

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(214)	C1	C9

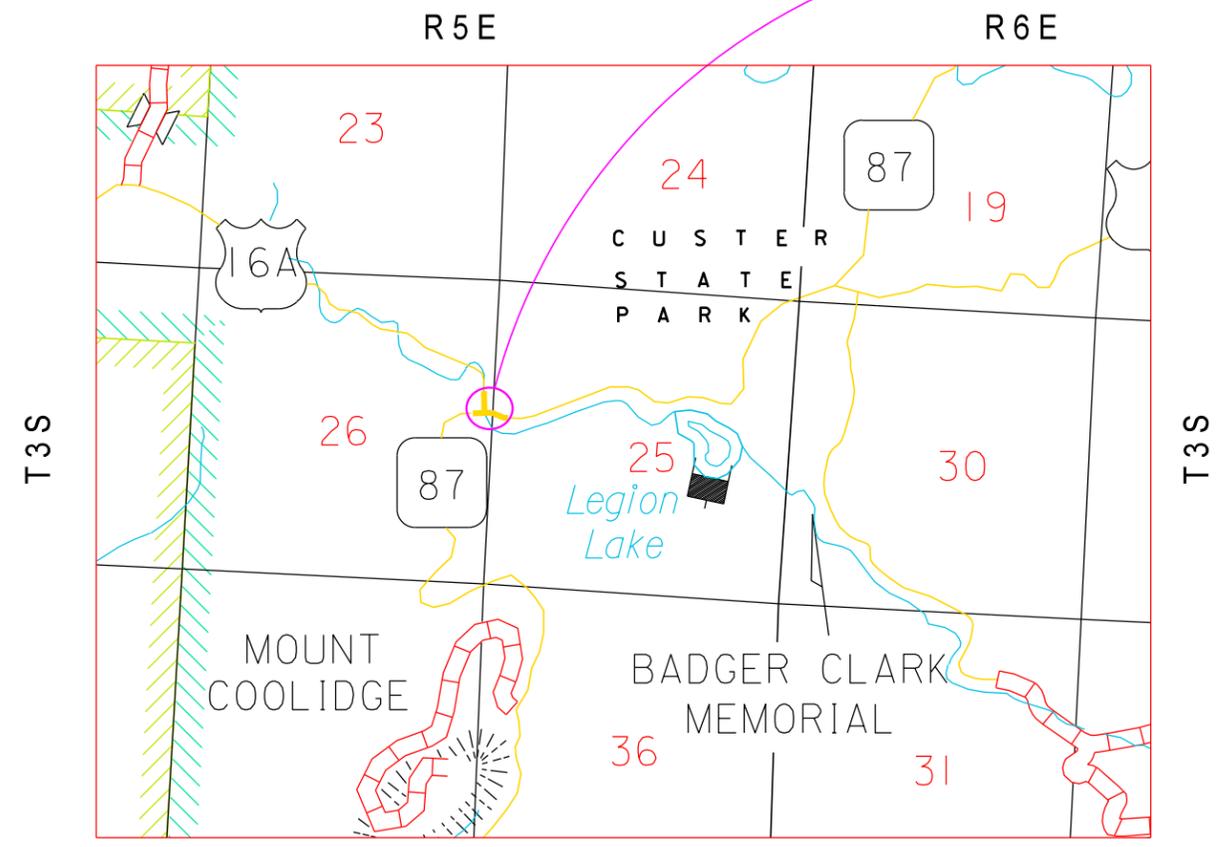
Plotting Date: 11/13/2015

Section C: Traffic Control Plans

INDEX OF SHEETS

- C1: General Layout W/Index
- C2: Estimates with General Notes & Tables
- C3: Fixed Location of Signs
- C4 - C5: Construction Phasing Phases I & II
- C6 - C9: Standard Plates

Project PH 0040(214)
Sta 0+00 to 10+00
MRM 29.110 to 29.244



Plot Scale - 1:200

Plotted From - trcr10202

PLOT NAME -

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(214)	C2	C9

REVISED 11/24/2015 - K.W.

ESTIMATE OF QUANTITIES

Section C - Traffic Control			
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	2,500.0	Hour
634E0020	Pilot Car	360.0	Hour
634E0110	Traffic Control Signs	287	SqFt
634E0120	Traffic Control, Miscellaneous	1	LS
634E0280	Type 3 Barricade, 8' Single Sided	10	Each
634E0630	Temporary Pavement Marking	3.0	Mile
634E1215	Contractor Furnished Portable Changeable Message Sign	3	Each

GENERAL MAINTENANCE OF TRAFFIC

Traffic shall not be delayed for a cumulative period longer than 15 minutes throughout the project.

At pipe installation locations the Contractor shall place the new pipe, place gravel surfacing and have the road open to traffic at the end of the day. Temporary gravel surfacing shall be incidental to the installation of the pipe. No additional payment shall be made for temporary gravel surfacing to facilitate opening of the roadway.

Cones with a height of 42" will be allowed in areas where drums will not fit on the road for maintaining traffic.

Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable.

Traffic control shall be in accordance with MUTCD Standards, the Standard Specifications and these plans.

The Contractor shall keep the portion of the project being used by public traffic in a condition that will adequately and safely accommodate traffic. A power broom will be required to clean all loose debris off of paved surfacing.

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

The pilot car shall be a four wheeled vehicle with the Contractor's name prominently displayed on both sides of the vehicle. A 36" x 18" black on orange sign G20-4, PILOT CAR (top line) FOLLOW ME (bottom line) shall be mounted in a conspicuous position on the rear of the vehicle. The pilot car will be equipped with a flashing amber light.

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.

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 at the time of initial installation.

If the Contractor elects not to work in an area for more than 3 days, for reasons within the control of the Contractor, the Contractor shall remove applicable traffic control devices and replace them when work resumes. There will be no payment for this work.

Work activities shall only be during daylight hours.

During periods of working hours the Contractor shall maintain one lane of traffic through the construction zone at all times with traffic being controlled with a pilot car.

The Contractor shall place Bump signs where appropriate.

The Contractor shall coordinate his operations such that during non-working hours the roadway shall be open to two-way traffic on a uniform driving surface for the entire width of the roadway. Exceptions will be at locations where half the existing roadway is removed for culvert replacement or at locations determined by the Engineer where it would be better to maintain a partial width closure during non-working hours.

The Contractor shall not allow mainline traffic to run on a milled surface at any location on the project for more than 14 calendar days.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

The Contractor shall furnish 3 portable changeable message signs to be used for the duration of the project. Message signs shall be installed to inform the traveling public of when construction will begin for each phase, changes that impact traffic, and as directed by the Engineer. The changeable message sign shall be furnished, programmed and maintained for the entire project duration.

The Engineer shall determine locations prior to construction and messages to be programmed into the message signs. The message signs shall be clearly visible from a minimum of 900 feet and shall be solar powered or wired directly to a power source. Diesel and gas powered message signs will not be allowed.

The portable message signs will be paid for at the contract unit price per each for Contractor Furnished Portable Changeable Message Sign. Payment will be full compensation for furnishing, maintaining, and relocating as many times as required by the Engineer and the Contractor's operations

TEMPORARY FLEXIBLE VERTICAL MARKERS (TABS)

The Contractor shall place Temporary flexible vertical markers (tabs). Tabs shall be used on the finished asphalt surface. Tabs for the centerline of the roadway throughout the full length of the project shall meet the requirements of Section 634 of the Standard Specifications. Due to the severe curvature of the road a cycle length of 20 feet shall be used. Covers on tabs shall be removed prior to opening roadway to normal traffic flow.

The Contractor shall use protective marker covers to be removed after the application of the flush seal.

The Contractor shall be responsible for maintaining a visible and reflective centerline throughout the project. Any marking covered or damaged shall be replaced prior to the end of the day. All costs associated with this work shall

be incidental to the contract unit price per mile for "Temporary Pavement Marking".

Flagger symbol signs (W20-7) and flaggers, or a shadow vehicle equipped with high-intensity rotating, flashing, oscillating or strobe lights shall be positioned on the roadway shoulder in advance of the workers for the installation of temporary road markers. The traffic control device used shall be moved to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a worker symbol sign (W21-1) or a BE PREPARED TO STOP (W3-4) sign shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

All costs for temporary pavement marking including furnishing, applying, uncovering, maintenance and removal of tabs shall be incidental to the contract unit price per mile for "Temporary Pavement Marking".

SEQUENCING OF CONSTRUCTION

Construction shall be phased such that traffic can be maintained on all portions of the project. A Construction Phasing plan has been developed, see Construction Phasing sheet C4. A Contractor alternative to the phasing shown in the plans can be submitted for approval. The Engineer shall have 15 days to review and comment on the plan prior to implementation. The Department reserves the right to reject any proposed alternatives.

SIGN INVENTORY

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	3	48" x 48"	16	48
W8-11	UNEVEN LANES	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	6	48" x 48"	16	96
W21-5	SHOULDER WORK	4	48" x 48"	16	64
G20-2	END ROAD WORK	3	36" x 18"	5	15
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			287

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 6' Single Sided	Each
Type 3 Barricade, 8' Single Sided	10 Each
Type 3 Barricade, 6' Double Sided	Each
Type 3 Barricade, 8' Double Sided	Each

PRESS RELEASE ANNOUNCEMENTS

The DOT will prepare a Press Release to be released 48 hours prior to any phase change or any other major change that affects traffic flow. The DOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor shall provide the Engineer with pertinent information 4 days prior to any major change that affects traffic flow.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PH 0040(214)	C3	C9

Plotting Date: 11/13/2015

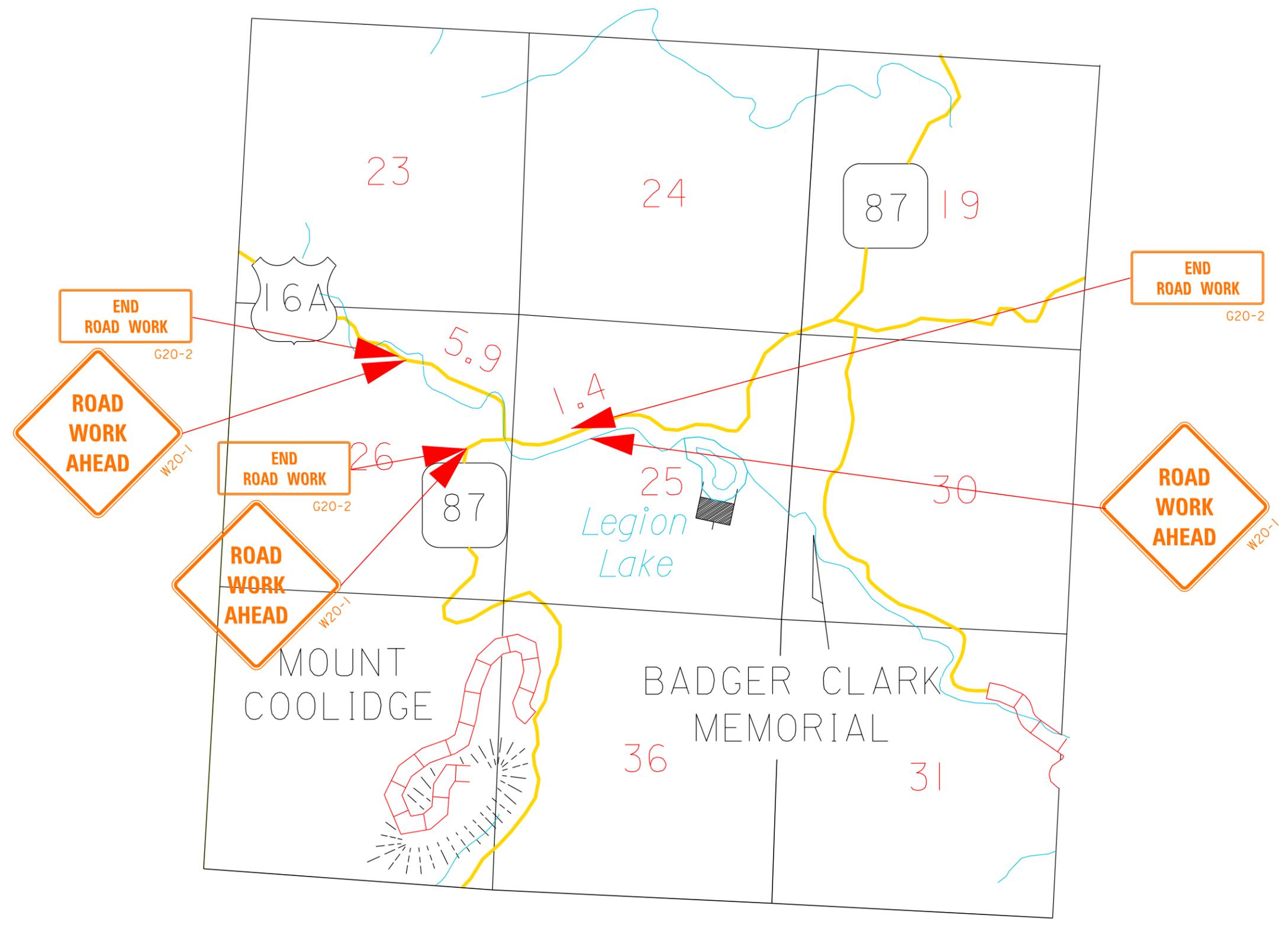
FIXED SIGN LOCATION PH 0040(214)

PLOT SCALE - 1"=0.13573

PLOT NAME - 1

FILE - ... \04GRV04GR TRAFFIC.DGN

PLOTTED FROM - TRCU10202



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PH 0040(214)	C4	C9

Plotting Date: 11/19/2015

REVISED 11/19/2015 - K.W.

CONSTRUCTION PHASING - PH 0040(214)

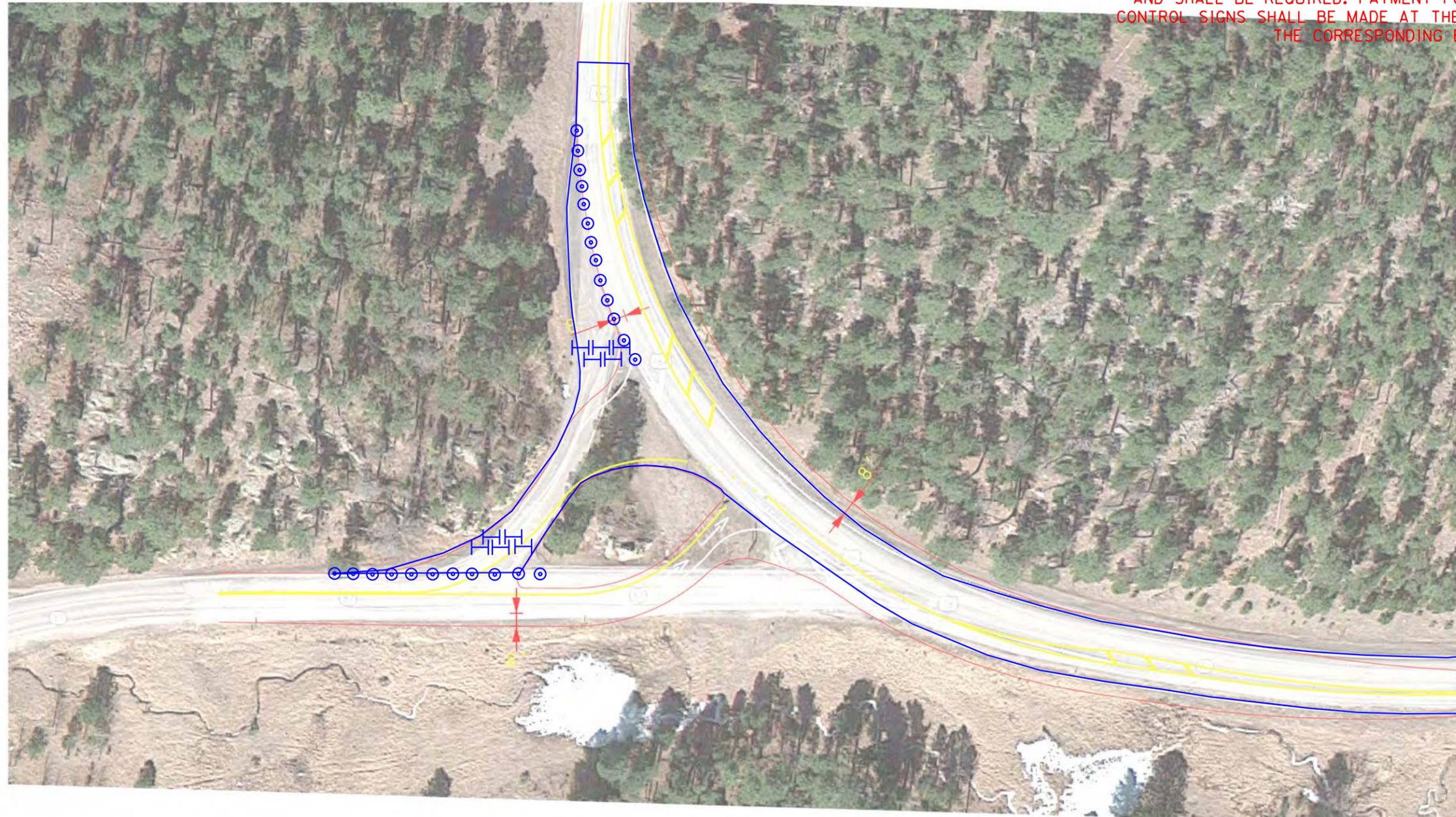
PHASE 1

LEGEND

- PHASE I CONSTRUCTION LIMITS
- ⊙ DRUM
- ⊥ TYPE 3 BARRICADE - 8 FT. SINGLE SIDED

PHASE I CONSTRUCTION -
 ALL WORK ASSOCIATED WITH PHASE I SHALL BE COMPLETED BEFORE CONTRACTOR PROCEEDS TO PHASE II. WORK TO BE COMPLETED INCLUDES ALL WORK ON HWY 16A AND THE PROPOSED ONE WAY SOUTHBOUND LANE ON HWY 87. AFTER WORK IS COMPLETED ON PHASE I, TRAFFIC SHALL BE MOVED OVER TO THE NEWLY CONSTRUCTED PORTION OF PHASE I AND PHASE II SHALL COMMENCE.

FLAGGERS AND TEMPORARY TRAFFIC CONTROL SIGNS ARE NOT SHOWN AND SHALL BE REQUIRED. PAYMENT FOR FLAGGERS AND TRAFFIC CONTROL SIGNS SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR THE CORRESPONDING BID ITEMS.



PLOT SCALE - 1:0.13573

PLOTTED FROM - TRCU10202

PLOT NAME - 1

FILE - ... \04GRV04GR TRAFFIC.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PH 0040(214)	C5	C9

Plotting Date: 11/19/2015

REVISED 11/19/2015 - K.W.

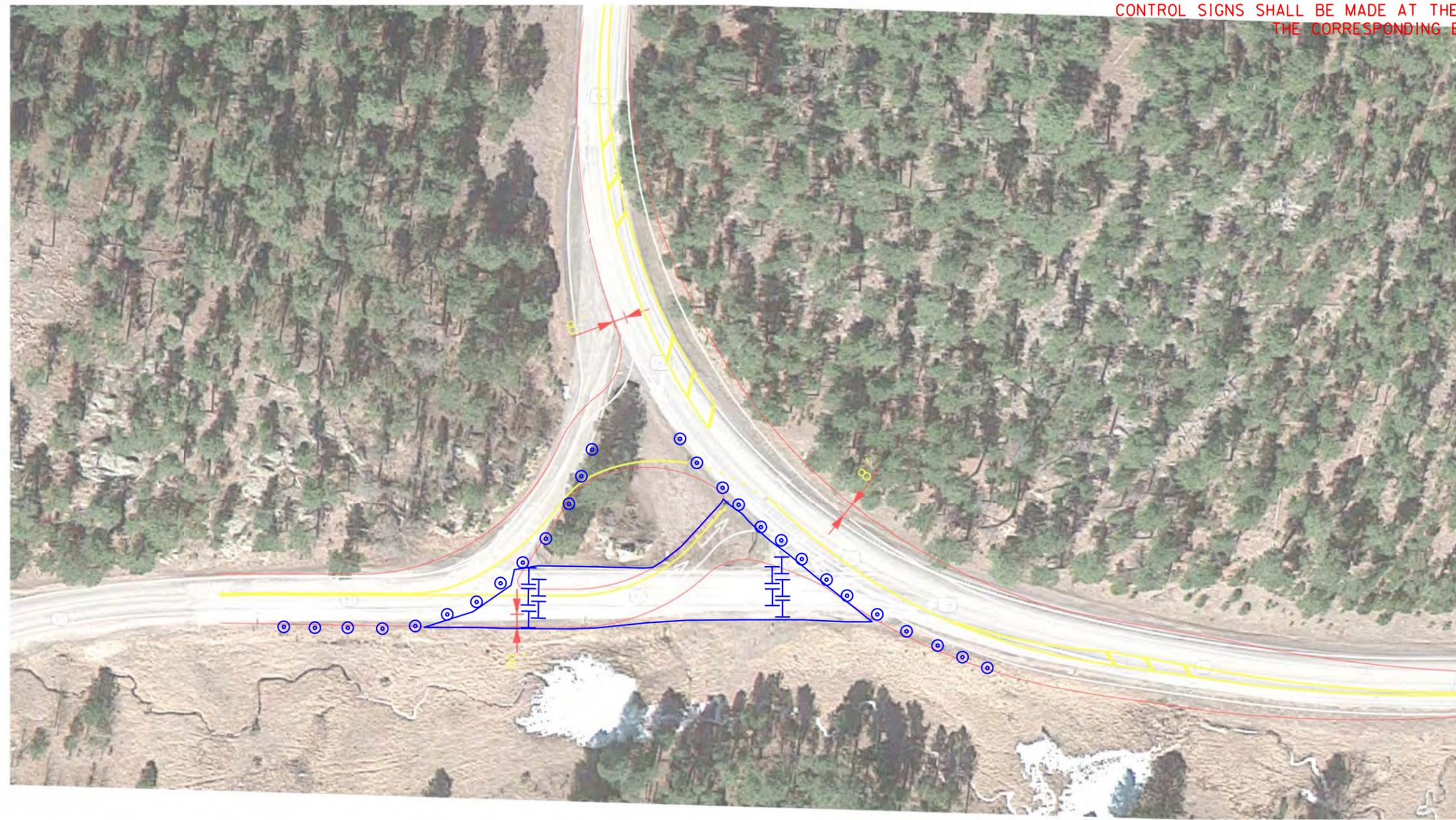
CONSTRUCTION PHASING - PH 0040(214) PHASE 2

LEGEND

- PHASE II CONSTRUCTION LIMITS
- ⊙ DRUM
- ⌌ TYPE 3 BARRICADE - 8 FT. SINGLE SIDED

PHASE II CONSTRUCTION -
PHASE II OF PROJECT INCLUDES ALL WORK ON
NORTH BOUND ONE-WAY OF HWY 87.
CONTRACTOR SHALL LEAVE ALL TEMPORARY TRAFFIC CONTROL
DEVICES IN PLACE UNTIL PERMANENT SIGNING AND PERMANENT
PAVEMENT MARKINGS ARE IN PLACE.

FLAGGERS AND TEMPORARY TRAFFIC CONTROL SIGNS ARE NOT SHOWN
AND SHALL BE REQUIRED. PAYMENT FOR FLAGGERS AND TRAFFIC
CONTROL SIGNS SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR
THE CORRESPONDING BID ITEMS.



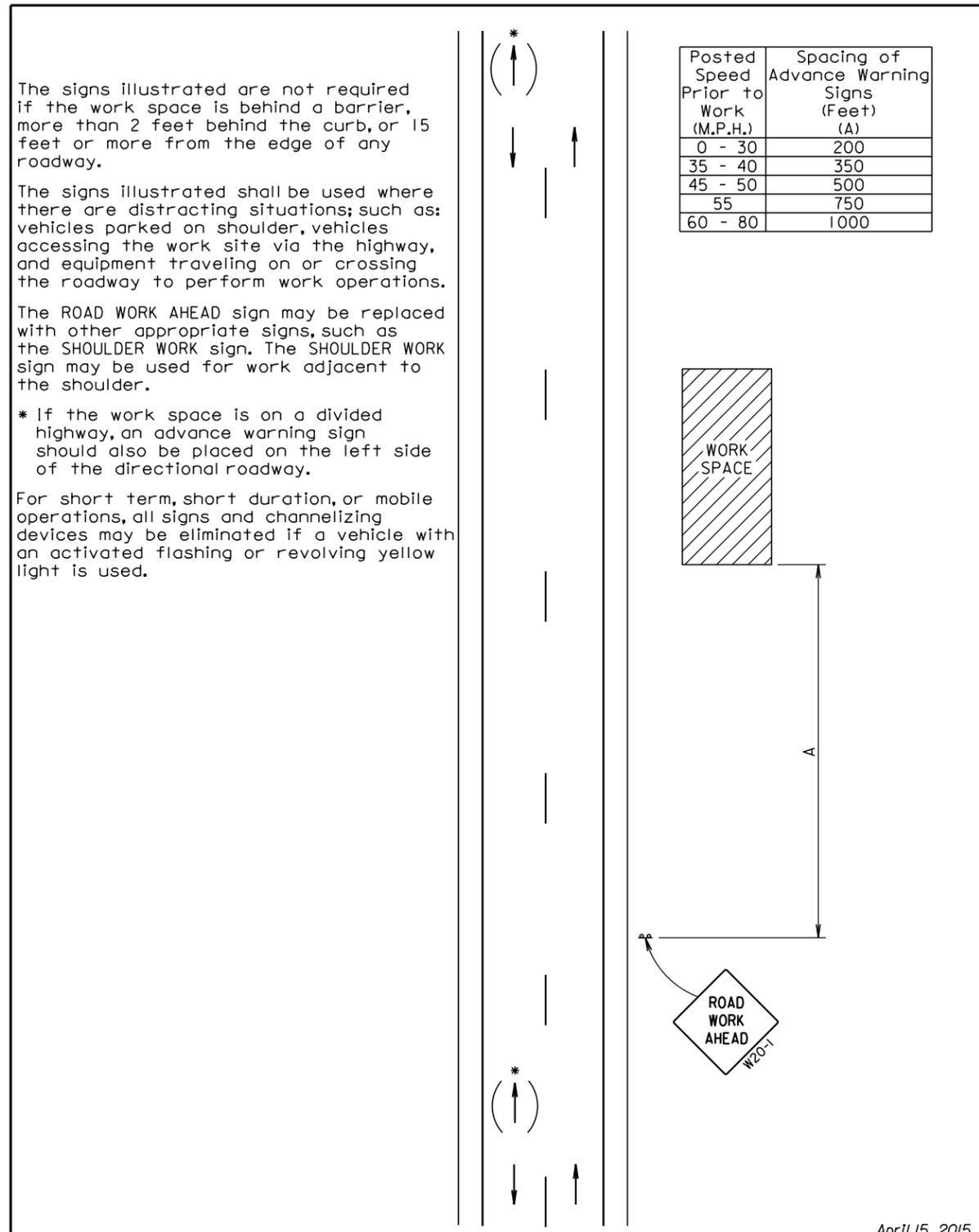
PLOT SCALE - 1:0.13573

PLOTTED FROM - TRCU10202

PLOT NAME - 2

FILE - ... \04GRV04GR TRAFFIC.DGN

Plotting Date: 10/02/2015



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.

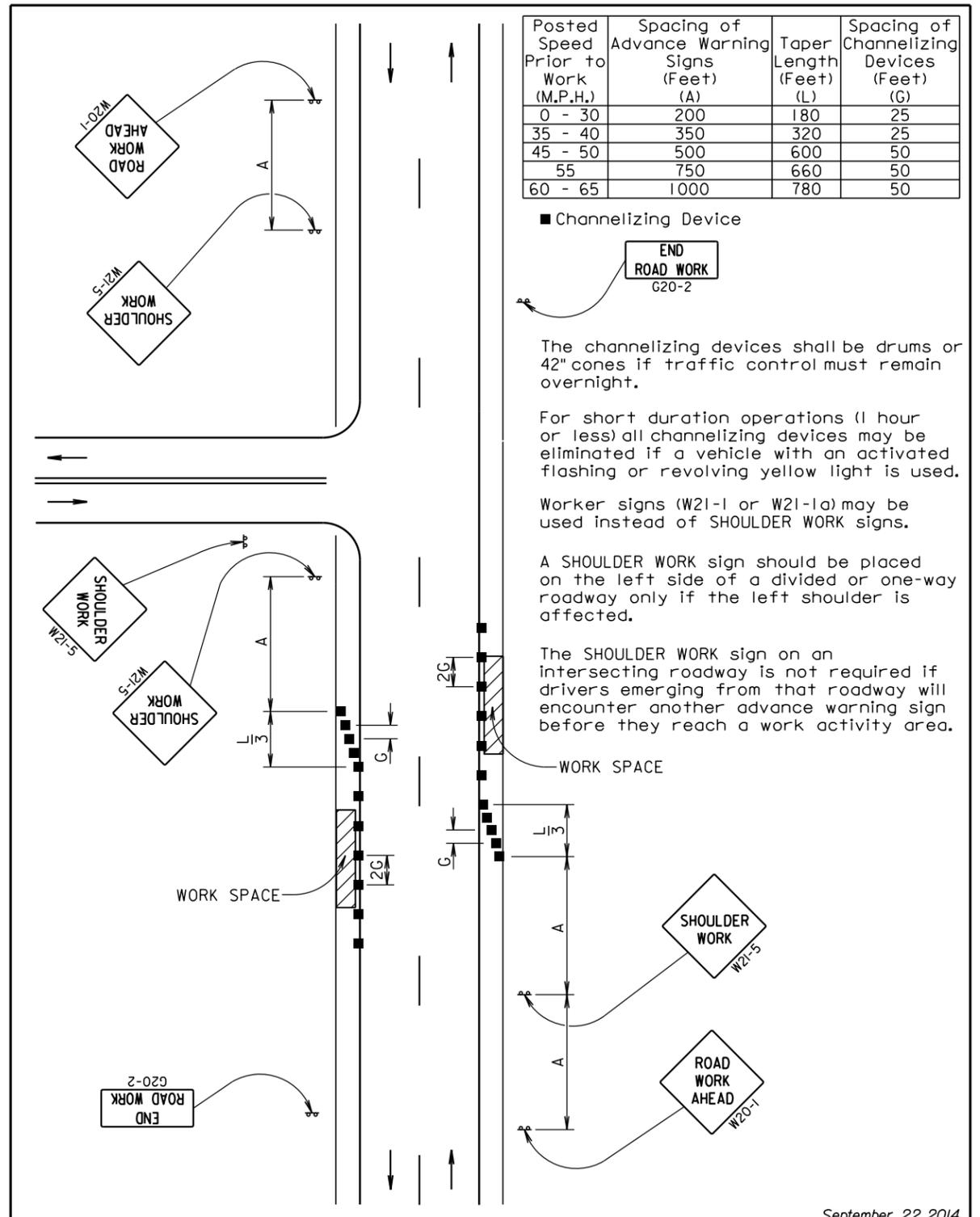
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* 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.

April 15, 2015

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 Of 1



Channelizing Device



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

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

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

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

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

September 22, 2014

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1

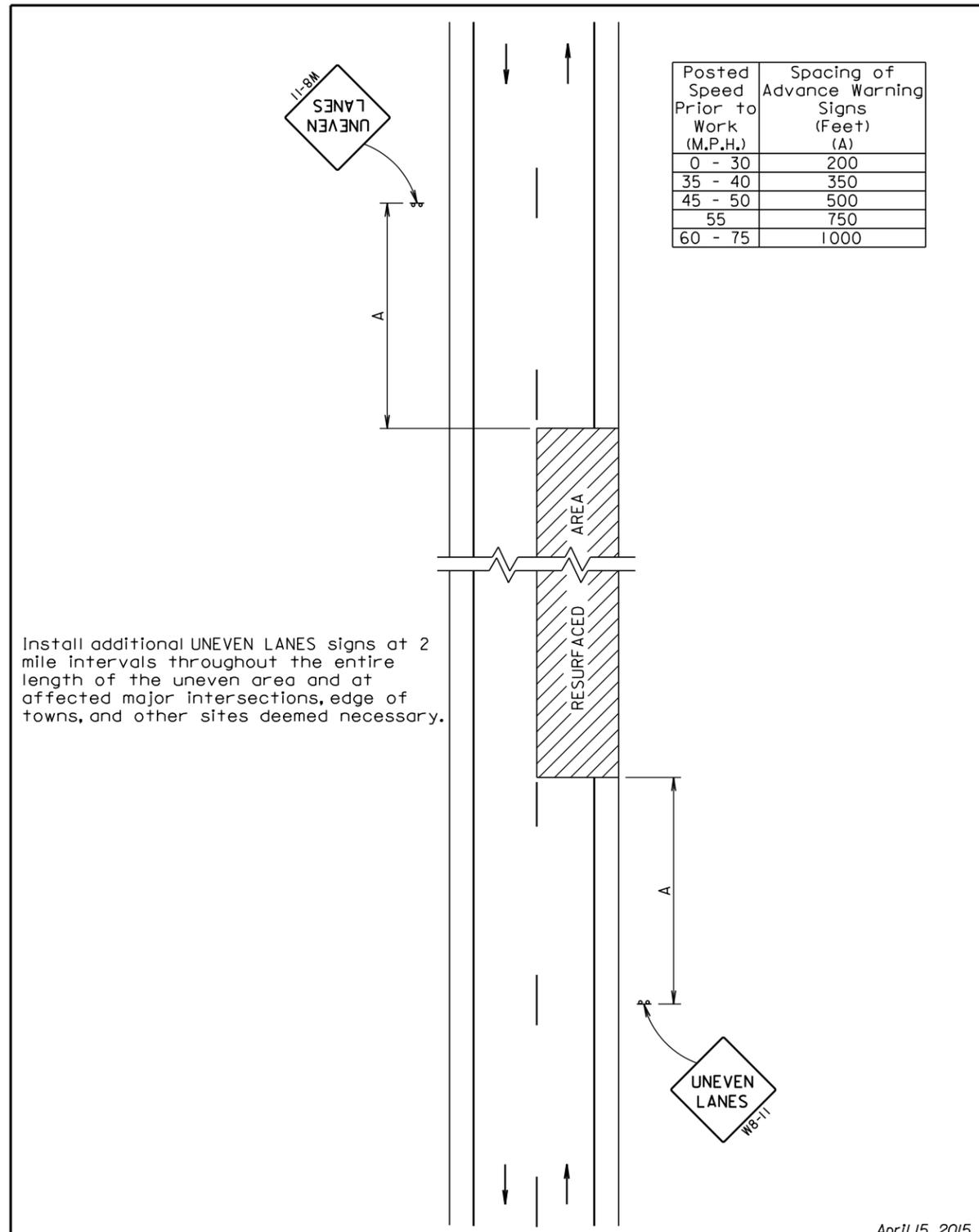
PLOT SCALE - 1:0.13573

PLOTTED FROM - TRCU10202

PLOT NAME - 3

FILE - ... \DESKTOP\04GR\04GR TRAFFIC.DGN

Plotting Date: 10/02/2015



Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

April 15, 2015

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES UNEVEN ROAD SURFACE	PLATE NUMBER 634.22
			Sheet 1 of 1

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

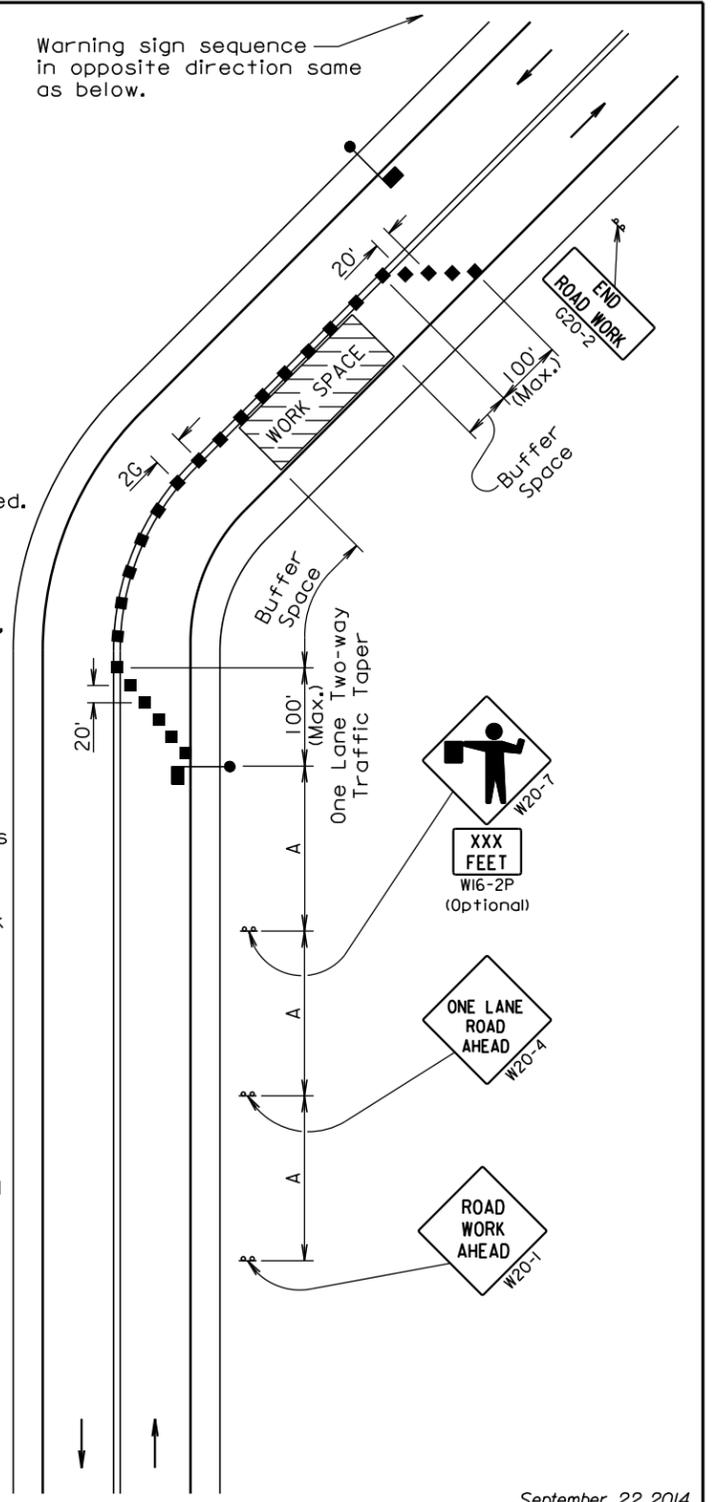
The channelizing devices shall be drums or 42" cones.

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.



Warning sign sequence in opposite direction same as below.

September 22, 2014

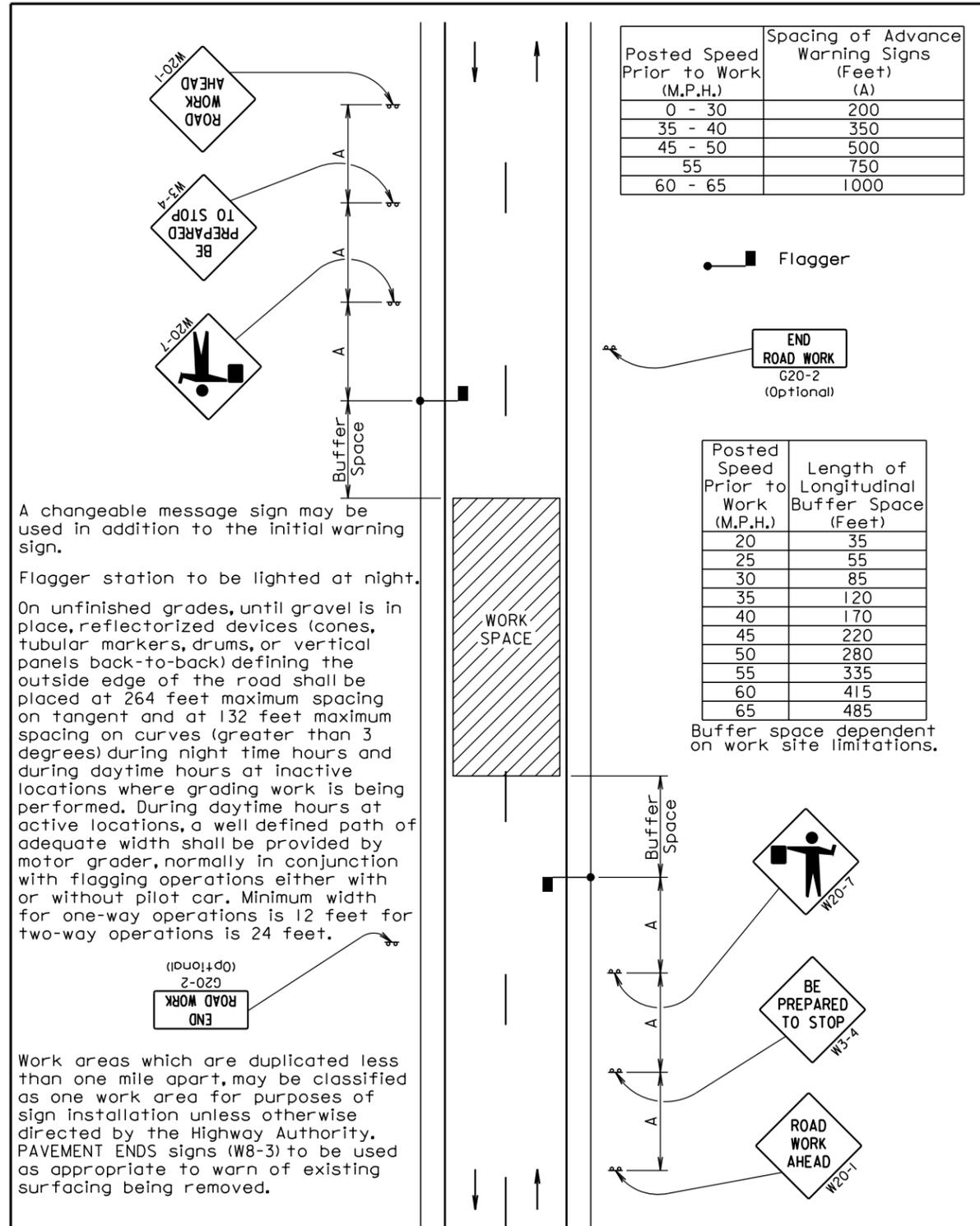
Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

PLOT SCALE - 1:0.13573

PLOTTED FROM - TRCU10202

PLOT NAME - 4

FILE - ... \DESKTOP\04GR\04GR TRAFFIC.DGN



A changeable message sign may be used in addition to the initial warning sign.

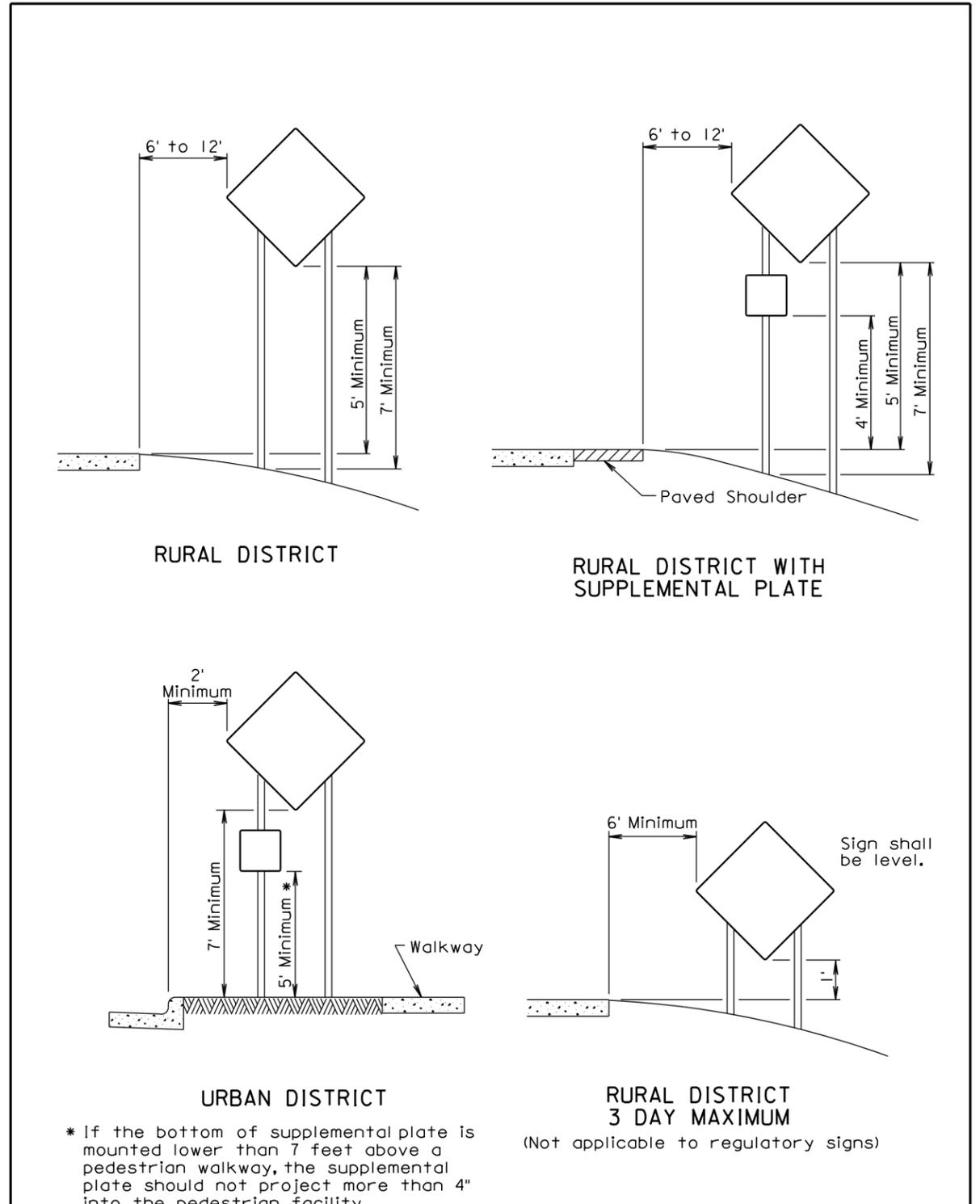
Flagger station to be lighted at night.

On unfinished grades, until gravel is in place, reflectorized devices (cones, tubular markers, drums, or vertical panels back-to-back) defining the outside edge of the road shall be placed at 264 feet maximum spacing on tangent and at 132 feet maximum spacing on curves (greater than 3 degrees) during night time hours and during daytime hours at inactive locations where grading work is being performed. During daytime hours at active locations, a well defined path of adequate width shall be provided by motor grader, normally in conjunction with flagging operations either with or without pilot car. Minimum width for one-way operations is 12 feet for two-way operations is 24 feet.

Work areas which are duplicated less than one mile apart, may be classified as one work area for purposes of sign installation unless otherwise directed by the Highway Authority. PAVEMENT ENDS signs (W8-3) to be used as appropriate to warn of existing surfacing being removed.

September 22, 2014

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LONG TERM ROAD WORK	PLATE NUMBER 634.31
			Sheet 1 of 1



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

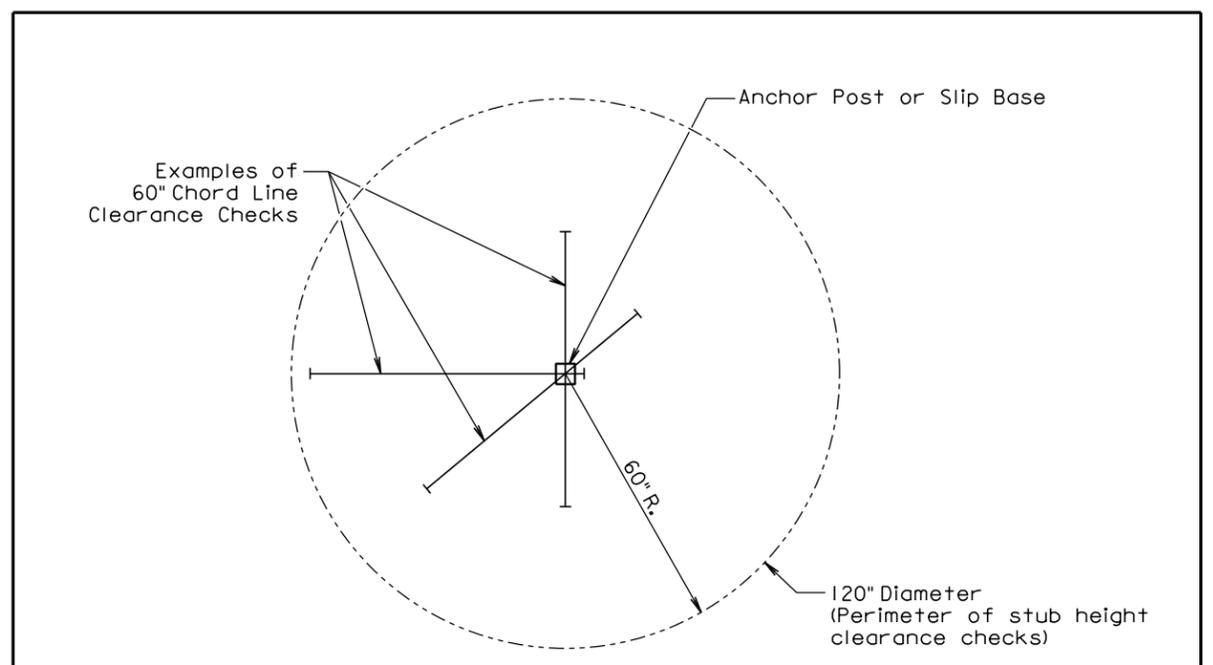
September 22, 2014

Published Date: 4th Qtr. 2015	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

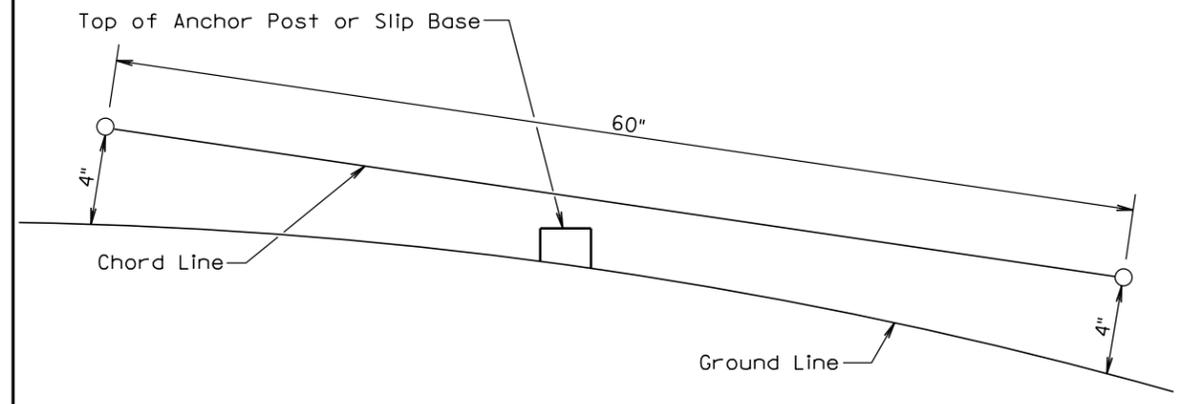
PLOT SCALE - 1/8" = 1'-0" (13573)

PLOT NAME - 3

FILE - ... \04GRV04GR TRAFFIC.DGN



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

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

July 1, 2005

<i>Published Date: 4th Qtr. 2015</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1