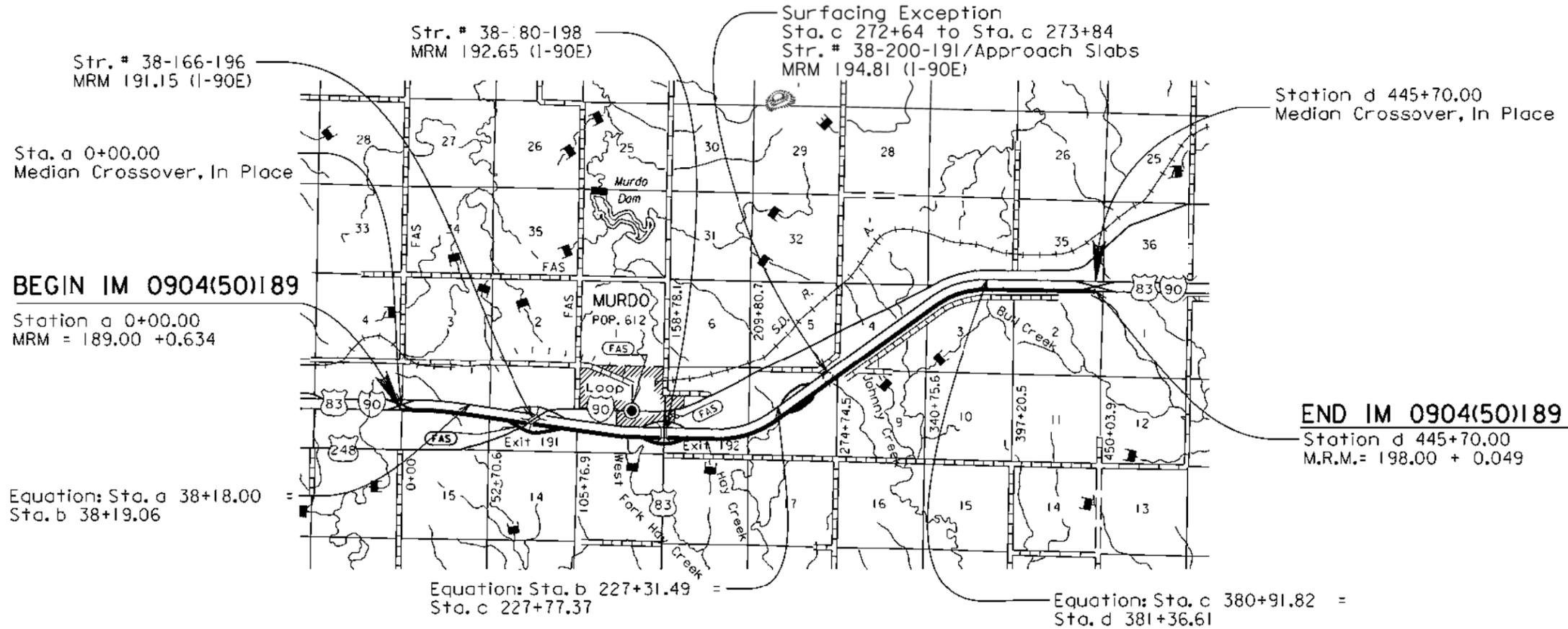


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0904(50)189	C1	C21

Plotting Date: 07/12/2016

# SECTION C: TRAFFIC CONTROL

- C1 General Layout with Index
- C2 thru C6 Estimate of Quantities & Notes
- C7 thru C9 Width Restriction Signage
- C10 thru C12 Width Restriction Deour Signage
- C13 thru C21 Special and Standard Plates



PLOT SCALE - 1:7520.02

PLOTTED FROM - TRW\INTJ9

PLOT NAME - 1

FILE - ... \FIRST REVIEW DESIGN\TILEC.DGN

## ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	480.0	Hour
634E0110	Traffic Control Signs	2,980.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	31	Each
634E0340	Temporary Raised Pavement Markers	19.0	Mile
634E0380	Tubular Marker	879	Each
634E0420	Type C Advance Warning Arrow Board	4	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	5,000	Ft
634E0620	Temporary Pavement Marking, Continuous 4" Edge Line	89,760	Ft
634E0630	Temporary Pavement Marking	7.8	Mile
634E1002	Detour Signing	1,335.4	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	4	Each

## TRAFFIC CONTROL SEQUENCE PLANNING

The contractor will submit a detailed schedule and sequence to the Engineer prior to the preconstruction meeting as described in the provisions.

The plans have been organized to aid in the guidance and requirements as they pertain to the various conditions and traffic control setups required for the project. Though notes may appear under a specific heading, they are to be applied to the project as a whole as per installation, maintenance, payment, standard plates, etc and where directed by the Engineer.

For the planning of the traffic control sequencing purposes, the Contractor has been allotted, to be used at his discretion, sufficient signage quantities to develop his sequence of operations as follows:

- One – Mobile Shoulder setup for off mainline road work
- One – Temporary Road Work closure for SD248 Asphalt patching
- Two – 5.0 mile lane closures for I-90 mainline work
- One - Two-Way setup for all traffic in WB lanes
- Two - Emergency Detour Layouts

The lane closures will be paid for once during their initial use on the project, regardless of the number of times they are moved by the Contractor.

The Contractor may utilize the above traffic control to best fit his planned sequence and operation. Sufficient traffic control devices have been allotted to be used and for the safe movement of the traveling public The Contractor may submit to the Department an alternative proposal if he finds alternatives that are not covered by these plans for consideration by the Department.

All work activities shall be conducted during daylight hours only, unless approved by the Engineer.

To accommodate traffic at Exit 192 On & Off ramps, the contractor will be required to install a block out at each ramp crossover location.

The Contractor is prohibited from using SD Highway 248 for loaded trucks during the I-90 construction unless prior written approval authorization is attained from the Engineer. The authorization will only be given for short segments associated with entering and exiting the plant site area.

For sequence planning purposes, the main portion of the project, which consists of the eastbound lanes of I-90 from MRM 189.634 to MRM 198.049 and the cold milling and asphalt concrete resurfacing of the EB ramps at Exit 191 will consist primarily of the following main activities. These tables are intended as a guide only to the Contractor to aid in setting up his sequence of operations and are not inclusive of all work activities:

### Traffic Control

Fixed Location Signs  
Overwidth Detour  
Emergency Closures  
Two-Way Traffic setup

### Structures

Transition Grading  
Guardrail Embankment  
Guardrail Installation

### Mainline

Cold Milling  
PCC Overlay  
Shoulder work to typical section  
Shoulder/Inslope Restoration  
Grinding of Median rumble strips  
Placement of Gravel Cushion  
Permanent Pavement Markings  
Permanent Sign Installation

### Miscellaneous

Exit 191 Ramp repairs  
Asphalt Patching SD248  
Permanent Pavement Markings SD248 thru Murdo  
Remove Ramp Crossovers  
Remove & Reset Roadway Lighting

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0904(50)189	C3	C21

## **MAINTENANCE OF TRAFFIC**

Traffic control shall be in accordance with Section 634 of the Specifications, and Plan Notes. Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

The Contractor shall designate an employee who will be available 24 hours/day, 7 days/week to be responsible for the maintenance of traffic. The person designated must have training and experience in the field of construction traffic control and be knowledgeable about the Manual on Uniform Traffic Control Devices (MUTCD). This person shall also have access and training to operate the portable changeable message boards that are on the project. The cost of the traffic control person shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous. The Engineer must approve the employee selected. The name and phone number of person(s) shall be provided to the SD Department of Transportation (842-0810), SD Highway Patrol (Pierre State Radio (773-3536) and Jones County Sheriff Department (669-7111).

Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, 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 or signs damaged or lost shall be replaced by the Contractor at no cost to the State.

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 ground in rural areas. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location supports, unless approved by the Engineer. If the duration is more than 3 days the signs shall meet the minimum mounting heights of 5 foot for rural areas and 7 foot for urban areas.

Additional standard signs, as ordered by the Engineer, shall be available within 2 working days. Failure to provide signs within this time limit will result in Liquidated Damages being assessed in the amount of \$400.00 per Calendar Day. Payment for additional signs will be paid using the contract unit price per square foot for Traffic Control.

Channelizing devices in a series shall be of the same type. Channelizing drums shall be of a two part construction with breakaway bases. The Contractor may use 42" Grabber Cones for longitudinal delineation only. All tapers and lane transitions shall be accomplished utilizing drums in accordance with the MUTCD.

All traffic control devices shall be in "like new" condition.

All fixed location signs and applicable traffic control devices shall be installed or in place prior to the start of work or mobilization of equipment within the traveled way.

Non-applicable signing shall be covered or removed during periods of in-activity. Improper covering will result in Liquidated Damages being assessed in the amount of \$400 per calendar day. All costs to do this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

A shadow vehicle, equipped with a flashing amber light and a ROAD MACHINERY AHEAD sign prominently displayed, shall be used in advance of landscaping, clean up and other mobile work activities.

The Contractor shall furnish, install and maintain TRUCK CROSSING signs. The exact number and location will be determined on construction.

The TRUCK CROSSING signs shall be displayed at all times when haul vehicles are hauling material. When the truck haul condition no longer exists, the signs shall be covered or removed from view. Hinged signs may be used. The exact number and location of "Truck Crossing" signs will be determined on construction.

The use of interstate maintenance crossovers will not be permitted except when both the left (inside) lanes for each directional set of lanes on the same section of interstate are closed.

The four (4) Type C Advance Warning Arrow Boards/Panels will be paid for only once during initial use regardless the number of times used on the project in single lane closures.

Material stockpiles, vehicles, and equipment not protected by movable concrete barrier shall be marked by Type 3 barricades. Traffic sight distances shall not be obstructed and located as far from the traveled way as feasible.

## **TRAFFIC CONTROL TWO-WAY TRAFFIC**

The Contractor's vehicles and equipment will not be allowed to use the maintenance crossovers at any time during the two-way traffic closure of the project. The crossovers located within the project limits shall be blocked off by the use of four (4) Drums. The Contractor will not be allowed to enter or exit the two way traffic section via the maintenance crossovers. Interchange ramps must be used.

The contractor shall close the eastbound on and off ramps at Exit 191 prior to the installation of the two-way traffic control being in place on the westbound lanes. The contractor shall close the top of each ramp with 4 double sided 8' -Type 3 Barricades. A Road Closed sign (R11-2 shall also be installed at the top of each closure.

To accommodate traffic at Exit 192 On & Off ramps, the contractor will be required to install a block out at each ramp crossover location.

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**TRAFFIC CONTROL TWO-WAY TRAFFIC CONTINUED**

The contractor shall close the eastbound on and off ramps at the eastbound weigh scale site prior to the installation of the two-way traffic control being in place on the westbound lanes. The contractor shall close each ramp with 4 double sided 8' -Type 3 Barricades. A Road Closed sign (R11-2) shall also be installed at the top of each closure.

The lanes of the interstate that have been closed to traffic shall not be opened to traffic until the Contractor has installed all of the permanent pavement marking paint. The permanent pavement markings shall include the edge lines, centerline, gore areas and ramp edge lines at Exits 191 and Exit 192 for the lanes that were closed to traffic.

During the removal or construction of temporary entrances, temporary exit ramps, or work in the median the Contractor shall close both the Eastbound and Westbound passing lanes.

In conjunction with the TWO WAY TRAFFIC SYMBOLS installed at 2 mile intervals on the two-way traffic section, the Contractor shall install a DO NOT PASS warning sign at 2 mile intervals on the two-way traffic section.

**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 an accident, hazardous materials spill, or similar event.

The contractor shall set up a meeting, a minimum of one week, prior to the installation of the two-way traffic zone. The contractor will invite the Department of Transportation, the South Dakota Highway Patrol, Jones County Sheriff, and Jones County Emergency Services. The Engineer will conduct the meeting.

The contractor will assist in maintain traffic as required by these plan notes and as agreed to at the meeting.

**EMERGENCY CLOSURE SITES EXIT 183 and EXIT 201**

The Contractor shall provide the necessary certified flagmen to direct traffic at Exit 183 EB and Exit 201 WB in the event that I90 must be closed due to an emergency. In any incident, it is the Contractor's responsibility to furnish sufficient personnel on short notice to address emergency flagging and signing needs 24 hours per day, 7 days per week. Flagging and the use of the Contractor's traffic control devices shall be paid for in accordance with the appropriate contract bid item.

The Contractor is responsible for furnishing, installing, and maintaining all traffic control devices for this closure, as shown on the special plan sheet. These devices shall be located at the referenced locations prior to the diverting interstate traffic onto the SD HWY 248. All sign and channelizing devices will have their locations marked and materials in place along the shoulder of the road for rapid employment if needed. Traffic control devices will be paid for at the time they are located at their respective sites.

If the Contractor's contact person for emergency operations is **not** the same individual identified as the employee whose only responsibility is the maintenance of traffic (see previous Maintenance of Traffic notes above), then another individual's name and cellular telephone number shall be given to the Engineer and Law enforcement

**CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGNS**

Portable Message signs will be utilized as follows:

2 – Two-Way Traffic setup from MRM 189 to MRM 198\*\*

\*\*The portable message signs leading into the two-way traffic closures shall be programmed with the following messages for use during normal traffic flow:

REDUCED SPEED  
TWO WAY TRAFFIC

During heavy traffic or during incident management:

SLOW TRAFFIC AHEAD  
BE PREPARED TO STOP

Portable message signs which are not being utilized, due to the Contractor's Sequence of Operations, shall be used as directed by the Engineer.

The portable message sign shall be programmed to use standard abbreviations and wording as described in the MUTCD or as directed by the Engineer.

The portable & changeable message signs shall be paid for at the contract unit price per each for CONTRACTOR FURNISHED PORTABLE MESSAGE SIGN. This payment shall be full compensation for furnishing, operating, and maintaining the signs for the duration of the project.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0904(50)189	C5	C21

**REMOVE PAVEMENT MARKING**

Existing pavement marking which conflicts with the desired traffic patterns detailed in the traffic control lay outs in the plans shall be removed by the Contractor unless otherwise shown.

Cost for removing pavement marking shall be incidental to the contract unit price per foot for Remove Pavement Marking, 4" or Equivalent.

**TEMPORARY RAISED PAVEMENT MARKERS**

Temporary Raised pavement Markers shall be used on the mainline centerline, closure tapers, ramp detours and median crossovers. Raised pavement markers will not be used for the white temporary edgeline in the two-way traffic section.

Raised Pavement Markers shall be attached to the roadway surface with a bituminous adhesive capable of being removed from the roadway surface.

Payment will be provided for Raised Pavement Markers used for the 4" equivalent temporary pavement marking lines on centerline. Cost for furnishing, installing, maintaining (including cleaning and replacing, if necessary), removing markers and bituminous adhesive shall be included in the contract unit price per mile (4" equivalent) for Temporary Raised Pavement Markers.

**TUBULAR MARKERS**

At Entrance Ramp and Exit Ramp locations, additional Tubular Markers shall be installed at 20' spacing from the gore point to the end of the ramp taper or 600' past the opposite entrance ramp if ramp acceleration/deceleration lands exists as shown in the plans plates.

At the westbound weigh station pullout and at the end of each crossover where two-way traffic begins, additional Tubular Markers shall be installed at 20' spacing for 600'.

Shoulder marking shall be installed on the shoulders of the westbound lanes on Interstate 90 from the beginning of the lane closure taper throughout the length of the two-way traffic, extending to the lane reduction. This marking shall consist of white tubular markers at a spacing of 500'. The white tubular markers shall be installed a minimum of 2' laterally from the edge of the driving lane, or as approved by the Engineer.

Cost for furnishing, installing, maintaining (including cleaning, if necessary), removing markers and bituminous adhesive shall be incidental to the contract unit price per Each for Tubular Marker.

**TEMPORARY PAVEMENT MARKING, CONTINUOUS EDGELINE**

The Contractor shall paint the yellow edgeline white and repaint the existing white edgeline white within the two-way traffic section when two-way traffic is maintained on the westbound lanes.

Cost for Temporary Pavement Marking, Continuous 4" Edge Line is included in the contract unit price per foot for Temporary Pavement Marking, Continuous 4" Edge Line.

Temporary Pavement Markings shall be applied at the rates as specified in the plans. The number of temporary lines has been computed as follows for information only:

**TEMPORARY PAVEMENT MARKING**

Temporary flexible vertical markers ( tabs) may be used on the interchange crossroad and ramps during resurfacing. If used, the Contractor shall remove and dispose of them after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall be accomplished within one week of completion of the Permanent Pavement Marking.

Pavement marking on the SD248 patching work shall be completed prior to establishing two-way traffic on I-90. This pavement marking on SD248 shall be installed on all patches and will include the installation of white edge lines. Cost for placing the pavement marking on SD248 shall be included in the contract unit bid price per Mile for Temporary Pavement Marking.

**STURGIS RALLY TRAFFIC MONITORS**

During the Sturgis Rally and with two-traffic, the contractor shall provide two traffic monitors the weekend prior to rally and the closing weekend of the rally. The monitors shall be on site from 8am to 8pm both Saturday and Sunday of the respective weekends. These monitors will have sole duty to maintain and monitor traffic flow through the two way traffic area. They shall maintain traffic control devices, emergency closures, change and update portable message boards, remove debris, flag when necessary, and work closely with emergency services as needed. Payment for these monitors shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

### ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD				EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD		36"	3.9		1	36"	3.9	3.9
R2-1	SPEED LIMIT 45		24" x 30"	5.0		2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 65		24" x 30"	5.0		11	36" x 48"	12.0	132.0
R2-1	SPEED LIMIT 80		24" x 30"	5.0		4	36" x 48"	12.0	48.0
R2-6aP	FINES DOUBLE (plaque)		24" x 18"	3.0		10	36" x 24"	6.0	60.0
R4-1	DO NOT PASS		24" x 30"	5.0		15	36" x 48"	12.0	180.0
R4-7	KEEP RIGHT (symbol)		24" x 30"	5.0		1	36" x 48"	12.0	12.0
R5-1	DO NOT ENTER		30" x 30"	6.3		1	36" x 36"	9.0	9.0
R11-2	ROAD CLOSED		48" x 30"	10.0		5	48" x 30"	10.0	50.0
W1-4	REVERSE CURVE (L or R)		48" x 48"	16.0		3	48" x 48"	16.0	48.0
W1-6	LARGE ARROW (one direction)		48" x 24"	8.0		2	60" x 30"	12.5	25.0
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0		48" x 48"	16.0	
W3-5	SPEED REDUCTION AHEAD ( _ MPH)		48" x 48"	16.0		10	48" x 48"	16.0	160.0
W4-1	MERGE (symbol)		48" x 48"	16.0		3	48" x 48"	16.0	48.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)		48" x 48"	16.0		18	48" x 48"	16.0	288.0
W4-3	ADDED LANE (symbol)		48" x 48"	16.0		1	48" x 48"	16.0	16.0
W5-4	RAMP NARROWS		48" x 48"	16.0		1	48" x 48"	16.0	16.0
W6-3	TWO WAY TRAFFIC (symbol)		48" x 48"	16.0		15	48" x 48"	16.0	240.0
W7-3aP	NEXT _ MILES (plaque)		36" x 30"	7.5		12	36" x 30"	7.5	90.0
W8-6	TRUCK CROSSING		48" x 48"	16.0		2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)		30" x 30"	6.3		19	30" x 30"	6.3	119.7
W13-4P	ON RAMP (plaque)		36" x 36"	9.0		1	36" x 36"	9.0	9.0
W16-2P	_ FEET (supplemental distance plaque)		30" x 24"	5.0		1	30" x 24"	5.0	5.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0	25	48" x 48"	16.0	400.0
W20-2	DETOUR AHEAD		48" x 48"	16.0		6	48" x 48"	16.0	96.0
W20-3	ROAD CLOSED AHEAD		48" x 48"	16.0		1	48" x 48"	16.0	16.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0		48" x 48"	16.0	
W20-5	LEFT or RIGHT LANE CLOSED AHEAD		48" x 48"	16.0		23	48" x 48"	16.0	368.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0	4	48" x 48"	16.0	64.0
W21-5	SHOULDER WORK		48" x 48"	16.0		3	48" x 48"	16.0	48.0
SPECIAL	EXT 192 with 45° ARROW (3 digits)					2	60" x 48"	20.0	40.0
SPECIAL	EXT 192 1000 FT					1	60" x 48"	20.0	20.0
G20-1	ROAD WORK NEXT 9 MILES		36" x 18"	4.5		5	48" x 24"	8.0	40.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0	9	48" x 24"	8.0	72.0
		<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 201.0</b>				<b>EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT 2779.6</b>			

#### TYPE 3 BARRICADES

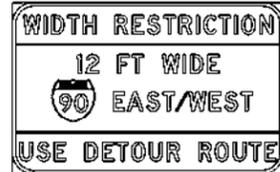
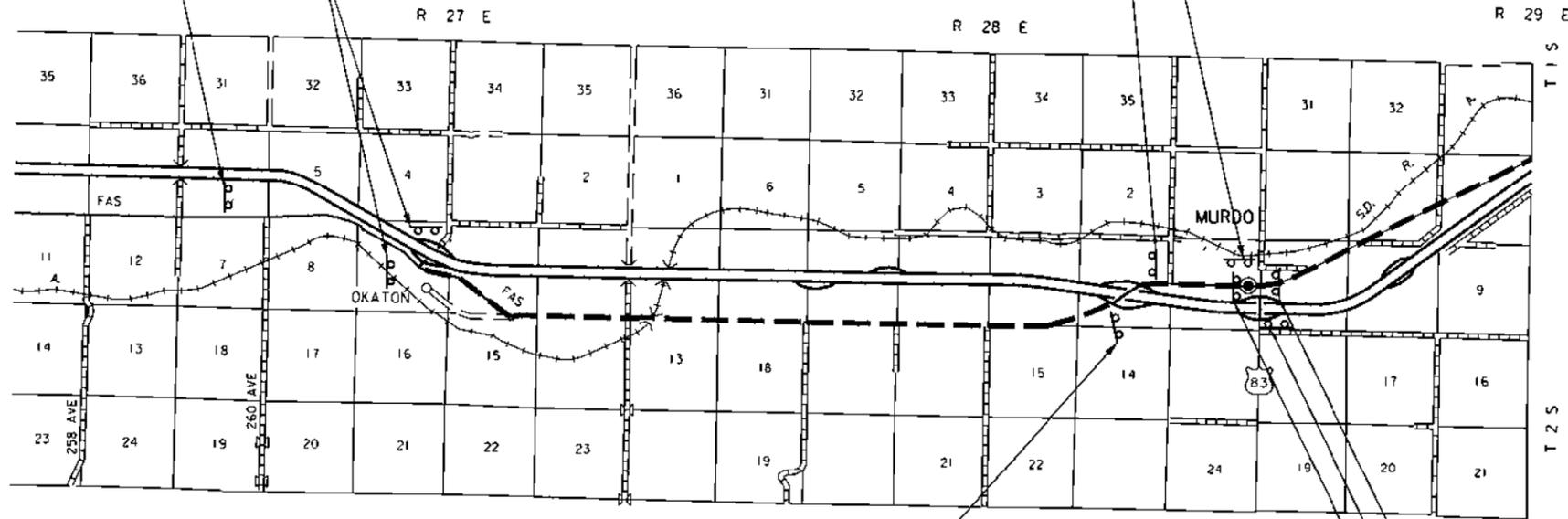
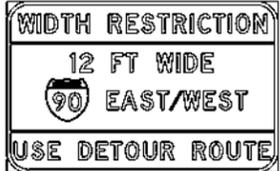
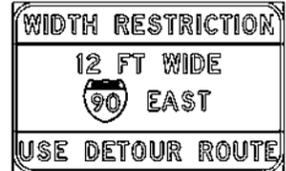
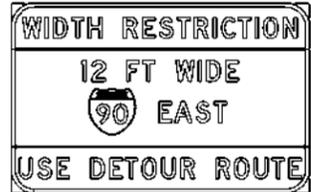
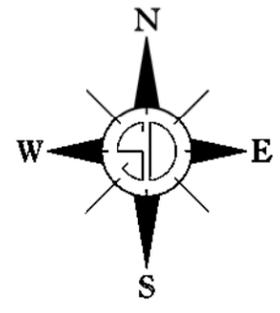
ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	31 Each

#### ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Advance Warning Arrow Board	4 Each

Plotting Date: 08/08/2016

**GUIDES FOR TRAFFIC CONTROL DEVICES  
SHOWING WIDTH RESTRICTION SIGNS  
WESTBOUND EXIT 201 TO EXIT 183  
EASTBOUND EXIT 183 TO EXIT 212**



NOTE:  
SIGN LOCATIONS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.

THE WIDTH RESTRICTION SIGNS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR DETOUR SIGNING

PLOT SCALE - 1:3,84244

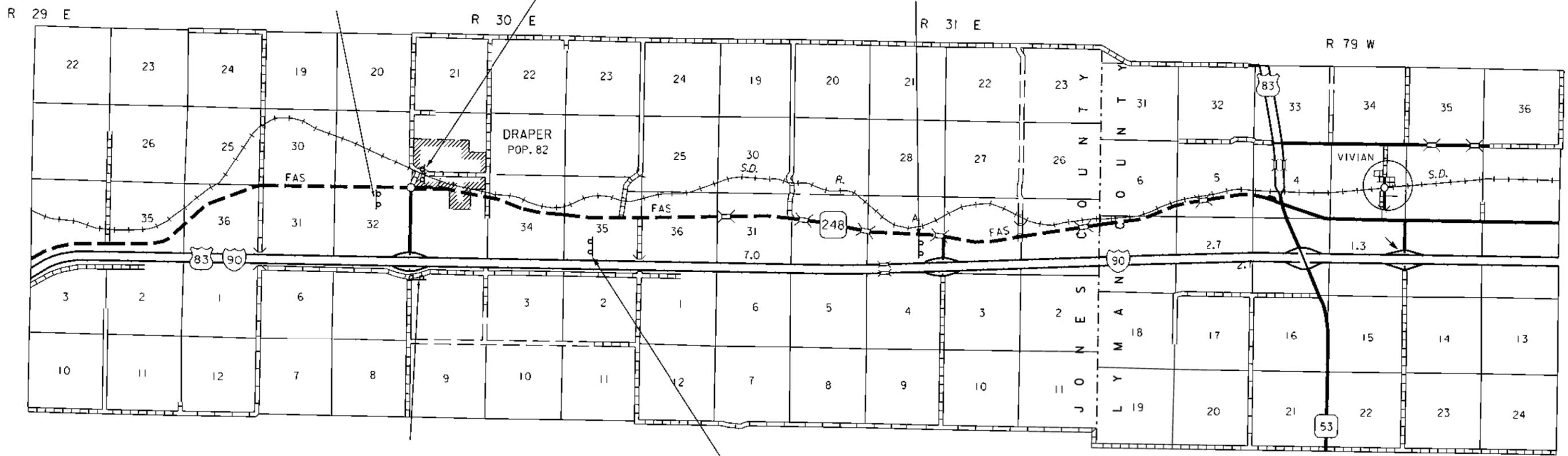
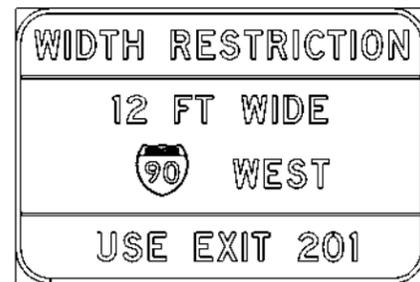
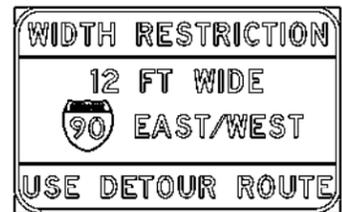
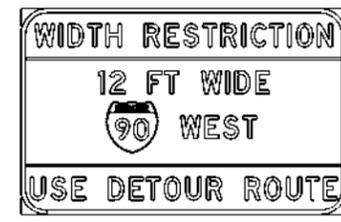
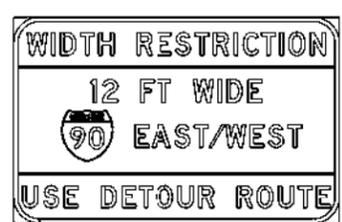
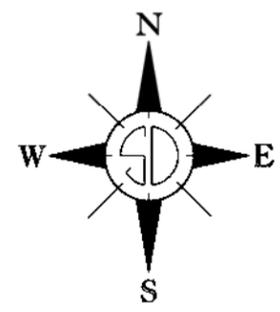
PLOTTED FROM - TRW\INTJ9

PLOT NAME - 1

FILE - ... \ICI WITH BRAD.DGN

Plotting Date: 07/13/2016

**GUIDES FOR TRAFFIC CONTROL DEVICES  
SHOWING WIDTH RESTRICTION SIGNS  
WESTBOUND EXIT 201 TO EXIT 183  
EASTBOUND EXIT 183 TO EXIT 212**



**NOTE:**  
SIGN LOCATIONS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.  
THE WIDTH RESTRICTION SIGNS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR TEMPORARY SIGNING

PLOT SCALE - 1:3,200

PLOTTED FROM - TRW\INTJ9

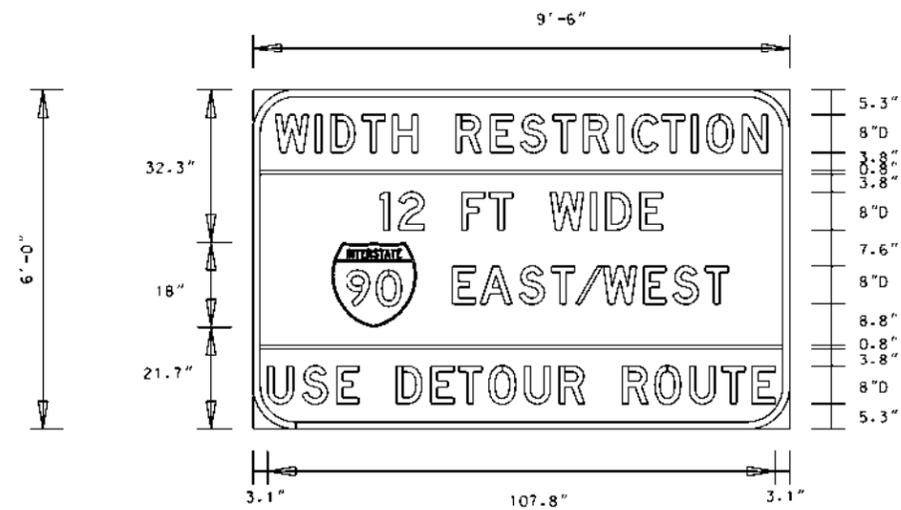
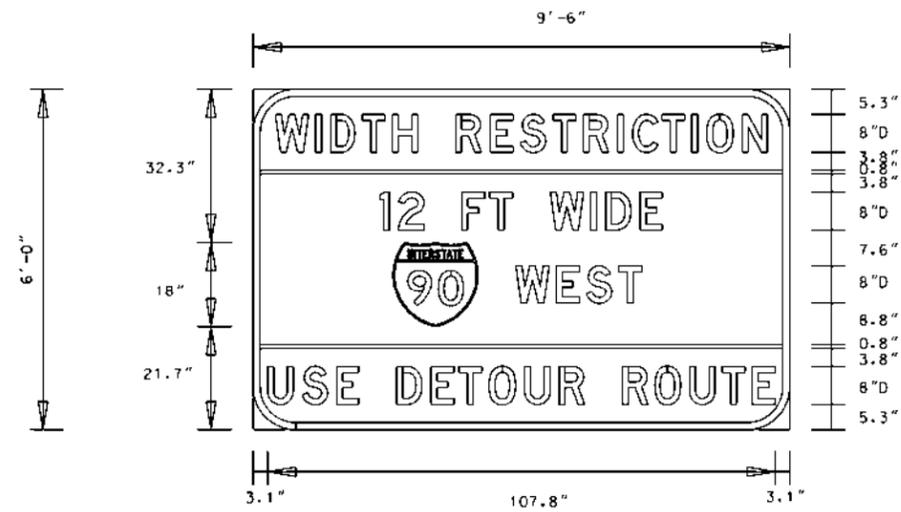
PLOT NAME - 1

FILE - ... \VIC2 WITH BRAD.DGN

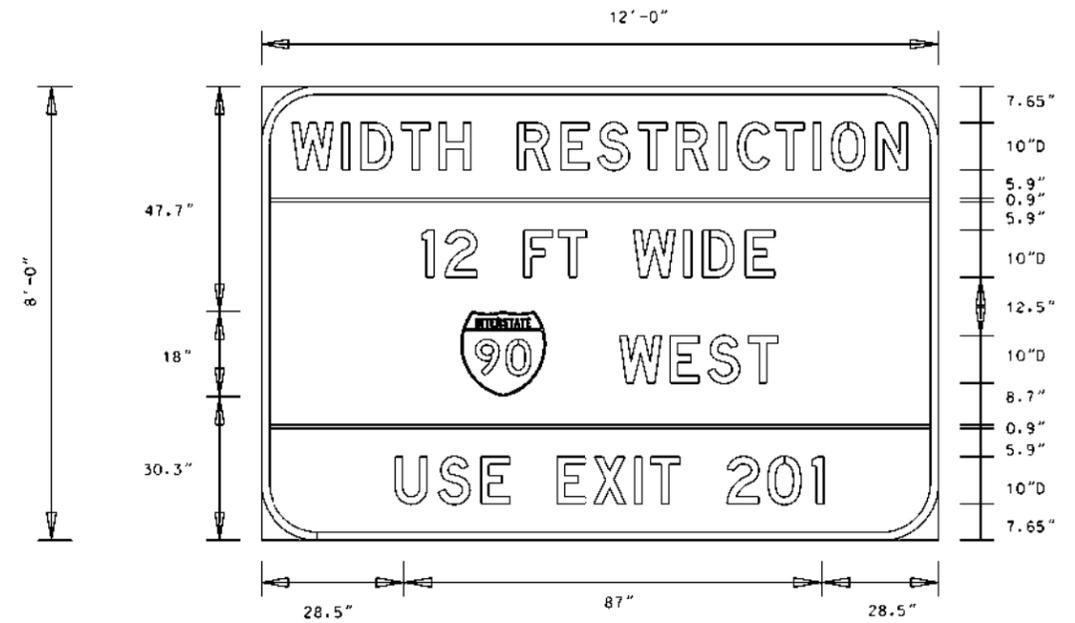
# WIDTH RESTRICTION SIGN DESIGN

STATE OF SOUTH DAKOTA	PROJECT IM 0904(50)189	SHEET NO. C9	TOTAL SHEETS C21
Plotting Date: 07/12/2016			

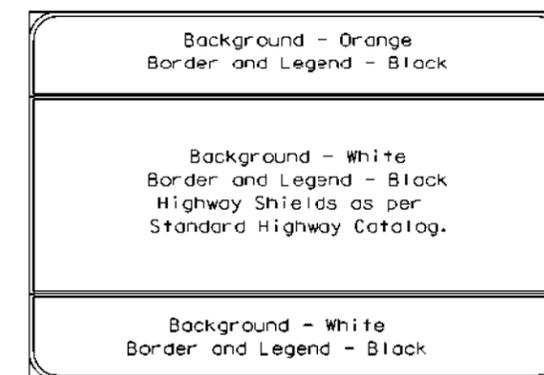
## STATE HIGHWAYS



## INTERSTATE



Two signs are required, one reading EAST - USE EXIT 183, and one as shown.



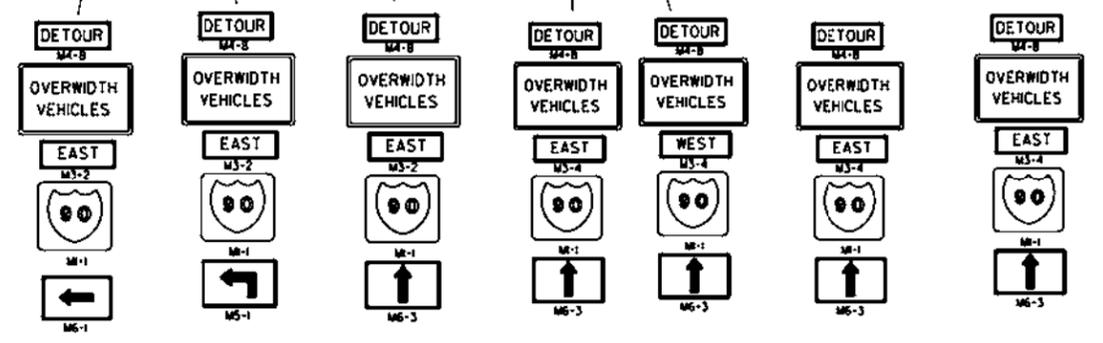
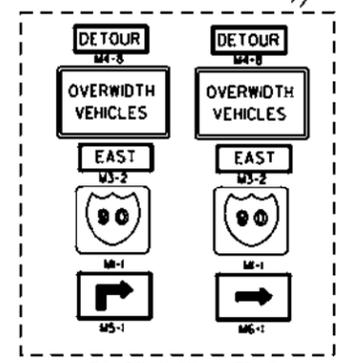
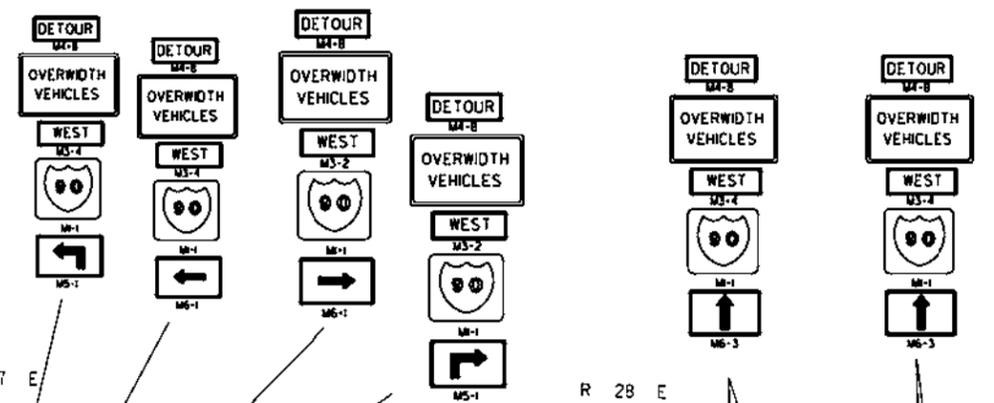
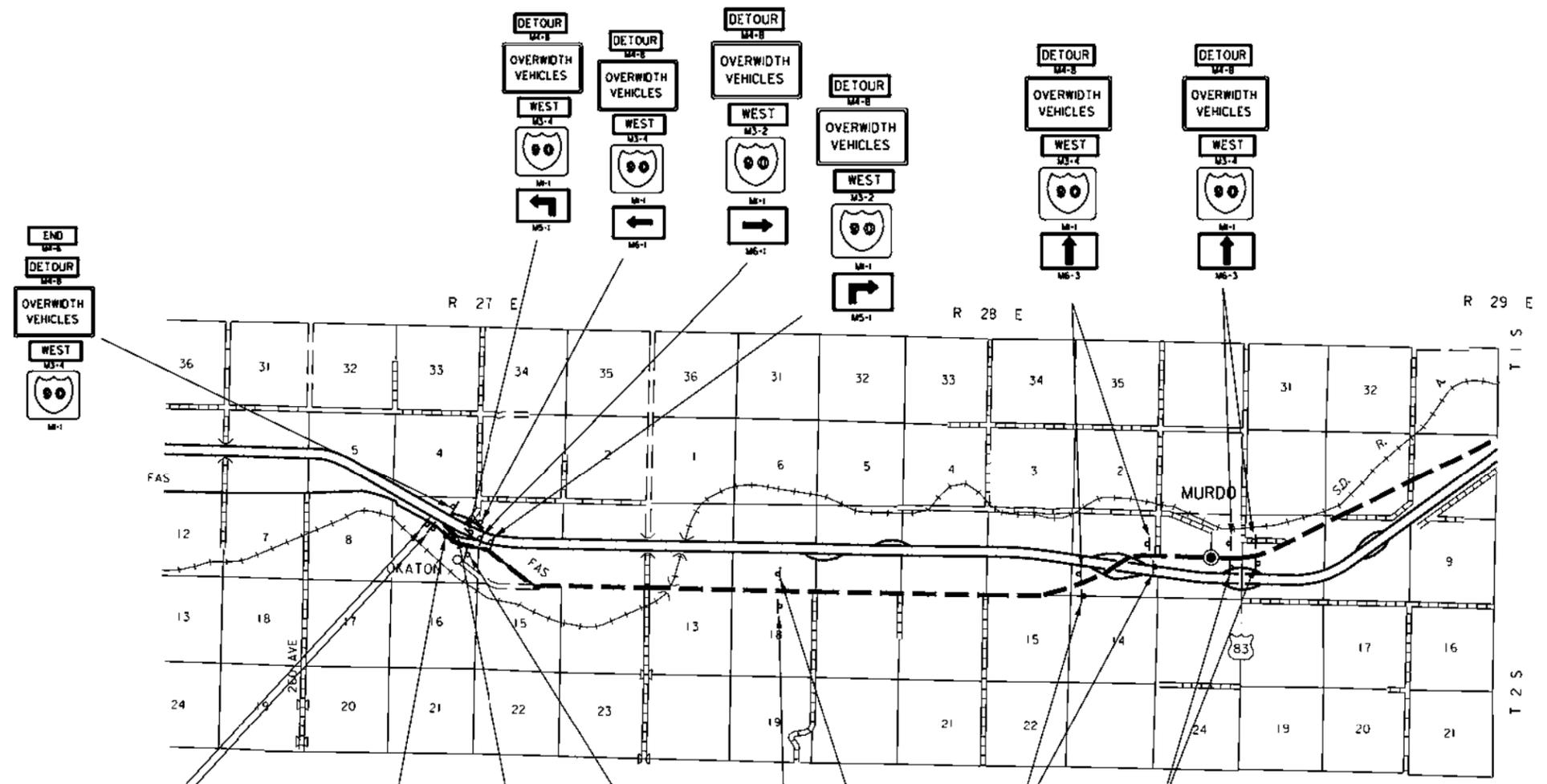
Typical Sign Layout for Overwidth Warning Signs

EXIT 183 two signs around interchange roads are to read EAST  
 EXIT 191 two signs around interchange roads are to read EAST/WEST  
 EXIT 192 four signs around interchange roads are to read EAST/WEST  
 EXIT 201 two signs around interchange roads are to read WEST & one sign  
 is to read EAST/WEST.

THE WIDTH RESTRICTION SIGNS SHALL BE PAID FOR AT THE  
 CONTRACT UNIT PRICE PER SQUARE FOOT FOR DETOUR SIGNING

Plotting Date: 07/12/2016

**GUIDES FOR TRAFFIC CONTROL DEVICES  
SHOWING WIDTH RESTRICTION DETOUR SIGNS  
WESTBOUND EXIT 201 TO EXIT 183 VIA SDHWY 248  
EASTBOUND EXIT 183 TO EXIT 212 VIA SDHWY248**



TO BE INSTALLED ON EASTBOUND EXIT 183 OFF RAMP

NOTE: SIGN LOCATIONS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.

PLOT SCALE - 1:25516.3

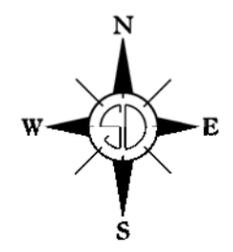
PLOTTED FROM - TRW\INTJ9

PLOT NAME - 1

FILE - ... \TC4.DGN

Plotting Date: 08/08/2016

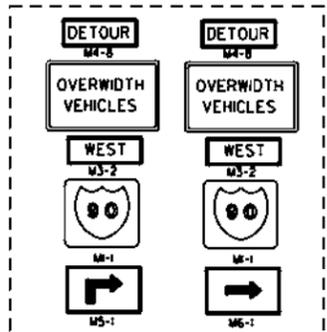
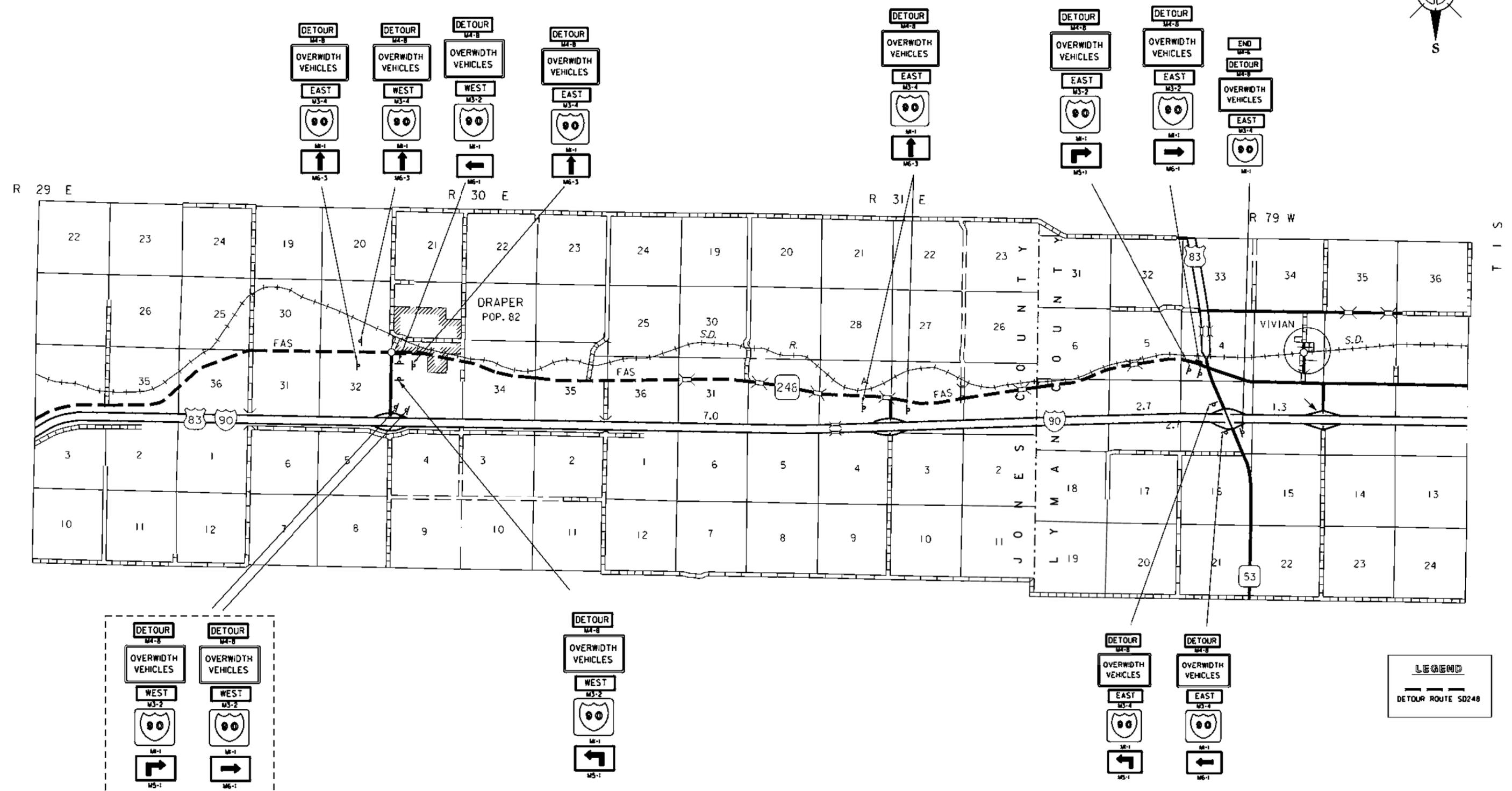
**GUIDES FOR TRAFFIC CONTROL DEVICES  
SHOWING WIDTH RESTRICTION DETOUR SIGNS  
WESTBOUND EXIT 191 TO EXIT 151 VIA SD HWY 248  
EASTBOUND EXIT 163 TO EXIT 191 VIA SD HWY 248**



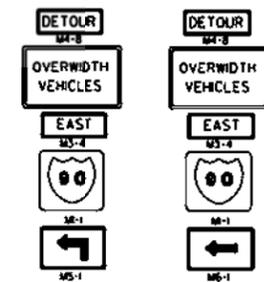
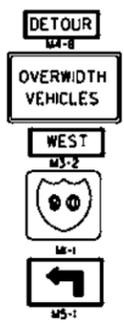
PLOT SCALE - 1:25516.3

PLOT NAME - 1

FILE - ... \1\5.DGN



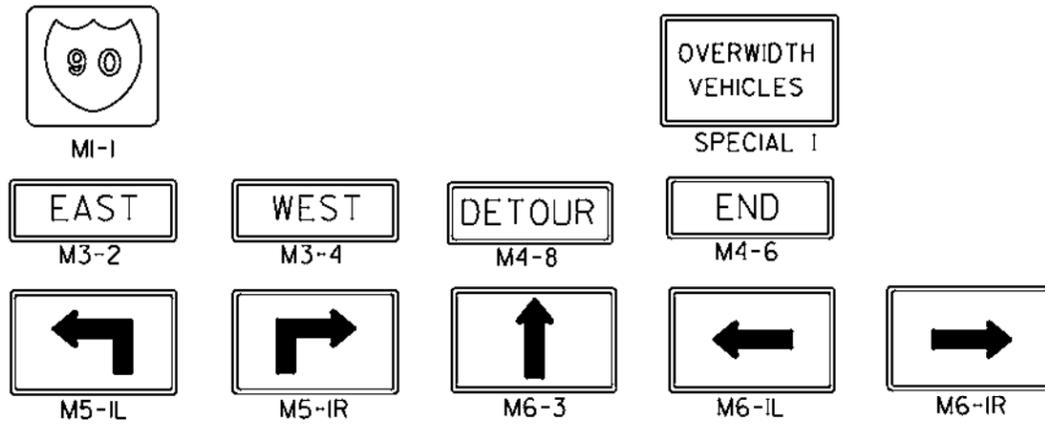
TO BE INSTALLED ON WESTBOUND EXIT 201 OFF RAMP



NOTE:  
SIGN LOCATIONS WILL BE VERIFIED IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.

Plotting Date: 08/08/2016

## OVERWIDTH DETOUR AND DETOUR SIGNING ROUTE AND AUXILIARY MARKERS

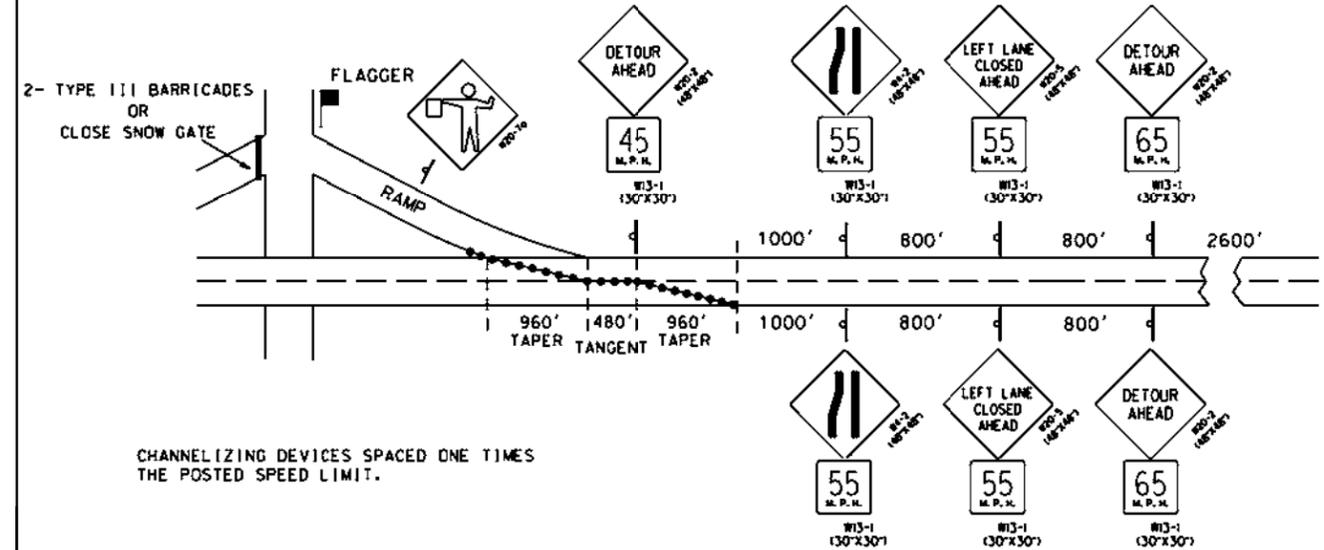


SIGN	SOFT per SIGN	DIMENSIONS (INCHES)					LETTER SIZE	LETTER SPACING	QUANTITY REQUIRED (EACH)	SOFT REQUIRED	
		WIDTH A	HEIGHT B	MARGIN	BORDER	CORNER RADIUS					
MI-1	4.0	24	24	-	-	1/2	12C	CENTERED	34	136	
MI-4	4.0	24	24	-	-	1/2	12C	CENTERED			
MI-5	4.0	24	24	-	-	1/2	12C	CENTERED			
M3-1	2.0	24	12	3/8	3/8	1/2	6C	CENTERED			
M3-2	2.0	24	12	3/8	3/8	1/2	6C	CENTERED	19	38	
M3-3	2.0	24	12	3/8	3/8	1/2	6C	CENTERED			
M3-4	2.0	24	12	3/8	3/8	1/2	6C	CENTERED	15	30	
M4-6	2.0	24	12	3/8	3/8	1/2	6B	20% REDUCED	2	4.0	
M4-8	2.0	24	12	3/8	3/8	1/2	6B	20% REDUCED	34	68	
M5-1R	2.2	21	15	3/8	3/8	1/2	-	-	4	8.8	
M5-1L	2.2	21	15	3/8	3/8	1/2	-	-	4	8.8	
M6-1R	2.2	21	15	3/8	3/8	1/2	-	-	4	8.8	
M6-1L	2.2	21	15	3/8	3/8	1/2	-	-	4	8.8	
M6-3	2.2	21	15	3/8	3/8	1/2	-	-	16	35.2	
SPECIAL 1	5.0	30	24	3/8	3/8	1/2	5B	CENTERED	34	170	
SPECIAL 2	5.0	30	24	3/8	3/8	1/2	5B	CENTERED			
									TOTAL	170	516.4

NOTE: ABOVE SIGNS FOR THE ROUTE AND AUXILIARY MARKERS SHALL CONFORM WITH THE LATEST EDITIONS OF THE M.U.T.C.D. AND THE STANDARD HIGHWAY SIGNS MANUAL.

THIS SIGNING WILL BE PAID FOR AT THE CONTRACT SOFT PRICE FOR "DETOUR SIGNING"

## I-90 EMERGENCY LAYOUT: EXIT 183 EASTBOUND & 201 WESTBOUND



CHANNELIZING DEVICES SPACED ONE TIMES THE POSTED SPEED LIMIT.

FLAGMEN ARE TO INSTRUCT DRIVERS TO FOLLOW THE SIGNED OVERWIDTH DETOUR (SD 248).

**NOTES:**

TO EXPEDITE AN EMERGENCY CLOSURE, CHANNELIZING DEVICE LOCATIONS SHALL BE MARKED ON THE PAVEMENT SURFACE IN A MANNER ACCEPTABLE TO THE ENGINEER. THIS SHALL BE COMPLETED PRIOR TO ESTABLISHING LANE CLOSURES ON THE WESTBOUND OR EASTBOUND LANES.

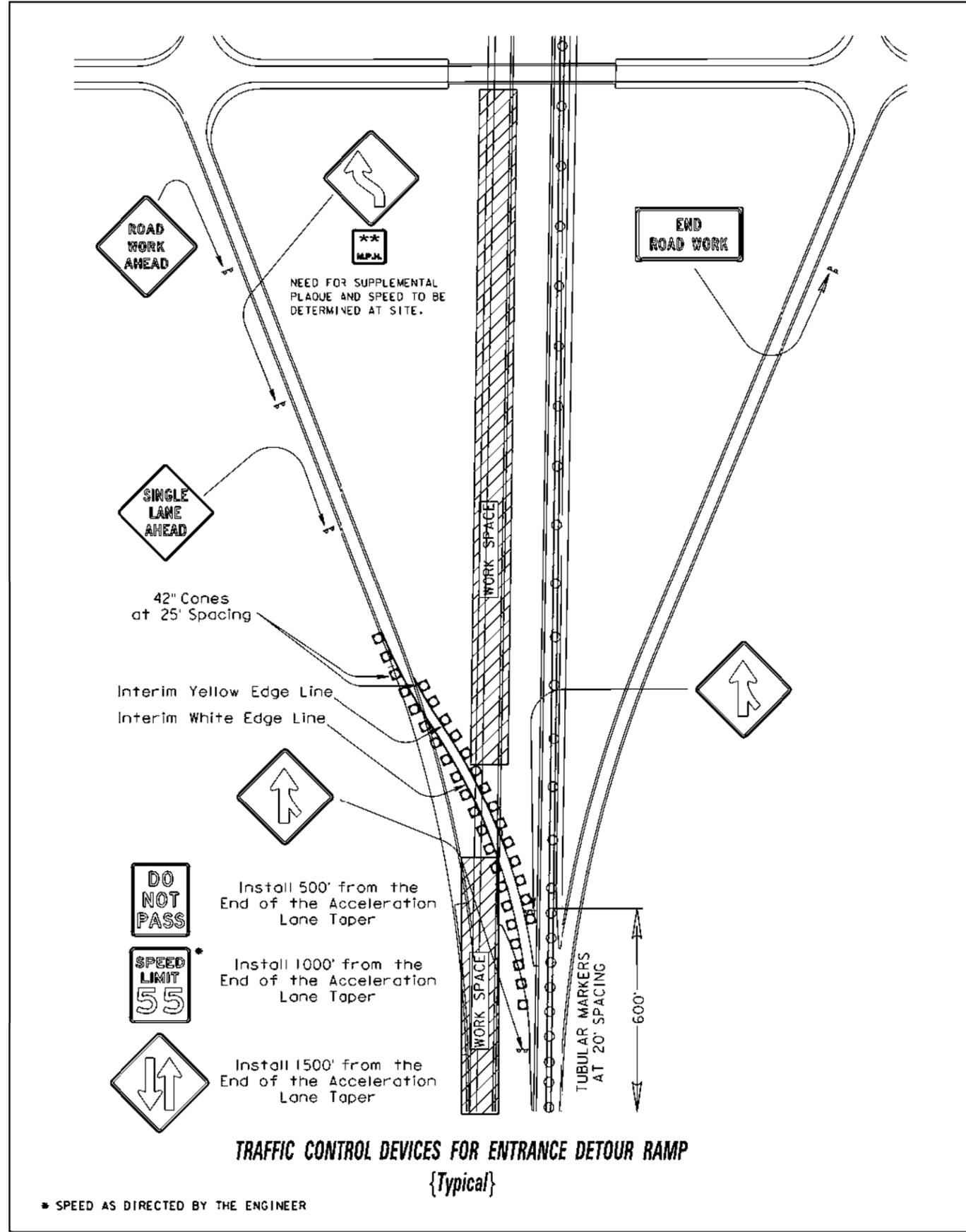
SIGNS SHALL BE MOUNTED ON TEMPORARY BASES AT THE TIME THESE SIGNS ARE DELIVERED TO THEIR RESPECTIVE LOCATIONS.

Plotting Date: 07/12/2016

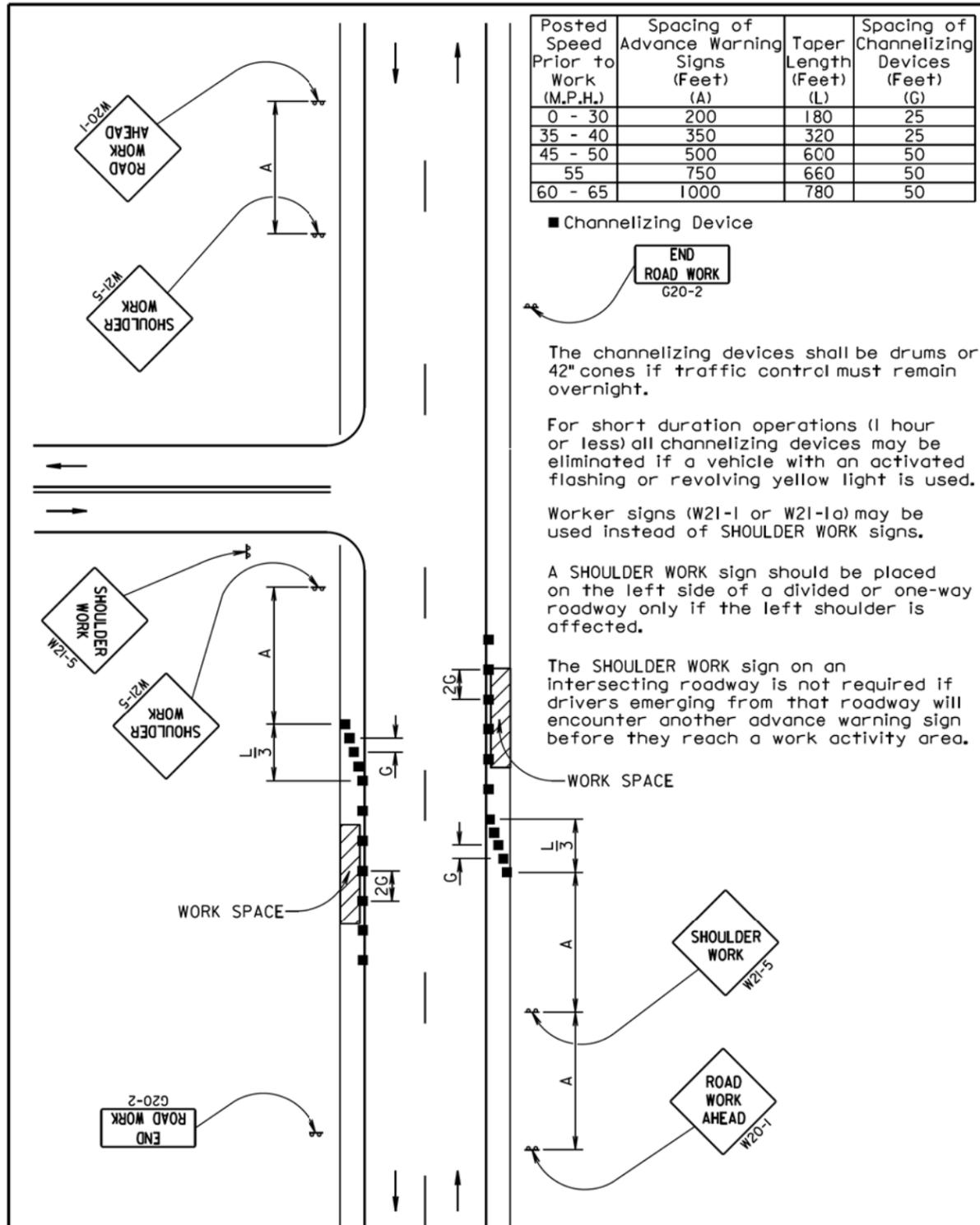
PLOT SCALE - 1:25616.3

PLOT NAME - 1

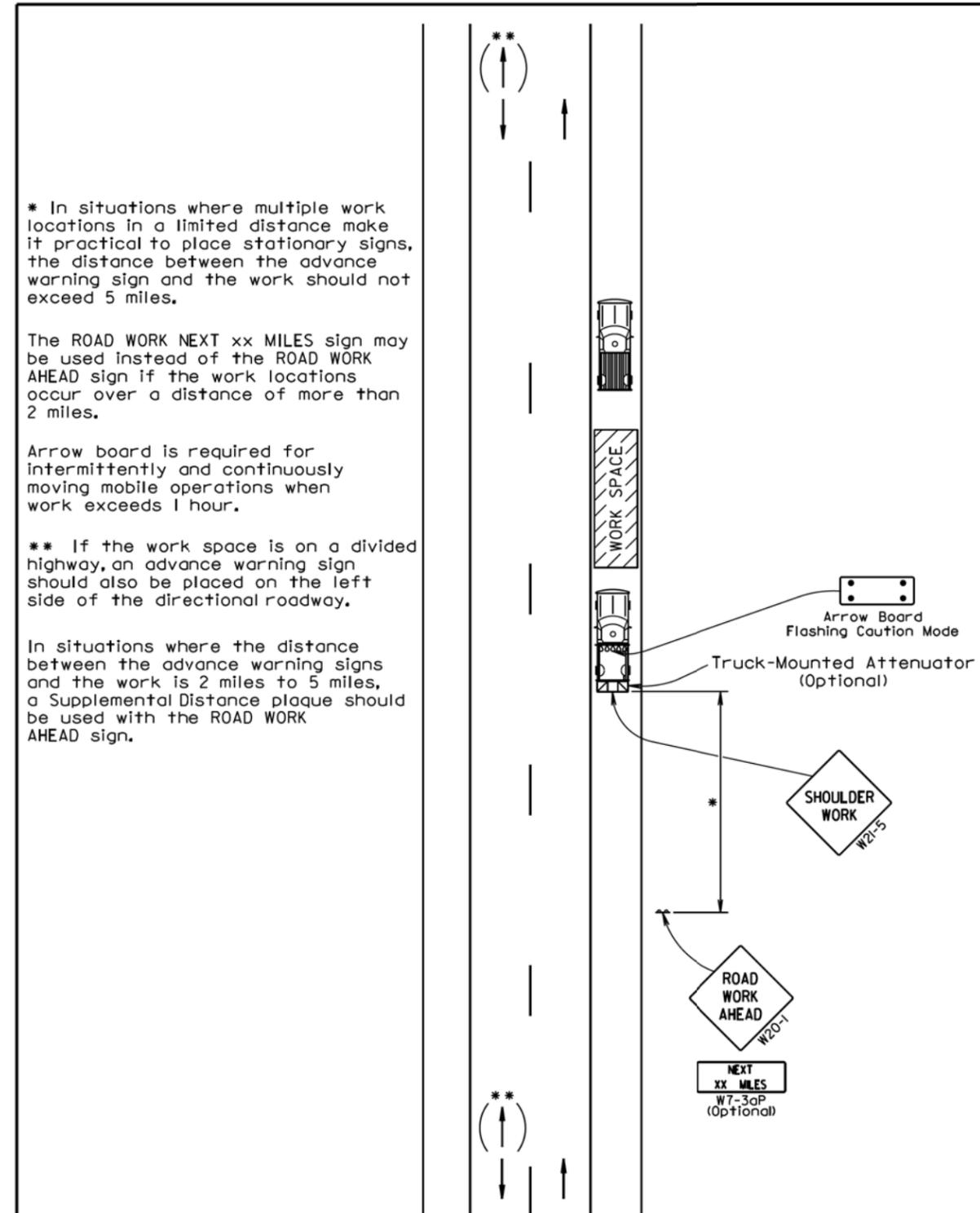
FILE - ... \1C7.DGN



Plot Scale - 1:200



September 22, 2014



September 22, 2014

Plotted From - jrw1mtf9

File - ...STD PLATES63403s63404.dgn

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.

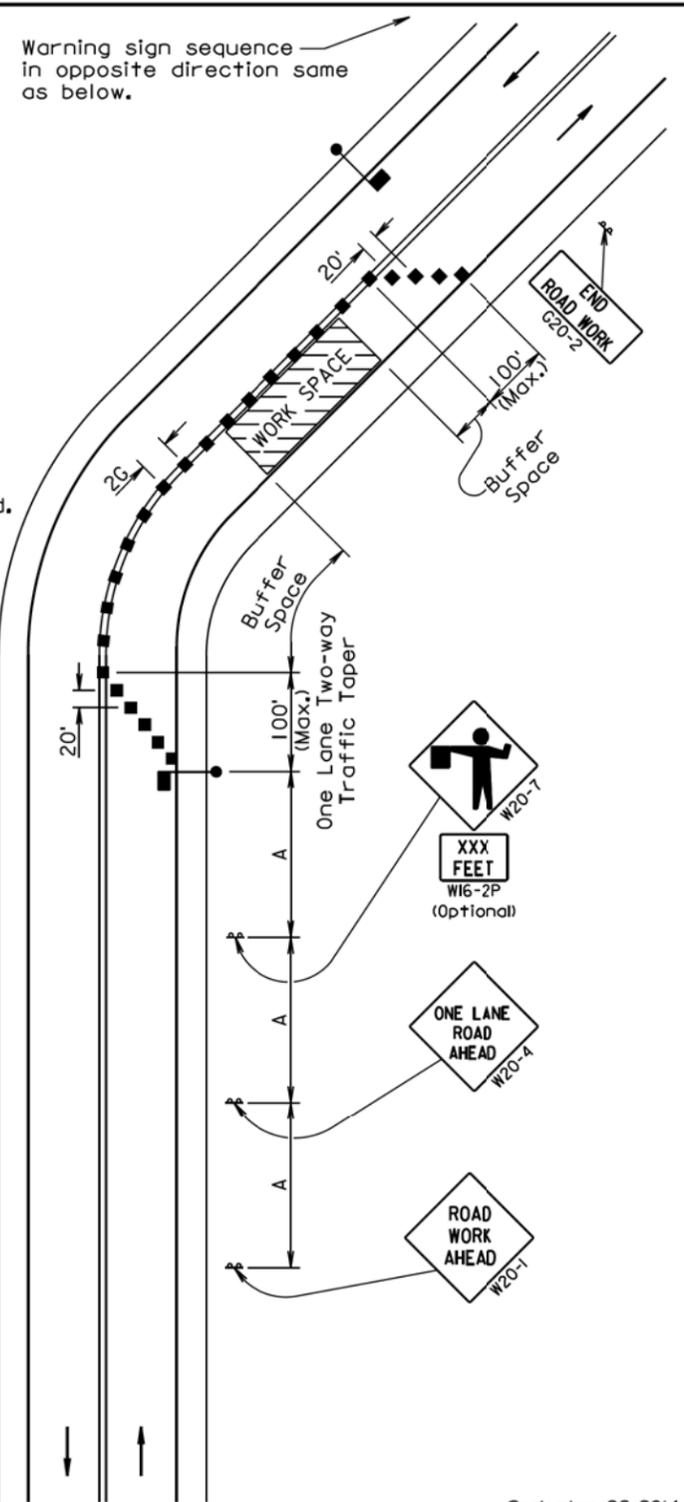
The channelizing devices shall be drums or 42" cones.

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.

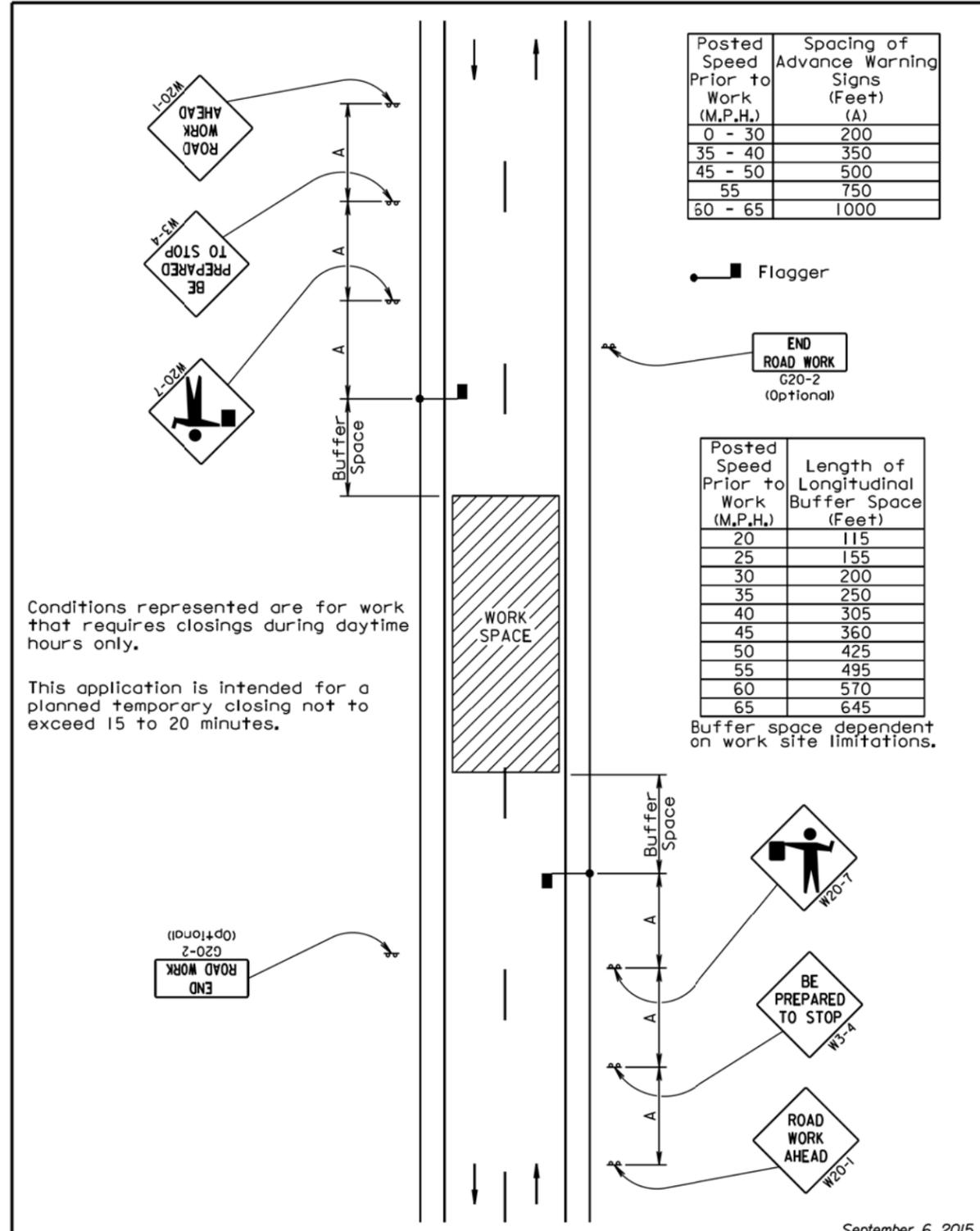
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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



September 22, 2014

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED</b>	PLATE NUMBER <b>634.23</b>
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1



September 6, 2015

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES TEMPORARY ROAD WORK</b>	PLATE NUMBER <b>634.30</b>
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1

1:200  
Plot Scale -  
1:200  
Plotted From -  
inw1m1t19

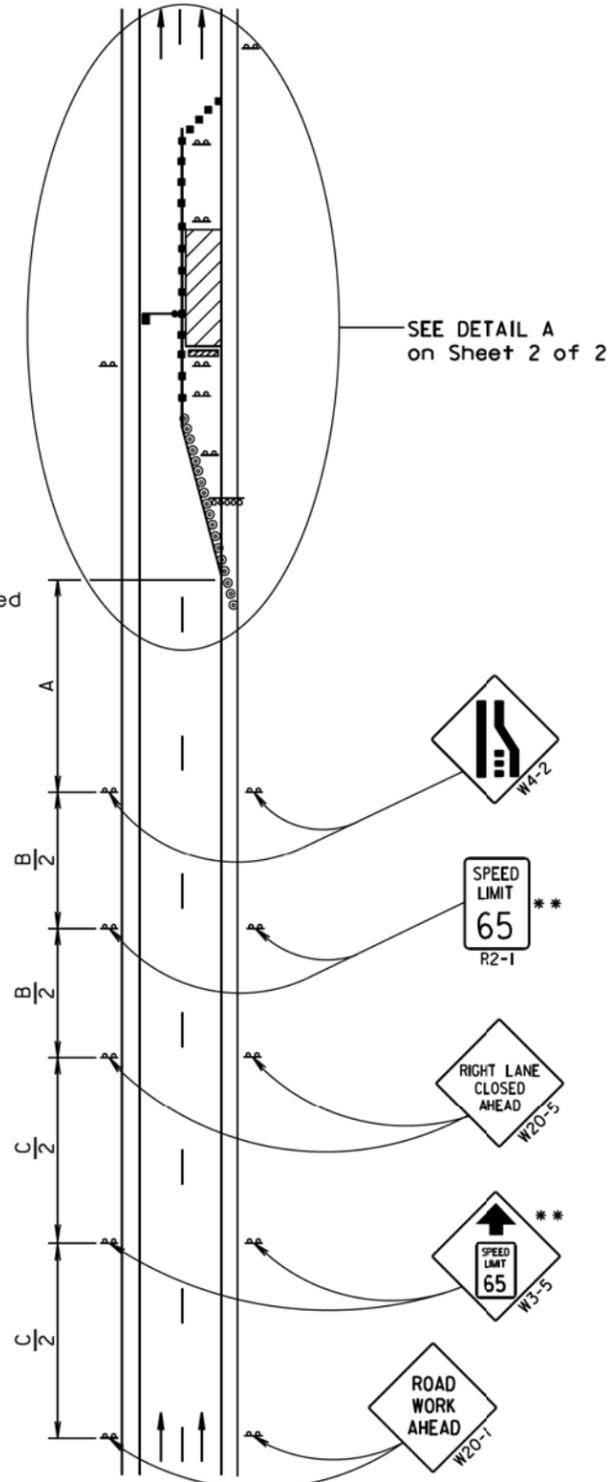
File - ...ISTD PLATES6342363430.dgn

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

<b>S D D O T</b>	<b>WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS</b>	PLATE NUMBER <b>634.63</b>
	Published Date: 2nd Qtr. 2016	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

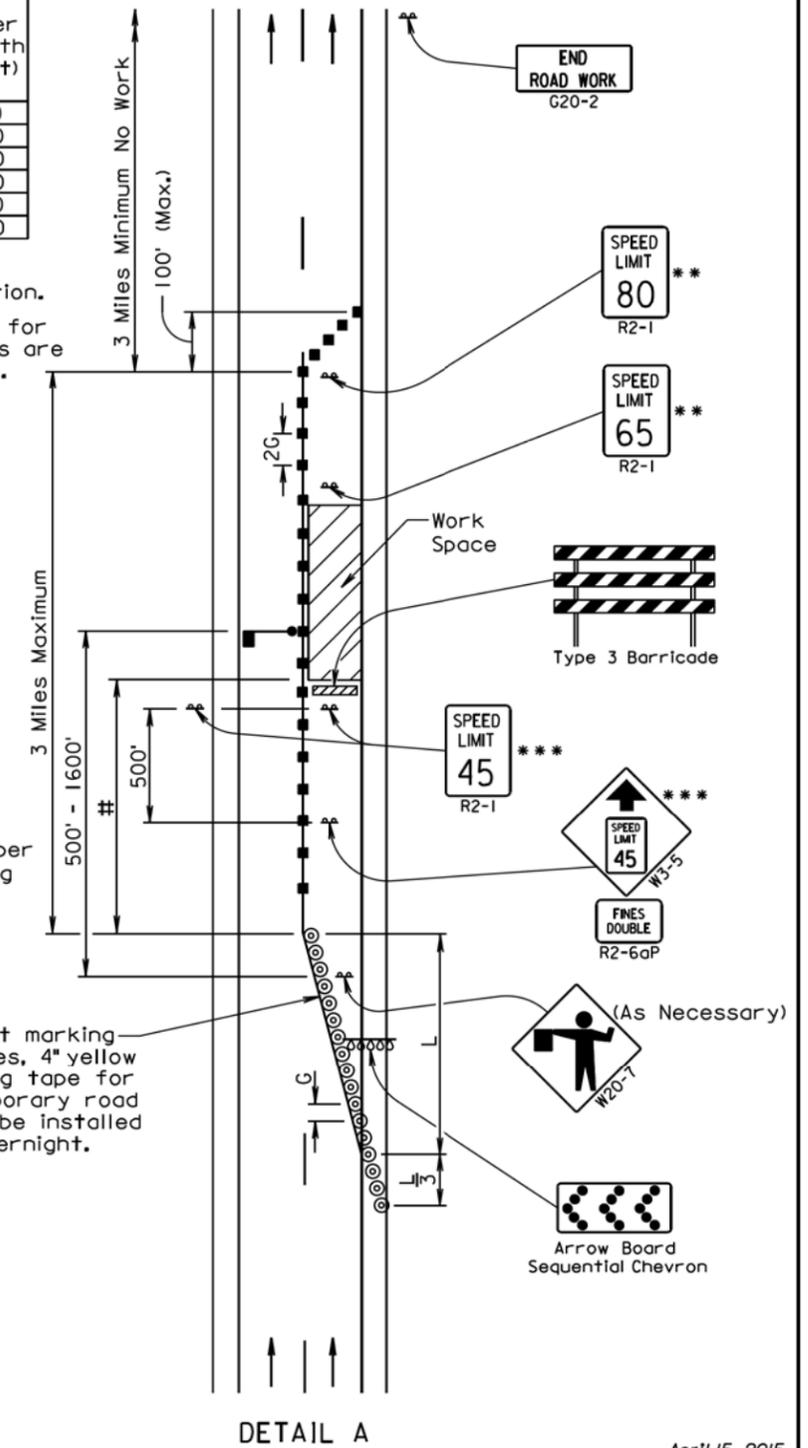
# The Work Space shall be a minimum of 500' from the end of the taper.

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.

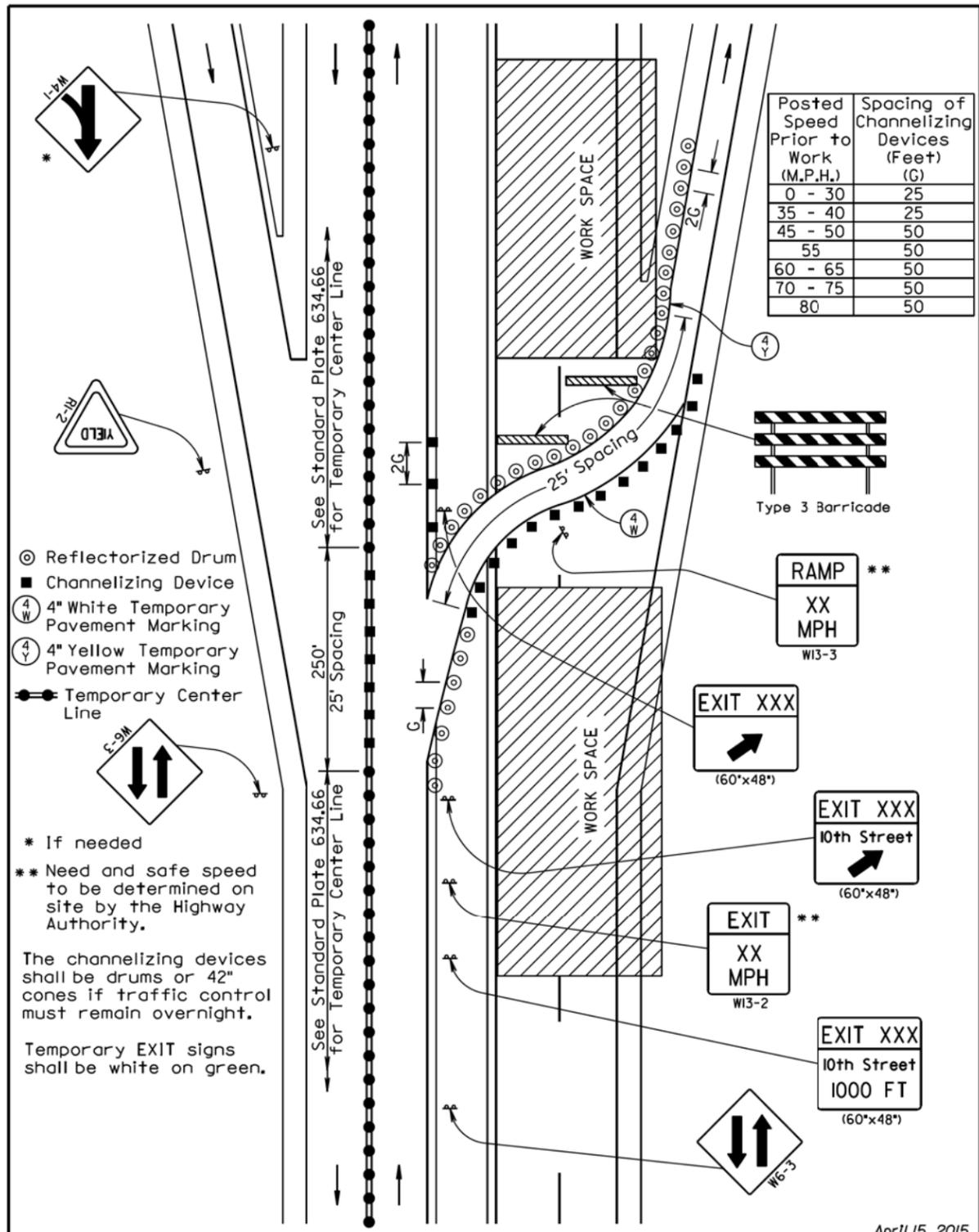


April 15, 2015

<b>S D D O T</b>	<b>WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS</b>	PLATE NUMBER <b>634.63</b>
	Published Date: 2nd Qtr. 2016	Sheet 2 of 2



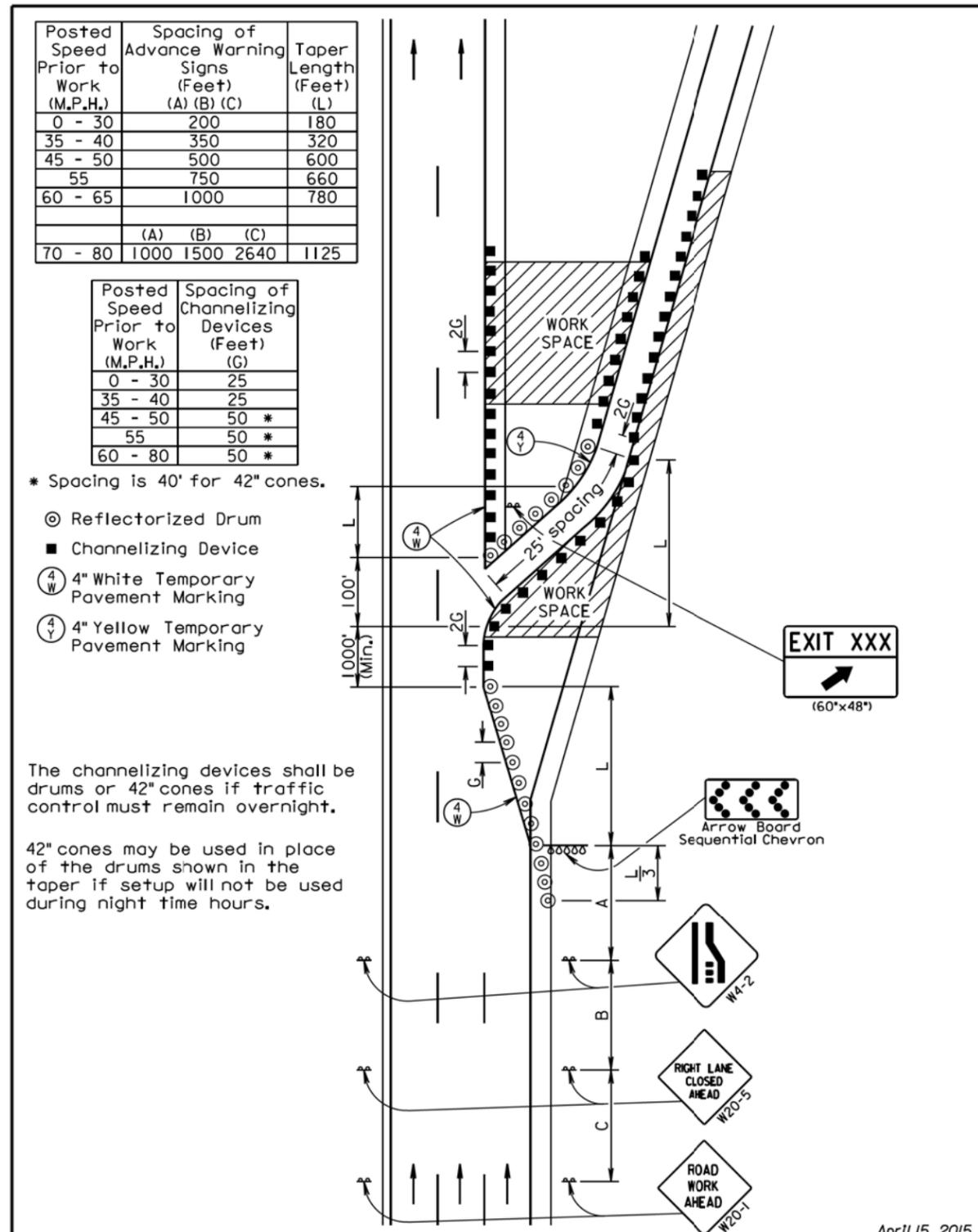
Plot Scale - 1:200



<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES MEDIAN CROSSOVER FOR EXIT RAMP</b>	PLATE NUMBER <b>634.67</b>
		Sheet 1 of 1

Published Date: 2nd Qtr. 2016

April 15, 2015



<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF EXIT RAMP</b>	PLATE NUMBER <b>634.68</b>
		Sheet 1 of 1

Published Date: 2nd Qtr. 2016

April 15, 2015

File - ...ISTD PLATES\63467\63468.dgn

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

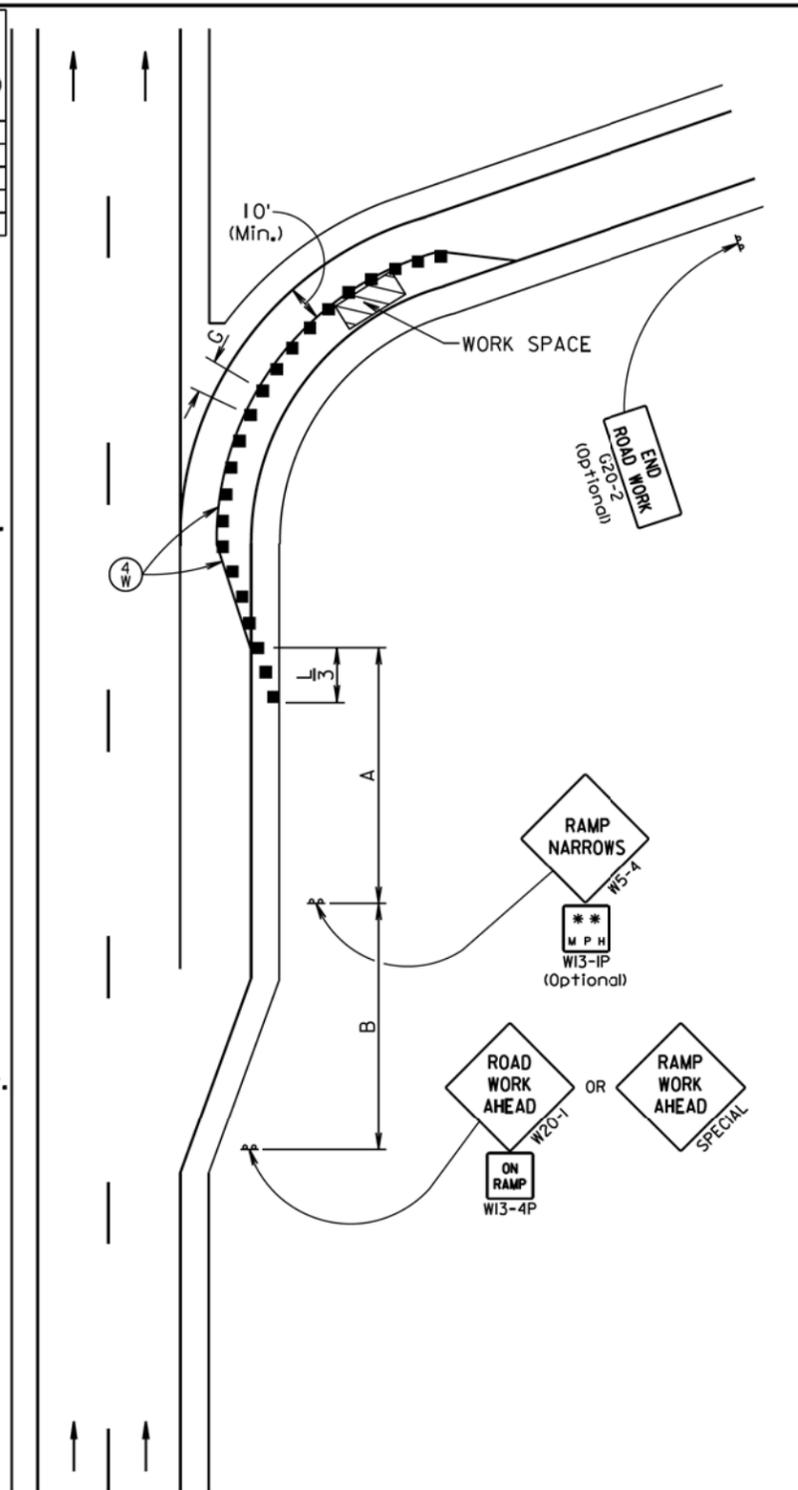
⊙ 4" White Temporary Pavement Marking

\*\* 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

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES PARTIAL EXIT RAMP CLOSURE</b>	PLATE NUMBER <b>634.69</b>
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
	(A)	(B)	(C)	
70 - 80	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 - 80	50 *	

\* Spacing is 40' for 42" cones.

⊙ Reflectorized Drum

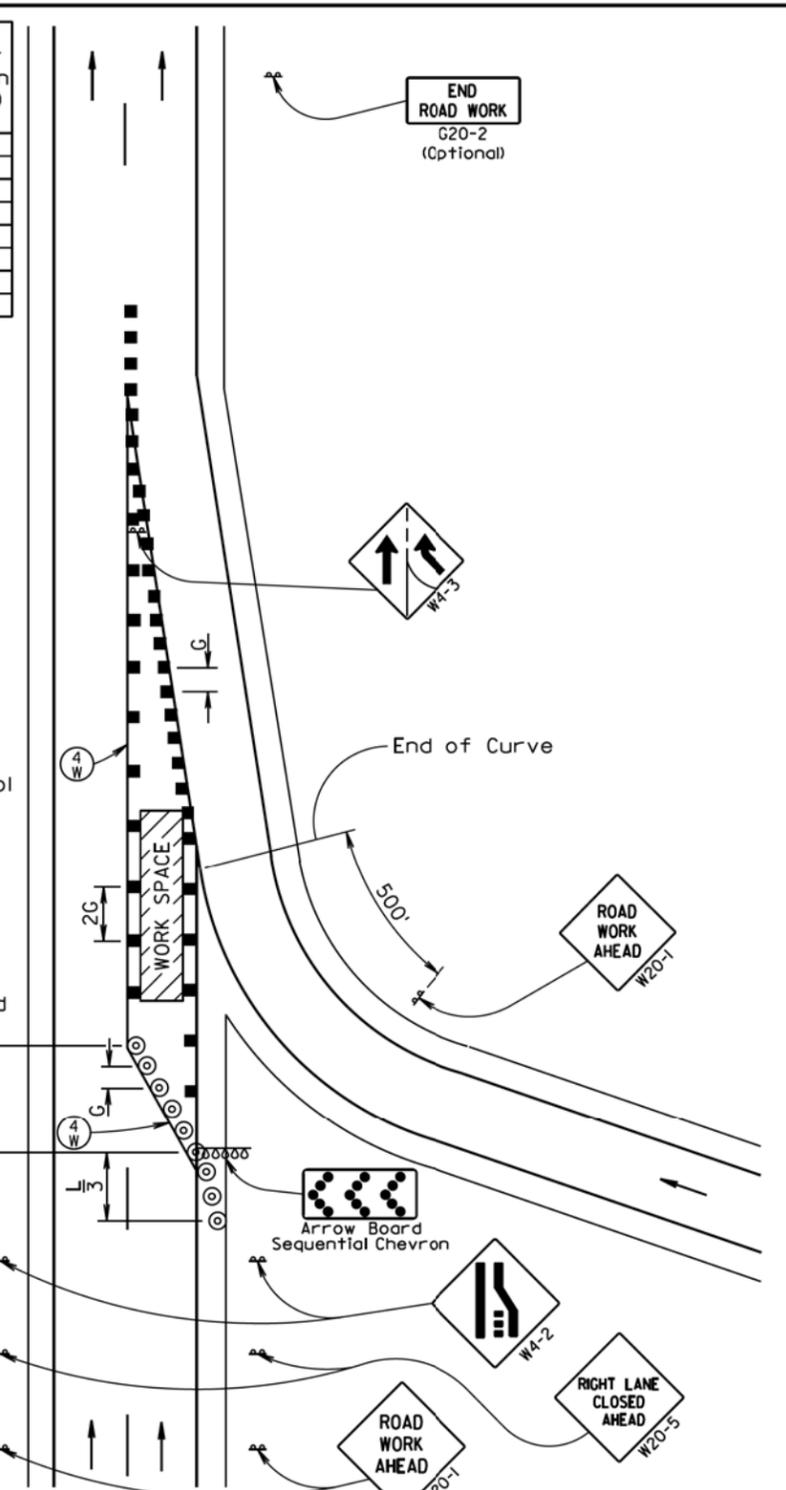
■ Channelizing Device

⊙ 4" White Temporary Pavement Marking

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

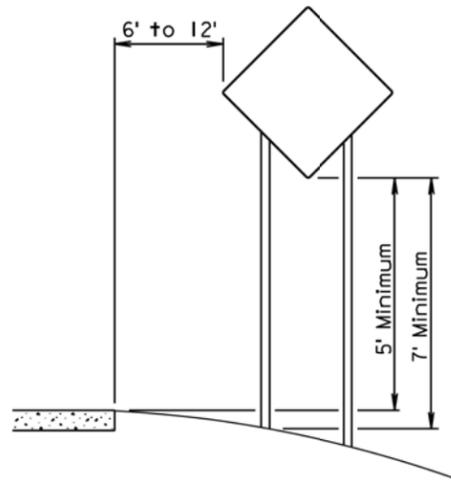
The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

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

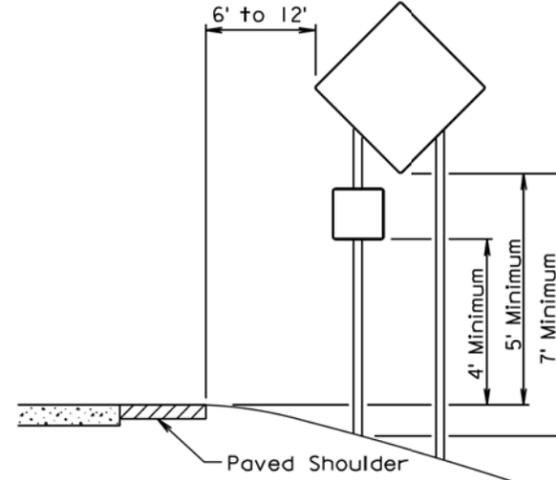


April 15, 2015

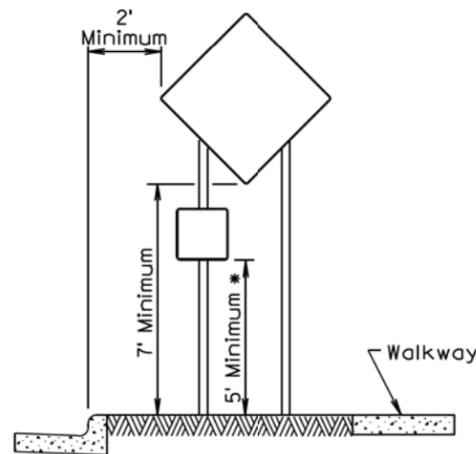
<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF ENTRANCE RAMP</b>	PLATE NUMBER <b>634.70</b>
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1



RURAL DISTRICT

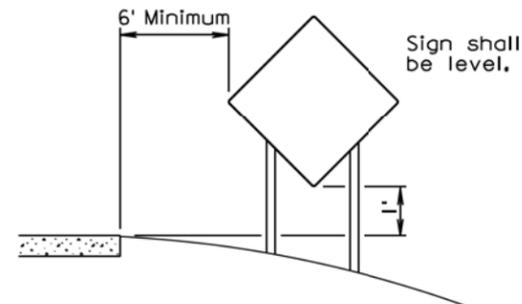


RURAL DISTRICT WITH  
SUPPLEMENTAL PLATE



URBAN DISTRICT

\* 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.

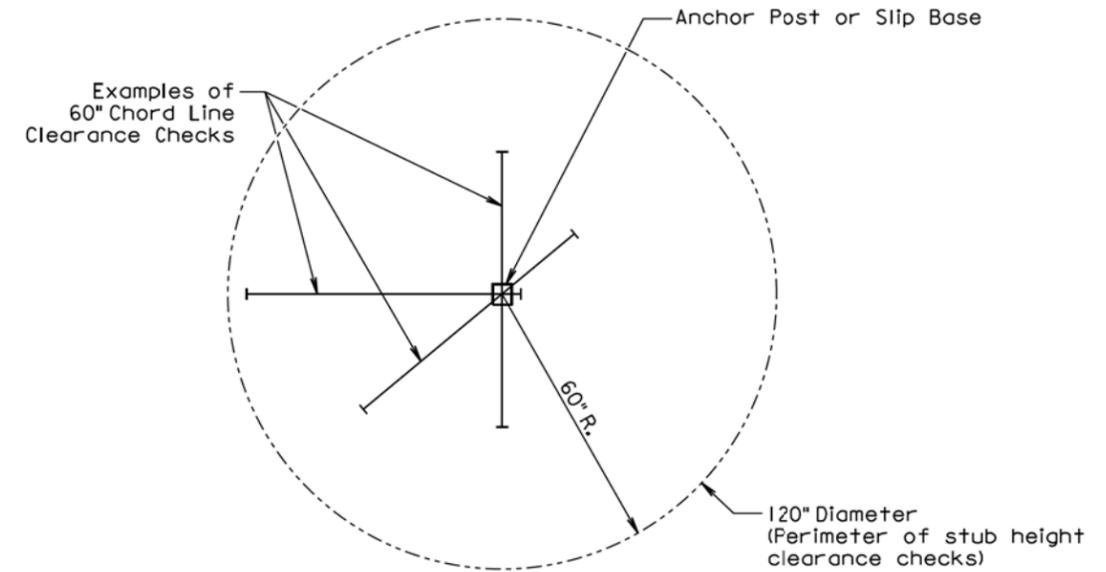


RURAL DISTRICT  
3 DAY MAXIMUM

(Not applicable to regulatory signs)

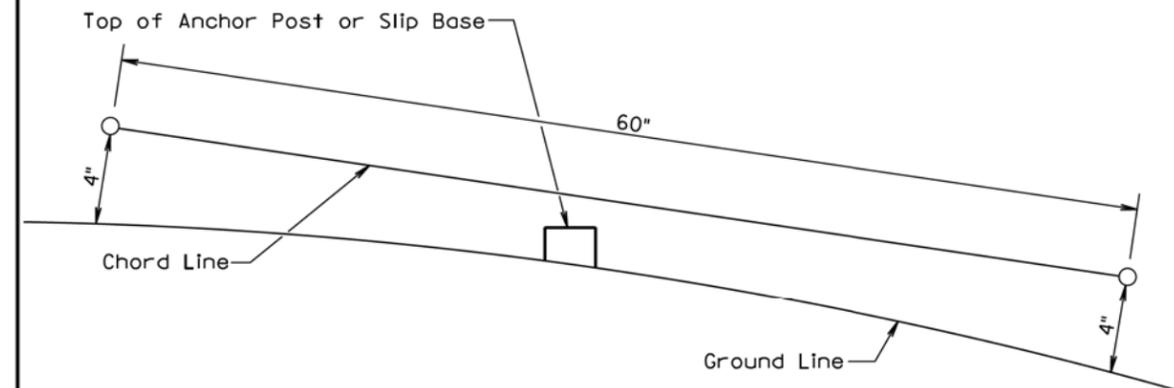
September 22, 2014

Published Date: 2nd Qtr. 2016	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			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.

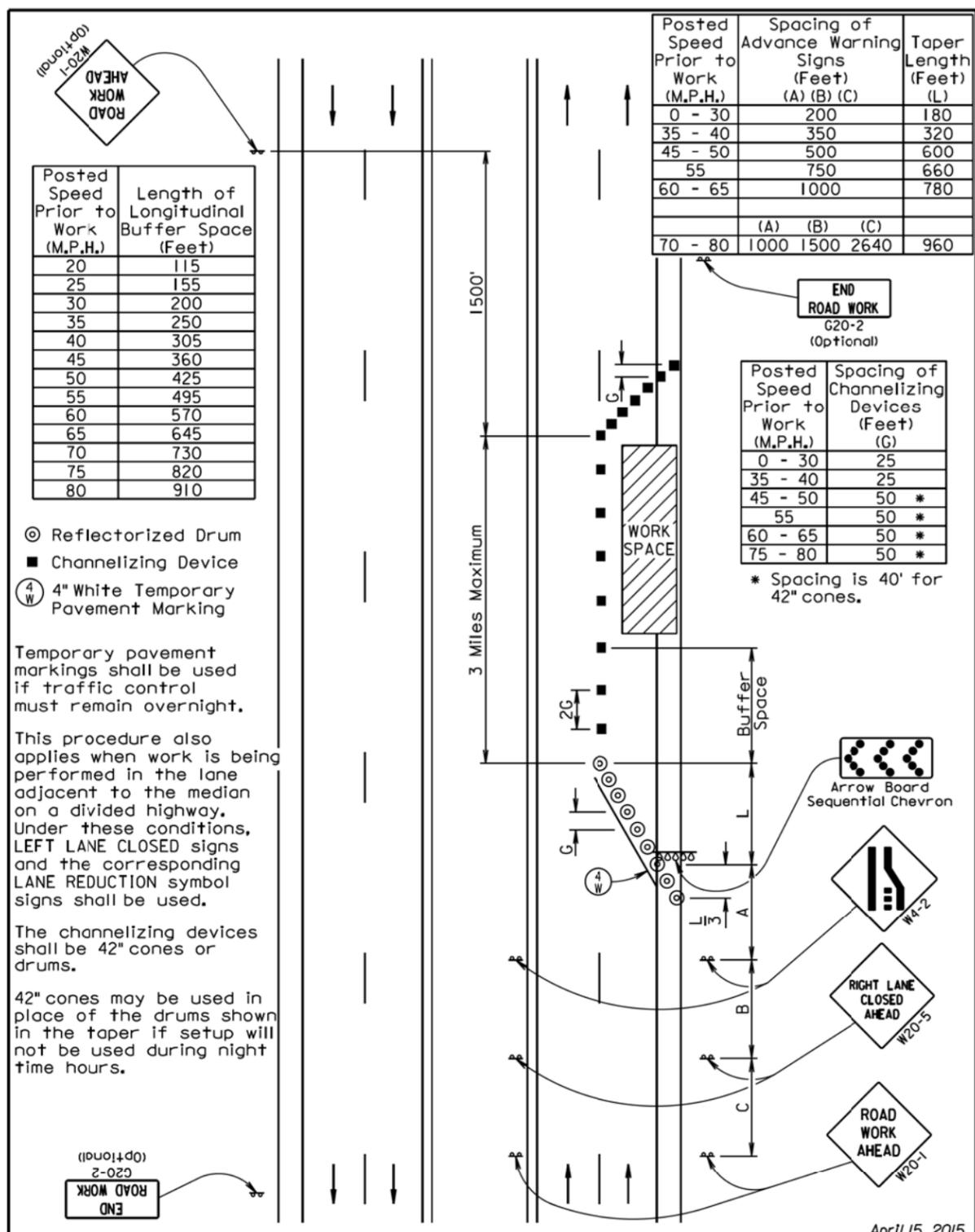
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

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

Published Date: 2nd Qtr. 2016	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

Plot Scale - 1:200



Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
70 - 80	1000	1500	2640	960

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 - 80	50 *

\* Spacing is 40' for 42" cones.

- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

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

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.

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.

Right Side Intentionally Left Blank

April 15, 2015

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER</b>	PLATE NUMBER <b>634.64</b>
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1

Plotted From - Inw1mt19

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