CHAPTER 8820

DEPARTMENT OF TRANSPORTATION

DIVISION OF STATE AID FOR LOCAL TRANSPORTATION

STATE–AID OPERATIONS

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8820.0100 DEFINITIONS.

[For text of subps 1 and 1a, see M R]

Subp 2 **Advance.** "Advance" means the authorized expenditure of future funds from any funds available for use on an approved state–aid project Advanced funds will be repaid to the appropriate account from subsequent apportionments

[For text of subps 2a to 2c, see M.R]

Subp 2d [Renumbered subp 2f]

Subp. 2e. **Bridge rehabilitation.** "Bridge rehabilitation" means (1) the partial reconstruction of an existing bridge to meet current design criteria and construction standards or (2) a project that fixes the deterioration in the structure and also improves the geometrics or load–carrying capacity to the minimum criteria set forth in this chapter, but may not provide improvement to meet new design standards.

[For text of subps 3 to 13a, see M R]

Subp. 13b **Reconditioning.** "Reconditioning" includes replacement or rehabilitation of the pavement structure to extend the life of the roadway and effectively address critical safety and operations needs through minor improvements to the existing facility. Reconditioning projects generally utilize the existing horizontal and vertical alignment, may entail minor widening or geometric improvement, and normally require little or no additional right–of–way. Replacement or rehabilitation of the pavement structure does not include significant subgrade correction. Reconditioning may include changes in vertical or horizontal alignment involving no more than 20 percent of the length of the project. Work does not normally extend beyond the existing ditch bottom

[For text of subps 14 to 15, see M.R.]

Subp. 15b [Renumbered subp 15d]

Subp 15c. **Suburban.** "Suburban" means an area both in a subdivided area or an area in a detailed development process, and where physical restraints are present that prevent reasonable application of the rural design standards

[For text of subps 16 to 22, see M R]

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.0800 ROUTE DESIGNATIONS.

[For text of subps 1 and 1a, see M R]

Subp 2. **Turnback designations.** With regard to turnback designations, prior to release of a trunk highway to the jurisdiction of a county or urban municipality, the commissioner shall notify the board of county commissioners or the governing body of the urban municipality through its county highway or city engineer, which portions of the turnback are eligible for designation as part of its state-aid system and which portions are eligible for restoration or reconstruction and improvement with turnback funds. Upon a request for the designation of eligible portions of the turnback from the board of county commissioners or the governing body of the urban municipality, the commissioner shall issue the official order for designation and notify the county or municipal screening board of this action.

Subp 3 **Payback on revoked state-aid routes.** If a local unit of government revokes a state-aid route for which state-aid construction money has been spent, the district state-aid engineer shall determine the remaining life of the project and compute the value of the items that were financed with state-aid money This computed value must be subtracted from the next state-aid contract let by the local unit of government. For this determination, (1) the life of a construction and reconstruction project is 25 years, (2) the life of a bridge project is 35 years, and (3) the life of a surfacing or reconditioning project is ten years Payback is not required if the state-aid construction was a special resurfacing project.

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.1400 MAINTENANCE, CONSTRUCTION, AND TURNBACK ACCOUNTS; STATE-AID PAYMENTS.

[For text of subps 1 to 4a, see M R]

Subp 4b. **Town bridge account.** The town bridge account portion of the annual allocation must be credited to each respective county and retained by the commissioner for payment on approved projects.

Subp 4c **Town road account.** The town road account portion of the annual allocation must be set aside and credited to each respective county

[For text of subp 4d, see M R.]

Subp 5 **Payment schedule.** At the earliest practical date, after the allotments have been determined, the commissioner shall release the following amounts to the respective counties and urban municipalities

A 100 percent of the town road account, and

B. maintenance funds

(1) 50 percent of the available maintenance allotment, after reduction for bond interest if any, from the regular account of each county;

(2) 50 percent of the maintenance allotment from the municipal account of each county, except that counties desiring to receive less than 50 percent must submit a request prior to January 1, and

(3) 50 percent of the available maintenance allotment, after reduction for bond interest if any, to each urban municipality.

Subp. 6 **Additional advances.** On or about July 1 of each year, the commissioner shall release an additional advance from the respective maintenance accounts listed below:

A 40 percent of the available maintenance allotment, after reduction for bond interest if any, from the regular account of each county;

B 40 percent of the maintenance allotment from the municipal account of each county if requested prior to January 1, and

C the entire remaining available amount, after reduction for bond interest if any, to those urban municipalities receiving the minimum maintenance allocation specified in subpart 3.

[For text of subps 7 and 8, see M R]

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.1500 CONSTRUCTION FUNDS.

Subp 2 **State–aid contracts.** Upon receipt of an abstract of bids and a certification as to the execution of a contract that includes a requirement for bond, the commissioner shall promptly release from the funds available to the county or urban municipality up to 95 percent of the state–aid portion of the contract Upon further receipt of a signed supplemental agreement for a major addition to the contract, or appraised values for additional right–of–way costs, the commissioner shall promptly release from the funds available to the county or urban municipality up to 95 percent of the state–aid portion of the supplemental agreement or right–of–way appraised value. The commissioner shall keep the remaining percentage of the state–aid share of the contract, except of approved right–of–way claims which will be paid in full upon proof of acquisition and availability of funds, until the project is 95 percent or more completed as substantiated and requested by the county or city engineer.

Upon receipt of the final project acceptance and final cost determination by the county or city engineer, and upon concurrence of project acceptance by the district state aid engineer, the commissioner shall promptly release from the funds available any remaining money due to the state–aid portion of the contract.

[For text of subps 3 to 6, see M R]

Subp. 7 **Right–of–way.** State–aid payments for right–of–way costs on approved projects must be limited to 95 percent of the approved claim until the acquisition of right–of–way parcels required are actually completed and the final costs established Each parcel contained in an approved right–of–way plan must be considered as separate entities in regard to payment eligibility

Subp 8 **Advance from county funds.** When the commissioner approves a request from the county board for constructing an approved county state–aid project requiring county state–aid highway funds in excess of the county's available balance, the county may make advances from any state–aid or local funds available to the county for the construction of that project The request for an advance must be in the form of a resolution Advances repaid from the turnback account must be processed according to part 8820 2900, subpart 4 The commissioner shall repay the advanced funds out of subsequent county construction account apportionments or turnback account apportionments in accordance with the terms and conditions specified in the approved request

Subp 9 **Advance from county state–aid highway fund.** When the commissioner approves a request from the county board for constructing an approved county state–aid project requiring county state–aid highway funds in excess of the county's available balance, the county may request to advance funds from the county state–aid highway fund The request for an advance must be in the form of a resolution The commissioner shall restore the county state–aid fund out of subsequent county construction account apportionments or turnback account apportionments in accordance with the terms and conditions specified in the approved request.

The county screening board shall recommend to the commissioner procedures for prioritizing requests for advance funding and a minimum balance for the county state–aid highway account, below which no further advances may be granted

Subp 9a. **Advance from town bridge account.** When the commissioner approves a request from the governing body of a county for the replacement or reconstruction of a town bridge requiring funds in excess of the county's available town bridge account, and these excess costs are initially paid for from other sources, then the commissioner shall reimburse those locally financed expenditures out of subsequent apportionments to the town bridge account in accordance with the terms and conditions specified in the approved request The total of these advances to be reimbursed from the town bridge account must not exceed the county's last town bridge apportionment. Advances must be repaid in accordance with the terms of the approved request from money accruing to the respective town bridge accounts The request for advance encumbrance must be submitted with the Report of State Aid Contract

[For text of subps 10 and 10b, see M R.]

Subp 11 **County or municipal bond account.** With regard to a county or municipal bond account, a county or urban municipality that resolves to issue bonds payable from the appropriate state–aid fund in accordance with law for the purpose of establishing, locating, relocating, constructing, reconstructing, or improving state–aid streets or highways and, for a county only, constructing buildings and other facilities for maintaining a county state–aid highway under its jurisdiction, shall certify to the commissioner within 30 days following issuance of the bond, the amount of the total obligation and the amount of principal and interest that will be required annually to liquidate the bonded debt The commissioner shall set up a bond account, itemizing the total amount of principal and interest involved and shall annually certify to the commissioner of finance the amount needed from the appropriate state–aid construction fund to pay the principal due on the obligation, and the amount needed from the appropriate state–aid maintenance fund to pay the current interest The total maximum annual repayment of funds loaned from the transportation revolving loan fund and state–aid bond funds that may be paid with state–aid funds is limited to 50 percent of the amount of the county's or urban municipality's last annual construction allotment preceding the bond issue Proceeds from bond sales are to be expended only on approved state–aid projects and for items determined to be eligible for state–aid reimbursement A county or urban municipality that intends to expend bond funds on a specific state–aid project shall notify the commissioner of this intent without delay upon awarding a contract or executing a force account agreement Upon completion of each such project, a statement of final construction costs must be furnished to the commissioner by the county or the urban municipality. Counties may only fund the portion of maintenance buildings and structures related to state–aid transportation maintenance operations If a building or structure or any portion of it is used for other than state–aid maintenance purposes during its useful life, the commissioner may determine an amount the county shall pay back to the county's maintenance account

Subp 11a **Transportation revolving loan fund.** The commissioner shall set up a payment schedule that matches the transportation revolving loan fund repayment schedule, itemizing the total amount of principal and interest The amount needed from the appropriate state–aid construction fund to pay the principal due on the loan and the amount needed from the appropriate state–aid maintenance fund to pay the current interest must be paid to the county or urban municipality.

The total maximum annual repayment of funds loaned from the transportation revolving loan fund and state–aid bond funds subject to reimbursement from state–aid funds due in any calendar year is limited to 50 percent of the amount of the county's or urban municipality's last annual construction allotment at the time of the loan

The loaned funds subject to reimbursement from state–aid funds are to be expended only on approved state–aid projects and for items determined to be eligible for state–aid reimbursement

A county or urban municipality that intends to borrow funds for a specific state–aid project shall notify the commissioner of this intent without delay upon awarding a contract or executing a force account agreement and submittal of a Report of State Aid Contract

Upon completion of each state–aid project, a statement of final construction costs must be furnished to the commissioner by the county or the urban municipality in the form of a Report of Final Estimate

[For text of subp 12, see M R]

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.1800 TRANSFERS FOR HARDSHIP CONDITIONS OR OTHER LOCAL USE.

[For text of subpart 1, see M R]

Subp 2. **Other local use.** When the county board or governing body of an urban municipality desires to use a part of its state–aid allocation on local roads or streets not on an approved state–aid system, it shall certify to the commissioner that its state–aid routes are improved to state–aid standards or are in an adequate condition that does not have needs other

than additional surfacing or shouldering needs identified in its respective state–aid needs report. That portion of the county or city apportionment attributable to needs must not be used on the local system.

A construction project for a local road or street not on an approved state–aid system and not designed to state–aid standards must not be given final approval by the State Aid for Local Transportation Division unless the plan is accompanied by a resolution from the respective county board or urban municipality that indemnifies, saves, and holds harmless the state of Minnesota and its agents and employees from claims, demands, actions, or causes of action arising out of or by reason of a matter related to constructing the local road or street as designed The resolution must be approved by the respective county board or urban municipality and agree to defend at the sole cost of the county or urban municipality any claim arising as a result of constructing the local road or street

Payment for the project must be made in accordance with part 8820 1500, subparts 1 to 5

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.2300 TURNBACK, TOWN BRIDGE, AND TOWN ROAD ACCOUNTS.

Subpart 1 **County and municipal turnback accounts.** A percentage of the net highway user tax distribution fund is set aside in accordance with law and apportioned to separate accounts respectively identified as the county turnback account and the municipal turnback account

Subp 1a. **Town bridge account.** Further, a percentage of the net highway user tax distribution fund is set aside and must be used for replacement or reconstruction of town bridges pursuant to the law. This latter account is known as the town bridge account

Subp 1b **Town road account.** Further, a percentage of the net highway user tax distribution fund must be apportioned to the counties for the construction, reconstruction, and maintenance of town roads This account is known as the town road account.

[For text of subps 2 to 6, see M R]

Subp. 6a. **In lieu payment.** In lieu of contracting work or force account work, the commissioner, with concurrence of the receiving agency, may enter into an agreement to pay a lump sum payment from the turnback account to the receiving agency's road and bridge account equal to the net value of eligible turnback costs for a project to be constructed within 20 years of the release date

[For text of subp 7, see M R]

Statutory Authority: *MS s 162 02; 162 09*

History: *23 SR 1455*

8820.2500 MINIMUM STATE–AID STANDARDS.

[For text of subpart 1, see M R]

Subp 1a **Geometric design standards.** The standards in part 8820 9920 apply to rural design undivided roadways, new or reconstruction

The standards in part 8820.9936 apply to urban design roadways, new or reconstruction.

The requirements in parts 8820 9926 and 8820 9946 apply to reconditioning projects

The vertical clearances for underpasses in part 8820 9956 apply

The standards in parts 8820 9981 and 8820 9986 apply to designated forest highways within national forests and state park access roads within state parks and to designated natural preservation routes.

The standards in part 8820.9995 apply to bicycle paths.

[For text of subps 2 and 3, see M.R]

Subp 4. **Parking provisions.** The criteria in part 8820.9961 must be used in establishing diagonal parking. The criteria in parts 8820.9936 and 8820 9946 must be used where parallel parking is used.

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.2800 CONSTRUCTION REQUIREMENTS.

[For text of subpart 1, see M R]

Subp 2 **Plans and estimates.** Plans and estimates for each state–aid construction project must be submitted for review Each plan must show the subsequent stages required for the completion of the improvement, portions of which may be covered by later contracts or agreements Only those projects for which final plans are approved by the state–aid engineer before opening bids or approving a force account agreement are eligible for state–aid construction funds, except as provided in subpart 8

[For text of subps 3 to 8, see M R]

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.2900 TURNBACK AND TOWN BRIDGE ACCOUNT EXPENDITURES.

Subpart 1. **Eligibility; former trunk highways.** The funds in the county and municipal turnback accounts must be spent only as payments to a county or urban municipality for the approved repair and restoration or reconstruction and improvement of those former trunk highways that have reverted to county or urban municipal jurisdiction after July 1, 1965, and that are a part of the county state–aid highway or municipal state–aid street system, except when the commissioner makes a lump sum payment under part 8820 2300, subpart 6a

For trunk highways released after December 31, 1992, approval of plans for the construction of a turnback project is limited to a period of 15 years from the date of reversion. Each approved project must be advanced to construction status within one year after notification to the county or urban municipality that sufficient funds are available for constructing the project Payment for repair and restoration or reconstruction and improvement of a section terminates eligibility for repair and restoration or reconstruction and improvement of that section with turnback funds

Subp 2a **Eligibility; town bridges.** The town bridge account may be used to pay the cost to replace or reconstruct a town bridge, or to abandon an existing bridge that is deficient and in need of replacement but where no replacement will be made It may also be used to pay the costs to construct a road or street to facilitate the abandonment of an existing bridge determined by the commissioner to be deficient if the commissioner determines that construction of the road or street is more cost efficient than replacing the existing bridge A town bridge is eligible for replacement, reconstruction, or abandonment after the county board reviews the pertinent data supplied by local citizenry, local units of government, the regional development commission, or the metropolitan council, and adopts a formal resolution identifying the town bridge or bridges to be replaced or reconstructed Except as otherwise provided by law, payment to the counties is limited to the cost of the bridge and must be made in accordance with part 8820.2300, subpart 7

Subp 3 **Plan approval and construction requirements.** Plans for county or municipal state–aid turnback or town bridge projects must be submitted to the commissioner and be approved before reconstruction or improvement work is undertaken, except when the commissioner makes a lump–sum payment under part 8820 2300, subpart 6a. State–aid rules consistent with the turnback regulations apply to projects to be financed from the county or municipal turnback accounts or the town bridge account

[For text of subp 4, see M R]

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.9920 GEOMETRIC DESIGN STANDARDS; RURAL UNDIVIDED; NEW OR RECONSTRUCTION PROJECTS.

New or reconstruction projects for rural undivided roadways must meet or exceed the minimum metric dimensions indicated in the following design chart The rounded English equivalent is provided for informational purposes only

Pro–jected ADT (b) Curb	Lane Width meters	Shoulder Width meters	In–slope (c) rise run	Recovery Area (d) meters	Design Speed (e) km/h	Sur–facing	Struc–tural Design Strength metric tons	Bridges to Remain (f) Width Curb– meters
0–49	3.3 (11 ft)	0 3 (1 ft)	1.3	2 (6.5 ft)	50–100 (30–60 mph)	Agg.		6 6 (22 ft)
50–149	3 3 (11 ft)	0 9 (3 ft)	1 4	3 (10 ft)	60–100 (40–60 mph) (g)	Agg		6 6 (22 ft)
150–749	3 6 (12 ft)	1 2 (4 ft)	1.4	5 (16 ft)	60–100 (40–60 mph)	Paved	8.2 (9 tons)	8.4 (27.5 ft)
750–1499	3 6 (12 ft)	1 2 (4 ft)	1 4	8 (26 ft)	60–100 (40–60 mph)	Paved	8 2 (9 tons)	8 4 (27 5 ft)
1500 and over	3 6 (12 ft)	1 8 (6) ft) (h)	1 4	9 (29 5 ft)	60–100 (40–60 mph)	Paved	9.1 (10 tons)	9 0 (29.5 ft)

Engineering judgment may be used to choose a lane–width or shoulder–width dimension other than the widths indicated in the chart for roadways Factors to consider may be safety, speed, population/land use, benefit/cost analysis, traffic mix, farm equipment, environmental impacts, terrain limitations, bicycle traffic, pedestrian traffic, other nonmotorized uses, functional classification, or other factors Widths less than those indicated in the chart require a variance in accordance with parts 8820 3300 and 8820 3400

(a) For rural divided roadways, use the geometric design standards of the Mn/DOT Road Design Manual, with a minimum 9 1 metric tons (ten tons) structural design and minimum 60 kilometers per hour (40 mph) design speed

(b) Use the existing traffic for highways not on the state–aid or federal–aid systems

(c) Applies to slope within recovery area only

(d) Obstacle-free area (measured from edge of traffic lane) Culverts with less than 675-millimeter (30-inch) vertical height allowed without protection in the recovery area.

Guardrail is required to be installed at all bridges where the design speed exceeds 60 kilometers per hour (40 mph), and either the ADT exceeds 400 or the bridge clear width is less than the sum of the lane and shoulder widths.

Mailbox supports must be in accordance with the provisions of chapter 8818

For roadways in suburban areas as defined in part 8820 0100, the recovery area may be reduced to a width of three meters (ten feet) for projected ADT under 1,000 and to six meters (20 feet) for projected ADT of 1,000 or over. Wherever the legal posted speed limit is 60 k/hr (40 mph) or less, the recovery area may be reduced to a width of three meters (ten feet).

(e) Subject to terrain

(f) Inventory design rating M 13 5 required Bridges narrower than these widths may remain in place provided that the bridge is not deficient structurally or hydraulically

(g) Design speed of 50 kilometers per hour (30 mph) allowed off of the state-aid and federal-aid systems

(h) Shoulders are required to be a minimum width of 2 4 meters (eight feet) for highways classified as minor arterials and principal arterials with greater than 1,500 ADT projected

Approach sideslopes must be 1 4 or flatter when the ADT exceeds 400

MS 22.5 loadmg or load and resistance factor design (LRFD) is required for new bridges. MS 16 loadmg is required for all rehabilitated bridges The curb-to-curb minimum width for new or rehabilitated bridges is the sum of the lane and shoulder widths plus 1.2 meters (four feet)

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.9926 GEOMETRIC DESIGN STANDARDS: RURAL UNDIVIDED; RECONDITIONING PROJECTS.

Subpart 1 **Minimum reconditioning standards.** Reconditioning projects for rural undivided roadways must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

Existmg ADT	Statutory or Regulatory Posted Speed	Lane Width (Paved)	Combined Lane (Paved) and Shoulder Width
	km/h	meters	meters
Below 750	Under 80 km/h (50 mph)	3 0 (10 ft)	3 3 (11 ft)
Below 750	80 km/h (50 mph) or over	3.0 (10 ft)	3.6 (12 ft)
Over 750	Under 80 km/h (50 mph)	3.0 (10 ft)	3.6 (12 ft)
Over 750	80 km/h (50 mph & over)	3 3 (11 ft)	4 3 (14 ft)

Engineering judgment may be used to choose a lane or shoulder width dimension other than the widths indicated in the chart for roadways Factors to consider include safety, speed, population/land use, benefit/cost analysis, traffic mix, environmental impacts, terrain limitations, bicycle traffic, pedestrian traffic, other nonmotorized uses, functional classification, or other factors. Widths less than those indicated in the chart require a variance in accordance with parts 8820 3300 and 8820 3400

Widths of bridges to remain in place must equal roadway pavement width. Bridges narrower than these widths may remain in place provided that the bridge does not qualify for federal-aid bridge funds. M 13.5 loading is required.

Any highway that was previously built to state-aid or state standards, that was granted a variance to standards in effect at the time of construction or reconstruction, or that is a trunk highway turnback, but does not meet current standards for vertical or horizontal alignment, may be reconditioned and may retain the existing vertical and horizontal alignment where safety considerations based on engineering judgment do not warrant improvements.

The proposed structural design strength must be 6.4 metric tons (seven tons).

Subp. 2. [Repealed, 23 SR 1455]

Statutory Authority: *MS s 162.02; 162.09*

History: *23 SR 1455*

8820.9931 [Repealed, 23 SR 1455]

8820.9936 GEOMETRIC DESIGN STANDARDS, URBAN; NEW OR RECONSTRUCTION PROJECTS.

New or reconstruction projects for urban roadways must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only.

Functional Classification and Projected Traffic Volume	Design Speed	Lane Width (a)	Curb Reaction Distance	Parking Lane Width
	km/h	meters	meters	meters
Collectors or Locals with ADT < 10000*	50–60 km/h (30–40 mph)	3.3 (b) (11 ft)	0.6 (2 ft)	2.4 (8 ft)
	over 60 km/h (40 mph)	3.6 (12 ft)	0.6 (2 ft)	3.0 (10 ft)
Collectors or Locals with ADT ≥ 10000 and Arterials	50–60 km/h (30–40 mph)	3.3 (b) (11 ft)	1.2 (c) (4 ft)	3.0 (10 ft)
	over 60 km/h (40 mph)	3.6 (12 ft)	1.2 (c) (4 ft)	3.0 (d) (10 ft)

(a) One-way turn lanes must be at least three meters (ten feet) wide, except 3.3 meters (11 feet) is required if the design speed is over 60 kilometers per hour (40 mph).

(b) Wherever possible, lane widths of 3.6 meters (12 feet), rather than 3.3 meters (11 feet), should be used.

(c) May be reduced to 0.6 meters (two feet) if there are four or more traffic lanes and on one-way streets.

(d) No parking is allowed for six or more traffic lanes or when the posted speed limit exceeds 70 kilometers per hour (45 mph).

One-way streets must have at least two through-traffic lanes.

When a median is included in the design of the two-way roadway, a 0.3 meter (one foot) reaction distance to the median is required on either side of the median. Minimum median width is 1.2 meters (four feet).

Urban design roadways must be a minimum 8.2 metric tons (nine tons) structural design.

A new or rehabilitated bridge must have a curb-to-curb width equal to the required street width. MS 22.5 loading or LRFD design is required for new bridges and a minimum of MS 16 loading is required for rehabilitated bridges.

Clearance of 0.5 meter (1.5 feet) from the face of the curb to fixed objects must be provided when the posted speed is 60 to 70 kilometers per hour (40 to 45 mph). A three-meter

(ten–foot) clearance from the driving lane must be provided when the posted speed exceeds 70 kilometers per hour (45 mph).

For volumes greater than 15,000 projected ADT*, at least four through–traffic lanes are required

*Additional average daily traffic may be allowed if a capacity analysis demonstrates that level of service D or better is achieved at the higher traffic volume. If the capacity analysis demonstrates that additional lanes are required only during peak traffic hours, then each additional driving lane may be used as a parking lane during nonpeak hours

"Level of service" has the meaning given it in the Highway Capacity Manual, Special Report 209, as revised and published by the Transportation Research Board of the National Research Council, Washington, D C The definition is incorporated by reference, is not subject to frequent change, and is located at the Minnesota State Law Library, 25 Constitution Avenue, St Paul, Minnesota 55155

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.9946 GEOMETRIC DESIGN STANDARDS, URBAN; RECONDITIONING PROJECTS.

Subpart 1 **Two–way streets.** In the following design chart, total width is in meters, from face–to–face of curbs

Reconditioning projects for two–way urban roadways must meet or exceed the minimum metric dimensions indicated in the chart. The rounded English equivalent is provided for informational purposes only

Number of Through Lanes, Functional Class, and Present Traffic Volume	Total Width with No Parking	Total Width with Parking on One Side	Total Width with Parking on Both Sides	Proposed Structural Design Strength
	meters	meters	meters	metric tons
2–Lane Collector or Local with ADT < 10000	7 8 (26 ft)	9 6 (32 ft)	11 4 (37 ft)	8 2(b) (9 tons)
4–Lane Collector or Local with ADT < 10000	13 2 (43 ft)	15.6 (51 ft)	18 0 (59 ft)	8 2(b) (9 tons)
2–Lane Collector or Local with ADT ≥ 10000 or 2–Lane Arterial (a)	7 8 (26 ft)	9.6 (32 ft)	12.6 (41 ft)	8 2 (9 tons)
4–Lane Collector or Local with ADT ≥ 10000 or 4–Lane Arterial	13.2 (43 ft)	16 2 (53 ft)	19.2 (63 ft)	8.2 (9 tons)
6–Lane Collectors or Arterials	19 8 (65 ft)	(c)	(c)	8.2 (9 tons)

(a) Permissible for present traffic volumes less than 15,000 ADT

(b) When ADT is less than 5,000, 6 4 metric tons (seven tons) is allowable.

(c) No parking is allowed

Minimum design speed is 50 kilometers per hour (30 mph) When a median is included in the design of the two-way roadway, a 0.3 meter (one foot) reaction distance to the median is required on either side of the median Minimum median width is 1.2 meters (four feet)

Subp. 2 **One-way streets.** In the following design chart, total width is in meters, from face-to-face of curbs.

Reconditioning projects for one-way urban roadways must meet or exceed the minimum metric dimensions indicated in the chart. The rounded English equivalent is provided for informational purposes only.

Number of Through Lanes and Functional Class	Present ADT	Total Width with No Parking	Total Width with Parking on One Side	Total Width with Parking on Both Sides	Proposed Structural Design Strength
		meters	meters	meters	metric tons
2-Lane Collector or Local	< 5000	6.3 (20 ft)	8 7 (29 ft)	11 1 (36 ft)	6 4 (7 tons)
with ADT < 10000	5000-10000	6.9 (23 ft)	9 3 (31 ft)	11 7 (38 ft)	8.2 (9 tons)
2-Lane Collector or Local with ADT ≥ 10000 or 2-Lane Arterial	<15000	6.9 (23 ft)	9 3 (31 ft)	11 7 (38 ft)	8.2 (9 tons)
	≥ 15000	7.2 (24 ft)	9 6 (32 ft)	12.0 (39 ft)	8.2 (9 tons)
3-Lane Arterial or Collector	All	10 2 (33 ft)	12 6 (41 ft)	15.0 (49 ft)	8 2 (9 tons)

Minimum design speed is 50 kilometers per hour (30 mph).

Subp 3 **Exception.** Any street that was previously built to state-aid or state standards, that was granted a variance to standards in effect at the time of construction or reconstruction, or that is a trunk highway turnback, but does not meet current standards, may be reconditioned regardless of subparts 1 and 2

Statutory Authority: *MS s 162 02; 162.09*

History: *23 SR 1455*

8820.9956 VERTICAL CLEARANCES FOR UNDERPASSES.

Underpass projects must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

	Rural-Suburban Design, Vertical Clearance	Urban Design, Vertical Clearance
	meters	meters
Highway under roadway bridge	5 (16 ft)	4.4 (14 ft)
Highway under railroad bridge	5 (16 ft)	4.4 (14 ft)

Highway under pedestrian bridge	5.3 (17 ft)	4.4 (14 ft)
Highway under sign structure	5 3 (17 ft)	4.4 (14 ft)
Railroad under roadway bridge*	6.7 (22 ft)	6.7 (22 ft)

*Variances to the required minimum may be granted by the commissioner of transportation. That approval eliminates the need for a state-aid variance.

Statutory Authority: *MS s 162 02; 162.09*

History: *23 SR 1455, L.1998 c 403 s 29*

8820.9961 MINIMUM DESIGN STANDARDS FOR 45-DEGREE AND 60-DEGREE DIAGONAL PARKING.

Diagonal parking projects must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

Parking Angle	Stall Width	Stall Depth	Traffic Aisle Width	Length Along Curb	1/2 Roadway Width Minimum	Present ADT	Legal Speed Limit
	meters	meters	meters	meters	meters		km/h
45 Degrees	2 7 (10 ft)	6 0 (20 ft)	7.7 (25 ft)	3.9 (13 ft)	10.0 (33 ft)	Less than 3000	50 km/h (30 mph) or less
60 Degrees	2 7 (9 ft)	6 4 (21 ft)	9.1 (30 ft)	3.2 (10 ft)	11.9 (39 ft)	Less than 3000	50 km/h (30 mph) or less
45 Degrees	2 7 (9 ft)	6.0 (20 ft)	7.7 (25 ft)	3.9 (13 ft)	13 7 (45 ft)	3000 and over	50 km/h (30 mph) or less
60 Degrees	2.7 (9 ft)	6.4 (21 ft)	9.1 (30 ft)	3.2 (10 ft)	15.5 (51 ft)	3000 and over	50 km/h (30 mph) or less

At least two through lanes must be provided.

Diagonal parking provisions must be established by cooperative agreement between the local road authority and the commissioner.

The cooperative agreement must show the angle of parking, provide for pavement marking of the parking lanes, and provide that the road authority may alter parking provisions if traffic volumes exceed the design criteria.

Minnesota Statutes, section 169.34, must be adhered to in determining diagonal parking spacing.

Provide a 0.6-meter (two-foot) clearance from the face of the curb to fixed objects. Parking meters, when spaced so as to not interfere with vehicle operation, are exempt.

Statutory Authority: *MS s 162.02; 162 09*

History: *23 SR 1455*

8820.9981 MINIMUM GEOMETRIC DESIGN STANDARDS: NATURAL PRESERVATION ROUTES, DESIGNATED NATIONAL FOREST HIGHWAYS WITHIN NATIONAL FORESTS, AND STATE PARK ACCESS ROADS WITHIN STATE PARKS; NEW OR RECONSTRUCTION PROJECTS.

Subpart 1. **Type I route.** New or reconstruction projects for type I natural preservation routes, designated natural forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

Surface Type	Design Speed	Lane Width	Shoulder Width	Inslope	Recovery Area	Design Strength	Bridge to Remain
	km/h	meters	meters	rise: run	meters	metric tons	meters
			(a)	(b)	(c)		(d)
Aggregate	50 (30 mph)	3.3 (11 ft)	0.3 (1 ft)	1:3	1 (3 ft)		6.6 (22 ft)
Paved	50 (30 mph)	3.3 (11 ft)	0.5 (1.5 ft)	1:3	3 (10 ft)	8.2 (9 tons)	6.6 (22 ft)

(a) If the route has scenic vistas that will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable. The designer will provide a 1.2-meter (four-foot) paved shoulder if the route is a popular bicycle route.

(b) Applies to slope within recovery area only. Other design features, such as guardrails or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820.4060.

(c) Obstacle-free area (measured from edge of traffic lane).

Guardrail is required to be installed at all bridges where the design speed exceeds 60 kilometers per hour (40 mph), and either the ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths.

Mailbox supports must be in accordance with the provisions of chapter 8818.

(d) Inventory design rating M 13.5. A bridge narrower than these widths may remain in place if the bridge is not deficient structurally or hydraulically.

MS 18 loading or LRFD design is required for new bridges. MS 16 loading is required for all rehabilitated bridges. The curb-to-curb minimum width for new or rehabilitated bridges is the sum of the lane and shoulder widths plus 1.2 meters (four feet).

Ditch depths and widths must be kept to the minimum required to function hydraulically and to provide for adequate snow storage when a standard ditch would negatively impact the surroundings.

The designer shall specify in the plan and special provisions that the clearing width is to be kept to the absolute minimum. In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless otherwise required for special conditions.

Curb and gutter may be used in lieu of a ditch section under the paved option. The lane width, shoulder width, and recovery area must be maintained.

For designated national forest highways within national forests, and state park access roads within state parks, this subpart applies only where the projected ADT is less than 100, unless the route has been designated as a natural preservation route.

Subp 2. **Type II route.** New or reconstruction projects for type II natural preservation routes, designated national forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

Surface Type	Design Speed	Lane Width	Shoulder Width	Inslope	Recovery Area	Design Strength	Bridge to Remain
	km/h	meters	meters (a)	rise:run (b)	meters (c)	metric tons	meters (d)
Aggregate	50 (30 mph)	3.3 (11 ft)	0.6 (2 ft)	1:3	3 (10 ft)		7.2 (24 ft)
Paved	60 (40 mph)	3.6 (12 ft)	1.2 (4 ft)	1:4	3 (10 ft)	8.2 (9 tons)	7.2 (24 ft)

(a) The designer will provide a 1.8-meter (six-foot) paved shoulder if the route is a popular bicycle route. If the route has scemc vistas that will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable

(b) Applies to slope within recovery area only. Other design features, such as guardrail or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820.4060. Approach sideslopes must be 1:4 or flatter withm the recovery area when the ADT exceeds 400

(c) Obstacle-free area (measured from edge of traffic lane).

Guardrail is required to be installed at all bridges where the design speed exceeds 60 kilometers per hour (40 mph), and either the ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths.

Mailbox supports must be in accordance with the provisions of chapter 8818.

(d) Inventory design rating M 13.5. A bridge narrower than these widths may remain in place if the bridge does not qualify for federal-aid bridge funds.

MS 18 loadmg or LRFD design is required for new bridges. MS 16 loading is required for all rehabilitated bridges The curb-to-curb minimum width for new or rehabilitated bridges is the sum of the lane and shoulder widths, but may not be less than nine meters (30 feet)

Ditch depths and widths must be kept to the minimum required to function hydraulically, to be traversable if withm the recovery area, and to provide for adequate snow storage when a standard ditch would negatively impact the surroundings

The designer shall specify m the plan and special provisions that the clearing width is to be kept to the absolute minimum. In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless required for special conditions.

For designated national forest highways within national forests, and state park access roads within state parks, this subpart may be applied only where the projected ADT is less than 300, unless the route has been designated as a natural preservation route.

Subp. 3. **Type III route.** New or reconstruction projects for type III natural preservation routes, designated national forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum metric dimensions indicated in the following design chart The rounded English equivalent is provided for informational purposes only.

Sur–face Type	Design Speed	Lane Width	Shoul–der Width	In–slope	Recov–ery Area	Design Strength	Bridge to Remain
	km/h	meters	meters (a)	rise run (b)	meters (c)	metric tons	meters (d)
Aggre–gate	50 (30 mph)	3 6 (12 ft)	0.9 (3 ft)	1 4	3 (10 ft)		7 2 (24 ft)
Paved (e)	50 (30 mph)	3 6 (12 ft)	1 2 (4 ft)	1 4	3 (10 ft)	8 2 (9 tons)	7 2 (24 ft)
Paved	60 (40 mph)	3 6 (12 ft)	1 2 (4 ft)	1·4	5 (16 ft)	8 2 (9 tons)	7 2 (24 ft)

(a) The designer will provide a 1 8–meter (six–foot) paved shoulder if the route is a popular bicycle route If the route has scenic vistas which will require parking vehicles along the shoulder, widening the shoulder at these locations is acceptable

(b) Applies to slope within recovery area only Other design features, such as guardrail or retaining walls, should be considered in particularly sensitive areas in lieu of reconstructing the inslope in accordance with part 8820 4060 Approach sideslopes must be 1:4 or flatter within the recovery area when the ADT exceeds 400.

(c) Obstacle–free area (measured from edge of traffic lane)

Guardrail is required to be installed at all bridges where the design speed exceeds 60 kilometers per hour (40 mph), and either the ADT exceeds 400 or the bridge width is less than the sum of the lane and shoulder widths

Mailbox supports must be in accordance with the provisions of chapter 8818

(d) Inventory design ratmg M 13.5. A bridge narrower than these widths may remain in place if the bridge does not qualify for federal–aid bridge funds

(e) This standard may be applied only when the project is located in a subdivided area or an area in a detailed development process, and physical restraints are present that prevent reasonable application of another level of these standards.

MS 22 5 loading or LRFD design is required for new bridges MS 16 loading is required for all rehabilitated bridges The curb–to–curb minimum width for new or rehabilitated bridges is the sum of the lane and shoulder widths, but may not be less than 9 6 meters (31 5 feet)

Ditch depths and widths must be kept to the minimum required to function hydraulically, to be traversable if within the recovery area, and to provide for adequate snow storage when a standard ditch would negatively affect the surroundings

The designer shall specify in the plan and special provisions that the clearing width is to be kept to the absolute minimum In sensitive areas, the normal clearance allowed to a contractor for working room is zero unless required for special conditions.

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.9986 MINIMUM GEOMETRIC DESIGN STANDARDS: NATURAL PRESERVATION ROUTES, DESIGNATED NATIONAL FOREST HIGHWAYS WITHIN NATIONAL FORESTS, AND STATE PARK ACCESS ROADS WITHIN STATE PARKS; RECONDITIONING PROJECTS.

Reconditioning projects for natural preservation routes, designated national forest highways within national forests, and state park access roads within state parks must meet or exceed the minimum metric dimensions indicated in the following design chart. The rounded English equivalent is provided for informational purposes only

TYPE I, II, OR III ROUTE

Proposed Design Strength	Pavement Width	Shoulder–to–Shoulder Width
metric tons	meters	meters
6 4 (7 tons)	6 6 (22 ft)	7 8 (26 ft)

Widths of bridges to remain in place must equal pavement width. A bridge narrower than these widths may remain in place if the bridge does not qualify for federal–aid bridge funds M 13 5 loadmg is required

Statutory Authority: *MS s 162 02; 162 09*

History: *23 SR 1455*

8820.9990 ROUTE MARKER.

610 mm x 610 mm (2 ft by 2 ft)
Green legend, white reflectorized background

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*

8820.9995 MINIMUM BICYCLE PATH STANDARDS.

Minimum Bicycle Path Standards
For Off–Road Design, the following shall apply:

Mmimum Surfacing Width (two–way)	2.4 meters (8 ft) (b)
Shoulder/Clear Zone	0.5 meters (2 ft) (c)
Inslope	1 2 (rise:run)
Design Speed	30 km/h (20 mph) (d)
Vertical Clearance	3 meters (10 ft)

(a) For on–road bicycle facilities, the appropriate tables in the Minnesota Bicycle Transportation Planning and Design Guidelines are recommended for design purposes.

(b) Three meters (ten feet) is desired for a combined bicycle/pedestrian path 1.5 meters (five feet) is required for a one–way bicycle path

(c) The shoulder/clear zone should be carried across bridges and through underpasses 3 6 meters (12 feet) or less in clear width. Lead–in guardrail should be provided when shoulders are not carried over bridges

(d) Use a 50 kilometers per hour (30 mph) design speed for grades longer than 150 meters (500 feet) and greater than four percent, from the uphill point where the grade equals four percent to 150 meters (500 feet) beyond the downhill point where the grade becomes less than four percent The maximum allowable grade is 8 3 percent

Statutory Authority: *MS s 162 02, 162 09*

History: *23 SR 1455*