

ARTICLE V. Subdivision Design Standards

§ 170-13. General requirements.

- A. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood, erosion, or other menace. If, following adequate investigation conducted by all public agencies concerned, it is determined that land to be subdivided cannot be used without endangering the health, safety, welfare, or prosperity of the community or would necessitate an excessive expenditure of public financial resources for sewage and water facilities, other public facilities, or streets, then the preliminary plat shall not be approved unless the subdivider formulates adequate methods for meeting such problems.
- B. All required improvements shall be constructed or installed in conformity with the provisions of this chapter and City specifications.

§ 170-14. Preservation of drainage patterns and natural features.

- A. Grading permit required. All subdividers seeking to grade real property within the Planning Jurisdiction shall obtain a grading permit and shall comply with the applicable requirements of the Stormwater Management Ordinance, Chapter 206 of the Papillion Code, the Papillion Creek Stormwater Management Policies, and the Southern Sarpy Stormwater Management Policies.
- B. Preservation of natural features required. To the extent possible, subdivisions shall be designed to preserve natural features of the site, to avoid areas of environmental sensitivity, and to minimize negative impact and alteration of such natural features and drainage patterns.
- C. Preservation of natural features as open space. The subdivider shall preserve the following areas as open space, to the extent consistent with reasonable utilization of land:
 - (1) Wetlands and other unique environmental areas, as defined in Section 404, Federal Water Pollution Control Act of 1972, as promulgated by the Federal Government, and delineated on wetlands maps prepared by the US Fish and Wildlife Service. Development and fill upon wetlands shall be regulated by permit authority of applicable state and federal agencies.
 - (2) Significant stands or mature specimens of trees. A tree inventory shall identify all significant stands, tree canopies, and mature specimens of trees. Tree species on the Recommended Plant Materials list that are removed shall be replaced as noted in Table V. Tree replacement requirements do not apply when tree growth is thinned for purposes of improving the health or viability of the tree canopy, provided that the extent or continuity of the tree canopy is not compromised.

- (3) Special Flood Hazard Areas, other than areas that have already experienced substantial development.
- (4) Natural slopes in excess of twenty percent (20%) as measured over a ten-foot (10') interval. Development on natural slopes over twenty percent (20%) may be permitted only if an erosion control plan is submitted and approved by the City Engineer with the development and if appropriate measures are taken by the subdivider in compliance with such approved plan. The subdivider shall cause a licensed Professional Engineer to review and certify any such plan(s) prior to submission to the City Engineer.
- (5) Development shall avoid fill or disturbance of significant wildlife habitat sites as identified on federal or state lists administered by the US Fish and Wildlife Service of the US Department of the Interior and applicable state environmental regulatory agencies. Subdividers, as applicable, are encouraged to preserve habitat areas as a connected open space consistent with the parks and greenways system designated in the Comprehensive Plan.

§ 170-15. General guidelines for subdivision layout.

Subdivisions shall be designed to comply with the following overall performance objectives:

- A. Avoidance of disturbance or other adverse effects on ground water and aquifer recharge.
- B. Reduction and minimization of cut and fill.
- C. Avoidance of unnecessary impervious surfaces.
- D. Prevention of flooding and encroachment of water onto other real properties outside the boundaries of the applicable subdivision, except for facilities designed as part of a regional or community-wide stormwater management system that is intended to account for such flooding and encroachment of water from such subdivision.
- E. Provision of adequate access to lots, including alternative routes to lots and sites within the subdivision, and the minimizing of cul-de-sacs over three hundred and fifty feet (350').
- F. Mitigation of negative environmental effects on surrounding properties, including effects of shadow, noise, odor, traffic, drainage, and utilities.
- G. Preservation of natural drainage patterns.
- H. Reduction and minimization of the number of multiple frontage lots.

- I. Avoidance of lots that access arterial or collector streets.
- J. Provision for ADA accessible facilities.
- K. Establishment of access control based on future development and projected traffic needs.
- L. Minimization of the number of access points to reduce the number of potential conflicts to promote public safety.
- M. Proper spacing and alignment of intersections to reduce the number of potential conflicts to promote public safety.

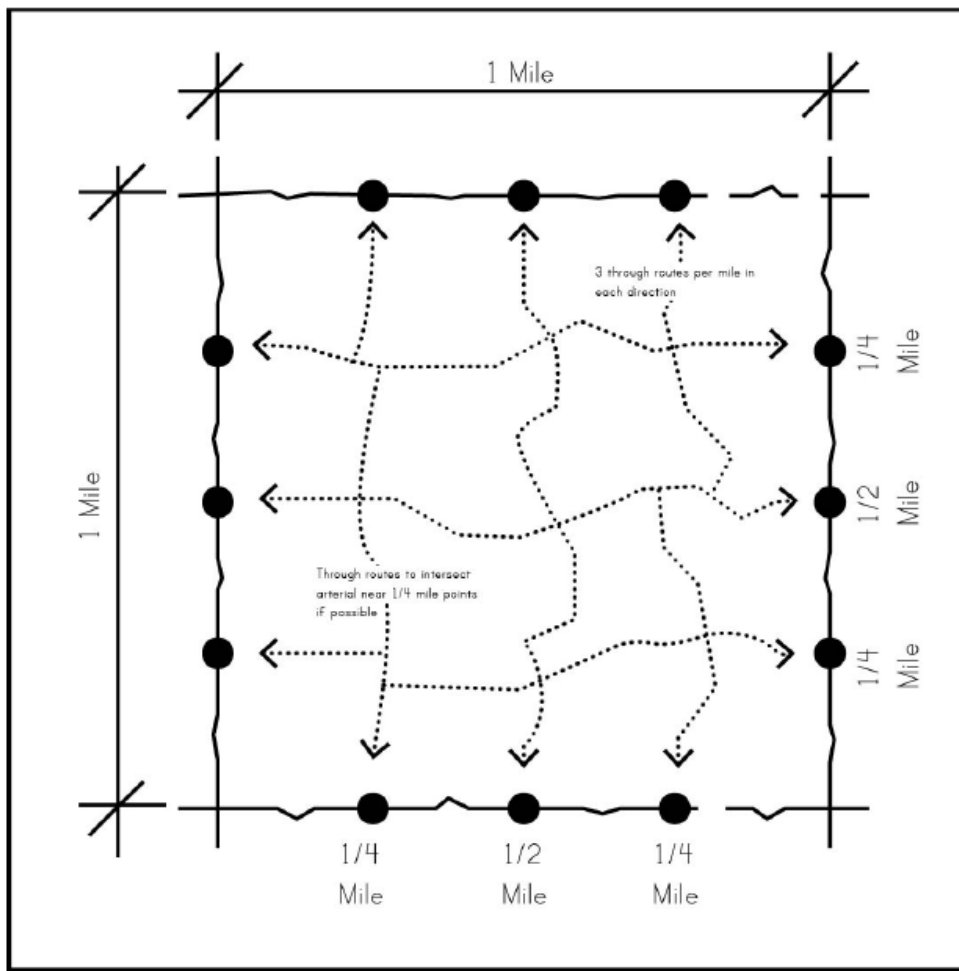
§ 170-16. Streets and alleys.

The arrangement, character, extent, width, grade, and location of all streets shall conform as near as possible to the Comprehensive Plan and shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and in their appropriate relation to the proposed uses of the land to be served by such streets.

- A. Overall roadway system design.
 - (1) The roadway system shall be designed to permit safe and orderly movement of vehicular and pedestrian traffic to meet, but not exceed, the needs of the present and future served population; to be simple and logical; to respect natural features, topography, and landscape; and to present an attractive streetscape.
 - (2) The roadway system shall conform to the City's Comprehensive Plan. For streets not shown on the Comprehensive Plan, the arrangement of such streets shall provide for the logical extension of existing streets and streets shown on the Comprehensive Plan.
 - (3) The internal street network of a subdivision should provide for logical, continuous extensions of streets to and from adjacent subdivisions, both existing and those yet to be platted.
 - (4) The roadway system shall provide adequate traffic flow through a subdivision and provide at least two (2) routes from each lot within the subdivision to the rest of the City, except as explicitly permitted by the City Council and any governmental agency with jurisdiction over the applicable roadway system. Additionally, the roadway system should be designed to discourage through traffic from using local streets and local traffic from using arterials.
 - (5) The roadway system shall provide an internal street network that creates a high level of connectivity as defined in the Comprehensive Plan.

- (6) The roadway system shall provide through routes within subdivisions that allow direct and continuous access to the adjacent arterial and collector street network. Such through routes shall be direct in nature with continuous access that allows easy navigation between the arterial and collector street network. At least three (3) north-south and three (3) east-west through routes shall be provided per mile unless the City Engineer and Planning Director determine that through routes are not feasible due to topography, environmental sensitivity, or other condition as deemed appropriate by the City Engineer and Planning Director. Such through routes shall be generally located at the quarter ($\frac{1}{4}$) and half ($\frac{1}{2}$) mile intersections with the adjacent streets as depicted on Figure 170-16(A)(6). The half ($\frac{1}{2}$) mile routes shall provide the most direct routes between the adjoining arterial and collector streets. Alternate routes that provide through routes at locations other than the quarter ($\frac{1}{4}$) or half ($\frac{1}{2}$) mile; provided that the City Engineer and Planning Director determine that such alternate route is required due to topography, environmental sensitivity, human conflicts, or other condition as deemed appropriate by the City Engineer and Planning Director.

Figure 170-16(A)(6): Subdivision Through Routes

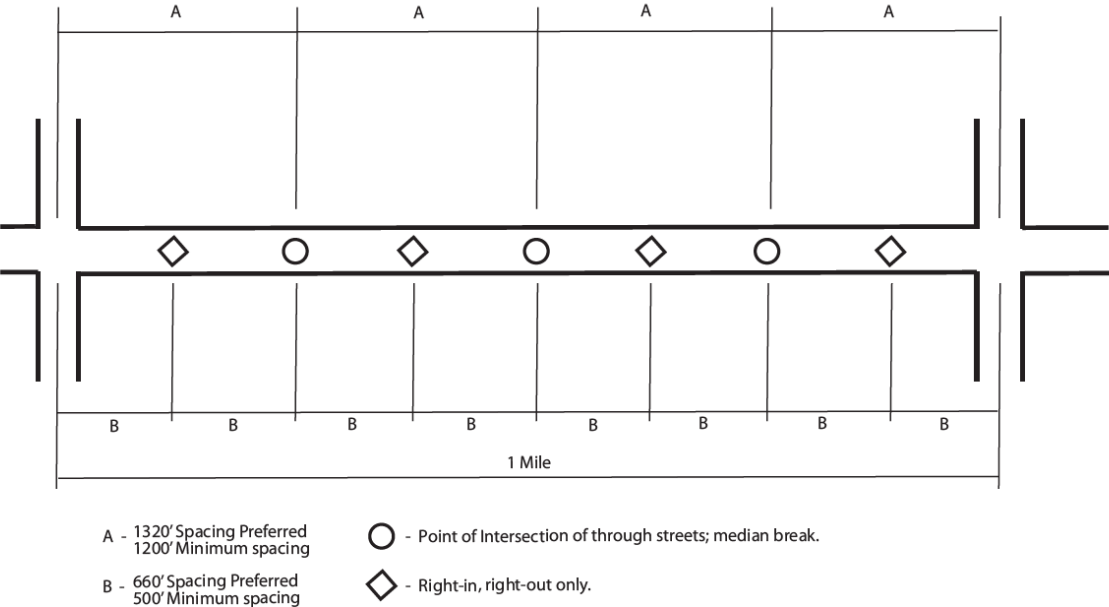


- B. Street extensions. The roadway system, including the internal street network, of the proposed subdivision shall provide for the continuation or appropriate projection of streets and alleys already existing in areas being subdivided. Where, at the determination of the City Council, it is desirable to provide street access to adjoining properties, proposed streets shall be extended by dedication to the boundaries of such properties. Where the City Council deems it necessary, such dead-end streets shall be provided with a temporary turnaround having a radius of at least fifty feet (50') or an equivalent means as authorized by the City Engineer. The roadway system, including the internal road network, of the proposed subdivision shall provide for extending existing roads, but in no case shall a road extension be of less width than the minimum width required in these regulations based on the road classification.
- C. Dedication of right-of-way for new streets. The dedication of right-of-way for new streets measured from lot line to lot line shall meet the right-of-way requirements as provided in Table II of these regulations. All points of access to all streets classified as arterial or collector streets shall be subject to the approval of the City Council. Marginal access streets may be required by the City Council for subdivisions fronting on arterial streets.
- D. Dedication of right-of-way for existing streets. Subdivisions platted along existing streets shall dedicate additional right-of-way, if necessary, to meet the minimum street width requirements set forth in these regulations. The entire minimum right-of-way width shall be dedicated where the subdivision is on both sides of an existing street. When the subdivision is located on only one (1) side of an existing street, one-half (1/2) of the required right-of-way width, measured from the centerline of the existing roadway, shall be dedicated.
- E. Intersections.
- (1) Intersection design.
- a. Conflicts at intersections shall be minimized.
 - b. Adequate stopping sight distances shall be provided, as deemed necessary by the City Engineer, to allow drivers to react to potential conflicts and stop.
 - c. Adequate intersection sight distances shall be maintained to provide opportunity for a driver who is waiting at an access point to enter or cross the street,
 - d. An area upstream and downstream shall be provided from any access point where drivers will need to change speed, brake, or maneuver should a vehicle turn onto the street.
 - e. Appropriate spacing shall be provided to eliminate interference between two or more vehicles attempting to enter the street at the same time.

- f. The function area necessary to minimize congestion shall be provided in the area extending upstream and downstream of the physical intersection (including the longitudinal limits of the auxiliary lanes).
- (2) Street intersections. Streets shall intersect as nearly as possible at an angle of ninety degrees (90°), and no intersection shall be at an angle of less than seventy-five degrees (75°) unless specifically approved by City Council. Street curb intersections shall be rounded by a radius of at least twenty-five feet (25') for residentially zoned lots and thirty-five feet (35') for all other zoning districts. When the smallest angle of street intersection is less than seventy-five degrees (75°), the City Engineer may require curb radii of greater length. In all cases, the intersection radii shall not reduce the sidewalk width to less than five feet (5') and shall allow for PROWAG compliant ramps which adhere to the standard City curb ramp details. As necessary, property lines at such street corner shall be chamfered or otherwise set back sufficiently to permit such curb, sidewalk, and curb ramp construction. No lot or other parcel of land which abuts on and has access to either a collector or a minor street shall have a service drive, curb cut, or other means of access within seventy-five feet (75') of the right-of-way of such arterial street.
 - (3) Driveway intersections. Driveways shall align with adjacent driveways or streets to the maximum extent possible in order to prevent offset intersections. For non-residential use type classifications, a minimum of one hundred and fifty feet (150') between driveways shall be required. When a driveway is located across from and between two other driveways that are on the opposite side of the street and unable to align, such driveway should be equally spaced between the opposing driveways.
 - (4) Traffic Signal Placing. Traffic signal placing shall be permitted at no closer than one thousand three hundred and twenty feet (1,320') to maximize signal progression, capacity, and speed.
 - (5) Access Spacing Requirements.
 - a. Spacing Required. Full access to minor and major arterial may be permitted at quarter (1/4) mile, half (1/2) mile, and one (1) mile intervals. The preferred spacing for between two full access intersections is one thousand three hundred and twenty feet (1320'); however, a minimum spacing of one thousand two hundred feet (1200') is required. Right-in, right-out access may be permitted at the eighth (1/8) mile interval. The preferred spacing between a full access intersection and a right-in, right-out intersection is six hundred and sixty (660'); however, a minimum spacing of five hundred feet (500') is required. Such spacing requirements are depicted on Figure 170-16(E)(5).
 - b. Interim Measures Permitted. Interim access control measures may be permitted until the City Engineer determines that development warrants more restrictive control to provide for public health, safety, and welfare. For example, full

access may be temporarily permitted at the eighth (1/8) mile when an arterial street is not yet improved to its ultimate profile.

Figure 170-16(E)(5): Access Spacing



(6) Access Control – Intersection Hierarchy. The hierarchy of intersections shall be established in Table VI. Connecting street classifications that are more than one level above or below in the hierarchy shall be avoided unless the City Engineer and Planning Director determine that such connection is required due to topography, environmental sensitivity, or other condition as deemed appropriate by the City Engineer and Planning Director. Private access shall only be permitted to connect with local streets; provided, however, that shared private access may be permitted to higher classification streets upon the determination by the City Engineer that such connection is appropriate for public health, safety, and welfare.

F. Street jogs. Street jogs with centerline offsets of less than one hundred and fifty feet (150') shall be prohibited.

G. Cul-de-sacs. Cul-de-sacs shall be prohibited unless the City Engineer and Planning Director determine that a cul-de-sac is required due to topography, environmental sensitivity, geometry, or other condition as deemed appropriate by the City Engineer and Planning Director. Cul-de-sacs shall not be longer than four hundred feet (400') and shall be provided at the closed end with a turnaround having a diameter at the outside of the pavement of at least seventy-five feet (75'), except such turnaround in industrial and commercial areas shall be one hundred feet (100') in diameter. The length of a cul-de-sac shall be measured from the centerline of the intersecting street to the center point of the closed end turnaround of the cul-de-sac.

H. Street names. Streets shall be named in a manner that is consistent with the naming conventions established for the Douglas-Sarpy County metropolitan area, including the numbering of north-south streets.

- (1) Names in alignment. Proposed streets in alignment with existing streets shall bear the names of such existing streets.
- (2) No duplication. The name of a proposed street that is not in alignment with an existing street shall not duplicate the name of any existing street within the Douglas-Sarpy County metropolitan area.
- (3) Name change at curvature. Whenever a street alignment changes direction more than sixty degrees (60°) without a return to the original alignment within a distance of five hundred feet (500'), the name of the street should be changed at the point of curvature.
- (4) Cul-de-sac naming. A cul-de-sac street serving not more than four lots shall take the name of the intersecting street.
- (5) Approval by the City Council required. The proposed names of all streets shall be subject to the approval of the City Council prior to such names being assigned or used.
- (6) Similar sounding streets. Street names shall be easy to pronounce, spell, and read to reduce confusion. Similar sounding street names, although spelled differently, shall be avoided (EXAMPLE: Lee and Leigh). In addition, the same street name should not be given a different or multiple street types (EXAMPLE: "Main" should not be "Main Street" in some places and "Main Road" in other places).
- (7) Vanity street names. Streets named after the subdivision shall be prohibited.

I. Horizontal and vertical street curves.

- (1) A tangent of a length to be determined by the City Engineer shall be introduced between reverse curves on all streets. Where there is a deflection angle of more than ten degrees (10°) in the alignment of a street, a curve with a radius adequate to ensure safe sight distance shall be made.
- (2) All vertical curves shall be designed to meet the American Association of State Highway and Transportation Officials (AASHTO) stopping sight distances/headlight distance required based on design speed.

J. Street grade and elevations.

- (1) All streets shall be designed so as to provide for the discharge of surface water from the pavement and from the right-of-way by grading and drainage. The minimum

street grade shall not be less than seven-tenths of one percent (0.7%). Streets that would be subject to inundation or flooding shall not be approved. Profiles or elevations of streets shall be furnished by the subdivider. Street grades shall conform to the minimum requirements provided in Table I of these regulations.

- (2) Accessible crosswalks shall be identified, and street grades shall be adjusted accordingly to meet PROWAG requirements.

K. Private streets. There shall be no private streets platted within a subdivision.

L. Alleys.

- (1) When required. Alleys may be required to give access to the rear of all lots used for commercial and industrial purposes. Alleys shall not be required in residential areas except in cases where the subdivider provides evidence of the need for alleys that is satisfactory to the City Council.
- (2) Design. Alley intersections and sharp changes in alignment shall be avoided, but, where necessary, corners shall be cut off sufficiently to permit safe vehicular movement. Dead-end alleys shall be avoided where possible, but if unavoidable, shall be provided with adequate turnaround facilities and signage at the dead end, as determined by the City Council.
- (3) Maintenance. Maintenance and snow removal of alleys shall not be the responsibility of the City.

M. Other right-of-way easements.

- (1) Easements for utility rights-of-way shall be not less than five feet (5') in width and whenever possible shall be provided along the rear and side property lines. See Table IV.
- (2) When a subdivision is traversed by a watercourse, drainageway, channel, or stream, a stormwater easement or drainage right-of-way shall be provided with adequate width for both waterflow and maintenance operations. The total width of any such easement shall be sufficient to accommodate a one hundred (100)-year storm event, calculated for a fully developed upstream drainage basin. The minimum width of such easement shall be established by the Papillion Creek Watershed Management Policies and the Southern Sarpy Watershed Management Policies, as applicable. Parallel streets, parkways, walkways, or bridges may be required in connection with such drainage easement.

N. Outlots.

- (1) Number minimized. The total number of outlots within a subdivision should be minimized to the greatest extent possible.

- (2) Ownership of PCSMP outlots. At the time of platting, the subdivider shall be expressly identified as the owner of any outlot(s) being utilized for permanent Post Construction Stormwater Management for a particular subdivision. Ownership of such outlot(s) may be transferred from the subdivider to a homeowners or business owners association for the subdivision once such entity is formed. Ownership of any such outlot(s) shall not be transferred to the City unless expressly authorized by resolution of the City Council.
- (3) Ownership of Outlots. At the time of platting, the subdivider shall be expressly identify ownership over all outlots. Ownership of any outlot(s) shall not be transferred to the City or sanitary and improvement district unless expressly authorized by resolution of the City Council.
- (4) No buildings permitted. No buildings, other than those approved by resolution of the City Council, or otherwise allowed pursuant to a subdivision agreement between the City and subdivider, are permitted on outlots.
- (5) Narrow outlots adjacent to public roadways prohibited. Narrow outlots adjacent to public roadways shall be prohibited. The subdivider shall extend private lots to the right-of-way. The subdivider may dedicate landscape easements within private lots if desired or incorporate the narrow outlots into public right-of-way as directed or authorized by the City Engineer and Planning Director.

§ 170-17. Pedestrian and bicycle systems.

- A. Continuous pedestrian system required. The subdivider shall provide for a continuous pedestrian system within each subdivision that is designed to conduct pedestrians throughout the subdivision in a safe manner.
- B. Pedestrian system for conventional subdivisions. In conventional subdivisions (*i.e.*, those subdivisions not consisting of mixed use developments, planned unit developments, or innovative subdivisions), the pedestrian system shall be provided by sidewalks or trails typically placed along both sides of each street. Waivers of this requirement may be granted by the City Council with the recommendation of Planning Commission to preserve natural features, create visual interest, maintain greenways and pedestrian ways proposed in the Comprehensive Plan, or improve the overall design quality of the project.
- C. Pedestrian system for mixed use developments, planned unit developments, and innovative subdivisions. In mixed use developments, planned unit developments, or innovative subdivisions, the pedestrian system may be an independent network diverging from streets but providing continuous pedestrian access between all points.
- D. Sidewalks requirements.

- (1) Sidewalk requirements shall be determined by road classification and intensity of development, as set forth in Table III.
- (2) Where sidewalks are not otherwise required by Table III, the City may require their installation if necessary to provide access to generators of pedestrian traffic or major community features, to continue a walk on an adjacent street, to link parts of the City, to accommodate future development, or such other reasons as may relate to the City's promotion of public health, safety, and welfare.
- (3) Sidewalks shall be placed generally parallel to streets within right-of-way, but may follow serpentine curved alignments to add interest, preserve important natural features, accommodate topography or vegetation, or improve the quality of the subdivision's design. Sidewalk conflicts with existing conditions (such as light poles, fire hydrants, trees, etc.) shall be addressed with smooth curved transitions that are a minimum of twenty feet (20') in length each side of the conflict.
- (4) Sidewalks shall provide a clear path of at least five foot (5') in width that is free of any obstructions.
- (5) All sidewalks shall be constructed according to current standards in use by the City. Sidewalks shall be of concrete construction with a minimum thickness of five inches (5") except at points of vehicular crossing where the sidewalk shall be a minimum thickness of six inches (6").
- (6) All sidewalks, crosswalks, driveway crossings, and other segments of a continuous pedestrian system shall comply with ADA and PROWAG requirements. Curb ramps within the right-of-way shall include the installation of truncated dome inserts for the purposes of safety, using removable prefabricated panels, subject to the approval of the City Engineer. Curb ramps shall be installed at intersections in accordance with ADA and PROWAG requirements and shall adhere to the standard City curb ramp details.

E. Bicycle systems and recreational trails.

- (1) The City may require the installation of bicycle route signage or other standard signage on street segments that are incorporated into the City's pedestrian and bicycle transportation system.
- (2) The City may substitute extra-width lanes or designated bicycle lanes on street segments in lieu of trails.
- (3) All recreational trails shall comply with ADA and PROWAG requirements. All off-street recreational trails that are not part of the regional trail system shall be a minimum of eight feet (8') in width to allow for two-way traffic. Recreational trails that are part of the regional trail system shall have a minimum width of ten

feet (10'). Surfacing of recreational trails shall follow standards established by the City.

- (4) If appropriate, recreational trails within a subdivision may be deemed by the City Council to satisfy part of the requirements of this chapter for sidewalks or open space for such subdivision.
- (5) All streets shall utilize bicycle safe storm sewer inlets. Inlets along defined bicycle lanes on street segments shall be set back one foot (1') behind the back of curb with ten feet (10') of curb transition to each side of the curb inlet throat.

§ 170-18. Blocks.

- A. Block length. Block length shall not exceed one thousand feet (1,000'). The length of blocks shall be considered to be the distance from street centerline to opposite street centerline and shall be measured along the center of the block. A waiver may be granted by resolution of the City Council with the recommendation of Planning Commission to preserve a significant natural feature, address a major site constraint, or in the cases of irregularly shaped blocks.
- B. Block width. The width of blocks shall generally be sufficient to allow two tiers of lots and be at least two hundred and forty feet (240') in width. The width of blocks shall be considered to be the distance from the street centerline to the adjacent parallel street centerline minus the fronting street rights-of-way widths. In cases of irregularly shaped blocks, the minimum width may be waived by the City Council with the recommendation of Planning Commission.
- C. Pedestrian access. Pedestrian pathways not less than eight feet (8') wide may be required by City in blocks longer than five hundred feet (500') or at the end of cul-de-sacs longer than three hundred feet (300') where the City Council deems such pathways necessary to provide circulation or access to schools, playgrounds, shopping centers, transportation, or other community facilities.

§ 170-19. Lots.

The lot size, width, depth, shape, and orientation and the minimum building setback lines shall be appropriate for the location of the subdivision and for the type of development and use contemplated.

- A. Lot dimensions and area shall conform to the requirements of Chapter 205, Zoning, of the Papillion Municipal Code. The ratio of depth to width of lots shall not exceed a ratio of three (3) to one (1).
- B. Corner lots shall be of extra width sufficient to maintain required setbacks.
- C. Side lot lines shall be approximately at right angles or radial to street lines.

- D. Access to lots shall be provided by means of a public street and each lot shall have satisfactory access to an existing public street.
- E. Double frontage and reverse frontage lots shall be avoided except where essential to provide separation of residential development from traffic arteries or to overcome specific disadvantages of topography and orientation.