



RULES AND REGULATIONS
FOR
STATE AID OPERATIONS
UNDER
CHAPTER 500 LAWS OF 1959

MINNESOTA DEPARTMENT OF HIGHWAYS
SEPTEMBER 1, 1959

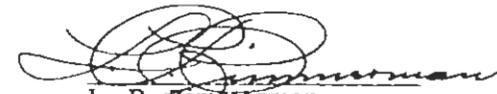
CERTIFICATION

Order Number 29256

A public hearing pursuant to notice duly given, having been duly held by me in Room 815 of the State Highway Building, St. Paul, Minnesota at 10:00 o'clock a.m. on August 20th, 1959, now then:

Pursuant to authority vested in me by law and particularly by Chapter 500 of the Laws of 1959, I do hereby promulgate, prescribe, and adopt the following and attached rules and regulations relating to and providing for state aid operations under Chapter 500, Laws of 1959; and do hereby revoke Order Number 28528 and Order Number 28981.

Dated at St. Paul, Minnesota, this / day of September, 1959.


L. P. Zimmerman
Commissioner of Highways

The Attorney General, under provisions of Minnesota Statutes 1957, Section 15.0412, hereby approves the following and attached rules and regulations, promulgated and adopted by the Commissioner of Highways on the / day of September, 1959.

MILES LORD
Attorney General

By: 
PAUL A. SKJERVOLD
Deputy Attorney General

Dated this 4 day of September, 1959

and to exercise all functions incidental thereto under the provisions of Chapter 500, Laws of 1959, and Acts amendatory thereto. All preparation of plans and specifications and the supervision of construction and maintenance shall be under the control and direction of a professional engineer, registered in the State of Minnesota and employed or retained for that purpose.

Section 1.3 Selection and Designation of State Aid Systems - The state-aid highways and streets designated to form the basis for a long range improvement program shall, in general, be so selected as to form an integrated network of roads and streets in accordance with the following provisions:

(1) Systems - The highway and street systems to be selected and designated in accordance with the appropriate provisions of Chapter 500, Laws of 1959, are:

- (a) County State-Aid System not exceeding 30,000 miles in extent
- (b) Municipal State-Aid System not exceeding 1,200 miles in extent within urban municipalities.

Final selection of routes to be included in the respective County State-Aid and Municipal State-Aid Systems shall be subject to the approval of the Commissioner.

(2) Criteria - Highways and streets selected and designated to form the County State-Aid and Municipal State-Aid Systems shall have sufficient width of right of way to provide for the minimum construction standards as adopted, consisting of sixty-six (66) feet in rural areas and sixty (60) feet within municipalities, except for conditions which, in the opinion of the Commissioner, would warrant modification. They shall further be selected on the basis of the following criteria:

- (a) County State-Aid Highway System; roads which
 - 1. Carry relatively heavier traffic volumes;
 - 2. And connect towns, communities, shipping points, and markets within a county or in adjacent counties;
 - 3. Or provide access to rural churches, schools, community meeting halls, industrial plants, state institutions, and recreational areas;
 - 4. Or serve as principal arteries of rural mail routes and school bus routes;
 - 5. Or act as collectors of major traffic from several roads of local interest;
 - 6. and occur at reasonable intervals consistent with the density of population;
 - 7. And provide an integrated and coordinated highway system, affording within practical limits a state-aid highway network consistent with local traffic demands.

- (b) Municipal State-Aid System, streets which
 - 1. Carry relatively heavier traffic volumes;
 - 2. And connect the points of major traffic interest within a city;
 - 3. Or connect with rural roads or urban routes of community interest and carry major traffic into and through cities;
 - 4. And form a system of streets which will effectively serve traffic within the city.

(3) Route Designations - All County State-Aid Highways and Municipal State-Aid Streets shall be selected by resolution of the respective boards of county commissioners, or the respective governing bodies of urban municipalities. The highway or street system as contained in the resolution shall be reviewed by the district engineer of that area and his recommendation filed with the Commissioner. Within three (3) months after receipt by him of each such resolution and recommendation, the Commissioner shall approve all or such part of said highway or street system contained in the resolution as complies with the criteria and other requirements set out in these regulations. The Commissioner shall certify to the respective boards of county commissioners or governing bodies of urban municipalities, the approved portion of their resolution. All highways or streets so approved shall become a part of the County State-Aid Highway system or the Municipal State-Aid Street System, subject to such additions or revisions as may be from time to time requested and approved.

Section 1.4 State Aid Apportionments - All state aid apportionments shall be made from the County State-Aid Highway Fund and the Municipal State-Aid Street Fund, respectively, as provided by Chapter 500, Laws of 1959, and Acts amendatory thereto. Apportionments to the respective counties and urban municipalities shall be released in accordance with Section 1.5 of these regulations.

- (1) Money Needs
 - (a) Construction Cost Estimates - To provide data to implement the formulas for state aid apportionment, each county engineer and urban municipal engineer shall prepare cost estimates of construction required to improve his County State-Aid or Municipal State-Aid System to approved standards.
 - (b) Incidental Costs - In addition to the direct construction or maintenance costs permitted under Law, the cost of the following incidental items will be considered as eligible for inclusion in the total estimate of needs;

- (i) County State-Aid Highways
 - Automatic traffic control signals
 - Lighting of intersections and bridges within approved standards
 - Proportional share of all drainage costs within municipalities to reflect the responsibility of the state-aid highway.
 - (ii) Municipal State-Aid Streets
 - Right of way
 - Automatic traffic control signals
 - Lighting of intersections and bridges within approved standards
 - Proportional share of all drainage costs to reflect the responsibility of the state-aid street.
 - (c) Deductible Items - The respective Screening Committees shall consider reports from the Commissioner listing either the County State-Aid allotments to townships, or the Municipal State-Aid payments on State Trunk Highways or County State-Aid Highways, covering all said allotments or payments made subsequent to July 1, 1959; and shall recommend to the Commissioner the amount of deductions to be made in the money needs for each such county or municipality in order to equalize their status with other counties or municipalities not making similar expenditures off of their approved State-Aid System.
- (2) Screening Committees
- (a) A detailed report of the mileage and cost estimates shall be tabulated and referred to the respective Screening Committees appointed pursuant to Law. These committees shall investigate and review all mileage, cost estimates and the reports of those expenditures listed under "Deductible Items", and shall on or before the first day of November of each year submit their findings and recommendations in writing as to the mileage and adjusted money needs for each of the governmental subdivisions represented by the respective committees.
 - (b) Within the limitations provided by Law, the respective Screening Committees shall annually determine and recommend the amount the Commissioner shall set aside from the County State-Aid Highway Fund or the Municipal State-Aid Street Fund, which amounts shall be used by the Commissioner solely for the purpose of matching federal funds for conducting research in methods and materials for the construction

and maintenance of County and Municipal State-Aid Highways and Streets. The use and proportionate share of such funds shall be specifically limited to those projects selected as described in Section 2. 1.

(3) Compilation of Data by Commissioner - The Commissioner shall determine the apportionment percentage due each county and municipality in accordance with the formulas established by Law.

(4) Notice of Annual Apportionment - Not later than January 25 of each year, the Commissioner shall certify the annual apportionment to each respective county or urban municipality.

(5) Semi-Annual Statements - Within thirty (30) days after the close of each six (6) month period, the Commissioner shall certify to each county or urban municipality, semi-annual statements as to the status of the respective state aid accounts.

Section 1.5 State Aid Payments - Annual apportionments to the respective counties and to urban municipalities under Chapter 500, Laws of 1959, and Acts amendatory thereto, shall be released in the following manner:

- (1) For Maintenance - As soon as the annual County and Urban Municipal State-Aid Allotments have been determined, the Commissioner shall apportion and set aside the following amounts:
 - (a) Forty (40) percent of the regular County State-Aid allotment for the general maintenance of County State-Aid Highways.
 - (b) Forty (40) percent of the County Municipal account allotment for the maintenance of County State-Aid Highways within municipalities of less than 5,000 population.
 - (c) The Commissioner will, upon receipt of a resolution from the county board, and for good cause shown, increase or decrease the proportion to be used for maintenance under either subsection (a) or (b) above.
 - (d) Twenty-five (25) percent of the Municipal State-Aid Street allotment to each urban municipality shall be initially set aside for the maintenance of the Municipal State-Aid Streets. Such maintenance apportionment shall be deemed to have been made as a joint determination of the Commissioner and the governing body of each urban municipality unless an adjustment in such maintenance apportionment is requested by resolution of the governing body.

- (e) Any unobligated balance remaining in the State Aid Maintenance Account to the credit of any county or urban municipality, after final settlement has been made for the annual maintenance expenditures, shall be automatically transferred to the construction account of said county or municipality.
- (f) Where the Commissioner approves a request from a county for the advance of local funds on maintenance expenditures in excess of the available County State-Aid Allotment, as a result of an unusually burdensome and unprecedented condition, the Commissioner will repay these locally advanced funds out of subsequent apportionments to the county's State Aid maintenance account.

At the earliest practical date, after the allotments have been determined, the Commissioner shall release an amount not to exceed fifty (50) percent of each such maintenance apportionment to the respective counties and urban municipalities, as an advance for the necessary maintenance operations. On or about July 1 each year, he shall release an additional advance in an amount not to exceed forty (40) percent of the total of each said maintenance allotment. The Commissioner shall retain the remaining amounts of said apportionments pending the determination of the final amount due, based on a report of actual maintenance expenditures and receipt of the District Engineer's certification of acceptable maintenance performance. In lieu of an urban municipality submitting an annual maintenance expenditure report, the Commissioner may, at the request of such urban municipality, authorize a minimum maintenance allotment not to exceed \$1,500.00 per mile or twenty-five (25) percent of their total allotment, whichever is the least.

(2) For Construction Projects - Funds credited to the county or urban municipality for construction of approved projects shall to the extent available be promptly paid in accordance with the following schedule:

- (a) Contract - The Commissioner shall promptly, upon receipt of an Abstract of Bids and a Certification as to the Contract and Bond executed therein, release up to ninety (90) percent of the contract amount to said county or municipality. The Commissioner shall retain the remaining percentage of the contract cost of said project until the same has been completed, the final cost determined, and the project accepted by the district engineer.
- (b) Force Account - Monthly estimates will be accepted on all projects approved for construction by local forces, using the agreed unit prices for arriving at the value of the completed work. The Commissioner shall promptly release ninety (90) percent of the cost of the accomplishment represented by each such monthly estimate. The Commissioner

- shall retain the remaining percentage of the cost of the project until the final cost has been determined and the project accepted by the district engineer.
- (c) Engineering Costs - Upon receipt of an Abstract of Bids and a Certification as to the Contract and Bonds, or upon receipt of monthly estimates on approved Force Account projects, the Commissioner shall upon request release additional amounts to cover the actual cost of preliminary engineering, not to exceed five (5) percent of the total contract or agreement amount. Upon final acceptance of a construction project completed pursuant to contract or on a force account basis, the Commissioner shall upon request release additional amounts to cover the actual cost of construction engineering not to exceed seven (7) percent of the total construction cost.
- (d) Right of Way - State Aid payments on right of way costs shall be limited to ninety (90) percent of the approved claim until the acquisition of all right of way required for that project is actually completed.
- (e) For County Federal-Aid Projects - The Commissioner, under authority of an agency agreement with a county board, and acting as its agent in Federal-Aid operations, will release ninety (90) percent of the county share of the entire contract obligation for immediate redeposit in an agency account for use in paying the county share of the partial estimates and for advancing the federal share of such estimate payments. Where other than County State-Aid Highway funds are to be used for depositing not less than ninety (90) percent of the county share of said contract amount in the agency account, the details for such deposits shall be set forth in the respective agency agreements.
- (f) Where the Commissioner approves a request from the county for the construction of an approved County State-Aid Highway project which requires County State-Aid Highway funds in excess of the available allotment to either its Regular County State-Aid Account or the county's Municipal Account; which excess costs will be initially paid from other local sources; then and in that event, the Commissioner will repay these locally financed expenditures out of subsequent construction apportionments from the respective county's Regular County State-Aid or County Municipal Account in accordance with the terms and conditions specified in the approved request.
- (g) Where the Commissioner approves a request from the county for the advance of regular County State-Aid Highway

Funds for use on a municipal section of an approved County State-Aid Highway project, and where repayments to the Regular Account of the County State-Aid Highway Fund are to be made from subsequent accruals to the county's Municipal Account, such repayments will be made by the Commissioner in the form of transfers from the county's Municipal Account to their Regular Account in the amounts and at the time specified in the authorization.

- (h) Upon receipt of evidence that an urban municipality with a population under 500,000 has issued bonds as provided by Law, for the purpose of establishing, locating, relocating, constructing, reconstructing or improving its Municipal State-Aid Streets, the Commissioner shall keep a bond record for said municipality, itemizing the total amount of principal and interest involved. The proceeds of the bonds shall be expended solely on approved Municipal State-Aid Street projects and for those items eligible for State-Aid reimbursement, and the municipality shall furnish the Commissioner a certified statement of all such expenditures. On or before March 1, of each year, the municipality shall also certify to the Commissioner the amounts needed to pay from their State-Aid Construction Fund, the principal due on the obligation and the current amount of interest thereon to be paid from their State-Aid Maintenance Fund. Within the limits set by Law, the Commissioner shall authorize these respective payments as promptly as possible after the necessary verification. This section does not apply to the City of Saint Paul when the City of Saint Paul is proceeding to sell bonds under Laws of 1959, Chapter 538.
- (i) The governing body of any urban municipality desiring to use a portion of its State-Aid funds for improvements within its boundaries of any State Trunk Highway or County State-Aid Highway, shall request such funds by resolution. Before any such funds are released for such purposes, the resolution shall be approved by the Commissioner. A copy of the approved resolution shall be filed with the State Aid Engineer. This section does not apply to payments made for interest on bonds sold under Laws of 1959, Chapter 538.

(3) Other Authorized Payments - In accordance with Chapter 500, Laws of 1959, and Acts amendatory thereto; local governments may request authorization to use part of their state aid allotments for improvement or maintenance of roads and streets off the state aid system.

- (a) The county board or governing body of any urban municipality desiring to use a part of its state aid funds for this purpose shall certify to the Commissioner either that all of its existing state aid routes are improved to State Aid standards, or that it is experiencing a hardship condition in regard to financing its local roads or streets while holding its current road and bridge levy equal to or greater than said levy for previous years. Where a hardship transfer is requested, the Commissioner may require fiscal information showing the extent of the financial deficiency. Within thirty (30) days of the receipt of a request for transfer, the Commissioner shall act to authorize or deny the transfer of State Aid funds for use outside of the approved State Aid system. Upon approval of the requested transfer, the Commissioner without requiring any progress reports, shall within thirty (30) days, authorize immediate payment of not less than fifty (50) percent of the total amount, with the balance to be paid within ninety (90) days, or schedule immediate payment of the entire amount authorized if the Commissioner determines there are sufficient funds available.
- (b) Upon receipt of a certified copy of a county board resolution, allocating a specific amount of its County State-Aid Construction funds for aid to its townships; which resolution shall indicate compliance with the law governing such allocations and be forwarded to the Commissioner on or before the second Tuesday of January of each year; the Commissioner shall authorize payment of the amount requested for distribution by the county for the construction of township roads.

Section 1.6 State Aid Standards - Subject to approval by the Commissioner, geometric design standards shall be cooperatively determined for use on all state aid streets and highways.

(1) Geometric Design Standards - The Commissioner, in cooperation with representatives of the Minnesota County Highway Engineers Association or the Minnesota City and Village Engineers Association, as the case may be, shall establish desirable minimum geometric design standards for use in improving County State-Aid and Municipal State-Aid routes. Copies of these current standards shall be furnished with these Rules and Regulations.

- (a) Revisions - When need for revision of state aid standards arises, the Commissioner shall confer with representatives of the county or city engineers associations and determine such change as might be necessary or desirable, and cause such change to be made in the same manner as outlined above.

(2) **Specifications** - Specifications for construction shall be the latest approved Minnesota Department of Highways specifications, except as modified by special provisions which set forth conditions or requirements for work or materials not covered by the approved specifications, or which set forth conditions or requirements to meet exigencies of construction peculiar to the approved project.

Section 1.7 State Aid Operations - State Aid funds allotted to counties and urban municipalities under Chapter 500, Laws of 1959, and Acts amendatory thereto, shall be expended in accordance with the following provisions:

(1) **Maintenance** - The Commissioner shall require a reasonable standard of maintenance effort and operation on all state aid routes within the county or urban municipality consistent with available funds, the existing street or road condition and the traffic being served.

- (a) **Unsatisfactory Maintenance** - When, in the opinion of the Commissioner, any county or municipal state aid route is determined to be in an unsatisfactory or neglected condition, he shall retain ten (10) percent of the current annual maintenance apportionment to the responsible county or municipality. Funds so retained shall be held to the credit of that county or municipality until the Commissioner is satisfied that the unsatisfactory condition has been corrected and that a reasonable standard of maintenance has been accomplished.
- (b) **Biennial Report** - The Commissioner's Biennial Report to the Legislature shall enumerate all such funds retained more than ninety (90) days subsequent to January 1 of each year, together with an explanation for this action.

(2) **Construction** - Surveys, plans, and estimates for all state aid projects shall be prepared by or under the immediate direction of the county or city engineer in accordance with standards as to form and arrangement prescribed by the Commissioner.

- (a) **Plans and Estimates** - Plans and estimates must be submitted for each state aid construction project. Only those projects for which plans and estimates are approved by the State Aid Engineer shall be eligible for state aid construction funds.
- (b) **Project Numbers** - Approved projects will be assigned state aid project numbers and shall be so identified in records of the State Highway Department and the local governmental unit.

- (c) **Contract Information** - Upon award of a state aid contract by any county or urban municipality, the engineer thereof shall furnish the Commissioner with an abstract of bids and a certification as to the specific contract and bond executed for said approved construction work.
- (d) **Force Account** - Any county or urban municipality desiring to use funds credited to it under the State Aid Act shall have its engineer file a request with the Commissioner for each construction project to be built by the county or urban municipality at agreed unit prices, which shall be based upon estimated prices for contract work, less a reasonable percentage to compensate for move-in, move-out, taxes, and contractor's profit. Such requests shall contain a complete list of pay items and the unit prices at which it is proposed to do the work. Prior to the approval by the Commissioner, the District Engineer shall file his recommendations as to approval of the request and the cost estimate. Items of work other than those listed as a pay item or approved by supplemental agreements shall be considered incidental work not eligible for state aid payment.
- (e) **Project Reports** - Prior to final acceptance of each construction project by the Commissioner, the county engineer or the city engineer shall submit to the Commissioner such final project records as the Commissioner may deem necessary or desirable.
- (f) **Partial Payments** - On all state aid construction projects, the Commissioner shall pay a maximum of ninety (90) percent of the contract amount, or of each partial estimate in the case of force account agreements, until final acceptance by him of the work under consideration. Upon receipt of required reports and data and a recommendation of final acceptance by the District Engineer, the Commissioner shall, within the limits of funds available therefor, authorize payment to the county or urban municipality, of such additional amount as is required to cover the total costs shown in the approved final estimate, plus the eligible allowance for construction engineering.

Section 1.8 General Rules and Regulations - In addition to those heretofore mentioned, expenditures of state aid funds by any county or urban municipality also shall conform to the following Rules and Regulations.

(1) State aid construction projects shall comply with all Federal, State, and local laws, together with all ordinances and regulations applicable to the work. Responsibility for compliance with this requirement shall rest entirely with the local unit of government.

(2) Plans for all bridge construction or bridge reconstruction projects shall be approved by the Bridge Engineer of the Minnesota Department of Highways prior to the approval of the State Aid Engineer.

(3) Annual reports, status maps, and all maintenance and construction reports and records shall be filed at the time and in the form specifically requested by the Commissioner or his authorized representatives.

(4) The Commissioner, upon determination that a county or urban municipality has failed to comply with the established state aid requirements, other than for unsatisfactory maintenance, shall determine the extent of the non-conformance and the amount of such county's or urban municipality's apportionment that shall be retained until such time as suitable compliance is accomplished. The amount withheld shall reasonably approximate the extent of the non-compliance.

(5) The Commissioner may, as authorized by Law, execute agreements with any county or urban municipality for technical assistance from the Department of Highways. These services, if furnished, shall be paid for by the governmental subdivision at the established rates.

Section 1.9 General State Aid Limitations - The extent of state aid participation on special items shall be limited as follows:

(1) Lighting

The lighting of hazardous or accident-prone locations where concurred in by the Traffic and Planning Engineer of the Minnesota Department of Highways, shall be considered an eligible expense to the following extent:

(a) New Construction

Cost of complete lighting at approved locations only on multiple lanes
Cost of lighting approved intersections on single-lane design

Locations where the municipality would normally install lighting units are not considered as an eligible expense. The county or urban municipality shall furnish traffic information or other needed data to support its request.

(b) Reconstruction

All costs incidental to the necessary revision or relocation of existing lighting facilities, up to and including the cost of completing the new base.

(2) Traffic Control Signals

Signals for the control of traffic shall be considered an eligible expense wherever the need of said signals is concurred in by the Traffic and Planning Engineer of the Minnesota Department of Highways.

(3) Right of Way

The cost of any lands and properties required to accommodate the design width of the street or highway as governed by the State Aid standards, including necessary width for sidewalks shall be considered as eligible expense. This cost may include damages to other lands if reasonably justified to the satisfaction of the Commissioner.

(4) Sidewalks

Sidewalks shall be considered as an eligible expense only where the proposed construction necessitates the alteration of existing walks.

Section 2.0 Disaster Fund - Any disaster appropriation approved by the Commissioner for a county or municipality in accordance with law, shall be promptly paid to the county or urban municipality for which such appropriation was authorized. The funds so allotted and paid to the county or urban municipality can only be spent for the purposes for which it was authorized, and within a reasonable time period specified by the Commissioner. Forthwith upon completion of the work for which the disaster payment was made, or the time specified for doing such work, whichever occurs first, the county or urban municipality shall file a report certifying the extent of the authorized work completed, and showing the total expenditure made therein. In the event the total disaster allotment was not required or used for the purpose specified, the remainder shall be promptly returned to the Commissioner for redeposit in the disaster fund from which it was obtained.

Section 2.1 Local Road Research Board - The Commissioner shall appoint a Local Road Research Board consisting of the following members:

- 4 County Highway Engineers, only one of whom may be from a county containing a city of first class
- 2 City Engineers, only one of whom may be from a city of first class
- 2 Department of Highway Staff Engineers
- 1 University of Minnesota Staff Engineer
- 1 Ex officio secretary, who shall be the Department's Engineer of Materials and Research.

The initial terms of the appointees shall be as follows, beginning January 1, 1960:

- 1 County Engineer - 1 year
- 1 County Engineer - 2 years
- 2 County Engineers - 3 years
- 1 City Engineer - 2 years
- 1 City Engineer - 3 years.

Subsequent appointments, except for unexpired terms, shall each be for three (3) years. The remaining members shall serve at the will of the Commissioner.

The Committee shall initially meet on call from the Commissioner, at which time they shall elect a chairman and establish their own procedure for recommending projects to be carried out by the Commissioner and paid for from the State-Aid Research Funds, as provided by Law. Final determination on all such research projects shall be made by the Commissioner. Neither the Commissioner, nor the Local Road Research Board, shall ever incur any expenses chargeable to the County or Municipal State-Aid Research Account in excess of the combined state-aid and federal-aid funds as are allocated to said accounts.

Section 2.2 Personal Expenses of Authorized Board or Committee Members - The personal expenses of all authorized board or committee members incurred for travel and other necessary expenses on authorized business may be submitted to the Commissioner for payment from the State Aid Administrative Fund. Claims for these expenses shall be submitted on forms furnished by the Commissioner.

MINIMUM GEOMETRIC DESIGN STANDARDS

These minimum geometric design standards are not a part of the State Aid Rules and Regulations promulgated by the Commissioner of Highways.

The following standards for the County State-Aid and Municipal State-Aid systems herein described and referred to in Section 1.6 of the Rules and Regulations shall be established as the minimum for the geometric design on construction or reconstruction of the State Aid roads and streets and for the computation of needs on these systems. Any deviation below these minimum standards, or as subsequently amended, because of topographic or economic considerations must be adequately justified to the satisfaction of the Commissioner.

(1) County State-Aid Highways

A. Rural Design

Rural Design as hereafter described shall be used on all roads in undeveloped areas including undeveloped areas within corporate limits.

(a) Roadbed Widths and Surface (in feet)

20-Year Projected Average Daily Traffic Volume	Base Design	Surface Type	Subgrade	Width	
				Finished Roadbed	Surface
Under 100	-	Aggregate	24	24	22
100 - 399	5 ton	Road Mix	30	26	22
400 - 899	7 ton	Plant Mix	32-34	28-30	24
1000 and over	7-ult. 9 ton	Plant Mix	36-38	30-32	24

Wherever economically justified, the design may include Portland Cement concrete pavement.

(b) Base Design

All base requirements for flexible pavements shall be based on the "Flexible Pavement Design Standards" in the Technical Manual No. 5-292 issued by the State of Minnesota, Department of Highways, and shall be consistent with the volume and type of a 20-year projection of traffic.

Base requirements for rigid base or surface shall be based on accepted engineering practices consistent with soil type and the volume and type of a 20-year projection of traffic.

(c) Design Speed (in miles per hour)

20-Year Projected Average Daily Traffic Volume	Terrain		
	Flat	Rolling	Mountainous
Under 100	45	40	30
100 - 399	50	50	40
400 - 999	60	50	45
1000 and over	60	50	45

(d) Maximum Degree of Curve (in degrees)

20-Year Projected Average Daily Traffic Volume	Terrain		
	Flat	Rolling	Mountainous
Under 100	10	12	22
100 - 399	8	10	14
400 - 999	5	8	10
1000 and over	4	5	8

(e) Maximum Gradient (in percent)

20-Year Projected Average Daily Traffic Volume	Terrain		
	Flat	Rolling	Mountainous
Under 100	5	7	10
100 - 399	4	5	8
400 - 999	3	5	7
1000 and over	3	4	6

(f) Non-Passing Sight Distance (in feet)

20-Year Projected Average Daily Traffic Volume	Terrain		
	Flat	Rolling	Mountainous
Under 100	320	300	275
100 - 399	350	350	300
400 - 999	475	350	320
1000 and over	475	350	320

(g) Bridge Standards

20-Year Projected Average Daily Traffic Volume	New Bridges	
	Clear Width	Design Load (AASHO)
Under 100	24 feet	H - 20
100 - 399	* 24	H - 20
400 - 999	30	H - 20

* Minimum of 24 feet but not less than 2 feet wider than surfaced widths on structures of 80 feet or less in length.

General Note: Consideration should be given to constructing all short span structures to full shoulder width.

(h) Bridges to Remain

20-Year Projected Average Daily Traffic Volume	Clear Width	Safe Load
		(Posting Basis in Tons)
Under 100	18 feet	10 ton
100 - 399	24	15
400 - 999	24	15

B. Municipal Design

Any incorporated or unincorporated area which, in the opinion of the county engineer and the Commissioner of Highways, is sufficiently developed, shall warrant the use of the design geometrics approved for the municipal state-aid streets and shall be designed on that basis.

(2) Municipal State-Aid Streets

A. Rural Design

When, in the opinion of the municipal engineer and the Commissioner of Highways, the area served by the road is not presently, nor will it be in the foreseeable future, sufficiently developed to warrant the use of municipal design, then the rural design of the county state-aid highways shall prevail and the road shall be designed on that basis.

B. Municipal Design

The design geometrics for the construction or reconstruction of the municipal state-aid streets shall be determined by the type and volume of traffic and specific project considerations conforming to the minimum requirements within the limits of the road-bed widths and other design data as described hereafter.

(a) Minimum Roadbed Widths

Through Lanes	Number of lanes	Lane width, feet	Total width in feet: Out to out of pavement (±) or face to face of outer curbs				With 4' median and two parking lanes
			Undivided; no parking lanes	With median no parking lanes 4' med, 14' med.	Undivided; with parking lanes One side Both sides	Undivided; with parking lanes One side Both sides	
2**	A*10	-	-	-	-	40	-
	B 11	22	-	-	-	42	-
	C 12	24	-	-	-	44	-
4	A 10	40	44	54	50	60	64
	B 11	44	48	58	54	64	68
	C 12	48	52	62	58	68	72
6	A 10	60	64	74	70	80	84
	B 11	66	70	80	76	86	90
	C 12	72	76	86	82	92	96
8	A 10	80	84	94	-	-	-
	B 11	88	92	102	-	-	-
	C 12	96	100	110	-	-	-

* - Minimums.

A - Absolute minimum - to be used only under extreme conditions.

B - Acceptable minimum - where conditions warrant.

C - Desirable minimum - wherever feasible.

** - Should not be considered except where continuous shoulder or parking lane is provided on each side. Traffic warrants for all multiple lane design will be based upon currently approved A. A. S. H. O. standards.

(b) Base Design

All base requirements for flexible pavements shall be 7-ton or 9-ton axle load and shall be based on the "Flexible Pavement Design Standards" in the Technical Manual No. 5-292 issued by the State of Minnesota, Department of Highways, and shall be consistent with the volume and type of a 20-year projection of traffic.

Base requirements for rigid base or surface shall be based on accepted engineering practices consistent with soil type and the volume and type of a 20-year projection of traffic.

(c) Base and Surface Types

The type of construction selected is to be determined by the type and volume of traffic, comparative costs, and special requirements pertinent to the project.

(3) Sub-Drainage - The proportional share of storm sewer installations on County and Municipal State-Aid Routes shall be based upon the following schedule, more fully explained under departmental memoranda.

- (a) Catch Basins and Leads - The initial installation or the necessary relocation of all catch basins and lead lines located within a State-Aid Highway or Street shall be eligible for full reimbursement. (Exception: Catch basins serving as manholes on the storm sewer main shall be computed as a part of the main.)
- (b) Main Trunk Sewers, Outlets, and Manholes - Storm sewer collection mains, outlet mains, and their manholes can be approved in the ratio that the drained area of the State-Aid Street bears to the total area drained. For the purposes of this policy the total area drained is defined as all of the drained area immediately adjacent to and including the State-Aid Street. Local areas outside of this definition could be drained in the proposed State-Aid sewer by oversizing the basic systems at one-hundred (100) percent city or county expense to provide additional capacity for the added areas. For State-Aid sewer outlets into an in-place city/county storm sewer, for all or part of the State-Aid Street drainage, a reasonable credit will be

allowed. This will have the effect of increasing the participating State-Aid cost of the storm sewer system over and above the basic split ratio. Except for said outlet connections as noted above, State-Aid payments will not be made on existing facilities.

- (c) Maintenance - No payments for sewer maintenance other than the regular State-Aid maintenance allotments will be made on State-Aid Streets or Highways.