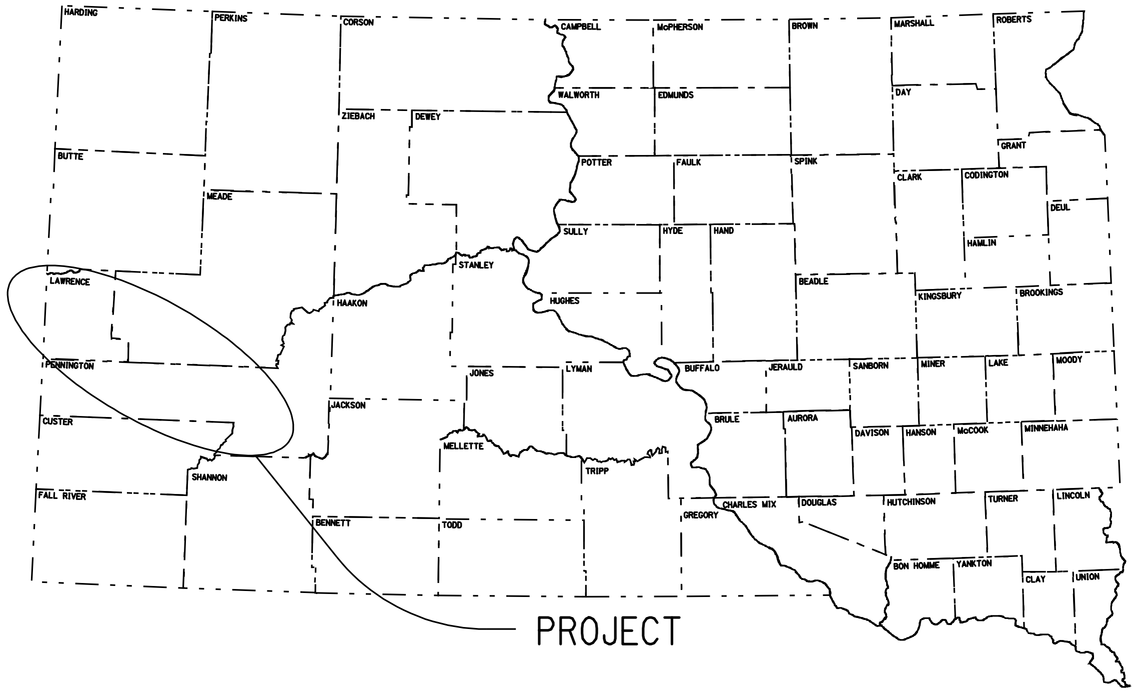
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	385-451 190N-452 090W-451	01	12

Plotting Date: 05-AUG-2011



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECTs 385–451, 190N–452 & 090W–451
HIGHWAYs US 385, I–190 & I–90
LAWRENCE & PENNINGTON COUNTIES
ASPHALT CONCRETE PAVEMENT REPAIR
PCNs i2e0, i2e1 & i2e3

(1) US 385

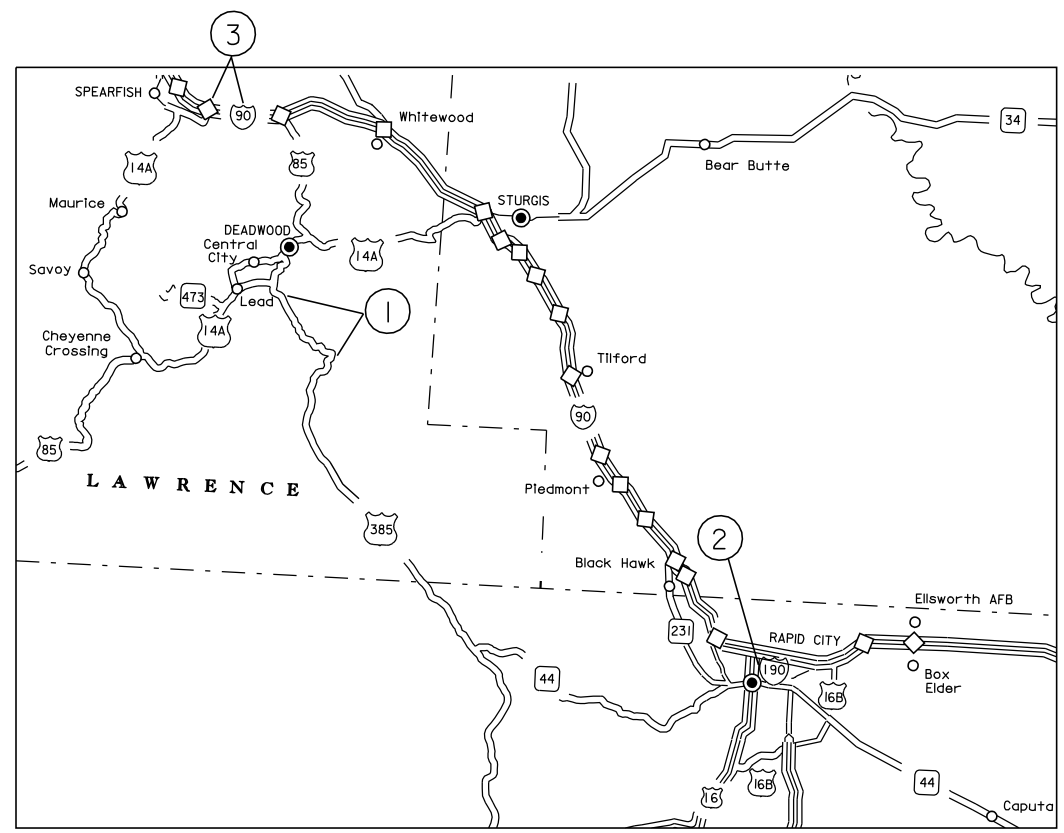
MRM 118.8 to 121.0, 385-451, pcn i2e0

(2) I-190 NB

MRM 1.0, 190N-452, pcn i2e1

(3) I-90 WB

MRM 13.7 to 16.5, 090W-451, pcn i2e3



INDEX OF SHEETS

N

Storm Water Permit

No Permit Required

PLOT SCALE - 200.000000:1.000000

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ESTIMATE OF QUANTITIES (i2e0, US 385)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	77	CuYd
260E1010	Base Course	75.6	Ton
320E1200	Asphalt Concrete Composite	11.6	Ton
320E2000	Maintenance Patching	75.6	Ton
332E0010	Cold Milling Asphalt Concrete	267	SqYd
633E1300	Pavement Marking Paint, White	1.1	Gal
633E1305	Pavement Marking Paint, Yellow	0.7	Gal
634E0010	Flagging	20	Hour
634E0100	Traffic Control	534	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	220	Ft

ESTIMATE OF QUANTITIES (i2e1, I-190 N)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	23	CuYd
260E1010	Base Course	23.0	Ton
320E2000	Maintenance Patching	23.0	Ton
633E1300	Pavement Marking Paint, White	0.3	Gal
634E0010	Flagging	20	Hour
634E0100	Traffic Control	379	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	69	Ft

ESTIMATE OF QUANTITIES (i2e3, I-90 W)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	2,463.4	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	3.4	Mile
332E5000	Grinding Asphalt Concrete	900	SqYd
633E1300	Pavement Marking Paint, White	35.9	Gal
633E1305	Pavement Marking Paint, Yellow	28.7	Gal
634E0010	Flagging	100	Hour
634E0100	Traffic Control	739	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
634E0640	Temporary Pavement Marking	8,976	Ft

SPECIFICATIONS

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

COMPLETION DATE

The overall completion date for the project is June 1, 2012. An interim completion date of October 15, 2011 will be required for the work on US 385 and I-190. Failure to complete the work on US 385 and I-190 by this date will result in liquidated damages assessed in accordance with section 8.7 of the standard specifications.

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.

WASTE DISPOSAL SITE(CONTINUED)

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.

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. 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. 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.

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.

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.

ASPHALT CONCRETE COMPOSITE (CONTINUED)

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 this project.

Locations and quantities of asphalt repair are subject to change. The exact locations will be determined in the field by the Engineer. Payment will be based on the actual quantities installed.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will 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.

TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (i2e0)

Highway	MRM	Description	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Tons)	Maintenance Patching (Tons)	Cold Milling (Sqyd)	Unclassified Excavation Digouts (Cuyds)	Base Course (Tons)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, White (Gal)	Pavement Marking Paint, Yellow (Gal)
US 385	118.830	Southbound Driving Lane	12	60	1.00		26.7		27	26.7	60	0.2	0.2
US 385	119.430	Southbound Driving and Passing Lane, AC Overlay to repair dip	24	50	0.13	11.6		267			50	0.5	0.2
US 385	120.620	Northbound	12	35	1.00		15.6		16	15.6	35	0.1	0.1
US 385	121.000	Northbound	12	75	1.00		33.3		33	33.3	75	0.2	0.2
					Totals	**11.6**	**75.6**	**267**	**77**	**75.6**	**220**	**1.1**	**0.7**

TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (i2e1)

Highway	MRM	Description	Width (Ft)	Length (Ft)	Depth (Ft)	Maintenance Patching (Tons)	Unclassified Excavation Digouts (Cuyds)	Base Course (Tons)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, White (Gal)
I-190 N	1.01	Exit 1C On Ramp	9	22	0.50	7.3	7	7.3	22	0.1
I-190 N	1.02	Exit 1C On Ramp	9	47	0.50	15.7	16	15.7	47	0.2
					Totals	**23.0**	**23**	**23.0**	**69**	**0.3**

TABLE OF ASPHALT CONCRETE PAVEMENT REPAIR (i2e3)

Highway	MRM to	MRM	Width (Ft)	Length (Ft)	Depth (Ft)	Asphalt Concrete Composite (Tons)	Grind 12" Rumble Strip or Stripe in Asphalt Concrete (Mile)	Grinding Asphalt Concrete (SqYd)	Temporary Pavement Marking (Ft)	Pavement Marking Paint, White (Gal)	Pavement Marking Paint, Yellow (Gal)
I-90 W	15.80	16.50	27	3,696	0.13	1,014.3	1.4	288.9	3,696	14.8	11.8
I-90 W	15.00	15.30	27	1,584	0.13	434.7	0.6	288.9	1,584	6.3	5.1
I-90 W	13.70	14.40	27	3,696	0.13	1,014.3	1.4	288.9	3,696	14.8	11.8
					Totals	**2,463.4**	**3.4**	**866.7**	**8,976**	**35.9**	**28.7**

GRINDING ASPHALT CONCRETE

The Contractor will be required to grind at each end of the asphalt overlay, so there is no vertical lip and a smooth transition to the existing surface is obtained. The estimated quantity is based on 50' of grinding at each end of the asphalt overlay. This quantity may need to be adjusted by the Engineer so that straightedge requirements are met.

The Contractor may need to make multiple passes in order to improve the ride quality of the bump locations. All costs associated with multiple passes shall be incidental to the contract unit price per square yard "Grinding Asphalt Concrete".

Grinding shall be done utilizing diamond blades mounted on a self-propelled machine designed for grinding and texturing pavement. The equipment shall be such that it will not strain or damage the underlying pavement surface. Grinding equipment that causes ravels, aggregate fractures, spalls, or disturbance of the transverse or longitudinal joints shall not be permitted. The Contractor shall use vacuuming equipment for removal of residue and excess water. Residue and wastewater shall not be deposited on the roadway or shoulder surface.

The cross slope of the pavement shall be uniform to the degree that no depressions or misalignment of slope greater than 1/4 inch in ten feet exist when tested with a ten foot straightedge. The cross slope shall extend onto the shoulder for the distance necessary to allow positive drainage and to remove any vertical edge.

The Contractor shall establish a positive means for the removal of the grinding and/or grooving slurry. The slurry shall be removed from the pavement surfaces before being blown by traffic action or wind. The slurry shall not be permitted to flow across lanes that are open to the traveling public.

The asphalt grinding slurry shall be hauled away and deposited in settling basins, or filtered by other means approved by the Engineer at no additional cost to the State. Filtering of the slurry within the right-of-way will be allowed provided only clean water flows onto the vegetated slopes. After the asphalt material has settled out of the slurry the material shall be disposed of in accordance with the Waste Disposal Site notes provided in these plans.

Each end of the asphalt overlay that is ground shall meet the minimum requirements of Sec. 380.3.O.1, ten foot straightedge test.

All labor, materials, equipment and the proper disposal of slurry material required to perform this work shall be incidental to the contract unit price per square yard for "Grinding Asphalt Concrete".

RUMBLE STRIP ROADWAY CLEANING

The Contractor shall be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. Loose material may be broomed to the edge of shoulders and it shall be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas and/or waterways.

All costs associated with this work shall be incidental to the contract unit price per mile for installing Rumble Strips or Stripes.

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.

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

At no time shall Interstate traffic be exposed to differential elevations in traveling lanes due to paving operations. All lanes that are paved shall remain closed until the adjacent lane is completed in a similar manner with no drop offs. All transitions shall be paved for a smooth ride as approved by the Engineer. The single exception to allowing differential elevations along a longitudinal joint will be at Interstate Exit or Entrance Ramp merge points. In these cases, the elevation differential along the edge shall be tapered to a 12:1 slope or flatter.

Construction related traffic shall not cross interstate traffic. The use of maintenance crossovers is not allowed.

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

All traffic control, 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.

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 repair area located at MRM 119.43 shall be cold milled and paved in the same day. The Contractor shall utilize standard plate 634.23 for performing this work.

TRAFFIC CONTROL (CONTINUED)

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 BUMP signs.

Vehicles working in traffic or along side traffic shall be equipped with a flashing amber light.

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.

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

Non-applicable signing will be covered or removed and reset during periods of inactivity. All costs to do this work shall be incidental to Traffic Control, Miscellaneous.

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's traffic control supervisor shall make night inspections to ensure the adequacy, legibility and reflectivity of each sign and device. The night inspections shall be performed for each new installation of traffic control where a lane is closed and on a weekly basis after the initial installation. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection.

Work activities shall only be during daylight hours. Daylight hours are considered to be ½ hour before sunrise until ½ hour after sunset.

TEMPORARY PAVEMENT MARKING

Temporary pavement markings for the centerline and lane lines of the roadway shall be Temporary Road Markers as per the Standard Specifications. Covers on tabs shall be removed prior to opening the roadway to traffic.

The contractor shall be responsible for maintaining a visible and reflective centerline, edge line and gore striping throughout the project. Any marking covered or damaged shall be replaced prior to the end of the day.

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	385-451, 190N-452 & 090W-451	5	12

PERMANENT PAVEMENT MARKING

The new pavement marking shall match existing upon completion of the work. Prior to removal of the existing pavement marking, the location and type shall be marked out and documented so that the pavement marking can be reestablished. All materials shall be applied as per manufacturer's recommendations.

Application of permanent pavement marking paint shall be completed within 7 days following completion of the asphalt paving.

The rate of application for a solid 4" line shall be 16.9 gallons per mile. Glass Beads shall be applied at the rate of 8 lbs./Gal.

INVENTORY OF TRAFFIC CONTROL DEVICES (pcn i2e0)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	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
W8-15	48" x 48"	GROOVED PAVEMENT	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W8-1	36" x 36"	BUMP	2	27	54
W8-11	48" x 48"	UNEVEN LANES	2	34	68
W13-1	24" x 24"	ADVISORY SPEED PLATE	1	16	16
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
W20-7b	48" x 48"	BE PREPARED TO STOP	1	34	34
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
				TOTAL UNITS	**534**

INVENTORY OF TRAFFIC CONTROL DEVICES (pcn i2e1)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	1	17	17
W4-3	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	3	34	102
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
W20-7a	48" x 48"	FLAGGER	1	34	34
W20-7b	48" x 48"	BE PREPARED TO STOP	1	34	34
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
				TOTAL UNITS	**379**

INVENTORY OF TRAFFIC CONTROL DEVICES (pcn i2e3)

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R1-2	48" x 48"	YIELD	1	34	34
R2-1	30" x 36"	SPEED LIMIT ##	3	23	69
W3-2	48" x 48"	YIELD AHEAD (SYMBOL)	1	34	34
W3-4	48" x 48"	BE PREPARED TO STOP	1	34	34
W3-5	48" x 48"	SPEED REDUCTION	2	34	68
W4-1	48" x 48"	MERGE (SYMBOL)	1	34	34
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	2	34	68
W4-3	48" x 48"	MERGE (SYMBOL)	1	34	34
W20-1	48" x 48"	ROAD WORK AHEAD	3	34	102
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
SPECIAL	30" x 24"	FINES DOUBLED	2	18	36
*****	*****	TYPE III BARRICADE - 8 FT. DOUBLE SIDED	1	56	56
				TOTAL UNITS	**739**

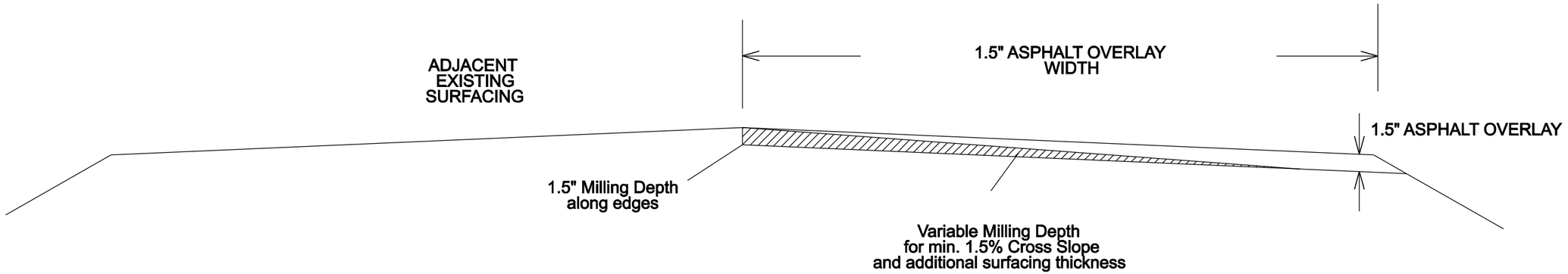
PLOT SCALE - 200.000000:1.000000

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	385-451 190N-452 090W-451	06	12

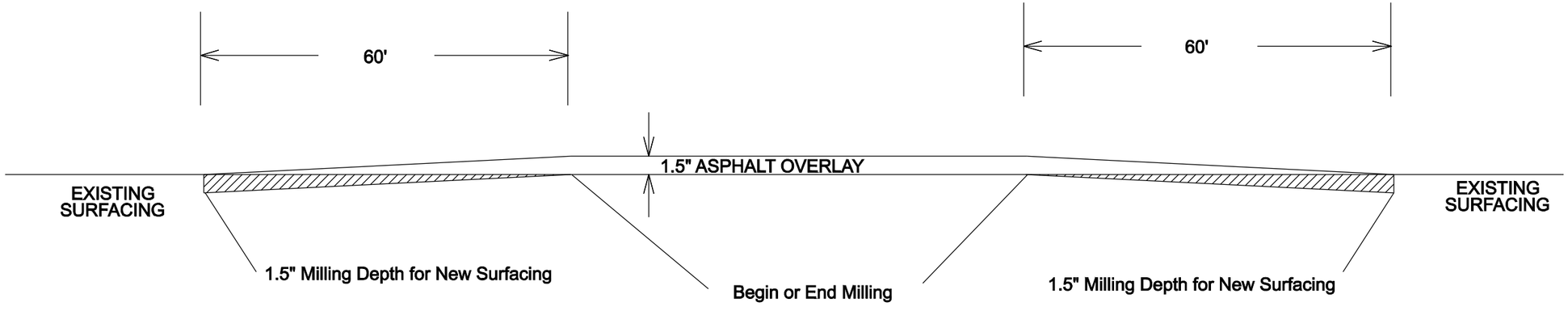
Plotting Date: 05-AUG-2011

COLD MILLING and ASPHALT OVERLAY DETAILS

TYPICAL SECTION OF MILLING ALONG EDGES



PROFILE OF MILLING AT BEGIN AND END OF ASPHALT OVERLAYS (Full Roadway Width)



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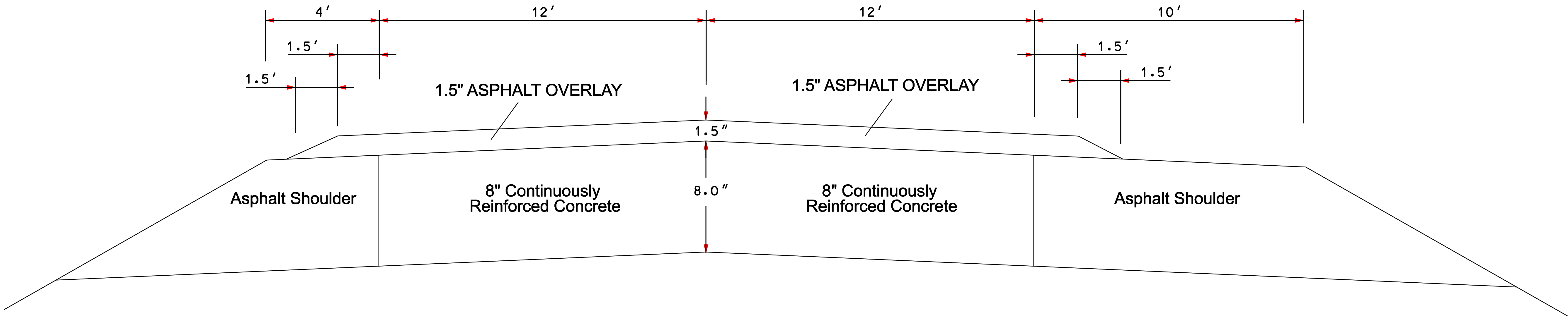
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	385-451 190N-452 090W-451	07	12

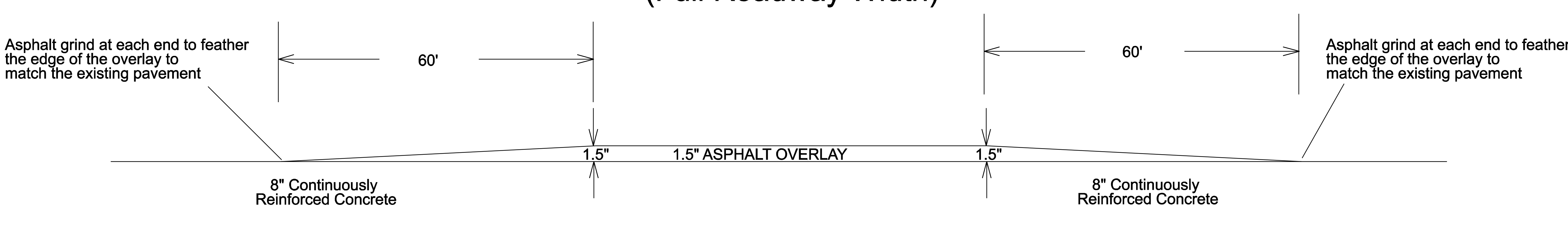
Plotting Date: 05-AUG-2011

I-90 ASPHALT OVERLAY DETAILS

TYPICAL SECTION



PROFILE OF ASPHALT OVERLAY (Full Roadway Width)



PLOT SCALE - 200.000000:1.000000

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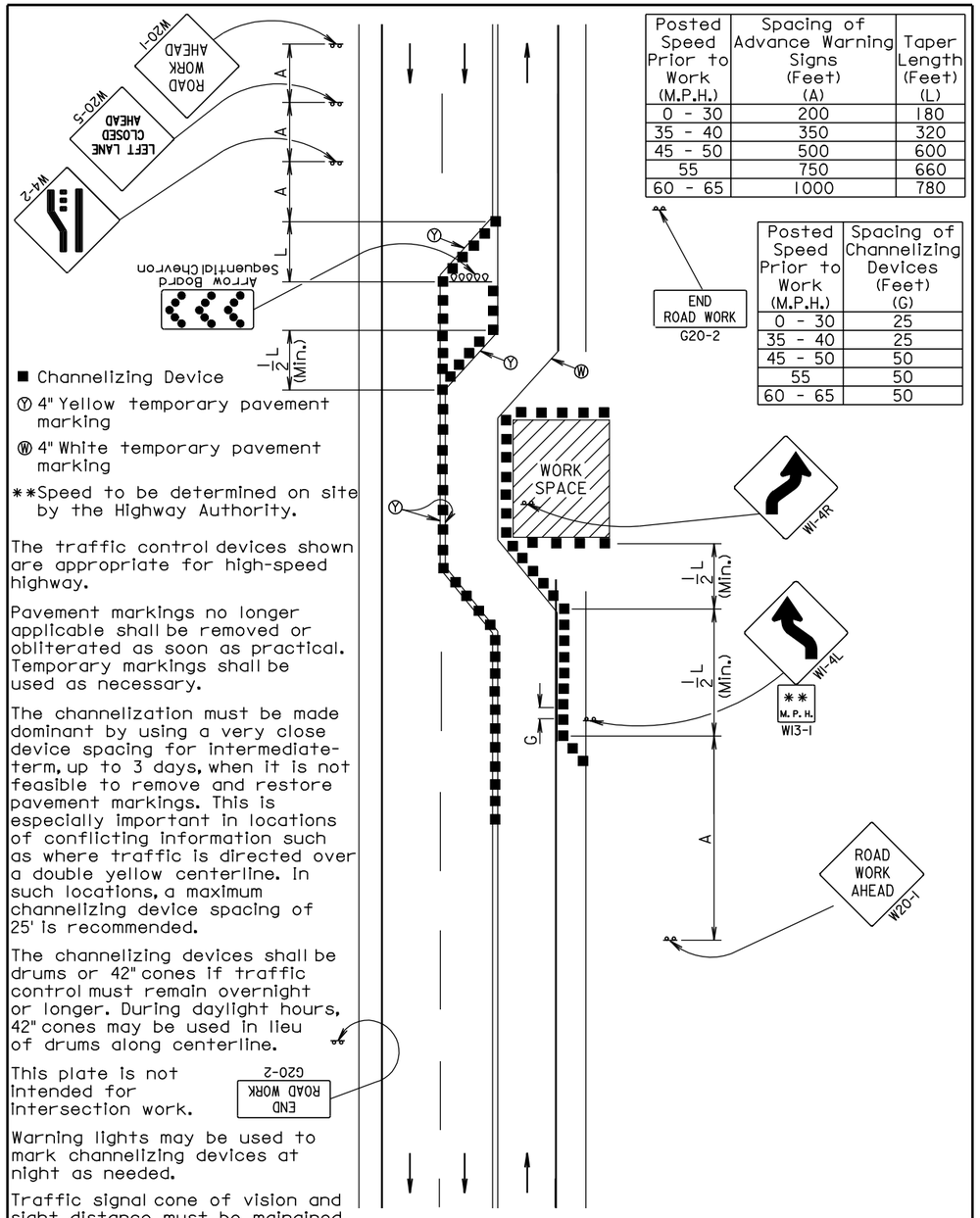
GUIDES FOR TRAFFIC CONTROL DEVICES
HALF ROAD CLOSURE ON MULTILANE HIGHWAY



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

END ROAD WORK G20-2

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

■ Channelizing Device

Ⓨ 4" Yellow temporary pavement marking

Ⓦ 4" White temporary pavement marking

**Speed to be determined on site by the Highway Authority.

The traffic control devices shown are appropriate for high-speed highway.

Pavement markings no longer applicable shall be removed or obliterated as soon as practical. Temporary markings shall be used as necessary.

The channelization must be made dominant by using a very close device spacing for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings. This is especially important in locations of conflicting information such as where traffic is directed over a double yellow centerline. In such locations, a maximum channelizing device spacing of 25' is recommended.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums along centerline.

This plate is not intended for intersection work.

END ROAD WORK G20-2

Warning lights may be used to mark channelizing devices at night as needed.

Traffic signal cone of vision and sight distance must be maintained.

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK IN VICINITY OF ENTRANCE RAMP

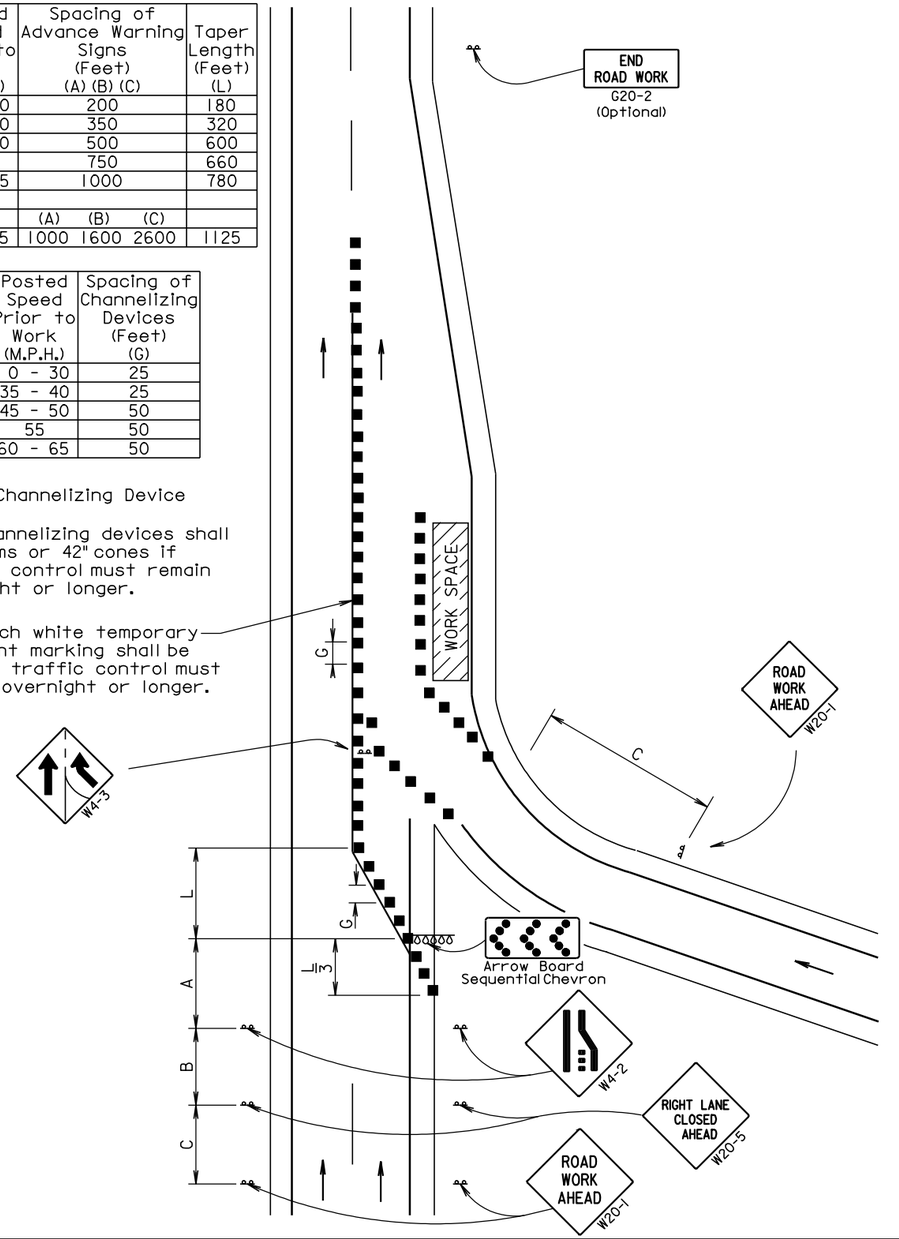
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	1125

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

■ Channelizing Device

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

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



GUIDES FOR TRAFFIC CONTROL DEVICES
WORK IN VICINITY OF ENTRANCE RAMP

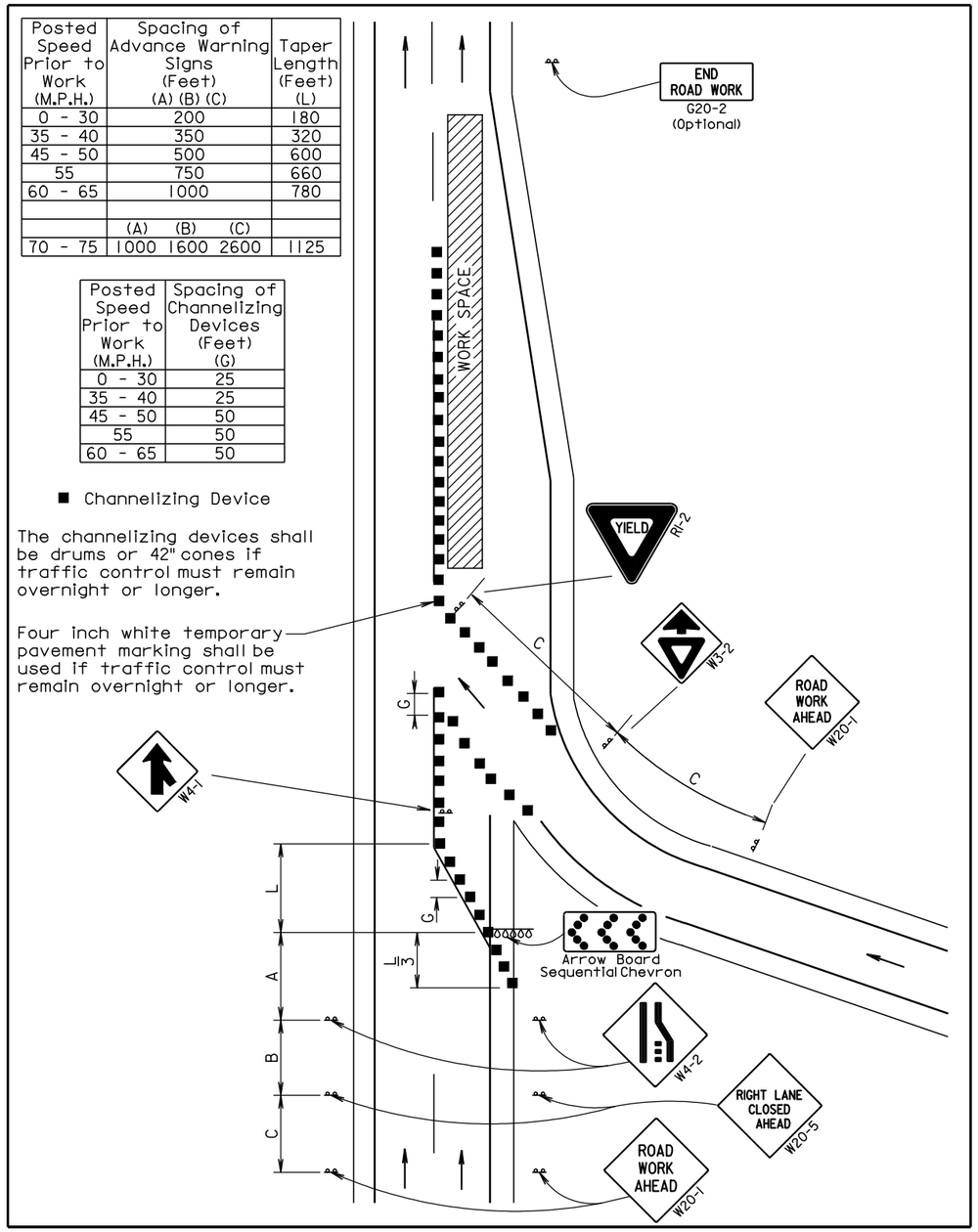
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	1125

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

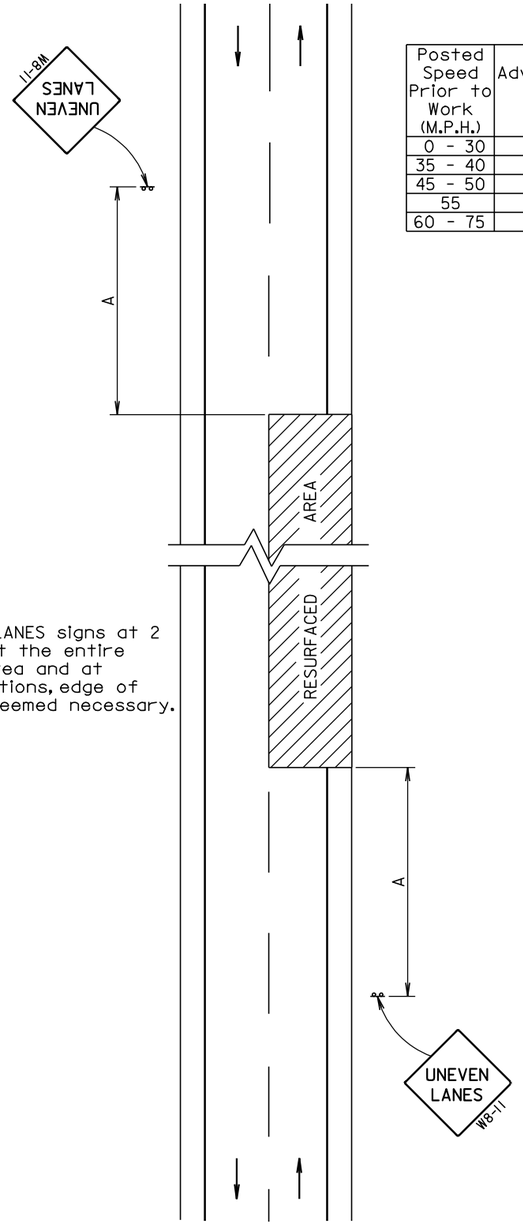
■ Channelizing Device

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

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



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000



Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

July 1, 2005

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.

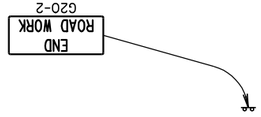
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

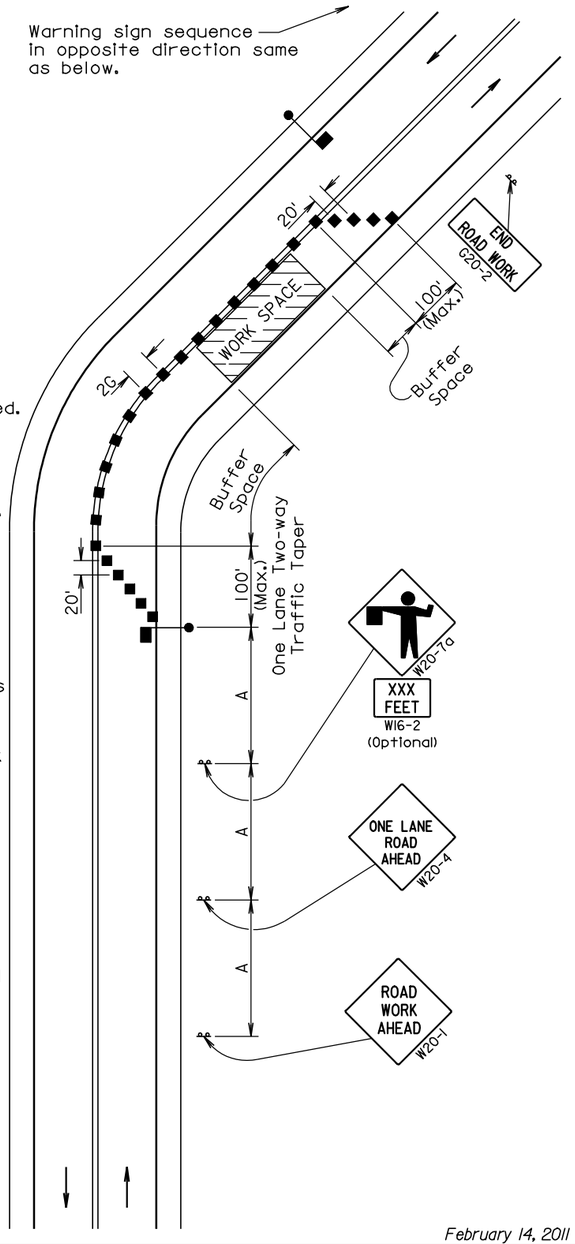
The channelizing devices shall be drums or 42" cones.

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.



February 14, 2011

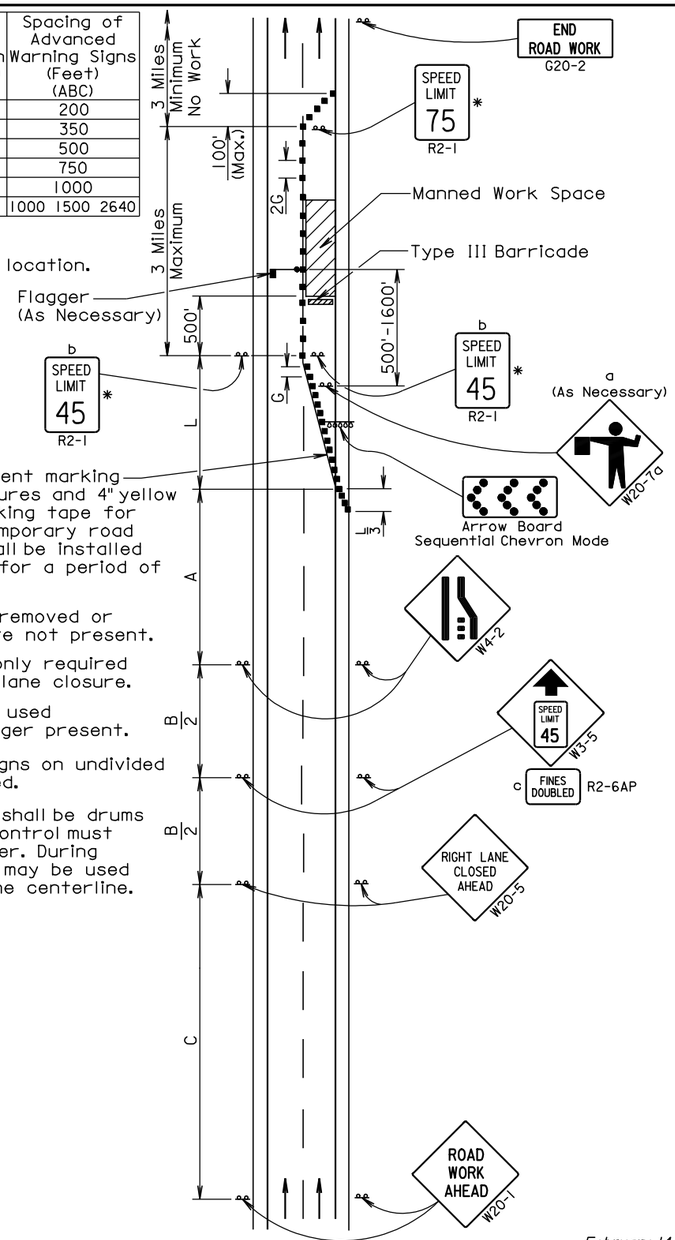
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	385-451 190N-452 090W-451	11	12

Plotting Date: 05-AUG-2011

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)	Spacing of Advanced Warning Signs (Feet) (ABC)
0 - 30	25	180	200
35 - 40	25	320	350
45 - 50	50	600	500
55	50	660	750
60 - 65	50	780	1000
70 - 75	50	900	1000 1500 2640

▪ 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.

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 42" cones if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums along the centerline.

February 14, 2011

Published Date: 3rd Qtr. 2011	SDDOT	MANNED WORK SPACE SIGNING FOR DIVIDED AND UNDIVIDED HIGHWAYS	PLATE NUMBER 634.63 Sheet 1 of 1

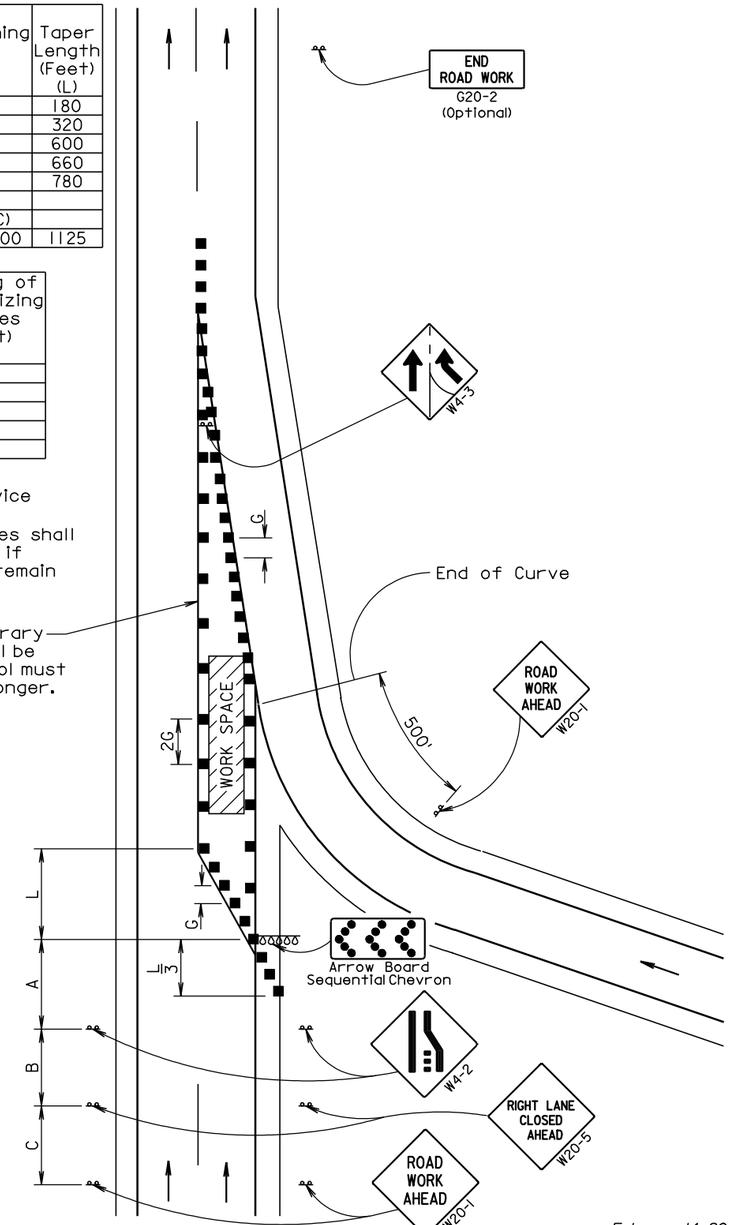
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 75	1000 1600 2600	1125

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

■ Channelizing Device

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

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



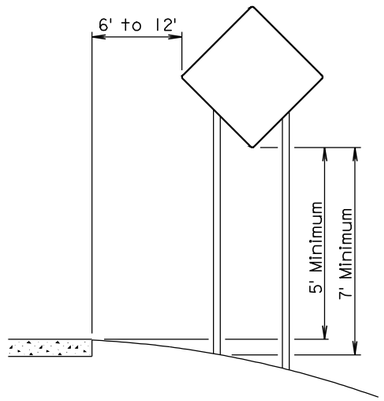
February 14, 2011

Published Date: 3rd Qtr. 2011	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF ENTRANCE RAMP	PLATE NUMBER 634.70 Sheet 1 of 1

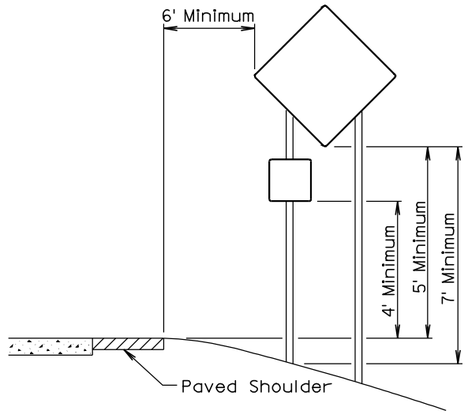
Username - trrcll95i

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	385-451 190N-452 090W-451	12	12

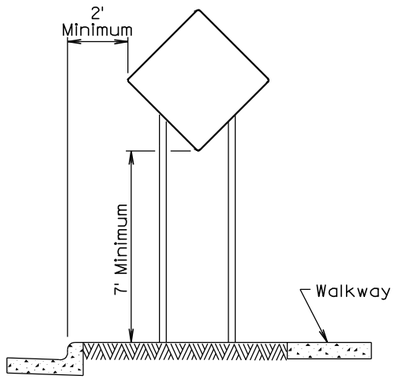
Plotting Date: 05-AUG-2011



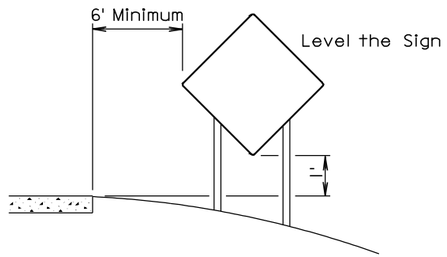
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT
3 DAY MAXIMUM

February 14, 2011

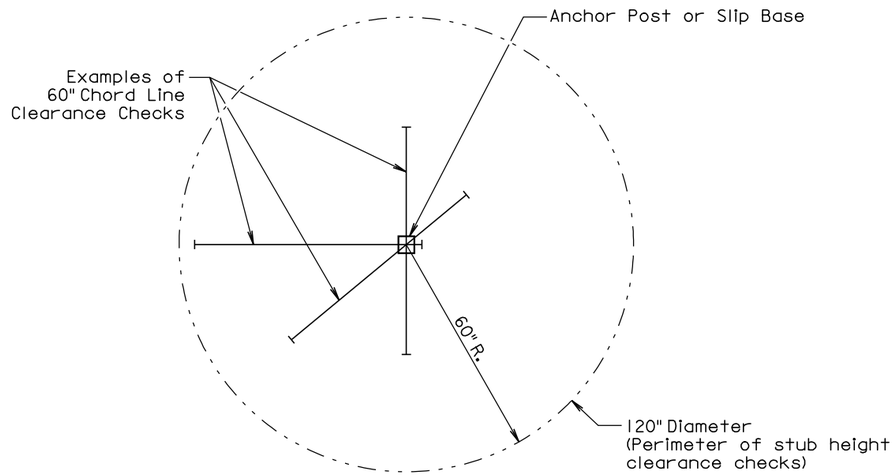
Published Date: 3rd Qtr. 2011

SDDOT

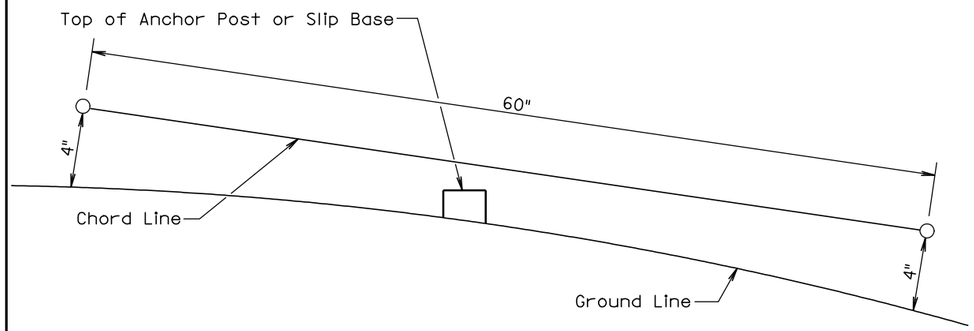
CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

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: 3rd Qtr. 2011

SDDOT

BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER 634.99

Sheet 1 of 1