

	STATE	PROJECT	SHEET	TOTAL
	OF S.D.	AC 6001(HNG)	NO.	SHEETS
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Plans Prepared By State of South Dakota **Department of Transportation**

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0020	Unclassified Excavation	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	10	CuYd
250E0010	Incidental Work	Lump Sum	LS
260E1010	Base Course	108.0	Ton
320E1200	Asphalt Concrete Composite	9.8	Ton
380E3025	6" Reinforced PCC Driveway Pavement	269.2	SqYd
380E6000	Dowel Bar	15	Each
380E6110	Insert Steel Bar in PCC Pavement	10	Each
380E6302	Reseal PCC Pavement Joint - Hot Pour	78	Ft
390E0200	Repair Type A Spall	75.0	SqFt

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

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ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the Public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

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SCOPE OF WORK

The work required for this project includes, but is not limited to, the following items, not listed in order of execution.

- 1. Remove Existing Concrete/Asphalt Pavement
- 2. Unclassified Excavation for Digouts & Backfill Operations
- Base Course Placement Operations 3.
- Remove and Reset Aluminum Post 4.
- 5. Asphalt Concrete Paving Operations
- 6. Install Dowel Bars
- 7. 6" Reinforced PCC Driveway Paving Operations
- 8. Type A Joint and Spall Repairs
- 9. Cleaning and Re-Sealing of Apron Joint to State Hangar
- 10. Cleanout Slotted Drain
- 11. Move Rain Downspout Gutter

The Contractor is encouraged to inspect the project site prior to bidding to evaluate the extent of work that will be required for construction.

SEQUENCE OF OPERATIONS

The Contractor shall submit a proposed sequence of operations for the Engineer's review and approval at least two weeks prior to the preconstruction meeting.

Once work starts to inconvenience the state hanger, work shall be pursued in a near continuous, expeditious manner to its completion. Any work that restricts the employees of the state hanger from accessing, storing, or causes a potentially unsafe condition due to Contractor operations such as frequent movement of equipment or materials on or through the project, is considered to be an inconvenience to the airport.

The Contractor will not be allowed to store equipment within the working area. Two areas have been designated as storage areas determined by airport personnel. These two staging areas can be seen on the plan sheet "Access and Staging Locations".

The Contractor shall notify the airport two weeks prior to work beginning so airport personnel can arrange and make available FHWA and FAA approved barrier to be installed 25' away from the existing slotted drain. The Contractor will install the barrier with an airport employee. Also the Contractor shall notify airport personnel (Michael Isaacs at 605-773-7447) 48 hours in advance so the airport can issue a "Notice to Airman" warning.

Once equipment is through the gate, the Contractor shall make sure the gate closes behind them and remains closed. At no time shall the Contractor be allowed to leave the gate open for extended periods of time.

Work areas need to be kept clean and no trash shall be allowed to blow beyond the work area. In the event debris/trash gets onto the runway, the Contractor shall immediately contact airport personnel (Cory Hoffrogge 605-773-7447 or 605-280-4416) so they are able to remove the debris/trash.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49 7A and Administrative Rule Article 20:25, the Contractor shall contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

WATER FOR GRANULAR MATERIAL

The moisture content for compaction of the Base Course material shall be approximately optimum moisture for the material or as directed by the Engineer. All costs for furnishing and placing the water shall be incidental to the contract unit price per ton for the corresponding Base Course material.

EXCAVATION OF UNSTABLE MATERIAL

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts shall be Base Course paid for at the contract unit price per ton.

Included in the Estimate of Quantities are 10 cubic yards of Unclassified Excavation – Digouts for the removal of unstable material throughout the project.

UNCLASSIFED EXCAVATION

Unclassified Excavation will occur throughout the Remove Pavement areas as detailed in the plans. For Information only, a table has been provided to show estimated removal from the project.

Unclassified Excavation material shall become the property of the Contractor for their disposal.

Table of Unclassified Excavation			
Item	Quantity (CuYd)		
Pavement & Granular Base Material	100		
Total Unclassified Excavation	100		

BASE COURSE

Base Course shall be utilized for 6" Reinforced PCC Driveway Pavement reconstruction, formwork reconstruction, and digout areas as detailed in the plans.

6" Reinforced PCC Driveway Pavement reconstruction, formwork reconstruction, and digout areas of excess moisture shall be dried, loose material shall be removed, and disturbed areas shall be leveled and compacted to the satisfaction of the Engineer prior to placing Base Course.

Compaction shall be to the satisfaction of the Engineer.

19 tons of base course material has been included for backfilling Digouts and 14 tons of base course material has been include for backfilling formwork reconstruction. All costs associated with the aforementioned work shall be incidental to the contract unit price per ton for "Base Course".

INCIDENTAL WORK

Three objectives shall be completed under this bid item. First, the Contractor will be required to remove all debris from the existing slotted drain. Second, the Contractor will be required to move an existing rain downspout located on the Northeast corner of the building. The new downspout shall be routed to the south of the existing door. It is estimated that 2-B Style Elbows and a 20' of aluminum downspout will be required to perform the work. If the existing aluminum downspout is not damaged when performing the cuts, the Contractor shall be allowed to use the salvaged material. A detail of the downspout work can be seen in this set of plans. Third, the Contractor will be required to remove and reset the aluminum pole that is located in the Northwest corner of the hanger. The Contractor shall make sure that the gate closes properly. All work to complete the debris removal from the slotted drain and re-routing the downspout shall be incidental to the contract lump sum price for "Incidental Work".

PCC PAVEMENT REPAIR - GENERAL

Locations and size (length or width) of concrete repair areas are subject to change in the field, at the discretion of the Engineer, at no additional cost to the state. Payment will be based on actual area replaced.

Existing concrete pavement shall be sawed full depth at the beginning and end of the repair areas. When either the beginning or end of a repair area falls close to an existing joint or crack, the repair area shall be extended to eliminate the existing joint or crack.

Saw cuts for repairs will be allowed 18" beyond the final PCCP limits and full depth to allow for formwork. Once the 6" Reinforced PCC Driveway Pavement has been placed, the formwork shall be removed and 12" of Base Course, 8" (2-3" and 1-2") Asphalt Concrete Composite shall be placed. If saw cuts extend beyond the formwork, the cuts filled with a non-shrinkage mortar mix at the Contractor's expense.

Any existing dowel bar assemblies/steel bars shall be sawed off and removed.

Existing asphalt concrete (AC) pavement and PCCP shown in the plans for removal shall be removed by the lift out method or by means that minimize damage to the existing building foundation, existing slotted drain, and base and sides of remaining in place concrete. All removed material shall become the Contractor's property and shall be removed from within the airport property by the end of the workday. Damage to the existing building, existing slotted drain, and adjacent concrete caused by the Contractor's operations shall be removed and replaced at the Contractor's expense.

Compact of the subgrade shall be to the satisfaction of the Engineer. The Contractor will then place 5" Base Course in all concrete repair areas.

AC and PCCP pavement removal, including saw cuts, sawing and removing existing steel bars, excavation to grade for Base Course, scarifying and compacting subgrade shall be incidental to the contract lump sum price for "Unclassified Excavation".

Asphalt concrete adjacent to concrete pavement replacements will be repaired by the Contractor with new Asphalt Concrete Composite.

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<u>6" REINFORCED PCC DRIVEWAY PAVEMENT</u>

The aggregate may require screening as determined by the Engineer.

The concrete used in the Portland Cement Concrete Pavement shall conform to section 462 Class M, and shall contain ledge rock as coarse aggregate.

The surface of the concrete shall be a carpet drag finish.

The Contractor shall place the #4 rebar mid-depth of 6" Reinforced PCC Driveway Pavement slabs. To accomplish this, the Contractor may need to use chairs.

Contraction joints in the 6" Reinforced PCC Driveway Pavement shall be $1\frac{1}{2}$ inches deep if formed in the fresh concrete using a suitable grooving tool. If a saw is used to cut the contraction joints, then the depth of the joint shall be at least $\frac{1}{4}$ the thickness of the approach pavement.

All costs for furnishing and placing the 6" Reinforced PCC Driveway Pavement and constructing the expansion and contraction joints including labor, equipment and materials shall be incidental to the contract unit price per square yard for "6" Reinforced PCC Driveway Pavement" accordingly.

All costs for furnishing and placing the granular material shall be incidental to the contract unit price per ton for "Base Course".

SAW AND SEAL JOINTS

All longitudinal and transverse joints shall be sawed and sealed. Longitudinal and transverse joints in the 6" Reinforced PCC Driveway Pavement area shall be sealed with Hot Poured Elastic Joint Sealer.

Joint sealing shall conform to Section 380.3 P.

The existing open joint between the existing building floor slab and the existing building approach slab on the north side of the building shall be cleaned full depth, saw a ¼" wide by 1' deep where the slabs are tight. The gap shall then be filled with Hour Pour Elastic Joint Sealer to flush along the entire hangar apron.

Expansion joint material shall be used between the existing building foundation and the new concrete, and between the existing building approach slabs and the new concrete/spall repairs areas. These joints shall be sealed with Low Modulus Silicone Joint Sealant.

Acceptance of the Low Modulus Silicone Sealant and Hot Poured Elastic Joint Sealer will be based on visual inspection by the Engineer.

Cost for sawing joints, expansion joint material, Hot Poured Elastic Joint Sealer, Low Modulus Silicone Sealant, and sealing of all longitudinal and transverse joints shall be incidental to the contract unit price per square yard for "6" Reinforced PCC Driveway Pavement".

Cost for sawing joints, expansion joint material, Hot Poured Elastic Joint Sealer, and sealing of joint located between the hangar and apron shall be incidental to the contract unit price per foot for "Reseal PCC Pavement Joint – Hot Pour".

TYPE A JOINT AND SPALL REPAIR

Concrete Patch Material shall Type III conforming to Section 390.2 B.3.

If strength requirement has not been met by 36 hours after placement, the patches shall be removed and replaced at no cost to the State.

The Engineer will determine the locations and limits for Type A Spall Repair on construction.

Spalls which are repaired according to plans and specifications and exhibit partial respalling or cracking, shall be repaired to the satisfaction of the Engineer at no additional cost to the State.

STEEL BAR INSERTION

Steel bars shall conform to Section 1010.

Locations and quantities of concrete repair are subject to change in the field at the discretion of the Engineer. The Contractor will be responsible for ordering the actual quantity of steel bars necessary to complete the work.

The Contractor shall insert the steel bars (1" x 18" epoxy coated plain round dowel bars and $\frac{1}{2}$ " x 18" epoxy coated plain round dowel bars at the locations shown in the plans) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

Steel bars shall be inserted in the joints on 24" centers as shown in the plans. The first steel bar in the joint shall be placed at a distance ½ of the remaining distance from the layout of 5 bars spaced at 24". It will be necessary to laterally adjust the location of some of the inserted steel bars when the dimensions above interfere with existing steel bar locations.

A rigid frame or mechanical device will be required to guide the drill to ensure proper horizontal and vertical alignment of the steel bars in the drilled holes.

Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to section 380.2 L.

Epoxy coated plain round steel bars shall be inserted on 12 inch centers in the transverse joint. The first steel bar shall be placed a minimum of 3 inches and a maximum of 6 inches from the outside edge of the slab.

TABLE OF STEEL BAR INSERTION

LOCATION		QUANTITY OF BARS		
		1/2"	1"	
Insert Steel Bar			10	
Dowel Bars		5	10	
	Totals:	5	20	

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ACCESS AND STAGING LOCATION





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STATE HANGAR REPAIRS

ADJUSTMENT OF RAIN DOWNSPOUT ON NE CORNER OF BUILDING





Electrical Box











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PLAIN ROUND DOWEL BAR INSERTION



