

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	385-451 & 044-452	1	10

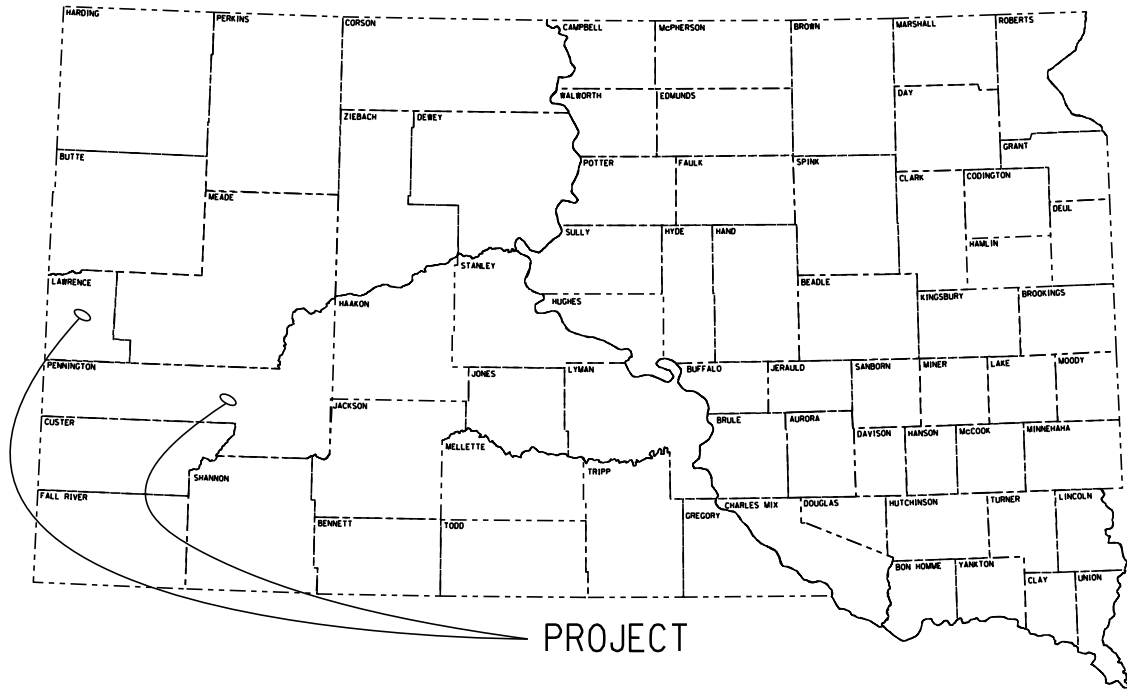
Plotting Date: 05/01/2013

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECTs 385-451 & 044-452
HIGHWAYs US 385 & SD 44
LAWRENCE & PENNINGTON COUNTIES

ASPHALT CONCRETE PAVEMENT REPAIR
PCNs i30n & i30p

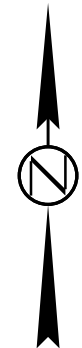
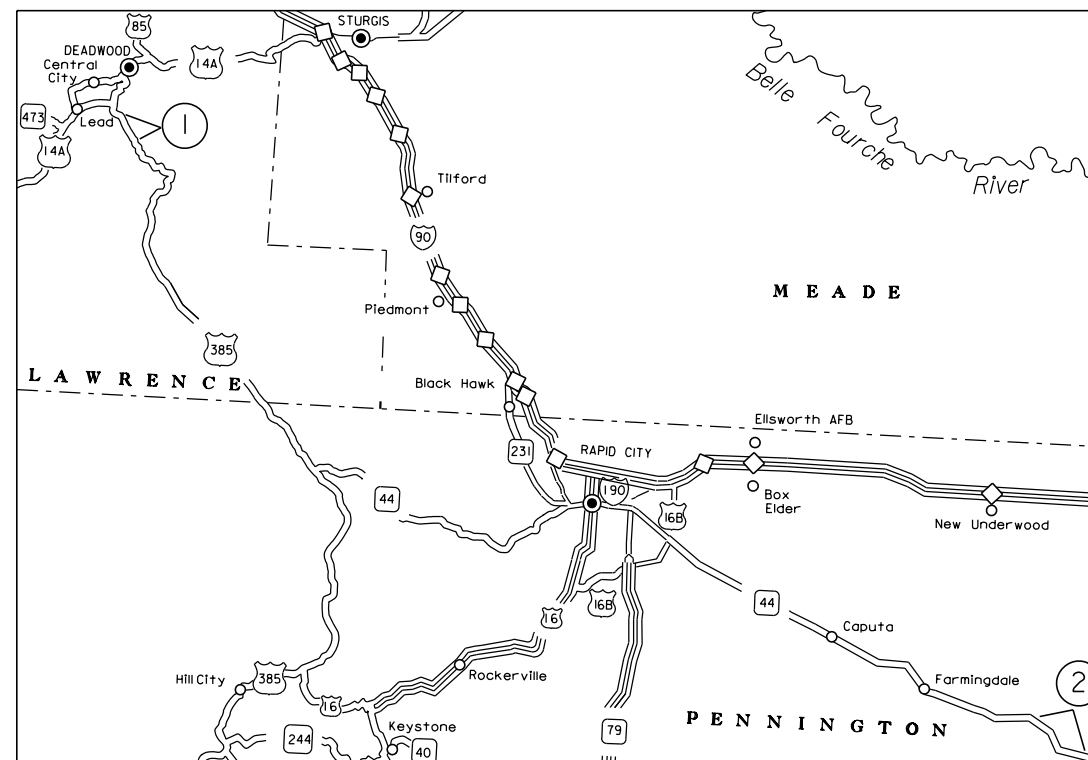
Plot Scale - 1:200



- ① US 385
MRM 119.0 to 120.6, 385-451, pcn i30n
- ② SD 44
MRM 71.2 to MRM 73.4, 044-452, pcn i30p

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Sheet	6:	Asphalt Surfacing Details
Sheet	7:	Pavement Marking Details
Sheet	8:	Traffic Control Details
Sheets	9-10:	Standard Plates



Storm Water Permit
No Permit Required

Plotted From - TRRC11951

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ESTIMATE OF QUANTITIES (US 385, PCN i30n)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digsouts	99	CuYd
260E1010	Base Course	102.2	Ton
320E2000	Maintenance Patching	102.2	Ton
633E1400	Pavement Marking Paint, 4" White	248	Ft
633E1405	Pavement Marking Paint, 4" Yellow	372	Ft
634E0100	Traffic Control	499	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	248	Ft

ESTIMATE OF QUANTITIES (SD 44, PCN i30p)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	954.7	Ton
332E0010	Cold Milling Asphalt Concrete	11,456	SqYd
633E1300	Pavement Marking Paint, White	26.0	Gal
633E1305	Pavement Marking Paint, Yellow	32.0	Gal
634E0010	Flagging	100	Hour
634E0020	Pilot Car	50	Hour
634E0100	Traffic Control	510	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	1.5	Mile

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SEQUENCE OF OPERATIONS

1. Set up traffic control to close one lane.
2. Perform Asphalt Pavement Repair. Install Temporary Pavement Marking if full roadway width is not complete prior to nightfall.
3. Switch traffic control to close adjacent lane.
4. Complete Asphalt Repair
5. Install Temporary Pavement Marking.
6. Install Permanent Pavement Marking.
7. Remove traffic control.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction/demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

MAINTENANCE PATCHING

Maintenance Patching shall be in accordance with the requirements of Section 324 of the Standard Specifications, Asphalt Concrete Composite.

UNCLASSIFIED EXCAVATION DIGOUTS

Provided in the Estimate of Quantities is Unclassified Excavation-Digouts at the Maintenance Patching locations for the necessary removal of existing asphalt concrete and base material. The dimensions provided in these plans are subject to change in the field, at the discretion of the Engineer. Payment will be based on the actual quantities installed. Unclassified Excavation Digouts depth shall be 1 foot or as directed by the Engineer. Backfill shall be 6" of Base Course placed in 3" lifts and 6" of Maintenance Patching placed in 3" lifts.

The existing asphalt concrete shall be sawed full depth with a vertical face to the removal limits established by the Engineer.

All costs associated with sawing, removal and disposal of existing asphalt and base material shall be incidental to the contract unit price per cubic yard "Unclassified Excavation Digouts".

COLD MILLING

The removed material from the Cold Milling operation shall be properly disposed of by the Contractor.

The Contractor shall provide temporary asphalt ramps with a 50:1 transition at all locations where traffic is transitioning from a milled to a paved surface and vice versa. All costs associated with this work shall be incidental to the various bid items on the project.

SURFACING THICKNESS DIMENSIONS

Plans tonnage shall be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation for smoothness, plans tonnage may be varied to achieve the required elevation.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be furnished by the Contractor.

Mineral Aggregate for Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1 Asphalt Concrete Specifications.

SS-1h or CSS-1h Emulsified Asphalt for Tack shall be applied at the rate of 0.05 gallons per square yard.

The asphalt binder used in the mixture shall be PG 58-28, PG 64-22 or PG 64-28 Asphalt Binder.

A Flush Seal will not be required on the asphalt concrete patching.

Locations and quantities of asphalt repair are subject to change. The exact locations will be determined in the field by the Engineer. The Engineer reserves the right to adjust quantities and/or add locations at no additional cost to the state.

TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (US 385, PCN i30n)

Highway	MRM	Description	Width	Length	Digout Depth	Maintenance Patching	Unclassified Excavation Digouts	Base Course	Temporary Pavement Marking	Pavement Marking Paint, 4" White	Pavement Marking Paint, 4" Yellow
			(Ft)	(Ft)	(Ft)	(Tons)	(CuYds)	(Tons)	(Ft)	(Ft)	(Ft)
US 385	119.057	Northbound Lane	12	37	1.00	16.4	16	16.4	37	37	56
US 385	119.093	Northbound Lane	6	12	1.00	2.7	3	2.7	12	12	18
US 385	119.815	Northbound Lane	6	12	1.00	2.7	3	2.7	12	12	18
US 385	120.257	Northbound Lane	6	12	1.00	2.7	3	2.7	12	12	18
US 385	120.591	Northbound Lane	12	130	1.00	57.8	58	57.8	130	130	195
US 385	120.637	Northbound Lane	12	45	1.00	20.0	20	20.0	45	45	68
					Totals	102.2	102	102.2	248	248	372

TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (SD 44, PCN i30p)

Highway	MRM to	MRM	Description	Width	Length	Depth	Asphalt Concrete Composite	Cold Milling Asphalt Concrete	Temporary Pavement Marking	Pavement Marking Paint, White	Pavement Marking Paint, Yellow
				Ft	Ft	Inches	Tons	SqYd	Mile	Gal	Gal
SD 44	71.20	72.60	Westbound	12	7,392	1.50	821.3	9,856	1.4	24	30
SD 44	73.40	73.50	300' each side of bridge	24	600	1.50	133.3	1,600	0.1	2	2
						Totals	954.7	11,456	1.5	26	32

MAINTENANCE OF TRAFFIC

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

Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined, as ½ hour after sunset until ½ hour before sunrise.

Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Existing guide, route, informational logo, regulatory, and warning signs shall be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Non-applicable signing shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 36 hours. The cost of removing or covering non-applicable signs shall be incidental to the contract lump sum price for, Traffic Control, Miscellaneous.

Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.

If inappropriate/conflicting pavement markings exist, the markings shall be removed and replaced with applicable temporary pavement markings when the work duration is more than 3 days. When the work duration is less than 3 days, the channelizing devices in the area where the pavement markings conflict shall be placed at a spacing of ½ G. Pavement marking removals shall be paid for at the contract unit price for Remove Pavement Marking, 4" or equivalent. Temporary pavement marking shall be paid for at the contract unit bid price for Temporary Pavement Marking. The additional channelizing devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

The quantity of signs paid for will be for the greatest number of installations per sign per PCN in place at any one time regardless of the number of set-ups on the project.

Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.

MAINTENANCE OF TRAFFIC (CONTINUED)

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.

The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable.

All construction operations shall be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used.

Temporary Road Markers shall be used for lane closure tapers or lane shift tapers and lane lines. Temporary Pavement Marking installed in accordance with the traffic control standard plates will not be measured for payment and will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Drums are required in all lane closure tapers.

Temporary asphalt ramps with a 50:1 transition slope shall be provided at all locations where traffic is transitioning from one lift to the next and shall be marked with the appropriate BUMP signs.

Bump Signs (48"x48") with appropriate Speed Advisory Plate (30"x30") shall be placed 500' in advance of the bump or as approved by the Engineer for adequate sight distance. Type I Object Markers (18"x18") shall be placed at the bump location.

Highway 44 - The Contractor shall not allow traffic to run on a milled surface or exposed to uneven lanes for more than 7 days.

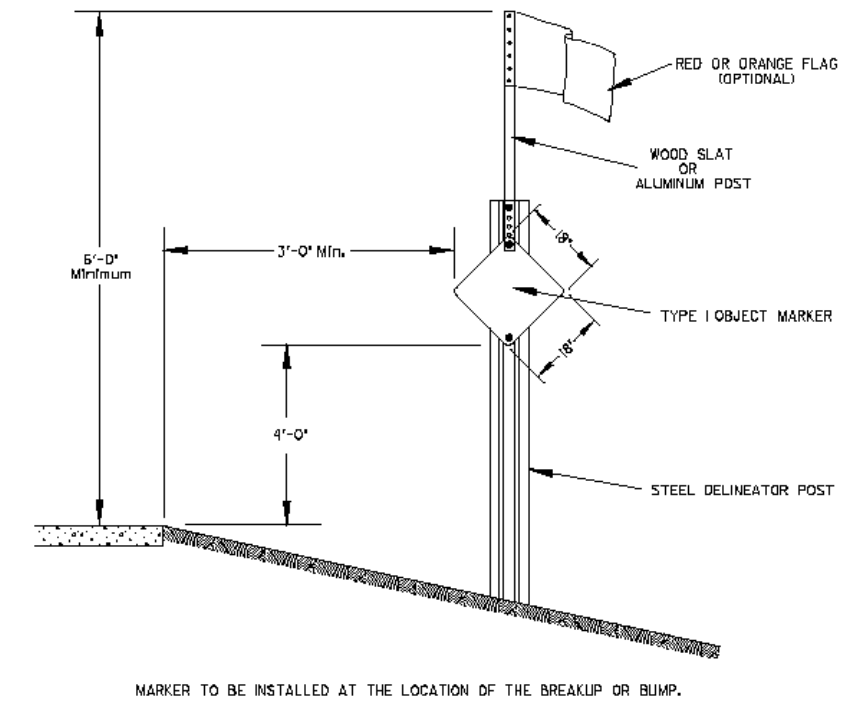
Highway 385 - If the Contractor begins work in multiple repair areas, those repairs shall all be complete within the same working day. The Contractor shall only be allowed to work in one repair area at a time if that repair area cannot be completed within one working day.

A type III barricade shall be placed in front of any repair area where the entire surfacing is removed.

BUMP MARKERS

Payment for bump markers shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

APPENDIX 1 SPECIFICATIONS FOR ROAD BREAKUP / BUMP MARKERS



MARKER TO BE INSTALLED AT THE LOCATION OF THE BREAKUP OR BUMP.

ROADWAY BREAKUP / BUMP MARKER

TABLE OF TRAFFIC CONTROL (US 385, PCN i30n)

SIGN CODE	SIGN SIZE	DESCRIPTION	#	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)	2	34	68
W13-1P	30" x 30"	ADVISORY SPEED PLATE	1	21	21
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
W20-7a	48" x 48"	FLAGGER	1	34	34
*****		TYPE III BARRICADE - 8 FT. SINGLE SIDED	6	40	240
TOTAL UNITS				499	

TABLE OF TRAFFIC CONTROL (SD 44, PCN i30p)

SIGN CODE	SIGN SIZE	DESCRIPTION	#	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W3-4	48" x 48"	BE PREPARED TO STOP	2	34	68
W8-1	48" x 48"	BUMP	2	34	68
W8-11	48" x 48"	UNEVEN LANES	2	34	68
W8-15	48" x 48"	GROOVED PAVEMENT	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
TOTAL UNITS				510	

TEMPORARY PAVEMENT MARKING

Temporary Road Markers shall be used for temporary pavement marking.

The Contractor shall be responsible for maintaining a visible and reflective centerline throughout the project. Any marking covered or damaged shall be replaced prior to the end of the day. All costs associated with this work shall be incidental to the contract unit price per mile "Temporary Pavement Marking".

All costs for temporary pavement marking including furnishing, applying, maintenance, removal and disposing of tabs shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

The quantities of temporary pavement marking provided in the tables are for opening completed repair areas to traffic. The temporary pavement marking for traffic control in accordance with the standard plates and details in these plans shall be incidental to the contract unit price per lump sum for "Traffic Control, Miscellaneous".

PERMANENT PAVEMENT MARKINGS

The location of the existing pavement marking shall be documented prior to removal, so that replacement can be at the existing location.

Application of permanent pavement marking shall be completed within 14 calendar days following completion of the pavement repair.

RATES OF APPLICATION

*Edgeline striping – 16.9 gallons per mile
Glass beads – 8.0 pounds per gallon

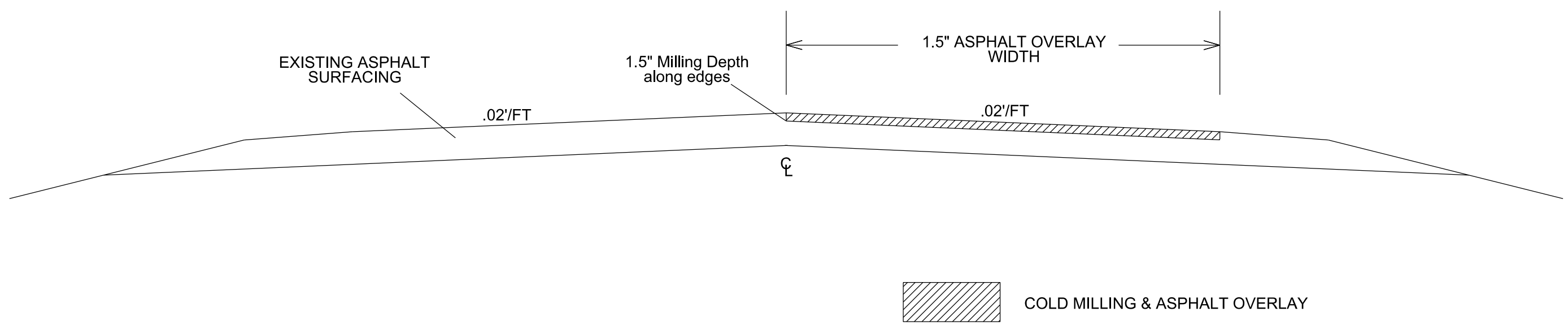
*Rate is the Region average and is for one 4" edgeline.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	385-451 & 044-452	6	10

Plotting Date: 05/01/2013

COLD MILLING and ASPHALT OVERLAY DETAILS

TYPICAL RESURFACING SECTION



Plot Scale - 1:200

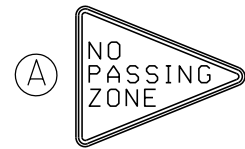
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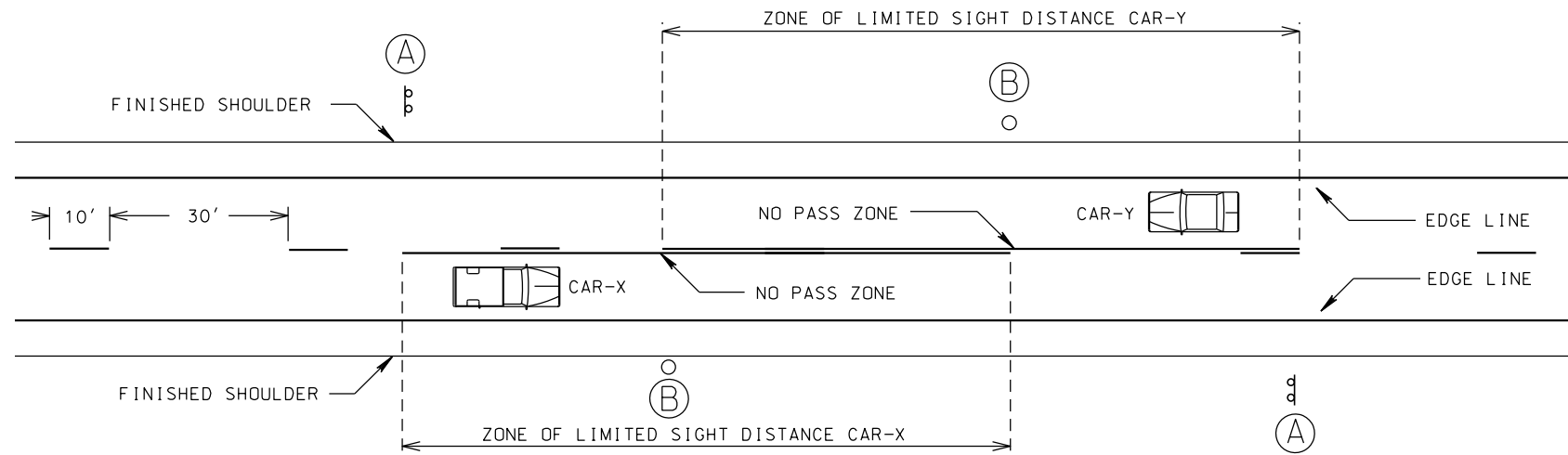
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	385-451 & 044-452	7	10

Plotting Date: 04/30/2013

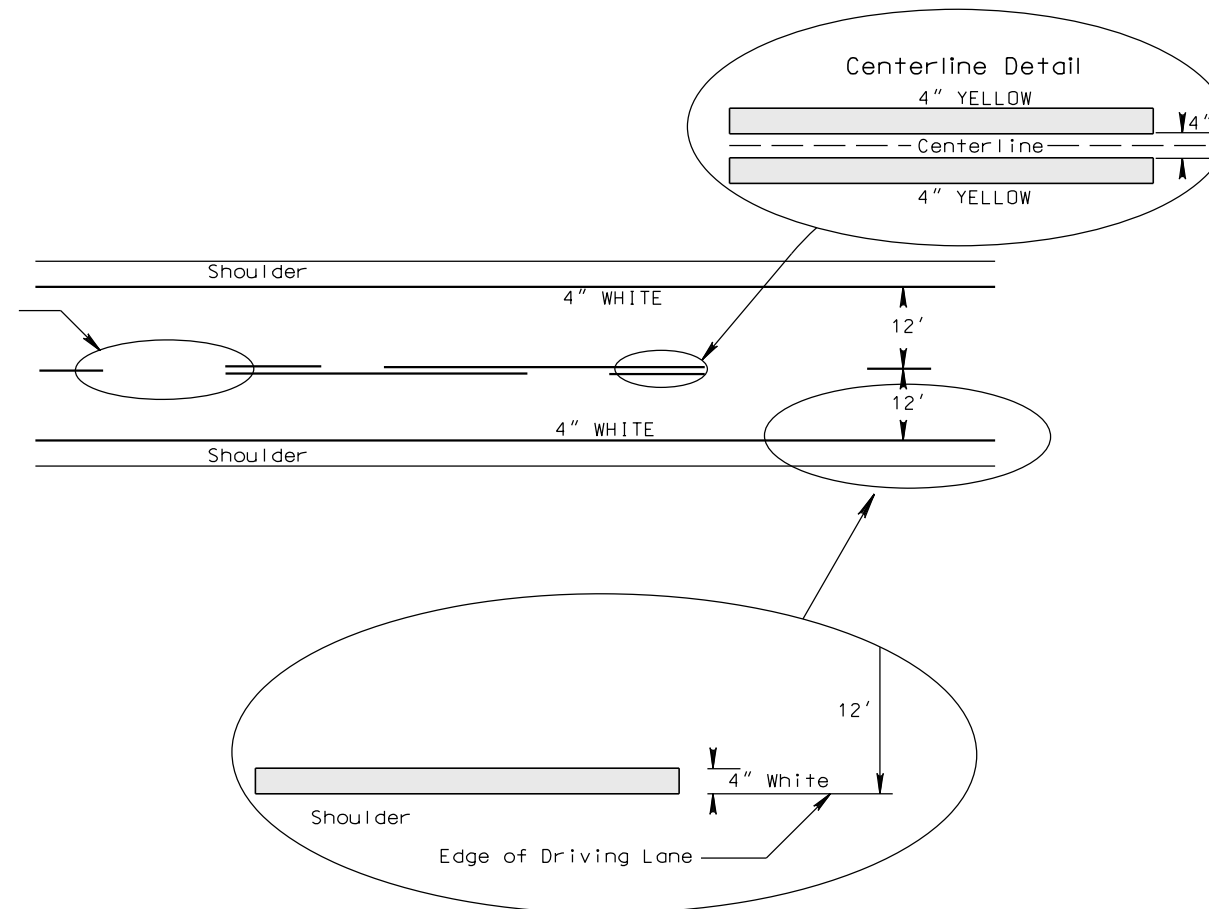
TYPICAL PAVEMENT MARKING LAYOUT



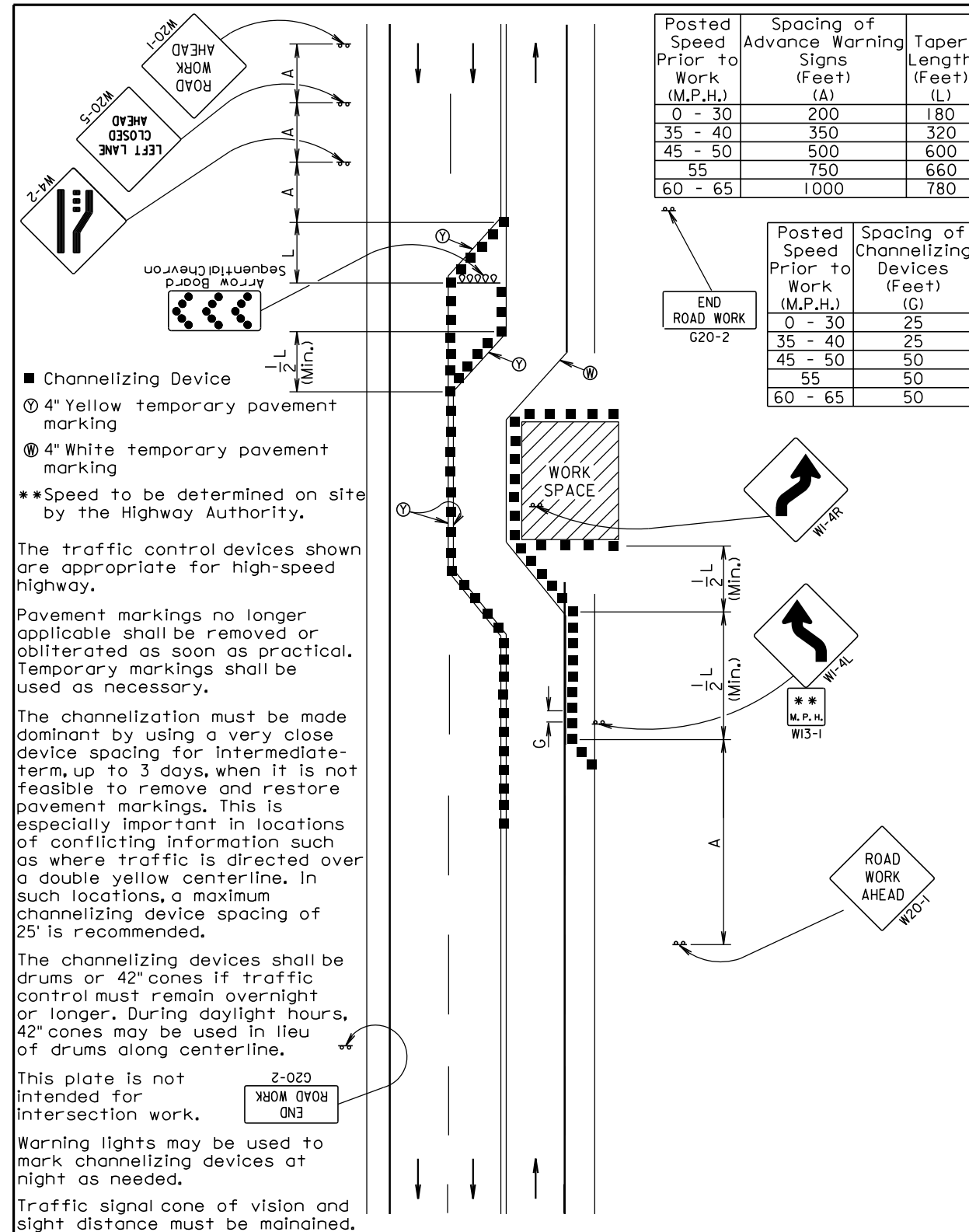
(A) NO PASSING ZONE
(B) End of Zone Marker



NOTE: A THREE "GUN" SYSTEM SHALL BE USED TO OBTAIN THIS PATTERN.



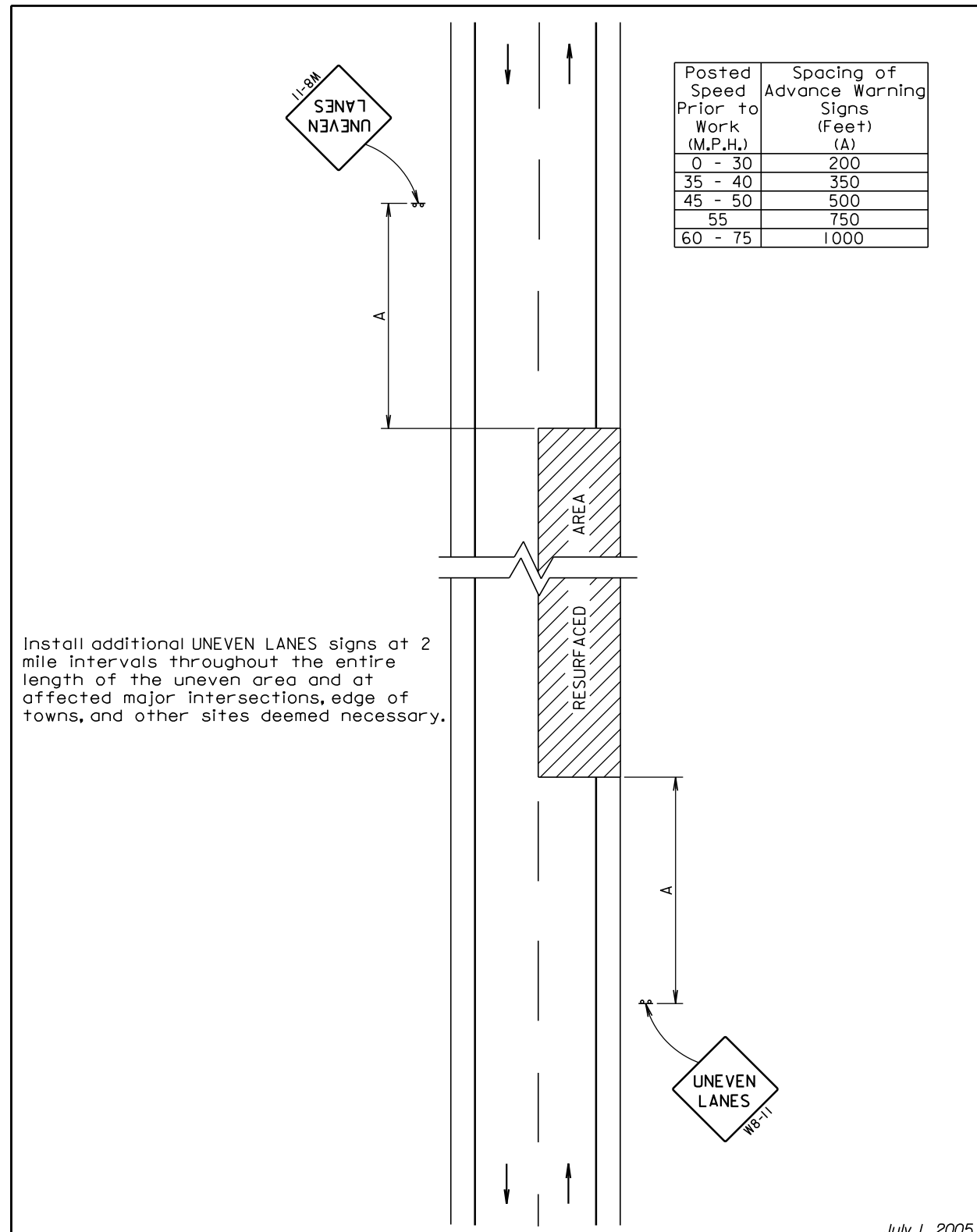
US 385 TRAFFIC CONTROL DEVICES LANE CLOSURE ON CLIMBING LANE SECTION OF HIGHWAY



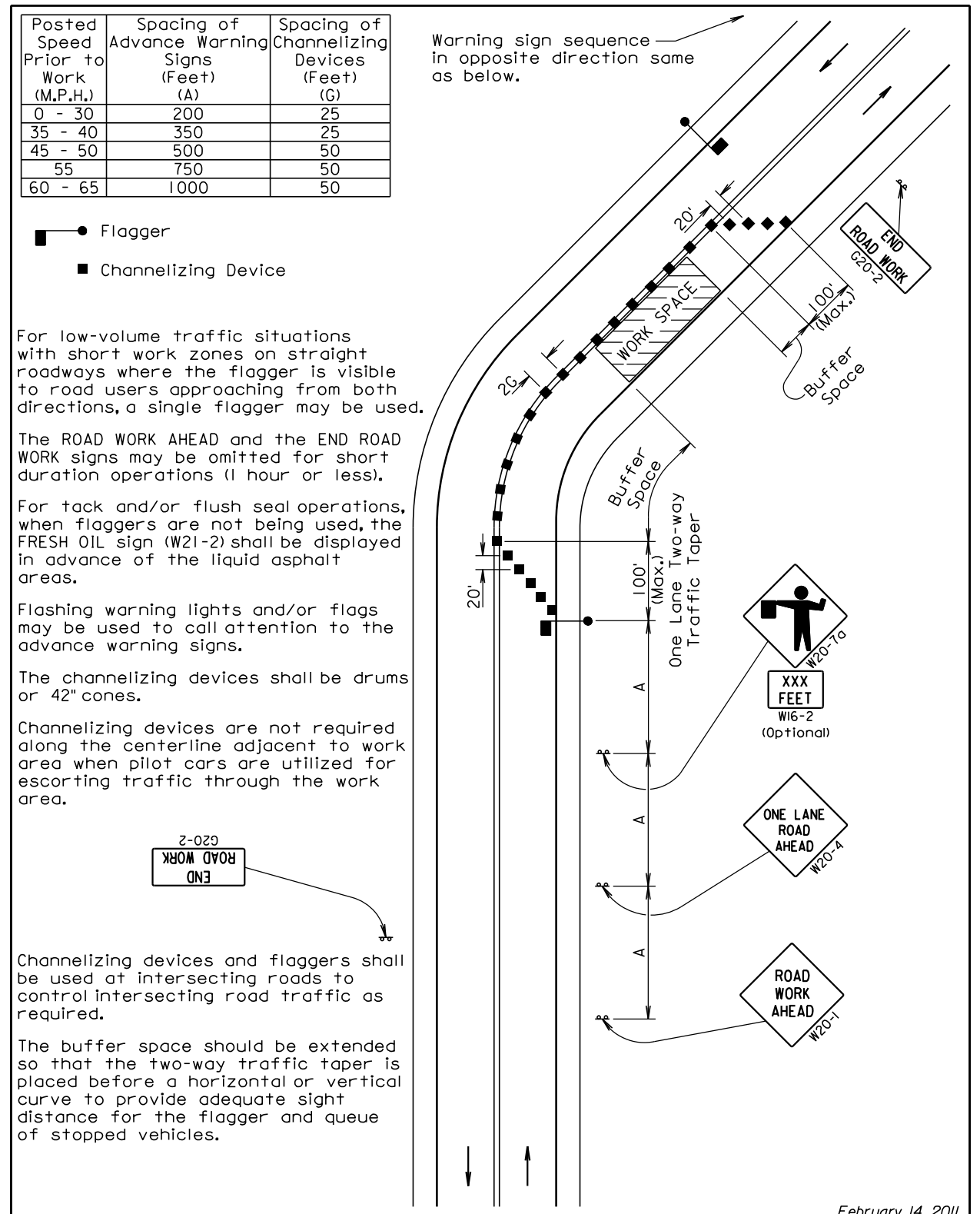
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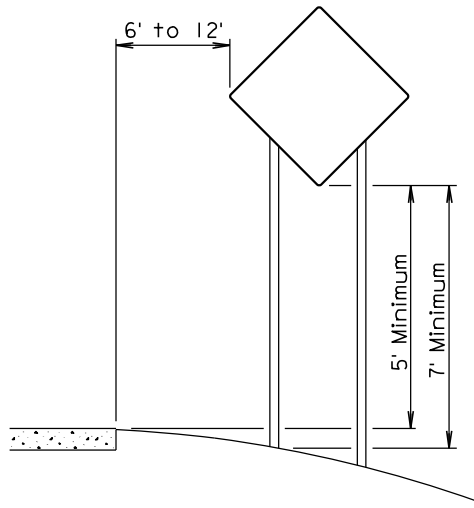
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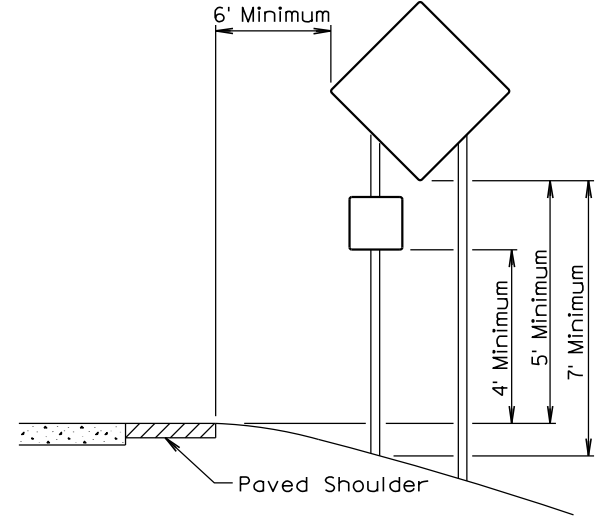
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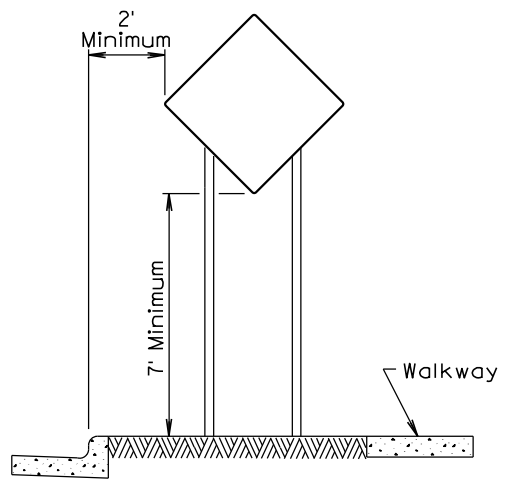
February 14, 2011



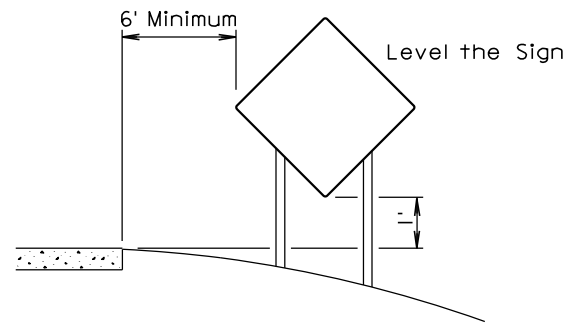
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



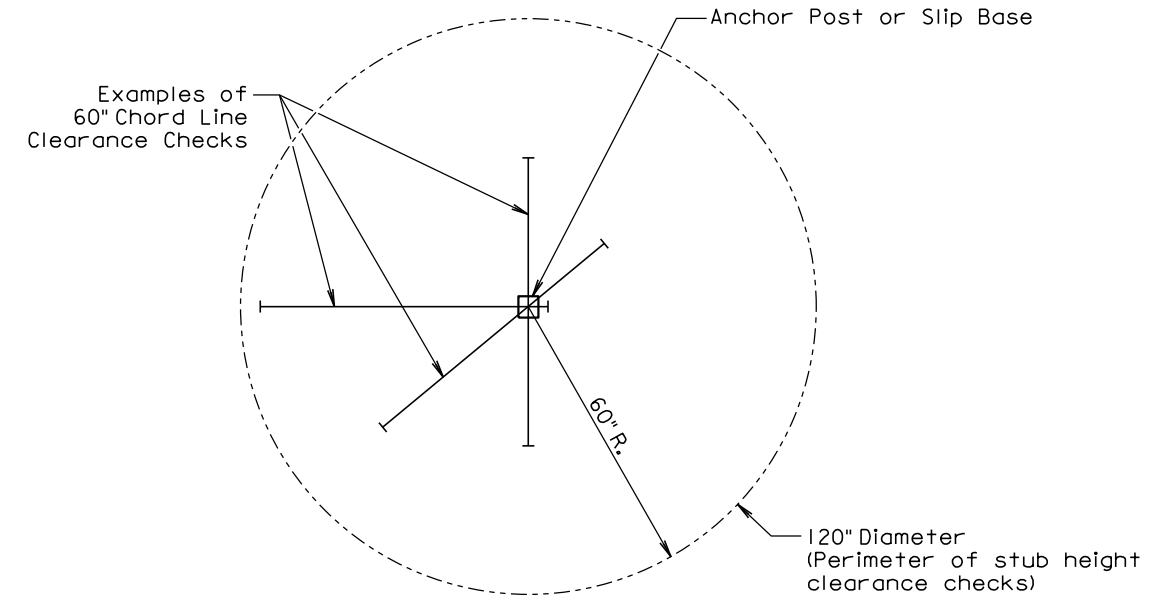
URBAN DISTRICT



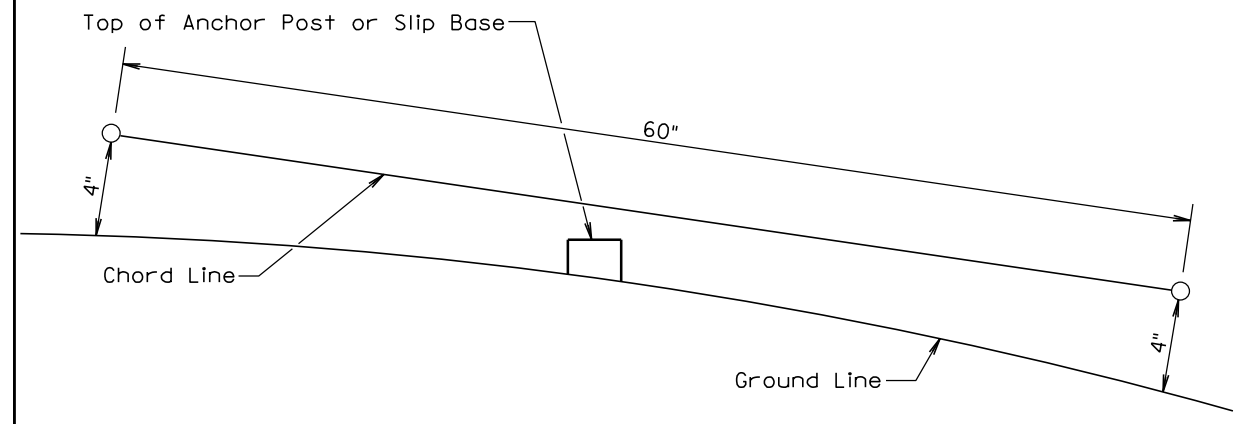
RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011

Published Date: 2nd Qtr. 2013	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. 2013	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1