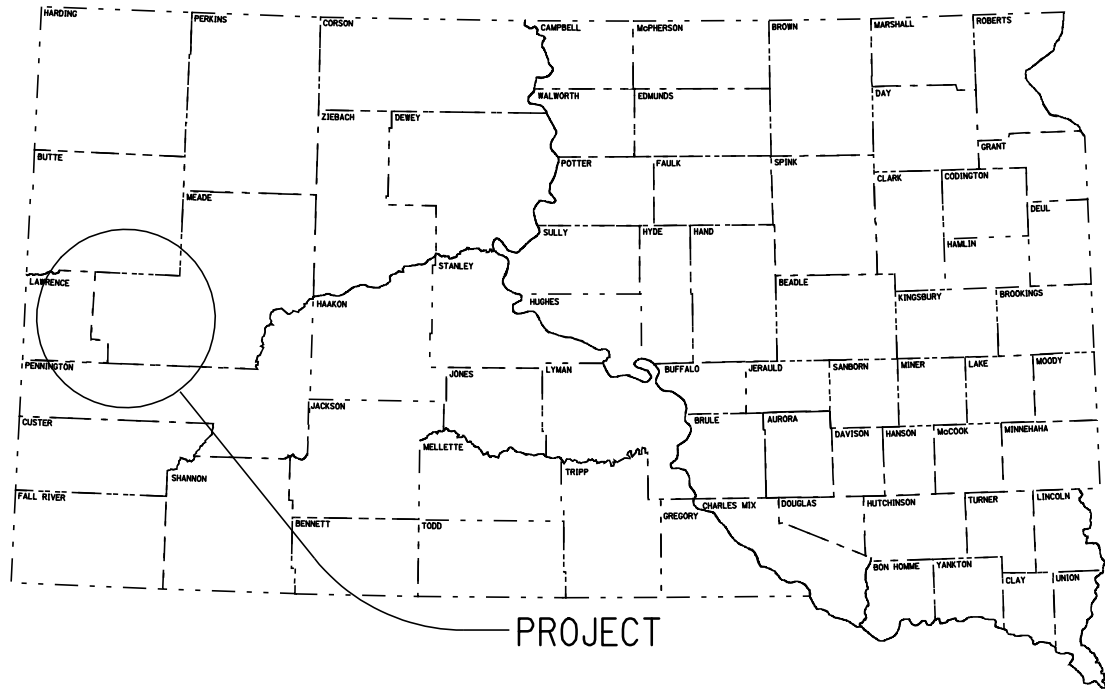


PLOT SCALE - 200,000000:1,000000

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-451 090W-451 etc.	01	7

Plotting Date: 12-MAY-2010



PROJECTs 090E-451, 090W-451, 090E-452, 090W-452, 16EB-452, 044-452 & 085S-471
HIGHWAYs I-90, US16B, SD44, & US85
LAWRENCE, MEADE & PENNINGTON COUNTIES



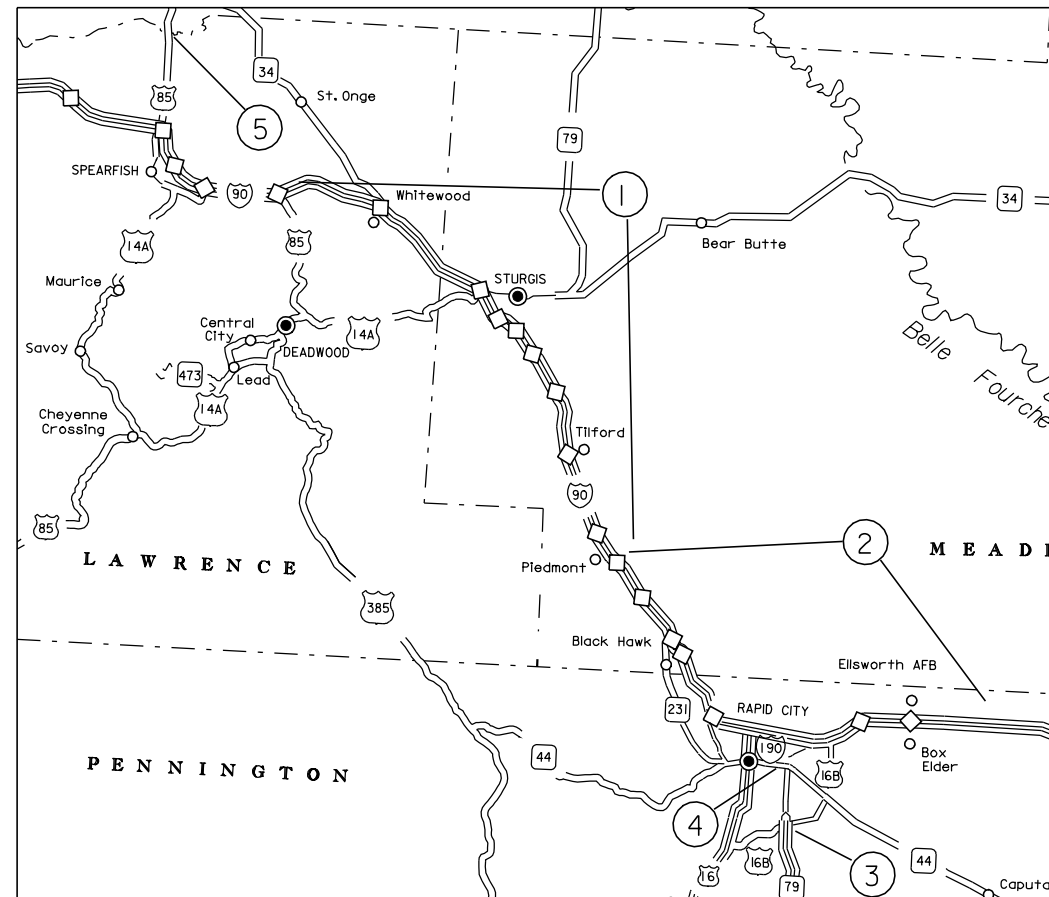
REPAIR ASPHALT GROWTH JOINTS
PCNs ilsw, ilsx, ilsy, ilsz, ilt4, ilt5, & ilt6

INDEX OF SHEETS

- Sheets 1: Title Sheet
- Sheets 2-4: Estimate of Quantities & Plan Notes
- Sheets 5-7: Standard Plates

- ① I-90, MRM 18.0 to MRM 44.4, 090E-451, ilsw & 090W-451, ilsx
- ② I-90, MRM 44.4 to MRM 68.0, 090E-452, ilsy & 090W-452, ilsz
- ③ US16B, MRM 67.7, 016EB-452, ilt4
- ④ SD44, MRM 46.2, 044-452, ilt5
- ⑤ US85S, MRM 50.2, 085S-471, ilt6

Storm Water Permit
No Permit Required



PLOTTED FROM - TRRC11951

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ESTIMATE OF QUANTITIES (i1sw)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	15.0	SqYd
250E0010	Incidental Work	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	300	Lb
463E0100	Polymer Modified Asphalt Growth Joint	120	Ft
634E0010	Flagging	10	Hour
634E0100	Traffic Control	524	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1sx)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	15.0	SqYd
250E0010	Incidental Work	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	450	Lb
463E0100	Polymer Modified Asphalt Growth Joint	120	Ft
634E0010	Flagging	10	Hour
634E0100	Traffic Control	524	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1sy)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	10	Hour
634E0100	Traffic Control	524	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1sz)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	10.0	SqYd
250E0010	Incidental Work	Lump Sum	LS
463E0100	Polymer Modified Asphalt Growth Joint	80	Ft
634E0010	Flagging	10	Hour
634E0100	Traffic Control	524	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1t4)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	10	Hour
634E0100	Traffic Control	328	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1t5)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
250E0010	Incidental Work	Lump Sum	LS
634E0010	Flagging	10	Hour
634E0100	Traffic Control	328	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

ESTIMATE OF QUANTITIES (i1t6)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	11.0	SqYd
463E0100	Polymer Modified Asphalt Growth Joint	88	Ft
634E0010	Flagging	10	Hour
634E0100	Traffic Control	328	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

SPECIFICATIONS

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

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 Tom Lehmkuhl, DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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.

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:

- 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".
- 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.

ROADWAY CLEANING

The Contractor shall be responsible for removing all construction debris from the roadway surface, including shoulders, intersecting roads, median crossovers and as directed by the Engineer.

CRACK SEALING GROWTH JOINTS

The quantities for sealing cracks in growth joints are based on a factor of 2 lbs. of sealant per 1 foot of existing crack. Actual quantities used may vary depending upon the location width and depth of the existing crack. Rates may vary as directed by the Engineer.

Routing equipment will not be required for this work. The cracks shall be cleaned and filled with sealant. Sealant material shall not be allowed on the roadway surface and shall be immediately wiped clean after application. All costs associated with sealing cracks in growth joints shall be incidental to the contract unit price per pound "Asphalt Concrete Crack Sealing".

TABLE OF CRACK SEALING GROWTH JOINTS (i1sw)

Highway	MRM	Location	Asphalt Concrete Crack Sealing (Lb)
I-90 E	24.85	Whitewood Creek	150
I-90 E	26.74	Spring Creek	150
Total			300

TABLE OF CRACK SEALING GROWTH JOINTS (i1sx)

Highway	MRM to	Location	Asphalt Concrete Crack Sealing (Lb)
I90W	19.09	Over Polo Ck.	150
I90W	24.85	Whitewood Creek	150
I90W	26.74	Spring Creek	150
Total			450

POLYMER MODIFIED ASPHALT GROWTH JOINT

The existing growth joint material shall be removed to a depth of 3 inches for the installation of new joint material as per the standard plate. New asphalt concrete on the bottom of the joint will not be required on this project. All costs associated with removing the growth joint material to this depth shall be incidental to the contract unit price per square yard "Remove Asphalt Concrete Pavement".

TABLE OF POLYMER MODIFIED ASPHALT GROWTH JOINT (i1sw)

Highway	MRM	Location	Remove Asphalt Concrete Pavement (SqYd)	Polymer Modified Asphalt Growth Joint (Ft)
I-90 E	42.81	Elk Creek	7.5	60
I-90 E	44.10	Little Elk Creek	7.5	60
Total			15.0	120

TABLE OF POLYMER MODIFIED ASPHALT GROWTH JOINT (i1sx)

Highway	MRM	Location	Remove Asphalt Concrete Pavement (SqYd)	Polymer Modified Asphalt Growth Joint (Ft)
I90W	42.81	Elk Creek	7.5	60
I90W	44.10	Little Elk Creek	7.5	60
Total			15.0	120

TABLE OF POLYMER MODIFIED ASPHALT GROWTH JOINT (i1sz)

Highway	MRM	Location	Remove Asphalt Concrete Pavement (SqYd)	Polymer Modified Asphalt Growth Joint (Ft)
I-90 W	58.8	Maple St.	10.0	80

TABLE OF POLYMER MODIFIED ASPHALT GROWTH JOINT (i1t6)

Highway	MRM	Location	Remove Asphalt Concrete Pavement (SqYd)	Polymer Modified Asphalt Growth Joint (Ft)
US85S	50.15	Butte County line	11.0	88

INCIDENTAL WORK

The "Incidental Work" work on this project includes removing or adding polymer modified asphalt growth joint material to level and seal the joint. The Contractor shall dispose of any excess material appropriately. The Contractor shall heat, remove or add material, seal and level the existing growth joint in accordance with Section 463 of the Standard Specifications.

INCIDENTAL WORK (i1sw)

Highway	MRM	Location	Description of Work	Length (Ft)
I-90 E	22.98	Over DM&E	Level and Seal Growth Joint	76

INCIDENTAL WORK (i1sx)

Highway	MRM	Description of Work	Length (Ft)
I90W	18.84	Level and Seal Growth Joint	76
I90W	22.98	Level and Seal Growth Joint	76

INCIDENTAL WORK (i1sy)

Highway	MRM	Location	Description of Work	Length (Ft)
I-90 E & W	63.42	Box Elder Creek	Level and Seal Growth Joint	276
I-90 E	58.31	Haines	Level and Seal Growth Joint	80

INCIDENTAL WORK (i1sz)

Highway	MRM	Location	Description of Work	Length (Ft)
I-90 W	58.30	Haines	Level and Seal Growth Joint	80
I-90 W	62.94	WB on ramp over I-90	Level and Seal Growth Joint	60
I-90 W	63.10	WB on ramp near I-90	Level and Seal Growth Joint	60

INCIDENTAL WORK (i1t4)

Highway	MRM	Location	Description of Work	Length (Ft)
US16B	67.67	Jct US16B & SD79	Level and Seal Growth Joint	172

INCIDENTAL WORK (i1t5)

Highway	MRM	Location	Description of Work	Length (Ft)
SD44	46.21	Rapid Creek	Level and Seal Growth Joint	128

TRAFFIC CONTROL

Traffic control shall be in accordance with MUTCD Standards, Standard Specifications and these plans.

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

Do not disturb any pavement marking tape.

All materials and equipment shall be moved to a minimum distance of 30 feet from the edge of the traveled lanes during nights, weekends, and other non-working hours.

Indiscriminate driving of vehicles within the right-of-way will not be permitted. Any damage to 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.

All Contractor's vehicles or equipment entering or leaving a closed work area shall display a flashing amber light.

During construction, all vehicles, equipment and materials shall be located in the half of the roadway which is closed to traffic.

The quantity of traffic control units paid shall be for the greatest number of signs in place at any one time per project(PCN), regardless of the number of set-ups on the project.

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

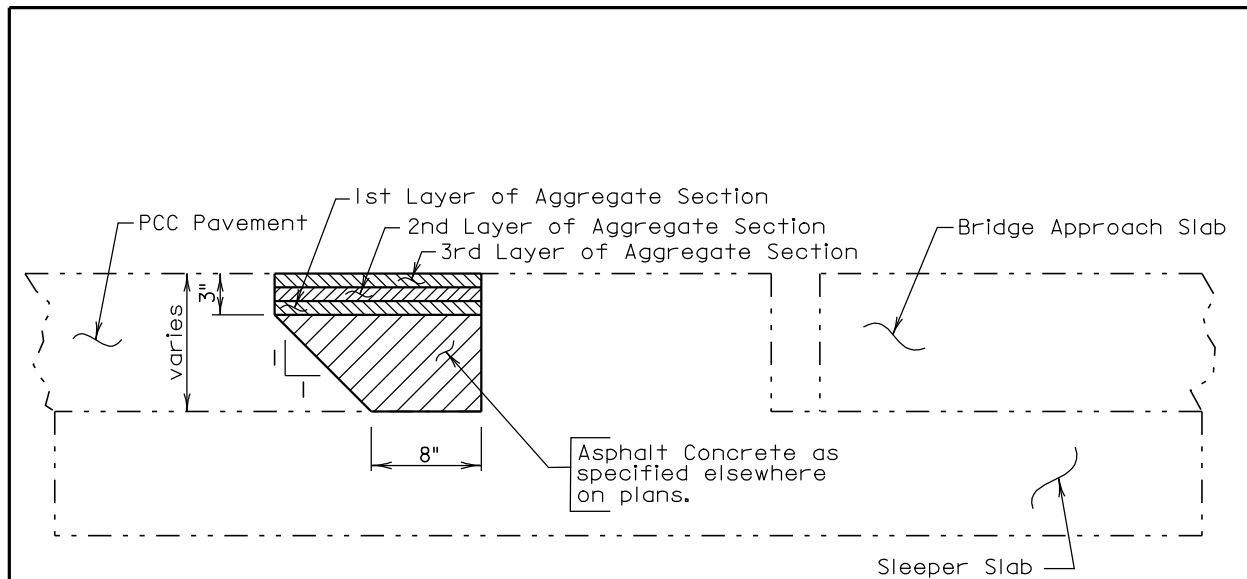
INVENTORY OF TRAFFIC CONTROL DEVICES (i1sw, i1sx, i1sy & i1sz)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRE D	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R2-1	30" x 36"	SPEED LIMIT ##	4	23	92
W3-5	48" x 48"	SPEED REDUCTION	2	34	68
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	1	34	34
SPECIAL	30" x 24"	FINES DOUBLED	2	18	36
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
TOTAL UNITS					524

INVENTORY OF TRAFFIC CONTROL DEVICES (i1t4, i1t5 & i1t6)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRE D	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	1	34	34
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
TOTAL UNITS					328

Plotting Date: 12-MAY-2010



POLYMER MODIFIED ASPHALT GROWTH JOINT

GENERAL NOTE:

The Asphalt Growth Joint shall be constructed as shown and detailed above. The top 3 inches of the growth joint shall conform to the S.D. Standard Specifications for Polymer Modified Asphalt Growth Joint. The remaining portion of the growth joint shall be constructed of asphalt concrete as used elsewhere on the project or specified elsewhere in the plans for the asphalt growth joint.

March 31, 2000

S D D O T	POLYMER MODIFIED ASPHALT GROWTH JOINT	PLATE NUMBER 463.01
	<i>Published Date: 2nd Qtr. 2010</i>	Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
	(A)	(B)	(C)		
0 - 30	200			180	25
35 - 40	350			320	25
45 - 50	500			600	50
55	750			660	50
60 - 65	1000			780	50

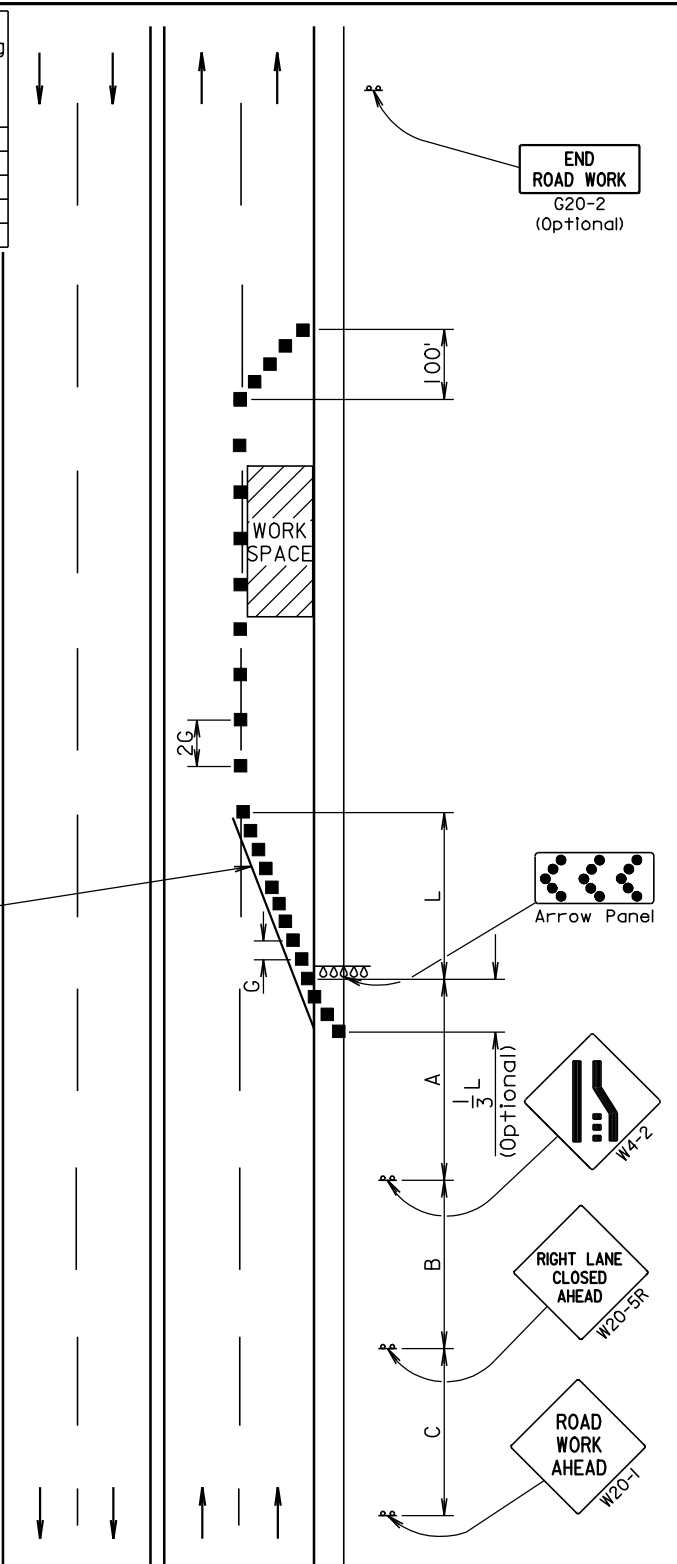
Channelizing Device

Drums or Type II Barricades shall be used if required overnight.

42" cones may be used along centerline

Longitudinal dimensions may be adjusted to fit project conditions such as horizontal curves, vertical curves, and other site restrictions.

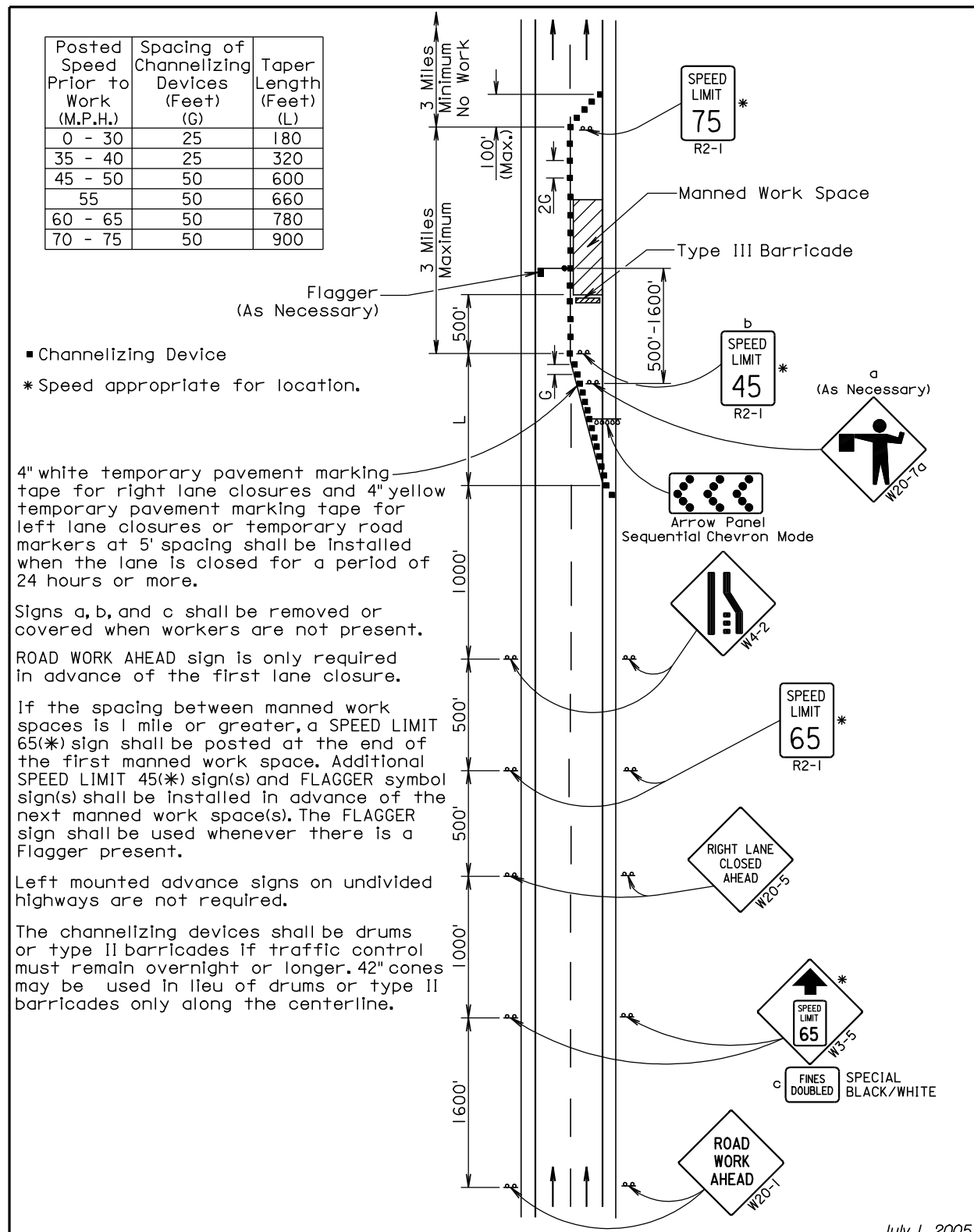
Four inch white temporary pavement marking shall be used if traffic control must remain overnight or longer.



April 1, 2008

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
	<i>Published Date: 2nd Qtr. 2010</i>	Sheet 1 of 1

Plotting Date: 12-MAY-2010



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 - 75	50	900

■ Channelizing Device
* Speed appropriate for location.

4" white temporary pavement marking tape for right lane closures and 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 for a period of 24 hours or more.

Signs a, b, and c shall be removed or covered when workers are not present.

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

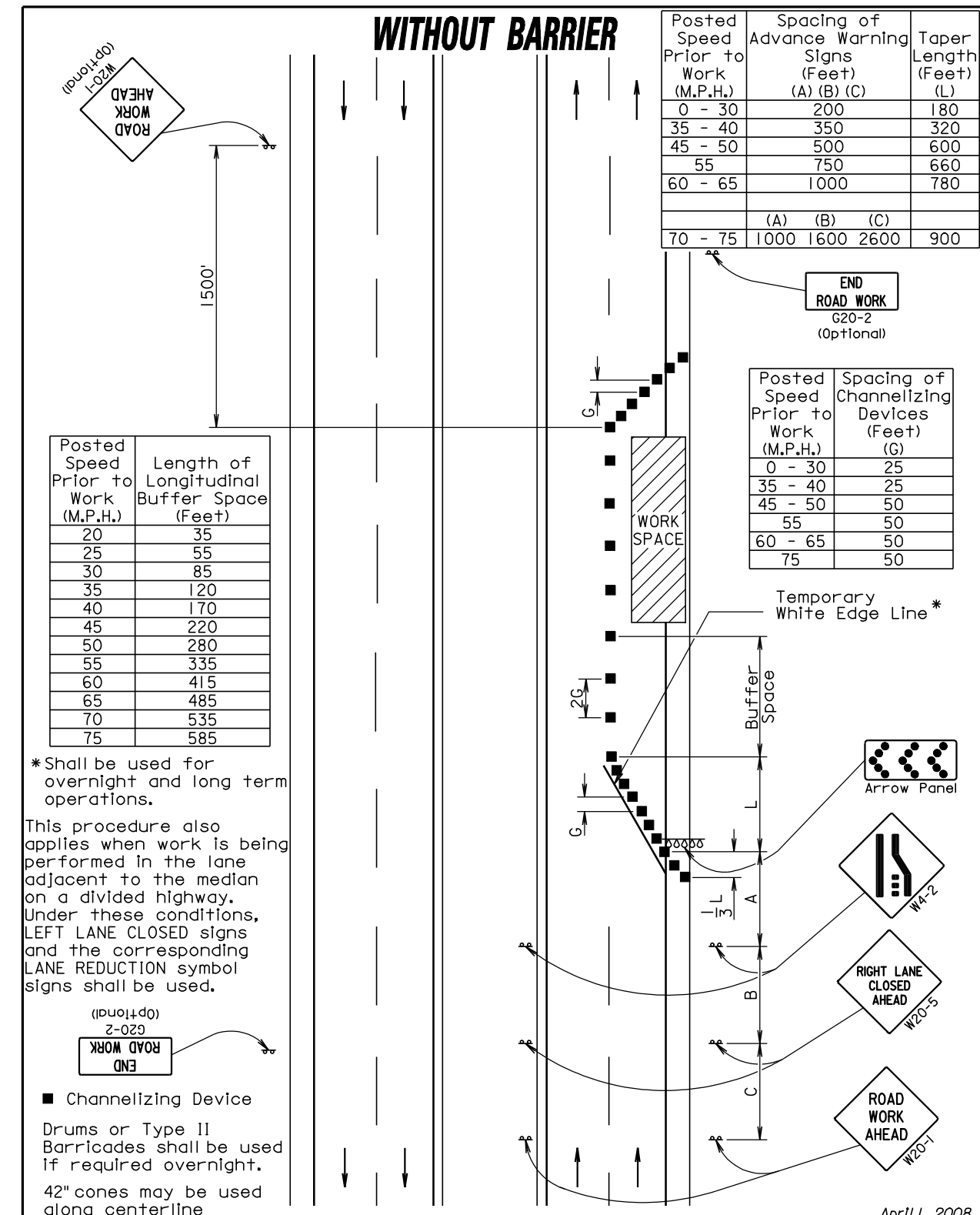
If the spacing between manned work spaces is 1 mile or greater, a SPEED LIMIT 65(*) sign shall be posted at the end of the first manned work space. Additional SPEED LIMIT 45(*) sign(s) and FLAGGER symbol sign(s) shall be installed in advance of the next manned work space(s). The FLAGGER sign shall be used whenever there is a Flagger present.

Left mounted advance signs on undivided highways are not required.

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. 42" cones may be used in lieu of drums or type II barricades only along the centerline.

July 1, 2005

S D D O T	MANNED WORK SPACE SIGNING FOR DIVIDED AND UNDIVIDED HIGHWAYS	PLATE NUMBER 634.63
	<i>Published Date: 2nd Qtr. 2010</i>	Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

* Shall be used for overnight and long term operations.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

■ Channelizing Device
Drums or Type II Barricades shall be used if required overnight.
42" cones may be used along centerline

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
	(A)	(B)	(C)	
70 - 75	1000	1600	2600	900

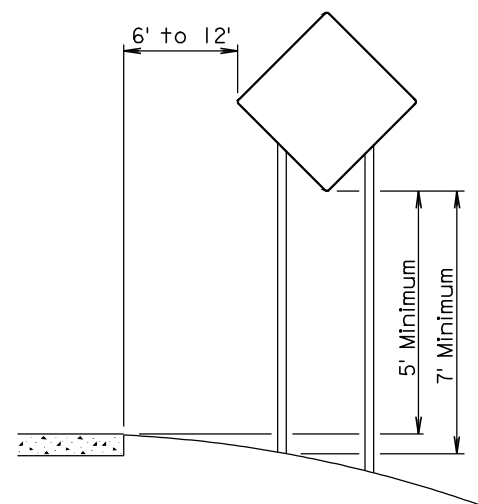
Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50
55	50
60 - 65	50
75	50

April 1, 2008

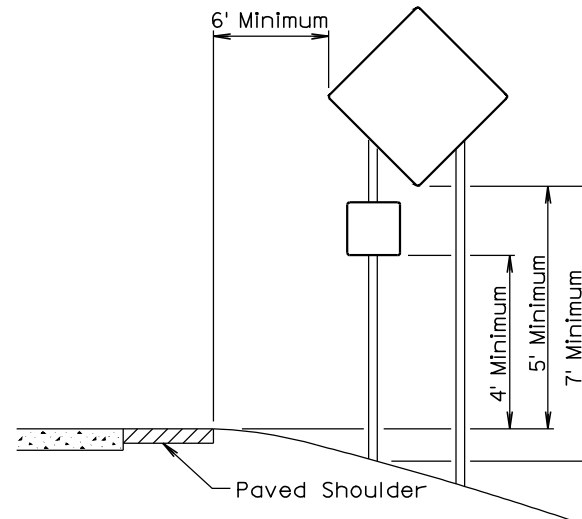
S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
	<i>Published Date: 2nd Qtr. 2010</i>	Sheet 1 of 1

Username - trrc11951

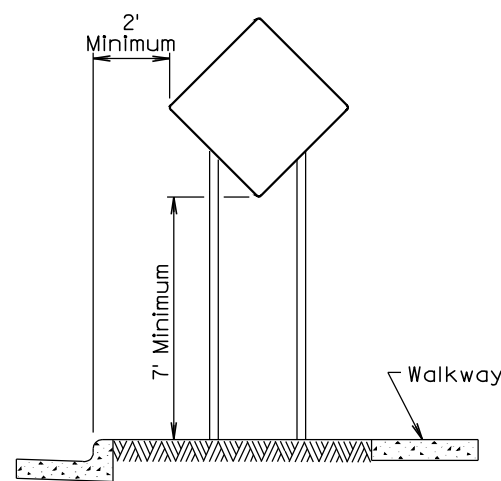
Plotting Date: 12-MAY-2010



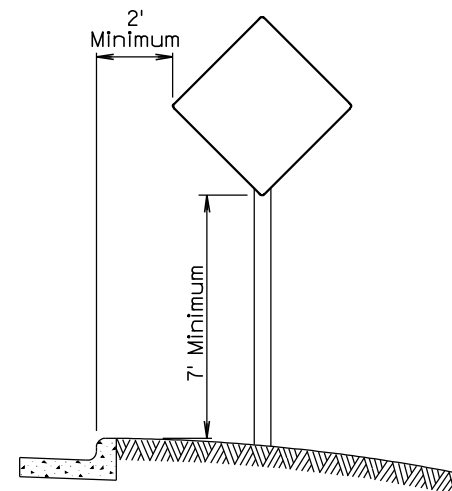
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



URBAN DISTRICT

December 23, 2003

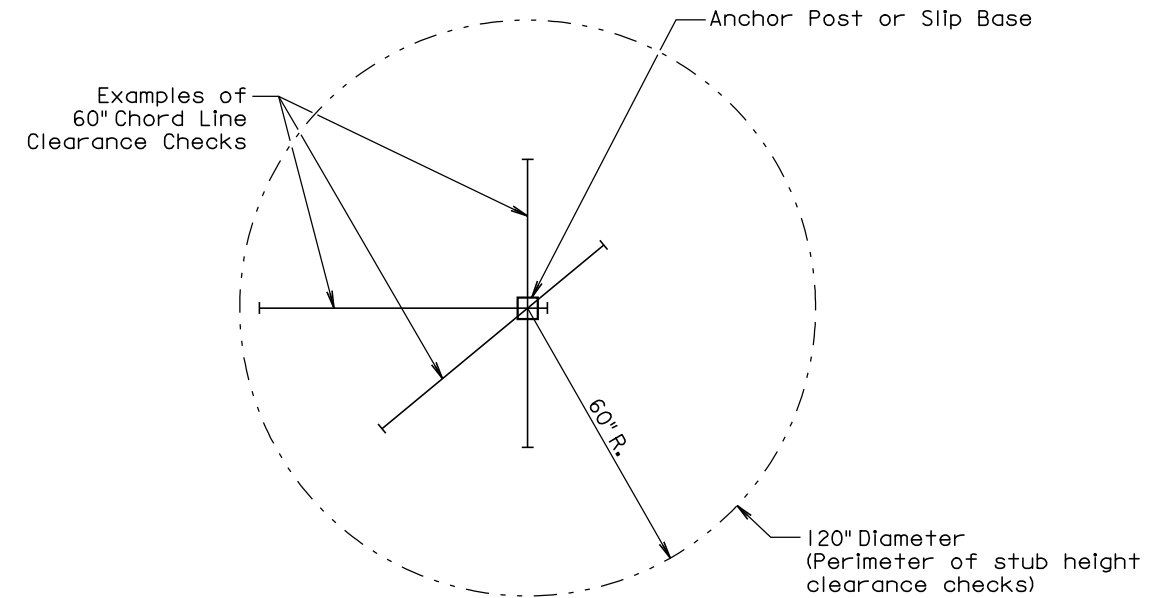
Published Date: 2nd Qtr. 2010

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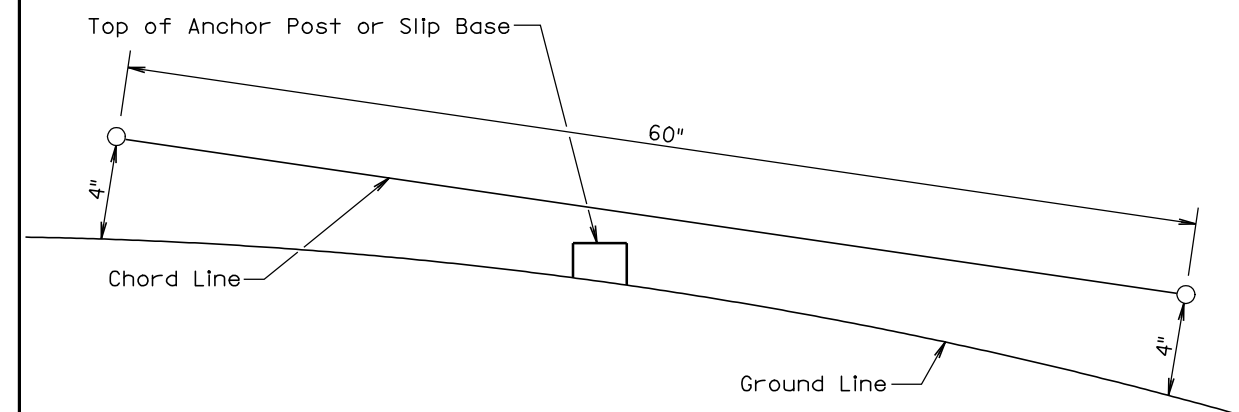
BREAKAWAY SIGN SUPPORTS
(Typical Construction Signing)

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. 2010

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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1