

SUUTH PH 000N-469 1 9 Plotting Date: 04/24/2023 04/24/2023 1 9 NONSECTION INDEX OF PAGES Sheet 1: Ttitle Sheet Sheet 1: Ttitle Sheet Sheet 3: Notes Sheet 4: Tables Sheet 5: Wiring Diagram Sheet 5: Wiring Diagram Sheet 7: Signal Layout Sheets 8-9: Standard Plates Standard Plates
NONSECTION INDEX OF PAGES Sheet 1: Ttitle Sheet Sheets 2-3: Notes Sheet 4: Tables Sheet 5: Wiring Diagram Sheet 6: Conduit Layout Sheet 7: Signal Layout Sheets 8-9: Standard Plates
NONSECTION INDEX OF PAGES Sheet 1: Ttitle Sheet Sheets 2-3: Notes Sheet 4: Tables Sheet 5: Wiring Diagram Sheet 6: Conduit Layout Sheet 7: Signal Layout Sheets 8-9: Standard Plates
Sheet 4: Tables Sheet 5: Wiring Diagram Sheet 6: Conduit Layout Sheet 7: Signal Layout Sheets 8-9: Standard Plates
↓ ↓

ESTIMATE OF QUANTITIES

BID ITEM	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1520	Remove Signal Equipment	Lump Sum	LS
634E0110	Traffic Control Signs	147.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
635E5800	Miscellaneous Signal Parts	Lump Sum	LS
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E6970	Install Pedestrian Push Button	2	Each
635E9024	1/C #14 AWG Copper Wire	120	Ft
635E9504	4/C #14 AWG Copper Tray Cable, K2	170	Ft
635E9507	7/C #14 AWG Copper Tray Cable, K2	320	Ft

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<u>https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf</u>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

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 will 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 be disposed of within the Public ROW.

The waste disposal site(s) will 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) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF	PROJECT	SHEET	TOTAL	
SOUTH DAKOTA	PH 000N-469	2	9	

SCOPE OF WORK

This project consists of removing old field wiring and signal head connections and installing new field wiring and signal head electrical connections and mounting brackets at the intersection of SD Hwy 34 & Glencoe Dr. The Contractor is encouraged to visit the signal ahead of bidding and or construction to see the scope of work.

SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

The following is a sequence of operations for the Contractor to follow:

- 1. Remove old infrastructure
- 2. Install new infrastructure
- 3. Install new signal head connections
- 4. Restore disturbed areas to satisfaction of the Engineer

NEW FIELD WIRING

The Contractor will remove all field wiring from the connection points in the bases of the poles to the termination points within the signal heads and replace with all new AWG #14 color-coded and numbered wire. The Contractor will match all new wiring colors with the existing wiring colors present in the base of poles as referenced on sheet 5 of these plans ('EXISTING WIRING DIAGRAM").

The Contractor may use existing wire as pull wire for installing new wiring. Costs for providing, furnishing and installing new signal field wiring will be included in the contract unit price per foot for "7/C #14 AWG Copper Tray Cable K2", and "4/C #14 AWG Copper Tray Cable K2". Removal and disposal of existing wiring will be incidental to the contract lump sum price for "Remove Signal Equipment".

REPLACE MISCELLANEOUS SIGNAL EQUIPMENT

This intersection is a temporary signal and the signal heads currently have detachable plugs on the backside of the heads, The Contractor will replace those plugs with continuous permanent wiring. The Contractor will replace all terminal blocks in the base of signal poles with a direct connection to old wiring, these connections will be made with 3M Scotchlok ICD Connector 314 or approved equivalent connectors. Costs for this will be incidental to the contract lump sum price for "Miscellaneous, Electrical".

The Contractor will remove and replace all signal head mounting hardware with new hardware, this will be incidental to the contract lump sum price for "Miscellaneous Signal Parts."

VERIFY NEW SIGNAL EQUIPMENT

The Contractor will verify that the signal head indication bulbs work correctly after new wiring and signal parts are installed. The Contractor will place the signal into operation and verify that the correct color indications are all working and sequencing at the correct times.

SD Hwy 34 & Glencoe Dr intersection is a temporary signal and has fabric covers over the signal heads from September thru July each year, the Contractor may remove these covers for performing work and the Contractor will reinstall these covers after work is complete.

The Contractor will verify the aiming of signal heads at their respective lanes of traffic during/after replacement of all the signal head mounting hardware.

PEDESTRIAN HEADS AND PUSH BUTTONS

The Contractor will remove existing pedestrian push buttons and wiring and they will become property of The Contractor. The Contractor will install two new pedestrian push buttons, and associated wiring (see wiring table). SDDOT RC Region Traffic will provide the new pedestrian push buttons and pedestrian signal heads for installation. The Contractor will test and ensure the pedestrian push buttons are properly connected and are functioning properly. Costs for this will be incidental to contract unit price per each for "Install Pedestrian Push Button".

Existing pedestrian signal heads are mounted to the bottom of mounting hardware for vehicle signal heads. The Contractor will re-mount the existing pedestrian signal heads in the same manner as before.

Contractor will contact Nick Wuebben SDDOT RC Region traffic technician (605-381-9875) for delivery of pedestrian buttons.

SUPPLYING AS BUILT PLANS

If the new wiring and signal equipment are constructed differently than what is stated in the plans, the Contractor will supply as built plans to the Engineer and a copy will be sent to the Rapid City Region Traffic Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

ON-SITE INSPECTION

An on-site inspection of the new traffic signal equipment will be conducted before acceptance of the project. The on-site inspection will be conducted by the Project Engineer and Region Traffic Engineer with the Contractor.

TRAFFIC CONTROL

During replacement of signal equipment that is over lanes of traffic at SD Hwy 34 and Glencoe Rd the contractor will use a lane closure according to traffic control standard plate 634.60.

During replacement of signal equipment at SD Hwy 34 and Glencoe Rd the contractor will use traffic control according to standard plate 634.30. The Contractor will also need to utilize traffic control standard plate 634.03 (shoulder work) for replacement of signal equipment that is not over the lanes of traffic.

ITEMI

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W16-2P	FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
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
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 14		147.0	

GENERAL TRAFFIC CONTROL

The Contractor will be limited to one traffic control setup at any one time.

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All regulatory signs will have a minimum mounting height of 5' in rural locations, even when mounted on portable supports.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
DAKOTA	PH 000N-469	3	9

All construction operations will be conducted in the general direction of traffic

CABLE AND MOUNTING HARDWARE QUANTITIES

MOUNTING HARDWARE AND WIRE QUANTITIES

				CAI	BLE (FT)				MO	DUNTING I	HARDWAR	RE													
		7/C #14 A	WG copper wire	4/C #14 A	WG copper wire	1/C #14 AW0	G copper wire	New As (No	stro-Brac E ot A Bid Ite	Bracket em)	New Mour New E (No	nting Hardw Banding to F t A Bid Item	are and Pole n)												
Location to	Location																								
base of pole S1	signal head 3				45																				
base of pole S1	signal head 4				20																				
base of pole S1	signal head 12		20																						
base of pole S1	signal head 2		60																						
base of pole S2	signal head 13		55																						
base of pole S2	signal head 14				20																				
base of pole S2	signal head 5		20																						
base of pole S3	ped head 19					4	5																		
base of pole S3	ped button					1	5																		
	pourbuilton						-																		
base of pole S3	signal head 7				50																				
base of note \$3	signal head 8				20																				
hase of note \$2	signal head 0		20		20																				
base of pole 53	signal head 9		70																						
base of pole 53	signal head 0		10				~																		
base of pole 53	ped nead 20					4	5 r																		
base of pole 53	ped button					1	5																		
base of pole S4	signal head 10		55																						
base of pole S4	signal head 11				20																				
base of pole S4	signal head 1		20																						
	signal head 3								1																
	signal head 4											1													
	signal head 12											1													
	signal head 2								1																
	signal head 13								1																
	signal head 14											1													
	signal head 5											1													
	- ,																								
	signal head 7								1																
	signal head 8											1													
	signal head 9											1													
	signal head 6								1			· ·													
	signal nead o																								
	cignal head 10								1																
	signal head 11											4													
	signal head 11											1													
	signal head 1											1													
	Subtotal:	0	320 0	0	170 0	1:	20	0	6	0	0	8	0	0 0	0	0	0	0	0	0	0	0	0	0	0

	STATE OF	PROJECT	SHEET	TOTAL SHEETS
	DAKOTA	PH 000N-469	4	9
0 0	_			
0 0	_			



PLOT SCALE - 1:45.05

N DITED EDOM - TEPLI223



STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA		6	0
		0	3
otting Dat	e: 04/24/2023		
			-
			•
			AME
			Å
			-01
			Ы
	Ť		
	(\mathbb{N})		
	$\mathbf{\dot{\varphi}}$		
	~		
	SCALE		
	1 = 40		

TING INFRASTRUCTUR	Ξ
ITEM	UNIT
NGS - 2.5 FOOT DIAMETER 4)	FT
UNCTION BOX (JB4)	EACH
UTILITY POLE	EACH
RICAL SERVICE CABINET	EACH
IC SIGNAL CONTROLLER	EACH
SOCKET	EACH
DETECTOR LOOP 8,E1-E2,W1-W2)	EACH
GID CONDUIT, SCHEDULE 40	FT
GID CONDUIT, SCHEDULE 40	FT
GID CONDUIT, SCHEDULE 80	FT
4 AWG COPPER WIRE	FΤ
6 AWG COPPER WIRE	FΤ
#14 AWG COPPER TRAY CABLE, K2	FΤ
#14 AWG COPPER TRAY CABLE, K2	FΤ
O DETECTOR CABLE	FΤ

LE - ... \Ø60C.DG

EXISTING SIGNAL LAYOUT SD HWY 34 & GLENCOE/STEEL PONY ENTRANCES



KEY	ITEM	UNIT	QUANT	KEY	ITEM	UNIT	Q
	SIGNAL POLE WITH LUMINAIRE ARM	EACH	2				
	LUMINAIRE POLE WITH MAST ARM	EACH	2	\Box	PEDESTRIAN SIGNAL HEAD (19,20)	EACH	Γ
\Diamond	SIGNAL HEAD (3-Section)(3,4,7,8,11,14)	EACH	6	PB	PEDESTRIAN PUSH BUTTON(provided by DOT)	EACH	
\Diamond	SIGNAL HEAD (5-SECTION)(1,2,5,6,9,10,12,13)	EACH	8		PEDESTRIAN CROSSING SIGN		-
Ø	TRAFFIC SIGNAL CABINET	EACH	1		(1 LEFT.1 RIGHT)	EACH	
	VIDEO DETECTION SYSTEM (15,16,17,18)	EACH	1	TO CROSS			









STATE OF	PROJECT	SHEET	TOTAL SHEETS
DAKOTA	PH 000N-469	9	9
Plotting [Date: 04/24/2023		

OT NAME - 4

LE - ... \Ø6ØC. DGN