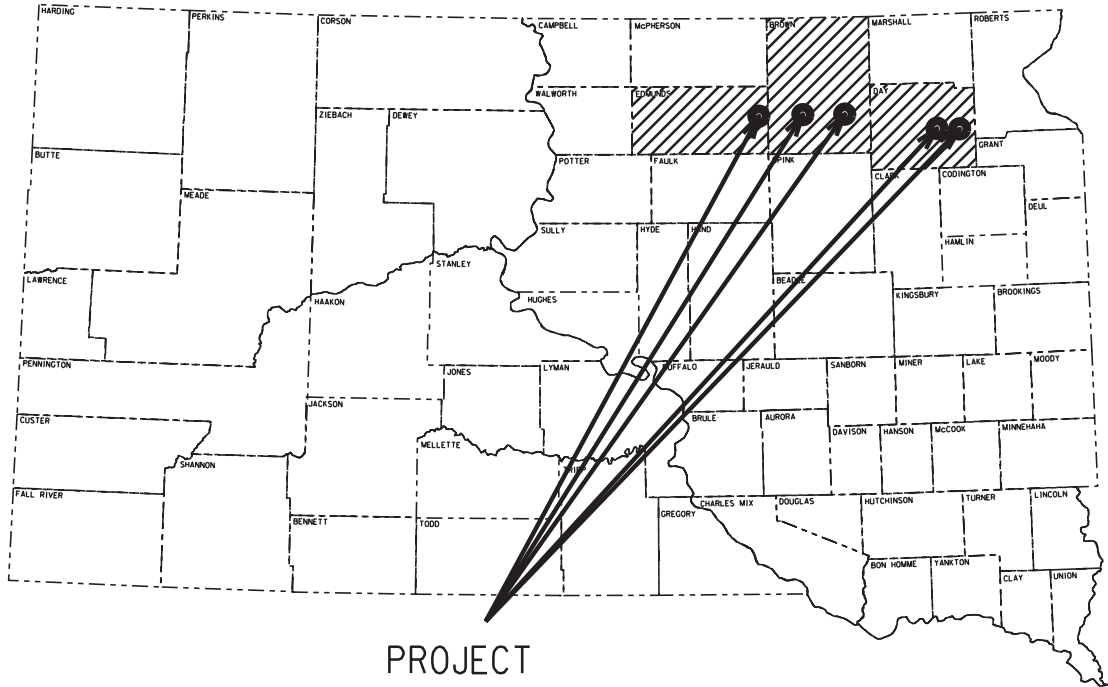


PLOT SCALE - 1"=800'

PLOTTED FROM - TRAB18004



PROJECT

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
**PROJECT 000P-152, 000P-151,
000N-151**
U.S. HIGHWAY 12 & 281
S.D. HIGHWAY 25
**BROWN, DAY & EDMUNDS
COUNTIES**

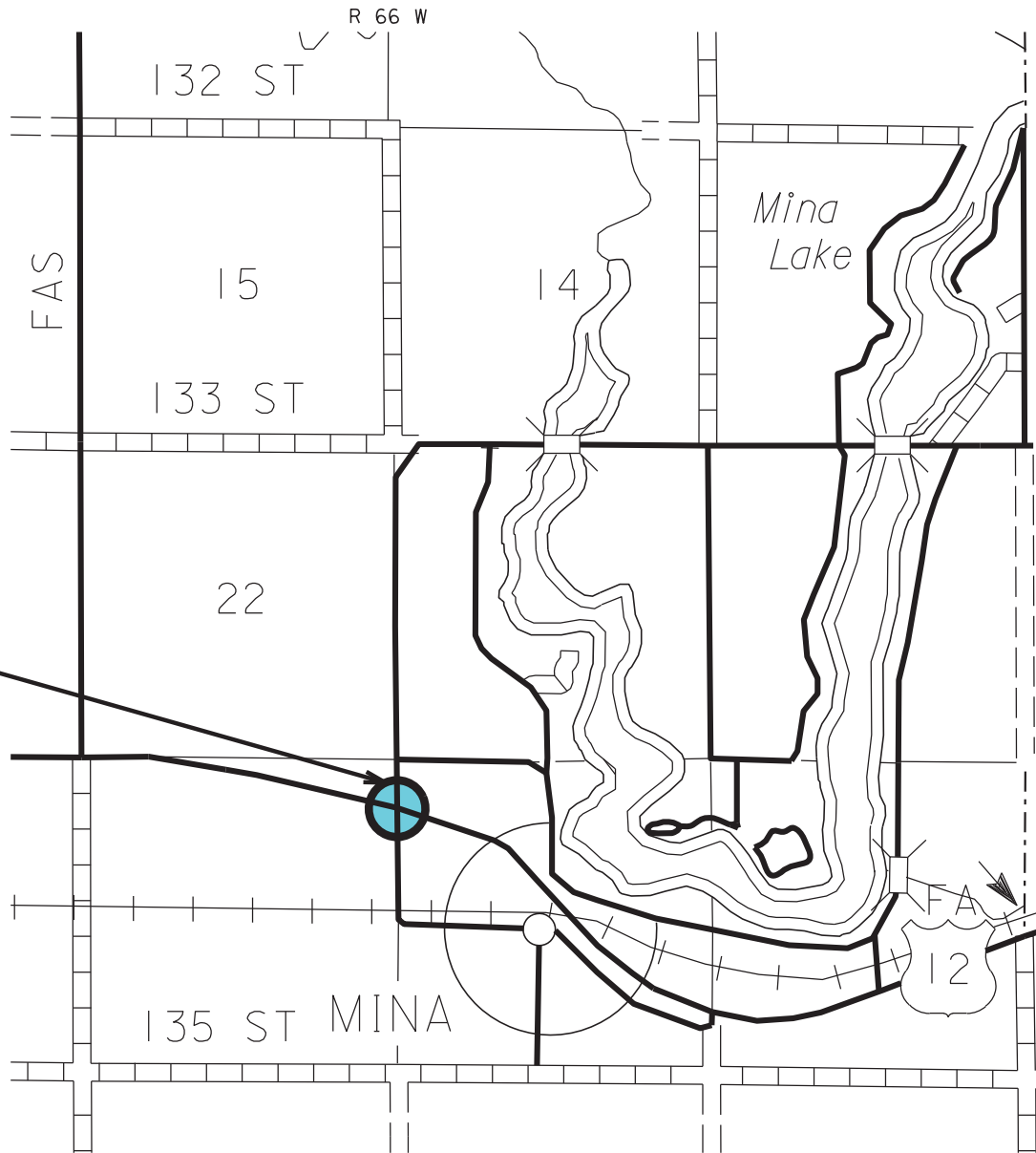
REPAIR AND REPLACE LUMINAIRE AND TRAFFIC SIGNAL POLES
PCN i3cr, i3ct & i3cu

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	1	49

INDEX OF SHEETS

Sheet 1-3	Title Sheet and Layout Maps
Sheet 4	Estimate of Quantities
Sheet 5	Environmental Commitments
Sheet 6-15	Tables of Luminaire and Signal Pole Repairs
Sheet 16-18	Plan Notes
Sheet 19-23	Traffic Control
Sheet 24-38	Aerial Photos with Structure Numbers
Sheet 39-46	Signal & Luminaire Photos
Sheet 47-49	Standard Plates

Project 000P-152, PCN i3cr
Junction of US 12 and 371st Ave
West of Mina, SD
Edmunds County



TO ABERDEEN &
JCT. US 281
10.4

STORM WATER PERMIT
(NONE REQUIRED)

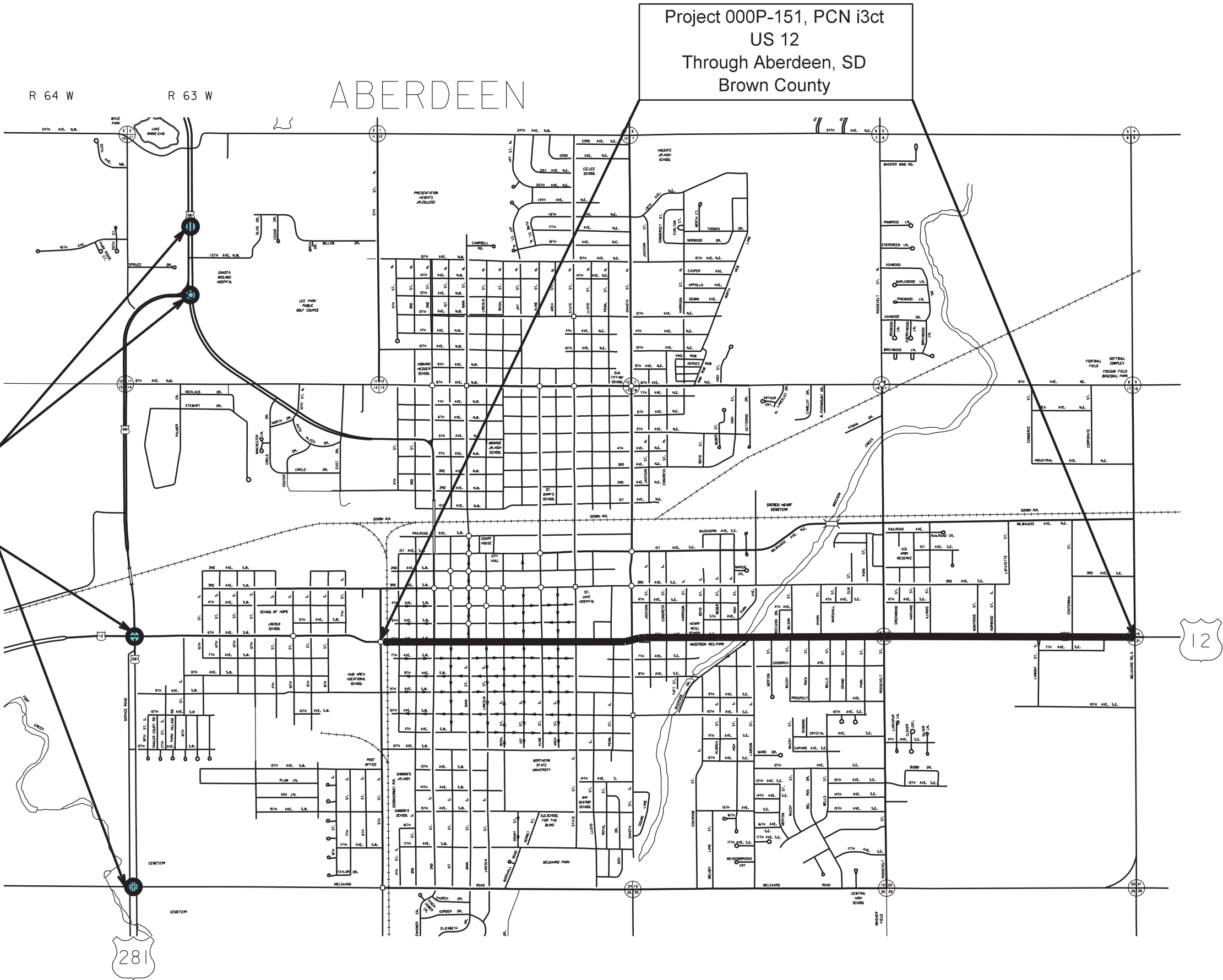
PLOT NAME - 2

FILE - ... \13CT_TITLE.SHEET.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	2	49

Project 000P-151, PCN i3ct
US 12
Through Aberdeen, SD
Brown County

Project 000P-151, PCN i3ct
US 281
Aberdeen, SD
Brown County



PLOT SCALE - 1"=8000

PLOTTED FROM - TRAB18004

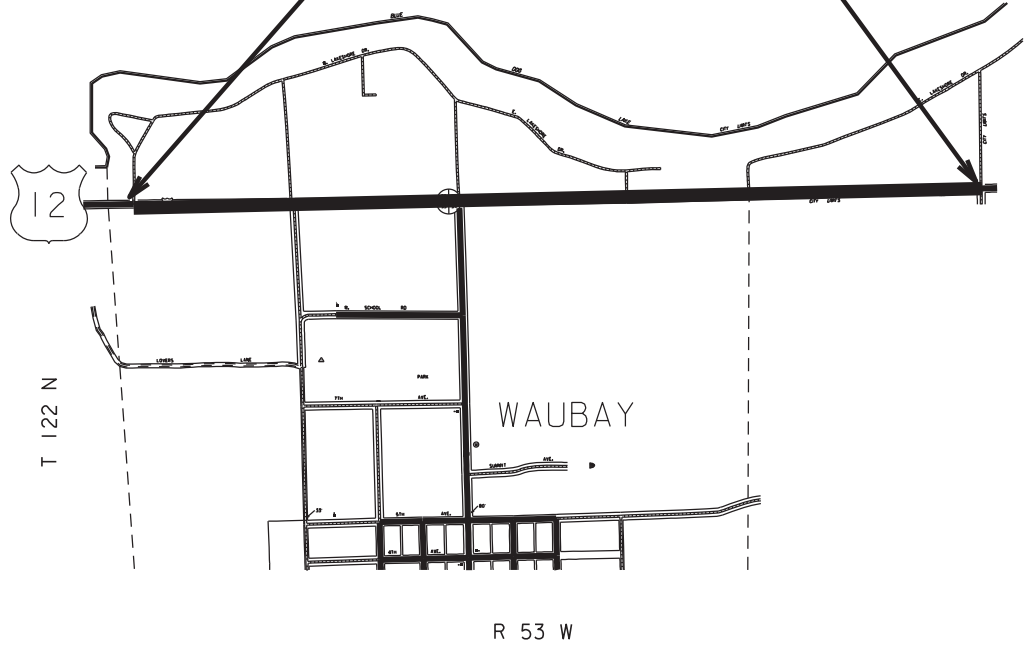
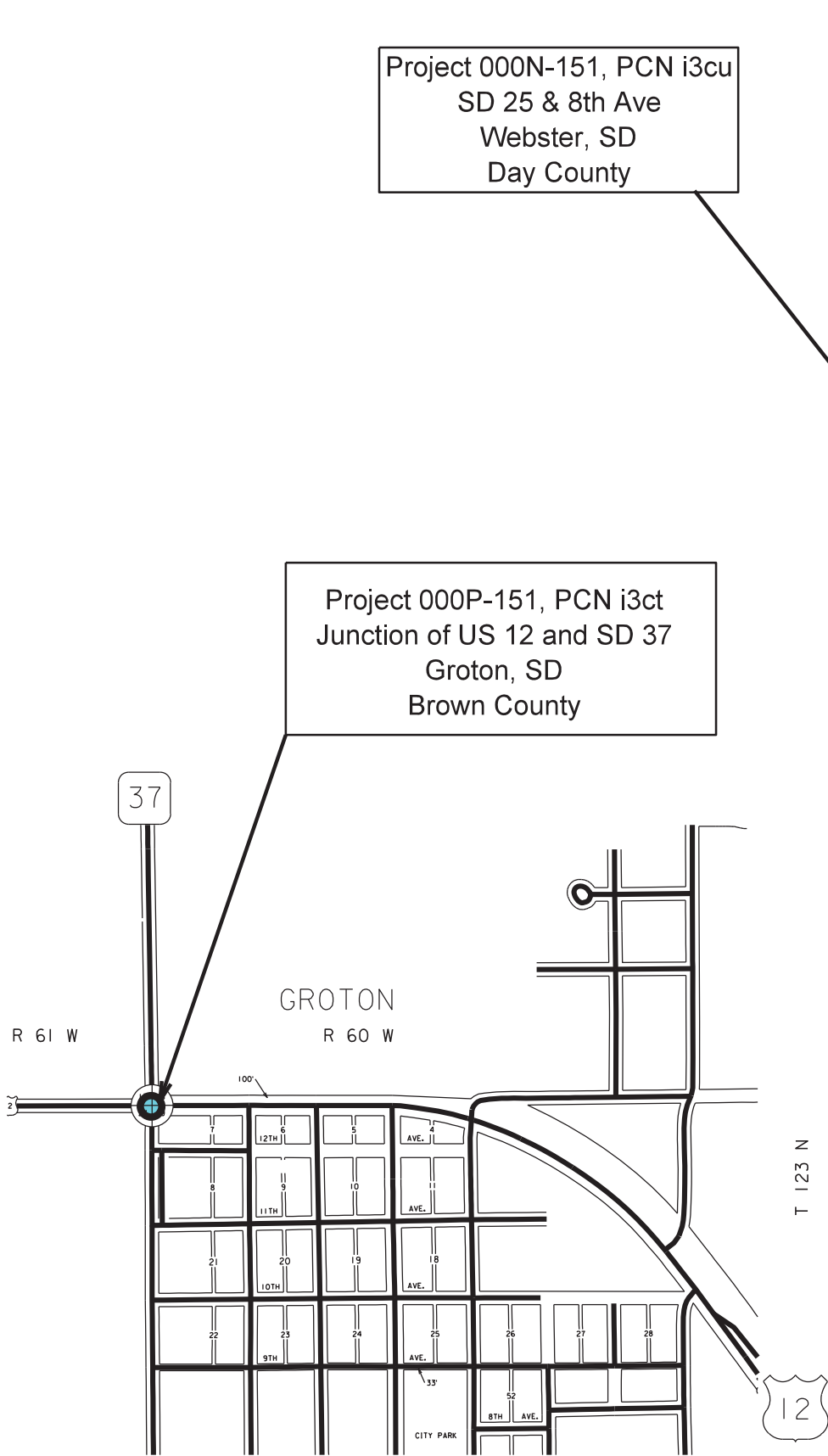
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	3	49

Project 000N-151, PCN i3cu
SD 25 & 8th Ave
Webster, SD
Day County

Project 000P-151, PCN i3ct
US 12
Webster, SD
Day County

Project 000P-151, PCN i3ct
Junction of US 12 and SD 37
Groton, SD
Brown County

Project 000P-151, PCN i3ct
US 12
Waubay, SD
Day County



PLOT NAME - 1

FILE - ...\\13CT_TITLE_SHEET.DGN

PLOT SCALE - 1:200

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	4	49

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	PROJECT NUMBER AND PCN			TOTAL	UNIT
		000P-151	000N-151	000P-152		
		I3CT	I3CU	I3CR		
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	-	-	Lump Sum	LS
634E0010	Flagging	40	10	10	60	Hour
634E0100	Traffic Control	289	669	238	1196	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	-	-	1	Each
635E0045	Breakaway Base Luminaire Pole with Arm, 45' Mounting Height (8' Arm)	1	-	-	1	Each
635E0150	Breakaway Base Luminaire Pole with Twin Arms, 50' Mounting Height (10' Arms)	1	-	-	1	Each
635E3340	Roadway Luminaire, 400 Watt with Photoelectric Cell	3	-	-	3	Each
635E5020	2' Diameter Footing	28	-	-	28	Ft
635E7505	Remove and Reset Luminaire Pole	13	-	1	14	Each
635E7510	Remove and Reset Signal Pole	9	2	-	11	Each
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	188	-	-	188	Ft
900E2030	Miscellaneous Work	67	2	1	70	Site

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	5	49

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 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 and/or demolition debris generated by this project.

Action Taken/Required:

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

ENVIRONMENTAL COMMITMENTS

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway 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 State 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 State 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 designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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 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.

PLOT SCALE - 1:200

														STATE OF SOUTH DAKOTA	PROJECT 000P-152, 000P-151, 000N-151		SHEET NO. 6	TOTAL SHEETS 49
TABLE OF LUMINAIRE/SIGNAL REPAIR AT RURAL INTERSECTIONS ALONG US 12, Project Number 000P-152, PCN i3cr																		
Struc #	City	Hwy	Location Description	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK			Repair Comments			
											Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)				
Struc # L26425001 on US 12 is Project No. 000P-152, PCN i3cr																		
L26425001	Mina	US 12	US 12 & 371 Ave Junction near Mina	-	-	-	-	-	1	-	-	-	-	1	Tighten all anchor rod nuts.			
			Total for Mina	0	0	0	0	0	1	0	0	1						
Struc#: L26425001 Luminaire Pole Manufacturer: Millerbernd Manufacturing Co. Original Construction Project Number: 0122-151, PCN 10BN Original Millerbernd Drawing No: 30B559, 30B511, TB1-17, Original Luminaire Pole Finish: Hot Dip Galvanized																		

														STATE OF SOUTH DAKOTA	PROJECT		SHEET NO.	TOTAL SHEETS
															000P-152, 000P-151, 000N-151		10	49
TABLE OF LUMINAIRE/SIGNAL REPAIR IN THE CITY OF ABERDEEN, Project No. 000P-151, PCN I3CT																		
Struc #	City	Hwy	Location Description	2' Diameter Footing (ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK			Repair Comments			
											Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)				
Struc # L03331016 US 12																		
Luminaire Pole Manufacturer: Valmont Industries																		
Original Construction Project Number: F 0012(73)291, PCN 118W																		
Original Valmont Drawing No: BSD46098																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # L03332002 thru L03332004 on US 281																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing Numbers: 460A12, 480A28, 480A34, 30B277, 30B278, 480B48 & 480B18																		
Original Construction Project Number: HES 0281(00)1931, PCN 081W																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # L03475026 on US 281																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 320B425, 320B426, 320B434 - 320B437,460B110 KHDHR(SD), JHDHR(SD), JTHDHR(SD)																		
Acceptable Luminaires																		
Hubbell: Test No. HP03019.IES High Pressure Sodium, Medium, semi-cutoff, Type III																		
Cooper Lighting: Test No. OVY4S3E.IES High Pressure Sodium, Medium, semi-cutoff, Type III																		
Original Construction Project Number: PH 0281(66)197, PCN 6529																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T30000002 thru T3000004 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 30B380, 10B245, 10B14, 320B337, 460B110, 390C64, TB3-17																		
Original Construction Project Number: NH 0281(19)194, PCN 5373																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T03000005 thru T03000008 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 320B426, 320B425, 360B182, JHDHR(SD), TB3-17", 460B110, 10B14, 10B337																		
Original Construction Project Number: NH 0012(38)289, PCN 0569																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # TT03000009 thru T03000048 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: N/A																		
Original Construction Project Number: NH-PH 0012(89)289, PCN 5946																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T30000050 thru T3000051 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 320B425, 320B426, 320B434 - 320B437,460B110 KHDHR(SD), JHDHR(SD), JTHDHR(SD)																		
Original Construction Project Number: PH 0012(88)290, PCN 6144																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T30000052 thru T3000055 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 320B425, 320B426, 320B434 - 320B437,460B110 KHDHR(SD), JHDHR(SD), JTHDHR(SD)																		
Original Construction Project Number: PH 227(2), PCN 5678																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T03000056 thru T03000058 US 12																		
Luminaire Pole Manufacturer:																		
Original Millerbernd Drawing No:																		
Original Construction Project Number: PH 0012(00)292, PCN 570H																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		
Struc # T30000068 thru T3000071 US 12																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Millerbernd Drawing No: 30B380, 10B245, 10B14, 320B337, 460B110, 390C64, TB3-17																		
Original Construction Project Number: NH 0281(19)194, PCN 5373																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		

PLOT SCALE - 1:200

TABLE OF LUMINAIRE/SIGNAL REPAIR IN THE CITY OF GROTON, Project No. 000P-151, PCN i3ct															STATE OF SOUTH DAKOTA	PROJECT		SHEET NO.	TOTAL SHEETS
																000P-152, 000P-151, 000N-151		11	49
Struc #	City	Hwy	Location Description	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK			Repair Comments				
											Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)					
Struc # T03000084 thru T03000085 on US 12 are Project No. 000P-151, PCN i3ct																			
T03000084	Groton	US 12	Intersection of US 12 and SD 37	-	-	-	-	-	-	1	-	-	1	-	Install ASTM F436 Heavy Washers under anchor rod nuts.				
T03000085	Groton	US 12	Intersection of US 12 and SD 37	-	-	-	-	-	-	1	-	-	1	-	Install ASTM F436 Heavy Washers under anchor rod nuts.				
			TOTAL FOR GROTON	0	0	0	0	0	0	2	0	2							
Struc # T03000084 thu T03000085 Luminaire Pole Manufacturer: Millerbernd Manufacturing Co. Original Construction Project Number: HES 0012(00)309, PCN 008Y Original Drawing No: N/A Original Luminaire Pole Finish: Hot Dip Galvanized																			

PLOT SCALE - 1"=200'

TABLE OF LUMINAIRE/SIGNAL REPAIR IN THE COMMUNITY OF WESTER, Project No. 000N-151, PCN i3ct															STATE OF SOUTH DAKOTA	PROJECT		SHEET NO.	TOTAL SHEETS
															000P-152, 000P-151, 000N-151		12	49	
Struc #	City	Hwy	Location Description	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK				Repair Comments			
											Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)					
Struc # L22435031 on US 12 is Project No. 000P-151, PCN i3ct																			
L22435031	Webster	US 12	US 12 through Webster	-	58	1	-	1	-	-	-	-	-	-	Replace with new Pole & Luminaire to fit existing anchor blot pattern.				
TOTAL FOR PCN i3ct				0	58	1	0	1	0	0	0	0							
Struc # T2200001 thru T2200003 on SD 25 are Project No. 000P-151, PCN i3cu																			
T22000001	Webster	SD 25	Traffic signals at intersection of SD 25 and 8th Ave	-	-	-	-	-	-	1	-	-	1	-	Install ASTM F436 Heavy Washers under anchor rod nuts.				
T22000003	Webster	SD 25	Traffic signals at intersection of SD 25 and 8th Ave	-	-	-	-	-	-	1	-	-	1	-	Install ASTM F436 Heavy Washers under anchor rod nuts.				
TOTAL FOR PCN i3cu				0	0	0	0	0	0	2	0	2							
TOTAL FOR WEBSTER				0	58	1	0	1	0	2	0	2							
Struc # L22435031															Acceptable Luminaires				
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.															Original Millerbernd Drawing No: 30B368, 30B469, TB1-17, 460B110	Hubbell: Test No. HP03019.IES High Pressure Sodium, Medium, semi-cutoff, Type III			
Original Construction Project Number: NH 0012(47)341, PCN 5851															Original Luminaire Pole Finish: Hot Dip Galvanized	Cooper Lighting: Test No. OVY4S3E.IES High Pressure Sodium, Medium, semi-cutoff, Type III			
Struc # T22000001 thu T220000003																			
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.															Original Millerbernd Drawing No: N/A				
Original Construction Project Number: P0025(21)180, PCN 3241															Original Luminaire Pole Finish: Hot Dip Galvanized				

PLOT SCALE - 1:200

														STATE OF SOUTH DAKOTA	PROJECT 000P-152, 000P-151, 000N-151		SHEET NO. 14	TOTAL SHEETS 49
TABLE OF LUMINAIRE/SIGNAL REPAIR IN THE CITY OF WAUBAY, Project No. 000P-151, PCN i3ct																		
Struc #	City	Hwy	Location Description	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK			Repair Comments			
											Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)				
L22479031	Waubay	US 12	Lighting on US 12 and the intersection of US 12 & 446th Ave in Waubay	-	-	-	-	-	1	-	-	-	-	1	Tighten anchor rod nut.			
TOTAL FOR CITY OF WAUBAY				0	0	0	0	0	10	0	3	10						
Struc#: L22479002 thru L22479031																		
Luminaire Pole Manufacturer: Millerbernd Manufacturing Co.																		
Original Construction Project Number: NH 0012(130)352, PCN 00T5																		
Original Millerbernd Drawing No: 10B283, 10B351, 460B110, TB1-17, 10B14																		
Original Luminaire Pole Finish: Hot Dip Galvanized																		

PLOT SCALE - 1"=200'

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	15	49

TOTAL TABLE OF LUMINAIRE/SIGNAL REPAIR BY CITY

Project Number	City	Hwy	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK		
										Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)
000P-151, PCN i3ct	Aberdeen	US12 & US281	28	130	2	1	-	3	7	-	55		
000P-151, PCN i3ct	Groton	US12	-	-	-	-	-	-	2	-	2		
000P-152, PCN i3cr	Mina	US12	-	-	-	-	-	1	-	-	1		
000P-151, PCN i3ct	Waubay	US12	-	-	-	-	-	10	-	3	10		
000N-151, PCN i3cu 000P-151, PCN i3ct	Webster	US12 & SD25	-	58	1	-	1	-	2	-	2		
Total			28	188	3	1	1	14	11	3	70		

TOTAL TABLE OF LUMINAIRE/SIGNAL REPAIR BY PROJECT NUMBER

Project Number	City	Hwy	2' Diameter Footing (Ft)	2/C #10 AWG Copper Pole and Bracket Cable (Ft)	Roadway Luminaire 400 Watt with Photo-electric Cell (Each)	Breakaway Base Luminaire Pole with Twin 10' Arms, 50' Mounting Height (Each)	Breakaway Base Luminaire Pole with One 8' Arm, 45' Mounting Height (Each)	Remove and Reset Luminaire Pole (Each)	Remove and Reset Signal Pole (Each)	INCIDENTAL WORK	MISCELLANEOUS WORK		
										Reshape soil around the base of the luminaire pole (Site)	Replace bolt at luminaire extension connection to pole (Site)	Install bolt, nut and/or washer (Site)	Tighten bolt and/or nut (Site)
000P-152, PCN i3cr	Mina	US 12	-	-	-	-	-	1	-	-	1		
000P-151, PCN i3ct	Aberdeen, Groton, Waubay, Webster	US 12	28	188	3	1	1	13	9	3	67		
000N-151, PCN i3cu	Webster	US12 & US281	-	-	-	-	-	-	2	-	2		
Total			28	188	3	1	1	14	11	3	70		

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	16	49

SCOPE OF WORK

Work on this project involves a wide range of repairs to various types of luminaire and signal poles. Several new luminaire poles with luminaire heads are to be furnished and installed on this project.

SEQUENCE OF OPERATIONS

The Contractor shall complete all work within a city or rural intersection before beginning work at another location.

Luminaire poles and luminaire heads shall remain in service during hours of darkness. Necessary repairs shall not take the luminaire out of service during the nighttime hours.

Repairs to signal poles shall be accomplished during non-peak hours of 7 PM to 6 AM if the repairs require the traffic signal to be taken out of service. If a lane closure is required on US 12 in Aberdeen, work shall also be done during non-peak hours.

GENERAL NOTES

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

ORIGINAL SHOP PLANS

The SDDOT has the original shop plans for the luminaire poles on file. The SDDOT will make these original shop plans available to the successful Contractor upon award of the project. These original shop plans will also be made available, upon request to Aberdeen Area Engineer Phil Dwight, to any bidders on this project. Please submit requests for original shop plans to Phil.Dwight@state.sd.us. Original shop plans will be provided in PDF format.

REPLACEMENT PARTS

All replacement parts on this contract shall be obtained from the company that furnished the original luminaire components, with the exception of the roadway luminaire head. Replacement bolts, nuts and washers shall be approved by the pole manufacturer.

In any case where any bolt/nut/washer assembly is disassembled a completely new assembly shall be furnished and installed. The exception for this case shall be of any anchor bolts/nut/washer assemblies, in this case only nut/washer assemblies shall be new. Contractor shall take caution when removing any nuts for all anchor assemblies so as to ensure the anchor rod is not damaged in any way, this may mean that the nuts will have to cut to be removed.

Contractor shall tighten all bolt/nut/washer assemblies according to the manufactures suggested installations. Replacement parts shall have the same protective coating as the original components and shall be lubricated with bees wax just before installation.

The Contractor shall be responsible for furnishing certification for replacement parts per the SDDOT Materials Manual.

ORIGINAL LUMINAIRE POLE SUPPLIER CONTACT INFORMATION

SUPPLIER

Valmont Industries, Inc.
<http://www.valmont.com/valmont/products/pole-structures>
One Valmont Plaza
Omaha, Nebraska 68154-5215
402-963-1000
Fax: 402-963-1198

SUPPLIER

Millerbernd Manufacturing Company
http://www.millerberndmfg.com/steel_lighting_poles/
Steve Klobe
Regional Manager ND,SD & MN
Inside Sales
Customer Service
320-485-2111
sklobe@millerberndmfg.com

UTILITIES

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

TRAFFIC CONTROL

Traffic control shall be per the standard plates included in this set of plans. Flaggers shall be utilized as necessary. A lane closure shall be in place if any activity impacts a lane of traffic. All lanes should be open to traffic during non-working hours.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be as near the right-of-way line as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Work activities during non-daylight hours are subject to prior approval with the exception of work on traffic signal poles which is required to be done during off-hours.

Work zones for luminaire repair shall not exceed 1500' (4 blocks) in length without prior approval from the Engineer.

Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

The Contractor shall accommodate pedestrian traffic, including those with disabilities. Bicycle traffic shall also be accommodated. If work shall impact the sidewalks the Contractor shall accommodate pedestrian traffic while repair work is underway with manned crossing assistance (crossing guards) combined with an accessible path.

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

When performing work at the intersection of US Highway 12 and US Highway 281 and also the intersection of US Highway 281 and 5th Ave NW (Old US Highway 281) in Aberdeen, SD the traffic signals shall be set to all red flash and the intersection shall be controlled by the use of 48" Stop signs on all legs of the intersection. Advance warning stop ahead (symbol) signs shall be placed where the existing signal head (symbol) signs are located. The signal head (symbol) signs shall be covered while lights are set to flash.

INCIDENTAL WORK (RESHAPE SOIL AROUND LUMINAIRE POLE BASE)

The Tables of Luminaire/Signal Repair indicate the luminaire poles which require the soil around the base of the pole to be reshaped. The Contractor shall grade the soil around the base of the pole such that the top of the soil elevation is equal to the top of the concrete pole footing elevation and the slope approach the base is less than 6:1.

At those locations where there is positive drainage away from the pole base, the excavation shall extend out from the center of the pole for a 3' radius. At those locations where it is not possible to create positive drainage away from the pole base, the excavation shall extend out from the center of the pole for a 5' radius. The 5' radius excavation shall be done such that the drainage shall be away from the base of the pole.

The final excavation shall not leave any situation which may be a hazard. The final surface shall be easily traversable and maintainable.

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INCIDENTAL WORK (RESHAPE SOIL AROUND LUMINAIRE POLE BASE)
CONTINUED

3” of Topsoil shall be placed on the area if the excavation exposes soils that are not capable of supporting grasses.

In rural areas the disturbed locations shall be seeded with a Type C Permanent Seed Mixture.

All permanent seed shall be planted in the topsoil at a depth of ¼” to ½”.

All seed broadcast must be raked or dragged in (incorporated) within the top ¼” to ½” of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

Type C Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Western Wheatgrass	Flintlock, Rodan, Rosana	0.4
Canada Wildrye	Mandan	0.1
Total:		0.5

All costs associated with excavation including disposal of excavated material, Mycorrhizal inoculum, and seeding shall be incidental to the contract lump sum price for INCIDENTAL WORK.

REMOVE AND RESET LUMINAIRE POLE

If repair work requires the removal of the luminaire pole from the pole base, the contract item REMOVE AND RESET LUMINAIRE POLE shall be paid to the Contractor in addition to any of the other contract items such as MISCELLANEOUS WORK. The Engineer shall have final authority as to when the contract item Remove and Reset Pole is paid for. Removal of the luminaire pole to make repairs to the pole or replace parts on the pole generally will not constitute for payment of the contract item Remove and Reset Pole as this work does not require removal of the pole from the pole base.

REMOVE AND RESET SIGNAL POLE

If repair work requires the removal of the luminaire pole from the pole base, the contract item REMOVE AND RESET SIGNAL POLE shall be paid to the Contractor in addition to any of the other contract items such as MISCELLANEOUS WORK. The Engineer shall have final authority as to when the contract item Remove and Reset Pole is paid for. Removal of the luminaire pole to make repairs to the pole or replace parts on the pole generally will not constitute for payment of the contract item Remove and Reset Pole as this work does not require removal of the pole from the pole base.

POLES

New luminaire poles and mast arms shall match (in appearance) the pole that is being replaced. The base of the luminaire pole shall also match the in place pole base that is being replaced.

New poles shall be galvanized steel. Galvanizing shall be in accordance with AASHTO Specification M111 (ASTM A123). Steel pole material shall be in accordance with ASTM A36, A242, A570, A572, A607 or A595 Grade A or B. A595 material shall be limited to a 3/8 inch maximum thickness. Steel pole material with a thickness of 1/2 inch to 2 inches, shall satisfy Charpy V-Notch toughness test requirements of 15 ft. lb. at 40 degrees F. The SDDOT Office of Bridge Design shall be contacted for Charpy impact requirements for steel pole material thickness greater than 2 inches.

The steel pole-to-base-plate connection shall be a full-penetration groove-welded connection with a backing ring as described in Table 11.9.3.1-1, Description 4.5 of the current edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

The Tables of Luminaire/Signal Repair indicate the mounting height and the length of the mast arm on the luminaire poles.

All costs associated with removal and disposal of the existing luminaire pole shall be incidental to the contract unit price per each for the new luminaire pole.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor shall submit shop drawings and catalog cuts in accordance with Section 985 of the Standard Specifications or in Adobe PDF format.

Adobe PDF submittals shall be sent to the following email addresses:

Pete.Longman@state.sd.us
John.Less@state.sd.us

LUMINAIRES

Three copies of the isofootcandle charts and utilization curves shall be furnished to the Engineer for approval. The Contractor must get approval from the Engineer prior to installation of the luminaires.

The approved isofootcandle data for each case shall be used to determine the correct socket position at each site. Each luminaire shall be installed with its lamp socket in the proper position and in a level attitude.

The contract unit price of the new luminaire shall also include removal of the existing roadway luminaire head from the existing pole. All luminaires replaced shall remain property of the DOT. Contractor shall contact Phil.Dwight@state.sd.us to obtain information as to where the salvaged lumiaires shall be delivered.

ABERDEEN – US 281 from north of 8th Ave NW north to the Wylie Park Entrance in Aberdeen
Struc # L03475026 Project No. 000P-151, PCN i3CT

The accepted design for the roadway luminaires shall 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: 19 Ft.
Lamp Loss Factor (LLF): 0.7
Width of Lighted Area: 24 Ft.
Spacing: 265 Ft.
Configuration: One Sided
Mounting Height: 50 Ft.
Lamp: 400W HPS

The following luminaires meet the requirements for this design:

- a.) Hubbell: Test No. HP03019.IES High Pressure Sodium, Medium, semi-cutoff, Type III
- b.) Cooper Lighting: Test No. OVY4S3E High Pressure Sodium, Medium, semi-cutoff, Type III

Webster – US 12 through Webster
Struc # L22435031 Project No. 000P-151, PCN i3ct

The accepted design for the roadway luminaires shall provide 1.2 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:

Overhang: 2 Ft.
Lamp Loss Factor (LLF): 0.7
Width of Lighted Area: 60 Ft.
Spacing: 210 Ft.
Configuration: One Sided
Mounting Height: 45 Ft.
Lamp: 400W HPS

The following luminaires meet the requirements for this design:

- a.) Hubbell: Test No. HP03019IES High Pressure Sodium, Medium, semi-cutoff, Type III
- b.) Cooper Lighting: Test No. OVY4S3E High Pressure Sodium, Medium, semi-cutoff, Type III

PLOT SCALE - 1:200

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BREAKAWAY BASES

A statement is required, signed by a Professional Engineer registered in the State of South Dakota, certifying that the breakaway base devices meet the design requirements, including breakaway and structural adequacy, of the "AASHTO Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals". The physical testing procedures outlined in Section 8 of the Fifth Edition of the Aluminum Association's "Specifications for Aluminum Structures" may be used to establish service limits for structural adequacy certification of aluminum breakaway transformer bases. If requested, test data of production samples to support the certification shall be provided. All breakaway bases that are replaced by this project shall remain the property of the DOT. Contractor shall contact Phil.Dwight@state.sd.us to obtain information as to where the salvaged breakaway bases shall be delivered.

TABLE OF FOOTING DATA

Structure #	Footing Diameter	* Footing Depth	** Spiral Diameter	**Spiral Length	Vertical Reinforcement
L03332002	2’ – 0”	10’ - 0”	1’ - 8”	65’ - 3”	8 - #7 x 9’ – 6”
L03332004	2’ – 0”	10’ - 0”	1’ - 8”	65’ - 3”	8- #7 x 9’ – 6”
L03331016	2’ – 0”	8’ - 0”	1’ - 8”	54’ - 9”	8- #7 x 7’ – 6”

*Footing depth shall be below ground level.

**The size of all spirals shall be #3

The existing footings for structures L03332002 and L03332004 shall be knocked down 3 ft below surface elevation. A junction box shall be installed on top of the existing footing for structure L03332002. The new location for luminaire pole L03332004 shall be 2 ft southwest of the existing footing and shall be located so that the existing electrical cable and conduit to the pole can be reused. Luminaire pole L03332002 shall be relocated to 6 ft south of from its existing location. The existing electrical cable shall be reused from structure L03332001 to the new junction box located at the existing location for L03332002. New conduit and cable shall be installed from the new junction box to the relocated luminaire pole L03332002.

The existing footing for structure L03331016 shall be knocked down 3 ft below surface elevation. A junction box shall be installed on top of the existing footing for structure L03331016. The new location for luminaire pole L03331016 shall be 2 ft east of the existing footing and shall be located so that the existing electrical cable and conduit to the pole can be reused. New conduit and cable shall be installed from the relocated luminaire pole L03331016 to the new junction box. The existing electrical cable and conduit shall be reused from structure L03331015 to the new junction box located on top of the old footing for structure L03331016.

All costs associated with this work including new junction boxes, conduit and electrical cable shall be incidental to the contract price per ft for 2’ diameter footing

All footings that are to be installed will have the current luminaire pole reset back on them. Contractor shall ensure that new anchor bolts along with all other footing accessories shall be furnished in order to reset the existing pole on the new footing.

All anchor rods shall be designed in accordance with the latest AASHTO specifications.

REPLACE BOLT AT LUMINAIRE EXTENSION CONNECTION TO POLE

The Tables of Luminaire/Signal Repair indicate the luminaire poles which require the in place bolts connecting the luminaire extension connection to the pole be replaced with the proper length bolt. In general, the in place bolt is not of sufficient length for full thread engagement and the in place bolt is galvanized.

The Contractor shall be responsible for reviewing the original shop plans and providing the replacement bolts that will provide full thread engagement. This may require working with the original pole supplier to determine the proper length of bolt to install. Existing washers at the connection may be reused if they are in good condition.

All costs associated with furnishing and replacing the bolt and washers at the luminaire extension connection to the pole shall be incidental to the contract unit price per site for MISCELLANEOUS WORK. Each luminaire pole requiring this work shall constitute 1 Site for payment purposes, regardless of the number of bolts requiring replacement.

INSTALL BOLT, NUT AND/OR WASHER

The Tables of Luminaire/Signal Repair indicate the luminaire pole locations which require the installation of bolts, nuts or washers on the base connection or breakaway assembly.

All costs associated with furnishing and installing bolts, nuts and/or washers shall be incidental to the contract unit price per site for MISCELLANEOUS WORK. Each luminaire pole requiring this work shall constitute 1 Site for payment purposes, regardless of the number of nuts and washers installed.

The Contractor shall be responsible for reviewing the original shop plans and working with the original supplier to determine the proper hardware to install at each location.

If the installation of the bolts, nuts or washers requires removal of the luminaire pole from the luminaire base, the Contractor shall be compensated by the contract item REMOVE AND RESET LUMINAIRE POLE in addition to the contract item MISCELLANEOUS WORK.

TIGHTEN BOLT AND/OR NUT

The Tables of Luminaire/Signal Repair indicate the luminaire pole locations which require tightening of bolts and nuts.

Anchor bolts shall be tightened in accordance with Section 635 of the Standard Specifications and the Supplemental Specifications. Transformer bases shall be tightened in accordance with base manufacturer's recommendations.

The Tables of Luminaire/Signal Repair indicate the number of anchor rod nuts that were determined to be loose at the time of inspection. All anchor rod nuts at a pole location requiring anchor rod nuts to be tightened shall be torqued to the proper specifications, regardless of the number of nuts indicated to be loose.

All costs associated with tightening an in place anchor rod nut shall be incidental to the contract unit price per site for MISCELLANEOUS WORK. Each luminaire

pole requiring this work shall constitute 1 Site for payment purposes. If the tightening requires removal of the luminaire pole from the luminaire base, the Contractor shall be compensated by the contract item REMOVE AND RESET LUMINAIRE POLE in addition to the contract item MISCELLANEOUS WORK.

MISCELLANEOUS WORK

The contract item Miscellaneous Work encompasses several items of work as indicated in the various Tables of Luminaire/Signal Repair. Each item of work indicated under the contract item Miscellaneous Work shall constitute one payment of the contract item MISCELLANEOUS WORK. Thus, the Contractor may be compensated several times for the contract item Miscellaneous Work at one pole location.

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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 shall 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.

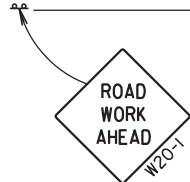
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



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 - 75	1000



A



July 1, 2005

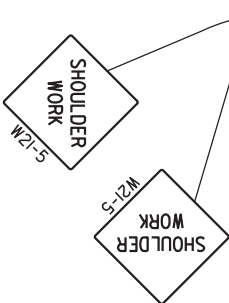
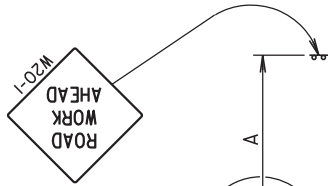
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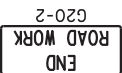
GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER
634.01

Sheet 1 of 1



WORK SPACE



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	100 - 200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device



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

For short duration operations (1 hour or less) all signs and 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.

WORK SPACE



February 14, 2011

Published Date: 1st Qtr. 2014

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GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER
634.03

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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 - 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.

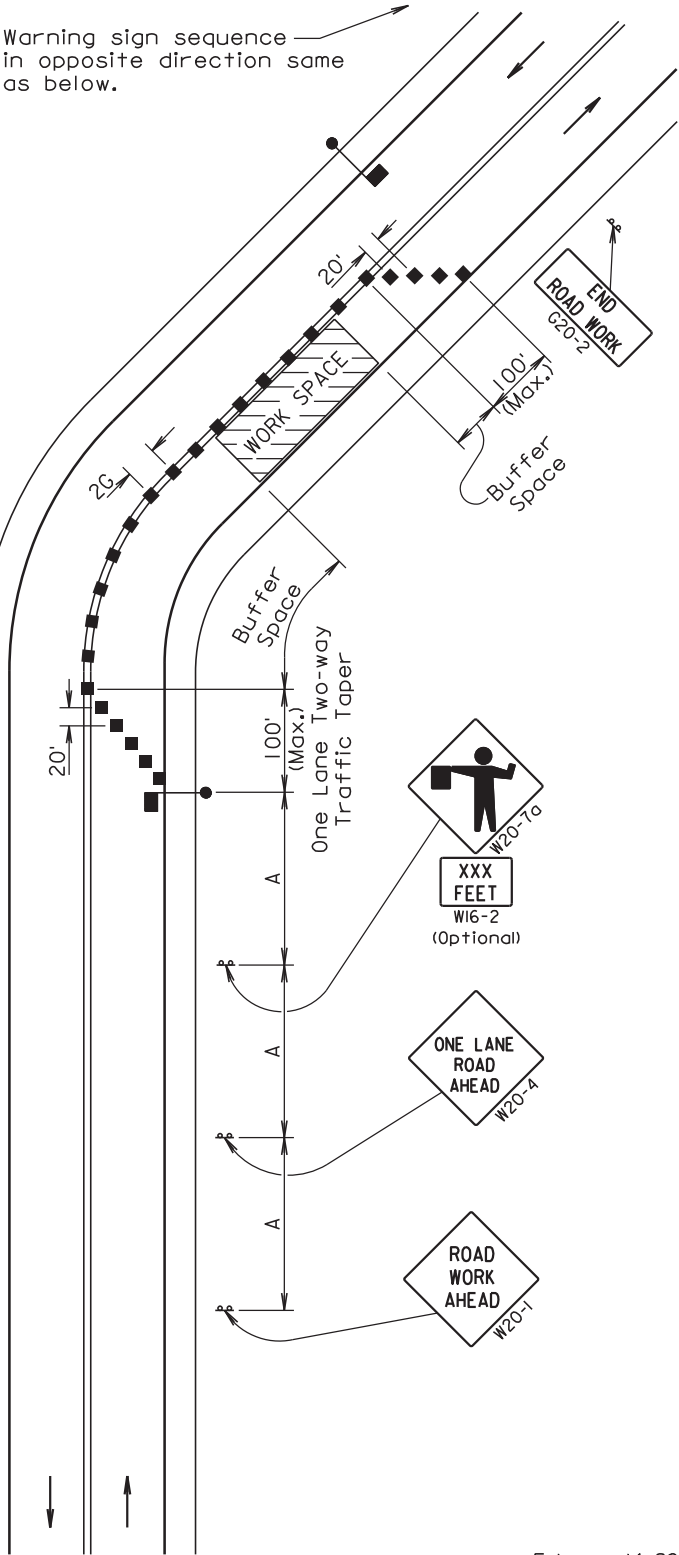
The channelizing devices shall be drums or 42" cones.

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.

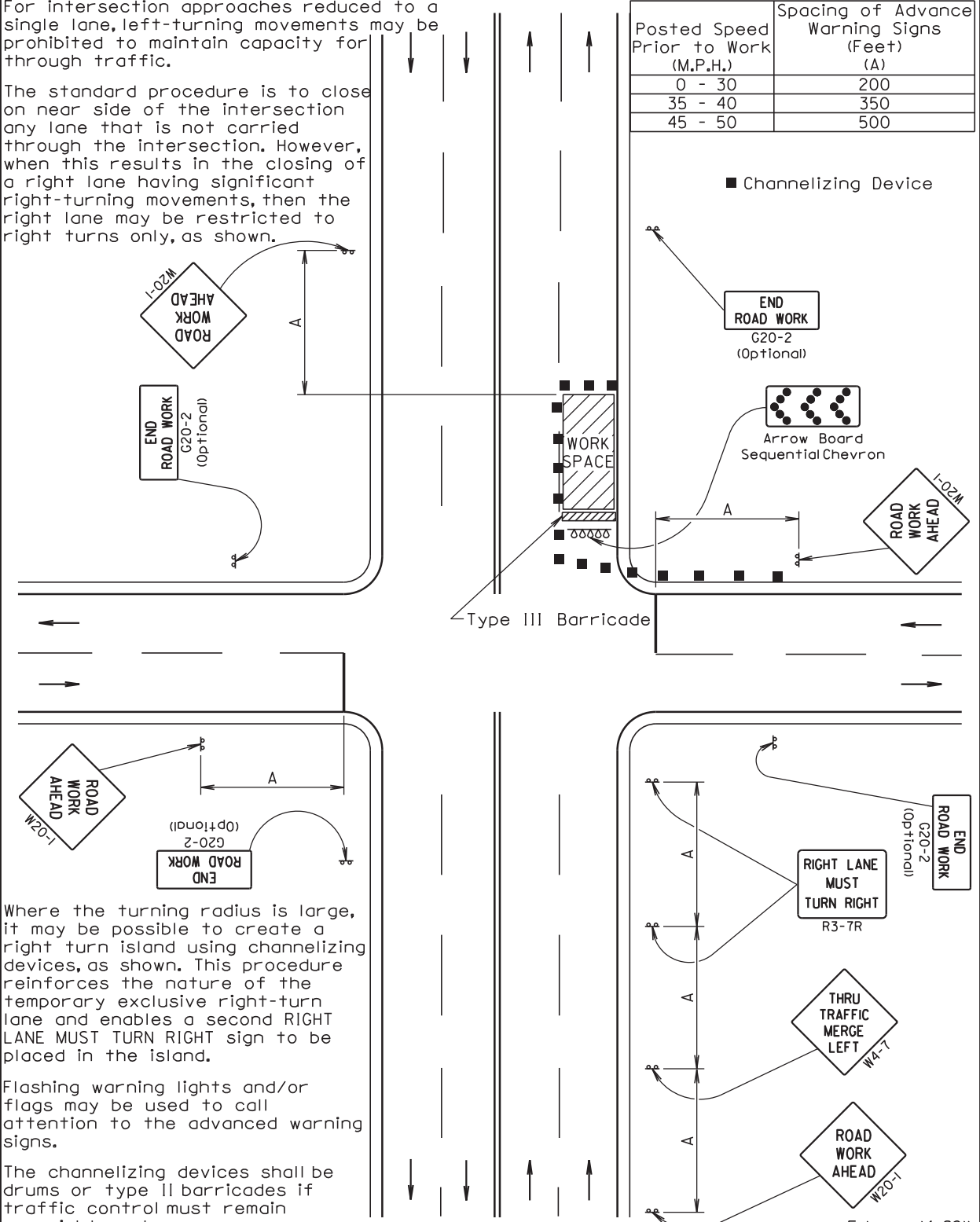
Warning sign sequence in opposite direction same as below.



February 14, 2011

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.



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 shall be drums or type II barricades if traffic control must remain overnight or longer.

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

END
ROAD WORK
G20-2
(Optional)

Arrow Board
Sequential Chevron

ROAD WORK
AHEAD
W20-1

END
ROAD WORK
G20-2
(Optional)

RIGHT LANE
MUST
TURN RIGHT
R3-7R

THRU
TRAFFIC
MERGE
LEFT
W4-1

ROAD WORK
AHEAD
W20-1

February 14, 2011

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

* Spacing to be every 40' for 42" cones.

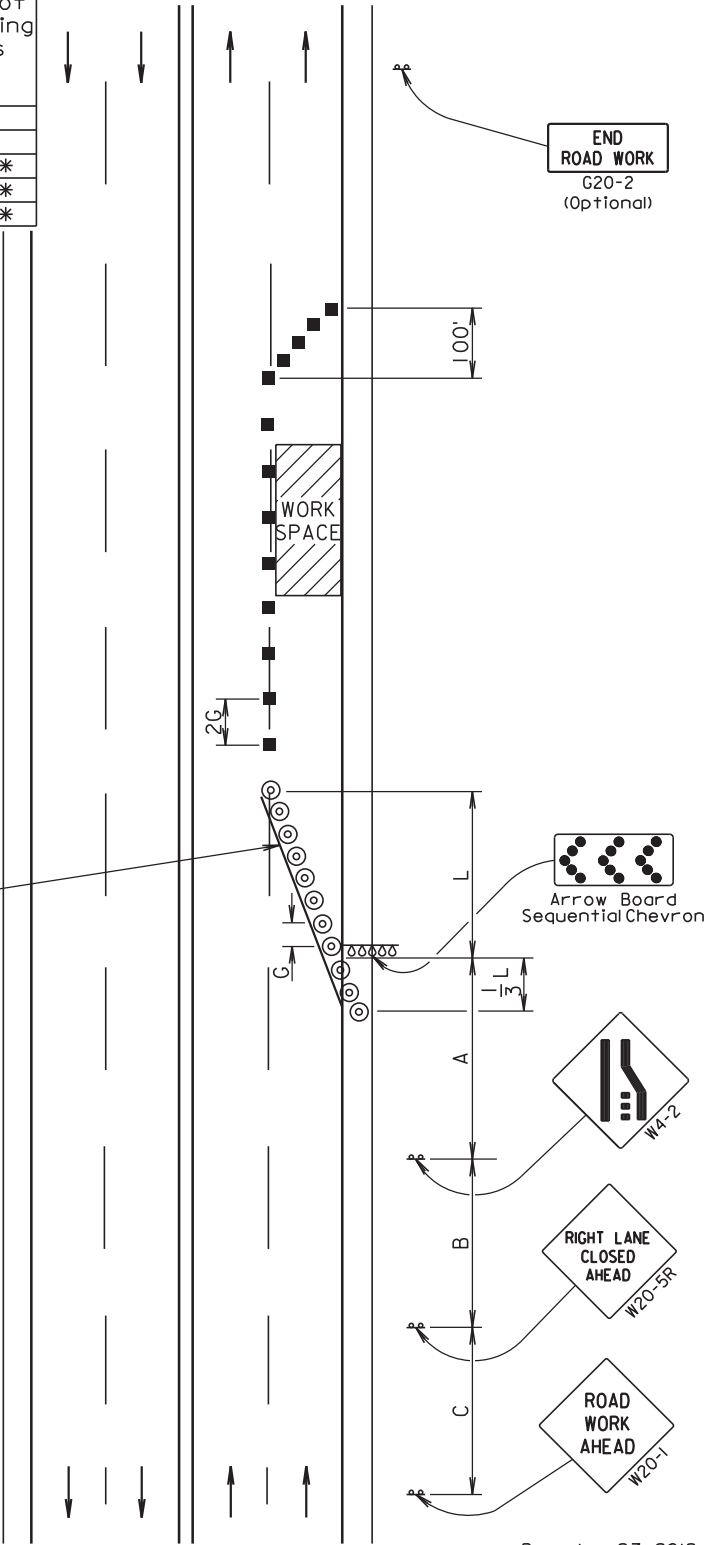
⊙ Reflectorized Drum

■ Channelizing Device shall 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 any night time hours.

4" white temporary pavement marking shall be used for overnight and long term operations.

Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.



December 23, 2012

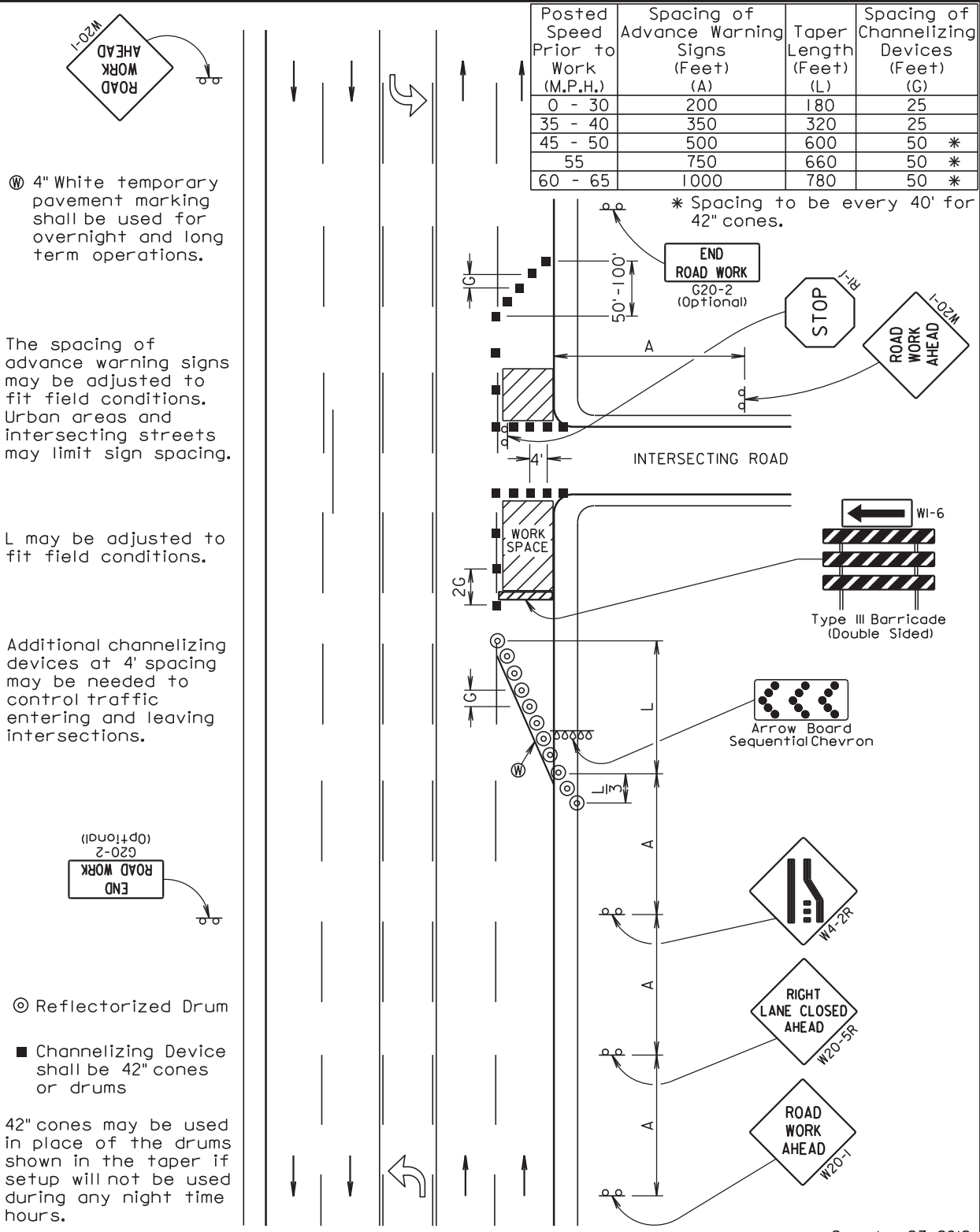
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GUIDES FOR TRAFFIC CONTROL DEVICES
4-LANE UNDIVIDED, RIGHT LANE CLOSED

PLATE NUMBER
634.47

Sheet 1 of 1



⊙ 4" White temporary pavement marking shall be used for overnight and long term operations.

The spacing of advance warning signs may be adjusted to fit field conditions. Urban areas and intersecting streets may limit sign spacing.

L may be adjusted to fit field conditions.

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.

⊙ Reflectorized Drum

■ Channelizing Device shall 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 any night time hours.

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

* Spacing to be every 40' for 42" cones.

Type III Barricade
(Double Sided)

December 23, 2012

Published Date: 1st Qtr. 2014

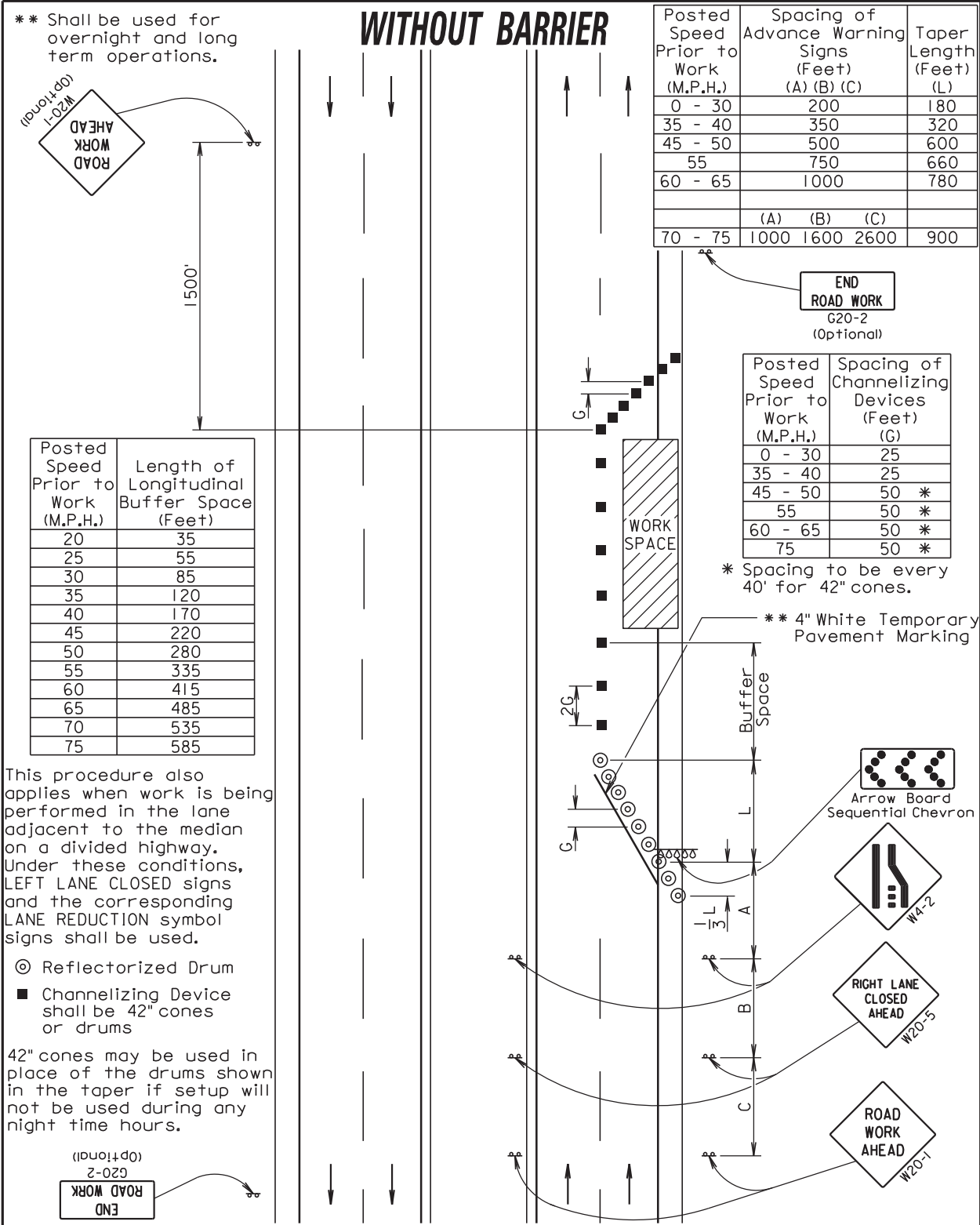
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GUIDES FOR TRAFFIC CONTROL DEVICES
5-LANE, OUTSIDE LANE CLOSED

PLATE NUMBER
634.60

Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

- ⊙ Reflectorized Drum
 - Channelizing Device shall 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 any night time hours.

December 23, 2012

Published Date: 1st Qtr. 2014

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GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITHOUT BARRIER

PLATE NUMBER
634.64

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PLOT SCALE - 1:200

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N,151	23	49

ITEMIZED LIST FOR TRAFFIC CONTROL - CONVENTIONAL ROADS

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	8	17	136
R1-1	30" x 30"	STOP	4	21	84
R3-7R	30" x 30"	RIGHT LANE MUST TURN RIGHT	2	21	42
R8-3	24" x 24"	NO PARKING (SYMBOL)	2	16	32
W1-6	60" x 30"	ONE DIRECTION LARGE ARROW	1	30	30
W3-1	48" x 48"	STOP AHEAD (SYMBOL)	4	34	136
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W4-7	48" x 48"	THRU TRAFFIC MERGE LEFT	1	34	34
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	8	34	272
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	3	34	102
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR AHEAD	2	34	68
W20-7	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
*****		TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
TOTAL UNITS					1196

If a sign is required on a project and not listed in the above inventory, the units per sign will be determined as follows:
Signs 36" x 36" will be measured at 27 units each and signs 48" x 48" will be measured at 34 units each, otherwise:
If a sign measures less than 25" high and 25" wide the units per sign will be computed as sign size (sq ft) x 3.
If a sign measures between 23H" and 37H" the units per sign will be computed as sign size (sq ft) x 1.2 +15.

PLOT SCALE - 1:200

Mina Pole Locations

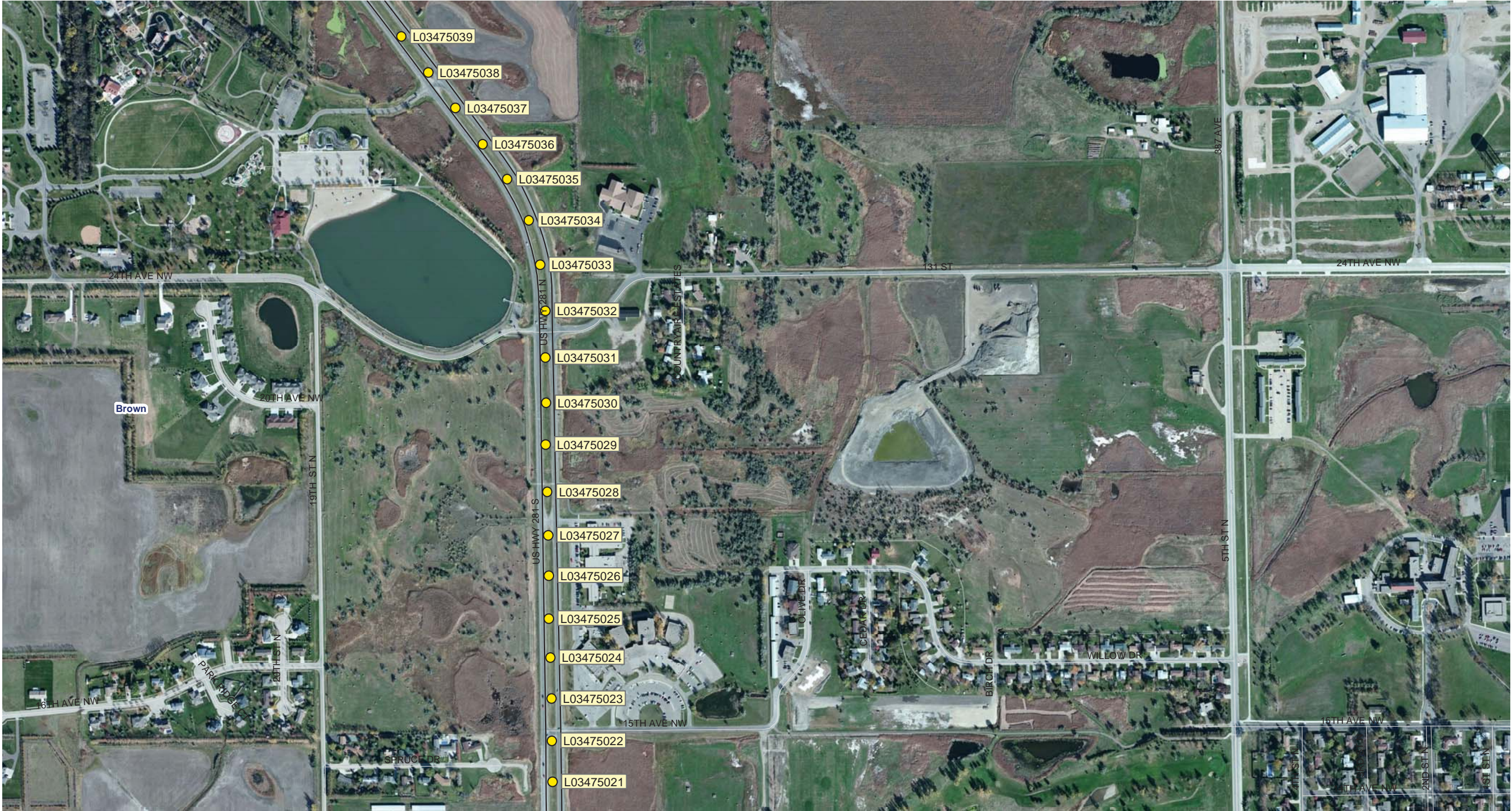
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	24	49



PLOT SCALE - 1:200

Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	25	49



PLOT SCALE - 1:200

Aberdeen Pole Locations

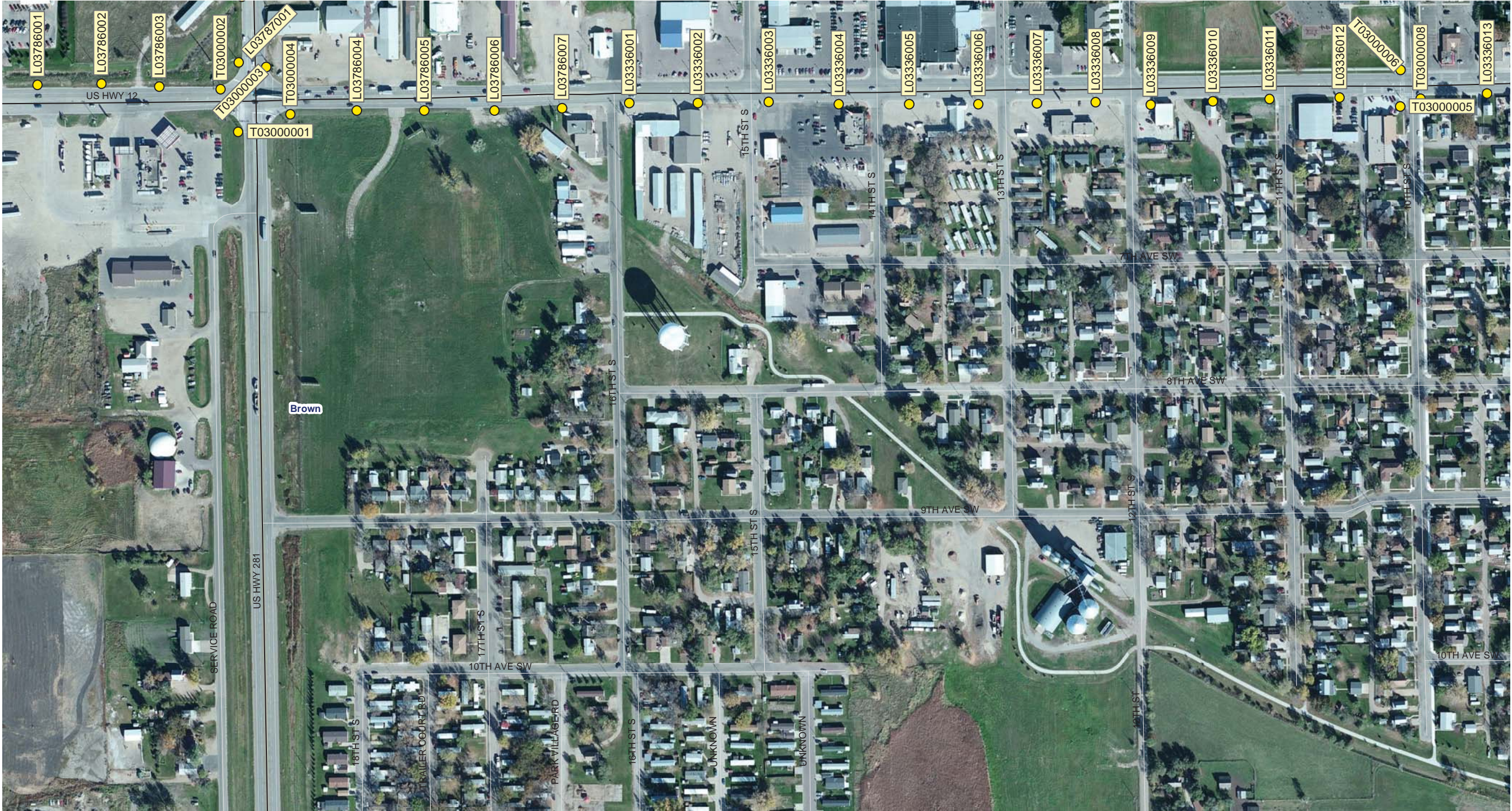
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	26	49



PLOT SCALE - 1:200

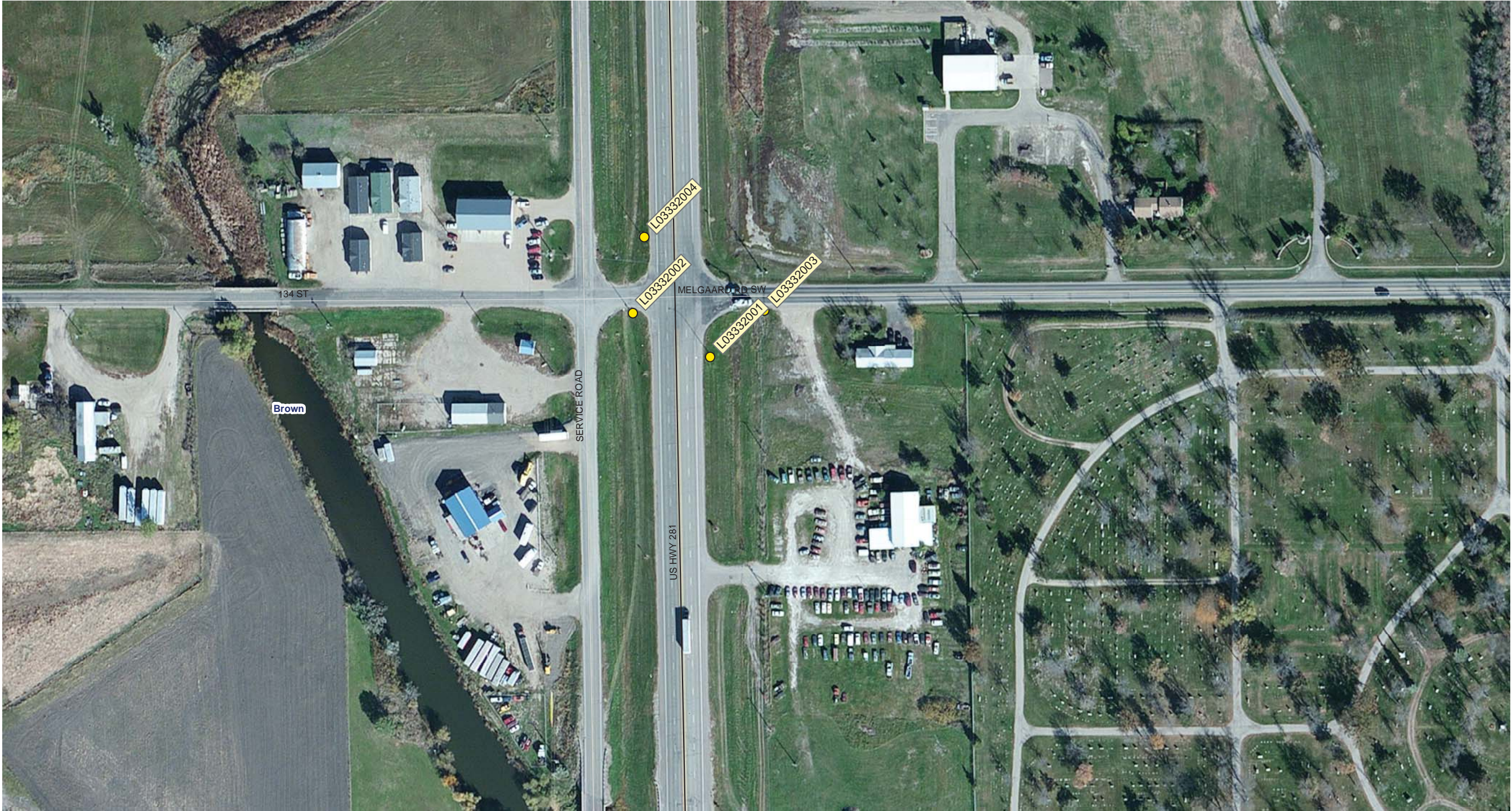
Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	27	49



Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	28	49



PLOT SCALE - 1:200

Aberdeen Pole Locations

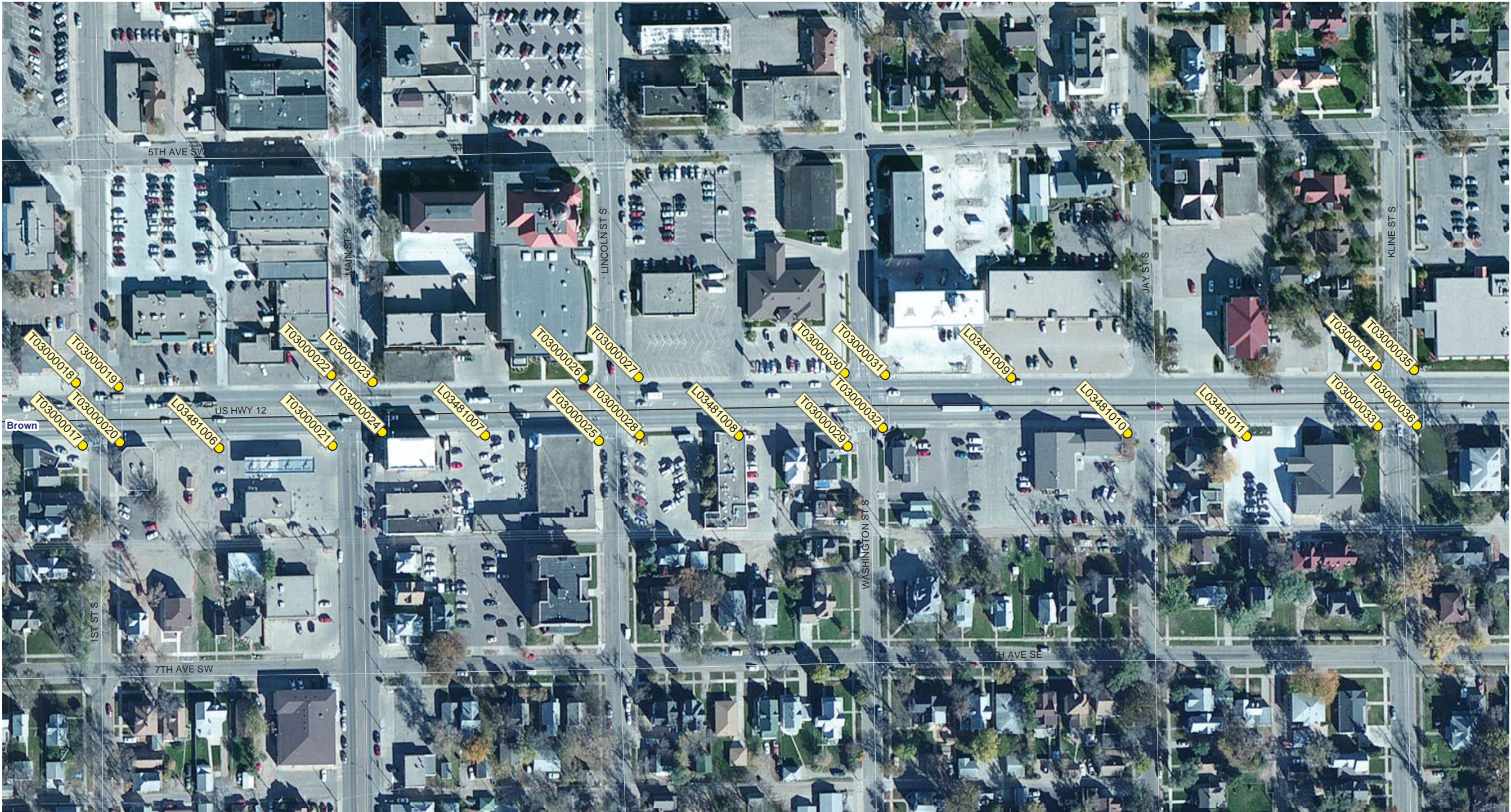
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	29	49



PLOT SCALE - 1:200

Aberdeen Pole Locations

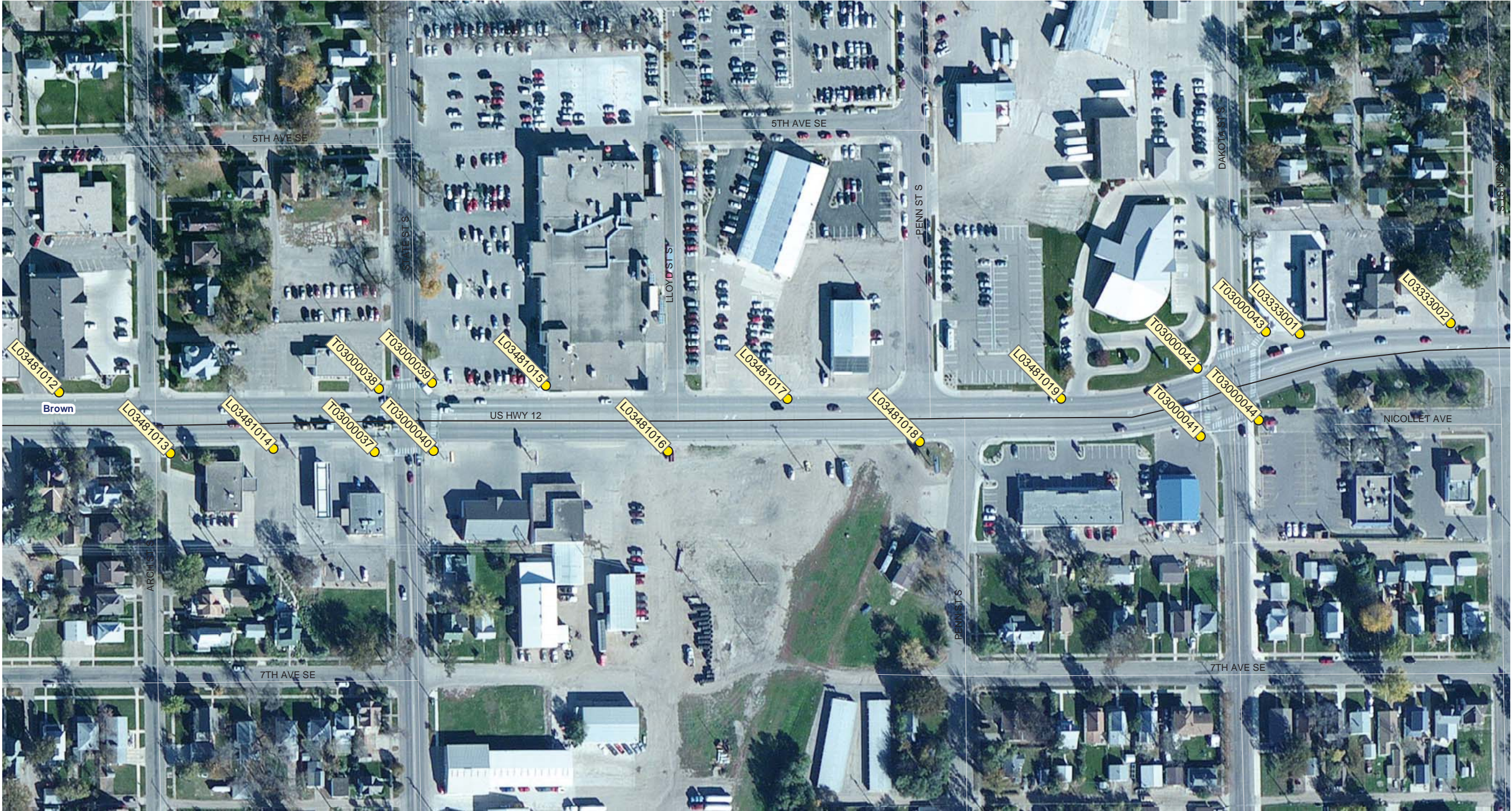
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	30	49



PLOT SCALE - 1:200

Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	31	49



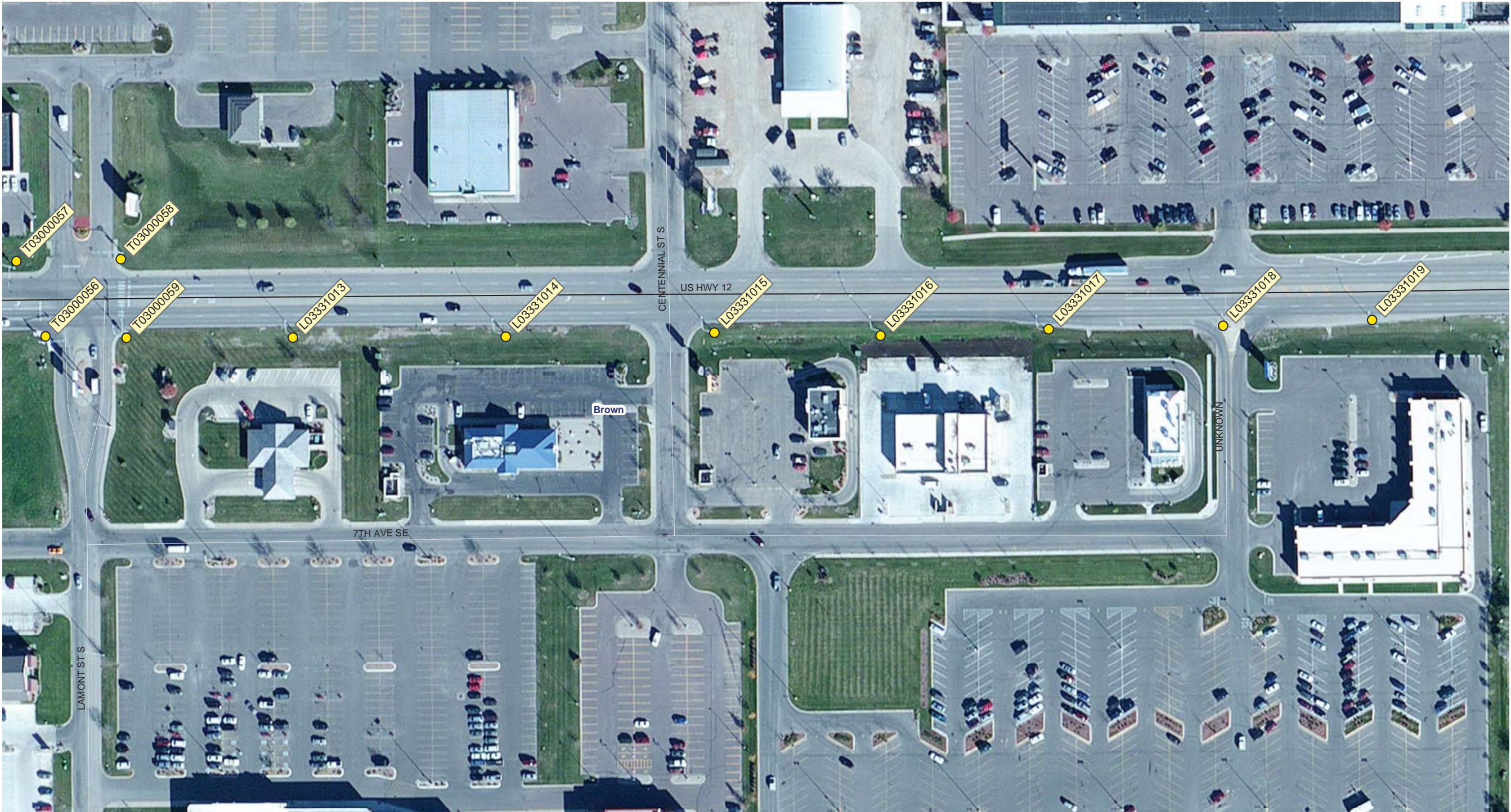
Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	32	49



Aberdeen Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	34	49



Groton Pole Locations

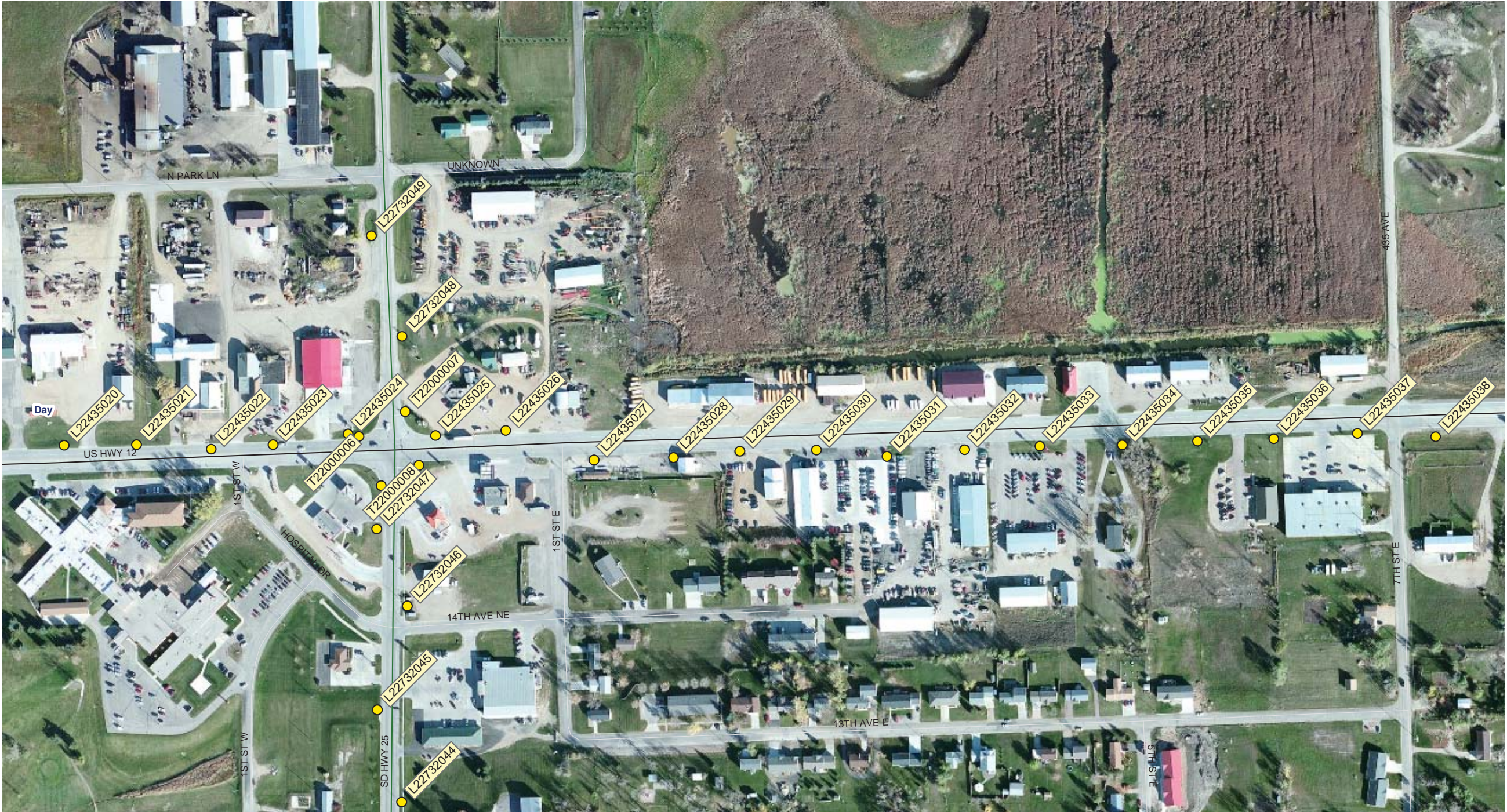
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	35	49



PLOT SCALE - 1:200

Webster Pole Locations

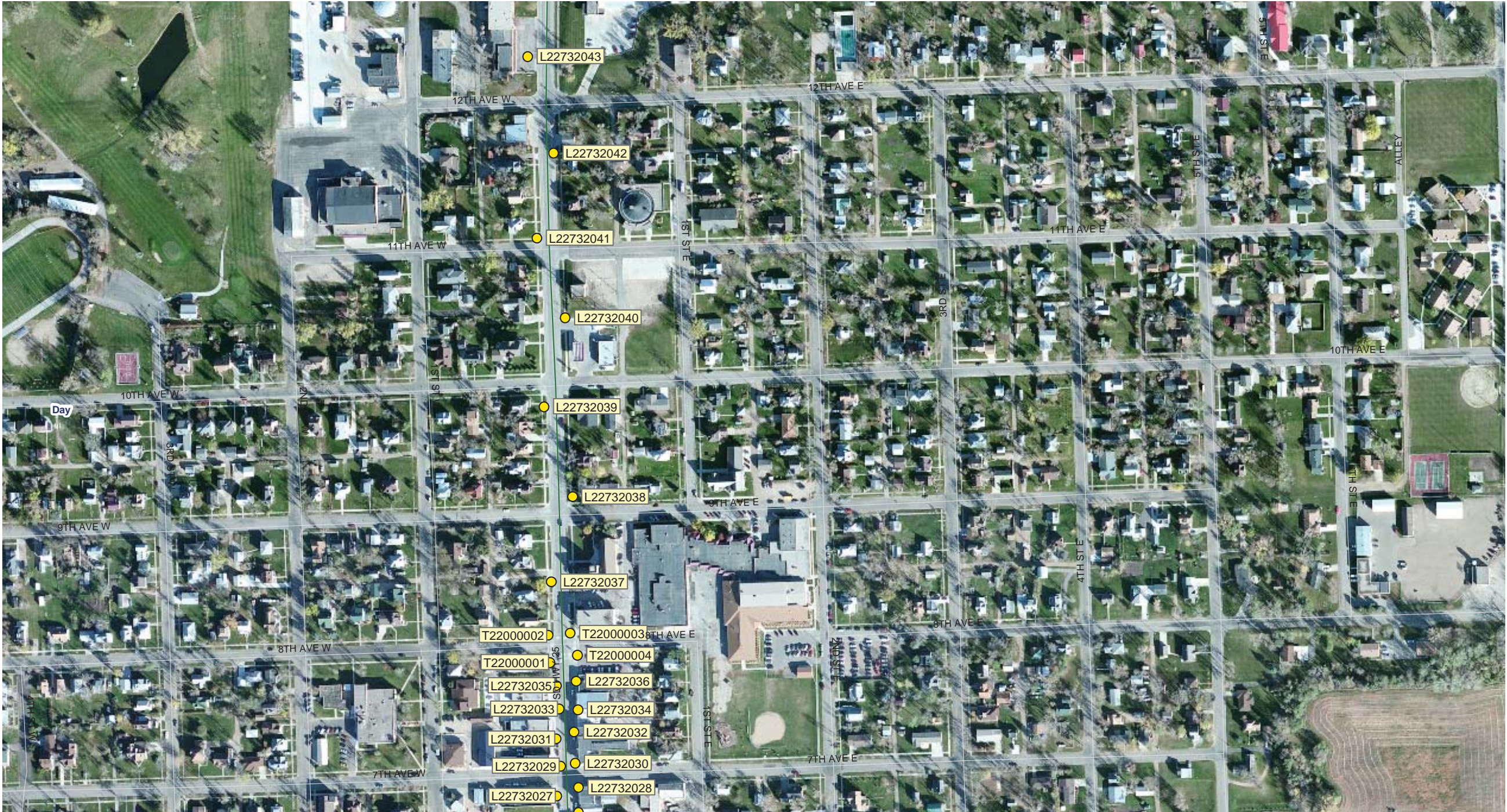
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	36	49



PLOT SCALE - 1:200

Webster Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	37	49



Waubay Pole Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	38	49



West of Mina

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	39	49

L26425001



Aberdeen

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	40	49

L03332002 – L03332004



L03475026



Aberdeen

L03331016

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	41	49



T03000068 & T03000071



Aberdeen

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	42	49

T03000070



T03000001 - T03000004



Aberdeen

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	43	49

T03000009 – T03000055



T03000056 – T03000058



Groton

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	44	49

T03000084 – T03000085



Webster

L22435031

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	45	49



T22000001 – T22000003



PLOT SCALE - 1:200

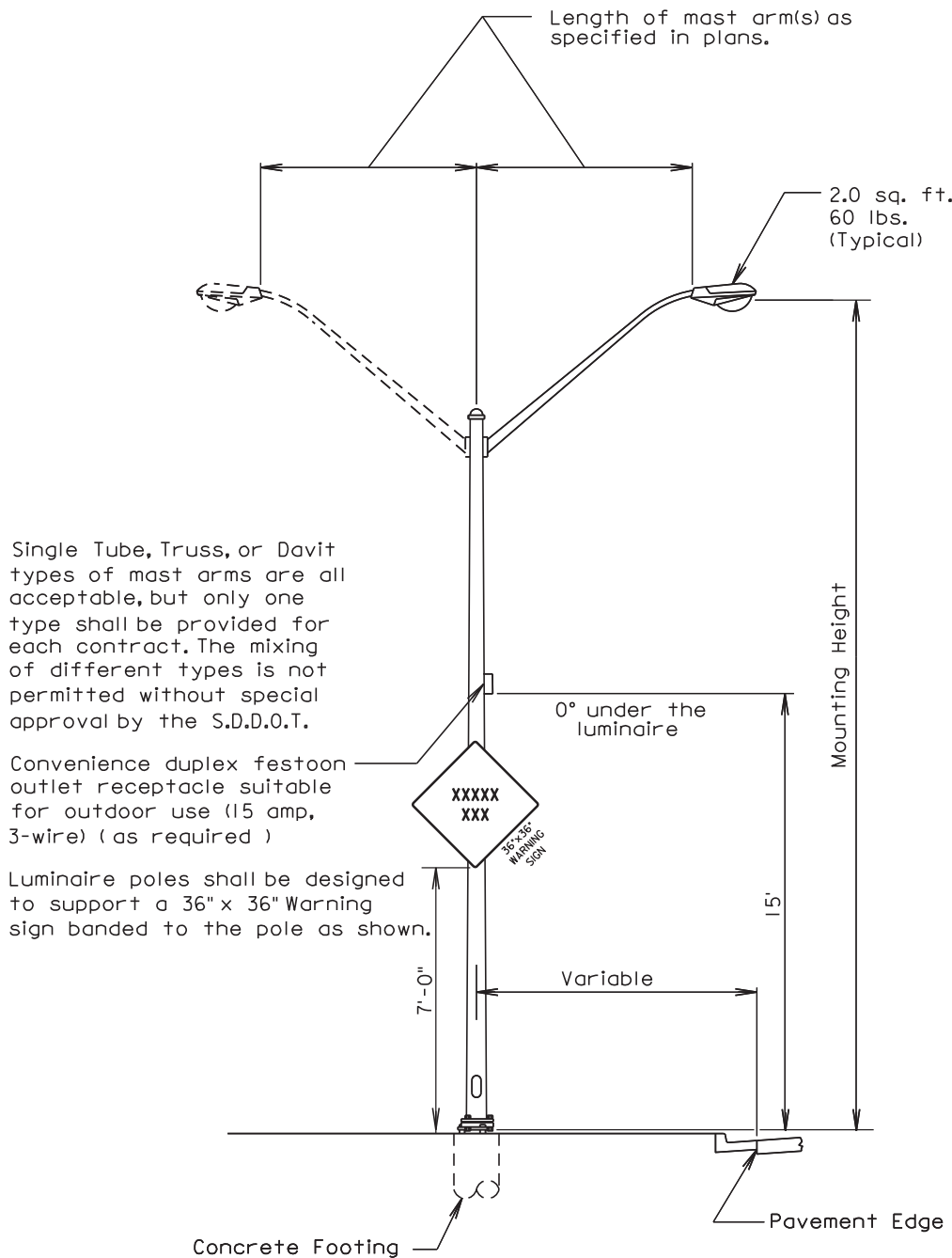
Waubay

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	46	49

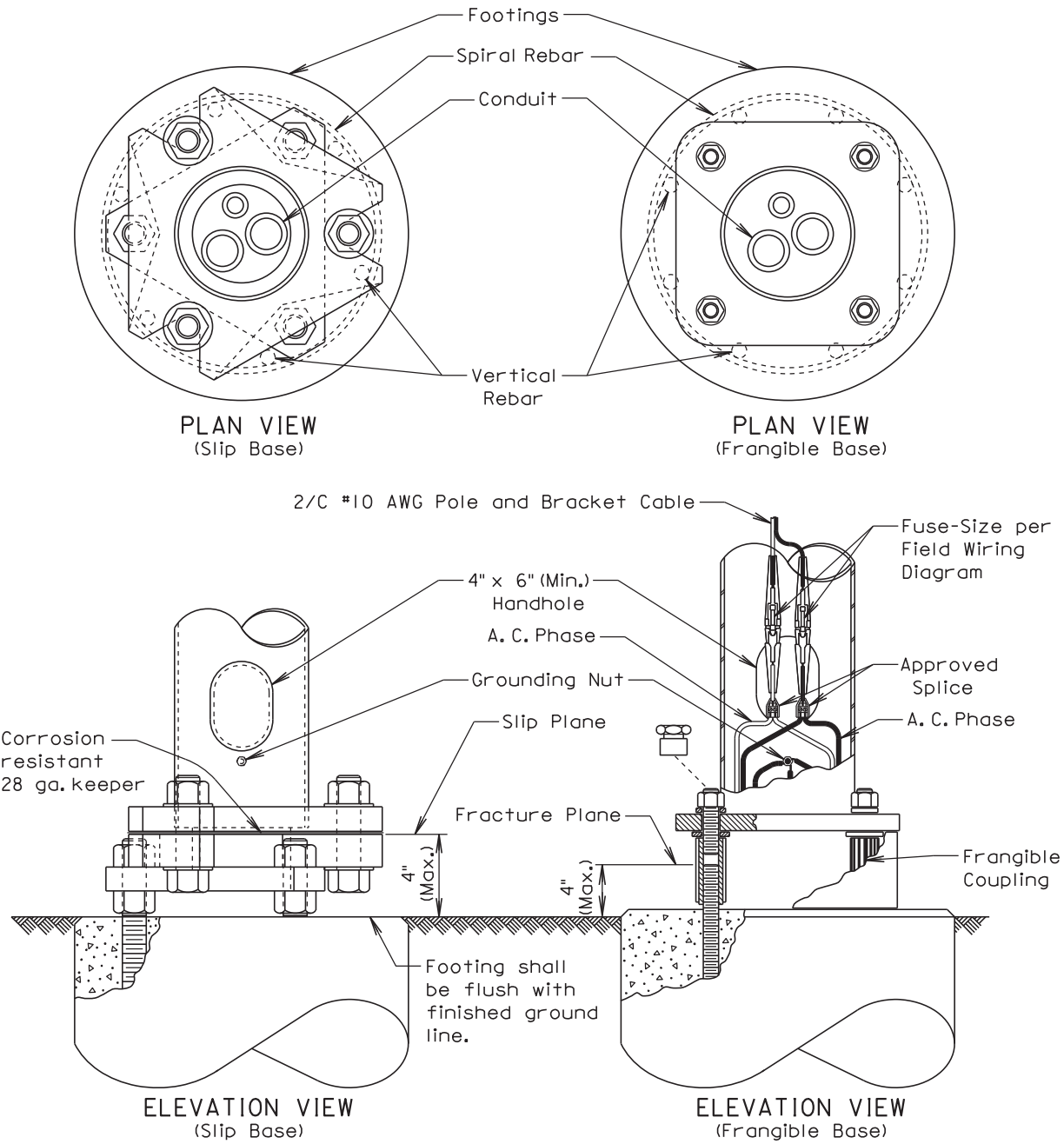
Luminaires L22479002 – L22479031



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	47	49



Published Date: 1st Qtr. 2014	S D D O T	STEEL ROADWAY LUMINAIRE POLE WITH MAST ARM(S)	March 31, 2000
			PLATE NUMBER 635.01 Sheet 1 of 1



GENERAL NOTES:

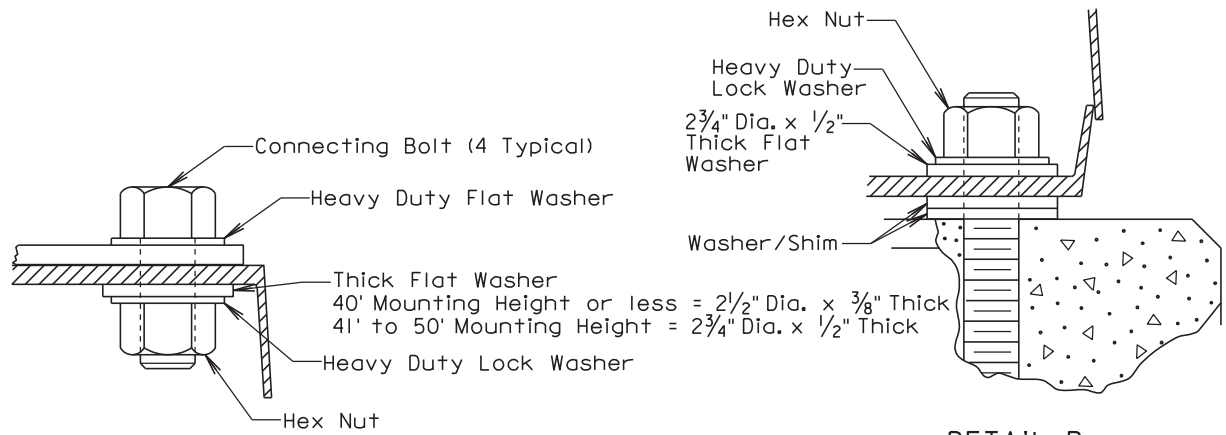
The Contractor has the option of using either the Slip Base, Transformer Base, or Frangible Base.

Base details are provided for example only and are not intended to be a complete design.

Connectors shall be breakaway type.

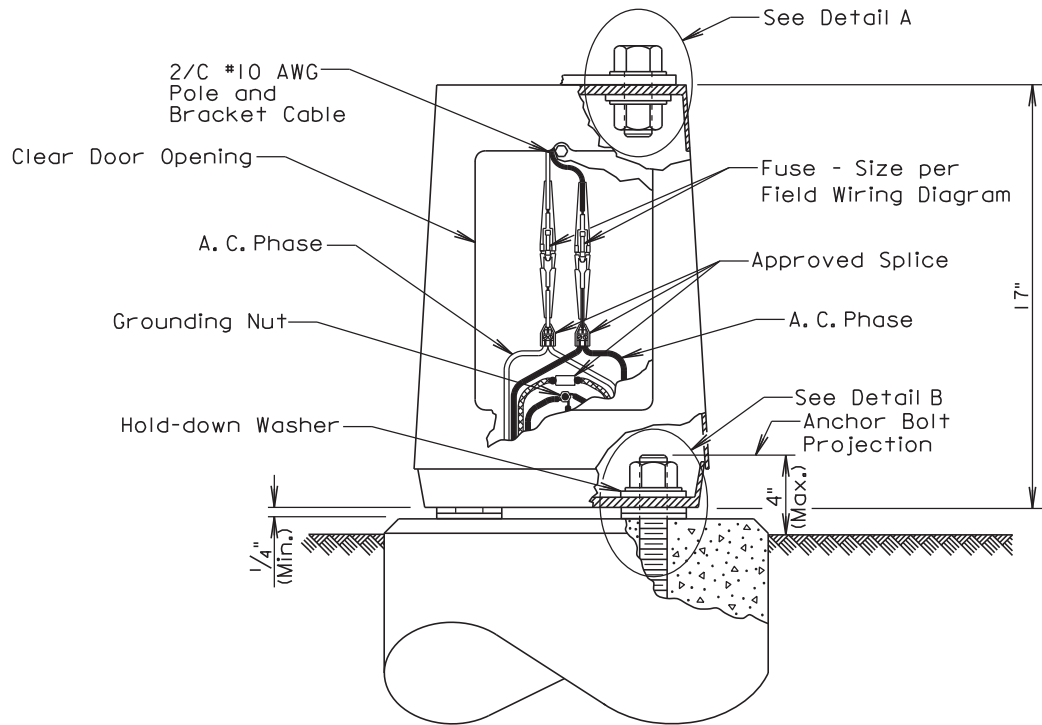
Published Date: 1st Qtr. 2014	S D D O T	ROADWAY LUMINAIRE POLE BREAKAWAY BASE	June 26, 2013
			PLATE NUMBER 635.11 Sheet 1 of 1

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	48	49



DETAIL A

DETAIL B



GENERAL NOTES:

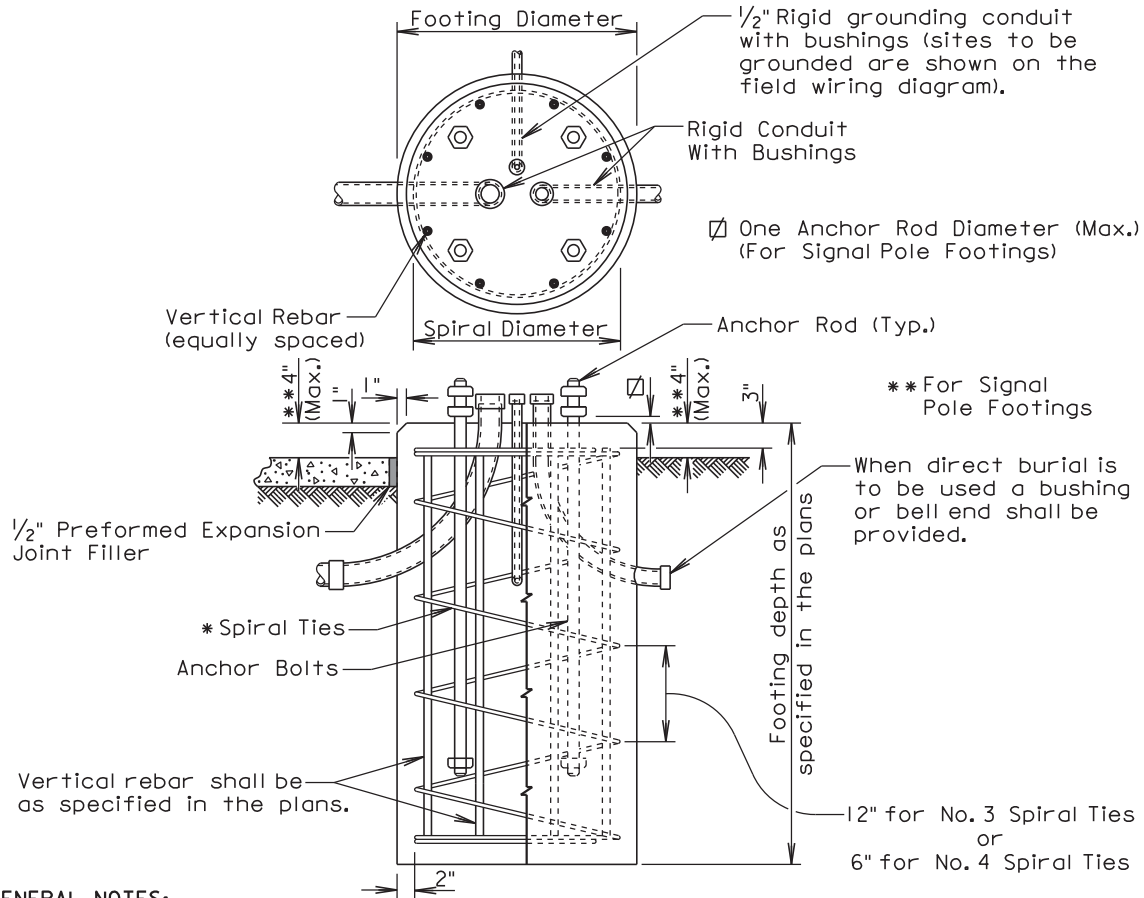
Base details are provided for example only and are not intended to be a complete design.

Connectors shall be breakaway type.

The Contractor shall install "U" shaped shims or round flat washers if shimming is necessary to install the light poles plumb and level. The washers and shims shall be installed around the anchor bolts.

June 26, 2013

<i>Published Date: 1st Qtr. 2014</i>	S D D O T	ROADWAY LUMINAIRE POLE BREAKAWAY TRANSFORMER BASE	PLATE NUMBER 635.21
			Sheet 1 of 1



GENERAL NOTES:

* The tie sizes are specified in the plans. Circular ties may be used in lieu of the spiral ties. The No. 3 ties shall be spaced 12 inches apart except for the top two which shall be spaced 6 inches apart. The No. 4 ties shall be spaced 6 inches apart except for the top two which shall be spaced 3 inches apart. The ties shall be lapped 18 inches and the laps shall be staggered around the cage.

Spiral ties shall have 1-1/2 extra turns at each end.

See section 985 of the Standard Specifications for footing materials.

Conduits and bushings may project 2 1/2 inches to 6 inches above footing for fixed base poles but shall not project above the slip plane or fracture plane for breakaway poles.

Conduits shall be sealed water-tight during all phases of construction until poles are in place.

The anchor rods shall fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.

Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).

The pole shall not be installed until the concrete has attained design strength (4000 psi).

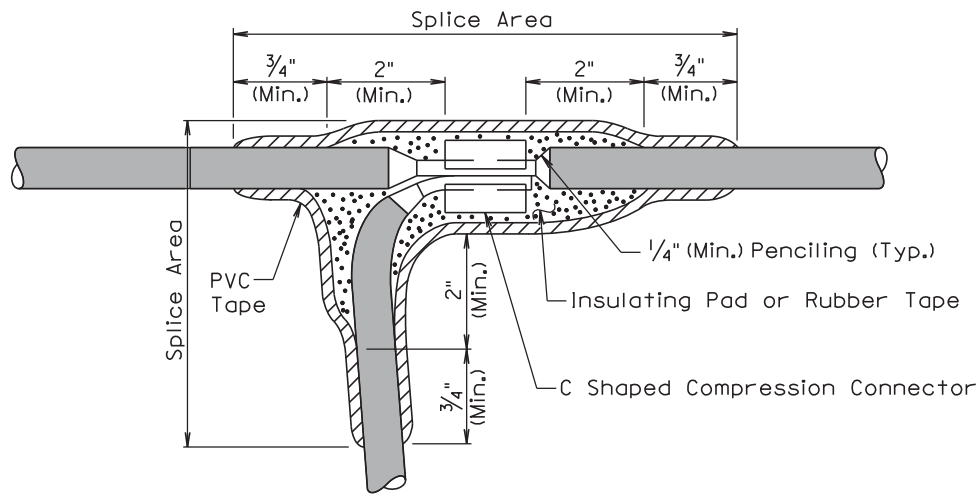
The contour of the area surrounding the breakaway pole shall be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

September 6, 2013

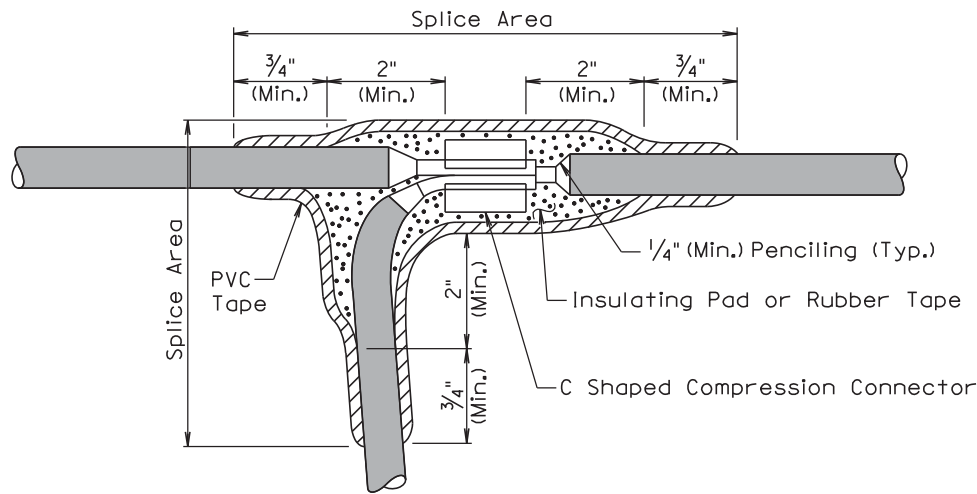
<i>Published Date: 1st Qtr. 2014</i>	S D D O T	POLE FOOTING	PLATE NUMBER 635.55
			Sheet 1 of 1

PLOT SCALE - 1:200

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-152, 000P-151, 000N-151	49	49



TYPE C SPLICE
(Between 1 free end and 1 through conductor)



TYPE T SPLICE
(For 3 free ends)

February 14, 2010

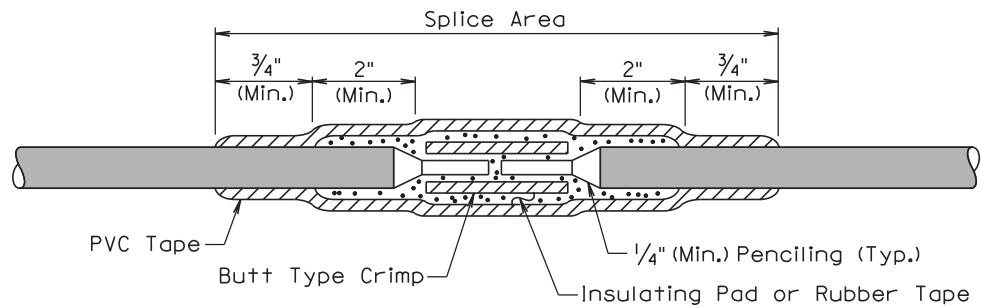
Published Date: 1st Qtr. 2014

**S
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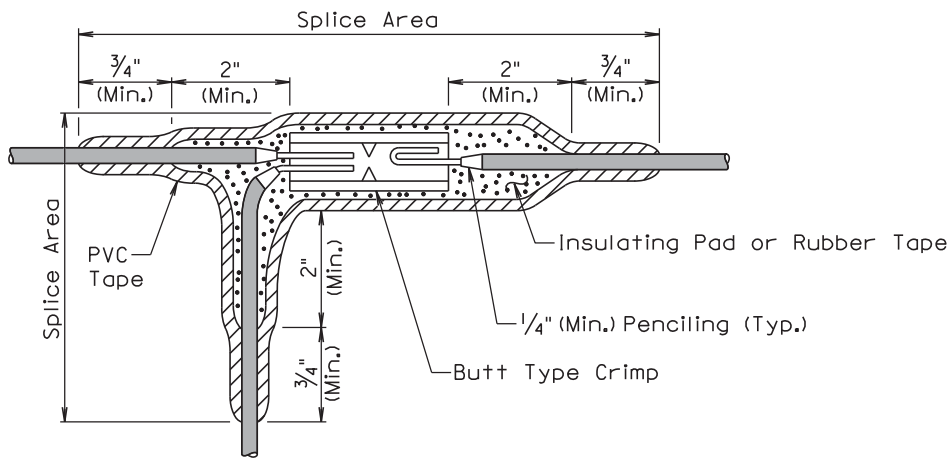
WIRE SPlicing FOR LIGHTING
(LOW VOLTAGE CIRCUITS (0 to 600 V))

PLATE NUMBER
635.80

Sheet 1 of 2



TYPE S SPLICE
(Between 2 free ends)



TYPE ST SPLICE
(For 3 free ends)

GENERAL NOTES:

The splice shall be environmentally sealed for protection from weather, moisture, and abrasion in accordance with the method stated below.

The rubber tapes shall be rolled after application.

Method for insulating splice area:

1. The splice area shall be completely covered with electrical insulating coating and dried.
2. Apply two layers of 1/8" minimum thickness electrical insulating pad or two layers of half lapped synthetic oil resistant self fusing rubber tape.
3. Three layers of half lapped polyvinyl chloride tape shall be applied.
4. The entire splice area shall be covered with electrical insulating coating and dried.

February 14, 2010

Published Date: 1st Qtr. 2014

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WIRE SPlicing FOR LIGHTING
(LOW VOLTAGE CIRCUITS (0 to 600 V))

PLATE NUMBER
635.80

Sheet 2 of 2