

SECTION-C TRAFFIC CONTROL

STATE OF SOUTH DAKOTA	PROJECT IM 0904(59)210	SHEET C1	TOTAL SHEETS C15
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Plotting Date: 01/27/2016

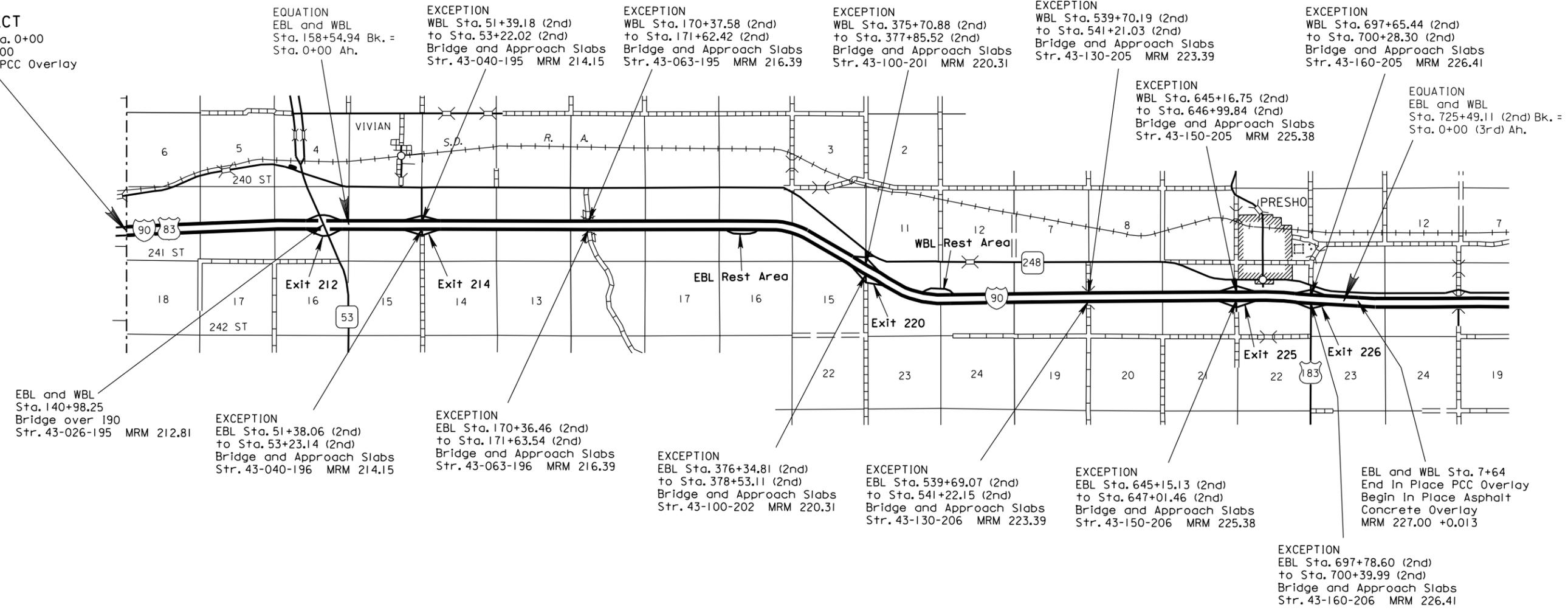
INDEX OF SECTIONS

Sheets C1-C3	Title Sheets
Sheets C4-C9	Notes
Sheets C10-C12	Standard Drawings
Sheets C13-C15	Standard Plates

PLOT SCALE - 1:7920

PLOT NAME - 1

BEGIN PROJECT
EBL and WBL Sta. 0+00
MRM 210.14 +0.000
Begin in Place PCC Overlay



EQUATION
EBL and WBL
Sta. 158+54.94 Bk. =
Sta. 0+00 Ah.

EXCEPTION
WBL Sta. 51+39.18 (2nd)
to Sta. 53+22.02 (2nd)
Bridge and Approach Slabs
Str. 43-040-195 MRM 214.15

EXCEPTION
WBL Sta. 170+37.58 (2nd)
to Sta. 171+62.42 (2nd)
Bridge and Approach Slabs
Str. 43-063-195 MRM 216.39

EXCEPTION
WBL Sta. 375+70.88 (2nd)
to Sta. 377+85.52 (2nd)
Bridge and Approach Slabs
Str. 43-100-201 MRM 220.31

EXCEPTION
WBL Sta. 539+70.19 (2nd)
to Sta. 541+21.03 (2nd)
Bridge and Approach Slabs
Str. 43-130-205 MRM 223.39

EXCEPTION
WBL Sta. 697+65.44 (2nd)
to Sta. 700+28.30 (2nd)
Bridge and Approach Slabs
Str. 43-160-205 MRM 226.41

EXCEPTION
WBL Sta. 645+16.75 (2nd)
to Sta. 646+99.84 (2nd)
Bridge and Approach Slabs
Str. 43-150-205 MRM 225.38

EQUATION
EBL and WBL
Sta. 725+49.11 (2nd) Bk. =
Sta. 0+00 (3rd) Ah.

EBL and WBL
Sta. 140+98.25
Bridge over I90
Str. 43-026-195 MRM 212.81

EXCEPTION
EBL Sta. 51+38.06 (2nd)
to Sta. 53+23.14 (2nd)
Bridge and Approach Slabs
Str. 43-040-196 MRM 214.15

EXCEPTION
EBL Sta. 170+36.46 (2nd)
to Sta. 171+63.54 (2nd)
Bridge and Approach Slabs
Str. 43-063-196 MRM 216.39

EXCEPTION
EBL Sta. 376+34.81 (2nd)
to Sta. 378+53.11 (2nd)
Bridge and Approach Slabs
Str. 43-100-202 MRM 220.31

EXCEPTION
EBL Sta. 539+69.07 (2nd)
to Sta. 541+22.15 (2nd)
Bridge and Approach Slabs
Str. 43-130-206 MRM 223.39

EXCEPTION
EBL Sta. 645+15.13 (2nd)
to Sta. 647+01.46 (2nd)
Bridge and Approach Slabs
Str. 43-150-206 MRM 225.38

EBL and WBL Sta. 7+64
End in Place PCC Overlay
Begin in Place Asphalt
Concrete Overlay
MRM 227.00 +0.013

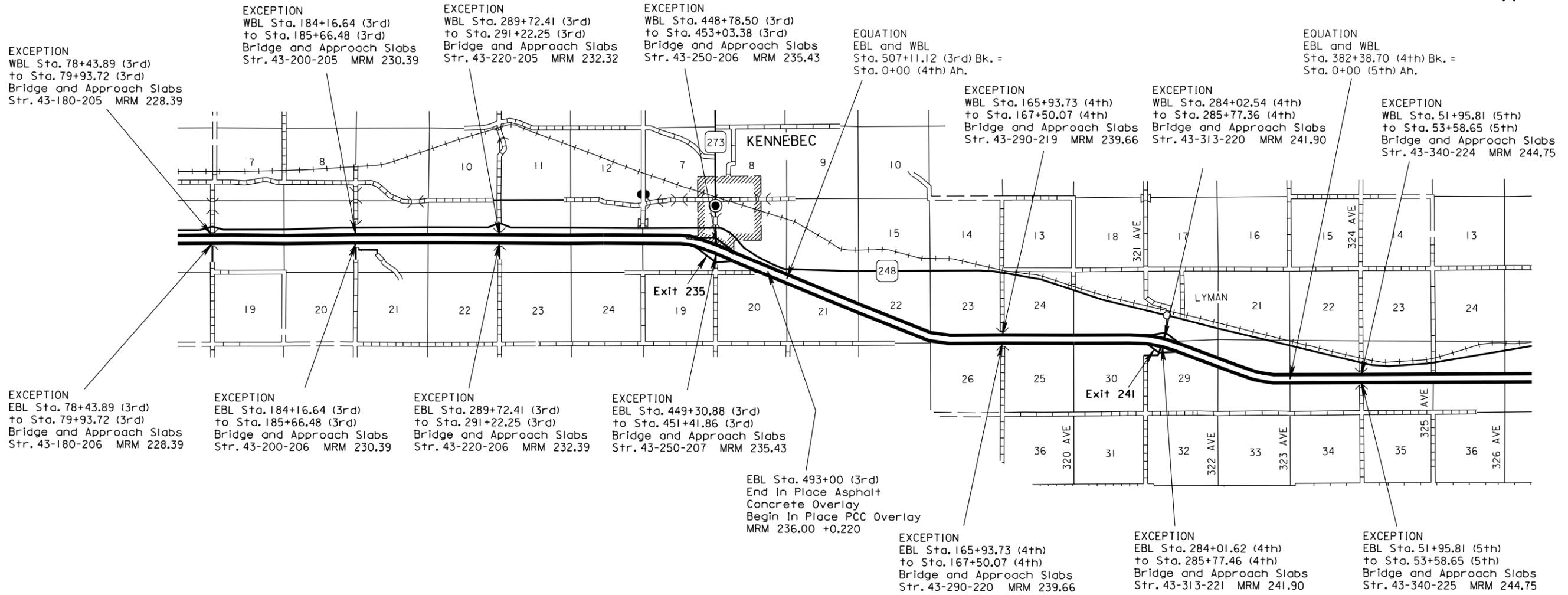
EXCEPTION
EBL Sta. 697+78.60 (2nd)
to Sta. 700+39.99 (2nd)
Bridge and Approach Slabs
Str. 43-160-206 MRM 226.41

PLOTTED FROM - TRW11INT19

FILE - ... \PCN04D4 SECTION C TITLE.DGN

Plotting Date: 01/29/2016

SECTION-C TRAFFIC CONTROL



PLOT SCALE - 1:7920

PLOTTED FROM - TRW1INT19

PLOT NAME - 1

FILE ... \PCN04D4 SECTION C TITLE.DGN

SECTION-C TRAFFIC CONTROL

STATE OF SOUTH DAKOTA	PROJECT IM 0904(59)210	SHEET C3	TOTAL SHEETS C15
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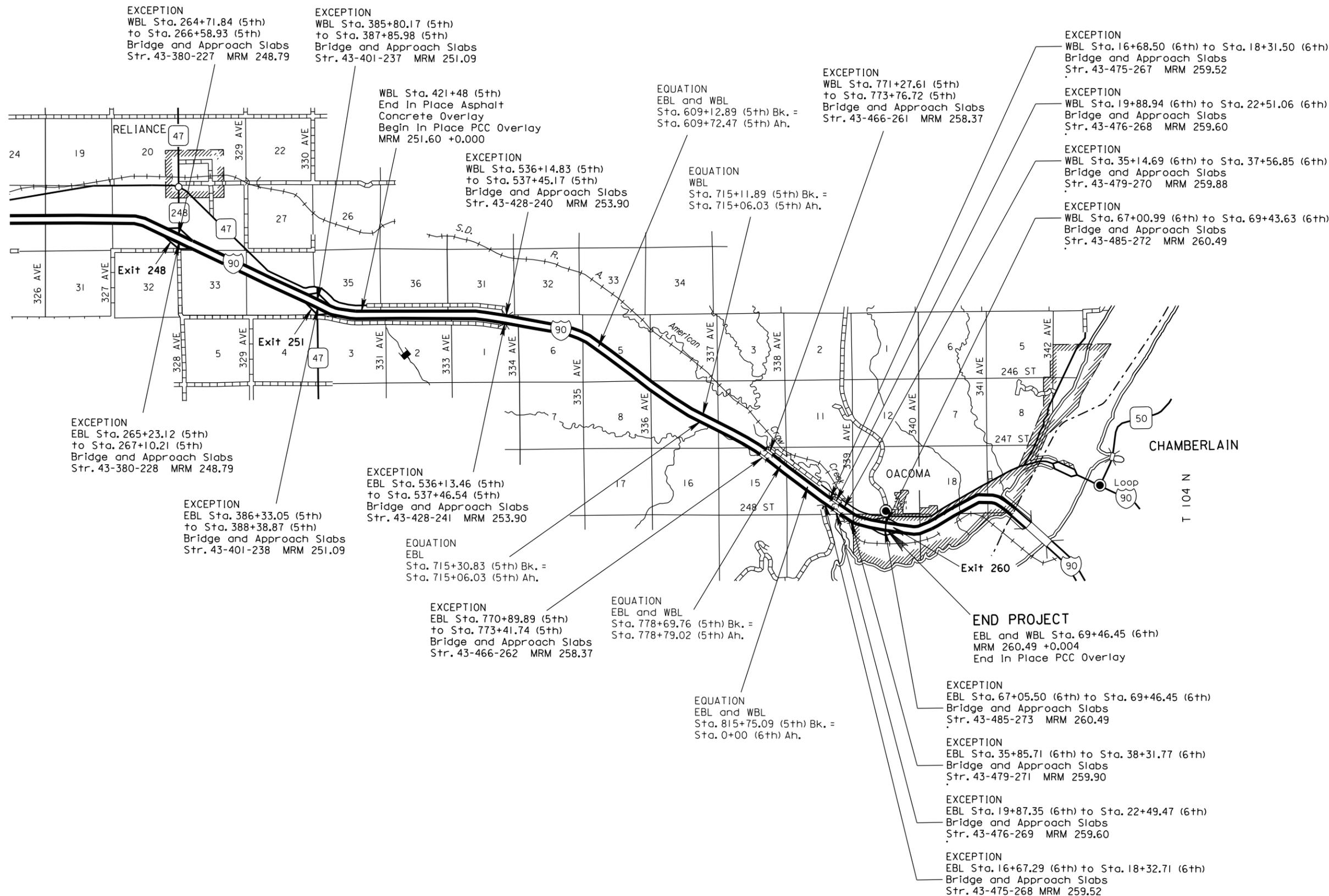
Plotting Date: 01/29/2016

PLOT SCALE - 1:7920

PLOTTED FROM - TRW11INT19

PLOT NAME - 1

FILE - ... \PCN04D4 SECTION C TITLE.DGN



ESTIMATE OF QUANTITIES

Section C - Traffic Control

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	8,760.0	Hour
634E0020	Pilot Car	120.0	Hour
634E0110	Traffic Control Signs	4,444	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	4	Each
634E0420	Type C Advance Warning Arrow Board	4	Each
634E0630	Temporary Pavement Marking	2.2	Mile
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.

Project Coordination

BSN 2-2-16

For sequencing planning purposes, this project will be adjacent to three other SDDOT projects. The Contractor will coordinate their work schedule and traffic closures as per the plans and specifications, as determined by the Engineer. Existing construction signing and traffic control may need to be covered or removed/reset as appropriate to complete this work. The cost for this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Project#1

NH0083()87: PCN 05H6

US83 PCC Repair Project from MRM 87 north (I-90 Exit 212)

Project#2

P0273(07)61; PCN 054J

SD273 Route and Seal (I-90 Exit 235 Kennebec)

Project#3

NH-P 0021(157); PCN 053F

I-90 Loop Asphalt Surface Treatment (I-90 Exit 260 Crossroad Oacoma)

Traffic Control Allotments

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:

- Two – 3 mile Temporary Lane Closures (Milling & Asphalt Paving)
- Two – 15 mile Temporary Lane Closures (Seal Operations)
- Four – Contractor Furnished Portable Changeable Message Signs

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. All other miscellaneous signs will be paid for at their respective SQFT price once installed for the ramp and crossroad work.

All milling and asphalt paving work will be limited to a 3 mile closure.

For the Asphalt Surface Treatment work, the length of the lane closure shall be limited to 15 miles or the length of the Contractor's planned daily production, whichever is less. During the installation of the chip seal on I-90, the Contractor shall chip in the opposite direction of the flow of traffic to facilitate the movement of trucks entering and exiting the lane closure/work area. As the seal is completed and brooming operations have finished, the Contractor shall make every effort to open portions of the closed lane back to traffic, as approved by the Engineer.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0904(59)210	C5	C15

Traffic Control Allotments-Continued

Lane closures in the same direction of travel shall be a minimum of 3 miles apart.

Payment for the 4" temporary pavement markings for individual lane closure tapers that must remain overnight shall be incidental to the contract lump sum price for TRAFFIC CONTROL MISCELLANEOUS.

Lane closures remaining overnight will be limited to 3 miles in length.

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

The Contractor is prohibited from using SD Highway 248 for loaded trucks for this project, 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.

All ramps shall remain open to the traveling public throughout the duration of the project unless approved by the Engineer.

The contract work may be done using portable sign supports. 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.

The minimum mounting height for regulatory signs in rural areas shall be five feet even if mounted on portable supports.

During the Asphalt Surface Treatment operation the on and off ramps adjacent to the mainline lane closure on I-90 shall be sealed while that lane closure is in place or as approved by the Engineer.

Flagging & Pilot Car

During work on the Interstate the Contractor may use flaggers, as approved by the Engineer, when operations are near the centerline of the two lanes or to help facilitate construction traffic entering and exiting the work area.

During the application of the seal on the crossroads the Contractor shall use a pilot car. If determined by the Contractor that the traffic can safely pass through the crossroad work area without a pilot car, by an alternate means, the Engineer may approve the use of no pilot car.

Sequence of Operations

The Contractor may utilize the above traffic control to best fit the planned sequence and operation. Sufficient traffic control devices have been allotted to be used 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.

For sequence planning purposes, the Department offers the following sequence of operations for the work called for in these plans: This sequence is intended as a guide only to the Contractor to aid in development of the sequence of operations and is not inclusive of all work activities:

Sequence:

- Install Fixed Location Signs
- Milling of Eastbound Shoulder from MRM 212 to MRM 226
- Paving of Eastbound Shoulder from MRM 212 to MRM 226
- Resealing of Shoulder Joint
- Resealing of Centerline Joint
- Shoulder Repair Eastbound and Westbound MRM 251 to MRM 260
- Install the Asphalt Surface Treatment on Mainline, Ramps and Crossroads.
- Install Permanent Pavement Markings
- Remove Fixed Location Signing

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 name and phone number of the Contractor's designated employee(s) who will be available 24 hours/day, 7 days/week to be responsible for the maintenance of traffic shall be provided to the SD Department of Transportation (842-0810), SD Highway Patrol (Pierre State Radio (773-3536) and Lyman County Sheriff Department (869-2267).

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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0904(59)210	C6	C15

MAINTENANCE OF TRAFFIC – CONTINUED

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.

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, cleanup and other mobile work activities.

Highway equipment working within traffic or adjacent to traffic shall, at all times, display a flashing or revolving amber light to warn the traveling public.

The Contractor shall furnish, install and maintain TRUCK CROSSING signs. 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 and the crossover is within the closures.

Work within a single lane closure with stored material stockpiles, vehicles, and equipment shall be marked by Type 3 barricades. Traffic sight distances shall not be obstructed and located as far from the traveled way as feasible. The Contractor should take every measure to minimize equipment that remains in a lane closure overnight. This equipment shall be parked as far as possible from the open lane and shall be marked with a Type 3 barricade or 3 drums to alert the traveling public of parked equipment in the closed lane. These Type 3 barricades or drums shall be incidental to the various bid items and no separate payment will be made.

Prior to opening a lane closure to traffic the entire lane shall be swept.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGNS

Portable Changeable Message signs will be utilized prior to the area where workers are present at the start of the occupied work area. One portable message sign will be utilized for each lane closure. The portable message sign shall be programmed to use standard abbreviations and wording as described in the MUTCD or as directed by the Engineer.

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

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGNS-CONTINUED

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

TEMPORARY PAVEMENT MARKING

Temporary Pavement Markings shall be required all crossroads to delineate the centerline until permanent pavement markings are applied.

Temporary pavement marking will be measured once for the asphalt surface treatment and once for the fog seal on each route, for a total of two applications.

All costs for each application of the temporary pavement marking; including labor, material, maintenance, etc. shall be incidental to the contract unit price per mile for "Temporary Pavement Marking".

The Contractor will be allowed to use "Do Not Pass" and "Pass With Care" fixed location signs for a period of two (2) weeks to mark no passing zones on crossroads. Cost for furnishing, installing, and removing the "Do Not Pass" and "Pass With Care" signs shall be incidental to the contract unit price per mile for "Temporary Pavement Marking".

No temporary pavement marking paint will be allowed on the asphalt surface treatment or fog seal applications.

TEMPORARY PAVEMENT MARKING - CONTINUED

At the end of each day the temporary pavement markings shall be in place and visible. No separate payment will be made at the end of the next day for remarking a stretch that was not evened up with surface treatment on the previous day.

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

PROTECTION OF BRIDGES AND JOINTS

Asphalt surface treatment shall not be placed on any bridge and/or bridge approach slabs. Any emulsion or cover aggregate found to be on bridges or approach slabs after final brooming shall be removed by the Contractor as directed by the Engineer at no cost to the Department.

Cover aggregate material shall not be broomed under any guardrail, 3 cable guardrail, or into any drop inlets along the project.

All joints at bridge ends including asphalt plug joints and strip seal glands along the project shall be masked and/or protected the entire length, in the closed lane, prior to any work operations. This protection shall remain in place until completion of the work and any final brooming operations. The protection shall then be removed and any loose material cleaned out of each of the gland areas. Any damage to the glands caused by the asphalt surface treatment operations shall be repaired at no expense to the State. All costs related to this work shall be incidental to the various contract items.

PROJECT BROOMING

During all work operations the Contractor shall have a power broom on site dedicated to clean and maintain the road surface of construction debris per operational lane closure. Cost of this dedicated broom per lane closure will be incidental to the various items and no separate payment shall be made.

All material shall be broomed off of bridges and curb & gutter areas adjacent to the bridges. No material shall be broomed under the guardrail, including the 3 cable guardrail or into the drop inlets. This material from the curb & gutter areas of the bridges, the guardrail areas of the bridges and the drop inlets shall be disposed of in a manner satisfactory to the Engineer.

No material shall be broomed into the ditches or on the boulevards in residential and commercial areas where the adjacent landowner conducts the mowing of the right-of-way. This material shall be disposed of in a manner satisfactory to the Engineer.

Material that is broomed onto the roadway inslopes shall not be left in piles or windrows. The material shall be evenly distributed at a height that will not hinder mowing operations or cause dispersion of the material into the traveled roadway when passed over with a mower.

Anticipated areas, other than the bridge areas stated above, that will require either removal of the chips with a pickup sweeper or additional dispersal of the chips with the rotary powered broom are:

EXIT #	LOCATION
214	Underpass Curb & Gutter Area
220	Underpass Curb & Gutter Area
225	Underpass Curb & Gutter Area
241	Underpass Curb & Gutter Area
248	Underpass Curb & Gutter Area

This list may not be complete. Additional areas may need attention as directed by the Engineer.

FOG SEAL

The Contractor will have the choice of completing the fog seal operation by utilizing one of the existing lane closures or may perform the work using a mobile operation, as shown in these plans. If the Contractor elects to use the mobile operation, the Contractor shall be required to utilize an approved crash attenuator. All costs for arrow boards and shadow vehicles will be incidental to the contract lump sum price for TRAFFIC CONTROL MISCELLANEOUS.

The Contractor shall place Fresh Oil signs at 5 mile intervals along the shoulder of the new fog seal. The Fresh Oil signs may be removed after 24 hours

PAVEMENT MARKING PRESERVATION

The Contractor shall take care not to get asphalt on the existing pavement markings on the project on the I-90 portion. The distributors used during the application of tack, the asphalt surface treatment and the fog seal shall be equipped with guards to prevent the emulsified asphalt from coming in contact with the existing pavement marking. The Contractor shall also take care during the milling, asphalt paving, and asphalt repair operations as to not damage the existing pavement markings.

The tracking of asphalt materials onto existing markings will not be acceptable.

Any damage to the existing pavement marking, as determined by the Engineer, shall be replaced with waterborne paint by the Contractor at his own expense with no additional costs to the State.

FIXED LOCATION SIGNING

Revised: BSN 3-4-16

The Contractor shall install the fixed location signing for the duration of the project as shown in the table below:

Table of Fixed Location Signs

Location	Hwy	Direction	Sign #	Sign Description	Install Location
Begin Project*	I-90	EB	G20-1	Rd Wrk Next Miles	5140' West of the project limits
End Project	I-90	WB	G20-2	End Road Work	1000' West of the project limits
Exit 212	I-90	EB & WB	W20-1	Road Work Ahead	200' from entrance of on ramp
Exit 226**	US183	NB & SB	W20-1	Road Work Ahead	3000' from limits of crossroad work
Exit 235	I-90	EB & WB	W20-1	Road Work Ahead	200' from entrance of on ramp
Exit 260	I-90	EB & WB	W20-1	Road Work Ahead	200' from entrance of on ramp
End Project	I-90	EB	G20-2	End Road Work	1000' East of the project limits
Begin Project*	I-90	WB	G20-1	Rd Wrk Next Miles	5140' East of the project limits

* The signs located at the beginning of the project will require two signs, one on each side of the interstate.

** The sign located for the southbound US183 traffic shall be placed south of SD248.

Reflectorized Sheeting Requirements for Temporary Traffic Control Devices

Delete the first paragraph of Section 984.1 and replace with the following:

Temporary traffic control devices, including signs, drums, cones, tubular markers, barricades, vertical panels, and direction indicator barricades shall be reflectorized with sheeting applied to a satisfactory backing. For all temporary traffic control warning signs, the reflective sheeting shall meet or exceed the standards of Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For all other temporary traffic control signs, the reflective sheeting shall meet or exceed the standards of Type IV, Type V, Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For barricades, vertical panels, and direction indicator barricades; the reflective sheeting shall meet or exceed the standards of Type III as defined by AASHTO M 268 (ASTM D4956). Round surfaced temporary traffic control devices including, but not limited to; drums, cones, and tubular markers shall be reflectorized with reflectorized sheeting meeting or exceeding the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

BSN 2-2-16

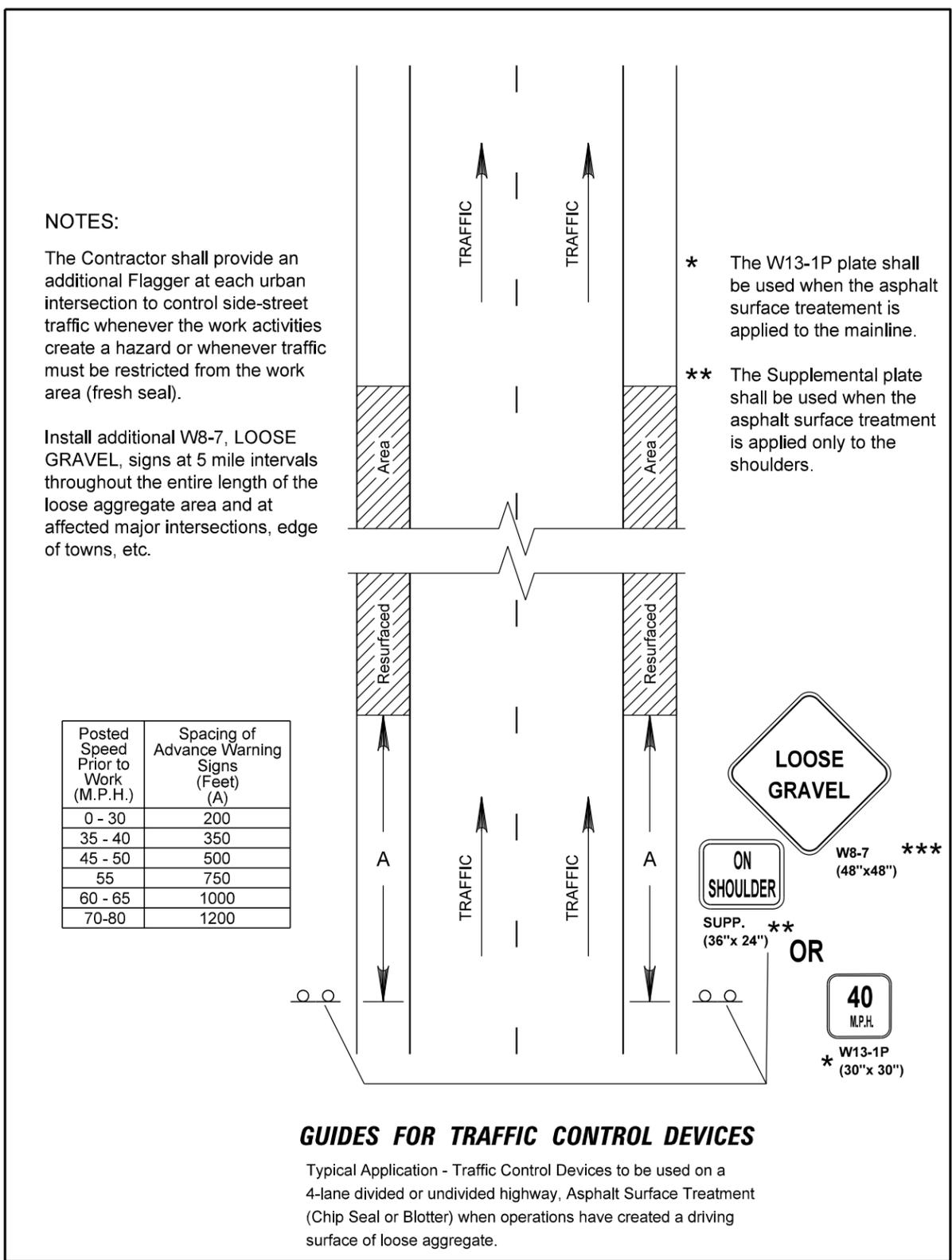
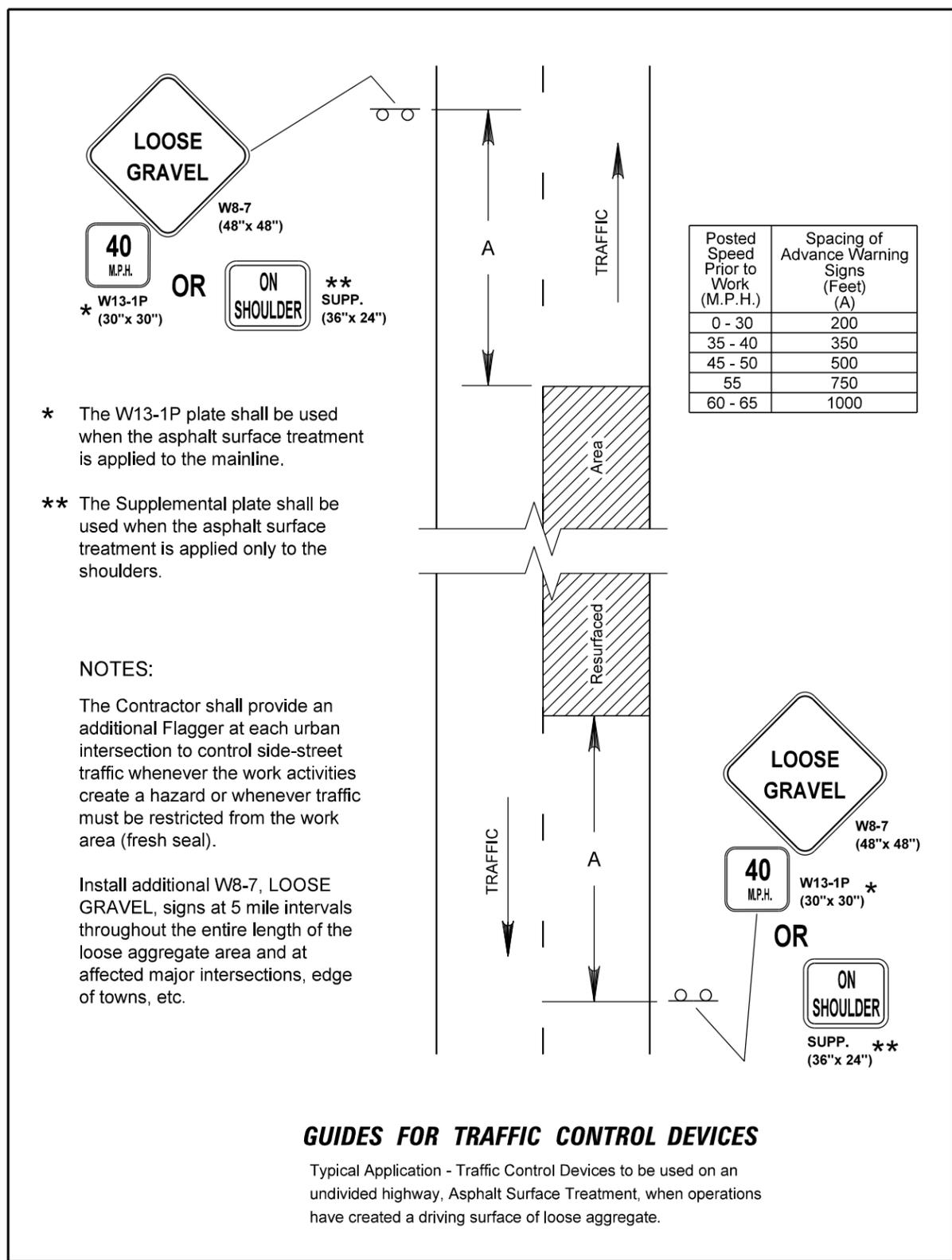
SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD	16	36" x 36"	4	64
R2-1	SPEED LIMIT 45	8	36" x 48"	12	96
R2-1	SPEED LIMIT 65	28	36" x 48"	12	336
R2-1	SPEED LIMIT 80	4	36" x 48"	12	48
R2-6aP	FINES DOUBLE (plaque)	4	36" x 24"	6	24
W3-5	SPEED REDUCTION AHEAD (__ MPH)	12	48" x 48"	16	192
W4-2	LEFT or RIGHT LANE ENDS (symbol)	8	48" x 48"	16	128
W5-4	RAMP NARROWS	16	48" x 48"	16	256
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-7	LOOSE GRAVEL	24	48" x 48"	16	384
W13-1P	ADVISORY SPEED (plaque)	42	30" x 30"	6	252
W13-4P	ON RAMP (plaque)	32	36" x 36"	9	288
W20-1	ROAD WORK AHEAD	66	48" x 48"	16	1056
W20-4	ONE LANE ROAD AHEAD	10	48" x 48"	16	160
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	9	48" x 48"	16	144
W20-7	FLAGGER (symbol)	12	48" x 48"	16	192
W21-1	WORKERS (symbol)	1	48" x 48"	16	16
W21-2	FRESH OIL	20	48" x 48"	16	320
E5-1	EXT with 45° ARROW	16	36" x 32"	8	128
SPECIAL	ON SHOULDER	44	36" x 24"	6	264
G20-1	ROAD WORK NEXT __ MILES	2	48" x 24"	8	16
G20-2	END ROAD WORK	6	48" x 24"	8	48
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			4444

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Double Sided	4 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	4 Each



- * The W13-1P plate shall be used when the asphalt surface treatment is applied to the mainline.
- ** The Supplemental plate shall be used when the asphalt surface treatment is applied only to the shoulders.

NOTES:
 The Contractor shall provide an additional Flagger at each urban intersection to control side-street traffic whenever the work activities create a hazard or whenever traffic must be restricted from the work area (fresh seal).
 Install additional W8-7, LOOSE GRAVEL, signs at 5 mile intervals throughout the entire length of the loose aggregate area and at affected major intersections, edge of towns, etc.

NOTES:
 The Contractor shall provide an additional Flagger at each urban intersection to control side-street traffic whenever the work activities create a hazard or whenever traffic must be restricted from the work area (fresh seal).
 Install additional W8-7, LOOSE GRAVEL, signs at 5 mile intervals throughout the entire length of the loose aggregate area and at affected major intersections, edge of towns, etc.

- * The W13-1P plate shall be used when the asphalt surface treatment is applied to the mainline.
- ** The Supplemental plate shall be used when the asphalt surface treatment is applied only to the shoulders.

PLOT SCALE - 1:7253.24

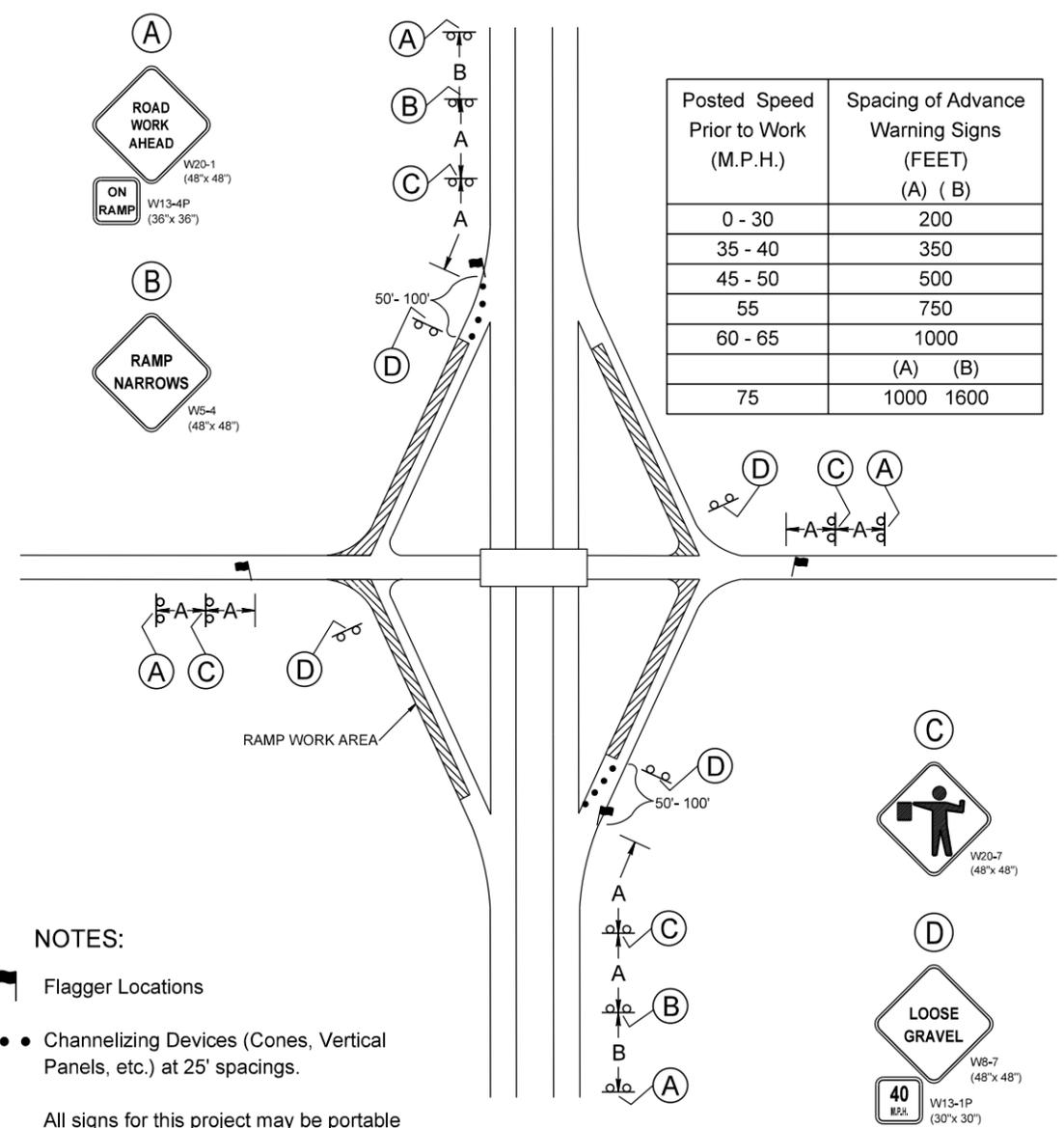
PLOTTED FROM - TRW11INT19

PLOT NAME - 1

FILE - ... \PCN 0404 RAMPS.DGN

TRAFFIC CONTROL

ENTRANCE RAMP AND EXIT RAMP DETAILS

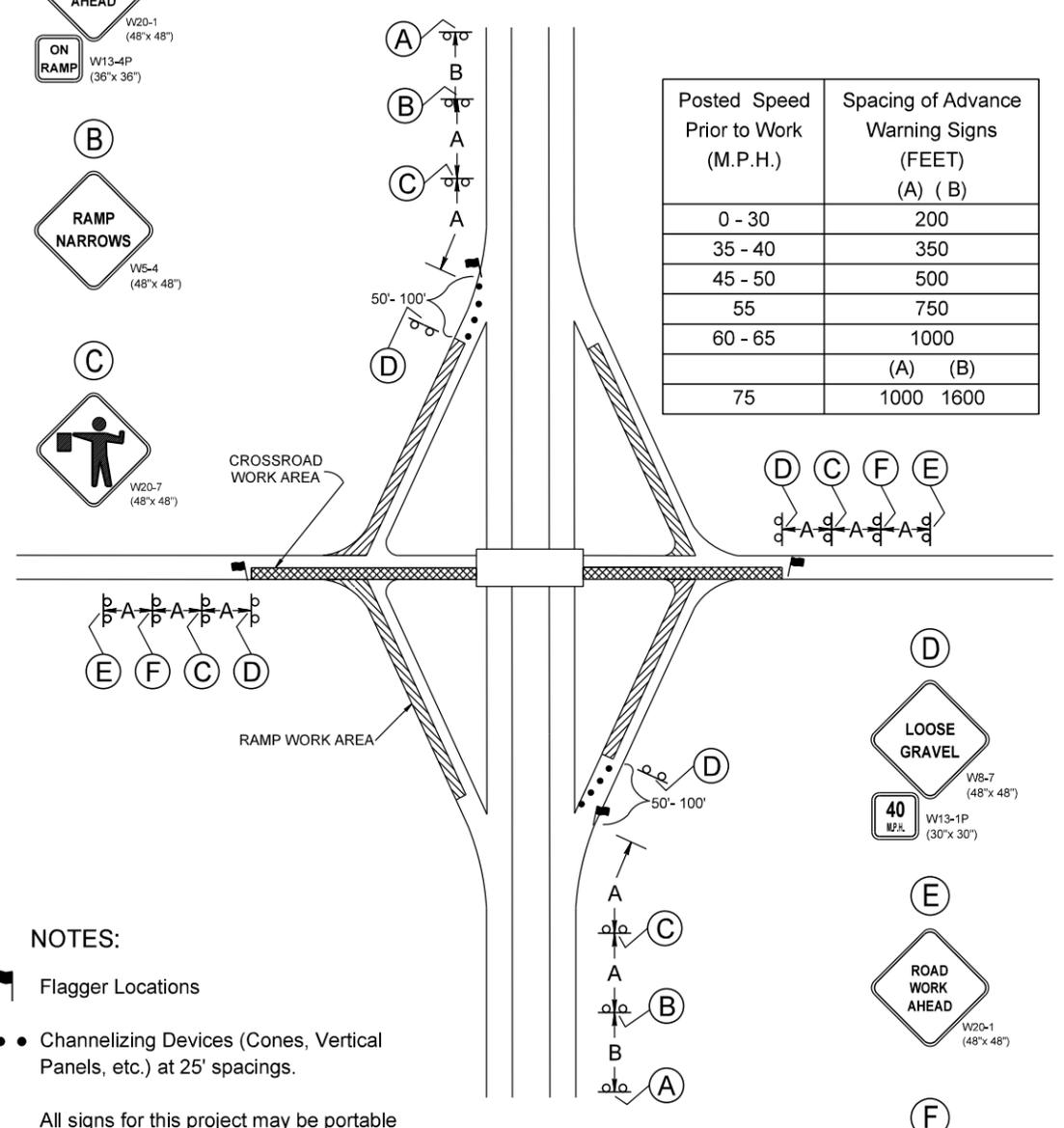


NOTES:

- Flagger Locations
- Channelizing Devices (Cones, Vertical Panels, etc.) at 25' spacings.
- All signs for this project may be portable and may be removed as soon as final brooming has been completed.
- Construction signs shall not obscure existing signs and must be installed a minimum of 100' from an existing sign.

TRAFFIC CONTROL

ENTRANCE RAMP AND EXIT RAMP DETAILS



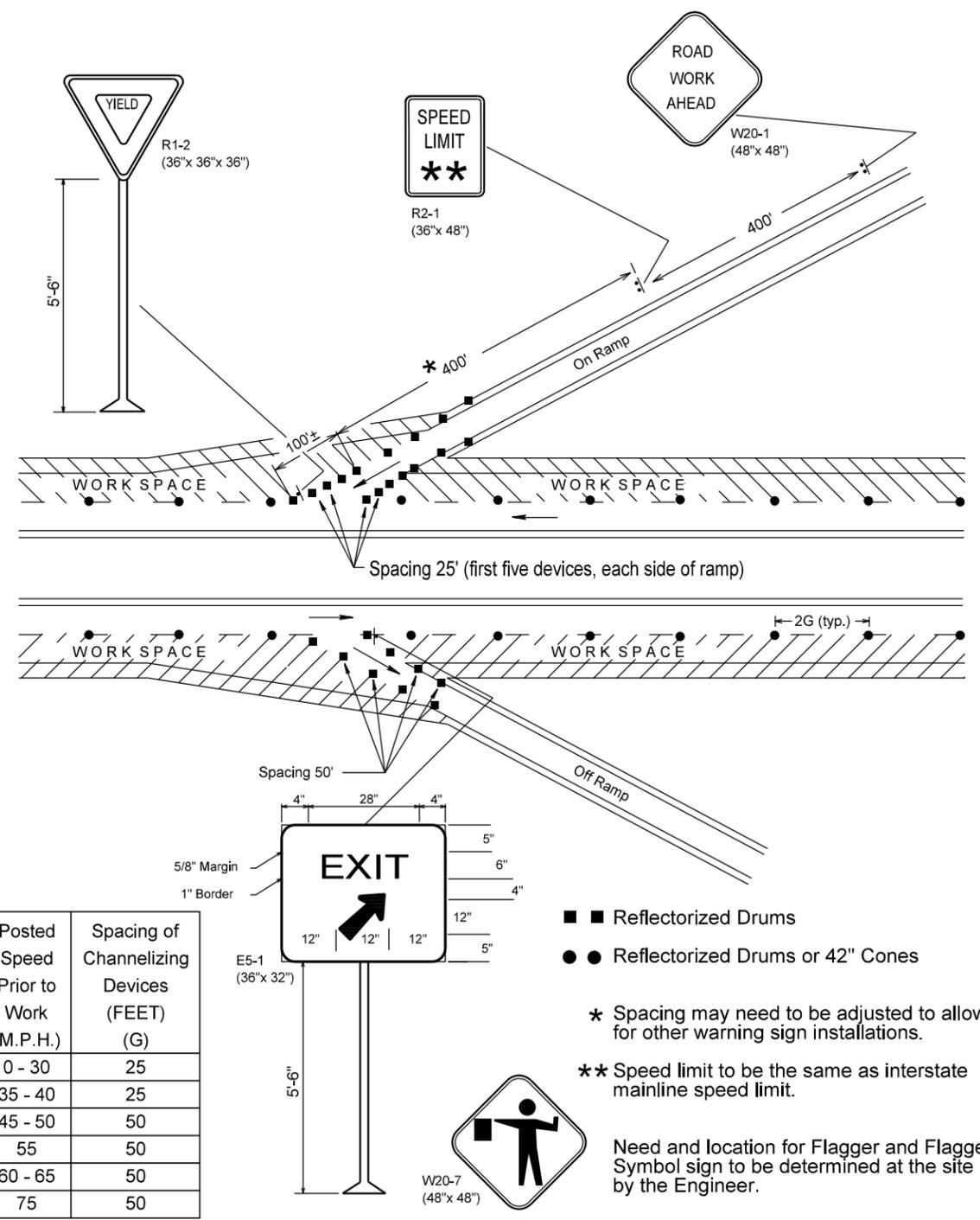
NOTES:

- Flagger Locations
- Channelizing Devices (Cones, Vertical Panels, etc.) at 25' spacings.
- All signs for this project may be portable and may be removed as soon as final brooming has been completed.
- Construction signs shall not obscure existing signs and must be installed a minimum of 100' from an existing sign.

Plotting Date: 01/21/2016

PLOT SCALE - 1:7214.57

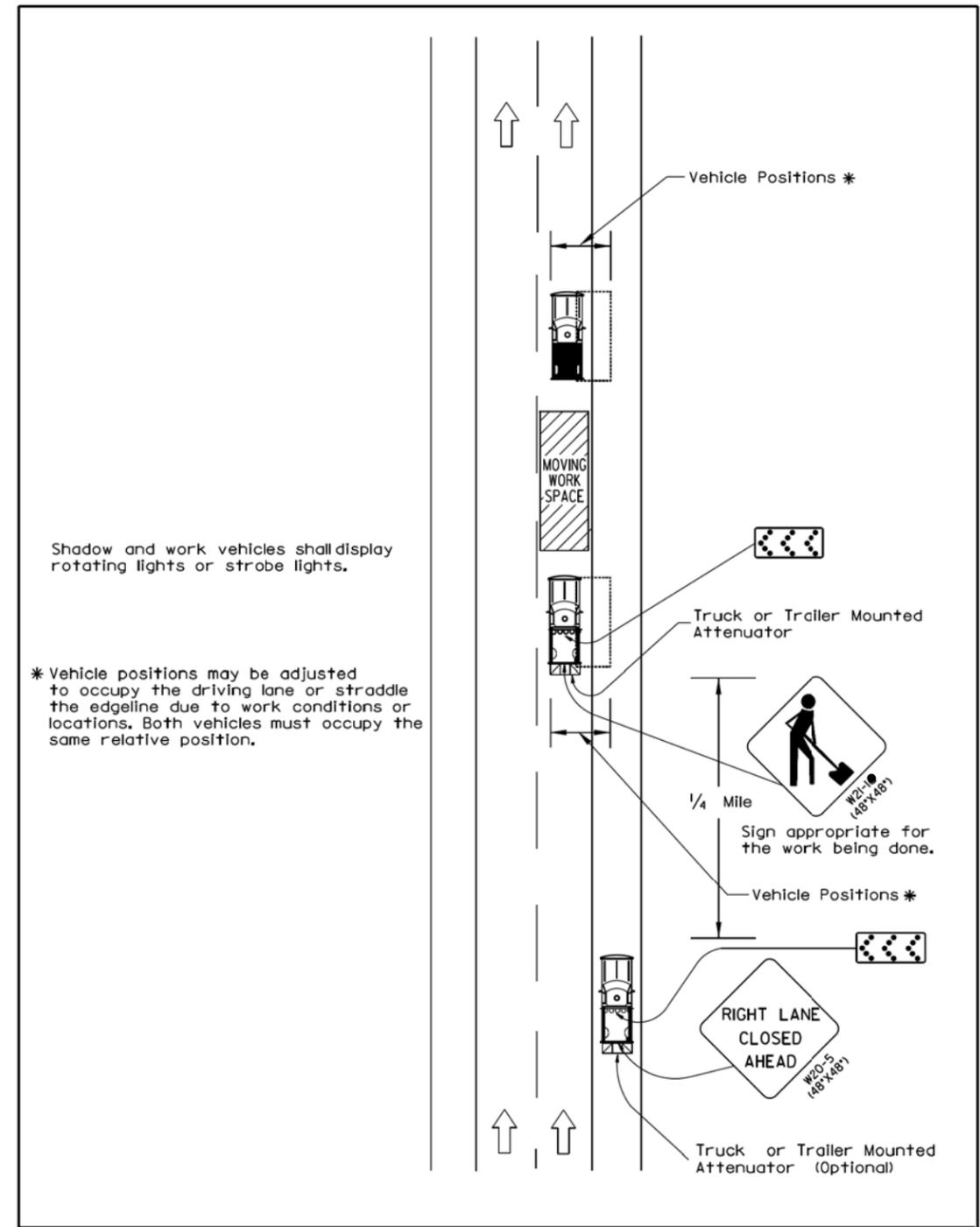
TRAFFIC CONTROL ENTRANCE RAMP AND EXIT RAMP DETAILS



PLOTTED FROM - TRW111119

PLOT NAME - 1

FILE - ... \PCN 0404 RAMPS.DGN



MOBILE OPERATIONS

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**GUIDES FOR TRAFFIC CONTROL DEVICES
MOBILE OPERATIONS FOR
MULTI-LANE HIGHWAYS**

PLATE NUMBER
10

Sheet 1 of 1

MS-14

June 2014

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.

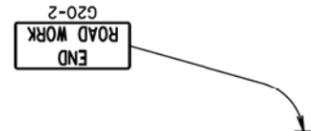
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

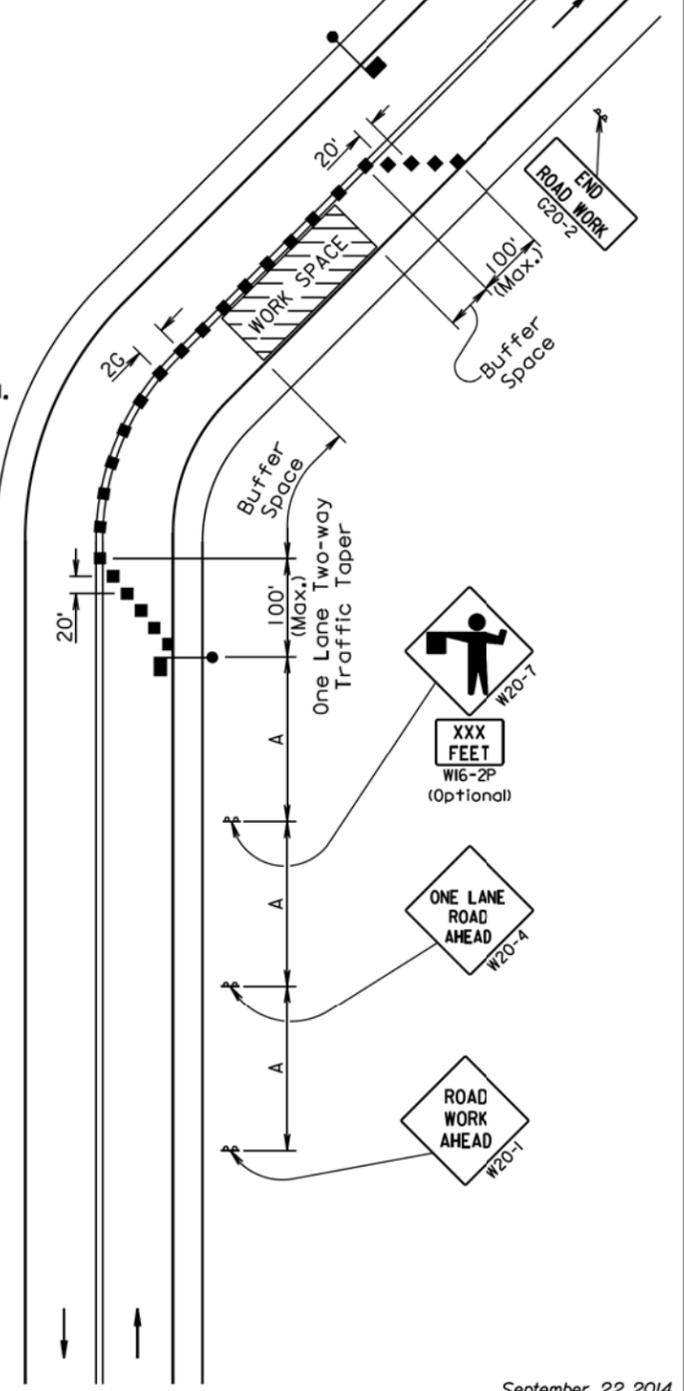


Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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.

Warning sign sequence in opposite direction same as below.



September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
	Published Date: 4th Qtr. 2015	Sheet 1 of 1

Plot Scale - 1:200

- Plotted From - tw1mt19

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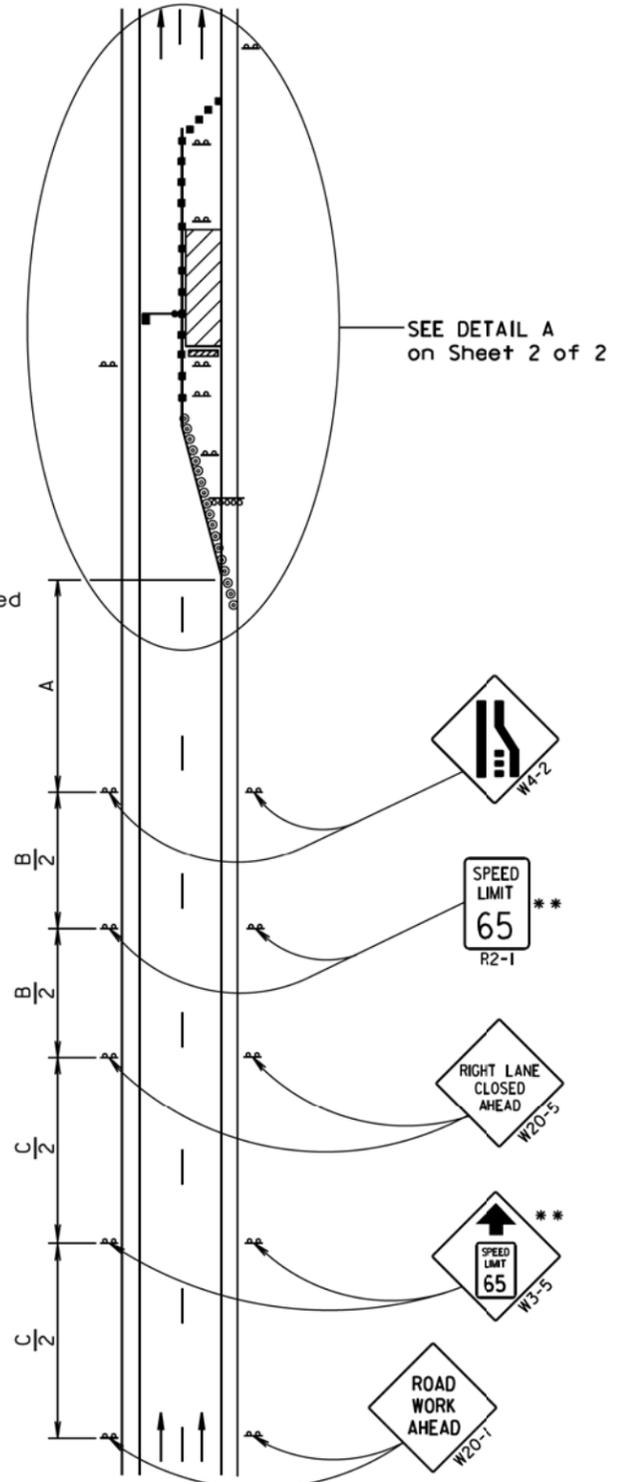
Plot Scale - 1:200

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

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

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

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



April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 4th Qtr. 2015	Sheet 1 of 2

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

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

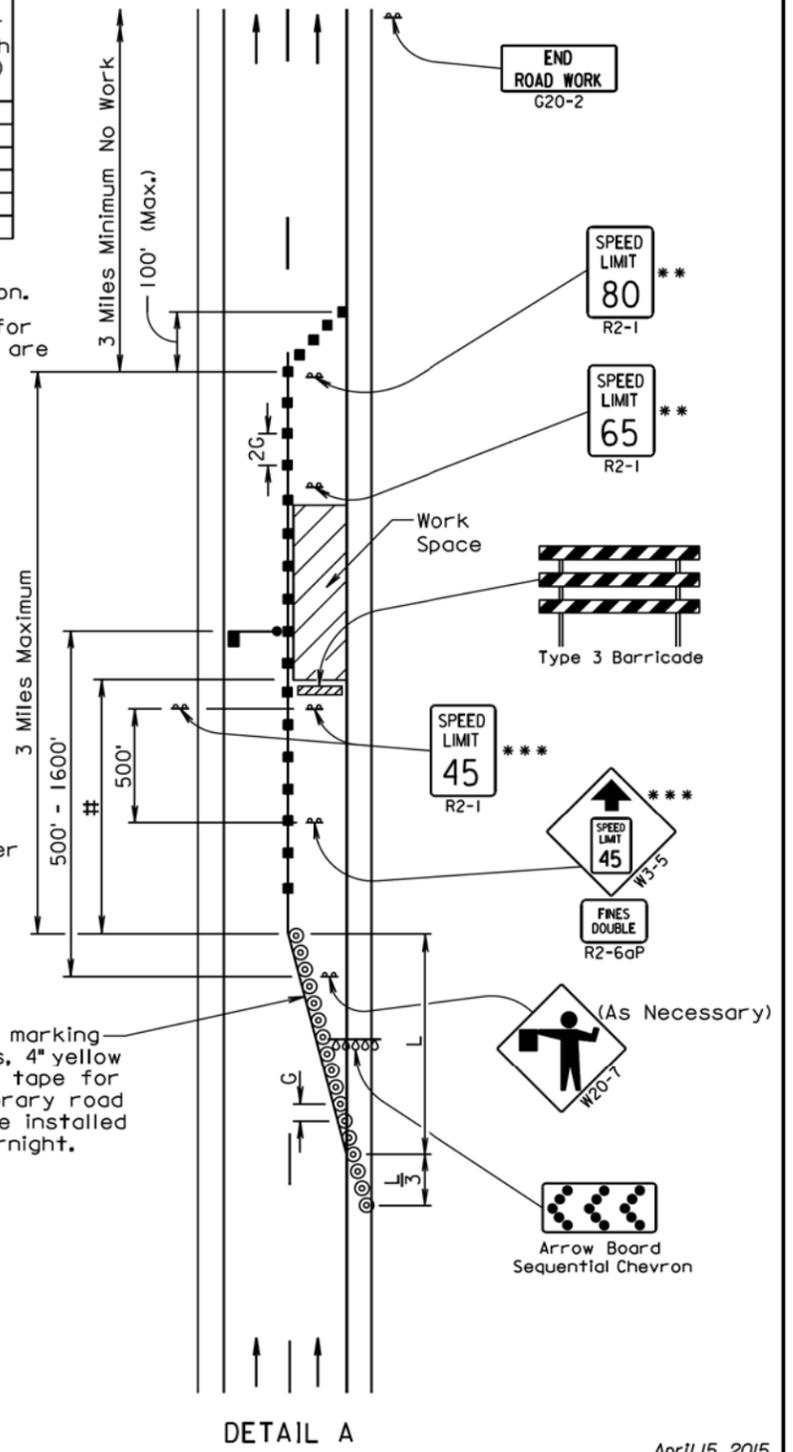
- Flagger (As Necessary)
- Reflectorized Drum
- Channelizing Device
- # The Work Space shall be a minimum of 500' from the end of the taper.

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

The channelizing devices shall be 42" cones or drums.

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

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



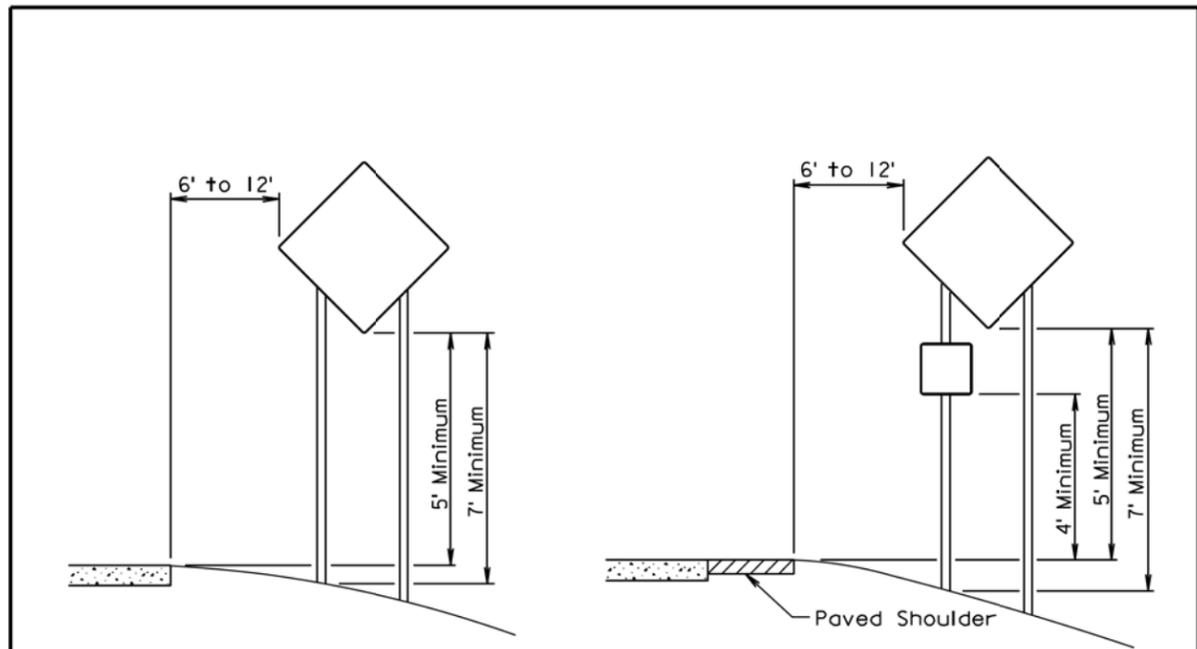
April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 4th Qtr. 2015	Sheet 2 of 2

- Plotted From - tw1mt19

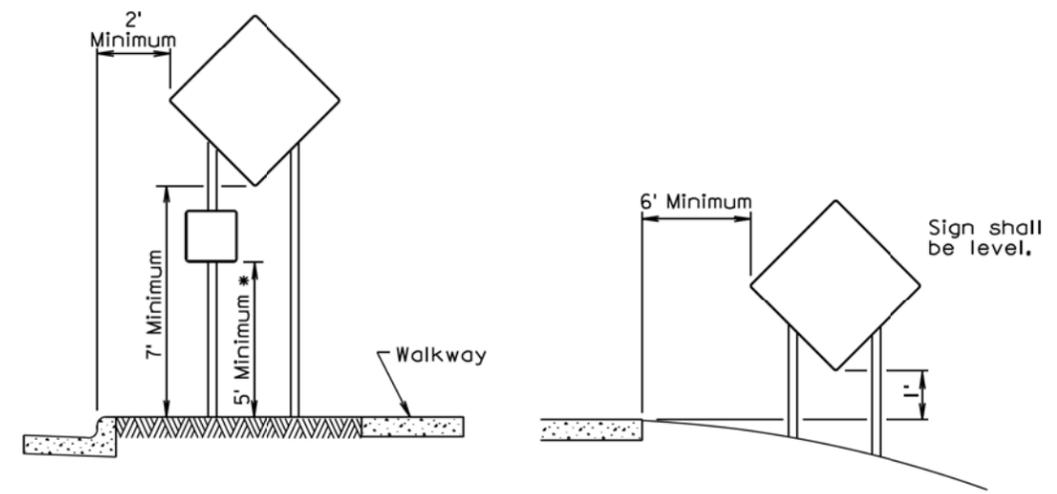
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Plot Scale - 1:200



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM

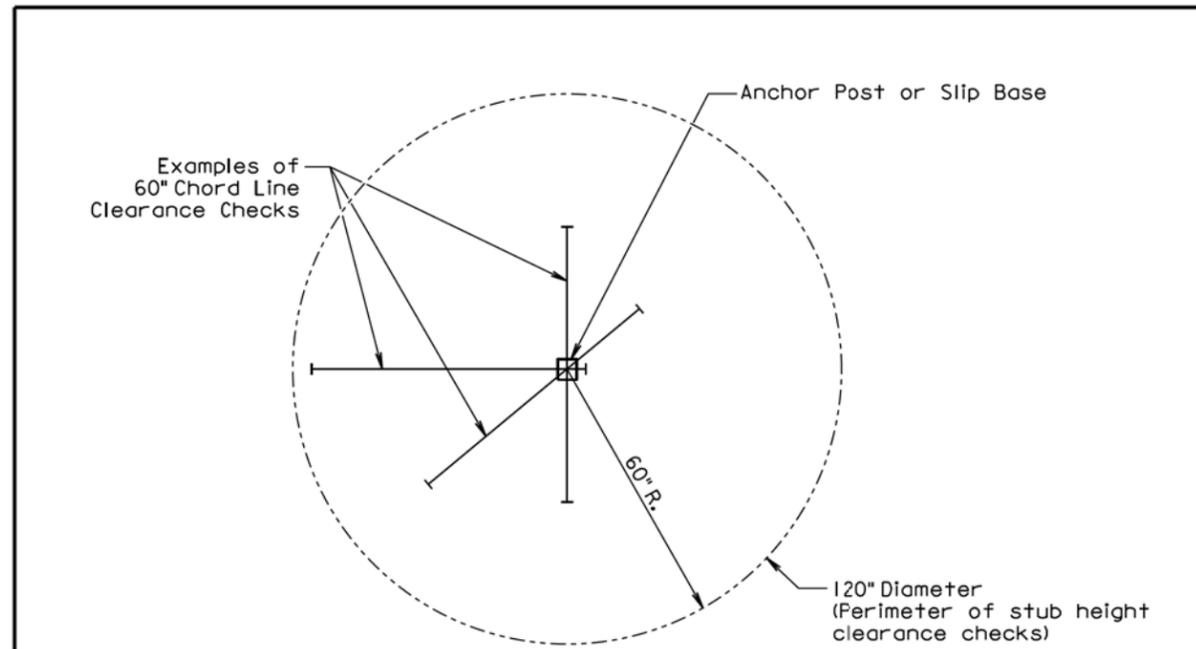
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

(Not applicable to regulatory signs)

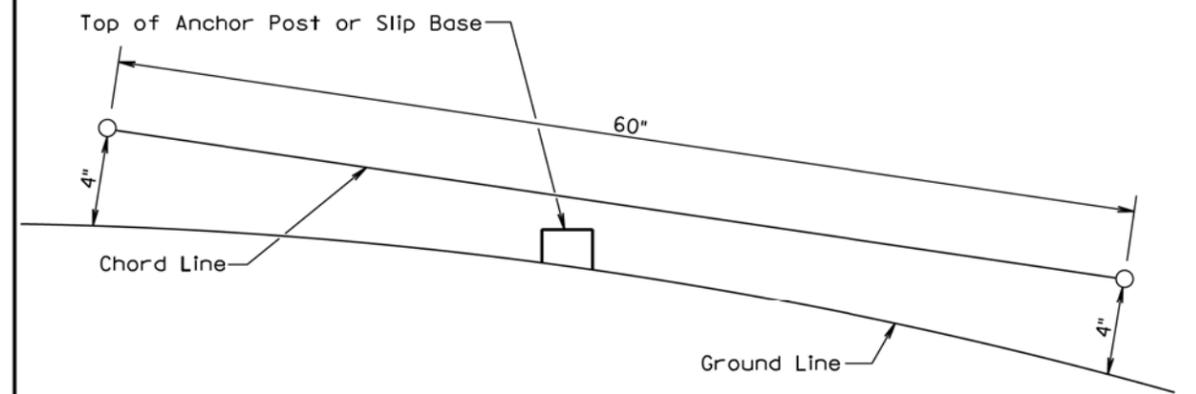
September 22, 2014

S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
		Sheet 1 of 1

Published Date: 4th Qtr. 2015



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

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

July 1, 2005

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 4th Qtr. 2015

- Plotted From - tw11m19

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