

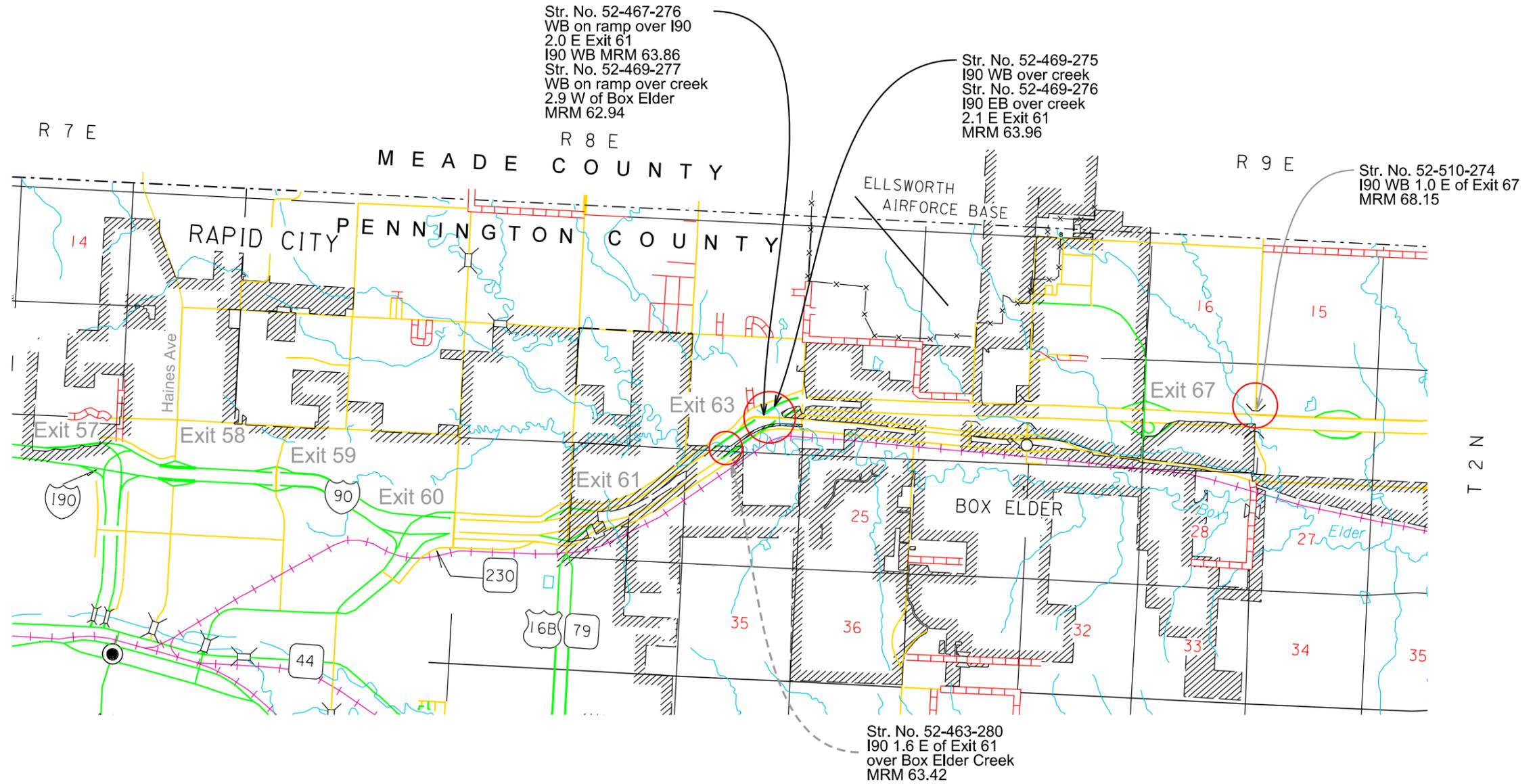
SECTION C: TRAFFIC CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM0901(175)58	C1	C10

Plotting Date: 11/10/2015

INDEX OF SHEETS

C1	General Layout with Index
C2-C3	Estimate With General Notes & Tables
C4	Overwidth Detour Layout
C5	Ramp Special Details
C6-C7	Ramp Signing Details
C8-C10	Standard Plates



SECTION C ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	1,200.0	Hour
634E0110	Traffic Control Signs	1,272	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	5	Each
634E0380	Tubular Marker	40	Each
634E0420	Type C Advance Warning Arrow Board	4	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	6,892	Ft
634E0640	Temporary Pavement Marking	7,992	Ft
634E1002	Detour Signing	469.0	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
634E1255	Contractor Furnished Speed Monitoring Radar Trailer	4	Each

TRAFFIC CONTROL – GENERAL NOTES

1. Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.
2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness.
3. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of 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.
4. Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.
5. Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours.
6. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
7. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.
8. All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.

9. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
10. All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.
11. All construction operations shall be conducted in the general direction of traffic movement.
12. If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.
13. Temporary Flexible Vertical Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.
14. Interstate 90 and ramp traffic shall not be stopped at any time.
15. The minimum height to the bottom of the Exit Gore sign shall be 7'.
16. When using Standard Plate 634.63, the speed limit through the 3 mile maximum work zone shall be 65 MPH in non-active areas and 45 MPH through active work spaces.
17. A 16' width restriction will be put in place for work on Str.'s 52-469-277, 52-467-276, 52-463-280, 52-469-275, and 52-469-276. A 14' width restriction during working hours will be allowed provided flaggers are used and traffic control is adjusted to allow a 16' wide load to pass. Payment for moving traffic control to allow for a 16' wide load shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.
18. A 12' width restriction will be put in place for work on Str.'s 52-415-285, 52-415-286, and 52-510-274.
19. The quantity of Type C Advance Warning Arrow Panels and Traffic Control Signs will be paid for per each work site.
20. The Be Prepared To Stop and Slow Traffic Ahead signs shown for Str. 52-510-274 shall only be used if there are traffic backups or as directed by the Engineer. These signs shall be placed 2500' in advance of the Road Work Ahead signs.

SEQUENCE OF OPERATIONS

Str. No. 52-469-277 - I-90 westbound on-ramp from Box Elder, over creek
Str. No. 52-467-276 - I-90 westbound on-ramp from Box Elder, over I-90

- Use Standard Plates 634.69 and 634.63 to complete the work at these two structures. Both of these structures will be considered one work site and shall be worked on simultaneously. The partial ramp closure shall begin at W. Gate Rd. One lane of traffic shall be maintained at all times.

Revised 11/16/2015 - BP

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM0901(175)58	C2	C10

Str. No. 52-463-280 – I-90 westbound over Box Elder Creek
Str. No. 52-469-275 – I-90 westbound over a creek

- Use Standard Plate 634.63, Ramp Entrance And Exit Signing Details #1 and #2, and special drawing traffic control sheets to complete the work at these two structures. Both of these structures will be considered one work site and shall be worked on simultaneously. The lane closures on Interstate 90 shall encompass both structures. One lane of traffic shall be maintained at all times. The lane closure taper shall be east of the West Gate Road overpass bridge in a tangent section of I-90.

Str. No. 52-463-280 – I-90 eastbound over Box Elder Creek
Str. No. 52-469-276 – I-90 eastbound over a creek

- Use Standard Plate 634.63 and "Ramp Entrance And Exit Signing Details #1 and #2" traffic control sheets to complete the work at these two structures. Both of these structures will be considered one work site and shall be worked on simultaneously. The lane closures on Interstate 90 shall encompass both structures. One lane of traffic shall be maintained at all times.

Str. No. 52-510-274 – I-90 westbound over 151st Ave.

- Use Standard Plate 634.63 to complete the work at this structure. One lane of traffic shall be maintained at all times.

REMOVE PAVEMENT MARKING 4", OR EQUIVALENT

All pavement marking paint removals shall be done as directed by the Engineer. Existing pavement marking tape shall be removed by the heat and remove method.

Str. No. 52-463-280 - 351'x2=702' + 1100'x2=2200'
 Str. No.'s 52-467-276 & 52-469-277 - 1065'x2=2130'
 Str. No. 52-469-275 – 283'x2=566'
 Str. No. 52-469-276 – 283'x2=566'
 Str. No. 52-510-274 – 364'x2=728'

Total = 6,892'

TEMPORARY FLEXIBLE VERTICAL MARKERS (TABS)

Temporary Flexible Vertical Markers shall be used for edge lines where edge lines are removed and traffic is shifted over, to mark edge lines when traffic is returned to normal until permanent markings are in place, and as directed by the Engineer.

All costs to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove the temporary pavement markings shall be included in the contract unit price per foot per 4" line or equivalent for Temporary Pavement Marking.

Str. No. 52-463-280 - 351'x2=702' + 1100'x3=3300'
 Str. No.'s 52-467-276 & 52-469-277 - 1065'x2=2130'
 Str. No. 52-469-275 – 283'x2=566'
 Str. No. 52-469-276 – 283'x2=566'
 Str. No. 52-510-274 – 364'x2=728'

Total = 7,992'

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a Press Release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT 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 7 days prior to any phase change or any other major changes that affect traffic flow.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

The Contractor Furnished Portable Changeable Message Signs on this project are to be used to inform the travelling public 1 week prior to work startup.

CONTRACTOR FURNISHED SPEED MONITORING RADAR TRAILER

The Contractor shall provide 4 speed trailers to monitor traffic speeds on designated routes at locations specified in the field by the Engineer.

The radar speed feedback sign assembly shall include a speed limit sign mounted in conjunction with the radar speed feedback display. The speed display shall not flash either the vehicle speeds exceeding the speed limit or any other messages.

All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the speed trailers from locations specified by the Engineer shall be included in the contract unit price per each for Contractor Furnished Speed Monitoring Radar Trailer.

OVERWIDTH DETOUR SIGNING

Details of the approximate location of the Overwidth Detour Signing are as shown in these plans. Prior to installing the signs, the Contractor shall mark out the sign locations and review them with the Engineer.

Overwidth Detour Signing shall be furnished and installed by the Contractor as detailed in these plans. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor shall remove the Overwidth Detour Signing. Overwidth Detour Signing shall be installed on fixed location, ground mounted, breakaway supports.

Payment for furnishing, installing, maintaining and removing the signs and the hardware shall be incidental to the contract unit price per square foot for Detour Signing.

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
SPECIAL	OVERWIDTH VEHICLES	14	60" x 48"	20	280
SPECIAL	WIDTH RESTRICTION ___ FT WIDE ___ MILES AHEAD NEXT EXIT	1	96" x 84"	56	56
SPECIAL	WIDTH RESTRICTION ___ FT WIDE ___ MILES AHEAD ALT ROUTE	2	96" x 84"	56	112
SPECIAL	WIDTH RESTRICTION ___ FT WIDE EXIT HERE	1	84" x 36"	21	21
DETOUR SIGNING SQFT					469

TRUCK OR TRAILER MOUNTED CRASH ATTENUATOR

A Truck or Trailer Mounted Crash Attenuator shall be utilized at the beginning of the work areas. The attenuators shall be used when workers are present and shall be removed from the roadway at the end of each working day. A Type 3 Barricade shall be placed in front of the work area in the absence of the Truck or Trailer Mounted Crash Attenuator. The crash attenuator shall

meet or exceed NCHRP 350 Test Level 3 criteria or current MASH requirements.

The Attenuator(s) will remain the property of the Contractor at the end of the project. Depending on how the Contractor chooses to complete the work locations, multiple attenuators may be required. The cost for the Truck or trailer Mounted Crash Attenuator(s) shall be incidental to the contract lump sum price for Traffic Control Miscellaneous.

ITEMIZED LISTS FOR TRAFFIC CONTROL DEVICES

Str. No. 52-469-277 - I-90 westbound on-ramp from Box Elder, over creek
Str. No. 52-467-276 - I-90 westbound on-ramp from Box Elder, over I-90

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT	3	36" x 48"	12	36
R2-6aP	FINES DOUBLE (plaque)	2	36" x 24"	6	12
W3-5	SPEED REDUCTION AHEAD (___ MPH)	2	48" x 48"	16	32
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W5-4	RAMP NARROWS	1	48" x 48"	16	16
W13-4P	ON RAMP (plaque)	1	36" x 36"	9	9
W20-1	ROAD WORK AHEAD	3	48" x 48"	16	48
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
G20-2	END ROAD WORK	2	48" x 24"	8	16
EXPRESSWAY / INTERSTATE					249
TRAFFIC CONTROL SIGNS SQFT					

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	2 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

Str. No. 52-463-280 – I-90 westbound over Box Elder Creek
Str. No. 52-469-275 – I-90 westbound over a creek

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD	1	60" x 60"	25	25
R2-1	SPEED LIMIT	5	36" x 48"	12	60
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6	6
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16	32
W1-4b	REVERSE CURVE DUAL LANE	2	48" x 48"	16	32
W3-2	YIELD AHEAD (symbol)	1	48" x 48"	16	16
W3-5	SPEED REDUCTION AHEAD (___ MPH)	3	48" x 48"	16	48
W4-1	MERGE (symbol)	2	48" x 48"	16	32
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W4-3	ADDED LANE (symbol)	2	48" x 48"	16	32
W20-1	ROAD WORK AHEAD	3	48" x 48"	16	48
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
G20-2	END ROAD WORK	1	48" x 24"	8	8
EXPRESSWAY / INTERSTATE					419
TRAFFIC CONTROL SIGNS SQFT					

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	1 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

Revised 11/16/2015 - BP

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM0901(175)58	C3	C10

Str. No. 52-463-280 – I-90 eastbound over Box Elder Creek
Str. No. 52-469-276 – I-90 eastbound over a creek

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT	5	36" x 48"	12	60
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6	6
W3-5	SPEED REDUCTION AHEAD (___ MPH)	3	48" x 48"	16	48
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W20-1	ROAD WORK AHEAD	3	48" x 48"	16	48
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
G20-2	END ROAD WORK	1	48" x 24"	8	8
SPECIAL	EXIT GORE SIGN	1	36" x 32"	8	8
EXPRESSWAY / INTERSTATE					258
TRAFFIC CONTROL SIGNS SQFT					

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	1 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

Str. No. 52-510-274 – I-90 westbound over 151st Ave.

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT	5	36" x 48"	12	60
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6	6
W3-4	BE PREPARED TO STOP	2	48" x 48"	16	32
W3-5	SPEED REDUCTION AHEAD (___ MPH)	3	48" x 48"	16	48
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16	64
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	1	48" x 48"	16	16
W23-1	SLOW TRAFFIC AHEAD	2	48" x 24"	8	16
G20-2	END ROAD WORK	1	48" x 24"	8	8
EXPRESSWAY / INTERSTATE					346
TRAFFIC CONTROL SIGNS SQFT					

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	1 Each

ARROW BOARDS

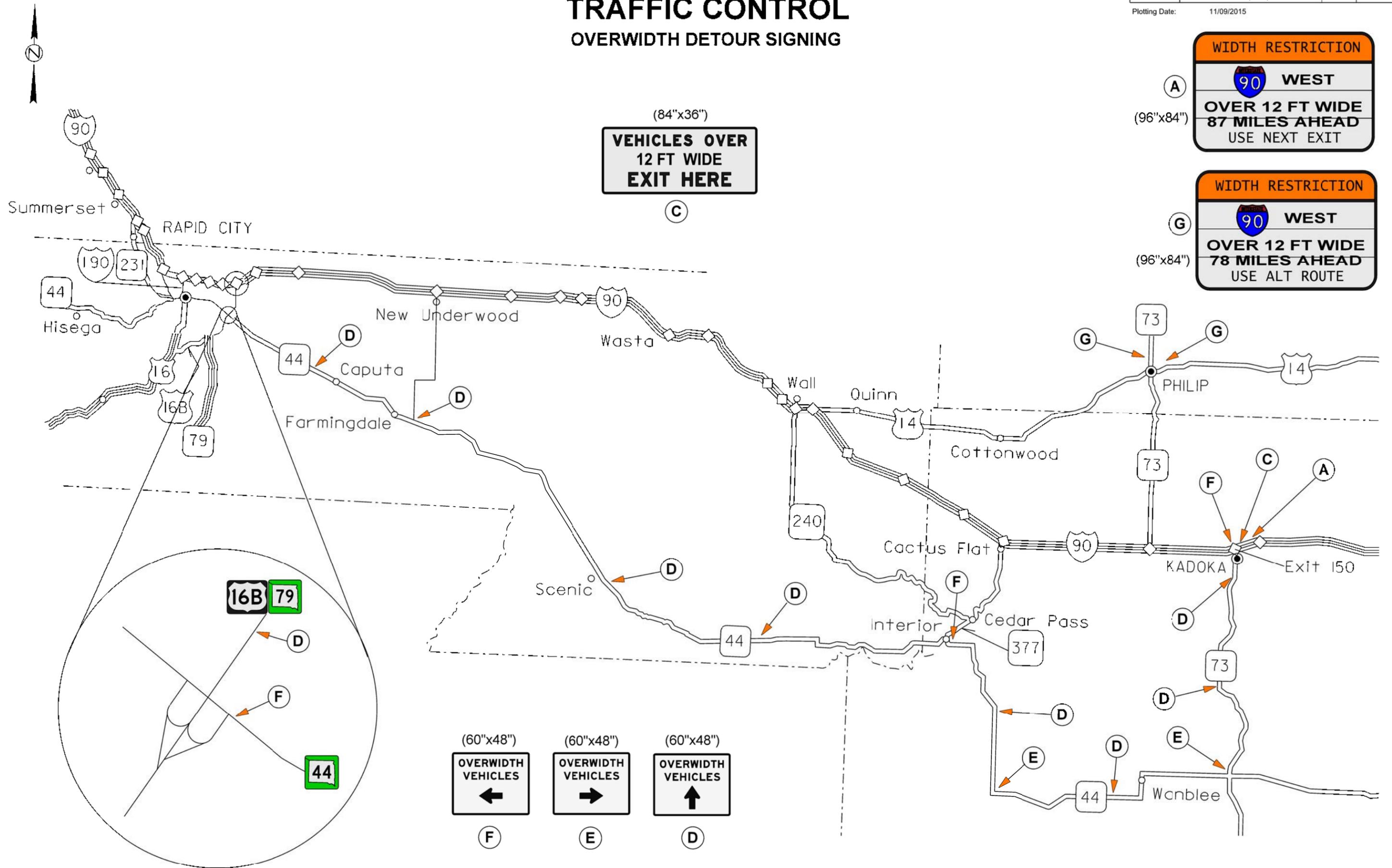
ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	1 Each

TRAFFIC CONTROL

OVERWIDTH DETOUR SIGNING

Plot Scale - 1:40

Plotted From - jrc11640



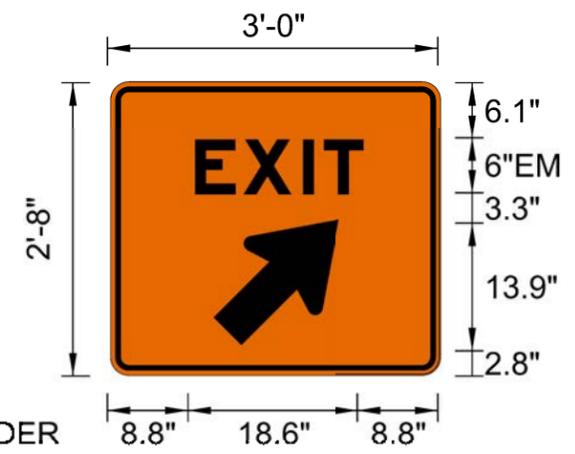
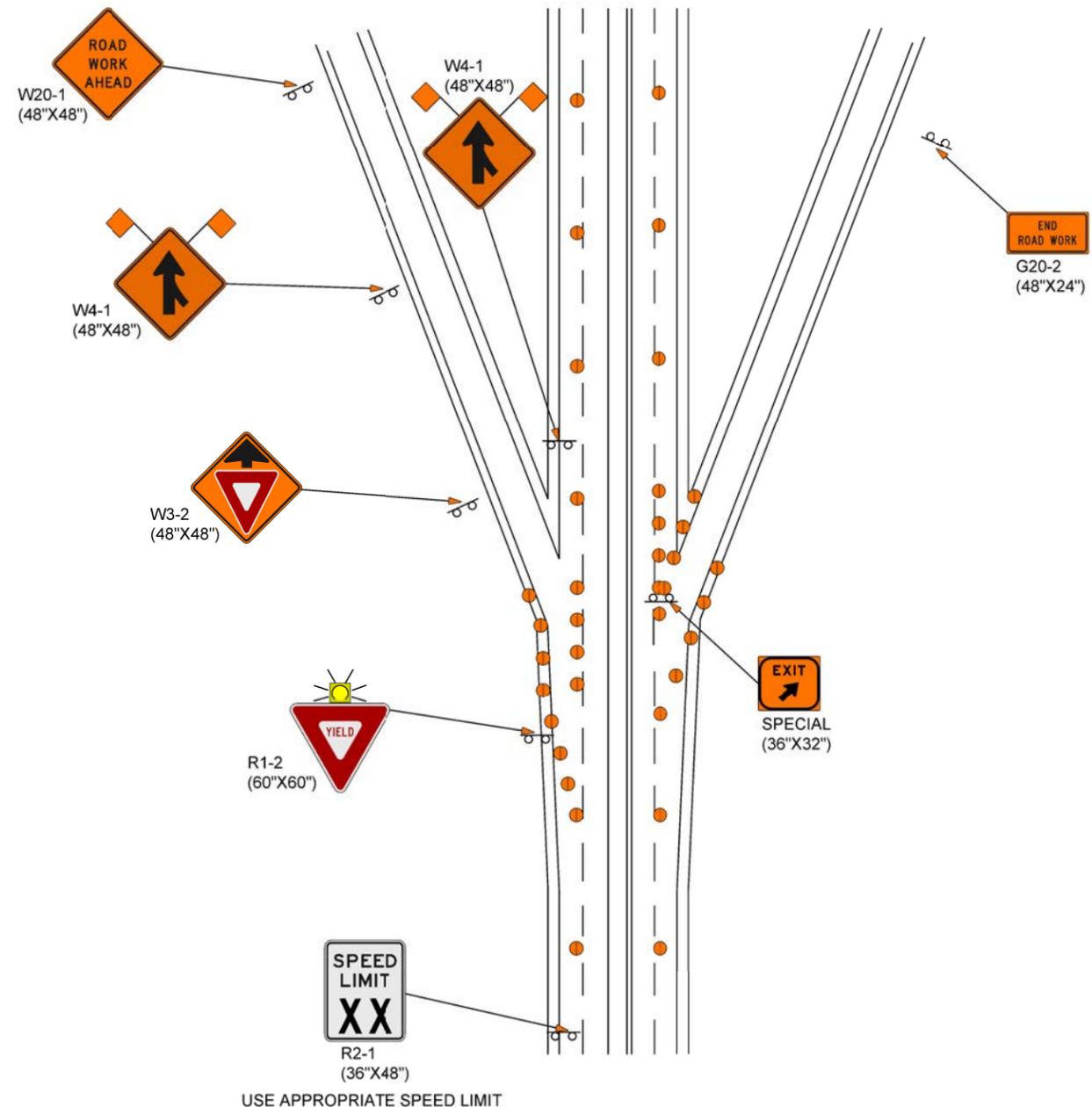
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM0901(175)58	C6	C10

Plotting Date: 11/16/2015

Revised 11/16/2015 - BP

TRAFFIC CONTROL

RAMP ENTRANCE AND EXIT SIGNING DETAILS #1



BORDER
R=1.5"
TH=0.63"
IN=0.47"

Panel Style: construction_guide.ssi
M.U.T.C.D.: 2009 Edition

 THE WARNING LIGHT SHALL BE A SHIELDED TYPE B. IN ACCORDANCE WITH THE MUTCD

Plot Scale - 1:40

Plotted From - trcs11640

File - ...Typical ramp signing details.dgn

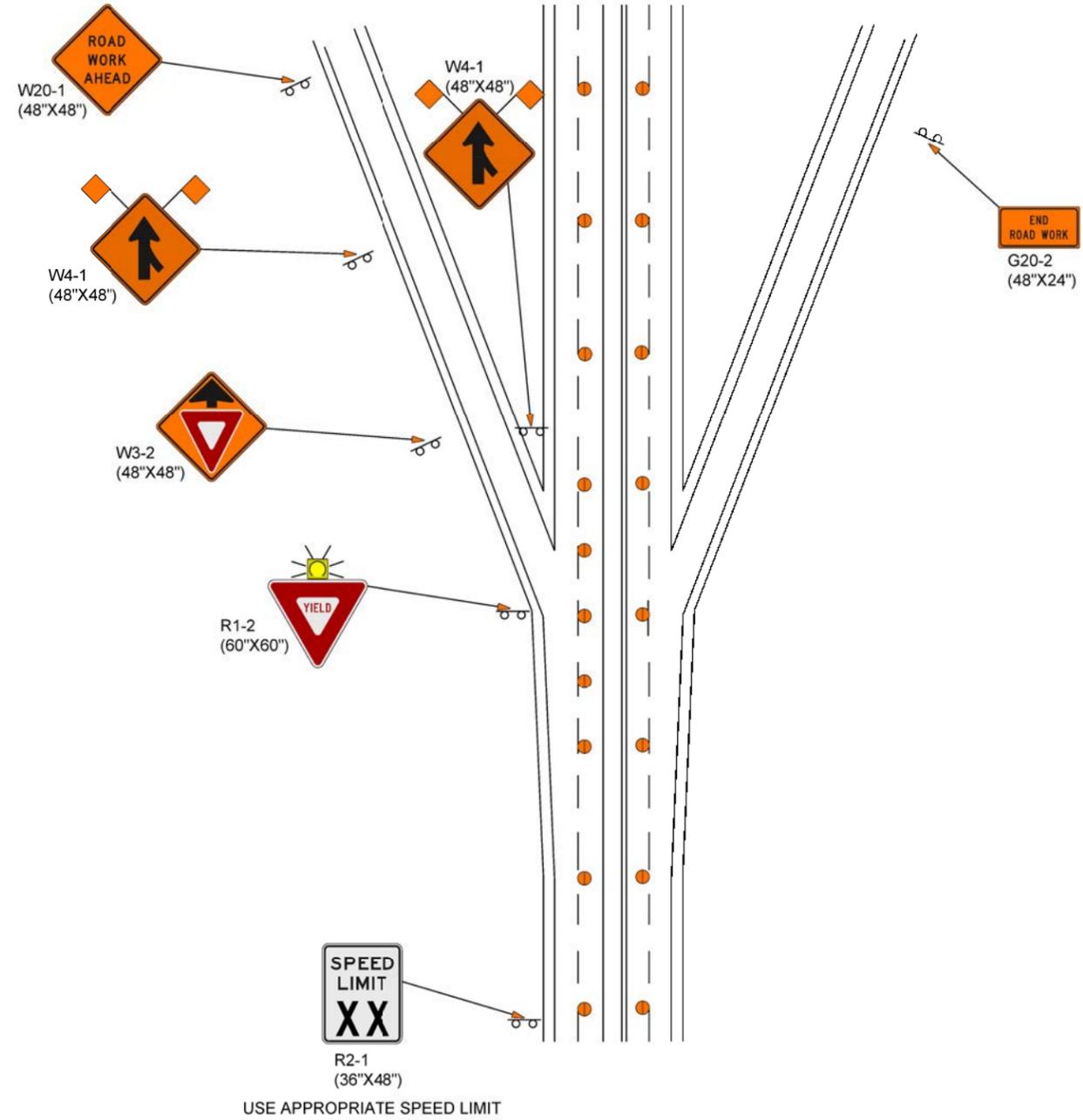
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM0901(175)58	C7	C10

Plotting Date: 11/16/2015

Revised 11/16/2015 - BP

TRAFFIC CONTROL

RAMP ENTRANCE AND EXIT SIGNING DETAILS #2



 -- THE WARNING LIGHT SHALL BE A SHIELDED TYPE B, IN ACCORDANCE WITH THE MUTCD

Plot Scale - 1:40

Plotted From - trcs11640

File - ...:\Typical ramp signing details.dgn

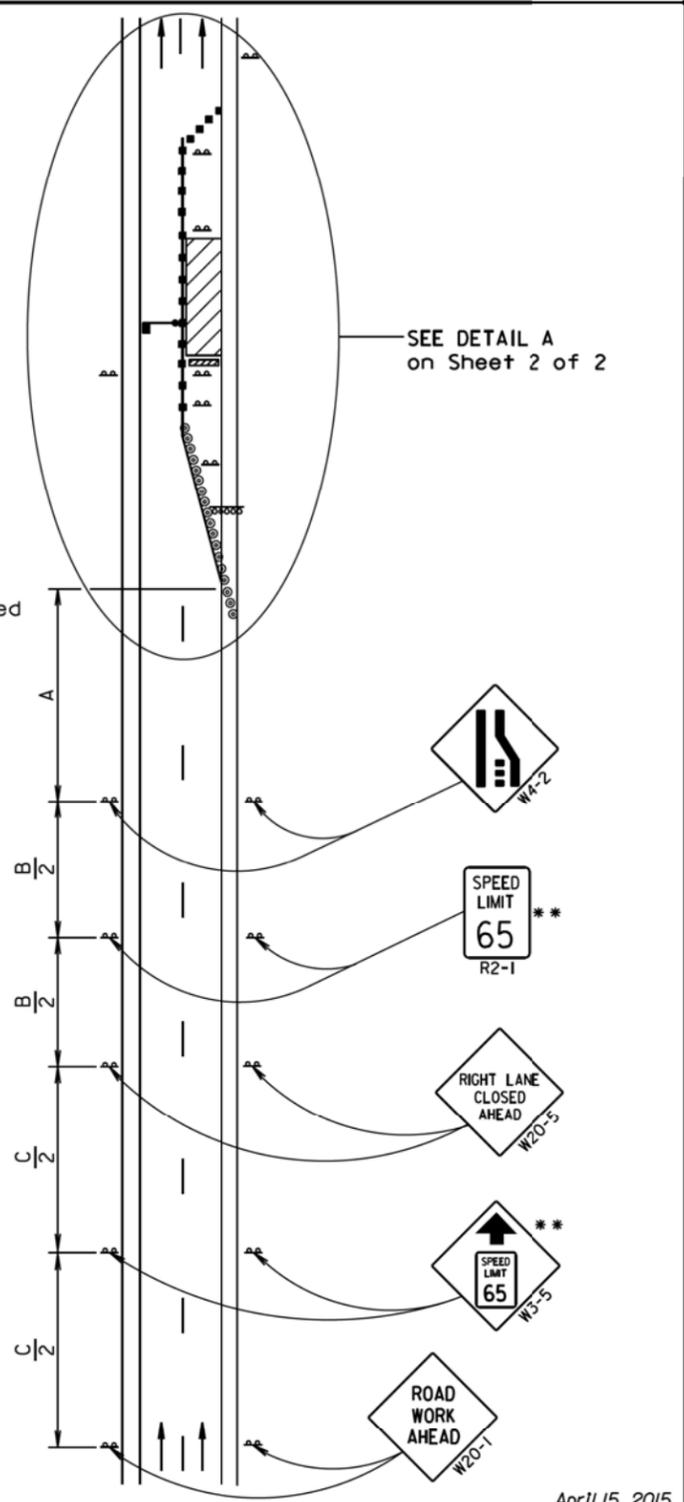
Plot Scale - 1:200

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
	(A)	(B)	(C)
70 - 80	1000	1500	2640

- ** Speed appropriate for location.
- ⊙ Reflectorized Drum
- Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 3rd Qtr. 2015	Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45 - 50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

- * Spacing is 40' for 42" cones.
- ** Speed appropriate for location.
- *** Use speed limit designated for the condition when workers are present in the work space. Signs shall be covered or removed when workers are not present.

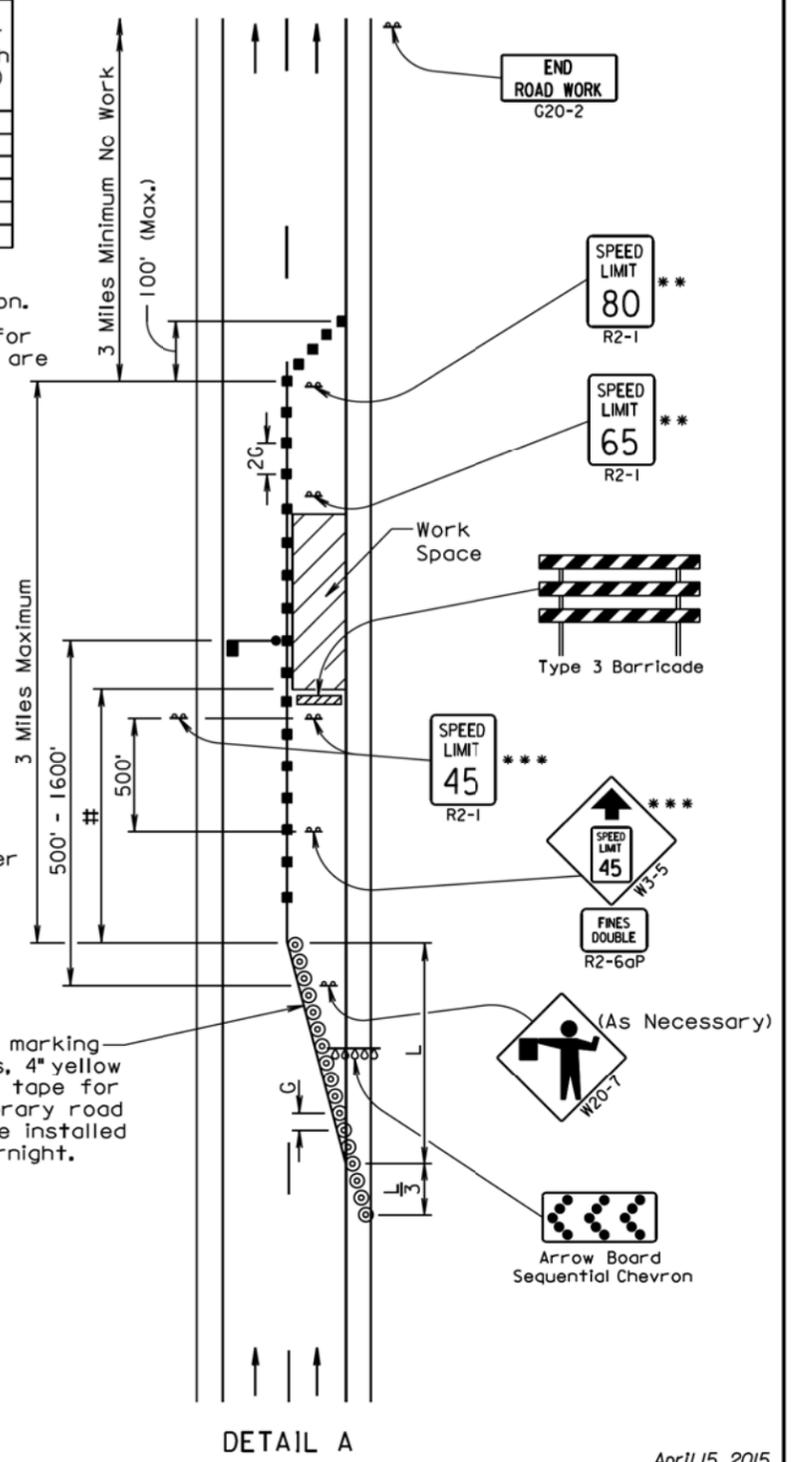
- Flagger (As Necessary)
- ⊙ Reflectorized Drum
- Channelizing Device
- # The Work Space shall be a minimum of 500' from the end of the taper.

The FLAGGER sign shall be used whenever there is a Flagger present.

The channelizing devices 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 night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary road markers at 5' spacing shall be installed when the lane is closed overnight.



April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 3rd Qtr. 2015	Sheet 2 of 2

- Plotted From - Irrc11640

File - ...Standard Plates.dgn

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
70 - 80	1000 1500	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 - 80	50 *

* Spacing is 40' for 42" cones.

■ Channelizing Device

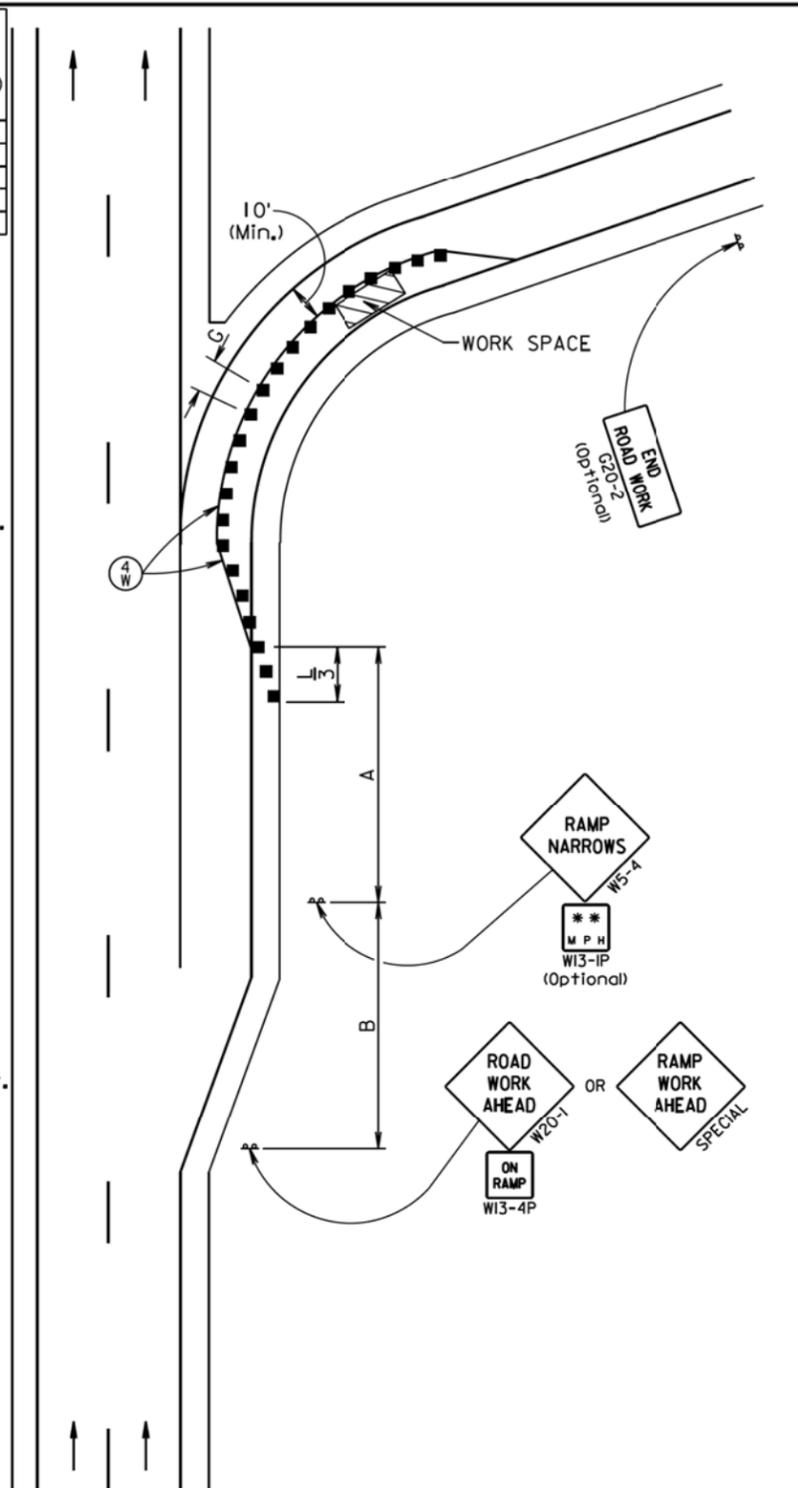
④ 4" White Temporary Pavement Marking

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

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

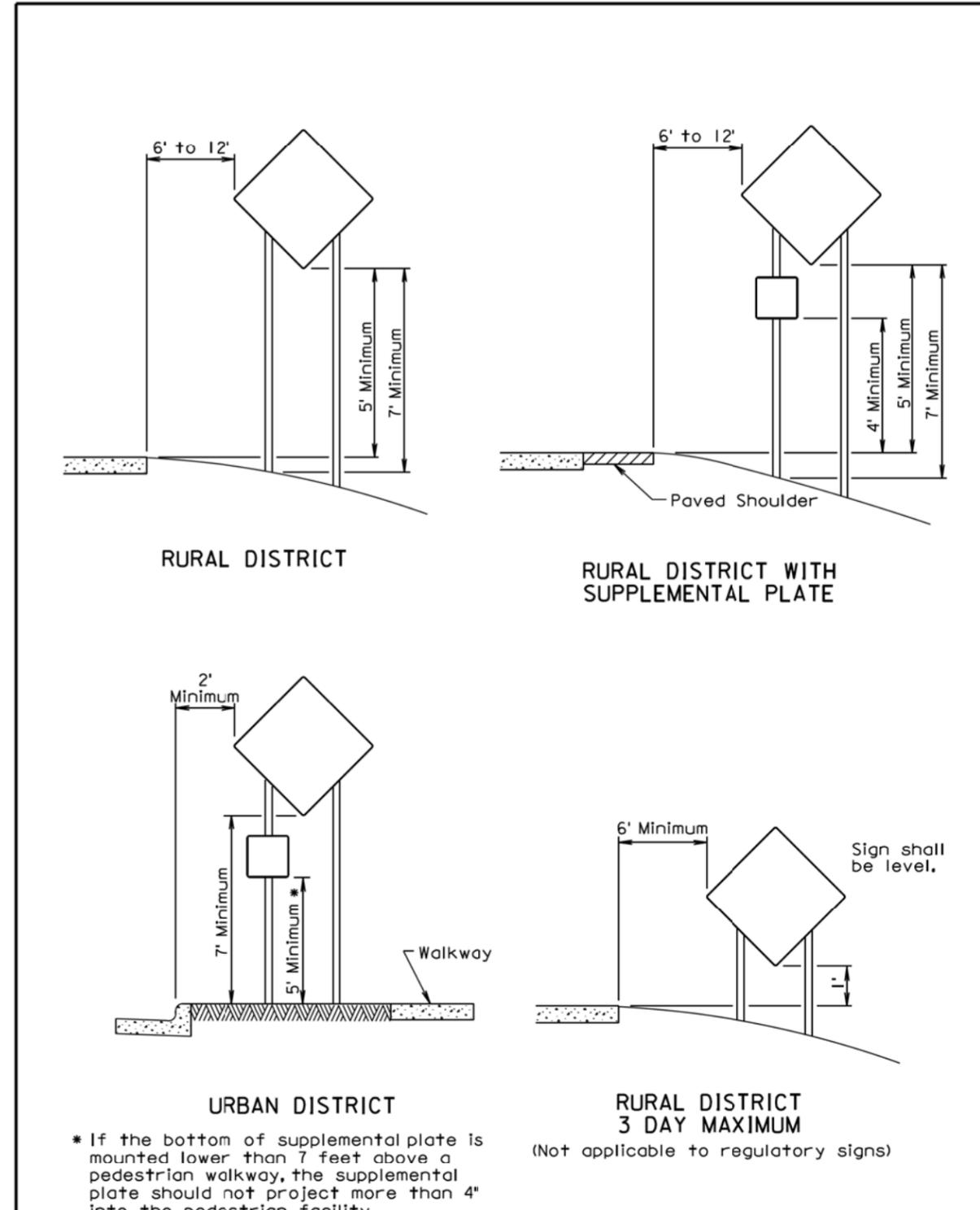
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

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



April 15, 2015

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69
	Published Date: 3rd Qtr. 2015	Sheet 1 of 1

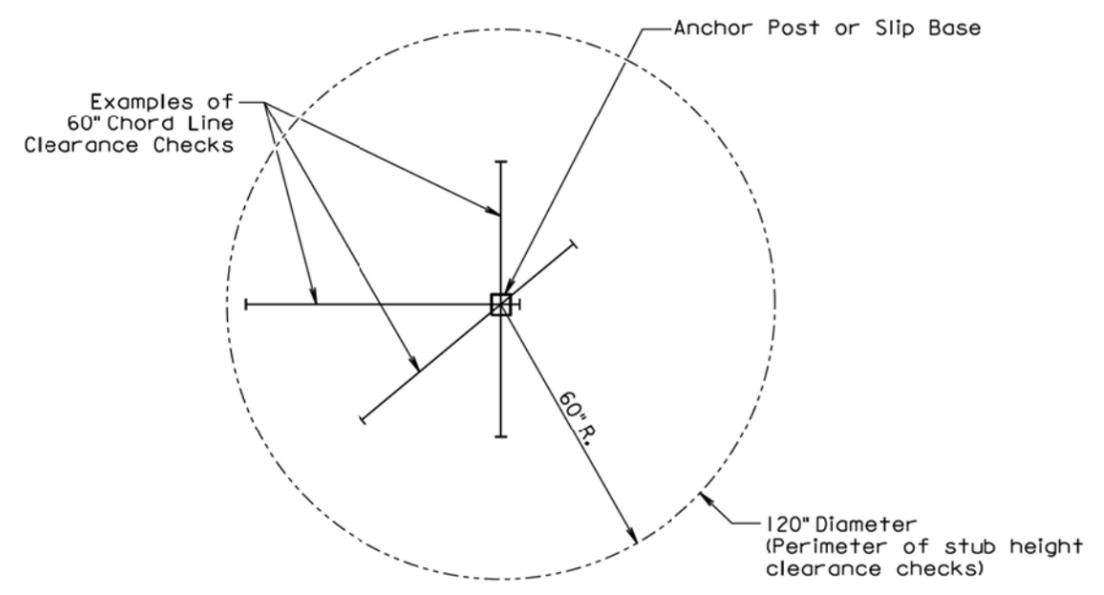


* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

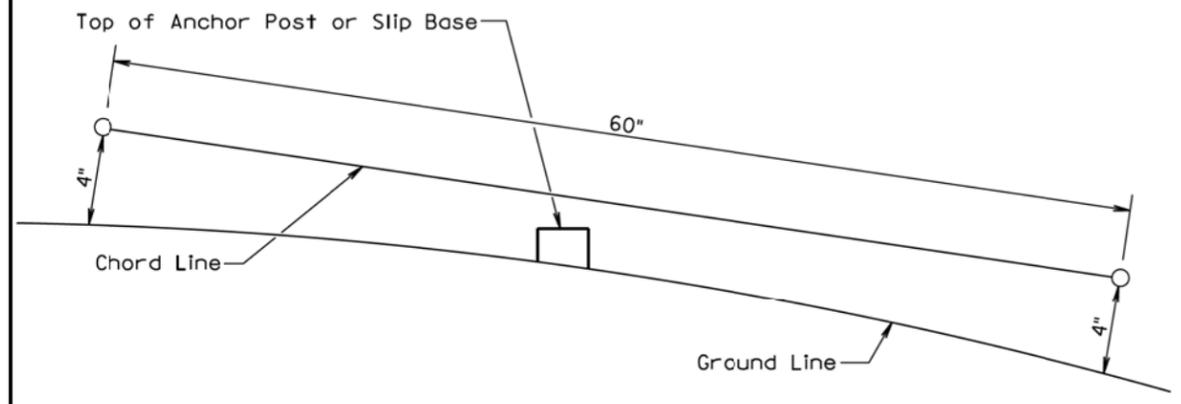
RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22, 2014

S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
	Published Date: 3rd Qtr. 2015	Sheet 1 of 1



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

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
	Published Date: 3rd Qtr. 2015	Sheet 1 of 1