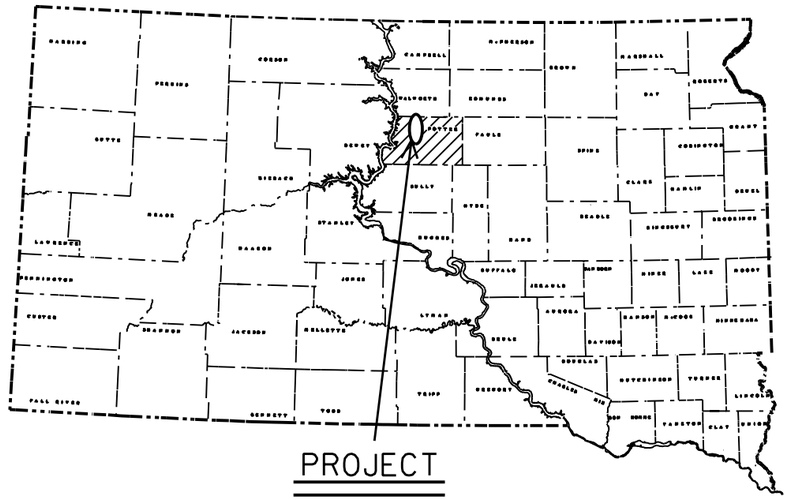
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	083-351	1	7



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT 083–351
U.S. HIGHWAY 83

POTTER COUNTY

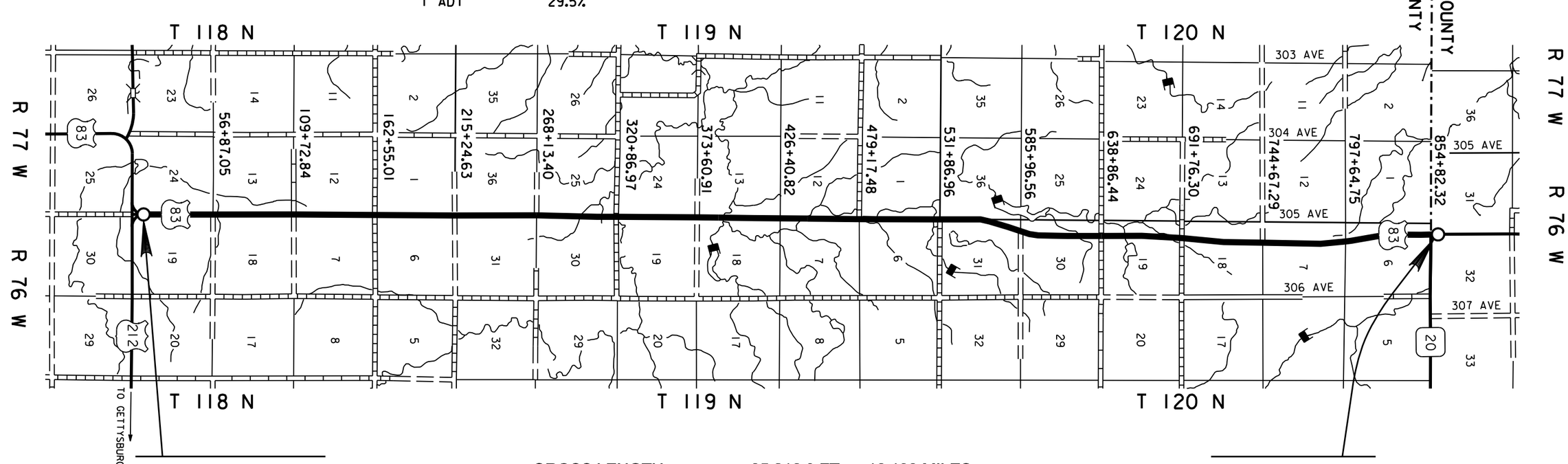
SHOULDER REHABILITATION

PCN I1QU

INDEX OF SHEETS

DESIGN DESIGNATION

ADT (2009)	930
ADT (2029)	1275
DHV	195
D	50%
T DHV	13.4%
T ADT	29.5%



BEGIN PROJECT
STATION 10+00
MRM 175.15 +0.087

GROSS LENGTH: 85,216.0 FT = 16.139 MILES
LENGTH OF EXCEPTIONS: 5783.9 FT = 1.095 MILES (CURVES)
NET LENGTH: 79,432.1 FT = 15.044 MILES

END PROJECT
STATION 862+16
MRM 191.26 +0.104

ESTIMATE OF QUANTITIES & SIGN TABULATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	083-351	2	7

ESTIMATED QUANTITIES

The below quantities are based on the rates shown in the Rates of Materials. This is only an estimate. The actual application rates of materials will be determined by field conditions and by the Manufacturer's recommendations. These rates may vary from the estimated rates stated in the Rates of Materials. The application rates may also be adjusted in the field. Pay quantities will be those actually used even though they may vary significantly from plans estimates.

083-351 POTTER COUNTY PCN I1QU

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E6200	Water for Granular Material	48.1	MGal
210E2000	Shoulder Shaping	30.088	Mile
330E0010	MC-70 Asphalt for Prime	104.7	Ton
360E0020	AE150S Asphalt for Surface Treatment	84.0	Ton
360E1200	Modified Cover Aggregate	741.4	Ton
634E0010	Flagging	80	Hour
634E0100	Traffic Control	527	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

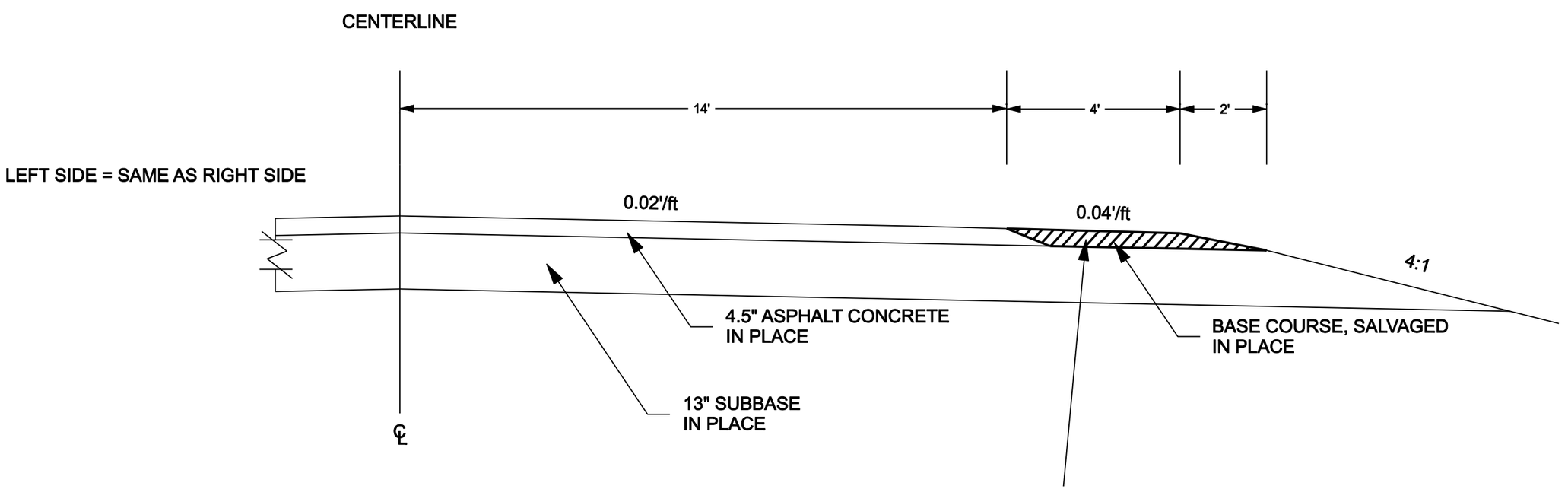
SIGN TABULATION

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-1	48" x 24"	ROAD WORK NEXT ## MILES	2	24	48
G20-2	36" x 18"	END ROAD WORK	3	17	51
W20-1	48" x 48"	ROAD WORK AHEAD	5	34	170
W20-4	48" x 48"	ONE LANE ROAD AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-2	36" x 36"	FRESH OIL	2	27	54
W21-5	48" x 48"	SHOULDER WORK	2	34	68
			TOTAL UNITS		**527**

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	083-351	3	7

TYPICAL SECTION

US 83 SHOULDERS



Sta 10+00.00 to 555+96.23

Sta 569+46.08 to 583+40.04

Sta 596+43.89 to 788+91.95

Sta 804+43.20 to 816+42.18

Sta 832+21.15 to 862+16.00

1) RESHAPE SHOULDERS TO TYPICAL SECTION

2) APPLY MC-70 ASPHALT FOR PRIME (5' WIDTH)

3) APPLY ASPHALT SURFACE TREATMENT (4' WIDTH)

PLAN NOTES & RATES OF MATERIALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	083-351	4	7

SPECIFICATIONS

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

ENGINEER NOTIFICATION

The Contractor is required to notify the Area Engineer at least 10 days prior to beginning work.

SHOULDER SHAPING

Prior to priming the shoulders, the upper 3 inches of existing shoulder material shall be scarified, reworked, shaped, and recompacted to the typical section.

The shoulders shall be regraded with a cross slope of 0.04 foot per foot slope.

Compaction and smoothness of the shoulder shall be to the satisfaction of the Engineer.

Included in the Estimate of Quantities are 1.6 MGAL of Water for Granular Material per shoulder per mile for compaction.

Shoulder Shaping will be paid for at the contract unit price per mile, inclusive of all costs for scarifying, reworking, shaping, compacting, equipment, labor, and incidentals necessary to satisfactorily complete the work.

The shoulders shall be primed after shaping is complete to the satisfaction of the Engineer. Any damage to the shoulders that result from delays between the shaping and priming operations shall be repaired by the Contractor at no cost to the State.

Shoulder drop-offs will not be allowed to remain overnight. Any shoulder drop-off present during daylight hours must be contained within the active work zone(s).

The Contractor shall not damage any existing asphalt pavement. Any damage to the existing asphalt, or to any pavement markings, shall be repaired at no cost to the State.

The exceptions to this work are any existing areas that have paved shoulders. These areas include existing approaches, intersecting roads, mailbox turnouts, and the four horizontal curves listed below.

Sta. 555+96.23 to 569+46.08
Sta. 583+40.04 to 596+43.89
Sta. 788+91.95 to 804+43.20
Sta. 816+42.18 to 832+21.15

The shoulders shall be broomed prior to the application of the MC-70 Asphalt for Prime, and also prior to the application of the AE150S Asphalt for Surface Treatment. Final brooming of the asphalt surface treatment shall be as per the Standard Specifications.

MODIFIED COVER AGGREGATE

Aggregate for Modified Cover Aggregate shall conform to the following gradation requirements:

Passing a 3/8 Inch Sieve	100%
Passing a No. 4 Sieve	0-75%
Passing a No. 8 Sieve	0-30%
Passing a No. 40 Sieve	0-6%
Passing a No. 200 Sieve	0-3.0%

Aggregate may be crushed or uncrushed.

All other requirements of the Standard Specifications for Type 1B shall apply.

After the aggregate stockpile has been produced, the Contractor shall submit an aggregate sample to the asphalt supplier a minimum of 14 days prior to starting the project to allow time to evaluate the compatibility and design of the surface treatment. A copy of the test results shall be submitted to the Engineer and Bituminous Engineer for approval prior to starting the asphalt surface treatment work.

Quality tests on the Cover Aggregate for abrasion and soundness are required by specification. The Contractor shall notify the Pierre Area Office prior to sampling and a representative from the Area Office shall witness all sampling of aggregates to be submitted to the Central Testing Laboratory for quality testing. Satisfactory test results for the Cover Aggregate shall be obtained prior to its use on the project.

MAINTENANCE OF TRAFFIC

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.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. 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 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 breakaway sign supports shall comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.

TRAFFIC CONTROL

All traffic control sign locations shall be set in the field by the Contractor and verified by the Engineer prior to installation.

Fixed location signing placed more than two days prior to the start of construction shall be covered until the time of construction. The cost of materials, labor and equipment necessary to complete this work shall be incidental to the other contract items. No separate payment will be made.

RATES OF MATERIALS

The Estimate of Quantities is based on the following quantities of material per mile on US 83 from MRM 175.15+0.087 to MRM 191.26+0.104 (Station 10+00 to Station 862+16).

Rates are for one shoulder only.

MC-70 Asphalt for Prime at the rate of 3.5 tons applied 5 feet wide (Rate = 0.30 gallon per square yard).

AE150S Asphalt for Surface Treatment at the rate of 2.8 tons applied 4 feet wide (Rate = 0.28 gallon per square yard).

Modified Cover Aggregate at the rate of 25 tons applied 4 feet wide (Rate = 21 pounds per square yard).

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	083-351	5	7

FIXED LOCATION SIGNS

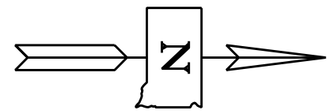
A – ROAD WORK AHEAD W20-1

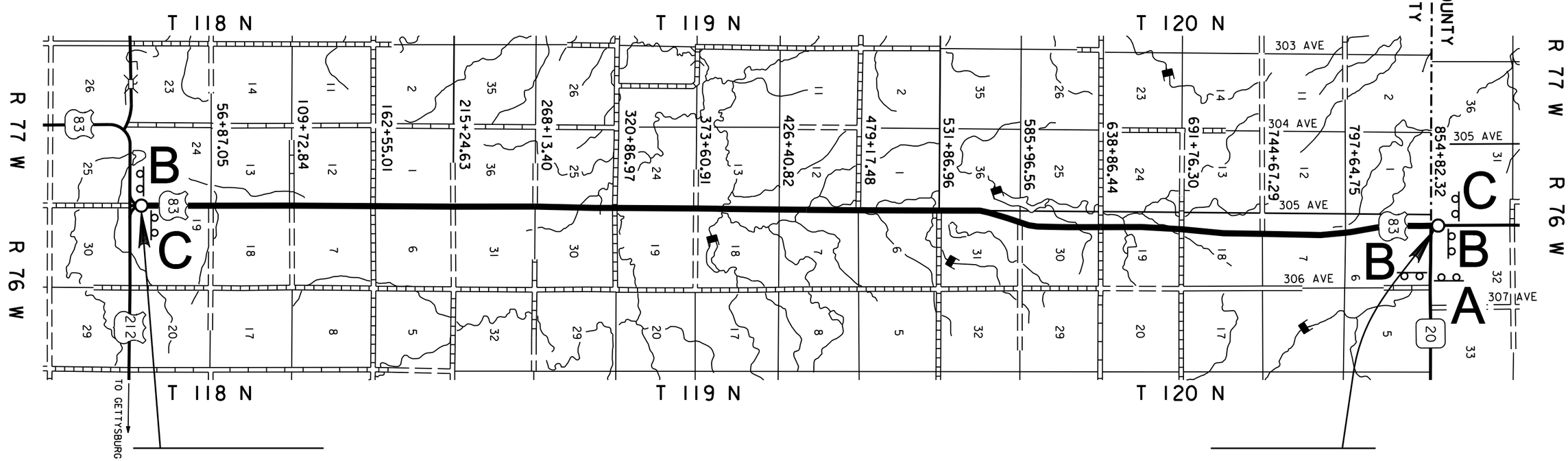
B – END ROAD WORK G20-2

C – ROAD WORK NEXT 16 MILES G20-1

The Contractor shall stake these signs.

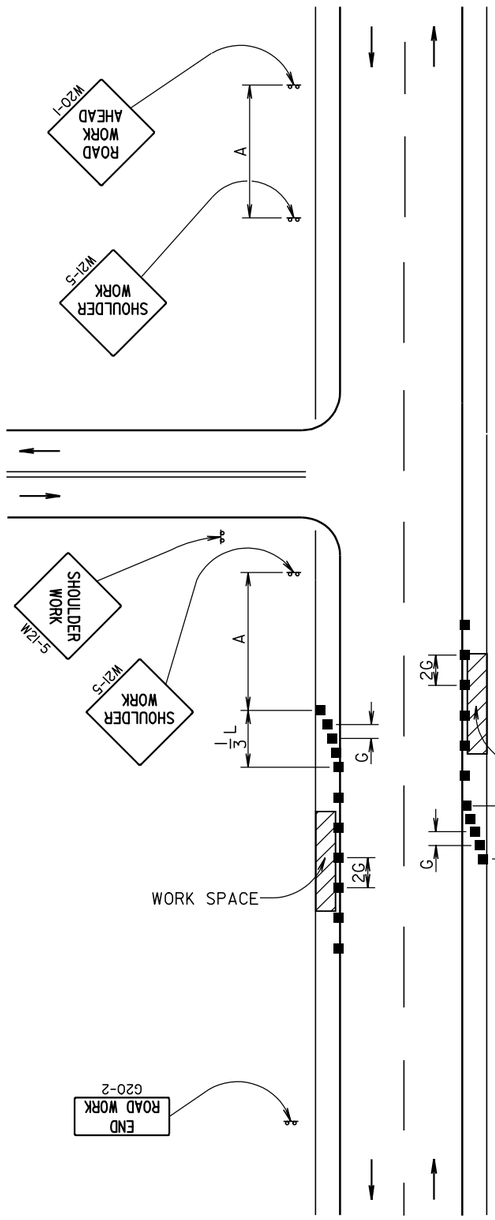
The Engineer must verify the stakes prior to sign installation.





BEGIN PROJECT
STATION 10+00
MRM 175.15 +0.087

END PROJECT
STATION 862+16
MRM 191.26 +0.104



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
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

END ROAD WORK G20-2

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer.

For short duration operations (1 hour or less) all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

July 1, 2005

Published Date: 1st Qtr. 2010

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1

* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

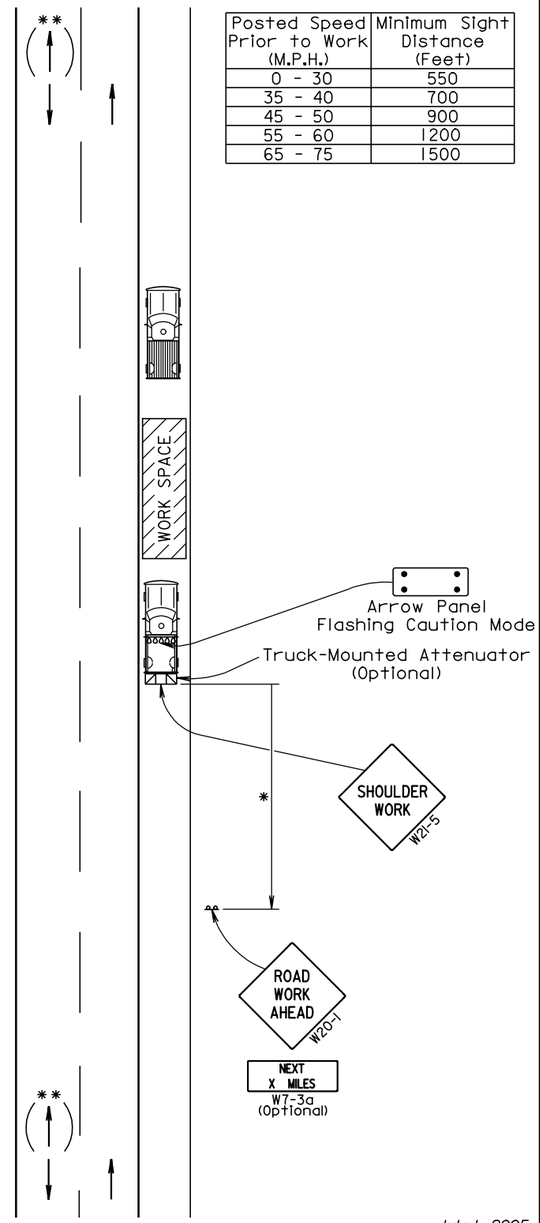
An activated flashing or yellow light on vehicles may be used for short duration (1 hour or less) only.

Arrow panel is required for mobile (intermittent and continuously moving) operations with no sight restriction and work exceeds 1 hour.

ROAD WORK AHEAD sign is required only when sight distance is restricted. (See Table)

** If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

Posted Speed Prior to Work (M.P.H.)	Minimum Sight Distance (Feet)
0 - 30	550
35 - 40	700
45 - 50	900
55 - 60	1200
65 - 75	1500



July 1, 2005

Published Date: 1st Qtr. 2010

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
MOBILE OPERATIONS ON SHOULDER

PLATE NUMBER 634.04

Sheet 1 of 1

Username - trpr22413

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

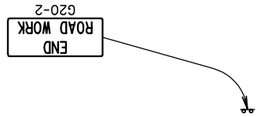
For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

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.

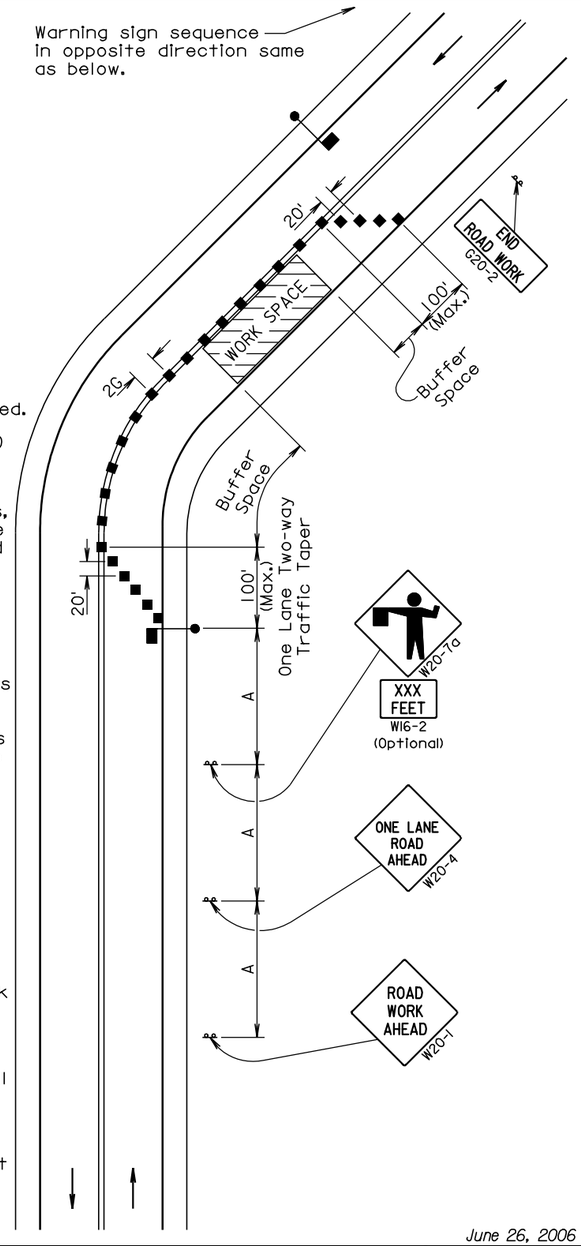
The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums or type II barricades along the centerline.



Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

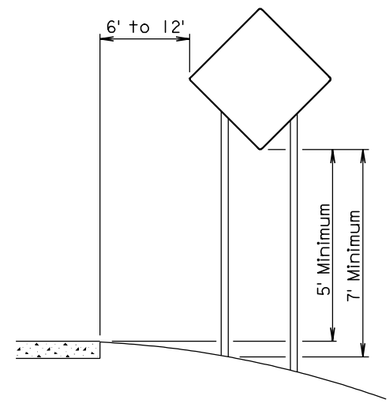
Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space shall be a sufficient length so that the channelizing devices are visible to approaching traffic.

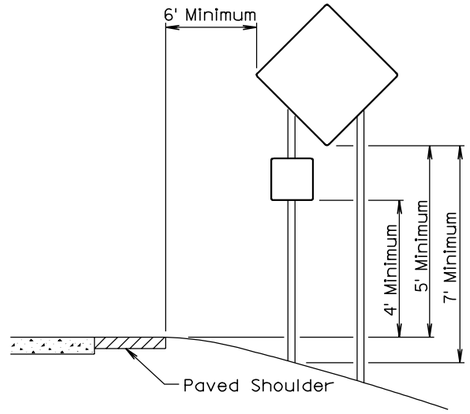


June 26, 2006

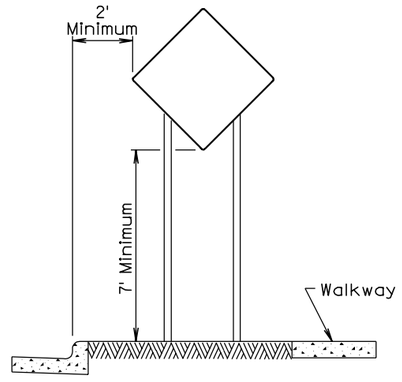
Published Date: 1st Qtr. 2010	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1



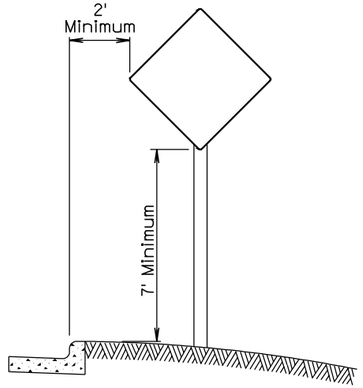
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT



URBAN DISTRICT

December 23, 2003

Published Date: 1st Qtr. 2010	SDDOT	BREAKAWAY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

Username - trpr22413