

St. Louis County Traffic Sign Policy



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St. Louis County Public Works Department



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1. PURPOSE AND BACKGROUND

The purpose of this policy is to establish uniformity in the installation and maintenance of traffic signs on the St. Louis County highway system. This policy recognizes that the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) is the standard for all traffic control devices on all public roads in Minnesota and therefore all traffic control devices on the St. Louis County highway system shall conform to its standards and specifications as specified in Minnesota Statute 169.06. The purpose of this policy is to describe typical applications and procedures related to placement of traffic signs on St. Louis County highways.

This policy officially recognizes the rule in the MnMUTCD that establishes minimum retroreflectivity levels for traffic signs and describes how St. Louis County achieves compliance.

It is in the interest of St. Louis County and the public to prevent the excessive use of traffic signs on the county highway system. A conservative use of traffic signs reduces maintenance costs and improves the effectiveness of those remaining signs. Limiting the excessive use of traffic signs fulfills demonstrated needs, champions a command of attention, reduces clutter that impedes the conveyance of a clear and simple meaning, fosters respect by road users, and reduces conflicts that may restrict time for a proper response which cumulatively improves traffic safety for all users and pursues the goals of the Minnesota Toward Zero Deaths partnership in St. Louis County.

2. POLICY STATEMENT

This policy provides standards and guidance for the St. Louis County Public Works staff to judiciously install and maintain traffic signs. All traffic signs on the St. Louis County highway system shall conform to the MnMUTCD. Traffic signs not required to be installed by the MnMUTCD shall not be installed on the St. Louis County highway system unless specified in this Policy, or authorized by the Traffic Engineer or County Engineer.

3. SIGN RETROREFLECTIVITY MANAGEMENT METHOD

St. Louis County shall use the Blanket Replacement method for maintaining minimum retroreflectivity levels for traffic signs. The MnMUTCD, Section 2A.8, describes this method as follows:

“All signs in an area/corridor, or of a given type, should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest life material used on the affected signs.”

Guidance

Highway segments that are repaved or reconstructed should have priority for traffic sign replacement. The Traffic Engineer and Sign Supervisor should prioritize other highway segments based upon the need, budget or other special circumstances.

The replacement of traffic signs shall be based upon the expected life of sign sheeting as determined by the manufacturer's warranty period or as documented by an engineering study. The replacement interval is not dependent on the traffic sign location or orientation.

4. TRAFFIC SIGN MANAGEMENT

St. Louis County shall use a sign inventory to track all traffic signs on the county highway system.

Guidance

The sign inventory should be used to implement the sign replacement program for each highway segment.

5. TRAFFIC SIGN STANDARDS AND GUIDANCE

This section describes standards and guidance for sign sheeting, sign posts and sign usage.

5.1. Sign Sheeting

Traffic sign sheeting shall meet the minimum sheeting standards of the MnMUTCD and be approved by the Traffic Engineer.

5.2. Sign Posts

All new traffic sign posts shall meet the requirements of the MnMUTCD, Section 2A.19, the NCHRP Report 350, the Minnesota Standard Specifications for Construction and be approved by the Traffic Engineer.

Guidance

New sign posts should be used for signs installed and/or replaced on highway segments that have been reconstructed. For all other highway segments, the ground and riser post should be inspected and replaced as necessary.

5.3. Regulatory Signs

Information about Regulatory signs is provided in Chapter 2B of the MnMUTCD.

5.3.1. STOP Sign (R1-1)

The STOP sign shall be installed and maintained at all county highway intersections with publicly maintained roadways. The STOP sign configuration should be approved by the Traffic Engineer.



The STOP sign shall be installed for any private roadway/driveway that intersects a county highway with an approved St. Louis County 911 Emergency Communications Street Name sign.

Guidance

St. Louis County 911 Emergency Communications is responsible for naming and issuing a request to St. Louis County Public Works Department to install a Street Name sign (D3-1) for a private roadway/driveway.

The STOP sign shall not be installed within county highway right-of-way at private or public entrances for private or government facilities unless approved by the Traffic Engineer. STOP signs that are approved at these locations shall be maintained by St. Louis County.

Guidance

The Minnesota Department of Transportation (Mn/DOT) is responsible for the installation and maintenance of STOP signs at all US/State Trunk Highway and county highway intersections. The respective railroad authority is responsible for the installation and maintenance of STOP signs at public at-grade railroad crossings that were reviewed and ordered by Mn/DOT.

5.3.2. YIELD Sign (R1-2)

The YIELD sign shall be installed and maintained when approved by the Traffic Engineer.



5.3.3. ALL-WAY Plaque (R1-3P)

The ALL-WAY plaque shall be installed and maintained for every all-way stop intersection.



5.3.4. Speed Limit Sign (R2-1)

The Speed Limit sign shall only be installed and maintained for authorized speed zones. Speed Limit signs shall not be installed for statutory speed limits unless authorized by the Traffic Engineer (as set forth in Minnesota Statutes Section 169.14).

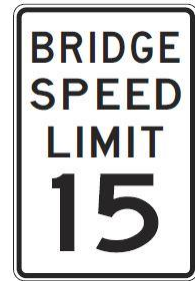


Guidance

Speed zones are established by the Minnesota Department of Transportation. The St. Louis County Traffic Engineer is responsible to submit requests to authorize, change or revoke speed zones. Contact the St. Louis County Traffic Engineer to inquire about established speed zones.

5.3.5. Bridge Speed Limit Sign (R2-X5)

The Bridge Speed Limit sign shall be installed and maintained when approved by the Traffic Engineer.



Guidance

Bridge speed limits are established by the Minnesota Department of Transportation. The St. Louis County Traffic Engineer is responsible to submit requests to authorize, change or revoke bridge speed limits. The St. Louis County Bridge Engineer usually makes the request to establish a bridge speed limit. Contact the St. Louis County Traffic Engineer to inquire about established bridge speed limits.

5.3.6. End Speed Zone Sign (R2-6b)

The End Speed Zone sign shall be installed and maintained at the end of an authorized speed zone to delineate the end of the speed zone and the beginning of the statutory speed limit (see Minnesota Statutes Section 169.14 for information on statutory speed limits).



5.3.7. LEFT/RIGHT LANE MUST TURN LEFT/RIGHT Sign (R3-7)

The LEFT/RIGHT LANE MUST TURN LEFT/RIGHT sign shall be installed and maintained at all turn lanes.



5.3.8. Advance Intersection Lane Control Signs (R3-30 Series)

The Advance Intersection Lane Control sign shall be installed and maintained when approved by the Traffic Engineer.



5.3.9. Keep Right and Keep Left Signs (R4-7, R4-8)

The Keep Right and Keep Left sign shall be installed and maintained when approved by the Traffic Engineer.



5.3.10. Parking, Standing and Stopping Signs (R7 and R8 Series)

The Parking, Standing and Stopping sign shall only be installed and maintained for zones where parking, standing and stopping are restricted by County Board or City Council resolution.

5.3.11. No Pedestrian Crossing Sign (R9-3)

The No Pedestrians sign shall be installed and maintained when approved by the Traffic Engineer.

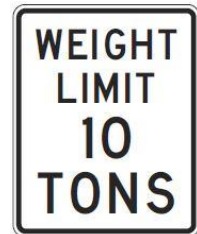


5.3.12. Traffic Signal, Pedestrian and Bicycle Actuation Signs (R10 Series)

See Section 5.8 for Traffic Signal signs.

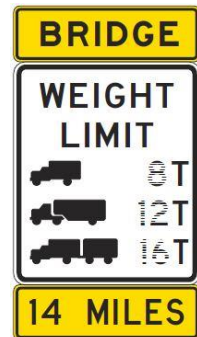
5.3.13. Weight Limit Signs (R12-1 through R12-5)

The Weight Limit signs shall be installed and maintained when approved by the Traffic Engineer.



5.3.14. Bridge and Structure Weight, Width and Height Restriction Signs (R12-1a, R12-5 Supplement, R12-X2, R12-X4, and R12-X4A)

The Bridge and Structure Weight, Width and Height Restriction signs shall be installed and maintained for all restricted bridges.



Guidance

A listing of restricted bridges can be obtained from the Bridge Engineer.

5.3.15. Grade Crossing (Crossbuck) Sign (R15-1)

The railroad authority is responsible for the installation and maintenance of the Crossbuck sign.



5.3.16. Ordinance Signs

Ordinance signs displaying County, Township or City ordinances shall be installed and maintained when approved by the Traffic Engineer. The ordinance displayed on the sign shall only apply to traffic operations. A Township or City shall be responsible for the cost of material to fabricate an ordinance sign. When the sign is due for replacement or is damaged, as determined by St. Louis County, the Township or City shall be responsible for the cost of material to fabricate the new sign. St. Louis County shall be responsible for the cost to install the sign.

5.3.17. Other Regulatory Signs

All other regulatory signs not required to be installed by the MnMUTCD, authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

5.3.18. St. Louis County Regulatory Sign Usage Summary

Standard (Shall)	Conditional (Approved by Traffic Engineer)
STOP (R1-1)	YIELD (R1-2)
ALL-WAY (R1-3P)	Bridge Speed Limit (R2-X5)
Speed Limit (R2-1)	Advanced Intersection Lane Control (R3-30 Series)
End Speed Zone (R2-6b)	Keep Right and Keep Left (R4-7, R4-8)
Intersection Lane Control (R3-7)	No Pedestrians (R9-3)
Parking, Standing and Stopping (R7 and R8 Series)	Weight Limit (R12-1 through R12-5)
Bridge and Structure Restriction (R12 Series)	Ordinance Signs

5.3.19. MnMUTCD Required Regulatory Signs (For reference only)

The MnMUTCD requires the following warning signs to be installed. Not all signs in this list are applicable to the St. Louis County highway system.

Sign Description	MUTCD Code
ALL-WAY	(R1-3P)
Stop Here for Pedestrians	R1-5 Series
Speed Limit	R2-1
Bridge Speed Limit	R2-X5
Truck Speed Limit	R2-2P
Night Speed Limit	R2-3P
Higher Fines	R2-6P, R2-10, R2-11
Movement Prohibition Signs	R3-1 thru R3-4, R3-18, R3-27
Optional Movement Lane Control	R3-6
Jughandle	R3-23, R3-24, R3-25, R3-26 Series
DO NOT ENTER	R5-1
ONE WAY	R6-1, R6-2
Divided Highway Crossing	R6-3, R6-3a
Disabled Parking	R7-8m
Traffic Signal Pedestrian and Bicycle Actuation	R10-1 thru R10-4, R10-24 thru R10-26
No Turn on Red	R10-11 Series, R10-30
Bridge and Structure Weight, Width and Height Restriction	R12-1a, R12-5 Supplement, R12-X2, R12-X4, R12-X4A
Grade Crossing (Crossbuck)	R15-1

5.4. Warning Signs

Information about Warning signs is provided in Chapter 2C of the MnMUTCD.

5.4.1. Horizontal Alignment Signs (W1-1 through W1-5, W1-11, W1-15)

A road segment shall have a Ball Bank test performed on each horizontal curve to obtain the advisory speed value(s) at the time a sign inventory is completed.



Guidance

A Ball Bank test is performed by using a slope meter mounted in a vehicle. See the Appendix for testing procedures.

Horizontal Alignment signs shall be installed in accordance with the Horizontal Alignment Warning Sign Selection Chart.

The nature of the county gravel road system, in terms of the cross-section elements and surface condition, present unique conditions that are variable through time to the driver and not normally encountered on the paved county highway system. As such, general operating speeds on gravel roads are less than on paved roads. This suggests the application of evaluation criteria of horizontal alignment warning signs should match the general operating speed. Therefore, St. Louis County has determined it shall utilize a safe and reasonable operating speed of 45 mph for the selection of horizontal warning signs on gravel roads instead of the established speed limit of 55 mph as per Minnesota Statutes 169.14, Subd. 2, Sec. 3. It should be noted the MnMUTCD does not establish a standard to install horizontal alignment warning signs on roads with an average annual daily traffic (AADT) of less than 1,000 vehicles per day.

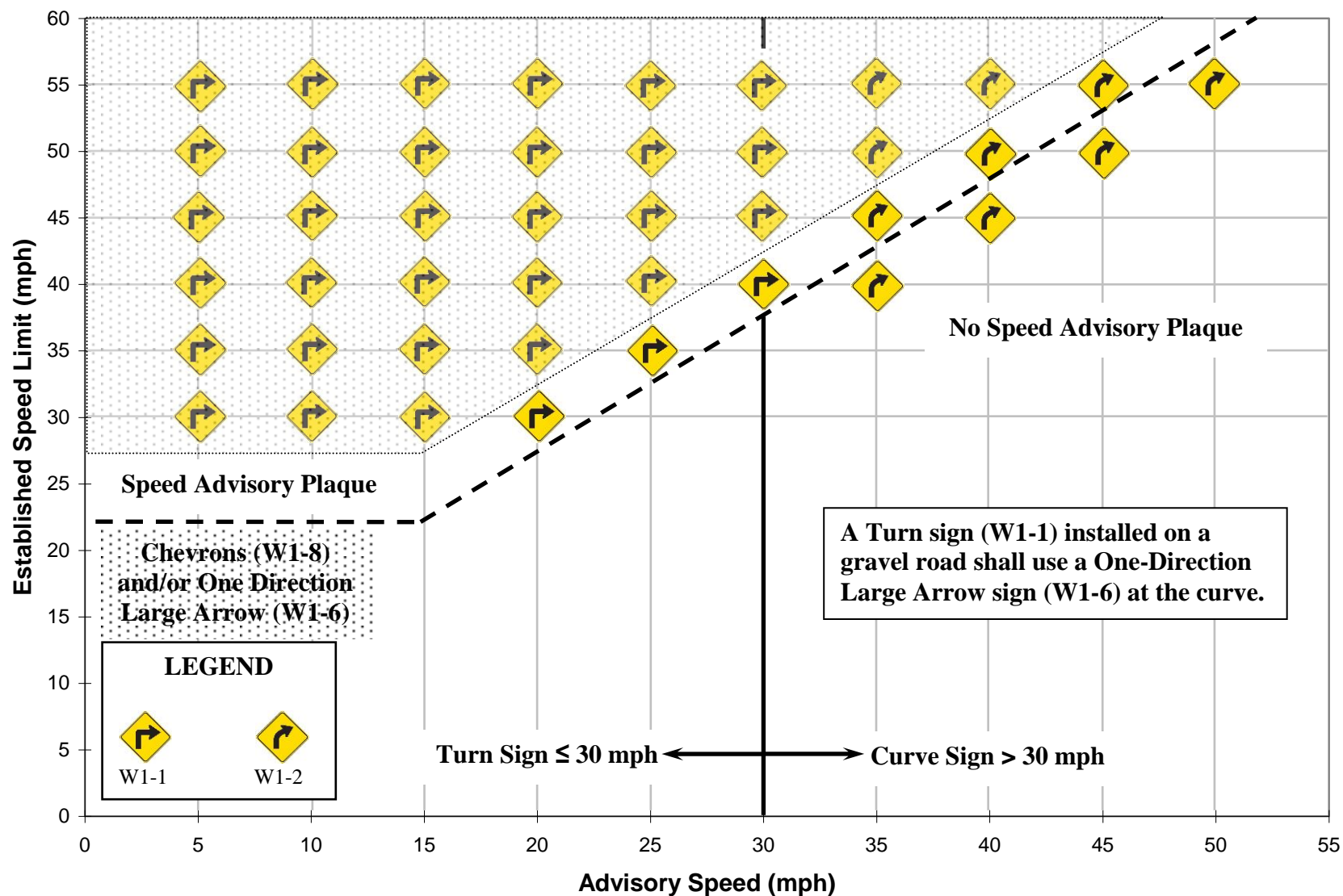
Guidance

Selection of the following Horizontal Alignment signs should use the following criteria.

Reverse Turn sign (W1-3): Two turns that meet the criteria for a Turn sign and are connected by a tangent < 600 feet in length

Reverse Curve sign (W1-4): Two curves that meet the criteria for a Curve sign and are connected by a tangent < 600 feet in length

Winding Road sign (W1-5): Three or more turns or curves that meet the criteria for a Turn or Curve sign and are connected by tangents < 600 feet in length. The Advisory Speed Plaque (W13-1P) shall use the lowest advisory speed for all curves or turns covered by the sign.



Horizontal Alignment Warning Sign Selection Chart

5.4.2. One-Direction Large Arrow Sign (W1-6)



The One-Direction Large Arrow sign shall be installed and maintained when a Turn sign (W1-1) or Reverse Turn sign (W1-3) is installed.

5.4.3. Two-Direction Large Arrow Sign (W1-7)



The Two-Direction Large Arrow sign shall be installed and maintained when the following criteria are satisfied:

- Approaching road surface (stem of the T-intersection) is paved
- Minimum speed zone is 45 mph up to the statutory speed limit for the approaching road (see Minnesota Statutes Section 169.14 for information on statutory speed limits)

5.4.4. Chevron Alignment Sign (W1-8)



The Chevron Alignment sign shall be installed in accordance with the Horizontal Alignment Warning Sign Selection Chart or if a curve is identified for a Chevron project in the St. Louis County Road Safety Plan. Chevron signs shall not be installed on gravel or dead-end roads.

Guidance

The installation of Chevron signs may deviate from this Sign Policy on roads with a traffic volume less than 1,000 vehicles per day.

5.4.5. Advance Traffic Control Sign – Stop Ahead (W3-1)



The Advance Traffic Control (Stop Ahead) sign shall be installed and maintained in advance of all STOP signs on non-dead-end roads in rural areas. The Stop Ahead sign shall be installed and maintained in advance of all STOP signs in urban areas or on rural dead-end roads when approved by the Traffic Engineer.

Guidance

The Sign Supervisor should evaluate the need to install a Stop Ahead sign in urban areas or on rural dead-end roads by considering the available stopping sight distance to the STOP sign and available space to install the Stop Ahead sign.

5.4.6. Reduced Speed Limit Ahead Sign (W3-5)

The Speed Reduction sign shall be installed and maintained when the following criteria are satisfied:



Condition A

In advance of an authorized speed zone of 50 mph or less if leaving a segment with the statutory speed limit (See Minnesota Statutes Section 169.14 for information on statutory speed limits).

Condition B

In advance of a lower authorized speed zone when leaving a segment with a higher authorized speed zone when approved by the Traffic Engineer.

5.4.7. Lane Ends Signs (W4-2 and W9-2)

The Lane Ends sign shall be installed and maintained when there is a reduction in the number of traffic lanes in the same direction of travel.



5.4.8. CROSS TRAFFIC DOES NOT STOP Plaque (W4-4P Series)

The CROSS TRAFFIC DOES NOT STOP plaque shall be installed and maintained when approved by the Traffic Engineer.



5.4.9. NARROW BRIDGE Sign (W5-2)

The NARROW BRIDGE sign shall be installed and maintained in advance of all bridge or culverts having a two-way roadway clearance width greater than or equal to 18 feet and less than the approach roadway width, or any bridge or culvert having a roadway clearance less than the width of the approach lanes.



Guidance

A listing of restricted bridges can be obtained from the Bridge Engineer.

5.4.10. ONE LANE BRIDGE Sign (W5-3)

The ONE LANE BRIDGE sign shall be installed and maintained in advance of all bridges or culverts having a two-way roadway clearance width less than 16 feet.



Guidance

A listing of restricted bridges can be obtained from the Bridge Engineer.

5.4.11. Divided Highway Sign (W6-1)

The Divided Highway sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.12. Divided Highway Ends Sign (W6-2)

The Divided Highway Ends sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.13. Hill Sign (W7-1, W7-1a)

The Hill sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.14. BUMP and DIP Signs (W8-1, W8-1a, W8-1b, W8-2)

Upon notification to the Sign Supervisor of a hazardous bump or dip on the county highway system by a St. Louis County Highway Division Superintendent, the Sign Supervisor will investigate and determine if a BUMP or DIP sign should be installed. If approved by the Sign Supervisor, the BUMP or DIP sign shall be installed and maintained.

Guidance

The Sign Supervisor should review each location where a BUMP and DIP sign are installed at the change of seasons and determine if the BUMP or DIP signs are still justified. If not justified, the BUMP or DIP sign should be removed.

5.4.15. PAVEMENT ENDS Sign (W8-3)

The PAVEMENT ENDS sign shall be used where a paved surface changes to a gravel or earth surface.



5.4.16. Pedestrian Warning Sign (W11-2)

The Pedestrian Warning sign shall be installed and maintained when approved by the Traffic Engineer. When used at a crossing, the Pedestrian Warning sign shall be supplemented with a diagonal downward pointing arrow (W16-7P) plaque showing the location of the crossing, regardless of the presence of crosswalk markings.



Guidance

The Traffic Engineer should complete an engineering study to determine if a pedestrian crosswalk is justified.

5.4.17. Snowmobile Crossing Warning Sign (W11-6)

Upon request by a snowmobile club, the Sign Supervisor will investigate and determine if a Snowmobile Crossing Warning sign should be installed. If approved by the Sign Supervisor, the Snowmobile Crossing Warning sign shall be installed and maintained.



Guidance

An engineering study should be performed by measuring the existing stopping sight distance for each direction of travel approaching the snowmobile crossing. A Snowmobile Crossing Warning sign should be installed for each direction of travel with restricted stopping sight distance.

At the end of each snowmobile season, all Snowmobile Crossing Warning signs on the county highway system should be removed. At the time of removal, the sign post should be left in place and delineated with a reflective material. Before the beginning of the next snowmobile season, the Sign Supervisor should replace all Snowmobile Crossing Warning signs if upon review the snowmobile crossing appears active and stopping sight distance is still restricted.

5.4.18. Fire Hall Warning Sign (W11-8)

A Fire Hall shall submit a formal request to the Traffic Engineer to install a Fire Hall Warning sign. The Sign Supervisor will determine if the Fire Hall Warning sign should be installed based upon available intersection sight distance. If there is insufficient intersection sight distance, the Fire Hall Warning sign shall be installed and maintained. If there is sufficient intersection sight distance, a static Fire Hall Warning sign shall not be installed. Under this condition, the Fire Department may install a dynamic flashing Fire Hall Warning sign that flashes based upon activity at the Fire Hall. The Fire Department shall be responsible for the purchase and maintenance costs of the blinker sign. The blinker sign sheeting shall meet the minimum sheeting standards of the MnMUTCD and be approved by the Traffic Engineer. A formal agreement between St. Louis County and the Fire Department shall be executed prior to the installation of a Fire Hall Warning sign. A copy of an agreement template is in the Appendix.



Guidance

The formal request to install a Fire Hall warning sign should be in the form of a letter from the Fire Department. A flashing sign includes the sign panel and reflective sheeting. The flashing sign should be included in the St. Louis County sign inventory to track when the life of the sheeting exceeds the sheeting warranty life.

5.4.19. Golf Cart Crossing Warning Sign (W11-11)

The Golf Cart Crossing Warning sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.20. Bicycle/Pedestrian and TRAIL CROSSING Sign (W11-15, W11-15a)

The Bicycle/Pedestrian and TRAIL CROSSING signs shall be installed and maintained when approved by the Traffic Engineer.



5.4.21. Double Arrow Sign (W12-1)

The Double Arrow sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.22. Low Clearance Signs (W12-2, W12-2a, W12-X2)

The Low Clearance sign shall be installed and maintained where the clearance is less than 12 inches above the statutory maximum vehicle height (as set forth in Minnesota Statutes Section 169.81).



5.4.23. Advisory Speed Plaque (W13-1P)

The Advisory Speed Plaque shall be installed and maintained when specified by this Policy, the MnMUTCD or when approved by the Traffic Engineer.



5.4.24. DEAD END Sign (W14-1)

The DEAD END sign shall be installed and maintained at the beginning of all dead end county highways.



5.4.25. NO PASSING ZONE Sign (W14-3)

The NO PASSING ZONE sign shall be installed and maintained at the beginning of no passing zones as determined by a no passing zone survey.



5.4.26. Distance Plaques (W16-2 series, W16-3 series, W16-4P, W7-3aP)

The Distance Plaque shall be installed and maintained when specified by this Policy, the MnMUTCD or when approved by the Traffic Engineer.

5.4.27. Supplemental Arrow Plaques (W16-5P, W16-6P)

The Supplemental Arrow Plaque shall be installed and maintained when specified by this Policy, the MnMUTCD or when approved by the Traffic Engineer.

5.4.28. SPEED HUMP Sign (W17-1)

The SPEED HUMP sign shall be installed and maintained when approved by the Traffic Engineer.



5.4.29. Other Warning Signs

All other warning signs not required to be installed by the MnMUTCD, authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

5.4.30. St. Louis County Warning Sign Usage Summary

Standard (Shall)	Conditional (Approved by Traffic Engineer)
Horizontal Alignment (W1-1 through W1-5, W1-11, W1-15)	CROSS TRAFFIC DOES NOT STOP (W4-4P Series)
One-Direction Large Arrow (W1-6)	Divided Highway (W6-1)
Two-Direction Large Arrow (W1-7)	Divided Highway Ends (W6-2)
Chevron Alignment (W1-8)	Hill Sign (W7-1, W7-1a)
Advance Traffic Control – Stop Ahead (W3-1)	BUMP and DIP (W8-1, W8-1a, W8-1b, W8-2)
Reduce Speed Limit Ahead (W3-5)	Pedestrian Warning (W11-2)
Lane Ends (W4-2 and W9-2)	Snowmobile Crossing Warning (W11-6)
NARROW BRIDGE (W5-2)	Fire Hall Warning (W11-8)
ONE LANE BRIDGE (W5-3)	Golf Cart Crossing Warning (W11-11)
PAVEMENT ENDS (W8-3)	Bicycle/Pedestrian and TRAIL CROSSING (W11-15, W11-15a)
Low Clearance (W12-2, W12-2a, W12-X2)	Double Arrow (W12-1)
DEAD END (W14-1)	Advisory Speed Plaque (W13-1P)
NO PASSING ZONE (W14-3)	Distance Plaques (W16 Series)
	Supplemental Arrow Plaques (W16 Series)
	SPEED HUMP (W17-1)

5.4.31. MnMUTCD Required Warning Signs (For reference only)

The MnMUTCD requires the following warning signs to be installed. Not all signs in this list are applicable to the St. Louis County highway system.

Sign Description	MUTCD Code
Horizontal Alignment (conditional)	W1-1 thru W1-5, W1-11, W1-15
One-Direction Large Arrow (conditional)	W1-6
Chevron Alignment (conditional)	W1-8
Combination Horizontal Alignment/Intersection (conditional)	W1-10 Series
DRAW BRIDGE	W3-6
Advance Traffic Control (Conditional)	W3-1, W3-2, W3-3, W3-4, W3-X2, W3-X4
Grade Crossing	W10 Series
Supplemental Highway-Rail Grade Crossing	W10-X2, W10-X3
NO TRAIN HORN	W10-9, W10-9P
Low Clearance	W12-2, W12-2a, W12-X2
Advisory Speed (conditional)	W13-1P
Advisory Exit and Ramp Speed	W13-2, W13-3
Traffic Signal (conditional)	W25-1, W25-2

5.5. Conventional Signs

Information about Conventional signs is provided in Chapter 2D of the MnMUTCD.

5.5.1. Route Signs (M1-6, M1-X3, M1-X4, M1-7)

The Route sign shall be installed and maintained at the beginning of each county highway. Route Marker signs shall be installed on a separate post. The special designation route marker (pentagon shape) shall only be installed on special designated routes. A special designated route is a County State Aid Highway and meets either of the following requirements:



Rural Areas

The road shall be functionally classified as a rural major collector or greater.

Urban Areas

The road shall be functionally classified as a minor arterial or greater.

If any segment of a road meets the above criteria, then the entire route (e.g. all of CSAH 5) shall be defined as a special designation route. A map of special designated routes is provided in the Appendix.

Guidance

The following example is offered when determining if a road is defined as a special designation route. A portion of CSAH 5 is a rural minor collector, but other segments of CSAH 5 are rural major collectors or minor arterial. Therefore, all of CSAH 5 shall be a special designation route.

5.5.2. Junction Auxiliary Sign (M2-1)

The Junction Auxiliary sign shall be installed and maintained in advance of county highway intersections in accordance with the *Guide Sign Typical Layouts* located in the Appendix.



5.5.3. Advance Turn Arrow Auxiliary Signs (M5-1, M5-2, M5-3 Series)

The Advance Turn Arrow Auxiliary sign shall be installed and maintained when approved by the Traffic Engineer.



5.5.4. Directional Arrow Auxiliary Signs (M6 Series)

The Directional Arrow Auxiliary sign shall be installed and maintained in advance of county highway intersections in accordance with the *Guide Sign Typical Layouts* located in the Appendix.



5.5.5. Destination Signs (D1 Series)

Upon request, destination signs shall only be installed if the following criteria are satisfied and when approved by the Traffic Engineer:

- The Destination sign shall only be installed at intersections where one special designated County State Aid Highway intersects another special designated County State Aid Highway. Special designated County State Highways are identified by the pentagon shaped Route sign (M1-6).
- Destination signs shall only be installed for cities included on the recognized list of cities maintained by the St. Louis County Auditor's Office.

Not more than three cities may be identified on a Destination sign. St. Louis County shall be responsible for the cost and expense of Destination signs.

5.5.6. Street Name Sign (D3-1)



The Street Name sign shall be installed at all county highway intersections.

When authorized by the Sign Supervisor, a Street Name sign may be mounted above a STOP sign. The letter size shall be in accordance with the MnMUTCD.

Guidance

St. Louis County is responsible for the installation and maintenance of Street Name signs at Trunk Highway/County Highway intersections.

The Street Name sign shall only be installed at non county highway intersections upon request by St. Louis County 911 Emergency Communications. St. Louis County is not responsible for the maintenance of those Street Name signs installed at non county highway intersections by St. Louis County.

5.5.7. PARK – RIDE Sign (D4-2)

The PARK – RIDE sign shall be installed and maintained when approved by the Traffic Engineer.



5.5.8. St. Louis County Conventional Sign Usage Summary

All other conventional signs not authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

Standard (Shall)	Conditional (Approved by Traffic Engineer)
Route Sign (M1 Series)	Park – Ride (D4-2)
Junction Auxiliary (M2-1)	
Advance Turn Arrow Auxiliary (M5-1, M5-2 and M5-3)	
Directional Arrow Auxiliary (M6 Series)	
Destination (D1 Series)	
Street Name Sign (D3-1)	

5.5.9. MnMUTCD Required Conventional Signs (For reference only)

The MnMUTCD requires the following conventional signs to be installed. Not all signs in this list are applicable to the St. Louis County highway system.

Sign Description	MUTCD Code
Route Numbers	M1-1, M1-2, M1-3, M1-4, M1-5b, M1-X4, M1-6, M1-X3, M1-7
Junction	M2-1
Route Sign Assemblies	
Junction Assembly	
Advance Route Turn Assembly	

5.6. Other Signs

There are other signs listed in other chapters of Part 2 of the MnMUTCD that require attention by this Policy.

5.6.1. City and Township Name Marker Sign (I2-3, I2-5) – Chapter 2H



The City and Township Name Marker sign shall be installed and maintained upon request by the respective city/township. The request shall be made on official agency letterhead by the clerk, administrator or agency engineer/public works director. City and Township Name Marker signs shall only be installed for cities/townships included on the recognized list of cities/townships maintained by the St. Louis County Auditor's Office. The

requesting agency shall be responsible for the cost of material to fabricate the sign. When the sign is due for replacement or is damaged, as determined by St. Louis County, the city/township shall be responsible for the cost of material to fabricate the new sign. St. Louis County shall be responsible for the cost to install the sign.

5.6.2. General Service Signs (D Series) – Chapter 2I

General Service Signs shall be installed and maintained when approved by the Traffic Engineer.



5.6.3. Rest Area and Other Roadside Area Signs – Chapter 2I

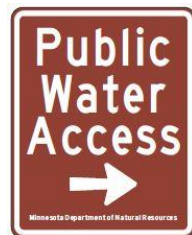
Rest Area or Other Roadside Area Signs shall be installed and maintained when approved by the Traffic Engineer.

Guidance

There are historical sites along the St. Louis County Highway System that are marked by historical marker signs.

5.6.4. Public Water Access Signs (D7-X7, D7-X7a, and DNR sign) – Chapter 2I

The Public Water Access sign shall only be installed upon request to the Traffic Engineer by the Minnesota Department of Natural Resources (MnDNR). The MnDNR shall furnish a Public Water Access sign at their cost and expense to St. Louis County for the requested locations. Upon receipt of the Public Water Access signs, St. Louis County shall install the sign at its cost and expense. The MnDNR shall furnish a new Public Water Access sign at their cost and expense when the existing sign is damaged or has reached the end of its service life as determined by St. Louis County. The Public Water Access sign shall be installed on its own structure.



Standard (Shall)	Conditional (Approved by Traffic Engineer)
	City and Township Name Marker (I2-3, I2-5)
	General Service Signs (D9 Series)
	Rest Area and Other Roadside Area
	Public Water Access (D7-X7, D7-X7a, and DNR sign)
	Other Guide Signs (D Series)
	Recreational and Cultural Interest Area Symbol

5.7. School Area Signs

5.7.1. School Zone Sign (S1-1) and Plaques (S4-3P, S4-7P) and END SCHOOL ZONE Sign (S5-2)

The School Zone Sign, Plaques and END SCHOOL ZONE signs shall be installed and maintained when approved by the Traffic Engineer.



5.7.2. School Bus Stop Ahead Sign (S3-1)

Upon request by the Transportation Director of a School, the Traffic Engineer shall complete a field review to determine if the stop is visible for an adequate distance. If there is inadequate stopping sight distance, a SCHOOL BUS STOP AHEAD sign shall be installed and maintained.



Guidance

On an annual basis, a letter should be sent to the transportation director of the school district in which a SCHOOL BUS STOP AHEAD sign is located requesting verification that the sign(s) are still utilized. Any SCHOOL BUS STOP AHEAD not verified as being utilized shall be removed. An example letter is included in the Appendix.

5.7.3. School Speed Limit Assembly (S5-1) and END SCHOOL SPEED LIMIT Sign (S5-3)

The School Speed Limit Assembly and END SCHOOL SPEED LIMIT sign shall be installed and maintained when approved by the Traffic Engineer.



5.7.4. St. Louis County School Area Sign Usage Summary

All other school area signs not authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

Standard (Shall)	Conditional (Approved by Traffic Engineer)
School Bus Stop Ahead (S3-1)	School Zone Signs (S1-1, S4-3P, S4-7P, S5-2))
	School Speed Limit Assembly and END SCHOOL SPEED LIMIT (S5-1 and S5-3)

5.7.5. MnMUTCD Required School Area Signs (For reference only)

The MnMUTCD requires the following school area signs to be installed. Not all signs in this list are applicable to the St. Louis County highway system.

Sign Description	MUTCD Code
School Zone (conditional)	S1-1
School Bus Stop Ahead (conditional)	S3-1
SCHOOL BUS LOADING AREA	S3-X1
School Speed Limit Assembly	S4 Series

5.8. Railroad-Highway Grade Crossing Signs

5.8.1. Grade Crossing Advance Warning Signs (W10 Series)

The Railroad Crossing Warning sign (W10-1) shall be installed and maintained in advance of all railroad crossings, unless otherwise noted by the MnMUTCD. All other Railroad Crossing Warning signs (W10 Series) shall be installed and maintained when approved by the Traffic Engineer.



5.8.2. Supplemental Grade Crossing Advance Warning Signs (W10-X2, W10-X3)

The Supplemental Grade Crossing Signs shall be installed and maintained when approved by the Traffic Engineer.



Guidance

Supplemental Grade Crossing Warning Signs generally are recommended by Mn/DOT during railroad crossing safety reviews.

5.8.3. NO TRAIN HORN Sign and Plaque (W10-9, W10-9P)

The NO TRAIN HORN sign shall be installed and maintained at all railroad crossings that have an authorized Quiet Zone established by the Federal Railroad Administration. This sign shall be mounted below the Railroad Crossing Warning sign (W10-1).



Guidance

A listing of railroad crossings identified as Quiet Zones can be obtained from the Traffic Engineer.

5.8.4. Low Ground Clearance Highway-Rail Grade Crossing Sign (W10-5)

The Low Ground Clearance Highway-Rail Grade Crossing sign shall be installed and maintained when approved by the Traffic Engineer.

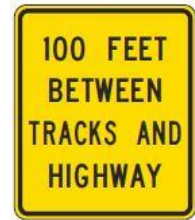


Guidance

The Low Ground Clearance Highway-Rail Grade Crossing sign is generally recommended by Mn/DOT during railroad crossing safety reviews.

5.8.5. Storage Space Signs (W10-11, W10-11a, W10-11b)

The Storage Space signs shall be installed and maintained when approved by the Traffic Engineer.



Guidance

The Storage Space signs are generally recommended by Mn/DOT during railroad crossing safety reviews.

5.8.6. Skewed Crossing Sign (W10-12)

The Skewed Crossing sign shall be installed and maintained when approved by the Traffic Engineer.



Guidance

The Skewed Crossing sign is generally recommended by Mn/DOT during railroad crossing safety reviews.

5.8.7. ROUGH CROSSING Plaque (W10-15P)

Upon notification to the Sign Supervisor of a rough railroad crossing on the county highway system, the Sign Supervisor will investigate and determine if a ROUGH CROSSING plaque should be installed. If approved by the Sign Supervisor, the ROUGH CROSSING plaque shall be installed and maintained on the Highway-Rail Grade Crossing Advance Warning sign (W10-1).



Guidance

When a railroad authority repairs a railroad crossing surface, the railroad crossing should be reviewed to determine if a ROUGH CROSSING plaque is still justified. If not justified, the ROUGH CROSSING plaque should be removed.

5.8.8. St. Louis County Railroad-Highway Grade Crossing Sign Usage Summary

All other railroad-highway grade crossing signs not authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

Standard (Shall)	Conditional (Approved by Traffic Engineer)
Railroad Crossing Warning Sign (W10-1)	ROUGH CROSSING Plaque (W10-15P)
NO TRAIN HORN Sign and Plaque (W10-9, W10-9P)	Other Railroad Crossing Warning (W10 Series)

5.8.9. MnMUTCD Required Railroad-Highway Grade Crossing Signs (For reference only)

The MnMUTCD requires the following railroad-highway grade crossing signs to be installed. Not all signs in this list are applicable to the St. Louis County highway system.

Sign Description	MUTCD Code
Grade Crossing (Crossbuck)	R15-1
Crossbuck Assemblies with YIELD or STOP	
Grade Crossing Advance Warning	W10-1
Supplemental Grade Crossing Advance Warning	W10-X2, W10-X3
NO TRAIN HORN	W10-9, W10-9P

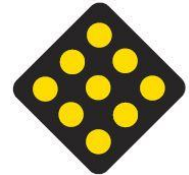
5.9. Traffic Signal Signs

All Traffic Signal signs (R10 Series and W3-X4) shall be installed and maintained when approved by the Traffic Engineer.

5.10. Markers

5.10.1. Hazard Marker (Type 1 Object Marker, X4-2)

The Hazard Marker shall be installed and maintained when approved by the Traffic Engineer.



5.10.2. Culvert Marker (Type 2 Object Marker, X4-3)

The Culvert Marker shall be installed and maintained when approved by the Sign Supervisor.

Guidance

When there is existing guardrail at the site of the culvert, the practice is to not install a culvert marker. Where there is no guardrail and/or the culvert span (longitudinal length along the road) is greater than four feet, the practice is to install a culvert marker.

5.10.3. Clearance Marker (Type 3 Object Marker, X4-4)

The Clearance Marker shall be installed on all bridge abutments and culverts with above grade structures. Standard placement is on each corner of the bridge deck or culvert headwalls.

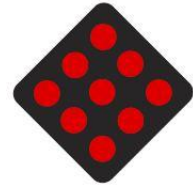


5.10.4. Snowplow Marker (X4-5)

The Snowplow Marker shall be installed and maintained on obstructions such as guardrail or other obstructions to inform snowplow drivers where to lift and lower the plow blade.

5.10.5. End of Roadway Marker (Type 4 Object Marker, X4-11)

The End of Road Marker shall be installed and maintained when approved by the Traffic Engineer.



5.10.6. St. Louis County Markers Usage Summary

All other markers not authorized by this Policy or the Traffic Engineer shall not be installed or maintained.

Standard (Shall)	Conditional (Approved by Traffic Engineer)
Clearance Marker (X4-4)	Hazard Marker (X4-2)
Snowplow Marker (X4-5)	Culvert Marker (X4-3)
	End of Roadway Marker (X4-11)

6. POLICY IMPLEMENTATION

Upon the adoption of this policy by the County Board, the policy shall be implemented as signs are replaced under the sign maintenance blanket replacement schedule.

When a county highway segment is scheduled for the replacement of its traffic signs:

- Traffic signs that are specified to be installed by this Policy shall be retained
- Traffic signs subject to the approval of the Traffic Engineer shall be reviewed with the Traffic Engineer to determine if they shall be retained or removed
- Traffic signs not specified to be installed by this Policy shall be removed

Guidance

Some traffic signs are ordered to be installed by a Traffic Control Order issued by the Traffic Engineer. When a traffic sign is ordered to be installed by a Traffic Control Order, the traffic sign should be noted as such in the sign inventory notes.

7. MISSING AND DAMAGED SIGNS

Minnesota Statutes Section 169.88 provides for the recovery of damages for any highway or highway structure caused by a person driving a vehicle, object or contrivance.

7.1. Critical Signs

Upon notification to the St. Louis County Sign Department by the St. Louis County Sheriff's Office or St. Louis County 911 Emergency Communications, the following signs are given highest priority for sign replacement:

- STOP Sign (R1-1)
- YIELD Sign (R1-2)
- Railroad Crossing Warning Sign (W10-1)
- Stop Ahead Sign (W3-1)

7.2. Other Traffic Signs

Upon notification to the St. Louis County Sign Department, all other traffic signs should be replaced as soon as possible during the normal course of business.

8. SPECIAL EVENT SIGNING

St. Louis County shall not perform special event signing unless authorized by the County Engineer.

9. SIGN PROGRAMS

The following sign programs are made available to the public.

9.1. Adopt-A-Highway Signing Program

The St. Louis County Public Works Department maintains the Adopt-A-Highway program. Highway segments are available on a first-come, first-serve basis. Information regarding this program is available at the St. Louis County Public Works Department office located in Pike Lake and website.

9.2. Specific Service Signing Program

The St. Louis County Public Works Department maintains the Specific Service Signing program. Information regarding this program is available at the St. Louis County Public Works Department office located in Pike Lake and website.

9.3. Resort Signing Program

The St. Louis County Public Works Department maintains the Resort Signing program. Information regarding this program is available at the St. Louis County Public Works Department office located in Pike Lake and website.

9.4. Neighborhood Watch Signs

An association, township, or other organization may request Neighborhood Watch signs be installed. This request should be routed through the following process:

- The Requestor must make a formal written request to the Traffic Engineer and St. Louis County Sheriff Office
- The County Sheriff Office must notify the Traffic Engineer that they have received and are in agreement with the request
- The Traffic Engineer issues a Traffic Control Order to install the sign posts
- The Requestor is responsible to furnish the sign to St. Louis County
- St. Louis County installs the requestor furnished sign.

9.5. Supplemental Guide Signing Programs

The MnMUTCD and the St. Louis County Sign Policy allow for supplemental guide signs to be installed on the county highway system. St. Louis County will provide signs at no cost to Hospitals. The following qualified facilities shall pay for signs under the Supplemental Guide Signing Program.

- | | |
|-----------------------------|------------------------|
| 1. Airports | 6. National Monuments |
| 2. Casinos | 7. National Parks |
| 3. Educational Institutions | 8. State Parks |
| 4. National Monuments | 9. Tourist Information |
| 5. Traffic Generators | 10. Trail Access |

Logos shall be approved by the Traffic Engineer. The following are considered traffic generator facilities:

- | | |
|--|---|
| 1. Bus Depot | 16. Multi-Purpose Facility (rural environment) |
| 2. Camp (private-rural environment) | 17. Museum |
| 3. Cemetery | 18. Park |
| 4. Civic Center and Convention Center | 19. Public Access to Lake and River |
| 5. Correctional Institution | 20. Public Office Building |
| 6. County Fairground | 21. Recreational Complex |
| 7. Downtown or Business District (rural environment) | 22. Recycling Center |
| 8. Fish Hatchery | 23. Regional Human Services Center, Regional Treatment Center |
| 9. Golf Course | 24. Sanitary Landfill, Demolition Landfill, Solid Waste Transfer Station, and Household Hazardous Waste sites |
| 10. Historical Marker | 25. Road Maintenance Facility |
| 11. Historic Site | 26. Scientific and Natural Area |
| 12. Indoor Ice Arena | 27. Ski Area |
| 13. Industrial Park | |
| 14. Interpretive Center | |
| 15. Library | |

28. Veteran Memorial or War Memorial
29. Wildlife Refuge or Wildlife
Management Area

30. Workforce Center
31. Zoo

9.6. Sale of Traffic Signs

St. Louis County will only sell traffic signs to other governmental agencies. All other institutions must purchase traffic signs from other sources such as a vendor.

10. DEVIATION FROM POLICY AND STANDARDS

This Policy does not supersede the MnMUTCD; Association of American State Highway Transportation Officials (AASHTO) “Green Book” titled *A Policy on Geometric Design of Highways and Streets*; or other AASHTO or Mn/DOT guidelines, manuals and policies. This Policy provides Standards, Guidance, and Options for design and application of traffic control devices. The St. Louis County Public Works Department reserves the right to supersede any or all of this Policy when safety concerns dictate. The Traffic Engineer shall review the proposed deviation. If the Traffic Engineer approves the deviation, the Traffic Engineer shall submit the recommended deviation to the County Engineer for final approval. The approved deviation shall be documented by the Traffic Engineer.

11. REVIEW AND MODIFICATION OF POLICY

This Policy should be reviewed on a regular basis to ensure that the standards and guidance contained therein reflect future revisions of the MnMUTCD; AASHTO guidelines, manuals and policies, and Traffic Engineering convention.

Appendix

- **Ball Bank Test Procedure**
- **Route Sign Assemblies Typical Layouts**
- **Snowmobile Crossing Warning Sign Inventory Update Letter Template**
- **SCHOOL BUS STOP AHEAD Sign Inventory Update Letter Template**
- **Signing Agreement Template**
- **Conversion of Multi-Way to Two-Way Stop Control**
- **Special Designated Routes Map**
- **References And Definitions**

Ball Bank Test Procedure

Slope Meter

The slope meter is an instrument used to determine the comfortable speed that a passenger vehicle can travel around a curved roadway section. This instrument consists of a steel ball in a sealed, curved glass tube filled with an alcohol solution. The tube, bent on the arc of a circle, is graduated from 0 to 20 degrees, both to the left and right of the zero point. The tube is enclosed in a metal case. When mounting the ball-bank indicator, the vehicle should be in a stationary level position. The speedometer of the test vehicle must be accurately calibrated and the tires uniformly inflated. The indicator should be mounted vertically, with the steel ball at the zero point. All occupants who are to be in the vehicle when the observations are made should be in the same position when mounting or checking the instrument as when making the test drive. This is necessary because changing the position of a passenger or the load in the test vehicle may cause the vehicle body to tilt to the right or left. This tilting action or body roll will cause a change in the slope meter readings.

Procedures for Testing A Curve

The use of the slope meter or electronic meter to measure the comfortable speed on curves involves the efforts of two people--one to drive and the other to observe the meter. The following procedures should be followed in each test:

1. The curve under observation should first be appraised by the driver to determine the approximate safe speed which can be maintained.
2. The driver should then conduct the first test at a speed 10 mph below the appraised speed.
3. Each succeeding test should be made at a speed 5 mph greater than the preceding test, until the meter has reached the maximum degree value for that speed range. These values are shown on the Ball Bank Test Worksheet.
4. On each test, the driver should attain the trial run speed at a distance of at least 1/4 mile from the beginning of the curve.
5. The course throughout the curve should be maintained precisely in the center of the lane and at uniform speed. Using a vehicle equipped with cruise control aids in this process.
6. The observer shall note carefully the position of the ball on the slope meter or the display on an electronic meter at the approximate center of the curve and shall record the reading.

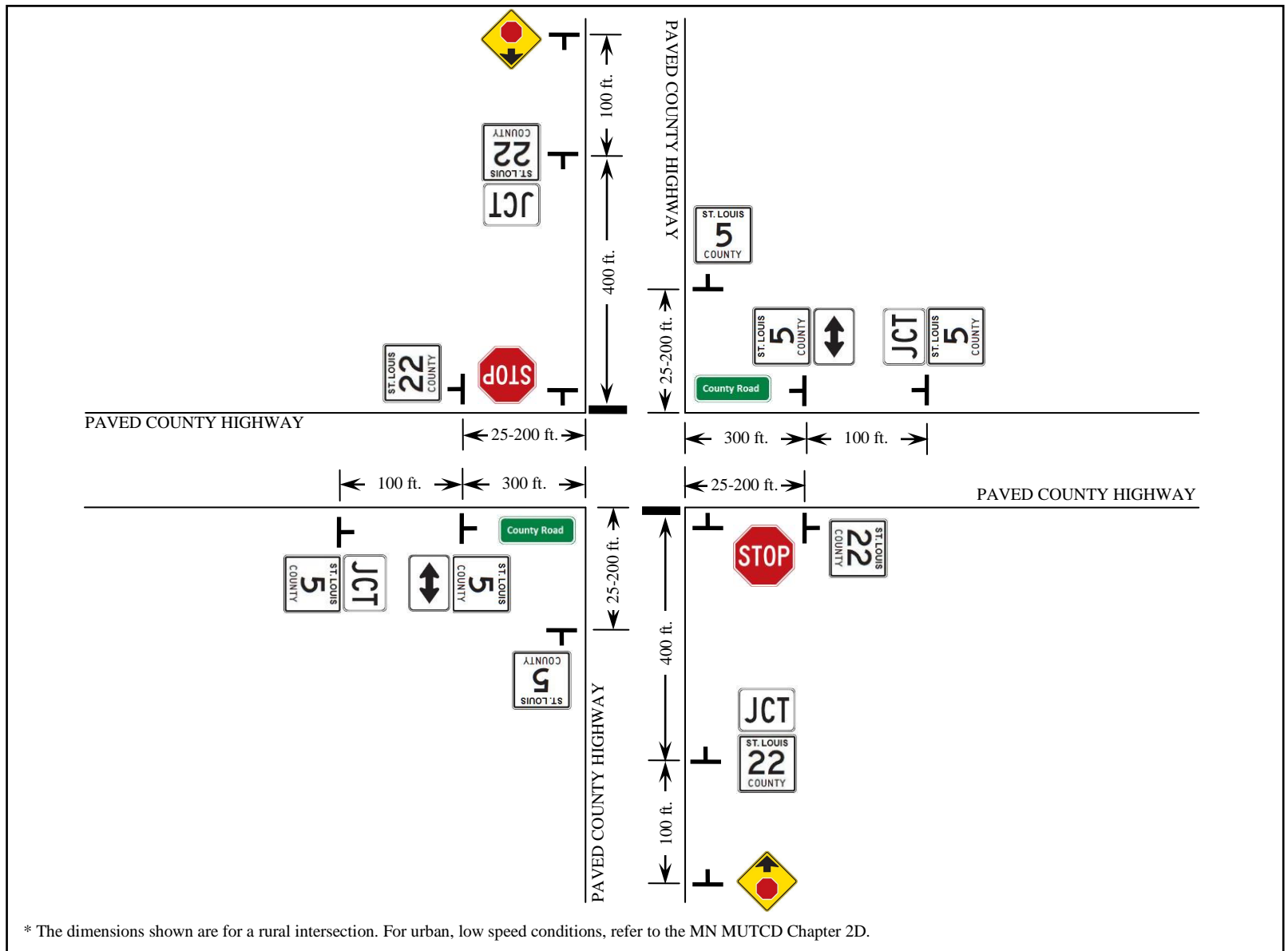
Curve Study Sheet

It is important that all information be recorded as indicated on the Ball Bank Test Worksheet. See the attached worksheet below. Trial runs should be made in each direction. The comfortable speed for the curve is the exact speed which swings the ball specified degree value off center on a slope meter or as displayed on an electronic meter. Any speed which causes the ball to move more than the specified degree value away from the zero position is considered uncomfortable to the driver and possibly unsafe at higher speeds.

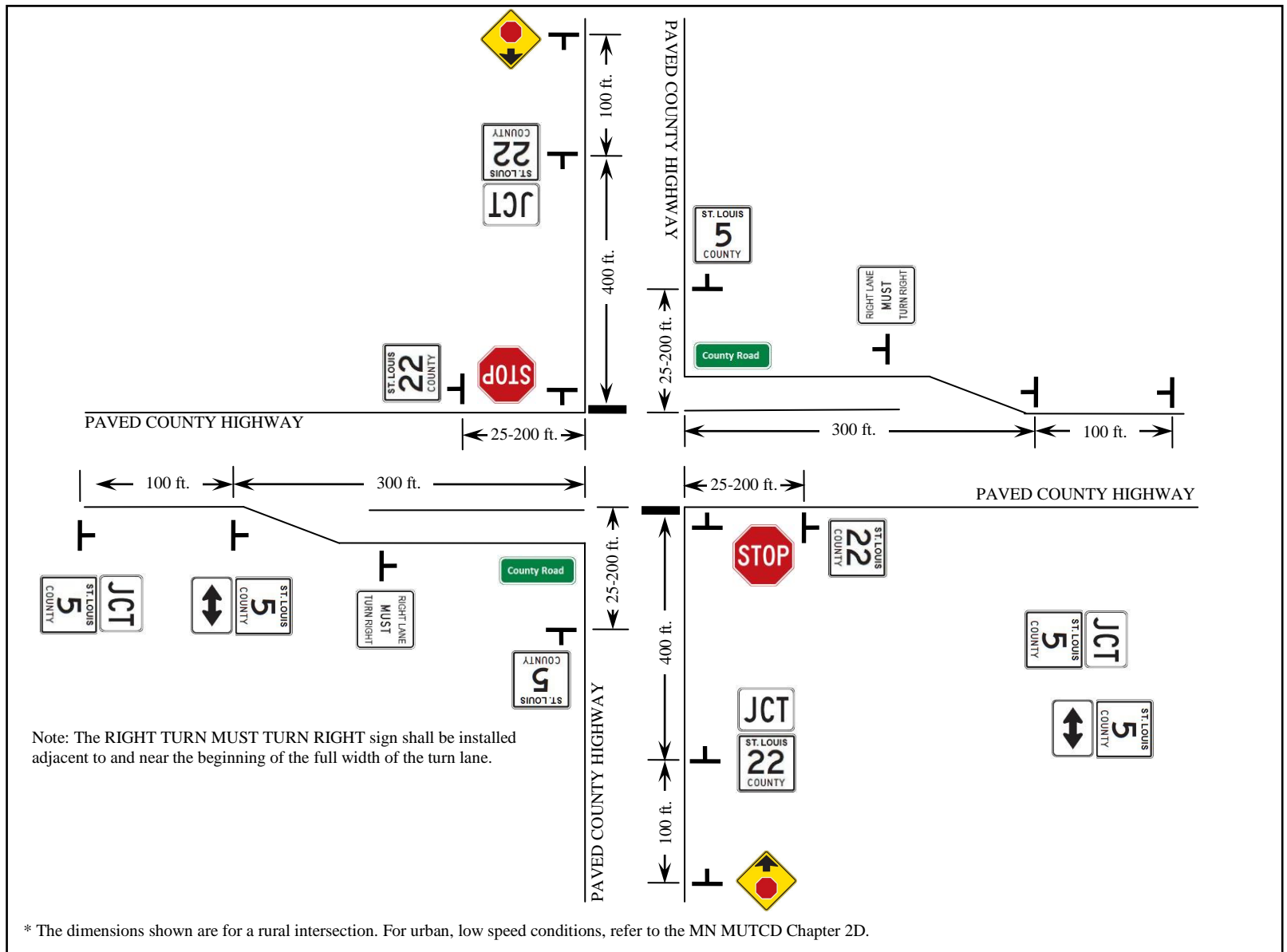
Ball Bank Test Worksheet		
Curve Location		Date:
Road Number:		Inspector:
Road Name:		
Beginning Ref. Point:		
Ending Ref. Point:		
Measurements		
Trial	Speed	Reading
1		
2		
3		
4		
5		
6		
Speed Limit:		
Advisory Speed:		
Difference:		
Curve Direction (Circle)	Right / Left	
Traditional Ball Bank Indicator Evaluation Criteria		
Speed Range	Maximum Degree Value	
≤ 20 mph	16 degrees	
25 – 30 mph	14 degrees	
≥ 35 mph	12 degrees	
Horizontal Alignment Warning Sign Selection		
Sign	Criteria	Select (X)
Turn Sign (W1-1)	≤ 30 mph	
Curve Sign (W1-2)	≥ 35 mph	

Route Sign Assemblies

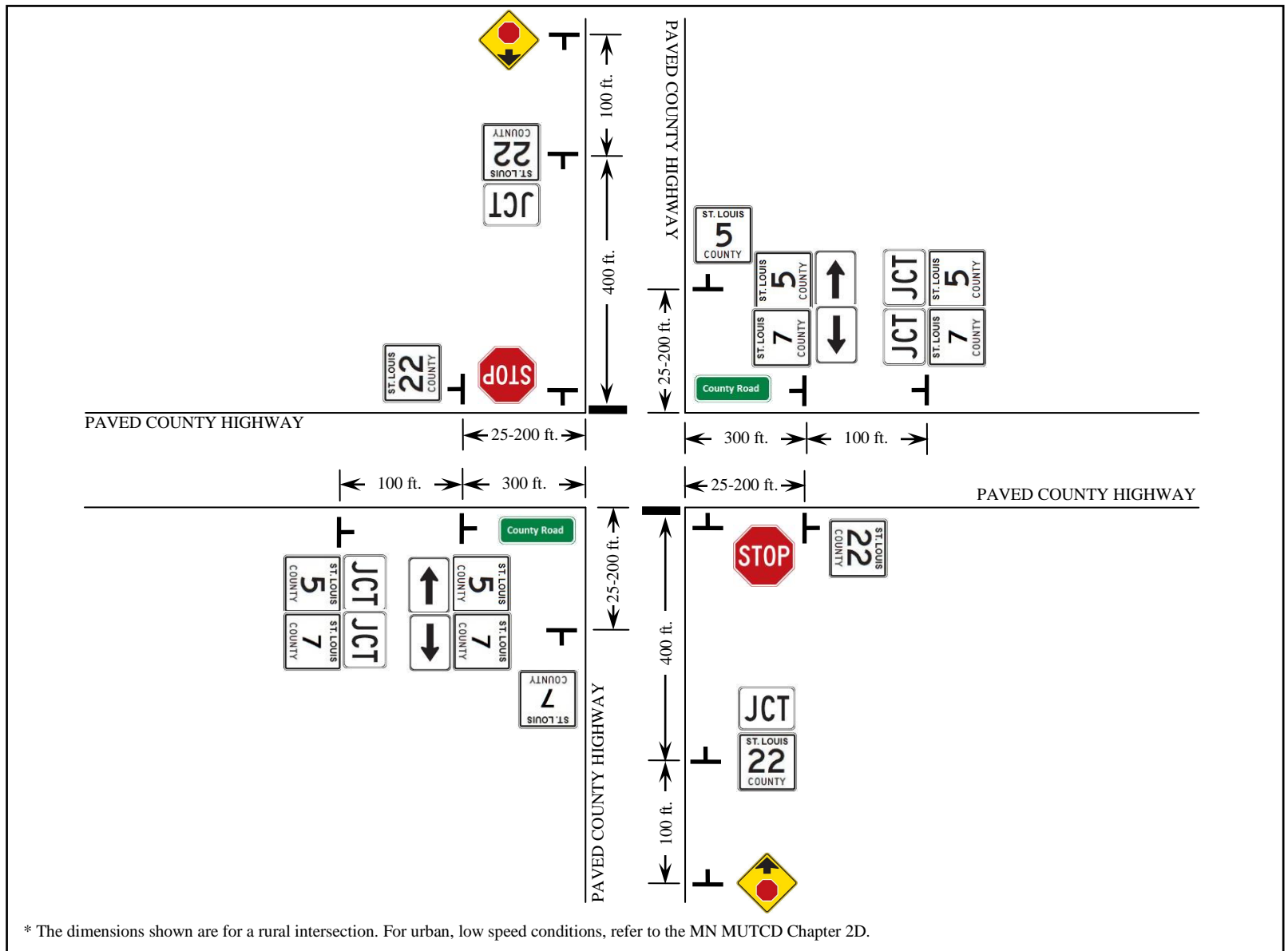
Typical Layouts



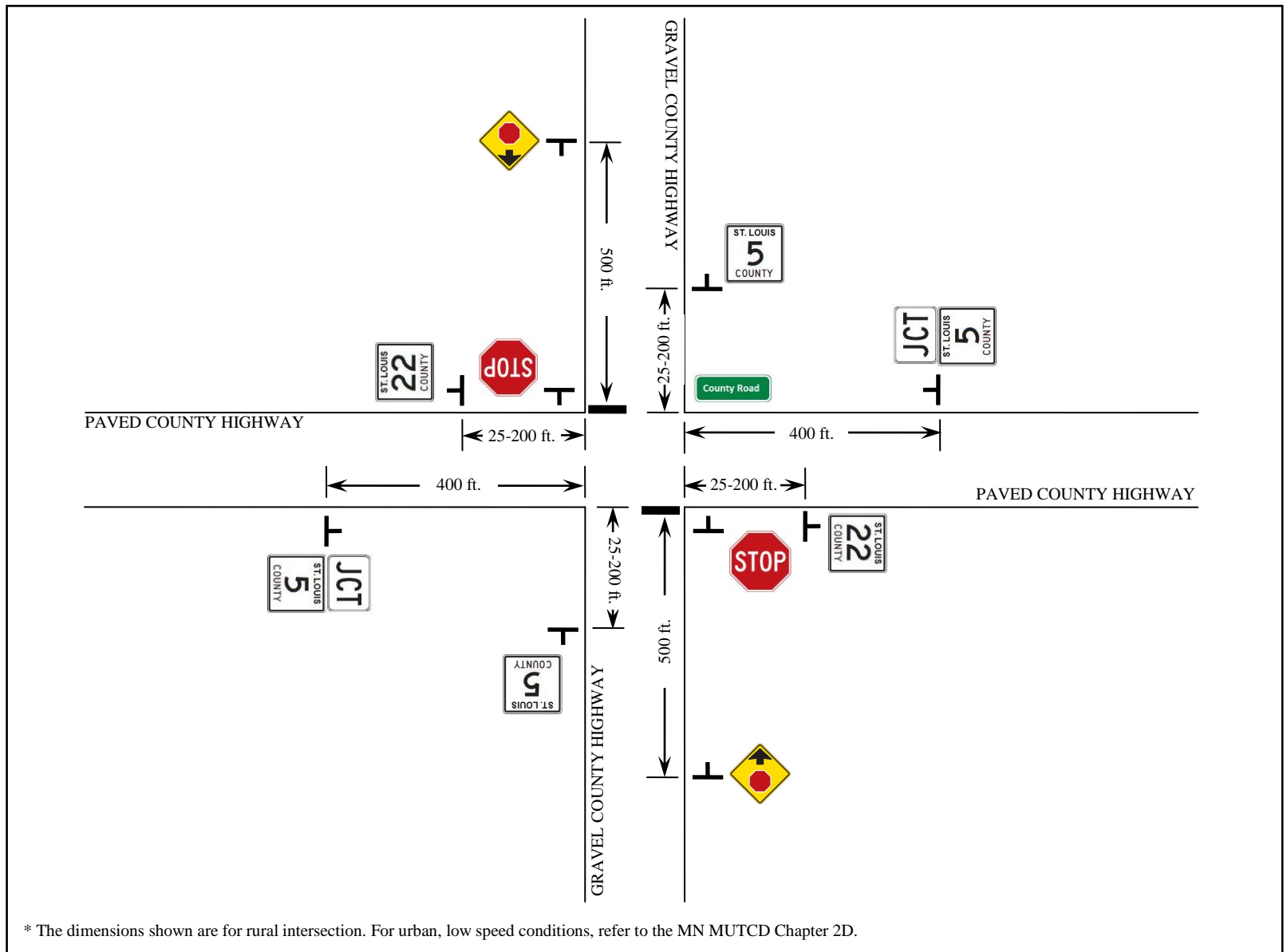
4-LEG INTERSECTION SIGNING **2-WAY STOP CONTROL** **PAVED COUNTY HIGHWAY AT PAVED COUNTY HIGHWAY**



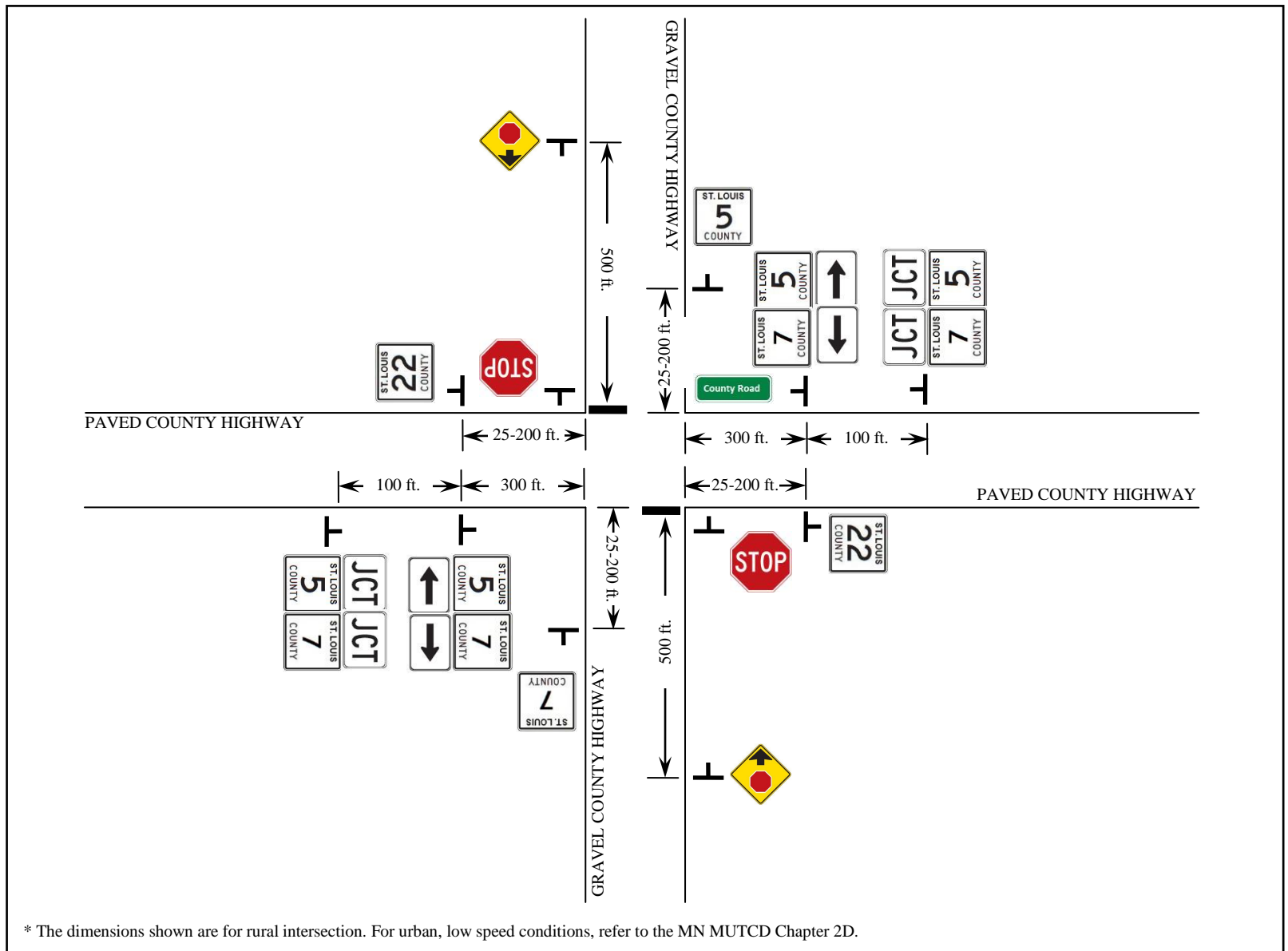
**4-LEG INTERSECTION SIGNING WITH RIGHT-TURN LANE
2-WAY STOP CONTROL
PAVED COUNTY HIGHWAY AT PAVED COUNTY HIGHWAY**



4-LEG INTERSECTION SIGNING



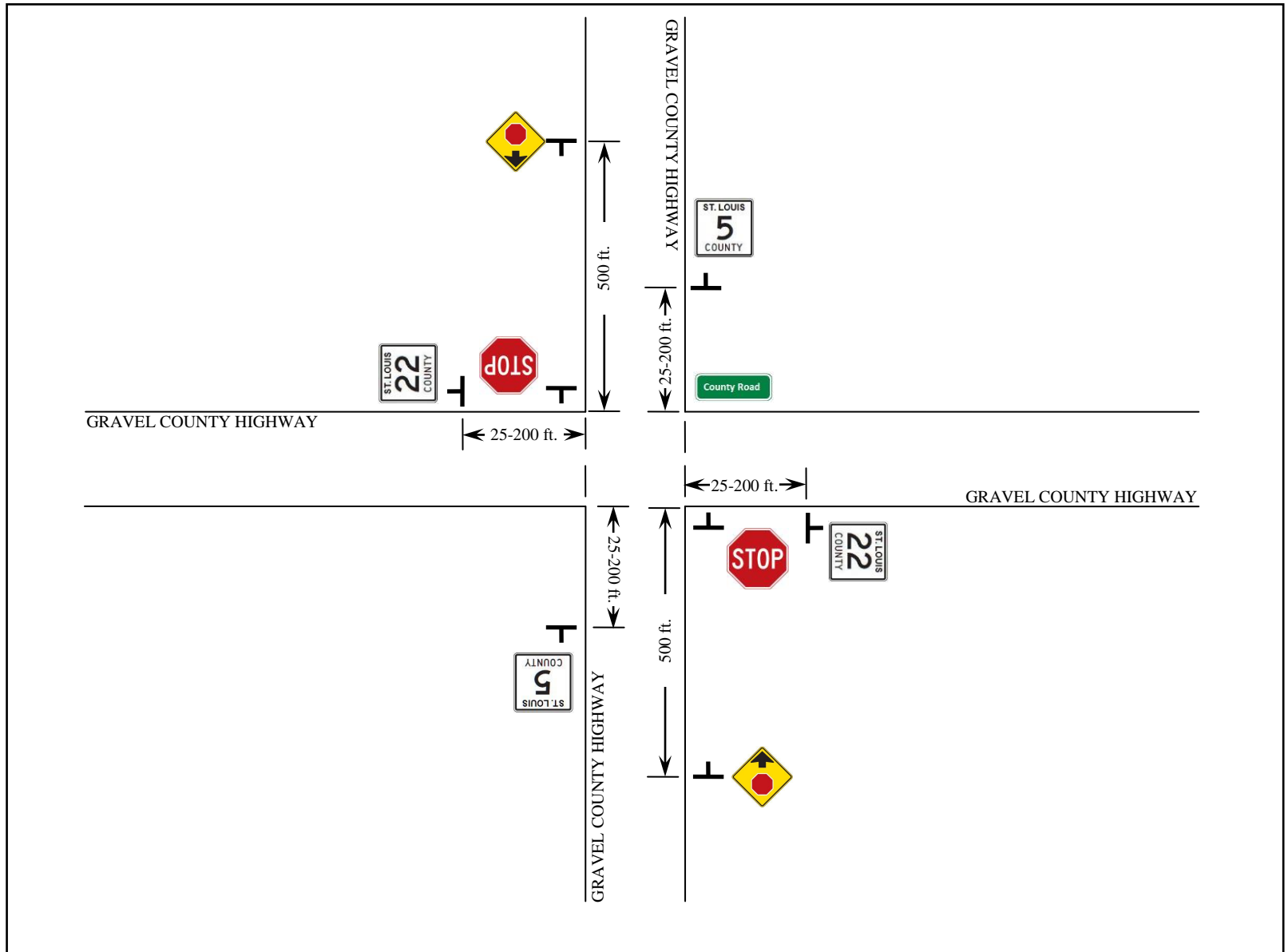
4-LEG INTERSECTION SIGNING **2-WAY STOP CONTROL** **PAVED COUNTY HIGHWAY AT GRAVEL COUNTY HIGHWAY**



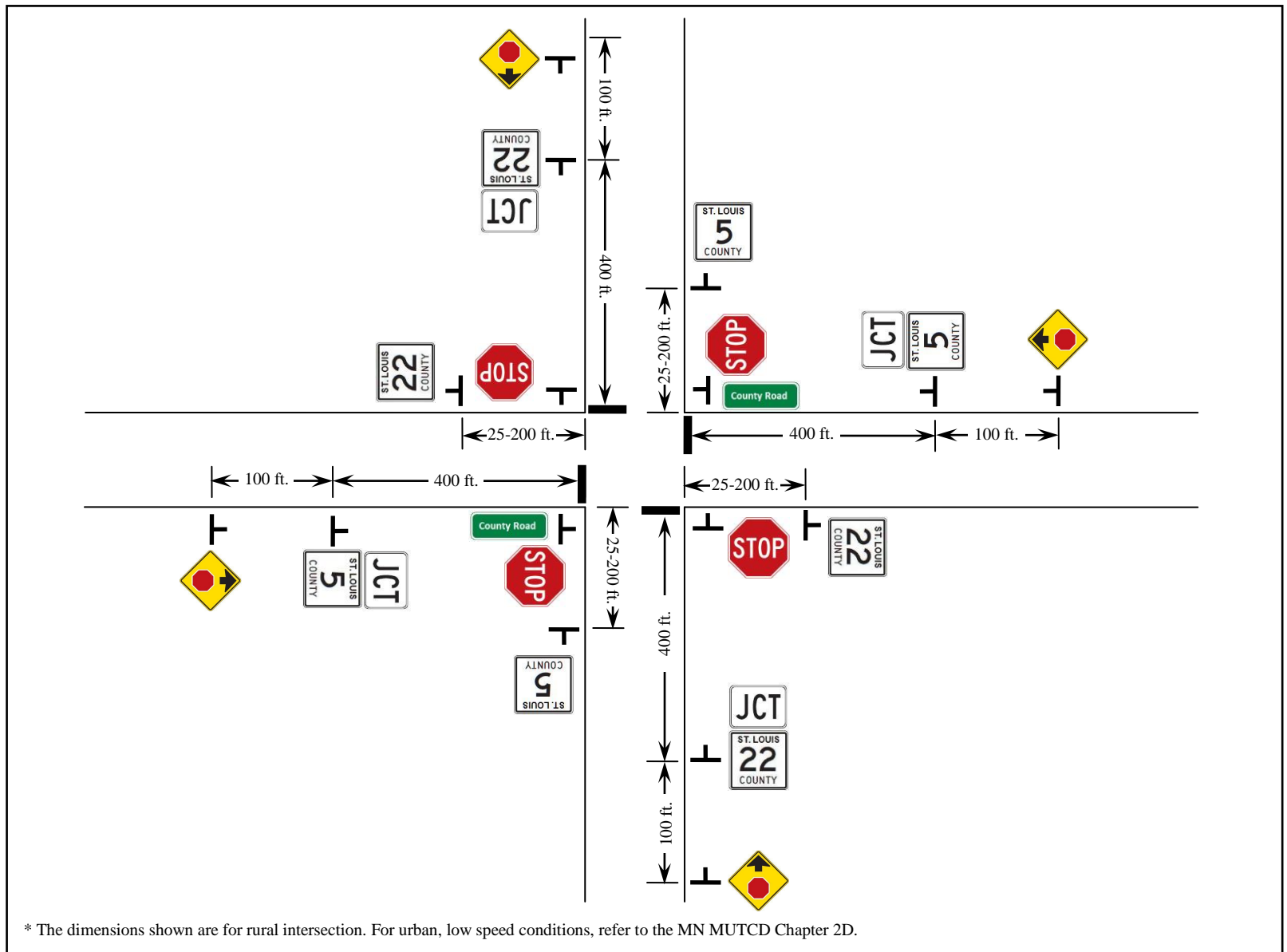
4-LEG INTERSECTION SIGNING

2-WAY STOP CONTROL WITH DIFFERENT INTERSECTING ROUTES

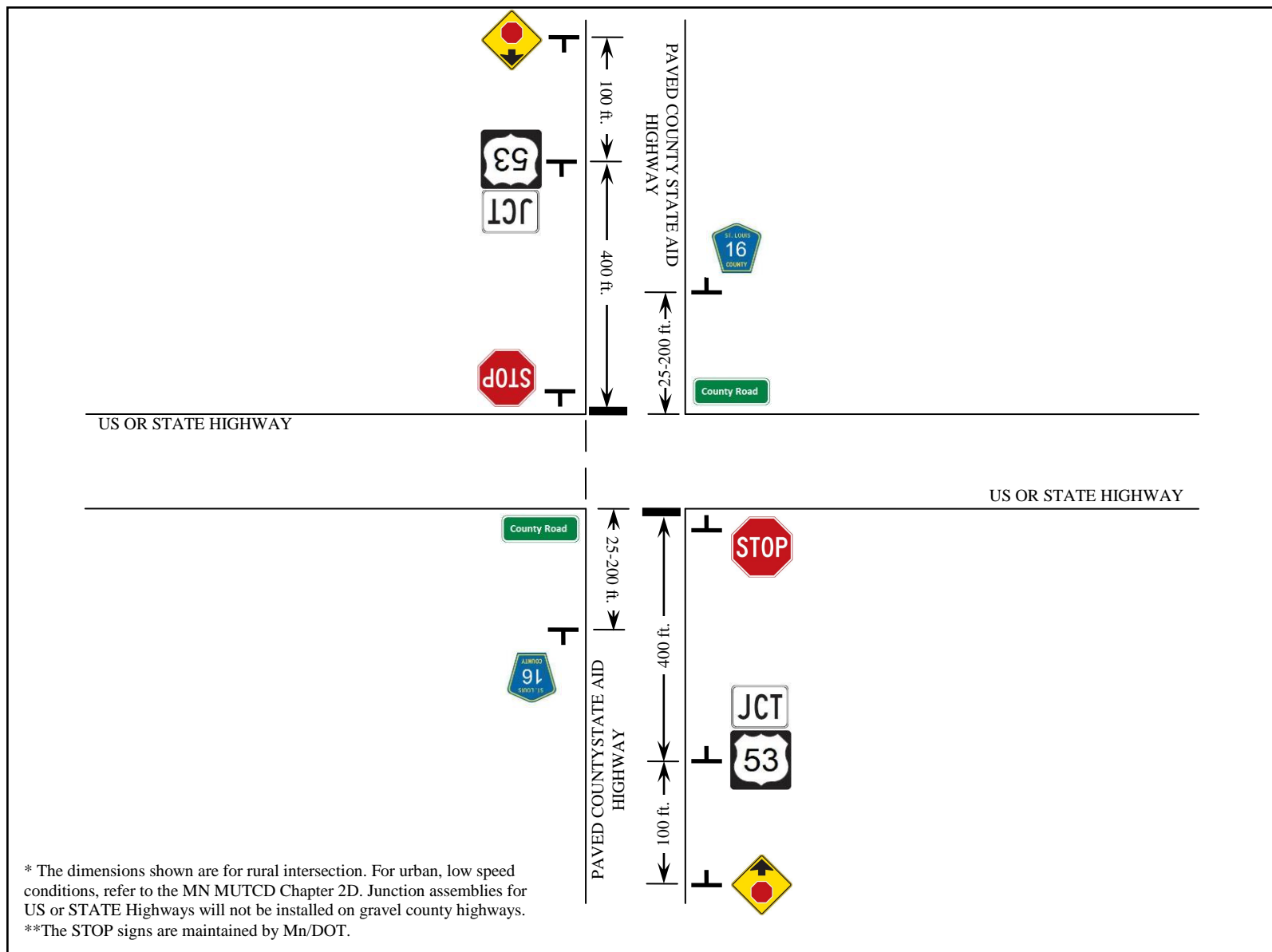
PAVED COUNTY HIGHWAY AT GRAVEL COUNTY HIGHWAY



**4-LEG INTERSECTION SIGNING
2-WAY STOP CONTROL
GRAVEL COUNTY HIGHWAY AT GRAVEL COUNTY HIGHWAY**

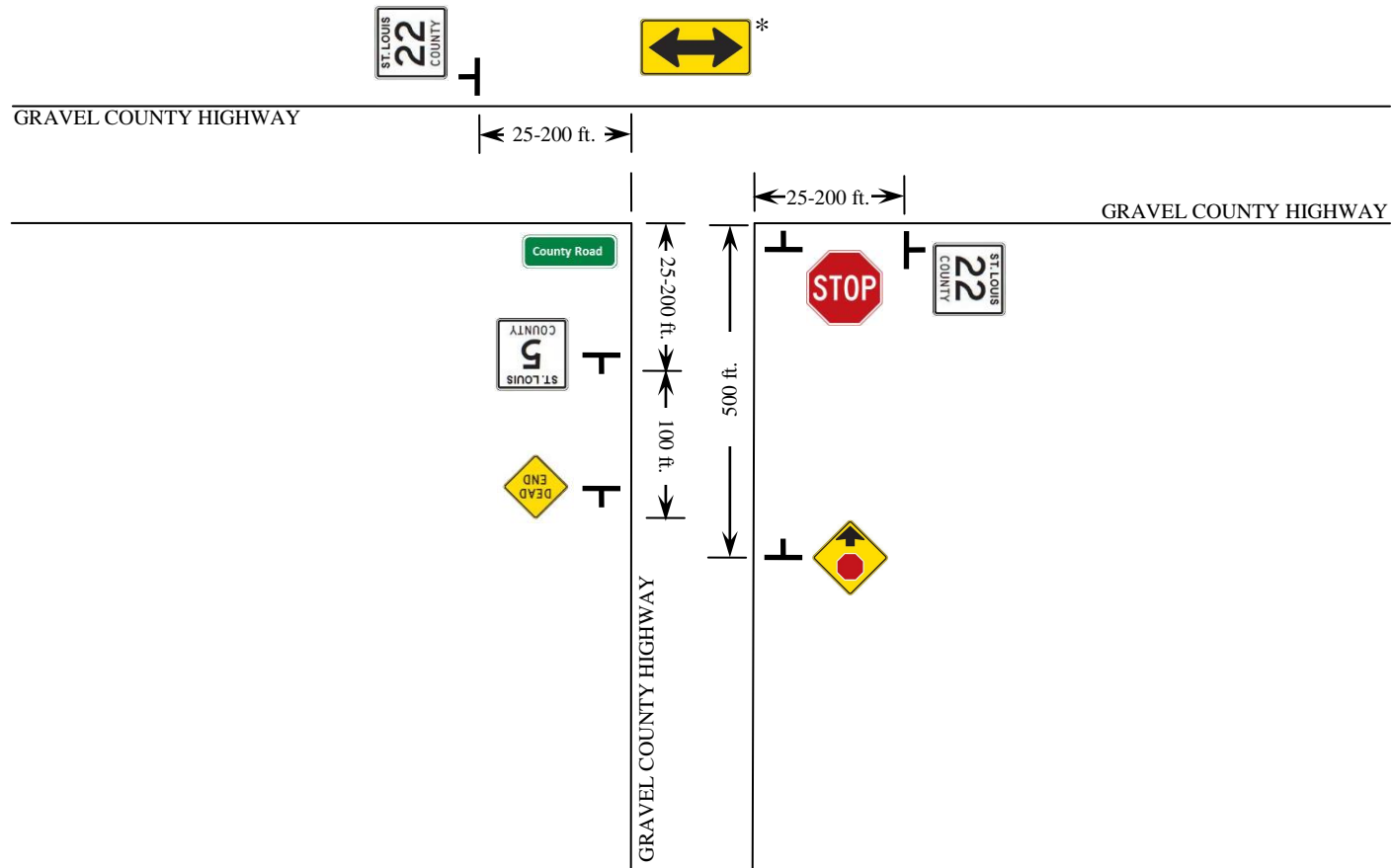


4-LEG INTERSECTION SIGNING
4-WAY STOP CONTROL
ANY SURFACE TYPE



4-LEG INTERSECTION SIGNING **2-WAY STOP CONTROL** **PAVED COUNTY STATE AID HIGHWAY AT US OR STATE HIGHWAY**

*Shall only be installed when approaching leg is paved and the minimum speed zone of the approaching leg is 45 mph. See Section 5.4.



**DEAD END T-INTERSECTION SIGNING
1-WAY STOP CONTROL
GRAVEL COUNTY HIGHWAY AT GRAVEL COUNTY HIGHWAY**

Snowmobile Crossing Warning Sign Inventory Update Letter Template



Saint Louis County

Public Works Department • Richard H. Hansen Transportation and Public Works Complex
4787 Midway Road, Duluth, MN 55811 • Phone: (218) 625-3830 • www.stlouiscountymn.gov

James T. Foldesi, P.E.
Public Works Director/
Highway Engineer

DATE

NAME

SNOWMOBILE CLUB

ADDRESS

CITY, STATE, ZIP CODE

RE: Snowmobile Crossing Warning Sign Inventory Update Request

Dear Mr./Ms. NAME,

St. Louis County installs and maintains Snowmobile Crossing Warning signs for snowmobile crossings on county highways when there is restricted stopping sight distance for approaching vehicles. In an effort to ensure that Snowmobile Crossing Warning signs currently installed reflect actual trail conditions, St. Louis County is requesting that your Snowmobile Club complete a review of the following sign locations. Please verify if your Snowmobile Club currently maintains and operates a snowmobile trail that crosses at the locations listed on the attached sheet. If St. Louis County does not receive verification from your Snowmobile Club within 30 days, all Snowmobile Crossing Warning signs listed on the attached sheet will be presumed to not reflect actual trail conditions and be permanently removed.

Please also note that if you have new snowmobile trail crossings that you believe may need a Snowmobile Crossing Warning sign, please contact me at **218-XXX-XXXX** to request a field review.

Sincerely,

NAME

Sign Supervisor
St. Louis County

Enclosure

Cc:
File

SCHOOL BUS STOP AHEAD
Sign Inventory Update Letter
Template

Saint Louis County



Public Works Department • Richard H. Hansen Transportation and Public Works Complex
4787 Midway Road, Duluth, MN 55811 • Phone: (218) 625-3830 • www.stlouiscountymn.gov

James T. Foldesi, P.E.
Public Works Director/
Highway Engineer

DATE

NAME

TRANSPORTATION DIRECTOR

SCHOOL DISTRICT

ADDRESS

CITY, STATE, ZIP CODE

RE: SCHOOL BUS STOP AHEAD Sign Inventory Update Request

Dear Mr./Ms. NAME,

St. Louis County installs and maintains SCHOOL BUS STOP AHEAD signs for school bus pick-up and drop-off locations on county highways when there is restricted stopping sight distance for approaching vehicles. In an effort to ensure that SCHOOL BUS STOP AHEAD signs currently installed reflect actual conditions, St. Louis County is requesting that your School District complete a review of the following sign locations. Please verify if your School District currently has pick-up or drop-off service at the SCHOOL BUS STOP AHEAD signs listed on the attached sheet. If St. Louis County does not receive verification from your School District within 30 days, all SCHOOL BUS STOP AHEAD signs located in your School District will be presumed to not reflect actual conditions and be permanently removed.

Please also note that if you have new pick-up or drop-off locations that you believe may need a SCHOOL BUS STOP AHEAD sign, please contact me at **218-XXX-XXXX** to request a field review.

Sincerely,

NAME

Sign Supervisor
St. Louis County

Enclosure

Cc:
File

Signing Agreement Template

ST. LOUIS COUNTY
AGREEMENT
BETWEEN
THE COUNTY OF ST. LOUIS
AND
AGENCY
TO

Install a SIGN TYPE AND DESCRIPTION on County State Aid Highway No. XX
(HIGHWAY NAME) in the TYPE OF AGENCY of AGENCY NAME, St. Louis County,
Minnesota.

THIS AGREEMENT is made and entered into by and between the County of St. Louis, a duly organized county within the State of Minnesota, hereinafter referred to as the “County”, and the **TYPE OF AGENCY (e.g. Town/City)** of **AGENCY NAME**, hereinafter referred to as the “**AGENCY (eg. Township/City)**”, an organized **TYPE OF AGENCY (e.g. Town/City)** within St. Louis County, Minnesota.

WHEREAS County State Aid Highway No. **XX** is hereinafter referred to as “**HIGHWAY NAME**”; and

WHEREAS, the County has authorized the installation of **SIGN TYPE** signs on **HIGHWAY NAME**, hereinafter referred to as “**SIGN TYPE** Signs” (MUTCD Code **CODE**) which are composed of the **DESCRIPTION OF SIGN COMPONENTS** and all associated hardware required for a complete installation; and

WHEREAS, the County has approved a plan to install **SIGN TYPE** Signs; and

WHEREAS, the County and the **AGENCY** shall participate in the cost, maintenance and operation of the **SIGN TYPE** Signs, as hereinafter set forth.

NOW THEREFORE, IT IS MUTUALLY AGREED AND UNDERSTOOD AS FOLLOWS:

1. The **AGENCY**, at its cost and expense, shall prepare the Plan to furnish the **SIGN TYPE** Signs.
2. The County shall approve the Plan and the **SIGN TYPE** Signs, and all required hardware shall conform to the specifications and requirements of the County.
3. The **AGENCY** shall pay one-hundred percent (100%) of the cost of materials and any associated costs incurred by the **SIGN TYPE** Sign vendor or manufacturer that is required to furnish fully functional **SIGN TYPE** Signs in accordance with

- the approved Plan, but not limited to, the cost of the **SIGN TYPE** Signs and all required hardware for a complete installation.
4. The County shall install the **SIGN TYPE** Signs on County furnished sign posts in accordance with the current versions of the Minnesota Department of Transportation “Standard Specifications for Construction”, the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD), and the American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide at its cost and expense.
 5. If required, the **AGENCY** shall provide an adequate electrical power supply to the **SIGN TYPE** Signs, and shall provide the necessary electrical power for the operation of the **SIGN TYPE** Signs at its cost and expense. If the **SIGN TYPE** Sign is solar powered, the **AGENCY** shall be responsible to verify the sign battery is operational and clean the solar panel.
 6. The **SIGN TYPE** Sign reflective sheeting shall meet the minimum standards of the MnMUTCD and be approved by the St. Louis County Traffic Engineer. The **SIGN TYPE** Sign shall be replaced when the reflective sheeting life exceeds the sheeting warranty life or if the reflective sheeting does not meet the minimum retroreflectivity requirements contained in the MnMUTCD.
 7. Should the County or the **AGENCY** determine that any of the **SIGN TYPE** Signs are in need of repair or replacement, it is understood and agreed that the **AGENCY** shall pay one-hundred (100%) of the cost of materials and any associated costs incurred by the **SIGN TYPE** Sign vendor or manufacturer required to repair or replace said damaged or deteriorated **SIGN TYPE** Signs

including, but not limited to, the cost of the SIGN TYPE Signs and all required hardware for a complete installation.

8. The County shall maintain the sign posts, and install SIGN TYPE Sign replacement components furnished by the AGENCY, at its cost and expense. If specified by the County, the SIGN TYPE Signs manufacturer or vendor representative may be required to complete a repair to the SIGN TYPE Signs.
9. Each Party designates an Authorized Representative for the purpose of administering this Agreement. A Party's authorized representative has the authority to give and receive notices, and to make any other decision required or permitted by this Agreement.

- a. For the County:

PERSON NAME

ENGINEER

ADDRESS

CITY, MN, ZIP CODE

(218) XXX-XXXX

e-mail: EMAIL@stlouiscountymn.gov

- b. For the AGENCY:

PERSON NAME

NAME OF AGENCY

ADDRESS

CITY, MN, ZIP CODE

(218) XXX-XXXX

10. This Agreement represents the full and complete understanding of the Parties and both Parties represent that neither Party is relying on any prior agreements or

understandings, whether oral or written. This Agreement shall be modified, if at all, with the signed, written consent of both Parties.

11. This Agreement may be terminated by any party upon thirty (30) days notice in writing to the other Party's authorized representative. Upon termination of this Agreement, the **SIGN TYPE** Signs shall be immediately removed by County forces and returned to the **AGENCY**.
12. Each of the Parties hereto hereby agrees that it shall defend, indemnify and save harmless the other Party and all of their employees and agents from any and all claims, demands actions or causes of action of whatever nature or character arising out of or by reason of their negligent or intentional acts or omissions in the execution or performance of the work provided herein, including, but not limited to, the installation, maintenance or repair of any of the **SIGN TYPE** Signs on **HIGHWAY NAME**.
13. Any and all employees of the County, while engaged in the performance of any work or service which the County is specifically required to perform under this Agreement, shall be considered employees of the County, and not the **AGENCY**, and that any and all claims that may or might arise under the Workers Compensation Act of the State of Minnesota on behalf of said employees while so engaged and any claims made by any third parties as a consequence of any act of said employees, shall be the sole obligation of the County.
14. Any and all employees of the **AGENCY**, while engaged in the performance of any work or service which the **AGENCY** is specifically required to perform under this Agreement, shall be considered employees of the **AGENCY**, and not the

County, and that any and all claims that may or might arise under the Workers Compensation Act of the State of Minnesota on behalf of said employees while so engaged and any claims made by any third parties as a consequence of any act of said employees, shall be the sole obligation of the AGENCY.

COUNTY OF ST. LOUIS

RECOMMENDED FOR APPROVAL:

By: _____
Chair of the County Board

By: _____
Public Works Director/Highway Engineer

Date: _____

Date: _____

APPROVED AS TO FORM AND EXECUTION:

By: _____
County Auditor

By: _____
County Attorney

Date: _____

Date: _____

TYPE OF AGENCY OF AGENCY NAME

COUNTERSIGNED:

By: _____
Chair

By: _____
Clerk

Date: _____

Date: _____

Conversion of Multi-Way to Two-Way Stop Control

DISCLAIMER:

The following policy was adopted from the report titled “Removal of Multiway Stop Signs with Minimum Hazard – Volume II Recommended Procedures” (Ligon et. al., 1984).

1. Engineering Study

An engineering study should be performed by the Traffic Engineer for the intersection identified for conversion of stop control. The engineering study may include a turning movement count, crash analysis and consideration of other factors such as driver expectancy or political decisions. The Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) provides criteria in Section 2B.7 that should be considered to justify the installation of multi-way stop control. Based upon the results of the engineering study, the Traffic Engineer may convert the multi-way control to a two-way or other form of control.

2. Notifying the Public and Other Agencies

The Traffic Engineer should provide notification to the public prior to the conversion of multi-way stop to a two-way stop. The following media outlets may be appropriate:

- Newspapers
- Radio
- Television
- Utility Bills
- Flyers
- Individual Letters
- Community Newsletters

If the intersection(s) includes an approach that is operated and/or maintained by another jurisdiction, the Traffic Engineer should submit a letter to the other agency summarizing the change in traffic control.

The Traffic Engineer should also install notice signs on the sign post for the STOP signs at the intersection. The notice signs should be installed at least 30 days prior to the conversion date. Figure 1 displays the recommended language for the notice signs on the STOP signs that **WILL** be removed.



Figure 1

Figure 2 displays the recommended language for the notice signs on the STOP signs that **WILL NOT** be removed.



Figure 2

The notice sign specifications should be as follows:

- Overall Dimensions: 24" x 18"
- Color: Black lettering on white background
- Sheeting: Reflective sheeting

3. Preparation for Conversion

Before the conversion, the Traffic Engineer should review if Stop Ahead sign(s) (W3-1) and/or pavement markings should be installed and if obsolete signs and pavement markings should be removed.

4. Day of Conversion

The conversion process should follow the following steps. The steps should be completed prior to the beginning of the A.M. peak period.

1. Replace the notice sign in Figure 2 with the CROSS TRAFFIC DOES NOT STOP sign (R1-X2).
2. Remove the obsolete STOP sign(s), post(s) and notice sign(s).
3. Remove any obsolete Stop Ahead signs (W3-1) or pavement markings
4. Replace the remaining STOP signs (R1-1) with larger STOP signs for additional emphasis

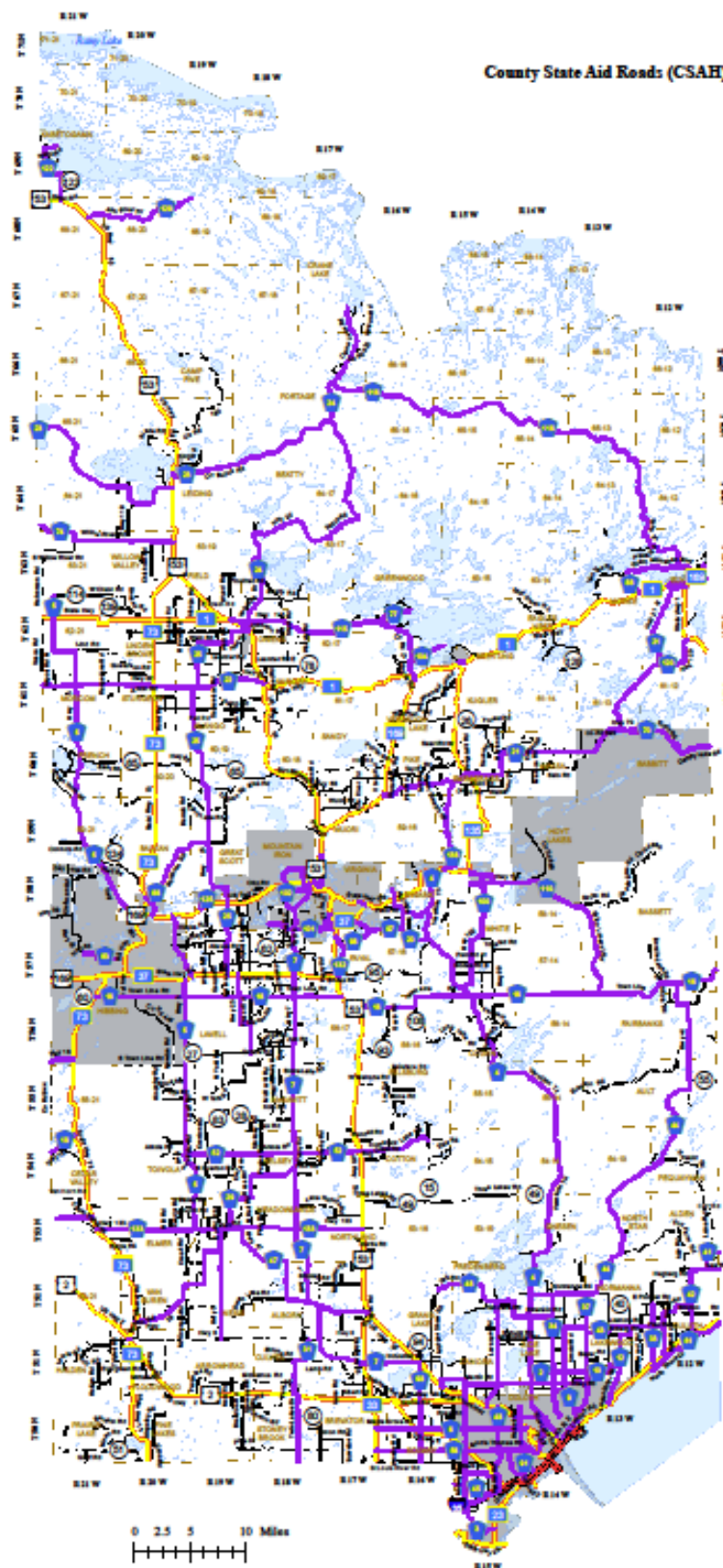
5. After the Conversion

After the conversion, the Traffic Engineer should monitor the intersection(s) for any safety deficiencies. This may include observation studies, speed studies, traffic counts, crash analysis, and traffic conflict analysis.

After 90 days from the conversion day, the Traffic Engineer should review if the oversize STOP signs should be replaced with standard size STOP signs.

Special Designated Routes Map

County State Aid Roads (CSAH) of Special Significance



References And Definitions

References

The following references were used to draft this sign policy:

Minnesota Manual on Uniform Traffic Control Devices. 2013. Minnesota Department of Transportation.

Traffic Engineering Manual. 2009. Minnesota Department of Transportation.

Minnesota Statutes, Laws and Rules. 2013. Minnesota Office of the Revisor of Statutes.

A Policy on Geometric Design of Highways, and Streets (Green Book). 2011. American Association of State Highway and Transportation Officials.

Definitions

The following definitions are referenced in this sign policy:

The 2013 Minnesota Statutes 169.14, Subd. 2, Sec. 3 defines the speed limit not specified for rural two-lane highways as 55 mph.

The 2013 Minnesota Statutes Section 169.81 defines the maximum vehicle height as 13 feet, 6 inches.