

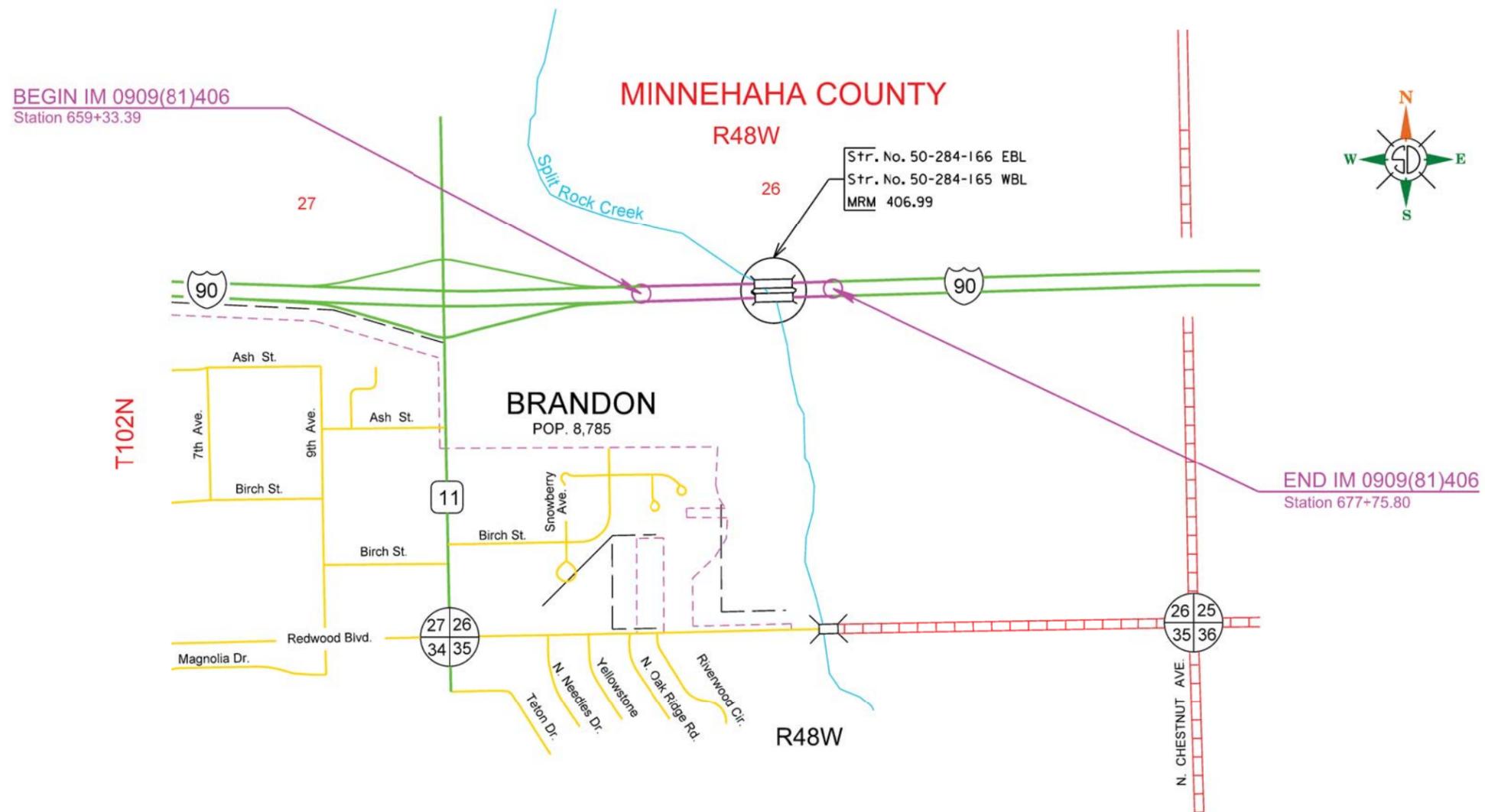
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0909(81)406	C1	C16

Plotting Date: 06/10/2016

# Section C: Traffic Control

## INDEX OF SHEETS

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- C5 Traffic Control Layout
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- C9 Width Restriction Signing Detour
- C10 Itemized List for Detour Signing
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- C13-C15 Standard Plates
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PLOT SCALE - 1:9024.3

PLOTTED FROM - TRSF12113

PLOT NAME - 1

FILE - ... \021XXA01\_SECTION.C.DGN

Revised 08/12/2016

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**SECTION C TRAFFIC CONTROL ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
632E2510	Type 2 Object Marker Back to Back	4	Each
633E0050	Cold Applied Plastic Pavement Marking, Message	2	Word
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	1,261.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	11	Each
634E0330	Temporary Raised Pavement Markers	6,645	Ft
634E0380	Tubular Marker	121	Each
634E0390	Replace Tubular Marker	12	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	4,633	Ft
634E0570	Remove Pavement Marking, Message	2	Word
634E0600	4" Temporary Pavement Marking Tape Type I	25,090	Ft
634E0620	Temporary Pavement Marking, Continuous 4" Edge Line	6,400	Ft
634E0900	Portable Temporary Traffic Control Signal	3	Unit
634E1002	Detour Signing	463.8	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
635E7600	Maintenance of Traffic Signal(s)	100	Hour

**SEQUENCE OF OPERATIONS**

The following Sequence of Operations shall be followed by the Contractor unless an alternate Sequence of Operations is submitted in writing one week prior to the preconstruction meeting and approved by the Engineer.

**Phase 1**

1. Install lane closure traffic control.
2. Complete guardrail installations required to maintain two-way traffic on the westbound lanes. Install delineation and Type 2 Object markers at guard rail locations as detailed in these plans.
3. Install traffic control for width restriction and for head to head traffic in the westbound lanes of Interstate 90.
4. Divert eastbound traffic through the crossovers and maintain head to head in the westbound lanes of Interstate 90.
5. Complete all work in the eastbound lanes.
6. Complete guardrail installations required to maintain two-way traffic on the eastbound lanes. Install delineation and Type 2 Object markers at guardrail locations as detailed in these plans.
7. Restore eastbound traffic to the eastbound mainline of Interstate 90. Continue to maintain one lane of westbound traffic in the westbound driving lane.

8. Remove the centerline traffic control devices and temporary pavement marking in the westbound lanes.
9. Reset Crossover Closures.
10. Complete miscellaneous cleanup and erosion control.

**Phase 2**

1. Install lane closure traffic control.
2. Install traffic control for width restriction and for head to head traffic in the eastbound lanes of Interstate 90.
3. Divert westbound traffic through the crossovers to be maintained head to head in the eastbound lanes of Interstate 90.
4. Complete all work in the westbound lanes.
5. Restore westbound traffic to the westbound mainline of Interstate 90. Continue to maintain one lane of westbound traffic in the westbound driving lane.
6. Remove the centerline traffic control devices and pavement marking in the eastbound lanes.
7. Remove traffic control for width restriction.
8. Reset Crossover Closures.
9. Complete miscellaneous cleanup and erosion control.

**Phase 3**

Phase 3 consists of the work to install the permanent waterborne pavement markings (spring of 2018).

**GENERAL NOTES**

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 alternative sequence shall be submitted for review a minimum of one week prior to potential implementation.

Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer.

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.

4" Yellow Raised Pavement Markers shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Raised Pavement Markers 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 paid at the unit price per foot for "Temporary Raised Pavement Markers".

**MAINTENANCE OF TRAFFIC**

Lane closures are to be used during guardrail and other minor work operations. Two-way head to head traffic controls are to be used during structure replacement. Lane shifts may be used on the interchange ramps.

Regulatory speed limits of 45 miles per hour shall be used when workers are present within lane closures.

Contractors' equipment and trucks will not be allowed to enter or exit lanes used by traffic or cross opposing traffic on Interstate 90. The Contractor shall submit a plan in writing detailing how haul vehicles will enter and exit the work site.

Traffic shall cross medians at median crossover locations built specifically for the maintenance of through traffic.

Routing traffic onto the asphalt shoulders during any phase of the construction will not be allowed.

Signing for the crossovers and the two way traffic section shall be installed on fixed location ground mounted supports.

The existing STOP/ONE WAY/DO NOT ENTER sign assemblies located at the top of the exit ramps shall be maintained when the exit ramp is opened to traffic. These sign assemblies may need to be removed, salvaged, relocated and reset.

Regulatory speed limit signing installed on ramps shall be changed as mainline regulatory speeds change.

Other devices as deemed necessary may be used.

One fixed location ground mounted Highway Workers Give 'Em a Brake sign shall be installed 2000' in advance of the Road Work Next 1 Mile signs for eastbound and westbound directions of travel. The signs shall be mounted to the right of the roadway a minimum of 16' from the edge of the shoulder to the inside edge of the sign.

**REMOVE PAVEMENT MARKING**

Pavement markings which conflict with the desired traffic patterns detailed in the traffic control layouts in the plans shall be removed by the Contractor unless otherwise shown. Removal of pavement markings shall be paid at the contract unit price per foot for "Remove Pavement Marking, 4" or Equivalent" and per word for "Remove Pavement Marking, Message".

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**TEMPORARY RAISED PAVEMENT MARKERS (RPM's)**

Temporary raised pavement markers shall be used for marking edge lines, lane lines, and centerlines. TRPM's shall be used on all new permanent surfacing sections of roadway, and on existing surfacing where temporary marking locations are different than existing marking locations, unless noted or as directed by the Engineer.

Temporary raised pavement markers shall 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.

The markers shall be installed at 5-foot spacing and will be paid for at the contract unit price per foot per 4" line for both Yellow and White markers. The contract unit price per foot for Temporary Raised Pavement Markers will be (including replacement as required by the Engineer at no added cost to the Department), and remove all markers.

**TUBULAR MARKERS**

The markers shall be securely attached to the roadway surface. The method of attachment shall be resistant to the effects of weather, and capable of retaining the marker in position under traffic during the interval of time it is required to function.

White tubular markers shall be placed on the shoulders of 500' alternate spacing and set at 3' offset from the edgeline for both eastbound and westbound lanes.

Payment for tubular markers will be at the contract unit price per each. Payment shall be full compensation for furnishing, installing, maintaining (including replacement as required by the Engineer at no added cost to the Department), and removal of all tubular markers as required by the Engineer.

**TEMPORARY PAVEMENT MARKING**

Temporary Pavement Marking shall be used on all temporary surfacing, or surfacing which is to be removed, or as directed by the Engineer.

The Contractor is responsible for maintain and replacing, if needed, the applied plastic pavement markings. Payment for maintain and replacing applied plastic pavement markings are incidental to the contract unit price per word for "Cold Applied Plastic Pavement Marking, Message".

Payment for furnishing, installing maintaining and removing the 12" white marking tape will be incidental to the unit price per foot for "4" Temporary Pavement Marking Tape Type 1".

Payment for temporary pavement marking will be by the foot per 4" line or equivalent. Payment will be for all costs to furnish, and install temporary pavement markings.

**TEMPORARY PAVEMENT MARKING, CONTINUOUS 4" EDGELINE**

The Contractor shall paint the yellow edgeline white and repaint the edgeline yellow within the head to head sections when two-way traffic is maintained.

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

**CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN**

The Contractor shall furnish 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 (2 week advance notice), advising the general public of the conditions ahead, and as directed by the Engineer. The changeable message signs shall be furnished, programmed, and maintained for the entire project duration. The Engineer will assist in determining the location and messages to be programmed into the message sign. 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 changeable 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.

**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 hardware shall be incidental to the contract unit price per square foot for Detour Signing.

**PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL**

The Contractor shall furnish, operate and maintain Portable Temporary Traffic Control Signal at westbound exit ramp of Interstate 90 & SD 11 interchange.

The temporary traffic signal system shall reliably and continuously control traffic for all approaches of the three approach intersection with single lanes.

**TRAFFIC SIGNAL EQUIPMENT**

The signal heads for the left turn green and left turn yellow indications shall be covered or removed in the event exclusive left turn lanes are not to be provided or left turn phases are not required.

**SYSTEM SUPPORT DESIGN**

The temporary signal trailer shall be designed to support the signal heads required.

A minimum clear zone distance of 2', 6' preferred, shall be maintained from the edge of the traveled way to the edge of the traffic signal trailer. Temporary signal trailers shall be marked with reflectorized drums or Type II barricades.

**CONTROLLER**

The Controller shall be capable of operating pre-timed, actuated or by manual control. The controller shall operate actuated.

The controller shall have the ability to dwell in all red.

Conflicts should be monitored and if fault conditions are detected the signal operation should change to red flash for the exit ramp and yellow flash for State Highway 11.

The controller shall record performance logs of all recent failures of the entire signal system.

In the event of a failure an audible alarm shall sound and the system shall send a page via cellular telephone to alert the user.

The Controller shall have internal signal dimming.

The Controller Solid State Flasher shall have dimming capability.

**VEHICLE DETECTION**

Microwave vehicle detection shall be provided. Should the microwave detection prove to be unreliable, an alternate method of vehicle detection shall be provided at no additional cost to the State.

**TRAFFIC SIGNAL PROGRAMMING**

Emergency preemption shall be provided and have priority.

The minimum yellow time shall be 5 seconds and the all red time shall be a minimum of two (2) seconds unless the SD Department of Transportation approves of an alternate.

**PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL (CONTINUED)**

**OPERATION AND MAINTENANCE**

When work begins on the project, the Contractor shall be responsible for the operation and maintenance (to include the provision of replacement parts and materials) required of the Portable Temporary Traffic Control Signal within the project limits.

The operation is the act of keeping the systems operating to adequately and safely control traffic as intended to operate per the Federal Manual on Uniform Traffic Control Devices and any details in these plans. The operation includes signal programming.

The maintenance includes adjustment and replacement of traffic signal appurtenances, repair and all work to keep the traffic signals in satisfactory condition.

The Contractor's operation and maintenance responsibility will end upon the Engineer's acceptance of the work on the project.

Traffic signal operation or maintenance work is required to be performed by the Contractor when project conditions dictate, lane closures change, traffic flow is impeded, a potential risk to the public exists or when equipment breaks down or malfunctions. Equipment break downs or malfunctions require a high priority response and are to be reacted to within one hour of notification of the event. In the event of complete failure of a traffic signal, the Contractor shall furnish necessary flaggers to safely control traffic until the traffic signal is operational. The Contractor shall furnish the flaggers as necessary to control traffic until the traffic signal is operational.

The Contractor should plan for sufficient staff to operate and maintain the traffic signals. The individual responsible for installation, operations and maintenance of traffic signals shall be experienced, knowledgeable, and trained with respect to installation, setup, operation and maintenance of the temporary and existing traffic signals.

The signal indications on any traffic signal system shall be covered or removed during shut down or periods of discontinued use.

**SIGNAL TIMING**

PHASING AND SEQUENCING							
INTERVAL	1	2	3	4	5	6	FLASH DISPLAY
SIGNAL HEADS							
SD 11	G	Y	R	R	R	R	R
I-90 Exit 406 WB Off-ramp	R	R	R	G	Y	R	R
C Y C L E  D W E L L  O N  S D 1 1  T I M E	L E N G T H  9 0	TIMINGS BASED ON MAXIMUM 140 FT DISTANCE BETWEEN OPPOSING STOP LINES AND TRAFFIC SPEED OF 45 MPH				FLASH TIME	
		1	24 HOURS/DAY	90			
PHASES		φ A		φ B			
MOVEMENTS						FAILURE OR EMERGENCY ONLY	
MINIMUM INITIAL		7			7		
PASSAGE		3			3		
MAXIMUM		56			20		
VEHICLE CLEARANCES			5	2		5	2

**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 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 Minnehaha County Sheriff 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 the meeting.

Emergency vehicle access through the project to the lanes where head-to-head traffic is maintained shall be considered and discussed at the meeting.

The Contractor will be required to modify messages on portable changeable message signs or relocate portable changeable message signs. The Contractor may be asked to provide flaggers to direct or detour of traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting for more than two hours. Ground mounted advance warning signs may be covered and additional portable warning 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 advanced warning sign due to an incident shall be 50% of the designated sign rate as per Section 634.5.

**STURGIS MOTORCYCLE RALLY**

The Contractor shall have a truck mounted arrow board, additional advanced signing (2-Road Work Ahead, 2-Left or Right Lane Closed Ahead, 2-Left or Right Lane Ends (symbol), and addition flaggers available for use from a period of one week prior to and until one week after the Sturgis Motorcycle Rally. The Sturgis Motorcycle Rally is August 7<sup>th</sup> – 13<sup>th</sup>, 2017. These items shall be used at any time traffic flows are excessive and additional advance signing is needed and will be at the discretion of the Engineer. All costs associated with furnishing and operating the truck mounted arrow board will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

**COORDINATION BETWEEN CONTRACTORS**

A separate contract for Project IM 0909(87)401 – PCN 04DD will be awarded to another Contractor for concrete pavement repair/asphalt concrete resurfacing on I90 adjacent to both ends of this project (PCN 021X). The asphalt concrete resurfacing for PCN 04DD will end at MRM 406.00+0.093 and begin at MRM 407.00+0.500 for the east bound lanes. For the westbound lanes the asphalt concrete resurfacing will end at MRM 406.00+0.102 and begin at MRM 407.00+0.500.

The Contractor shall schedule his work so as not to interfere with or hinder the progress of the work performed by other Contractors on the concrete pavement repair/asphalt concrete resurfacing project.

Plotting Date: 06/10/2016

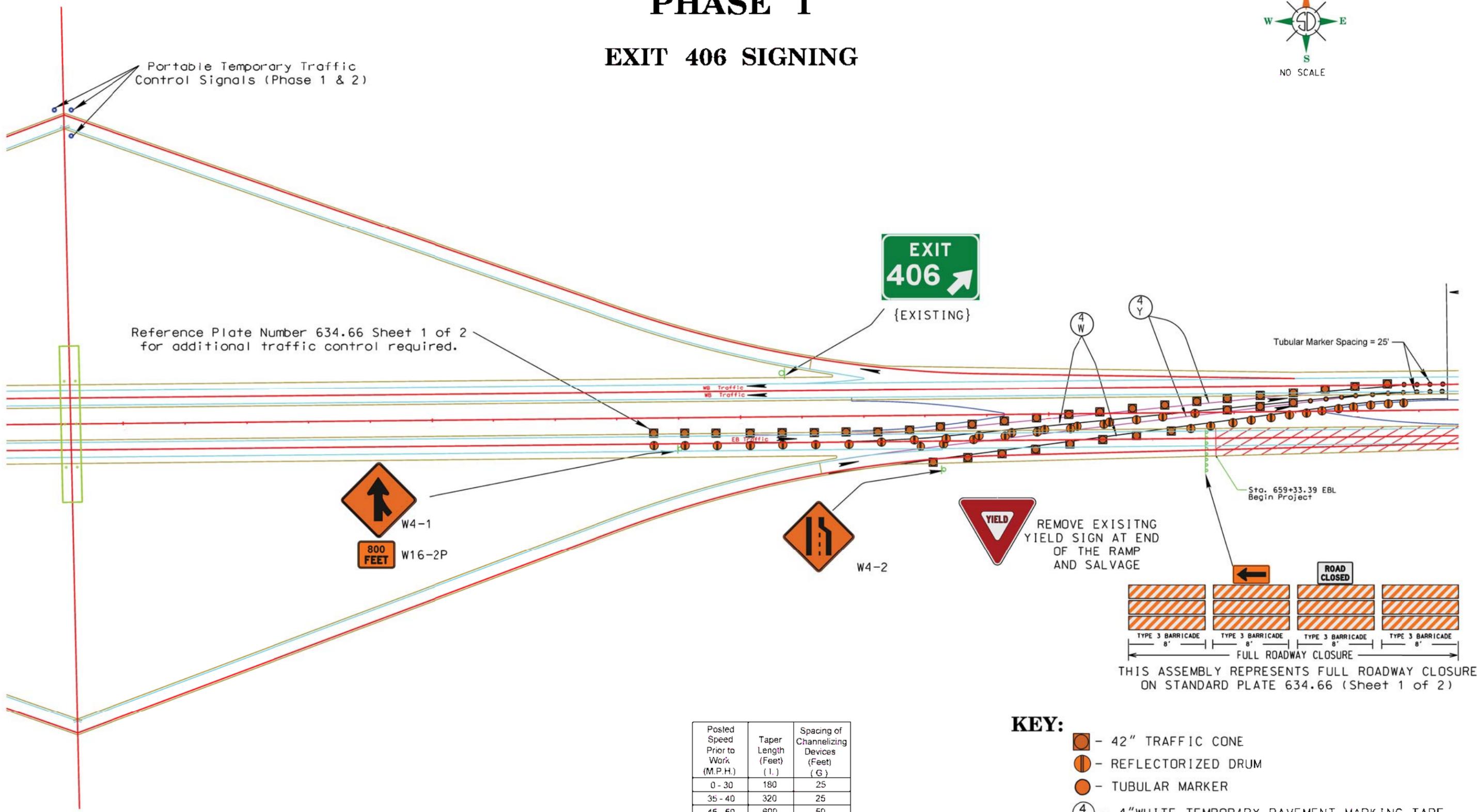


# TRAFFIC CONTROL PHASE 1

## EXIT 406 SIGNING

PLOT SCALE - 1:153

PLOT NAME - 1



Posted Speed Prior to Work (M.P.H.)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	180	25
35 - 40	320	25
45 - 50	600	50
55	660	50
60 - 65	780	50
75 - 80	960	50

**KEY:**

- 42" TRAFFIC CONE
- REFLECTORIZED DRUM
- TUBULAR MARKER
- 4 W - 4" WHITE TEMPORARY PAVEMENT MARKING TAPE
- 4 Y - 4" YELLOW TEMPORARY PAVEMENT MARKING TAPE

THIS ASSEMBLY REPRESENTS FULL ROADWAY CLOSURE ON STANDARD PLATE 634.66 (Sheet 1 of 2)

PLOTTED FROM - IRSE12113

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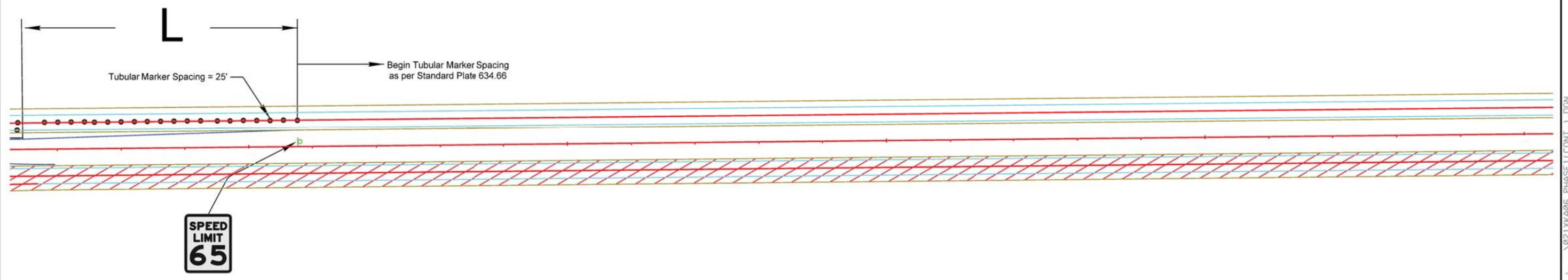
Plotting Date: 06/10/2016

# TRAFFIC CONTROL PHASE 1 EXIT 406 SIGNING



PLOT SCALE - 1:153

PLOT NAME - 1



PLOTTED FROM - TRSE12113

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Posted Speed Prior to Work (M.P.H.)	Tapcr Length (Feet) ( L )	Spacing of Channelizing Devices (Feet) ( G )
0 - 30	180	25
35 - 40	320	25
45 - 50	600	50
55	660	50
60 - 65	780	50
75 - 80	960	50

**KEY:**  
 - TUBULAR MARKER

# TRAFFIC CONTROL PHASE 2 EXIT 406 SIGNING

Plotting Date: 06/10/2016



**EXIT 406**  
{EXISTING}

4 Y  
4 W  
Reflectorized Drums at 25' spacing

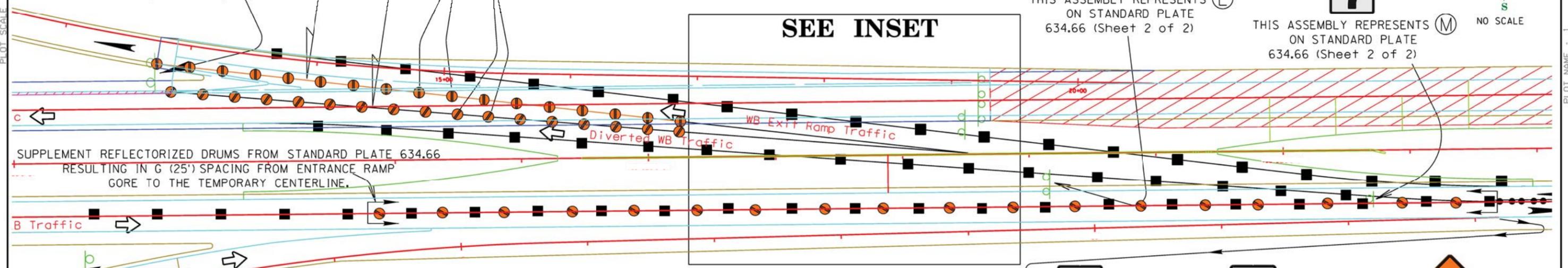
SEE INSET

THIS ASSEMBLY REPRESENTS ON STANDARD PLATE 634.66 (Sheet 2 of 2)

THIS ASSEMBLY REPRESENTS ON STANDARD PLATE 634.66 (Sheet 2 of 2)

PLOT SCALE - 1:153

PLOT NAME - 1



{MAINTAIN EXISTING}

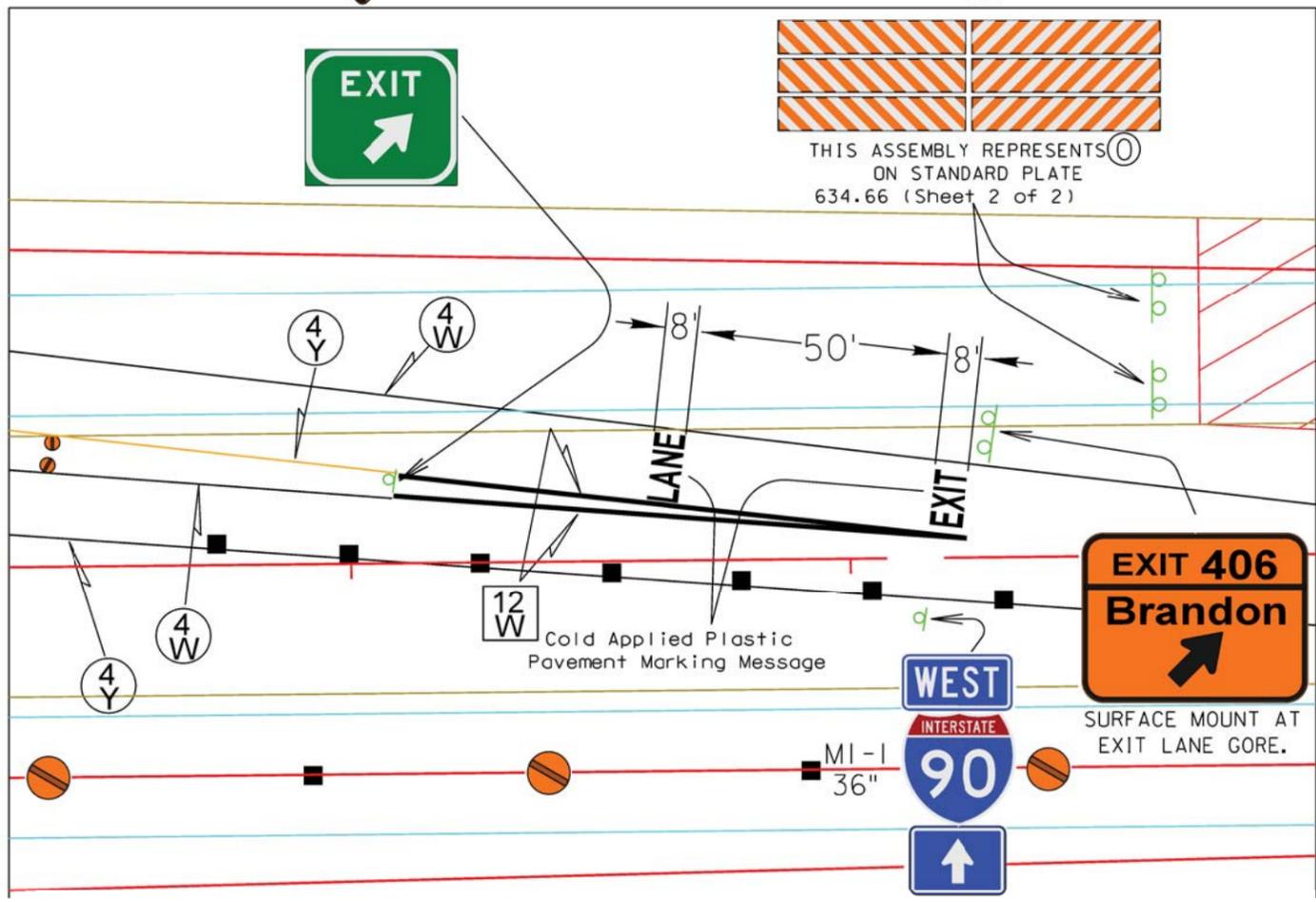


Install 500' from the End of the Acceleration Lane Taper

Install 1000' from the End of the Acceleration Lane Taper

Install 1500' from the End of the Acceleration Lane Taper

## INSET



THIS ASSEMBLY REPRESENTS ON STANDARD PLATE 634.66 (Sheet 2 of 2)



RIGHT MOUNT IN THE MEDIAN 500' IN ADVANCE OF THE EXIT LANE GORE.



RIGHT MOUNT IN THE MEDIAN 1320' IN ADVANCE OF THE EXIT LANE GORE.

Posted Speed Prior to Work (M.P.H.)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	180	25
35 - 40	320	25
45 - 50	600	50
55	660	50
60 - 65	780	50
75 - 80	960	50

Layout follows Standard Plate 634.66, except for changes shown here.

### KEY:

- Work Space
- Direction of Traffic
- Temporary Centerline-from Standard Plate 634.66 Sheet 2 of 2
- Reflectorized Drum-from Standard Plate 634.66 Sheet 2 of 2
- Traffic Cones at 20' Spacing
- Reflectorized Drum
- 4" White Temporary Pavement Marking Tape
- 4" Yellow Temporary Pavement Marking Tape
- 12" White Marking Tape

PLOTTED FROM - IRSE12113

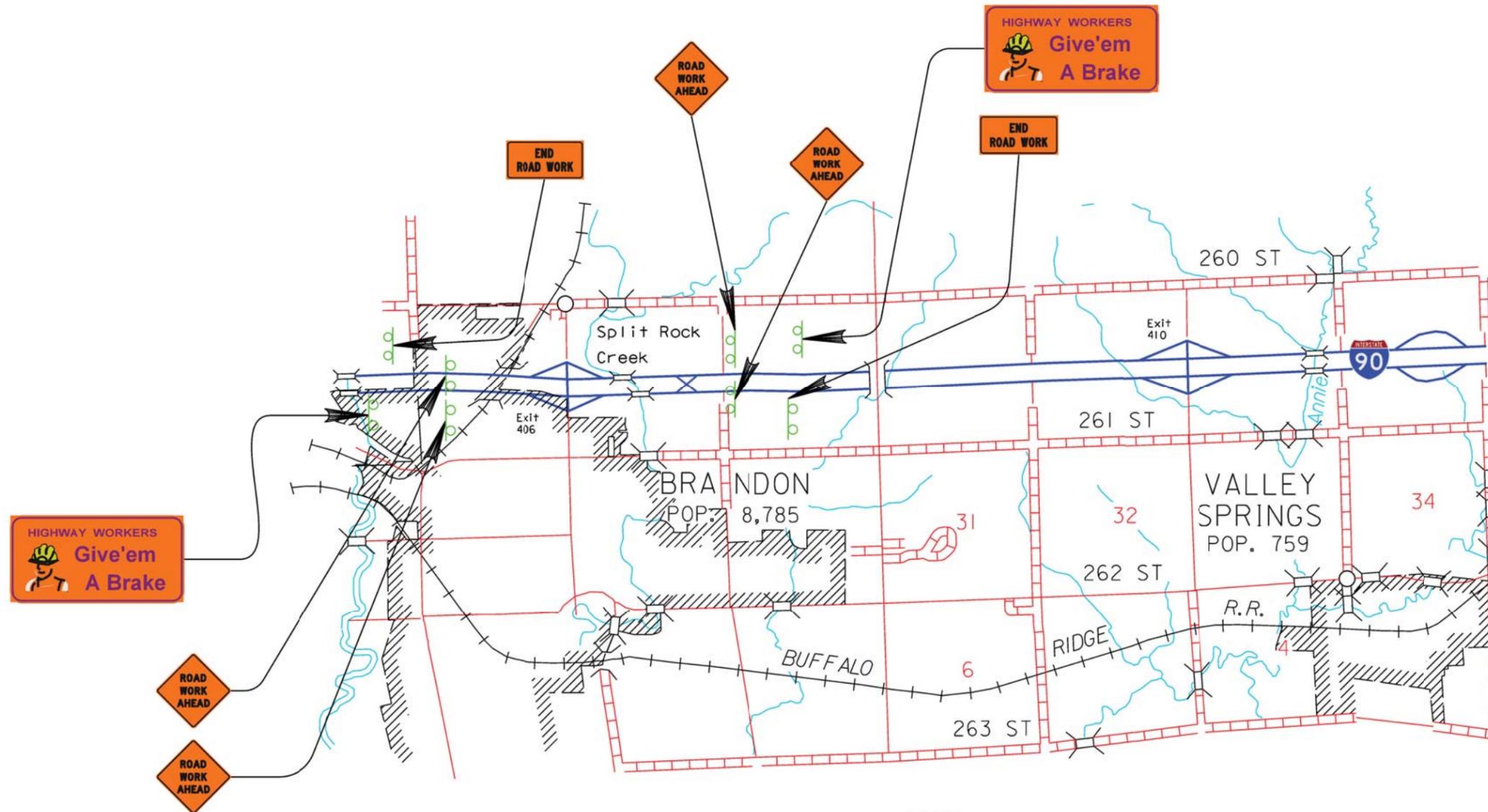
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	IM 0909(81)406	C8	C16

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# TRAFFIC CONTROL

FIXED LOCATION SIGNS  
(GROUND MOUNTED SUPPORTS)



**NOTES:**

All Gound Mounted Support signs shall remain in place until permanent pavement marking is complete.

Posts used for the mounting of construction signs shall yield upon impact to minimize hazards to motorists. If a two-part assembly is used, the connection must conform to FHWA breakaway sign support requirements.

All construction signs shall be erected so as to not obscure the view of any existing signs and shall be erected a minimum of 100 feet from any existing sign.

"Give'em A Brake" sign shall be installed 2000' in advance the G20-1 signs shown on Plate Number 634.66.

END ROAD WORK signs shall be installed 500' past all other project related signing.

PLOT SCALE - 1:9024.3

PLOTTED FROM - TRSF12113

PLOT NAME - 1

FILE - ... \021XKA08\_FIXEDLOCATIONS.DGN

PLOT SCALE - 1:9024.3

PLOTTED FROM - TRSF12113

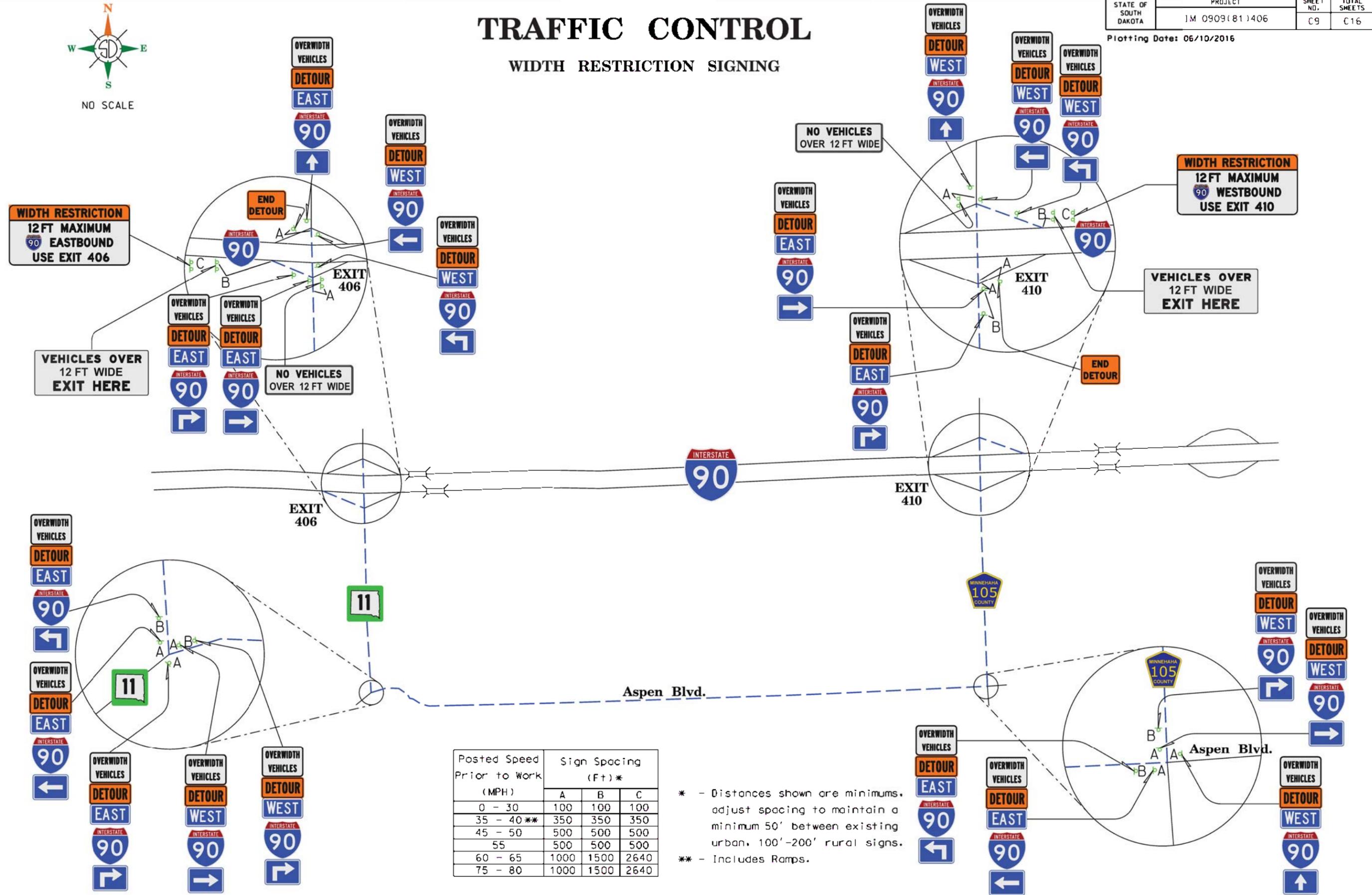


# TRAFFIC CONTROL

## WIDTH RESTRICTION SIGNING

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	1M 0909(81)406	C9	C16

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Posted Speed Prior to Work (MPH)	Sign Spacing (Ft)*		
	A	B	C
0 - 30	100	100	100
35 - 40**	350	350	350
45 - 50	500	500	500
55	500	500	500
60 - 65	1000	1500	2640
75 - 80	1000	1500	2640

\* - Distances shown are minimums, adjust spacing to maintain a minimum 50' between existing signs, 100'-200' rural signs.

\*\* - Includes Ramps.

FILE - ... \021XKA09\_WIDTHRESTRICTIONSIGNING.DGN

PLOT NAME - 1

# ITEMIZED LIST FOR DETOUR SIGNING

STATE OF SOUTH DAKOTA	PROJECT JM 0909(81)406	SHEET NO. C10	TOTAL SHEETS C16
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Plotting Date: 06/10/2016

DESCRIPTION/ILLUSTRATION	DIMENSIONS (INCHES)	AREA ( Sq Ft)	QUANTITY	TOTAL ( Sq Ft)	DESCRIPTION/ILLUSTRATION	DIMENSIONS (INCHES)	AREA ( Sq Ft)	QUANTITY	TOTAL ( Sq Ft)	
INTERSTATE 90 ROUTE MARKER	24" X 24"	4.00	20	80.00		72" X 24"	12.00	2	24.00	
DIRECTIONAL MARKER EAST (INT)	24" X 12"	2.00	10	20.00						
DIRECTIONAL MARKER WEST (INT)	24" X 12"	2.00	10	20.00		120" X 48"	40.00	2	80.00	
DETOUR	24" X 12"	2.00	20	40.00						
HORIZONTAL SINGLE HEAD (INT)	21" X 15"	2.19	8	17.50		108" X 60"	45.00	1	45.00	
ADVANCE TURN 90 RIGHT (INT)	21" X 15"	2.19	5	10.94						
ADVANCE TURN 90 LEFT (INT)	21" X 15"	2.19	4	8.75						
VERTICAL SINGLE HEAD (INT)	21" X 15"	2.19	3	6.56						
END DETOUR	24" X 18"	3.00	2	6.00		108" X 60"	45.00	1	45.00	
OVERWIDTH VEHICLES	24" X 18"	3.00	20	60.00						
<b>COLUMN TOTAL</b>										
					<b>COLUMN TOTAL</b>					194.00
					<b>DETOUR SIGNING TOTAL</b>					<b>463.8</b>

PLOT SCALE - 1:9024.3

PLOTTED FROM - TRSF12113

PLOT NAME - 1

FILE - ... \021XKA10\_DETOUR\_SIGNING.DGN

# SPECIAL SIGN DETAILS

STATE OF SOUTH DAKOTA	PROJECT IM 0908(81)406	SHEET C11	TOTAL SHEETS C16
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Plotting Date: 06/10/2016



SIGN NUMBER	SPECIAL
WIDTH x HEIGHT	8'-0" X 6'-0"
BORDER WIDTH	2.0"
CORNER RADIUS	9.0"
LEGEND	9"/10"/12" E MODIFIED
BACKGROUND	TYPE: MICROPRISMATIC COLOR: FLUORESCENT ORANGE
LEGEND/BORDER	TYPE: OPAQUE COLOR: BLACK



SIGN NUMBER	SPECIAL
WIDTH x HEIGHT	8'-0" X 5'-0"
BORDER WIDTH	2.0"
CORNER RADIUS	8.0"
LEGEND	9"/10"/12" E MODIFIED
BACKGROUND	TYPE: MICROPRISMATIC COLOR: FLUORESCENT ORANGE
LEGEND/BORDER	TYPE: OPAQUE COLOR: BLACK



SIGN NUMBER	SPECIAL
WIDTH x HEIGHT	5'-0" X 3'-6"
BORDER WIDTH	1.5"
CORNER RADIUS	5.0"
LEGEND	8" E MODIFIED
BACKGROUND	TYPE: MICROPRISMATIC COLOR: FLUORESCENT ORANGE
LEGEND/BORDER	TYPE: OPAQUE COLOR: BLACK



SIGN NUMBER	SPECIAL
WIDTH x HEIGHT	8'-0" X 5'-0"
BORDER WIDTH	2.0"
CORNER RADIUS	8.0"
LEGEND	8"/9"/10"/12" E MODIFIED
BACKGROUND	TYPE: MICROPRISMATIC COLOR: FLUORESCENT ORANGE
LEGEND/BORDER	TYPE: OPAQUE COLOR: BLACK

# SPECIAL SIGN DETAILS

STATE OF SOUTH DAKOTA	PROJECT IM 0908(81)406	SHEET C12	TOTAL SHEETS C16
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Plotting Date: 06/10/2016



1/2" BORDER - 1 1/2" CORNER RADIUS  
BLACK OPAQUE BORDER/LEGEND  
ON HIGH INTENSITY WHITE SHEETING



OPAQUE BLACK BORDER/LEGEND  
ON HIGH INTENSITY WHITE SHEETING  
3/4" BORDER - 3" CORNER RADIUS



OPAQUE BLACK BORDER/LEGEND  
ON HIGH INTENSITY WHITE SHEETING  
1" BORDER - 6" CORNER RADIUS

FLUORESCENT ORANGE  
SUPER/VERY HIGH INTENSITY SHEETING



OPAQUE BLACK BORDER/LEGEND  
1 1/2" BORDER - 9" CORNER RADIUS

HIGH INTENSITY  
WHITE SHEETING

72"

FLUORESCENT ORANGE  
SUPER/VERY HIGH INTENSITY SHEETING



OPAQUE BLACK BORDER/LEGEND  
1 1/2" BORDER - 9" CORNER RADIUS

HIGH INTENSITY  
WHITE SHEETING

72"

Plotting Date: 06/10/2016

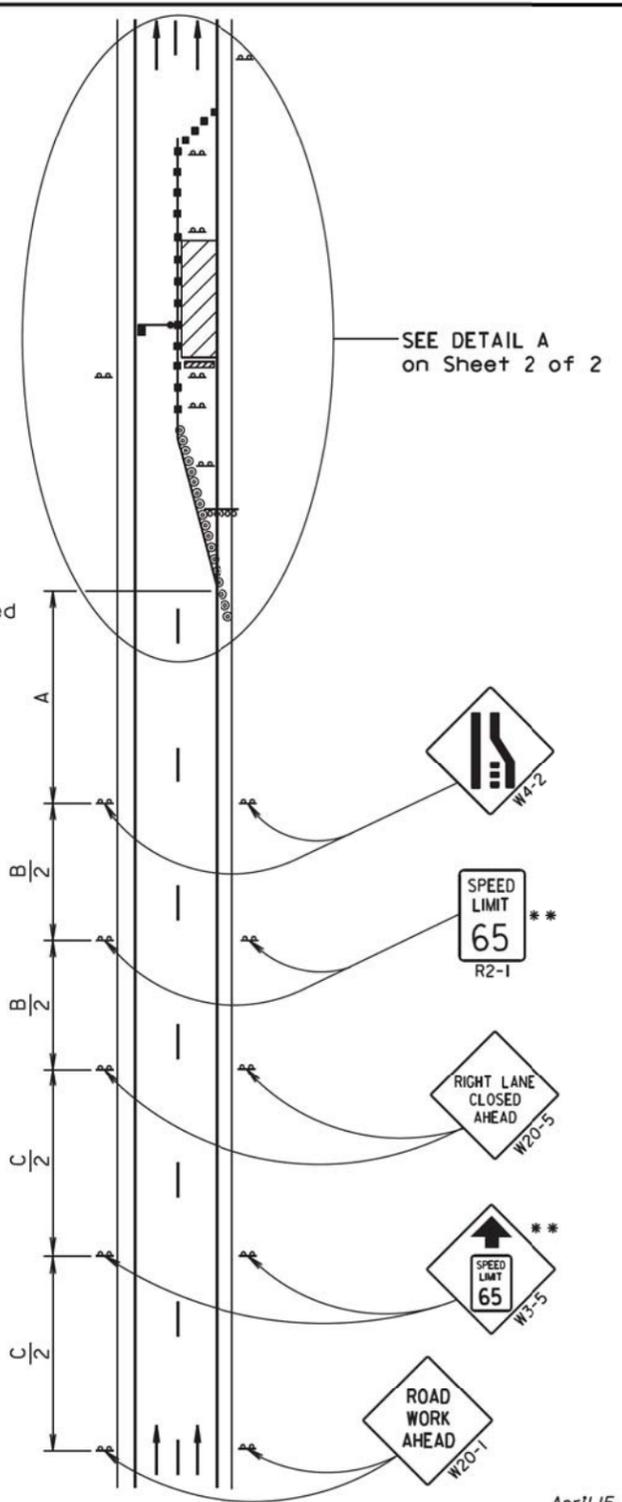
PLOT SCALE - 1:22000

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

PLOTTED FROM - TRSF12113

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet)	
	(G)	(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.

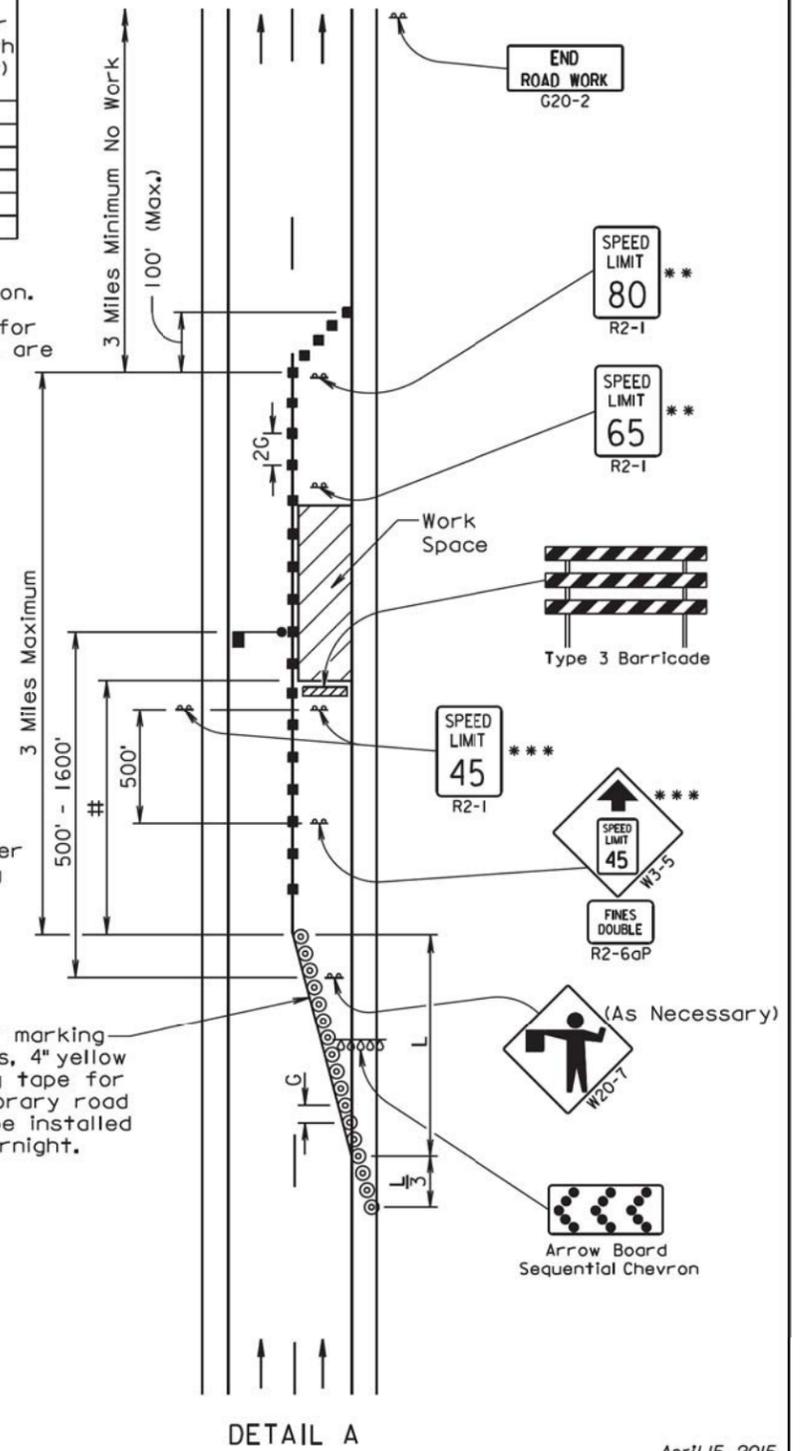
- Flagger (As Necessary)
- ⊙ Reflectorized Drum
- Channelizing Device
- # The Work Space shall be a minimum of 500' from the end of the taper.

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

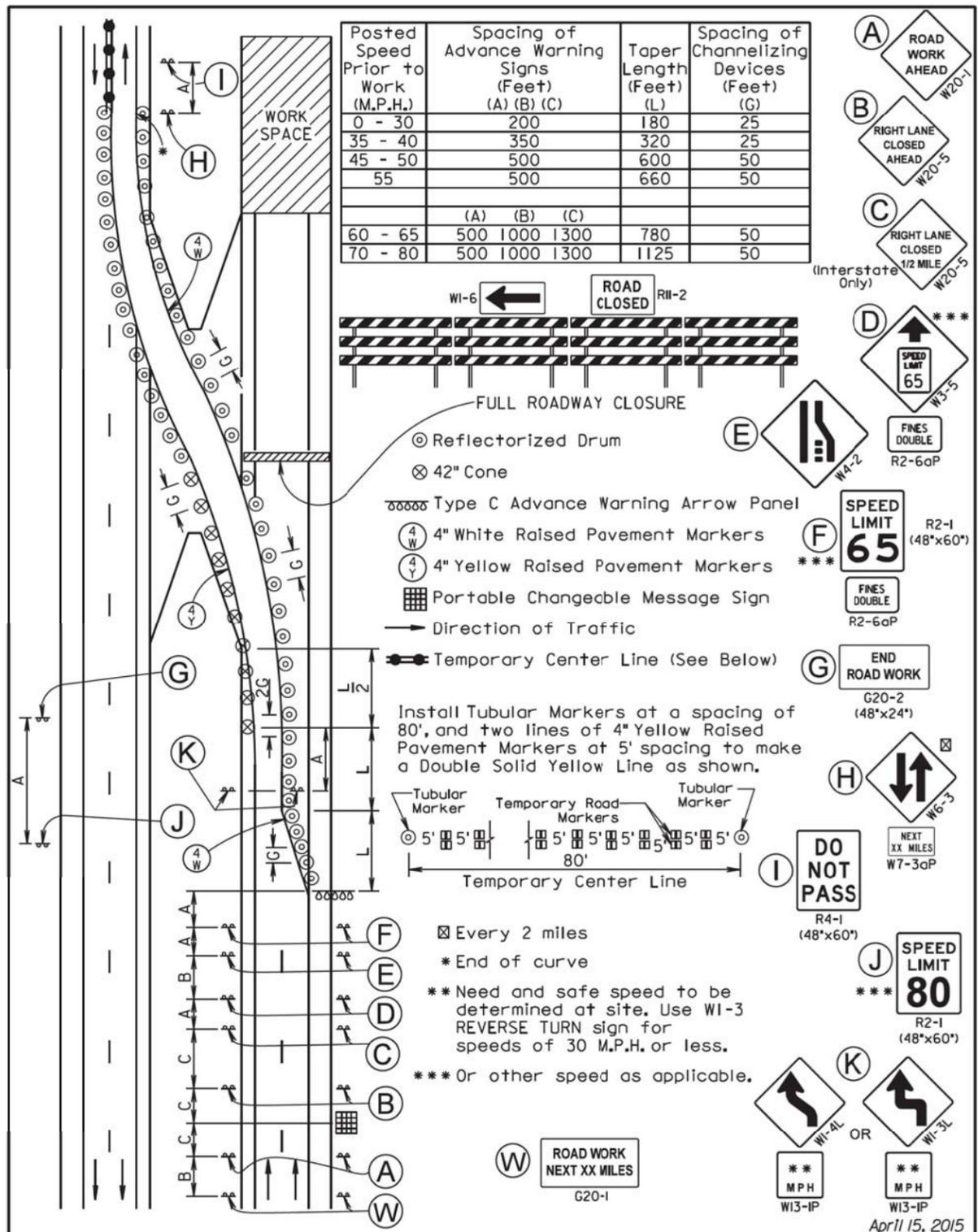
<b>S D D O T</b>	<b>WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS</b>	PLATE NUMBER <b>634.63</b>
	Published Date: 2nd Qtr. 2016	Sheet 2 of 2

PLOT NAME - 1

FILE - ... \021XKA13\_STDPATE634.63.DGN

Plotting Date: 06/10/2016

PLOT SCALE - 1:22000



Published Date: 2nd Qtr. 2016

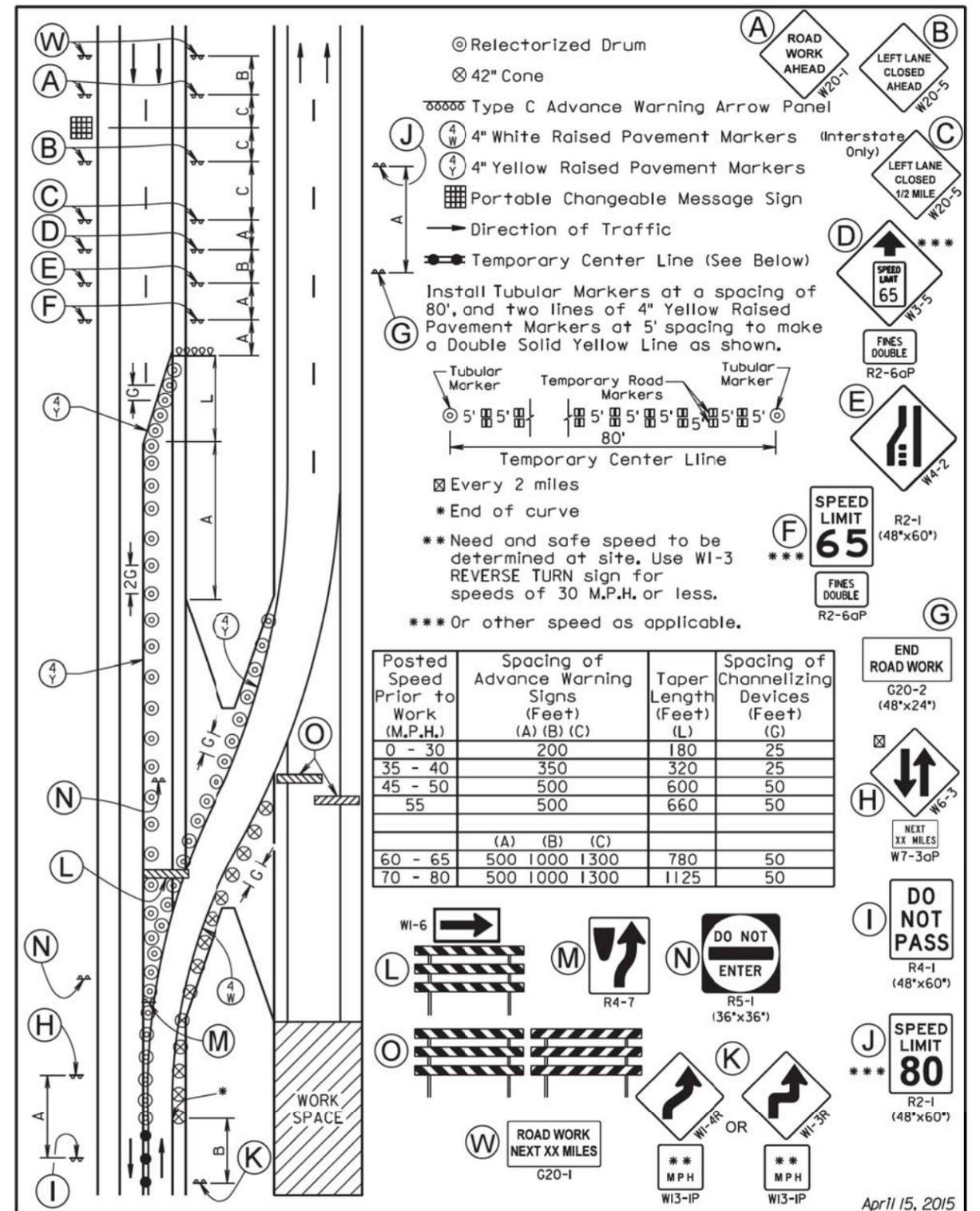
**SD DOT**

**GUIDES FOR TRAFFIC CONTROL DEVICES  
MEDIAN CROSSOVER ON DIVIDED HIGHWAY**

PLATE NUMBER  
634.66

Sheet 1 of 2

April 15, 2015



Published Date: 2nd Qtr. 2016

**SD DOT**

**GUIDES FOR TRAFFIC CONTROL DEVICES  
MEDIAN CROSSOVER ON DIVIDED HIGHWAY**

PLATE NUMBER  
634.66

Sheet 2 of 2

April 15, 2015

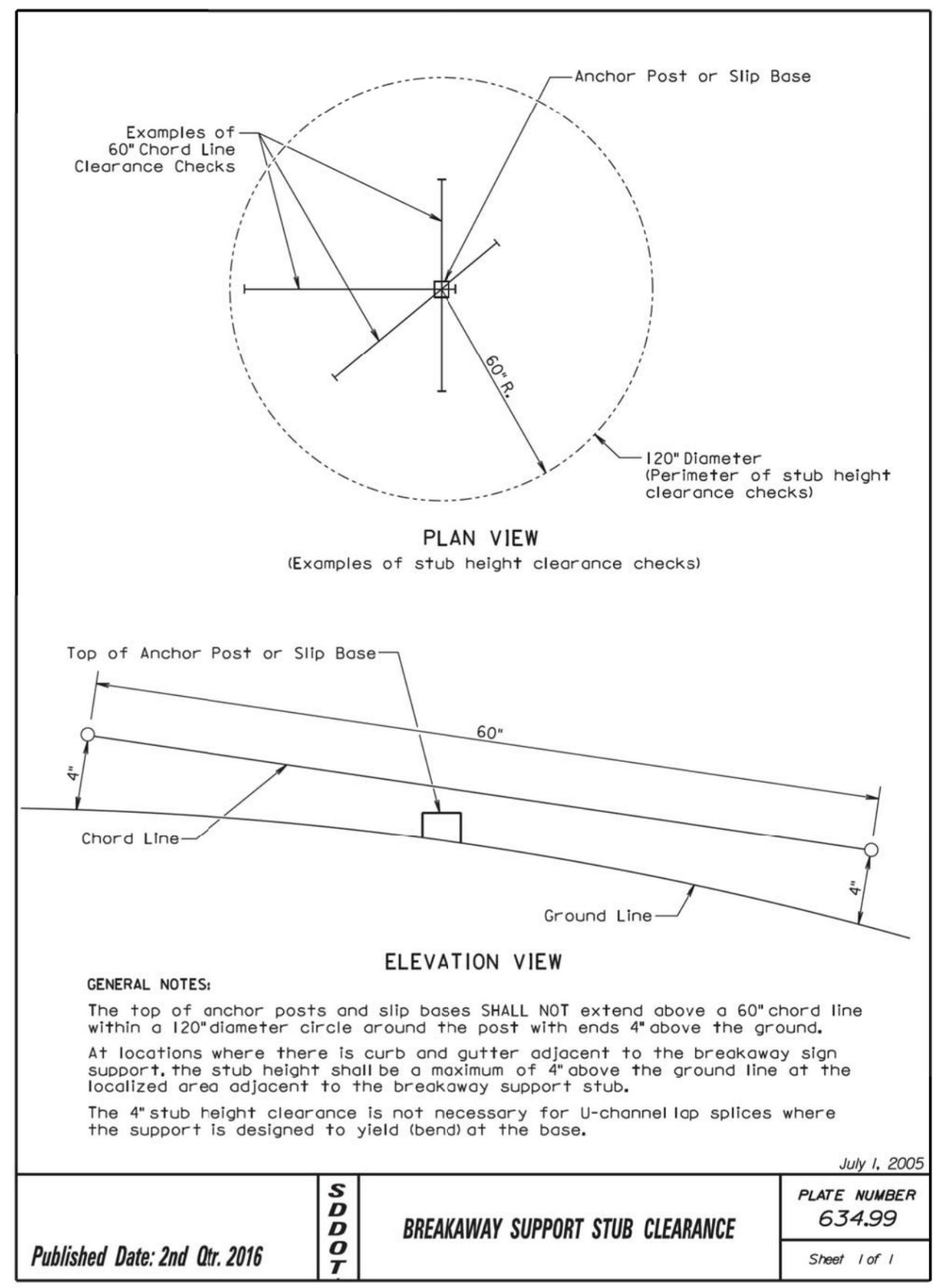
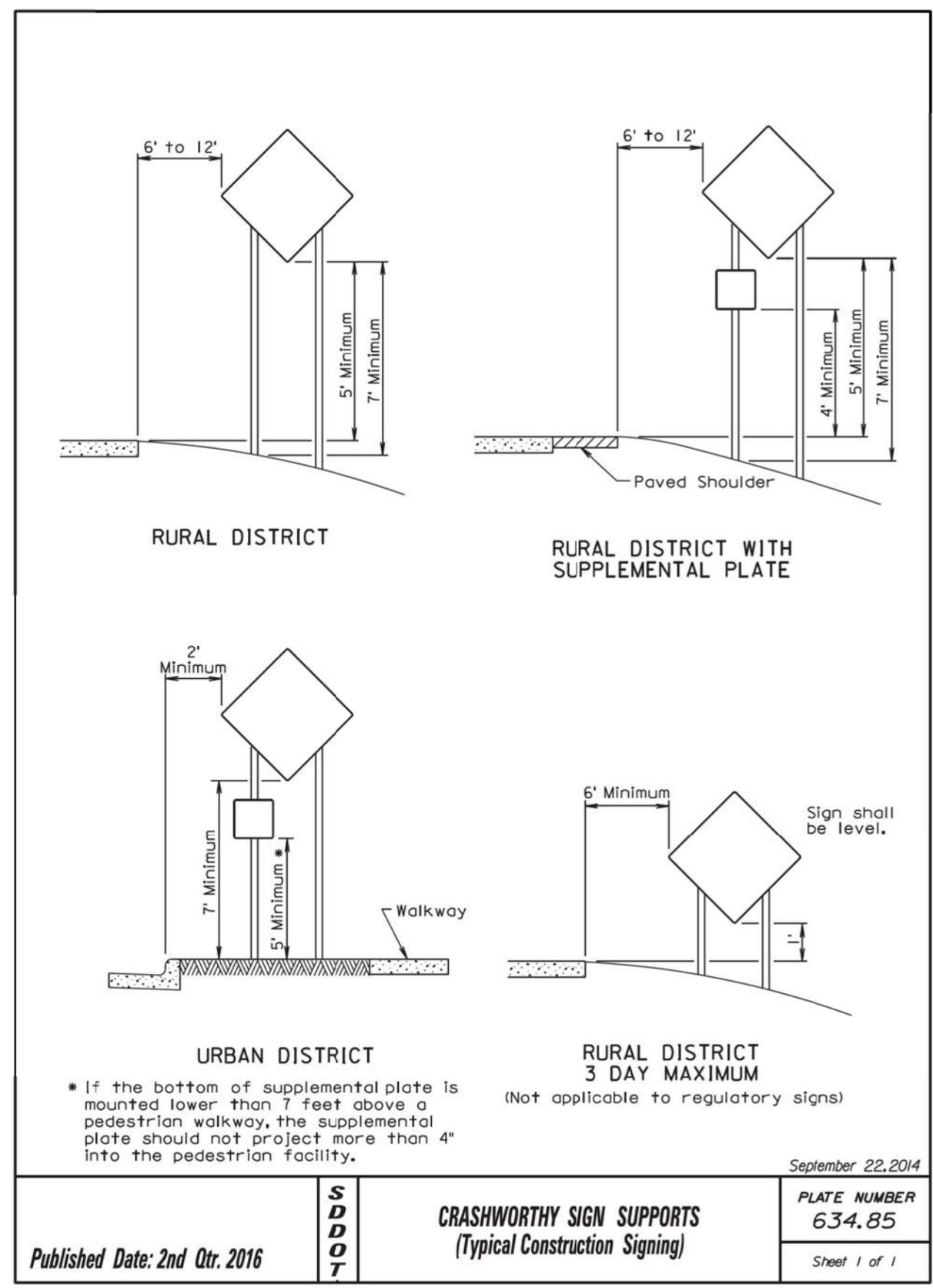
PLOTTED FROM - TRSF12113

FILE - ... \021\KA14 STD\PLATE634.66.DGN

Plotting Date: 06/10/2016

PLOT SCALE - 1:22000

FILE - ... \021XKA15\_STDPLATE634\_85&634\_99.DGN PLOT NAME - 1



PLOTTED FROM - TRSF12113

# ITEMIZED LIST FOR TRAFFIC CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	JM 0909(81)406	C16	C16

Plotting Date: 06/10/2016

SIGN CODE	SIGN DESCRIPTION	INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT 65	6	36" x 48"	12.0	72.0
R2-1	SPEED LIMIT 80	2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)	8	36" x 24"	6.0	48.0
R4-1	DO NOT PASS	3	36" x 48"	12.0	36.0
R4-7	KEEP RIGHT (symbol)	1	36" x 48"	12.0	12.0
R5-1	DO NOT ENTER	2	36" x 36"	9.0	18.0
R11-2	ROAD CLOSED	1	48" x 30"	10.0	10.0
W1-4L	REVERSE CURVE (L)	2	48" x 48"	16.0	32.0
W1-4R	REVERSE CURVE (R)	1	48" x 48"	16.0	16.0
W1-6	LARGE ARROW (one direction)	2	60" x 30"	12.5	25.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	4	48" x 48"	16.0	64.0
W4-1	MERGE (symbol)	1	48" x 48"	16.0	16.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	7	48" x 48"	16.0	112.0
W4-5	ENTERING ROADWAY MERGE	1	48" x 48"	16.0	16.0
W6-3	TWO WAY TRAFFIC (symbol)	3	48" x 48"	16.0	48.0
W7-3aP	NEXT __ MILES (plaque)	2	36" x 30"	7.5	15.0
W13-1P	ADVISORY SPEED (plaque)	3	30" x 30"	6.3	18.9
W16-2P	__ FEET (supplemental distance plaque)	1	30" x 24"	5.0	5.0
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	6	48" x 48"	16.0	96.0
W20-5a	LEFT OR RIGHT LANE CLOSED 1/2 MILE	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (SYMBOL)	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT __ MILES	4	48" x 24"	8.0	32.0
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
M1-1	INTERSTATE ROUTE MARKER (2 digits)	1	36" x 36"	9.0	9.0
M3-4	DIRECTION MARKER - WEST	1	36" x 18"	4.5	4.5
M6-3	DIRECTION ARROW - Vertical Single Head	1	30" x 21"	4.4	4.4
SW12-1b	HIGHWAY WORKS GIVE'EM A BRAKE	2	120" x 60"	50.0	100.0
SPECIAL	EXIT WITH 45 DEGREE ARROW	1	96" x 72"	48.0	48.0
SPECIAL	EXIT 406 Brandon WITH 45 DEGREE ARROW	1	102" x 90"	63.8	63.8
SPECIAL	EXIT 406 Brandon 500 FT	1	96" x 60"	40.0	40.0
SPECIAL	EXIT 406 Brandon 1/4 MILE	1	96" x 60"	40.0	40.0
		INTERSTATE TRAFFIC CONTROL SIGNS SQFT		<b>1261.6</b>	

PLOT SCALE - 1:9024.3

PLOTTED FROM - TRSF12113

PLOT NAME - 1

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