CITY OF SWIFT CURRENT

where life makes sense

PART A5

STREETS

OCTOBER 2020

1 GENERAL

1.1.1 This section covers the design of the roadway system including but not limited to streets, lanes, sidewalks, and pathways located within the road right of way. The designer must consider safety in the design of transportation facilities. At a minimum the following safety factors shall be considered in the design of the transportation system:

- Number and types of vehicles using the roadway.
- Accessibility of an area to emergency services.
- Spacing, type, intersection angle, and location of intersections and crosswalks.
- Sight distance (decision, stopping, etc.)
- Level of access from adjacent properties.
- Traffic calming requirements.
- Playground and school zone locations.
- Pedestrian facilities.
- Intersection offsets.
- Intersection control (uncontrolled, yield, stop, or traffic signal).
- Median treatment; and
- Traffic control device warrants.

1.1.2 Designers must also consider how the transportation system interacts with other components of the City's infrastructure.

2 DEFINITIONS

Cul-de-sac: means a minor residential dead-end street with one end open for traffic with a turnaround at the other end.

Intersection Corner Clearances: is the triangular area between intersecting streets or a street and driveway that is free of visual obstructions to provide a clear line of sight for motorists and pedestrians.

Lane: means a public highway intended primarily to provide access to the rear of abutting properties and does not include a road allowance, road, or street.

Private Driveway: as defined in the Traffic Bylaw, means every road intended for private use and not open to the public for the purpose of vehicular traffic.

Right of Way: means the area of land owned by the Crown or City, or where an easement exists for the benefit of the Crown or City for the purpose of any public street, access, utilities, or infrastructure.

Road: Synonymous with street.

Roadway: That portion of a street or highway which is improved, designed, or ordinarily used for vehicular travel.

Street: The whole and entire width of a right of way, highway, or road allowance intended to be used by vehicles and pedestrians shown as such on a Plan of Survey registered with Information Services Corporation. There are three main street classifications as follows:

Arterial Street: means a street or roadway designed to carry traffic from one district/neighborhood of the City to another. Full or partial control of access to abutting land uses shall be required where development warrants such action and where alternate access can be provided. Arterial streets are separated into Major and Minor Arterial Streets in accordance with Table 4.1 and 4.2.

Collector Street: means a street or roadway designed to intercept traffic between local and arterial streets, with direct access to abutting properties. Collector streets are separated into Residential and Commerical/Industrial Collector Streets in accordance with Table 4.1 and 4.2.

Local Street: means a street intended for providing street access to land uses abutting along its length. Local streets are separated by Residential and Commercial/Industrial Local Streets in accordance with Table 4.1 and 4.2.

Walkway: means a parcel of land primarily intended for pedestrian use by the public.

3 SUBMISSIONS AND APPROVALS

Depending on the nature of concept plan and/or the type of subdivision to occur, the City may require technical evaluations and/or studies be done by the property owner/developer prior to detailed design for the transportation/traffic component of the development. Possible requirements are as follows:

3.1 TRAFFIC IMPACT ASSESSMENT (TIA)

- The *Traffic Impact Assessment* (TIA) will be required of all applicants preparing a concept plan for review and action by the City. Depending on the scale or intensity of development the assessment can vary in complexity and detail at the discretion of the City in consultation with the applicant. The TIA typically includes the following detail:
    - Data collection for existing road network affected by the development (traffic counts).
    - Review of the *Official Community Plan* and *Transportation Master Plan* and other existing City studies that may have an impact on the development.
    - Projection of background traffic growth on existing road network.
    - Determine new trips generated by the proposed development based on the ITE Trip Generation Manual, Current Edition.

- Distribution of generated trips onto the existing road network.
- Combine trip generations from the new development with estimated future traffic volumes to determine the total traffic volumes at the new and existing impacted intersections at full build out and a 20 year horizon.
- Evaluate traffic operating conditions at various stages of development, full build out, and a 20 year horizon.
- Identify potential operational, safety, and capacity constraints.
- Determination of required intersection, roadway and access improvement required to provide acceptable level of service (LOS) and safety for the transportation network. Industry standard LOS thresholds are established in the Highway Capacity Manual (HCM), whereas generally LOS A has the best operating conditions and LOS F represents failure of an intersection movement. LOS D is typically considered the limit of acceptable operation due to excessive delays that occur beyond this level.
- Recommended access control policy, where applicable to the roadway types identified.

Where offsite improvements are warranted by the TIA as a result of the development, the *Servicing Agreement* shall define the obligations of the Developer. Development Levys from a combination of developments **may** be utilized for offsite improvements as determined by the City.

3.2 TRANSPORTATION PLAN

A Concept Plan proposal shall include a Transportation Plan that takes into consideration the Official Community Plan, Master Transportation Plan, and TIA for the relevant development. The proposed Transportation Plan forms a portion of the preliminary design work portion of a concept plan and shall include the following at a minimum:

- Right of ways, roads, and lanes, including widths for the development.
- Road classification.
- Transit routes.
- Locations of sidewalks, pathways, and bicycle routes.
- Recommendations identified in a TIA.
- Pedestrian Access.
- Illumination Recommendations.
- Preliminary intersection configurations and signalization requirements.
- Access control issues and development access points and connectivity to adjacent existing/future developments.
- Shared access and parking arrangements should be identified.

- "Traffic Calming" opportunities should be qualified at this time.
- Streetscapes should be qualified at this time (attached or detached walks, boulevard landscape, etc.) and developer obligations within adjacent streets.

3.3 DETAILED DESIGN SUBMISSION

Upon acceptance by the City of any requested Traffic Impact Assessment or Transportation Plan development proponents will be required to submit a detailed design plan for construction. The detailed design shall consist of the following:

3.3.1 Requirements as stated in Part A - General Requirements. The design drawings shall be a component of the overall detailed design drawing package where applicable.

3.3.2 All calculations, schematic diagrams, computer printouts, etc.

4 DESIGN REQUIREMENTS

4.1 GENERAL

Public and/or private streets shall be designed to accommodate design traffic flows for the proposed development. In specific cases the road may need to accommodate extensions to adjacent future development areas as determined in a Sector Plan, or Transportation Study.

Unless otherwise noted in these standards the roadway system shall be designed in accordance with *Transportation Association of Canada (TAC) Manual - Geometric Design Standards for Canadian Roads* latest edition.

4.2 CLASSIFICATION AND CONNECTIVITY

4.2.1 The street classification system used by the City considers land service and traffic characteristics including vehicle types, vehicular/traffic mix, and destinations. The following hierarchical categories are used:

- Lanes
- Local - Residential
- Local - Commercial & Industrial
- Collector - Residential
- Collector - Industrial & Commercial
- Arterial - Major
- Arterial - Minor

4.2.2 Roadways within a proposed development shall reflect the progression of connectivity. Locals connect to collectors, and collectors connect to arterials. The Developer's engineer is responsible for designating the appropriate classification of roadways in new developments, subject to City approval.

4.3 SUMMARY CLASSIFICATION-DESIGN TABLES

Street geometrics shall be in accordance with Tables 4.1 and 4.2, Standard Drawings and the specific sections of these standards that follow the tables. Daily traffic volumes and road speeds shown below are to be used in establishing road classification.

TABLE 4.1
SUMMARY OF CLASSIFICATION

Classification	Traffic Volumes (vpd)	Design Speed[a] (km/h)	Street Width[b] (m)	Direct Access	Parking	Sidewalks
Lanes	Up to 500	n/a	6-10	Permitted	Restricted	n/a
Local - Residential	Up to 1,000	50	18.0	Permitted	Permitted	1 or 2 sides
Local – Commercial & Industrial	Up to 3,000	60	18.0	Permitted	Permitted	2 sides
Collector - Residential	Up to 8,000	60	22.0	Permitted	Permitted	Attached or Separate, 2 sides
Collector – Commercial & Industrial	Up to 12,000	60	22.0	Permitted	Permitted	Attached or Separate, 2 sides
Minor Arterial	5,000 – 20,000	50 - 70	30.0	Some Restrictions	Optional	Separate, 2 sides
Major Arterial	10,000 – 30,000	60 - 90	45.0	Restricted	Restricted	Separate, 2 sides

Notes for Table 4.1 and 4.2:

a. Posted speed to be 10 km/h less than design speed.
b. Land for noise attenuation will be in addition to the road right-of-way requirement.
c. Additional travel lane width may be required to accommodate cyclists, e.g. on arterials the outside lanes may be 4.2 m wide.
d. Rear lane (alley) access may be required on collectors.
e. Any street in excess of the volumes in Table 4.1, shall be considered an Expressway or Freeway and be designed in accordance with TAC.

TABLE 4.2
SUMMARY OF MINIMUM DESIGN STANDARDS FOR STREETS

Classification	Pavement Widths (m)	Travel Lanes[c]	Parking Lanes	Minimum Radius of Curvature (m)	Minimum Intersection Spacing (m)	Minimum Corner Cuts at Intersections (m)	Lighting Poles and Other Obstructions	Maximum Gradients (%)	Maximum Super-elevation (m/m)
Lanes	6-8	n/a	n/a	60	60	3	n/a	7	.025
Local - Residential	11.0	2 @ 3.0 m	2 @ 2.5 m	90	45	4.5	As per Std. Dwg. D-101	7	.025
Local – Commercial & Industrial	12.5	2 @ 3.5m	2 @ 2.75m	90	60	6.0	As per Std. Dwg. D-102	7	.025
Collector - Residential	12.5	2 @ 3.5m	2 @ 2.75m	150	60	6.0	As per Std. Dwg. D-103	5	.025
Collector – Commercial & Industrial	13.0	2 @ 3.5 m	2 @ 3.0 m	150	60	10	As per Std. Dwg. D-104	5	.025 - .04
Minor Arterial	15.4	As per Std. Dwg. D-105	Restricted	90 – 190	200	10	As per Std. Dwg. D-105	5	.04 - .06
Major Arterial	15.4	As per Std. Dwg. D-106	Restricted	130 – 340	400	30	As per Std. Dwg. D-106	5	.04 - .06

4.4 VERTICAL ALIGNMENT

4.4.1 Minimum gutter grades around all curves and along all tangents shall not be less than 0.5%. Minimum gutter grades on curb returns and intersection corners shall be 1.0%.

4.4.2 Maximum gutter grades shall not exceed those defined by the Maximum Gradient column in Table 4.2.

4.4.3 All roadways shall be crowned or shall have a crossfall as shown on the applicable standard drawings. The standard crossfall rate is 2.0%.

4.4.4 The grades at intersections for all roadway classifications shall not exceed 2% for a minimum distance of twenty (20) metres, measured from the shoulder edge of the receiving road.

4.4.5 All vertical curves shall be designed to meet or exceed the minimum requirements shown in the following Table 4.3.

Table 4.3 – "K" VALUE

Design Speed (km/hr)	Crest	Sag*	Minimum Length (m)
50	7	6	50
60	15	10	60
70	22	15	70

K = L/A
L = length of vertical curve in metres
A = algebraic difference in grades percent
* = based on comfort control and assumes street lighting

4.4.6 The maximum superelevation is shown in Table 4.2.

4.5 HORIZONTAL ALIGNMENT

4.5.1 The minimum curve radius is relative to the Road Classification, the design speed, and the maximum superelevation (see Table 4.1 and 4.2).

4.5.2 All horizontal curves shall be designed to meet the minimum design requirements shown in Table 4.1 and 4.2.

4.5.3 For minimum edge of pavement radius for cul-de-sacs refer to Standard Drawing D-400.

4.5.4 Maximum cul-de-sac length shall be 150 m, unless an approved emergency access route is provided within the cul-de-sac and it is approved by Council.

4.5.5 Flares at intersecting roadways without a curb shall have the following minimum radius from shoulder to shoulder:

- Residential access and local 10.0 metres
- Residential collector 15.0 metres
- Industrial local and collector 15.0 metres

4.6 STREET INTERSECTIONS

Street intersection design widely varies with the classification of intersecting streets, traffic volumes, vehicle types, and speeds. Intersections shall be designed in accordance with the factors within *The Geometric Design Guide for Canadian Roads by TAC*. Notwithstanding TAC, the following minimum requirements for intersection design are required.

4.6.1 Intersection Corner Clearances shall be in accordance with Standard Drawing D-1000.

4.6.2 Intersection spacing will depend on the classification of intersecting roads, but in no case shall centreline offsets be less than 45m.

4.6.3 Streets shall intersect at angles between 80^{o} and 100^{o}.

4.6.4 Intersections on curves should be avoided. Where an intersection must be placed on a curve the developers engineer shall provide calculations and drawings confirming that the sight distance and other intersection requirements of TAC can be achieved.

4.6.5 Curb ramps shall be constructed in accordance with Standard Drawing D-305.

4.6.6 Curb returns at residential local street intersections shall be a minimum radius of 8.0m at lip of gutter.

4.6.7 Curb returns at residential local street to collector street intersections shall be a minimum radius of 10.75 m at lip of gutter.

4.6.8 In industrial/commercial areas, the lip-of-gutter radius should be a minimum of 12.5 m to accommodate truck turning movements.

4.7 DRIVEWAYS AND LANES

This section outlines the requirements respecting the design and placement of driveways and lanes within new developments, or where existing developments propose to install new or alter existing driveways. The location requirements for driveways shall also apply to lanes.

4.7.1 Residential driveways shall have widths no larger than 60% of total lot frontage to a maximum of 11.0 m.

4.7.2 Commercial driveways shall have widths no larger than 12.0 m.

4.7.3 Industrial driveways shall have widths no larger than 15.0 m.

4.7.4 In accordance with TAC, increased widths for commercial and industrial driveways may be considered where multiple exit and entry lanes are employed, to the maximum width of 17.0 m.

4.7.5 Driveway width on pie lots shall be measured along the arc of the lot's frontage.

4.7.6 Driveways shall be located in accordance with the requirements shown in Standard Drawing D-306 and *"The Sidewalk Crossing Bylaw".*

4.7.7 Corner clearances at the intersection of a driveway and an **existing** street shall be in accordance with Standard Drawing D-1000.

4.7.8 Corner clearances and intersections for new developments shall be designed in accordance with the current issue of the *"Geometric Design Guide for Canadian Roads"* published by TAC.

4.7.9 Driveways should be minimized on horizontal and vertical curves.

4.7.10 A driveway crossing should be positioned at 90^{o} to a street and in no case less than an angle of 70^{o} to the street.

4.7.11 All driveways shall be constructed to give a minimum of 1.0m clearance from edge of flare to any structure (e.g. hydrants, light standards, service pedestals).

4.7.12 Driveways for industrial/commercial lots are required to be constructed by the Developer where the access locations are known. Where access locations cannot be determined during land development, the City may choose to have the Developer provide materials and/or securities to permit future construction of the approaches.

4.8 CURB AND GUTTER

4.8.1 Curb and gutter will be required in all areas unless otherwise approved by the City.

4.8.2 At the discretion of the City, **rolled** curb and gutter will be constructed on all local and collector streets and collector residential streets. All other streets shall have **straight face (standard)** curb and gutter in accordance with the standard drawings.

4.8.3 For arterial street intersections the curb returns shall be designed in consideration of the type and volume of the turning traffic. Two and three centred curves, with or without islands, may be required.

4.8.4 Pedestrian ramps are required at all intersections which have sidewalks and straight face curb and gutter.

4.9 SIDEWALKS AND PATHS

4.9.1 Pedestrian features that are designated for use by the general public shall be accessible to all persons as well as being safe, functional, and attractive and provide free and clear movement of pedestrians.

4.9.2 In addition to providing sidewalks and paths adjacent to streets, developments must provide pedestrian connection between streets and interconnection to recreation facilities, community centres, green space, and other existing/future developments in accordance with the Concept Plans developed for the development area.

4.9.3 Sidewalk locations shall be in accordance with Standard Drawings D-101 to D-106.

4.9.4 Outdoor display and seating areas shall be independent of walkways and trails and shall be accommodated in a separate area adjacent to the walkway or trail.

4.9.5 The following classes of pedestrian space are typically used by the City within the City's rights-of-way or other land ownership, independent of adjoining land uses:

- 1.5m Attached Concrete Walkway Std. Dwg. D-300 to 302

- 1.5m Detached Concrete Walkway Std. Dwg. D-303
- 3.0m Asphalt Pathway Std. Dwg. D-303a
- 3.0m Granular Pathway Std. Dwg. D- 303a

4.9.6 Wider sidewalks may be required in commercial areas and areas of high pedestrian activity to address the need for both outdoor display areas, outdoor seating areas, and through access by pedestrians as determined by the City.

4.9.7 Street furniture and any other obstructions shall be a minimum of 0.5m clear from the edge of all sidewalks and trails. This setback must be measured from the edge of projected mature vegetation.

4.9.8 Unless otherwise approved by the City, a sidewalk shall be located on both sides of the street. The Developer is responsible for proposing and justifying why a sidewalk on both sides of the street may not be applicable, how elimination of a walk is beneficial to the development, and if the remaining walk may be increased in width to compensate for the reduction in pavement on both sides for pedestrian use.

4.10 CULVERTS AND DITCHES

A culvert is required where a driveway crosses a ditch or a drainage course and shall be in accordance with the following:

4.10.1 The minimum allowable ditch grade shall be 0.5%. Ditch grades in excess of 2.0% shall be protected against erosion through rock ditch checks, silt fences, Enviroberm fences and/or erosion control blankets. Typical ditch check installations are illustrated in the Standard Detail Drawings.

4.10.2 Ditch side slopes and back slopes shall not be steeper than 3:1.

4.10.3 The minimum ditch bottom width shall be 3.0 metres along arterial roads and 1.0 m along the collector and local roadways, sloping away from the roadway at a minimum of 5.0%.

4.10.4 Culvert size requirements shall be determined through the storm water drainage analysis; however, the minimum size culverts shall be as follows:

- Roadway cross culvert 600 mm (24 inch)
- Residential approach culvert 300 mm (16 inch)
- Industrial approach culvert 500 mm (20 inch)

4.11 ROAD SURFACES

4.11.1 The City presently approves two (2) types of roadway surface finishes:

- Gravelled surface (rural roads where approved)
- Asphaltic concrete (hot mix asphalt) pavement surface (A.C.P.)

4.11.2 Roadways in all subdivision developments shall be surfaced with asphaltic concrete pavement (hot mix asphalt).

4.11.3 Irrespective of the roadway surface finish approved by the City for a specific development, good roadway industry construction practices and techniques shall be employed at all times. Furthermore, roadway sub-grade and base construction shall be undertaken with the view that an asphaltic concrete pavement will ultimately be placed as the surface finish for the roadway.

4.11.4 Should a gravelled surface be approved, even for an interim period, the surface gravel shall be a minimum compacted layer of 75 mm depth of 20 mm crushed gravel. All approaches shall be similarly treated.

4.11.5 All roadways shall be paved with hot mix asphalt. A geotechnical report with recommended pavement designs shall be conducted by a Professional Engineer and submitted to the City for review.

4.11.6 Paved roadways shall be designed in accordance with the Asphalt Institute Method of pavement design, using minimum design loadings of 8,165 kg (18,000 pound) axle loads. The design parameters, such as traffic count, percentage of trucks, or California Bearing Ratio (CBR), are to be outlined to the City. The City reserves the right to request the Developer to engage an engineering agency to carry out tests, prior to paving, to confirm adequacy of design.

4.11.7 Minimum pavement structure requirements shall be as per typical details in City Construction Standards. An independent pavement design is required for all developments. Additional pavement structure strengths and/or materials may be required in areas with poor sub-grade materials, pending the results of the geotechnical investigation.

4.11.8 The final lift of asphaltic concrete shall be placed in the second year of the maintenance period, 60 days prior to Final Acceptance Certificate application.

4.11.9 Alternative pavement designs, such as soil cement base, may be considered. Approval of alternate pavement designs must be obtained in writing from the City prior to submission of design drawings.

4.12 LANES

4.12.1 Rear lanes (alleys) shall have a minimum surfaced width of 5.5 m within a 6.0 m right-of-way.

4.12.2 Rear lanes (alleys) shall have a minimum longitudinal grade of 0.7%. If gravel-surfaced, the lane shall be cross sloped to one side with a 3.0% slope, or have a centre swale with each

side having a 3.0% slope. If paved, the lane shall be cross sloped to one side at 2.0%, or have a centre swale with cross slopes of 2.0%.

4.12.3 Where rear lane traffic activity is expected to be high, such as for certain commercial developments, a wider surfaced width and right-of-way may be required as determined by the City.

4.12.4 Where rear lanes are to be used for primary access, a surface width consistent with typical street width for the intended traffic type shall be used. (i.e. local residential or local commercial/industrial).

4.12.5 A 3m fillet (corner cut) shall be placed at the corners of all alley intersections.

4.13 EMERGENCY VEHICLE ACCESS

4.13.1 If cul-de-sac roads exceeding 150m in length are approved by Council, an emergency vehicle access route shall be provided unless otherwise approved.

4.13.2 Where the emergency vehicle access is designated as a walkway, the walkway shall be designed in accordance with Standard Drawing D-910 and the following requirements apply:

- The emergency access structure shall be a minimum of 6m wide to allow access by emergency vehicles, with T-bollards installed to limit pedestrian passage to 3m during regular pathway usage.
- If planting and lighting is proposed in the emergency access/pathway right of way, a minimum 8m clearance is required where there are no obstructions to allow unimpeded access by emergency vehicles.

4.13.3 Removable T-bollards must be placed at each end of the walkway access, as shown in drawing D-910. The posts shall prevent non-emergency vehicle access while allowing access for emergency vehicles.

4.14 VEHICLE TRACKING SOFTWARE (AUTOTURN)

4.14.1 To ensure trucks and emergency vehicles are able to negotiate turning movements without encountering obstacles, AutoTURN or a similar vehicle tracking software shall be used in the design process. An AutoTURN plan shall be provided with travel around the site using all driving lanes. Travel paths should begin outside the site illustrating the turn onto the primary entry road/drive, manoeuvring around the site, and exiting the site.

4.14.2 The design vehicle shall be the Swift Current Fire Department's Ladder Truck, as shown in Standard Drawing D-1001.

4.14.3 Paths must illustrate the full vehicle swept path and must indicate a clear, unobstructed travel around the site without impact/collisions to buildings, curbs, landscaping, parking spaces, vehicles, tree overhangs, etc.

4.14.4 A minimum vehicle speed of 8 kph shall be used to determine vehicle turning envelopes for emergency vehicles.

4.14.5 Emergency vehicles shall be assumed to initiate a right turn from anywhere on the roadway and to manoeuvre right turns using the entire roadway. Vehicles shall maintain a minimum 300 mm offset from the face of curb.

4.15 CONTROL DEVICES, STREET NAME SIGNS AND PAVEMENT MARKINGS

4.15.1 Plans shall be provided to the City that depicts the locations and details of all traffic control devices (traffic signs and traffic signals), street name signs, and pavement markings.

4.15.2 All traffic control devices and pavement markings shall be designed and installed in accordance with the manual "Uniform Traffic Control Devices for Canada" as issued and revised from time to time by the Transportation Association of Canada (formerly RTAC).

4.15.3 Street signing shall be standard aluminium, white on green (unless otherwise approved by the City), with a minimum vertical dimension of 150 mm.

4.15.4 Sign supports and appurtenances to be capable of withstanding summation of following loads:

- Wind and ice loading specified to be consistent with anticipated loads in locality of installation. Refer to National Building Code of Canada and/or applicable provincial building code.
- Dead load of signboards, sign supports, and appurtenances.
- Ice load on one face of signboards and around surface of all structural members and appurtenances.

4.15.5 Structural deflections and vibration in accordance with American Association of State Highway and Transportation Officials (AASHTO), "Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals".

4.15.6 All signs shall utilize High Intensity reflectorized material to ASTM-D4956, Type III.

4.15.7 All sign posts shall be round galvanized steel, or PWF wood where specified by the City.

4.15.8 Along collector and arterial streets and intersections, pavement markings shall be of a "permanent" type, thermoplastic. Painted markings are acceptable elsewhere.

4.15.9 All traffic control signs shall be mounted to provide 2.0 m vertical clearance to the lowest portion of the sign, unless otherwise approved by the City.

4.15.10 All signs shall be mounted to provide a minimum of 0.3 m of horizontal clearance from back of curb or back of walk. Where there is no curb or walk within the right-of-way, the sign location is to be approved by the City.

4.16 STREETSCAPING

Streetscaping is defined as "The practice of applying aesthetic treatments to the street and its facilities, intended to enhance the quality of the roadway environment" in TAC. Streets are not just an area to convey traffic, rather they are a shared space with pedestrians and bicyclists, that functions to accommodate vehicular, non-motorized vehicles (e.g., bicycles) and pedestrian traffic in a safe and

friendly manner. A well designed streetscape promotes walking, which allows for more opportunity for social, physical, and recreation activity resulting in a better community to live.

The principles in the TAC *Geometric Design Guide for Canadian Roads* shall be used for designing Streetscapes in the City. Designers and Developers are encouraged to use additional creativity where possible when designing a new neighbourhood. Streetscape designs shall be submitted as part of the overall design package for the development. Sector plans and concept plans for smaller area development and redevelopment shall include the streetscape in their landscape design plans.

It is the Developer's obligation to design and construct not only the roadway, but the entire street in accordance with the city standards, specifications, and streetscape plans for the intended development including:

- Grading
- Topsoil
- Turf and Vegetation
- Natural areas & Xeriscaping
- Hardscape elements

4.17 NOISE ATTENUATION

4.17.1 Noise attenuation barriers shall be provided where traffic noise levels exceed or are expected to exceed 65 dB(A) L_{dn} (A-weighted day night average sound level).

4.17.2 Barriers may consist of noise walls or earthberms where space permits.

4.17.3 In the case of new residential developments located within 300 m of a major transportation route (may include major arterial roadways, freeways, railways, airports, etc.) or heavy industrial areas, a noise study may be required, at the City's discretion, to determine the need for noise attenuation barriers. The study shall consider a twenty year projection of future traffic volumes and related noise levels.

4.17.4 The developer shall be responsible for determining and providing the noise attenuation measures required to meet the noise level standard.

4.18 STREET LIGHTING

4.18.1 The City of Swift Current's Department of Light and Power provides street lighting for the City. Standards for industrial developments shall be determined by the City during the initial planning stages of the proposed development.

4.18.2 All street lighting cables in new subdivisions shall be installed underground. Additional street lights in neighbourhoods with overhead cabling may be installed overhead if approved by the City.

4.18.3 The Developer shall coordinate the location of street lights to ensure that they do not interfere with other utilities and driveways.

4.18.4 Where possible street lighting shall be directed downward toward the roadway and sidewalks without causing glare to adjacent uses.

4.18.5 Any capital contribution that the utility company may charge for installation of underground street lighting shall be paid by the Developer.

4.19 PUBLIC PARKING LOTS

4.19.1 All public use facilities shall include adequate on-site parking space for the intended use as required by the Zoning Bylaw, or through consultation with the City where not specified in the Zoning Bylaw.

4.19.2 On-site parking may not be required for public spaces if there is adequate off-site parking adjacent to the public use facility at the discretion of the City.

4.19.3 Parking stalls located at the end of a dead end parking lot shall include space for adequate manoeuvring from the parking stalls adjacent to the dead end. The developer shall provide a drawing based on vehicle turning radius software that shows vehicles will be able to enter and exit the end stall without difficulty.

5 LIST OF DRAWINGS

D-100 Cross Section – Lanes
D-101 Cross Section – Local Residential
D-102 Cross Section – Local Commercial & Industrial
D-103 Cross Section – Collector Residential
D-104 Cross Section – Collector Industrial & Commercial
D-105 Cross Section – Minor Arterial
D-106 Cross Section – Major Arterial
D-107 Cross Section – Rural Gravel Road
D-108 Cross Section – Rural Country Residential Paved Road
D-109 Overlays
D-200 Rolled Curb and Gutter
D-201 Standard Curb and Gutter
D-202 Standard Reverse Curb and Gutter
D-300 Rolled Monolithic Sidewalk
D-301 Standard Monolithic Sidewalk
D-302 Standard Reinforced C/G with Walk
D-303 1.5 Separate Sidewalk
D-303a Asphalt Pathway
D-304 Standard Curb and Gutter Driveway Crossing
D-305 Typical Monolithic Lane and Driveway Crossing
D-306 Standard Driveway Locations
D-307 Typical Rural Industrial Approaches

D-308 Wheelchair/Bike ramp Locations
D-309 Type A – Ramp Details at Center of Curb
D-310 Type B – Ramp Details at both Curb Returns
D-311 Type C – Ramp Details at Tangent
D-400 Typical Cul-De-Sac
D-500 Cross Section – Concrete Easement Swale
D-501 Cross Section – Concrete Intersection Swale Crossing
D-502 Concrete Sidewalk Swale
D-600 Asphalt Speed Bump
D-800 Typical Rip-Rap for Culvert Size 400 – 1200 mm Diameter
D-801 Cross Section - Typical Culvert Installation
D-900 Parallel, 30° and 45° Parking Lot Layouts
D-901 60°, 75°, and 90° Parking Lot Layouts
D-902 Parking Stall Painting
D-903 Crosswalks
D-910 "T" Bollard - Emergency Vehicle Access
D-950 Rubber Asphalt Crack Filling
D-951 Standard Paving Stone to Curb
D-953 Concrete Step Detail
D-954 Standard Steel Bollard
D-955 Barrier Posts
D-956 W-beam Guard Rail
D-960 Street Sign Standard Placement
D-1000 Corner Clearances
D-1001 AUTOturn Design Vehicle

END OF SECTION