

SECTION 7 DESIGN STANDARDS

500-7-1: Conformity with the Comprehensive Plan and Zoning Ordinance.

A proposed subdivision shall conform to the Comprehensive Plan, to related policies adopted by the City, and to the Brainerd Zoning Ordinance, as may be amended.

500-7-2: Land Requirements.

- A. Land shall be suited to the purpose for which it is to be subdivided. No plan shall be approved if the site is not suitable for the purposes proposed by reason of potential flooding, topography, adverse soil conditions, rock formations, or wetlands.
- B. Land subject to hazards to life, health, or property shall not be subdivided until all such hazards have been eliminated or unless adequate safeguards against such hazards are provided by the subdivision plan.
- C. Proposed subdivisions shall be coordinated with surrounding properties and/or neighborhoods, so that the City as a whole may develop efficiently and harmoniously.

500-7-3: Blocks.

- A. Length. The maximum length of blocks shall be one thousand three hundred (1,300) feet and the minimum length of four hundred (400) feet. Blocks over nine hundred (900) feet long may require pedestrian ways at least ten (10) feet wide at their approximate center. The use of additional pedestrian ways to schools, parks, and other destinations may be required.
- B. Arrangement. A block shall be so designed as to provide two (2) tiers of lots unless it adjoins a major collector or an arterial street or where topographic wetland or other conditions render the block arrangement unreasonable.
- C. Block Width. The width of the block shall normally be sufficient to allow two (2) tiers of lots of appropriate depth, except where topography or other conditions render the block depth unreasonable.

500-7-4: Lots.

- A. Area. The minimum lot area, width and depth shall not be less than that established by the Brainerd Zoning Ordinance in effect at the time of adoption of the final plat. Minimum lot area for urban lots shall consist of buildable land and be exclusive of utility transmission easements that encumber lot development.

- B. Corner Lots. Corner lots for residential use shall have additional width to permit appropriate building setback from both streets and a side yard buffer yard where the side yard abuts a collector or arterial street as required in the Brainerd Zoning Ordinance.
- C. Butt Lots. Butt lots shall be platted at least five (5) feet wider than the average width of interior lots in the block.
- D. Side Lot Lines. Side lines of lots shall be approximately at right angles to street lines or radial to curved street lines.
- E. Width. Lots must have sufficient frontage on a public street to provide minimum lot width. Lot width shall be established by the Brainerd Zoning Ordinance and measured at the minimum front yard setback and at the setback from the OHWL of an abutting lake or stream and extending to the location of the principal building.
- F. Lot Frontage. All lots shall have frontage on a public street that provides the required lot width at the minimum front yard setback. Flag lots are prohibited.
- G. Building Sites. Each lot shall provide an adequate building site at least twelve (12) inches above the top of the adjacent curb unless approved by the City Engineer upon the basis of plans submitted showing alternative, acceptable surface drainage measures.
- H. Urban Single and Two Family Lot Access. All new single and two family urban lots shall be designed to receive access from a local street.
- I. Access to Arterial Streets and Major Collector Streets. In the case where a proposed plat is adjacent to a major collector or arterial street, said streets to be defined by the City's Comprehensive Plan, there shall be no direct vehicular access from individual urban single family or two-family lots to such streets and roads. In the platting of small tracts of land fronting on limited access highways, arterial, or major collector streets where there is no other alternative, a temporary entrance may be granted, subject to terms and conditions defined by the City Council and applicable County or State agencies. As neighboring land becomes subdivided and more preferable access arrangements become possible, such temporary access permits shall become void. In such cases where direct lot access to major collector or arterial streets is allowed, special traffic safety measures including, but not limited to, provisions for on-site vehicle turn around shall be required. In cases where a proposed plat is adjacent to the County or State highway, the plat shall be subject to County and/or State approval.
- J. Lots fronting on an arterial or major collector street. New commercial, industrial, and multiple family lots fronting on an arterial or major collector street shall be designed to minimize the number of direct access points through the following methods listed in preferential order. If the highest preference is not possible, the next preference shall be utilized until an access method is possible.

1. Access from a local street.
 2. Frontage road serving multiple properties.
 3. Frontage driveway or connected parking lot, with cross easements serving multiple properties.
 4. Shared driveways.
 5. One driveway access, no closer than two hundred (200) feet to another driveway and that meets the City's minimum spacing standards from a street intersection. All driveways shall be reviewed for consistency with the policies of the Brainerd Comprehensive Plan.
- K. **Setback Lines.** Setback or building lines shall be shown on all lots intended for residential use and shall not be less than the setback required by the Brainerd Zoning Ordinance, as may be amended.
- L. **Water Courses.** Water courses may be contained within abutting lots. Water courses shall be protected by easement that will include a buffer strip extending outward from the delineated wetland boundary or the water course ordinary high water level as defined by Section 500-1-12 of this Ordinance. Lots with easements protecting water courses shall have sufficient dimensions and contiguous area outside the water course easement to meet or exceed the minimum lot area and width specified in the zoning chapter for the district in which the lots are located.
- M. **Grading for Drainage.** Lots shall be graded so as to provide drainage away from building locations and shall conform to the approved final grading plan. Storm water drainage from an improved subdivision or lot shall not be directed at an adjoining property at a rate above a predevelopment condition except where drainage is directed to a designed drainage easement.
- N. **Features.** In the subdividing of any land, due regard shall be shown for all natural features, such as tree growth, water courses, historic places or similar conditions which, if preserved, will add attractiveness and stability to the proposed development.
- O. **Frontage on Two Streets.** Double frontage, or lots with frontage on two (2) parallel streets shall not be permitted except where lots back on major collector or arterial streets, County or State highways, or where topographic or other conditions render subdividing otherwise unreasonable. Double fronting lots that have a yard abutting a collector or arterial street shall have a twenty (20) foot wide landscaped buffer yard abutting said collector or arterial street. The yard shall be planted with landscape material that meets the minimum requirements listed in Section 20 of the Brainerd Zoning Ordinance.

- P. Irregular Shaped Lots. On single family residential lots determined to be irregular in shape (e.g., triangular), the developer shall demonstrate to the City an ability to properly place principal buildings and accessory structures upon the site which are compatible in size and character to the surrounding area.
- Q. Lot Remnants/Outlots. All remnants of lots below minimum lot size left over after subdividing a larger tract must be added to adjacent lots rather than allowed to remain as unusable parcels. Outlots may be platted within a subdivision to delineate future development phases or commonly owned open spaces. The outlot shall be sized in a manner to accommodate its intended use. An outlot shall be platted into a lot and block prior to issuance of a building permit. No building permits shall be issued for an outlot except for open air structures allowed as a recreational component in an open space area.
- R. Extraterritorial Design Standards. In areas lying outside the City but within the jurisdiction of this section, the following additional minimum subdivision standards shall be required. The size of lots shall be determined by on-site soil percolation tests conducted by a recognized soil testing service utilizing sound engineering practices, but in no case shall a lot contain less than fifteen thousand (15,000) square feet in area nor less than one hundred (100) feet in width measured between the side lot lines at a setback distance of thirty (30) feet from the front lot line.
- S. Wetlands. All structures shall be located a minimum of sixteen (16) feet from the edge of a wetland.

500-7-5: Street and Alleys.

- A. Street Plan. The arrangement, character, extent, width, grade and location and all streets shall conform to the comprehensive development plan and to this section, and shall be considered in their relation to existing and planned streets, to reasonable circulation of traffic, to topographical conditions, to drainage patterns, to public convenience and safety and in their appropriate relationship to the proposed uses of the land and to be served by such streets.
- B. Streets, Continuous. Except for cul-de-sacs, streets shall connect with streets already dedicated in adjoining or adjacent subdivisions, or provide for future connections to adjoining unsubdivided tracts, or shall be a reasonable projection of streets in the nearest subdivided tracts. The arrangement of major collector and arterial streets shall be considered in their relation to the reasonable circulation of traffic, to topographic conditions, to runoff of storm water, to public convenience and safety, and in their appropriate relation to the proposed uses of the area to be served in compliance with the Brainerd Comprehensive Plan.
- C. Street Plans for Future Subdivisions. Where the plat application includes only part of the tract owned or intended for development by the subdivider, or abuts an undeveloped tract, a

build out plan (ghost plat) illustrating a proposed future street system for the unsubdivided tract, prepared and submitted by the subdivider, may be required by the City.

- D. Provisions for Resubdivision of Large Lots and Parcels. When a tract is subdivided into larger than normal building lots or parcels, such lots or parcels shall be so arranged as to permit the logical location and openings of future streets and appropriate resubdivision, with provision for adequate utility connections for such resubdivision.
- E. Local Streets and Dead End Streets. Local streets should be so planned as to discourage their use by non-local traffic. Dead end streets are prohibited, but cul-de-sacs shall be permitted where topography or other physical conditions justify their use. Cul-de-sacs shall not be longer than five hundred (500) feet, including a terminal turn around which shall be provided at the closed end, with a right-of-way radius of not less than sixty (60) feet. A forty-five (45) foot street radius will be required on all cul-de-sacs.
- F. Temporary Cul-de-Sac. In those instances where a street is terminated pending future extension in conjunction with future subdivision and the street segment is more than two hundred (200) feet between the dead-end and the nearest intersection, a temporary turn around facility shall be provided at the closed end, in conformance with cul-de-sac requirements. This temporary cul-de-sac must be placed inside a temporary roadway easement if it is located outside street right-of-way. Financial guarantee will be required for removal or restoration as determined by the City Engineer.
- G. Subdivisions Abutting Major Rights-of-Way. Wherever the proposed subdivision contains or is adjacent to the right-of-way of a U.S. or State highway, County road, local major collector, or local arterial street, provision may be made for a service street approximately parallel and adjacent to the boundary of such right-of-way; provided that due consideration is given to proper circulation design, setbacks from an intersection on the major rights-of-way, or for a street at a distance suitable for the appropriate use of land between such street and right-of-way. Such distance shall be determined with due consideration of the minimum distance required for approach connections to future grade separations, or for lot depths.
- H. Compliance with the Brainerd Comprehensive Plan. All subdivisions incorporating streets which are identified in the City Comprehensive Plan, as amended, shall comply with the minimum right-of-way, surface width, and design standards as outlined in this Ordinance, and must be reviewed and approved by the City Engineer.
- I. Dedication. All proposed streets shown on the plat shall be in conformity to City, County, and State plans and standards and be offered for dedication as public streets unless otherwise determined by the City Council.
- J. Street Design. Design of street rights-of-way shall conform to the following minimum standards:

Road Type	ADT	Width		Number Traffic Lanes	Number Park Lanes	% Grade	
		R.O.W.	Street ¹			Min	Max
Local Street:							
Alley (Ind/Com)	150	24 ft	20 ft	2	0	.5	8
Alley (residential)	150	20 ft	16 ft	2	0	.5	8
Marginal Access	300	50 ft	28 ft	2	0	.5	6
Minor Streets Cul-de-sac Low Density	300	70 ft	32 ft	2	2	.5	7
Medium Volumes	300-1,000	80 ft	35 ft	2	2	.5	7
Minor Collector	1,000-1,500	80 ft	36 ft	2	1	.5	7
Major Collector:							
Low	1,500	80 ft	44 ft	2	2	.5	4
Medium	1,500-5,000	80 ft	44 ft	2	2	.5	4
High	5,000	100	66 ft	4	0	.5	4
Arterial:							
Low	10,000	120 ft ³	66 ft	4	0	.5	4
Medium	10,000-15,000	120 ft ³	66 ft	4	0	.5	4
High ²	15,000	120 ft ³	2 @ 28 ft	4	0	.5	4

¹ Face of curb to face of curb

³ At major intersections increase to 150 feet

² Parkway design (optional for medium arterial)

NOTE: The actual right-of-way width will be determined by the City Council after considering all characteristics of the adjacent development.

Private streets shall have a minimum twenty-eight (28) foot width and be signed as No Parking and have adequate maneuvering area for large trucks and vehicles (fire equipment, refuse, Dial-A-Ride etc.)

K. **Additional Right-of-Way.** Additional right-of-way and roadway widths may be required by the Council to promote public safety and convenience when special conditions require it. Where a subdivision abuts or contains an existing street of inadequate width, sufficient additional width shall be provided to meet the standards of this Ordinance.

L. **Half Streets.** Half streets shall be prohibited except where it will be practical to require the dedication of the other half when the adjoining property is subdivided, in which case the dedication of a half street may be permitted. The probable length of time elapsing before dedication of the remainder shall be considered in this decision. No permanent street improvement shall be permitted within a half street right-of-way. All lots having frontage or access solely from a half street are prohibited from being eligible for building permits.

- M. Alley Location Requirements. Either a public or private alley shall be provided in a block where commercially zoned property abuts a major or local thoroughfare.
- N. Marginal Access Streets. Where a subdivision abuts or contains an existing or planned major thoroughfare or a railroad right-of-way, the Council may require a street approximately parallel to and on either side of such right-of-way for adequate protection of residential properties and to afford separation of through and local traffic. Such marginal access streets shall be located at such a distance from the major thoroughfare or railroad right-of-way as to allow for the appropriate use of the intervening land, as for park purposes in residential districts, or for commercial or industrial purposes in the appropriate districts. Such distances shall also be determined with due regard for the requirements for approach grades and future grade separations.
- O. Curb Radius. The minimum curb radii for thoroughfares, collector streets, local streets, and alleys shall be as follows:
- a. Arterial Streets and Collector Streets: Twenty-five (25) feet.
 - b. Local Streets: Twenty (20) feet.
 - c. Alleys: Ten (10) feet.
- P. Vertical Curves. Different connecting street gradients shall be connected with vertical curves. Minimum lengths of these curves shall conform to the standards specified in Table A, Sheet 5 291.231 of the Minnesota Highway Road Design Manual, as amended.
- Q. Reverse Curves. Minimum design standards for collector and arterial streets shall comply with Minnesota Department of Transportation State Aid standards.
- R. Street Intersections. Insofar as practical, streets shall intersect at right angles. In no case shall the angle formed by the intersection of two (2) streets be less than seventy-five (75) degrees. Intersections having more than four (4) corners shall be prohibited if not controlled by a roundabout. Adequate land for future intersection construction needs shall be dedicated.
- S. Tangents. A tangent of at least one hundred (100) feet shall be introduced between reverse curves on arterial and collector streets. The tangent lengths may be longer if a transition between super-elevated section is required.
- T. Deflections. When connection street lines deflect from each other at one point by more than ten (10) degrees, they shall be connected by a curve with a radius adequate to ensure a sight distance of not less than five hundred (500) feet for arterials, three hundred (300) feet for collectors, and one hundred (100) feet for all other streets. The City Council may allow greater or lesser sight distances.

- U. Street Intersection Offsets (Jogs). Street intersection jogs with centerline offsets of less than one hundred fifty (150) feet shall be prohibited.
- V. Centerline Curvature. The minimum horizontal curvature of collector and arterial streets shall be in accordance with the MnDOT Highway Design Manual for the type of street and design speed.
- W. Streets in Flood Hazard Area. No street shall be approved if its final surface is at a lower elevation than two (2) feet below the regulatory flood protection elevation. The City Council shall require profiles and elevations of finished streets for areas subject to flooding. Fill may be used for streets, provided such fill does not unduly increase flood heights and provided any such fill would not result in a stage increase violating the requirements of the Brainerd Floodplain Ordinance, as may be amended.
- X. Reserve Strips. Reserve strips controlling access to streets shall be prohibited.
- Y. Private Streets. Private Streets, except in the case of planned unit developments, shall be prohibited and no public improvements shall be approved for any private street. All private streets within an approved PUD shall meet the construction design standards for City streets.
- Z. Curb and Gutter. All urban streets, and all streets in commercial and industrial areas, shall have concrete curb and gutter in compliance with established City standard design detail plates.

500-7-6: Sidewalks and Trails.

- A. Concrete Sidewalks. Concrete sidewalks in new developments not less than six (6) feet in width, ten (10) feet in commercial zoning districts, and/or bituminous trails not less than ten (10) feet in width shall be provided in accordance with the following:

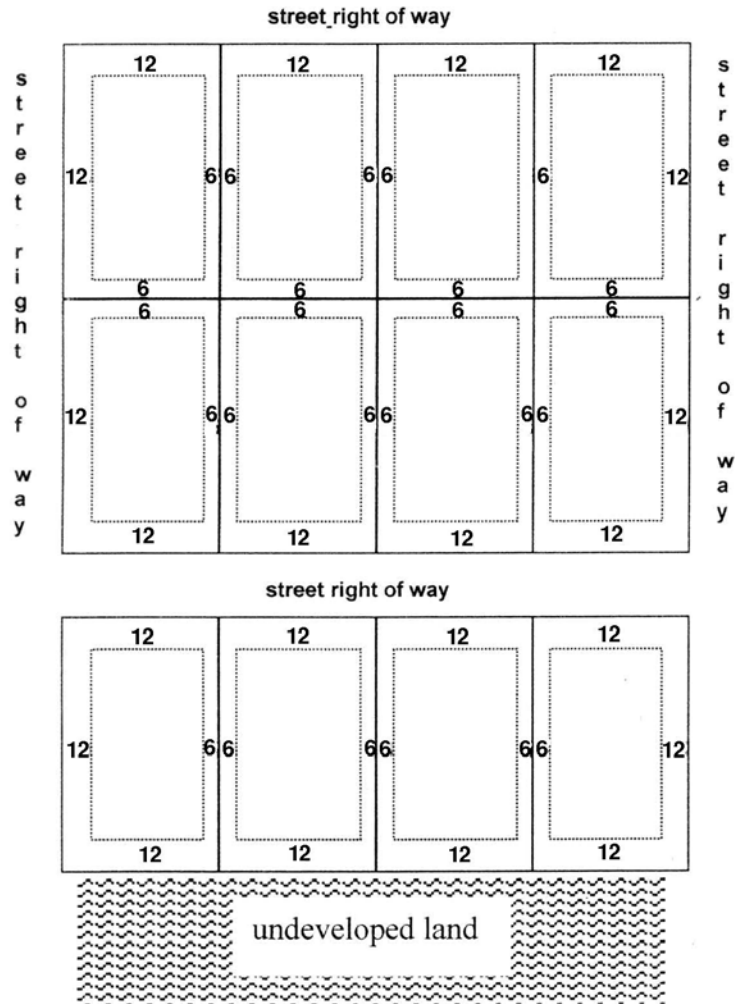
<u>Street Type</u>	<u>Sidewalk/Trail Requirements</u>
Arterial and Major Collector	Sidewalk on both sides of the street or sidewalk on one (1) side of the street and trail on the other side of the street if part of a larger trail network.*
Minor Collector and Local Streets, excepting Cul-de-sacs	Sidewalk on both sides of street and if a trail is part of a minor collector that alternate sidewalk and trail would also apply*
Cul-de-sacs	Sidewalk around cul-de-sac*
Industrial	Either/or sidewalks/trails*

*The sidewalks shall not be located less than one (1) foot from the property line, not be adjacent to the curb, except as may be permitted in commercial areas to provide a green strip for snow storage, to promote pedestrian safety, and to provide for boulevard trees.

- B. Sidewalk/Trail Grades. Sidewalks shall slope one-fourth (1/4) of an inch per one (1) foot away from the property line and the profile grade shall conform to street grades.
- C. Pedestrian Ways. In blocks over nine hundred (900) feet long, pedestrian crosswalks through the blocks located within a public right-of-way at least ten (10) feet wide, may be required by the City Council in locations deemed necessary for the public health, safety, convenience and necessity.

500-7-7: Easements.

- A. Width and Location. An easement for utilities at least twelve (12) feet wide along front and rear lot lines and six (6) feet wide along all abutting side lot lines shall be provided. An easement for utilities not less than twelve (12) feet wide shall be provided adjacent to all plat boundaries. If necessary for the extension of main water or sewer lines or similar utilities, easements of greater width may be required along lot lines or across lots.



- B. Drainage. Easements shall be provided along each side of the centerline of any waterway or drainage channel of a sufficient width to provide proper maintenance and protection, and to provide for stormwater runoff and installation and maintenance of drainage systems. Where necessary, drainage easements corresponding with lot lines shall be provided. Such easements for drainage purposes shall not be less than twenty (20) feet in width.
- C. Continuous Utility Easement Locations. Utility easements shall connect with easements established in adjoining properties. These easements, when approved, shall not thereafter be changed without the approval of the City Council after a public hearing.
- D. Guy Wires. Additional easements for pole guys should be provided, when appropriate, at the outside of turns. Where possible, lot lines shall be arranged to bisect the exterior angle so that pole guys fall along side lot lines.

500-7-8: Public Utilities.

- A. Water Supply. Extensions of the public water supply system shall be designed so as to provide public water service to each lot. The design of said extensions shall be in accordance with the standards of the City.
- B. Sewage Disposal. Extension of the public sanitary sewer system shall be designed so as to provide sewer service to each lot. The design of such extensions shall be in accordance with the applicable standards of the City, County and State.
- C. Public Utilities Placement. Telephone, electric, cable, gas service lines and/or other public utilities are to be placed underground in accordance with City standards.
 - 1. Developers shall apply for City permits to install underground utilities in public rights-of-way.
 - 2. The City shall approve all utilities prior to installation.
 - 3. Public utilities shall be installed in a joint trench in accordance with City standards.
 - 4. Conduit shall be installed for all road crossings.
 - 5. Public utility installation, except street light wires, shall not occur until one (1) week after all curb has been backfilled.
 - 6. Any utility not installed in a joint trench shall not be allowed installation for five (5) years following the joint trench installation.

500-7-9: Storm Water Management and Erosion and Sediment Control.

- A. Drainage. The natural drainage shall be used as far as is feasible for the storage and flow of runoff. The design of a drainage system shall conform to any overall storm water drainage plan for the area. The following requirements shall also apply:
 - 1. Storm water drainage shall be consistent with policies and standards of the Brainerd Storm Water Standards, as may be amended.
 - 2. No existing ditch, stream, drain or drainage channel shall be deepened, widened, re-routed or filled without written permission from the City and other governmental agencies.
 - 3. Where drainage channels must be constructed to augment the natural drainage system, such channels, as well as the natural drainageways, may be planned as a part

of a recreational trail system. When this is done, channels shall be designed to be aesthetically compatible for recreational trail use.

- B. Subdivision Grading, Drainage, and Wetland Mitigation Plans. The City shall approve all subdivision grading, drainage, and wetland mitigation plans. All individual lots shall be graded after construction to conform with the approved final grading and drainage plans.
- C. Erosion and Sediment Control.
 - 1. Erosion and siltation control measures shall be coordinated with the different stages of construction. Appropriate control measures shall be installed prior to grading when necessary to control erosion.
 - 2. Land shall be developed in increments of workable sizes such that adequate erosion and siltation controls can be provided as construction progresses. The smallest practical area of land shall be exposed at any one period of time.
 - 3. When soil is exposed, the exposure shall be for the shortest feasible period of time, as specified in the development agreement.
 - 4. Where the top soil is removed, sufficient arable soil shall be set aside for re-spreading over the developed area. Top soil shall be restored or provided to a depth of three (3) inches and shall be of a quality at least equal to the soil quality prior to development.
 - 5. Native vegetation shall be protected wherever practical.
 - 6. Based upon the review and recommendation of the City Engineer, it may be necessary to divert runoff water to a sedimentation basin before being allowed to enter the natural drainage system.
 - 7. For subdivisions which shall disturb one (1) or more acre of land, the subdivider shall submit a NPDES permit application and a Stormwater Pollution Prevention Plan (SWPPP) to the Minnesota Pollution Control Agency (MPCA).

500-7-10: Protected Areas.

Where land proposed for subdivision is deemed environmentally sensitive by the City, due to the existence of wetlands, drainageways, watercourses, floodable areas or steep slopes, the design of said subdivision shall clearly reflect all necessary measures of protection to insure against adverse environmental impact.

Based upon the necessity to control and maintain certain sensitive areas, the City shall determine whether said protection will be accomplished through lot enlargement and redesign or dedication of those sensitive areas in the form of outlots.

In general, measures of protection shall include design solutions which allow for construction and grading involving a minimum of alteration to sensitive areas. Where these areas are to be incorporated into lots within the proposed subdivision, the subdivider shall be required to demonstrate that the proposed design will not require construction on slopes over thirty (30) percent, or result in significant alteration to the wetlands, floodplains, or natural drainage systems, such that adverse impacts cannot be contained within the plat boundary.

500-7-11: Signs.

- A. Signs. As part of preliminary plat application, the subdivider shall identify all signs associated with the proposed plat including, but not limited to, neighborhood identification signs, street signs, traffic control signs, wetland demarcation signs, or other signs related to the proposed subdivision. The type, size and location of signs shall be subject to approval of the City. Installation shall be at the expense of the developer.
- B. Street Names. Names of new streets shall not duplicate existing or platted street names unless a new street is a continuation of or in alignment with the existing or platted street, in which event it shall bear the same name of the existing or platted street so in alignment.