Attachment #2

SD DEPARTMENT OF TRANSPORTATION

Division of Finance & Management
Office of Air, Rail & Transit
700 East Broadway Avenue
Pierre, SD 57501
O: 605.773-3574 | F: 605.773.2804
dot.sd.gov

TO: South Dakota Aeronautics Commission

FROM: Jack Dokken, Office of Aeronautics

DATE: October 12, 2022

SUBJECT: Bi-partisan Infrastructure Law (BIL) Grant Applications

Airport sponsors are requesting funding from the State Aeronautics Fund for the BIL projects below.

Aberdeen 3-46-0001-048-2022
BIL - Design rehab for runway 13/31, pave shoulders, reconstruct edge lights 13/31, replace 13 REILS, replace 31 PAPI, replace wind cones, replace 13/31 airfield guidance signs.

Federal Share	$ 95,000.00
State Share	$ 2,500.00
Local Share	$ 2,500.00
Total	$ 100,000.00

Parkston 3-46-0042-017-2022
BIL - Conduct a cultural survey and aquatic resources survey for future development.

Federal Share	$ 31,500.00
State Share	$ 1,750.00
Local Share	$ 1,750.00
Total	$ 35,000.00

Watertown 3-46-0058-041-2022
BIL – Purchase SRE equipment; reimburse cultural survey.

Federal Share	$ 840,750.00
State Share	$ 22,125.00
Local Share	$ 22,125.00
Total	$ 885,000.00

Webster 3-46-0059-015-2022
BIL - Conduct a cultural survey and aquatic resources survey for future development.

Federal Share	$ 31,500.00
State Share	$ 1,750.00
Local Share	$ 1,750.00
Total	$ 35,000.00

Project Narrative (Justification)

Design Runway 13/31 Rehabilitation (Full Panel Replacement, Joint Sealant, and Rehabilitate Shoulders) and Lighting Improvements (Replace Runway Edge Lights, distance remaining signs, Runway 13 REILs, Runway 31 PAPIs, & primary windcone) and Preparation of a Documented CATEX

The Runway 13/31 pavement has several severe distresses and is in need of rehabilitation and corrective actions. The runway was reconstructed in 1997 and consists of geotextile separator fabric, geogrid, 20 inches of recycled millings, 6 inches of P-209 Aggregate Base Course, and 13 inches of P-501 concrete. The airport has performed several small pavement maintenance projects on the runway to extend the life of the pavement. The latest results from the 2021 Pavement Condition Index (PCI) surveys indicated a 51 for the runway. The FAA minimum recommended PCI requirement for runways is 60. The vast majority of distresses on the runway included joint seal damage, joint spalls, corner spalls, and linear cracks. These types of distresses can be corrected with rehabilitation efforts through joint seal replacement, full panel replacement, and spall repairs through partial depth or full depth partial panel replacements.

The table below shows the gradual degradation of the runway since 2012.

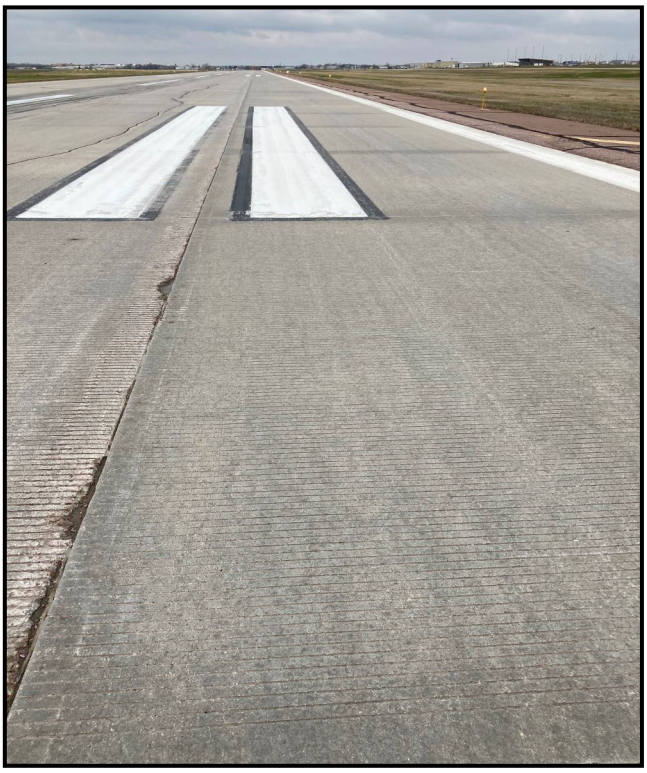
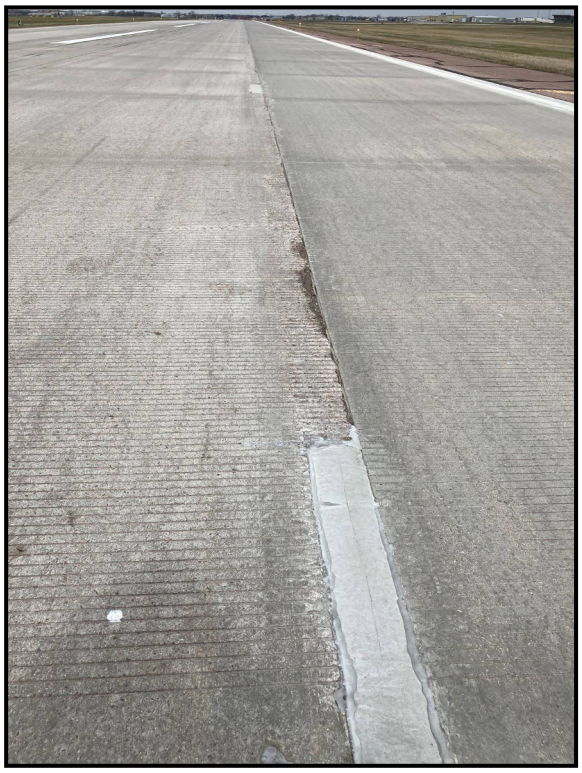
	Pavement		2012		2015		2018		2021	
Branch ID	**Age**	**Material**	**PCI**	**Condition**	**PCI**	**Condition**	**PCI**	**Condition**	**PCI**	**Condition**
Runway 13/31	1997	Concrete	93	Good	88	Good	83	Satisfactory	51	Poor

This project proposes to rehabilitate the entire runway with joint seal replacement, full panel replacement, spall repair, and stitching. The asphalt shoulders are also in need of rehabilitation. The project shall consist of concrete panel removal, 13 inch PCC pavement, asphalt pavement, and marking. The project shall also include preparation of a Documented CATEX.

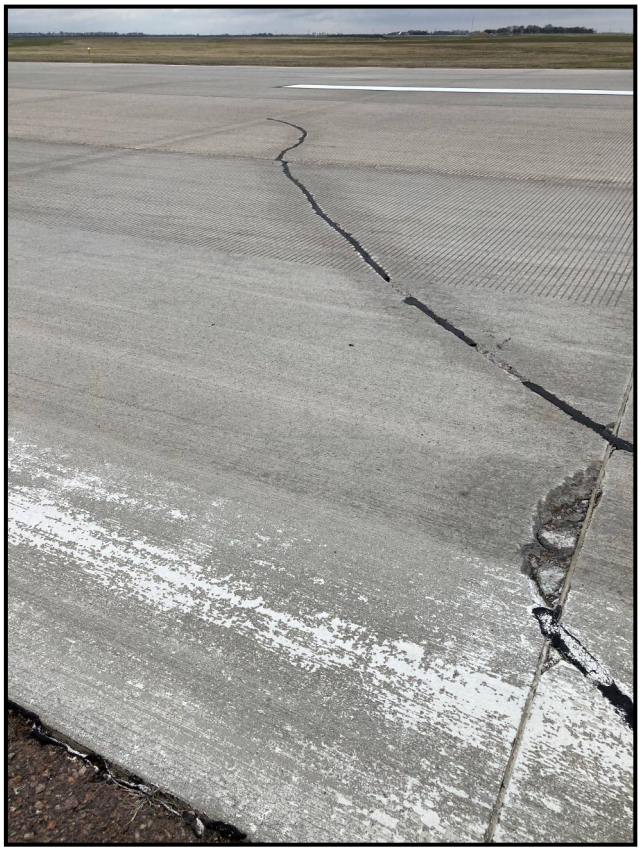
In addition to pavement rehab, the lighting is also in need of replacement. Originally installed in 1991, the High Intensity Runway Lighting (HIRL) consists of incandescent lights. In 1996, Runway 13/31 was reconstructed to a reduced width of 100 feet; the light fixtures were reused, but the concrete cans were newly installed. New 2 inch conduit and wires were also installed in 1996 beneath the asphalt shoulder pavement. Runway 31 PAPIs have alignment issues when frost is coming out of the ground, and will likely require new footings. The 31 PAPIs are also direct bury and it is recommended new conduit be installed for the new PAPIs. This project proposes to replace these with LED bulbs for the HIRL, the 31 PAPIs, and the 13 REILs.

Installation of LED technology at the Aberdeen Regional Airport has a multitude of benefits. LEDs can last up to 10 years without needing to be replaced while the incandescent lights need to be replaced twice per year, if they are run continuously. Longer lifespan of LEDs means less need for maintenance vehicles on active areas of the airfield. Less maintenance also decreases cost for labor and equipment. The major reason Aberdeen Regional Airport would like to install the LED fixtures is the cost savings over the life of both the HIRL, PAPI, and REIL systems.

The following photographs of Runway 13/31 were taken during the spring while conducting the 2021 PCI surveys.

Left: Photo shows the lack of joint seal and spalling joint. Grooved concrete showing signs of great wear along the joint. **Right:** Photo shows patching along the joint and joint seal no longer working effectively.

Left: Linear cracking through multiple panels. **Right**: Particularly bad spall with FOD. Linear crack through panels with joint seal no longer working effectively.

View of Shoulders along the Runway

LEGEND

Proposed Construction Limits

No.	Revisions	By	App.	Date

I Hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota.
Registration No.

416 Production St N.
P.O. Box 111.
Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email:
bobb@helmsengineering.com

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

RUNWAY 13/31
REHABILITATION

ABERDEEN REGIONAL
AIRPORT

Drawn By:

Chk' By:

Proj. No:

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VP. No:

Date:

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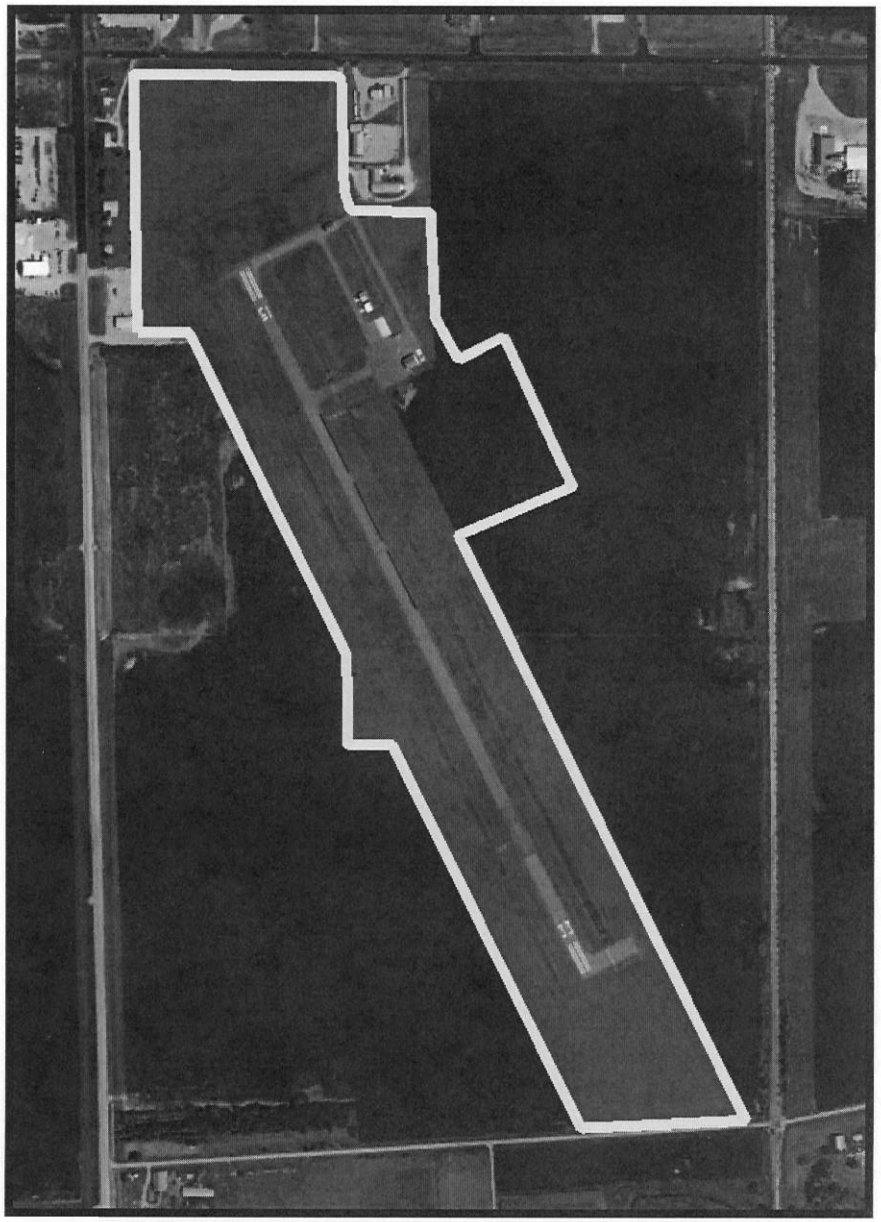

LEGEND

Cultural Survey and Aquatics Resources Survey Limits to be Completed (±110 acres)

2022 BIL Project - Parkston Municipal Airport

Aquatic Resources Survey and Cultural Survey for Future Airport Development

No.	Revisions	By	Date

I Hereby Certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the law of the State of South Dakota. Registration No.

416 Production St N.
P.O. Box 111
Aberdeen, SD 57402
Phone: 605.225.1742
Fax: 605.229.3189
Email:
bobb@helmsengineering.com

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS

2022 BIL Project
Parkston Municipal Airport

Drawn By:	
Chkd By:	
Proj. No:	
Dwg. No:	
Vlt. No:	
Date:	

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Project Narrative (Justification)

Snow Removal Equipment

The Watertown Regional Airport currently operates a fleet of Snow Removal Equipment that consists of Oshkosh Snow Blowers ('98 and '13), Oshkosh Truck Chassis ('05 and '09) equipped with 12' Reversible Tip Plows, 1 Case IH Front End Loader ('14), and a 22' MB Sweeper Broom Attachment that can be mounted onto one of the Oshkosh Snow Blowers (1998). The Airport is proposing to purchase two pieces of equipment for the airport, one to be reimbursed with 2022 BIL funds and the second with 2023 funds.

In order to justify the use of federal money for the purchase of SRE Equipment, the FAA developed a SRE Calculator spreadsheet that uses different variables to quantify the equipment needed to meet the requirements they set in their advisory circulars. The following justifications of the variables used in completing the spreadsheet. Figure 1 provides the results of the spreadsheet that was prepared using the following variables:

- The average annual snowfall of 34 inches was determined from the historical average monthly data from 1949 to 2022 from the Watertown Regional Airport's National Weather Service Station.
- The Watertown Regional Airport is a Commercial Service facility.
- The Number of Operations was obtained from the most recent Airport Master Record. The total operations for 12 months ending 1/1/2015 was 12,276. However, that is not an accurate overview of what is occurring at the airport. The July, 2019 Concept Budget Report analyzed the enplanements based on the FAA's Terminal Area Forecast (TAF), it was identified that the TAF is extremely inaccurate for ATY. The TAF matches the Airport Master Record.
  The current Air Carrier on the field is Denver Air and has **1,460** operations annually.
  ATY Aviation, the FBO on the airfield started their flight school in 2019, recently hired a second flight instructor and has had a growing number of students since inception. They estimate that they have an average of **8,600** annual operations and growing.
  Lake Area Technical College (LATC) has also had a growing aviation department in recent years. They have had an Aviation Maintenance Technology program for years, started the Unmanned Aerial Systems Pilot Systems program, and have expanded into a Professional Fixed Wing Pilot program that also allows students to become Certified Flight Instructors. LATC has 9 registered aircraft on the field and estimates that they have an average of **15,000** operations annually with anticipated annual growth.
  The airport has one ag spray operator on the airfield for years. This operator has 3 aircraft and estimates more than **1,000** operations annually. A second operator has joined the airport in a temporary location until a taxilane can be constructed allowing him to construct a hangar. He believes that he will have greater than **1,000** operations annually. Additionally, the airport is working to construct additional taxilane to allow that additional ag operator and another to base operations at ATY.
  With the operations discussed above and the estimated **10,000** annual local GA operations of the 45 based aircraft and estimated **5,000** itinerant operations by the FBO, the total operations at ATY is greater than **41,000**.

- The sizes of the Priority 1 snow removal areas are:
  - Runway 17/35 is 6,900 ft x 100 ft.
  - Parallel Taxiway C is ± 5850 ft. x 50 ft and totals approximately 323,000 ft^2 of pavement. This area includes Connector Taxiways C1, A3, a portion of Taxiway A from A3 to 17/35, and all applicable taxiway radius pavements.
  - Taxiway B is ± 2,150' x 75' ft. The total area is approximately 165,000 ft inclusive of applicable taxiway fillets.
  - The Terminal Access Taxiway is ±875 ft x 60 ft and totals approximately 59,000 ft^2 of pavement inclusive of all applicable taxiway fillets.
  - The Terminal Apron is approximately 128,000 ft^2.
  - The ARFF Access Road is ±970 ft x 25 ft and includes 24,250 ft of pavement.

Figure 1 is the completed "Airport Snow Removal Equipment" for the Watertown Regional Airport. The Airport is proposing to purchase two (2) additional Class III or IV snow plows. ATY has the capability of maintenance and repairs for these pieces of equipment. ATY has adequate storage to store the currently owned and proposed snow removal equipment indoors.

ATY is proposing to replace the 1998 Oshkosh Chasis with Plow, Snow Blower, and MB Broom attachment. It is greater than 24 years old and in need of replacement. All of the gauge clusters are inoperative, it has several small hydraulic leaks, and the block heaters melted down and started on fire 3 years ago and had to be replaced.

BEFORE the acquisition and replacement of the Snow Removal Equipment, ATY will have the following equipment purchased with AIP funds:	According to the Snow Removal Equipment Calculations spreadsheet, the maximum number of eligible items for ATY is as follows:	AFTER the acquisition and replacement of the Snow Removal Equipment, ATY will have:
2 – Snow Blowers	2 – Snow Blowers	1 – Snow Blowers
2 – Plows	4 – Plows	3 – Plows
1 – Sweeper	2 – Sweepers	2 – Sweeper
0 – Hopper Spreaders	2 – Hopper Spreaders	0 – Hopper Spreaders
1 – Front End Loader	0 – Front End Loader	1 – Front End Loader.

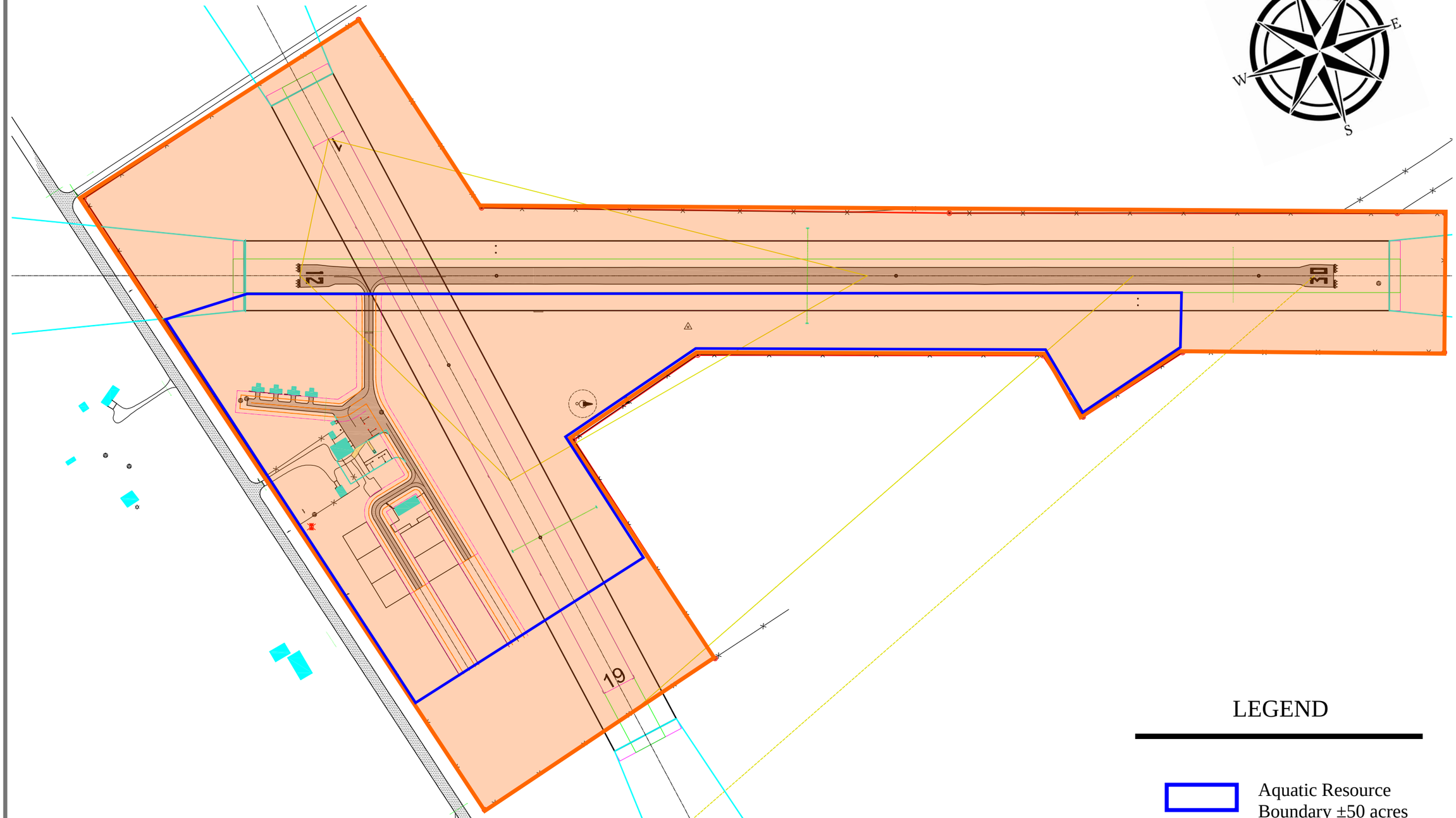
Project Narrative (Justification)

Aquatic Resources Survey and Cultural Survey for Future Airport Development

The proposed Aquatic Resources Survey and Cultural Survey will establish a strong foundation for proposed future projects at the Airport. These future projects include a fuel system and an AWOS III-P which are anticipated to be designed and constructed during 2023-2024 and 2024-2025, respectively.

A Level III Intensive Survey of airport property will be completed by Principal Investigator pursuant to SD SHPO Guidelines, including subsurface testing. The traditional cultural specialists (TCS) will conduct a separate traditional cultural property survey, in conjunction with the archaeologist's cultural resource survey. It is anticipated that the pedestrian survey will be completed with 15 meter or less spaced transects as generally requested by THPO.

The field delineation will be conducted in accordance with the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (1987 Edition) and Regional Supplement to the Corps of Engineers Wetland Manual: Great Plains Region.



LEGEND

- Aquatic Resource Boundary ±50 acres
- Cultural Survey Boundary ±120 acres

No.	Revisions	By	App.	Date

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Aberdeen, S.D. 57402
Phone: 605.225.1212.
Fax: 605.225.3189
Email:
bobb@helmsengineering.com

Helms & Associates
CIVIL ENGINEERS & LAND SURVEYORS

Project Justification Sketch

Sigurd Anderson Field
Webster, SD

Drawn By:
Chk' By:
Proj. No:
Dwg. No:
VP. No:
Date:

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