PROPOSED AIRPORT PROJECT

SHISHMAREF AIRPORT

SHISHMAREF AIRPORT EROSION CONTROL

AIP NO. 3-02-0404-XXX-XXXX

PROJECT NO. NFAPT00370

SPONOSRED BY THE STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION

INDEX OF SHEETS

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TITLE SHEET</td>
</tr>
<tr>
<td>2</td>
<td>ESTIMATED QUANTITIES, FACTORS &amp; SUMMARY TABLES</td>
</tr>
<tr>
<td>3-5</td>
<td>SURVEY CONTROL PLAN</td>
</tr>
<tr>
<td>6</td>
<td>PROJECT LAYOUT PLAN</td>
</tr>
<tr>
<td>7-8</td>
<td>CONSTRUCTION SAFETY AND PLANNING PLANS</td>
</tr>
<tr>
<td>9-10</td>
<td>TYPICAL SECTIONS</td>
</tr>
<tr>
<td>11-12</td>
<td>EROSION AND DEGRADATION CONTROL PLAN</td>
</tr>
</tbody>
</table>

JONATHAN J. HUTCHINSON, P.E., PROJECT MANAGER
THOMAS C. WABER, P.E., DESIGNER
RAIANO CHANG, ENGINEERING ASSISTANT

APPROVED BY: SARAH E. SCHACHER, P.E., PRECONSTRUCTION ENGINEER, NORTHERN REGION

ACCEPTED FOR CONSTRUCTION: JOSEPH P. BEVPI, P.E., ACTING REGIONAL DIRECTOR, NORTHERN REGION

PRELIMINARY PLANS
GENERAL NOTES

1. VERIFY HORIZONTAL AND VERTICAL CONTROL PRIOR TO USE. ON MULTI YEAR PROJECTS, VERIFY ALL CONTROL ON A SEASONAL BASIS.

2. BACKGROUND MAPPING IS SHOWN FOR ORIENTATION PURPOSES ONLY. THIS SHEET DOES NOT PURPORT TO DEPICT RIGHT OF WAY.

3. ALL DISTANCES SHOWN ARE GROUND DISTANCES IN U.S. SURVEY FEET.

4. COORDINATE SYSTEM DEFINITION

   - THIS PROJECT IS LOCATED ENTIRELY WITHIN A MODIFIED STATE PLANE PROJECTION, ORIGINALLY DESIGNED BY USING
     STATE PLANE ZONE B
     SCALE FROM POINT 0002, "CNCI", N 442737.777 SFT E 1628458.892 SFT
     USING THE INVERSE COMBINED SCALE FACTOR, V/CSP
     COMBINED SCALE FACTOR (CSF) = 0.999990492

   - RESULTING IN THE FOLLOWING COORDINATE REFERENCE SYSTEM

     - PROJECTION SYSTEM: NAD 1983, EPSG 2481
     - HORIZONTAL UNIT: U.S. SURVEY FOOT (SFT)
     - DOWNScale: NEAR PERP.

   - PROJECTION: TRANSVERSE MERCATOR
     - CENTRAL MERIDIAN AND ZONE ORIGIN: 126W
     - FALSE EASTING: 1,401,575 SFT
     - FALSE NORTHING: 1,494,017 SFT
     - SCALE FACTOR AT ORIGIN: 0.9999000048 (EXACT)

5. BASICS OF VERTICAL IS NAVD88, GEDG 12A

   - BASE OF HEADING IS STATE PLANE ZONE B

   - BASE OF COORDINATES ARE FROM GPS ACQUIRED POINT 1000, A NO SAC (SECONDARY AIR CONTROL) WHICH IS A NO SIGHTING POINT. THIS IS ALSO THE BASES OF ELEVATION.

   - POINTS 1000, 1001, AND 1002 ARE PRIMARY CONTROL. OTHER POINTS GIVEN ARE BACKUP.

   - PLAT 94-12

   - Block 1 Lot 12

LEGEND

- PRIMARY MONUMENT FOUND
- REBAR AND CAP FOUND

GRAPHIC SCALE

0 200 400

Feet

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION-DESIGN AND CONSTRUCTION-AVIATION

SHISHMAFAIRPORT
SHISHMAFAIRPORT EROSION CONTROL
AIP 3-02-404-XXX-XXX/NFAP00370
SURVEY CONTROL PLAN 1 OF 3

DESIGN
DRAWN
CHECKED

DATE
REVISIONS

Sheet 1
Preliminary Plans

GENERAL NOTE:

1. Submit a safety plan compliance document (SPCD) to the Engineer for review within 30 days of receiving notice to proceed. Construction activities cannot start until a SPCD has been approved by the Engineer. Following approval of the SPCD, if subsequent changes are needed, submit a revision to the Engineer for review and approval.

2. Develop a construction schedule containing the conditions of the construction safety plan (CSP). Project permits, interconnections, and contract requirements provide supplemental detail to address required submittal, review period, procurement of material, work, and coordination requirements. Allow sufficient time for coordination and approvals within the schedule.

3. No days prior to starting work in Shishmaref, notify FAA air traffic organization of potential impacts to airport operation from construction activities.

4. For Shishmaref airport data, see the airport layout plan approved on June 23, 2016 included as supplemental information.

5. This sheet shows the airport layout in its existing condition. Particular restrictions are provided in the phase-specific plan view see the controllable sheet of phase specific airport safety dimensions.

6. Speed is restricted to 20 mph on airport property.

7. The Contractor must report any safety issues to the Engineer and airport manager upon discovery. The Contractor must take immediate action to resolve safety issues as directed.

8. Provide water for dust control; use of water and other measures must result in construction activities being a safety issue. Water usage summary and paid by the FAA by 04/01/2020.

9. Foreign object debris (FOD) is a safety issue. Remove all FOD immediately upon discovery or notification.

10. Keep all active access routes, mail routes, and airport surfaces free of material. Remove spilled or tracked material immediately to avoid possible accidents or aircraft damage.

11. Monitor temporary markers frequently and take action to correct deficiencies immediately upon discovery of notification.

12. The term "active runway" refers to a runway open to landing, takeoff and taxiing operations.

13. No construction activity is allowed within the runway safety area (RSA) of the active runway.

14. No construction activity is allowed within the taxiway safety area (TSA) or runway object free area (OFA) while the runway is open for airport operations.

15. Do not park equipment within the object free area (OFA) of active runway.

16. The Contractor is responsible for maintenance of access routes, mail routes, stockpile areas, and spraying areas.

17. All staging area and stockpile are not to exceed weight restrictions per C.F.R. Part 77 objects affecting navigable airspace. Stockpiling of OFA shall not penetrate the OFA plane.

18. Staging area shown may be used to stage stockpile material or park equipment.

19. The Contrator shall propose, in a spcc submisual staging area and stockpile areas utilizing the construction area, existing staging area, proposed staging area or alternatives.

20. The Contractor shall propose, in a specific submisual staging area and stockpile areas utilizing the construction area, existing staging area, proposed staging area or alternatives.

21. The Contractor shall verify suitability of staging area access route and staging area shown. The staging area access route, existing staging area, construction area, and staging area may require improvement to support contractor operations.
PROJECT NOTE:

1. This project included night-time closures of the project area, coordinated through the engineer with the airport manager and FAA. Prior to start of work, coordination through the engineer and airport manager was required for all users, air carriers, and airport manager for airport closures, after the last scheduled flight arrival or departure and that work completed and service restored not less than one hour prior to the first scheduled flight arrival or departure the following morning.

2. Construction activity, while the airport is open, is permitted with an approved IAC and subject to the FAA requirements and restrictions.

3. The main elements of this project include:
   A. Installation, removal, and maintenance of hazard markings and signage on the landfill pad.
   B. Utilities – no utility work is anticipated.
   C. Stake work limits.
   D. Delimit and improve haul routes(s), access route(s), staging area(s), and stockpile area(s).
   E. Sequence salvage of existing erosion control structures.
   F. Sequence excavation, grading, and construction of new revetment structure and improvements to existing road.
   G. Seeding, restoration, and clean up.

4. At the end of the project, complete inspection of all surfaces with the engineer and airport manager. Complete any punch list items that are brought to attention during the inspection within 24 hours of the inspection.

LEGEND:

- Construction area
- Haul road
- Runway safety area (RSA)
- Runway object free zone (OFR)
- Runway object free area (OFIA)
- Runway protection zone (RPZ)
Preliminary Plans

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION—DESIGN AND CONSTRUCTION—AVIATION

SHISHMAREF AIRPORT
SHISHMAREF AIRPORT EROSION CONTROL
AIP 3-02-0404-XXX-XXXX/NFAPT00370
TYPICAL SECTIONS 1 OF 2

NOTE:
1. SEE SURVEY CONTROL FOR BASIS OF VERTICAL AND HORIZONTAL CONTROL.
2. THE CONTRACTOR SHALL LIMIT THE AREA UNDER CONSTRUCTION AT ANY GIVEN TIME, AT A MINIMUM, ACCORDINGLY INSTALL GEOTEXTILE FABRIC AND UNDERLAYER STONE FOR THE AREA BEFORE THE END OF EACH WORK SHIFT.
3. EXCAVATION SHALL BE PERFORMED IN A MANNER TO SELECTIVELY SEPARATE MATERIAL WITH ORGANIC AND VEGETATION FROM BEACH SAND, MINIMIZE WINDING OF MATERIALS.
4. EXCAVATED MATERIAL WITH ORGANIC & VEGETATION SHALL BE STACKED, SEPARATELY AND USED AS FINISH GRAVING MATERIAL IN AREAS TO BE SEEDED, OR AS DIRECTED BY THE ENGINEER. THIS WORK IS SUBJECT TO FINP F-192,190.000.
5. FILL OR EXCAVATE AND GRADE BEARING RELEVANT, GARDENS TO EXISTING GROUND, THE FINISHED GRADE SHALL NOT EXCEED 12.5%.
6. USE BEACH SAND FROM EXCAVATION TO PREPARE RELEVANT SURFACE, FILL BEARING RELEVANT, AND BACKFILL/PLACE REMAINING MATERIAL IN FRONT OF THE RELEVANT STRUCTURE. THIS WORK INCLUDED IN FINP F-192,190.000.
7. PLACE ARMOR AND UNDERLAYER STONE IN A MANNER THAT PRODUCES A WELL-MADE MASS OF STONE, WITH EACH INDIVIDUAL STONE HAVING FOUR POINTS OF CONTACT. PLACE STONE IN A MANNER THAT AVOIDS DISPLACING UNDERLAYER MATERIALS. SEE 5.115 SECTION F-195.
8. ANY DAMAGE TO THE NATURAL VEGETATIVE MAT OUTSIDE OF THE PLAN GRAVING LIMITS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTORS EXPENSE.
9. PLAN GRAVING LIMITS AND VEGETATIVE MAT SHALL BE MAINTAINED IN THE FIELD BY THE CONTRACTOR TO THE EXTENT PRACTICAL, CONTRACTOR ACTIVITY BELOW VEGETATIVE MAT IS PROHIBITED. EXCEPT THAT SAND BEINGS MAY BE TEMPORARILY PLACED GROWN VEGETATIVE MAT WITHIN THE LIMITS OF THE GRAVING LIMITS, ENSURED IN ADJACENT A OF THE SPEC.
RE Veniment Expansion Section
STA. "L" 17+00 TO 30+58

Landfill Haul Route Reconstruction Sections
STA. "L" 4+83 TO 14+70
STA. "L" 30+70 TO 36+83

NOTE:
1. The existing rock revetment varies in dimensions. The objective will be to expand the existing rock revetment to 50' length as shown on typical sections.
2. Work needed to place filter stone and geotextile shown, will require displacement and replacement of existing armor stone. That work will be submittal to FMB-01700-0000.
Preliminary Plans

1. Shishmaref is located on Sarekt Island, a barrier island off the northwest coast of the Seward Peninsula. It is a classic barrier island composed primarily of sand deposited by the waves and controllably being eroded and built up at different points.

2. Discontinuous permanent underlies parts of Sarekt Island at depths of 2 to 4 ft and is critical to its stability. The erosion problem is caused by storm-driven waves depositing against the sandy island shore. The stability of a bay is related to be primarily a function of seasonally and permanently frozen ground (1980 USCG Community Map).

3. PROJECT LOCATION IS ABOUT 2,500 FEET ON THE COASTAL, EASTBOUND ROAD ON SAREKT ISLAND IN SHISHMAREF, ALASKA. MORE SPECIFICALLY IT RUNS NORTHWARD TO THE SHISHMAREF AIRPORT RUNWAY 5 AND EXTENDS TOWARDS THE LANDLY SITE. SHOWING SEASON IS FROM MAY 23 TO OCTOBER 3 FOR NORTHERN ALASKA SEASONAL PREVALENT MINORITY-MAJOR ECLIPSE (SHISHMAREF CLIMATE AND WEATHER STATISTICS 1980 USECG COMMUNITY MAP).

4. A REVIEW OF THE ALASKA DEPARTMENT OF CONSERVATION (ADC) DATABASE OF CONTAMINATED SITES IN JUNE 70, 1979 INDICATED NO RELEVANT SPECIES OR SUBSPECIES SHOWN IN OR BEHIND SHISHMAREF PROJECT ON THE SHISHMAREF NORTH SIDE OF SAREKT ISLAND. NORTH-SIDE SHISHMAREF HAS A LIE REPORTED IN 5-5/14-1979 TO 1979. (1552-9378), KIPART (SAME CASE). SHISHMAREF.

5. A REVIEW OF THE ALASKA DEPARTMENT OF CONSERVATION (ADC) DATABASE OF CONTAMINATED SITES IN JUNE 70, 1979 INDICATED NO RELEVANT SPECIES OR SUBSPECIES SHOWN IN OR BEHIND SHISHMAREF PROJECT ON THE SHISHMAREF NORTH SIDE OF SAREKT ISLAND. NORTH-SIDE SHISHMAREF HAS A LIE REPORTED IN 5-5/14-1979 TO 1979. (1552-9378), KIPART (SAME CASE). SHISHMAREF.

6. PROJECT PROVIDES REPAIR OF SEVERAL DAMAGED SECTIONS OF EMBANKMENT AND SLOPE REPAIRS AND UPGRADES.

7. PROJECT AREA 5.0 ACRES

8. ESTIMATED AREA 5.0 ACRES


10. AVERAGE ANNUAL PRECIPITATION IS 11.48 IN (AVERAGES 1979). LAT. 65°16'17", LONG. -166°05'00", PEMBERTON NORTHERN CLIMATE CENTER WEBSITE, SEE APPENDIX 9.

11. POSSIBLE MAXIMUM PRECIPITATION FOR 2 YEARS, AVERAGE IS 0.97 IN THE SHISHMAREF SHISHMAREF CLIMATE AND WEATHER STATISTICS 1980 USECG COMMUNITY MAP.

12. NAMES OF READING WATERS: SHISHMAREF INLET AND CHUKCHI SEA.

13. INHABITED WATERS: NONE.

14. HYDROLOGICAL DATA:

<table>
<thead>
<tr>
<th>TYPE OF SURFACE</th>
<th>RUNOFF COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAVEL, ROCK, OR SMUDGE</td>
<td>0.45-0.6</td>
</tr>
<tr>
<td>CROP AND FILL SLOPES</td>
<td>0.3-0.7</td>
</tr>
<tr>
<td>CRUDED AREAS</td>
<td>0.1-0.7</td>
</tr>
</tbody>
</table>

   HYDROLOGICAL NOTES:
   1. FROM INHABITED WATER SOURCE (SHISHMAREF AIRPORT RUNWAY 5), JUNE 1980, PAGE 12. FOR FLAT SLOPES AND/OR PERMANENT SOILS, USE LOWER VALUES. FOR STEEP SLOPES AND/OR TEMPORARY SOILS, USE HIGHER VALUES.