

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(171)180	C1	C6

Plotting Date: 09/04/2013

INDEX OF SHEETS

- C1 Title with Index
- C2 Estimate with General Notes
- C3 Sign and Paint Tabulation
- C4-C6 Standard Plates

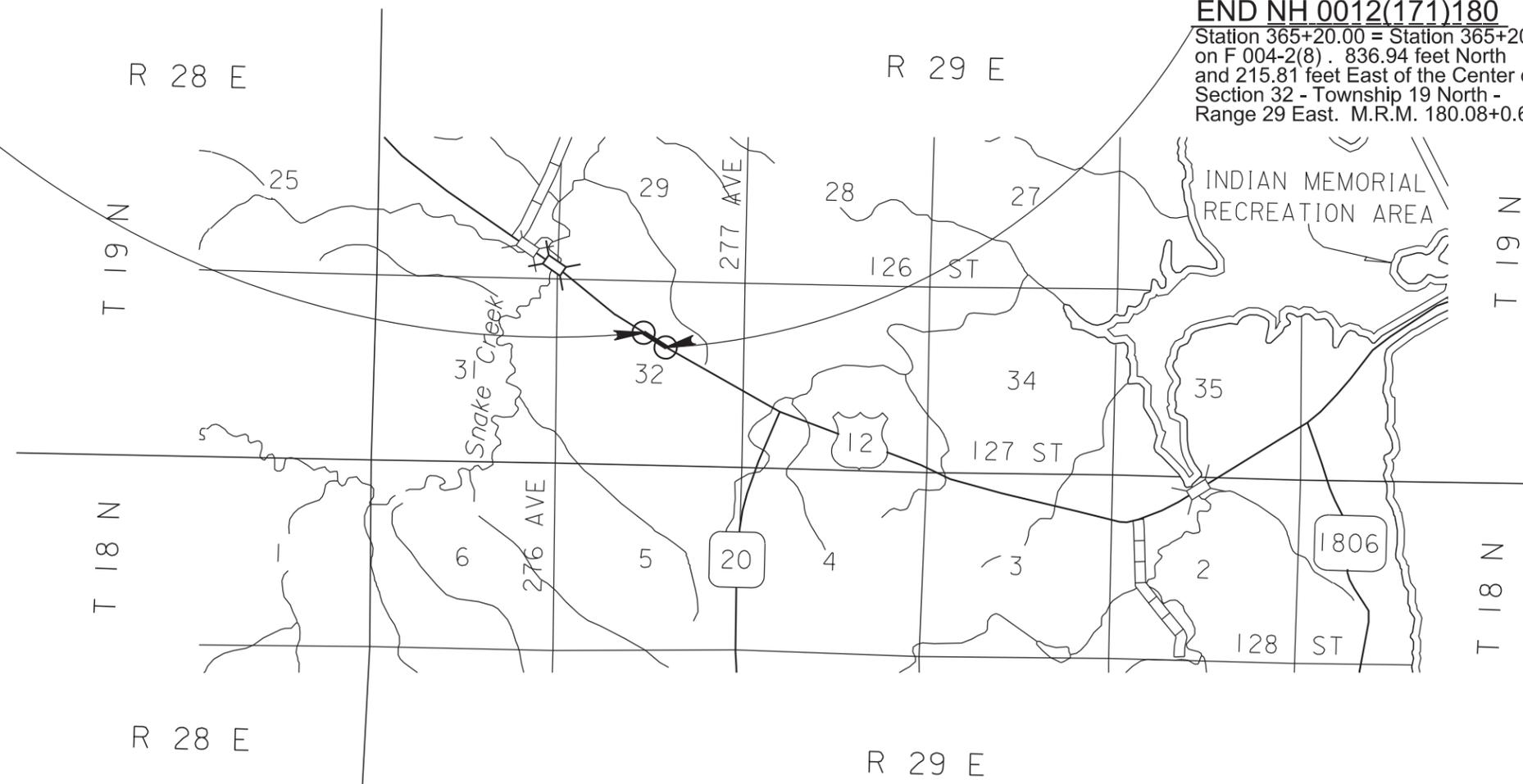
Section C: Traffic Control Plans

BEGIN NH 0012(171)180

Station 362+20.00 = Station 362+20.00
on F 004-2(8) . 1089.24 feet North
and 149.84 feet West of the Center of
Section 32 - Township 19 North -
Range 29 East. M.R.M. 180.08+0.613

END NH 0012(171)180

Station 365+20.00 = Station 365+20.00
on F 004-2(8) . 836.94 feet North
and 215.81 feet East of the Center of
Section 32 - Township 19 North -
Range 29 East. M.R.M. 180.08+0.698



Plot Scale - 1:200

Plotted From - tmo1ntr13

File - ...apr2013\ccrs0303\Title.dgn

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
633E1300	Pavement Marking Paint, White	2.0	Gal
633E1305	Pavement Marking Paint, Yellow	1.0	Gal
634E0010	Flagging	80	Hour
634E0020	Pilot Car	40	Hour
634E0100	Traffic Control	974	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0610	4" Temporary Pavement Marking Tape Type 2	2,688	Ft
634E0630	Temporary Pavement Marking	0.2	Mile

SEQUENCE OF OPERATIONS

Traffic shall be maintained through the project at ALL times.

The Contractor may perform work on the roadway during daylight hours only, unless additional hours are approved by the Engineer. Daylight hours are considered to be ½ hour before sunrise until ½ hour after sunset. Traffic shall be returned to normal driving lanes during non-working hours.

The Contractor shall submit their proposed sequence of operations for the Engineer's approval at least one week prior to the preconstruction meeting.

The Contractor shall maintain access on and off the highway for local residences and county roads.

TRAFFIC CONTROL

The Contractor shall designate an employee who will be available 24 hours/day, 7 days/week to be responsible for the maintenance of traffic during periods of repair work. The person so designated must have training and experience in the field of construction traffic control and be knowledgeable about the Manual on Uniform Traffic Control Devices (MUTCD). The cost of the traffic control person shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous. The Engineer must approve the employee selected. The name and phone number of person(s) shall be provided to the SD Department of Transportation (605-845-3844), SD Highway Patrol (Pierre State Radio (605-773-3536)), and Corson County Sheriff Department (605-273-4210).

Channelizing devices in a series shall be of the same type.

Channelizing drums shall be of a two part construction with breakaway bases.

All traffic control devices shall be in "like new" condition.

During construction every effort should be made to restrict work to the passing lane and leave 2 lanes open to traffic. Standard Plate 634.03 has been included for this situation except the Contractor shall set channelizing devices to close the entire passing lane from its beginning to past the construction zone, a distance of approximately 2650 feet and the channelizing devices shall be set at 50 foot maximum spacing rather than 100 foot as stated on the standard plate. These channelizing devices shall be included in the bid item Traffic Control, Miscellaneous.

If work must be done in the driving lane Standard Plate 634.25 has been included to allow for one way traffic controlled by stop signs. If this becomes necessary the Contractor shall make every effort to minimize the length of time traffic is diverted to the opposing lane.

GENERAL 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 site 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.

Traffic approaching the project from intersecting roadways and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

Access to businesses and residences along the project shall be maintained at all times, unless arrangements are made between the Contractor and business or residence owners to provide an alternative entrance during construction.

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

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall meet the minimum mounting heights of 5 foot for rural areas and 7 foot for urban areas.

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

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

TEMPORARY PAVEMENT MARKINGS

Temporary pavement markings shall be as per the Standard Specifications.

The total length of no passing zone is estimated to be 0.057 miles.

No Passing Zones may be identified using DO NOT PASS and PASS WITH CARE signs in addition to dashed centerline pavement markings. It is estimated that 2 DO NOT PASS and 2 PASS WITH CARE signs will be required to mark the no passing zones.

The Contractor shall erect DO NOT PASS signs to mark no passing zones prior to the removal of the existing pavement markings. PASS WITH CARE signs shall also be used in conjunction with the DO NOT PASS signs. These signs shall be erected on fixed location supports.

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TEMPORARY PAVEMENT MARKINGS (continued)

These signs shall be removed upon completion of the permanent pavement markings.

If the Contractor elects not to use the DO NOT PASS and PASS WITH CARE signs, the temporary pavement markings placed shall be full compliant as normally used to identify no passing zones.

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

Quantities of Temporary Pavement Markings consist of:

- 1) One pass on top of the first lift of Asphalt Concrete
- 2) One pass on top of the second lift of Asphalt Concrete
- 3) ** One pass on top of the Flush Seal

** If the flush seal is eliminated from the contract, the length of temporary pavement marking used for the flush seal shall also be eliminated from the contract.

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

PERMANENT PAVEMENT MARKING

The Contractor shall advise the Engineer a minimum of 2 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones.

The application of permanent pavement marking paint may not begin until 2 calendar days following completion of flush seal and shall be completed within 14 calendar days following completion of the flush seal. If the Flush Seal is eliminated, the Contractor shall complete the application of permanent pavement marking paint no sooner than 2 calendar days, but within 14 calendar days following completion of final surfacing.

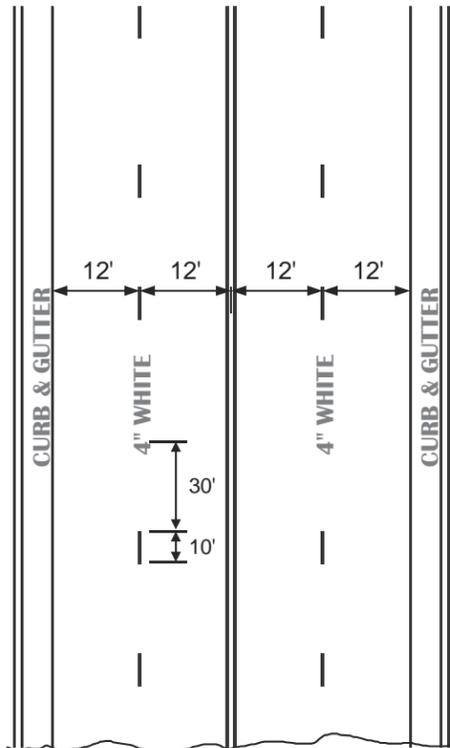
The Contractor will be required to repaint all existing pavement marking including centerline, edge line, lane lines, turn arrows, etc. This list is approximate. The Contractor will be required to inventory and mark, and/or offset the extent and location of the existing turn arrows, etc. before the markings are obliterated. Additional quantities are included in the Estimate of Quantities to paint the additional pavement markings.

All materials shall be applied as per manufacturer's recommendations.

SIGN AND PAINT TABULATION

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

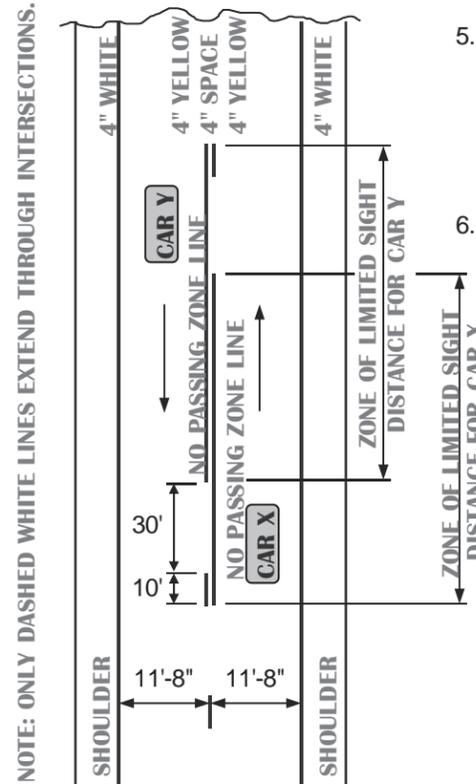
UNDIVIDED ROADWAY



1. Pavement marking paint and glass beads will be furnished and applied by the Contractor. Material shall meet the requirements of Section 980 and 981 of the Standard Specifications. The bead application rate shall be 8 pounds/gallon of paint.
2. Construction requirements, methods of measurement and basis of payment shall conform to the requirements of Section 633 of the Standard Specifications and the Supplemental Specifications.
3. Approximate paint application rates shall be as follows:

Four Lane Roadway (Rates for one line)	Two Lane Roadway
Solid Yellow Centerline Rate = 16.90 Gals./Pass-Mile	Yellow Centerline (Includes No Passing Zones) Rate = 12± Gals./Pass-Mile
Dashed White Laneline Rate = 4.60 Gals./Pass-Mile	Solid White Edgeline (Rate for one line) Rate = 16.90 Gals./Pass-Mile
Solid White Edgeline (Not applicable in curb & gutter section) Rate = 16.90 Gals./Pass-Mile	

4. Typical pavement marking as shown on this sheet shall be applied throughout the entire length of undivided roadway.
5. Exact location of NO PASSING ZONE lines will be determined in the field by the Engineer. A dash of white paint will mark the beginning and end of all no passing zones. NO PASSING ZONE signs and the ending post in fence lines, if present, shall not be used as the beginning and ending of NO PASSING ZONE lines.
6. Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.

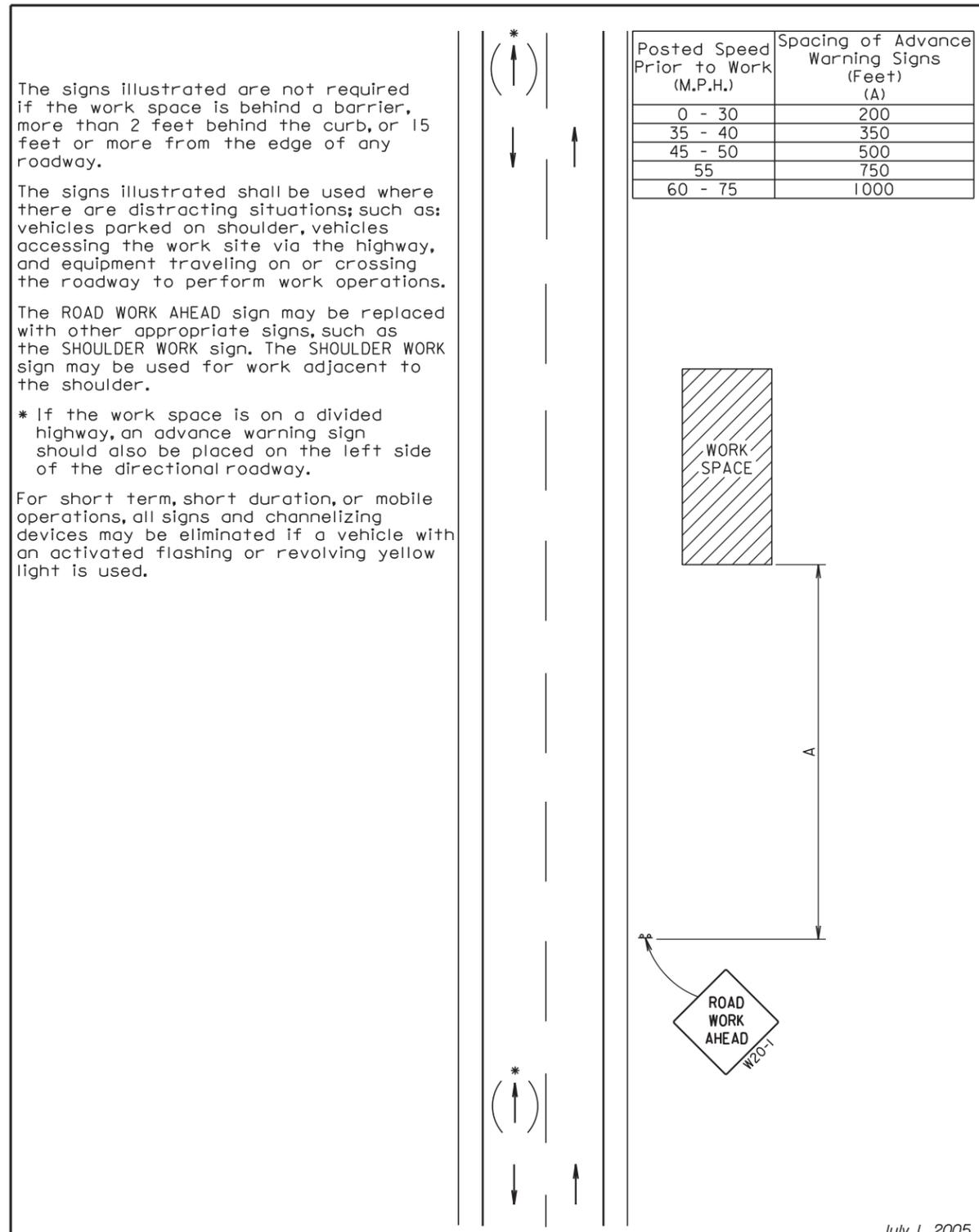


ESTIMATED QUANTITIES	
PAVEMENT MARKING PAINT	QUANTITY
WHITE	2.0 GALLONS
YELLOW	1.0 GALLONS
TOTAL	3.0 GALLONS

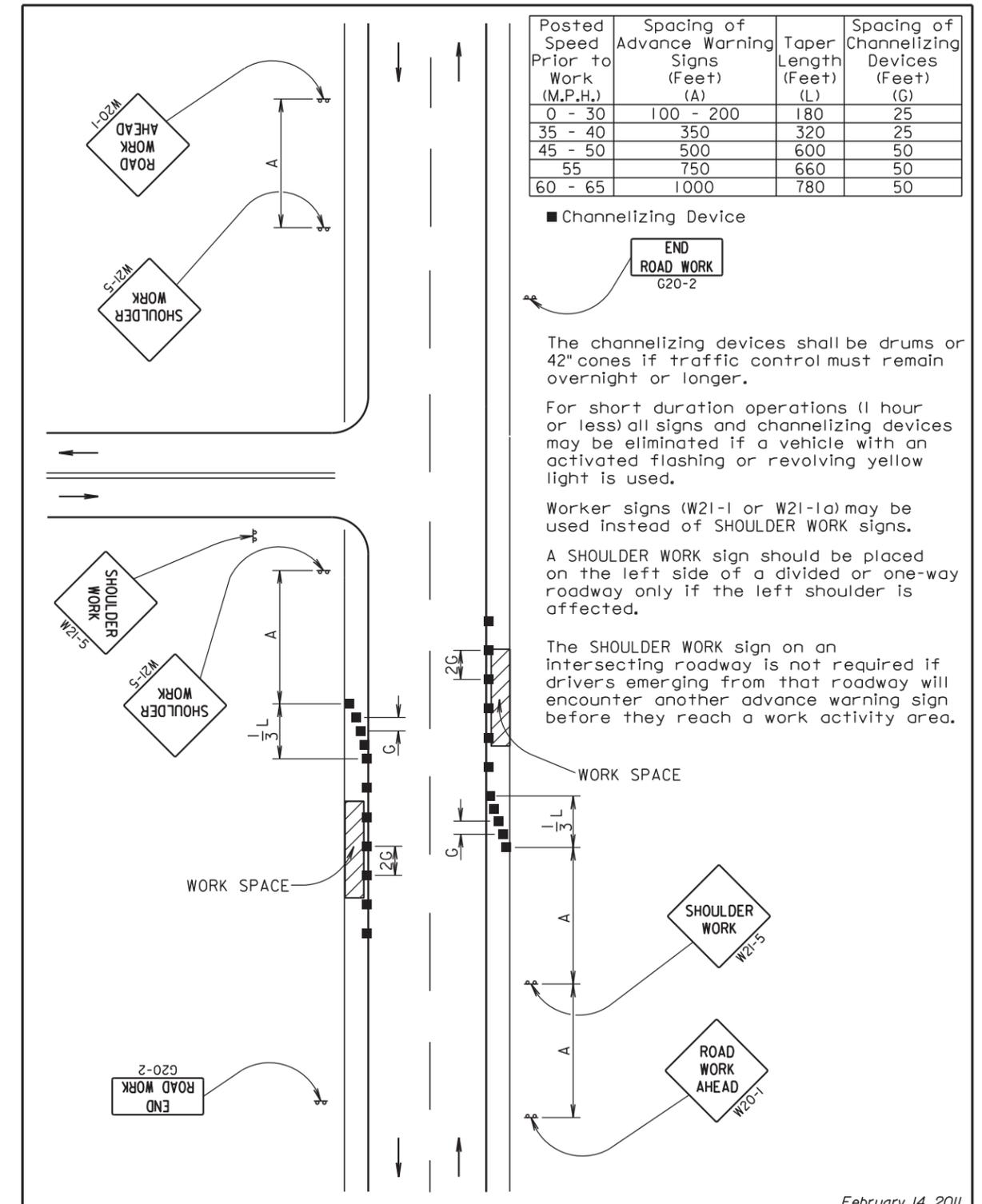
SIGN TABULATION

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	2	17	34
R1-1	48" x 48"	STOP	2	34	68
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)	1	34	34
W3-1	48" x 48"	STOP AHEAD (SYMBOL)	2	34	68
W8-1	36" x 36"	BUMP	4	27	108
W8-6	48" x 48"	TRUCK CROSSING	2	34	68
W8-9a	48" x 48"	SHOULDER DROP-OFF	1	34	34
W13-1	24" x 24"	ADVISORY SPEED PLATE	2	16	32
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED ##### FT. OR 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	1	34	34
*****	*****	TYPE III BARRICADE - 6 FT. SINGLE SIDED	4	30	120
TOTAL UNITS				974	

Place Road Work Ahead, Road Work Next 1 Mile and End Road Work Signs on fixed supports at each end of the project as directed by the Engineer.



July 1, 2005



February 14, 2011

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

Warning sign sequence in opposite direction same as below.

- 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.

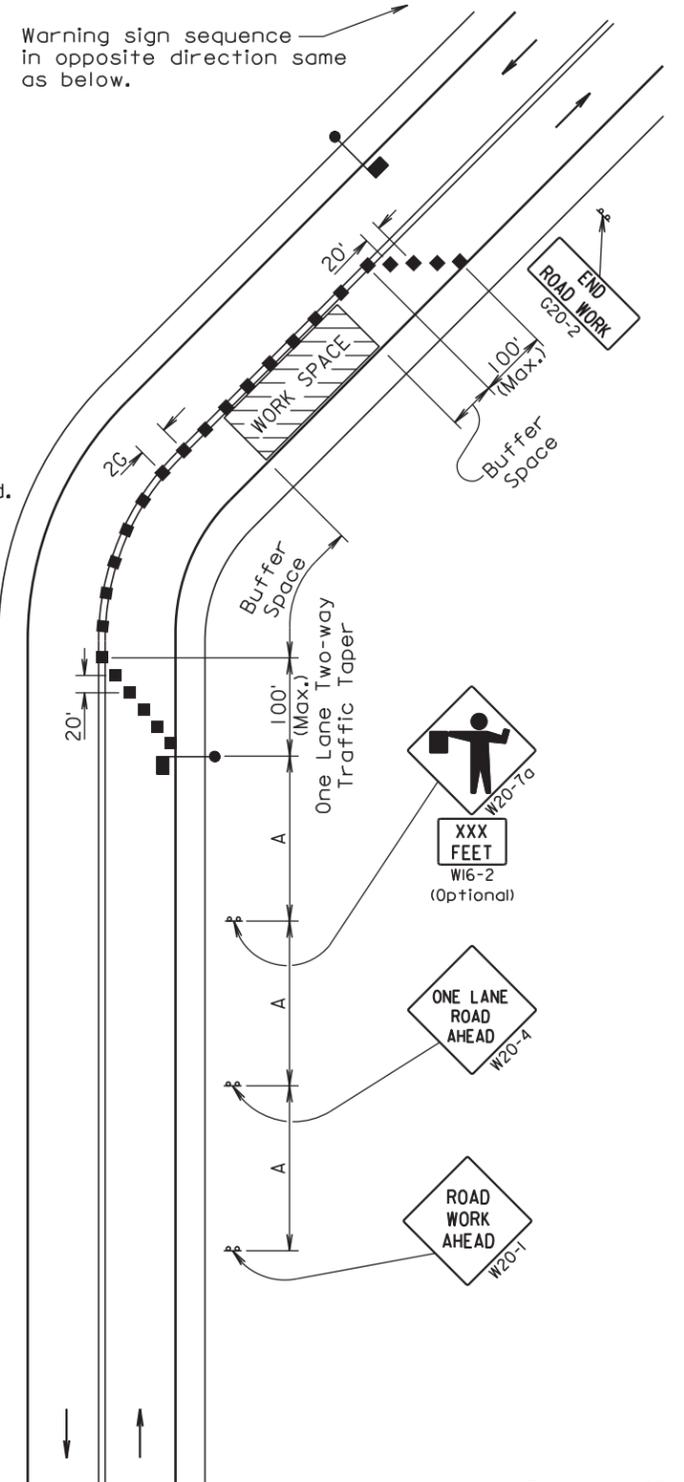
Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

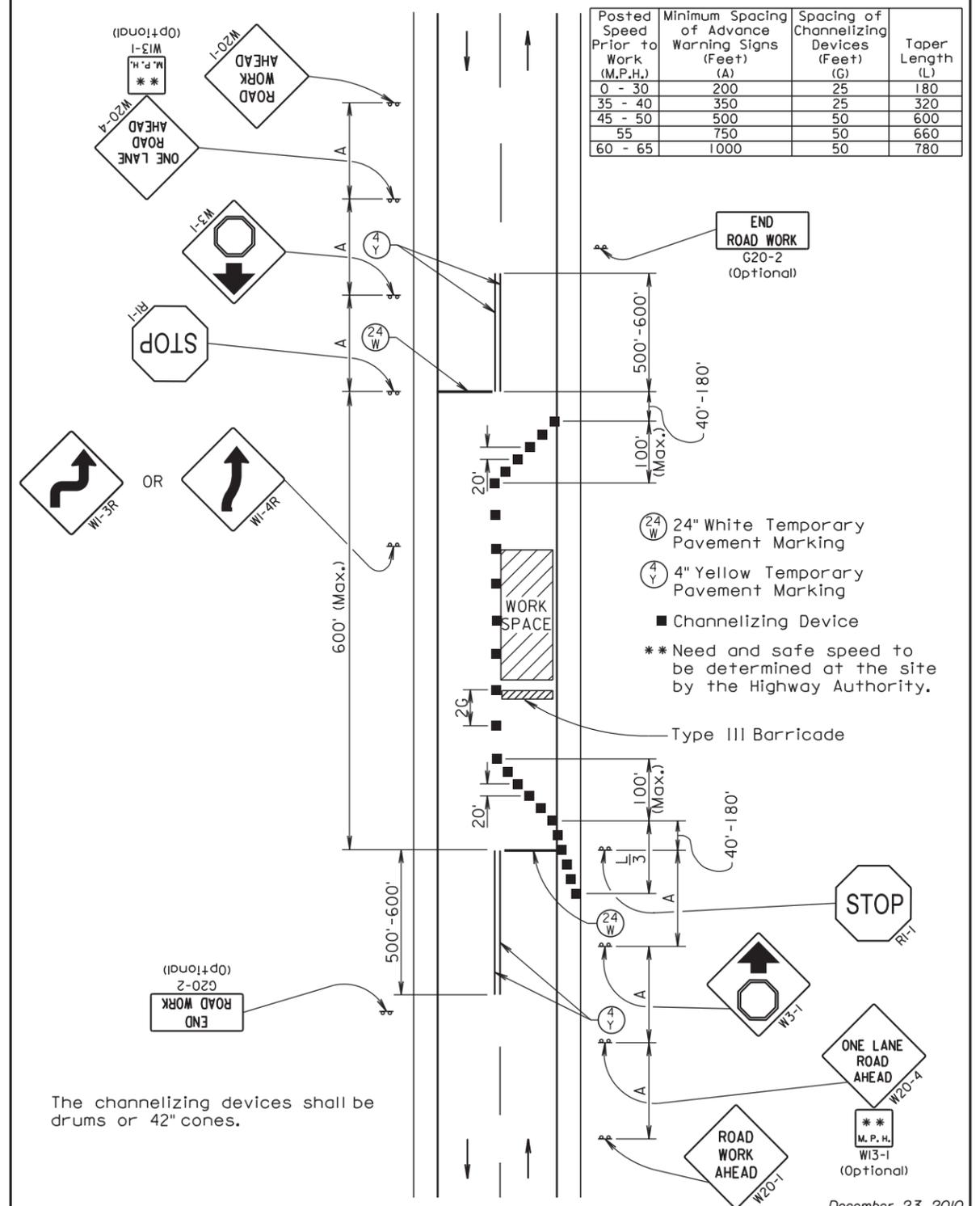
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

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

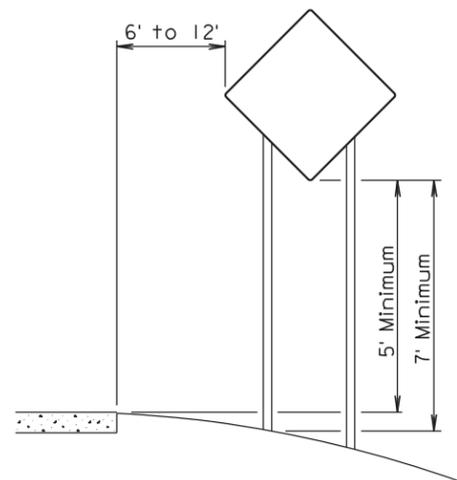
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.



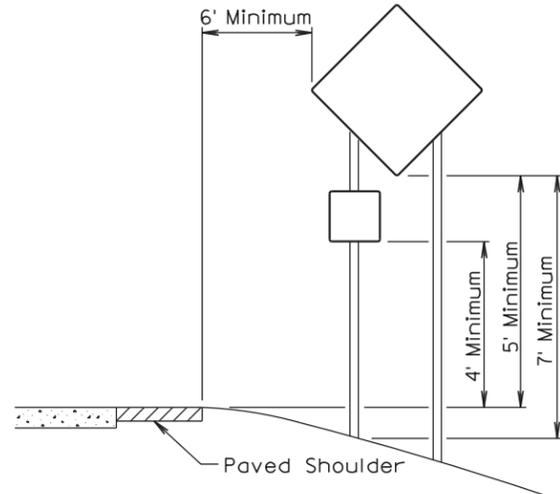
February 14, 2011



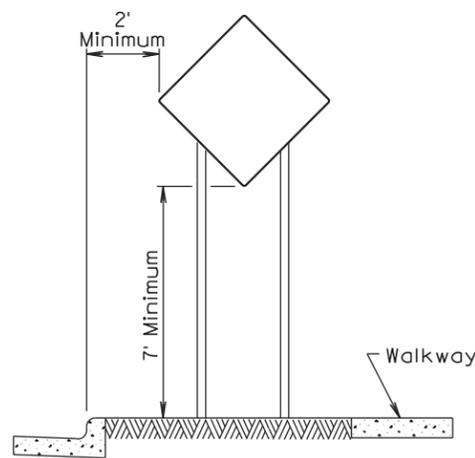
December 23, 2010



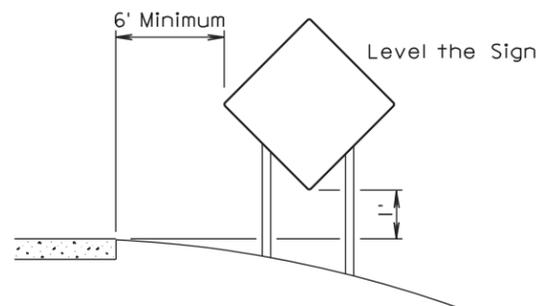
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



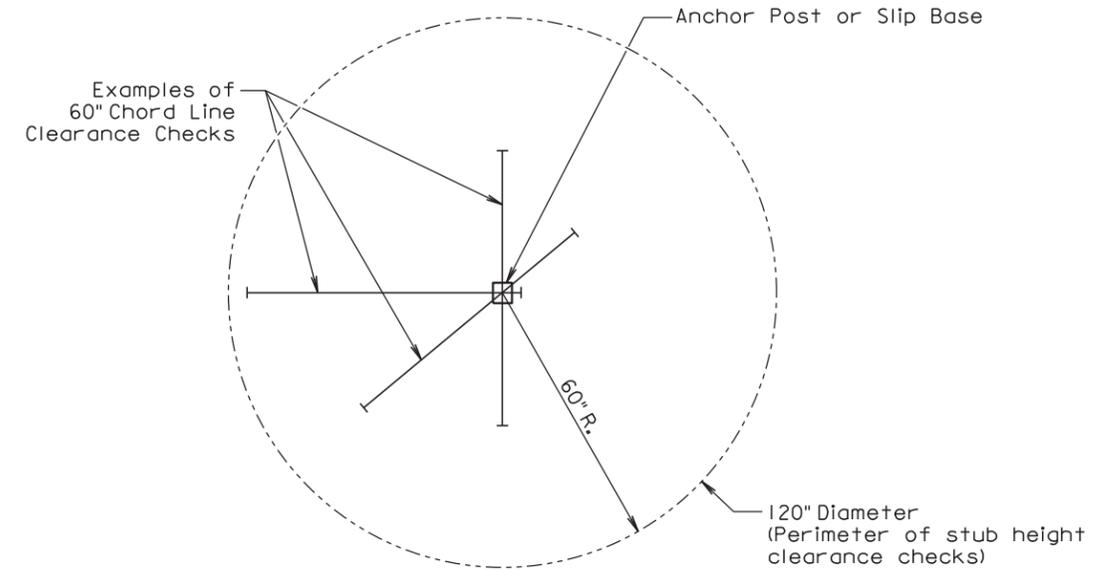
URBAN DISTRICT



RURAL DISTRICT 3 DAY MAXIMUM

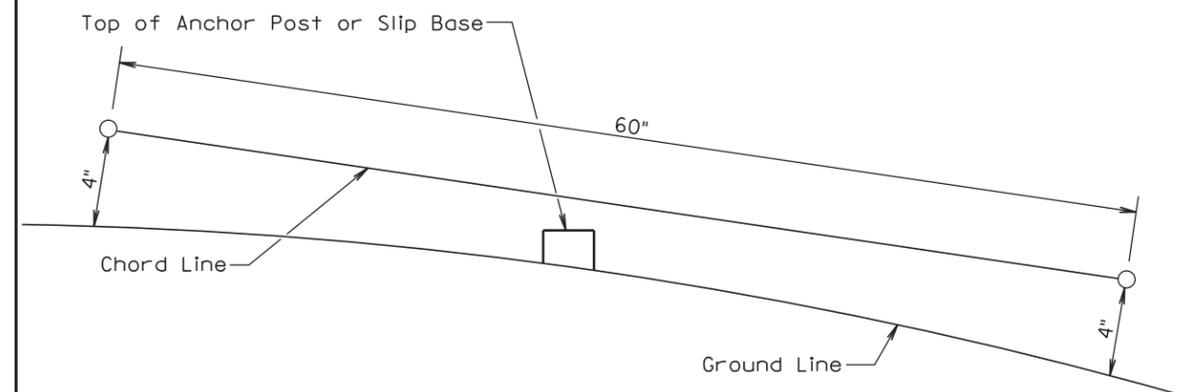
February 14, 2011

Published Date: 1st Qtr. 2014	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: 1st Qtr. 2014	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1