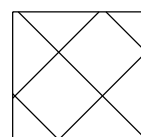
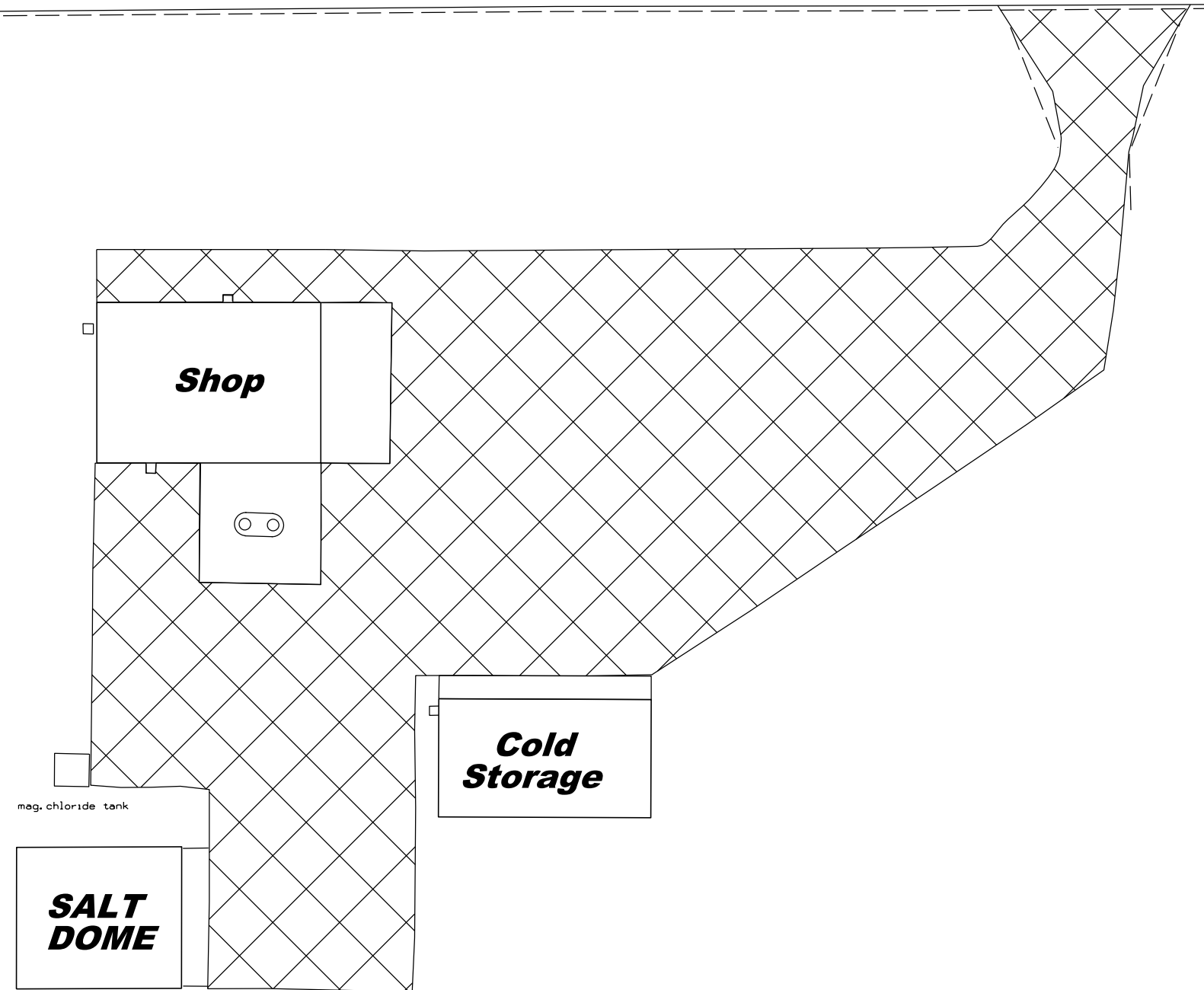
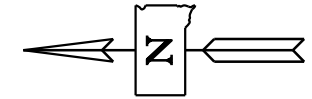




STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	411C420, 411C420, 411C422 & 411C423	2	8

# Herreid Maintenance Yard 411C420 PCN I59R

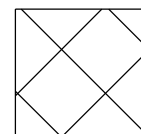
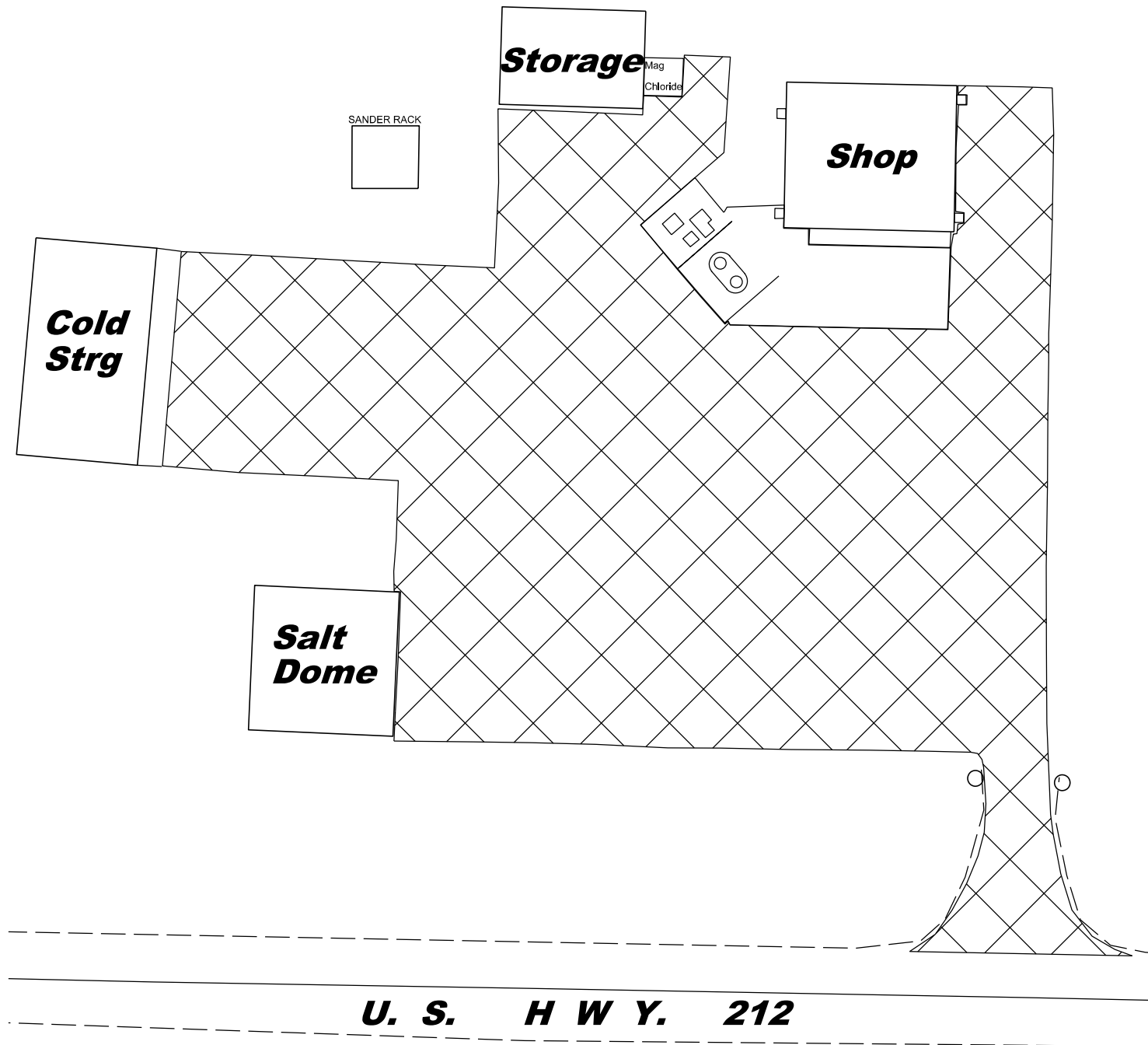
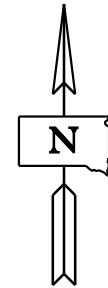
*U. S. H W Y. 8 3*



**8067 sqyds - Slightly porous and oxidized**

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	411C420, 411C420, 411C422 & 411C423	3	8

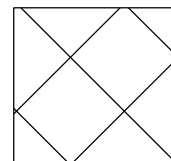
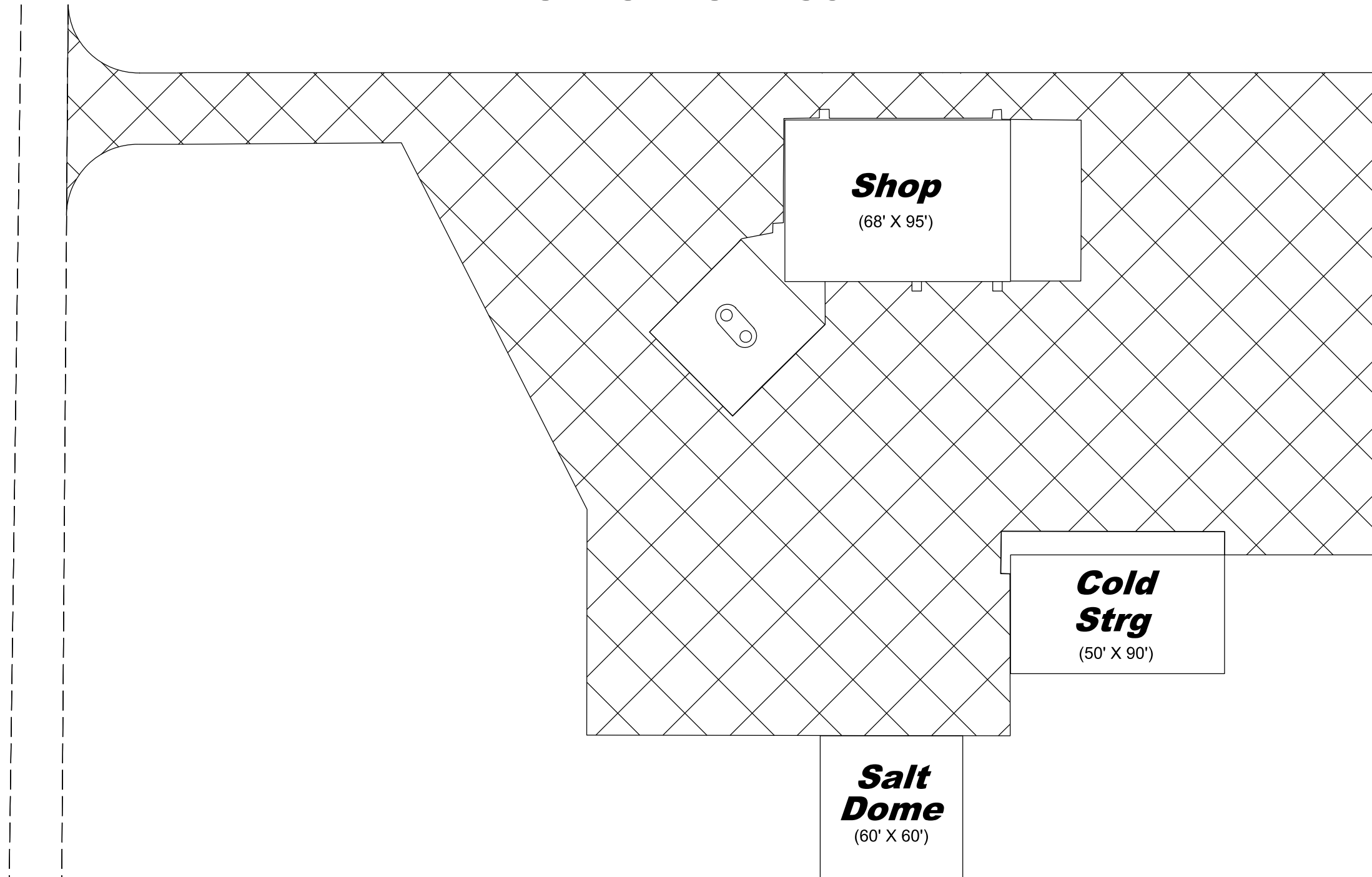
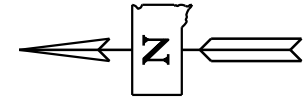
# Eagle Butte Maintenance Yard 411C422 PCN I59U



**7965 sqyds - Slightly pocked, porous and oxidized**

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	411C420, 411C421, 411C422 & 411C423	4	8

# Isabel Maintenance Yard 411C423 PCN I59V



**9091 sqyds - Slightly porous and oxidized**

## SPECIFICATIONS

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

## ESTIMATE OF QUANTITIES

### Herreid - 411C420 PCN I59R

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.7	Ton
330E3000	Sand for Fog Seal	10.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	9.6	Ton
360E1200	Modified Cover Aggregate	96.8	Ton
634E0010	Flagging	4.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

### McIntosh - 411C421 PCN I59T

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.4	Ton
330E3000	Sand for Fog Seal	10.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	7.9	Ton
360E1200	Modified Cover Aggregate	79.5	Ton
634E0110	Traffic Control Signs	32.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

The quantities of asphalt for surface treatment and cover aggregate are based on the rates shown in the Rates of Materials. This is only an estimate. The actual application rates of materials will be determined by mix design as stated in the Special Provisions. The mix design rates may vary from the estimated rates stated in the Rates of Materials depending on the aggregate source and the variation in gradation and flakiness index. The application rates may also be adjusted in the field due to results of gradations, flakiness index and differing surface conditions. Pay quantities will be those actually used, even though they may vary significantly from plans estimate.

### Eagle Butte - 411C422 PCN I59U

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.7	Ton
330E3000	Sand for Fog Seal	10.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	9.5	Ton
360E1200	Modified Cover Aggregate	95.6	Ton
634E0010	Flagging	4.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

### Isabel - 411C423 PCN I59V

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.9	Ton
330E3000	Sand for Fog Seal	10.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	10.8	Ton
360E1200	Modified Cover Aggregate	109.1	Ton
634E0110	Traffic Control Signs	32.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	411C420, 411C421, 411C422 & 411C423	6	8

**ENVIRONMENTAL COMMITMENTS**

An Environment 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 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/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 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 separated 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 reclaiming of the waste disposal site(s) shall be incidental to the various contract items.

**COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES**

The SDDOT has obtained concurrences 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 review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for the 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 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 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 staging areas, borrow sites, waste disposal sites, or material processing sites 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.

**RATES OF MATERIALS**

The Estimate of Quantities is based on the following quantities of materials per square yard.

**Herreid, McIntosh, Eagle Butte, and Isabel Maintenance Yards**

CRS2P Asphalt for Surface Treatment at the rate of 0.28 gallons per square yard.

Modified Cover Aggregate at the rate of 24 pounds per square yard.

CSS-1h or SS-1h Asphalt for Fog Seal at the rate of 0.05 gallons per square yard.

**SEQUENCE OF OPERATIONS**

The Contractor is required to notify the Area Engineer at least 10 days prior to Beginning asphalt surface treatment operations.

The surface treatment work shall be sequenced such that access to the fuel pump islands are maintained at all times.

**BUILDINGS, SIDEWALKS, VALLEY GUTTERS, AND FUEL ISLAND CONCRETE**

Asphalt surface treatment and fog seal treatment shall not be placed on any building, sidewalk, valley gutter, or fuel island concrete. Any emulsion or cover aggregate found to be on any of these items shall be removed by the Contractor as directed by the Engineer at no cost to the state.

Cover aggregate material shall not be broomed into any drop inlets.

**CRS-2P ASPHALT FOR SURFACE TREATMENT**

Application of the asphalt surface treatment shall be applied to the areas specified in the plans. The Contractor will have to consider the shapes and areas to receive the surface treatment to ensure coverage over the total area specified. Gaps between surface treatment passes will not be allowed. NOTE: The fog seal shall be applied to cover the total area specified by the plans.

**MODIFIED COVER AGGREGATE**

Aggregate for Modified Cover Aggregate shall conform to the following gradation requirements:

Passing a 3/8 Inch Sieve	100%
Passing a No. 4 Sieve	0-75%
Passing a No. 8 Sieve	0-30%
Passing a No. 40 Sieve	0-6%
Passing a No. 200 Sieve	0-1.5%

NOTE: A tighter requirement for the percent passing the 200 Sieve has been specified. Aggregate may be crushed or uncrushed. All other requirements of the Standard Specifications for Type 1B shall apply.

After the aggregate stockpile has been produced, the Contractor shall submit an aggregate sample to the asphalt supplier a minimum of 14 days prior to starting the project to allow time to evaluate the compatibility and design of the surface treatment. A copy of the test results shall be submitted to the Engineer and Bituminous Engineer for approval prior to starting the asphalt surface treatment work.

Quality tests on the Cover Aggregate for abrasion and soundness are required by specification. The Contractor shall notify the Mobridge Area Office prior to sampling of aggregates to be submitted to the Central Testing Laboratory for Quality testing. Satisfactory test results for the Cover Aggregate shall be obtained prior to its use on the project.

NOTE: Due to the lack of traffic in the DOT yards, rollers shall increase the number of complete roller coverages from four to eight. As per the Specification, a complete coverage is defined as rolling full width in one direction. The cost for this work shall be incidental to other contract bid items.

**HAUL ROAD**

The Contractor shall be responsible for any haul roads used to transport material to the project site. The State will not participate in the cost of restoration of any haul roads used by the Contractor.

**BROOMING**

The first brooming of loose material remaining on the area receiving the asphalt surface treatment shall be lightly broomed off during the cool morning period the day following application or as directed by the Engineer.

NOTE: It is anticipated that successful brooming will require a combination of rotary brooming, pickup brooming and hand brooming. Loose material will not be allowed to be broomed onto or against grass, buildings, or other appurtenances.

The excess aggregate shall become the property of the DOT and stockpiled at an approved location in the DOT yard. The cost for this work shall be incidental to other contract bid items.

**FOG SEAL**

The fog seal shall be placed following the completion of the chip seal. Prior to the application of the fog seal the entire area that has received asphalt surface treatment shall be broomed a second time. The second brooming shall be accomplished no earlier than 72 hours following the application of the asphalt surface treatment and no earlier than 24 hours before the application of the fog seal. Brooming shall be done as noted above. The excess aggregate shall become the property of the DOT and stockpiled at an approved location in the DOT yard.

A CSS-1h or SS-1h emulsion shall be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the binder application.

Prior to hauling, Blotting Sand shall be screened to minimize segregation, eliminate oversize and effectively breakup or discard material bonded into chunks.

**TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT**

The Contractor shall furnish, install, maintain, and remove TRUCK CROSSING signs daily. The TRUCK CROSSING signs shall be displayed at all times when haul vehicles are hauling material. When hauling conditions no longer exist, the signs shall be covered or removed from view. The exact number and location shall be determined on construction. Payment for additional signs will be based on the contract unit price per square foot for Traffic Control Signs.

ROAD WORK AHEAD, FLAGGER, ONE LANE ROAD AHEAD, and TRUCK CROSSING signs may be mounted on portable supports

Traffic shall be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment shall be repaired at no expense to the Department.

Operations shall be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

**PERMANENT PAVEMENT MARKING PAINT**

The DOT Traffic Crew will mark all of the existing parking lot stripes with tabs to sufficiently allow for locating and repainting of these stripes after completion of the work. The DOT Traffic Crew will permanently repaint the new parking lot stripes after final brooming operations.

**EXISTING PAVEMENT CONDITIONS**

The existing pavement conditions for each area are listed in the table below. The descriptions are from the McLeod procedure for seal coat design.

PROJECT	EXISTING PAVEMENT CONDITION
Herreid (PCN I59R)	Slightly porous and oxidized
McIntosh Area 1 (PCN I59T)	Slightly pocked, porous and oxidized
McIntosh Area 2 (PCN I59T)	Smooth, non-porous
Eagle Butte (PCN I59U)	Slightly pocked, porous and oxidized
Isabel (PCN I59V)	Slightly porous and oxidized

# SIGN TABULATION

### Herreid – 411C420 PCN I59R

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>137.0</b>

### McIntosh – 411C421 PCN I59T

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>32.0</b>

### Eagle Butte – 411C422 PCN I59U

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>137.0</b>

### Isabel – 411C423 PCN I59V

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>32.0</b>

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

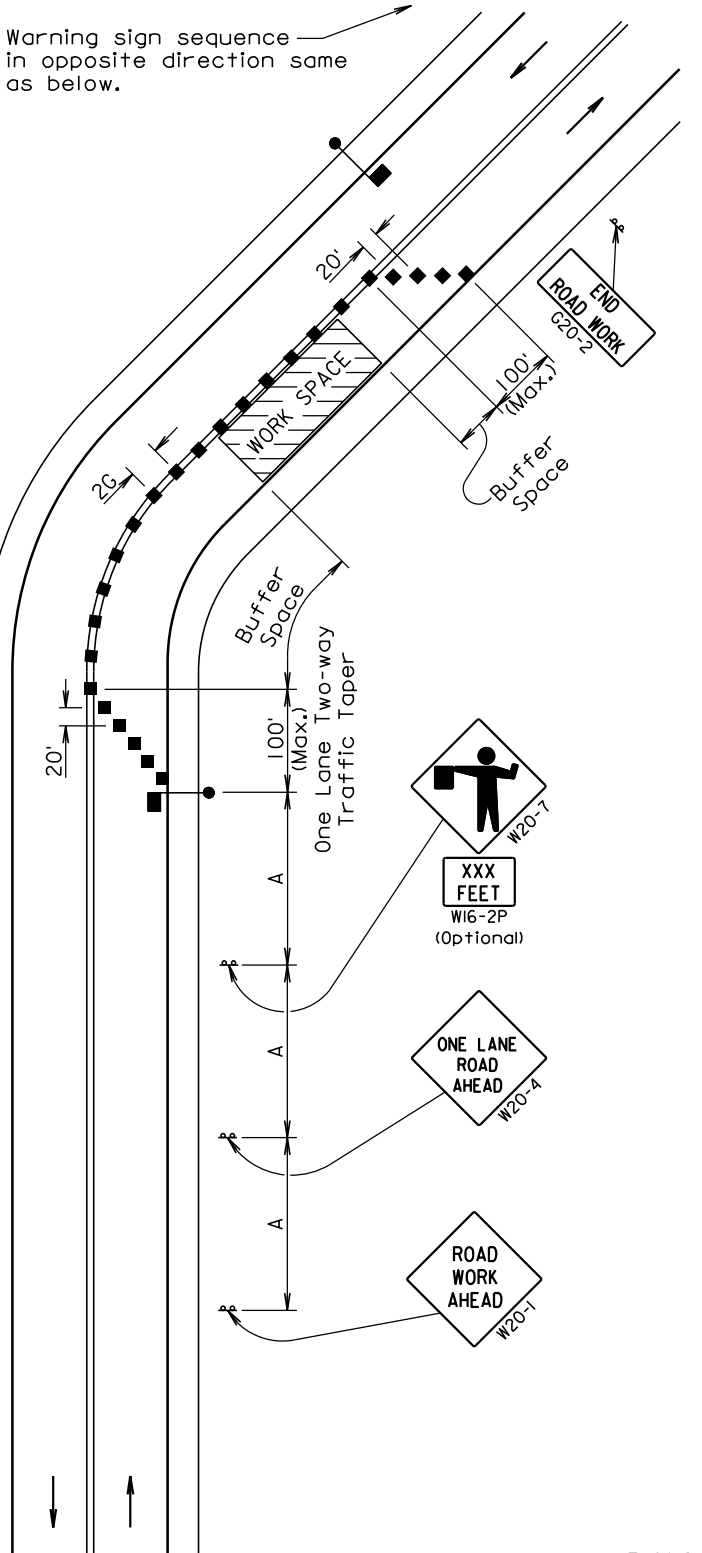
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



June 3, 2016