



**South Dakota
Department of Transportation**

**PERMANENT SIGNING
MANUAL**

September 2021

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PREFACE

This manual is intended to act as a guide for the preparation and design of permanent signing for the South Dakota Department of Transportation (SDDOT). The information is intended to be used in conjunction with the current edition of the Manual of Uniform Traffic Control Devices (MUTCD) and the Standard Highway Signs and Markings (SHSM) book.

The acronym TEOP used in this manual refers to the department's Traffic Engineering Operational Panel (TEOP) whose mission is to provide traffic engineering expertise and leadership, for both permanent and temporary highway conditions, to SDDOT regions and central office, other levels of government, highway industry partners, and highway users.

PLAN PREPARATION

Project plans may be assembled using either the Nonsection or Section method. In Nonsection plans, the signing, delineator, and object marker bid items will be included in the Estimate of Quantities (when there is one Estimate per PCN) or in the Grading Estimate of Quantities (when there is a separate Estimate of Quantities for Structures). In the Section method, all permanent signing items, including bid items, notes, details, and standard plates, will be in Section S – Permanent Signing.

Generally, a set of signing plans will be assembled in the following order (refer to the SDDOT Road Design Manual for additional information):

- Title Sheet
- Estimate of Quantities
- General Notes
- Table of Permanent Signing
- Traffic Control
 - Any special traffic control needs not covered by the standard plates and/or special plan notes must be shown in a plan layout.
- Sign Layouts
- Sign Design sheets
 - All non-standard highway signs will be detailed showing exact placement of any symbols, legend, and/or arrows in relation to the edge of the sign as well as font, color, border, and radius requirements.
- Standard Plates

Estimate of Quantities

The bid items to be used in all permanent signing plans for sign posts will be those bid items that are measured and paid for per foot. The per each bid items will only be used for county signing projects.

Some guidance on certain bid items used in permanent signing plans follows.

2.0"x2.0" Perforated Tube Post, per Each (632E1321):

The per Each bid item for 2" perforated tube post is only for use on county signing projects. These projects include thousands of signs, and to alleviate issues in the field with measurement and payment of tens of thousands of feet of sign post, per Each bid items were created. For all SDDOT signing projects on state highways, use bid item 632E1320 2.0"x2.0" Perforated Tube Post, per Ft.

2.5"x2.5" Perforated Tube Post, per Each (632E1341):

The per Each bid item for 2.5" perforated tube post is only for use on county signing projects. These projects include thousands of signs, and to alleviate issues in the field with measurement and payment of tens of thousands of feet of sign post, per Each bid items were created. For all SDDOT signing projects on state highways, use bid item 632E1340 2.5"x2.5" Perforated Tube Post, per Ft.

Type 4 Object Marker (632E2535):

This used to be called the End of Roadway Marker.

Aluminum Overlay Sign, Nonremovable Copy Engineer Grade (632E3001):

The DOT no longer installs Engineer Grade (ASTM D4956 Type I) sheeting on any new signs. Certain signs will have Type XI sheeting; the rest will have Type IV sheeting. See Sign Sheeting Guidance under SIGN MATERIALS.

Flat Aluminum Sign, Nonremovable Copy Engineer Grade (632E3201):

The DOT no longer installs Engineer Grade (ASTM D4956 Type I) sheeting on any new signs. Certain signs will have Type XI sheeting; the rest will have Type IV sheeting. See Sign Sheeting Guidance under SIGN MATERIALS.

Type 3 Single Sided Barricade, per Ft measurement (632E4005):

This bid item is used in Local Government Assistance plans for permanent end of roadway barricades.

General Notes

Section S – Permanent Signing Notes are available on the SDDOT website. Plan preparers should always download the notes when beginning work on the notes section to ensure that the current version is being used. Adequate white space should be provided on each note sheet to more easily accommodate additional notes that may come out of plan reviews.

Table of Permanent Signing

The Table of Permanent Signing will include Route Name, MRM, sign size, Standard Highway Sign number, direction facing, square footage of new sign, sheeting type, new post data, description of sign, remarks/action that needs to be taken, and two blank columns for field construction use.

Where the sign square footage is calculated in the Table of Permanent Signing, use the Round function in the formula to ensure the totals added up use the actual rounded value, and not the full value to any number of decimal points. You can make a cell show you a rounded value, but any formulas using that cell will use the actual value if the Round function is not used. For example, table values for a 30" x 30" warning sign are shown below.

	A	B	C
1	Width (inches)	Height (inches)	Sq. Ft.
2	30	30	6.3

Just using the formula =A1*B1/144 in cell C2 will give a value of 6.25, even though the cell is showing this to the nearest tenth of a square foot.

The formula that should be used is:

=ROUND(A1*B1/144,1)

This will round the equation being calculated to the nearest one decimal place. The result will look the same, 6.3, but when a total square footage is calculated in Excel, the values will be different. Below is an example of this. Cell C2 did not use the Round function. Cell C3 did use the Round function. So, cell C2 actually took $6.25 \times 4 = 25$ sq. ft. whereas cell C3 took $6.3 \times 4 = 25.2$ sq. ft.

	A	B	C	D	E
1	Width (inches)	Height (inches)	Sq. Ft.	Number of Signs	Total Sq. Ft.
2	30	30	6.3	4	25
3	30	30	6.3	4	25.2

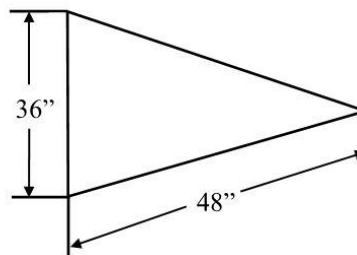
It may seem small, but with a large number of signs, it adds up and potentially creates confusion in the field when the number of signs is adjusted, or signs are being paid out on the project. Therefore, the formula to use is:

ROUND(number,1)

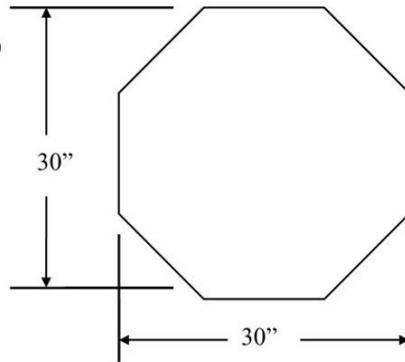
Where "number" is the formula being used to calculate the square footage of an individual sign.

Certain signs will have the square unit measurement entered into the table instead of calculated as shown in the steps above. These signs and their measurements are as follows:

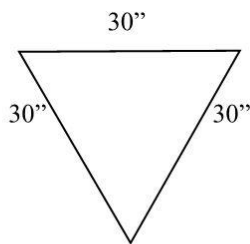
48"x48"x36" = 5.6 SF (square feet)



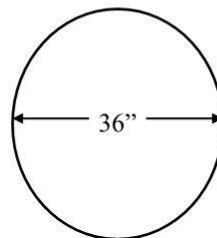
18"x18"= 1.9 SF (Bike Paths Only)
 24"x24" = 3.3 SF
 30"x30" = 5.2 SF
 36"x36" = 7.5 SF
 48"x48" = 13.3 SF



30"x30"x30" = 2.7 SF
 36"x36"x36" = 3.9 SF
 48"x48"x48" = 6.9 SF



36" diameter = 7.1 SF
 48" diameter = 12.6 SF



36"x36" = 6.8 SF



Sign Design Sheets

This section includes illustrations of design specifications for the standard signs the SDDOT uses. All non-standard signs need an individual design included in the plans. These include guide signs, destination and distance signs, townboards, street name signs, adopt-a-highway recognition plates, tourist-oriented directional signs, and other signs that are not a standard sign shown in the MUTCD or SHSM book.

SIGN DESIGN

Sign design is based on the current MUTCD and the SHSM book. Those employees who design signs should be familiar with both references. If the information is not contained in this document, the answer most likely lies within one of those two sources. Where interpretation of the MUTCD is needed, either the Region Traffic Engineer or the Operations Traffic Engineer should be contacted. Deviation from

these guidelines, the current MUTCD, or the SHSM book must be approved in advance. For some items, approval may be granted by the Region Traffic Engineer or Operations Traffic Engineer. Other items may require approval of the TEOP.

Portions of the text from the MUTCD are contained in the guidance that follows. These are commonly used or questioned items that were added for emphasis and quick reference in this manual. They are no more important than other portions of the MUTCD. Knowledge of all sections within Chapters 2A through 2N of the MUTCD is essential to designing signs and developing permanent signing plans. Parts 7, 8, and 9 of the MUTCD contain information on signing for school areas, railroad grade crossings, and bicycle facilities.

The sign design software used by the SDDOT is Bentley SignCAD. Tutorials for the Bentley SignCAD software can be found in LMS.

General

The minimum sign dimensions given in the sign size tables in the MUTCD and the SHSM will be used unless otherwise noted in this document for a particular sign.

MUTCD Section 2A.13 (04): *Word messages should not contain periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens unless necessary to avoid confusion.*

MUTCD Section 2A.13 (08): *When initials are used to represent an abbreviation for separate words (such as "U S" for a United States route), the initials should be separated by a space of between 1/2 and 3/4 of the letter height of the initials.*

Sign locations and mounting will follow the MUTCD and SDDOT Standard Plates. Signs will not be mounted to the back of W14-3 No Passing Zone pennants.

Regulatory Signs

Regulatory signs inform drivers of traffic laws or regulations.

R1-1 STOP Sign

Requests for all-way stop control at an intersection should undergo an engineering study that examines the criteria set forth in Section 2B.07 of the MUTCD. The engineering study will be performed by the Region Traffic Engineer or designee.

MUTCD Section 2B.05 (05): **The ALL WAY plaque shall only be used if all intersection approaches are controlled by STOP signs.**

MUTCD Section 2B.05 (06): **Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.**

STOP signs on Interstate off ramps will be 36" x 36" and placed as follows:

- On an off ramp with a single approach, one STOP sign will be located on the right side of the ramp at the normal location on the crossroad approach.
- On an off ramp with more than one lane of approach, one STOP sign will be located on the right and another STOP sign will be located on the left, in the normal locations on the crossroad approaches.
- Where an engineering study indicates a need for added emphasis or the visibility of a STOP sign mounted on the right is somehow reduced or obstructed, another STOP sign may be installed on the left side of the ramp, at the normal location on the crossroad approach.

A 48" x 48" STOP sign may be installed in place of a 36" x 36" STOP sign only in cases where a need for added emphasis has been determined.

Stop Ahead (W3-1) signs will be installed only on those ramps where a need exists, such as when horizontal or vertical curves limit the sight distance to the STOP sign, or when an issue with the stop control is occurring that could be corrected by installing the Stop Ahead sign.

One WRONG WAY (R5-1a) sign will be installed on the left side of the off ramp across from the Destination Guide side on the right side of the ramp. The WRONG WAY sign will face the crossroad.

A DO NOT ENTER (R5-1) sign will be installed on the back of the STOP sign(s) located on the off ramp. ONE WAY (R6-1) signs will be mounted on top of the STOP sign(s), facing the crossroad.

All roadways approaching expressways will have a minimum 36" x 36" STOP sign. All state highways approaching a US or state highway will have a minimum 36" x 36" STOP sign. All county and township roads approaching a US or state highway will have a minimum 30" x 30" STOP sign. An additional left-mounted STOP sign or a larger size than the minimum listed here may be used when special conditions warrant. Existing signs will not be replaced with a smaller size without prior approval from the Region Traffic Engineer.

R1-5 Series Yield or Stop Here to Pedestrians

South Dakota Codified Law (SDCL) requires drivers to yield the right-of-way to pedestrians making a proper crossing. Therefore, signs such as the R1-5 series that allow for either the Yield or Stop message must use the Yield message.

R2-1 Speed Limit

All speed limits on state highways that are less than the statutory maximum speed limit for that facility are defined by administrative rule. The administrative rule contains the speed and the begin and end points for each reduced speed limit. If there is not an administrative rule for a given section of highway, the posted speed limit is not legally enforceable. Speed limit changes to existing zones or the addition of new speed zones to the state highway system must be approved by the Transportation Commission before being installed. The procedures for setting a speed limit are contained in the *Traffic Operations Manual*.

Adjustments to the signs in the field may need to occur due to utilities, approaches, or other changes; however, all speed limit signs must be within 200 feet of the location described in the administrative rule. If signs are moved beyond this limit of the administrative rule location, the sign must either be moved back to the legally described location, or approval must be obtained from the Transportation Commission to change the limits of the speed zone.

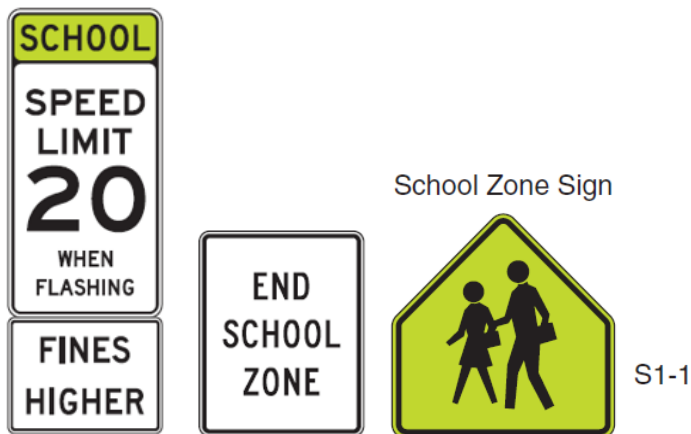
It is common practice to establish 45 or 50 mph speed zones at the edges of communities, to step down the speed limit from the rural 65 mph zone and low speed posted limits within communities.

Speed Limit Signing for School Zones

In June 2017 the TEOP recommended that school speed limits on state highways be signed in accordance with the requirements that follow and Section 7B.15 of the MUTCD:

- At the beginning of a school speed zone install an S5-1 SCHOOL SPEED LIMIT 15 WHEN FLASHING sign with an R2-6P FINES HIGHER plaque.
- Install a School (S1-1) sign in advance of the first School Speed Limit (S5-1) assembly that is encountered in each direction.
- At the end of the school speed zone install an R2-1 SPEED LIMIT sign showing the normal posted speed limit and an S5-2 END SCHOOL ZONE sign. These may be installed on the same post.

Upgrades to existing school speed limit signing will be done as construction projects and sign maintenance activities occur near a school zone. Examples of the sign designations referenced above are shown here:



Radar Speed Feedback Signs

Radar Speed Feedback Signs (RSFS) are typically installed as part of safety projects and are meant to reduce operating speeds and crashes. If a RSFS is requested at a location outside of a planned safety project, then the Highway Safety Engineer should be asked to review the location. If the location is not found to have a speed related crash issue, then the local agency can apply for a permit to

occupy right-of-way and install the signs at their expense. The local agency would be responsible for all costs and maintenance of RSFS installed under permit.

Permits to occupy right-of-way for RSFS are handled by the appropriate DOT Area Office. The following criteria should be included with the permit so communities adhere to them, otherwise approval could be denied, or the devices removed, if necessary.

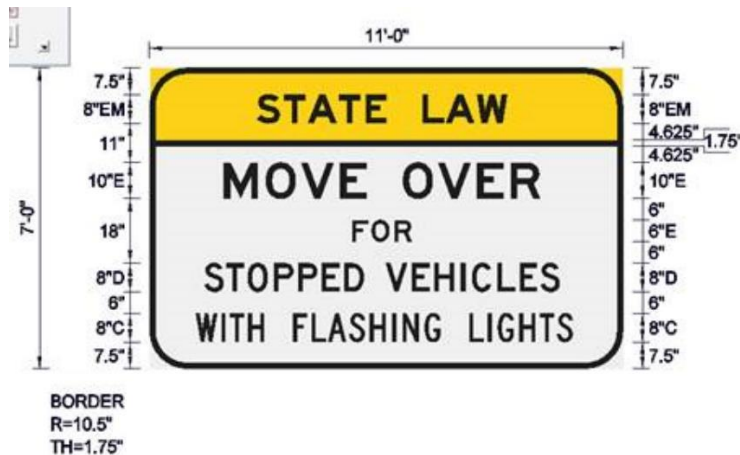
- The radar speed feedback sign assembly will be located a minimum of 300’ inside the speed zone; achieving a 300’ minimum distance from the state’s speed limit sign. This will aid in displaying the speed zone that is pertinent to the display instead of displaying the speed prior to entering the speed zone being monitored.
- The radar speed feedback sign assembly must include a speed limit sign mounted in conjunction with the radar speed feedback display.
- If the radar speed feedback sign assembly is located inside the clear zone (see Chapter 10 of the Road Design Manual), the assembly must be mounted on breakaway supports complying with NCHRP Report 350 or MASH crashworthy criteria.
- The speed display will not flash either vehicle speeds exceeding the speed limit or any other messages. The display may show a message such as SLOW DOWN when vehicles exceed a certain speed, but no messages will flash per the requirements of the FHWA and the MUTCD.

R4-3 SLOWER TRAFFIC KEEP RIGHT/R4-13 KEEP RIGHT EXCEPT TO PASS

The R4-13 KEEP RIGHT EXCEPT TO PASS sign is not enforceable under any law. The only enforceable sign (under SDCL 36-26-8) is the R4-3 SLOWER TRAFFIC KEEP RIGHT sign. Therefore, all R4-13 KEEP RIGHT EXCEPT TO PASS signs will be replaced by R4-3 SLOWER TRAFFIC KEEP RIGHT signs as the R4-13 signs reach the end of their useful life.

Move Over Law Signs

All new Move Over signs should have the STATE LAW portion of the sign on a yellow background as recommended by the Maintenance Standards Panel and the TEO. The design for this sign is shown below. The appropriate Region Traffic Engineer determines the locations for these signs.



Wrong Way Driving

Red reflective strips may be used on delineator posts on interstate ramps, at locations where wrong way entry is a concern.

Parking Signs

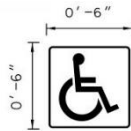
Parking cannot be prohibited along a state highway without proper approval. For temporary prohibition of parking, approval must be obtained from the Secretary of Transportation, the Secretary of Public Safety, and the Director of the Highway Patrol. The SDDOT *Temporary No-Parking Zones on State Highways* policy outlines the procedures for establishing a temporary no parking zone along a state highway.

For permanent prohibition of parking along a state highway, approval must be obtained from the Transportation Commission. Each segment of highway with a no parking zone is defined by an administrative rule in Chapter 70:01:03 Traffic Safety.

Reserved Parking for Persons with Disabilities

As required by SDCL, each sign designating a parking space for a person with a physical disability must state the fine for illegal use of the parking space. The SDDOT uses a modified version of the R7-8 RESERVED PARKING for persons with disabilities sign as shown below.

Where parking spaces that are reserved for persons with disabilities are designated to accommodate wheelchair vans, an R7-8P VAN ACCESSIBLE plaque will be mounted below the modified R7-8 RESERVED PARKING for persons with disabilities sign.



This sign will have a white background with a green border and legend. The international symbol of accessibility will be white on a blue square with rounded corners.

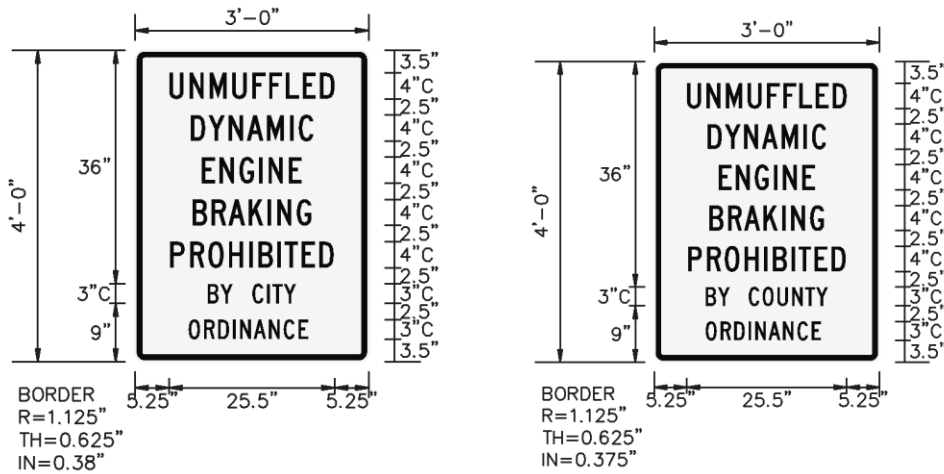
Traffic Signal Pedestrian Actuation Signs

The SDDOT installs R10-3e signs at all locations that have countdown pedestrian signals. The sign should be installed directly above the pedestrian push button.

Unmuffled Dynamic Engine Braking

In order for the SDDOT to install dynamic engine braking prohibition signs on state highways the local municipality must have an ordinance supporting the prohibition. The ordinance must specifically mention unmuffled dynamic engine braking (muffled braking cannot be prohibited on state highways). Existing signs that reach the end of their usable life should not be replaced unless the local agency has updated their ordinance to specifically cite unmuffled braking.

The SDDOT does not post dynamic engine braking prohibitions on Interstate.



No Drone Signs

In 2019, the department received a request for installation of No Drone signs on SD 38 at the Springfield prison. It was the recommendation of the TEOP that that the DOT will not install No Drone signs along the highway. This message is not information drivers need while traveling along the highway. Such signs should be posted on the prison property.

Warning Signs

Warning signs alert drivers to unexpected conditions, conditions that might call for a reduction in speed, or to situations that might not be readily apparent to the driver.

MUTCD Section 2C.02 (01): The use of warning signs shall be based on an engineering study or on engineering judgment.

MUTCD Section 2C.02 (02): *The use of warning signs should be kept to a minimum as the unnecessary use of warning signs tends to breed disrespect for all signs. In situations where the condition or activity is seasonal or temporary, the warning sign should be removed or covered when the condition or activity does not exist.*

Horizontal Alignment Warning Signs

Table 2C-5 of the MUTCD will be used for the appropriate signing to install at horizontal curves. Although the MUTCD includes a method for determining advisory speed limits on horizontal curves, the SDDOT uses a more conservative value. The SDDOT procedure is as follows:

For all roads posted at 45 mph or higher, the curve is driven at 5 mph over the posted speed limit with a ball bank indicator. If the ball bank indicator value is greater than 10 degrees, the curve is driven again at the posted speed limit. If the ball bank indicator value does not go over 10 degrees at the posted speed limit, then the curve warning sign is installed without an advisory speed limit. If the ball bank indicator value is greater than 10 degrees at the posted speed limit, the curve is driven until the speed at which the less than 10 degrees of ball-bank is found. This speed will be rounded to the nearest 5 mph increment and will be the signed advisory speed limit.

W1-8 Chevron Alignment Signs

The SDDOT uses the sizes shown in Table 2C-2 for W1-8 Chevron Alignment signs on state highways. The SDDOT standard size for W1-8 Chevron Alignment signs on interstate ramps for SDDOT is 24" x 30". Larger size chevrons may be used at the discretion of the appropriate Region Traffic Engineer.

W3-5 Reduced Speed Limit Ahead Signs

The SDDOT typically installs W3-5 Reduced Speed Limit Ahead signs for the first reduced speed zone in or approaching a community. A W3-5 sign is not typically installed prior to any subsequent reduced speed zones. For example, along a rural highway posted at 65 mph, drivers would see a W3-5 Reduced Speed Limit 45 sign before the beginning of the 45-mph zone in a community. Drivers would not see a W3-5 sign before a subsequent SPEED LIMIT 30 sign along that highway in the same community.

Vehicular Traffic Warning Signs

Vehicular Traffic Warning signs may be used to alert road users to locations where unexpected entries into the roadway by trucks, bicyclists, farm vehicles, emergency vehicles, golf carts, horse-drawn vehicles, or other vehicles might occur. Use should be limited to where sight distance restrictions or other unusual circumstances exist that would make it difficult for drivers to see or expect such entries.

Non-Vehicular Warning Signs

Non-vehicular warning signs include pedestrian, deer, cattle, snowmobile, equestrian, wheelchair, large animal, and playground signs.

W11-3 Deer Crossing

The W11-3 Deer Crossing sign may be installed at locations with a history of deer-vehicle crashes. Sign installation is at the discretion of the appropriate Region Traffic Engineer.

If a request for LED Blinking Deer Crossing signs is received, explain that the SDDOT is testing the effectiveness of these signs and until our analysis is complete, they will not be installed at other locations. If the signs do appear to have a significant impact on crashes, then the Highway Safety Engineer will determine a threshold for installation and the department will utilize them in areas with a considerable number of deer hits. If the signs do not have a significant impact on the crash rate, they will not be installed at any new locations.

W15-1 Playground and Other Children Warning Signs

The W15-1 PLAYGROUND sign and similar non-standard warning signs will not be installed on state highways. These signs do not inform motorists to do anything more than what they should be doing already, which is pay attention. Examples of such signs shown below.



The use of “Autistic Child” or other special needs warning signs are not installed by the SDDOT. There are no signs for these in the MUTCD. Unlike blind or hearing-impaired children, children with autism or special needs behave in a variety of ways and a driver encountering such a warning sign would not know what behavior to look for or what they may be required to do differently from their normal careful driving.

Parents and politicians often believe that the addition of a warning sign will somehow make the children who live along a road safer. The reality of warning signs that warn of things other than actual static conditions (curves, hills, low clearance, etc.) is that they are largely ignored by drivers of all types and ages. Drivers on roads that have obvious residential development (cities, towns) should expect to see children and other pedestrians and adjust their driving behavior accordingly; a sign is unnecessary to inform a driver that there may be children living in the houses that are in plain sight. The installation of unnecessary signs in residential areas can distract a driver, directing their attention to the sign instead of activity in the yard adjacent to the sign. Children who are not able to understand the dangers of traffic for whatever reason should not be allowed to play near a road unsupervised, regardless of the reason for their inability to perceive the danger. Children should not be using public roads as playgrounds regardless of their ability to understand the dangers of traffic. There is also the possibility of a predator seeing such a sign and watching for a child that is vulnerable.

Low Clearance Signs

W12-2 Low-Clearance warning signs showing the minimum amount of vertical clearance over the roadway are used in advance of bridges, tunnels, and other overhead structures with measured clearances of less than 15'-3". The Low Clearance warning signs will indicate a 3" buffer subtracted from the actual vertical clearance measurements. Clearance measurements are taken by the Region Bridge Engineer.

The W12-2 Low Clearance sign with supplemental distance plaque is installed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around. These signs may need to be installed at such locations as:

- Intersections prior to the restriction
- Off ramps prior to becoming trapped at the restriction
- On ramps prior to becoming trapped at the restriction
- Off ramps at the restriction that are a significant distance from the low-clearance structure

A 36" x 36" W12-2 sign with a 24" x 18" W16-2P is used on two-lane and four-lane non-Interstate highways. A 48" x 48" W12-2 sign with a 30" x 24" W16-2P is used on Interstate highways.

The Region Traffic Engineer determines if additional W12-2 signs are needed in advance of the structure. An advance W12-2 sign should be located close enough for the driver of a vehicle to identify the restriction and far enough away for a fully loaded truck-trailer to stop prior to passing below the structure. This installation does not require a supplemental distance plaque because it is within view of the low clearance structure.

The Region Traffic Engineer determines if additional warning should be installed overhead on the structure. If overhead signs are used, the Region Traffic Engineer will work with the Region Bridge Engineer and the Office of Bridge Design for these installations.

Overhead signs on the structure will be rectangular in shape with the legend XX FT. XX IN. in black font on a fluorescent yellow background to indicate the maximum permissible clearance. They will have standard 10" numerals when mounted over two-lane highways, 12" numerals when mounted over four-lane non-Interstate highways, and 16" numerals when mounted over Interstate highways. Where physical limitations prevent the mounting of a sign of the size necessary to meet these legend size requirements, a smaller sign may be used. Under no circumstance will the numerals be less than 8" when mounted over two-lane highways, 10" when mounted over four-lane non-Interstate highways, or 12" when mounted over Interstate highways.

Overhead signs should be installed on the exterior face of the structure directly over the center of the applicable lane or lanes. Two or more overhead signs may be installed as necessary to provide accurate information concerning existing clearances over the roadway on arches or other similar structures.

S3-1 School Bus Stop Ahead Sign

S3-1 School Bus Stop Ahead signs should be installed where there is a sight distance issue for a rural school bus stop. SDDOT standard practice is to use a distance of 750 feet to the height of a mailbox as the sight distance needed for a school bus stop.

Object Markers

The SDDOT *Road Delineation, Guardrail Delineation, and Object Markers on State Highways* policy specifies how object markers and delineators are to be used.

Guide Signs

SDDOT standard practice is to use Series E-Modified on all guide signs unless otherwise noted.

MUTCD Section 2A.13 (11): The sign lettering for names of places, streets, and highways shall be composed of a combination of lower-case letters with initial upper-case letters.

SDDOT standard sizes and designs for Destination signs, Destination and Distance signs, and signs identifying the name of communities (Townboards) are as follows:

For priority winter routes (see map in the SDDOT *Road Delineation, Guardrail Delineation, and Object Markers on State Highways* policy), use a 5-foot minimum length, 1 ½-inch border, no margin, 8-inch upper- & lower-case Series E-modified font.

- One line, 24-inch sign height
- Two lines, 36-inch sign height
- Three lines, 48-inch sign height

For non-priority routes, use a 5-foot minimum length, 1 ¼-inch border, no margin, 6-inch upper-& lower-case Series E-modified font.

- One line, 18-inch sign height
- Two lines, 30-inch sign height
- Three lines, 42-inch sign height

The SDDOT designs Destination signs using a style where the arrows are aligned with the text on the signs, as shown in the examples below. This minimizes the horizontal width of the signs.



When designing guide signs, careful attention should be paid to those signs with only two destinations that are in different directions. If there is too much green space between the destination and the arrow, or not enough space between lines for destinations, it can be confusing for drivers to know which destination is in what direction. An example is shown below.



For these situations, a horizontal separator line may be used to separate the destinations. An example of this from the MUTCD is shown below.



MUTCD Section 2D.07 (02): *Except where otherwise provided in this Manual, guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions. Where two or more signs are included in the same overhead display, the amount of legend should be further minimized. Where appropriate, a distance message or action information, such as an exit number, NEXT RIGHT, or directional arrows, should be provided on guide signs in addition to the destinations.*

Figure 2D-2 of the MUTCD shows the various standard arrow designs that have been approved for use on guide signs. Detailed drawings and standardized sizes based on ranges of letter heights are shown for these arrows in the “Standard Highway Signs and Markings” book

MUTCD Section 2D.08 (23): *The width across the arrowhead for the Types A, B, and C directional arrows should be between 1.5 and 1.75 times the height of the upper-case letters of the principal legend on the sign. The width across the arrowhead for the Type D directional arrow should be at least equal to the height of the upper-case letters of the principal legend on the sign. For down arrows used on overhead signs, the width across the arrowhead should be approximately two times the height of the upper-case letters of the principal legend on the sign.*

The SDDOT standard practice for route shields on Destination signs is to size the route shield so that the route numbers inside are approximately the same size as the rest of the lettering on the sign. SDDOT received approval from FHWA in 2016 to continue this practice, despite Section 2D.36 of the MUTCD requiring route shields to be at least 18 inches.

MUTCD Section 2D.37 (05): Except as otherwise provided in this Manual, an arrow pointing to the right shall be at the extreme right of the sign, and an arrow pointing left or up shall be at the extreme left. The distance numerals, if used, shall be placed to the right of the destination names.

MUTCD Section 2D.37 (14): *The closest destination lying straight ahead should be at the top of the sign or assembly, and below it the closest destinations to the left and to the right, in that order. The destination displayed for each direction should ordinarily be the next county seat or the next principal city, rather than a more distant destination. In the case of overlapping routes, only one destination should be displayed in each direction for each route.*

MUTCD Section 2D.41 (01): If used, the Distance (D2-1 through D2-3) sign (see Figure 2D-7) shall be a horizontal rectangle of a size appropriate for the required legend, carrying the names of no more than three cities, towns, junctions, or other traffic generators, and the distance (to the nearest mile) to those places.

Street Name Signs

The SDDOT standard practice is to use Series D font for street name signs. The minimum letter heights for street name signs are given in Table 2D-2 of the MUTCD.

A test of overhead street name signs with 10-inch upper-case and 8-inch lower-case letters US 14B in Pierre was installed in 2015. This was viewed by the TEOB at their December meeting and there did not appear to be any legibility issues with these sizes.

Townboards

Townboards are informational guide signs identifying the name of communities on the state highway system. Townboards should have the community name in Series E-Modified font and Series C font for the population figure. Community population figures are included on all townboards of incorporated communities. The source for population figures is obtained from the most current official census data for the community being signed for. The "POP. XXXX" legend is centered directly below the town name.

Special Welcome Signs

In 2014, the SDDOT received a request from Brookings to mount a city "Welcome" type sign on the proposed new US14/I29 interchange structure. The SDDOT *Policy for Approving Special Welcome Signing within the Highway Right of Way* does not allow such signing in the Interstate right-of-way or on structures. The department sought FHWA's opinion which was according to 23 CFR 1.23(b), the ROW of a public highway must be devoted exclusively to public highway purposes. This type of sign would be considered an advertising sign in the ROW, and therefore, an encroachment that would not be allowed.

Weigh Station Signing (D8 Series)

Buses and RVs cannot be required to stop at weigh stations and inspection sites. Therefore, South Dakota Motor Carrier Services has requested that we install the message BUSES AND RVs EXCLUDED under all signs stating ALL VEHICLES OVER 10,000 GVW MUST STOP.

Community Wayfinding Signs

The SDDOT *Municipal Wayfinding Program* policy establishes methods, procedures, and guidelines for communities adopting a wayfinding sign program on conventional state highways within their limits.

Scenic Byways

The SDDOT *Policy and Procedure for State Designation of Scenic Byways* policy describes the procedure for the state designation of scenic byways.

County Route Markers on State Highways

The Department of Transportation has agreed to allow the placement of county route marker directional assemblies on the State Trunk System in advance of county road intersections in accordance with the following:

- Signs, posts, installation, and maintenance will be by and at the expense of the various county highway departments.
- Each installation will consist of a county road marker with a minimum size of 18" x 18" (two digits) and 24" x 24" (three digits) mounted above a directional arrow marker (M6 series). Both signs will be fully reflectorized with an approved type sheeting. County route markers will be of the same design (layout and color) as that used on the county road being intersected.
- Such markers should be placed approximately 500 feet in advance of the intersection to provide the necessary advance notice. This 500-foot distance is considered a maximum. When a destination/distance sign is in place, the route marker assembly should be placed between the directional sign and the intersection. Care should be taken that the county route marker installation does not interfere with existing state signs.
- Sign height and lateral clearance from the near edge of pavement will be in conformance with the Manual on Uniform Traffic Control Devices (MUTCD).
- Signs will be mounted on an appropriate perforated tube post, which will safely break away or yield when struck by a vehicle.
- County route marker directional turn assemblies will not be permitted on the Interstate System mainline or ramps.

Interstate Guide Signs

Based on the FHWA's Official Interpretation 2(09)-5(1) – Overhead Arrow-per-Lane Sign Requirements for Major Interchanges and Reconstructed Locations, South Dakota's non-system interchanges can be classified as intermediate because our traffic volumes are significantly lower than those found in the

nation's major cities (a system interchange is interstate to interstate, such as the I-29 & I-229 interchange). Therefore, the SDDOT has adopted a minimum upper-case letter size of 16 inches for names of destinations (as per Table 2E-4 of the MUTCD) for Intermediate Interchanges will be used as the SDDOT standard. Engineering judgment may determine if a larger letter size is needed or if a particular interchange should be classified as a Major Category b Interchange (see Table 2E-4 of the MUTCD) which would have a minimum upper-case letter size of 20" for named destinations.

For new Exit Direction signs, arrows should be located on the right side of the sign. If an Exit Direction sign is being replaced on existing supports, the arrow may be placed at the bottom of the sign to match the existing sign size so that existing supports can be reused.

MUTCD Section 2E.19 (02): Except on Overhead Arrow-per-Lane guide signs (see Section 2E.21) and on Exit Direction signs for lane drops (see Section 2E.24), and except as provided in Paragraphs 3 and 4, directional arrows on all overhead and post-mounted Exit Direction signs shall point diagonally upward and shall be located on the side of the sign consistent with the direction of the exiting movement.

MUTCD Section 2E.19 (03): On post-mounted Exit Direction signs that are located where a directional arrow to the side of the legend farthest from the roadway might create an unusually wide sign that limits the road user's view of the arrow, the directional arrow may be placed at the bottom portion of the sign, centered under the legend.

SDDOT does not include the route marker symbol for an intersecting county road on the major interstate guide signs, just the street name.

General Service Signs

The D9-3a Trailer Camping sign will be used most of the time when the general service camping sign is needed, especially for Interstate and white on blue general service signs. The D9-3 Camping (tent symbol) sign is used for more primitive sites or at the request of the owner.



D9-3
Camping



D9-3a
Trailer Camping

The SDDOT does not install the small motorist services signs under the mainline advanced and exit directional guide signs when there are specific service signs (logo signs) in place.

Hospital signing

Signing for emergency medical services on the Interstate System and other state highways is provided in accordance with the provisions for "General Service Signs" as contained in the MUTCD and the following guidance.

For hospital signing along interstate, the hospital will have emergency department facilities with a physician (or emergency care nurse on duty within the emergency department with a physician on call) trained in emergency medical procedures on duty 24 hours per day, 7 days per week. The hospital should be signed from the closest interchange and most direct route. The route should be agreed upon by city and hospital officials. If more than one qualifying hospital is served by a specific interchange, signs will direct traffic to the closer facility.

The name of the hospital will not be a part of the hospital message. Where general service sign panels are used in advance of the interchange nearest the hospital, either the Hospital symbol sign or the word "HOSPITAL" will be included with such signing. If there are no general service sign panels, then either the Hospital symbol sign or the word "HOSPITAL" will be shown on a supplemental panel mounted below the advance guide sign and the exit direction sign.

If the first exit the motorist encounters is not the hospital exit, a supplemental sign with the message, "Hospital/Use Exit" will be erected in advance of the first interchange. A sign of smaller size will be placed near the ramp terminal to direct motorists from the ramp and will display the hospital message along with an appropriate arrow and mileage. All signing required on the route between the Interstate highway and the hospital will be in place prior to erecting the Interstate signs. These signs will be furnished, installed, and maintained by the agency having jurisdiction over the roadway. They will be placed at intervals along the route as needed and at those intersections where the route turns or the direction of the route is questionable.

Hospital signs may be erected at rural intersection locations if the junctions of state trunk highways nearest the hospital are outside the urban area. The hospital will have emergency department facilities with a physician (or emergency care nurse on duty within the emergency department with a physician on call) trained in emergency medical procedures on duty 24 hours per day, 7 days per week.

The hospital should be signed from the nearest junction and most direct route. The route should be agreed upon by county, city, and hospital officials. If more than one qualifying hospital is served by a specific junction, signs will direct traffic to the closer facility. All signing required on the route between the junction and the hospital will be in place prior to erecting the signs at the junction. The signs will be furnished, installed and maintained by the agency having jurisdiction over the roadway. They will be placed at intervals along the route as needed and at those intersections where the route turns or the direction of the route is questionable. The name of the hospital will not be a part of the hospital message.

Interstate Oasis Signing

In 2018, the department received a request to examine the possibility of installing Interstate Oasis signing. An investigation found that all the facilities that would meet the requirements for designation as an Interstate Oasis would be eligible for an Interstate Logo sign on the Gas panel. The department also had signing for truck parking at recently closed Interstate Rest Areas. None of the surrounding states – Minnesota, Nebraska, Wyoming, Montana, or North Dakota – had these signs. Only Idaho was known to install these at the time. Therefore, it was determined that an Interstate Oasis signing program would not be pursued unless sought after by the trucking industry, at a time when such signs are more widely used and understood.

Tourist Information and Welcome Center Signs

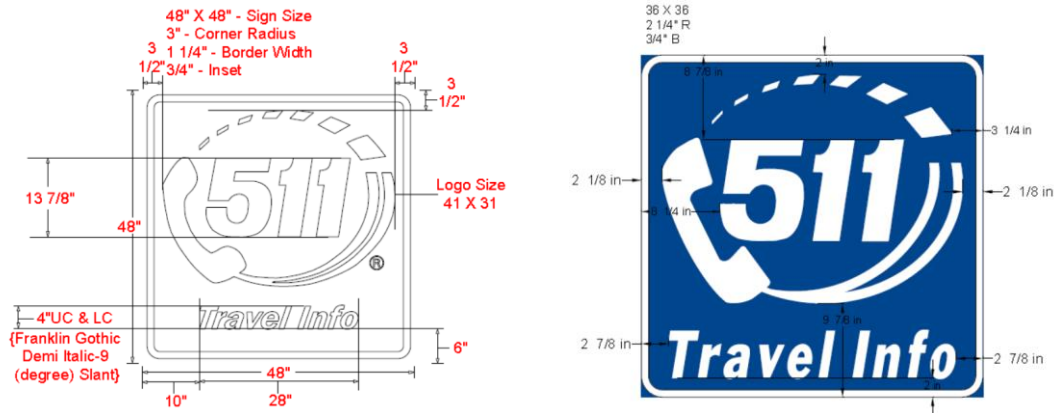
In 2019, The Department of Tourism agreed with a proposal to use the D9-10 Tourist Information sign beneath Rest Area advance guide signs at Rest Areas with Tourist Information Centers. All existing Rest Area signs with the “?” symbol all will be replaced by the D9-10 Tourist Information signs as they reach the end of their useful life.



D9-10
Tourist Information

Traveler Info 511 Signs

The current SDDOT design for 511 signs differs from that shown for the D12-5 and D12-5a signs in the MUTCD. The SDDOT began installing their version of the sign prior to the MUTCD including the D12-5 and D12-5a signs, and has decided to retain that design. The SDDOT 511 sign design is shown below.



Specific Service Signs (Logo Signs)

Specific Service signs are guide signs that provide road users with business identification and directional information for services and for eligible attractions. These signs are also known as logo signs. Eligible service categories are limited to gas, food, lodging, camping, and attractions. The use of these signs is covered by Administrative Rules in [Chapter 70:04:02 Informational, Directional Signs – On Right-of-Way](#).

The SDDOT allows supplemental messages on logo sign panels. Such messages must adhere to the MUTCD requirements. Only one supplemental message located horizontally along the bottom portion of logo sign panel will be allowed. Supplemental message to be displayed in a color to contrast with the logo or separated by divider bar.

Supplemental messages cannot be a message for an additional service. For example, a supplemental message on a gas station logo panel cannot be for a food service or coffee company. Such services would require a separate logo sign panel for food.

Supplemental message should not be for completely different services or accommodations. For example, a Restaurant or Motel should not have a supplemental message for Wi-Fi. A motel is advertising lodging, not internet service.

The SDDOT allows supplemental messages for 24 HRS, DIESEL, and RV ACCESS. The SDDOT would also allow supplemental messages for days of the week when closed, such as CLOSED SUNDAY. The SDDOT does not allow supplemental messages on logo sign panels for BUFFET or DRIVE THRU. The supplemental message cannot be 24 HRS / DIESEL, as this would violate the one supplemental message requirement. The business would have to choose which supplemental message to display.

Tourist-Oriented Directional Signs (TODS)

Tourist-Oriented Directional Signs (TODS) are white on blue signs that provide business identification and directional information for rural and tourist-oriented businesses. These signs are covered by Administrative Rules in Chapter [70:04:07 Tourist-Oriented Directional Signs – On Right-of-Way](#).

The SDDOT does not mount TODS and guide signs on the same post. Where conditions make installation of a separate post impractical, TODS can be mounted together with green Destination/Distance signs.

Changeable Message Signs

The *SDDOT Guidelines for DMS* provide guidance for the use of changeable message signs (referred to within the department as dynamic message signs or DMS) on the state highway system. SDDOT personnel should use this document when making decisions on when, where, and how to effectively deploy DMS for providing real-time motorist information. This document is located on the intranet under Forms/Manuals/Reports.

Recreational and Cultural Interest Area Signs

Recreational or cultural interest areas are attractions or traffic generators that are open to the general public for the purpose of play, amusement, or relaxation.

SDDOT standard practice is to use Series D font on most recreational and cultural interest area signs. Certain recreational and cultural interest area signs may use Series C font where sign size is an issue. Use of Series C font will be at the discretion of the Region Traffic Engineer or Operations Traffic Engineer.

MUTCD Section 2A.12 (09): ...a recreational and cultural interest area symbol (see Chapter 2M) shall not be used on streets or highways outside of recreational and cultural interest areas.

The SDDOT *Signing for Winter Recreation Areas* policy provides guidelines for the recognition of Winter Recreational Areas and defines the guidelines under which signing for these areas may be installed.

Public Use Area Signing

Signing for recreational facilities is to be provided based on a request from the department or agency having jurisdiction of the area. Such signs will normally be placed at the nearest highway turnoff to the recreational site.

There are four classifications of public use areas administered by State and Federal Agencies:

- Recreation Area
- Lakeside Use Area
- State Park
- Lake Access
 - The present park classification system of the Department of Game, Fish and Parks and the Corps of Engineers requires that the designation “Lake Access” be used on recreational guide signs in place of “Public Access.”

All such destination signing will show the name of the facility on the top line, the type of facility on the second line, the mileage (to the nearest mile) and appropriate arrow on the bottom line, and have white legend and border on a brown background. The sign size requirement for each of the four classifications will be as follows:

- Recreation Areas:
 - Type 1 Routes = 96” x 48”
 - Type 2 Routes = 72” x 36”
- Lakeside Use Area:
 - Type 1 and Type 2 Routes = 72” x 36”
- State Park:
 - Type 1 Route = 72” x 48”
 - Type 2 Route = 60” x 36”
- Lake Access:
 - Type 1 and Type 2 Routes = 60” x 36”

Type 1 Route are denoted Principal Arterial Highways. Type 2 Route are denoted as Minor Arterial Highways. Sign sizes smaller than those shown above may be used in urban areas.

Memorial Highway Signing

Signing for Memorial Highways and Auto Tour Routes is covered by the SDDOT *Memorial Highways and Auto Tour Routes* policy.

Dedication Signing

Signing for the home and hometown of the current governor, US senators, and US representative is covered in the SDDOT *Dignitary Signing* policy. This policy also includes signing for the home or hometown of Congressional Medal of Honor recipients from South Dakota. These are the only individuals for whom home and/or hometown signing is installed.

The SDDOT *Signing for Fallen Law Enforcement Officers* policy provides guidelines for the use of signs recognizing Highway Patrol troopers who died in the line of duty and local law enforcement officers who died in the line of duty along a state highway.

The SDDOT *Purple Heart Signing* policy provides guidance for the installation of signs recognizing Purple Heart entities designated by the Military Order of the Purple Heart as part of their Purple Heart Trail Program.

Other Signing Programs

Think/Why Die? Signs

The SDDOT *Fatal Accident Markers* policy provides guidance on the installation and removal of Think/Why Die? signs. In conformance with the policy, all area and maintenance crews should remove signs that are in poor condition. Due to the sensitive and often emotional nature of these signs, markers that are faded and beyond their useful sign life need to be taken down out of respect for the families of the victims. The signs will be replaced at the request of the immediate family. If there is anything attached to the sign, such as personal mementos, photos, etc., these should be saved at a DOT site for a period of two weeks to give the families a chance to collect these items.

Adopt-a-Highway Signs

The SDDOT *Adopt-a-Highway* policy contains information on the application process, rules for pickup, and signing for organizations, businesses and individuals who pick up litter along State highways. The Area offices keep track of all Adopt-a-Highway information. The Area offices have a method in place to contact groups that are not doing pickups; however, the sign often remains in place. Faded signs along highway segments that are no longer actively adopted may be removed.

In 2014, the TEOP decided against installing “This Site Available Signs” or employing other means of encouraging participation in the Adopt-a-Highway program.

SIGN MATERIALS

Sign Supports

All new sign posts will be 2.0” x 2.0” or 2.5” x 2.5” square steel perforated tube posts. The size and number of posts will be determined based on the sign size and location.

Sign Sheeting

The following signs will require ASTM D4956 Type XI (Super/Very High Intensity*) Sheeting:

- STOP (R1-1) & ALL WAY (R1-3P)
- YIELD (R1-2)
- DO NOT ENTER (R5-1)

- WRONG WAY (R5-1a)
- All Warning Signs
- All Overhead Signs – this includes signs on signal mast arms
- All Interstate Guide Signs
- All Extruded Aluminum Panel signs used on Interstates and Expressways, except those with a blue or brown background
- All Delineators
- All School Zone Signs

All other signs will require ASTM D4956 Type IV (High Intensity) Sheeting.

*SDDOT Policy refers to Type XI sheeting as “Cubic Prismatic,” SDDOT plan notes and bid items refer to Type XI sheeting as “Super/Very High Intensity Sheeting,” and ASTM D4956 refers to Type XI sheeting as “cube corner microprismatic.”

The SDDOT *Sign Retroreflectivity Management* policy specifies the Expected Sign Life Method used by the SDDOT to maintain minimum sign retroreflectivity on state highways.

DESIGN OF SIGN SUPPORTS

A pre-prepared Excel workbook is available to determine the post size, footing diameter, and footing depth of fixed and breakaway supports for large and extruded aluminum signs. Microstation plan sheets with plan details and blank sign tables are also available. Both the workbook and the plan sheet files can be found at <U:\br\prj\Sign Post Erection Detail Sheets & Program>. Consultants should contact the Operations Traffic Engineer to obtain the files.