

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0110	Traffic Control Signs	1,593.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	4	Each
634E0380	Tubular Marker	82	Each
634E0390	Replace Tubular Marker	10	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0630	Temporary Pavement Marking	5.3	Mile
634E1002	Detour and Restriction Signing	1,431.6	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each

SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department’s intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

The Contractor will be allowed to work on any or all of the sites at one time. If working on multiple sites requires an increase in quantities of any traffic control items, those increases will be at the Contractor’s expense.

Site 1 – Grading 32+00 to 64+50 (I90 MRM 317.00)

1. Install width restriction signing as detailed in these plans.
2. Install traffic control for both the I90 westbound and eastbound lane closures at the installation of the median crossovers at 16+00 and 95+00.
3. Construct Crossovers at 16+00 and 95+00.
4. Install temporary guardrail at 64+16 on I90 mainline.
5. Install traffic control for two-lane two-way in the EB lanes from the crossover 16+00 to 95+00.
6. Move all I-90 traffic to eastbound lanes.
7. Perform all pipe, grading, and surfacing work in the WB lanes.
8. Install traffic control for two-lane two-way in the WB lanes from the crossover 16+00 to 95+00.
9. Move all I-90 traffic to WB lanes.
10. Perform all pipe, grading, and surfacing work in the EB lanes of I90.
11. Install permanent signing and pavement marking in eastbound lanes.
12. Move all traffic to appropriate lanes.
13. Install permanent signing and pavement marking in the westbound lanes.
14. Remove temporary traffic control devices.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

GENERAL TRAFFIC CONTROL (CONTINUED)

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports. All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

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

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

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

A Type 3 Barricade will be installed at the end of a lane closure taper. Additional Type 3 Barricades will be installed facing traffic within the closed lane at a spacing of ¼ mile.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor’s equipment will be repaired at no expense to the Department.

On Interstate projects with more than one construction site, slow moving equipment that operates at a speed less than 40 MPH may mobilize between sites if the equipment travels on the shoulder. The slow-moving equipment will also display a flashing amber light and a slow-moving sign.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

LANE CLOSURES

Interstate lane closures shorter than 5 miles will be used if 5 miles is greater than the length of work that can be accomplished in one day’s production. More than one lane closure may be permitted; however, there will be a minimum of a three-mile section between lane closures, excluding the tapers.

LANE CLOSURES (CONTINUED)

Interstate lane closures will be removed when work will not be occurring for a period of 3 or more calendar days. Activities that do not involve workers being present, such as curing time for concrete, constitute work. Lane closures will not be set up on a Friday if no work will be occurring on Saturday or Sunday. In these cases, the lane closure will be installed on Monday.

The Contractor will furnish and install the overwidth restriction and detour signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction and detour signs will be installed on fixed location, ground mounted, breakaway supports. 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 will remove the overwidth restriction and detour signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction and detour signs will be incidental to the contract unit price per square foot for “Detour and Restriction Signing”.

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

One week prior to starting work affecting the traveling public, portable changeable message signs (PCMS) will be installed to notify drivers of the upcoming construction. The Contractor will install one message sign at each end of the two-way taper and have two extra signs to place at the Engineers request.

The Contractor will program the portable changeable message signs with the following message:

ROAD WORK
STARTS (Date)

When work begins that will affect traffic patterns, the Contractor will re-program the PCMS with the messages as detailed below:

USE CATION
TWO WAY TRAFFIC AHEAD

USE CAUTION
LANE CLOSURE AHEAD

USE CAUTION
ROAD WORK AHEAD

TEMPORARY PAVEMENT MARKING

Temporary Pavement Marking Paint will be used on milled and leveling surfaces for centerlines, lane lines, skips, and as directed by the Engineer. The Temporary Pavement Marking Paint will be placed at the location of the existing pavement markings except that centerline will be double yellow the entire project length and will be offset 6-inches from centerline of the roadway. It will be the Contractor’s responsibility to determine which direction to offset so that the markings do not get covered up when the first half of the roadway is paved. Any markings that get covered by the paving operation will be reestablished as directed by the Engineer at the Contractor’s expense. The Contractor will be responsible for marking out those exact locations.

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of PCC concrete surfacing as directed by the Engineer. Tabs will be offset 6-inches from the location shown for permanent pavement markings. Centerline will be double yellow lines with tabs spaced at 5’ the entire project length.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

No adjustment in the contract unit price for “Temporary Pavement Marking” will be made because of a variation in quantities.

TEMPORARY RAISED PAVEMENT MARKERS

Temporary raised pavement markers will be used for crossover lane closure in accordance with standard plate 634.66 to mark the centerlines.

Temporary raised pavement markers will be attached to the roadway surface with a flexible non-permanent bituminous adhesive capable of being removed from the roadway surface or with an adhesive approved by the Engineer.

All costs to furnish, install, replace if necessary, and remove the markers will be incidental to the contract unit price per mile for “Temporary Pavement Marking”.

Route No.	Temporary Pavement Marking	Length	
	Description	Feet	Miles
I90 WB&EB	Two-Way Traffic - Tangent Section Edgeline (2 Sets)	9,600	1.82
I90 WB&EB	Two-Way Traffic - Tangent Section Centetline (2 Sets)	9,600	1.82
I90 WB&EB	Crossover - Entering Taper/Exiting Taper (2 Sets)	9,000	1.70
	Total	28,200	5.34

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Hanson & McCook County Sheriffs and local emergency response entities to the meeting.

The Contractor will assist to maintain traffic as required by these plan notes and as agreed to at that meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to modify messages on portable changeable message signs or relocate portable changeable message signs, and to provide flaggers to direct or detour traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered and additional portable signs provided.

No additional payment will be made for the modification of portable changeable message sign messages or the relocation of portable changeable message signs. Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Flaggers will be paid for at the contract unit price per hour for “Flagging”.

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 will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

TUBULAR MARKERS

The color of the tubular markers on centerline will be predominately orange. The color of the tubular markers installed on the shoulders will be predominately white. The white tubular markers will be installed 2.0 feet from the existing edge line at intervals of approximately 480 feet.

All tubular markers will be a minimum of 28 inches in height. The base of the tubular marker should be attached to the roadway surface with a flexible non-permanent bituminous adhesive capable of being removed from the roadway surface after use. The pin used to connect the marker to the base will be of a type that will not puncture a vehicle tire if it should become dislodged from the base.

All costs for furnishing, installing, maintaining, and removing the tubular markers will be incidental to the contract unit price per each for “Tubular Marker”.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 65	4	48" x 60"	20.0	80.0
R2-1	SPEED LIMIT 80	4	48" x 60"	20.0	80.0
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-6aP	FINES DOUBLE (plaque)	4	36" x 24"	6.0	24.0
R4-1	DO NOT PASS	8	36" x 48"	12.0	96.0
R4-2	PASS WITH CARE	2	36" x 48"	12.0	24.0
R4-7	KEEP RIGHT (symbol)	4	36" x 48"	12.0	48.0
R5-1	DO NOT ENTER	8	36" x 36"	9.0	72.0
R11-2	ROAD CLOSED	4	48" x 30"	10.0	40.0
W1-4	REVERSE CURVE (L or R)	8	48" x 48"	16.0	128.0
W1-6	LARGE ARROW (one direction)	4	60" x 30"	12.5	50.0
W3-5	SPEED REDUCTION AHEAD 65 MPH	4	48" x 48"	16.0	64.0
W3-5	SPEED REDUCTION AHEAD 45 MPH	4	48" x 48"	16.0	64.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	6	48" x 48"	16.0	96.0
W6-3	TWO WAY TRAFFIC (symbol)	8	48" x 48"	16.0	128.0
W7-3aP	NEXT __ MILES (plaque)	4	36" x 30"	7.5	30.0
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	10	48" x 48"	16.0	160.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-5R	RIGHT LANE CLOSED 1/2 MILE	4	48" # 48"	16.0	64.0
W20-5L	LEFT LANE CLOSED 1/2 MILE	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT 2 MILES	8	48" x 24"	8.0	64.0
G20-2	END ROAD WORK	10	48" x 24"	8.0	80.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			
		1593.2			

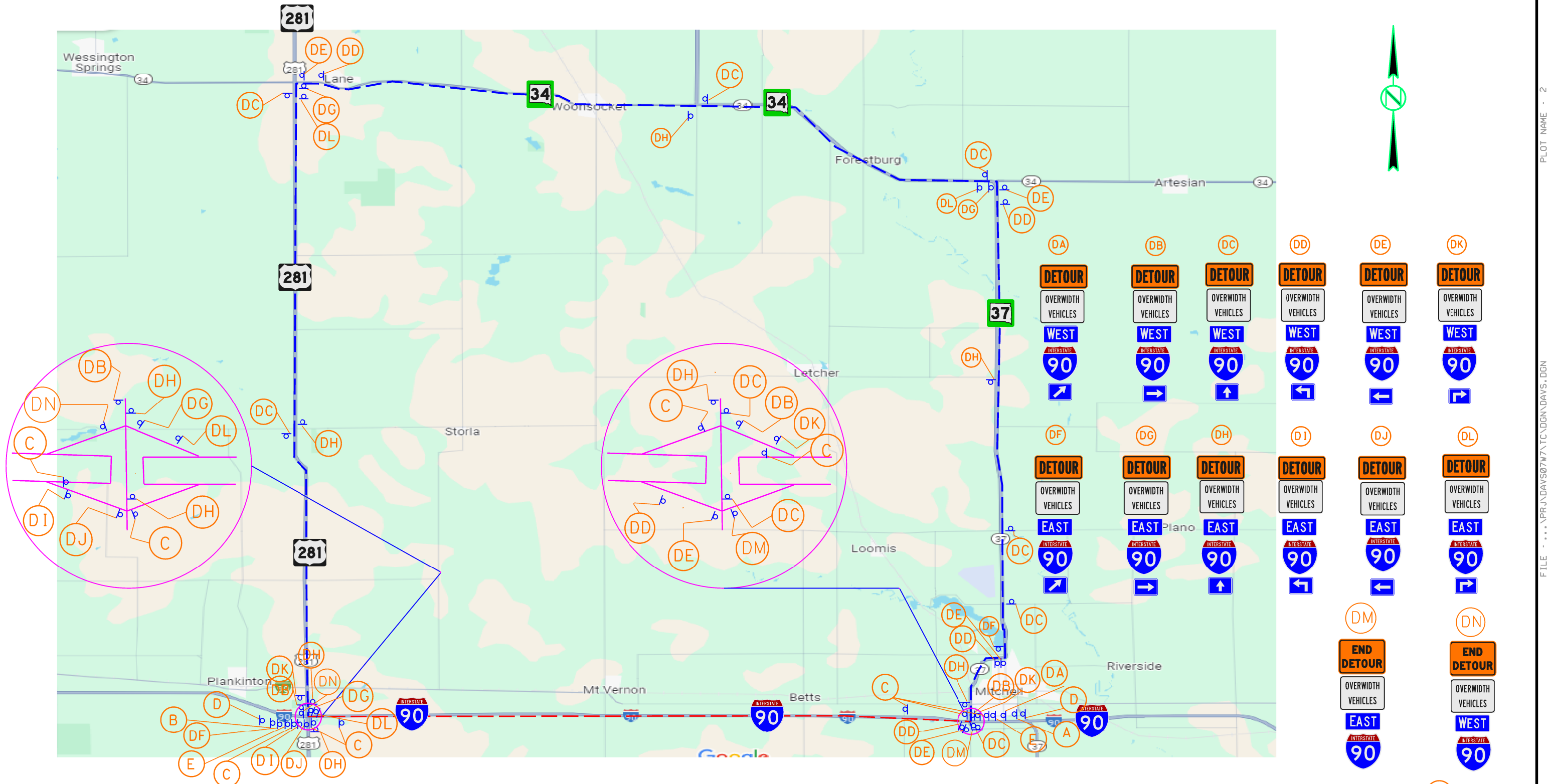
ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
M1-1	INTERSTATE ROUTE MARKER (2 digits)	40	24" x 24"	4.0	160.0
M3-2	DIRECTION MARKER - EAST	20	24" x 12"	2.0	40.0
M3-4	DIRECTION MARKER - WEST	20	24" x 12"	2.0	40.0
M4-8	DETOUR	40	24" x 12"	2.0	80.0
M4-8a	END DETOUR	2	24" x 18"	3.0	6.0
M5-1	ADVANCE TURN ARROW 90° (L or R)	10	21" x 15"	2.2	22.0
M6-2	DIRECTION ARROW - 45° Single Head (L or R)	6	21" x 15"	2.2	13.2
M6-3	DIRECTION ARROW - Vertical Single Head	6	21" x 15"	2.2	13.2
M6-4	DIRECTION ARROW - Horizontal Double Head	6	21" x 15"	2.2	13.2
SPECIAL	OVERWIDTH VEHICLES	40	42" x 24"	7.0	280.0
SPECIAL	WIDTH RESTRICTION 12 FT MAX I90 WEST USE EXIT 330	2	120" x 66"	55.0	110.0
SPECIAL	WIDTH RESTRICTION 12 FT MAX I90 EAST USE EXIT 310	2	120" x 66"	55.0	110.0
SPECIAL	NO VEHICLES OVER 12 FT WIDE	2	132" x 36"	33.0	66.0
SPECIAL	VEHICLES OVER 12 FT WIDE EXIT HERE	6	120" x 54"	45.0	270.0
SPECIAL	WIDTH RESTRICTION 12 FT MAX 1 MILE AHEAD	2	156" x 96"	104.0	208.0
		CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT			
		1431.6			

TRAFFIC CONTROL OVERWIDTH DETOUR SIGNING

STATE OF SOUTH DAKOTA	PROJECT PT 0907(89)317	SHEET C5	TOTAL SHEETS C9
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Plotting Date: 03/13/2025



PROJECT - ---
DETOUR ROUTE - ---

DETOUR SIGNS WILL BE SPACED 100 - 150' FROM OTHER EXISTING SIGNS.
DETOUR SIGNS WILL NOT OBSCURE EXISTING SIGNS.

C

NO VEHICLES
OVER 12 FT WIDE

E

VEHICLES OVER
12 FT WIDE
EXIT HERE

A

WIDTH RESTRICTION
12 FT MAX
WEST
USE EXIT 330

B

WIDTH RESTRICTION
12 FT MAX
EAST
USE EXIT 310

D

WIDTH RESTRICTION
12 FT MAX
1 MILE AHEAD
USE DETOUR ROUTE

PLOT SCALE - 1:9498.36

PLOTTED FROM - TRM113318

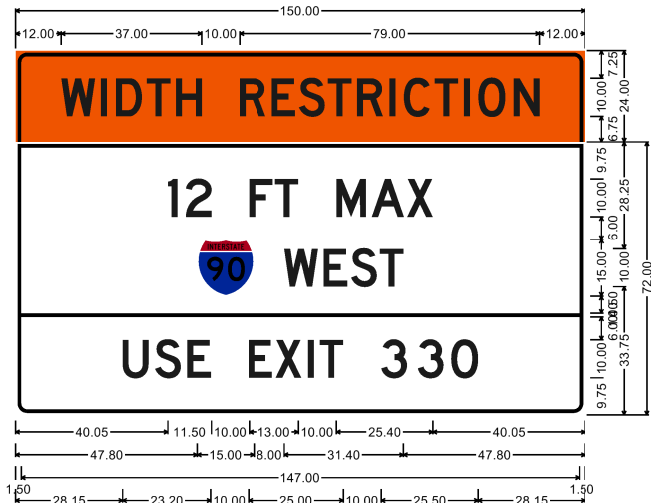
PLOT NAME - 2

FILE - ... \PRJ\DAVS07\7\TC\DN\DAVS.DGN

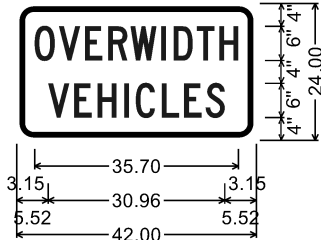
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PT 0907(89)317	C6	C9

Plotting Date: 03/13/2025

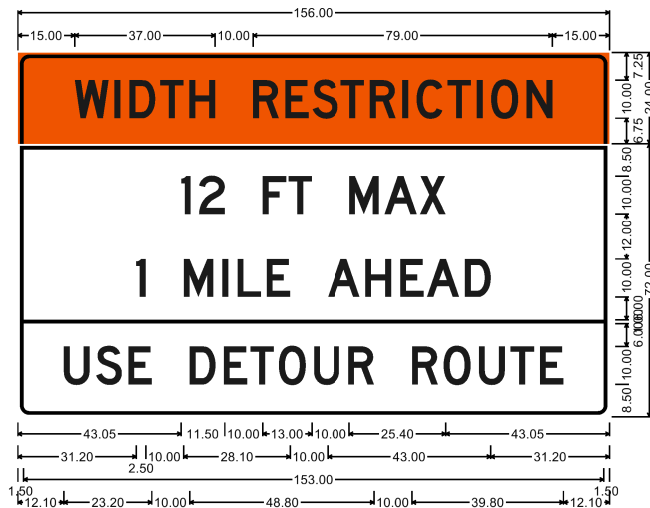
OVERWIDTH SIGN DETAILS



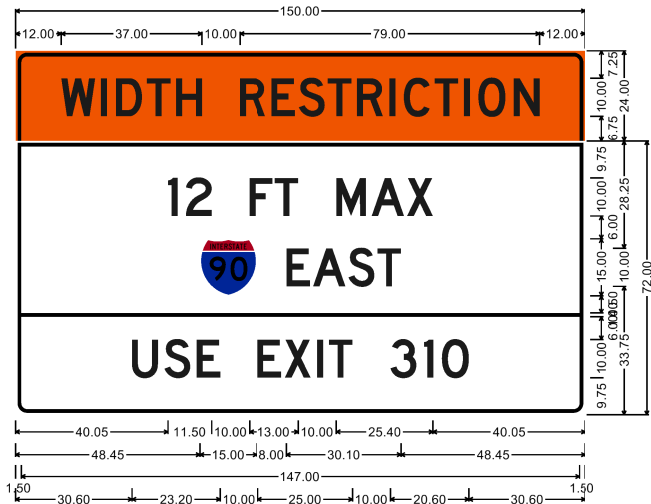
3.00" Radius, 1.00" Border, 0.50" Indent, Black on Orange;
"WIDTH RESTRICTION", D 2K;
3.00" Radius, 1.00" Border, 0.50" Indent, Black on White;
"12 FT MAX", D 2K; "WEST", D 2K; "USE EXIT 330", D 2K;



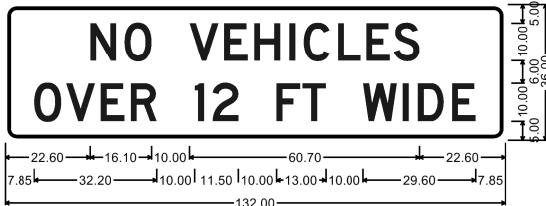
1.00" Border, 0.50" Indent, Black on White;
"OVERWIDTH", C 2K;
"VEHICLES", C 2K;



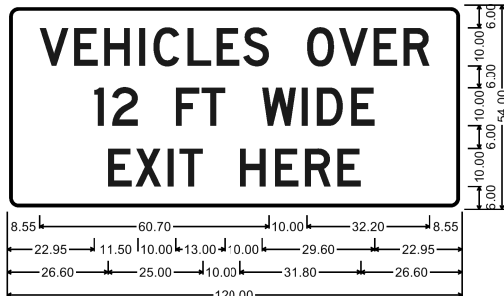
3.00" Radius, 1.00" Border, 0.50" Indent, Black on Orange;
"WIDTH RESTRICTION", D 2K;
3.00" Radius, 1.00" Border, 0.50" Indent, Black on White;
"12 FT MAX", D 2K; "1 MILE AHEAD", D 2K; "USE DETOUR ROUTE", D 2K;



3.00" Radius, 1.00" Border, 0.50" Indent, Black on Orange;
"WIDTH RESTRICTION", D 2K;
3.00" Radius, 1.00" Border, 0.50" Indent, Black on White;
"12 FT MAX", D 2K; "EAST", D 2K; "USE EXIT 310", D 2K;



1.00" Border, 0.50" Indent, Black on White;
"NO VEHICLES", D 2K; "OVER 12 FT WIDE", D 2K;



1.00" Border, 0.50" Indent, Black on White;
"VEHICLES OVER", D 2K; "12 FT WIDE", D 2K;
"EXIT HERE", D 2K;

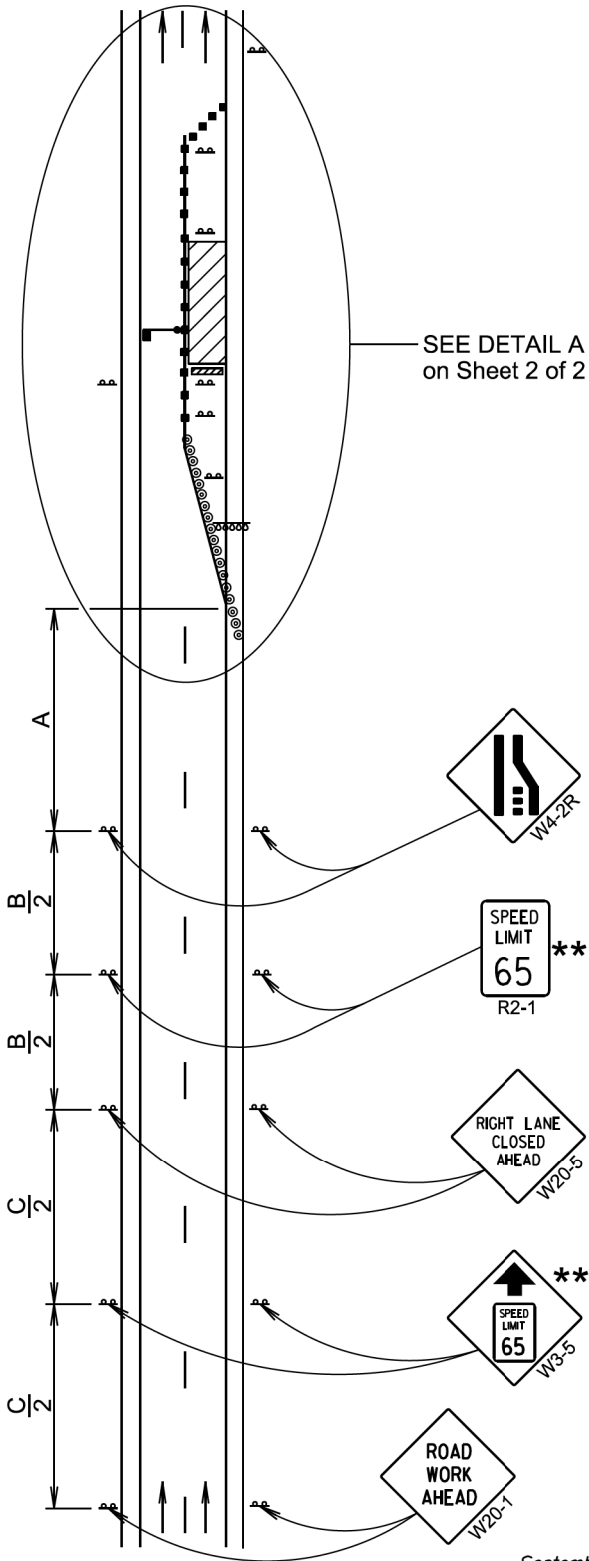
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
	(A)	(B)	(C)
70 - 80	1000	1500	2640

** 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.



September 22, 2021

Published Date: 2025

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WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

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	25	600
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 will be covered or removed when workers are not present.

Flagger (As Necessary)

◉ Reflectorized Drum

■ Channelizing Device

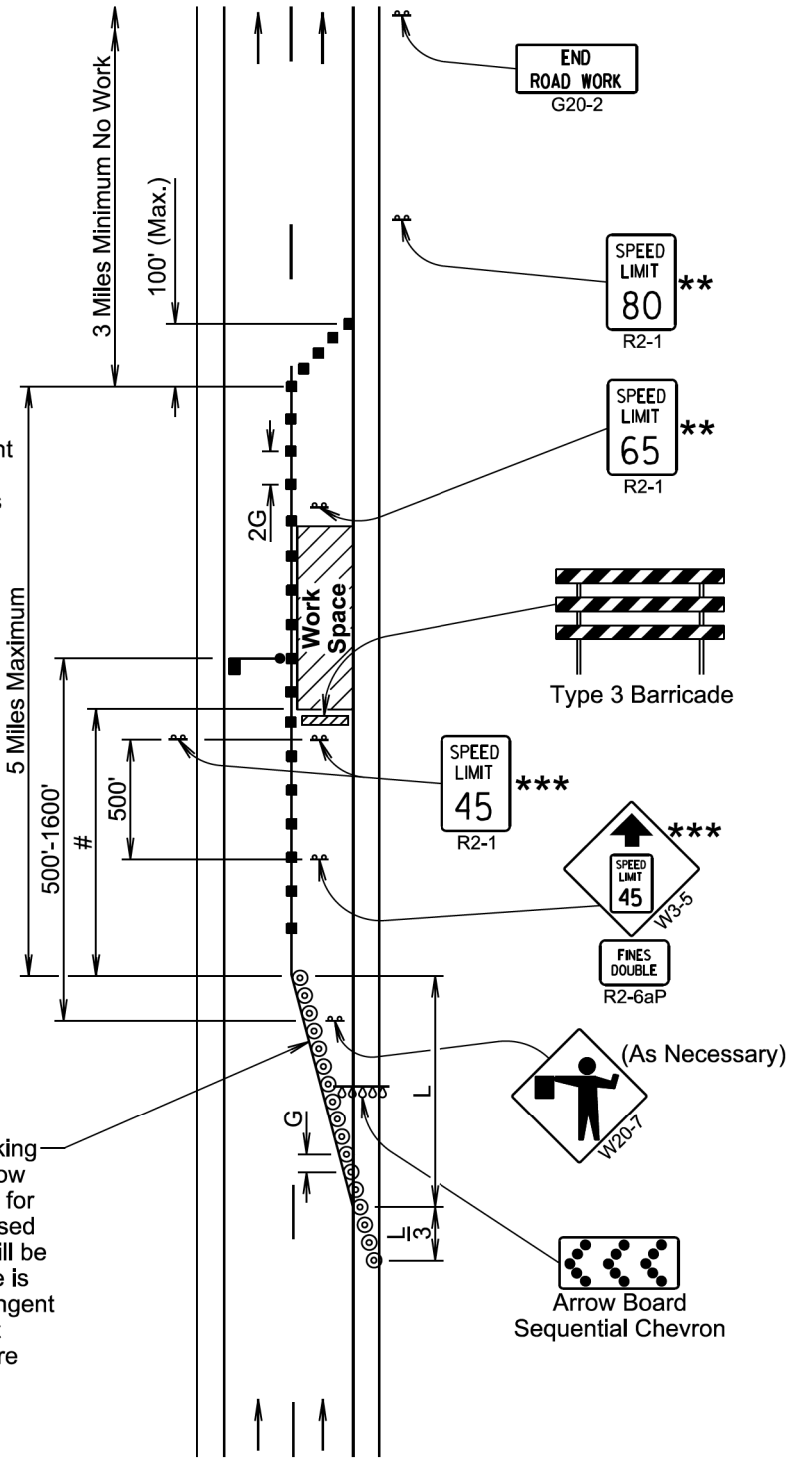
The Work Space will be a minimum of 500' from the end of the taper.

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

The channelizing devices will be 42" cones or drums.

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

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

September 22, 2021

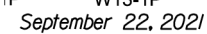
Published Date: 2025

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WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

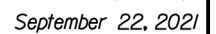
Sheet 2 of 2



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PLATE NUMBER
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Sheet 1 of 2



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