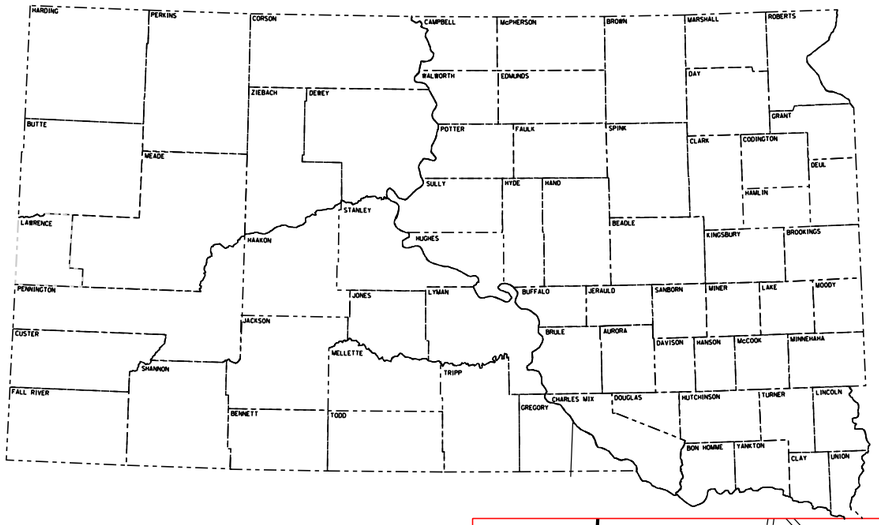


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 000I–451, 000I–452
000P–451, 000P–452 & 000N–451
LAWRENCE, MEADE & PENNINGTON COUNTY

PCN I3AK, I3AL, I3AM, I3AN & I3AP

Lighting Repair

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	1	43

Plotting Date: 12/05/2014

INDEX OF SHEETS

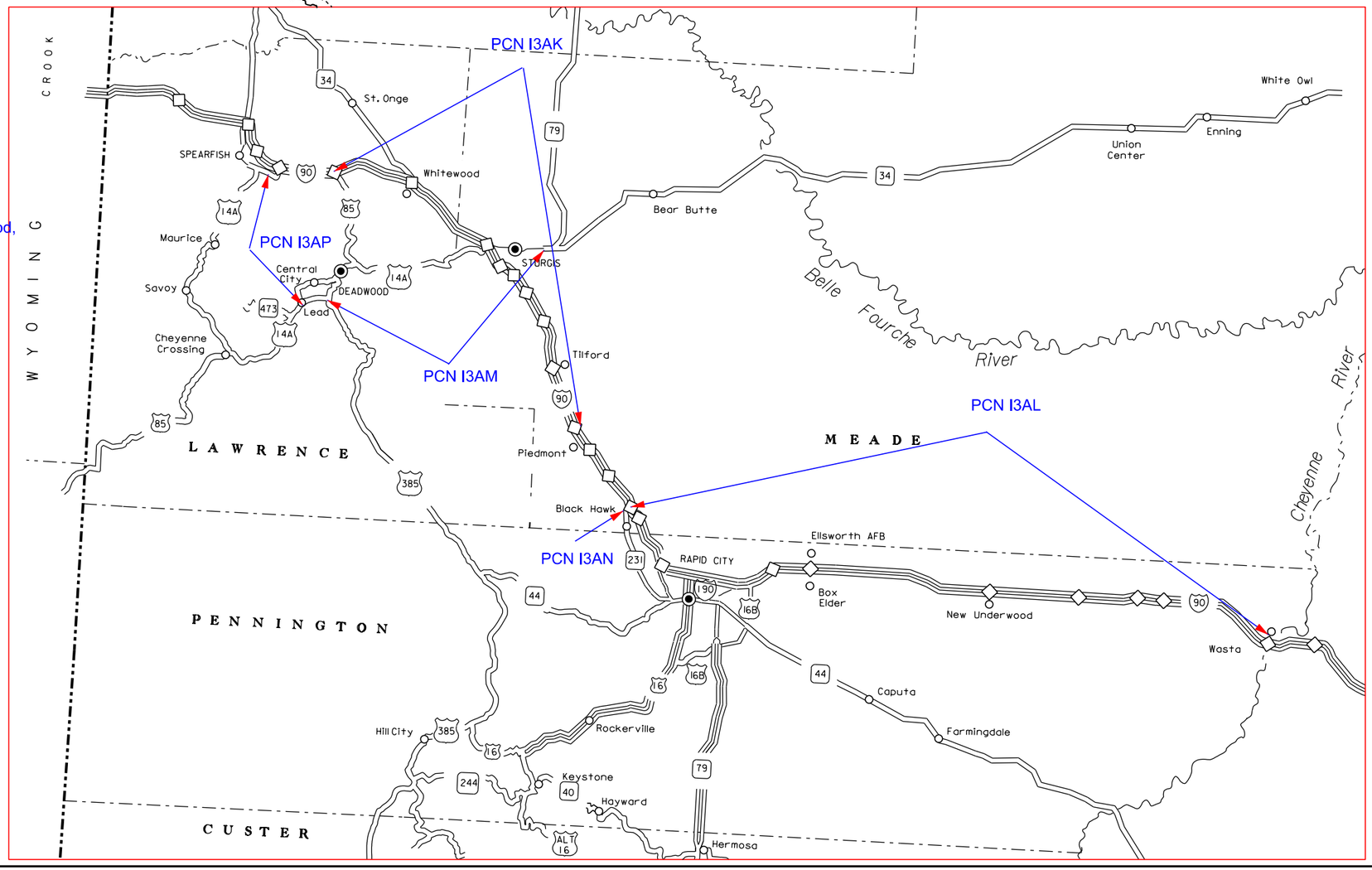
PCN I3AL
I-90 from MRM 52 to MRM 100

PCN I3AK
I-90 MRM 17 to 41

PCN I3AP
US 85 in Lead and Hwy 14A and Colorado Blvd.

PCN I3AM
Hwy 34 MRM 33 to MRM 37, Hwy 14A in Deadwood,
Hwy 385 and 85 Jct & Hwy 85 in Deadwood.

Pcn I3AN
Hwy 231 and Peaceful Pines Intersection



ESTIMATE OF QUANTITIES

PCN I3AK

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	1,080	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
635E7500	Remove and Reset Luminaire Pole	9	Each
900E2024	Miscellaneous Work, Electrical	Lump Sum	LS
900E2030	Miscellaneous Work	11	Site

PCN I3AL

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	1,080	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
635E7500	Remove and Reset Luminaire Pole	12	Each
900E2024	Miscellaneous Work, Electrical	Lump Sum	LS
900E2030	Miscellaneous Work	13	Site

PCN I3AM

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	1,080	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
635E5810	Anchor Bolt Cover	1	Each
635E7500	Remove and Reset Luminaire Pole	14	Each
635E7510	Remove and Reset Signal Pole	1	Each
900E2024	Miscellaneous Work, Electrical	Lump Sum	LS
900E2030	Miscellaneous Work	22	Site

PCN I3AN

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	912	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
900E2030	Miscellaneous Work	4	Site

PCN I3AP

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	1,080	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
900E2030	Miscellaneous Work	4	Site

SCOPE OF WORK

Work on this project involves a wide range of repairs to various types of luminaire and signal poles. Repairs consist of installing nuts, bolts and washers, replacing covers, bases, anchor systems and removing and resetting of numerous poles.

SEQUENCE OF OPERATIONS

The Contractor shall complete all work within one specific location 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. The exception to this would be the luminaire pole footing extension which requires removal of the luminaire pole for several days to allow the concrete to obtain required strength. The luminaire pole shall be operational within 5 calendar days of the concrete obtaining required strength.

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. Intersection shall be signed in all 4 directions with stop signs and all 4 way, plaques.

GENERAL NOTES

1. 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.
2. 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.

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 if requested. These original shop plans will also be made available, upon request to RC Area Engineer Mike Carlson, to any bidders on this project if requested. Please submit requests for original shop plans to Steve.Wiege@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. Replacement bolts, nuts and washers shall be approved by the pole manufacturer.

Replacement parts shall have the same protective coating as the original components.

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

SUPPLIER
Ameron Pole Products
http://www.ameronpoles.com/
Northwest Regional Sales Office
9661 Dutchess Place
South Jordan, UT 84095
801-631-3650
Fax: 801-657-4505

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 when applicable. All lanes shall 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

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. Payment for crossing guards shall be paid for under the contract item FLAGGING.

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. The quantity of traffic control units paid for will be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups on the project. Payment will be for those signs ordered by the Engineer and used on each project PCN.

In some locations work may be accomplished from behind the curb without impeding traffic. Repair locations within the City limits of Deadwood and Lead, may need to be scheduled to accommodate work areas and or special events held within these two locations. Contacts for these locations, are Ron Green @ 605-578-3082, Deadwood and John Bunch @ 605-584-1401, Lead.

ESTIMATE OF SIGN QUANTITIES FOR EACH PCN I3AK, I3AL, I3AM, I3AN & I3AP

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
E5-1a	60" x 48"	EXIT ### WITH 45 DEGREE ARROW (1 or 2 digits)	1	38	38
G20-2	48" x 24"	END ROAD WORK	1	24	24
R1-3P	16" x 18"	ALL WAYS	4	15	60
R1-1	36" x 36"	STOP	4	27	108
W3-1	48" x 48"	STOP AHEAD (SYMBOL)	4	34	136
W3-4	48" x 48"	BE PREPARED TO STOP	4	34	136
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W4-3	48" X 48"	ADDED LANE (SYMBOL)	1	34	34
W5-4	48" X 48"	RAMP NARROWS	1	34	34
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	5	34	170
W20-4	48" x 48"	ONE LANE ROAD #### FT. OR AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED #### FT. OR AHEAD	2	34	68
W20-7	48" x 48"	FLAGGER (SYMBOL)	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
				TOTAL UNITS	1080

REPLACE LUMINAIRE POLE BASE COUPLERS

The fluted aluminum couplers and skirting at the base of the luminaire pole shall be replaced with Transpo Pole Safe couplers and skirting. The Tables of Luminaire/Signal Repair indicate the luminaire poles which require this coupler and skirting replacement. It shall be the contractor responsibility to verify size of anchor bolts to ensure the correct couplers are purchased. It is anticipated that Model 4100 Transpo Pole Safe couplers, for 1" diameter anchor bolts will be used for replacements on this poroject.

Couplers and skirting shall be installed per Transpo Pole Safe installation instructions. Installation may require sizing of the anchor bolt projection height, cleaning of the anchor bolt, and cold galvanizing of the anchor bolt. http://www.transpo.com/pdfs/Pole-Safe_Website_Update/Pole_Safe_Design_Book_2013.pdf

All costs associated with furnishing, replacing and installing the couplers and skirting shall be incidental to the contract unit price per each for REMOVE AND RESET LUMINAIRE POLE.

REPLACE BOLT/BOLTS ON BACKSIDE OF MAST ARM

The Tables of Luminaire/Signal Repair indicates signal poles which require the bolts connecting the mast arm and/or anti-rotation bolt on the arm to pole connection to be replaced.

The Contractor shall be responsible for reviewing the original shop plans and providing the proper replacement bolts. 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 mast arm connection to the pole shall be incidental to the contract unit price per site for MISCELLANEOUS WORK. Each signal 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 to the Standard 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 in place nut/nuts 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.

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 removal and resetting of pole.

REPLACE / REPAIR / SECURE HAND HOLE COVERS

The Tables of Luminaire/Signal Repair indicate the luminaire pole locations which require repairs and or reattachment of the hand hole access covers.

If an access cover is not presently attached to the hand hole access, or the access cover is damaged, the Contractor shall furnish and install a new access cover. Replacement covers shall be pre-approved before use.

If the present attachment for the access cover is damaged and/or does not adequately secure the access cover in place, the Contractor shall be responsible for preparing and implementing a plan that adequately secures the access cover and still allows for easy removal of the access cover. Theft deterrent covers may be a potential option if the present covers and attachments are significantly damaged. The repair plan shall be approved by the Engineer prior to implementation.

All replacement materials shall have the same surface finish as the original part. If any component has the protective galvanizing damaged, the damaged area shall be repaired as per the Repair Galvanized Coating notes within these plans.

All costs associated with furnishing and installing an access cover and/or making repairs to allow for the securing of an access cover shall be incidental to the contract lump sum price for MISCELLANEOUS WORK, ELECTRICAL.

REPLACE POLE CAP

The Tables of Luminaire/Signal Repair indicate the luminaire pole locations which require installation of a luminaire pole cap. The Repair Comments in the Tables of Luminaire/Signal Repair indicate some locations where only the pole cap set screw needs to be replaced.

All costs associated with furnishing and installing a new pole cap or furnishing and installing a new pole cap set screw shall be incidental to the contract lump sum price for MISCELLANEOUS WORK, ELECTRICAL. There will be no additional compensation to the Contractor if the Repair Comments in the Tables of Luminaire/Signal Repair indicate to replace the set screw and the Contractor is required to furnish and install a new pole cap to complete the repair.

REPLACE SIGNAL HEAD BACKPLATE

The Tables of Luminaire/Signal Repair indicate the signal pole locations which require installation of a signal head backplate.

All costs associated with furnishing and installing a new signal head backplate shall be incidental to the contract lump sum price for MISCELLANEOUS WORK, ELECTRICAL.

REPAIR GALVANIZED COATING

The Tables of Luminaire/Signal Repair indicate the luminaire poles which require repair to the galvanized pole or mast arm surface.

The galvanizing repairs shall be in compliance with ASTM A 780 specifications for Zinc-rich Paint.

The steel surface shall be cleaned of all rust, scale, oil, grease and foreign matter prior to coating. The galvanizing product shall be applied according to the product application instructions.

The Contractor shall furnish the Engineer with the Zinc-rich Paint product name, application instructions and documentation that the product complies with ASTM A 780 for Paints Containing Zinc Dust.

All costs associated with repairing the galvanized surface shall be incidental to the contract lump sum price for INCIDENTAL WORK.

ANCHOR BOLT COVERS

The Tables of Luminaire/Signal Repair indicate the luminaire poles which require replacement of damaged or missing die cast anchor bolt nut covers.

All replacement materials shall have the same surface finish as the original part. If any component has the protective galvanizing damaged the damaged, area shall be repaired as per the Repair Galvanized Coating notes within these plans.

All costs associated with furnishing and installing new die cast anchor bolt nut covers shall be incidental to the contract unit price per each for ANCHOR BOLT COVER..

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

BREAKAWAY BASES

The Tables of Luminaire/Signal Repair indicate the locations which require installation of a new 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 costs associated with furnishing and installing a new Breakaway Base Assembly 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.

In addition to the Breakaway Base Assembly, it requires removal of the luminaire pole from the existing luminaire base and the Contractor shall be compensated by the contract item REMOVE AND RESET LUMINAIRE POLE in addition to the contract item MISCELLANEOUS WORK.

REPAIR CONCRETE FOOTING

The footing to be repaired shall consist of cleaning exposed concrete to the satisfaction of the Engineer and patched with an approved patching material from the Approved Products List. All cost to clean, form and patch footing shall be incidental to the contract unit price for INCIDENTAL WORK. Due to size of the patch, it is anticipated that the pole and base will not need to be removed to accommodate the repair of the footing.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (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.

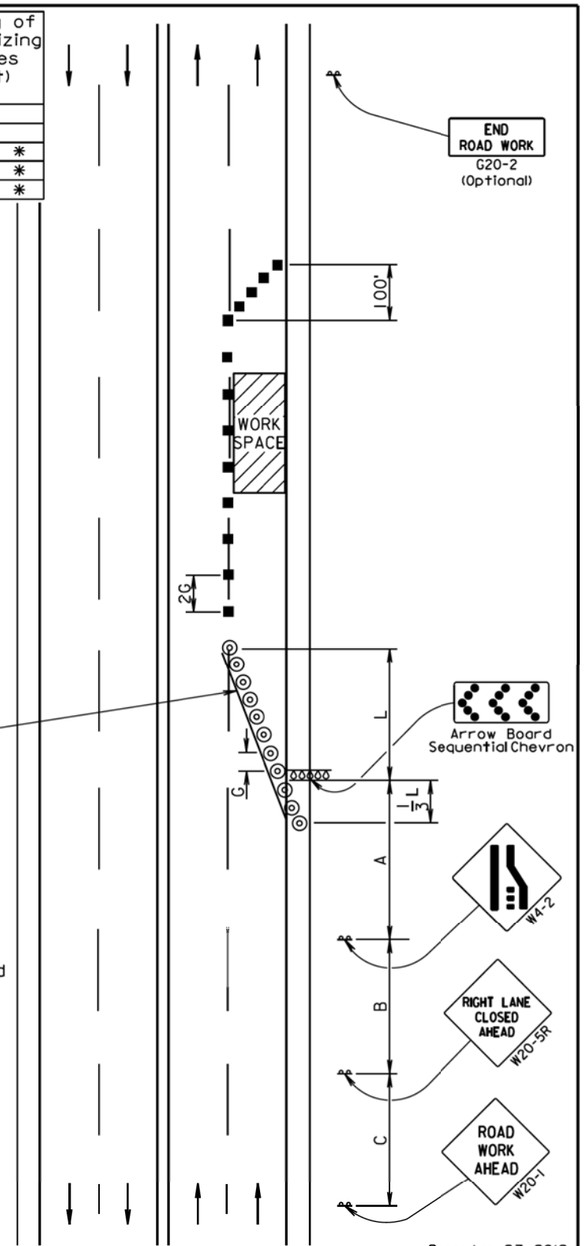
◎ Reflectorized Drum

■ 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

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47 Sheet 1 of 1

** Shall be used for overnight and long term operations.

WITHOUT BARRIER

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

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

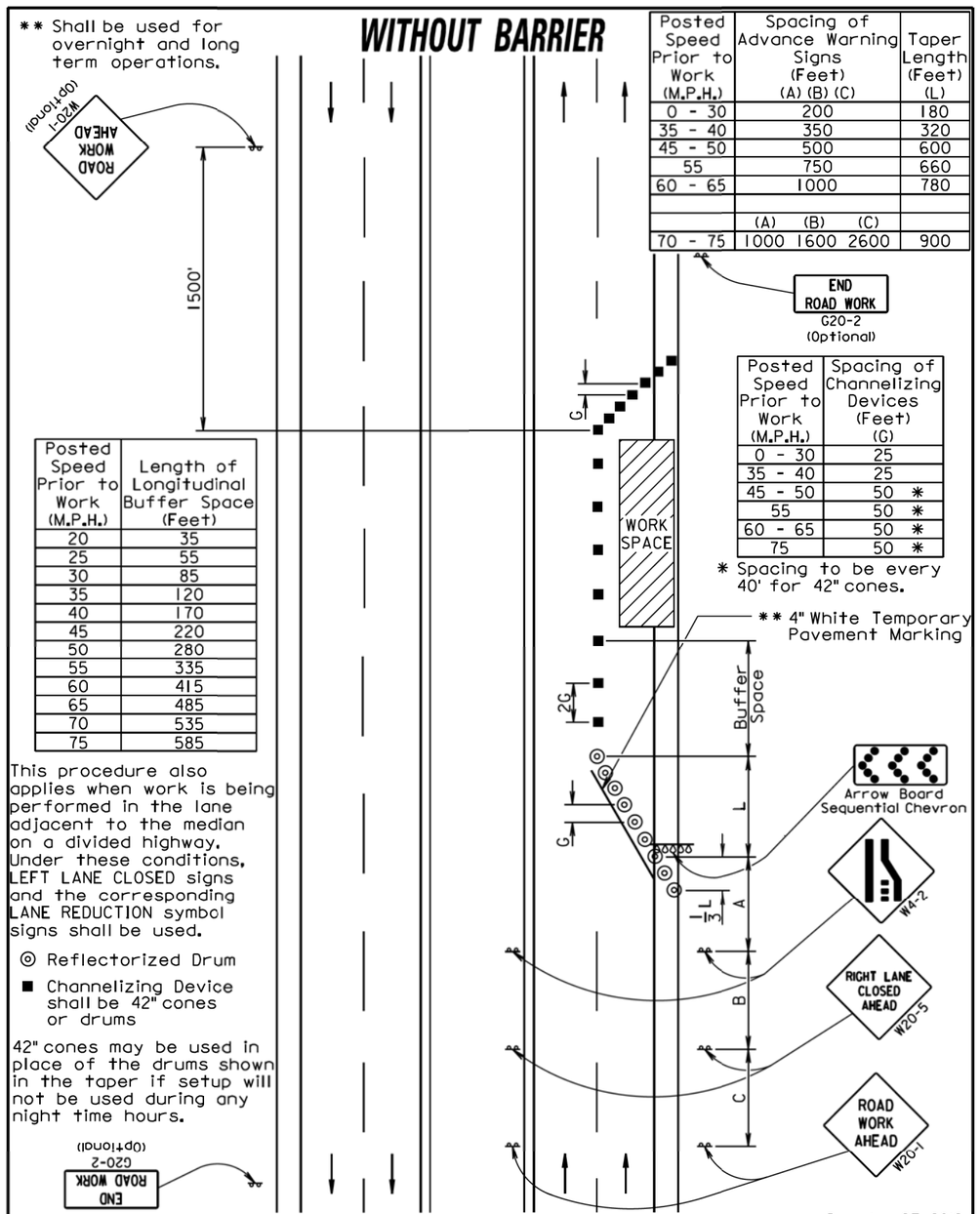
■ Channelizing Device shall be 42" cones or drums

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.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	900

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 65	50 *
75	50 *

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



December 23, 2012

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64 Sheet 1 of 1

PLOT SCALE - 1:200

PLOT NAME - 1

FILE - ...\STDPLATES.DGN

PLOTTED FROM - TRRC11644

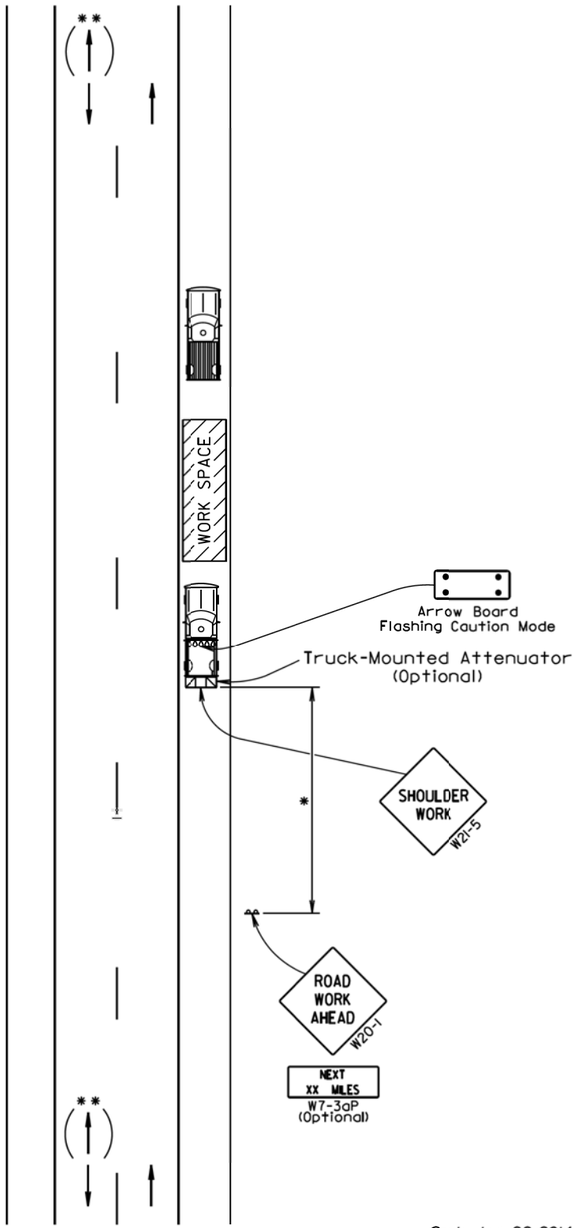
* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

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.



September 22,2014

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES MOBILE OPERATIONS ON SHOULDER	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 - 50	500	50
55	750	50
60 - 65	1000	50

Flagger

Channelizing Device

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

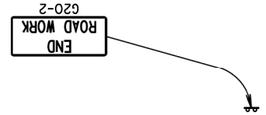
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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

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

The channelizing devices shall be drums or 42" cones.

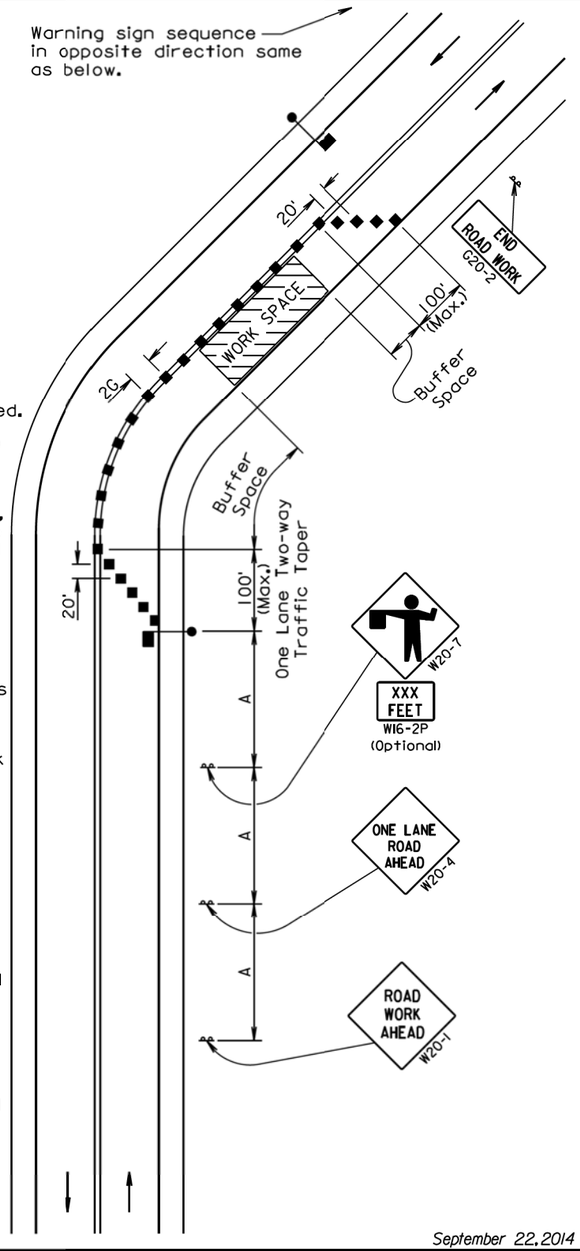
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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

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

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



September 22,2014

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1500 2640	1125

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 75	50 *

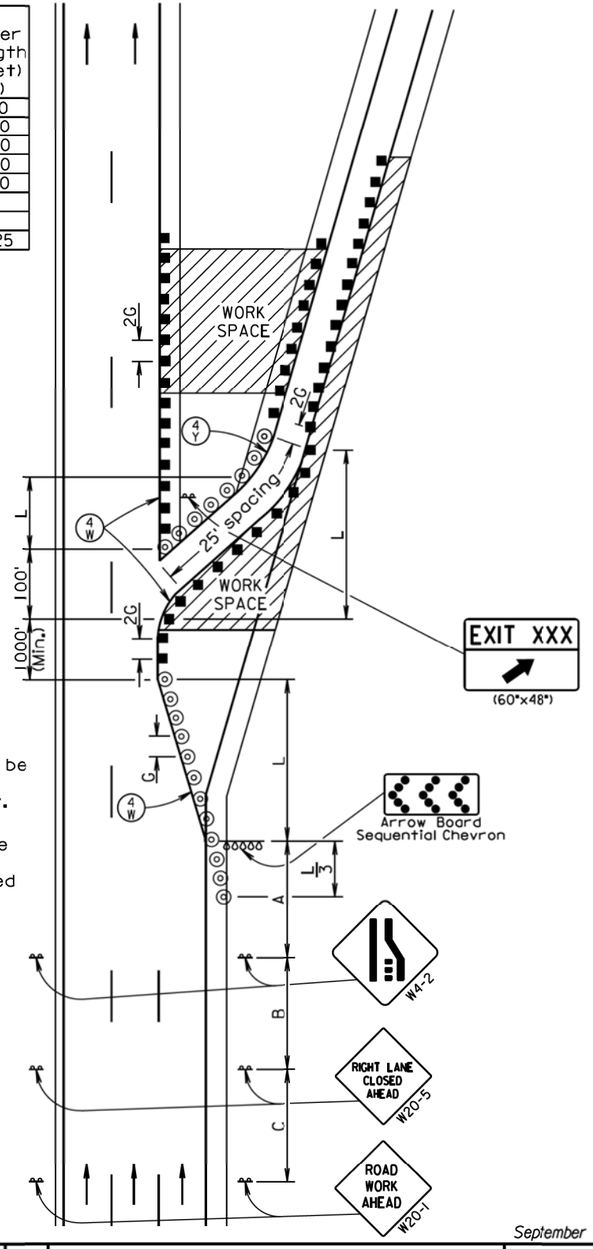
* Spacing is 40' for 42" cones.

◎ Reflectorized Drum

■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

(4Y) 4" Yellow Temporary Pavement Marking



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

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

September 22, 2014

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF EXIT RAMP	PLATE NUMBER 634.68 Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B)	L (Feet)
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B)	
70 - 75	1000 1500	1125

■ Channelizing Device

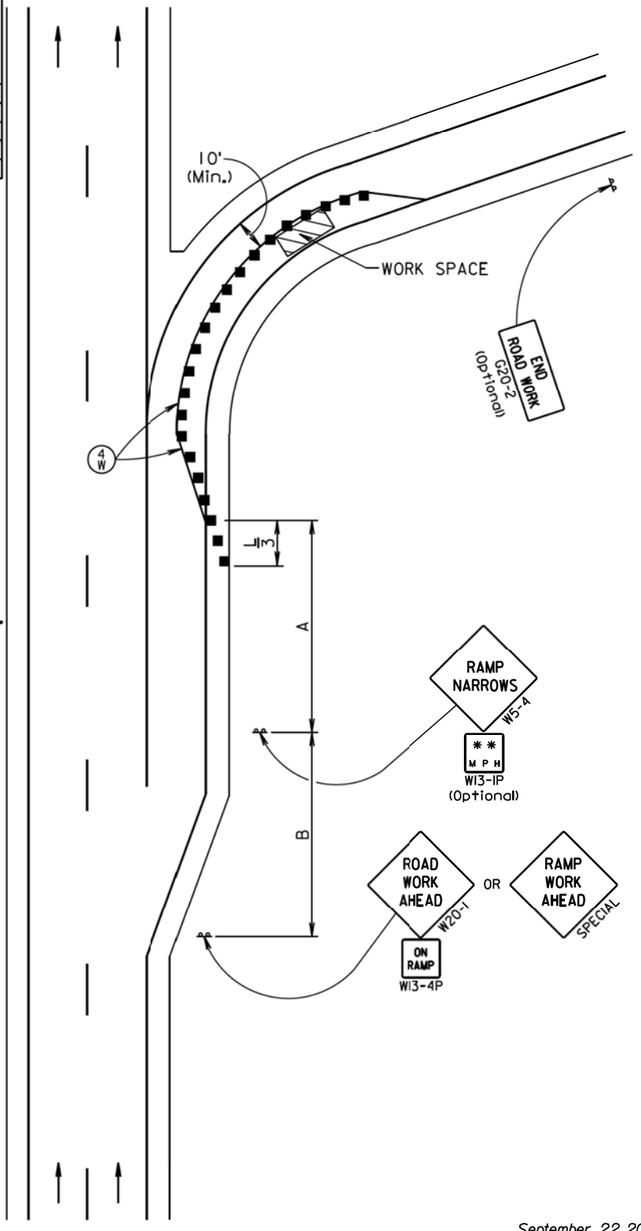
(4W) 4" White Temporary Pavement Marking

** Need and safe speed to be determined by the Highway Authority.

Temporary pavement markings shall be used if traffic control must remain overnight.

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

Truck off-tracking should be considered when determining whether the 10-foot minimum lane width is adequate.



September 22, 2014

Published Date: 4th Qtr. 2014	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69 Sheet 1 of 1

PLOT SCALE - 1:200

PLOT NAME - 3

FILE - ...\STDPLATES.DGN

PLOTTED FROM - TRRC11644

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1500 2640	1125

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 65	50 *

* Spacing is 40' for 42" cones.

◎ Reflectorized Drum

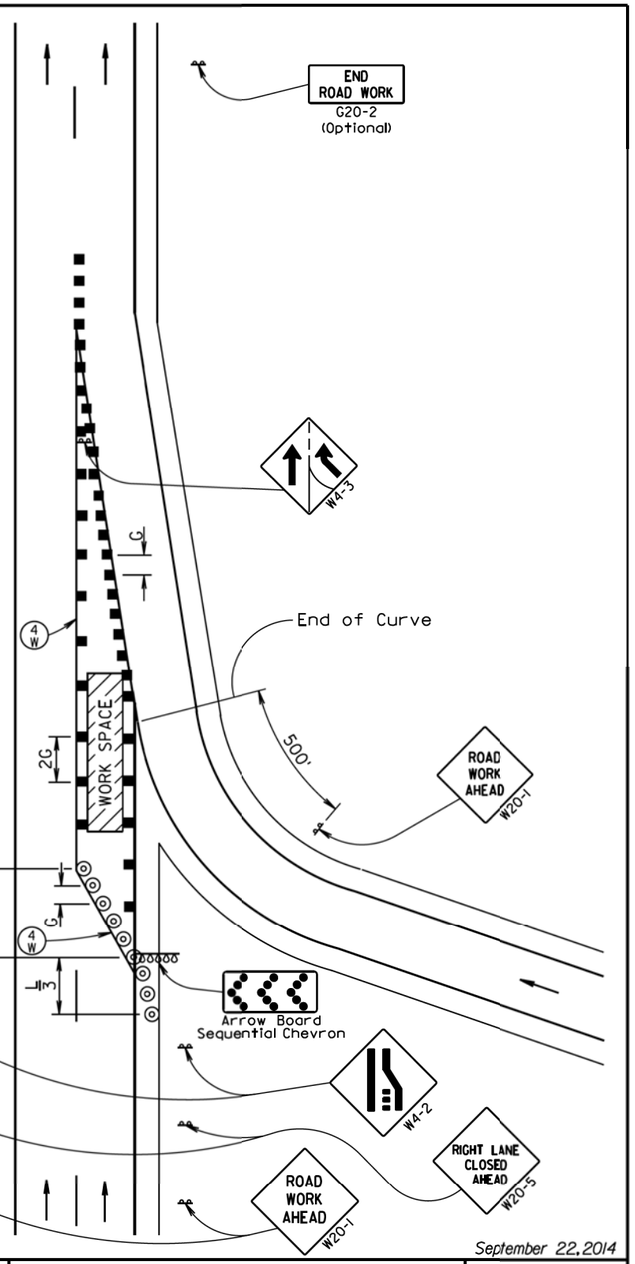
■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

Temporary pavement markings shall be used if traffic control must remain overnight.

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

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



September 22,2014

Published Date: 4th Qtr. 2014

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK IN VICINITY OF ENTRANCE RAMP

PLATE NUMBER 634.70

Sheet 1 of 1

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.

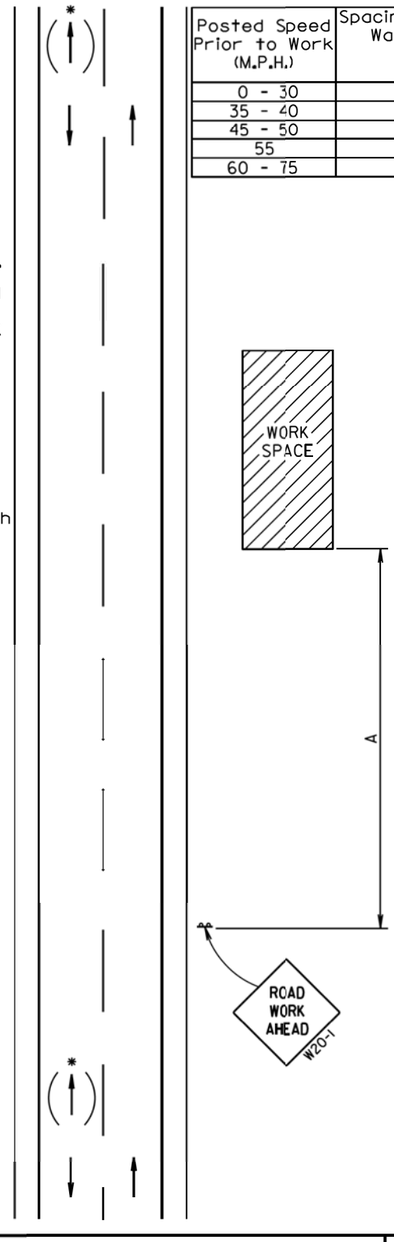
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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



July 1, 2005

Published Date: 4th Qtr. 2014

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 of 1

PLOT SCALE - 1:200

PLOT NAME - 4

FILE - ...\STDPLATES.DGN

-PLOTTED FROM - TRRC11644

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000I-451 PCN I3AK

							(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete Footing	Repair Galvan-izing	Replace bolt\bolts on bascksid e of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaw ay base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L49354002	Meade	Rural	090 E	Elk Creek Rd and N Highway 79	44.2241	-103.37914	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe couplers
L49354003	Meade	Rural	090 E	Elk Creek Rd and WB I-90 ramps	44.22405	-103.37863	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe couplers.
L49359006	Meade	Rural	090 E	In weigh station	44.31866	-103.43757	1								1					Replace base due to impact damage.
L49359010	Meade	Rural	090 E	In weigh station	44.31786	-103.43731								1						Install ASTM F436/ASTM F959 Heavy Washers under ancho rod nuts.
L49690001	Meade	Rural	090 W	WB I-90 rest area	44.28293	-103.42276	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49690002	Meade	Rural	090 W	WB I-90 rest area	44.28	-103.42	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49690003	Meade	Rural	090 W	WB I-90 rest area	44.2828	-103.42251	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49800003	Meade	Rural	090 E	EB I-90 rest area off ramp	44.29	-103.43										1				Tighten 4 anchor rod nuts.
L49800004	Meade	Rural	090 E	EB I-90 rest area	44.28	-103.43	1													Remove leveling nuts under the transformer base and shim as necessary to level.
L49800005	Meade	Rural	090 E	EB I-90 rest area	44.28344	-103.42559	1													Remove leveling nuts under the transformer base and shim as necessary to level.
L49800006	Meade	Rural	090 E	EB I-90 rest area	44.28352	-103.42515	1													Remove leveling nuts under the transformer base and shim as necessary to level.

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000I-451 PCN I3AK

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete Footing	Repair Galvan-izing	Replace bolt\bolts on bascksside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L49463026	Meade	Sturgis	090 E	NA	44.39	-103.50										1				Tighten 2 anchor rod nuts.
T49000160	Meade	Sturgis	090	I-90 WB ramps and Junction Ave.	44.40	-103.50								1			yes			Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts. Replace the broken cover on the Pelco terminal compartment
T49000162	Meade	Sturgis	090	I-90 WB ramps and Junction Ave.	44.40	-103.50								1						Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts.
T49000163	Meade	Sturgis	090	I-90 WB ramps & Junction Ave.	44.40	-103.50								1			yes			Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts. Replace the broken cover on the Pelco terminal compartment
T49000194	Meade	Sturgis	090	I-90 EB ramps & Junction Ave.	44.39423	-103.50383								1						Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts.
L09761010	Lawrence	Rural	090 E	I-90 EB off-ramp at Hwy 85	44.47737	-103.74027										1				Tighten 2 anchor rod nuts.
L09761011	Lawrence	Rural	090 E	I-90 WB on-ramp at Hwy 85	44.47916	-103.74201										1				Tighten 2 anchor rod nuts.
L09761013	Lawrence	Rural	090 E	I-90 EB off-ramp at Hwy 85	44.47958	-103.7418										1				Tighten 1 anchor rod nut.
PCN i3ak Totals							9	0	0	8	Lump Sum		11				Lump Sum			

Struc # L49354002 thru L49354003
Luminaire pole manufacturer: Valmont Industries Inc.
Construction Project PCN: 424W

Struc # L49463002 thru L49463037
Luminaire pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: 00DS

Struc # L49359001 thru L49359022
Luminaire pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: 6658

Struc # T49000160 thru T49000194
Signal pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: I-90 Exit 32

Struc # L49690001 thru L49800006
luminaire pole manufacturer: Valmont Industries Inc.
Construction Project PCN: I199 & 4423

Struc # L09761010 thru L09761013
Luminaire pole manufacturer: Value Structures Inc.
Construction Project PCN: 5869

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000I-452, PCN I3AL

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L02598001	Pennington	Box Elder	090 E	Liberty Blvd.	44.11214	-103.04996								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598002	Pennington	Box Elder	090 E	Liberty Blvd.	44.11233	-103.0511								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598003	Pennington	Box Elder	090 E	Liberty Blvd.	44.11242	-103.05071								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598004	Pennington	Box Elder	090 E	Liberty Blvd.	44.11312	-103.05048								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598005	Pennington	Box Elder	090 E	Liberty Blvd.	44.11381	-103.05076								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598006	Pennington	Box Elder	090 E	Liberty Blvd.	44.11448	-103.05054								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598007	Pennington	Box Elder	090 E	Liberty Blvd.	44.11517	-103.05083								1						Install ASTM F436 /ASTM F959 heavy washers on the bottom side of the pole to base bolts.
L02598016	Pennington	Box Elder	090 E	Liberty Blvd.	44.11773	-103.04879										1				Tighten 2 anchor rod nuts.
L49792005	Meade	Black Hawk	090 E	WB I-90 on ramp at exit 52	44.16	-103.31	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792006	Meade	Black Hawk	090 E	WB I-90 on ramp at exit 52	44.16	-103.31	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792007	Meade	Black Hawk	090 E	EB I-90 ramps and Peaceful Pines Rd	44.15484	-103.30511	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792008	Meade	Black Hawk	090 E	WB I-90 ramps and Peaceful Pines Rd	44.15482	-103.301	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792009	Meade	Black Hawk	090 E	EB I-90 ramps and Peaceful Pines Rd	44.15462	-103.30464	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792010	Meade	Black Hawk	090 E	WB I-90 ramps and Peaceful Pines Rd	44.15463	-103.30044	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792011	Meade	Black Hawk	090 E	EB I-90 on-ramp at exit 52	44.1508	-103.30138	1													Remove leveling nuts under the transformer base. Shim as necessary to level.

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000I-452, PCN I3AL

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L49792011	Meade	Black Hawk	090 E	EB I-90 on-ramp at exit 52	44.1508	-103.30138	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792012	Meade	Black Hawk	090 E	EB I-90 on-ramp at exit 52	44.15024	-103.30119	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792013	Meade	Black Hawk	090 E	EB I-90 on-ramp at exit 52	44.14976	-103.30089	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792014	Meade	Black Hawk	090 E	WB I-90 off ramp at exit 52	44.14943	-103.30007	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792015	Meade	Black Hawk	090 E	WB I-90 off ramp at exit 52	44.14892	-103.2997	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L49792016	Meade	Black Hawk	090 E	WB I-90 off ramp at exit 52	44.1484	-103.29949	1													Remove leveling nuts under the transformer base. Shim as necessary to level.
L02669003	Pennington	Rural	090 E	EB I-90 off-ramp at Wasta rest stop	44.06243	-102.43879										1				Tighten 2 anchor rod nuts.
PCN i3aL Totals							12	0	0	0	Lump sum		9				Lump Sum			

Struc # L02598001 thru L02598016
Luminaire pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: 4951

Struc # L49792005 thru L49792016
Luminaire pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: 5586

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000P-451, PCN I3AM

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
T49000134	Meade	Sturgis	034	34 & Avalanche Rd.	44.41935	-103.5307								1						We weren't able to discern from the photos and description what could be done to properly secure the pole. At the very least, the proper size washers need to be installed on the anchor rod nuts. Washers may need to be modified to fit location.
T49000137	Meade	Sturgis	034	34 & 8th St., label 739	44.42	-103.52								1						2 Anchor bolts are slightly bent and not bearing evenly on the base of the pole. Install wedge shaped shims/washers under the anchor rod washers.
T49000139	Meade	Sturgis	034	34 & 4th St., Label 509	44.41577	-103.5156								1						Replace the 2 pole to base bolts that are not engaged by 3 threads with correct length bolts.
T49000141	Meade	Sturgis	034	34 & 4th St.	44.42	-103.52								1						Replace the 4 pole to base bolts that are not engaged by 3 threads with the correct length bolts.
T49000142	Meade	Sturgis	034	34 & 4th St.	44.41575	-103.5154								1						Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts.
T49000150	Meade	Sturgis	034	34 & Junction Ave.	44.42	-103.51		1									1			One anchor rod nut not engaged by three threads. Repair or adjust anchorage system to fully engage all anchor rod nuts.
T49000154	Meade	Sturgis	034	34 & Nellie St.	44.42	-103.50								1						Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts.
T49000156	Meade	Sturgis	034	34 & Glencoe Dr.	44.41568	-103.4485			1				1	1						Replace 1 missing anchor bolt cap. Replace 1 missing screw at the mast arm end cap. Replace 2 missing bolts on the backside of the mast arm connection.
T49000158	Meade	Sturgis	034	34 & Glencoe Dr.	44.41602	-103.4482							1							Replace two missing bolts on the backside of the mast arm connection.
T49000159	Meade	Sturgis	034	34 & Glencoe Dr.	44.41594	-103.4485							1	1						Replace the 2 broken bolt cap screws. Replace 2 missing bolts on backside of mast arm connection.

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000P-451, PCN I3AM

							(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK					MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L09375001	Lawrence	Deadwood	385	85 and 385	44.35863	-103.7405	1							1						Install ASTM F436/F959 Heavy Washers on base to pole nut/bolt. Remove leveling nuts under base and shim as necessary to level.
L09375002	Lawrence	Deadwood	385	NA	44.35835	-103.7403	1							1						Install ASTM F436/F959 Heavy Washers on base to pole nut/bolt. Remove leveling nuts under base and shim as necessary to level.
L09375003	Lawrence	Deadwood	385	NA	44.35904	-103.7396	1					1		1						Install ASTM F436/F959 Heavy Washers on base to pole nut/bolt. Remove leveling nuts under base and shim as necessary to level. Repair Galvanization.
L09380002	Lawrence	Deadwood	014A	Label 18	44.38156	-103.7233	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380003	Lawrence	Deadwood	014A	Label 17	44.38215	-103.7228	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380004	Lawrence	Deadwood	014A	Label 16	44.38272	-103.7224	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380005	Lawrence	Deadwood	014A	Label 15	44.38329	-103.722	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380006	Lawrence	Deadwood	014A	Label 14	44.38383	-103.7215	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380007	Lawrence	Deadwood	014A	Label 13	44.38434	-103.7209	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000P-451, PCN I3AM

							(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L09380008	Lawrence	Deadwood	014A	Label 12	44.38478	-103.7203	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380009	Lawrence	Deadwood	014A	Label 11	44.38521	-103.7196	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380010	Lawrence	Deadwood	014A	Label 10	44.38565	-103.7189	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380011	Lawrence	Deadwood	014A	Label 9	44.38608	-103.7182	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09380018	Lawrence	Deadwood	014A	Label 1	44.3883	-103.7118	1			4										Replace fluted aluminum couplers with Transpo Pole-Safe frangible couplers.
L09381005	Lawrence	Deadwood	014A	Label Q9, Pioneer Way & Deadwood St.	44.38	-103.73								1						Replace washers under the anchor rod nuts with thicker washers.
L09716018	Lawrence	Deadwood	085	Label V20, Sherman St. & Pine St.	44.37481	-103.7291								1						Install larger and thicker washer (ASTM F436 or ASTM F959) on anchor rod nuts to increase contact area with base.
L09716019	Lawrence	Deadwood	085	Label V12, Sherman St. & Pine St.	44.37512	-103.7294								1						Install larger and thicker washer (ASTM F436 or ASTM F959) on anchor rod nuts to increase contact area with base.

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000P-451, PCN I3AM

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L09716020	Lawrence	Deadwood	085	Label V17, Sherman St. & Pine St.	44.37492	-103.7295								1						Install washer (ASTM F436 or ASTM F959) on anchor rod nuts to increase contact area with base.
L09716022	Lawrence	Deadwood	085	Label V16	44.37498	-103.73								1						Install washer (ASTM F436 or ASTM F959) on anchor rod nuts to increase contact area with base.
PCN i3am Totals							14	1	1	44	Lump Sum		20				Lump Sum			

Struc # T49000134	Struc # T49000137	Struc # T49000139 thru T49000142
Signal pole manufacturer: Valmont Industries Inc	Signal pole manufacturer: Unknown	Signal pole manufacturer: Valmont Industries Inc
Construction Project PCN: 6557 Exit 30 shop drawings	Construction Project PCN: Lazelle St & 8th St drawings	Construction Project PCN: 418H Lazelle & 4th shop drawings
Struc # T49000156 thru T49000159	Struc # L09375001 thru L09375003	Struc # L09380002 thru L09380018
Signal pole manufacturer: Millerberned Manufacturing	Luminaire pole manufacturer: Millerberned Manufacturing	Luminaire pole manufacturer: No shops found plans on file under pcn 1956
Construction Project PCN: I647	Construction Project PCN: 0566	Construction Project PCN: 1956
Struc # L09716012 thru L09716022		
Luminaire pole manufacturer: Millerbernd Manufacturing		
Construction PCN: 267H		

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	17	43

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000P-452 PCN I3AN

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANOUS WORK				MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Luminaire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete Footing	Repair Galvanizing	Replace bolt\bolts on bascksside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
T49000341	Meade	Black Hawk	231	SD231 & Peaceful Pines Rd.	44.15486	-103.31							1					yes		Replace 1 missing anti-rotation bolt on the backside of the mast arm connection. Replace broken backplate on one traffic signal.
T49000338	Meade	Black Hawk	231	SD231 & Peaceful Pines Rd.	44.15453	-103.31							1							Replace 1 missing anti-rotation bolt on the backside of the mast arm connection.
T49000339	Meade	Black Hawk	231	SD231 & Peaceful Pines Rd.	44.15454	-103.31							1							Replace 1 missing anti-rotation bolt on the backside of the mast arm connection.
T49000340	Meade	Black Hawk	231	SD231 & Peaceful Pines Rd.	44.15487	-103.31							1							Replace 1 missing anti-rotation bolt on the backside of the mast arm connection.
PCN i3an Totals							0	0	0	0	Lump sum		4				0			
Struc # T49000341 thru T49000340																				
Signal Pole manufacturer: Millerberned Manufacturing																				
Construction Project PCN 5586																				

TABLE OF LUMINAIRE/SIGNAL REPAIRS, PROJECT NO. 000N-451 PCN I3AP

										(N.A.B.I.)	INCIDENTAL WORK		MISCELLANOUS WORK				MISC WORK, ELECTRICAL			Repair Comments
Struc #	County	City	Hwy	Location Description	Latitude	Longitude	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete Footing	Repair Galvan-izing	Replace bolt\bolts on bascksid e of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaw ay base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap	
L09374002	Lawrence	Lead	085	Label 58	44.35545	-103.748					YES									repair damaged footing by patching
L09377004	Lawrence	Lead	085	Label 50	44.3551	-103.7555								1						Install ASTM F436/ASTM F959 Heavy Washers on transformer base to pole nuts/bolts.
L09385001	Lawrence	Lead	085	Label 32	44.3518	-103.7642								1						Install ASTM F436/ASTM F959 Heavy Washers on transformer base to pole nuts/bolts.
L09855004	Lawrence	Lead	085	NA	44.34892	-103.7756								1						Install ASTM F436/ASTM F959 Heavy Washers on anchor rods.
T09000183	Lawrence	Spearfish	14A	Colorado Blvd. & Spearfish Canyon Hwy	44.48193	-103.8445								1						Install ASTM F436/ASTM F959 Heavy Washers under the anchor rod nuts.
PCN i3ap Totals							0	0	0	0	Lump sum		4				0			

Struc # L09374002 thru L09896023
Luminaire pole manufacturer: Millerbernd Manufacturing
Construction Project PCN: 6569

Struc # T09000183
Signal pole manufacturer: Valmont Industries Inc
Construction Project PCN: 4992

					(N.A.B.I.)	INCIDENTAL WORK		MISCELLANEOUS WORK				MISC WORK, ELECTRICAL		
Project #	Hwy #	**Remove and Reset Lumi-naire Pole (Each)**	**Remove and Reset Signal Pole (Each)**	**Anchor Bolt Cover (Each)**	Replace fluted aluminum coupler with Transpo Pole Safe coupler (Each)	Repair Concrete footing	Repair Galvan-izing	Replace bolt\bolts on backside of mast arm (Site)	Install bolt, nut and/or washer (Site)	Replace breakaway base assembly (Site)	Tighten bolt and/or nut (Site)	Repair/ Secure hand hole covers	Replace signal head backplate	Replace pole cap
PCN i3ak Totals	090E & 090W	9	0	0	8	Lump Sum		11				Lump Sum		
PCN i3aL Totals	090E , 090W & 231	12	0	0	0	Lump sum		13				Lump Sum		
PCN i3am Totals	14A, 034 & 385	14	1	1	44	Lump Sum		20				Lump Sum		
PCN i3an Totals	231	0	0	0	0	0		4				0		
PCN i3ap Totals	14, 14A & 85	0	0	0	0	0		4				0		
	Totals	35	1	1	52	Lump Sum		48				Lump Sum		

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	20	43

Plotting Date: 12/04/2014

I-90 Rest Area
PCN I3AK

Plot Scale - 1:200

Plotted From - trnc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	21	43

Plotting Date: 12/04/2014

I-90 Exit 46
PCN I3AK

Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	22	43

Plotting Date: 12/04/2014

I-90 Exit 32
PCN I3AK

Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	23	43

Plotting Date: 12/04/2014

I-90 Exit 32
PCN I3AK

Plot Scale - 1:200

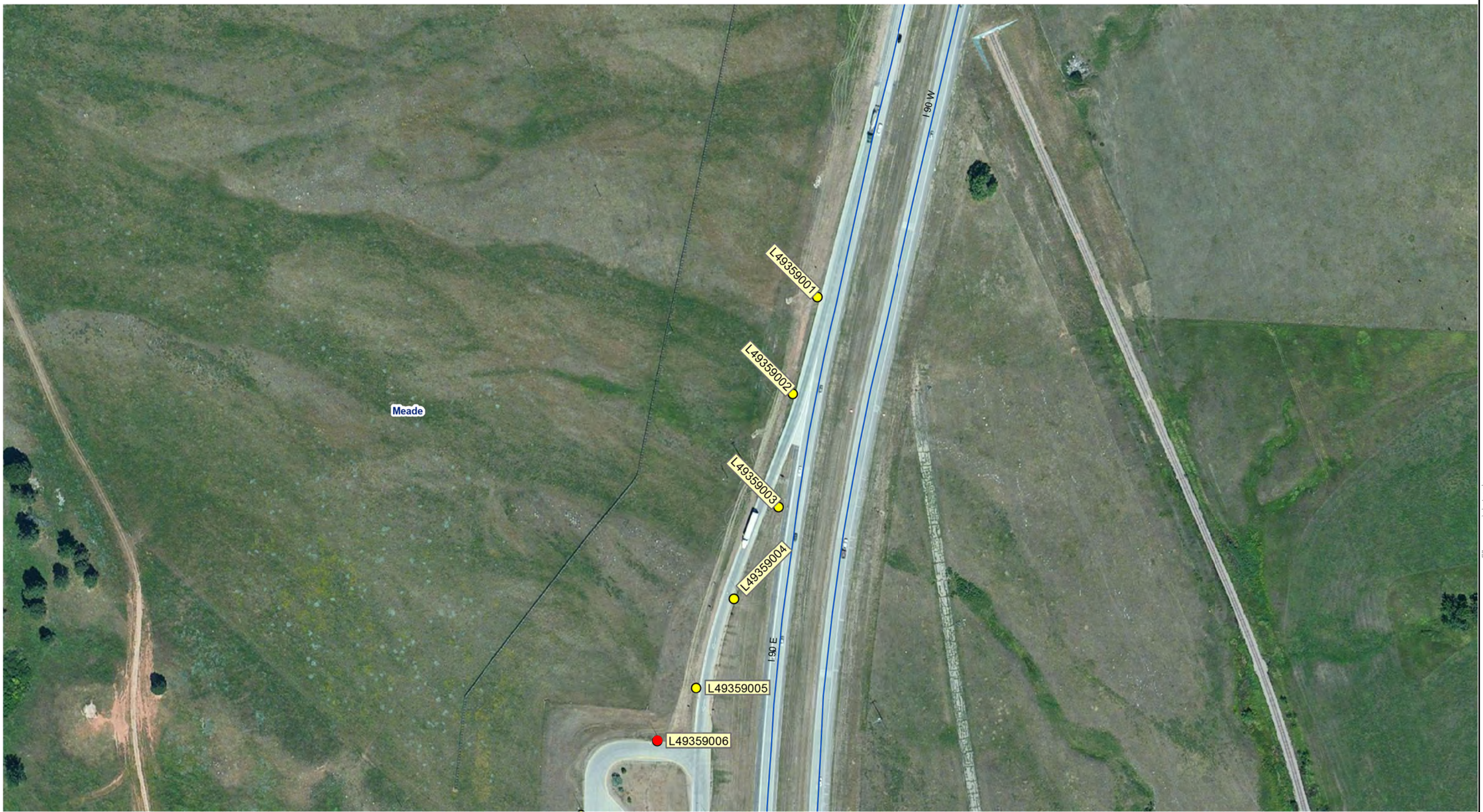
Plotted From - trnc11644

File - ...\photos.dgn

I-90 Tilford scale
PCN I3AK

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	24	43

Plotting Date: 12/04/2014



Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	25	43

Plotting Date: 12/04/2014

I-90 Tilford scale
PCN I3AK

Plot Scale - 1:200

Plotted From - trnc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	26	43

Plotting Date: 12/04/2014

Exit 17
PCN I3AK

Plot Scale - 1:200

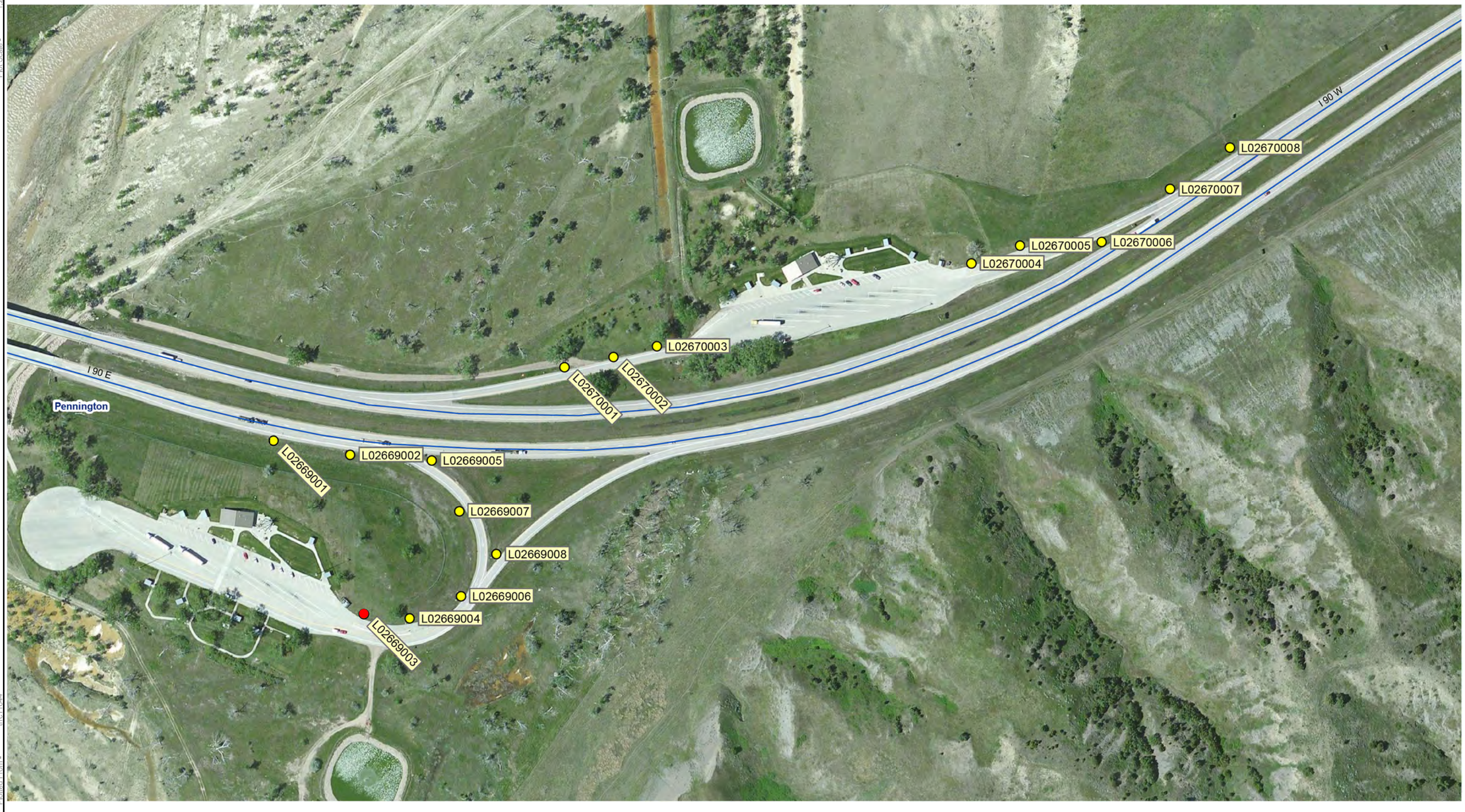
Plotted From - trnc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	27	43

Plotting Date: 12/04/2014

I-90 Wasta Rest Area
PCN I3AL



Plot Scale - 1:200

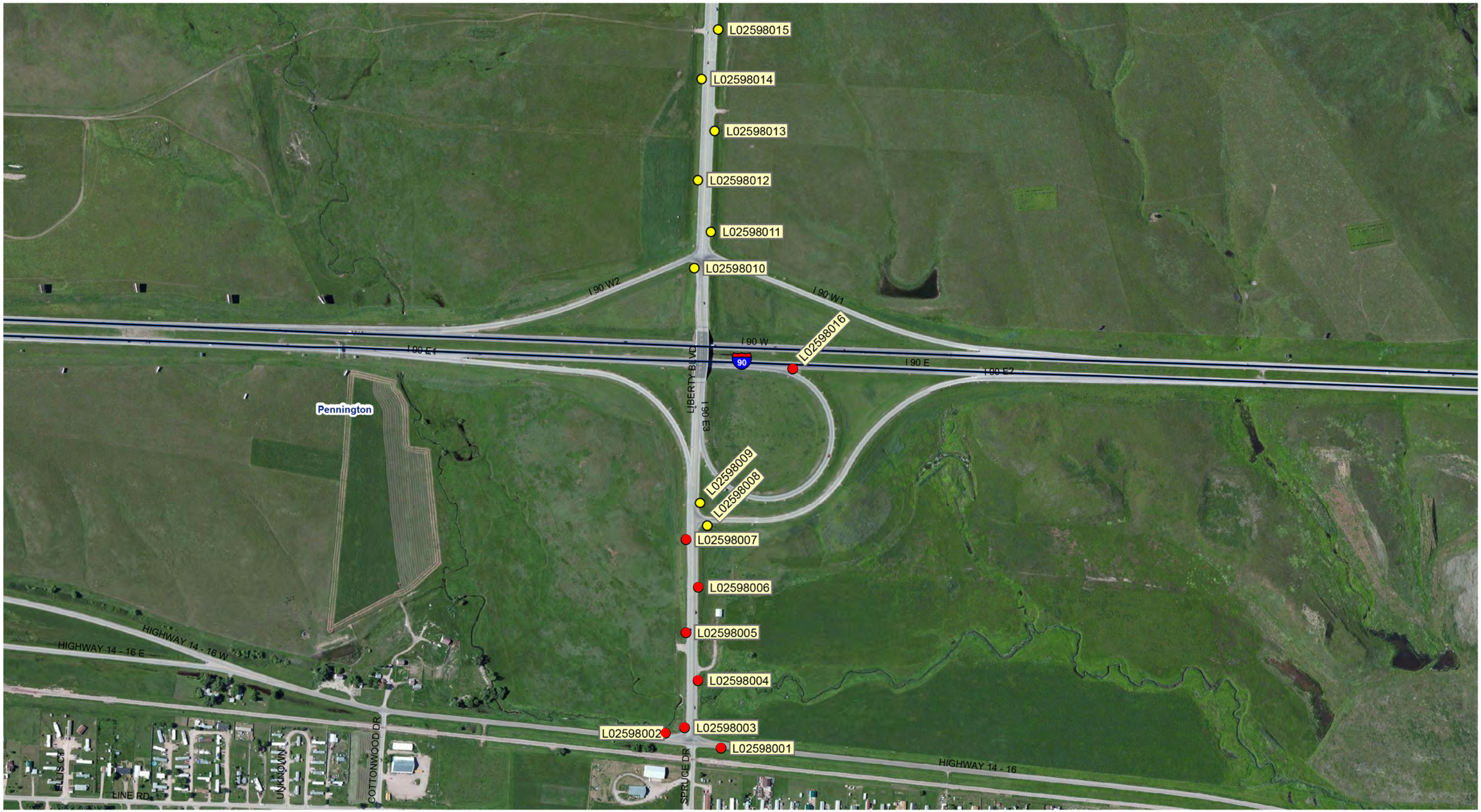
Plotted From - trm11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	28	43

Plotting Date: 12/04/2014

Liberty Blvd & Exit 67
PCN I3AL



Plot Scale - 1:200

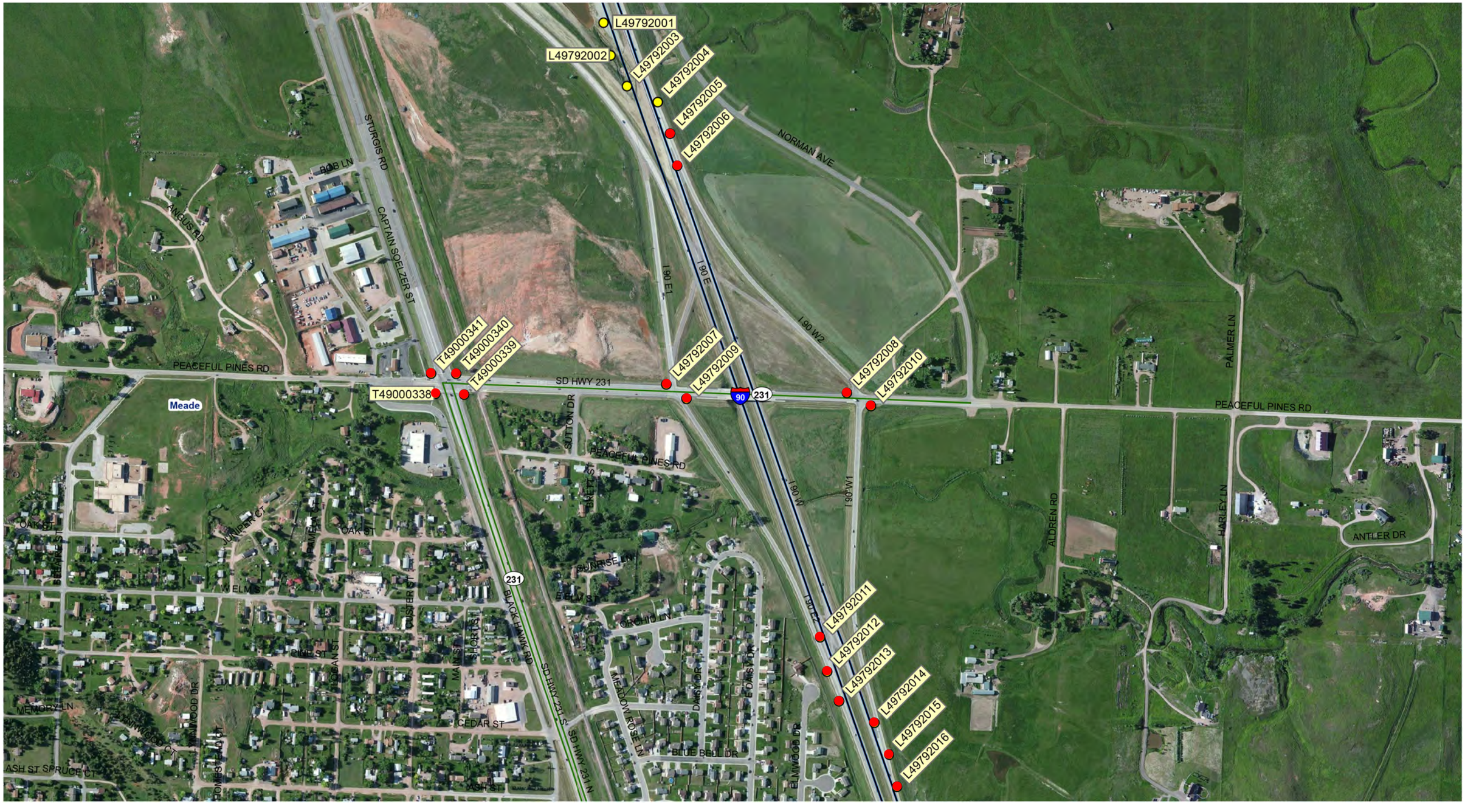
Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	29	43

Plotting Date: 12/04/2014

Black Hawk & Exit 52
PCN I3AL & I3AN



Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	30	43

Plotting Date: 12/04/2014

Deadwood HWY 14A
PCN I3AM

Plot Scale - 1:200

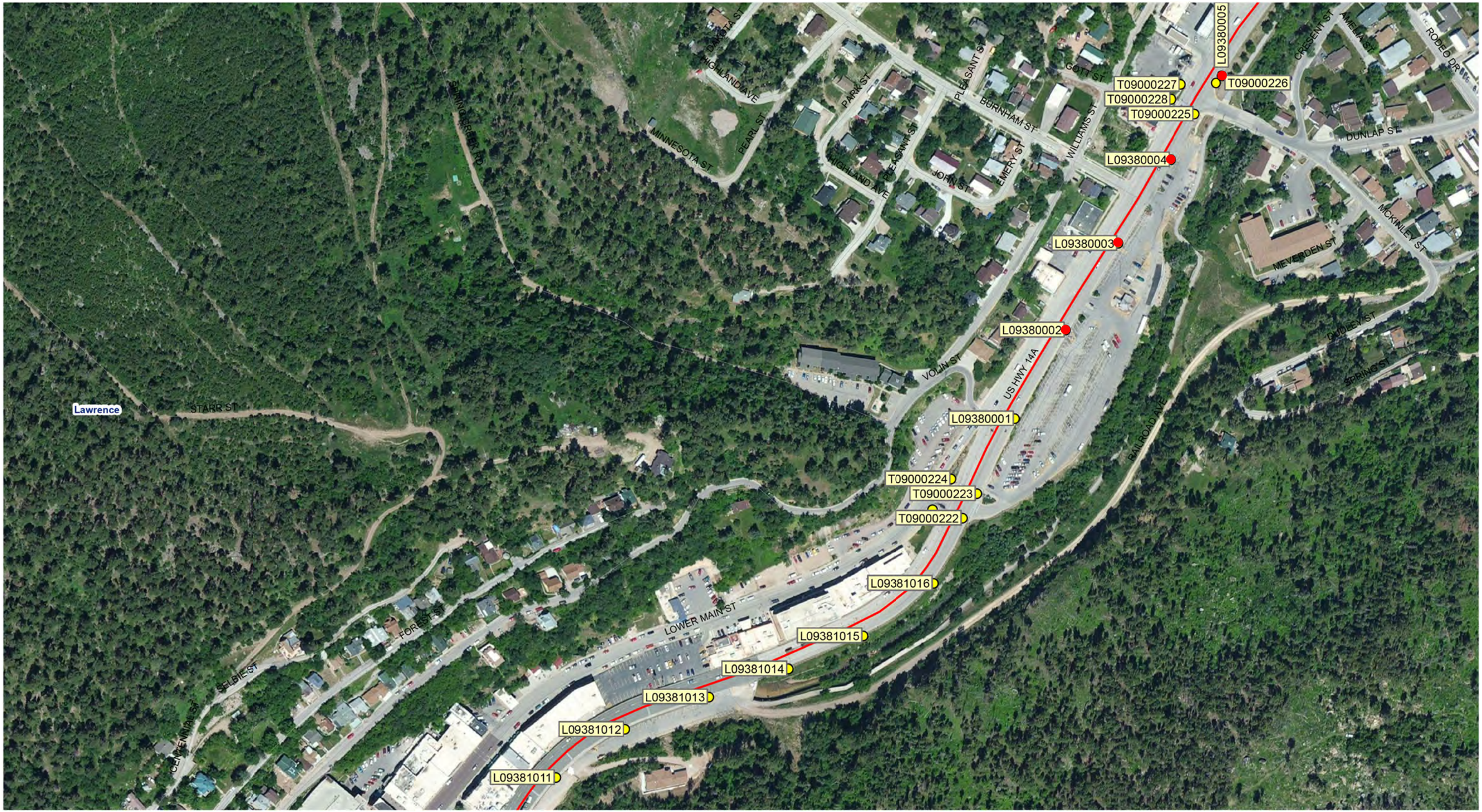
Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	31	43

Plotting Date: 12/04/2014

Deadwood HWY 14A
PCN I3AM



Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	32	43

Plotting Date: 12/04/2014

Deadwood HWY 14A
PCN I3AM

Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	33	43

Plotting Date: 12/04/2014

Deadwood HWY 85
PCN I3AM

Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	34	43

Plotting Date: 12/04/2014

Deadwood HWY 85
PCN I3AM

Plot Scale - 1:200

Plotted From - trnc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	35	43

Plotting Date: 12/04/2014

Hwy 34 East of Sturgis
PCN I3AM

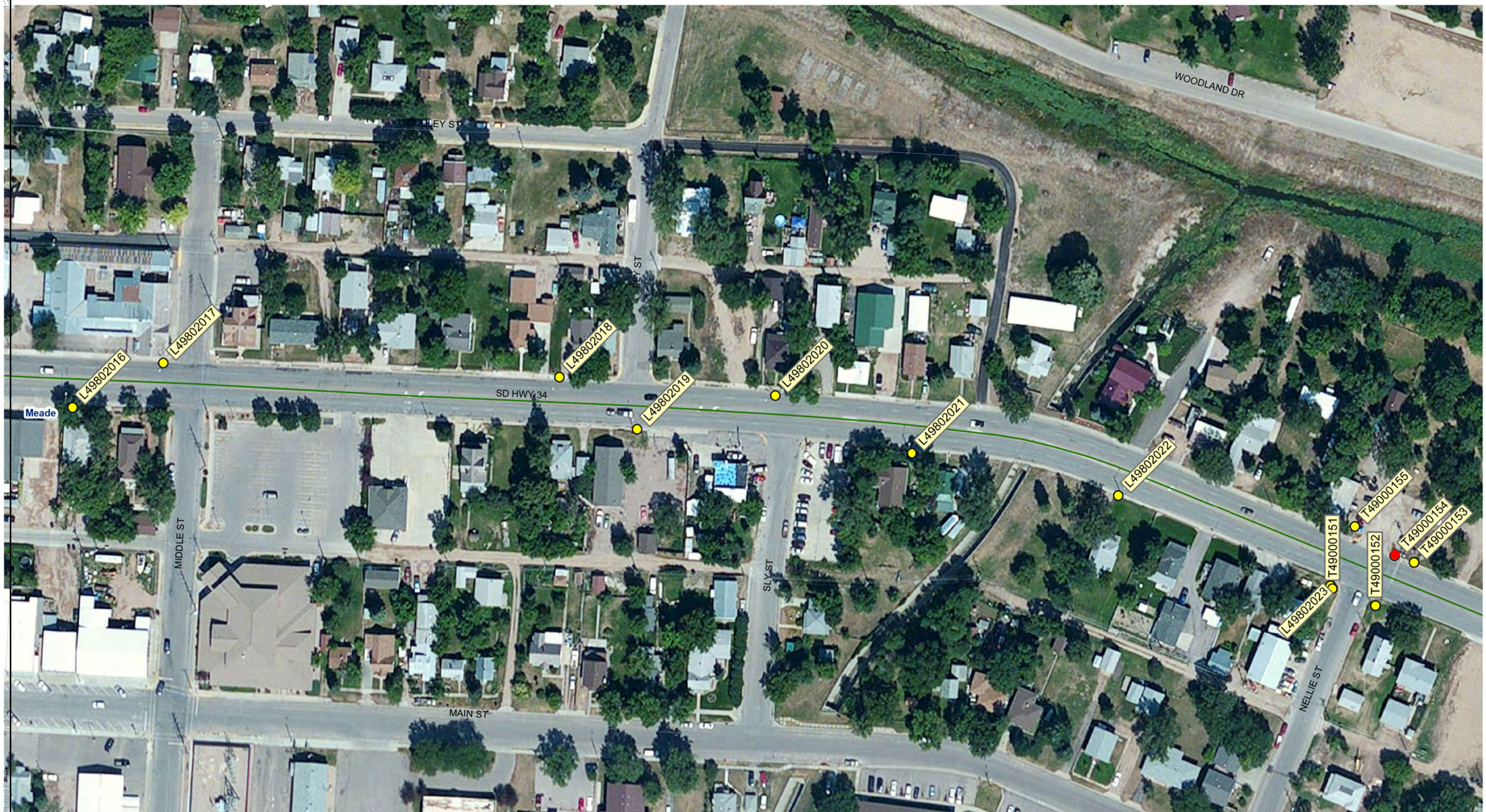
Plot Scale - 1:200

Plotted From - trc11644

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	36	43

Plotting Date: 12/04/2014

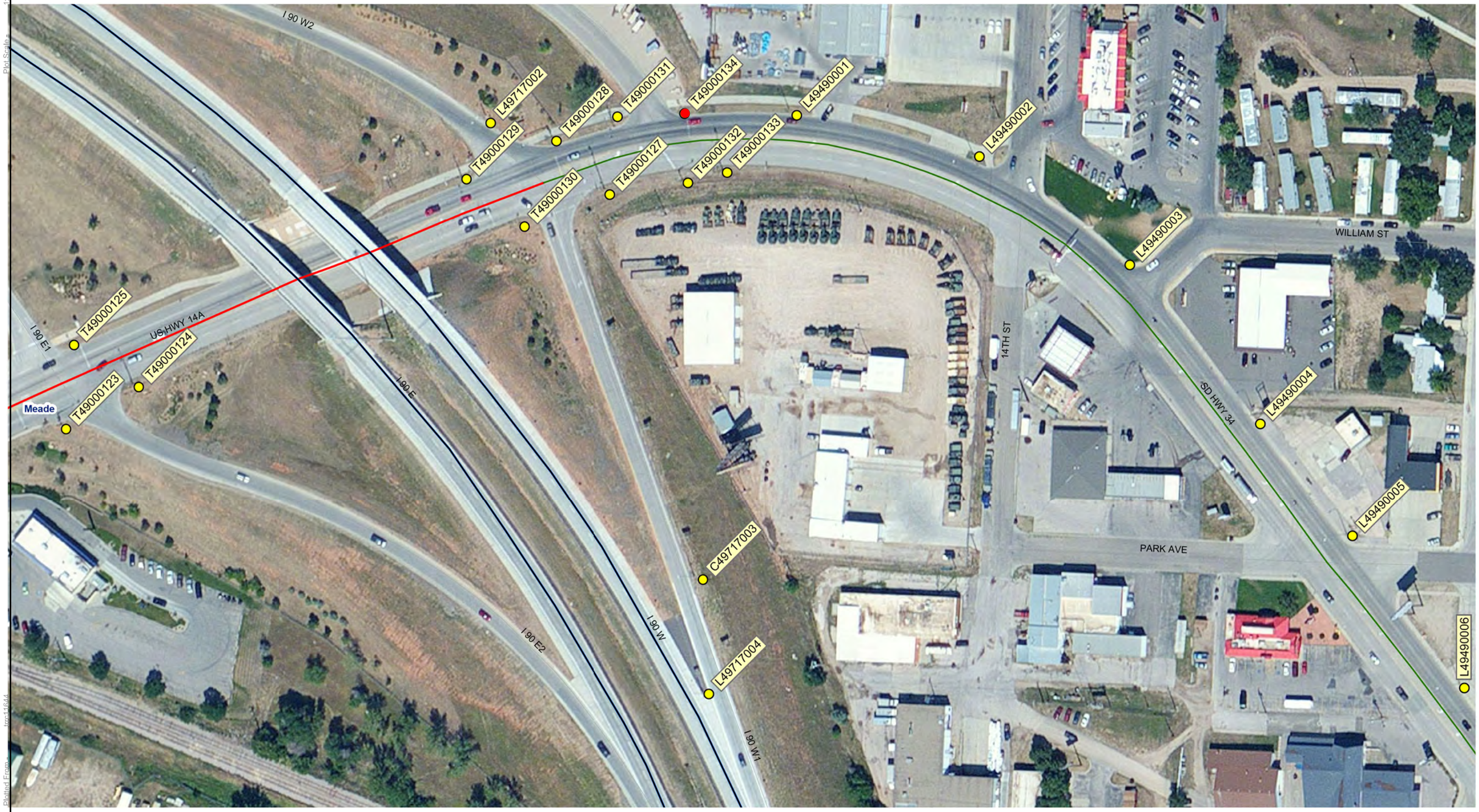
Hwy 34 in Sturgis
PCN I3AM



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	37	43

Plotting Date: 12/04/2014

Hwy 34 Exit 30
PCN I3AM



Plot Scale - 1:200

Plotted From ...trpc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	38	43

Plotting Date: 12/04/2014

Hwy 34 in Sturgis
PCN I3AM

Plot Scale - 1:200

Plotted From - trnc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	39	43

Plotting Date: 12/04/2014

Hwy 34 in Sturgis
PCN I3AM

Plot Scale - 1:200

Plotted From - trm11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	40	43

Plotting Date: 12/04/2014

Hwy 34 in Sturgis
PCN I3AM

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	41	43

Plotting Date: 12/04/2014

Lead HWY 85
PCN I3AP

Plot Scale - 1:200

Plotted From - trrc11644

File - ...\photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	42	43

Plotting Date: 12/04/2014

Lead HWY 85
PCN I3AP

Plot Scale - 1:200

Plotted From - trrc11644

File - ...photos.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-451, 000I-452 & Etc.	43	43

Plotting Date: 12/04/2014

Lead HWY 85
I3AP

File - ...\photos.dgn