acceptable to the Engineer. The scale operator shall complete the Scale Diary with the following information: dates of action, type of material, source, time the scale opened and time the scale closed, times of scale balance, ticket sequence, time the haul for each material started and stopped, voided ticket numbers, vehicle identification numbers, times of tare and tare weights, and the scale operator's signature. The Scale Diary shall include the following information on any scale used to weigh materials for payment:

- (a) Owner of the scales and scale locations;
- (b) Manufacturer's name, model serial number, maximum capacity, and type of scales (single beam, double beam, self-reading, etc.);
- (c) Date(s) the scales were installed and/or adjusted;
- (d) Scale service company inspections and accuracy checks (attach copy);
- (e) Division of Measurement Standards inspections and accuracy checks (attach copy); and
- (f) Time and dates of notification of any malfunctions.

The Scale Diary shall be given to the Engineer at the end of each shift. The Scale Diary is the property of the Department.

- (c) **Weighing Procedures.** The scale operator shall tare hauling vehicles and record tare weights at least once daily; perform additional tares and record additional tare weights as directed by the Engineer; perform tares in the presence of the Engineer when requested; and ensure that each hauling truck displays a unique, legible identification mark.

The Engineer will calculate the MAVW for each vehicle and list all vehicles and their MAVW(s) in the scale house. The MAVW is either the maximum allowable legal weight determined by the Engineer when the Contractor cannot haul overloads, or the manufacturer's recommended maximum allowable gross vehicle weight as certified by the Contractor when vehicles are allowed to haul overloads. Only MAVWs that the Engineer has provided in writing shall be used. Tickets may not be issued to a vehicle until the Engineer provides the MAVW.

No payment will be made for any material weighed without using the ECWS, unless the Contractor obtains the Engineer's prior written authorization. If the ECWS malfunctions or breaks down, weights shall be manually weighed and recorded for up to 48 hours as directed by the Engineer. The manual weighing operation shall meet all other Contract requirements.

The system must generate a report either during or at the end of the day or shift that summarizes the number of loads and total net weight for each date, project, and product. The scale operator shall submit the original report to the Engineer at the end of each shift.

No payment for any hauled material on a given date will be made until the following are delivered to the Engineer:

- 1. Sequential printout;
- 2. Daily data; and
- 3. Scale Diary.

The Contractor will not receive payment for any material hauled in a vehicle that does not conform to the requirements of Subsection 50-12, Load Restrictions, and this Subsection. The Contractor shall dump material from non-conforming vehicles until they conform, then reweigh the vehicles.

When a weighing device indicates less than true weight, the Contractor will not receive additional payment for material previously weighed and recorded. When a weighing device indicates more than true weight, all material received after the last previously correct weighing accuracy test will be reduced by the percentage of error that exceeds 0.5 percent.

If the Engineer incurs extra construction engineering expenses from checking non-machine data entries or other data irregularities, the total value of those expenses will be deducted from the value of the Contract item before payment.

The Contractor shall accept natural variations in the specific gravity of aggregates, without adjustment in Contract unit price.

- (3) **Invoices.** Supplier's invoice with net weight or volume converted to weight for bulk material that is shipped by truck or rail and is not passed through a mixing plant. Periodic check weighing may be required. Net certified weights or volumes of asphalt materials are subject to correction for temperature and foaming. All materials are subject to correction for material that is lost, wasted, or otherwise not incorporated into the work, for computing quantities.

All aggregate paid by weight shall be less than 2% over optimum moisture, or as approved by the Engineer.

90-03 SCOPE OF PAYMENT. The Department will make payment at the Contract price or prices for each item shown on the bid schedule or as modified by change order with specified price adjustments. The Contractor shall accept the Contract prices as full and complete payment for (a) furnishing all equipment, materials, tools, and labor necessary to complete the work in a complete and acceptable manner, and for (b) all of the Contractor's risk, loss, damage, or expense of whatever character arising from or relating to the work and performance of the work.

90-04 COMPENSATION FOR ALTERED QUANTITIES. Payment to the Contractor for unit price items shall be made only for the actual quantities of work performed and accepted or materials furnished, in conformance with the Contract. When the accepted quantities of work or materials vary from the quantities stated in the bid schedule, the Contractor shall accept payment at the original Contract unit prices for the quantities of work and materials furnished, completed and accepted as payment in full. Payment at the Contract unit price shall compensate the Contractor for all costs, expenses, and profit that the Contractor is entitled to receive for the altered quantities, except as provided below:

- a. When the final quantity of a Major Contract Item varies more than 25 percent above or below the bid quantity, either party to the Contract may receive an equitable adjustment, excluding anticipated profits, in the Contract unit price of that item. If the final quantity of work is:
 - (1) Greater than 125 percent of the bid quantity, the equitable adjustment will be made only for those units that are in excess of 125 percent of the bid quantity.
 - (2) Less than 75 percent of the bid quantity, the equitable adjustment will be made for those units of work done and accepted, except that the total payment for the item shall not exceed 75 percent of the total amount bid for the item.

Except as provided above and in Subsection 40-02, no allowance shall be made for any increased expenses, expected reimbursement, or anticipated profits suffered or claimed, either directly from alterations in quantities or indirectly from unbalanced allocations among the contract items on the part of the bidder and subsequent loss of expected reimbursements, or any other causes.

90-05 COMPENSATION FOR EXTRA WORK ON TIME AND MATERIALS BASIS. When the Engineer orders extra work to be performed on a time and materials basis, compensation will be computed as follows:

- a. **Labor.** Based on the sum of (1) through (6):
 - (1) **Total hours worked times the straight time rate of pay.** The rates of pay are those indicated on the certified payroll for all labor and foremen in direct charge of the specific operations. Rates shall not exceed those for comparable labor currently employed on the project, and shall not include general superintendence.
 - (2) **Overtime hours worked times the difference between the overtime rate and the straight time rate.** No markup is allowed.
 - (3) **Fringe benefit rate times the total hours worked.** Fringe benefits include Health and Welfare, Pension Fund, etc., when such amounts are required by collective bargaining

agreement or other employment contracts generally applicable to the classes of labor employed on the project.

(4) Workers' Compensation Insurance at 8 percent of (1). The actual net rate may be used if it exceeds 10 percent and if proof of rates is furnished within 30 days of the completion of the extra work.

(5) Either subsistence and travel allowances or prorated camp costs. If an employee is due and receives subsistence or camp privileges on their days off, divide that cost by the number of days worked that week and add to their daily subsistence entitlement. If the employee did not work an entire day on time and materials work, prorate the entitlement for the hours worked on time and materials.

(6) Markup at 35 percent of the sum of (1), (3), (4), and (5). This includes and shall fully compensate the Contractor for all overhead and profit, including general superintendence, additional bond, property damage liability insurance, unemployment insurance contributions, social security and other taxes, administrative overhead costs, and profit.

b. Materials. Actual invoiced material and delivery costs plus 15 percent markup. The material must be approved and incorporated into the work. The Contractor shall furnish to the Engineer proof of payment for materials used in the work plus applicable transportation charges. For Contractor-produced materials, certify in writing the Contractor's actual direct costs, the quantities used, and attach cost spreadsheets and production documentation to verify the costs.

c. Equipment. Includes machinery and special equipment (other than small tools) necessary for the work and authorized by the Engineer. No additional compensation will be made for overhead, profit, maintenance, service, repairs, fuels, lubricants, or replacement parts.

(1) Hourly Rental Rate. Based on rental rates in the current edition and appropriate volume of the *Rental Rate Blue Book*, by EquipmentWatch, Penton Media, Inc.

The regular hourly rental rate is equal to the equipment rate plus the estimated hourly operating cost. These rates apply for equipment used during the Contractor's regular shift of 10 hours per day. No markup is allowed.

The equipment rate is equal to the age adjusted monthly rate for the basic equipment plus the age adjusted monthly rate for applicable attachments, both divided by 176, and multiplied by the regional adjustment factor. The equipment rate is per hour.

The age adjusted monthly rate is that resulting from application of the age adjustment formula, to eliminate replacement cost allowances in machine depreciation and contingency cost allowances.

Only the attachments required for the time and materials work will be included.

The rental rate area adjustment factors for this project shall be as specified on the adjustment maps for the Alaska - South Region.

(2) Hourly Overtime Rate. Half of the equipment rate plus the full estimated hourly operating cost. The overtime rate will apply to hours the equipment is used in excess of 10 hours per day, either on the Contractor's normal work or on time and materials, and either on single or multiple shifts. No markup is allowed.

(3) Hourly Stand-by Rate. Half of the equipment rate, for equipment ordered on stand-by during the Contractor's normal work shift, not to exceed eight hours per day. No operating costs or markup is allowed.

(4) Unlisted Equipment. For equipment not listed in The Blue Book, the Contractor and the Engineer may agree to a rate before extra work is begun. If agreement is not reached, the Engineer has authority to establish a rate based on similar equipment in the Rental Rate Blue Book or prevailing commercial rates. No markup is allowed.

(5) Leased or Rented Equipment. Equipment that must be rented or leased specifically for work required under this section and authorized in writing by the Engineer shall be paid at invoice price plus 15 percent markup.

Equipment rented or leased for other work under the Contract and used for work under this section shall be paid based on c.(1), (2), and (3). (above) with no markup, except that the adjusted monthly rate is the monthly rate determined directly from the submitted rental or lease agreement.

(6) Transportation of Equipment. The actual cost of moving equipment to and from the work site. To receive reimbursement for transportation of equipment, the Contractor shall obtain the equipment from the nearest approved source and use the equipment exclusively for time and materials work. Payment for move-out will not exceed the amount of the move-in. No markup is allowed, except on operator's wages.

Basis of payment:

(a) If by common carrier: paid freight bill or invoice.

(b) If hauled with the Contractor's own resources: hourly rental rate for hauling unit plus operator wages.

(c) If equipment must be moved under its own power: half of the normal hourly rental rate plus operator's wages.

Provide a printed copy of the current EquipmentWatch rate sheet for each piece of equipment utilized on time and materials work.

d. Work by a Subcontractor or Owner-Operator. For time and materials work performed by an approved subcontractor or owner-operator under items **a.** through **c.** above, the Contractor will receive a 5 percent markup for administrative costs. No percentage will be paid on work covered under bid items in the original Contract. No percentage over the amount covered above will be paid for work done by a lower tier subcontractor.

e. Work by a Specialty Subcontractor. The Contractor shall obtain the Engineer's advance agreement that the specialty item needed is beyond the Contractor's ability or expertise or that of the Contractor's other subcontractors. For work on a specialty item performed by an approved specialty subcontractor, the Contractor will receive the approved invoice cost of work or service plus a 15 percent markup for administrative costs.

f. Records. The Engineer will maintain a daily record of labor, equipment and materials utilized in the extra work. The Engineer will present this record to the Contractor at the end of each day's work for verification and signature.

g. Compensation. Payment for time and materials work will be made in the progress estimate following receipt of the verified daily records and all required supporting information from the Contractor. If, at any time, a unit price or lump sum basis of compensation is agreed to for work being performed under this subsection, that compensation will be set forth in writing as a Change Order.

90-06 PROGRESS PAYMENTS. The Department will make monthly progress payments to the Contractor based on estimates of the value of work performed and materials on hand under Subsection

90-07. At the Departments discretion, a progress payment may be made twice monthly if the value of the estimate exceeds \$10,000.

Contractor's failure to pay subcontractors, or subcontractor's failure to pay lower tier subcontractors, according to prompt payment provisions required under Subsection 80-01 is considered unsatisfactory performance.

The Department will not withhold payment as retainage but may withhold payment for unsatisfactory performance. If satisfactory progress is being made and subcontractors are paid according to Subsection 80-01 and AS 36.90.210, the Engineer will authorize 100 percent payment for the estimated value of work accomplished, less any authorized deductions.

If the Engineer finds that satisfactory progress is not being made or payment for satisfactory work by a subcontractor or lower tier subcontractor is not paid according to Subsection 80-01, the Engineer may withhold up to 100 percent of the total amount earned from subsequent progress payments. The Engineer may withhold up to 200 percent of the estimated cost to complete final punch list items for unsatisfactory performance until those items are complete. The Engineer will notify the Contractor in writing within eight (8) working days of a request for a progress payment of the reasons why part or all of the payment is being withheld for unsatisfactory performance and what actions may be taken by the Contractor to receive full payment.

Payments of withheld amounts will be made in accordance with AS 36.90.200. No interest will be paid to the Contractor for amounts withheld for unsatisfactory performance except if the Department fails to pay the amount withheld within twenty one (21) calendar days after the Contractor satisfactorily completes the remedial actions identified by the Engineer, as provided in AS 36.90.200(e).

The Contractor shall pay interest on retainage withheld from subcontractors, and at an interest rate according to AS 36.90.250 and AS 45.45.010(a).

90-07 PAYMENT FOR MATERIAL ON HAND.

a. Partial Payment. The Engineer will make partial payment for materials designated for incorporation into the work. The material shall:

- (1) Meet Contract requirements;
- (2) Be delivered and stockpiled at the project or other approved location;
- (3) Be supported by invoices, freight bills, and other required information; and
- (4) Not be living or perishable.

b. Payment Requests. The Contractor shall make each payment request in writing and:

- (1) List stockpiled items, quantities of each, and stockpile location(s);
- (2) Certify that materials meet the applicable Contract specifications;
- (3) For purchased materials, attach copies of invoices, freight bills, and manufacturer's published storage recommendations;
- (4) For Contractor-produced materials, attach production statements showing quantities and dates produced and copies of process quality control test results; and
- (5) Include other information requested by the Engineer.

c. Storage Conditions. The Contractor shall protect material from damage or loss while in storage. The Contractor shall:

- (1) Physically separate stockpiled materials from other materials at the storage location;
- (2) Clearly label materials with the project name and number; and
- (3) Store materials per the manufacturer's recommendations.

If storage conditions become unsatisfactory, liens are filed on any materials, or the storage location is changed without approval, the Engineer will deduct any previous payments made for such materials.

- d. **Method of Payment.** The Engineer will include payments for acceptably stockpiled materials in the progress estimate following receipt of the Contractor's written request and all required documentation. The Engineer will:

- (1) Pay for materials purchased by the Contractor at the delivered cost but not to exceed 85% of the Contract amount for those items.
- (2) Pay for materials produced by the Contractor at up to 50% of the Contract amount for those items.
- (3) Deduct the Department's cost to inspect materials stored off the limits of the project.
- (4) Deduct partial payment quantities as they are incorporated into the project.

The Contractor shall release and discharge the Department from any liability for damages or delays related to the storage or transport of, and to the payment for, material on hand.

The Department's payment for material on hand will not constitute final acceptance by the Department.

90-08 FINAL PAYMENT. When the project has been completed as provided in Subsection 50-15, the Engineer will prepare the final estimate of the quantities of the various classes of work performed. All prior progress estimates and payments shall be subject to correction in the final estimate and payment. The final estimate will not be processed until the Alaska Department of Labor and Workforce Development has verified that final payment can be released. The Department will not process the final estimate until the Contractor completes Items a through d in the first paragraph of Subsection 50-16.

If the Contractor certifies the final estimate, or does not file a claim within 90 days of receiving the final estimate, the estimate shall be processed for final payment. Final payment shall consist of the entire sum found to be due after deducting all previous payments and all amounts to be retained or deducted under the provisions of the Contract. Failure to file a claim within 90 days of receiving the final estimate is a waiver of any and all claims relating to or arising from the final estimate.

When the Contractor executes the Certification of Final Estimate (Form 25D-116) and the Contractor's Release (Form 25D-117), final payment will be processed.

The Contractor may reserve any unresolved claims that were timely filed according to Subsection 50-17 by listing those claims as exceptions on the Contractor's Release. Any claims listed as exceptions that were not filed before the Contractor executes the final estimate will be considered null and void. Any claims filed in a timely manner but not listed on the Contractor's Release are waived and deemed released.

If the Contractor fails or declines to approve the final estimate within 90 days but does not file any claims, the Department will consider the estimate approved and process the estimate for final payment. Any subsequently raised claims will be considered null and void.

On federally funded projects, if DOLWD Wage and Hour Administration notifies the Department of a pending prevailing wage investigation, and that the investigation is preventing the closing out of the project, the Contractor may place the notified amount in escrow under Wage and Hour for the exclusive

purpose of satisfying unpaid prevailing wages. Upon receipt of notice from Wage and Hour that the contractor has satisfactorily transferred the necessary funds into escrow, the Department will proceed to issue final payment.

90-09 ELIMINATED ITEMS. When the Contractor is notified of the elimination of a minor Contract item, the Contractor will be reimbursed for actual work performed and all direct costs incurred before notification. In no case will any payment be made for anticipated profits or overhead.

Should it become necessary to eliminate a major Contract item, an equitable adjustment will be made and the Contract modified in writing accordingly.

90-10 CONSTRUCTION WARRANTY.

- a. In addition to all other warranties or remedies, express or implied, available to the Department under this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.
- b. This warranty shall continue for a period of one year from the date of final acceptance of the work. If the Department takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Department takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work.
- c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Department real or personal property, when that damage is the result of:
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defect of equipment, material, workmanship, or design furnished by the Contractor.
- d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.
- e. The Engineer will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.
- f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, or longer timeframe approved by the Engineer, the Department shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Department, as directed by the Engineer, and (3) Enforce all warranties for the benefit of the Department.
- h. The provisions of this section shall not limit the Department's rights with respect to latent defects, gross mistakes, or fraud.

90-11 PROJECT CLOSEOUT. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the Engineer approves the Contractor's final submittal. The Contractor shall:

- a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations;

- b.** Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors;
- c.** Complete final cleanup in accordance with Subsection 40-07, Cleanup;
- d.** Complete all punch list items identified during the Final Inspection;
- e.** Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the DBE subcontractors and/or suppliers associated with the project;
- f.** When applicable per state requirements, return copies of sales tax completion forms;
- g.** Provide manufacturer's certifications for all items listed in the MCL;
- h.** All required record drawings, as-built drawings or as-constructed drawings;
- i.** Project Operation and Maintenance (O&M) Manual;
- j.** Security for Construction Warranty, when required;
- k.** Equipment commissioning documentation submitted, if required.

SECTION 100

CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)

100-01 GENERAL. The Contractor shall assure that all materials and completed construction conform to contract Plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be used. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

- a. Provide qualified personnel to develop and implement the CQCP.
- b. Adequately provide for the production of acceptable quality materials.
- c. Provide sufficient information to assure that the specification requirements can be met.
- d. Document the CQCP process.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, their understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and accepted by the Engineer. No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and accepted.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the acceptance testing requirements. Acceptance testing requirements are the responsibility of the Engineer.

A Quality Control (QC)/Acceptance Testing workshop with the Engineer, Contractor, subcontractors, and testing laboratories shall be held prior to start of construction. The workshop shall address QC and acceptance testing requirements of the project specifications. The Contractor shall coordinate with the Engineer on time and location of the QC/Acceptance Testing workshop.

100-02 DESCRIPTION OF PROGRAM.

- a. **General Description.** The Contractor shall establish a CQCP to perform inspection and testing of each item of work for which it is required by the technical specifications, including those performed by subcontractors. This CQCP shall ensure conformance to applicable specifications and Plans with respect to materials, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.
- b. **Contractor Quality Control Program (CQCP).** The Contractor shall describe the CQCP in a written document. The written CQCP and plan for QC testing laboratory shall be submitted to the Engineer for review at least 5 calendar days before the preconstruction conference. The Contractor's CQCP and QC testing laboratory must be accepted by the Engineer prior to the start of any production, construction, or off-site fabrication.

The CQCP shall be organized to address, as a minimum, the following items:

- a. QC organization;

- b. Project progress schedule;
- c. Submittals schedule;
- d. Inspection requirements;
- e. QC testing plan;
- f. Documentation of QC activities and distribution of QC reports;
- g. Requirements for corrective action when QC and/or acceptance criteria are not met; and
- h. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor shall add any additional elements to the CQCP that are necessary to adequately control all production and/or construction processes required by this contract.

100-03 QUALITY CONTROL ORGANIZATION. The Contractor's CQCP shall be implemented by the establishment of a separate QC organization. An organizational chart shall be developed to show all QC personnel and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all QC staff by name and function, and shall indicate the total staff required to implement all elements of the CQCP, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the CQCP, the personnel assigned shall be subject to the qualification requirements of Subsections 100-03.a. and 100-03.b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The QC organization shall consist of the following minimum personnel:

- a. **Program Administrator.** The Contractor Quality Control Program Administrator (CQCPA) shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA shall have a minimum of 5 years of experience in QC pavement construction with prior QC experience on a project of comparable size and scope as the contract.

Included in the 5 years of paving/QC experience, the CQCPA shall meet at least one of the following requirements:

- (1) Professional engineer with 1 year of airport paving experience acceptable to the Engineer.
- (2) Engineer-in-training with 2 years of airport paving experience acceptable to the Engineer.
- (3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with 3 years of airport paving experience.
- (4) An individual with 4 years of airport paving experience acceptable to the Engineer, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

The CQCPA shall have full authority to institute any and all actions necessary for the successful implementation of the CQCP to ensure compliance with the contract Plans and technical

specifications. The CQCPA authority shall include the ability to immediately stop production until materials and/or processes are in compliance with contract specifications. The CQCPA shall report directly to a responsible officer of the construction firm. The CQCPA may supervise the CQCP on more than one project provided that person can be at the job site within 2 hours after being notified of a problem.

- b. QC Technicians.** A sufficient number of QC technicians necessary to adequately implement the CQCP shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of 2 years of experience in their area of expertise.

The QC technicians shall report directly to the CQCPA and shall perform the following functions:

- (1)** Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-06, and.
- (2)** Performance of all QC tests as required by the technical specifications and Subsection 100-07.

Certification at an equivalent level of qualification and experience, by a state or nationally recognized organization will be acceptable in lieu of NICET certification, including WAQTC qualification in any modules for which testing will be performed.

- c. Staffing Levels.** The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

100-04 PROJECT PROGRESS SCHEDULE. Critical QC activities shall be shown on the project schedule as required by Section 80, paragraph 80-03, *Prosecution and Progress*.

100-05 SUBMITTALS SCHEDULE. The Contractor shall submit a detailed listing of all submittals (e.g., mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

- a.** Pay item number;
- b.** Item description;
- c.** Description of submittal;
- d.** Specification Subsection requiring submittal; and
- e.** Scheduled date of submittal.

100-06 INSPECTION REQUIREMENTS. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-09.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

- a.** During plant operation for material production, QC test results and periodic inspections shall be utilized to ensure the quality of aggregates and other mix components, and to adjust and control

mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment utilized in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and utilized.

- b. During field operations, QC test results and periodic inspections shall be utilized to ensure the quality of all materials and workmanship. All equipment utilized in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and utilized.

100-07 CONTRACTOR QC TESTING FACILITY.

- a. For projects that include Item P-401, meet paragraph 401-3.2 Job Mix Design (JMD) Laboratory.
- b. For projects that include Item P-501, meet paragraph 501-3.2 Concrete Mix Laboratory.

100-08 QC TESTING PLAN. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by the technical specification for the Pay Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

- a. Pay item number (e.g., P401.010.0010);
- b. Item description (e.g., Hot Mix Asphalt, Type I, Class A);
- c. Test type (e.g., gradation, grade, asphalt content);
- d. Test standard (e.g., ASTM or AASHTO test number, as applicable);
- e. Test frequency (e.g., as required by technical specifications or Material Sampling and Testing Frequency table when requirements are not stated);
- f. Responsibility (e.g., plant technician); and
- g. Control requirements (e.g., target, permissible deviations).

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples according to ASTM D3665. The Engineer shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-09.

100-09 DOCUMENTATION. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

- a. **Daily Inspection Reports.** Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations on a form acceptable to the Engineer. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

- (1) Pay item number and description;
- (2) Compliance with approved submittals;
- (3) Proper storage of materials and equipment;
- (4) Proper operation of all equipment;
- (5) Adherence to Plans and technical specifications;
- (6) Summary of any necessary corrective actions; and
- (7) Safety inspection.

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results shall be archived.

- b. **Daily Test Reports.** The Contractor shall be responsible for establishing a system which will record all QC test results. Daily test reports shall document the following information:

- (1) Pay item number and description;
- (2) Test designation;
- (3) Location;
- (4) Date of test;
- (5) Control requirements;
- (6) Test results;
- (7) Causes for rejection;
- (8) Recommended remedial actions; and
- (9) Retests.

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically the results shall be archived.

100-10 CORRECTIVE ACTION REQUIREMENTS. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action

will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 INSPECTION BY THE ENGINEER. All items of material and equipment shall be subject to inspection by the Engineer at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed herein and the applicable technical specifications and Plans. In addition, all items of materials, equipment and work in place shall be subject to inspection by the Engineer at the site for the same purpose.

Inspection by the Engineer does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 NONCOMPLIANCE.

- a. The Engineer will notify the Contractor in writing of any noncompliance with the CQCP. The Contractor shall, after receipt of such notice, take corrective action.
- b. When QC activities do not comply with either the CQCP or the contract provisions, or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the Engineer may:
 - (1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors, and /or.
 - (2) Order the Contractor to stop operations until appropriate corrective action is taken.

SECTION 110 METHOD OF ESTIMATING PERCENTAGE OF MATERIAL WITHIN SPECIFICATION LIMITS (PWL)

110-01 GENERAL. All statistical Quality Level Analysis (QLA) is computed using the Engineer's Price Adjustment program. The program calculates all intermediate values to 16 decimal places. Pay factors are rounded to the nearest 0.001. The basis of payment for production lots of selected pay items is adjusted using statistical analysis of acceptance test results.

Analysis is based on an Acceptable Quality Level (AQL) of 90 percent. The AQL is the minimum Percent Within Limits (PWL) at which the material is considered fully acceptable and receives a 1.000 pay factor.

As an incentive to produce quality material, a pay factor greater than 1.000 is possible. The maximum pay factor obtainable is 1.050.

110-02 METHOD FOR COMPUTING PWL. The computational sequence for computing PWL is as follows:

The procedure for estimating the PWL uses the number (n), the arithmetic mean ($\bar{X}$) and the sample standard deviation (s), of acceptance test results as shown below. If the sample standard deviation is less than 0.001, then it is set at 0.001.

- a. The arithmetic mean is computed:

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}$$

Where: X_i = test result for subplot i .

$\sum_{i=1}^n$ = sum of values from subplot 1 to n .

- b. The sample standard deviation is computed:

$$s = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{(n-1)}}$$

The upper specification limit (USL) and lower specification limit (LSL) are equal to the Target Value (TV) plus and minus the allowable tolerances as defined in the pay item specification.

Quality Indexes are computed as shown below. The maximum Quality Index obtainable is 10.000.

- c. The Upper Quality Index (Q_U) is computed:

$$Q_U = \frac{USL - \bar{X}}{s}$$

- d. The Lower Quality Index (Q_L) is computed:

$$Q_L = \frac{\bar{X} - LSL}{s}$$

The computed Q_U and Q_L are used with AASHTO R 9 to determine the Percent Within Upper Limits (PWL_U) and Percent Within Lower Limits (PWL_L).

- e. The PWL used in pay factor determination is:

$$PWL = (PWL_U + PWL_L) - 100$$

When material requirements are one-sided, with only an upper or lower limit, then the PWL is equal to the percent within the side that has a limit. For example, if a material only has an upper specification (maximum) limit, then $PWL = PWL_U$. Also, two-sided specification limits with one side that cannot be exceeded (like 100% passing) will be analyzed as if they are one-sided.

- f. The pay factor (PF) is:

$$PF = 0.55 + \frac{PWL_U}{200}$$

Where: PWL varies from 50.000 to 100.000.

When PWL is less than 50.000, pay factor (PF) = zero.

PART II

TECHNICAL SPECIFICATIONS

ITEM D-701 PIPE FOR STORM DRAINS AND CULVERTS

DESCRIPTION

701-1.1 This item shall consist of the construction of pipe culverts and storm drains according to these Specifications and in reasonably close conformity with the lines and grades shown on the Plans.

MATERIALS

701-2.1 Materials shall meet the requirements shown on the Plans and specified below.

701-2.2 PIPE. The pipe shall be of the type called for on the Plans and shall be according to the following appropriate requirements.

Metallic Coated Corrugated Steel Pipe (Type I, IR or II)	AASHTO M 36
Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains	ASTM A760
Galvanized Steel Corrugated Structural Plates and Fasteners for Pipe, Pipe-Arches, and Arches	ASTM A761
Polymer Precoated Corrugated Steel Pipe for Sewers and Drains	ASTM A762
Post-Coated and Lined (Bituminous or Concrete)	
Corrugated Steel Sewer and Drainage Pipe	ASTM A849
Corrugated Aluminum Alloy Culvert Pipe	ASTM B745
Non-Reinforced Concrete Pipe	ASTM C14
Reinforced Concrete Pipe	ASTM C76
Reinforced Concrete D-Load Pipe	ASTM C655
Reinforced Concrete Arch Pipe	ASTM C506
Reinforced Concrete Elliptical Pipe	ASTM C507
Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers	ASTM C1433
Corrugated Polyethylene (PE) Pipe and Fittings	ASTM F667
Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	ASTM F714
Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter	ASTM F794
Polyethylene (PE) Large Diameter profile Wall Sewer and Drain Pipe	ASTM F894
Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings	ASTM F949
Steel Reinforced Polyethylene (PE) Corrugated Pipe	ASTM F2435
Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage	ASTM F2562
Polypropylene (PP) Corrugated Single Wall Pipe and Double Wall Pipe	ASTM F2736
Polypropylene (PP) Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications	ASTM F2764
Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications.	ASTM F2881
Bituminous-Coated Corrugated Metal Pipe and Pipe Arches	AASHTO M 190
Bituminous-Coated Corrugated Aluminum Alloy Culvert Pipe	AASHTO M 190 and M 196
Bituminous-Coated Structural Plate Pipe, Pipe Arch, and Arches	AASHTO M 167 and M 243
Aluminum Alloy Structural Plate for Pipe, Pipe Arch, and Arches	AASHTO M 219
Polyvinyl Chloride (PVC) Pipe	ASTM D3034
Corrugated Polyethylene Drainage Tubing	AASHTO M 252
Corrugated Polyethylene Pipe, 300 mm to 1500 mm Diameter	AASHTO M 294

701-2.3 CONCRETE. Concrete for pipe cradles shall have a minimum compressive strength of 2,000 pounds per square inch (psi) at 28 days and conform to the requirements of AASHTO M 157.

701-2.4 RUBBER GASKETS. Rubber gaskets for rigid pipe shall conform to the requirements of ASTM C443. Rubber gaskets for PVC pipe and polyethylene pipe shall conform to the requirements of ASTM F477. Rubber gaskets for zinc-coated steel pipe and precoated galvanized pipe shall conform to the requirements of ASTM D1056, for the "RE" closed cell grades. Rubber gaskets for steel reinforced thermoplastic ribbed pipe shall conform to the requirements of ASTM F477.

701-2.5 JOINT MORTAR. Pipe joint mortar shall consist of one part by volume of portland cement and two parts sand. The portland cement shall conform to the requirements of AASHTO M 85, Type I. The sand shall conform to the requirements of AASHTO M 45.

701-2.6 JOINT FILLERS. Poured filler for joints shall conform to the requirements of AASHTO M 324.

701-2.7 PLASTIC GASKETS. Plastic gaskets shall conform to the requirements of AASHTO M 198 (Type B).

701-2.8. CONTROLLED LOW-STRENGTH MATERIAL (CLSM). Controlled low-strength material shall conform to the requirements of Item P-153. When CLSM is used all joints shall have gaskets.

701-2.9 CULVERT MARKER POSTS. Provide posts made of durable glass fiber and resin reinforced material flexible to -40°F, resistant to impact and ultraviolet light. "T" in cross section, 3.75 inch wide x ~~6672~~ inches long, and color blue. Provide Carsonite CRMCUM-375 utility marker or approved equal.

701-2.10 CLASS B BEDDING. Use one of the following materials:

- a. Suitable material as defined in specification subsection P-152-2.3, except that 100% of the material will pass a 1 inch sieve.
- b. P-299 Aggregate Surface Course (when included in this contract).
- c. P-209 Crushed Aggregate Base Course (when included in this contract).

701-2.11 END SECTIONS. End sections for metal pipe must be of the same material as the pipe.

CONSTRUCTION METHODS

701-3.1 EXCAVATION. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but it shall not be less than the external diameter of the pipe plus 18 inches on each side. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 8 inches or ½ inch for each foot of fill over the top of the pipe (whichever is greater) but for no more than 75% of the nominal diameter of the pipe. The width of the excavation shall be at least 1 foot greater than the horizontal outside diameter of the pipe. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved Class B bedding material for the full trench width. The Engineer shall determine the depth of removal necessary. The Class B bedding material shall be compacted to provide adequate support for the pipe.

The excavation for pipes that are placed in embankment fill shall not be made until the embankment has been completed to a height above the top of the pipe as shown on the Plans.

701-3.2 BEDDING. The pipe bedding shall conform to the class specified on the Plans. When no bedding class is specified or detailed on the Plans, the requirements for Class B bedding shall apply. Compact all bedding to 95% of the maximum density determined by ATM 207 or ATM 212.

- a. **Rigid Pipe.** Class A bedding shall consist of a continuous concrete cradle conforming to the plan details.

Class B bedding shall consist of a bed of granular material having a thickness of at least 6 inches below the bottom of the pipe and extending up around the pipe for a depth of not less than 30% of the pipe's vertical outside diameter. The layer of bedding material shall be shaped to fit the pipe for at least 10% of the pipe's vertical diameter and shall have recesses shaped to receive the bell of bell and spigot pipe.

Class C bedding shall consist of bedding the pipe in its natural foundation material to a depth of not less than 10% of the pipe's vertical diameter. The bed shall be shaped to fit the pipe and shall have recesses shaped to receive the bell of bell and spigot pipe.

- b. **Flexible Pipe.** For flexible pipe, the bed shall be roughly shaped to fit the pipe, and a bedding blanket of sand or fine granular material shall be provided as follows:

Pipe Corrugation Depth, in.	Minimum Bedding Depth, in.
1/2	1
1	2
2	3
2-1/2	3-1/2

- c. **PVC and Polyethylene Pipe.** For PVC and polyethylene pipe, the bedding material shall consist of Class B bedding. The bedding shall have a thickness of at least 6 inches below the bottom of the pipe and extend up around the pipe for a depth of not less than 50% of the pipe's vertical outside diameter.

701-3.3 LAYING PIPE. The pipe laying shall begin at the lowest point of the trench and proceed upgrade. The lower segment of the pipe shall be in contact with the bedding throughout its full length. Bell or groove ends of rigid pipes and outside circumferential laps of flexible pipes shall be placed facing upgrade.

Paved or partially lined pipe shall be placed so that the longitudinal center line of the paved segment coincides with the flow line.

Elliptical and elliptically reinforced concrete pipes shall be placed with the manufacturer's reference lines designating the top of pipe within five degrees of a vertical plane through the longitudinal axis of the pipe.

701-3.4 JOINING PIPE. Joints shall be made with (1) portland cement mortar, (2) portland cement grout, (3) rubber gaskets, (4) plastic gaskets, or (5) coupling bands.

Mortar joints shall be made with an excess of mortar to form a continuous bead around the outside of the pipe and shall be finished smooth on the inside. Molds or runners shall be used for grouted joints in order to retain the poured grout. Rubber ring gaskets shall be installed to form a flexible watertight seal.

- a. **Concrete Pipe.** Concrete pipe may be either bell and spigot or tongue and groove. The method of joining pipe sections shall be such that the ends are fully entered and the inner surfaces are reasonably flush and even. Joints shall be thoroughly wetted before mortar or grout is applied.

- b. **Metal Pipe.** Metal pipe shall be firmly joined by form fitting bands conforming to the requirements of ASTM A760 for steel pipe and AASHTO M 36 for aluminum pipe.
- c. **PVC, Polypropylene, and Polyethylene Pipe.** Joints for PVC, polypropylene, and polyethylene pipe shall conform to the requirements of ASTM D3212 when water tight joints are required. Joints for PVC and polyethylene pipe shall conform to the requirements of AASHTO M 304 when soil tight joints are required. Fittings for polyethylene pipe shall conform to the requirements of AASHTO M 252 or M 294. Fittings for polypropylene pipe shall conform to the requirements of ASTM F2881, ASTM F2736, or ASTM F2764.

701-3.5 BACKFILLING. Pipes shall be inspected before any backfill is placed; any pipes found to be out of alignment, unduly settled, or damaged shall be removed and relaid or replaced at the Contractor's expense.

Use backfill that is suitable material as defined in subsection P-152-2.3 except that:

- a. 100% of the material placed within 1 foot of the pipe will pass a 3 inch sieve.
- b. If the pipe is placed in or under the structural section, construct the backfill according to the material and construction requirements of the specifications for the applicable lift of material (P-154, P-299, P-209).

When the top of the pipe is even with or below the top of the trench, the backfill shall be compacted in layers not exceeding 6 inches on both sides of the pipe and shall be brought up 1 foot above the top of the pipe or to natural ground level, whichever is greater. Care shall be exercised to thoroughly compact the backfill material under the haunches of the pipe without displacing the pipe. Material shall be brought up evenly on both sides of the pipe for the full length of the pipe.

When the top of the pipe is above the top of the trench, the backfill shall be compacted in layers not exceeding 6 inches and shall be brought up evenly on both sides of the pipe to 1 foot above the top of the pipe. The width of backfill on each side of the pipe for the portion above the top of the trench shall be equal to twice the pipe's diameter or 12 feet, whichever is less.

For PVC, polypropylene, and polyethylene pipe, the backfill shall be placed in two stages; first to the top of the pipe and then at least 12 inches over the top of the pipe. The backfill material shall meet the requirements of Subsection 701-3.2c.

All backfill shall be compacted to the density required under Item P-152.

It shall be the Contractor's responsibility to protect installed pipes and culverts from damage due to construction equipment operations. The Contractor shall be responsible for installation of any extra strutting or backfill required to protect pipes from the construction equipment.

701-3.6 CULVERT MARKER POSTS. Install culvert marker posts at each culvert inlet and outlet. Drive posts to 18 inches minimum embedment.

METHOD OF MEASUREMENT

701-4.1 PIPE. ~~No measurement shall be made. Installation of pipe, including trench excavation, removal of existing pipe, bedding and backfill shall be subsidiary to pay item D751.010.0072. The length of pipe will be measured in linear feet of pipe in place, completed, and approved. It will be measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types and size will be measured separately. All fittings and end sections will be included in the length of the pipe being measured. All trench excavation and backfill associated with pipe installation is subsidiary.~~

701-4.2 CONCRETE. The volume of concrete for pipe cradles to be paid for will be the number of cubic yards of concrete which is completed in place and accepted.

701-4.3 ROCK. The volume of rock to be paid for will be the number of cubic yards of rock excavated. No payment will be made for the cushion material placed for the bed of the pipe.

701-4.4 CULVERT MARKER POSTS. Culvert marker posts will not be measured for payment.

BASIS OF PAYMENT

701-5.1 ~~No payment shall be made. Installation of pipe, including trench excavation, removal of existing pipe, bedding and backfill shall be subsidiary to pay item D751.010.0072. Payment will be made at the contract unit price per linear foot for each kind of pipe of the type and size designated; at the contract unit price per cubic yard of concrete for pipe cradles; and at the contract unit price per cubic yard for rock excavation. Culvert marker posts will not be paid for directly, but will be subsidiary to pipe items.~~

~~Payment will be made under:~~

REFERENCES

AASHTO M 36	Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
AASHTO M 45	Aggregate for Masonry Mortar
AASHTO M 85	Portland Cement
AASHTO M 157	Ready-Mixed Concrete
AASHTO M 190	Bituminous-Coated Corrugated Metal Culvert Pipe and Pipe Arches
AASHTO M 196	Corrugated Aluminum Alloy Culverts and Underdrains
AASHTO M 198	Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets
AASHTO M 219	Aluminum Alloy Structural Plate for Pipe, Pipe-Arches, and Arches
AASHTO M 243	Field Applied Coating of Corrugated Metal Structural Plate for Pipe, Pipe-Arches, and Arches
AASHTO M 252	Corrugated Polyethylene Drainage Tubing
AASHTO M 294	Corrugated Polyethylene Pipe, 300 to 1500 mm Diameter
AASHTO M 304	Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
AASHTO M 324	Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
ASTM A760	Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM A761	Steel Galvanized, Corrugated Structural Plates and Fasteners for Pipe, Pipe-Arches, and Arches
ASTM A762	Precoated (Polymeric) Galvanized Steel Sewer and Drainage Pipe
ASTM A849	Post-Coated and Lined (Bituminous or Concrete) Corrugated Steel Sewer and Drainage Pipe
ASTM B745	Corrugated Aluminum Alloy Culvert Pipe
ASTM C14	Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C1433	Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers, 3 – 24 in

ASTM C76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C443	Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
ASTM C506	Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
ASTM C507	Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe
ASTM C655	Reinforced Concrete D-Load Culvert, Storm Drain and Sewer Pipe
ASTM C700	Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM D1056	Flexible Cellular Materials--Sponge or Expanded Rubber
ASTM D3034	Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM D3212	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F667	Corrugated Polyethylene Pipe and Fittings
ASTM F714	Polyethylene (PE) Plastic Pipe (DR PR) Based on Outside Diameter
ASTM F794	Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter
ASTM F894	Polyethylene (PE) Large Diameter profile Wall Sewer and Drain Pipe
ASTM F949	Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
ASTM F2435	Steel Reinforced Polyethylene (PE) Corrugated Pipe
ASTM F2562	Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage
ASTM F2736	Polypropylene (PP) Corrugated Single Wall Pipe and Double Wall Pipe
ASTM F2764	Polypropylene (PP) Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications
ASTM F2881	Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications

ITEM D-705 PIPE UNDERDRAINS FOR AIRPORTS

DESCRIPTION

705-1.1 This item shall consist of the construction of pipe drains according to these Specifications and in reasonably close conformity with the lines and grades shown on the Plans.

MATERIALS

705-2.1 GENERAL. Materials shall meet the requirements shown on the Plans and specified below.

705-2.2 PIPE. The pipe shall be of the type called for on the Plans or in the bid and shall be according to the following appropriate requirements.

Perforated Concrete Pipe	ASTM C444
Porous Concrete Pipe	ASTM C654
Corrugated Steel Pipe, Metallic Coated for Sewers and Drains	ASTM A760
Polymer Precoated Perforated Corrugated Steel Pipe	ASTM A762
Perforated Corrugated Aluminum Alloy Pipe	AASHTO M 196
Smooth-Wall Perforated PVC Pipe	ASTM F758
Poly Vinyl Chloride (PVC) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter	ASTM F794
Poly Vinyl Chloride (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings	ASTM F949
Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage	ASTM F2562
Perforated Corrugated Steel Pipe	AASHTO M 36
Bituminous-Coated Perforated Corrugated Aluminum Alloy Pipe	AASHTO M 196 and M 190
Corrugated Polyethylene Drainage Tubing	AASHTO M 252
Corrugated Polyethylene Pipe, 300 to 1500 mm Diameter	AASHTO M 294
Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter	AASHTO M 304
Steel Reinforced Polyethylene (PE) Ribbed Pipe, 12 to 36 inch Diameter	AASHTO MP 20

705-2.3 JOINT MORTAR. Pipe joint mortar shall consist of one part by volume of portland cement and two parts sand. The portland cement shall conform to the requirements of AASHTO M 85, Type I. The sand shall conform to the requirements of AASHTO M 45.

705-2.4 ELASTOMERIC SEALS. Elastomeric seals shall conform to the requirements of ASTM F477.

705-2.5 POROUS BACKFILL OR FILTER MATERIAL. Porous backfill shall be free of clay, humus, or other objectionable matter, and shall conform to the gradation in Table 1 when tested according to ATM 304.

Filter material shall be gravel or sand consisting of crushed or naturally occurring granular material. It shall be free of clay particles and conforming to the gradation requirements in Table 1. The coarse aggregate material conforming to the requirements specified below shall have a percentage of wear not

to exceed thirty (30) after five hundred (500) revolutions, as determined by the current requirements of ASTM C-131. Foundry sand and other material which may be cementitious or not suitable for water percolation shall not be used.

TABLE 1. GRADATION OF POROUS BACKFILL OR FILTER MATERIAL

Sieve Designation (square openings)	Percentage by Weight Passing Sieves		
	No. 1	No. 2	Filter Material Type C
			100
1-1/2 in.		100	95 - 100
1 in.		90 - 100	---
3/4 in.			0 - 20
3/8 in.	100	25 - 60	0 - 5
No. 4	95 - 100	5 - 40	---
No. 8	---	0 - 20	---
No. 16	45 - 80	---	---
No. 50	10 - 30	---	---
No. 100	0 - 10	---	---

When two courses of porous backfill are specified in the Plans, the finer of the materials shall conform to particle size in Table 1, Gradation of Porous Backfill, for porous backfill No. 1. The coarser granular material shall meet the gradation given in Table 1, Gradation of Porous Backfill, for porous backfill No. 2.

705-2.6. GRANULAR MATERIAL. Granular material used for bedding and backfill shall be fine, readily compactable soil, or granular material selected from the excavation or a source of the Contractor's choosing. It shall not contain frozen lumps, chunks of highly plastic clay, or other objectionable material. Material for backfill shall be 100% passing a 2-inch sieve, 95-100% passing a 1/2-sieve, and 0-5% passing a No. 4 sieve.

705-2.7. FILTER FABRIC. The filter fabric shall conform to the requirements of AASHTO M 288, Class 2, except as modified by Table 2.

TABLE 2. FILTER FABRIC PROPERTIES

Fabric Property	Test Method	Test Requirement
Apparent Opening Size	ASTM D4751	40-100
Permittivity	ASTM D4491	0.80
Accelerated Weathering (UV Stability) (Strength Retained - %)	ASTM D4355 *(500 hrs exposure)	70

CONSTRUCTION METHODS

705-3.1 EQUIPMENT. All equipment necessary and required for the proper construction of pipe underdrains shall be on the project, in good working condition, and approved by the Engineer before construction is permitted to start.

705-3.2 EXCAVATION. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but shall not be less than the external diameter of the pipe plus 6 inches on each side of the pipe. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the foundation grade for a depth of at least 4 inches. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The Engineer will determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

Excavated material not required or acceptable for backfill shall be disposed of by the Contractor as directed by the Engineer. The excavation shall not be carried below the required depth; if this occurs, the trench shall be backfilled at the Contractor's expense with material approved by the Engineer and compacted to the density of the surrounding material.

The pipe bed shall be so shaped that at least the lower quarter of the pipe shall be in continuous contact with the bottom of the trench. Spaces for the pipe bell shall be excavated to allow the pipe barrel to support the entire weight of the pipe.

The Contractor shall do trench bracing, sheathing, or shoring necessary to perform and protect the excavation as required for safety and conformance to Federal, state, and local laws. Unless otherwise provided, the bracing, sheathing, or shoring shall be removed by the Contractor after the backfill has reached at least 12 inches over the top of the pipe. The sheathing or shoring shall be pulled as the granular backfill is placed and compacted to avoid any unfilled spaces between the trench wall and the backfill material. The cost of bracing, sheathing, or shoring, and the removal of same, shall be included in the unit price bid per linear foot for the pipe.

705-3.3 LAYING AND INSTALLING PIPE.

- a. **Concrete or Clay Pipe.** The laying of the pipe in the finished trench shall be started at the lowest point and laid upgrade. When bell and spigot pipe is used, the bells shall be laid upgrade. If tongue and groove pipe is used, the groove end shall be laid upgrade. Holes in perforated pipe shall be placed down, unless otherwise shown on the Plans. The pipe shall be firmly and accurately set to line and grade so that the invert will be smooth and uniform. Pipe shall not be laid on frozen ground.

Pipe which is not true in alignment, or which shows any settlement after laying, shall be taken up and relaid by the Contractor at no additional expense.

- b. **Metal and Fiber Pipe.** The metal pipe shall be laid with the separate sections joined firmly together with bands, with outside laps of circumferential joints pointing upgrade, and with longitudinal laps on the sides. Any metal in the pipe or bands which is not protected thoroughly by galvanizing shall be coated with a suitable asphaltum paint.

The sections of bituminized-fiber pipe shall be securely fastened together with suitable fittings. When the fiber couplings are tapered, they shall provide a tight, driven fit.

During installation, the asphalt-protected pipe shall be handled without damaging the asphalt coating. Any breaks in the bitumen or treatment of the pipe shall be refilled with the type and kind of bitumen used in coating the pipe originally.

- c. **PVC or Polyethylene Pipe.** PVC or polyethylene pipe shall be installed according to the requirements of ASTM D2321 or AASHTO Standard Specification for Highway Bridges Section 30. Perforations shall meet the requirements of AASHTO M 252 or M 294 Class 2, unless otherwise indicated on the Plans. The pipe shall be laid accurately to line and grade.
- d. **All Types of Pipe.** The upgrade end of pipelines, not terminating in a structure, shall be plugged or capped as approved by the Engineer.

Unless otherwise shown on the Plans, a 4-inch bed of granular backfill material shall be spread in the bottom of the trench throughout the entire length under all perforated pipe underdrains.

Pipe outlets for the underdrains shall be constructed when required or shown on the Plans. The pipe shall be laid with tight-fitting joints. Porous backfill is not required around or over pipe outlets for underdrains. All connections to other drainage pipes or structures shall be made as required and in a satisfactory manner. If connections are not made to other pipes or structures, the outlets shall be protected and constructed as shown on the Plans.

- e. **Filter Fabric.** The filter fabric shall be installed according to the manufacturer's recommendations, or according to AASHTO M 288 APPENDIX, unless otherwise shown on the Plans.

705-3.4 MORTAR. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe and for making connections to other pipes or to structures. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted.

705-3.5 JOINTS IN CLAY OR CONCRETE PIPE. When open or partly open joints are required or specified, they shall be constructed as indicated on the Plans. The pipe shall be laid with the ends fitted together as designed. If bell and spigot pipe is used, mortar shall be placed along the inside bottom quarter of the bell to center the following section of pipe.

The open or partly open joints shall be surrounded with granular material meeting requirements of porous backfill No. 2 in Table 1 or as indicated on the Plans. This backfill shall be placed so its thickness will be not less than 3 inches nor more than 6 inches, unless otherwise shown on the Plans.

When the original material excavated from the trench is impervious, commercial concrete sand or granular material meeting requirements of porous backfill No. 1 shall surround porous backfill No. 2, as shown on the Plans or as directed by the Engineer.

When the original material excavated from the trench is previous and suitable, it may be used as backfill in lieu of porous backfill No. 1, when indicated on the Plans or as directed by the Engineer.

705-3.6 BACKFILLING.

- a. **Earth.** All trenches and excavations shall be backfilled soon after the pipes are installed, unless additional protection of the pipe is directed. The backfill material shall be selected material from excavation or borrow and shall be approved by the Engineer. The select material shall be placed on each side of the pipe out to a distance of the nominal pipe diameter and 1 foot over the top of the pipe and shall be readily compacted. It shall not contain stones retained on a 3-inch sieve, frozen lumps, chunks of highly plastic clay, or any other material which is objectionable to the Engineer. The material shall be moistened or dried, as required to aid compaction. Placement of the backfill shall not cause displacement of the pipe. Special care shall be taken in placing the backfill. Great care shall be used to obtain thorough compaction under the haunches and along the sides to the top of the pipe.

The backfill shall be placed in loose layers not exceeding 6 inches in depth under and around the pipe, and not exceeding 8 inches over the pipe. Successive layers shall be added and thoroughly compacted by hand and pneumatic tampers, approved by the Engineer, until the trench is completely filled and brought to the proper elevation. Backfilling shall be done to avoid damaging top or side pressures on the pipe.

In embankments and other unpaved areas, the backfill shall be compacted per Item P-152 to the density required for embankments in unpaved areas. Under paved areas, the subgrade and any backfill shall be compacted per Item P-152 to the density required for embankments for paved areas.

- b. **Granular Material.** When granular backfill is required, its placement in the trench and about the pipe shall be as shown on the Plans. The granular backfill shall not contain an excessive amount of foreign matter, nor shall soil from the sides of the trench or from the windrow be allowed to filter

into the granular backfill. When required by the Engineer, a template shall be used to properly place and keep separate the two sizes of backfill. The backfill shall be placed in loose layers not exceeding 6 inches in depth. The granular backfill shall be compacted by hand and pneumatic tampers to the requirements as given for embankment. Backfilling shall be done to avoid damaging top or side pressure on the pipe. The granular backfill shall extend to the elevation of the trench, as shown on the Plans.

When perforated pipe is specified, granular backfill material shall be placed along the full length of the pipe. The position of the granular material shall be as shown on the Plans. If the original material excavated from the trench is pervious and suitable, it shall be used in lieu of porous backfill No. 1.

If porous backfill is placed in paved or adjacent to paved areas before grading or subgrade operations is completed, the backfill material shall be placed immediately after laying the pipe. The depth of the granular backfill shall be not less than 12 inches, measured from the top of the underdrain. During subsequent construction operations, a minimum depth of 12 inches of backfill shall be maintained over the underdrains. When the underdrains are to be completed, any unsuitable material shall be removed exposing the porous backfill. Porous backfill containing objectionable material shall be removed and replaced with suitable material. The cost of removing and replacing any unsuitable material shall be at the Contractor's expense.

If a granular subbase blanket course is to be used which extends several feet beyond the edge of paving to the outside edge of the underdrain trench, the granular backfill material over the underdrains shall be placed in the trench up to an elevation of 2 inches above the bottom surface of the granular subbase blanket course. Immediately prior to the placing of the granular subbase blanket course, the Contractor shall blade this excess trench backfill from the top of the trench onto the adjacent subgrade where it can be incorporated into the granular subbase blanket course. Any unsuitable material which remains over the underdrain trench shall be removed and replaced. The subbase material shall be placed to provide clean contact between the subbase material and the underdrain granular backfill material for the full width of the underdrain trench.

- c. **Controlled low-strength material (CLSM).** Controlled low-strength material shall conform to the requirements of Item P-153.
- d. **Deflection Testing.** The Engineer may at any time, notwithstanding previous material acceptance, reject or require re-installation of pipe that exceeds 5% deflection when measured according to ASTM D2321, including Appendices.

705-3.7 CONNECTIONS. When the Plans call for connections to existing or proposed pipe or structures, these connections shall be watertight and made so that a smooth uniform flow line will be obtained throughout the drainage system.

705-3.8 CLEANING AND RESTORATION OF SITE. After the backfill is completed, the Contractor shall dispose of all surplus material, soil, and rubbish from the site. Surplus soil may be deposited in embankments, shoulders, or as directed by the Engineer. Except for paved areas of the airport, the Contractor shall restore all disturbed areas to their original condition.

METHOD OF MEASUREMENT

705-4.1 The length of pipe to be paid for will be the number of linear feet of pipe underdrains in place, completed, and approved; measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types, and sizes will be measured separately. All fittings will be included in the length as typical pipe sections in the pipeline being measured.

705-4.2 Filter material will not be measured for payment and shall be considered subsidiary to the D705.020.4012 pay item. ~~The quantity of porous backfill to be paid for will be the number of cubic yards of~~

~~porous backfill No. 1 and No. 2, complete in place and accepted, and will be determined from the dimensions given on the Plans by typical trench sections indicating the placement of porous backfill or dimensions ordered by the Engineer.~~

~~**705-4.3** Filter fabric will not be measured for payment and shall be considered subsidiary to the D705.020.4012 pay item. The quantity of filter fabric to be paid for will be the number of square yards of filter fabric in place, completed, and approved; and will be determined from the dimensions given on the Plans by typical trench sections indicating the placement of filter fabric or dimensions directed by the Engineer.~~

BASIS OF PAYMENT

705-5.1 Payment will be made at the contract unit price per linear foot for pipe underdrains of the type, class, and size designated, completed in place, and accepted.

These prices shall be full compensation for furnishing all labor, equipment, materials and for all preparation, and installation of these materials and incidentals necessary to complete this item. Excavation, Backfill Material, Filter Material Type C, Filter Fabric, and piping not identified in the pipe summary tables will not be paid for directly, but are subsidiary to the work.

~~**705-5.2 POROUS BACKFILL.**~~

~~a. Porous backfill No. 1 shall be made at the contract unit price per cubic yard.~~

~~b. Porous Backfill No. 2 shall be made at the contract unit price per cubic yard.~~

~~**705-5.3 FILTER FABRIC.** Filter fabric shall be made at the contract unit price per square yard (square meter) for filter fabric.~~

~~**705-5.4 PIPE UNDERDRAINS, COMPLETE.** Pipe underdrains, complete (including porous backfill and filter fabric) shall be made at the contract unit price per linear foot.~~

~~These prices shall be full compensation for furnishing all materials and for all preparation, excavation, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.~~

Payment will be made under:

Item D705.020.4012 Underdrain, CPE Pipe, Type SP, 12-inch – per linear foot

TESTING REQUIREMENTS

ATM 304	Sieve Analysis of Aggregates & Soils
AASHTO MP 20	Steel Reinforced Polyethylene (PE) Ribbed Pipe, 12 – 36 in Diameter

MATERIAL REQUIREMENTS

AASHTO M 36	Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains
AASHTO M 45	Aggregate for Masonry Mortar
AASHTO M 85	Portland Cement
AASHTO M 190	Bituminous Coated Corrugated Metal Culvert Pipe and Pipe Arches
AASHTO M 196	Corrugated Aluminum Alloy Culverts and Underdrains
AASHTO M 252	Corrugated Polyethylene Drainage Tubing
AASHTO M 288	Geotextile Specification for Highway Applications

AASHTO M 294	Corrugated Polyethylene Pipe, 300 to 1500 mm Diameter
AASHTO M 304	Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
AASHTO	<i>Standard Specifications for Highway Bridges</i>
ASTM A760	Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM A762	Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM C444	Perforated Concrete Pipe
ASTM C654	Porous Concrete Pipe
ASTM D2321	Underground Installation of Flexible Thermoplastic Sewer Pipe
ASTM D3034	Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F758	Smooth-Wall Poly Vinyl Chloride (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage
ASTM F949	Poly Vinyl Chloride (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
ASTM F2562	Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage

ITEM D-751 MANHOLES, CATCH BASINS, INLETS, AND INSPECTION HOLES

DESCRIPTION

751-1.1 This item shall consist of construction of manholes, catch basins, inlets, and inspection holes, according to these Specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the Plans or required by the Engineer. Work also includes removal of existing manholes and providing a canal gate when shown on the Plans.

MATERIALS

751-2.1 BRICK. The brick shall conform to the requirements of ASTM C32, Grade MS.

751-2.2 MORTAR. Mortar shall consist of one part by volume portland cement and two parts sand. The portland cement shall conform to the requirements of AASHTO M 85, Type I. The sand shall conform to the requirements of AASHTO M 45.

751-2.3 CONCRETE. Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall conform to the requirements of Item P-610.

751-2.4 PRECAST CONCRETE PIPE MANHOLE RINGS. Precast concrete pipe manhole rings shall conform to the requirements of ASTM C478. Unless otherwise specified, the risers and offset cone sections shall have an inside diameter of not less than 36 inches nor more than 48 inches. There shall be a gasket between individual sections and sections cemented together with mortar on the inside of the manhole. Gaskets shall conform to the requirements of ASTM C443.

751-2.5 CORRUGATED METAL. Corrugated metal shall conform to the requirements of AASHTO M 36.

751-2.6 FRAMES, COVERS, AND GRATES. The castings shall conform to one of the following requirements:

- a. Gray iron castings shall meet the requirements of ASTM A48, Class 30B and 35B.
- b. Malleable iron castings shall meet the requirements of ASTM A47.
- c. Steel castings shall meet the requirements of AASHTO M 103.
- d. Structural steel for grates and frames shall conform to the requirements of ASTM A283, Grade D.
- e. Ductile iron castings shall conform to the requirements of ASTM A536.
- f. Austempered ductile iron castings shall conform to the requirements of ASTM A897.

All castings or structural steel units shall conform to the dimensions shown on the Plans and shall be designed to support the loadings, aircraft gear configuration and/or direct loading, specified.

Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of AASHTO M 111.

751-2.7 STEPS. The steps or ladder bars shall be gray or malleable cast iron, injection-molded polypropylene, or galvanized steel. The steps shall be the size, length, and shape shown on the Plans and those steps that are not galvanized shall be given a coat of asphalt paint, when directed.

751-2.8 PRECAST INLET STRUCTURES. Manufactured in accordance with and conforming to ASTM C913.

751-2.9 EXTERNAL CONCRETE JOINT WRAP. Must be a high-density polyethylene (HDPE) backed concrete joint wrap with a butyl adhesive, designed to provide effective sealing and protection for concrete joints in accordance with or exceeding the standards specified in ASTM C877.

- a. HDPE Backing shall be a minimum of 0.01 inches (10 mils) thick. It should be composed of polyethylene material with high tensile strength, resistance to puncture, and exceptional chemical resistance.
- b. The butyl adhesive used on the HDPE backing shall be a minimum of 0.04 inches (40 mils) thick and comply with the requirements of ASTM C877. It must be a synthetic rubber-based adhesive, free from any contaminants that may interfere with its bonding properties. The adhesive should be tacky and capable of providing a watertight and durable bond to concrete surfaces.
- c. The HDPE backing should have a minimum tensile strength of 4,000 psi (pounds per square inch) when tested in accordance with ASTM D882.
- d. The butyl adhesive must demonstrate a peel adhesion of at least 10 lbs/inch width when tested in accordance with ASTM D903.
- e. The HDPE backing should have minimal water absorption properties, not exceeding 0.1% by weight after a 24-hour immersion test in accordance with ASTM D570.
- f. The concrete joint wrap shall be available in 6 inches, 9 inches and 12 inches widths.

751-2.10 POLYETHYLENE ENCASEMENT. Clear or opaque, 8-mil tube or sheeting.

751-2.11 BOOT CONNECTOR. Boot connector shall be a flexible pipe to manhole connection that provides a flexible, watertight seal between a pipeline and concrete structure. The connector shall be cast integrally with the concrete structure when the structure is fabricated in such a manner that it will not pull out when coupling with the pipe. The seal shall be made by compressing the connector against the inside walls of the valley of the corrugated pipe by means of a stainless steel take-down clamp. Connector shall be manufactured in accordance with ASTM C-923 and ASTM C-1478.

751-2.12 CANAL GATE. Provide a canal gate meeting the following requirements and as shown on the Plans:

- a. CL-10 Canal Gate as manufactured by Waterman Valve, LLC, or approved equal.
- b. Have a non-rising stem such that the handwheel operator remains in static operating position within manhole when opening and closing gate and not interfere with manhole cover.
- c. Have a flat back frame (Type F) to attach to manhole mounting surface.
- d. Components must have galvanized finish.
- e. When the gate is open, the complete size of the outlet pipe must be unobstructed.

The canal gate mounting surface shall be cast by the manhole manufacturer. Canal gate shall be installed by the manhole manufacturer. The gate must have a lift mechanism that can be operated by a single person standing outside of the manhole using both hands.

CONSTRUCTION METHODS

751-3.1 UNCLASSIFIED EXCAVATION.

- a. Limits of Excavation.** The Contractor shall excavate for structures and structure footings to the lines and grades or elevations, shown on the Plans, or as staked by the Engineer. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or

structure footings shown. The elevations of the bottoms of footings, as shown on the Plans, shall be considered as approximately only; and the Engineer may direct, in writing, changes in dimensions or elevations of footings necessary for a satisfactory foundation.

- b. **Excavation.** Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the Engineer. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. Where concrete will rest on a surface other than rock, the bottom of the excavation shall not be disturbed, and excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.
- c. **Shoring.** The Contractor shall do all bracing, sheathing, or shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for the structure.
- d. **Shoring Removal.** All bracing, sheathing, or shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall not damage or disturb finished masonry. The cost of removal shall be included in the unit price bid for the structure.
- e. **Engineer's Approval.** After excavation is completed for each structure, the Contractor shall notify the Engineer. No concrete or reinforcing steel shall be placed after the Engineer has approved the depth of the excavation and the character of the foundation material.

751-3.2 BRICK STRUCTURES.

- a. **Foundations.** A prepared foundation shall be placed for all brick structures after the foundation excavation is completed and accepted. Unless otherwise specified, the base shall consist of reinforced concrete mixed, prepared, and placed according to the requirements of Item P-610.
- b. **Laying Brick.** All brick shall be clean and thoroughly wet before laying so that they will not absorb any appreciable amount of additional water at the time they are laid. All brick shall be laid in freshly made mortar. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted. An ample layer of mortar shall be spread on the beds and a shallow furrow shall be made in it which can be readily closed by the laying of the brick. All bed and head joints shall be filled solid with mortar. End joints of stretchers and side or cross joints of headers shall be fully buttered with mortar and a shoved joint made to squeeze out mortar at the top of the joint. Any bricks that may be loosened after the mortar has taken its set, shall be removed, cleaned, and relaid with fresh mortar. No broken or chipped brick shall be used in the face, and no spalls or bats shall be used except where necessary to shape around irregular openings or edges; in which case, full bricks shall be placed at ends or corners where possible, and the bats shall be used in the interior of the course. In making closures, no piece of brick shorter than the width of a whole brick shall be used; and wherever practicable, whole brick shall be used and laid as headers.
- c. **Joints.** All joints shall be filled with mortar at every course. Exterior faces shall be laid up in advance of backing. Exterior faces shall be plastered or parged with a coat of mortar not less than 3/8 inch thick before the backing is laid up. Prior to parging, all joints on the back of face courses shall be cut flush. Unless otherwise noted, joints shall be not less than 1/4 inch nor more than 1/2 inch wide and the selected joint width shall be maintained uniform throughout the work.
- d. **Pointing.** Face joints shall be neatly struck, using the weather struck joint. All joints shall be finished properly as the laying of the brick progresses. When nails or line pins are used the holes shall be immediately plugged with mortar and pointed when the nail or pin is removed.

- e. **Cleaning.** Upon completion of the work all exterior surfaces shall be thoroughly cleaned by scrubbing and washing with water. If necessary to produce satisfactory results, cleaning shall be done with a 5% solution of muriatic acid which shall then be rinsed off with liberal quantities of water.
- f. **Curing and Cold Weather Protection.** The brick masonry shall be protected and kept moist for at least 48 hours after laying the brick. Brick masonry work or pointing shall not be done when there is frost on the brick or when the air temperature is below 50 °F unless the Contractor has on the project ready to use, suitable covering and artificial heating devices necessary to keep the atmosphere surrounding the masonry at a temperature of not less than 60 °F for the duration of the curing period.

751-3.3 CONCRETE STRUCTURES. Concrete structures which are to be cast-in-place within the project boundaries shall be built on prepared foundations, conforming to the dimensions and shape indicated on the Plans. The construction shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the Plans and shall be approved by the Engineer before the concrete is placed.

All invert channels shall be constructed and shaped accurately so as to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped to the outlet.

751-3.4 PRECAST CONCRETE STRUCTURES. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another third party certification program approved by the Engineer.

Precast concrete structures shall conform to ASTM C478. Precast concrete structures shall be constructed on prepared or previously placed slab foundations conforming to the dimensions and locations shown on the Plans. All precast concrete pipe sections necessary to build a completed structure shall be furnished. The different sections shall fit together readily. Joints between precast concrete ~~risers and tops shall (1) be full bedded in cement mortar or (2) components shall utilize a rubber gasket per ASTM C443.~~ The top of the upper precast concrete section shall be suitably formed and dimensioned to receive the metal frame and cover or grate, or other cap, as required. Provision shall be made for any connections for lateral pipe, including drops and leads that may be installed in the structure. The flow lines shall be smooth, uniform, and cause minimum resistance to flow. The metal, injection molded polypropylene, or metal encapsulated steps which are embedded or built into the side walls shall be aligned and placed in accordance to ASTM C478. When a metal ladder replaces the steps, it shall be securely fastened into position.

External concrete joint wrap is required (where shown on the Plans) at all structure joints between precast concrete, concrete, and metal components. The joint wrap shall extend a minimum of 6" on to all structure components along the joint and shall be overlapped 6" at each seam. The joints for the frame, grade rings, and top of cone shall be fully wrapped with one continuous piece of external concrete joint wrap.

Manholes (where shown on the Plans) are to have a minimum of three (3) layers of 8-mil polyethylene encasement on the outside. The polyethylene encasement may be applied one layer at a time with three individual tubes, continuously wrapping, or three separate tape secured layers of polyethylene. Polyethylene joints are to overlap a minimum of twelve inches and be secured with tape.

751-3.5 CORRUGATED METAL STRUCTURES. Corrugated metal structures shall be prefabricated. All standard or special fittings shall be furnished to provide pipe connections or branches with the correct dimensions and of sufficient length to accommodate connecting bands. The fittings shall be welded in place to the metal structures. The top of the metal structure shall be designed so that either a concrete slab or metal collar may be attached to allow the fastening of a standard metal frame and grate or cover. Steps or ladders shall be furnished as shown on the plans. Corrugated metal structures shall be constructed on prepared foundations, conforming to the dimensions and locations as shown on the plans. When indicated, the structures shall be placed on a reinforced concrete base.

751-3.6 INLET AND OUTLET PIPES. Inlet and outlet pipes shall extend through the walls of the structures a sufficient distance beyond the outside surface to allow for connections. They shall be cut off flush with the wall on the inside surface of the structure, unless otherwise directed. For concrete or brick structures, mortar shall be placed around these pipes so as to form a tight, neat connection. Where shown on the Plans, install boot style connectors between manhole and pipe.

751-3.7 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES, AND FITTINGS. All castings, frames, and fittings shall be placed in the positions indicated on the Plans or as directed by the Engineer, and shall be set true to line and elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

When frames or fittings are placed on previously constructed masonry, the bearing surface of the masonry shall be brought true to line and grade and shall present an even bearing surface in order so the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the Plans or as directed by the Engineer. All units shall set firm and secure.

After the frames or fittings have been set in final position, the concrete or mortar shall be allowed to harden for 7 days, before the grates or covers are placed and fastened down.

751-3.8 INSTALLATION OF STEPS. The steps shall be installed as indicated on the Plans or as directed by the Engineer. When the steps are to be set in concrete, they shall meet the requirements of ASTM C478. The steps shall be placed and secured in position before the concrete is placed. When the steps are installed in brick masonry, they shall be placed as the masonry is being built. The steps shall not be disturbed or used until the concrete or mortar has hardened for at least 7 days. After 7 days, the steps shall be cleaned and painted, unless they have been galvanized.

When steps are required with precast concrete pipe structures, they shall be cast into the sides of the sections at the time the sections are manufactured or set in place after the structure is erected by drilling holes in the concrete and cementing the steps in place.

When steps are required with corrugated metal structures, they shall be welded into aligned position at a vertical spacing of 12 inches.

Instead of steps, prefabricated ladders may be installed. For brick or concrete structures, the ladder shall be held in place by grouting the supports in drilled holes. For metal structures, the ladder shall be secured by welding the top support to the structure and grouting the bottom support into drilled holes in the foundation or as directed by the Engineer.

751-3.9 BACKFILLING. After a structure has been completed, the area around it shall be backfilled with approved material, in horizontal layers not to exceed 8 inches in loose depth, and compacted to the density required in Item P-152. Each layer shall be deposited evenly around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the Plans or as directed by the Engineer.

Backfill shall not be placed against any structure until approved by the Engineer. For concrete structures, approval shall not be given until the concrete has been in place 7 days, or until tests establish that the concrete has attained sufficient strength to withstand any pressure created by the backfill and placing methods.

751-3.10 CANAL GATE. Install canal gate in the manhole in accordance with the manufacturer's recommendation and as shown on the Plans.

METHOD OF MEASUREMENT

751-4.1 Manholes, catch basins, inlets, and inspection holes will be measured by the unit. Canal gate, boot connector, joint wrap and polyethylene encasement will not be measured separately but shall be subsidiary. Removal and disposal of existing manholes is subsidiary.

BASIS OF PAYMENT

751-5.1 The accepted quantities of manholes, catch basins, inlets, and inspection holes will be paid for at the contract unit price per each, complete and in place. This price shall be full compensation for furnishing and installation of such specials and connections to pipes and other structures as may be required to complete the item as shown on the Plans, including manholes requiring canal gates. Removal and disposal of existing manholes is subsidiary.

All excavation and backfill required to complete the items of this section shall not be measured for payment, and shall be considered as a subsidiary obligation of the Contractor, included in the contract unit price for the structure involved.

Payment will be made under:

Item D751.010.0072	Manhole, Type II, 72-inch - per each
Item D751.010.0072	Manhole, Type II, 72-inch with Canal Gate - per each

MATERIAL REQUIREMENT

AASHTO M 36	Zinc Coated (Galvanized) Corrugated Iron or Steel Culverts and Underdrains
AASHTO M 45	Aggregate for Masonry Mortar
AASHTO M 85	Portland Cement
AASHTO M 103	Steel Castings, Carbon, for General Application
AASHTO M 111	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A47	Malleable Iron Castings
ASTM A48	Gray Iron Castings
ASTM A283	Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes, and Bars
ASTM A536	Ductile Iron Castings
ASTM A897	Austempered Ductile Iron Castings
ASTM C32	Sewer and Manhole Brick
ASTM C443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
ASTM C478	Precast Reinforced Concrete Manhole Sections
ASTM C913	Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
ASTM C1478	<u>Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes, and Laterals</u>
ASTM C923	<u>Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals</u>

ITEM D-780 DEWATERING

DESCRIPTION

780-1.1 The Work under this Section consists of performing all work and operations pertaining to the dewatering of Work areas, including diversion of surface and subsurface water flows, to provide a dry and stable environment for excavation, backfill, and trench Work.

MATERIALS

780-2.1 Contractor is responsible for preparing, obtaining approval of, and implementing the Dewatering Plan. The Contractor shall provide all equipment, materials, and personnel necessary to prepare and implement the Dewatering Plan and provide a dry and stable construction environment and meet the conditions outlined in the discharge permit to be acquired by the Contractor.

SUBMITTALS

780-3.1 The Contractor shall submit his Dewatering Plan to the Engineer a minimum of fourteen (14) days prior to beginning dewatering activities. The Dewatering Plan shall contain copies of all Contractor obtained permits and approvals. When dewatering approval is required by ADEC, the Contractor shall submit a copy of the approved dewatering plan to the Engineer. Dewatering activities shall not commence until the Engineer has approved the Plan. The Contractor shall acquire all permits as required in CGP 70-02 and submit them as part of the Dewatering Plan. The following is a list of permits pertaining to the dewatering system that maybe required:

1. ADEC Excavation Dewatering General Permit (AKG002000)
2. DNR Temporary Water Use Authorization (TWUA)

Acceptance of Contractor's Dewatering Plan by the Engineer shall not relieve the Contractor of responsibility for the exercise of reasonable precaution, sound engineering judgment, prudent construction practices, overloading or misuse of existing or new structures, the adequacy and safety of such Works, and potential damage or undermining of existing or completed Work. Acceptance of the Dewatering Plan by the Engineer does not relieve the Contractor of the responsibility for providing additional Dewatering Work if implementation of the accepted Dewatering Plan does not result in a dry and stable construction environment.

CONSTRUCTION REQUIREMENTS

780-4.1 GENERAL. The Contractor shall be responsible for the control of water in the excavation. Control of water shall consist of furnishing, installation, operation, maintenance, monitoring, and removal of a pumped dewatering system or systems to provide a dry and stable environment throughout the project for excavation, backfill, and trench work to achieve proper completion of all work performed under this Contract. The water table must be lowered below the excavation depth prior to excavating. The Contractor will not be permitted to excavate soil that is underwater in the excavation.

The Contractor shall dispose of all water from dewatering in accordance with the State of Alaska regulations. Contractors shall treat all ground water to meet the discharge requirements of the applicable discharge permit.

The Contractor shall control surface runoff to prevent entry or collection of water in excavations or in other isolated areas of the site.

METHOD OF MEASUREMENT

780-5.1 Dewatering will not be measured and is considered subsidiary to the item being constructed.

BASIS OF PAYMENT

780-6.1 No payment will be made dewatering. Dewatering will be subsidiary to the project.

ITEM F-162 CHAIN-LINK FENCE

DESCRIPTION

162-1.1 This item shall consist of furnishing and erecting a chain-link fence according to these specifications and the details shown on the Plans. This item includes removal of existing fence as shown on the Plans.

MATERIALS

162-2.1 FABRIC. Chain-link fabric shall meet AASHTO M 181, 9-gage thickness, Type I (zinc-coated steel), Class D coating, and 2-inch mesh.

162-2.2 BARBED WIRE. Barbed wire shall meet AASHTO M 280, Design Number 12-4-5-14R, Standard Grade, Coating Type Z, and Coating Class 3.

162-2.3 POSTS, RAILS AND BRACES. Line posts, rails, and braces shall be galvanized steel pipe, or equivalent galvanized roll-formed sections, and meet AASHTO M 181, Type I, Grade 1 or Grade 2.

The dimensions of the posts, rails, and braces shall be as shown on the Plans.

162-2.4 GATES. Gate frames shall consist of galvanized steel pipe, or equivalent galvanized roll-formed sections, and shall meet AASHTO M 181, Type I, Grade 1 or Grade 2. The fabric shall be of the same type material as used in the fence.

162-2.5 WIRE TIES AND TENSION WIRES. Wire ties for use in conjunction with a given type of fabric shall be of the same material and coating weight identified with the fabric type. Tension wire shall meet AASHTO M 181, Type I, Class 3 coating.

162-2.6 MISCELLANEOUS FITTINGS AND HARDWARE. Miscellaneous steel fittings and hardware shall meet AASHTO M 181, Type I, Grade 1 Barbed wire support arms shall withstand a load of 250 pounds applied vertically to the outermost end of the arm.

162-2.7 CONCRETE. Concrete shall ~~not be used of a commercial grade with a minimum 28-day compressive strength of 2,500 pounds per square inch (psi) or an approved, pre-mixed, sacked concrete.~~

162-2.8 MARKING. Each roll of fabric shall carry a tag showing the kind of base metal, kind of coating, the gage of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal, and kind of coating.

162-2.9 GATE LOCKS. Gate locks shall be provided for each gate and shall be brass, restricted keyway padlocks with a shackle that is 3/8 inch in diameter having a closed clearance of 2-1/4 inches. The locks shall have control key removable cores and each lock shall have a separate replacement core. All cores shall be keyed differently. The Contractor shall provide 4 keys per lock, and 2 core-removal keys.

162-2.10 KEYLESS LOCKS. When specified, a changeable combination lock shall be furnished with pedestrian gates. The keyless lock shall have a 4- or 5-digit mechanism and shall be an Ilco Unican Model 1011 or approved equal. A sign, 12 inches by 12 inches, shall be securely mounted on the inside of the gate. The sign shall be shielded from view from outside of the gate by means of a hinged 12-inch by 12-inch cover or other means approved by the Engineer. The cover shall have the legend "LIFT AND RECORD COMBINATION FOR REENTRY". The sign shall be aluminum sheet with white reflective coating. Letters shall be black and a minimum of 3/4 inch tall.

CONSTRUCTION METHODS

162-3.1 GENERAL. The fence shall be constructed according to the details on the Plans and as specified herein using new materials. The Contractor shall be responsible for establishing the fence alignment as

shown on the Plans. After the fence line has been staked and prior to fence installation, the Contractor shall review the alignment with the Engineer and make required adjustments to avoid conflicts.

The Contractor shall arrange the work so that construction of the new fence will immediately follow the removal of existing fences. The length of unfenced section at any time shall not exceed 300 feet or such length that the stock can be kept in the proper field. The work shall progress in this manner and at the close of the working day the newly constructed fence shall be tied to the existing fence.

162-3.2 CLEARING FENCE LINE. All trees, brush, stumps, logs, and other debris which would interfere with the proper construction of the fence in the required location shall be removed a minimum width of 10 feet on each side of the fence centerline before starting fencing operations.

162-3.3 INSTALLING POSTS. All end posts, corner posts and pull posts shall be ~~set in concrete at the required dimensions and driven to the depths~~ and at the spacing shown on the Plans. Line posts ~~will~~ may be ~~either set in concrete as shown on the Plans or driven to the depth shown of the Plans~~ a minimum of 5 feet embedment. Pull posts shall have a maximum spacing of 250 feet.

Posts shall be spaced as shown on the Plans but in no case shall spacing be more than 10 feet. ~~The post holes shall be in proper alignment so that there is a minimum of 3 inches of concrete on all sides of the posts. The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts.~~ All posts shall be set plumb and to the required grade and alignment. ~~No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within 7 days after the individual post footing is completed.~~

Should rock be encountered at a depth less than the planned embedment depth, a hole 2 inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required embedment depth.

162-3.4 INSTALLING TOP RAILS. The top rail shall be continuous and shall pass through the post tops unless otherwise shown on the Plans. The coupling used to join the top rail lengths shall allow for expansion.

162-3.5 INSTALLING BRACES. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

162-3.6 INSTALLING FABRIC. The wire fabric shall be firmly attached to the posts and braced in the manner shown on the Plans. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than 1 inch or more than 4 inches from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched thereon to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 6 inches or less.

162-3.7 ELECTRICAL GROUNDS. Electrical grounds shall be installed along the fence between gate openings and at intervals not exceeding 500 feet. Electrical grounds shall also be installed where a power line passes over the fence. The ground shall be accomplished with a copper clad rod 8 feet long and a minimum of 5/8 inch diameter driven vertically until the top is 6 inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. The Contractor shall comply with FAA-STD-019, Lightning and Surge

Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment, Paragraph 4.2.3.8, Lightning Protection for Fences and Gates, when fencing is adjacent to FAA facilities.

162-3.8 CLEANING UP. The Contractor shall remove from the vicinity of the completed work all tools, buildings, equipment, etc., used during construction.

162-3.8 REMOVE FENCE. Remove fence and gates in areas shown on the Plans. Roll undamaged fence fabric into tight 100 foot rolls, secure the ends, and deliver the rolled fabric to Airport Operations and Maintenance at a time and place of their choosing. Deliver any posts without concrete to Airport Operations and Maintenance. Unless otherwise directed by the Engineer, all other removed components become the Contractor's property for disposal off airport property. Removal of fence includes removal of gates as shown on the plans.

METHOD OF MEASUREMENT

162-4.1 Chain-link fence will be measured along the finish grade line of the fence from center to center of end posts, excluding the length occupied by gate openings.

162-4.2 Gates will be measured as complete units.

162-4.3 Removal of fence will not be measured. Removal of fence shall be subsidiary.

BASIS OF PAYMENT

162-5.1 Payment will be made at the contract unit price per linear foot for fence complete in place and per each for gates.

No payment for removal of fence will be made. Removal of fence shall be subsidiary.

Work and materials involved in clearing and disposal of material along the fence line, rock excavation, and ground rod installation are subsidiary.

Payment will be made under:

Item F162.010.0008 8-foot Chain-Link Fence – per linear foot

MATERIAL REQUIREMENTS

AASHTO M 181	Chain-Link Fence
AASHTO M 280	Metallic-Coated (Carbon) Steel Barbed Wire
ASTM A121	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A123	Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392	Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A491	Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A572	High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A653	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A824	Metallic-Coated Steel Marcellled Tension Wire for Use With Chain Link Fence

ASTM A1011	Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High Strength Low Alloy with Improved Formability, and Ultra High Strength
ASTM B117	Operating Salt Spray (Fog) Apparatus
ASTM B221	Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
ASTM B429	Aluminum-Alloy Extruded Structural Pipe and Tube
ASTM F668	Polyvinyl Chloride(PVC) and Other Organic Polymer Coated Steel Chain-Link Fence Fabric
ASTM F1043	Strength and Protective Coatings on Steel Industrial Fence Framework
ASTM F1083	Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F1183	Aluminum Alloy Chain Link Fence Fabric
ASTM F1345	Zinc 5% Aluminum-Mischmetal Alloy Coated Steel Chain-Link Fence Fabric
ASTM G152	Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G154	Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
ASTM G155	Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials
FAA-STD-019	Lighting and Surge Protection, Grounding, Bonding and Shielding Requirements for Facilities and Electronic Equipment

ITEM G-100 MOBILIZATION AND DEMOBILIZATION

DESCRIPTION

100-1.1 This item consists of preparatory work and operations, including but not limited to operations necessary to move personnel, equipment, and supplies to the project site; to establish offices, buildings and other facilities, except as provided under Section G-130; to perform all other work and operations, including costs incurred, before beginning work on the project; and to complete similar demobilization activities, including submittals such as as-builts, certificates, payrolls, civil rights reports, equipment warranties, etc.

All equipment, materials, supplies, and incidentals shall be demobilized and removed from the project site within 45 days of the Final Inspection, unless otherwise directed by the Engineer in writing. The Contractor shall notify the Engineer in writing when all materials, supplies, and incidentals have been demobilized and removed from the project site.

METHOD OF MEASUREMENT

100-4.1 Payment for mobilization and demobilization will be made in partial payments as follows:

- a. When equipment and supplies are landed in serviceable condition at the project site and other necessary preparation have been completed so that work can commence on other pay items, ~~40~~60% of the pay item.
- b. When 25% or more of the original contract is earned, an additional ~~40~~20%.
- c. With Final Payment, the remaining 20%.

The Department reserves the right to require submittal of invoices, receipted bills, payrolls, and other appropriate documents to justify any or all payments under this item.

BASIS OF PAYMENT

100-5.1 Payment will be made at the contract lump sum price for mobilization and demobilization. This price and payment shall be full compensation for all costs associated with this item.

Payment will be made under:

Item G100.010.0000 Mobilization and Demobilization – per lump sum

ITEM G-135 CONSTRUCTION SURVEYING AND MONUMENTS

DESCRIPTION

135-1.1 GENERAL. Perform surveying and staking essential for the completion of the project. Perform the necessary calculations required to accomplish the work in conformance with the Plans and Specifications, AS 34.65.040, and the Alaska Society of Professional Land Surveyors' *Standards of Practice Manual*.

135-1.2 DEFINITIONS.

- a. **Monument:** A fixed physical object marking a point on the surface of the earth; used to commence or control a survey; mark the boundaries of a parcel of land; or the centerline of a right-of-way corridor. Monuments will be Primary or Secondary, as shown on the Plans.
- b. **Point:** An identified spot located on the surface of the earth. For purposes of this definition, a point can be a PK nail, wooden hub, rebar, large nail or other structure capable of being utilized as a marker.
- c. **Reference Monument:** A material mark or point placed at a known distance and direction from a property corner or other survey point, usually not on a property or survey line. A reference monument is employed to perpetuate a corner/point that cannot be monumented at its true location or where the corner monument is subject to destruction.
- d. **Surveyor:** The Contractor's Professional Land Surveyor, currently registered in the State of Alaska.
- e. **Witness Corner:** A material mark or point usually placed on a property or survey line, at a known distance from a property corner or other survey point. A witness corner is employed to witness the location of a corner/point that cannot be monumented at its true location.

MATERIALS

135-2.1 MONUMENT CASES. Use castings meeting AASHTO M 105, Class 30A. Coat with a bituminous damp-proof coating. Use bolting tops.

135-2.2 PRIMARY MONUMENT. A minimum 2-inch diameter nonferrous pipe at least 30 inches long, with a minimum 4-inch flange at the bottom and having magnets attached at the top and bottom. Permanently attach a minimum 2-1/2-inch diameter nonferrous metal cap to the top. Mark the cap around the outside edge with the words "STATE OF ALASKA DOT&PF". Permanently stamp every primary monument with the Surveyor's registration number, the year set, and the point/corner identification. Orient cap so that the data may be read facing up-station.

135-2.3 SECONDARY MONUMENT. A minimum 5/8-inch by 30-inch rebar with a 2-inch aluminum cap attached to the top. Permanently stamp every secondary monument with the Surveyor's registration number and the year set.

135-2.4 SURVEY POINT MATERIALS. Listed sizes are a minimum. Use only stakes with planed sides.

**TABLE 135-1
SURVEY POINT MATERIAL REQUIREMENTS**

	2" x 2" x 8" hub w/ whiskers	2" x 2" x 12" hub	48" lath	tack
Benchmarks**				
Blue tops*	X			
Centerline P.C., P.T., P.O.T.		X	X	
Centerline reference points		X	X	
Centerline station			X	
Clearing & Grubbing			X	
Culvert stake		X	X	
Curb & gutter		X	X	X
Guardrail			X	
Grade stakes		X	X	
Red tops*	X			
Riprap			X	
Signs			X	
Slope stake			X	
Slope stake references		X	X	
Structures		X	X	X
Under drains & sewers		X	X	

*Use blue tops for top of base course. Use red tops for the bottom of base course.

**Set benchmarks on a permanent, stable object, not subject to vertical or horizontal movement.

CONSTRUCTION REQUIREMENTS

135-3.1 GENERAL. Perform work classified as Land Surveying under AS 08.48, and work involving the location, control, and monumentation of construction centerline and right-of-way, by or under the responsible charge of a Professional Land Surveyor. The Department will provide sufficient centerline or reference thereto, and at least one benchmark to enable the establishment of planned elevations and centerline.

Schedule a mandatory Pre-Survey Conference with the Engineer, Contractor, Surveyor, and all personnel who are to be involved in the survey work, two weeks prior to beginning survey work. The purpose of this meeting will be to discuss methods and practices of accomplishing the required survey work. A preconstruction survey is to be provided to the Engineer prior to work commencing.

Furnish field survey notes. Keep field survey notes in an approved format, written in a clear, orderly, and neat manner. Make field survey notes available for inspection by the Engineer at any time. Furnish all computer generated data in a file format and medium that is compatible with Department software.

As soon as practical after completion of the work, and in no case later than acceptance of the project, deliver to the Engineer: field survey notes; PNEZD files; DTMs; machine control surfaces; and computer output data used in the calculation of measured quantities. This data becomes the property of the Department.

Perform the following by the Surveyor, or personnel under the responsible charge of the Surveyor:

- a. Reduce, check, and adjust survey data.
- b. Measurement of pay quantities that require measurement. Submit a proposed method of measuring and computing volumes to the Engineer in writing for approval before performing any work on pay items measured by volume. Provide supporting survey data and interim calculations for measured items to the Engineer prior to progress payments for each specific item. Prior to final payment, provide calculations that are completed, checked, and signed by the Surveyor.
- c. Staking, referencing and other actions required to preserve or restore land monuments and property corners.
- d. Staking of project control and benchmarks.
- e. Slope staking.
- f. Staking of signs, culverts, minor drainage structures and other appurtenances, including the necessary checking to establish the proper location and grade to best fit the conditions on site.
- g. Staking or hubbing all layers of material shown in the typical sections, including the bottom of excavation, top of borrow, top of base course, and top of surcharge. The Engineer may waive the requirement to stake and hub all layers after a successful demonstration of the machine control system to build to the required tolerances.
- h. As-built surveying as required under 135-3.9. Tie as-built measurements and locations to project horizontal and vertical survey control.
- i. Other surveying and staking necessary to complete the project.
- j. As-built existing striping prior to any demo.

Perform the following:

- a. Staking necessary to delineate clearing and/or grubbing limits.
- b. Stake Environmental Permit boundaries.
- c. ~~Slope staking.~~
- d. ~~Staking of signs, culverts, minor drainage structures and other appurtenances, including the necessary checking to establish the proper location and grade to best fit the conditions on site.~~

~~e. Staking or hubbing all layers of material shown in the typical sections, including the bottom of excavation, top of borrow, top of base course, and top of surcharge. The Engineer may waive the requirement to stake and hub all layers after a successful demonstration of the machine control system to build to the required tolerances.~~

~~f.c.~~ Staking material source limits where staking is called for in the Contract.

~~g.d.~~ Staking of right-of-way where staking is called for on the Plans.

~~h. As built surveying as required under 135-3.9. Tie as built measurements and locations to project horizontal and vertical survey control.~~

~~i.e.~~ If machine controls are used, develop the machine control models.

~~j. Other surveying and staking necessary to complete the project.~~

Notify the Engineer immediately if a Department-established reference point is discovered to be in error or a reset point is not in relationship to the adjacent control points.

Maintain the position and identifying marks of slope stakes and reference points until used for their intended purpose. Provide copies of temporary bench mark elevations and grade sheets or electronic surfaces to the Engineer 48 hours before beginning work on unclassified excavation or embankment. Before beginning clearing, grubbing, or excavation within an area submit the survey field notes relating to monument referencing for the area.

The Engineer may randomly spot check the Contractor's surveys, staking, and computations. After the survey or staking has been completed, provide the Engineer with a minimum of 72 hours notice before performing work, and furnish the appropriate data, to allow for random spot checking. The Department assumes no responsibility for the accuracy of the work.

Provide item quantities, including computations and plots to the Engineer prior to payment for each specific item. The Department will review and accept or modify the quantities provided.

135-3.2 CROSS-SECTION SURVEYS. Provide plotted cross-sections, on stations according to Table 135-3, with elevations, offsets and computed end areas in square feet for each section prior to final payment for each item measured by volume. Provide these cross-sections and associated data for the entire area of earthwork computations along with any terrain model. Take cross sections after clearing and grubbing has been completed.

135-3.3 MONUMENTS. Install primary and secondary monuments where called for in the Plans.

Prior to the start of construction, reference monuments, to include property markers/corners and accessories, that may be disturbed or buried during construction. In addition, reference monuments designated for referencing on the Plans. Prepare and record Monument Record Forms in the appropriate Recorder's Office before disturbing monuments. Monument Record Forms may be obtained from the Engineer. Re-establish monuments in their original position before completion of the project. Prepare and file a Monument Record Form for each reestablished monument.

Keep records and report to the Engineer evidence that a monument has been disturbed and is no longer reliable or cannot be located and is presumed to be missing. Establish a minimum of two in-line reference points, or three swing-tie reference points in situations where in-line referencing is not desirable. Set reference points outside of the construction limits. Measure distances from the monument to the nearest 0.01 foot. Record referencing of monuments in a separate field book sealed and signed by the Surveyor.

Replace existing monuments disturbed by construction with Primary or Secondary Monuments meeting the requirements of subsections 135-2.1 through 3. When it is impractical to establish a monument in its original position, install a witness corner (WC). Place the WC to a property corner on the property line when the other property corner that defines said line is existing or there has been sufficient retracement to define

said line. In other cases, place a reference monument (RM) perpendicular to the centerline at the station of the original position and at a distance from the original position measured in whole feet.

Those monuments found that are not shown on the Plans will be recognized by the Engineer when the following is provided by the Surveyor: Field notes identifying type and location of the monument, and a description of the point the monument marks, with the reason to preserve its location.

The Surveyor shall complete a State of Alaska Land Survey Monument Record form for each primary and secondary monument referenced, removed, installed, relocated or replaced. Provide the required survey information on the form according to statutory requirements, including section, township and range. Meet requirements for recording at the District Recorder's Office in which the project is located for each monument record. Provide copies of the Record forms to the Engineer for approval before submitting them to the District Recorder's Office. Deliver conforming copies of the recorded forms to the Engineer before monument removal or disturbance, and after setting any final monuments requiring monument records.

Set each monument and monument case accurately to lines established at the required location and in a manner as to ensure being held firmly in place. Set existing monuments and monument cases to be adjusted to new elevations in the manner and at the elevations directed.

Primary Airport Control (PAC) and Secondary Airport Control (SAC) monuments are present in the project area as shown on the Plans. This control is important and if disturbed, must be reestablished by the Contracting Agency. For this reason, the Contractor is required to employ all reasonable measures to preserve the existing control monuments in an undisturbed condition. If a PAC or SAC is disturbed by the Contractor's actions, the Contractor shall reimburse the State of Alaska for the cost of replacing monuments, performing geodetic surveys and related data processing, and filing the completed survey with the National Geodetic Surveys office.

135-3.4 CONTRACTOR FURNISHED ENGINEERING TOOLS. When item G135.050.0000 appears in the bid schedule, furnish and maintain Engineering Tools as required in the Directive authorizing the work. The Contractor shall insure and indemnify the Department against normal wear and tear, damage, theft, and all other events that may cause a loss of function of the furnished tools. The equipment will be returned to the Contractor upon completion of the project, or when services are terminated by the Engineer. Furnish training for the Engineer's staff, as directed by the Engineer.

135-3.5 SURVEY ACCURACY REQUIREMENTS. Keep daily notes on instrument checks and accuracy checks and make them available to the Engineer upon request. Perform surveying within the following accuracy requirements:

**TABLE 135-2
SURVEY ACCURACY REQUIREMENTS
(Measurements in Feet)**

	Stationing	Horizontal Position	Horizontal Angle	Distance To Centerline	Elevation
Additional cross sections	1.0	0.04	**	0.1	0.1
Benchmark		0.02			0.01
Blue tops	1.0	0.04		0.1	0.02
Bridges	0.02	0.02			0.01
Centerline	*		*		
Clearing & Grubbing	1.0			1.0	
Culverts	1.0	0.04	**	0.1	0.1
Curb & gutter	1.0	0.02		0.1	0.02
Grade stakes	1.0			0.1	0.1
Guardrail	1.0			0.1	
Monuments	*		*		
Other Structures	1.0	0.02		0.1	0.02
Red tops	1.0	0.04		0.1	0.05
Riprap	1.0	0.04		1.0	0.1
Signs	1.0			0.1	0.02***
Slope stakes & RP's	1.0	0.04	**	0.1	0.1
Under drains & sewer	1.0	0.02		0.1	0.02

* Third order survey or 0.07 ft (21mm) local accuracy

** Right angle from center line.

***For signs set in concrete.

135-3.6 SURVEY FREQUENCY REQUIREMENTS. Take survey information and install staking and hubbing at the following frequencies:

**TABLE 135-3
SURVEY FREQUENCY REQUIREMENTS
(Measurements in Feet)**

	Tangents	Curves	Interchange Ramps	Stake Each Per Plan
Additional cross sections	*	*	*	
Bench marks				
Blue tops	100	100**	25	
Blue tops within 100 feet both sides of railroad track crossings and bridge approaches	25	25	25	
Center line	100	100**	25	
Clearing & Grubbing	100	100**	25	
Culverts				X
Curb & gutter	25	25	25	
Grade stakes	100	100**	50	
Guardrail	25	25	25	
Monuments				X
Red tops	100	100**	25	
Riprap	50	50	50	
Signs				X
Slope stake / cross sections	100	100**	25	
Structures				X
Under drains & sewers	50	25	25	

*Establish additional cross sections and slope stakes at all breaks in topography and where structures begin and end.

**Stake curves on 50-foot stations if the curve is greater than six degrees.

Establish all benchmarks and take the centerline profile before doing any staking involving elevations. Do not set benchmarks in utility poles. Recheck benchmarks after each major freeze/thaw cycle and any environmental event that may change the benchmark elevation.

Place reference points at each slope stake beyond the slope stake in a location they will not be disturbed.

In areas where slides or overbreak are anticipated, extend cross sections beyond the construction limits. Cross section on the frequency of the slope stakes. Final re-cross sections are required where there are overbreaks, undercuts, or similar changed features.

At a minimum, show the following information on slope stakes:

- a. Where to begin the cut or fill.
- b. Slope ratio.
- c. Depth of cut or height of fill.
- d. Station.

At a minimum, show the following information on culvert stakes:

- a. Station.
- b. Size.
- c. Length.
- d. Type of Pipe (e.g. CMP).
- e. Cut or fill from top of hub to inlet & outlet.
- f. Skew angle.
- g. Horizontal distance from hub to end of pipe.
- h. Gradient of pipe.
- i. Drop of pipe.

At a minimum show the following information on other stakes:

- a. An identifier/name for the stake.
- b. Station
- c. Offset
- d. Elevation (if applicable)

Place red/blue tops at each break in typical section and on centerline. Evenly space red/blue tops at and between crown section break points with a maximum spacing of 25 feet between red/blue tops. Place red/blue tops at curve superelevation transitions.

135-3.7 FINAL VERIFICATION OF MONUMENTS. Within 30 days after the Engineer receives a letter stating that construction activities that may disturb the monuments have ceased, the Surveyor shall verify the positional accuracy of installed survey monuments. Verify the primary and secondary monuments placed or replaced compared to undisturbed Department-provided control points. The Surveyor shall sign and stamp a letter that lists each monument and its coordinates. The letter shall certify that the monuments are each located within 0.1-foot of their proposed position based on the project survey control points provided by the Department. Deliver the certification letter and field notes for this work to the Engineer.

135-3.8 EXTRA THREE PERSON SURVEY PARTY. This pay item is for extra, additional, or unanticipated work made necessary by changes in the project. Monuments not shown on the Plans will be considered additional work. Work under pay item G135.020.0000 may include field work, office engineering, or any work described under the construction requirements of Item G-135.

135-3.9 AS-BUILT SURVEYS. Upon completion of each phase of the work, the Contractor shall furnish the Engineer with all necessary measurements for completion of the as-built drawings. The Contractor shall include identification and location of project features where actual locations differ from locations shown on the Plans. Document the final locations of paved surfaces, topographic surfaces, structures, and utilities constructed by the project.

135-3.10 OFFICE ENGINEERING. RESERVED.

METHOD OF MEASUREMENT

135-4.1 The work will be measured according to GCP Section 90, and as follows:

- a. Hour. By the number of hours, as directed by the Engineer and as recorded by certified payrolls.
- b. Contingent Sum. As specified by the Engineer in the Directive authorizing the work.

BASIS OF PAYMENT

135-5.1 Pay Item G135.020.0000 Extra Three Person Survey Party. Work accomplished by a three person survey party will be paid at 100% of the contract unit price, by a two person survey party at 75% of the contract unit price, or by a one person survey party at 50% of the contract unit price, for Pay Item G135.020.0000.

Pay Item G135.040.0000 Extra Surveying by the Contractor. Payment will be made as specified in the Directive authorizing the work.

Pay Item G135.050.0000 Contractor Furnished Engineering Tools. Payment will be made as specified in the Directive authorizing the work.

The Engineer will deduct the Department's cost of replacing PAC and SAC monuments under 135-3.3 from the amount due the Contractor.

Payment will be made under:

Item G135.010.0000	Construction Surveying by the Contractor – per lump sum
Item G135.020.0000	Extra Three Person Survey Party – per hour

ITEM G-300 CRITICAL PATH METHOD SCHEDULING

DESCRIPTION

300-1.1 Provide and maintain a Critical Path Method (CPM) progress schedule for the project. Use the schedule in coordinating and monitoring of all work under the Contract including activity of subcontractors, manufacturers, suppliers, and utility companies, and reviews by the Department. Schedule shall incorporate off-site work activities including: Department activities, product manufacturing, submittal preparation, shipping etc. Additionally, include work by others that may have an effect on work of this Contract. Consider activities by other Contractors under contract with the Department, Department activities, TSAIA requirements and Airport Tenant activities. Department activities include but are not limited to: Department reviews and approvals, permitting requirements, inspections, utility tie-ins, and Department furnished products or equipment. Update the CPM schedule, as required.

Provide work plans, daily construction reports, and recovery plans.

300-1.2 DEFINITIONS

- a. Project Schedule.** The schedule prepared or updated by the Contractor to the requirements specified. The project schedule shall be used to measure the progress of the work and aid in the evaluation of time impacts to the project.
- b. Critical Path.** The sequence of activities that determine the earliest possible completion date for the project or project phase.
- c. CPM Schedule.** The schedule prepared by the Contractor defining the planned work of the contract.
- d. Schedule Updates.** Progress updates performed by the Contractor to the accepted CPM baseline schedule, as described in Section 300-4.1.b. The most recently updated schedules shall be provided and submitted with pay applications. The schedule updates shall reflect actual progress of the work and shall have a direct correlation to progress payments.
- e. Time Impact Evaluation (TIE).** Forward looking schedule analysis technique that adds a modeled delay to an accepted contract schedule to determine the possible impact of that delay to the project completion.
- f. Fragnet.** A sequence of new activities that are proposed to be added to the project schedule to demonstrate the influence of the delay or impact to the project's schedule that immediately preceded the delay.
- g. Activity Float.** Activity Float is the length of time that an activity can be delayed without causing a delay to the "end project" (contract completion date) finish milestone.
- h. Project Float.** Project Float is the length of time between the Contractors's projected early finish and the Contract Completion Date.

~~300-2.1 SUBMITTAL OF SCHEDULE.~~ ~~Submit a detailed initial CPM Schedule at the pre-construction conference for the Engineer's acceptance as set forth below.~~

~~The construction schedule, for the entire project, may not exceed the specified contract time.~~

~~Allow the Engineer 14 days to review the initial CPM Schedule. If revisions are required, make them promptly. The finalized CPM Schedule must be completed and accepted prior to commencement of any work on the project.~~

SUBMITTAL REQUIREMENTS

300-2.1 General

- a. Initial submittal.** Submit a detailed initial CPM schedule within two weeks of receiving Notice To Proceed (or partial NTP covering scheduling work) from the Department. Make any required changes and submit the modified CPM schedule at the pre-construction conference for the Engineer's acceptance as set forth below. The construction schedule may not exceed the specified contract time.
- b. Review and acceptance.** Allow the Engineer 14 days to review the initial CPM Schedule. If revisions are required, make them within 2 working days of their receipt and submit a modified CPM schedule incorporating the revisions. No other work on the project may be commenced until the CPM Schedule is accepted by the Engineer.

The accepted CPM schedule becomes the baseline CPM schedule to which all subsequent updates are made by the Contractor.

The accepted CPM schedule, including the most recent accepted periodic schedule update, shall be the basis for the two week look-ahead schedule presentation at weekly progress meetings.

- c. Required weekly submittals.** After acceptance of the initial CPM and once work commences, submit the following in accordance with Section G-300-4.1:

On a weekly basis:

(1) Revised CPM Schedule (G-300-3.1)

(2) Look Ahead Plan (G-300-4.1.c)

(3) Narrative Report (G-300-2.1.d)

On a daily basis:

(1) Daily Construction Report (G-300-4.1.d)

- d. Submittal format.** Provide schedules and schedule updates electronically in original software and in PDF format. Provide a narrative report including the following elements:

(1) Project number, project name, date, data date

(2) Standard workday settings for each calendar.

(3) Critical path. Show all activities on the critical path

(4) Added activities, Deleted activities, duration changes, calendar changes, logic changes.

(5) Current and anticipated delays. Include a description of current and anticipated problem areas or delaying factors and their impacts, and an explanation of corrective actions taken or required to be taken.

300-3.1 REQUIREMENTS AND USE OF SCHEDULE

- ~~**a. Schedule Requirements.** Prepare the CPM schedule as a Precedence Diagram Network developed in the activity-on-node format which includes:~~

~~(1) Activity description~~

~~(2) Activity duration~~

~~(3) Resources required for each of the project activities, including:~~

- ~~(a) Labor (showing work days per week, holidays, shifts per day, and hours per shift)~~
- ~~(b) Equipment (including the number of units of each type of equipment)~~
- ~~(c) Materials.~~

~~Show on the activity-on-node diagram the sequence and interdependence of all activities required for complete performance of all items of work under this Contract, including shop drawing submittals and reviews and fabrication and delivery activities.~~

~~No activity duration may be longer than 15 work days without the Engineer's approval.~~

~~The Engineer reserves the right to limit the number of activities on the schedule.~~

~~Consider that schedule float time is shared equally with the Department.~~

~~The contract completion time will be adjusted only for causes specified in this Contract.~~

- ~~b. **Schedule Updates.** Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer monthly, or as deemed necessary by the Engineer. Review progress and verify finish dates of completed activities, remaining duration of uncompleted activities, and any proposed logic and/or time estimate revisions. Submit a revised CPM schedule within 5 working days after this meeting showing the finish dates of completed activities and updated times for the remaining work, including any addition, deletion, or revision of activities required by Contract modification.~~
- ~~c. **Work Plans.** In addition to the CPM schedule, submit a work plan every 2 weeks during construction, detailing your proposed operations for the forthcoming two weeks. Include:~~
 - ~~(1) Work activities~~
 - ~~(2) Manpower involved by trade~~
 - ~~(3) Work hours~~
 - ~~(4) Equipment involved~~
 - ~~(5) Location of the work to be performed~~

SCHEDULE UPDATES

300-3.1 Provide updates as described in Section G-300-4.1.b.

Lack of an approved schedule update will result in the inability of the Department to evaluate the progress of the work for the purposes of payment. Failure of the Contractor to provide all of the required information or to meet the requirements of this specification will result in the disapproval of the initial, finalized, and periodic schedule updates. If the Contractor fails to submit any schedule within time prescribed or in the event revisions are directed by the Engineer and those revisions have not been included in subsequent project schedule revisions or updates, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

REQUIREMENTS AND USE OF SCHEDULE

300-4.1 General

a. Schedule Requirements.

- (1) Prepare the CPM schedule as a Precedence Diagram Network developed in the activity-on-node format which includes:
- (a) Activity ID.
 - (b) Activity description
 - (c) Activity duration – original and remaining. Duration and units shall be fixed.
 - (d) Activity dates – start, late start, finish, late finish.
 - (e) Activity percent complete
 - (f) Activity total float
 - (g) Resources required for each of the project activities, including:
 - Labor (showing work days per week, holidays, shifts per day, and hours per shift)
 - Equipment (including the number of units of each type of equipment)
 - Materials.
- (2) Department approval activities shall be on a 7 day calendar with an original duration of 30 days.
- (3) Show on the activity-on-node diagram the sequence and interdependence of all activities required for complete performance of all items of work under this Contract, including shop drawing submittals and reviews and fabrication and delivery activities.
- (4) No activity duration may be longer than 15 work days without the Engineer's approval.
- (5) The Engineer reserves the right to limit the number of activities on the schedule.
- (6) Consider that schedule float time is shared equally with the Department.
- (7) Float that is available in the schedule, at any time, shall not be considered for the exclusive use of neither the Department, nor the Contractor. This includes activity float and project float.
- (8) The contract completion time will be adjusted only for causes specified in this Contract.
- (9) As determined by CPM analysis, only delays in activities which affect the critical path will be considered for a time extension.
- (10) Procurement activities (submittals, shop drawings, manufacturing and shipping) shall be logically tied to the submission, approval, and construction installation activity.
- (11) There shall be only two open ended activities; the first activity "Start project: NTP" shall not have a predecessor and the last activity "Final Completion" shall have no successor logic. All other activities shall be logically linked and shall have a predecessor and a successor.
- (12) Constraints. The Contractor shall not have any constrained dates other than those specified herein. Additional constraints may be approved by the Engineer on a case by case basis. The use of artificial float constraints is prohibited. Additionally, mandatory start, mandatory finish, finish on, and as late as possible constraints are prohibited.
- (a) Project Start Constraint is the first activity in in the project schedule and shall have a Start On constraint equal to the date that the NTP was acknowledged.

(b) Substantial Completion Constraint. The Substantial Completion activities shall have a Finish On or Before constraint equal to the contractual Substantial Completion date.

(13) Calendars. Activities shall be assigned a project specific calendar to which the activity logically belongs. Calendars should be developed to accommodate any contract defined work period such as a 7-day no holiday and a '5-day with holidays' project specific calendar. For projects that include activities that are affected by adverse weather, an additional project specific calendar that includes weekends and holidays as applicable should be developed that blocks out the winter shut down period as non-work days.

(14) Out of Sequence logic. Activities that have progressed before all preceding logic has been satisfied are not allowed. Logic must be corrected so that the error log is clear of out of sequence logic.

(15) Original Duration. Activity Original Durations (OD) changes are prohibited unless approved by the Engineer. Remaining duration shall be used to make activity duration changes, after an activity has started, when progressing the project schedule.

(16) Negative lags and Start to Finish (SF) Relationships. Lag durations contained in the project schedule shall not have a negative value under any circumstances. Start to Finish (SF) relationships are prohibited.

(17) Retained Logic. Schedule calculations shall retain the logic between predecessors and successors ('retained logic' mode) even when the successor activity has started and the predecessor activity has not yet finished (out of sequence logic). Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("Progress Override") is not allowed.

b. Schedule Updates. Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer weekly, or as deemed necessary by the Engineer. Review progress and verify finish dates of completed activities, remaining duration of uncompleted activities, and any proposed logic and/or time estimate revisions. Submit a revised CPM schedule within 2 working days after this meeting showing the finish dates of completed activities and updated times for the remaining work, including any addition, deletion, or revision of activities required by Contract modification.

c. Look Ahead Plans. In addition to the CPM schedule, submit a Look Ahead Plan during construction, detailing proposed operations for the forthcoming two weeks. Update the Look Ahead Plan at the weekly construction progress meeting and ensure that it correlates to the CPM schedule. Include the following:

(1) Work activities

(2) Manpower involved by trade

(3) Work hours

(4) Equipment involved

(5) Location of the work to be performed

d. Daily Construction Reports. The Contractor shall, on a daily basis, submit a daily task report to the Engineer for each working day, including weekends, and holidays, when worked. The Contractor shall develop the daily construction report on computer-generated databases capable of sorting daily Work, manpower, and labor hours by the Contractor, SubContractor, area, and change order. The report shall be provided electronically and shall include the following items:

(1) Project Name and Project Number

(2) Contractor's name and address

(3) Weather, temperature, and site conditions

(4) Brief description and location of the day's scheduled activities and any special problems/accidents. Include work by others.

(5) Activities started today. Activities completed today.

(6) Worker quantities for prime and subContractors – any tier.

(7) Equipment, other than hand tools, utilized by Contractor and subContractors. Include equipment identification, number of hours in service, and number of hours idle. Include any equipment inspections and equipment maintenance performed.

e. Recovery Plan. Should the Contractor's progress fall behind the approved project schedule for reasons other than those that are excusable within the terms of the contract, the Engineer may require the Contractor to provide a written recovery plan to the Engineer for approval. The plans shall detail how progress will be made-up to include which activities will be accelerated by adding additional crews, longer work hours, extra work days etc.

The Contractor shall not artificially improve progress by simply revising the schedule logic, modifying or adding constraints, shortening activity durations, or changing calendars in the project schedule. The Contractor shall indicate assumptions made and the basis for any logic, constraint, and calendar changes used in the creation of the recovery plan. Any additional resources, manpower, or daily and weekly work hour changes proposed in the recovery plan must be evident at the work site and documented in the Contractor's daily report.

f. Request for Time Extensions. The Contractor shall provide a justification of delay for the Engineer in accordance with the Section 80-06. The Contractor shall also prepare a Time Impact Evaluation (TIE) for each Department request for proposal (RFP) to justify time extensions.

(1) Justification of Delay – The Contractor shall provide a description of the event(s) that caused the delay and/or impact to the Contractor's work. As part of the description, the Contractor shall identify the schedule activities that were impacted. The Contractor shall show the event that caused the delay/impact was the responsibility of the Department. The Contractor shall also provide a TIE that demonstrates the effects of the delay or impact on the project completion date or interim completion date(s). Multiple impacts shall be evaluated chronologically; each with its own justification of delay. The sum of all delays shall be cumulative. A time extension and the schedule fragnet shall become part of the project schedule and all further schedule updates upon approval of the Engineer.

(2) Time Impact Evaluation (TIE) - The Contractor shall prepare a time impact evaluation for approval by the Engineer. The Contractor shall utilize a copy of the last approved schedule prior to the first day of the impact or delay for the time impact analysis. Pending change orders shall not be incorporated into the schedule unless the TIE has been approved by the Department.

(3) Fragmentary Network (fragnet) - The Contractor shall prepare a proposed fragnet for its time impact evaluation. The proposed fragnet shall consist of a sequence of new activities that are proposed to be added to the project schedule to demonstrate the influence of the delay or impact other project's contractual dates. The Contractor shall clearly show how the proposed fragnet is to be tied into the project schedule including all processors and successors to the fragnet activities. The proposed fragnet shall be approved by the Engineer prior to incorporation into the project schedule.

(4) Time Extension – The Engineer must approve the Contractor's justification for delay including TIE before a time extension will be granted. The time extension shall be given in calendar days.

(5) The Contractor shall be responsible for all costs associated with the preparation of TIE(s) and the process of incorporating them into the current schedule update.

METHOD OF MEASUREMENT

300-45.1 CPM Scheduling will not be measured for payment. Refer to GCP Section 90.

BASIS OF PAYMENT

300-65.1 At the lump sum price for CPM Scheduling.

Payment will be made under:

Item G300.010.0000 CPM Scheduling – per lump sum

ITEM G-710 TRAFFIC CONTROL FOR ROADS, STREETS, AND HIGHWAYS

710-1.1 DESCRIPTION. Protect and control traffic during the contract. Furnish, erect, maintain, replace, clean, move and remove the highway traffic control devices required to ensure the public's safety. Perform all administrative responsibilities necessary to implement this work.

Maintain all public corridors affected by the work in a smooth and passable condition. Construct and maintain approaches, crossings, intersections, and other necessary features throughout the project for the life of the contract.

710-1.2 ACRONYMS AND DEFINITIONS.

ATM. When used in this section, ATM stands for the *Alaska Traffic Manual*, which is the MUTCD with the *Alaska Traffic Manual Supplement*.

HIGHWAY. A main direct road. Used throughout this section for the sake of brevity, the word "highway" also applies to roads and streets.

HIGHWAY TRAFFIC CONTROL ZONE. A portion of a construction project, haul route, utility work, or similar operation that affects traffic and requires highway traffic control to safely guide and protect motorists, pedestrians, bicyclists, or workers, outside of the AOA.

HIGHWAY TRAFFIC CONTROL PLAN (TCP). A drawing or drawings indicating the method or scheme for safety guiding and protecting motorists, pedestrians, bicyclists, and workers in a highway traffic control zone. The TCP depicts the highway traffic control devices and their placement and times of use.

TRAFFIC. The movement of vehicles, ATV's, equipment, pedestrians, and bicyclists through public corridors, construction areas, utility work, or similar operations.

710-1.3 HIGHWAY TRAFFIC CONTROL PLAN. Design and implement an approved TCP before beginning work within a highway traffic control zone.

The TCP includes, but is not limited to, signs, barricades, traffic cones, plastic safety fence, sequential arrow panels, portable changeable message board signs, special signs, warning lights, portable concrete barriers, crash cushions, highway flaggers, pilot cars, interim pavement markings, temporary lighting, temporary roadways and all other items required to direct traffic through or around the highway traffic control zone according to these Specifications and the ATM. Address in the TCPs, placement of highway traffic control devices, including location, spacing, size, mounting height and type. Include code designation, size, and legend per the ATM and the ASDS. Include longitudinal buffer space for the posted speed limit, according to Table 6C-2 of the ATM unless project conditions or geometric features prohibit including all or a portion of the buffer length.

When a TCP is included in the Plans, use it, modify it, or design an alternative TCP. All TCPs must include the following information:

- a. Project name and number.
- b. A designated TCP number and name on each page.
- c. For TCPs more than one page, each page must be numbered.
- d. The posted speed limit for each roadway.
- e. Existing striping width, lane width, and road surfacing.
- f. Construction lane widths, striping layout, and temporary pavement marker layout.
- g. Provisions for Pedestrian, Bicycle, and ADA travel through the work zone.

- h. Dates and times the TCP will be in effect and why it is being used.
- i. The Worksite Traffic Supervisor's signature certifying that all TCPs conform with the ATM and the Contract.
- j. The Project Superintendent's signature confirming the TCP is compatible with the work plan.
- k. The name(s) of the Worksite Traffic Supervisor, his/her alternate and their 24 hour telephone number(s).
- l. Signs to be used and the ASDS designation number and size.
- m. Location and spacing of all devices and signs.
- n. A plan to address any possible slopes, drop offs, paving joints, or similar temporary features that may occur during use of the TCP.
- o. For TCPs proposed to be used at night, note how the requirements will be met for the required lighting and retroreflective material.

TCPs submitted for approval without all the required information will be rejected. Allow 7 days for review of each TCP submittal. All required modifications to a TCP require a new submission and an additional 7 days for review.

A minor revision to a previously approved TCP during construction requires 48 hours for review and approval by the Engineer.

The TCPs, Plans, and Alaska Standard Plans show the minimum required number of highway traffic control devices. If unsafe conditions occur, the Engineer may require additional highway traffic control devices.

Use of oversize and overweight equipment in a highway traffic control zone must conform to an approved TCP, including all highway traffic control devices these operations require.

710-1.4 WORKSITE TRAFFIC SUPERVISOR. Provide a Worksite Traffic Supervisor responsible for maintaining 24-hour traffic operations.

- a. **Qualifications.** ~~The Provide a~~ Worksite Traffic Supervisor ~~shall be~~ knowledgeable and experienced regarding the requirements of the ATM and the implementation of those requirements. ~~The Provide a~~ Worksite Traffic Supervisor ~~shall be~~ familiar with the Plans, the Specifications, proposed operations, and is certified as one of the following:

(1) Traffic Control Supervisor, American Traffic Safety Services Association (ATSSA).

~~(4)(2)~~ Traffic Control Supervisor, Laborers' International Union of North America (LIUNA)

~~(2)(3)~~ Work Zone Temporary Traffic Control Technician, ~~or Work Zone Safety Specialist,~~ International Municipal Signal Association (IMSA). After December 31, 2026 IMSA certification will not be accepted.

Certify according to Form 25D-124 that the Worksite Traffic Supervisor has a minimum 4,000 hours of temporary traffic control work experience, is competent and capable, and has the authority to perform the duties and responsibilities in accordance with this section.

- Temporary traffic control work experience shall demonstrate an understanding of concepts, techniques, and practices in the installation and maintenance of traffic control devices, and skill in reading, interpreting, implementing, and modifying TCPs.

- Temporary traffic control work experience includes: flagging; installing traffic control devices in accordance with TCPs; monitoring traffic control devices and TCPs for correction.
- Temporary traffic control work experience is gained while serving as a Worksite Traffic Supervisor-in-training, temporary traffic control support personnel, and Flagger.
- Four thousand (4,000) hours of experience serving solely as a flagger does not satisfy these requirements.

Worksite Traffic Supervisors shall maintain current certification and be able to show their certification anytime they are on the project.

b. Duties.

- (1) Prepare the TCPs and public notices and coordinate highway traffic control operations between the Project Superintendent and the Engineer.
- (2) Physically inspect the condition and position of all highway traffic control devices used on the project at least twice each day and at approximately 12 hour intervals. Ensure that highway traffic control devices work properly, are clean and visible, and conform to the approved TCP. Complete and sign a detailed written report of each inspection within 24 hours. Use Traffic Control Daily Review Form 25D-104.
- (3) Supervise the repair or replacement of damaged or missing highway traffic control devices.
- (4) Review and anticipate highway traffic control needs. Make available proper highway traffic control devices necessary for safe and efficient traffic movement.
- (5) Review work areas, equipment storage, and traffic-safety material handling and storage.
- (6) Hold traffic safety meetings with superintendents, foremen, subcontractors, and others as appropriate before beginning construction, prior to implementing a new TCP, and as directed. Invite the Engineer to these meetings. Conduct monthly open house public meetings to discuss the TCP and construction phasing.
- (7) Supervise all highway traffic control workers, highway flaggers, and pilot car drivers.
- (8) Certify that all highway flaggers are certified as required by subsection 710-3.4d. Submit a copy of all highway flagger certifications to the Engineer.

- c. Authority.** The Worksite Traffic Supervisor shall have the Contractor's authority to stop work and implement immediate corrective action to unsafe traffic control, in locations where unsafe traffic control is present.

MATERIALS

710-2.1 Provide highway traffic control devices meeting the following requirements:

- a. Signs.** Use signs, including sign supports that conform to Section P-661, the ATM, the ASDS, and ASTM D4956. Use Type VIII or Type IX fluorescent orange reflective background sheeting at any time.
 - (1) **Construction Signs:** Regulatory, guide, or construction warning signs designated in the ASDS.
 - (2) **Permanent Construction Signs:** As designated on the Plans or an approved TCP.

(3) Special Construction Signs: All other signs are Special Construction Signs. Neatly mark the size of each sign on its back in 3-inch black numerals.

- b. Portable Sign Supports.** Use wind-resistant sign supports with no external ballasting. Use sign supports that can vertically support a 48 X 48 inch highway traffic control sign at the height above the adjacent roadway surface required by the ATM.
- c. Barricades and Vertical Panels.** Use barricades and vertical panel supports that conform to the ATM. Use Type III Barricades at least 8 feet long. Use retroreflective sheeting that meets ASTM D4956 Type II or III.
- d. Portable Concrete Barriers.** Use portable concrete barriers that conform to the Contract. For each direction of highway traffic, equip each 12.5-foot section of barrier with at least two side-mounted retroreflective tabs placed approximately 6 to 8 feet apart, or a continuous 4-inch wide horizontal retroreflective stripe mounted 6 inches below the top of the barrier. Use yellow tabs or stripe when barriers are placed at centerline. Use white tabs or stripe when barriers are placed on the roadway shoulder. Use retroreflective sheeting that meets ASTM D4956 Type III, IV or V.
- e. Warning Lights.** Use Type A (low intensity flashing), Type B (high intensity flashing) or Type C (steady burn) warning lights that conform to the ATM.
- f. Drums.** Use plastic drums that conform to the requirements of the ATM. Use reflective sheeting that meets ASTM D4956 Type II or III.
- g. Traffic Cones and Tubular Markers.** Use reflectorized traffic cones and tubular markers that conform to the requirements of the ATM. Use traffic cones and tubular markers at least 28 inches high. Use reflective sheeting that meets ASTM D4956 Type II or III.
- h. Plastic Safety Fence.** Use 4 foot high construction orange fence manufactured by one of the following companies, or an approved equal:
 - (1)** "Safety Fence" by Services and Materials Company, Inc., 2200 South "J" Street, Elwood, Indiana, 46036. Phone (800) 428-8185.
 - (2)** "Flexible Safety Fencing" by Carsonite, 1301 Hot Springs Road, Carson City, Nevada, 89706. Phone (800) 648-7974.
 - (3)** "Warning Barrier Fence" by Plastic Safety Systems, Inc. P.O. Box 20140, Cleveland, Ohio, 44120. Phone (800) 662-6338.
- i. Flagger Paddles.** Use flagger paddles with 24 inches wide by 24 inches high sign panels, 8 inch Series C lettering (see ASDS for definition of Series C), and otherwise conform to the ATM. Use reflective sheeting that meets ASTM D4956 Type VIII or IX. Use background colors of fluorescent orange on one side and red on the other side.

710-2.2 CRASHWORTHINESS. Submit documentation that all highway traffic control devices conform to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 (Test Level 3) or Manual for Assessing Safety Hardware MASH 2016 (Test Level 3).

Temporary work zone devices manufactured after December 31, 2019 must have been successfully tested to the 2016 edition of MASH. Such devices manufactured on or before this date, and successfully tested to NCHRP 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives.

CONSTRUCTION METHODS

710-3.1 GENERAL CONSTRUCTION REQUIREMENTS. Keep the work, and portions of the project affected by the work, in good condition to accommodate traffic safely. Provide and maintain highway traffic control devices and services inside and outside the project limits, day and night, to guide traffic safely.

Unless otherwise provided in this Section, keep all roadways, business accesses, and pedestrian facilities within the project limits open to traffic. Obtain the Engineer's approval before temporarily closing residential, commercial, or street approaches. Provide access through the project for emergency vehicles and school and transit buses. Properly sign and/or flag all locations where the traveling public must be redirected or stopped. Organize construction operations so the total of all construction related stoppages experienced by a vehicle traveling through the project does not exceed 20 minutes except when indicated otherwise in the Contract.

Stop equipment at all points of intersection with the traveling public unless an approved TCP shows otherwise.

Operate flood lighting at night according to the ATM. Adjust flood lighting so that it does not shine into oncoming traffic.

Provide and maintain safe routes for pedestrians and bicyclists through or around highway traffic control zones at all times, except when regulations prohibit pedestrians or bicyclists.

Immediately notify the Engineer of any traffic related accident that occurs within the project limits as soon as an employee, or a subcontractor becomes aware of the accident. any traffic related crash that occurs within the project limits, between construction warning signs, along a detour route, or involving a traffic in a queue back up from project work. Within three days fill out the information on Form 25D-123 Work Zone Crash Report and submit a copy to the Engineer.

710-3.2 ROADWAY CHARACTERISTICS DURING CONSTRUCTION. Obtain an approved TCP before starting construction. Maintain a clear area with at least 2 feet between the edge of traveled way and the work area. Use barricades, traffic cones, or drums to delineate this area. Place highway traffic control devices on the work side of the clear area. Space them according to the ATM.

If maintaining traffic on an unpaved surface, provide a smooth and even surface that public traffic can use at all times. Properly crown the roadbed surface for drainage. Before beginning other grading operations, place sufficient fill at culverts and bridges to permit traffic to cross smoothly and unimpeded. Use part-width construction techniques when routing traffic through roadway cuts or over embankments under construction. Excavate the material or place it in layers. Alternate construction activities from one side to the other. Route traffic over the side opposite the one under construction.

Detour traffic when the Plans or an approved TCP allows it. Maintain detour routes so that traffic can proceed safely. When detours are no longer required, obliterate the detour. Topsoil and seed appropriate areas.

If two-way traffic can't be maintained on the existing roadway or detour, use half-width construction or a road closure if it is shown on an approved TCP. Make sure the TCP indicates closure duration and conditions. Schedule roadway closures to avoid delay school buses and peak-hour traffic. For road closures, post closure-start and road-reopen times at the closure site, within view of waiting traffic.

710-3.3 PUBLIC NOTICE. Give notice of major changes, delays, lane restrictions, or road closures to local officials and transportation organizations, including but not necessarily limited to:

- a. Alaska Trucking Association
- b. Alaska State Troopers
- c. Division of Measurement Standards
- d. Local Police Department
- e. Local Fire Department
- f. Local Government Traffic Engineer

- g. School and Transit Authorities
- h. Local Emergency Medical Services
- i. Local Media (newspapers, radio, television)
- j. Railroads (where applicable)
- k. U.S. Postal Service
- l. Major Tour Operators

710-3.4 HIGHWAY TRAFFIC CONTROL DEVICES. Before starting construction, erect permanent and temporary highway traffic control devices required by the approved TCPs. The Engineer will determine advisory speeds when necessary.

For lane closures on multilane roadways, use sequential arrow panels. During hours of darkness when required by the approved TCP use flashing warning lights to mark obstructions or hazards and steady-burn lights for channelization.

Use only one type of highway traffic control device in a continuous line of delineating devices, unless otherwise noted on an approved TCP. Use drums or Type II barricades for lane drop tapers.

During non-working hours and after completing a particular construction operation, remove all unnecessary highway traffic control devices. Store all unused highway traffic control devices in a designated storage area, which does not present a nuisance or visual distraction to traffic. If sign panels are post mounted and cannot be readily removed, cover them entirely with either metal or plywood sheeting. Completely cover signal heads with durable material that fully blocks the view of signal head and will not be damaged or removed by weather.

Keep signs, drums, barricades, and other devices clean at all times.

Use only highway traffic control devices that meet the requirements of the "Acceptable" category in ATSSA "Quality Guidelines for Temporary Traffic Control Devices" and meet crashworthiness requirements per Section 710-2.2.

Immediately replace any devices provided under this Section that are lost, stolen, destroyed, inoperable or deemed unacceptable while used on the project. Stock repair parts for each Temporary Crash Cushion used on the project. Repair damaged crash cushions within 24 hours.

Maintain pre-existing roadside safety hardware at an equivalent or better level than existed prior to project implementation until the progress of construction necessitates removing the hardware. All existing hazards that are currently protected with roadside safety hardware or new hazards which result from project improvements shall be protected or delineated as required in the plans, specifications, and approved TCPs until permanent roadside safety hardware is installed.

All items paid under this Section remain the property of the contractor, unless noted otherwise in the contract. Remove them after completing the project.

- a. **Embankments.** Install portable concrete or steel barrier, plastic drums, barricades, tubular markers, plastic safety fence, and cones as specified on the Plans or TCPs to delineate open trenches, ditches, other excavations and hazardous areas when they exist along the roadway for more than one continuous work shift.
- b. **Adjacent Travel Lane Paving.** When paving lifts are 2 inches or greater and adjacent travel lanes or paved shoulders are not paved to the same elevation before the end of the shift, install W8-11 (Uneven Lanes), W8-9 (Low Shoulder), W8-17 (Shoulder Drop-Off), W14-3 (No Passing Zone),

R4-1 (Do Not Pass), R4-2 (Pass with Care), and W8-1 (Bump) signs as appropriate. Place additional signs every 1500 feet if the section is longer than ½ mile.

- c. **Fixed Objects and Construction Vehicles and Equipment Working On Or Next to the Traveled Way.** Do not park equipment in medians. Locate fixed objects at least 30 feet from the edge of traveled way. Fixed objects that exist prior to construction activity are not subject to this requirement unless the proposed temporary traffic routing moves the edge of traveled way closer to the pre-existing fixed object. Vehicles and other objects within parking lots in urban environments are considered preexisting fixed objects regardless of whether they are or are not present continuously throughout the day.

When worksite restrictions, land features, right of way limitations, environmental restrictions, construction phasing, or other construction conditions allow no practicable location meeting the preceding requirements, the Engineer may approve alternate locations for fixed objects. Alternate locations shall be as far as practicable from the edge of traveled way, the Engineer may verbally approve the alternate location. When the alternate location provides less than 15 feet separation, written approval is required.

When the Engineer determines a fixed object or fixed objects present unacceptable hazard, use drums or Type II barricades with flashing warning lights, or use portable concrete or steel barriers, or temporary crash cushion to delineate or shield the hazard, as approved by the Engineer.

- d. **Flagging.** Furnish trained and competent highway flaggers and all necessary equipment, including lighting of the highway flagger position during nighttime operations, to control traffic through the highway traffic control zone. The Engineer will approve each highway flagging operation before it begins and direct adjustments as conditions change.

Flaggers must be certified by one of the following:

~~(1) Flagging Level I Certification by IMSA~~

~~(2)(1) Flagger Certification by ATSSA~~

~~(3) Traffic Control Supervisor, ATSSA~~

~~(4) Work Zone Safety Specialist, IMSA~~

(2) ATSSA Flagging Instructor

(3) Flagger by LIUNA

(4) Traffic Control Technician, LIUNA

(5) Temporary Traffic Control Technician, IMSA

After December 31, 2026 IMSA certification will not be accepted.

Flaggers shall maintain current flagger certification. Flaggers must be able to show their flagger certification anytime they are on the project.

Highway flaggers must maintain their assigned flagging location at all times, unless another qualified highway flagger relieves them, or the approved TCP terminates the flagging requirements. Remove, fully cover, or lay down flagger signs when no highway flagger is present. Keep the highway flaggers' area free of encumbrances. Keep the flagger's vehicle well off the roadway and away from the flagging location so the flagger can be easily seen.

Provide approved equipment for two-way radio communications between highway flaggers when they are not in plain, unobstructed view of each other.

Obtain the Engineer's written approval before flagging signalized intersections. When flagging a signalized intersection, either turn off and cover the traffic signal or place it in the All-Red Flash mode. Coordinate changing traffic signal modes and turning off or turning on traffic signals with the agency responsible for signal maintenance and operation and the Engineer. Get their written approval in advance. Only uniformed police officers are permitted to direct traffic in an intersection with an operating traffic signal.

- e. **Watering.** Furnish, haul, and place water for dust control and pavement flushing, as directed. Use water trucks that can provide a high pressure water stream to flush the pavement and a light-water spray to control dust. If the flushing operations contaminate or fill adjacent catch basins, clean and restore them to their original condition. This requirement includes sections of roadway off the project where flushing is required. The Engineer will control water application.

When taking water from a lake, stream, or other natural water body, first obtain a water removal permit from the Alaska Department of Natural Resources. Comply with the Alaska Department of Fish and Game screening requirements for all water removal operations.

710-3.5 AUTHORITY OF THE ENGINEER. The Engineer will provide written notice when conditions may adversely affect the traveling public's safety and/or convenience. The notice will state the defect(s), the corrective action(s) required, and the time required to complete such action(s). If corrective action(s) are not taken within the specified time, the Engineer will immediately close down the offending operations until the defect(s) are corrected. The Engineer may require outside forces to correct unsafe conditions. The cost of work by outside forces will be deducted from any monies due under the terms of this Contract.

710-3.6 HIGHWAY TRAFFIC PRICE ADJUSTMENT. A Highway Traffic Price Adjustment, under Item G-710c, will be assessed for unauthorized lane closures or reductions. Unauthorized lane reductions will be assessed as one full lane closure for each lane reduced without authorization.

Authorized lane closures and/or lane reductions are those shown in the Contract, an approved TCP, or authorized in writing.

Unauthorized lane reductions include unacceptable roadway, pedestrian walkway or route, and bicycle route or pathway surfaces, such as severe bumps, ruts, washboarding, potholes, excessive dust or mud, and non-conforming, or out of place highway traffic control devices. Failure to install temporary crash cushions or barriers, when required according to the contract or TCP, is also considered an unauthorized lane reduction. The Engineer will make the sole determination as to whether unauthorized lane reductions or closures are present.

Adjustment Rates are listed in Table 710-1. These rates are liquidated damages which represent highway user costs, based on Average Daily Traffic (ADT). The Engineer will use the rate shown for the current ADT for this project, as published in the Regional Traffic Volume Report prepared by the Department's Planning Section. Adjustment rates for unauthorized reduction or closure of each lane of pedestrian walkways or route, and bicycle route or pathway, are the same as for one full lane closure. For this project, ADT for the Tug Road and DeHavilland Avenue area less than 1,000.

**TABLE 710-1
ADJUSTMENT RATES**

Published ADT	Dollars/Minute of Unauthorized Lane Reduction or Closure
Less than 1,000	\$2.00
1,000 – 4,999	\$10.00
5,000 – 9,999	\$30.00
10,000+	\$40.00

710-3.7 MAINTENANCE OF TRAFFIC DURING SUSPENSION OF WORK. Approximately one month before work is suspended for the season, schedule a preliminary meeting with the Engineer and

Maintenance and Operations to outline the work expected to be completed before shutdown. Schedule a field review with the Department for winter maintenance acceptance. At the field review the Engineer will prepare a punch list for implementation before acceptance.

To be relieved of winter maintenance responsibility, leave all roads with a smooth and even surface for public use at all times. Properly crown the roadbed surface for drainage and install adequate safety facilities. Make sure illumination and signals, including vehicle detectors, are in good working order.

After the project is accepted for winter maintenance and until ordered to resume construction operations, the Department is responsible for maintaining the facility. The Department will accept maintenance responsibility only for portions of the work that are open to the public, as determined by the Engineer. The Department will not accept maintenance responsibility for incomplete work adjacent to accepted roads. The contractor is responsible for maintaining all other portions of the work. The Engineer will issue a letter of "Acceptance for Winter Maintenance" that lists all portions of the work that the Department will maintain during a seasonal work suspension. The Contractor retains all contractually required maintenance responsibilities until receipt of this letter.

If the contractor suspends work due to unfavorable weather (other than seasonal) or due to failure to correct unsafe conditions, carry out Contract provisions, or carry out the Engineer's orders. All costs for highway traffic maintenance during the suspended period will be borne by the contractor.

When work is resumed, replace or renew any work or materials lost or damaged during temporary use. If the Department caused damage during winter suspension, payment will be made for repairs by unit pay item or in accord with GCP Subsection 90-05, Compensation for Extra Work. When the Engineer directs, remove any work or materials used in the temporary maintenance. Complete the project as though work has been continuous.

710-3.8 CONSTRUCTION SEQUENCING. The construction sequencing is detailed in these provisions, the Special Provisions, and the Plans. You may propose alternative construction sequencing.

Throughout the project, maintain the existing roadway configuration (such as the number of lanes and their respective widths) except for restrictions to traffic allowed in the Special Provisions or on the Plans, and addressed through approved TCPs. A restriction to traffic is any roadway surface condition, work operation, or highway traffic control that reduces the number of lanes or impedes traffic. Obtain an approved TCP before restricting traffic.

Obtain the local school bus schedule and coordinate your work to ensure the school buses are not delayed through the highway traffic control zone. Submit this plan, as a TCP, to the Engineer for approval before implementation.

710-3.9 INTERIM PAVEMENT MARKINGS – RESERVED.

710-3.10 LIGHTING OF NIGHT WORK – RESERVED.

710-3.11 HIGH VISIBILITY GARMENTS. Ensure all workers within project limits wear outer garments that are highly visible and comply with the following requirements:

- a. **Standards.** Use high visibility garments conforming to the requirements of ANSI/ISEA 107-2004, Class 2 for tops or Class E for bottoms, and Level 2 retroreflective material.
- b. **Labeling.** Use garments labeled in conformance with Section 11.2 of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010.
- c. **Tops.** Wear high visibility vests, jackets, or coverall tops at all times.
- d. **Bottoms.** Wear high visibility pants or coverall bottoms during nighttime work (sunset to sunrise). Worksite Traffic Supervisors, employees assigned to highway traffic control duties, and flaggers wear high visibility pants or coverall bottom at all times.

- e. **Outer Raingear.** Wear raingear tops and bottoms conforming to the requirements of this Subsection 710-3.11.
- f. **Exceptions.** When workers are inside an enclosed compartment of a vehicle, they are not required to wear high visibility garments.
- g. **Condition.** Furnish and maintain all vests, jackets, coveralls, rain gear, hard hats, and other apparel in a neat, clean, and presentable condition. Maintain retroreflective material to Level 2 standards.
- h. **Subsidiary.** Payment for high visibility garments for workers is subsidiary to other highway traffic contract items.

710-3.12 OVERSIZE AND OVERWEIGHT VEHICLES. Comply with the legal size and weight regulations of 17 AAC 25 and all restrictions of the *Administrative Permit Manual*, except when the Department waives the requirements.

The Engineer may waive the permit requirements of regulation 17 AAC 25 regarding oversize and overweight vehicles within the project limits when the contractor submits and follows an approved Highway TCP.

Permits shall be obtained from the Department's Division of Measurement Standards & Commercial Vehicle Enforcement, for movements of oversize and overweight equipment outside of the project limits, except when the Department waives the permit requirements outside of the project limits. Retain this permit for your records and submit a copy to the Engineer.

Submit a highway TCP for hauling operations from the material site(s) to the project. Include all the highway traffic control devices required for these operations in the highway TCP. Indicate the type, number and frequency of oversize and overweight hauling equipment.

The following items are required of oversize or overweight vehicles or equipment:

- a. Truck and equipment headlights must be on at all times during vehicle use;
- b. A roof mounted flashing or rotating amber beacon, visible from 360 degrees, must be on during vehicle use;
- c. For overweight street legal vehicles, mount clearly visible oversize signs on front and rear of vehicle; and
- d. For oversize equipment and/or overweight non-street legal equipment, mount 16" X 16" clean red/orange flags on the outboard points, in addition to clearly visible oversize signs on front and rear of equipment.

When oversize or overweight vehicles are used, add the following to the highway TCP:

- a. Install and maintain orange plastic safety fence that separates the haul route from any adjacent school, business, residence, community center or public gathering place;
- b. Furnish highway flaggers as specified by the highway TCP, and at additional locations where necessary, to control the haul route during all hauling operations. Coordinate their placement with the Engineer. Haul route highway flaggers will be in addition to airport flaggers required by FAA Advisory Circular 150/5370-2, and the CSPP;
- c. Limit haul unit speed to 10 mph when passing through any developed area or significant hazard. The Engineer is sole judge of what constitutes a developed area or significant hazard;
- d. Obey bridge load restrictions and all height restrictions on haul route;

- e. Maintain the haul route in a smooth and dust free condition. Remove all haul debris from the roadway and the surroundings;
- f. When overweight loads are hauled over existing pavement, remove the existing pavement and replace with new pavement of similar material and equal thickness to old pavement, as a subsidiary cost, after the haul is finished;
- g. Hauler is responsible for the costs of repair for damage to the highway structures, including but not limited to the bridge railings, guardrail, light poles, signs, signal, highway traffic control devices, utilities, and mailboxes on the roadways;
- h. Immediately reinstall all signs, signals, guardrail and other safety features that were removed for the haul; and
- i. If mailboxes were removed for the haul, reinstall mailboxes by the next day after the haul.
- j. Maintain a minimum 12 foot lateral separation between the nonstreet legal vehicles and the motoring public. Specify the highway traffic control devices required for these operations in the highway TCP.

METHOD OF MEASUREMENT

710-4.1 See Section 90 and as follows. Quantities will not be measured during winter suspension of work.

- a. **Highway Traffic Control Device Items.** By the number of units in the Highway Traffic Control Rate Schedule, under item G-710d Highway Traffic Control that are installed, accepted, and operational. Incomplete or unsatisfactory devices will not be measured. Special Construction Signs are measured by the total area of legend-bearing sign panel, as determined under subsection P-661-4.1. Items measured by the day are for each item per 24-hour period.
- b. **Highway Flagger.** By the number of approved hours, supported by certified payroll.
- c. **Watering.** By the 1,000 gallons (M-Gallon) of water applied. The Engineer may specify measurement by weight or volume. If by weight, convert to gallons at 8.34 pounds per gallon. If by volume, convert to gallons at 7.48 gallons per cubic foot.
- d. **Highway Traffic Price Adjustment.** By each minute of unauthorized lane closure or lane reduction, per lane, measured to the nearest minute. The Engineer will determine whether the roadway is opened to full unimpeded use by the traveling public.
- e. **Highway Traffic Control.** By the units specified.
- f. **Plastic Safety Fence.** By the linear foot, as placed, to protect or channelize pedestrian traffic as shown on an approved TCP. Any adjustments in configuration of the fence at the same location that does not result in an increased amount of fence is not measured. Opening and closing the fence to gain access to and from the worksite is not measured.
- g. **Temporary Guardrail.** By the linear foot, including end treatments, as shown on an approved TCP.

BASIS OF PAYMENT

710-5.1 Use the following table for unit rates of pay for Contingent Sum:

HIGHWAY TRAFFIC CONTROL RATE SCHEDULE

Traffic Control Rate Schedule (03/2019-04/2024)	Pay Unit	Unit Rate
Construction Signs	Each/Day	\$6.50

Traffic Control Rate Schedule (03/2019-04/2024)	Pay Unit	Unit Rate
Special Construction Signs	Sq Ft.	\$31.00
Type II Barricade	Each/Day	\$3.30
Type III Barricade	Each/Day	\$11.00
Traffic Cone or Tubular Marker	Each/Day	\$1.10
Drums	Each/Day	\$3.30
Temporary Guardrail	Lineal Foot	\$35 25.00
Portable Concrete or Steel F Shape Barrier (12.5 foot standard length or \$8/foot)	Each	\$100.00
Temporary Crash Cushion / non-redirective gated water barrier (all required per end)	Each	\$2,500.00
Temporary Crash Cushion / Water filled Barrels (all required per end)	Each	\$3,285.00
Temporary Crash Cushion / Sand filled Barrels or Barrier (all required per end)	Each	\$4,325.00
Temporary Crash Cushion / Redirective	Each	\$9,230.00
Plastic Safety Fence	Foot	\$1.00
Temporary Sidewalk Surfacing	Sq Ft	\$2.00
Flexible Markers (Flat Whip, Reflective)	Each	\$60.00
Electronic Boards, Panels, and Signals		
Sequential Arrow Panel	Each/Day	\$60 40.00
Portable Changeable Message Board Sign	Calendar Day	\$130 .00
Portable Traffic Signals (two)	Each /Day	361.00
Cars and Trucks w/driver		
Pilot Car (4x2 ½ ton truck, or any car)	Hour	\$128 77.00
Watering – up to 4900 gallon	M-Gallon	\$40 28.00
Watering Truck - more than 4900 gallon	M-Gallon	\$30 24.00
Street Sweeping (Regenerative Sweeper, Vacuum Sweeper, Mechanical or Power Broom with vacuum)	Hour	\$214.00
40,000 GVW Truck with Crash Attenuator	Hour	\$162.00
Interim Pavement Markings		
Painted Markings	Lineal Foot	\$0.30
Preformed Pavement Marking Tape (removable or non-removable)	Lineal Foot	\$1.75
Temporary Raised Pavement Markings	Each	\$1.00
Word or Symbol Markings	Each	\$40 55.00
Temporary Cover Markings	Lineal Foot	\$4.00
Removal of Pavement Markings	Lineal Foot	1.25

- a. **Highway Traffic Maintenance.** The contract price includes all resources required to provide the Worksite Traffic Supervisor, all required TCPs and public notices, monthly open house meetings, the CSPP, and the maintenance of all roadways, approaches, crossings, intersections and pedestrian and bicycle facilities, as required. This item also includes any Highway Traffic Control Devices required but not shown on the bid schedule, including permanent construction signs.

Item shall also include providing 2 portable changeable message board signs during active work phases. Signs shall be deployed as directed by the Engineer

Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary to Item G-710.010.0000 Highway Traffic Maintenance, except Highway Traffic Price Adjustment.

- b. Highway Traffic Control Device Items.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to provide, install, maintain, move, and remove the specified devices. Warning lights, vertical panels, and sign supports required for highway traffic control devices are subsidiary.
- c. Highway Flagger.** The contract price includes all required labor, radios, flagger paddles, and transportation to and from the worksite. The Engineer will pay for item G710.020.000 Highway Flagger at the contract unit price for each Highway Flagger per hour. The hourly rate for Highway Flagger is set at \$82.00 per hour for this contract. The Engineer does not require a change order/directive for this pay item.
- d. Watering.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to provide watering, as directed.
- e. Highway Traffic Price Adjustment.** If Item G-710.030.0000, Highway Traffic Price Adjustment, is shown on the bid schedule, the total value of this contract will be adjusted, for unauthorized lane closures or lane reductions at the rate stated as a pay deduction.
- f. Highway Traffic Control.** Payment for Item G-710.040.0000 Highway Traffic Control will be made at the unit rate value contained in the Highway Traffic Control Rate Schedule for the accepted units of highway traffic control devices. The Engineer does not require a change order/directive for this pay item.
- g. Plastic Safety Fence.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to install, maintain, and remove the fence.
- h. Temporary Sidewalk Surfacing.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to construct, maintain, and remove the surfacing.
- i. Temporary Guardrail.** The contract price in the Highway Traffic Control Rate Schedule includes all resources required to construct, maintain, and remove the guardrail.

Payment will be made under:

Item G710.010.0000	Highway Traffic Maintenance – per lump sum
Item G710.020.0000	Highway Flagger – per contingent sum
Item G710.030.0000	Highway Traffic Price Adjustment – per contingent sum
Item G710.040.0000	Highway Traffic Control – per contingent sum

ITEM P-151 CLEARING AND GRUBBING

DESCRIPTION

151-1.1 This item shall consist of clearing or clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the Plans or as required by the Engineer.

Clearing shall consist of the cutting and removal of all trees, stumps, brush, logs, hedges, ~~the removal of fences~~ and other loose or projecting material from the designated areas. The grubbing of stumps and roots will not be required.

Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, ~~fences~~, structures, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the Engineer is unsuitable for the foundation of strips, pavements, or other required structures, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing by burning or otherwise.

Hand clearing requires the hand cutting of all types of trees (including limbs and branches) either by chain saw or by other approved conventional hand clearing methods within the vertical area shown on the Plans. Dispose of the hand cleared material as described in P151-2.4.

CONSTRUCTION METHODS

151-2.1 GENERAL. The areas to be cleared or cleared and grubbed shall be staked or otherwise marked on the ground at the direction of the Engineer. The Engineer will flag or mark each tree designated for selective tree removal. The clearing and grubbing shall be done far enough ahead of the earthwork operation to permit cross-sectioning prior to excavation or embankment. Mechanical brush cutting equipment may be used for clearing. Dozers or other mechanical equipment not specifically designed for brush cutting may not be used.

Vegetation clearing will follow the USFWS Recommended Time Periods for Avoiding Vegetation Clearing in Alaska in order to protect Migratory Birds unless the USFWS has been consulted to determine the most appropriate method to avoid impacts to nesting birds.

Organic materials generated by clearing must remain on site and be disposed of as shown on the Plans. All material within the fenced areas is to be considered contaminated with PFAS compounds.

~~Debris from mechanical brush cutting equipment less than 4 feet long by 4 inches in diameter may remain in place outside of Runway and Taxiway Safety Area surfaces except as specified in areas to be embanked. All other spoil materials generated by clearing or by clearing and grubbing shall be disposed of by burning, when permitted by local laws, or by removal to approved disposal areas. When burning of material is permitted, it shall be burned under the constant care of competent watchmen so that the surrounding vegetation and other adjacent property will not be jeopardized. Burning shall be done according to all applicable laws, ordinances, and regulations. Before starting any burning operations, the Contractor shall notify the agency having jurisdiction.~~

As far as practicable, waste concrete and masonry shall be placed on slopes of embankments or channels. When embankments are constructed of such material, this material shall be placed according to requirements for formation of embankments. Any broken concrete or masonry which cannot be used in construction, and all other materials not considered suitable for use elsewhere, shall be disposed of by the Contractor. In no case shall any discarded materials be left in windrows or piles adjacent to or within the airport limits. The manner and location of disposal of materials shall be subject to the approval of the Engineer and shall not create an unsightly or objectionable view. When the Contractor is required to locate a disposal area outside the airport property limits, the Contractor shall obtain and file with the Engineer, permission in writing from the property owner for the use of private property for this purpose.

If the Plans or the Specifications require the saving of merchantable timber, the Contractor shall trim the limbs and tops from designated trees, saw them into suitable lengths, and make the material available for removal by others.

~~Blasting will not be permitted on airport property. Perform blasting in accordance with all Federal, state, and local safety regulations. Submit notice 15 days prior to starting work. Submit a Blasting Plan, prepared and sealed by a registered professional Engineer that includes calculations for overpressure and debris hazard. Obtain written approval prior to performing any blasting and notify the Engineer 24 hours prior to blasting. Include provisions for storing, handling and transporting explosives as well as for the blasting operations in the plan. The Contractor is responsible for damage caused by blasting operations.~~

The Contractor shall remove existing structure and utilities that are identified to be removed or demolished, except when another entity is identified in the Contract to accomplish the work.

151-2.2 CLEARING. The Contractor shall clear the staked or indicated area of all objectionable materials. Trees unavoidably falling outside the specified limits must be cut up, removed, and disposed of in a satisfactory manner. In order to minimize damage to trees that are to be left standing, trees shall be felled toward the center of area being cleared. The Contractor shall preserve and protect from injury all trees not to be removed. The trees, stumps, and brush shall be cut flush with the original ground surface. The grubbing of stumps and roots will not be required.

~~Fences shall be removed and disposed of when directed by the Engineer. Fence wire shall be neatly rolled and the wire and posts stored on the airport if they are to be used again, or stored at a designated location if the fence is to remain the property of a local owner.~~

151-2.3 CLEARING AND GRUBBING. In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials shall be removed, except where embankments exceeding 4 feet in depth are to be made in areas that are not subject to aircraft or vehicle traffic loadings and are unpaved. For embankments that are greater than 4 feet in depth, which are not subject to aircraft or vehicle traffic loadings and are unpaved, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off flush with the original ground and allowed to remain. Tap roots and other projections over 1.5 inches in diameter shall be grubbed out to a depth of at least 18 inches below the finished subgrade or slope elevation.

All material is to be placed within the project area as shown on the Plans or as directed by the Engineer.

Any buildings and miscellaneous structures that are shown on the Plans to be removed shall be demolished or removed, and all materials therefrom shall be disposed of either by burning or otherwise removed from the site. The cost is incidental to this item. The remaining or existing foundations, wells, cesspools, and all like structures shall be destroyed by breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material which cannot be used in backfill shall be removed and disposed of at the Contractor's expense. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes remaining after the grubbing operation in embankment areas shall have the sides broken down to flatten out the slopes, and shall be filled with suitable material, moistened and properly compacted in layers to the density required in Item P-152. The same construction procedure shall be applied to all holes remaining after grubbing in excavation areas where the depth of holes exceeds the depth of the proposed excavation.

METHOD OF MEASUREMENT

151-4.1 Measure according to GCP Section 90 and the following:

- a. **Acre.** The area acceptably cleared, or cleared and grubbed, measured on the ground surface. Only areas shown on the Plans, or areas cleared at the Engineer's direction will be measured. Islands of existing cleared areas, such as lakes, ponds, existing stream beds, and roads and trails within the clearing limits of more than 60 square yards will not be included as pay areas.
- b. **Each.** The number of designated trees acceptably removed, regardless of size.

BASIS OF PAYMENT

151-5.1 At the contract lump sum or unit price, for each of the pay items listed below that are shown in the bid schedule.

Payment will be made under:

Item P151.020.0000 Clearing – per lump sum

ITEM P-152 EXCAVATION, SUBGRADE, AND EMBANKMENT

DESCRIPTION

152-1.1 This item consists of excavation, hauling, embankment (or waste disposal), placement, grading and compaction of all materials required to construct runway safety areas, taxiway safety areas, runways, taxiways, aprons, drainage, buildings, roadways, parking, and other work. Construct according to the specifications, and conform to the dimensions and typical sections shown on the Plans.

MATERIALS

152-2.1 MATERIAL DEFINITIONS. The Contract will designate material to be removed from within the project lines and grades as classified excavation (common, rock or muck) or as unclassified excavation. Material obtained from outside the project lines and grades is borrow.

All material shall be described as defined below, but no quantity of material shall be defined or paid in more than one category:

- a. **Unclassified Excavation.** All material, regardless of its nature, which is not paid for under another contract item. May include common, rock or muck.
- b. **Common Excavation.** Suitable material such as silt, sand, gravel, and granular material that does not require blasting or ripping. Not rock or muck.
- c. **Rock Excavation.** Rock that cannot be excavated without blasting or ripping, and boulders containing a volume of more than 0.5 cubic yard.
- d. **Muck Excavation.** Soil, organic matter, and other material not suitable for embankment or foundation material, including material that will decay or produce subsidence in the embankment such as stumps, roots, logs, humus, or peat.
- e. **Drainage Excavation.** Excavation made for the primary purpose of controlling drainage including: intercepting, inlet or outlet ditches; temporary levee construction; or any other type as shown on the Plans.
- f. **Borrow.** Suitable material that is required for the construction of embankment or for other portions of the work. Borrow material shall be obtained from sources within the limits of the airport property but outside the project lines and grades, or from sources outside the airport property.
- g. **Foundation Soil.** In-situ soil or undisturbed ground.
- h. **Ditch Lining.** Use crushed or naturally occurring stones that are sound and durable, are not larger than 8 inches in greatest dimension, and containing not more than 50% by weight passing a 3-inch sieve and not more than 5% by weight passing the 1-in sieve as determined by ATM 304, or as accepted by the Engineer.

152-2.2 UNSUITABLE MATERIAL. Material that does not meet the testing requirement for suitable material. Material containing vegetable or organic matter, such as muck, peat, organic silt, or sod is considered unsuitable for use in embankment construction. Material that is contaminated by hazardous substances, including fuel or oil, in greater quantity than state and federal standards allow is considered unsuitable for use.

152-2.3 SUITABLE MATERIAL. Suitable material may be obtained from classified excavation, unclassified excavation, or borrow. The Engineer will approve material as "suitable" for use in embankment when the material meets the following criteria:

- a. Sand, rock, gravel, silt, concrete, asphalt pavement, and other inorganic material;

- b. Gradation of 100% by weight passing 6 inch screen; and
- c. Meets definition of Non-Frost Susceptible in GCP Subsection 10-03, except delete "6%" and replace with "10%" (passing No. 200 screen).

The Engineer may, in their discretion, approve oversize material as "suitable" for use in embankment when the material meets the following criteria:

- a. Sand, rock, gravel, silt, concrete, asphalt pavement, and other inorganic material;
- b. Gradation of 100% by weight passing 24 inch screen;
- c. Meets definition of Non-Frost Susceptible in GCP Subsection 10-03, except delete "6%" and replace with "10%" (passing No. 200 screen); and
- d. Rock is well graded with an even distribution of rock sizes, and can be compacted with a minimal amount of voids.

CONSTRUCTION METHODS

152-3.1 GENERAL. Perform all necessary clearing and grubbing in accordance with Item P-151, and construction surveying in accordance with Item G-135, including staking of lines and grades, prior to beginning excavation, grading, and embankment operations in any area.

The suitability of material to be placed in embankments shall be subject to approval by the Engineer. Material with organics, when approved by the Engineer as suitable to support vegetation, may be used on top of the embankment slope.

Unsuitable material shall be disposed of in waste areas shown on the Plans or in locations acceptable to the Engineer. No excavated material from within the project areas shall be removed from the project area and is considered contaminated with PFAS compounds. Material contaminated by hazardous substances shall require special handling and disposal, performed according to GCP Subsection 70-11.f. and using methods acceptable to the Engineer.

Dewater excavation area as described in Section D-780.

- a. **Waste Areas.** All waste areas shall be graded to allow positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the airport, unless specified on the Plans or approved by the Engineer. Unsuitable material shall not be left in windrows or piles, and shall not extend into the Obstacle-Free Zone as shown on the plans.

All waste areas shall be protected from erosion according to the SWPPP. Areas where seeding is called for, in which the top layer of soil material has become compacted, by hauling or other activities of the Contractor shall be scarified and disked to a depth of 4 inches, in order to loosen and pulverize the soil.

The Contractor shall obtain all permits required for placing waste in areas they choose, and which are not covered by Department obtained permits. When the Contractor is required to locate a disposal area outside the airport property limits at his/her own expense, he shall obtain and file with the Engineer, permission in writing from the property owner for the use of private property for this purpose.

- b. **Utility Work.** Utility work shall be performed, and compensation claims for utility work made, according to GCP Subsection 50-06. If it is necessary to work thorough or around existing utilities or associated structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve the utilities or provide temporary services. When utilities not shown on the Plans are encountered, the Contractor shall immediately notify the Engineer, and the Engineer will

determine the disposition of the utility. The Contractor shall, at no additional cost to the Department, satisfactorily repair or pay the cost of all damage to utilities or associated structures which may result from any of the Contractor's operations.

152-3.2 EXCAVATION. No excavation shall be started until the Contractor has construction surveyed the work, including staking the lines and grades, and the Engineer has reviewed stakes, elevations and measurements of the ground surface. As required in GCP Subsection 40-04, all Useable Excavation of suitable material shall be used in the formation of embankment or for other purposes shown on the Plans. All unsuitable material shall be disposed of in waste areas as shown on the Plans or as directed by the Engineer.

When the volume of the Useable Excavation exceeds that required to construct the embankments to the grades indicated, the excess material shall be used to grade the areas of ultimate development or disposed of as directed. When the volume of Useable Excavation is not sufficient for constructing the fill to the grades indicated, borrow shall be used to make up the deficiency.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the work. All temporary drains and drainage ditches shall be constructed and maintained according to the SWPPP.

In cuts, all loose or protruding rocks on the back slopes shall be scaled or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the Plans or as directed by the Engineer.

- a. **Selective Grading.** When selective grading is required, the more suitable material as designated by the Engineer shall be used in constructing the upper layers of the embankment or pavement structure. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas.
- b. **Undercutting.** Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for runways, taxiways, safety areas, subgrades, roads, shoulders, or any areas intended for turfing shall be excavated to a minimum depth of 12 inches below the subgrade, or to the depth directed by the Engineer. Muck, peat, matted roots, or other yielding material that is unsatisfactory for foundation soil compaction, shall be removed to the depth specified. Unsuitable materials shall be disposed of at locations shown on the Plans. The excavated area shall be backfilled with suitable material, obtained from the grading operations or borrow areas and thoroughly compacted as specified. Where rock cuts are made and backfilled with suitable material. Any pockets created in the rock surface shall be drained according to the details shown on the Plans. The material removed will be paid as Unclassified Excavation.
- c. **Overbreak.** Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work, as planned or authorized by the Engineer. All overbreak shall be graded or removed by the Contractor and disposed of as directed by the Engineer. Payment will not be made for the removal and disposal of overbreak which the Engineer determines as avoidable. Unavoidable overbreak will be paid as Unclassified Excavation.
- d. **Removal of Structures and Utilities.** The Contractor shall accomplish the removal of existing structures and utilities that are specified to be removed or demolished, except when another entity is identified in the Contract to accomplish the work. All existing structural foundations shall be excavated and removed to a depth at least 2 feet below the top of subgrade or as indicated on the Plans, and the material disposed of as directed. Holes left after removing foundations shall be backfilled with suitable material and compacted as specified. The material will be paid as Unclassified Excavation.
- e. **Foundation Soil Compaction Requirements.** In areas of excavation, the top 6 inches of foundation soil under areas serving aircraft or vehicle traffic loadings shall be compacted to a density of not less than 95% of the maximum density as determined by ATM 207, ATM 212, or

ATM 309. The in-place field density and moisture content shall be determined according to ATM 213.

Compaction of the foundation soil is a subsidiary cost to excavation.

The Engineer may direct the Contractor to over excavate foundation soil that is soft or compresses excessively, and to backfill excavation with compacted suitable material. The material will be paid as Unclassified Excavation.

- f. **Blasting.** ~~Blasting will not be permitted on Airport property only when proper precautions are taken for the safety of all persons, the work, and the property. The Contractor is responsible for blasting operations including the requirements of GCP Subsection 70-10. All damage done to the work or property shall be repaired at the Contractor's expense. All operations of the Contractor in connection with the transportation, storage, and use of explosives shall conform to all federal, state, local regulations, explosive manufacturers' instructions, and approved permits.~~

~~The Contractor shall submit a Safety Plan that includes descriptions of road and runway closures, warning signals; and plans for notification of affected local, state, and federal agencies, the airport manager, and other interested parties. Discuss in the Safety Plan methods for protection of life and health, public and private property, new work or existing work on the project, nearby structures, wetlands, waters and wildlife. When working within airport property include an emergency response contingency to clear runways of debris, to repair damaged navigational or visual aids; and get a NOTAMs before blasting. Hold a safety meeting prior to commencement of blasting operations to address safety issues.~~

~~In each distinct blasting area the Contractor shall submit a blasting plan, prepared by a qualified blaster, to the Engineer. This plan must consist of hole size, depth, spacing, burden, type of explosives, type of delay sequence, maximum amount of explosive on any one delay period, depth of rock, and depth of overburden if any. The maximum explosive charge weights per delay included in the plan shall not be increased without submitting a revised blasting plan to the Engineer.~~

~~When blasting, the Safety Plan and the Blasting Plan shall conform to FAA Order 7400.2 Procedures for Handling Airspace Matters, Chapter 27, and AC 150/5370-2 Operational Safety on Airports During Construction.~~

~~The Contractor shall keep a record of each blast fired, its date, time, and location; the amount of explosives used, maximum explosive charge weight per delay period, and, where necessary, seismograph records identified by instrument number and location. These records shall be made available daily to the Engineer.~~

~~The Engineer will keep the submitted plans and records, and has authority to review and reject plans.~~

152-3.3 BORROW SOURCES. Borrow sources within the airport property if available will be identified on the Plans. Excavation of borrow on airport property shall be made only at these identified locations and within the lines and grades staked.

Borrow sources outside of airport property may be identified in the Contract according to GCP Subsection 60-02. The Contractor shall furnish additional borrow sources if necessary.

Removal of overburden and waste material, permit costs, mineral royalties, and other costs of material source development are subsidiary and shall be included in the unit price for borrow.

152-3.4 DRAINAGE EXCAVATION. Drainage excavation for intercepting, inlet or outlet drains; for temporary levee construction; or for any other type as designed or as shown on the Plans. The work shall be performed in the proper sequence with the other construction and according to the SWPPP. All suitable material shall be placed in embankment fills; unsuitable material shall be placed in waste areas or as

directed by the Engineer. Intercepting ditches shall be constructed prior to starting adjacent excavation operations. All necessary work shall be performed to secure a finish true to line, elevation, and cross section.

The Contractor shall maintain ditches constructed on the project to the required cross section and shall keep them free of debris or obstructions until the project is accepted.

Place and spread ditch lining materials so that the finished face is uniform and conforms with the lines and slope shown on the Plans or as directed.

152-3.5 PREPARATION OF EMBANKMENT AREA. In areas of Clearing and Grubbing, completely break up the subgrade by plowing or scarifying to a minimum depth of 6 inches. Where an embankment is to be constructed to a height of 4 feet or less, or where the embankment supports asphalt or concrete paving, compact the subgrade as indicated in Subsection 152-3.2.e. Where the height of fill is greater than 4 feet and the embankment does not support asphalt or concrete paving, compact the subgrade to the density of the surrounding ground before construction of embankment.

When new embankment is placed on slopes steeper than 4:1, the existing ground shall be continuously benched over the areas as the work is brought up in layers. Benching shall be of sufficient width to permit placing of material and compacting operations. Each horizontal cut shall begin at the intersection of the original ground and the vertical side of the previous bench. Material thus cut out and deemed suitable shall be blended and incorporated into the new embankment.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-3.6 FORMATION OF EMBANKMENTS. Embankments shall be formed in successive horizontal layers of not more than 8 inches in loose depth for the full width of the cross section, unless otherwise approved by the Engineer.

The grading and compaction operations shall be conducted, and the various soil strata shall be placed, to produce an embankment as shown on the typical cross section or as directed by the Engineer. Materials such as brush, hedge, roots, stumps, grass and other unsuitable material, shall not be incorporated or buried in the embankment.

- a. **Suspension of Operations.** Operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, moisture content or other unsatisfactory conditions of the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide proper surface drainage.
- b. **Soft Foundations.** When embankments are to be constructed across wet or swampy ground, which will not support the weight of heavy hauling and spreading equipment, the Contractor shall use methods of embankment construction, and use hauling and spreading equipment, that will least disturb the soft foundation (defined as having a California Bearing Ratio less than 3). When soft foundations are encountered, and when approved by the Engineer, the lower part of the fill may be constructed by dumping and spreading successive vehicle loads in a uniformly distributed layer of a thickness not greater than that necessary to support the vehicle while placing subsequent layers, after which the remainder of the embankment shall be constructed in layers and compacted as specified. The Contractor shall not be required to compact the soft foundation, and at the Engineer's option, may not be required to clear and grub.
- c. **Moisture.** The material in the layer being placed shall be within $\pm 2\%$ of optimum moisture content before rolling to obtain the prescribed compaction. In order to achieve a uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be performed when necessary. Should the material be too wet to permit proper compaction or rolling, all work on all of

the affected portions of the embankment shall be delayed until the material has dried to the required moisture content. Watering of dry material to obtain the proper moisture content shall be done with approved equipment that will sufficiently distribute the water. Sufficient equipment to furnish the required water shall be available at all times.

- d. **Compaction.** Unless otherwise shown on the Plans, rolling operations shall be continued until the embankment is compacted to not less than 95% of maximum density as determined by ATM 207 or ATM 212. Under all areas serving aircraft or vehicle traffic loadings, the embankment shall be compacted to a density of not less than 98% of the maximum density as determined by ATM 207 or ATM 212. The in-place field density and moisture content shall be determined according to ATM 202.

Keep dumping and rolling areas separate. Do not cover any layer by another until the proper density is obtained.

During construction of the embankment, the Contractor shall route their equipment at all times, both when loaded and when empty, over the layers as they are placed and shall distribute the travel evenly over the entire width of the embankment. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay, or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer.

In the construction of embankments, layer placement shall begin in the deepest portion of the fill and progress in layers approximately parallel to the finished pavement grade line. Stones or fragmentary rock larger than 3 inches in their greatest dimensions will not be allowed in the top 6 inches of the embankment.

- e. **Oversize Material.** At the Engineer's discretion and direction, the Contractor may use oversize material or rockfill, as defined in Subsection 152-2.3, in the embankment. Place material in layers up to 2 feet thick. Fill voids with finer material. Level and smooth each layer with suitable leveling equipment. Use compaction equipment and construction methods that can form a dense, well-compacted embankment. Do not use oversize material within 4 feet of the top of finished subgrade.

Rock or boulders larger than 2 feet in thickness shall either be disposed of outside the excavation or embankment areas, in places and in the manner designated by the Engineer; or they may be crushed to less than 2 feet thickness and used in the embankment.

- f. **Subsidiary Costs.** Excavation and embankment is a single pay item; there will be no separate measurement or payment. The costs for material source development, blasting, excavation, hauling, placing in layers, compacting, diskings, watering, mixing, sloping, grading, and other necessary operations for construction of embankments, are subsidiary and shall be included in the contract unit prices for excavation, borrow, or other pay items.

- g. **Frozen Material.** Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material, unless this construction method is identified in the special provisions, or is part of a Contractor's Progress Schedule that the Engineer has approved.

152-3.7 FINISHING AND PROTECTION OF SUBGRADE. After the subgrade has been substantially completed, the full width shall be conditioned by removing any soft or other unstable material that will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to finish subgrade elevation with suitable material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade, whose top is shaped to the lines and grades shown on the Plans.

Grading of the top of subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. The Contractor shall limit hauling over the finished subgrade to that which is essential for construction purposes.

All ruts, ponds or rough places that develop in a completed subgrade shall be repaired, smoothed and recompacted before another layer is placed on top of the subgrade.

No subbase, or surface course shall be placed on the subgrade until the subgrade has been approved by the Engineer. Erosion and sediment control shall be done according to the SWPPP. Work described in this subsection is subsidiary and shall be included in the contract unit prices.

152-3.8 TOLERANCES. In those areas upon which a subbase or base course is to be placed, the top of the subgrade shall be of such smoothness that, when tested with a 12-foot straightedge applied parallel and at right angles to the centerline, it shall not show any deviation in excess of 1/2 inch, or shall not be more than 0.05 foot from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and recompacting by watering and rolling.

On Runway Safety Areas, intermediate and other designated areas, the surface shall be of such smoothness that it will not vary more than 0.10 foot from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-3.9 TOPSOIL. When topsoil is specified or required as shown on the plans or under Item T-905, it may be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. The material may be stockpiled at approved locations in conformance with the CSPP.

Upon completion of grading operations, topsoil shall be handled and placed as directed, or as required in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-4.1 The quantity of unclassified excavation, common excavation, rock excavation, and muck excavation, will be measured in cubic yards of excavated material, measured in its original position. Pay quantities will be computed to the neat lines staked, by the method of average end areas of materials acceptably excavated. Measurement will not include the quantity of materials excavated without authorization beyond project lines and grades, or the quantity of material used for purposes other than those directed or approved by the Engineer.

With the Engineer's written approval, excavation may be measured by any method described in Subsection 152-4.2.

152-4.2 The quantity of Borrow material to be paid will be by calculated by one of the following methods of measurement, as described in the Bid Schedule.

If Borrow is paid by source volume, the quantity will be measured in cubic yards of material, measured in its original position at the borrow source, after stripping of overburden and waste. Pay quantities will be computed by the method of average end areas from cross sections taken before and after borrow excavation. No shrink or swell factor will be used.

If Borrow is paid by design volume, the quantity will be measured in cubic yards of material, measured in its final compacted position. Pay quantities will be computed by the method of average end areas, as determined from original ground cross sections before placement (after clearing and grubbing) and to the neat lines staked and verified by the Engineer after placement. No allowance will be made for subsidence of the subgrade or for material placed outside the staked neat line limits. The quantity to be paid for will be the cubic yards of material placed and accepted in the completed embankment. No shrink or swell factor will be used.

If Borrow is paid by weight, the quantity will be measured in tons.

152-4.3 Ditch Lining will be weighed by the ton or measured by the cubic yard in final position. Excavation required below normal ditch grade is subsidiary.

BASIS OF PAYMENT

152-5.1 Excavation and embankment (or waste disposal) is a single pay item. The costs for material source development, blasting, excavation, hauling, placing in layers, compacting, diskings, watering, mixing, sloping, grading, and other necessary operations for construction of embankments, or waste disposal, are subsidiary and shall be included in the contract unit prices. Dewatering area per Section D-780 shall be subsidiary.

- a. For "Unclassified Excavation" payment will be made at the contract unit price per cubic yard.
- b. For "Common Excavation" payment will be made at the contract unit price per cubic yard.
- c. For "Rock Excavation" payment will be made at the contract unit price per cubic yard.
- d. For "Muck Excavation" payment will be made at the contract unit price per cubic yard.
- e. For "Drainage Excavation" payment will be made at the contract unit price per cubic yard.
- f. For "Borrow" payment will be made at the contract unit price per cubic yard. If by weight, payment will be made at the contract unit price per ton.

Payment will be made under:

Item P152.010.0000 Unclassified Excavation – per cubic yard

REFERENCES

ATM 202	WAQTC FOP for AASHTO T 255/T 265 Moisture Content of Aggregate and Soils
ATM 207	WAQTC FOP for AASHTO T 99/ T 180 Moisture-Density Relations of Soils
ATM 212	Determining the Standard Density of Coarse Granular Materials using the Vibratory Compactor
ATM 213	WAQTC FOP for AASHTO T 310 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ATM 304	WAQTC FOP for AASHTO T 27/T 11 Sieve Analysis of Fine and Coarse Aggregates
ATM 309	Relative Standard Density of Soils by the Control Strip Method

ITEM P-154 SUBBASE COURSE

DESCRIPTION

154-1.1 This item shall consist of a subbase course composed of granular materials constructed on a prepared subgrade or underlying course according to these Specifications, and in conformity with the dimensions and typical cross section shown on the Plans.

MATERIALS

154-2.1 MATERIALS. The subbase material shall consist of hard durable particles or fragments of granular aggregates. This material will be mixed or blended with fine sand, clay, stone dust, or other similar binding or filler materials produced from approved sources. This mixture must be uniform and shall comply with the requirements of these Specifications as to gradation, soil constants, and shall be capable of being compacted into a dense and stable subbase. The material shall be free from vegetable matter, lumps or excessive amounts of clay, and other objectionable or foreign substances. Pit-run material may be used, provided the material meets the requirements specified.

Aggregate gradation shall meet the requirements of Table 1, determined according to ATM 304.

**TABLE 1
AGGREGATE GRADATION REQUIREMENTS**

Sieve designation (Square opening)	Percentage by weight passing sieves
3 inch	90-100
No. 4	20-55
No. 200	0-6

The percent passing the No. 200 sieve will be determined on minus 3-inch material.

The portion of the material passing the No. 40 sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6 when tested according to ATM 204 and ATM 205.

The gradations shall be well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on the adjacent sieves, or vice versa.

CONSTRUCTION METHODS

154-3.1 GENERAL. The subbase course shall be placed where designated on the Plans or as directed by the Engineer. The material shall be shaped and thoroughly compacted within the tolerances specified.

Granular subbases which, due to grain sizes or shapes, are not sufficiently stable to support the movement of construction equipment, shall be mechanically stabilized to the depth necessary to provide such stability as directed by the Engineer. The mechanical stabilization shall principally include the addition of a fine-grained medium to bind the particles of the subbase material sufficiently to furnish a bearing strength, so that the course will not deform under the traffic of the construction equipment. The addition of the binding medium to the subbase material shall not increase the soil constants of that material above the limits specified.

154-3.2 PREPARING UNDERLYING COURSE. Before any subbase material is placed, the underlying course shall be prepared and conditioned as specified. The course shall be checked and accepted by the Engineer before placing and spreading operations are started.

To protect the subgrade and to ensure proper drainage, the spreading of the subbase shall begin along the centerline of the pavement on a crowned section or on the high side of pavements with a one-way slope.

154-3.3 MATERIALS ACCEPTANCE IN EXISTING CONDITION. When the entire subbase material is secured in a uniform and satisfactory condition, such approved material may be moved directly to the spreading equipment for placing. The material may be obtained from gravel pits, stockpiles, or may be produced from a crushing and screening plant with the proper blending. The materials from these sources shall meet the requirements for gradation, quality, and consistency. The moisture content of the material shall be approximately that required to obtain maximum density. The final operation shall be blading or dragging, if necessary, to obtain a smooth uniform surface true to line and grade.

154-3.4 GENERAL METHODS FOR PLACING. When materials from several sources are to be blended and mixed, the subbase material, together with any blended material, shall be thoroughly mixed prior to placing on grade.

The subbase course shall be constructed in layers. Any layer shall be not less than 3 inches nor more than 8 inches of compacted thickness. The material, as spread, shall be of uniform gradation with no pockets of fine or coarse materials. No material shall be placed in snow or on a soft, muddy, or frozen course.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade, shoulder, or foreign material in the subbase course mixture.

154-3.5 FINISHING AND COMPACTING. After spreading or mixing, the subbase material shall be thoroughly compacted. Sufficient compactors shall be furnished to adequately handle the rate of placing and spreading of the subbase course. The moisture content of the material shall be approximately that required to obtain maximum density.

The field density of the compacted material shall be not less than 98% of the maximum density or as shown on the Plans, as determined according to ATM 207 or ATM 212. The in-place field density and moisture content shall be determined according to ATM 213.

The course shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the subbase. When the rolling develops irregularities that exceed 1/2 inch when tested with a 12-foot straightedge, the irregular surface shall be loosened and then refilled with the same kind of material as that used in constructing the course and again rolled as required above.

Along places inaccessible to rollers, the subbase material shall be tamped thoroughly with mechanical or hand tampers.

Watering during rolling, if necessary, shall be in the amount and by equipment approved by the Engineer. Water shall not be added in such a manner or quantity that free water will reach the underlying layer and cause it to become soft.

154-3.6 SURFACE TEST. After the course is completely compacted, the surface shall be tested for smoothness and accuracy of grade and crown; any portion found to lack the required smoothness or to fail in accuracy of grade or crown shall be scarified, reshaped, recompact, and otherwise manipulated as the Engineer may direct until the required smoothness and accuracy is obtained. The finished surface shall not vary more than 1/2 inch when tested with a 12-foot straightedge applied parallel with, and at right angles to, the centerline.

154-3.7 PROTECTION. Work on subbase course shall not be conducted during freezing temperature nor when the subgrade is wet. When the subbase material contains frozen material or when the underlying course is frozen, the construction shall be stopped.

154-3.8 MAINTENANCE. Following the final shaping of the material, the subbase shall be maintained throughout its entire length by the use of standard motor graders and rollers until, in the judgment of the Engineer, the subbase meets all requirements and is acceptable for the construction of the next course.

METHOD OF MEASUREMENT

154-4.1 Subbase Course will be weighed by the ton or measured by the cubic yard in final position according to GCP Subsection 90-02.

Subbase materials will not be included in any other excavation quantities.

BASIS OF PAYMENT

154-5.1 Subbase Course will be paid for at the contract price, per unit of measurement, accepted in place.

Hauling and placing of these materials is subsidiary.

Payment will be made under:

Item P154.020.0000 Subbase Course – per ton

TESTING REQUIREMENTS

ATM 212	Determining the Standard Density of Coarse Granular Materials using the Vibratory Compactor
ATM 304	WAQTC FOP for AASHTO T 27/T 11 Sieve Analysis of Fine and Coarse Aggregates * .
ATM 204	WAQTC FOP for AASHTO T 89 Determining the Liquid Limit of Soils ..
ATM 205	WAQTC FOP for AASHTO T 90 Determining the Plastic Limit and Plasticity Index of Soils
ATM 207	WAQTC FOP for AASHTO T 99/ T 180 Moisture-Density Relations of Soils*
ATM 213	WAQTC FOP for AASHTO T 310 In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)*

ITEM P-165 REMOVAL OF STRUCTURES

DESCRIPTION

165-1.1 Remove and dispose of or salvage existing structures as specified. Backfill the resulting holes and pits. Also includes removal and dispose of utility pipes, culverts, manholes, and any other obstructions which are not designated or permitted to remain, except for the obstructions to be removed and disposed of as shown on the Plans and as indicated in these Specifications.

CONSTRUCTION REQUIREMENTS

165-3.1 GENERAL. Obtain utility locates in the vicinity of the designated items. Work around and preserve any facilities within the work limits. Backfill all excavations with approved embankment or excavated materials and compact in accordance with item P-152.

- a. **Removed Structures Designated for Disposal.** Removed structures designated for disposal become your property. Excavate, load, and haul structures to an approved disposal site off of airport property in accordance with applicable Federal and State regulations. Items designated for disposal and paid for under P-165 pay items are tabulated in the Plans. All other items that must be removed shall be paid for under other pay items in the bid schedules or are subsidiary to the pay items that require their removal.
- b. **Removed Structures Designated for Salvage.** Removed structures designated for salvage remain the property of the State. No structures will be removed for salvage under P165 pay items unless directed by the Engineer.

METHOD OF MEASUREMENT

165-4.1 This item will not be measured for payment. The Engineer's acceptance constitutes measurement.

BASIS OF PAYMENT

165-5.1 Payment will be made at the contract price for work acceptably completed. No separate payment will be made for hauling or transportation. All work associated with removal of specified items, including but not limited to labor, equipment, tools, hauling, transportation, and incidentals will be included in the contract price for removal of structures.

Payment will be made under:

Item P165.010.0000 Removal of Structures – per lump sum

ITEM P-171 TEMPORARY CONTAMINATED SOIL STOCKPILE AREA

DESCRIPTION

171-1.1 At the location shown on the plans or as directed by the Engineer, establish a temporary petroleum contaminated soil storage area and construct contaminated soil stockpiles according to the requirements for short-term stockpiling as defined in Alaska Department of Environmental Conservation (DEC) Contaminated Site Regulations (18 AAC 75) for short-term storage of petroleum contaminated soil. This area serves as temporary storage for material that has been designated fuel contaminated soil.

Nothing in this contract is intended to impose on the Contractor the status under state or federal law of a facility owner or operator or the status of an owner or generator of the hazardous substances or contaminated materials that existed on the designated sites before the contract. The Contractor must carefully abide by all applicable laws, regulations, plans and practices to avoid becoming a facility owner or operator, or an owner or generator of contaminated materials by a release of hazardous substances.

Work also includes installing a contaminated soil separation liner as shown on the Plans.

MATERIALS

171-2.1 BERM. Use uncontaminated suitable material from project excavations.

171-2.2 SUBMITTALS. At least 5 days before ordering liner and cover material, submit manufacturer's product bulletins for approval. Include in the submittal proposed seam layout and joining methods, if applicable.

171-2.3 LINER. Use a membrane impervious to petroleum that meets the minimum specifications for long-term storage for petroleum contaminated materials or long-term storage for PFAS contaminated materials as per 18 AAC 75.370, Table D

171-2.4 COVER. Use 0.006 inch (6 mil) reinforced polyethylene for cover sheeting with manufacturer or field sealed seams.

171-2.5 TEMPORARY FENCE. Provide a 6-foot high chain-link fence on a tubular frame supported with concrete foundation blocks.

CONSTRUCTION REQUIREMENTS

171-3.1 CONTAMINATED CRITERIA. The applicable criteria for determining what soil is fuel contaminated and placed in this area is described in Item P-170 and P-152.

171-3.2 STOCKPILE AREA PREPARATION. Construct separate bermed areas for each stockpile by placing suitable material from unclassified excavation on a prepared site. Prepare site by removing objects that may damage the liner and grade to smooth contours.

171-3.3 LINER. Install liner as shown on the Plans. Secure liner during material filling using sandbags or other non-destructive methods. Do not puncture liner. Cover both the berm and the stockpile floor with the liner.

171-3.4 COVER. Lap the edge of the cover over the bottom liner to prevent water from running through the soil. Maintain the top cover over the stockpiled material. Secure sheeting against displacement throughout the project. Use rope, sandbags, and/or netting to secure the cover. Do not use tires.

171-3.5 TEMPORARY FENCE. Surrounding the completed temporary stockpiles, erect a 6-foot high fence.

171-3.6 REMOVAL. Remove berm, liner, cover and temporary fence following disposition of the temporarily stockpiled material.

METHOD OF MEASUREMENT

~~171-4.1 Subsection 90-05 Compensation For Extra Work On Time And Materials Basis and measured as specified in the directive authorizing the work.~~

171-4.1 CONTAMINATED SOIL SEPARATION LINER. If Liner by unit area appears in the bid schedule, the item will be measured in the final position at locations shown on the plans and as accepted by the Engineer. Area will be the plan shown height and width. No allowance will be made for angle, overlap, whether at joints or patches.

BASIS OF PAYMENT

~~171-5.1 Subsection 90-05 Compensation for Extra Work on Time and Materials Basis and paid for as specified in the directive authorizing the work.~~

171-5.1 Pay Item P171.050.0000 Contaminated Soil Separation Liner. Payment will be made at the contract price per square yard of liner installed and accepted in locations shown on the plans.

Payment will be made under:

Item P171.050.0000 Contaminated Soil Separation Liner – per square yard

ITEM P-172 CONTAMINATED SOIL REMEDIATION

DESCRIPTION

172-1.1 This item shall consist of preparing permeable filter barriers amended with a blend of activated carbon mixed with subbase course constructed on a prepared subgrade or underlying course according to these Specifications, and in conformity with the dimensions and typical cross section shown on the Plans.

MATERIALS

172-2.1 ACTIVATED CARBON. Blended mix of both liquid and solid activated carbon. Liquid format composed of fine particles of colloidal activated carbon, 1 to 2 microns in size, suspended in water using food-grade organic polymers. The solid format consists of engineered conglomerates made from colloidal activated carbon (1-2 microns) and powdered activated carbon (20 microns) with a particulate size range of 0.5 to 2.0 mm in diameter. Liquid and solid format should meet the properties shown in Table 1:

**TABLE 1
ACTIVATED CARBON REQUIREMENTS**

Property	Value
Physical State	Liquid & Solid
Color	Black
Liquid Form	Aqueous suspension of colloidal activated carbon particles and additives.
Liquid Particle Size	1 – 2 micrometers
Solid Form	Aggregate composites of colloidal activated carbon particles and powdered activated carbon
Solid Particle Size	0.5 – 2.0-millimeter conglomerates

172-2.2 SUBBASE COURSE. P-154.

172-2.3 ACTIVATED CARBON BACKFILL. The blend of activated carbon shall be mixed with the subbase course at the manufactured recommended rate and distributed both horizontally and vertically to achieve a consistent homogeneous mix by standard yellow-iron-type/soil mixing equipment.

A total of 8,400 pounds of the activated carbon blend (liquid and solid) will be utilized and mixed with the subbase course. The estimated delivery rate shall consist of 14 pounds per in place cubic yard.

CONSTRUCTION METHODS

172-3.1 GENERAL. The activated carbon backfill shall be placed where designated on the Plans or as directed by the Engineer. The material shall be shaped and thoroughly compacted within the tolerances specified.

Granular subbases which, due to grain sizes or shapes, are not sufficiently stable to support the movement of construction equipment, shall be mechanically stabilized to the depth necessary to provide such stability as directed by the Engineer. The mechanical stabilization shall principally include the addition of a fine-grained medium to bind the particles of the subbase material sufficiently to furnish a bearing strength, so that the course will not deform under the traffic of the construction equipment. The addition of the binding medium to the subbase material shall not increase the soil constants of that material above the limits specified.

172-3.2 PREPARING UNDERLYING COURSE. Before any activated carbon backfill material is placed, the underlying course shall be prepared and conditioned as specified. The course shall be checked and accepted by the Engineer before placing and spreading operations are started.

172-3.3 MATERIALS ACCEPTANCE IN EXISTING CONDITION. When the entire activated carbon backfill material is secured in a uniform and satisfactory condition, such approved material may be moved directly to the spreading equipment for placing. The final operation shall be blading or dragging, if necessary, to obtain a smooth uniform surface true to line and grade.

172-3.4 GENERAL METHODS FOR PLACING. When materials from several sources are to be blended and mixed, the subbase material, together with any blended material, shall be thoroughly mixed prior to placing on grade.

The activated carbon backfill shall be constructed in layers. Any layer shall be not less than 3 inches nor more than 8 inches of compacted thickness. The material, as spread, shall be of uniform gradation with no pockets of fine or coarse materials. No material shall be placed in snow or on a soft, or muddy course. Frozen soil conditions are acceptable.

When more than one layer is required, the construction procedure described herein shall apply similarly to each layer.

During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade, shoulder, or foreign material in the subbase course mixture.

172-3.5 FINISHING AND COMPACTING. After spreading or mixing, the activated carbon backfill material shall be compacted. Sufficient compactors shall be furnished to adequately handle the rate of placing and spreading of the subbase course.

The field density of the compacted material shall be field verified to be stable but not tightly compacted.

The backfill shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the subbase. When the rolling develops irregularities that exceed 1/2 inch when tested with a 12-foot straightedge, the irregular surface shall be loosened and then refilled with the same kind of material as that used in constructing the course and again rolled as required above.

Along places inaccessible to rollers, the subbase material shall be tamped thoroughly with mechanical or hand tampers.

QUALITY CONTROL (QC)

172-4.1 MANUFACTURER'S REPRESENTATION. The manufacturer shall provide a qualified representative to be onsite during the mixing and installation of the activated carbon backfill. The manufacturer's representative shall have documented experience with the specified carbon backfill material and its proper mixing/installation procedures. The cost of the manufacturer's representative shall be included in the Contractor's bid price.

The manufacturer's representative will ensure that the activated carbon backfill is mixed according to the recommended proportions, moisture content, and blending procedures. They will also provide guidance on necessary adjustments to ensure material consistency and performance.

The manufacturer's representative shall remain onsite for the entire duration of the activated carbon backfill mixing and installation. The contractor shall not proceed with the installation with the manufacturer's representative present.

METHOD OF MEASUREMENT

172-5.1 Activated carbon backfill will be measured by the cubic yard in final position according to GCP Subsection 90-02. Subbase course used in activated carbon backfill is subsidiary to the P172.020.0000 pay item.

BASIS OF PAYMENT

172-6.1 Activated carbon backfill will be paid for at the contract price, per unit of measurement, accepted in place.

Mixing, hauling and placing of these materials is subsidiary.

Payment will be made under:

Item P172.020.0000 Contaminated Soil Remediation – per cubic yard

ITEM P-180 RIPRAP

DESCRIPTION

180-1.1 Construct riprap bank and slope protection.

MATERIALS

180-2.1 Use evenly graded stones that are hard, angular, and have no more than 50% wear at 500 revolutions as determined by AASHTO T 96. Use stones with breadth and thickness at least 1/4 of its length. Do not use rounded boulders or cobbles on slopes steeper than 2:1.

Meet the following gradation for the class specified. Percents are by total weight, weights are for each stone:

Class I	0-50% weighing up to 25 pounds 0-10% weighing more than 50 pounds
Class II	50-100% weighing 200 pounds or more 0-15% weighing up to 25 pounds 0-10% weighing more than 400 pounds
Class III	50-100% weighing 700 pounds or more 0-15% weighing up to 25 pounds 0-10% weighing more than 1400 pounds
Class IV	50-100% weighing 2000 pounds or more 0-15% weighing up to 400 pounds 0-10% weighing more than 5400 pounds

CONSTRUCTION REQUIREMENTS

180-3.1 Provide a level, compact area large enough to dump and sort typical loads of riprap at approved location(s). Dump the loads specified in this area and assist the Engineer as needed to sort and measure the stones in the load to determine if the riprap is within specifications. Provide the equipment needed to assist in this sorting.

Excavate a footing trench along the toe of the slope as shown on the Plans.

Place stones to the thickness, height, and length shown on the Plans, or as staked, in a well-graded mass with a minimum of voids. Fill in unacceptable voids with smaller stones. Place riprap to its full course thickness in one operation. Avoid displacing the underlying material. Do not place riprap in layers or use methods likely to cause segregation.

Manipulate the rock sufficiently using a backhoe, rock tongs, or other suitable equipment to secure a reasonably regular surface and stability.

METHOD OF MEASUREMENT

180-4.1 Section 90. By neat line volume or by weight. Excavation and backfill will not be measured for payment and is considered subsidiary.

BASIS OF PAYMENT

180-5.1 Payment will be made at the contract unit price for each item below that appears on the bid schedule.

Payment will be made under:

Item P180.010.0000 Riprap, Class I – per cubic yard

ITEM P-610 CONCRETE FOR MISCELLANEOUS STRUCTURES

DESCRIPTION

610-1.1 This item shall consist of concrete and reinforcement, as shown on the plans, prepared and constructed in accordance with these Specifications. This specification shall be used for all concrete other than airfield pavement which are cast-in-place.

MATERIALS

610-2.1 GENERAL. Only approved materials, conforming to the requirements of these Specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Engineer before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

a. Reactivity. ~~Test~~ Fine aggregate and coarse aggregates to be used in all concrete ~~shall have been tested separately within six months of the project in accordance with ASTM C1260, or test within two years of the project in accordance with ASTM C1293. Test results shall be submitted~~ Submit test results to the Engineer. The aggregate ~~is~~ shall be considered innocuous if the expansion of test specimens;

i. ~~tested in accordance with ASTM C1260, does not exceed 0.08% at 14 days (16 days from casting), or-~~

ii. ~~tested in accordance with ASTM C1293, does not exceed 0.04% at 12 months.~~

If the expansion ~~exceeds either or both test specimen is greater than~~ 0.08% at 14 days for ASTM C1260 or 0.04% at 12 months for ASTM C1293, but less than 0.20%, use a minimum of 25% of Type F fly ash, or between 40% and 55% of total cementitious when using slag cement shall be used in the concrete mix. Additionally, limit the alkali of the concrete to be less than or equal to 3.0 lb per cubic yard, calculated in accordance with AC 150/5370-10H including EB-106.

~~Do not use if the aggregates with expansions is greater than 0.20%, the aggregates shall not be used, and test results for other aggregates must be submitted for evaluation; or aggregates that meet P-501 reactivity test requirements may be utilized.~~

610-2.2 COARSE AGGREGATE. The coarse aggregate for concrete shall meet the requirements of AASHTO M 80, Class A.

Coarse aggregate shall be well graded from coarse to fine, and shall meet AASHTO M 43, Number 57 or 67, when tested according to ATM 304.

610-2.2.1 COARSE AGGREGATE SUSCEPTIBILITY TO DURABILITY (D) CRACKING. Not Used.

610-2.3 FINE AGGREGATE. The fine aggregate for concrete shall meet all fine aggregate requirements of AASHTO M 6, Class A.

610-2.4 CEMENT. Cement shall conform to the requirements of AASHTO M 85.

610-2.5 CEMENTITIOUS MATERIALS.

- a. **Fly ash.** Fly ash shall meet the requirements of AASHTO M 295, with the exception of loss of ignition, where the maximum shall be less than 6%. Fly ash shall have a Calcium Oxide (CaO) content of less than 15% and a total available alkali content less than 3% per AASHTO M 295. Fly ash produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive AASHTO M 295 reports for each source of fly ash proposed in the concrete mix, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the Engineer.
- b. **Slag cement (ground granulated blast furnace (GGBF)).** Slag cement shall conform to AASHTO M 302, Grade 100 or Grade 120. Slag cement shall be used only at a rate between 25% and 55% of the total cementitious material by mass.

610-2.6 WATER. Water used in mixing or curing shall be from potable water sources. Water from 'Community' or 'Non-Transient Non-Community' sources regulated by the Alaska Department of Environmental Conservation Division of Environmental Health Drinking Water Program, or equivalent in other states, do not require testing under ASTM C1602. Other sources shall be tested in accordance with ASTM C1602 prior to use.

610-2.7 ADMIXTURES. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the Engineer may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the Engineer from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

- a. **Air-entraining admixtures.** Air-entraining admixtures shall meet the requirements of AASHTO M 154 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.
- b. **Water-reducing admixtures.** Water-reducing admixture shall meet the requirements of AASHTO M 194, Type A, B, or D. AASHTO M 194, Type F and G high range water reducing admixtures and ASTM C1017 flowable admixtures shall not be used. Water-reducing admixtures shall be added at the mixer separately from air-entraining admixtures according to the manufacturer's printed instructions.
- c. **Other chemical admixtures.** The use of set retarding, and set-accelerating admixtures shall be approved by the Engineer. Retarding shall meet the requirements of AASHTO M 194, Type A, B, or D and set-accelerating shall meet the requirements of AASHTO M 194, Type C. Calcium chloride and admixtures containing calcium chloride shall not be used.

610-2.8 PREMOLDED JOINT MATERIAL. Premolded joint material for expansion joints shall meet the requirements of AASHTO M 213.

610-2.9 JOINT FILLER. The filler for joints shall meet the requirements of Item P-605.

610-2.10 STEEL REINFORCEMENT. Reinforcing shall consist of Deformed and Plain Carbon-Steel Bars conforming to the requirements of ASTM A615, Welded Steel Wire Fabric conforming to the requirements of ASTM A1064, Welded Deformed Steel Fabric conforming to the requirements of ASTM A1064, or Bar Mats conforming to the requirements of ASTM A184, as shown on the Plans.

610-2.11 MATERIALS FOR CURING CONCRETE. Curing materials shall conform to Table 610-1:

TABLE 610-1. MATERIALS FOR CURING CONCRETE

CURING MATERIAL	SPECIFICATION
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Burlap Cloth made from Jute or Kenaf and Cotton Mats	AASHTO M 182, Class 4
Sheet Materials for Curing Concrete	ASTM C171
Liquid Membrane – Forming Compounds for Curing Concrete	ASTM C309, Type 1-D Class B, except do not use compounds containing linseed oil.

610-2.12 SURFACE SEALER. Provide a liquid applied, water soluble hydrophobic pore lining impregnate that is specifically formulated to protect concrete from the detrimental effects of moisture intrusion, freeze-thaw cycles, chloride ion penetration, and deicing chemicals.

CONSTRUCTION METHODS

610-3.1 GENERAL. The Contractor shall furnish all labor, materials, and services necessary for, and incidental to, the completion of all work as shown on the drawings and specified here. All machinery and equipment used by the Contractor on the work, shall be of sufficient size to meet the requirements of the work. All work shall be subject to the inspection and approval of the Engineer.

610-3.2 CONCRETE MIXTURE. The concrete shall develop a minimum compressive strength of 4,000 psi in 28 days as determined by test cylinders made according to ATM 506 and tested according to AASHTO T 22. The concrete shall contain not less than 470 pounds of cementitious material per cubic yard. The concrete shall contain 5.0% of entrained air, plus or minus 1.2%, as determined by ATM 505. Slump, as determined by ATM 503, shall match the mix design target value plus or minus 1 inch.

610-3.3 MIXING. Concrete may be mixed at the construction site, at a central point, or wholly or in part in truck mixers. The concrete shall be mixed and delivered in accordance with the requirements of AASHTO M 157.

The concrete shall be mixed only in quantities required for immediate use. Concrete shall not be mixed while the air temperature is below 40°F without the Engineer's approval. If approval is granted for mixing under such conditions, aggregates or water, or both, shall be heated and the concrete shall be placed at a temperature not less than 50°F nor more than 100°F. The Contractor shall be held responsible for any defective work, resulting from freezing or injury in any manner during placing and curing, and shall replace such work at his expense.

Retempering of concrete by adding water or any other material is not permitted.

The rate of delivery of concrete to the job shall be sufficient to allow uninterrupted placement of the concrete.

610-3.4 FORMS. Concrete shall not be placed until all the forms and reinforcements have been inspected and approved by the Engineer. Forms shall be of suitable material and shall be of the type, size, shape, quality, and strength to build the structure as shown on the Plans. The forms shall be true to line and grade and shall be mortar-tight and sufficiently rigid to prevent displacement and sagging between supports. The surfaces of forms shall be smooth and free from irregularities, dents, sags, and holes. The Contractor shall be responsible for their adequacy.

The internal form ties shall be arranged so that no metal will show in the concrete surface or discolor the surface when exposed to weathering when the forms are removed. All forms shall be wetted with water or with a non-staining mineral oil, which shall be applied immediately before the concrete is placed. Forms shall be constructed so they can be removed without injuring the concrete or concrete surface.

610-3.5 PLACING REINFORCEMENT. All reinforcement shall be accurately placed, as shown on the Plans, and shall be firmly held in position during concrete placement. Bars shall be fastened together at intersections. The reinforcement shall be supported by approved metal chairs. Shop drawings, lists, and bending details shall be supplied by the Contractor when required.

Reinforcing bars shall be bent cold and shall conform accurately to the shape and dimensions shown on the diagram. In no case shall the radius of any bend be less than 4 times the diameter of the bar.

Place reinforcement as indicated on the Plans or as hereinafter specified. Rigidly block and wire in place, using metal or plastic supports or concrete blocks and securely tie at each intersection with annealed iron wire of at least 1/8 inch.

Do not splice bars at points not indicated on the Plans except with the consent of the Engineer. Such splices shall be at the points of minimum tensile stress and the lap shall be not less than 36 bar diameters.

Verify the quantity, size, and shape of the reinforcement against the structure drawings and make necessary corrections to the bar lists and bending schedules before ordering. Errors in the bar lists and/or bending schedules shall not be cause for adjustment of the contract prices.

If reinforcing bars are to be welded, follow AWS D12.1.

610-3.6 EMBEDDED ITEMS. Before placing concrete, all embedded items shall be firmly and securely fastened in place as indicated. All embedded items shall be clean and free from coating, rust, scale, oil, or any foreign matter. The concrete shall be spaded and consolidated around and against embedded items. The embedding of wood shall not be allowed.

610-3.7 CONCRETE CONSISTENCY. The Contractor shall monitor the consistency of the concrete delivered to the project site; collect each batch ticket; check temperature; and perform slump tests on each truck at the project site in accordance with ATM 503.

610-3.8 PLACING CONCRETE. All concrete shall be placed during daylight hours, unless otherwise approved. The concrete shall not be placed until the depth and condition of foundations, the adequacy of forms and falsework, and the placing of the steel reinforcing have been approved by the Engineer. Concrete shall be placed as soon as practical after mixing, but in no case later than one (1) hour after water has been added to the mix. The method and manner of placing shall avoid segregation and displacement of the reinforcement. Troughs, pipes, and chutes shall be used as an aid in placing concrete when necessary. The concrete shall not be dropped from a height of more than 5 feet. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Do not subject concrete to procedures which cause segregation. Concrete shall be placed on clean, damp surfaces, free from running water, or on a properly consolidated soil foundation.

610-3.9 VIBRATION. Vibration shall follow the guidelines in American Concrete Institute (ACI) Committee 309R, Guide for Consolidation of Concrete.

610-3.10 JOINTS. Joints shall be constructed as indicated on the plans.

610-3.11 FINISHING. All exposed concrete surfaces shall be true, smooth, and free from open or rough areas, depressions, or projections. All concrete horizontal plane surfaces shall be brought flush to the proper elevation with the finished top surface struck-off with a straightedge and floated.

610-3.12 CURING AND PROTECTION. All concrete shall be properly cured in accordance with the recommendations in American Concrete Institute (ACI) 308R, Guide to External Curing of Concrete. The concrete shall be protected from damage until project acceptance.

610-3.13 COLD WEATHER PLACING. When concrete is placed at temperatures below 40°F, follow the cold weather concreting recommendations found in ACI 306R, Cold Weather Concreting.

610-3.14 HOT WEATHER PLACING. When concrete is placed at temperatures greater than 85°F, follow the hot weather concreting recommendations found in ACI 305R, Hot Weather Concreting.

ACCEPTANCE TESTING

610-4.1 ACCEPTANCE SAMPLING AND TESTING. Concrete for each day's placement will be accepted on the basis of the compressive strength specified in Subsection 610-3.2. The Engineer will sample the concrete in accordance with ATM 501; test the slump in accordance with ATM 503; test air content in accordance with ATM 505; make and cure compressive strength specimens in accordance with ATM 506; and test in accordance with AASHTO T 22. The Acceptance Testing laboratory will meet the requirements of ASTM C1077.

The Contractor shall provide adequate facilities for the initial curing of cylinders.

610-4.2 DEFECTIVE WORK. Any defective work that cannot be satisfactorily repaired as determined by the Engineer, shall be removed and replaced at the Contractor's expense. Defective work includes, but is not limited to, uneven dimensions, honeycombing and other voids on the surface or edges of the concrete.

METHOD OF MEASUREMENT

610-5.1 Concrete will be measured by the number of cubic yards based on the dimensions shown on the plans of concrete complete in place and accepted, and according to GCP Section 90. When the pay items shown below are absent from the bid schedule, no measurement for payment will be made.

610-5.2 Steel reinforcement will be measured by the calculated theoretical number of pounds placed, as shown on the Plans, complete in place and accepted. The unit weight used for deformed bars will be the weight of plain square or round bars of equal nominal size. If so indicated on the Plans, the weight to be paid for will include the weight of metal pipes and drains, metal conduits and ducts, or similar materials indicated and included. When the pay items shown below are absent from the bid schedule, no measurement for payment will be made.

BASIS OF PAYMENT

610-6.1 Payment will be made at the contract unit price per cubic yard for structural portland cement concrete and per pound for reinforcing steel. If the following pay items are absent from the bid schedule, no payment will be made.

~~Payment will be made under:~~

References

ATM 304	WAQTC FOP for AASHTO T 27/T 11 Sieve Analysis of Fine and Coarse Aggregates
ATM 501	FOP for WAQTC TM 2 Sampling Freshly Mixed Concrete
ATM 503	WAQTC FOP for AASHTO T 119 Slump of Hydraulic-Cement Concrete
ATM 505	WAQTC FOP for AASHTO T 152 Air Content of Freshly Mixed Concrete by the Pressure Method
ATM 506	WAQTC FOP for AASHTO T 23 Making and Curing Concrete Test Specimens in the Field
AASHTO M 6	Fine Aggregate for Portland Cement Concrete
AASHTO M 43	Sizes of Aggregate for Road and Bridge Construction
AASHTO M 80	Coarse Aggregate for Portland Cement Concrete
AASHTO M 85	Portland Cement
AASHTO M 154	Air-Entraining Admixtures for Concrete

AASHTO M 157	Ready-Mixed Concrete
AASHTO M 182	Burlap Cloth made from Jute or Kenaf and Cotton Mats
AASHTO M 194	Chemical Admixture for Concrete
AASHTO M 213	Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
AASHTO M 295	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
AASHTO M 302	Slag Cement for Use in Concrete and Mortars
AASHTO T 22	Compressive Strength of Cylindrical Concrete Specimens
ASTM A184	Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A1064	Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C171	Sheet Materials for Curing Concrete
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C311	Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C1017	Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1077	Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1260	Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1602	Mixing Water Used in the Production of Hydraulic Cement Concrete
AWS D12.1	Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308R	Guide to External Curing of Concrete
ACI 309R	Guide for Consolidation of Concrete

ITEM P-641

EROSION, SEDIMENT, AND POLLUTION CONTROL

641-1.1 DESCRIPTION. Provide project administration and work relating to control of erosion, sedimentation, and discharge of pollutants, according to this section and applicable local, state, and federal requirements, including the Alaska Pollution Discharge Elimination System (APDES) Construction General Permit (CGP). The state APDES program is administered by the Department of Environmental Conservation (DEC). Section 301(a) of the Clean Water Act (CWA) and 18 AAC 83.015 provide that the discharge of pollutants to water of the U.S. is unlawful except as allowed by the CGP.

Temporary erosion control measures shall be in accordance with the Erosion and Sediment Control Plan; the approved Construction Safety and Phasing Plan (CSPP), and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary erosion and sediment control measures may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites, when such areas are included in the Project Zone.

Temporary control measures shall be designed, installed and maintained:

- a. outside of safety areas of active runways and taxiways, and
- b. to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near airports.

DEFINITIONS AND TERMS

641-1.2 These definitions apply only to Item P-641.

ACTIVE TREATMENT SYSTEM (ATS) OPERATOR. See CGP Appendix C.

ALASKA CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (AK-CESCL). A person who has completed training, testing, and other requirements of, and is currently certified as, an AK-CESCL from an AK-CESCL Training Program (a program developed under a Memorandum of Understanding between the Department and others). The Department recognizes AK-CESCLs as “qualified personnel” required by the CGP. An AK-CESCL must be recertified every three years. (See Qualified Person).

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC). The state agency authorized by EPA to administer the Clean Water Act’s National Pollutant Discharge Elimination System.

ALASKA GENERAL PERMIT FOR EXCAVATION, DEWATERING (Excavation Dewatering Permit). The permit authorizing excavation dewatering discharges from Construction Activities.

ALASKA MULTI-SECTOR GENERAL PERMIT (MSGP). The permit authorizing stormwater discharges associated with Industrial Activity.

ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM (APDES). A system administered by DEC that issues and tracks permits for stormwater discharges.

BEST MANAGEMENT PRACTICES (BMPs). See CGP Appendix C.

CLEAN WATER ACT (CWA). Federal Water Pollution Control Amendments of 1972, as amended (33 U.S.C. 1251 et seq.).

CONSTRUCTION ACTIVITY. Ground disturbing activity by the contractor, subcontractor or utility company; that may result in erosion, sedimentation, or a discharge of pollutants into stormwater. See CGP Appendix C.

CONSTRUCTION GENERAL PERMIT (CGP). The permit authorizing stormwater discharges from Construction Activities, issued and enforced by Alaska DEC. It authorizes stormwater discharges providing permit conditions and water quality standards are met.

U.S. ARMY CORPS OF ENGINEERS PERMIT (COE PERMIT). A COE permit for construction in waters of the U.S. May be issued under Section 10 of the Rivers and Harbors Act of 1899, or Section 404 of the Clean Water Act.

ELECTRONIC NOTICE OF INTENT (ENOI). See CGP Appendix C.

ELECTRONIC NOTICE OF TERMINATION (ENOT). See CGP Appendix C.

ENVIRONMENTAL PROTECTION AGENCY (EPA). The federal agency charged to protect human health and the environment.

ERODIBLE STOCKPILE. Any material storage area or stockpile consisting of mineral aggregate, organic material, or a combination thereof, with greater than 5 percent passing the #200 sieve, and any material storage where wind or water transports sediments or other pollutants from the stockpile. Erodible Stockpile also includes any material storage area or stockpile, where the Engineer determines there is potential for wind or water transport, of sediments or other pollutants away from the stockpile.

EROSION AND SEDIMENT CONTROL PLAN (ESCP). The Department's project specific document that illustrates measures to control erosion and sediment on the project. The ESCP provides bidders with the basis for cost estimating and guidance for developing an acceptable Storm Water Pollutant Prevention Plan (SWPPP).

FINAL STABILIZATION. See CGP, Appendix C, "Stabilization."

HAZARDOUS MATERIAL CONTROL PLAN (HMCP). The Contractor's detailed project specific plan for prevention of pollution from storage, use, transfer, containment, cleanup, and disposal of hazardous material (including, but are not limited to, petroleum products related to construction activities and equipment). The HMCP is included as an appendix to the SWPPP.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT. A DEC stormwater discharge permit issued to certain local governments and other public bodies, for operation of stormwater conveyances and drainage systems. See CGP Appendix C.

OPERATOR(S). The party(s) responsible to obtain CGP permit coverage. CGP, Appendix C.

- a. Contractor – the Contractor is an Operator inside and outside the Project Zone.
- b. Department – the Department is an Operator inside the Project Zone.

POLLUTANT. Any substance or item meeting the definition of pollutant contained in 40 CFR § 122.2. A partial listing from this definition includes: dredged spoil, solid waste, sediment, sewage, garbage, sewage sludge, chemical wastes, biological materials, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

PROJECT ZONE. The physical area provided by the Department for Construction. The Project Zone includes the area of airport property or facility under construction, project staging and equipment areas, and material and disposal sites; when those areas, routes and sites, are provided by the Contract.

Material sites, material processing sites, disposal sites, haul routes, staging and equipment storage areas; that are furnished by the Contractor or a commercial operator, are not included in the Project Zone.

QUALIFIED PERSON. See CGP Appendix C and Subsection 641-1.4.

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN (SPCC PLAN). The Contractor's detailed plan for petroleum spill prevention and control measures that meet the requirements of 40 CFR 112.

SPILL RESPONSE FIELD REPRESENTATIVE. The Contractor's representative with authority and responsibility for managing, implementing, and executing the HMCP and SPCC Plan.

STORM EVENT. See CGP Appendix C.

STORM WATER POLLUTION PREVENTION PLAN TWO (SWPPP2). The Contractor's plan for compliance with both the CGP and MSGP construction activities outside the Project Zone.

SUPERINTENDENT. The Contractor's duly authorized representative with authority and responsibility for the overall operation of the Project, and Contractor furnished sites and facilities.

SWPPP AMENDMENT. A modification to the SWPPP. CGP Part 5.0.

SWPPP MANAGER. The Contractor's Qualified Person with authority and responsibility. CGP Appendix C.

SWPPP PREPARER. The Contractor's Qualified Person with authority and responsibility. CGP Appendix C.

SWPPPTRACK. Software subscription service version SWPPPTrack DOT AK developed and provided by SWPPPTrack AK LTD, for use on construction projects that require coverage under the APDES CGP.

TEMPORARY STABILIZATION. See CGP Appendix C. See "Stabilization."

641-1.2.1 REFERENCE. A complete list of websites and documents referenced herein can be found at the DOT&PF Statewide Design and Engineering Services Stormwater webpage.

DEC Permit information can be found at the DEC Division of Water webpage. SWPPP preparation documents can be found at the DOT&PF Design and Engineering Services Stormwater webpage. Construction forms are found at the DOT&PF Design and Engineering Services Construction Forms webpage.

641-1.3 PLAN AND PERMIT SUBMITTALS.

For plans listed in Subsection 80-03.d (SWPPP, HMCP, and SPCC), use the Contractor submission and Department review deadlines identified in this Subsection.

Partial and incomplete submittals will not be accepted for review. Any submittal that is re-submitted or revised after submission, but before the review is completed, will restart the submittal review timeline. No additional Contract time or additional compensation will be allowed due to delays caused by partial or incomplete submittals, or required re-submittals.

- a. Storm Water Pollution Prevention Plan.** Submit an electronic copy and one hard copy of the SWPPP to the Engineer for approval. Deliver these documents to the Engineer at least 21 days before beginning Construction Activity. Organize the SWPPP and related documents for submittal according to the requirements of Subsection 641-2.1.b

The Department will review the SWPPP submittals within 14 days after they are received. Submittals will be returned to the Contractor, and marked as either "rejected" with reasons listed or as "approved" by the Department. When the submittal is rejected, the Contractor must revise and resubmit the SWPPP. The 14 day review period will restart when the contractor submits an electronic copy ~~and one hard copy~~ of the revised SWPPP to the Engineer for approval.

After the SWPPP is approved and certified by the Department using Form 25D-109, the Contractor must certify the approved SWPPP using Form 25D-111. See Subsection 641-1.3.d for further SWPPP submittal requirements.

- b. **Hazardous Material Control Plan.** The HMCP Template can be found at the DOT&PF Construction Forms webpage. The HMCP submittal and review timeline, and signature requirements are the same as the SWPPP.
- c. **Spill Prevention, Control and Countermeasure Plan.** When a SPCC Plan is required under Subsection 641-2.3, submit an electronic copy ~~and one hard copy~~ of the SPCC Plan to the Engineer. Deliver these documents to the Engineer at least 21 days before beginning Construction Activity. The Department reserves the right to review the SPCC Plan and require modifications.
- d. **CGP Coverage.** The Contractor is responsible for permitting of Contractor and subcontractor Construction Activities related to the Project. Do not use the SWPPP for Construction Activities outside the Project Zone where the Department is not an operator. For Construction Activities outside the Project Zone, the Contractor must use a SWPPP2. Department approval is not needed for a SWPPP2.

After the Department certifies the SWPPP and prior to beginning Construction Activity, submit an eNOI with the required fee to DEC for coverage under the CGP. Submit a copy of the signed eNOI and DEC's written acknowledgement (by letter or other document), to the Engineer as soon as practicable and no later than three days after filing eNOI or receiving a written response.

Do not begin Construction Activity until the conditions listed in Subsection 641-3.1.a are completed.

The Department will submit an eNOI to DEC for Construction Activities inside the Project Zone. The Engineer will provide the Contractor with a copy of the Department's eNOI and DEC's written acknowledgment (by letter or other document), for inclusion in the SWPPP.

Before Construction Activities occur, transmit to the Engineer ~~one hard copy and~~ an electronic copy of the approved and certified SWPPP, with signed Delegations of Signature Authorities on Forms 25D-107 and 25D-108, SWPPP Certifications on Forms 25D-111 and 25D-109, both permittee's signed eNOIs and DEC's written acknowledgement.

- e. **DEC SWPPP Review.** When CGP Part 2.1.3 or 2.1.4, requires DEC SWPPP review:
 - (1) Transmit a copy of the Department-approved SWPPP to DEC using delivery receipt confirmation;
 - (2) Transmit a copy of the delivery receipt confirmation to the Engineer within seven (7) days of receiving the confirmation; and
 - (3) Retain a copy of delivery receipt confirmation in the SWPPP.
- f. **Local Government SWPPP Review.** When local government or the CGP Part 2.1.4, requires local government review:
 - (1) Transmit a copy of the Department-approved SWPPP and other information as required to local government, with the required fee. Use delivery receipt confirmation;
 - (2) Transmit a copy of the delivery receipt confirmation to the Engineer within seven days of receiving the confirmation;
 - (3) Transmit a copy of any comments by the local government to the Engineer within seven days of receipt;
 - (4) Amend the SWPPP as necessary to address local government comments and transmit SWPPP Amendments to the Engineer within seven days of receipt of the comments;

(5) Include a copy of local government SWPPP review letter in the SWPPP; and

(6) File a notification with local government that the project is ending.

- g. Modifying Contractor's eNOI.** When required by the CGP Part 2.7, modify your eNOI to update or correct information within 30 calendar days of the change. Reasons for modification are found in the CGP Part 2.7.1. The Contractor must submit an eNOT instead of an eNOI modification when the operator has changed. The new operator must file an eNOI to obtain permit coverage.

641-1.4 PERSONNEL QUALIFICATIONS. Provide documentation in the SWPPP that the individuals serving in these positions meet the personnel qualifications. The Department accepts the following certificates as equivalent to AK-CESCL: CPESC, Certified Professional in Erosion and Sediment Control or CISEC, Certified Inspector in Sediment and Erosion Control, which are found in the CGP Appendix C and repeated below.

**Table 641-1
Personnel Qualifications**

Personnel Title	Required Qualifications
SWPPP Preparer	Current certification as a Certified Professional in Erosion and Sediment Control (CPESC); OR Current certification as AK-CESCL, and at least two years' experience in erosion and sediment control, as a SWPPP Manager or SWPPP writer, or equivalent. OR Professional Engineer registered in the State of Alaska with current certification as AK-CESCL.
Superintendent	Current AK-CESCL or substitute training from CGP Appendix C Qualified Person Table 4
SWPPP Manager	Current AK-CESCL or substitute training from CGP Appendix C Qualified Person Table 4
Active Treatment System Operator	Current AK-CESCL or substitute training from CGP Appendix C Qualified Person Table 4. ATS operator should possess a recognized certification, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to meet the ATS requirement.

641-1.5 SIGNATURE/CERTIFICATION REQUIREMENTS AND DELEGATIONS.

- a. eNOI and eNOT.** The eNOI, eNOT, and eNOI Modifications must be signed and certified by a responsible corporate officer according to CGP Appendix A, Part 1.12. Signature and certification authority for the eNOI and eNOT cannot be delegated.
- b. Delegation of Signature Authority for Other SWPPP Documents and Reports.** Use Form 25D-108 to delegate signature authority and certification authority to the Superintendent position, according to CGP Appendix A, Part 1.12.3, for the SWPPP, inspection reports and other reports required by the CGP. The Superintendent position is responsible for signing and certifying the SWPPP, inspection reports, and other reports required by the CGP, except the eNOI, eNOI Modifications, and eNOT.

The Engineer will provide the Department's delegation on Form 25D-107, which the Contractor must include in the SWPPP.

- c. **Subcontractor Certification.** Subcontractors must certify on Form 25D-105, that they have read and will abide by the CGP and the conditions of the project SWPPP.
- d. **Signatures and Initials.** Where documents are completed in SWPPPTrack, utilize SWPPPTrack to sign and initial documents. When documents are not completed in SWPPPTrack (e.g. Form 25D-111 SWPPP Certification for Contractor), upload scanned copies after signing and initialing the documents into SWPPPTrack. ~~Certify or initial on the CGP documents and SWPPP forms, wherever a signature or initial is required.~~

641-1.6 RESPONSIBILITY FOR STORM WATER PERMIT COVERAGE.

- a. The Department and the Contractor are jointly responsible for permitting and permit compliance within the Project Zone.
- b. The Contractor is responsible for permitting and permit compliance for all construction support activity in the Project Zone and outside the Project Zone. The Contractor has sole responsibility for compliance with DEC, COE and other applicable federal, state, and local requirements, and for securing all necessary clearances, rights, and permits. The Contractor shall be responsible for protection, care, and upkeep of all work, and all associated off-site zones. Subsection 70-02 describes the requirement to obtain permits, and to provide permit documents to the Engineer.
- c. The Contractor is responsible for obtaining an Excavation Dewatering Permit (AKG002000) if construction activities are within 1,500 feet of a DEC-identified contaminated site or groundwater plume.
- d. An entity that owns or operates, a commercial plant as defined in Subsection 80-01.d. or material source or disposal site outside the Project Zone, is responsible for permitting and permit compliance. The Contractor has sole responsibility to verify that the entity has appropriate permit coverage. Subsection 70-02 describes the requirement to obtain permits, and to provide permit documents to the Engineer.
- e. The Department is not responsible for permitting or permit compliance, and is not liable for fines resulting from noncompliance with permit conditions:
 - (1) For areas outside the Project Zone;
 - (2) For Construction Activity and Support Activities outside the Project Zone; and
 - (3) For commercial plants, commercial material sources, and commercial disposal sites.

641-1.7 UTILITY. (RESERVED FOR REGIONS)

641-1.8 USE OF SWPPPTRACK. The Contractor is responsible for purchasing and contracting with SWPPPTrack AK LTD for the use of the SWPPPTrack software application and services until final stabilization is achieved and the eNOT has been completed. Contact SWPPPTrack Alaska Support at (888)401-1993 or AKSupport@SWPPPTrack.com for project fees, setup coordination, device requirements, and training.

Perform and document all inspections required by the CGP and the SWPPP with SWPPPTrack and populate all inspection fields accurately to represent current project conditions. Complete the following forms using SWPPPTrack:

- a. SWPPP Construction Site Inspection Report (25D-100)
- b. SWPPP Grading & Stabilization Activities Log (25D-110)
- c. SWPPP Corrective Action Log (25D-112)
- d. SWPPP Amendment Log (25D-114)

e. SWPPP Daily Record of Rainfall (25D-115)

f. SWPPP Training Log (25D-125)

g. SWPPP Project Staff Tracking (25D-127)

641-2.1 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.

a. SWPPP Preparer and Pre-Construction Site Visit.

Use a SWPPP Preparer to develop the SWPPP in accordance with the CGP, DEC and Department SWPPP templates. See Subsection P-641-1.2.1 for guidance and templates. The SWPPP Preparer must conduct a pre-construction inspection at the Project Site before Construction Activity begins. If the SWPPP Preparer is not a Contractor employee, the SWPPP Preparer must visit the site accompanied by the Contractor. Give the Department at least seven days advance notice of the site visit, so that the Department may participate.

Document the SWPPP Preparer's pre-construction inspection in the SWPPP on Form 25D-106, SWPPP Pre-Construction Site Visit, including the names of attendees and the date.

b. Developing the SWPPP.

Use the Department's ESCP, Environmental commitments, and other Contract documents as a starting point for developing the SWPPP.

Develop the SWPPP with sections and appendices, according to the DEC CGP SWPPP template and DOT&PF SWPPP template. Include information required by the Contract and described in the CGP Part 5.0. Use SWPPP forms found at the DOT&PF Construction Forms website.

Compile the SWPPP in three ring binders with tabbed and labeled dividers for each appendix. One electronic copy of the SWPPP must be submitted as a single PDF file.

c. SWPPP Considerations and Contents.

(1) The SWPPP must provide erosion and sediment control measures for all Construction Activity within the Project Zone. Construction Activity outside the Project Zone must have permit coverage and document permit compliance according to a SWPPP2.

(2) The SWPPP must consider the activities of the Contractor and all subcontractors and utility companies performing work in the Project Zone. The SWPPP must describe the roles and responsibilities of the Contractor, subcontractors, utility companies, and the Department with regard to implementation of the SWPPP. The SWPPP must identify all operators for the project, including utility companies performing Construction Activity, and identify the areas:

(a) Over which each operator has operational control, and;

(b) Where the Department and Contractor are co-operators.

(3) For work outside the Project Zone the SWPPP must identify the entity that has stormwater permit coverage, the operator, and the areas that are:

(a) Dedicated to the project and where the Department is not an operator; and

(b) Not dedicated to the project, but used for the project.

(4) The SWPPP must meet all CGP requirements. Utilize the DEC CGP SWPPP Template in conjunction with the DOT&PF SWPPP Template to develop the SWPPP.

- (5) Comply with the CGP Part 1.4.3 Authorized Non-Storm Water Discharges.
- (6) If the project discharges to a Tier III, Outstanding Natural Resource Water, comply with CGP Part 2.1.6. Submittal deadlines apply prior to filing an eNOI and beginning construction activities. As noted, none have been designated in the state of Alaska as of the issuance of the 2021 CGP.
- (7) There are special requirements in the CGP Part 3.2, for stormwater discharges into an impaired water body, and they may include monitoring of stormwater discharges. The Contractor is responsible for monitoring and reporting outside the Project Zone.
- (8) Describe the sequence and timing of activities that disturb soils and BMP implementation and removal. Phase earth disturbing activities to minimize unstabilized areas, and to achieve temporary or final stabilization. Whenever practicable incorporate final stabilization work into excavation, embankment and grading activities. Include drawings showing each phase of the project with the BMPs implemented in the phase.
- (9) Delineate the site according to CGP Part 4.2.1.
- (10) Minimize the amount of soil exposed and preserve natural topsoil on site, unless infeasible according to the CGP Part 4.2.2.
- (11) Describe methods and time limits, to initiate temporary or final soil stabilization. Comply with stabilization requirements in the CGP Part 4.5.
- (12) If construction will cease during winter months, describe all requirements for winter shutdown according to the CGP Part 4.12.
- (13) Plans for ATS must meet with the requirements in the CGP Part 2.1.5 and 4.6.
- (14) Design all temporary BMPs to accommodate a two year 24-hour storm event. All installed control measures must be described and documented in the SWPPP, according to the CGP Part 5.3.6. All installed BMPs must include a citation from a published BMP Manual, publication, or manufacturers specification used as a source, or include a statement "No BMP Manual was used for this design." If using out of state BMPs follow the instructions in the SWPPP Guide, found at the DOT&PF Stormwater webpage.
- (15) Provide a legible site map or set of maps in the SWPPP, showing the entire site and identifying boundaries of the property where construction and earth-disturbing activities will occur. Include all the elements described in the CGP Part 5.3.5, and DEC CGP SWPPP Template Section 5.0.
- (16) Identify the inspection frequency in the SWPPP according to the CGP Part 6.1.
- (17) Linear Project Inspections, described in CGP Part 6.5, are not applicable to this contract.
- (18) The SWPPP must cite and incorporate applicable requirements of the project permits, environmental commitments, COE permit, and commitments related to historic preservation. Make additional consultations or obtain permits as necessary for Contractor specific activities that were not included in the Department's permitting and consultation.
- (19) The SWPPP is a dynamic document. Keep the SWPPP current by noting installation, modification, and removal of BMPs, and by using amendments, SWPPP amendment logs, inspection reports, corrective action logs, records of land disturbance and stabilization, and any other records necessary to document stormwater pollution prevention activities and to satisfy the requirements of the CGP and this specification. See Subsection 641-3.3 for more information.

d. Recording Personnel and Contact Information in the SWPPP.

Identify the SWPPP Manager as the Storm Water Lead and Stormwater Inspector positions in the SWPPP. Document the SWPPP Manager's responsibilities in Section 2.0 Stormwater Contacts, of the SWPPP template and:

- (1) Identify that the SWPPP Manager does not have authority to sign inspection reports (unless the SWPPP Manager is also the designated project Superintendent).
- (2) Identify that the SWPPP Manager cannot prepare the SWPPP unless the SWPPP Manager meets the Contract requirements for the SWPPP Preparer.

Include in the SWPPP proof of AK-CESCL or equivalent certifications for the Superintendent and SWPPP Manager, and for any acting Superintendent and acting SWPPP Managers. If the Superintendent or SWPPP Manager is replaced permanently or temporarily, by an acting Superintendent or acting SWPPP Manager; record in the SWPPP (use Form 25D-127) the names of the replacement personnel and date of replacement. For temporary personnel, record their beginning and ending dates.

Provide 24-hour contact information for the Superintendent and SWPPP Manager. The Superintendent and SWPPP Manager must have 24-hour contact information for all Subcontractor SWPPP Coordinators and Utility SWPPP Coordinators.

Include in the SWPPP proof of AK-CESCL or equivalent certifications of ATS operators. Record names of ATS operators and their beginning and ending dates, on Form 25D-127.

The Department will provide proof of AK-CESCL, or equivalent certifications for the Department's Project Engineer, Stormwater Inspectors, and Monitoring Person (if applicable), and names and dates they are acting in that position. Include the Department's staff certifications in Appendix E. Include Department's staff names, dates acting, and assignments in Section 2.0 of the SWPPP and Form 25D-127.

641-2.2 HAZARDOUS MATERIAL CONTROL PLAN (HMCP) REQUIREMENTS.

Prepare the HMCP using the Department template for the prevention of pollution from storage, use, containment, cleanup, and disposal of all hazardous material, including petroleum products related to construction activities and equipment. Include the HMCP as an appendix to the SWPPP. Compile Material Safety Data Sheets in one location and reference that location in the HMCP.

641-2.3 SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN (SPCC PLAN) REQUIREMENTS.

Prepare and implement an SPCC Plan when required by 40 CFR 112 when both of the following conditions are present on the project:

- a. Oil or petroleum products from a spill may reach navigable waters (as defined in 40 CFR 112); and
- b. Total above ground storage capacity for oil and any petroleum products is greater than 1,320 gallons (not including onboard tanks for fuel or hydraulic fluid used primarily to power the movement of a motor vehicle or ancillary onboard oil-filled operational equipment, and not including containers with a storage capacity of less than 55 gallons).

Reference the SPCC Plan in the HMCP and SWPPP.

641-2.4 RESPONSIBILITY AND AUTHORITY OF THE SUPERINTENDENT AND SWPPP MANAGER.

The Superintendent shall certify the SWPPP, inspection reports, and other reports required by the CGP, except the eNOI and eNOT. The Superintendent may not delegate the task or responsibility of signing and certifying these documents.

The Superintendent may assign certain duties to the SWPPP Manager.

- a. Ensuring Contractor's and subcontractor's compliance with the SWPPP and CGP;
- b. Ensuring the control of erosion, sedimentation, or discharge of pollutants;
- c. Directing and overseeing installation, maintenance, and removal of BMPs;
- d. Performing inspections; and
- e. Updating the SWPPP including adding amendments and forms.

When Bid Item P641.070.0000 is part of the Contract, the SWPPP Manager must be a different person than the Superintendent and must be available at all times to administer SWPPP requirements, and be physically present within the Project Zone or the project office, when construction activities are occurring.

The Superintendent and SWPPP Manager shall be knowledgeable in the requirements of this Item P-641, the SWPPP, CGP, BMPs, HMCP, SPCC Plan, environmental permits, environmental commitments.

The Superintendent and SWPPP Manager shall have the Contractor's complete authority and be responsible for suspending construction activities that do not conform to the SWPPP or CGP.

641-2.5 MATERIALS.

Use materials suitable to withstand hydraulic, wind, and soil forces, and to control erosion and trap sediments according to the requirements of the CGP and the Specifications.

Use the seed mixture specified in the contract or as directed by the Engineer.

Use soil stabilization material as specified in P-682 and T-908.

Use silt fences as specified in P-680.

Use straw and straw products certified weed free of prohibited and restricted noxious weed seed and quarantined pests, according to Alaska Administrative Code, Title 11, Chapter 34 (11 AAC 34). When straw or straw products certified according to 11 AAC 34 are not available, use non-certified products manufactured within Alaska before certified products manufactured in another state, country, or territory. Non-certified straw or straw products manufactured in another state, country, or territory shall not be used. Grass, legumes, or any other herbaceous plants produced as hay, shall not be substituted for straw or straw products.

641-3.1 CONSTRUCTION REQUIREMENTS.

Comply with the SWPPP and the requirements of the CGP Part 5.0.

a. Before Construction

The following actions must be completed before Construction Activity begins:

- (1) The SWPPP Preparer must visit the project, the visit must be documented in the SWPPP using Form 25D-106, and the SWPPP must be developed or amended with findings from the visit.
- (2) The SWPPP must be approved by the Engineer on Form 25D-109.
- (3) The Contractor must be authorized to begin work by the Engineer.
- (4) The Project must have an eNOI for the Department and for the Contractor.

- (5) The Department approved SWPPP must be submitted to DEC and Local Government per CGP Part 2.1.2, Part 2.1.4, and Part 2.4.1.
- (6) The Contractor has transmitted to the Engineer an electronic copy ~~and at least one hardcopy~~ of the approved SWPPP.
- (7) The Delegation of Authority forms 25D-108 and 25D-107 for both the Contractor and Engineer are signed.
- (8) Main entrance signage must meet requirements of CGP Part 5.10.2.

Post notices on the outside wall of the Contractor's project office, and near the main entrances of the construction project. Protect postings from the weather. Locate postings so the public can safely read them without obstructing construction activities or the traveling public (for example, at an existing pullout). Do not use retroreflective signs for the SWPPP posting. Do not locate SWPPP signs in locations where the signs may be confused with traffic control signs or devices. Update the notices if the listed information changes.

- (9) Track precipitation according to CGP Part 7.3.9. Submit the method to track precipitation to the Engineer for approval.

(10) Complete all setup and training required to implement SWPPPTrack.

(11) Complete the upload of the BMP inventory into SWPPPTrack.

b. During Construction

- (1) Delineate the site according to the CGP Part 4.2.1.
- (2) Install required BMPs according to the SWPPP prior to the initiation of ground disturbance.
- (3) Document subcontractors. Provide a copy of the SWPPP and the CGP to all subcontractors and utility companies before they begin soil disturbing activities, and verify they understand and comply with the SWPPP and CGP and:
 - (a) Document all subcontractors and utility companies that may work on the site, according to the CGP Part 5.3.1, and SWPPP Section 1.2.
 - (b) Require subcontractors and utility companies to sign the SWPPP Subcontractor Certification (Form 25D-105). Include in the signed Form in the SWPPP Appendix E.
 - (c) Inform subcontractors and utility companies in a timely manner of SWPPP amendments that affect them. Coordinate with subcontractors and utility companies to protect BMPs, including temporary and final stabilization from damage.
 - (d) Notify the Engineer immediately if the actions of any utility company or subcontractor do not comply with the SWPPP and the CGP.
- (4) Provide ongoing training to all employees, subcontractors and utility companies, in according to the CGP Part 4.14. Training must:
 - (a) Be given no less than once a month during construction activity;
 - (b) Be documented in the SWPPP Training Log using Form 25D-125. Include the training record in the SWPPP Appendix I.
- (5) Protection and Restoration. Comply with Subsection 70-11.

(6) Good housekeeping measures to comply with the SWPPP and CGP 4.8.

(7) Control measures. Comply with the SWPPP and CGP Part 5.3.6 including:

- (a) Maintain BMPs.
- (b) Comply with requirements of the HMCP and SPCC Plan, if applicable and all local, state and federal regulations that pertain to the handling, storage, containment, cleanup, and disposal of petroleum products or other hazardous materials.
- (c) Keep the SWPPP and HMCP current (refer to Subsection 641-2.1.c, SWPPP Considerations and Contents).

c. Winter Construction

If winter construction activity occurs, the project must have appropriate BMPs in place CGP Part 4.12.2. Inspections can be reduced to once per month if the project meets the requirements in the CGP Part 6.2.4.

d. Storm Water Discharge Pollutant Reporting Requirements

If an incident of non-compliance occurs that may endanger health or the environment a report must be made, CGP, Appendix A, Part 3.4.

A permit non-compliance is considered any type of pollutant, such as turbidity or petroleum that enters storm water runoff and flows into a receiving water body, MS4, or wetland that is connected to waters of the U.S.

- (1) Immediately report the incident to the Engineer verbally;
- (2) Report to DEC verbally within 24 hours after the permittee becomes aware of the incident, and;
- (3) Report to DEC in writing within five days after the permittee becomes aware of the circumstances. To report in writing, complete the written noncompliance report on Form 25D-143, and file the written report with DEC. Coordinate the report with the Engineer. Include in the report:
 - (a) A description of the noncompliance and its causes;
 - (b) The exact dates and times of noncompliance;
 - (c) If not yet corrected the anticipated time the project will be brought back into compliance, and;
 - (d) The corrective action taken or planned to reduce, eliminate and prevent reoccurrence.
- (4) Notify the Engineer immediately if there is incident of noncompliance with COE Permits. The Engineer will notify the COE.

e. Hazardous Materials Reporting Requirements

Any release of a hazardous substance must be reported immediately to the Engineer as soon as the person has knowledge of the discharge.

Report spills of petroleum products or other hazardous materials to the Engineer and other agencies as required by law, and according to CGP Part 9.3.

- (1) To water; any amount released must be reported immediately to the Engineer, DEC, and the Coast Guard.
- (2) To land:

- (a) Any release of a petroleum product in excess of 55 gallons must be reported as soon as the person has knowledge of the discharge CGP Part 9.3.2.
 - (b) Any release of a petroleum product in excess of 10 gallons but less than 55 gallons must be reported to the Engineer and must be reported to DEC within 48 hours after the person has knowledge of the discharge CGP Part 9.3.2.
 - (c) Any release of a petroleum product in excess of 1 gallon to 10 gallons must be recorded and logged and provided to DEC on a monthly basis.
- (3) Use the HMCP and SPCC Plan (if available) for contact information to report spills to regulatory agencies.
 - (4) Implement measures to prevent the reoccurrence of and to respond to such releases.
 - (5) Prior to disposal of contaminated material, submit a Contaminated Media Transport and Treatment Disposal Approval Form to DEC Spill Prevention and Response. Dispose as approved by DEC.

f. Corrective Action and Maintenance of BMPs

Implement maintenance as required by the CGP Part 4.13 and Part 8.0, SWPPP, and manufacturer's specifications, whichever is more restrictive.

- (1) Implement corrective action to comply with the CGP Part 8.0 and the SWPPP.

- (2) Corrective action deadlines and documentation:

- (a) Corrective actions must be completed according to CGP Part 8.2.

- (b) Document corrective actions in the Corrective Action Log (25D-112) according to the SWPPP, CGP Part 8.3 and Part 5.9.2.

If a different BMP is installed to correct the condition leading to the corrective action a SWPPP Amendment must be completed.

- (c) If a corrective action is not completed according to the CGP 8.2, document the conditions in the Corrective Action Log, notify the Engineer, and implement the corrective action as soon as possible.

The Engineer may assign a new complete-by date using a Delayed Action Item Report, Form 25D-113 (DAIR Form), if the contractor is unable to complete the corrective action within the required timeframe. The DAIR Form can only be authorized and completed by the Engineer.

g. Stabilization

- (1) All Soil Stabilization requirements must be met in accordance with CGP Part 4.5 and the SWPPP.
- (2) When temporary or permanent seeding is required, provide a working hydro seeding equipment located within 100 miles of the project by road; with 1,000 gallon or more tank capacity, paddle agitation of tank, and the capability to reach the seed areas with an uniform mixture of water, seed, mulch and tackifier. If the project is located in an isolated community, the hydro-seeder must be located at the project.
- (3) Apply temporary seed and stabilization measures after preparing the surface to reduce erosion potential and to facilitate germination and growth of vegetative cover according to T-901.
- (4) Apply permanent seed and stabilization measures after land-disturbing activity has permanently ceased. Comply with the CGP, SWPPP, and items T-907, T-908 or T-920 as specified.

- (5) Incorporate final or temporary stabilization immediately after installing culverts or drainage structures to satisfy CGP Part 4.5, the SWPPP and the Engineer. Stabilize under any bridges, and in areas upstream and downstream of culverts, drainages and areas disturbed by related construction activities after installation, or before deactivating stream bypass or diversion.

- (6) Stabilization before Fall Freeze up and Spring Thaw.

Stabilize Construction Activities within the Project Zone with appropriate BMPs prior to the anticipated date of fall freeze up, in accordance with the SWPPP and CGP, Part 4.12.

Exceptions to stabilization prior to anticipated date of fall freeze up include:

- (a) Where temporary stabilization activities are precluded by snow cover or frozen ground conditions prior to the anticipated date of fall freeze up, stabilization measures must be initiated as soon as practicable following the actual spring thaw.
- (b) When winter construction activity is authorized by the Engineer and conducted according to the contract.

h. Ending CGP Coverage

- (1) The Engineer will determine the date that all the following conditions for ending CGP coverage have been met within the Project Zone:
 - (a) Land disturbing activities have ceased;
 - (b) Final Stabilization has been achieved on all portions of the Project Zone, according to the CGP 4.5.2 (including at Department furnished material sources, disposal sites, staging areas, equipment areas, etc.), and;
 - (c) Temporary BMPs have been removed.
- (2) After the Engineer has determined the conditions have been met for submitting an NOT in accordance to CGP Part 10.2, the Department will:
 - (a) Send written notice to the Contractor with the date that the conditions were met;
 - (b) Submit an eNOT to DEC within 30 days, and;
 - (c) Provide a copy of the eNOT and DEC's acknowledgement letter to the Contractor.
- (3) If the Contractor's CGP eNOI acreage includes Support Activities and any other areas where the Department is not an Operator, the Contractor may not be able to file an eNOT at the same time as the Department.
- (4) The Contractor must submit a copy of each signed eNOT and DEC's acknowledgement letter to the Department within three days of filing the eNOT or receiving a written response. Insert the eNOT and DEC acknowledgement letter in SWPPP Appendix Q.
- (5) The Contractor is responsible for coordinating local government inspections of work and ending permit coverage with local government. See Subsection 641-1.3.e for more information.

i. Ending BMP Maintenance in the Project Zone

The Contractor is responsible for continuing inspections, BMP maintenance and SWPPP updates until permit coverage is ended.

j. Transmit final SWPPP

Transmit one electronic copy of the final SWPPP, including all SWPPP documents, to the Engineer, when the Contractor's eNOT is filed, or within 30 days of the Department's eNOT being filed, whichever is sooner.

641-3.2 SWPPP DOCUMENTS, LOCATION ON-SITE, AVAILABILITY, AND RECORD RETENTION.

The SWPPP and related documents maintained by the Contractor are the record for demonstrating compliance with the CGP. Copies of SWPPP documents transmitted to the Engineer under the requirements of this specification are informational and do not relieve the Contractor's responsibility to maintain complete records as required by the CGP and this specification.

Keep the SWPPP, HMCP and SPCC Plan if applicable at the on-site project office. If there is not an on-site project office, keep the documents at a locally available location that meets CGP requirements and is approved by the Engineer. Records may be moved to another office for record retention after the eNOTs are filed. Records may be moved to another office during winter shutdown. Update on-site postings if records are relocated during winter shutdown. Provide the Department with copies of all records.

Retain records and a copy of the SWPPP, for at least three years after the date of eNOT according to the CGP Part 9.4.

The SWPPP and related documents must be made available for review and copy, to the Department and other regulatory agencies that request them. See CGP Parts 5.10, 6.6 and 9.5.

641-3.3 SWPPP INSPECTIONS, AMENDMENTS, REPORTS, AND LOGS.

Perform inspections, prepare Inspection Reports, and prepare SWPPP Amendments in compliance with the SWPPP and the CGP using Department forms found at the DOT&PF Construction Forms website.

a. Inspection during Construction

Conduct Inspections according to the schedule and requirements of the SWPPP and CGP Part 6.0. When the project is on a 14 calendar day inspection frequency, conduct Post-Storm Event Inspections within 24 hours of the end of a storm event, as required, in addition to the 14 day predetermined inspection cycle.

Inspections required by the CGP and SWPPP must be performed by the Contractor's SWPPP Manager and the Department's Stormwater Inspector jointly, unless approved by the Engineer, when:

- (1) One of the inspectors is not on site, access is only by air, and weather delayed or canceled flights;
- (2) One of the inspectors is sick;
- (3) The project is on a reduced frequency inspection schedule with no staff on site, the only access to the site is by air, and it is economical to send only one inspector, or;
- (4) When the Engineer determines a safety concern that makes joint inspection impracticable.

When this is the case, the Operator who conducts the inspection must provide a copy of the Inspection Report to the other Operator within three days of the inspection date and document the date of the report transmittal in SWPPP Appendix K.

b. Inspection Reports

Use only the Department SWPPP Construction Site Inspection Report, Form 25D-100, to record inspections. Changes or revisions to Form 25D-100 are not permitted, except for adding or deleting data fields that list Location of Discharge Points and Site Specific BMPs. Complete all fields in the Inspection Report; do not leave any fields blank.

Refer to the DOT&PF Construction Forms webpage for instruction to complete Form 25D-100.

The Superintendent or SWPPP Manager must review and correct all errors within three days of the date of inspection.

Inspection Reports must be signed by the person described in the CGP Appendix A, Part 1.12 or by a duly authorized representative of that person. Only the Superintendent can certify the Inspection Form.

Insert a Complete-by-Date for each corrective action listed that complies CGP Part 8.2.

Provide a copy of the completed, unsigned Inspection Report to the Engineer by the end of the next business day following the inspection.

The Engineer may coordinate with the Superintendent to review and correct any errors or omissions before the Superintendent signs the report. Corrections are limited to adding missing information or correcting entries to match field notes and conditions present at the time the inspection was performed. The signed and certified Inspection Report must be provided to the Engineer on the same day the Superintendent signed the form.

The Engineer will sign and certify the Inspection Report and will return the original to the Contractor within three working days if compliant with the CGP and SWPPP.

If the Inspection Report is not compliant with the CGP or SWPPP the Engineer may make corrections after the Superintendent has signed and certified the Inspection Report. The Engineer will initial and date each correction. If the Engineer makes corrections, the Superintendent must recertify the Inspection Report by entering a new signature and date in the white space below the original signature and date lines. Send a copy of the recertified Inspection Report to the Engineer on the day it is recertified.

When a correction is required to an Inspection Report that was already certified by both the Superintendent and Engineer, follow directions given below:

If subsequent corrections are required for a certified Inspection Report 25D-100, document the corrections in an addendum memo that addresses only the omitted or erroneous portions of the original Inspection Report. The Superintendent and the Engineer must both sign and certify the updated Inspection Report and addendum memo. File the corresponding Inspection Report and memo in the SWPPP Appendix K and update the amendment log. The issuance of an addendum memo does not relieve the Contractor of liquidated damages that may have been incurred as a result of the error on the original certified inspection report.

c. Items and Areas to Inspect

Conduct inspections of all areas required by the CGP Part 6.4 and SWPPP.

d. Reduced Inspection Frequencies

Conduct inspections according to the inspection schedule indicated in the approved SWPPP. Any change in inspection frequency must be approved by the Engineer, and beginning and ending dates documented as an amendment to the SWPPP.

If the Engineer approves and the entire site is stabilized, the frequency of inspections may be reduced in accordance to the CGP Part 6.2.1. At actively staffed sites, inspect within two business days of the end of a storm event that results in a discharge from the site.

e. Winter Shutdown Inspection

Conduct winter shutdown inspection 14 calendar days after the anticipated fall freeze up date and conditions under the CGP Parts 4.12, 6.2.3, and the SWPPP are met. The Engineer may approve

suspension of inspections and waive requirements for updating the Grading and Stabilization Activities Log and Daily Record of Rainfall Form during Winter Shutdown.

Inspections must resume on a regular frequency or reduced inspection frequency identified in the SWPPP, at least 21 days before anticipated spring thaw CGP Part 6.2.3. Resume updating the Daily Record of Rainfall Form at the start of the 21-day spring thaw inspection.

f. Inspection before Project Completion.

Conduct inspection to ensure Final Stabilization is complete throughout the Project, and temporary BMPs that are required to be removed are removed. Temporary BMPs that are biodegradable and are specifically designed and installed with the intent of remaining in place until they degrade, may remain in place after project completion if approved by the Project Engineer.

g. SWPPP Amendments and SWPPP Amendment Log

The SWPPP Amendment Log Form 25D-114 must be filled out by an individual who holds a current AK-CESCL, or equivalent certification. The Superintendent or the SWPPP Manager must sign and date amendments to the SWPPP and updates to the SWPPP Amendment Log.

SWPPP Amendments must be approved by the Engineer.

Amendments must occur:

- (1) Whenever there is a change in design, construction operation, or maintenance at the construction site that has or could cause erosion, sedimentation or the discharge of pollutants that has not been previously addressed in the SWPPP;
- (2) If an inspection identifies that any portion of the SWPPP is ineffective in preventing erosion, sedimentation, or the discharge of pollutants;
- (3) Whenever an inspection identifies a problem that requires additional or modified BMPs or a BMP not shown in the original SWPPP is added;
- (4) If the inspection frequency is modified (note beginning and ending dates);
- (5) When there is a change in personnel who are named in the SWPPP, according to Subsection 641-2.1.d.
- (6) When an inspection is not conducted jointly;
- (7) When a NOI modification is filed;
- (8) When a Noncompliance Report is filed with DEC.

Place all correspondence with DEC, EPA or MS4s in Appendix Q.

Amend the SWPPP as soon as practicable after any change or modification, but in no case later than seven days following identification of the need for an amendment. All SWPPP Amendments must have an amendment number, be dated, and signed.

Keep the SWPPP Amendment Log current. Prior to a scheduled inspection or submittal of an inspection, submit to the Engineer a copy of the pages of the Amendment Log that contain new entries since the last submittal. Include copies of any documents amending the SWPPP.

Keep the SWPPP Amendment Log in Appendix M.

h. Site Maps

Maintain site maps in accordance with CGP Part 5.3.5 and the SWPPP template 5.0. It is acceptable to have separate site maps for BMPs and grading and stabilization activities.

i. Corrective Action Log

The Superintendent and SWPPP Manager are the only persons authorized to make entries on the SWPPP Corrective Action Log, Form 25D-112.

The Corrective Action Log must document corrective actions required by the conditions listed in the CGP Part 8.0. Document the need for corrective action within 24 hours of either:

- (1) Identification during an inspection, or;
- (2) Discovery by the Department's or Contractor's staff, a subcontractor, or a regulatory agency inspector;
- (3) If a corrective action is discovered outside of an inspection, update the log with the date of discovery, the proposed corrective action, and the date the corrective action was completed.

Keep the Corrective Action Log current and submit a copy to the Engineer prior to performing each scheduled SWPPP Inspection.

Keep the Corrective Action Log in Appendix J of the SWPPP.

j. Grading and Stabilization Activities Log

The Superintendent and SWPPP Manager are the only persons authorized to date and initial entries on the SWPPP Grading and Stabilization Activities Log, Form 25D-110. Use the SWPPP Grading and Stabilization Activities Log, to record land disturbance and stabilization activities.

Keep the Grading and Stabilization Activities Log current and submit a copy to the Engineer prior to performing each scheduled SWPPP Inspection. Keep the Grading and Stabilization Activities Log organized and completed to demonstrate compliance with the CGP Part 4.5.

Keep the Grading and Stabilization Activities Log in Appendix G of the SWPPP.

k. Daily Record of Rainfall

Use SWPPP Daily Record of Rainfall, Form 25D-115 to comply with CGP Part 7.3.9. Submit a copy to the Engineer with each completed Inspection Report. Keep the Daily Record of Rainfall current in Appendix N of the SWPPP. For projects on a 14-day inspection frequency or reduced inspection frequency, SWPPPTrack will generate a precipitation alert for storm events that produce more than 0.5 inch of rainfall in 24 hours. If a storm event does not produce a discharge from the project zone, submit an explanation in response to the SWPPPTrack precipitation alert.

l. Staff Tracking Log

Use the SWPPP Project Staff Tracking Form 25D-127, to identify project staff that are required to be AK-CESCL certified or hold an equivalent qualification CGP Appendix C. Complete this form to document the following positions; Superintendent, SWPPP Manager, Engineer, DOT&PF Stormwater Inspector, and when positions have changed in personnel, either permanent or temporary. Update the SWPPP Project Staff Tracking Form within 24-hours of any changes in personnel, qualifications, or other staffing items related to administration of the CGP or Item P-641.

641-3.4 FAILURE TO PERFORM WORK.

The Engineer has authority to suspend work and withhold monies according to Subsections 50-01 and 80-06 for the reasons listed under Subsection 80-06 and for an incident of noncompliance with the CGP or SWPPP that may endanger health or the environment or for failure to perform work related to Item P-641.

- a. An incident of noncompliance includes, but is not limited to, the Contractor's failure to:
 - (1) Obtain appropriate permits before Construction Activities occur;
 - (2) Perform SWPPP administration;
 - (3) Perform timely inspections;
 - (4) Update the SWPPP;
 - (5) Transmit updated SWPPP, Inspection Reports, and other updated SWPPP forms to the Engineer;
 - (6) Maintain effective BMPs to control erosion, sedimentation, and pollution in accordance with the SWPPP, the CGP, and applicable local, state, and federal requirements;
 - (7) Perform duties according to the requirements of Item P-641;
 - (8) Meet requirements of the CGP, SWPPP, or other permits, laws, and regulations related to erosion, sediment, or pollution control, or;
 - (9) Any other requirements established or included in the contract.
- b. No additional Contract time or additional compensation will be allowed due to delays caused by the Engineer's suspension of work.

641-3.5 ACCESS TO WORK.

The Project, including any related off-site areas or support activities, must be made available for inspection, or sampling and monitoring, by the Department and other regulatory agencies. See CGP Part 6.6.

METHOD OF MEASUREMENT

641-4.1 See Section 90 and as follows:

Items P641.010.0000, P641.030.0000, and P641.070.0000 are lump sum.

Items P641.020.0000, P641.040.0000, and P641.050.0000 will be measured on a contingent sum basis as specified by the Directive authorizing the work.

Item P641.060.0000 will be measured on a contingent sum basis with withholding determined by the Department.

TABLE 641-1 BMP VALUES – RESERVED

Liquidated Damages assessed according to Table 641-2 are not an adjustment to the Contract amount. These damages charges are related to Contract performance but are billed by the Department to the Contractor, independent of the Contract amount. An amount equal to the Liquidated Damages may be withheld for unsatisfactory performance, from payment due under the Contract, until the Contractor remits payment for billed Liquidated Damages.

TABLE 641-2 - VERSION C
EROSION, SEDIMENT AND POLLUTION CONTROL – LIQUIDATED DAMAGES

Code	Specification Section Number and Description	Deductible Amount in Dollars	Cumulative Deductible Amounts in Dollars
A	641-1.4 Failure to have a qualified (AK-CESCL or equivalent) SWPPP Manager	Calculated in Code B or F	
B	Failure to meet SWPPP requirements of: (1) 641-2.1a Name of SWPPP Preparer (2) Not Applicable (3) 641-3.3h Sign and Date SWPPP amendments by qualified person (4) 641-3.2 Records maintained at project and made available for review	\$750 per omission	
C	Not Applicable		
D	641-3.3.e Failure to stabilize a Project prior to fall freeze up.	\$5,000 per Project per year	
E	641-2.1a Failure to conduct pre-construction inspections before Construction Activities on all projects greater than 1 acre.	\$2,000 per Project	
F*	641-3.3. Failure to conduct and record CGP Inspections 641-3.3a Personnel conducting Inspections and Frequency 641-3.3b Inspection Reports, use Form 25D-100, completed with all required information	\$750 per Inspection	Additional \$750 for every additional 7 day period without completing the required inspection.
G	641-3.1d Corrective action, failure to timely accomplish BMP maintenance and/or repairs. In effect until BMP maintenance and/or repairs is completed.	\$500 per Project per day	
H	641-3.1c Failure to provide to the Engineer and DEC a timely oral noncompliance report of violations or for a deficient oral noncompliance report	\$750 for the first day the report is late or deficient	Additional \$750 for every 14 day period with- out the required information
I	641-3.1c Failure to provide to the Engineer and DEC a timely written noncompliance report, use Form 25D-143, of violations or for a deficient written noncompliance report	\$750 for the first day the report is late or deficient	Additional \$750 for every 14 day period without the required information
J	641-3.4 Failure to comply with the requirements of the CGP, approved SWPPP, and Item P-641, except as listed above	\$750 per occurrence for the first day of noncompliance	Additional \$750 for every day the deficiency remains uncorrected

Code F* Liquidated Damages according to Code F will not be billed for typographic errors and minor data entry errors, except the liquidated damages will be assessed for these errors when:

- (1) the Contractor has previously been notified and subsequent inspection reports repeat the same or similar error,
- (2) multiple inspection reports are submitted after the submission due date and the same or similar errors are repeated on multiple overdue reports,
- (3) an error in recording the inspector's AK-CESCL certification date results in an inspector performing the inspection during a period when their certification was lapsed or was otherwise invalid.

BASIS OF PAYMENT

641-5.1 See Subsection 641-3.4 Failure to Perform Work, for additional work and payment requirements.

Item P641.010.0000 Erosion, Sediment and Pollution Control Administration. At the Contract lump sum price for administration of all work under this Section. Includes, but is not limited to, SWPPP and HMCP and SPCC Plan preparation, agency fees for SWPPP reviews, SWPPP amendments, pre-construction inspections, inspections, monitoring, reporting, and recordkeeping or copying records related to the SWPPP and required by the CGP, and record retention.

Item P641.020.0000 Temporary Erosion, Sediment and Pollution Control. At the contingent sum prices specified for all labor, supervision, material, equipment, and incidentals to install, maintain, remove and dispose of approved temporary erosion, sedimentation, and pollution control BMPs required to implement the SWPPP and SPCC Plan.

Item P641.030.0000 Temporary Erosion, Sediment and Pollution Control. At the Contract lump sum price for all labor, supervision, material, equipment, and incidentals to install, maintain, remove and dispose of temporary erosion, sedimentation, and pollution control BMPs identified in the SWPPP and SPCC Plan.

Item P641.040.0000 Temporary Erosion, Sediment and Pollution Control Additives. At the contingent sum prices specified in the Directive to authorize the work, for all labor, supervision, materials, equipment, and incidentals for extra, additional, or unanticipated work, to install, maintain, remove and dispose of temporary erosion, sedimentation, and pollution control BMPs not covered by Item P641.030.0000. All additional Erosion, Sediment, and Pollution Control Administration necessary due to this item will not be paid for separately but will be subsidiary to other bid items.

Item P641.050.0000 Temporary Erosion, Sediment and Pollution Control by Directive. At the contingent sum prices specified in the Directive using time and materials to authorize the work, for all labor, supervision, materials, equipment, and incidentals to install, maintain, remove and dispose of temporary erosion, sedimentation, and pollution control BMPs. Prices for this item will be by time and materials according to Subsection 90-05, or by mutual agreement between the Engineer and Contractor. All additional Erosion, Sediment, and Pollution Control Administration necessary due to this item will not be paid for separately but will be subsidiary to other bid items.

Item P641.060.0000 Withholding. The Engineer may withhold an amount equal to Liquidated Damages, assessed according to Item P-641, from payment due the Contractor. Liquidated Damages for violations of the Contract, CWA, CGP, are determined by the Engineer according to Table 641-2. The Engineer may withhold payment due the Contractors until the Contractor pays the Liquidated Damages to the Department.

The Department will not release performance bonds until Liquidated Damages assessed according to Item P-641 are paid to the Department, and all requirements according to Subsection 30-05 are satisfied.

Item P641.070.0000 SWPPP Manager. At the Contract lump sum price for a SWPPP Manager that conforms to this specification. When Item P641.070.0000 appears in the Bid Schedule, the SWPPP Manager must be a different person than the superintendent, and must be physically present during construction activity with duties and authority as described in Subsection 641-2.4. When Item P641.070.0000 does not appear in the Bid Schedule, the SWPPP Manager is subsidiary to Item P641.010.0000.

Item P641.110.0000 SWPPPTrack. Payment for purchasing and contracting with SWPPPTrack AK LTD for the use of the SWPPPTrack software application and services will be based on paid receipts plus a 5 percent markup.

Subsidiary Items. Temporary erosion, sediment and pollution control measures that are required outside the Project Zone are subsidiary. Work required by the HMCP and SPCC Plan including hazardous material storage, containment, removal, cleanup and disposal, are subsidiary to Item P641.010.0000 Erosion, Sediment and Pollution Control Administration.

Work under other pay items. Work that is paid for directly or indirectly under other pay items will not be measured and paid for under Item P-641. This work includes but is not limited to:

- a. Dewatering;
- b. Shoring;
- c. Bailing;
- d. Permanent seeding;
- e. Installation and removal of temporary work pads;
- f. Temporary accesses;
- g. Temporary drainage pipes and structures;
- h. Diversion channels;
- i. Settling impoundment, and;
- j. Filtration.

Permanent erosion, sediment and pollution control measures will be measured and paid for under other Contract items, when shown on the bid schedule.

Work at the Contractor's Expense. Temporary erosion, sediment and pollution control measures that are required due to carelessness, negligence, or failure to install temporary or permanent controls as scheduled or ordered by the Engineer, or for the Contractor's convenience, are at the Contractor's expense.

Payment will be made under:

Item P641.010.0000	Erosion, Sediment and Pollution Control Administration – per lump sum
Item P641.050.0000	Temporary Erosion, Sediment and Pollution Control by Directive – per contingent sum
Item P641.060.0000	Withholding – per contingent sum
Item P641.070.0000	SWPPP Manager – per lump sum
Item P641.110.0000	SWPPPTrack – per contingent sum

ITEM P-681 GEOTEXTILE FOR SEPARATION AND STABILIZATION

681-1. 1 DESCRIPTION. Prepare ground surface, and furnish and place geotextiles for separation, stabilization, and/or reinforcement as shown on the Plans.

681-2.1 MATERIALS. Use materials that conform to the following:

- a. **Separation.** Meet AASHTO M 288 for Separation, except provide a minimum permittivity of 0.50 sec^{-1} , and meet Class 3 Strength Property Requirements.
- b. **Stabilization.** Meet AASHTO M 288 for Stabilization, except provides a minimum permittivity of 0.50 sec^{-1} , and meet Class 1 Strength Property Requirements.
- c. **Reinforcement.** Meet the requirements in Table 681-1 for Type 1 or Type 2.

Package, label, handle and store geotextile materials according to ASTM D 4873.

**TABLE 681-1
GEOTEXTILE REINFORCEMENT PROPERTIES**

Property	Test Method	Units	Requirement ^a	
			Type 1	Type 2
Grab Tensile	ASTM D4632	lb.	200/200	400/400
Grab Elongation	ASTM D4632	% (MD)	10	10
Wide Width Tensile	ASTM D4595	lb/in. (ultimate)	200/200	400/400
Wide Width Tensile	ASTM D4595	lb/in. (@ 5% strain)	100/100	200/200
Seam Breaking Strength	ASTM D4632	lb./in.	180	360
Puncture	ASTM D6241	lb.	500	1500
Trapezoidal Tear	ASTM D4533	lb.	100	150
AOS	ASTM D4751	U.S. sieve size	#30 ^b	#30 ^b
Permittivity	ASTM D4491	sec^{-1}	0.20	0.20
Flow Rate	ASTM D4491	gal./min./ft ²	10	10

^a Minimum Average Roll Values (MARV) in machine direction (MD) / cross-machine direction (XD) unless otherwise specified

^b Maximum average roll value

Sewing Thread. Use high strength polypropylene, or polyester. Do not use nylon thread. Use thread of contrasting color to that of the geotextile itself.

CONSTRUCTION REQUIREMENTS

681-3.1. SURFACE PREPARATION. Prepare ground surface by removing stumps, brush, boulders, and sharp objects. Fill holes and ruts over 3 inches deep, with material shown on the Plans or as approved by the Engineer.

681-3.2. GEOTEXTILE PLACEMENT. Unroll geotextile directly onto the prepared surface. Stretch geotextile to remove any creases, folds or wrinkles. Do not drag the geotextile through mud or over sharp objects that could damage the geotextile. Do not expose geotextiles to sunlight for longer than 14 days after removal of protective covering. Do not allow geotextiles to get wet prior to installation.

- a. **Separation and Stabilization.** Lay geotextile for embankment separation and stabilization parallel to roadway centerline. On horizontal curves, place in segment lengths not exceeding those listed in Table 681-1, with butt ends cut to match and sewn or overlapped. On tangents, straighten the geotextile and sew or overlap butt ends. Shingle overlaps in the same direction as fill placement. Prevent overlapped edges from lifting during construction.
- b. **Reinforcement.** Lay the machine direction of the geotextile for embankment reinforcement perpendicular to the roadway centerline or as shown on the Plans. Join segments by sewing or an approved bonding or attachment process. Shingle overlaps in the same direction as fill placement if seams are not sewn. Prevent overlapped edges from lifting during construction.

**TABLE 681-2
GEOTEXTILE PLACEMENT ON CURVES**

Degree of Curve	Maximum Segment Length (ft.)
1	125
2	90
3	75
4	65
5	55
6	50

681-3.3. JOINING. Join adjacent geotextiles for separation or stabilization by overlapping or sewing. Join adjacent geotextiles for reinforcement by sewing or as shown on the Plans.

- a. Sew seams with a Butterfly or J-Seam using a double-thread chain stitch (lock stitch). Bring adjacent sections of geotextile together and fold so that the stitching penetrates four layers of geotextile for the full seam length. Make the stitching line 1-1/4 inches ($\pm 1/4$ -inch) from the folded edge of the seam and at least 1/2-inch from the free edge of the geotextile. Sew seams so that they face upward and can be easily inspected by the Engineer. Illustrations showing correct stitch formation and seam configurations are provided in Figure 1-2 (page 1-28) of the FHWA publication, *Geosynthetic Design & Construction Guidelines*, FHWA-NHI-07-092, August 2008.
- b. Overlap geotextile sections by a minimum of 3 feet at all longitudinal and transverse joints. Place the beginning of each new roll beneath the end of the previous roll to prevent the advancing fill from lifting the geotextile. Shingle in the direction of construction.

681-3.4. MATERIAL PLACING AND SPREADING. During placing and spreading of material, maintain a minimum depth of 12 inches of cover material; or a minimum depth equal to the separation distance between multiple layers of geotextile as shown on the Plans when this separation distance is less than 12 inches; at all times between the geotextile and the wheels or tracks of the construction equipment. Limit the size and weight of construction equipment to reduce rutting in the initial lift above the geotextile to not greater than 3 inches deep to prevent overstressing the geotextile.

Spread the material in the direction of the upper overlapped geotextile. Maintain proper overlap and geotextile continuity. If sewn or bonded seams are used, place the cover material and spread in only one direction for the entire length of the geotextile. On weak subgrades limit height of dumped cover material to prevent localized subgrade and/or geotextile failure. Do not drop stones or frozen material larger than 1 foot in diameter directly onto the geotextile from a height of more than 1 foot.

Compact using a smooth drum roller. Do not allow construction equipment to make sudden stops, starts, or turns on the cover material. Do not allow turning of vehicles on the initial lift of cover material above the geotextile. Fill any ruts over 3 inches deep occurring during construction with material shown on the Plans; do not grade adjacent material into rut; and compact to the specified density.

681-3.5. GEOTEXTILE REPAIR. Repair and replace damaged geotextile (torn, punctured, or disturbed at the overlaps or sewn joints). For damage evidenced by visible geotextile damage, subgrade pumping,

intrusion, or embankment distortion, remove the backfill around and under the damaged or displaced area, and repair with material matching the damaged material. Make patches overlap or sew patches to the existing geotextile..

- a. Separation and Stabilization.** Overlay torn area with geotextile with a minimum 3 foot overlap around the edges of the torn or damaged area or sew and bond according to Subsection 681-3.3.a Ensure the patch remains in place when cover material is placed over the affected area.
- b. Reinforcement.** Sew according to Subsection 681-3.3.a unless joining by overlap is shown on the Plans. Ensure the patch remains in place when cover material is placed over the affected area.

681-4.1 METHOD OF MEASUREMENT. By multiplying plan neat line width by the measured length in final position parallel to installation centerline along the ground surface. No allowance will be made for overlap, whether at joints or patches.

681-5.1 BASIS OF PAYMENT. Payment will be made at the contract unit price per square yard. Material used to fill ruts and holes will be paid for under separate materials pay items.

Payment will be made under:

Item P681.010.0000 Geotextile, Separation – per square yard

ITEM P-682 GEOTEXTILE FOR DRAINAGE AND EROSION CONTROL

682-1.1 DESCRIPTION. Prepare ground surface, and furnish and place geotextiles for subsurface drainage and erosion control, as shown on the Plans.

682-2.1 MATERIALS. Use materials that conform to the following for the class specified in the bid schedule:

- a. **Subsurface Drainage.** Meet AASHTO M 288 for Subsurface Drainage, except provide a minimum permittivity of 0.50 sec^{-1} , and meet Class 2 Strength Property Requirements.
- b. **Erosion Control.** Meet AASHTO M 288 for Permanent Erosion Control and meet Class 1 Strength Property Requirements.

Package, label, handle and store geotextile materials according to ASTM D 4873.

Sewing Thread. Use high strength polypropylene, or polyester. Do not use nylon thread. Use thread of contrasting color to that of the geotextile itself.

CONSTRUCTION REQUIREMENTS

682-3.1 SURFACE PREPARATION. Prepare ground surface by removing stumps, brush, boulders, and sharp objects. Fill holes and ruts over 3 inches deep, with material shown on the Plans or as approved by the Engineer. Construct smooth and stable trench walls.

682-3.2. GEOTEXTILE PLACEMENT. Unroll geotextile directly onto the prepared surface. Stretch geotextile to remove any creases, folds or wrinkles. Place geotextile in a manner which will ensure intimate contact between the trench wall and the geotextile (i.e., no voids, folds, or wrinkles). The geotextile may be held in place with securing pins at 3-foot spacing along all edges (but not closer than 2 inches from the edge) to prevent movement during construction. Do not expose geotextiles to sunlight for longer than 14 days after removal of protective covering. Do not allow geotextile rolls to get wet prior to installation.

- a. **Subsurface Drainage.** In trenches, after placing the geotextile and material shown on the Plans, fold the geotextile over the top of the material shown on the Plans to produce a minimum overlap of 12 inches, for trenches greater than 12 inches wide. In trenches less than 12 inches wide, make the overlap equal to the width of the trench. Then cover the geotextile with the subsequent course of material.
- b. **Erosion Control.** Place and anchor geotextile on the approved surface so it will not be torn or excessively stretched by placement of the overlying materials. Secure the geotextile to the slope but secure it loosely enough so that the geotextile will not tear when riprap or other cover material is placed on the geotextile. The geotextile shall not be keyed at the top of the slope until the riprap or other cover material is in place at the top of the slope. Anchor the terminal ends of the geotextile using key trenches or aprons with a minimum of 24 inches depth into the soil substrate at the crest and toe of slope, or as shown on the Plans. Place geotextile with the machine direction parallel to the direction of water flow (normally parallel to the slope for erosion control runoff and wave action, and parallel to the stream or channel).

682-3.3. JOINING. Join geotextile by sewing or overlapping.

- a. Sew seams with a Butterfly or J-Seam using a double thread chain stitch (lock stitch). Bring adjacent sections of geotextile together and fold so that the stitching penetrates four layers of geotextile for the full seam length. Make the stitching line 1-1/4 inches ($\pm 1/4$ -inch) from the folded edge of the seam and at least 1/2-inch from the free edge of the geotextile. Sew seams so that they can be easily inspected by the Engineer or representative. Illustrations showing correct stitch formation and seam configurations are provided in Figure 1-2 (page 1-

28) of the FHWA publication, *Geosynthetic Design & Construction Guidelines*, FHWA-NHI-07-092, August 2008. Conform both factory and field sewn seams to the strength requirements of Table 1 as outlined in the AASHTO M288 for subsurface drainage and erosion control applications.

- b. Overlap geotextile sections by a minimum of 3 feet at all longitudinal and transverse joints. Overlap successive geotextile sheets in the direction of flow so that the upstream sheet is placed over the downstream sheet and/or upslope over downslope. In trenches, where overlapped seams are constructed in the longitudinal trench direction, make the overlap equal to the width of the trench.

682-3.4. PLACEMENT OF COVER MATERIAL. Following placement of the geotextile on the prepared surface, place cover material of the type shown on the Plans. Place the cover material and armor from the bottom to the top of the slope using methods which minimize tearing and/or excessive stretching of the geotextile. In underwater applications, place the geotextile and the required thickness of cover material in the same day. Maintain proper overlap and geotextile continuity. Do not exceed the allowable drop heights for cover material shown in Table 682-1. Do not allow stones with a weight of more than 100 pounds to roll down the slope on the geotextile. Do not grade the slope in a way that will disturb the cover material or armor stone once it has been placed. Backfill all voids in the riprap or other cover material, which allows the geotextile to be visible, with material shown on the Plans, so that the geotextile is completely covered.

**TABLE 682-1
ALLOWABLE DROP HEIGHT FOR GEOTEXTILE**

INDIVIDUAL STONE Max. Weight (lbs)	ALLOWABLE DROP HEIGHT (ft)	
	UNPROTECTED GEOTEXTILE	PROTECTED GEOTEXTILE*
< 5	3	3
5-250	0	3
> 250	0	0**

**Protected geotextile is defined as having a gravelly covering (cushion layer) at least 6 inches thick.*

***If stones greater than 250 pounds must be dropped or if a height of drop greater than 3 feet is required, then perform field trials to determine the minimum cushion thickness and/or maximum height of safe drop without damaging the geotextile.*

Maintain a minimum depth of 12 inches of cover material between the geotextile and the wheels or tracks of the construction equipment.

682-3.5. GEOTEXTILE REPAIR. Should the geotextile be torn, punctured, or the overlaps or sewn joints disturbed – as evidenced by visible geotextile damage – remove the backfill around the damaged area and repair or replace the damaged area at no additional expense to the State. Make repairs to the damaged area with a patch of the same type of geotextile originally placed. Overlay torn area with geotextile with a minimum 3 foot overlap around the edges of the torn area. Ensure that the patch remains in place when material is placed over the affected area.

682-4.1 METHOD OF MEASUREMENT. By multiplying plan neat line width by the measured length in final position parallel to installation centerline along the ground surface. No allowance will be made for geotextile in key trenches or for overlap, whether at joints or patches.

682-5.1 BASIS OF PAYMENT. Payment will be made at the contract unit price per square yard. Material used to fill ruts and holes will be paid for under separate materials pay items at the unit price for the type of material used.

Payment will be made under:

Item P682.010.0000 Geotextile, Drainage – per square yard

ITEM T-901 SEEDING

DESCRIPTION

901-1.1 This work consists of preparing the ground and applying seed and fertilizer in conformance with the Plans and Specifications.

The intent of this work is to provide a living vegetative cover in the areas indicated on the Plans and to maintain the cover for the term of the Contract.

MATERIALS

901-2.1 SEED. Provide the seed mixture as specified in the below. ~~Special Provisions.~~

Seed Type	Proportion By Weight
Annual Rye Grass (<i>Lolium multiflorum</i>)	10%
Arctared Red Fescue (<i>Festuca rubra</i> 'Arctared')	40%
Nortran Tufted Hairgrass (<i>Deschampsia caespitosa</i>)	50%

Provide seed collected or harvested within 2 years of the targeted seeding date. Provide all seed in pure live seed (PLS) unless otherwise directed.

Provide seed true of genus and species. Meet the applicable requirements of the State of Alaska Seed Regulations, 11 AAC 34, Articles 1 and 4, and the Federal Seed Act, 7 CFR Part 201.

The Engineer will review requests for species or cultivar substitution(s); genus substitution is not allowed. Substitution requests need to be submitted a minimum of 60 calendar days in advance of delivery.

- a. **Prohibited and Restricted Noxious Weeds and Quarantined Pests.** Provide seed and appliances certified to be free of prohibited noxious weeds or quarantined pests, and certified to contain no more than the maximum allowable tolerances for restricted noxious weeds, according to Alaska Administrative Code, Title 11, Chapter 34 (11 AAC 34).
 - (1) Seed or appliances found to contain prohibited noxious weeds or quarantined pests will be rejected, according to 11 AAC 34.020(a) and 11 AAC 105-180, respectively.
 - (2) Seed or appliances found to contain restricted noxious weed seed in excess of the maximum allowable tolerance per pound will be rejected, according to 11 AAC 34.020(b).
 - (3) Prohibited and restricted noxious weeds are listed in 11 AAC 34.020, and can be viewed at the following URL: <http://plants.alaska.gov/invasives/noxious-weeds.htm>.
- b. **Labeling.** Ensure each bag or container of individual seed species is labeled to meet requirements of 11 AAC 34.010. Do not remove labels from bags or containers.
- c. **Certification.** Certify seed is free of prohibited noxious weeds and restricted noxious weeds are within allowable tolerances. Provide to the Engineer no later than 10 days prior to seeding 4 signed copies of a statement signed by the vendor identifying the lot number or lot numbers, certifying each lot of seed has been tested within the preceding nine months, by a recognized seed testing laboratory, a member of the Association of Official Seed Certifying Agency (AOSCA), or the Alaska Plant Materials Center.

Include the following in each certification:

- (1) name and address of laboratory
- (2) date of test

- (3) lot number
- (4) seed name
- (5) percent pure seed
- (6) percent germination
- (7) percent weed content
- (8) percent inert matter

Seed will be rejected if:

- a. Contains prohibited noxious weeds;
- b. Contains restricted noxious weeds above maximum allowable tolerances;
- c. Not certified as tested within the preceding nine months;
- d. Wet, moldy, or otherwise damaged in transit or storage; or
- e. Containers do not have labels or the labels have been removed.

Seed may be rejected for:

- f. Discrepancies in the lot numbers listed on the statement to the lot numbers indicated on the labels of the seed containers.

The Contractor shall immediately remove rejected seed from the project premises. If seed is rejected for containing prohibited noxious weeds or for exceeding maximum allowable tolerances of restricted noxious weeds, dispose of rejected seed according to 11 AAC 34.075(g).

901-2.2 FERTILIZER. Provide a 20-20-10 fertilizer containing no cyanamid compounds or hydrated lime. Tolerances of the chemical ingredients shall be plus or minus 2%.

Use standard commercial fertilizer supplied separately or in mixtures, and in moisture proof containers. Mark each container with the total net weight and with the manufacturer's guaranteed analysis of the contents showing the percentage for each ingredient.

CONSTRUCTION METHODS

901-3.1 SOIL PREPARATION. Clear all areas to be seeded of stones 4 inches in diameter and larger and of all sticks, stumps, noxious weeds, and other debris or irregularities that might interfere with the seeding operation, growth of grass, or subsequent maintenance of the grass covered areas.

Just prior to seeding, roughen the surface of all areas to be seeded by track-walking transversely up and down the slopes or using a scarifying slope board. Round the top and bottom of the slopes, when necessary, to facilitate tracking and to create a pleasing appearance, but do not disrupt drainage flow lines. Where fill is adjacent to wetlands, keep the equipment entirely on the fill slope.

901-3.2 SEEDING SEASONS. Seed and fertilize between May 15 and August 15.

Do not seed during windy conditions or when climatic conditions or ground conditions would hinder placement or proper growth.

901-3.3 APPLICATION. Apply seed and fertilizer at the rates specified ~~below; in the Special Provisions.~~

5 lbs/1,000 s.f. for seed
10.5 lbs/1,000 s.f. for fertilizer

Use ~~either of~~ the following methods:

a. Hydraulic Method.

- (1) Mix a slurry of seed, fertilizer, water, and other components as required by the Special Provisions. Add seed to the slurry mixture no more than 30 minutes before application.
- (2) Use hydraulic seeding equipment that will maintain a continuous agitation and apply a homogeneous mixture through a spray nozzle. The pump must produce enough pressure to maintain a continuous nonfluctuating spray that will reach the extremities of the seeding area, without causing damage to the seed bed. Use a hose attachment to reach areas where a fixed nozzle cannot reach.
- (3) ~~Add approved Hydraulic Erosion Control Product (HECP) If mulch material is required, add it~~ to the water slurry in the hydraulic seeder after adding the proportionate amounts of seed and fertilizer.
- (4) Apply slurry at a rate that distributes all materials evenly.

~~b. Dry Method.~~

- ~~(1) Use mechanical spreaders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical spreading equipment.~~
- ~~(2) Moisten the soil prior to the application of seed and fertilizer and immediately afterwards.~~
- ~~(3) Mix or rake the seed and fertilizer into the seed bed to a depth of 1/2 inch, unless mulch material is to be applied immediately.~~

901-3.4 MAINTENANCE OF SEEDED AREAS. Protect seeded areas against traffic using approved warning signs or barricades. Repair surfaces that are gullied or otherwise damaged following seeding by regrading and reseeding, as directed. Maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

Keep temporary erosion control measures in place until the vegetation is accepted.

Water the seeded areas, as required, for proper germination and growth. Use equipment that can acceptably water all seeded areas without vehicular traffic on seeded areas.

Reseed any seeded areas not showing evidence of satisfactory growth, as directed.

901-3.5 FINAL ACCEPTANCE. Final acceptance will be based on the following criteria and must provide 70% vegetative coverage of the seeded area. If seeding is completed by July 15th, coverage must be attained by September 30th. If seeding is completed by August 15th, coverage must be attained by June 15th of the following season. Final acceptance will be based on the Engineers approval.

METHOD OF MEASUREMENT

901-4.1 The work will be measured according to Subsection 90-02, and as follows:

- a. Seeding by the acre.** By the area of ground surface acceptably seeded, fertilized, and maintained. Required reseeding is subsidiary.

- b. **Seeding by the pound.** By the weight of seed acceptably placed. Fertilizer is subsidiary. Any other work required will be measured separately.
- c. **Water for maintenance.** By the M-gal (1,000 gallons) acceptably placed. Use a conversion factor of 8.34 pounds per gallon, if measured by weight. Use a conversion factor of 7.48 gallons per cubic foot, if measured by volume.

BASIS OF PAYMENT

901-5.1 Soil preparation, fertilizer, and water required for hydraulic method are subsidiary. ~~Mulching will be measured and paid for under Item T-908.~~

- a. **Seeding by the Acre.** Payment is for established vegetative mat.
- b. **Seeding by the Pound.** Payment is for established vegetative mat.
- c. **Water for Seeding.** Water applied for growth of vegetative mat.
- d. **HECP.** As further described under Item T-908 is subsidiary to T-901.
- e. **Water for Maintenance.** Water applied for maintenance is subsidiary.

Payment will be made under:

Item T901.020.0000 Seeding – per pound

ITEM T-905 TOPSOIL

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the Engineer.

MATERIALS

905-2.1 TOPSOIL. Provide a natural friable surface soil without admixtures of undesirable subsoil, refuse, or foreign materials and reasonably free from roots, clods, hard clay, noxious weeds, tall grass, brush sticks, stubble or other litter, and which is free draining and non-toxic.

The gradation shall conform to selected Class in Table 1 when tested according to ATM 304. If no class is indicated, meet the grading requirements in Table 1 for Class BA topsoil.

**TABLE 1
TOPSOIL GRADING**

Sieve Designation	Percent Passing By Weight	
	CLASS A	CLASS B
3 in.	-	100
1/2 in.	100	-
No. 4	95-100	75-100
No. 16	64-90	50-95
No. 200	30-60	20-80
Organic Matter	10-40	<u>3-20% min.</u>
pH Range		<u>5.5-7.5</u>

Percent of organic matter will be determined by loss-on-ignition of oven dried samples using ATM 203.

The No. 200 gradation shall be determined according to ASTM C117.

The pH shall be determined using ATM 206.

All tests shall be completed and accepted by the Engineer prior to placement of topsoil.

When necessary, amend natural topsoil to meet the above specifications, using approved materials and methods.

The Engineer shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified herein. During the inspection, the Contractor may be required to take representative soil samples for testing purposes.

CONSTRUCTION METHODS

905-3.1 PREPARING THE GROUND SURFACE. Where grades in the areas to be topsoiled have not been established, smooth-grade the areas to the grades shown on the Plans. Maintain the prescribed grades in an even and properly compacted condition to prevent the formation of low places or pockets where water will stand.

Clear the surface of the area to be topsoiled of all stones larger than 2 inches in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting.

Immediately prior to dumping and spreading the topsoil, loosen the surface, by approved means, to a minimum depth of 2 inches to facilitate bonding of the topsoil to the covered subgrade soil.

905-3.2 OBTAINING TOPSOIL. Prior to the stripping of topsoil from designated areas, remove any vegetation, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, using approved methods.

When suitable topsoil is available on the site, remove this material from the designated areas to the depth directed. Spread the topsoil on areas already tilled and smooth-graded, or stockpile in approved areas. Grade the stockpile sites and adjacent areas which have been disturbed if required and put into a condition acceptable for seeding.

When suitable topsoil is secured off the airport site, locate and obtain the supply, subject to approval. Notify the Engineer sufficiently in advance of operations in order that necessary measurements and tests can be made. Remove the topsoil from approved areas and to the depth as directed. Haul the topsoil to the site of the work and stockpile or spread as required.

905-3.3 PLACING TOPSOIL. Spread the topsoil evenly on the prepared areas to a uniform depth of 4 inches after compaction. Do not spread when the ground or topsoil is frozen or excessively wet.

After spreading, break up any large stiff clods and hard lumps with a pulverizer or other effective means. Rake up and dispose of all stones or rocks (2 inches or more in diameter), roots, litter, or any foreign matter. After spreading, compact the topsoil with a cultipacker or by other approved means. The compacted topsoil surface shall conform to the required lines, grades, and cross sections. Promptly remove any topsoil or other dirt falling upon pavements or other surface courses.

Track topsoil with a dozer to make track marks running perpendicular to the direction of drainage.

METHOD OF MEASUREMENT

905-4.1 By the square yard, according to GCP Subsection 90-02, acceptably placed.

BASIS OF PAYMENT

905-5.1 Payment will be made at the contract unit price per square yard.

Stockpiling and rehandling of topsoil are subsidiary.

Payment will be made under:

Item T905.010.0020 Topsoiling, Class B – per square yard

TESTING REQUIREMENTS

ATM 203	<u>Organic Content of Soils by Ignition</u>
ATM 206	<u>pH of Topsoil</u>
ATM 304	<u>WAQTC FOP for AASHTO T 27/T 11 Sieve Analysis of Fine and Coarse Aggregates</u>
ASTM C117	<u>Materials Finer than 75mm (No. 200) Sieve in Mineral Aggregates by Washing</u>

ITEM T-908 MULCHING

DESCRIPTION

908-1.1 This work consists of providing, placing, and maintaining soil stabilization material where shown on the Plans.

MATERIALS

908-2.1 MULCH. ~~Virgin/recycled wood fiber, recycled paper (wood cellulose), or an acceptable blend containing up to 50% recycled paper, with the following characteristics:~~

- ~~a. Contains no growth or germination inhibiting factors.~~
- ~~b. Will remain in uniform suspension in water under agitation and will blend with grass seed, fertilizer and other additives to form a homogeneous slurry, when required.~~
- ~~c. Will form a uniform, blotter like ground cover on application, having moisture absorption and percolation properties and the ability to cover and hold grass seed in contact with soil.~~
- ~~d. Will not form a hard crust upon drying.~~
- ~~e. Dyed a suitable color to facilitate inspection of its placement.~~

~~Ship the mulch in packages of uniform weight (plus or minus 5%) bearing the name of the manufacturer and the air dry weight content.~~

~~Use a commercial tackifier on all slopes 4:1 or steeper. Use the amount recommended by the manufacturer.~~

908-2.1 Hydraulic Erosion Control Product (HECP). The HECP upon application to the soil surface will create a three-dimensional fiber matrix forming a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth. Provide an HECP that conforms to either HECP-1 or HECP-2 as follows:

- a. **HECP-1** consisting of thermally processed or pasteurized non toxic organic defibrated fibers, dispersible interlocking natural or synthetic fibers and a cross-linked hydro-colloidal tackifier. HECP-1 is not composed of paper, cellulose fiber, or blend of paper, cellulose, and other materials. Provide an HECP-1 that is a flexible erosion control matrix and forms a strongly lofted but porous fiber mat that contains air pockets and moisture absorbing chambers that allow for the proper germination of seeds while reducing the energy of raindrops and decreases the volume of sediment loss, or:
- b. **HECP-2** certified by the manufacturer to provide an equivalent level of performance to that of an HECP-1 meeting the material requirements described under "a." above. In addition, provide evidence that the HECP-2 has been shown to be at least 99% effective by testing at any of the following laboratories:

(1) San Diego State University Soil Erosion Research Laboratory, San Diego, CA

(2) Utah Water Research Laboratory at Utah State University, Logan, Utah

(3) USDA-Agricultural Research Service National Soil Erosion Research Laboratory (NSERL) at Purdue University, West Lafayette, Indiana.

(4) Texas DOT/Texas Transportation Institute (TTI) Hydraulics and Erosion Control Laboratory at Texas A & M, College Station, Texas.

Provide Flexterra FGM as manufactured by Profile Products, LLC, Flex Guard as manufactured by Mat, Inc., Earth Guard Fiber Matrix as manufactured by Terra Novo, Inc., or approved equal. Deliver materials and products in UV and weather resistant factory labeled packages. Store and handle in compliance with manufacturer's instructions and recommendations. Protect from damage from weather, excessive temperatures, and construction operations. Ensure that all components of the HECP are pre-packaged by the manufacturer to assure material performance.

908-2.2 ROLLED MATTING. Use materials that conform to one of the following standards:

- a. **Unbleached Single Jute Yarn.** Use yarn that is loosely twisted and not varying in thickness more than one-half its normal diameter. Provide jute mesh in rolled strips conforming to the following requirements.
 - (1) Width: 45 to 48 inches, $\pm$ 1 inch.
 - (2) 78 warp-ends per width of cloth (minimum).
 - (3) 41 weft-ends per yard (minimum).
 - (4) Weight: 1.22 pounds per linear yard, $\pm$ 5%
- b. **Knitted Straw Matting.** Commercially manufactured erosion control blanket. Use netting which is biodegradable. Straw shall be from oats, wheat, rye, rice, or other approved grain crops that are free from noxious weeds, mold, or other objectionable material. May contain coconut or other natural fiber to reinforce the straw. Follow the manufacturer's published recommendations.

908-2.3 STAPLES. U-shaped staples for anchoring matting, approximately 6 inches long and 1 inch wide. Machine-made: No. 11 gage or heavier steel wire. Hand-made: 12-inch lengths of No. 9 gage or heavier steel.

CONSTRUCTION METHODS

908-3.1 SURFACE PREPARATION. Smooth the surface and backfill all gullies and potholes before application. Remove all sticks and other foreign matter that prevents contact of the ~~HECP mulch~~ or matting and the soil. Ensure that surfaces receiving an application of HECP are geotechnically stable and constructed to divert runoff away from the face of any slope. Do not proceed with HECP installation until satisfactory conditions are established.

Ensure that the surface is moist at the time of placement. If area is to be seeded, soil preparation shall conform to Section 901-3.1.

908-3.2 APPLICATION.

- a. **Matting.** Apply soil stabilization material at the rate specified in the Special Provisions. If seeding is specified, complete the application of mulch or matting within 24 hours after seed is placed. When matting is shown on the plans, staple matting every 5 feet at overlapped joints and edges or as recommended by the manufacturer. Do not use vehicles or equipment which cause rutting or displacement of the subgrade or topsoil.
- b. **Hydraulic Erosion Control Product (HECP).**
 - (1) **HECP-1.** Apply at a rate of 3500 lbs per acre (dry weight basis) in compliance with manufacturer's instructions and recommendations using an approved mechanically agitated, hydraulic seeding/mulching machine with a fan-type nozzle (50-degree tip). Apply from opposing directions to reduce the "shadow effect" and to achieve best soil coverage. Do not apply HECP-1 in channels, swales, or other areas where concentrated flows are anticipated, unless installed in conjunction with a temporary erosion control blanket or non-degradable

turf reinforcement mat. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 100 feet and/or slopes are steeper than 3H:1V. Where surfaces are to be seeded, apply HEC-1 in a two-step process unless a single step process is recommended by the manufacturer and approved by the Engineer. The single step process involves mixing all components in a single tank load. In step one of a two step process, mix and apply any seed and soil amendments with a small amount of HEC-1 for visual metering. In step two, mix and apply HEC-1 over freshly seeded surfaces. Do not leave seeded surfaces unprotected, especially if precipitation is imminent. Mix HEC-1 in the hydraulic application machine by filling the tank to middle of agitator shaft or 1/3 tank full of water. Turn on the pump to wet or purge lines. Begin agitating and keep adding water slowly while adding the HEC-1 at a steady rate. Consult the manufacturer's application and loading charts to determine the number of bags to be added. Mix at a rate of 50 lbs HEC-1 per 125 gallons of water. Contact the equipment manufacturer to determine optimum loading and mixing rates. All HEC-1 should be loaded when the tank is approximately 3/4 full. Where fertilizer is applied with HEC-1, add it when the tank is nearly full. Before application, mix the slurry for at least 10 minutes after adding the last amount of HEC-1. This is imperative to fully activate the bonding additives and to attain proper viscosity. Turn off the recirculation valve and reduce the agitator speed to minimize the potential for air entrainment within the slurry.

(2) HEC-2. Apply in accordance with manufacturer's instructions, at a rate specified by the manufacturer.

908-3.3 MAINTENANCE. Reshape and reseed any damaged areas and repair the mulch or matting as required.

Maintain the mulch or matting until all work on the project is complete and accepted.

METHOD OF MEASUREMENT

~~908-4.1 Soil stabilization will not be measured for payment. By the square yard, according to GCP Subsection 90-02, acceptably placed.~~

BASIS OF PAYMENT

~~908-5.1 No separate payment for soil stabilization will be made. Soil stabilization is subsidiary to T-901 – Seeding. At the contract unit price per unit of measure for the pay items listed below that appear on the bid schedule. Water, maintenance, and repair are subsidiary.~~

~~Payment will be made under:~~

APPENDIX A

CONSTRUCTION SURVEYING REQUIREMENTS

(NOT USED)

APPENDIX B

MATERIALS SAMPLING AND TESTING FREQUENCY

AIRPORT CONSTRUCTION – Materials Sampling & Testing Frequency (MSTF) Table					
Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Excavation	Acceptance	(5)	Gradation, P.I. (4), Moisture (or visual description if organic)	1 per 5,000 CY waste or undesignated waste cut	For unsuitable excavation number consecutively EX-W-1. No need to test if waste is designated on plans
Embankment	Acceptance	(5)	Standard Density	As required by changes in material	Number consecutively BM-SD-1 or EX-SD-1.
			Field Density (1)	1 per 1,500 CY or 1 per 3,000 Tons (6)	Number consecutively BM-D-1 or EX-D-1.
			Gradation, P.I. (4) and Deleterious (visual)	1 per 5,000 CY or 1 per 10,000 Tons (6)	Number consecutively BM-G-1 or EX-G-1.
	Independent Assurance	(5)	Standard Density (2)	1 per source	Use numbers that correspond to acceptance samples. Include field test results with sample.
			Field Density (1)	1 per 15,000 CY or 1 per 30,000 Tons	
			Gradation and Deleterious (visual)	1 per 50,000 CY or 1 per 100,000 Tons	
Bedding & Backfill for Structures (Drainage Items, Ducts, Conduits, etc.)	Acceptance	(5)	Standard Density	As required by change in material	
			Field Density (1)	(3)	
			Gradation, P.I. (4), and Deleterious (visual)	1 per source or as required by change in material	
General: When acceptance testing is performed in the Department’s Regional Laboratories that are accredited in the specified test method, Independent Assurance (IA) testing is not required. If the regional laboratories perform acceptance testing and choose to perform IA testing, they must use different personnel and equipment for IA testing than was used for acceptance testing. 1) If material is impractical for field density, document quantity and/or area by reporting percent oversize and compactive effort used on a proper density acceptance form. IA density testing is not required when material (as shown by gradation testing) is Too Coarse to Test (TCTT). Any material can be rejected based on failure to meet any one of the criteria. 2) Required when Standard Density is performed in the project laboratory. 3) One density per structure (pipe, conduit, manhole, catch basin, inlet, utility vault, etc.), with a minimum of one density per 100 lineal feet of structure installed same day and same manner. Perform densities within 18 inches of the structure or outside diameter of the pipe. Frequency may be reduced to 1 per 200 lineal feet for electrical conduits when approved by Regional Quality Assurance Engineer (RQE) or Regional Materials Engineer (RME). 4) Perform Plasticity Index (P.I.) tests on the first five acceptance samples at the start of production from any source. If these tests indicate the material to be non-plastic, additional acceptance tests need only be performed when IA samples are taken. The RQE or RME may reduce the number of tests required if the source is known to have no value for liquid limit and be non-plastic. 5) See the specified test method for minimum sample size. 6) For large unclassified embankments, a field density and gradation testing frequency of 1/10,000 CY or 1/20,000 Tons is acceptable subject to the approval of the RQE, RME or Statewide Materials Engineer (SME).					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Subbase Course	Source Quality	150 lbs.	L.A. Wear, Micro-Deval	1 per source prior to use or as required based on change in material	Allow minimum of 14 days for transport and testing. Number consecutively Q-SB-1 or Q-SC-1
	Acceptance	(6)	Standard Density	1 per source and as required based on change in material	Number consecutively SB-SD-1
			Field Density (1)	1 per 1,000 CY or 1 per 2,000 Tons	Number consecutively SB-D-1
			Gradation, L.L. P.I. (3), Deleterious	1 per 2,500 CY or 1 per 5,000 Ton (3)	Number consecutively SB-G-1
	Independent Assurance	(6)	Standard Density (2)	1 per source	Use numbers that correspond to acceptance samples. Include field test results with sample.
			Field Density (1)	1 per 10,000 CY or 1 per 20,000 Tons	
			Gradation, L.L., P.I. (3), Deleterious,	1 per 25,000 CY or 1 per 50,000 Tons	
Crushed Aggregate Base Course	Source Quality	150 lbs.	L.A. Wear, Micro-Deval , Soundness, Nordic Abrasion (7),	1 per source prior to use or as required based on change in material	Allow minimum 14 days for transport and testing. Number consecutively Q-BC-1
	Acceptance	(6)	Standard Density	1 per source and as required based on change in material	Number consecutively BC-SD-1
			Field Density (1)	1 per 200 CY or 400 Tons	Number consecutively BC-D-1
			Gradation, L.L., P.I. (3), Fracture, SE, Deleterious,	1 per 400 CY or 1 per 800 Tons (3) (4) (5)	Number consecutively BC-G-1
	Independent Assurance	(6)	Standard Density (2)	1 per source	Use numbers that correspond to acceptance samples. Include field test results with sample
			Field Density (1)	1 per 2,000 CY or 1 per 4,000 Tons	
			Gradation, L.L., P.I. (3), Fracture, SE, Deleterious	1 per 4,000 CY or 1 per 8,000 Tons	

- 1) If material is impractical to test for field density, document quantity and/or area by reporting percent oversize and compactive effort used on a proper density acceptance form. IA density testing is not required when material (as shown by gradation testing) is Too Coarse to Test (TCTT).
- 2) Required when Standard Density is performed in project laboratory.
- 3) Perform Liquid Limit (L.L.) and Plastic Index (P.I.) tests on the first five acceptance samples at the start of production from any source. If these tests indicate the material to be non-plastic, additional acceptance tests need only be performed when IA samples are taken. The RQE or RME may reduce the number of tests required if the source is known to have no value for liquid limit and be non-plastic.
- 4) Perform fracture tests on the first ten acceptance tests. If these tests indicate the fracture to be 5% or more above specification, additional acceptance tests need only be performed when IA samples are taken.
- 5) Perform Sand Equivalent (SE) tests on the first five acceptance tests. If these tests indicate the material meets specification, additional acceptance tests need only be performed when IA samples are taken. The SE test is not required for Aggregate Surface Course.
- 6) See the specified test method for minimum sample size.
- 7) Include Nordic Abrasion testing of source material. Report test results to Statewide Materials section.

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Aggregate Surface Course	Source Quality	150 lbs.	L.A. Wear, Micro-Deval Soundness, Nordic Abrasion (7),	1 per source prior to use or as required based on change in material	Allow minimum 14 days for transport and testing. Number consecutively Q-SC-1
	Acceptance	(6)	Standard Density	1 per source and as required based on change in material	Number consecutively SC-SD-1
			Field Density (1)	1 per 500 CY or 1 per 1,000 Tons	Number consecutively SC-D-1
			Gradation, L.L., P.I. (3), Fracture, Deleterious,	1 per 1,000 CY or 1 per 2,000 Tons (3) (4)	Number consecutively SC-G-1
	Independent Assurance	(6)	Standard Density (2)	1 per source	Use numbers that correspond to acceptance samples. Include field test results with sample
			Field Density (1)	1 per 5,000 CY or 1 per 10,000 Tons	
			Gradation, L.L., P.I. (3), Fracture, Deleterious	1 per 10,000 CY or 1 per 20,000 Tons	
1) If material is impractical to test for field density, document quantity and/or area by reporting percent oversize and compactive effort used on a proper density acceptance form. IA density testing is not required when material (as shown by gradation testing) is Too Coarse to Test (TCTT). 2) Required when Standard Density is performed in project laboratory. 3) Perform Liquid Limit (L.L.) and Plastic Index (P.I.) tests on the first five acceptance samples at the start of production from any source. If these tests indicate the material to be non-plastic, additional acceptance tests need only be performed when IA samples are taken. The RQE or RME may reduce the number of tests required if the source is known to have no value for liquid limit and be non-plastic. 4) Perform fracture tests on the first ten acceptance tests. If these tests indicate the fracture to be 5% or more above specification, additional acceptance tests need only be performed when IA samples are taken. 5) Perform Sand Equivalent (SE) tests on the first five acceptance tests. If these tests indicate the material meets specification, additional acceptance tests need only be performed when IA samples are taken. The SE test is not required for Aggregate Surface Course. 6) See the specified test method for minimum sample size. 7) Include Nordic Abrasion testing of source material. Report test results to Statewide Materials section.					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Plant Hot Mix Asphalt and Asphalt Treated Base Course	Source Quality	150 lbs. Aggregate	L.A. Wear, Micro-Deval , Sodium Sulfate Loss, Nordic Abrasion (10)	1 per source prior to use or as required based on change in material	Allow 25 days for transport and testing.
	Mix Design	500 lbs. Aggregate (7)	Mix Design (1) (2) L.L., P.I. (3), Fracture, Sand Equivalent (SE), Flat & Elongated (F&E),	1 per source and as required based on change in material	Allow 15 days or contract specified time for mix design and testing after receiving contractor's proposed gradation. AB = asphalt binder, same as asphalt cement. If possible sample AB at the plant for the Mix Design.
		5 one gallon. cans of AB,			
		1 pint of Anti-strip			
	Acceptance	(8)	MSG (Maximum Specific Gravity)	1 per Lot (1) (9)	(1) From Mix Design on first lot and then from the first subplot of each additional lot
			Mat Density, Gradation, Binder Content, L.L., P.I. (3), Fracture, F&E, SE, Deleterious, Thickness	1 per subplot (3) (4) (5) (6) (9)	Ross Count (AASHTO T 195, Coating Test) as required by RQE or RME.
			Joint Density	(9)	Top Lift (1)
	Independent Assurance	(8)	MSG	1 per project minimum (1)	Required when MSG is run in the field.
			Mat Density, Gradation, Binder Content, L.L., P.I. (3), Fracture, F&E, SE	1 per 10 sublots	Use numbers that correspond to acceptance samples. Include field test results with sample.
	Information	30 lbs.	3-Marshall Biscuits or 2-gyratory samples	1 per Mix Design minimum	Compare results to Mix Design.
1) Refer to project specifications. 2) Recommendations regarding anti-strip requirements must be determined for each mix design. 3) Perform Liquid Limit (L.L.) and Plastic Index (P.I.) tests on the first five acceptance samples at the start of production from any source. If these tests indicate the material to be non-plastic, additional acceptance tests need only be performed when IA samples are taken. The RQE or RME may reduce the number of tests required if the source is known to have no value for liquid limit and be non-plastic. 4) Perform fracture tests on the first ten acceptance tests. If these tests indicate the fracture to be 5% or more above specification, additional acceptance tests need only be performed when IA samples are taken. 5) Perform Sand Equivalent (SE) tests on the first five acceptance tests. If these tests indicate the material meets specification, additional acceptance tests need only be performed when IA samples are taken. 6) Perform Flat and Elongated (F&E) tests on the first five acceptance samples from any source. For known sources, the RQE or RME may waive this requirement. 7) For multiple stockpiles, proportion each stockpile sample to the proposed Job Mix Design blend ratio. 8) See the specified test method for minimum sample size. 9) May not be applicable to Asphalt Treated Base Course. Refer to project specifications. 10) Include Nordic Abrasion testing of source material. Report test results to Statewide Materials section.					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Asphalt Binder	Source Quality	(1)	(1)	1 per each grade and source prior to use	Manufacturer's certification required
	Acceptance (1)	Three 1-quart cans		1 per 50,000 gals. or 1 per 200 Tons	Sampled on project. Test for anti-strip if required by RQE or RME.
Liquid Asphalt for: a) Prime Coat b) Tack Coat c) Seal Coats d) Asphalt Surface Treatment	Source Quality	(1)	Type and Grading	1 per each grade and source prior to use	Manufacturer's certification required
	Acceptance	1-1 gallon plastic jug (for emulsified asphalt)	(1)	1 per 50,000 gallons or 1 per 200 Tons	Sample must be tested by Lab that did not test material for Quality. Material sampled prior to dilution
Aggregate for Seal Coats and Asphalt Surface Treatments	Source Quality	150 lbs. Aggregate	Fracture, F&E, L.A. Wear, Soundness, Micro-Deval	1 per source prior to use or as required by change in material prior to use	Allow 25 days for transport and testing.
	Acceptance	(4)	Gradation, Fracture, F&E, Deleterious (visual)	1 per 500 Tons (2) (3)	May be taken from stockpile or production
	Independent Assurance		Gradation, Fracture, F&E, Deleterious (visual)	1 per 5,000 Tons	May be taken from stockpile or production
1) Refer to project specifications. 2) Perform fracture tests on the first ten acceptance tests. If these tests indicate the fracture to be 5% or more above specification, additional acceptance tests need only be performed when IA samples are taken. 3) Perform Flat and Elongated (F&E) tests on the first five acceptance samples from any source. For known sources, the RQE or RME may waive this requirement. 4) See the specified test method for minimum sample size.					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Portland Cement Concrete	Source Quality				
a. Cement and Cementitious	Quality	a. Two 1-gal. cans, each	See Remarks	1 per shipment (2) (4)	Allow 40 days for transport and testing. Manufacturer's certification required
b. Water		b. ½ gal. in glass jar	See Remarks	1 per source	Allow 20 days for testing or potable water accepted by Project Engineer.
c. Coarse Aggregate		c. 100 lbs.	Deleterious Substances, L.A. wear, Soundness	1 per source	Allow 25 days for transport and testing.
d. Fine Aggregate		d. 25 lbs.	Deleterious Substances, Soundness	1 per source	Allow 25 days for transport and testing.
Portland Cement Concrete	Mix Design Submittal (1) (3)				
a. Cement and Cementitious	Mix Design	a. 94 lbs., each	Mix Design Verification as required by RQE or RME	1 per source prior to use	For verification of Contractor-furnished mix design, allow 40 days for transport and testing.
b. Water		b. None			
c. Coarse Aggregate		c. 330 lbs.			
d. Fine Aggregate		d. 220 lbs.			
e. Admixtures		e. 1 qt. each			
1) Refer to project specifications. 2) Cement stored in silos or bins over six months, or in bags over three months, may require re-testing. See project specifications. 3) Manufacturer's certifications and aggregate test reports required. 4) Manufacturer's Certification for cement used on project may be accepted in lieu of sampling as approved by the RQE or RME.					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Concrete Continued:					
Coarse Aggregate	Acceptance	(5)	Gradation and Deleterious (visual)	1 per 200 CY (6)	Number consecutively CA-G-1
Fine Aggregate			Gradation, Deleterious (visual), Fineness Modulus	1 per 200 CY (6)	Number consecutively FA-G-1
Mix		As required by test method	Temperature, Slump, % Air, Water/Cement Ratio, Unit Weight, Yield, Proportions per CY	1 per ½ days pour (2) or 1 per 200 CY	(3)
		Cylinders or beams	Compressive strength or Flexural strength (1)	1 per ½ days pour (2) or 1 per 200 CY	Mold two (6"x12") or three (4"x8") cylinders or 2 (6"x6"x20") beams. Test at 28 days. (1) (4)
	Information	Cylinders or beams	Compressive strength or Flexural strength	As required (e.g. for 7 day break)	Mold two (6"x12") or three (4"x8") cylinders or 2 (6"x6"x20") beams "As Required" for Strength Data.
Coarse Aggregate	Independent Assurance	(5)	Gradation and; Deleterious (visual)	1 per 2,000 CY with minimum of 1 per project if over 100 CY is placed (6)	Use numbers that correspond to acceptance samples. Include field test results with sample.
Fine Aggregate			Gradation, Deleterious (visual), Fineness Modulus		
Mix		As required by test method	Temperature, Slump, % Air, Water/Cement Ratio, Unit Weight, Yield, Proportions per CY	1 per 2,000 CY	Mold two (6"x12") or three (4"x8") cylinders or 2 (6"x6"x20") beams.
		Cylinders or beams	Compressive strength or Flexural strength	1 per 2,000 CY	
1) Refer to project specifications. 2) Half day's pour considered to be 6 hours or less. 3) Commercial sources which are periodically inspected do not have to be tested if day's total quantity of concrete placement is less than 5 CY as determined by the Project Engineer. Placement reports summarizing all minor pours will be completed. 4) For non-structural or minor concrete construction, as determined by the RQE or RME, 1 set minimum per project is recommended. 5) See the specified test method for minimum sample size. 6) For known Commercial sources that are periodically inspected, the RQE or RME may reduce the frequency of sampling and testing to 1 per project per mix design.					

Material	Type of Sample	Sample Size	Type of Tests	Frequency	Remarks
Misc. Hardware	Source Quality	(1)		1 per pay item or assembly, min.	Approved by designated authority; reference MCL
Concrete Reinforcing Steel	Source Quality	(2)		1 for each type, grade and size in a shipment	Approved by designated authority; reference MCL
Joint Sealer, Joint Filler, and Curing Materials for Concrete	Source Quality	1 Quart for each liquid (see remarks)	See remarks (1)	1 per type	Project Engineer documentation if on QPL. If not on QPL, manufacturer's certification or sample for testing.
Porous Backfill	Source Quality	(3)	Clay Lumps, Deleterious	1 per source (4)	
	Acceptance		Gradation, Deleterious (visual)	1 per source or as required based on change in material	Number consecutively PB-G-1
Topsoil	Source Quality	15 lbs.	Organic content, Gradation, pH	1 per source prior to use or as required by change in material	Allow 15 days for transport and testing.
	Acceptance	(3)	Gradation	1 per 15,000 SY or 1 per 2,500 CY	Number consecutively TS-G-1
Signals and Lighting	Quality and Acceptance	Within 30 days following award of the contract, the contractor shall submit to the Project Engineer for approval a complete list of material and equipment that is proposed to be used for this item. The data shall include catalog cuts, diagrams, test reports, manufacturers' certifications, etc. The above data shall be submitted in eight sets. Any proposed deviation from the plans shall also be submitted.			
1) Certificates of Compliance per Specifications GCP- 60. 2) Mill Test Reports to include heat numbers, fabrication date, physical and chemical properties, and Buy American certification (when required by specifications). 3) See the specified test method for minimum sample size. 4) For known quarry sources, the RQE or RME may waive Clay Lumps testing if visual inspection for deleterious materials has been performed and the percent passing (by weight) the No. 200 sieve is 3% or less.					

Small Quantities of Miscellaneous Materials and Installations

If the Pay Item quantity at bid opening is equal to or less than the amounts listed below, the following applies:

1. Acceptance and Independent Assurance sampling & testing is not required.
2. Documentation required to support the Acceptance decision is:
 - I. Asphalt/Aggregate Mixtures and Bituminous Materials – Mix design and Project Materials Report (PMR).
 - II. Portland Cement Concrete – Mix design, batch tickets, Concrete Placement Report (CPR), and PMR.
 - III. Soils and Aggregates – PMR.
3. Inspection of materials and workmanship is still required.
4. Source quality testing may be required as noted below.

I. Small Quantities of Asphalt/Aggregate Mixtures and Bituminous Materials:

- a) Bituminous Material — not to exceed 85 Tons of asphalt binder or 15 Tons for other liquid asphalt.
- b) Landscaping, paved ditches and flumes -- all quantities.
- c) Temporary materials -- all quantities.

II. Small Quantities of Portland Cement Concrete:

- a) Sidewalks — not to exceed 150 Square Yards per day.
- b) Curb and gutter — not to exceed 250 Lineal Feet per day.
- c) Slope paving and headers -- all quantities.
- d) Landscaping, paved ditches and flumes -- all quantities.
- e) Catch basins, manholes, inlets, inspection holes; and grout for risers, pipes and invert channels – all quantities.
- f) Culvert headwalls for pipe diameters 48 inches or less -- all quantities.
- g) Cable markers -- all quantities.
- h) Temporary materials -- all quantities.

III. Small Quantities of Soils and Aggregates:

- a) Embankment, Borrow, Aggregates for Base Course, Surface Course, and Subbase — not to exceed 500 Tons or 250 Cubic Yards with PMR; 1,000 Tons or 500 Cubic Yards with PMR and source quality report (4).
- b) Riprap or Armor Stone — not to exceed 500 Tons or 250 Cubic Yards.
- c) Topsoil — not to exceed 600 Square Yards or 100 Cubic Yards.
- d) Temporary materials -- all quantities.

APPENDIX C

CONSTRUCTION SAFETY AND PHASING PLAN

STATE OF ALASKA

Department of Transportation

And

Public Facilities

Central Region



Construction Safety and Phasing Plan

ANC PFAS Remediation

Project No. CFAPT01228

Ted Stevens Anchorage International Airport

Anchorage, AK

Prepared by: CRW Engineering Group, Inc.

April 2025

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Airport Emergency Notification Procedure:

- **Call Airport Police & Fire Emergency:** 266-2555 (911 calls Anchorage Police)
- **State Emergency & If Aircraft or Vehicle is Involved** (accidents, collisions, injuries, fires, trespassers on airport property, etc.)
- **Give Location** (distance/direction from nearest runway, taxiway, or building)

Example:

“I need the {police or fire department} to respond to an accident involving an {aircraft, vehicle, or personnel}. The accident occurred near the intersection of Runway 25R and Taxiway A, approximately 200 feet north of Runway 25R.”

Emergency Follow up – As soon as possible notify:

266-2600 On-Duty Manager – Airport Operations Center

Contractor: 24-hour Representative

Name: _____

24-hour Phone: _____

Non-Emergency Notification:

264-2411 Airport Police, Rescue and Fire Dispatch (Non-Emergency)

Immediately notify Dispatch of any personal injury requiring medical attention or damage to Airport/State/Federal property, even when an emergency response is not required.

266-2600 On-Duty Manager – Airport Operations Center

Contractor: 24-hour Representative

Name: _____

Cell Phone: _____ Office Phone: _____

Points of Contact:**Engineer:****Frank Lee**

ADOT&PF Aviation Construction
P.O. Box 196900
Anchorage, Alaska 99519-6900
Telephone (907) 243-4169
Cellular (907) TBD
FAX (907) 243-4597

The ADOT&PF Engineer will be the central point of contact between the Contractor and Airport Operations Center and the FAA.

Airport Operations Center:**Tim Lufkin, Airport Construction Coordinator**

Ted Stevens Anchorage International Airport
P.O. Box 196960, Anchorage, Alaska 99519-6960
Office (907) 266-2615 (24 hr.)
Cellular (907) 306-5023
FAX (907) 266-2646

Zaramie Lindseth, Field Maintenance Manager

Ted Stevens Anchorage International Airport
P.O. Box 196960, Anchorage, Alaska 99519-6960
Office (907) 266-2427
Cellular (907) 748-2302
FAX (907) 266-2677

Dennis Deering, Field Electrician

Ted Stevens Anchorage International Airport
P.O. Box 196960, Anchorage, Alaska 99519-6960
Office (907) 266-2423
Cellular (907) 748-2310
FAX (907) 266-2122

Security Contact Phone Numbers:

Airport Security Manager: (907) 782-5419

Airport Operations: (907) 266-2600

Airport Badge Office: (907) 266-2409

Airport Communications Center: (907) 266-2415

Due to the ever-changing nature of security requirements, please contact the Airport Security Manager at 266-2522 for any clarification you may need.

FAA:

Daniel Wight, ATO Engineering Services

Office (206) 231-2615

Joe Ferguson, FAA Engineering Services (AJW2-W13B), Fiber Optic System Engineer

Office (303) 342-1817

Cellular (303) 898-0736

David Osborne, Turnagain System Support Manager (Turnagain SSC)

Office (907) 271-2216

Cellular (907) 538-2604

Thomas Bradley, Anchorage SSC Manager

Office (907) 271-6748

Cellular (907) 351-9987

ATCT Watch Supervisor

Office (907) 271-6549

FAA Anchorage SSC

Office (907) 271-6783

FAA Turnagain SSC

Office (907) 271-6780

FAA Operations Control Center (OCC)

(866) 4-FAA-OCC

FAA Network Enterprise Management Center System Operations Center (NEMC SOC)

(855) 322-6362

FAA Anchorage Service Operations Center

(907) 269-1803

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List of Acronyms

AC	Advisory Circular ACS
.....	Alaska Communications
ACSI	Airport Certification Safety Inspector
ANC	Ted Stevens Anchorage International Airport
AOA	Airport Operations Area
ARFF	Aircraft Rescue and Fire Fighting
ASDE	Airport Surface Detection Equipment
ASSC	Airport Surface Surveillance Capability
ATCT	Air Traffic Control Tower
ATO	Air Traffic Organization
AWSS	Automated Weather Sensor System
AWWU	Anchorage Water & Wastewater Utility
BMP	Best Management Practices CEA
.....	Chugach Electric Association Inc.
CFR	Code of Federal Regulations
CONUS	Continental United States
CPM	Critical Path Method
CSPP	Construction and Safety Phasing Plan
CTAF	Common Traffic Advisory Frequency
DOT&PF	State of Alaska Department of Transportation and Public Facilities
FAA	Federal Aviation Administration
FOD	Foreign Object Debris
GCP	General Contract Provision
HAZMAT	Hazardous Material
NAVAIDs	Navigational Aids
NEMC SOC	Network Enterprise Management Center System Operations Center
NOTAM	Notice to Air Missions
NTP	Notice to Proceed
OCC	Operations Control Center
OFA	Object Free Area
OFZ	Obstacle Free Zone
OSHA	Occupational Safety and Health Administration
PAPI	Precision Approach Path Indicator
P&R	Planning & Requirements
RA	Reimbursable Agreement
REIL	Runway End Identifier Light
ROFA	Runway Object Free Area
ROFZ	Runway Obstacle Free Zone

RSA.....	Runway Safety Area
RW	Runway
SPCD.....	Safety Plan Compliance Document
SREB.....	Snow Removal Equipment Building
SSC	System Service Center
SWPPP	Storm Water Pollution Prevention Plan
TL.....	Taxilane
TOFA	Taxiway Object Free Area
TSA	Taxiway Safety Area
TW	Taxiway
UNICOM	Universal Integrated Community
VGSI	Visual Glide Slope Indicator
WSA.....	Western Service Area

Introduction

Ted Stevens Anchorage International Airport (ANC) is state owned and operated and serves as the primary air transportation facility in Alaska. Based on operation totals from 2018-2019 taken from the current ANC Airport Master Report, approximately 717 aircraft operations are conducted daily serving aircraft ranging in size from small propeller driven aircraft to large commercial jet aircraft. The airport operates two parallel east/west runways: Runway (RW) 7L/25R (10,600 feet) and RW 7R/25L (12,400 feet). It also has one north/south runway: RW 15/33 (10,865 feet).

This Construction Safety and Phasing Plan (CSPP) is for use during the ANC PFAS Remediation project. It has been prepared in conformance with the Alaska Department of Transportation and Public Facilities (DOT&PF) Aviation Preconstruction Manual, Federal Aviation Administration (FAA) Standard of Practice 2.0 (SOP 2.0), and FAA Advisory Circular (AC) 150/5370-2G Operational Safety on Airports During Construction (Safety AC). The Safety AC may be downloaded here:

https://www.faa.gov/airports/resources/advisory_circulars/

This Safety AC mandates the format and content of both the CSPP and the Safety Plan Compliance Document (SPCD). The CSPP is to be used as the basis for the Contractor to develop their SPCD for submittal to the Engineer per the provisions set forth in General Contract Provision (GCP) 80. All references to construction safety plans, security plans, and construction phasing or staging plans in the Alaska Standard Specifications for Airport Construction and the project manual refer to this CSPP and the Contractor's SPCD.

The FAA intends the CSPP and the SPCD to be "stand-alone" documents that can be circulated to the relevant sections of the FAA for review and approval within the Safety Management System. Additionally, the CSPP and the SPCD are both enforceable parts of the contract documents.

Safety and security are of paramount importance. The entire airport is an industrial site that can present potentially significant danger to the traveling public, individual workers, and property if safety and security are not carefully attended to. The purpose of this CSPP is to present information needed for safe airport operations during construction activities, to minimize disruption to operations of air and ground traffic, and to facilitate the completion of construction in the shortest time possible. Failure to comply with airport rules, regulations, and the CSPP may result in penalties, fines, and/or work stoppage.

This CSPP is intended to supply useful information to assist the Contractor in the preparation of other plans as required by the contract. Many of the topics covered in this CSPP are also addressed, often in more detail, in the contract specifications. The CSPP is not intended to contradict the specifications. If any discrepancy exists, follow the order of precedence in GCP

50-04. Work necessary to meet the requirements of the CSPP is subsidiary to the contract and no additional payment will be made.

(1) Coordination

The airport administration holds the primary responsibility for virtually all aspects of the airport's operation, safety, and security. The Contractor's point of contact with the airport is through the Engineer. The airport will provide training to the Contractor and Subcontractors to provide for proper access, airport security, radio communication, vehicle operation, and any safety procedures or precautions prior to any work beginning on airport property. Plan the first meeting with ANC Operation's Airport Construction Coordinator, through the Engineer, prior to preparing the SPCD. The SPCD must be submitted prior to the preconstruction conference.

The preconstruction conference must be conducted as soon as practicable after the contract has been awarded and before issuance of the Notice to Proceed (NTP). Sufficient time should be allowed to notify all parties so schedules can be arranged accordingly. **A 10 day minimum notification is recommended.** At the preconstruction conference, the Contractor must introduce and discuss the subject of airport operational safety during construction and the construction phasing. Safety for air operations, personnel, and the public is the highest priority. The participants will vary according to the effect the proposed construction will have on airport operations. As applicable, the sponsor should invite the following parties to participate:

- Sponsor's Engineer
- Engineer
- Airport Manager
- Contractor and Subcontractor(s)
- Contractor's project superintendent
- Contractor's project clerk
- Airport users, including airline representatives, fixed base operators, Air Line Pilots Association representative, Air Transport Association regional representative, and military representative (for joint-use airports)
- Utility companies affected by the proposed construction
- Federal, state, or local agencies affected by the proposed construction
- Representative of FAA Airports regional or field office

Coordination Through the Engineer: Whenever the project documents call for coordination, notification, contact, or other interaction with FAA; airport management; maintenance and operations; Airport Rescue and Fire Fighting (ARFF) personnel; airport tenants; airport users; any local, state, or federal agency, group, or association; or the general public, such activity shall be done through, in the presence of, or with the written approval of the Engineer. The Contractor shall allow sufficient time for coordination and approvals within proposed work schedules.

The Contractor shall plan work activities ahead of when they are needed to be performed. The airport cannot accommodate last minute requests to allow access or close portions of the active Airport Operations Area (AOA) except in emergencies. The inability of the airport, or other entities, to meet these requests shall not constitute a delay to the Contractor's work effort or entitlement to further compensation. The Contractor shall initiate coordination through the Engineer and provide schedule information.

The following are required lead times for coordination with certain groups:

Entity/Group/Agency/Organization	Lead Time for Coordination
FAA*	45 Days
Airport Operations**	14 Days
Airport Facilities	3 Days
ARFF**	14 Days
Airport Tenants/Users	45 Days
Air Carriers	90 Days

* Notifications to FAA requiring different lead times are shown in Sections 1(c) & 9(e).

** Any issue involving airport safety or security, and all emergencies or accidents require immediate notification.

(a) Contractor Progress Meetings

Construction progress meetings must be held throughout the duration of the project on a coordinated schedule. At a minimum, required attendees will include the Airport Manager, the Engineer, the Contractor, and Subcontractors. Representatives from the following may also be invited to attend:

- FAA Air Traffic Organization (ATO) Engineering Services Engineer
- ANC Air Traffic Control
- ANC ARFF Department
- Airport Operations and Security
- Airport Facilities
- Airport Engineering
- Airport Maintenance
- Airport Stakeholders

Construction phasing, operational safety, security, and traffic must be a standing agenda item for discussion during progress meetings throughout the project. At these meetings, the Contractor will remind personnel of safety and security issues, requirements, and boundaries that affect their work areas.

(b) Scope or Schedule Changes

Any scope or schedule changes must be addressed in accordance with GCP 40 and GCP 80. Changes in the scope or duration of the project may necessitate revisions to the CSPP and review and approval by the airport operator and the FAA.

The Engineer will hold coordination conferences as necessary for the purpose of assuring coordination of the work covered by this contract and/or scope or schedule changes. The Contractor must attend all such conferences and address the effects on the approved CSPP.

The Contractor will develop a Critical Path Method (CPM) schedule according to the requirements in G-300. The goal of the schedule is to facilitate construction activities while maintaining Airport Operations to the fullest extent possible.

An acceptable schedule must be based on the following operational constraints and mitigation efforts:

- Aircraft operations must continue day and night.
- Aircraft access for all taxiways and taxilanes in and around the project area must be maintained except where described in this CSPP and the CSPP drawings.
- All efforts must be made to minimize impacts to airport operations.

(c) FAA ATO Coordination

Early coordination with FAA ATO is required to schedule airway facility shutdowns and restarts. Relocation or adjustments to the Navigational Aids (NAVAIDs) and changes to final grades in NAVAID critical areas will require an FAA flight inspection prior to restarting the facility. Flight inspections must be coordinated and scheduled well in advance of the intended facility restart. **Ten (10) days prior to the flight inspection, the runway centerline and must be painted and the RSA must be clear.**

The Contractor shall notify the FAA ATO Planning and Requirements (P&R) Western Service Area (WSA) office (through the Engineer) at least 45 days prior to the physical construction start date, runway closures (partial or full), re-opening a closed runway, displacing a runway threshold, or implementing an event that causes impacts to NAVAIDs by emailing an “Airport Sponsor Strategic Event Submission Form” including all date, time and/or duration changes via email to 9-AJV-SEC-WSA@faa.gov. Daniel Wight is the FAA ATO Engineering services contact (206) 231-2615 (office).

The Contractor shall notify the FAA Turnagain Systems Service Center (SSC) Manager Myles Peterson, (through the Engineer), at (907) 271-2216 (office) at least 30 days prior to any impacts to the FAA NAVAIDs.

The Contractor shall notify the FAA Anchorage System Support Center (SSC) Manager, Thomas Bradley at (907) 271-6748 (office) or (907) 351-9987 (cell) and FAA Anchorage SSC Coordinator Burke Stott at (907) 271-3890 (office) or (907) 231-5503 (cell) at least 30 days prior to start of construction to institute temporary and permanent

mapping changes to the ANC Airport Surface Detection Equipment (ASDE)/Airport Surface Surveillance Capability (ASSC) system.

The Contractor shall notify the FAA Operations Control Center (OCC) prior to the start of the project in order to schedule any necessary service outages for the RW 7R & RW 7L RVR facilities at 866-4-FAA-OCC.

The Contractor shall notify the FAA Network Enterprise Management Center System Operations Center (NEMC SOC) prior to the start of the project in order to schedule any necessary service outages and/or maintenance for the ASOS at (855)-322-6362, Option #1 for an NEMC and then Option #3 for a Team Lead.

(2) Phasing

The construction schedule will be developed by the Contractor, and coordinated with and approved by the Engineer. The Contractor will propose a schedule for construction phasing to the Engineer at the preconstruction conference. This must be approved prior to commencement of any construction activities in the AOA. Advance scheduling and communication are essential to enable the Engineer to ensure all appropriate Notice to Air Missions (NOTAMs) are issued in a timely manner. To file the appropriate NOTAMs, the Contractor shall follow the procedures outlined in Section 9.b. Prior to the physical construction start date, runway closures (partial or full), re-opening a closed runway, displacing a runway threshold, or implementing an event that causes impacts to NAVAIDs, the Contractor shall follow the procedures outlined in Section 1.c.

This project includes the following scope of work:

- Remove manholes and install new manholes with 12” underdrain piping
- Remove manhole and install new manhole with canal gate.
- Install new manhole with canal gate.
- Install activated carbon barrier.

(a) Phase Elements

Contractor staging areas will be provided as shown in the CSPP drawings. For runway closures, re-opening a closed runway, or implementing an event that causes impacts to NAVAIDs, the procedures detailed in 1.c and 3.a. of this CSPP must be followed. The project is comprised of two (2) phases of work, including sub-phases, described in more detail below.

<i>Phase 1</i>	
<i>Complete Prior to Construction</i>	• Install traffic control devices • Install appropriate Best Management Practices (BMPs) per Contractors approved Storm Water Pollution Prevention Plan (SWPPP) as defined in contract specification P-641
<i>Complete During Construction</i>	• Remove existing fencing as required • Clearing of existing vegetation • Install new manholes • Install geotextile, subbase, active carbon backfill, drainage pipe, and riprap • Rehabilitate storm drain system
<i>Complete After Construction</i>	• Temporary stabilize work areas • Remove traffic control devices • Remove BMPs

<i>Phase 2</i>	
<i>Complete Prior to Construction</i>	• Install traffic control devices • Install BMPs per Contractor approved SWPPP
<i>Complete During Construction</i>	• Install manholes with canal gates • Topsoil and see all disturbed area
<i>Complete After Construction</i>	• Remove traffic control devices • Remove BMPs

(b) Construction Phasing and Safety Drawings

The CSPP drawings are included in Appendix C of the construction plan set.

(3) Areas and Operations Affected by the Construction Activity

Runways and taxiways should remain in use by aircraft to the maximum extent possible without compromising safety.

(a) Identification of Affected Areas

There will be runway, taxiway, and taxilane closures at different times during construction. Runway closure markers and hazard marker barriers must be placed to limit access to the active construction areas. The hazard marker barriers must be lighted when dark to prevent aircraft from inadvertently entering areas closed for construction. See the CSPP drawings and GCP 70-09 for additional information. The construction staging areas and haul routes are shown in the CSPP drawings.

Table 3.1 below identifies the areas affected by this construction project. Areas affected in the table below do not account for instances when phases are allowed to be done concurrently. The Contractor is required to coordinate with Airport Operations through the Engineer prior to making changes to the project site that will impact operations on the airport.

Table 3.1 Areas Affected

Area	Phase	
	1	2
Tug Road	Open	Open
Dehavilland Avenue	Open	Open
Postmark Drive	Open	Open

Table 3.2 below shows the area to be protected along the runway edges for each phase. These RSA dimensions are depicted on the CSPP plans for each applicable phase. The Contractor shall not enter the RSA of any active runway without prior coordination with Airport Operations and communication with air traffic control via ground frequency.

Table 3.2 Runway Edge Protection

Runway	Phase	Aircraft Approach Category (AAC)	Airplane Design Group (ADG)	RSA Width From RW CL
N/A	All Phase	N/A	N/A	N/A

Table 3.3 below shows the area to be protected before the runway threshold for each phase. These approach protection areas are shown on the CSPP plans for each applicable phase. The Contractor shall not place stockpiles or store materials or fuel in the runway approach protection area of any active runway.

Table 3.3 Runway Threshold Protection

Runway	Phase	AAC	ADG	RSA Prior to the Threshold	RW Approach & Departure Surface Slopes*
N/A	All Phases	N/A	N/A	N/A	N/A (Approach)
					N/A (Departure)

*Departure surface slope starts at the RW threshold. Approach surface slope starts at the primary surface edge, 200' beyond the RW threshold.

(b) Mitigation of Effects

The Contractor will appoint a Safety Officer who will be the primary point of contact for all safety issues including worker and airfield safety. The Safety Officer will have the authority to immediately direct Contractor and Subcontractor personnel and equipment to evacuate an area or otherwise address a potentially unsafe situation. The Safety Officer will inspect the jobsite daily for compliance with safety requirements. All State, Contractor, and Subcontractor personnel must be instructed to remain alert for situations which could negatively impact the safety of air operations or the safety of personnel or the public. When an unsafe situation or condition is identified, regardless of the source, immediate action must be taken to create a safe and healthy environment.

The Contractor will maintain a 24-hour point-of-contact for safety issues that arise, requiring immediate attention. This duty may be shared by more than one person as long as the personnel are identified to the Engineer in writing. These personnel must have the power to immediately take action involving Contractor personnel and equipment.

Ensure that all lighting systems, telecommunications, and control cables remain in operation continuously throughout the construction period except as noted in the plans and specifications. Facilities that are directly related to work items for this project may be placed out of service only as long as necessary to make the alterations shown in the plans.

(4) Navigation Aid (NAVAID) Protection

NAVAIDs provide visual and electronic information which is used by pilots who operate and land aircraft at the airport. Construction activities can have negative impacts on the functionality and serviceability of NAVAIDs. The Contractor must coordinate their work efforts and limit their operations so that NAVAIDs are not impacted beyond what is planned, see Table 4.1 below. Planned NAVAID impacts must be addressed in the Contractor's construction schedule.

Table 4.1 NAVAID Facility Impacts

NAVAID	Phase Impacted	Impact
None	None	No impacts to NAVAIDs are anticipated.

Before commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID, coordinate with the appropriate FAA ATO/Technical Operations office to evaluate the effect of the construction activity and the required distance and direction from the NAVAID. See Section 9.e.3 for additional information.

Construction activities/equipment storage, and vehicle parking near electronic NAVAIDs require special consideration since they may interfere with signals essential to air navigation. If any NAVAID may be affected, the CSPP and SPCD must show an understanding of the "critical area" associated with each NAVAID and describe how it will be protected. Pay particular attention to stockpiling material, as well as to movement and parking of equipment that may interfere with line of sight from the Air Traffic Control Tower (ATCT) or with electronic emissions. Interference from construction equipment and activities may require NAVAID shutdown or adjustment of instrument approach minimums for low visibility operations. This condition requires that a NOTAM be filed.

Underground utilities serving these NAVAIDs must also be protected. See Section 11 for additional information about the underground utilities.

Construction activities and material/equipment storage near a NAVAID must not obstruct access to the equipment and instruments for maintenance. **Submittal of a 7460-1 form is required for construction vehicles operating near FAA NAVAIDs, see Section 9.e.1 of this CSPP.**

To file the appropriate NOTAMs, the Contractor shall follow the procedures outlined in Section 9.b below. Prior to the physical construction start date, runway closures (partial or full), re-opening a closed runway, displacing a runway threshold, or implementing an event that causes impacts to NAVIDS, the Contractor shall follow the procedures outlined in Section 1.c above. For unplanned or emergency (short-notice) impacts to FAA facilities/ NAVAIDs contact FAA Anchorage Service Operations Center (SOC) (907) 269-1803.

(5) Contractor Access

This section will detail the areas in which the Contractor will have access and explain how Contractor personnel will access those areas.

(a) Location of Stockpiled Construction Materials

The Contractor is limited to placement of stockpiled material in the staging areas or within the work limits as shown in the CSPP drawings. Stockpiled materials or equipment are not permitted within an active RSA, ROFA, ROFZ, TOFA, or TSA. **The Contractor must receive approval from FAA, through submittal of Form 7460-1, and the Engineer prior to locating stockpiles or equipment within an active ROFA or TOFA; see Section 9.e.1 of this CSPP.** The RSA, ROFZ, ROFA, TSA, and TOFA dimensions are described below in Section 17 of this CSPP.

Stockpiled materials and equipment adjacent to the active areas described above must be prominently marked and lighted during hours of restricted visibility or darkness. See Section 16 below for additional information.

To not create an obstacle hazard for active runways or taxiways, material stockpile heights must be limited to 15 feet unless limited by a more restrictive maximum height, such as for runway obstacle limitations or ATCT or aircraft line-of-sight requirements, etc.

All fuel storage and filling operations must occur in a staging area approved by the Engineer. All material deliveries shall be received in the Contractor's staging area. No delivery trucks will be allowed access to a secured area of the airport beyond the staging area.

Stockpiling of material must be performed in a manner to protect from water or wind erosion. The Contractor must follow the Storm Water Pollution Prevention Plan (SWPPP) for these protection measures. The Contractor shall ensure materials are stabilized and stored at an approved location to prevent hazards to aircraft operations, prevent attraction of wildlife, and prevent foreign object debris (FOD). See Sections 6 and 7 below for additional information.

(b) Vehicle and Pedestrian Operations

Vehicle and pedestrian access routes for airport construction projects must be controlled to prevent inadvertent or unauthorized entry of vehicles, pedestrians, or wildlife onto the AOA. Vehicle operators must have an appropriate level of knowledge of airport rules and regulations. All vehicles operators and pedestrians must:

- Obey state laws.
- Heed posted signs and traffic markings.
- Be familiar with and heed airfield signs, barriers, markings, and lighting, including edge lights and markings, hold short lines, and hazardous area barriers, markings and lighting.
- Obtain clearance from ATCT Ground Control before entering or operating within runway or taxiway safety areas.
- Obtain clearance to cross a runway or taxiway. Confirm by personal observation that no aircraft are approaching when given clearance to cross.
- Yield the right of way to moving aircraft and responding emergency vehicles and equipment. Be aware that pilots have poor visibility of objects and vehicles on the ground.
- Watch for slow moving vehicles, aircraft in tow, and vehicles parked in unusual places.
- Understand the dangers of jet blast and prop wash.
- Understand that roads on some areas of the airfield are designated using only painted pavement markings.
- Persons that are found not complying with airport driving rules will no longer be allowed to operate vehicles on the airport.

It is recommended that the Contractor post the “Best Practices” for vehicle drivers and place the “FAA Guide to Ground Vehicle Operations” in each vehicle. These may be downloaded through the Runway Safety Program Website:

https://www.faa.gov/airports/runway_safety/vehicle/.

Flaggers will be utilized as follows and flagger positions may be adjusted as conditions warrant:

- At each position shown in the plans or at an alternate location as directed by the Engineer.
- Where construction activity is being conducted in close proximity to operating aircraft and the Engineer determines that a flagger is needed.
- Where gates not manned by Airport Security are used for haul or other construction access.
- To protect the safety of the public where construction traffic is passing through populated areas.
- To maintain vehicular traffic on an existing road, street, or highway during construction activities.
- Anytime the Engineer determines a flagger is needed to enhance safety.

Flaggers must also:

- Be trained by the Contractor on the location and dimensions of the RSA, TSA, OFA, and OFZ and know how to immediately evacuate these areas for aircraft use.

Provide each airport flagger with a two-way radio to contact construction equipment and other airport flaggers on the project.

Duties of flaggers or other persons positioned at gates not manned by Airport Security include vehicle access, pedestrian control, hazardous condition reporting, and wildlife control. These persons shall be instructed by Airport Operations in the proper procedures and identification requirements for persons and vehicles. Typically pedestrians would be limited to construction employees whose vehicles must be parked outside the AOA. These procedures are specific to each contract and may change during different phases of the contract.

Watch for moose or other wildlife in the vicinity of open gates. If a breach of the AOA by wildlife appears imminent, close gates and notify Airport Operations via the Airport Operations frequency.

(1) Construction site parking

Vehicle parking for Contractor employees shall be in designated employee parking areas shown in the plans or other areas as approved by the Engineer. Do not park vehicles on grassy unimproved surfaces. Do not park vehicles within 15 feet of any roadway or within 6 feet of any airport fence.

(2) Construction equipment parking

Park and service all construction vehicles in designated staging areas or other areas as approved by the Engineer. Do not park vehicles or equipment in the RSA, TSA, OFA, or OFZ. Do not stage motorized equipment on dirt surfaces in the staging area without a drip pan. Unless a complex setup procedure makes movement of specialized equipment infeasible, inactive equipment must not be parked on a closed taxiway or runway. If it is necessary to leave specialized equipment on a closed taxiway or runway at night, the equipment must be well lighted. Park vehicles or equipment outside the OFA when not in use by construction personnel. Parked vehicles or equipment must not obstruct the clear line of sight by the ATCT to any taxiways or runways under air traffic control nor obstruct any runway visual aids, signs, or navigational aids.

(3) Access and haul roads

The access/haul routes on airport property are designated on the CSPP drawings. Contractor access and hauling operations are strictly limited to the access/haul routes shown in the plans. Every truck must possess a copy of the designated haul routes. Construction vehicles and equipment must remain confined to the approved haul routes and work areas as directed by the Engineer. Access routes used by Contractor vehicles must be clearly marked to prevent inadvertent entry to areas open to airport operations. If any construction traffic is to share or cross ARFF routes, construction employees must

pay special attention to ensure ARFF routes are not impeded at any time. Construction traffic must not interfere with NAVAIDs or approach surfaces of operational runways. Construction for other projects may be occurring concurrently. Ensure that access is also maintained for these projects according to the instructions of the Engineer.

The Contractor may not impede, modify or control traffic flow outside airport boundaries without a Traffic Control Plan approved by the Engineer. Such activities must follow all applicable federal, state, and municipal statutes and regulations.

The Contractor is responsible for any improvements and maintenance of haul routes as needed to efficiently perform construction activities. Following construction completion, the Contractor is required to restore haul routes to original or better condition. Provide water or other dust palliative and appropriate distribution equipment, as required, for dust control on the haul route surfaces and in the work areas.

(4) Marking and lighting of vehicles

Each Contractor licensed vehicle must display a company logo on both sides and a temporary ramp permit as issued and instructed by the Airport Badge Office. Each vehicle must also have a yellow flashing light affixed to the uppermost part of the vehicle and a 3'x3' checkered flag with 1'x1' orange and white checks. The flag must be on a staff attached to the vehicle so it is readily visible. The beacon must be visible from any direction, day and night, including from the air. Specialized construction equipment does not require signs or rotating beacons. Contractor vehicle marking and lighting is the sole responsibility of the Contractor. The airport will not provide marking or lights.

(5) Description of proper vehicle operations

Traffic crossing active movement areas must be controlled either by two-way radio with the ATCT, escort, flagman, or signal light.

Vehicles and pedestrians must yield the right of way to moving aircraft, responding emergency vehicles and equipment, and be aware that pilots have poor visibility of objects and vehicles on the ground.

(6) Required escorts

When any vehicle operator must travel over any portion of an aircraft movement or non-movement area, other than properly closed and marked areas, they shall be escorted by a vehicle operator who has received radio communication training, and drivers training on compliance with airport vehicle rules, a working aviation-band two-way radio, and prior approval from Airport Operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time.

Personnel engaged in activities involving unescorted vehicle operation on aircraft movement areas will be trained by Airport Operations to observe the proper procedures

for communications, including using appropriate radio frequencies. When operating vehicles on or near open runways or taxiways, personnel must understand the critical importance of maintaining radio contact with Airport Operations.

If authorized by the Airport, vehicle operators granted access to travel a designated haul route within the line-of sight of airport ID badged individuals with the capability to radio Airport Operations can travel the haul route unescorted. These persons will not deviate from the designated route and will not leave their vehicles in route except in an emergency.

(7) Training requirements for vehicle drivers

Personnel who drive vehicles or equipment on the apron or taxiways, or within the ROFZ and ROFA, must be trained in safety requirements. The Contractor shall have a training program in place to provide vehicle operators with the level of training necessary for their positions so they are capable of operating safely on the airside of an airport in accordance with the current version of FAA AC 150/5210-20 Ground Vehicle Operations on Airports.

(8) Situational awareness

Vehicle drivers must confirm by personal observation that no aircraft is approaching their position (either in the air or on the ground) when given clearance to cross a runway, taxiway, or any other area open to airport operations. In addition, it is the responsibility of the escort vehicle driver to verify the movement/position of all escorted vehicles at any given time.

There are a number of factors that hamper vehicle operator situational awareness. Situational awareness can decline due to fatigue, running behind schedule, incomplete communication, or degrading operational conditions. Situational awareness can be enhanced by establishing dedicated marked routes through congested areas or blind spots, or eliminating or relocating fixed objects that hinder a vehicle's line of sight.

(9) Two-way radio communication procedures

(a) General

All construction vehicles and equipment must have functioning two-way radio communication capabilities. When it is not practical to install radios in the equipment, the Contractor must provide additional personnel with radio communications in constant and immediate proximity to the equipment lacking radio equipment.

(b) Area requiring two-way radio communication with the ATCT

No two-way radio communication shall be conducted between the ATCT and the Contractor. Vehicular traffic crossing active movement areas must be controlled either by escort, flagman, or signal light.

(c) Frequencies to be used

When operating vehicles on or near open runways or taxiways, personnel must maintain radio contact with Airport Operations and the ATCT as required using the following frequencies:

ATCT	118.3 MHz
Ground Control (GC).....	121.9 MHz
Emergency.....	121.5 MHz

To monitor weather, use the following frequency:

Anchorage (ANC) Center	124.5 MHz
ASOS.....	118.4 MHz

(d) Proper radio usage

Personnel in communication with pilots must be trained, by the Contractor, in proper radio usage and read back requirements

(e) Proper phraseology

Personnel in communication with pilots must be trained, by the Contractor, in radio phraseology, including the International Phonetic Alphabet as required.

(f) Light gun signals

Even though radio communication is maintained, escort vehicle drivers must also familiarize themselves with ATCT light gun signals as required in the event of radio failure described below:

Steady Green	Cleared to cross, proceed, or go
Flashing Green	Not applicable to vehicles
Steady Red.....	STOP
Flashing Red.....	Clear the taxiway/runway
Flashing White	Clear the taxiway/runway
Alternating Red/Green	Clear the taxiway/runway

(10) Maintenance of the secured area of the airport

More detailed security information and requirements are included in Section 70-21 of the contract documents.

(a) Fencing and gates

The Contractor is responsible for preventing unauthorized access to the AOA by way of the construction site and is responsible for maintaining, as a minimum, a six (6) foot clear zone on both sides of any perimeter fence line affected by the Contractor or any authorized representative. This includes maintaining ANC perimeter gates and doors in either a locked condition or attended by appropriately badged persons who ensure that only authorized personnel or vehicles are admitted through them into the AOA. Those persons designated to control access points into the AOA shall be instructed by Airport Operations in the proper procedures of identification requirements for persons and vehicles. These procedures are specific to each contract and may change during different phases of the contract. The Contractor will provide these persons with the capability to communicate directly with Airport Operations and/or Airport Dispatch. Ensure personnel assigned to access authorization or perimeter guard duties are properly trained and alert to security concerns and procedures. Where the Contractor has the responsibility of monitoring gates and entry points, restrict access to the AOA to only authorized persons and vehicles.

(b) Badging Requirements

The Transportation Security Administration requires ANC to control access and prevent unauthorized persons from entering the AOA. In compliance with this requirement, the airport operator has established procedures to authorize or deny access to the AOA and to identify and control persons while in these areas.

The Airport Identification Badge, developed and adopted by ANC, is the only identification system recognized as authority to enter the Security Identification Display Area (SIDA) and Customs Sterile Areas of the airport. Only persons identified by this system have permitted access. All Airport Identification Badges must be worn on the outermost garment above the waist.

An individually-assigned Airport Identification Badge will be used by each Contractor employee granted access to the airport SIDA, Sterile Area, or other airport restricted areas for construction projects. It does not grant access to aircraft and is valid only for the area in which their construction is actually taking place and the approved routes to and from that area.

In lieu of individually issued Airport Identification Badges, those employees working in the same area together may be escorted by one employee with an Airport Identification Badge with Escort Authorization indicated on their badge. Escorted

employees in the area must be issued and display a visitor badge. They must be monitored and under the immediate control of the escort at all times. A person using a visitor badge is expected to follow all regulations while on the restricted areas of the airport. Contractors utilizing escorts and visitor badges must receive prior approval from Airport Operations or the Airport Security Manager.

The Contractor shall be responsible for the maintenance of records necessary to ensure the retrieval of badges from employees and subcontractor(s). The Contractor shall designate one or more persons to act as the authorized point of contact for coordination in matters of badge program administration and security.

Should an employee lose his or her I.D. Badge, they should immediately notify their employer, who shall then immediately notify the Airport Badge Office at (907) 266-2409. If lost after normal business hours, then it should be reported to the Airport Communications Center at (907) 266-2415.

For specific job sites, the Airport may authorize the use of an access list. An airport badged individual would be responsible for checking each individual entering the work area against the list. Use of such a list is limited and solely at the discretion of the Airport.

Due to the ever-changing nature of ANC security requirements, please contact the Airport Security Manager at (907) 782-5419 for any changes, updates or additional requirements.

(c) Airport Security

Airports subject to 49 CFR Part 1542, Airport Security, must meet standards for access control, movement of ground vehicles, and identification of construction Contractor and tenant personnel.

(6) Wildlife Management

The Contractor must review the current version of FAA AC 150/5200-33, Hazardous Wildlife Attractants On or Near Airports and FAA CertAlert 98-05, Grasses Attractive to Hazardous Wildlife. The Contractor must carefully control and continuously remove waste or loose materials, including food scraps or land clearing debris that might attract wildlife. Contractor personnel must be aware of and avoid construction activities that can create wildlife hazards on airports. The Contractor must mitigate the following items.

(a) Trash

All construction personnel will dispose of trash and food scrapes in closed containers provided by the Contractor. The Contractor must perform trash clean-up on a daily basis and empty all trash containers at an approved landfill off site.

(b) Standing Water

If standing water remains for more than (3) hours after a rainfall, the Contractor will immediately re-grade any runway, taxiway, or apron area that has been disturbed by construction activities. The Contractor shall provide temporary drainage during construction to avoid standing water for all other work site areas.

(c) Tall Grass and Seeds

The Contractor is responsible for maintaining a maximum grass height of 10 inches or less for or all disturbed areas that are being returned to turf throughout the construction work area. The Contractor shall adhere to the requirements of Specification T-901, Seeding.

(d) Poorly Maintained Fencing and Gates

The Contractor shall immediately report any damage to gates or fences. The Contractor will be responsible for repairs to any gates or fences caused by negligence by the Contractor. Watch for moose or other wildlife in the vicinity of open gates. If a breach of the AOA by wildlife appears imminent, close gates and notify Airport Operations via the Airport Operations frequency. See Section 5.b.10.a above for additional information.

(e) Disruption of Existing Wildlife Habitat

The Contractor must notify airport operations immediately of any wildlife sightings on the airfield.

(7) Foreign Object Debris (FOD) Management

Waste and loose materials, commonly referred to as FOD, are capable of causing damage to aircraft landing gear, propellers, and jet engines. On construction sites, FOD typically is comprised of loose gravel, blowing sand, wire bristles from sweeper heads, food wrappers, and material packaging. The presence of FOD on the AOA poses a significant threat to the safety of air travel. FOD has the potential to damage aircraft during critical phases of flight, which can lead to catastrophic loss of life or airframe, and at the very least increased maintenance and operating costs. For more information see Section 10, Inspection Requirements, below and AC 150/5210-24, Foreign Object Debris (FOD) Management.

The Contractor must:

- Provide training to all employees working within the AOA on description of FOD, consequences of FOD, effective FOD management, FOD awareness, and housekeeping procedures.

- Avoid leaving FOD on or near active aircraft movement areas.
- Use covered trash containers, cover loads, have a zero tolerance of littering, and tie down items which may be easily windblown.
- Continuously remove materials capable of creating FOD during the construction project.
- Perform vehicle tire checks for any loose rocks in the treads prior to crossing active airfield pavement. Tires covered in mud must be cleaned prior to crossing active airfield pavement in order to prevent tracking of dirt.
- Sweep the entire pavement surface (including shoulders) of a work area prior to opening it to aircraft traffic. The Contractor is required to clean all bristles from the pavement after sweeping. Compressed air and vacuums may also be used to clean surfaces.

(8) Hazardous Material (HAZMAT) Management

If any construction vehicle or equipment is operated within airport property, the Contractor must be prepared to expeditiously contain and clean-up spills resulting from fuel or hydraulic fluid leaks or other hazardous material spills. Special procedures are required when handling or transporting hazardous materials on airport property. Do not stage motorized equipment on dirt surfaces in the staging area without a drip pan. For more information, see AC 150/5320-15, Management of Airport Industrial Waste and GCP-70. The Contractor must prepare and follow all Hazardous Material Control Plan (HMCP) and Spill Prevention Control and Countermeasures (SPCC) plans required in the contract. See contract specification P-641 for more information.

(9) Notification of Construction Activities

(a) List Responsible Representatives

Upon award of the project, the Contractor shall provide all appropriate contact information for its staff and subcontractors in the SPCD such as project managers, project superintendents, and safety managers. Should any personnel change occur during the project, it is the responsibility of that organization to provide revised contact information.

The State of Alaska Department of Transportation and Public Facilities (DOT&PF) Engineer will be the central point of contact between the Contractor, Airport Operations, and the FAA. The primary contact for DOT&PF will be:

Frank Lee

DOT&PF Construction Engineer

frank.lee@alaska.gov

Office: (907) 243-4169

Cell: (907) 727-4808

(b) Notices to Air Missions (NOTAMs)

Before beginning any construction activity, coordinate with the Engineer to enable Airport Operations to issue the NOTAM at least 24 hours in advance.

Airport Operations will issue the NOTAM for the airport. The following person, or designated alternate, has authority to issue the NOTAM and will be the point of contact, through the Engineer, for required issuances, updates, and cancellations:

Tim Lufkin

Airport Operations – Construction Coordinator
Ted Stevens Anchorage International Airport
P.O. Box 196960
Anchorage, AK 99519-6960
tim.lufkin@alaska.gov
Phone: (907) 266-2615 (24 hr.)
Cell: (907) 306-5023
Fax: (907) 266-2646

Alternate Contact

Airport Duty Officer
Ted Stevens Anchorage International Airport
P.O. Box 196960
Anchorage, AK 99519-6960
Phone: (907) 266-2600 (24 hr.)

The Contractor shall provide sufficient information to the Engineer to enable Airport Operations to fulfill the following procedures:

- Only Airport Operations may initiate or cancel NOTAMs on airport conditions and Airport Operations is the only entity that can close or open a runway.
- Airport Operations must coordinate the issuance, maintenance, and cancellation of NOTAMs about airport conditions resulting from construction activities with tenants and the local air traffic facility.
- Airport Operations must provide information on closed or hazardous conditions on airport movement areas to the FAA Flight Service Station (FSS) so it can issue a NOTAM.

Any person having reason to believe that a NOTAM is missing, incomplete, or inaccurate must immediately notify Airport Operations.

Upon completion of work, return all areas to standard conditions and coordinate similarly to provide information regarding the cancellation of all notices issued as a NOTAM.

(c) Emergency Notification Procedures

In the case of a life-threatening emergency, dial 911, then contact Airport Operations and the Engineer immediately thereafter. Airport Operations will coordinate any emergency response.

Airport Operations

Tim Lufkin (907) 266-2615 (24 hr.)
(907) 306-5023

Alternate Contact for Airport Operations

Airport Duty Officer (907) 266-2600 (24 hr.)

Medical

911 for emergencies

Airport Police & Fire (907) 266-2555 – Emergency
Airport Police & Fire (907) 266-2411 – Non-Emergency
Alaska Regional Hospital (907) 276-1131
Providence Hospital (907) 562-2211
Anchorage Poison Control Center (907) 261-3193 or (800) 478-3193

Fire/Emergency Responders

911 for emergencies

Airport Police & Fire (907) 266-2555 – Emergency
Airport Police & Fire (907) 266-2411 – Non-Emergency

(d) Coordination with ARFF Personnel

The Contractor shall coordinate, through the Engineer, with ARFF personnel, mutual aid providers, and other emergency services if construction requires:

- The deactivation or subsequent reactivation of water lines or fire hydrants,
- The rerouting, blocking, and restoration of emergency access routes, or
- The use of hazardous materials on the airfield.

(e) Notification to the FAA

All questions and notices to the FAA shall be coordinated through the Engineer.

Provide notices to FAA as required under CRF 14, Part 77 and Part 157.

The following person will be the point of contact with FAA ATO/Technical Operations in matters relating to FAA NAVAIDs/facilities at ANC:

David Osborne

FAA Turnagain System Support Center (SSC) Manager

Phone: (907) 271-2216

The following persons will be the point of contact with FAA ATO/Technical Operations in matters relating to Air Traffic at ANC:

Thomas Bradley

FAA Anchorage System Support Center (SSC) Manager

Phone: (907) 271-6748

Cell: (907) 351-9987

Prior to the physical construction start date, runway closures (partial or full), re-opening a closed runway, displacing a runway threshold, or implementing an event that causes impacts to NAVAIDs, the Contractor shall follow the procedures outlined in Section 1.c.

Prior to any work requiring crane(s) to be raised, the Contractor shall notify the ATCT Watch Supervisor through the Engineer at (907) 271-2701 in order to establish a procedure to have the crane(s) immediately lowered upon request of the ATCT. When crane(s) are no longer needed and have been permanently lowered, the Contractor shall notify the ATCT through the Engineer that the NOTAM can be cancelled.

(1) FAR Part 77

Any person proposing construction or alteration of objects that affect navigable airspace, as defined in Part 77, must notify the FAA. This includes construction equipment and proposed parking areas for the equipment (i.e. cranes, graders, etc.) on airports. The Contractor must provide this information to the Engineer and Airport Operations. **The Contractor must submit Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA, following the instructions on the form, for approval at least 45 days prior to the start of construction. This form may be submitted here: <https://oeaaa.faa.gov>**

(2) FAR Part 157

With some exceptions, Title 14 Code of Federal Regulations (CFR) Part 157, Notice for Construction, Alteration and Deactivation of Airports, requires that the airport operator notify the FAA in writing whenever a non-federally funded project involves the construction of a new airport; the construction, realigning, altering, activating, or abandoning of a runway, landing strip, or associated taxiway; or the deactivation or abandoning of an entire airport. The Contractor must provide this information to the Engineer and Airport Manager. **Form 7480-1, Notice of Landing Area Proposal, must be submitted to the FAA, following the instructions on the form, for approval at least 90 days before construction, alteration, activation, deactivation, or change to the status or use of a civil or joint-use (civil/military) airport. This form may be submitted here: <https://oeaaa.faa.gov>**

(3) NAVAIDs

For unplanned or emergency (short-notice) impacts to FAA facilities/ NAVAIDs contact FAA Anchorage Service Operations Center (907) 269-1803.

(a) Airport Owned/FAA maintained

This section is not applicable for ANC.

(b) FAA Owned

1. General

Notify FAA ATO Service Area P&R WSA office a **minimum of 45 days prior** to implementing an event that causes impacts to NAVAIDs following the procedures outlined in Section 1.c. (Impacts to FAA equipment covered by a Reimbursable Agreement (RA) do not have to be reported by Airport Operations.)

2. Coordination

Coordinate work for an FAA owned NAVAID shutdown with the local FAA ATO/Technical Operations office following the procedures outlined in Section 1.c. **Also, provide seven days' notice to the actual shutdown.**

(10) Inspection Requirements

(a) Daily Inspections

The Contractor must inspect the project site and vehicles daily for FOD and employ a “clean as you go” approach throughout the project. The daily inspections must also ensure all traffic control devices are in proper location and working order. These inspections may need to be more frequent when construction is in progress. The Contractor shall notify Airport Operations at least 30 minutes before the end of shifts each day for a safety inspection of the work site. The Contractor must perform joint inspections with the Engineer and Airport Operations throughout the project, with immediate remedy of any deficiencies, whether caused by negligence, oversight, or project scope change. These inspections include an inspection of all paved airfield areas and safety areas to ensure compliance with FAR Part 139.327.

(b) Final Inspections

Prior to opening work areas to aircraft operations, the Contractor must coordinate with Airport Operations for inspection of work area. Work area must be free of any FOD that could cause damage to aircraft engines. Coordinate with the FAA Airport Certification Safety Inspector (ACSI) to determine if a final inspection will be necessary.

(11) Underground Utilities

The Contractor must request locates from all utilities having facilities in the area prior to any work being performed in the area. Locates from the local utilities listed below can be obtained by calling the Alaska Dig Line at:

Alaska Dig Line

811
(907) 278-3121
(800) 478-3121

Local Utilities

Alaska Communications Systems (ACS)

Anchorage Water and Wastewater Utility (AWWU)
Chugach Electric Association (CEA)
Enstar Natural Gas Company
General Communications, Inc. (GCI)
Municipal Traffic Operations
Menzies Aviation
Andeavor (formerly Tesoro)

In addition, contact the following utilities separately and individually for locates of their utility lines. All costs associated with this work are considered subsidiary to other pay items and no separate payment will be made.

ANC Field Maintenance	(907) 266-2425
ANC Field Maintenance, Electric	(907) 266-2423
FAA Anchorage SSC	(907) 271-6783
FAA Turnagain SSC	(907) 271-6780

Notify ANC Airfield Maintenance when work is expected to begin for de-energizing any circuit. Upon completion of each stage, notify ANC Airfield Maintenance before energizing that portion of the system.

The FAA has various navigational aids and other equipment in operation at ANC. The approximate location of the power cable, control cables and equipment is shown in the plans. There may be cables and equipment that are not shown in the plans. Contact the FAA for locates **21 days prior to excavation and/or stockpiling.**

Approximate locations of the utilities known to the DOT&PF within the work area are shown in the plans. The actual locations, elevations, and true nature of utilities may vary and additional utilities may exist at locations other than those shown in the plans.

When the Contractor's operations meet any of the following conditions, the Contractor will advise the owning utility in writing, indicating location and duration of the work to be performed, at least 24 hours in advance of the work.

- Operations anticipated within 10 feet of an overhead electric line.
- Operations requiring the use of equipment capable of coming within 10 feet of an overhead electrical line.
- Operations anticipated within 3 feet of an underground electrical line according to the locations provided by the owning utility.

Take all precautions necessary to protect the safety of workers and the public when performing work involving utilities. Carefully work around existing underground utilities. If utility lines are found in areas of excavation, hand dig pot-holes every 100 feet along the utility to maintain

visibility of the utility. Carefully uncover utilities where they intersect the work. Coordinate requests to temporarily remove any other underground utilities from service with the Engineer.

Ensure that all lighting systems, telecommunications, and control cables remain in operation continuously throughout the construction period except as noted in the plans and specifications. Facilities that are directly related to work items for this project may be placed out of service only as long as necessary to make the alterations shown in the plans. The Contractor will obtain permission from the Engineer before taking any facilities out of service. The Contractor must **provide at least 24 hours' notice** to Airport Operations, through the Engineer, before placing any airport lighting or NAVAIDs out of service for the NOTAM to be filed. All airfield lighting circuits locked out for construction shall be returned to ATCT control no later than 2 hours before sunset.

Immediately stop excavating in the vicinity of a utility and notify the Engineer and the utility owner if an underground utility is discovered that was not field marked or was inaccurately field marked. Promptly notify the utility owner and the Engineer in the event of accidental interruption of utility service, and cooperate with the utility owner and the Engineer until service is restored. The Contractor must repair any damage to utilities, including FAA utilities and equipment, caused by the Contractor's operations at no cost to the DOT&PF.

The Contractor is required to work around aboveground and underground utility facilities, either existing or relocated, throughout the project unless advised by the utility that the facility is abandoned in place.

See Section 50-06 of the contract documents for more details.

(12) Penalties

Failure to comply with the safety rules of this CSPP, the General Contract Provisions, Occupational Safety and Health Administration (OSHA) regulations, SIDA rules, airport rules, security of the AOA, or any other federal, state, or local laws may result in suspension of construction activities or imposition of fines or other legal action. Penalties could also include rescission of driving privileges or access to the AOA. The Contractor will be liable for any penalty levied against the State resulting from actions by the Contractor or those for whom the Contractor is responsible.

(13) Special Conditions

Airport operations take precedence over all work, especially if a question of safety is involved. Special conditions such as low visibility, snow removal, aircraft in distress, aircraft accident, security breach, vehicle/pedestrian deviations, or other activities may require the suspension or rescheduling of project construction to accomplish air safety. See Section 5 above for compliance with airport safety and security measures and for radio communication procedures. See Section 9 above for emergency notification information for all involved parties, including police/security, and medical services.

(14) Runway and Taxiway Visual Aids

Taxiway and runway lighting and marking will be affected by this project. Construction activities involving lighting require that a NOTAM be filed. Temporary airport markings, lighting, signs, and/or visual NAVAIDs may be necessary to provide access to aircraft on and across runways and/or taxiways within and adjacent to the project area.

(a) General

Cover, remove, or disable airport markings, lighting, signs and visual NAVAIDs for closed areas of the airport during construction. All temporary markings, lighting, signs, and visual NAVAIDs must be clearly visible to pilots, not misleading, confusing, or deceptive. All must be secured in place to prevent movement by prop wash, jet blast, wing vortices, or other wind currents and constructed of materials that would minimize damage to an aircraft in the event of inadvertent contact.

(b) Markings

Markings must be in compliance with the current version of FAA AC 150/5340-1, Standards for Airport Markings.

*(1) Closed Runways and Taxiways/Taxilanes**(a) Temporarily Closed Runways*

This section is not applicable since no runways will be closed as part of this project.

*(b) Taxiways**i. Permanently Closed Taxiways/Taxilanes:*

This section is not applicable since no taxiways will be permanently closed.

ii. Temporarily Closed Taxiways/Taxilanes:

This section is not applicable since no taxiways will be temporarily closed.

(2) Temporary Markings

This section is not applicable since no temporary marking will be used on this project.

(3) Removal of Markings

This section is not applicable since no marking removal will be used on this project.

(c) Lighting and Visual NAVAIDs

Lighting must be in conformance with the current FAA AC 150/5340-30, Design and Installation Details for Airport Visual Aids and AC 150/5345-50, Specification for Portable Runway and Taxiway Lights. When disconnecting taxiway lighting fixtures, disconnect the associated isolation transformers. Alternately, cover the light fixture in such a way as to prevent light leakage. Avoid removing the lamp from energized fixtures because an excessive number of isolation transformers with open secondaries may damage the regulators

and/or increase the current above its normal value. Secure, identify, and place any above ground temporary wiring in conduit to prevent electrocution and fire ignition sources.

(1) Permanently Closed Runways and Taxiways

This section is not applicable since no runways or taxiways will be permanently closed as part of this project.

(2) Temporarily Closed Runways

This section is not applicable since no runways will be temporarily closed as part of this project.

(3) Partially Closed Runways and Displaced Thresholds

This section is not applicable since no runways will be partially closed or thresholds displaced as part of this project.

(4) Temporarily Closed Taxiways

This section is not applicable since no taxiways will be temporarily closed.

(5) Temporarily Re-routed Taxiways

This section is not applicable since no taxiways will be temporarily re-routed.

Construction activities involving lighting or NAVAIDS require the issuance of a NOTAM. See Section 9 of this CSPP for additional information.

(d) Signs

To the extent possible, signs must be in conformance with the current FAA AC 150/5345-44, Specification for Runway and Taxiway Signs and AC 150-5340-18, Standard for Airport Sign Systems. Any time a sign does not serve its normal function, it must be covered or removed to prevent misdirecting pilots. Note that information signs identifying a crossing taxiway continue to perform their normal function even if the crossing taxiway is closed.

(15) Marking and Signs for Access Routes

The Contractor is responsible for supplying and installing all necessary markings and signage for all access routes to and from the site to be used by Contractor personnel, subcontractor personnel, or delivery operations. Any pavement markings and signs for construction personnel will conform to the current version of FAA AC 150/5340-18, Standards for Airport Sign Systems, and, to the extent practicable, with the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) and the Alaska Traffic Manual (ATM) Supplement. All signage in the Airport Operations ROFA or TOFA must be frangible, these requirements are detailed in the current version of FAA AC 150/5220-23, Frangible Connections, which may require modification to size and height guidance in the MUTCD. All visual aids must conform to the current version of FAA AC 150/5340-30, Design and Installation Details for Airport Visual Aids.

(16) Hazard Marking and Lighting**(a) Purpose**

Hazard marking and lighting prevents pilots from entering areas closed to aircraft and prevents construction personnel from entering areas open to aircraft. Hazard marking and lighting must also be used to identify open manholes, open excavations, trenches, hazardous areas, small areas under repair, stockpiled material, waste areas, and areas subject to jet blast and prop wash. Also consider less obvious construction related hazards and include markings to identify FAA, airport, and National Weather Service facilities cables and power lines; instrument landing system (ILS) critical areas; airport surfaces, such as RSA, OFA, and OFZ; and other sensitive areas to make it easier for contractor personnel to avoid these areas.

(b) Equipment*(1) Barricades*

Barricades, including traffic cones, (weighted or sturdily attached to the surface) are acceptable methods used to identify and define the limits of construction and hazardous areas on airports. Careful consideration must be given to selecting equipment that poses the least danger to aircraft, but is sturdy enough to remain in place when subject to typical winds, prop wash, and jet blast. The spacing of barricades must be 4 feet, so that a breach is physically prevented barring a deliberate act. Provisions must be made for ARFF access if necessary. If barricades are intended to exclude pedestrians, they must be continuously linked. Continuous linking may be accomplished through the use of ropes, securely attached to prevent FOD. The Contractor is responsible for supplying and installing all hazard marker barriers. Hazard marker barriers must be in accordance with Specifications GCP 70-09 and P-670. Hazard marker barrier will be used as shown in the CSPP drawings and as required by the direction of the Engineer and Airport Operations.

(2) Barricade Lights

The hazard marker barriers must be lighted when dark to prevent aircraft from inadvertently entering the closed runway, taxiway, or apron. Lights must be red, either steady burning or flashing, and must meet the luminance requirements of the State Highway Department. Batteries powering lights will last longer if lights flash. Lights must be mounted on barricades spaced at no more than 10 feet. Lights must be operated between sunset and sunrise and during periods of low visibility. Light may be operated by photocell, but this may require that the Contractor turn them on manually during periods of low visibility during daytime hours.

(3) Supplemental Barricades

Provide supplemental barricades with signs as necessary, for example “No Entry” or “No Vehicles”.

(4) Air Operations Area - General

Barricades are not permitted in any active safety area. Within a runway or taxiway OFA and on aprons, use orange traffic cones, flashing or steady burning red lights as noted above, collapsible barricades marked with diagonal, alternating orange and white stripes to separate all construction areas from the movement areas. These locations are denoted in the CSPP drawings.

(5) Air Operations Area – Runway/Taxiway Intersections

Use highly reflective barricades with lights to close taxiways leading to closed runways. The use of traffic cones is appropriate for short duration closures.

(6) Air Operations Area – Other

Beyond a runway and taxiway OFA and aprons, barricades intended for construction vehicles and personnel may be different shapes and made from various materials, including railroad ties, sawhorses, jersey barriers, or barrels.

(7) Maintenance

The Contractor must have a person on call 24 hours a day for emergency maintenance of airport hazard lighting and barricades. The Contractor must file the contact person's information with the airport operator and be included in the contact list as described in Section 9.a. Lighting should be checked for proper operation at least once a day, preferably at dusk.

(17) Protection of Runway and Taxiway Safety Areas

Since construction personnel may not be familiar with the airport, especially the AOA, the potential for confusion resulting in safety or security incidents is greatly increased. The airport contains facilities for major passenger and cargo airlines and numerous businesses providing airport related services.

Several entities have responsibilities for the safety and security of the airport including the Air Traffic Control Tower (FAA), Ground Control (FAA), FAA operations facilities, ARFF, the Transportation Security Administration, and the airport police.

The RSA, TSA, OFA, OFZ, and approach surfaces are described below, but can be found in more detail in the current version of FAA AC 150/5300-13. Protection of these areas includes limitations on the location and height of equipment and stockpiled material.

(a) Runway Safety Area (RSA)

An RSA is defined as the surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. The RSA dimensions for each phase of construction are shown in Table 17.1 below. No equipment will operate within these limits when the runway is open. Exceptions to these construction limitations may occur only with the permission of the Engineer and Airport Operations and after the proper NOTAM has been issued. See Section 5 of this CSPP

for details regarding vehicle and personnel movement within safety areas and material stockpiling restrictions. See Section 16 of this CSPP for details regarding the hazard marking and lighting devices used to identify open excavations. Construction activities within the existing RSA are subject to the following conditions:

- (1) No construction may occur within the existing RSA while the runway is open for aircraft operations.
- (2) Adjustments of the RSA dimensions must be coordinated with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and a NOTAM issued.
- (3) Blasting operations are prohibited on airport property.
- (4) Excavations
 - (a) Open trenches or excavations are not permitted within the RSA while the runway is open. If possible, backfill trenches before the runway is opened. If the runway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft operating on the runway across the trench without damage to the aircraft.
 - (b) The Contractor must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by Airport Operations, and light them with red lights during hours of restricted visibility or darkness.
- (5) Soil erosion must be controlled to maintain RSA standards. The RSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment, ARFF equipment, and occasional passage of aircraft without causing structural damage to the aircraft.

(b) Runway Object Free Area (ROFA)

The ROFA dimensions for each phase of construction are shown in Table 17.1 below. Construction, including excavations, may be permitted in the ROFA. However, equipment must be removed from the ROFA when not in use and material should not be stockpiled in the ROFA if not necessary. Equipment or stockpiling material in the ROFA requires approval from the Engineer and submittal of a 7460-1 form and justification provided to the appropriate FAA Airports Regional or District Office for approval, see Section 9.e of this CSPP.

(c) Taxiway/Taxilane Safety Area (TSA)

A TSA is a defined surface alongside the taxiway/taxilane prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. The TSA dimensions for each phase of construction are shown in Table 17.2 below. Construction activities within the TSA are subject to the following conditions:

- (1) No construction may occur within the TSA while the taxiway is open for aircraft operations.
- (2) Adjustments of the TSA dimensions must be coordinated with the appropriate FAA Airports Regional or District Office and the local FAA air traffic manager and a NOTAM issued.
- (3) Blasting operations are prohibited on airport property.
- (4) Excavations
 - (a) Open trenches or excavations are not permitted within the TSA while the taxiway is open. If possible, backfill trenches before the taxiway is opened. If the taxiway must be opened before excavations are backfilled, cover the excavations appropriately. Covering for open trenches must be designed to allow the safe operation of the heaviest aircraft.
 - (b) The Contractor must prominently mark open trenches and excavations at the construction site with red or orange flags, as approved by the airport operator, and light them with red lights during hours of restricted visibility or darkness.
- (5) Soil erosion must be controlled to maintain TSA standards. The TSA must be cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations, and capable, under dry conditions, of supporting snow removal equipment occasional passage of aircraft without causing structural damage to the aircraft.

(d) Taxiway/Taxilane Object Free Area (TOFA)

Unlike the ROFA, aircraft wings regularly penetrate the TOFA during normal operations. Thus the restrictions are more stringent. The TOFA dimensions for each phase of construction are shown in Table 17.2 below. Except as noted below, no construction may occur within the taxiway object free area while the taxiway is open for aircraft operations.

- (1) The TOFA dimensions may be temporarily adjusted if the taxiway is restricted to aircraft operations requiring a TOFA that is equal to the TOFA width available.
- (2) Offset taxiway markings may be used as a temporary measure to provide the required TOFA. If offset taxiway markings are used, centerline lighting or reflectors are required.
- (3) Construction activity may be accomplished without adjusting the width of the TOFA, subject to the following restrictions:
 - (a) Appropriate NOTAMs are issued.
 - (b) Marking and lighting meeting the provisions of Sections 14 and 16 of this CSPP are implemented.
 - (c) Five foot clearance is maintained between equipment and materials and any part of an aircraft (including wingtip overhang). In these situations, flaggers must be used to direct construction equipment, and wing walkers will be necessary to guide aircraft. Wing walkers shall be airline/aviation personnel rather than construction workers. If such clearance can only be maintained if an aircraft does

not have full use of the entire taxiway width (with its main landing gear at the edge of the pavement), then it will be necessary to move personnel and equipment for the passage of that aircraft.

(e) Obstacle Free Zone (OFZ)

The OFZ dimensions for each phase of construction are shown in Table 17.1 below. In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. If a penetration to the OFZ is necessary, it may be possible to continue aircraft operations through operational restrictions. Coordinate with the FAA through the appropriate FAA Airports Regional or District Office.

(f) Runway Approach/Departure Surfaces

All personnel, materials, and/or equipment must remain clear of the threshold siting surfaces, as defined in FAA AC 150/5300-13. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. For examples, the boom of an excavator or a raised dump bed, for instance, could potentially obstruct an aircraft on approach for landing. The Engineer and the Contractor must remain aware of the equipment operating in these sensitive areas, and calculate and enforce the ceiling beneath which equipment can operate safely without evacuating upon aircraft approach.

This project does not have construction activity and haul routes proposed in the vicinity of runway approach and departure surfaces.

Table 17.1 Runway Protection Areas

Design Element	Phase	Distance from Each Side of Centerline	Length Beyond R/W End
N/A	All Phases	N/A	N/A

Table 17.2 Taxiway and Taxilane Protection Areas

Phase		TL	TL	TL
Phase 1	TSA:	N/A	N/A	N/A
	TOFA:	N/A	N/A	N/A
Phase 2	TSA:	N/A	N/A	N/A
	TOFA:	N/A	N/A	N/A

(18) Other Limitations on Construction**(a) Prohibitions**

- (1) No use of equipment taller than 15 feet unless a 7460-1 determination letter is issued for such equipment.
- (2) No use of open flame or welding torches unless fire safety precautions are provided and Airport Operations has approved their use.
- (3) No use of electrical blasting caps on or within 1,000 feet of the airport property.
- (4) No use of flare pots within the AOA.

(b) Restrictions

- (1) *Construction suspension required during specific airport operations*

Construction may be suspended when low visibility operations are in effect.

- (2) *Areas that cannot be worked on simultaneously*

Construction activity for each phase is limited to the areas shown in the CSPP drawings.

- (3) *Day or night construction restrictions*

There are no day or night construction restrictions.

- (4) *Seasonal construction restrictions*

All work for this project shall be completed by the completion date stated in GCP-80.

APPENDIX D

PERMITS

Permits will be provided when obtained. Potential documentation includes:

- U.S. Corps of Engineers Section 404 or Nationwide Permit

APPENDIX E

TRAFFIC PLAN

(NOT USED)

APPENDIX F

SIGN PLAN

(NOT USED)

APPENDIX G

MINING PLAN

(NOT USED)

APPENDIX H

AVIATION MATERIALS CERTIFICATION LIST

MATERIALS CERTIFICATION LIST

Project Name ANC PFAS Remediation

Project Number CSAPT01228

Project Engineer Signature _____

Unshaded boxes indicate who approves the manufacturer's certificate of compliance or materials submittals.

If two boxes not shaded, either approving authority may be used.

Materials Item	Specification	Construction			Design		Statewide Materials		Remarks	Materials Certificate Location e.g. Binder #
		Project Engineer	Regional Materials or QA Engineer	Airport Ltg. Equipment Certification Program	Civil Design Engineer of Record	Electrical Design Engineer of Record	*Qualified Products List (QPL)	State Materials or QA Engineer		

D-701 STORM DRAINS AND CULVERTS

Pipe

(Type) Pipe or Arch, ___ Diam.
or ___ Rise & Span

D-701-2.2										

D-705 PIPE UNDERDRAINS FOR AIRPORTS

Pipe

CPE Pipe, Type SP, 12-inch

Filter Material

Filter Fabric

D-705-2.2										
D-705-2.5										
D705-2.6										

D-751 MANHOLES, CATCH BASINS, INLETS, AND INSPECTION HOLES

Mortar

Portland Cement

Concrete

Precast Concrete Pipe Manhole Rings

D-751-2.2										
D-751-2.3/ P-610										
D-751-2.4										

Frames, Covers and Grates

Gray Iron Castings

Malleable Iron Castings

D-751-2.6 a.										
D-751-2.6 b.										

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See GCP 60-05 for submittal requirements.

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Steel Castings	D-751-2.6 c.									
Structural Steel for Grates and Frames	D-751-2.6 d.									
Ductile Iron Castings	D-751-2.6 e.									
Austempered Ductile Iron Castings	D-751-2.6 f.									
Steps	D-751-2.7									
External Concrete Joint Wrap	D-751-2.9									
Polyethelyne Encasement	D-751-2.10									
Boot Connector	D-751-2.11									
Canal Gate	D-751-2.12									

D-780 DEWATERING

Dewatering Plan	D-780-3.1									
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F-162 CHAIN-LINK FENCE

Fabric	F-162-2.1									
Barbed Wire	F-162-2.2									
Posts, Rails, and Braces	F-162-2.3/ Plans									
Wire Ties And Tension Wires	F-162-2.5									
Misc. Fittings And Hardware	F-162-2.6									

P-171 TEMPORARY CONTAMINATED SOIL STOCKPILE AREA

Liner	P-172-2.3									
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P-172 CONTAMINATED SOIL REMEDIATION										
Activated Carbon	P-172-2.1									
P-610 STRUCTURAL PORTLAND CEMENT CONCRETE										
Concrete Mix Design	P-610-3.2									
Premolded Joint Material	P-610-2.8									
Joint Filler	P-610-2.9 / P-605									
Steel Reinforcement	P-610-2.10									
P-641 EROSION, SEDIMENT AND POLLUTION CONTROL										
BMP Installations	P-641-2.5								P-641 Control and Stabilization Materials identified and documented in SWPPP and approved on project.	
P-681 GEOTEXTILE FOR SEPARATION AND STABILIZATION										
Separation Geotextile	P-681-2.1.a									
P-682 GEOTEXTILE FOR DRAINAGE AND EROSION CONTROL										
Subsurface Drainage	P-682-2.1.a									
T-901 SEEDING										
Seed	T-901-2.1									
Fertilizer	T-901-2.2									
T-908 SOIL STABILIZATION										
Hydraulic Erosion Control Product (HECP)	T-908-2.1									

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Materials Item	Specification	Construction			Design		Statewide Materials		Remarks	Materials Certificate Location e.g. Binder #
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<u>Rolled Matting</u> Unbleached Jute Yarn Knitted Straw Matting Staples										
	T-908-2.2 a.									
	T-908-2.2 b.									
	T-908-2.3									

ADDITIONAL MATERIALS

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 See GCP 60-05 for submittal requirements.

APPENDIX I

FAA TECHNICAL SPECIFICATIONS FOR APPROACH LIGHTING AIDS

(NOT USED)

APPENDIX J

MANDATORY POST-AWARD CONFERENCE NOTICE AND AGENDA

(NOT USED)

APPENDIX K

SNOW REMOVAL EQUIPMENT BUILDING TECHNICAL SPECIFICATIONS

(NOT USED)

APPENDIX L

MATERIAL SALES AGREEMENT (NOT USED)

