STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	1	20

Plotting Date: 03/29/2022

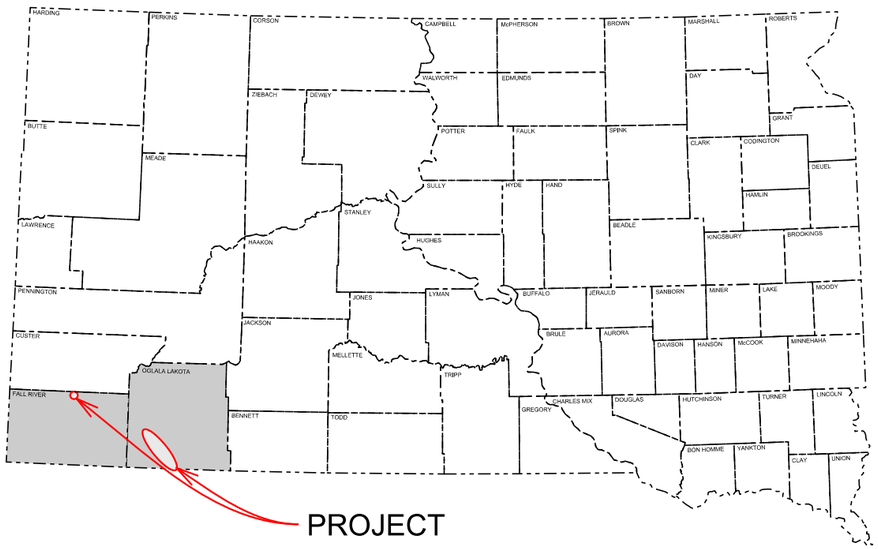
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT 000P-492 & 000N-492
US HIGHWAY 18, SD HWY 79 & SD HWY 407
FALL RIVER & OGLALA LAKOTA COUNTIES

LIGHTING REPAIR

PCN i6nx & i6ny



INDEX OF SHEETS

FALL RIVER COUNTY

I6nx 000P-492 Intersection of SD 79 & US 18
US 18 MRM 44.0 + 0.573 to MRM 44.67 + 0.026,
Hwy 79 MRM 26.76 + 0.021
at Maverick Jct.
DESIGN DESIGNATION

AADT (2021)	3542
AADT (2041)	5263
DHV	1006
D	51 %
DHV T%	5.8 %
AADT T%	12.7 %
V	55 mph

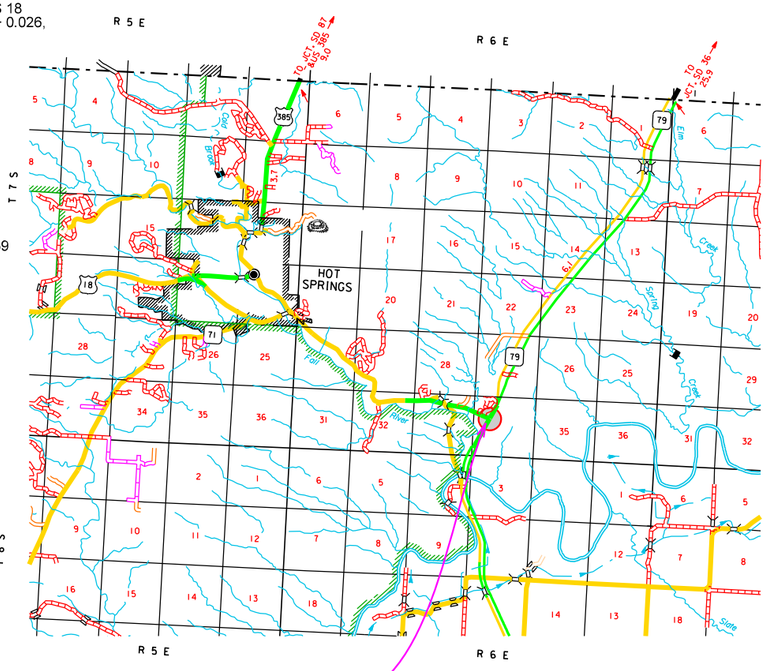
i6nx 000P-492 US Hwy 18
MRM 87.52 + 0.404 to MRM 88.25 + 0.469
at Oglala
DESIGN DESIGNATION

AADT (2021)	1425
AADT (2041)	1897
DHV	223
D	50 %
DHV T%	3.7 %
AADT T%	8.2 %
V	45 mph

I6nx 000P-492 US Hwy 18
MRM 99.0 + 0.374 to MRM 99.0 + 0.552
at Red Cloud School
DESIGN DESIGNATION

AADT (2021)	2078
AADT (2041)	2766
DHV	325
D	50 %
DHV T%	2.3 %
AADT T%	5.1 %
V	65 mph

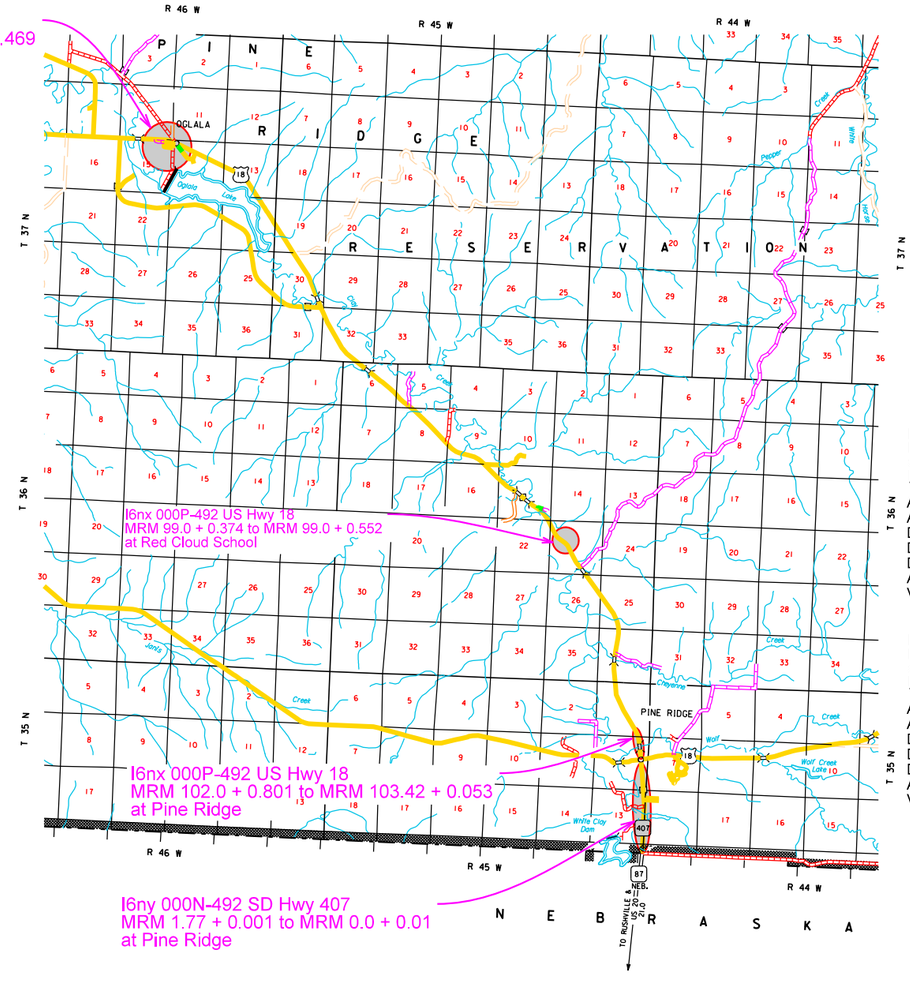
STORM WATER PERMIT
None Required



I6nx 000P-492 Intersection of SD 79 & US 18
US 18 MRM 44.0 + 0.573 to MRM 44.67 + 0.026,
Hwy 79 MRM 26.76 + 0.021
at Maverick Jct.

i6nx 000P-492 US Hwy 18
MRM 87.52 + 0.404 to MRM 88.25 + 0.469
at Oglala

OGLALA LAKOTA COUNTY



I6nx 000P-492 US Hwy 18
MRM 99.0 + 0.374 to MRM 99.0 + 0.552
at Red Cloud School

I6nx 000P-492 US Hwy 18
MRM 102.0 + 0.801 to MRM 103.42 + 0.053
at Pine Ridge

I6ny 000N-492 SD Hwy 407
MRM 1.77 + 0.001 to MRM 0.0 + 0.01
at Pine Ridge

I6nx 000P-492 US Hwy 18
MRM 102.0 + 0.801 to MRM 103.42 + 0.053
at Pine Ridge
DESIGN DESIGNATION

AADT (2021)	3829
AADT (2041)	5096
DHV	600
D	50 %
DHV T%	1.7 %
AADT T%	3.7 %
V	50, 35, & 25 mph

I6ny 000N-492 SD Hwy 407
MRM 1.77 + 0.001 to MRM 0.0 + 0.01
at Pine Ridge
DESIGN DESIGNATION

AADT (2021)	3935
AADT (2041)	5237
DHV	616
D	50 %
DHV T%	0.8 %
AADT T%	1.8 %
V	55,40,35, & 25 mph

Plot Scale - 1:200
Plotted From - TRRC11626
File - ...ttle.dgn

PCN i6nx, 000P-492

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	80.0	Hour
634E0110	Traffic Control Signs	363.9	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	3	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	75	Each

PCN i6ny, 000N-492

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	356.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E3700	Roadway Luminaire, LED with Photoelectric Cell	39	Each
635E5301	Type 1 Electrical Junction Box	3	Each
635E8120	2" Rigid Conduit, Schedule 40	8,860	Ft
635E8220	2" Rigid Conduit, Schedule 80	915	Ft
635E9014	1/C #4 AWG Copper Wire	30,210	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	2,145	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and 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: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

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 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 pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately 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 will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< http://sdleastwanted.com/maps/default.aspx >

< South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

COMMITMENT D: WATER QUALITY STANDARDS

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 not 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 Agriculture 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 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 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: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic 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 in 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 within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery 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.

UTILITIES

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

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 will contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

To gain access to electrical services, the Contractor will contact Lacreek Electric (1-800-655-9324) for work in Oglala and Red Cloud School and Nebraska Public Power District (1-877-275-6773) for work in Pine Ridge and along SD 407.

SCOPE OF WORK

Work on this project involves installing conduit to the existing luminaire poles and upgrading electrical junction boxes on SD Hwy 407. Roadway luminaires will be upgraded to LED light source.

GENERAL NOTES

The Contractor will adequately support the luminaire poles during the upgrade process. Any damage caused to the poles, mast arms, pole bases, or any other component of the luminaires will be repaired or replaced by the Contractor at his expense. The Engineer will have final approval of any repairs or replacements that are required.

Any damage caused by the contractor to the surrounding vegetated surface, will be repaired to the satisfaction of the engineer at no cost to the State.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

PDF submittals will be sent to the following email address:

John.Less@state.sd.us

ELECTRICAL JUNCTION BOXES

At the locations noted on the plans, the Contractor will remove existing junction boxes and install new junction boxes. The new junction boxes will be type 1 as noted on the plan sheets.

All costs associated with removing the existing junction boxes and salvaging & delivery of the junction box covers will be incidental to the contract unit price per each for “Type 1 Electrical Junction Box”.

LUMINAIRES

Oglala L65772001 – L65772025
The accepted design for luminaires will provide 1.2 and greater average maintained foot-candles on the roadway AND 1.4 and greater average maintained foot-candles on the pedestrian/bike path and a uniformity ratio (average maintained to minimum maintained foot-candles) of 3:1 and less using the following parameters:

Setback (Roadway):	0 Ft.
Setback (Pedestrian Path):	varies
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area (Roadway):	36 Ft.
Width of Lighted Area (Pedestrian Path):	36 Ft.
Luminaire Cycle Length:	165 Ft.
Configuration:	One-Sided
Mounting Height:	40 Ft.
Lamp:	LED

Red Cloud School L65774001 – L65774006
The accepted design for the roadway luminaires will provide 1.0 and greater average maintained foot-candles and a uniformity ratio (average maintained to minimum maintained foot-candles) of 3:1 and less using the following parameters:

Setback:	2 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	36 Ft.
Luminaire Cycle Length:	380 Ft.
Configuration:	Staggered
Mounting Height:	40 Ft.
Lamp:	LED

Pine Ridge - Hwy 18 L65773001 – L65773016
The accepted design for the roadway luminaires will provide 1.0 and greater average maintained foot-candles and a uniformity ratio (average maintained to minimum maintained foot-candles) of 3:1 and less using the following parameters:

Setback:	0 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	36 Ft.
Luminaire Cycle Length:	400 Ft.
Configuration:	Staggered
Mounting Height:	40 Ft.
Lamp:	LED

Pine Ridge - Hwy 18 L65773017 – L65773022
The accepted design for the roadway luminaires will provide 1.1 and greater average maintained foot-candles and a uniformity ratio (average maintained to minimum maintained foot-candles) of 3:1 and less using the following parameters:

Setback:	0 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	36 Ft.
Luminaire Cycle Length:	180 Ft.
Configuration:	One-Sided
Mounting Height:	40 Ft.
Lamp:	LED

Pine Ridge - SD Hwy 407 L65610001 – L65610034
The lighting design used the following parameters and provides 0.74 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles):

Pole Setback:	1 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	44 Ft.
Luminaire Cycle Length:	245 Ft.
Configuration:	One-Sided
Mounting Height:	40 Ft.
Arm Length	6 Ft.
Light Source:	LED

Pine Ridge - SD Hwy 407 L65610035 – L65610039
The lighting design used the following parameters and provides 0.78 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles):

Pole Setback:	8.5 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	26 Ft.
Luminaire Cycle Length:	255 Ft.
Configuration:	One-Sided
Mounting Height:	40 Ft.
Arm Length	8 Ft.
Light Source:	LED

Maverick Jct. – US Hwy 18 & SD Hwy 79 L27424001 – L27424003
The lighting design used the following parameters and provides 0.8 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles):

Pole Setback:	0 Ft.
Lamp Loss Factor (LLF):	0.8
Width of Lighted Area:	60 Ft.
Luminaire Cycle Length:	298 Ft.
Configuration:	Staggered
Mounting Height:	50 Ft.
Arm Length	8 Ft.
Light Source:	LED

LUMINAIRES (Cont.)

The following LED luminaires meet the requirements for this design:

US18
- o Streetworks Navion: NVN-SA3B-740-U-T2R
- o AEL Autobahn ATB0_P452_R3_4K
- o GE Evolve ERL2_19B340_____

SD407
- o Lumec RoadFocus: RFL-135W80LED4K-G2-R2M
- o GE Evolve ERL2_21B340_____-120-277V

US18/US385 & SD79 (Maverick Junction)
- o Streetworks Navion: NVN-SA6D-740-U-T3R
- o GE Evolve: ERL2_30B340

CONDUIT CONNECTIONS AT POLE FOOTINGS

The Contractor will carefully expose the conduits entering & exiting the footings. The existing direct bury wiring will be cut where exposed and removed from the conduits and footings. The conduits will then be modified as necessary to allow connection with the proposed conduits shown on the plans.

All costs associated with exposing the existing conduits, modifying the existing conduits, removing & disposing of the existing wiring, and connecting to the new conduits will be incidental to the contract unit price per foot for “2" Rigid Conduit, Schedule 40”.

WIRE SPLICING FOR LIGHTING

All wire splices for lighting will be made using TE Connectivity GTAP connectors, NSI Industries Polaris Blue connectors, or an approved equal.

TABLE OF CONDUIT AND CABLE QUANTITIES

		Rigid Conduit			Copper Wire	
		Schedule 40	Schedule 80			
		2"	2"		1/C	
					#4	
					AWG	
Location to Location		Ft	Ft		Ft	
Pine Ridge, SD 407 (PCN i6ny)						
L65610001	L65610002	255			790	
L65610002	L65610003	255			790	
L65610003	L65610004	255			790	
L65610004	L65610005	170	85		790	
L65610005	L65610006	255			790	
L65610006	L65610007	155	100		790	
L65610007	L65610008	255			790	
L65610008	L65610009	255			790	
L65610009	L65610010	255			790	
L65610010	JB1	135	65		620	
JB1	L65610011	105			325	
L65610011	L65610012	255			790	
L65610012	L65610013	255			790	
L65610013	L65610014	195	60		790	
L65610014	L65610015	255			790	
L65610015	L65610016	200	55		790	
L65610016	L65610017	210	45		790	
L65610017	L65610018	255			790	
L65610018	L65610019	255			790	
L65610019	L65610020	255			790	
L65610020	L65610021	250			770	
L65610021	L65610022	250			770	
L65610022	JB2	50			155	
JB2	L65610023	155	95		770	
L65610023	L65610024	250			770	
L65610024	L65610025	250			770	
L65610025	L65610026	250			770	
L65610026	L65610027	250			770	
L65610027	L65610028	250			770	
L65610028	L65610029	250			770	
L65610029	L65610030	250			770	
L65610030	L65610031	175	75		770	
L65610031	JB3	110			340	
JB3	L65610032	190			590	
L65610032	L65610033	200	50		770	
L65610033	L65610034	200	50		770	
L65610034	L65610035	200	50		770	
L65610035	L65610036	250			770	
L65610036	L65610037	165	85		770	
L65610037	L65610038	265			820	
L65610038	L65610039	165	100		820	
	TOTAL:	8,860	915		30,210	

TABLE OF LUMINAIRES

Structure #	Roadway Luminaire LED with Photoelectric Cell Each
City of Pine Ridge, US 18 (PCN i6nx)	
L65773001	1
L65773002	1
L65773003	1
L65773004	1
L65773005	1
L65773006	1
L65773007	1
L65773008	1
L65773009	1
L65773010	1
L65773011	1
L65773012	1
L65773013	1
L65773014	1
L65773015	1
L65773016	1
L65773017	1
L65773018	1
Subtotal:	**18**
Maverick Junction, US 18 (PCN i6nx)	
L27424001	1
L27424002	1
L27424003	1
Subtotal:	**3**

Structure #	Roadway Luminaire LED with Photoelectric Cell Each
City of Oglala, US 18 MRM 88.1 to 88.7 (PCN i6nx)	
L65772001	2
L65772002	2
L65772003	2
L65772004	2
L65772005	2
L65772006	2
L65772007	2
L65772008	2
L65772009	2
L65772010	2
L65772011	2
L65772012	2
L65772013	2
L65772014	2
L65772015	2
L65772016	2
L65772017	2
L65772018	2
L65772019	2
L65772020	2
L65772021	2
L65772022	2
L65772023	2
L65772024	1
L65772025	1
Subtotal:	**48**
US18 near Red Cloud School (PCN i6nx)	
L65774001	1
L65774002	1
L65774003	1
L65774004	1
L65774005	1
L65774006	1
Subtotal:	**6**
TOTAL (PCN i6nx):	**75**

Structure #	Pole and Bracket Cable 2/C #10 AWG Ft	Roadway Luminaire LED with Photoelectric Cell Each
Pine Ridge, SD 407 (PCN i6ny)		
L65610001	55	1
L65610002	55	1
L65610003	55	1
L65610004	55	1
L65610005	55	1
L65610006	55	1
L65610007	55	1
L65610008	55	1
L65610009	55	1
L65610010	55	1
L65610011	55	1
L65610012	55	1
L65610013	55	1
L65610014	55	1
L65610015	55	1
L65610016	55	1
L65610017	55	1
L65610018	55	1
L65610019	55	1
L65610020	55	1
L65610021	55	1
L65610022	55	1
L65610023	55	1
L65610024	55	1
L65610025	55	1
L65610026	55	1
L65610027	55	1
L65610028	55	1
L65610029	55	1
L65610030	55	1
L65610031	55	1
L65610032	55	1
L65610033	55	1
L65610034	55	1
L65610035	55	1
L65610036	55	1
L65610037	55	1
L65610038	55	1
L65610039	55	1
TOTAL (PCN i6ny):	**2,145**	**39**

SEQUENCE OF OPERATIONS

The Contractor will complete all work within one specific location before beginning work at another location.

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.

GENERAL TRAFFIC CONTROL

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.

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

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following completion of work at specific location.

TABLE OF TRAFFIC CONTROL DEVICES

000P-492, PCN i6nx

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	1	30"	5.2	5.2
R3-2	LEFT TURN PROHIBITION (symbol)	1	24" x 24"	4.0	4.0
R3-7R	RIGHT LANE MUST TURN RIGHT	2	30" x 30"	6.3	12.6
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W9-2	LANE ENDS MERGE LEFT	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
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
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	7	36" x 18"	4.5	31.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			363.9

000N-492, PCN i6ny

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R3-2	LEFT TURN PROHIBITION (symbol)	1	24" x 24"	4.0	4.0
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	12	48" x 48"	16.0	192.0
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
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	12	36" x 18"	4.5	54.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			356.0

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	8	20

Plotting Date: 03/28/2022

I6nx 000P-492 SD 79 & US 18 intersection at Maverick Jct.
US Hwy 18 MRM 44.0 + 0.573 and MRM 44.67 + 0.026
SD Hwy 79 MRM 26.76 + 0.021

Plot Scale - 1:200

Plotted From - TRRC11626

File - ...\Maverick Jct.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	9	20

Plotting Date: 03/28/2022

I6nx 000P-492 US Hwy 18 at Red Cloud School
MRM 99.0 + 0.374 to MRM 99.0 + 0.552

Plot Scale - 1:200

Plotted From - TRRC11626

File - ...\Red Cloud.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	10	20

Plotting Date: 03/28/2022

I6nx 000P-492 US Hwy 18 at Oglala
MRM 87.52 + 0.404 to MRM 88.25 + 0.469

Plot Scale - 1:200

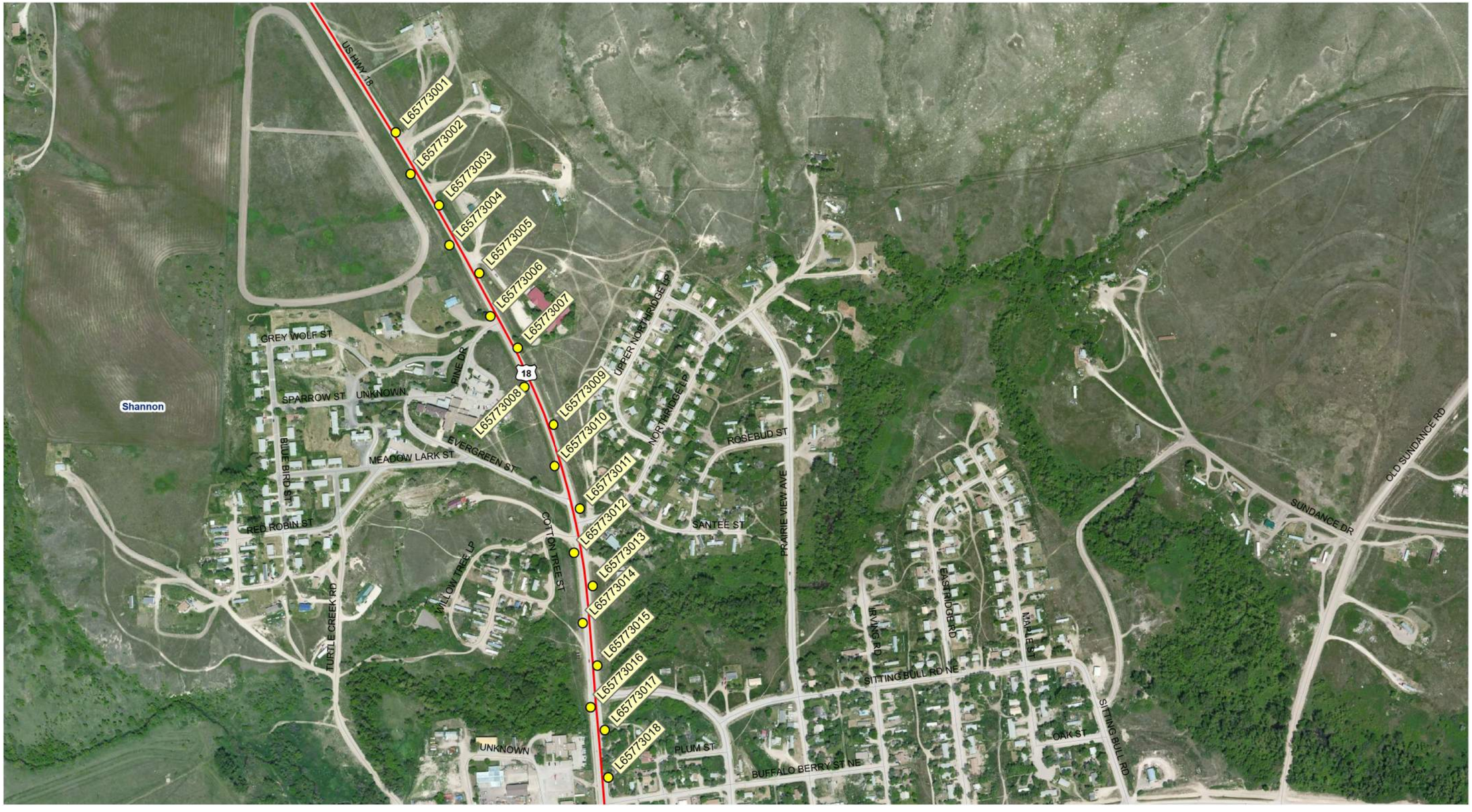
Plotted From - TRRC11626

File - ...\Oglala.dgn

I6nx 000P-492 US Hwy 18 at Pine Ridge
MRM 102.0 + 0.801 to MRM 103.34 + 0.074

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	11	20

Plotting Date: 03/28/2022



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	12	20

Plotting Date: 03/28/2022

I6nx 000P-492 US Hwy 18 at Pine Ridge
MRM 103.41 + 0.008 to MRM 103.42 + 0.053

Plot Scale - 1:200

Plotted From - TRRC11626

File - ...\Pine Ridge - Hwy 18 north.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	13	20

Plotting Date: 03/28/2022

I6ny 000N-492 SD Hwy 407 at Pine Ridge
MRM 0.0+ 0.01 to MRM 0.0 + 0.839

Plot Scale - 1:200

Plotted From - TRRC11626

File - ...\Pine Ridge - Hwy 407 south.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-492 & 000N-492	14	20

Plotting Date: 03/28/2022

I6ny 000N-492 SD Hwy 407 at Pine Ridge
MRM 0.0 + 0.889 to MRM 1.77 + 0.001

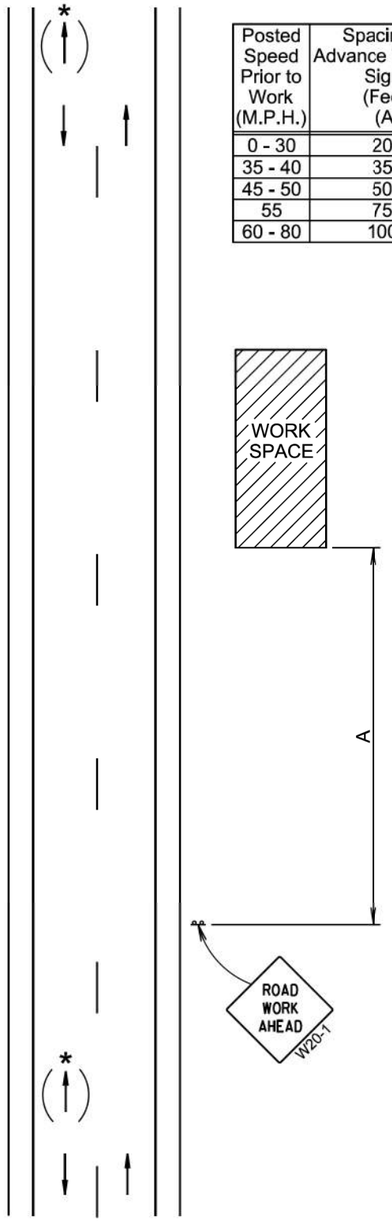
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

January 22, 2021

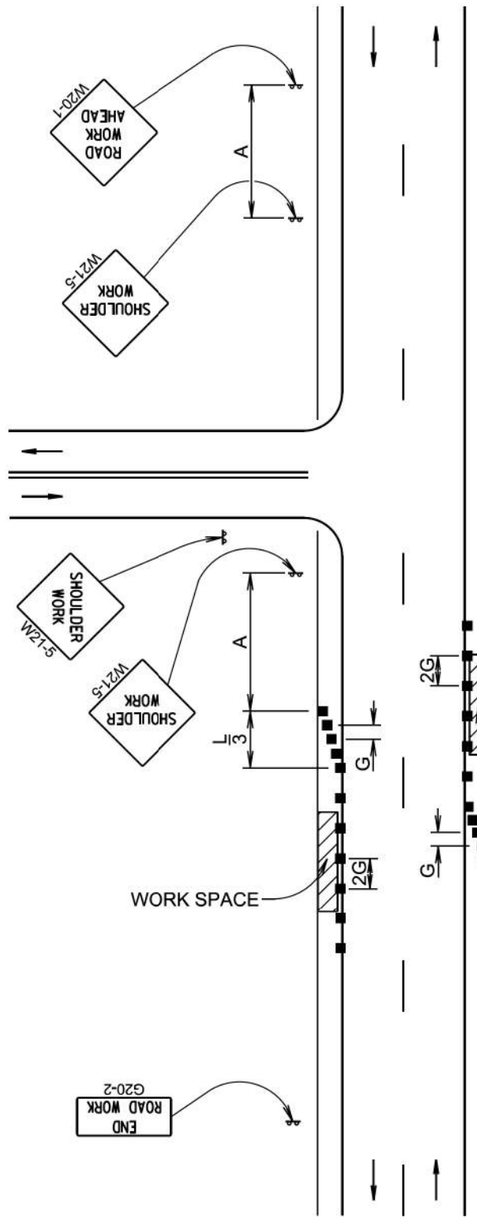
Published Date: 1st Qtr. 2022

SDDOT

WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK
G20-2

The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

January 22, 2021

Published Date: 1st Qtr. 2022

SDDOT

WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1

*In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

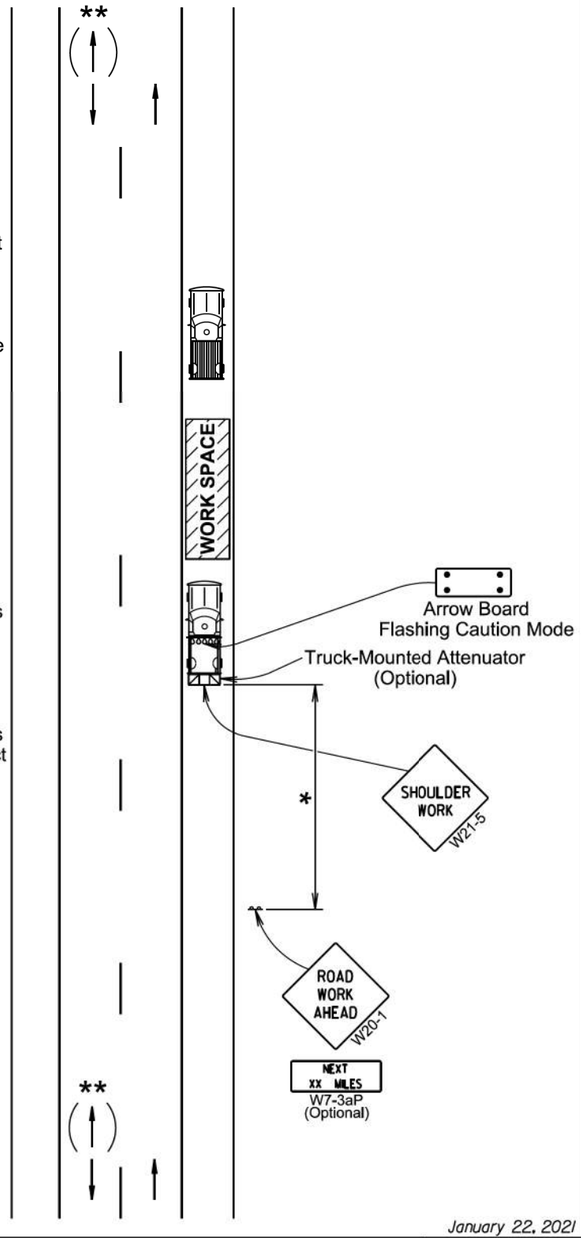
The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

Arrow board is required for intermittently and continuously moving mobile operations when work exceeds 1 hour.

**If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	MOBILE OPERATIONS ON SHOULDERS	PLATE NUMBER 634.04
			Sheet 1 of 1

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.

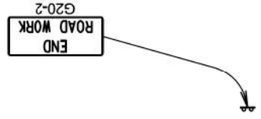
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will 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 will be drums or 42" cones.

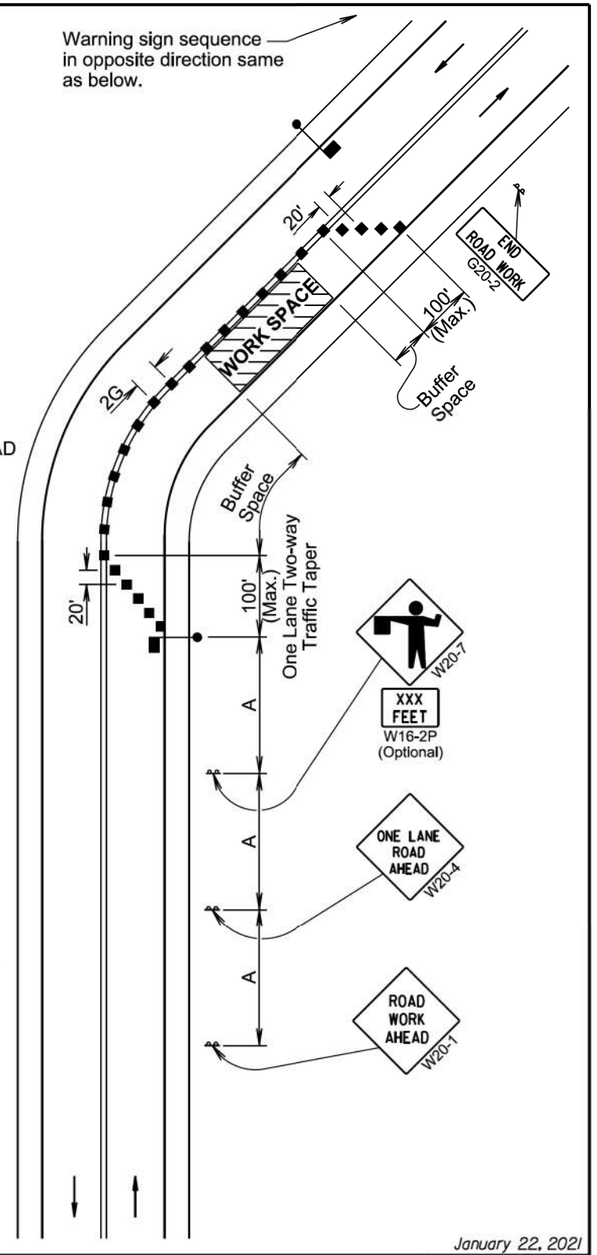
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers will 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.



January 22, 2021

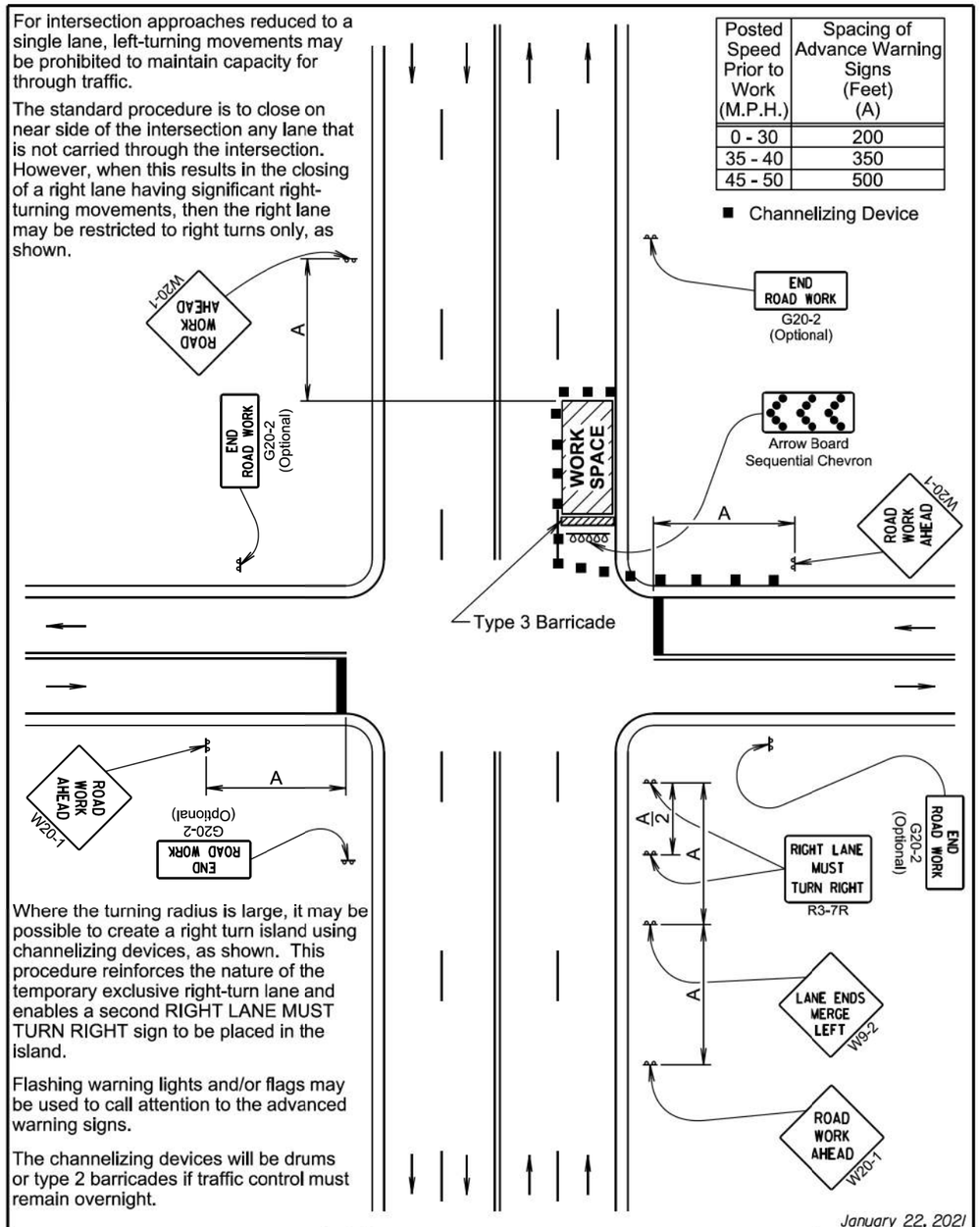
Published Date: 1st Qtr. 2022	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through traffic.

The standard procedure is to close on near side of the intersection any lane that is not carried through the intersection. However, when this results in the closing of a right lane having significant right-turning movements, then the right lane may be restricted to right turns only, as shown.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500

■ Channelizing Device



Where the turning radius is large, it may be possible to create a right turn island using channelizing devices, as shown. This procedure reinforces the nature of the temporary exclusive right-turn lane and enables a second RIGHT LANE MUST TURN RIGHT sign to be placed in the island.

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

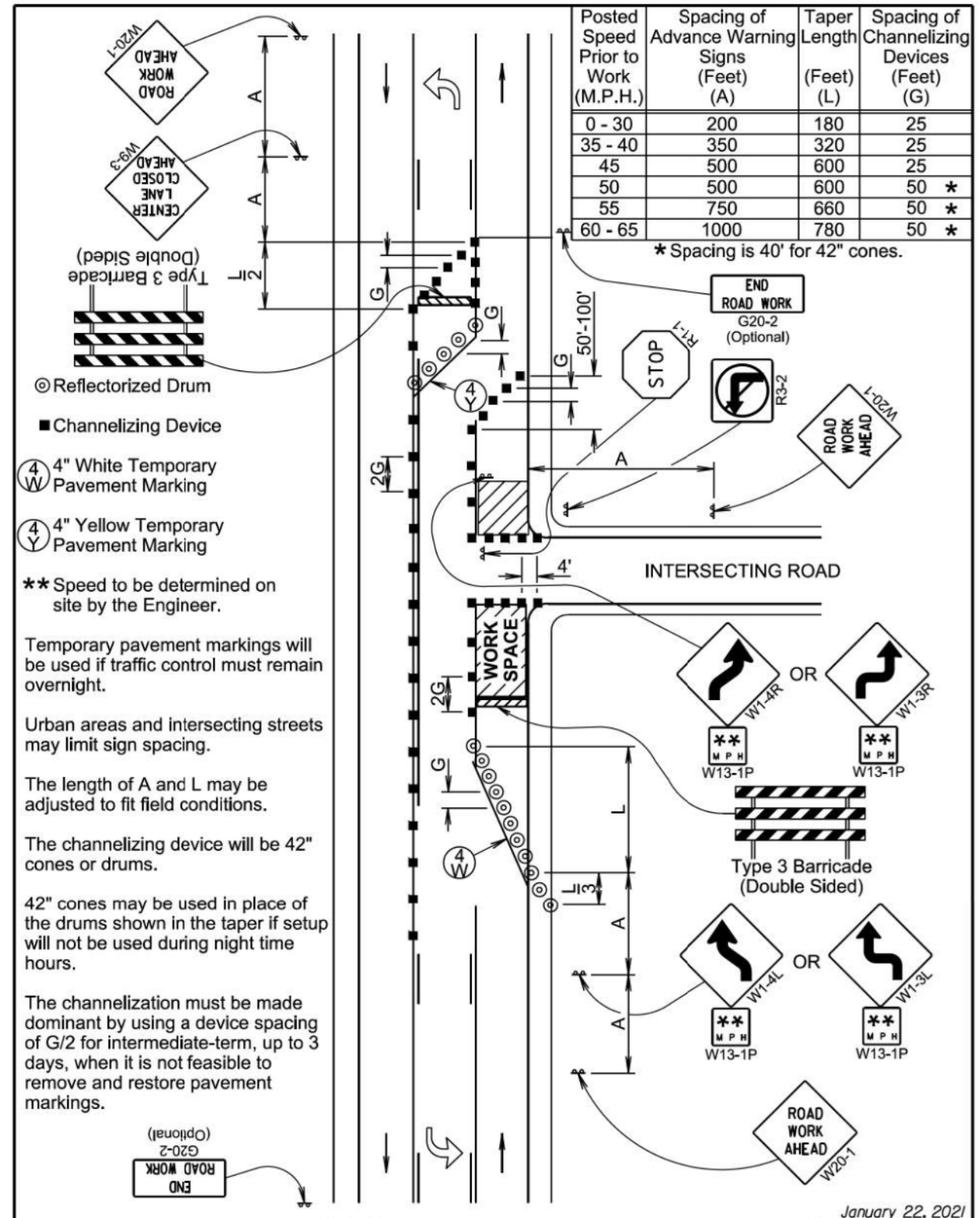
The channelizing devices will be drums or type 2 barricades if traffic control must remain overnight.

January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	RIGHT LANE CLOSURE FAR SIDE OF INTERSECTION	PLATE NUMBER 634.42
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

* Spacing is 40' for 42" cones.



Urban areas and intersecting streets may limit sign spacing.

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

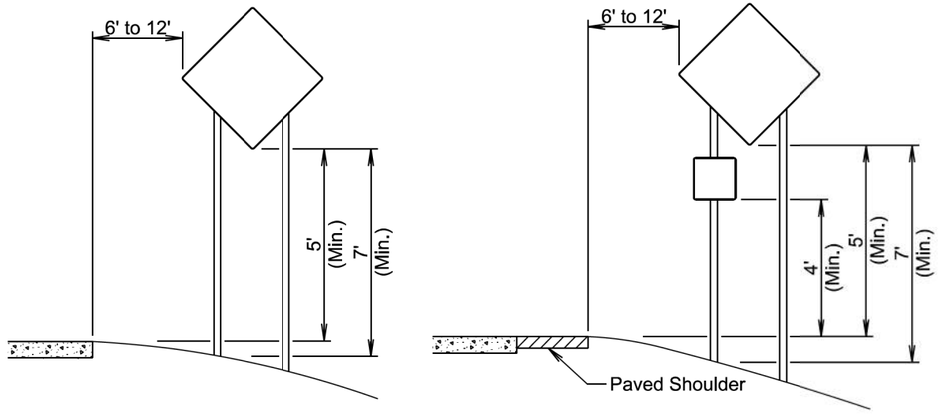
The channelizing device will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

The channelization must be made dominant by using a device spacing of G/2 for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings.

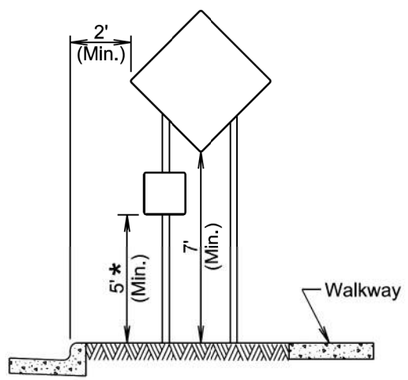
January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	3-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.53
			Sheet 1 of 1

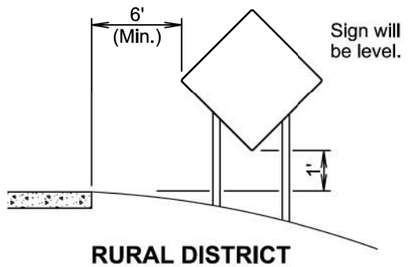


RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

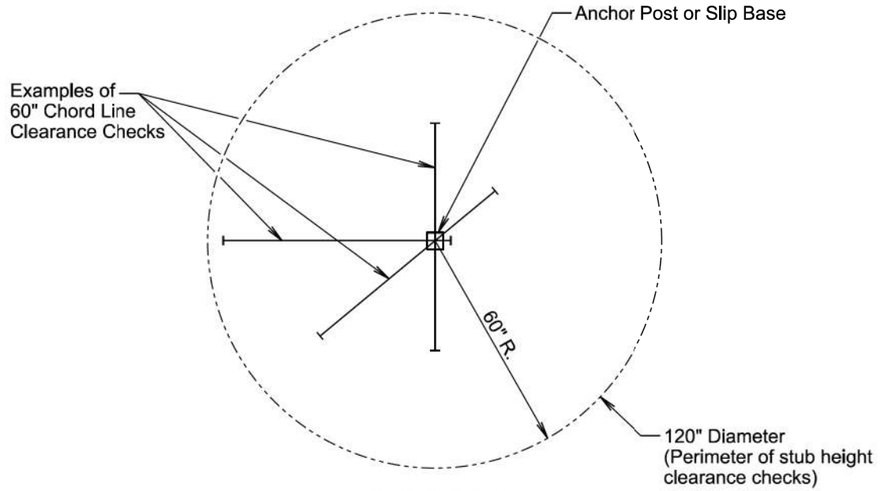


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

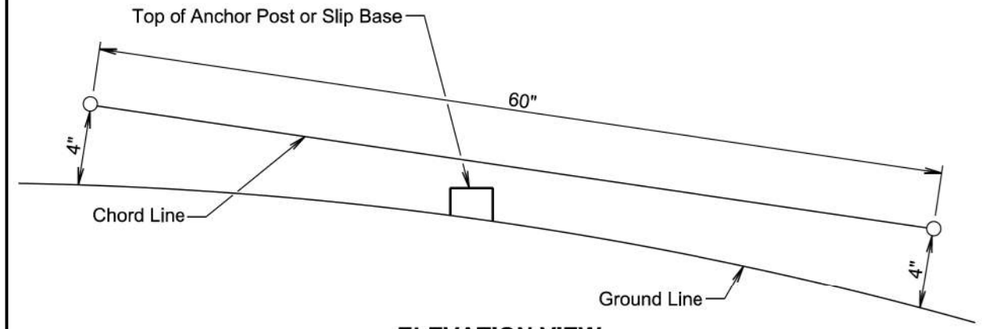
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85 Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

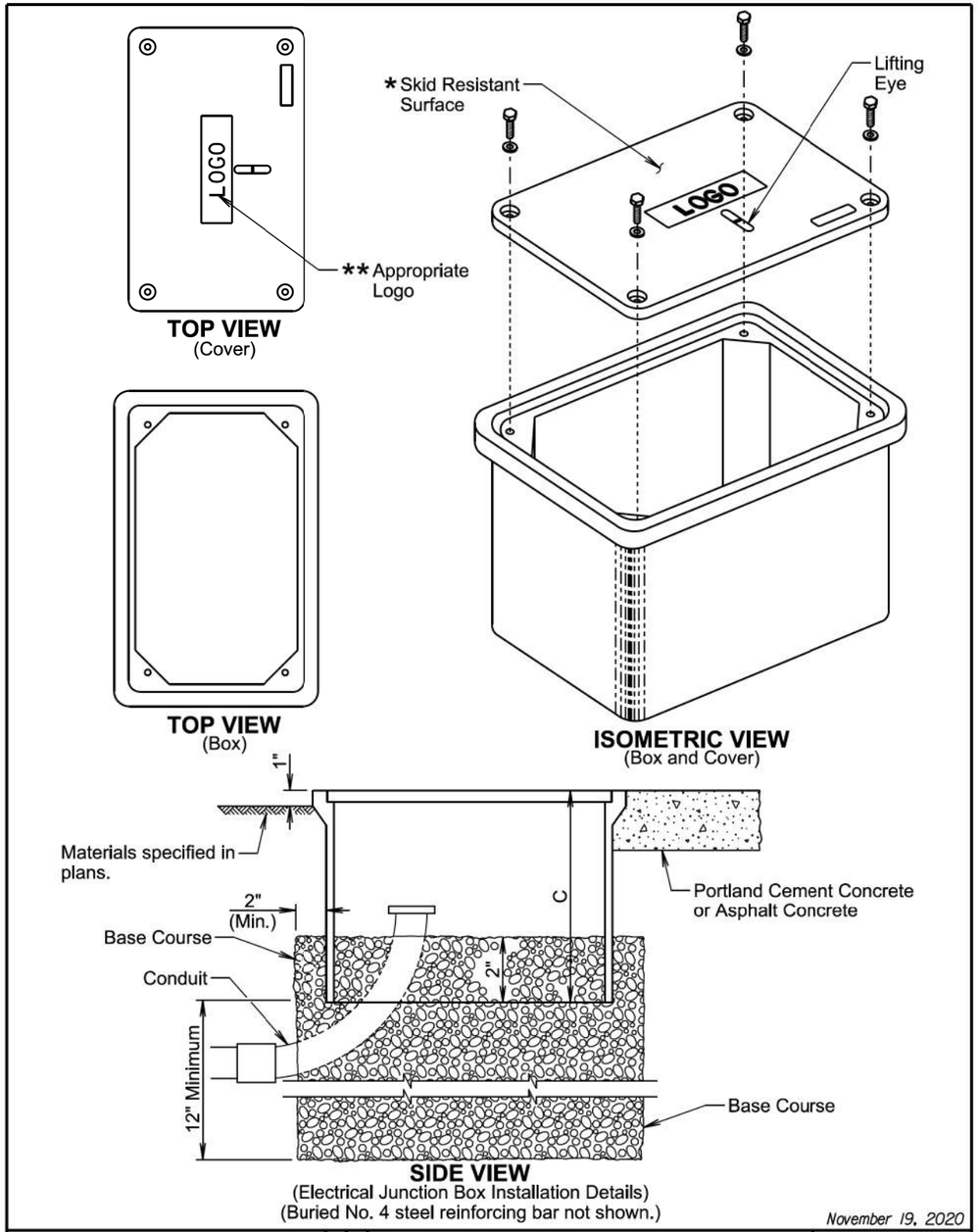
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

Published Date: 1st Qtr. 2022	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99 Sheet 1 of 1



November 19, 2020

Published Date: 1st Qtr. 2022	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65 Sheet 1 of 2

ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

* The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

** The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

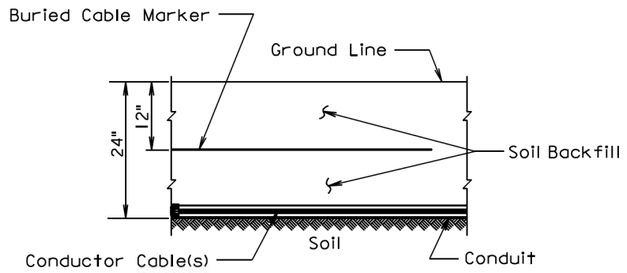
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

The electrical junction boxes will be UL listed.

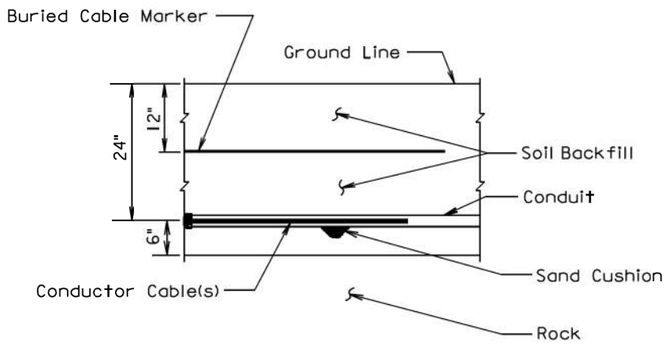
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

November 19, 2020

Published Date: 1st Qtr. 2022	SDDOT	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65 Sheet 2 of 2



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

Published Date: 1st Qtr. 2022	SDDOT	**CONDUIT INSTALLATION**	*PLATE NUMBER* 635.76
			Sheet 1 of 1