

6.0 STREET DESIGN STANDARDS

6.1 STREET DESIGN STANDARDS

6.1.1 General

- A. Street network standards are to achieve an open interconnected street network with sufficient number of street connections within a development as well as in the overall area in order to protect the public health, safety, and welfare; in order to ensure that streets will function in an interdependent manner; to provide multiple routes to and from destinations without significantly increasing through-traffic in residential areas; connect developments to each other and to destinations, such as schools, parks, shopping, libraries, and post offices, among others; to provide choices for drivers, bicyclists, and pedestrians; decrease traffic on arterial streets; increase emergency vehicle access and reduce emergency response times; improve utility connections, easier maintenance, and more efficient trash and recycling pick up; reduce vehicle miles traveled and travel time to improve air quality and mitigate the effects of auto emissions on the health of residents; provide continuous and more direct routes for travel by walking and biking as a convenient, safe, and healthy form of multi-modal transportation; and to provide opportunities for residents to increase their level of physical activity each day by creating walkable neighborhoods with adequate connections to destinations. In general, network standards have the purpose of creating multiple, alternate routes for automobiles and creating more route options for people on foot and on bicycles. In addition, the following network standards establish pedestrian routes and passageways between land uses that can link isolated developments to each other and create the shortest, safest routes possible between origins and destinations.

6.1.2 Context Sensitive Street Design

- A. Each development shall utilize the Context Sensitive Street Design (CSSD) approach to street planning, design and operation, to meet transportation effectiveness within the overall planning area while enhancing the development and overall livability of each of the identified districts. Context Sensitive Street Design respects traditional street design objectives for safety, efficiency, capacity, and maintenance, while integrating community objectives and values relating to compatibility, livability, sense of place, urban design, and environmental impacts. Furthermore, Context Sensitive Street Design considers not only access for alternative modes of transportation, such as bicycling, walking and transit, but also the environmental, scenic, aesthetic, historic, community, and preservation impacts of a street project.
- B. Context Sensitive Street Design principles and concepts are applicable to the planning and design of new streets, street widening, and street rehabilitation projects.

6.1.3 Complete Streets

Each development should ensure that the Complete Streets Policy for the State of Illinois as defined within Act 095-0665 is used as guiding principle, where practicable and economically feasible, and otherwise in accordance with applicable law, in the planning, design, operation and maintenance of streets to promote:

- A. Safe and convenient access, and continuous travel networks for all users --- pedestrians, bicyclists, transit riders, motorists and people of all ages and abilities.
- B. Walking, bicycling and transit use as safe, convenient and widely available modes of transportation for all people.
- C. Transportation improvements, facilities and amenities that may contribute to Complete Streets including: street and sidewalk lighting; pedestrian and bicycle safety improvements; access improvements, including compliance with the Americans with Disabilities Act; public transit facilities accommodation including, but not limited to pedestrian access improvement to bus and transit stops and stations; street trees and landscaping; drainage; and street amenities.

6.1.4 Green Streets

Each development is encouraged where practicable and economically feasible, and otherwise in accordance with applicable law, to utilize the principles of Green Street Design. Green Streets are streets designed with landscape areas that capture, filter and allow for infiltration of stormwater runoff. They are recognized as an effective way to protect the health of rivers and ground water, help manage stormwater volume and water quality, enhance community and neighborhood livability by enhancing the pedestrian environments and introducing park-like elements into the development, and help ensure maximum benefit to sanitary sewer and stormwater management rate payers by reducing flow into piped infrastructure, preserving sewer capacity and reducing the need for expensive sewer expansions.

6.1.5 Universal Accessibility

All streets shall meet, if not exceed compliance with the Americans with Disabilities Act as all State and local relevant plans, rules and regulations in this regard.

6.1.6 Supplemental Traffic Studies

Traffic studies may be required by the applicable jurisdiction in order to adequately assess the impacts of a development plan proposal adjacent to or nearby the existing and/or planned street system. The primary responsibility for assessing traffic impacts associated with a proposed development will rest with the developer, with the applicable jurisdiction serving in a report review and evaluation capacity. All traffic studies submitted with respect to a development proposal shall be approved by the applicable jurisdiction prior to approval of the plat.

- A. Preparation: Traffic studies shall be prepared under the direction and supervision of a licensed professional engineer of the State of Illinois, with reputable expertise and experience in professional traffic and transportation engineering, with which to analyze and assess traffic impacts.
- B. Submission: The final traffic study shall be submitted by the developer in accordance with Article 1.0 of this Code.
- C. Types of Traffic Studies: The Traffic studies shall be prepared in concert with the applicable jurisdiction's procedures, traffic circulation analysis guidelines, traffic impact analysis guidelines, and current available traffic counts. In general, traffic studies shall be prepared using trip generation calculations from the most recent version of the Institute of Traffic Engineer's (ITE) *Trip Generation Manual*. To this end, two (2) types of traffic studies shall be considered based upon the project size, development intensity, land/lot use mix, and estimated traffic generation. The appropriate individual (in accordance with Article 1.0 of this Code) or designee shall advise the developer as to the type and detail level of traffic study required at the time of a pre-development conference. In general, the types and nature of traffic studies which may be required are as follows:
 - 1. Traffic Assessment Study (TAS): A TAS study is required when more than five hundred (500) but less than five thousand (5,000) daily vehicle trips are anticipated to be generated by the development or when only certain intersections may have a capacity problem affecting turning movements, etc.
 - 2. Traffic Impact Study (TIS): A TIS study is required when five thousand (5,000) or more daily vehicle trips are anticipated to be generated by the development or if the development is anticipated to cause severe impacts on either the street system or nearby neighborhoods, and the evaluation of collector streets, internal neighborhood circulation issues, connectivity assessments, or other such system capacities and evaluations.

6.1.7 Interconnected and Multi-Modal Street Network

Each development shall provide an interconnected and multi-modal network of streets, alleys or lanes, and other public passageways based upon the following standards:

- A. The permissible street types shall be organized into a hierarchical system based on transit role, scale (lanes) and projected traffic intensity (number of vehicles and speed) relative to the adjacent buildings/lot types and land uses. All proposed developments shall provide multiple direct connections in its local street system to and between local destinations, such as parks, schools, and shopping, without requiring the use of major streets. Each development shall incorporate and continue

all streets stubbed to the boundary of the development plan by previously approved but unbuilt development or existing development.

- B. Right-of-ways can vary per these considerations in order to protect the safety and experiential quality for all modes of transportation including local and regional bus system, vehicles, service/delivery vehicles, emergency services, bike and pedestrian transportation.
- C. The streets network should be designed to encourage multi-modal transit use especially pedestrian and bicycle travel by providing short, easily accessible and experientially comfortable routes to connect residential areas with nearby commercial services, schools, parks, and other neighborhood and public facilities.
- D. Within every district there shall be at least one readily accessible public transit node that serves the surrounding area. These public transit nodes can take the form of a dedicated lane, roadside turn off or park and ride facility with a climate controlled waiting area adjacent to a parking structure or lot.
- E. Primary transportation corridors shall accommodate regular bus service by being capable of regularly hosting vehicles that exceed fifteen (15) tons and require a sixty foot (60') turning radius.
- F. Streets wherever possible shall be oriented in a manner that allows individual buildings maximum solar benefits, including east-west axial alignments, allowances for shade tree plantings and solar façade strategies.
- G. Corridor networks need not form an orthogonal grid with ninety-degree (90°) intersections, but shall utilize small, pedestrian-oriented block sizes with regular connections.
- H. Street networks need to provide continuously linked pedestrian ways and sidewalks.
- I. Intersections shall be designed to provide equal service to vehicles, pedestrians and bikes, and the engineer may require any intersections to include an access control median or other acceptable access control device.
- J. In order to facilitate walking, biking and shortest-path for vehicular travels there should be on average between three hundred (300') feet and four hundred (400') feet intersections per square mile within each development. In addition, a proposed development shall provide a potentially signalized, full movement intersection at an interval of at least every one thousand three hundred and twenty feet (1,320') or one-quarter (1/4) mile along major streets and shall provide an additional non-signalized, potentially limited movement, intersection at an interval not to exceed six hundred and sixty feet (660') between the full movement collector and the local street intersection.
- K. Traffic signals placed for optimum visibility for pedestrian, bike, and automobile travel modes and intersections need to be illuminated to provide clear visibility of pedestrians.
- L. Mitigate potential hazard from backing on to street from angled parking and driveways.
- M. When roads are improved, provisions must be made for a constructed underpass at any intersection(s) with existing recreational trails.
- N. Employment of traffic calming intersection alternatives, such as raised intersections, traffic circles or lateral shifts are encouraged.
- O. Street stubs shall be constructed to the edge of the property line to ensure the long-term realization of a connective corridor network, except where immediately adjacent to a conservation area or for some topographical or existing condition.
- P. Cul-de-sacs may be necessary where a street cannot be connected to adjoining development, either through a stub or a direct connection. In some cases, there may be topographical hindrances or waterways that won't allow a connection to be made. In other cases, the design of the subdivision won't allow for a connection at every point. In all cases, a street connection should be considered; however, the reviewing jurisdiction may consider a variance when barriers are present. Should a cul-de-sac be necessary, then each cul-de-sac should be landscaped in the center and a pedestrian and/or bicycle through connection should be made to the adjoining property or development.
- Q. Each development of fifty (50) acres and above in size shall feature at least two street types.
- R. Whenever a proposed development exceeds twenty-five (25) lots or adjoins another commercial, residential or industrial development so as to collectively exceed twenty-five (25) lots in size it shall be required to have two (2) or more entrances into the proposed development.
- S. Landscaping and site design should be oriented to those choosing to make a trip by walking, bike or transit.
- T. Sidewalks and regularly spaced street trees shall be located on both sides of every corridor.
- U. The above requirements may be waived if they are infeasible due to unusual topographic features, existing development, or a natural area or feature.

6.1.8 Block Size and Pattern

The following block, size and pattern principles shall apply:

- A. Block Width: Blocks shall be sufficiently wide to accommodate two (2) tiers of development lots back to back having the minimum characteristics required in the Lot/Building Types (See Article 3.0 Section 3.4). This requirement may be waived in blocks adjacent to interstates, railroads, or other similar features.
- B. Block Perimeter: The average, minimum, and maximum perimeter of all blocks within each district is listed below. Notwithstanding the standards below, the portion of any block between intersections shall not exceed four hundred feet (400') without a dedicated trail or sidewalk of a minimum size of 10 feet (10') within a 20 foot (20') easement that provides access to another street (excludes Mixed-Use Commercial District). The applicable jurisdiction or designee may require, in order to facilitate pedestrian access from the streets to schools, parks, playgrounds, or other nearby public amenities, perpetual unobstructed easements at least twenty feet (20') in width. In addition, the applicable jurisdiction or designee may require in long blocks the reservation of an easement through the block to accommodate utilities and/or drainage facilities, the size of which will be determined by the applicable jurisdiction or designee. The average, minimum and maximum perimeter of all blocks within each district shall be as follows:
 - 1. Mixed-Use Commercial District: On average, the perimeter of all blocks within this district shall not exceed two thousand feet (2,000'). The maximum perimeter of any block shall not be longer than two thousand feet (2,000') nor shorter than five hundred feet (500') and if the block contains a parking structure then the perimeter of the block can be up to three thousand feet (3,000');
 - 2. Town Center District: On average, the perimeter of all blocks within this district shall not exceed one thousand five hundred feet (1,500'). The maximum perimeter of any block shall not be longer than two thousand feet (2,000') nor shorter than five hundred feet (500');
 - 3. General Neighborhood District: On average, the perimeter of all blocks within this district shall not exceed two thousand feet (2,000'). The maximum perimeter of any block shall not be longer than two thousand four hundred feet (2,400') nor shorter than five hundred (500') feet;
 - 4. Neighborhood Residential District: On average, the perimeter of all blocks within this district shall not exceed two thousand four hundred feet (2,400'). The maximum perimeter of any block shall not be longer than three thousand feet (3,000') nor shorter than five hundred feet (500'); and
 - 5. Rural Residential District: The maximum perimeter of any block shall not be longer than three thousand feet (3,000') nor shorter than five hundred feet (500').

6.1.9 Open Space Network

In addition to an interconnected network of streets, each district should include an interconnected network of recreational trails or greenways that provide residents with ready access to existing trails, public amenities and surrounding neighborhoods and districts. Greenways shall be interconnected wherever possible to provide a continuous network capable of use by residents, wildlife and other natural environmental systems.

6.2 STREET AND STREETSCAPE TYPES

6.2.1 General

All streets shall be classified as the following street and streetscape types: parkway, boulevard, avenue, main street, commercial street 1, commercial street 2, commercial street 3, neighborhood street 1, neighborhood street 2, road 1, road 2, lane 1, lane 2, commercial alley, or joined trail. These streets and streetscapes can be modified based upon the following:

- A. The specific design of each street shall follow the cross-sections illustrated below for each street type but the parkways and boulevards can be calibrated in relationship to special traffic generators such as industries, business districts, schools, churches, and shopping centers; to population densities; and to the development intent, pattern and use within each of the districts.
- B. All street types contain the minimum pedestrian and bicyclists' amenities, all of which can be upgraded and improved at the request of the developer and/or applicable jurisdiction to maximize the design quality of the public space and walk and bike ability of the development.
- C. In the event of direct conflicts, these standards shall supersede other standards in the Ordinance or other public works manuals, with the exception of any Federal and State rules, regulations and requirements.

6.2.2 District Street and Streetscape Types

The following street and streetscape types are to be permitted by right in the Districts as shown on Table 6.2.2.

Table 6.2.2 Allowable Street Types by Development District

Development Districts	Street and Streetscape Types														
	Parkway	Boulevard	Avenue	Main Street	Commercial Street 1	Commercial Street 2	Commercial Street 3	Neighborhood Street 1	Neighborhood Street 2	Road 1	Road 2	Lane 1	Lane 2	Commercial Alley	Joined Trail
Mixed-Use Commercial (MC)	-	Y	Y	Y	-	Y	Y	-	-	-	-	-	-	Y	Y
Town Center (TC)	-	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	Y	Y
General Neighborhood (GN)	Y	Y	-	-	Y	Y	Y	Y	Y	-	-	-	-	Y	Y
Neighborhood Residential (NR)	Y	Y	-	-	-	-	-	Y	Y	Y	Y	-	-	-	Y
Rural Residential (RR)	Y	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	-	Y

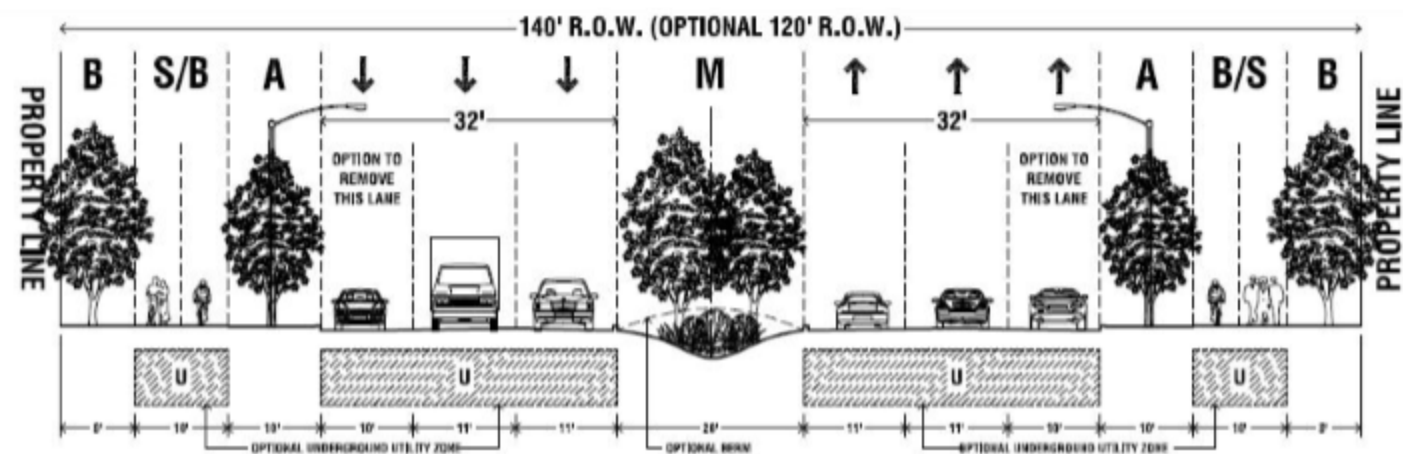
6.2.3 Street and Streetscape Cross-Sections

The permitted street and streetscape type sections and design criteria are shown on the following pages:

- A. Parkway
- B. Boulevard
- C. Avenue
- D. Main Street
- E. Commercial Street 1
- F. Commercial Street 2
- G. Commercial Street 3
- H. Neighborhood Street 1
- I. Neighborhood Street 2
- J. Road 1
- K. Road 2
- L. Lane 1
- M. Lane 2
- N. Rear Lane
- O. Commercial Alley
- P. Joined Trail

6.2.3A Parkway

Figure 6.2.3A Typical Parkway Cross Section



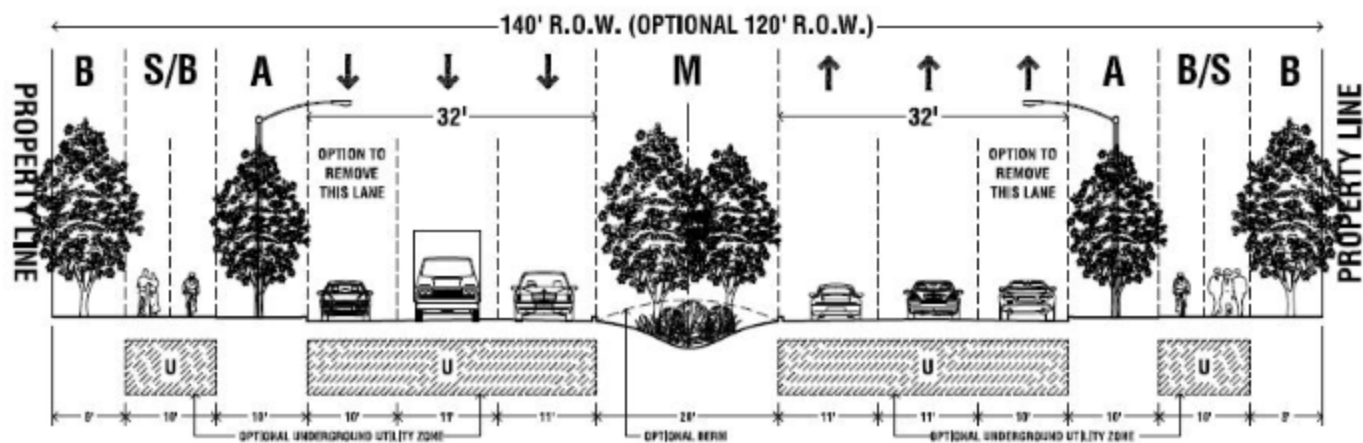
A Parkway is a main thoroughfare designed for high vehicular capacity and moderate speed, traversing both urbanized and rural areas. Parkway are typically equipped with a landscaped median or swale, and tree lined sidewalks and streetscape. The right-of-way for all parkways is typically one hundred and forty feet (140'), consisting of three (3) travel lanes in both directions. For residential areas, one lane of travel in either direction can be removed reducing the right-of-way to one hundred and twenty feet (120'). The median can be a planted swale or berm; and bicycle transportation is accommodated with a shared sidewalk.

Parkway Details	
Street Type	Parkway
Development Districts (Allowed)	GN NR RR
Right of Way Width	140' (optional 120')
Pavement Width	64' (total)
Median	20' (1)
Travel Lane(s)	11' (4) & 10' (2; optional)
Turn Lane	When Necessary
Bike Lane(s)	5' (2; shared sidewalk)
Amenity Zone	10' (2)
Sidewalk(s)	5' (2; shared sidewalk)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Shared Sidewalk
Pedestrian Crossing Time	9.4 Seconds
Parking Lanes	None
On Street Parking	None
Planter Type	Planter
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Swale or Berm
Curb Type	Concrete Curb
Curb Radius	10'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Free Movement
Maximum Design Speed	35 MPH
Minimum Gradient	1%
Maximum Gradient	6%-8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	9'6"



6.2.3B Boulevard

Figure 6.2.3B Typical Boulevard Cross Section



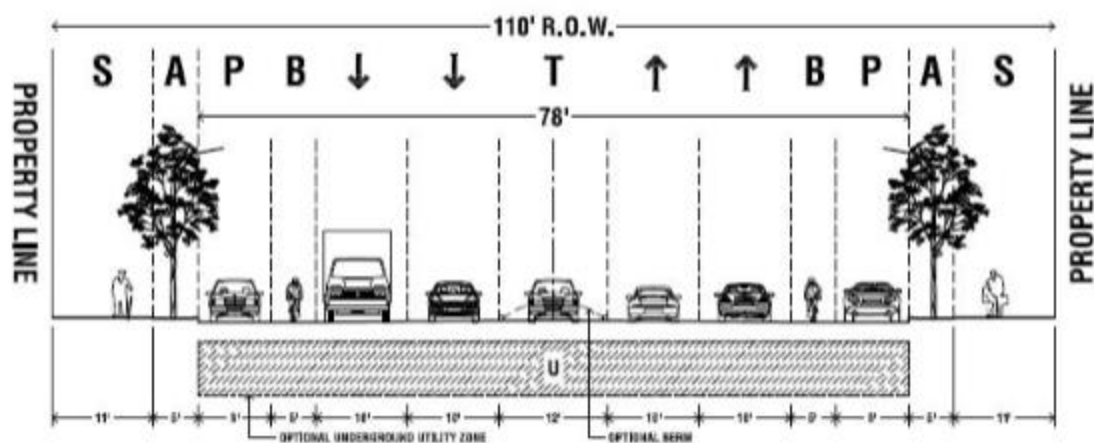
A Boulevard is a main thoroughfare designed for high vehicular capacity and moderate speed, acting as a long distance connector between urbanized areas. Boulevards are typically equipped with a landscaped median or swale, treeline sidewalks and streetscape, and on street parking on both sides of the street. The right-of-way for all boulevards is typically one hundred and ten feet (110'), consisting of two (2) travel lanes in both directions. For residential areas, one lane of travel in either direction can be removed reducing the right-of-way to ninety feet (90'). The median can be a planted swale or berm. Bicycle transportation is accommodated with a shared sidewalk.

Boulevard Details	
Street Type	Boulevard
Development Districts (Allowed)	MC TC GN NR
Right of Way Width	110' (optional 90')
Pavement Width	60' (total)
Median	20' (1)
Travel Lane(s)	11' (2) & 10' (2; optional)
Turn Lane	When Necessary
Bike Lane(s)	5' (2; shared sidewalk)
Amenity Zone	5' (2)
Sidewalk(s)	5' (2; shared sidewalk)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Shared Sidewalk
Pedestrian Crossing Time	6.3 Seconds
Parking Lanes	9' (2)
On Street Parking	Both Sides
Planter Type	Planter
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Swale or Berm
Curb Type	Concrete Curb
Curb Radius	10'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Free Movement
Maximum Design Speed	35 MPH
Minimum Gradient	1%
Maximum Gradient	6%-8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	4'6"



6.2.3C Avenue

Figure 6.2.3C Typical Avenue Cross Section



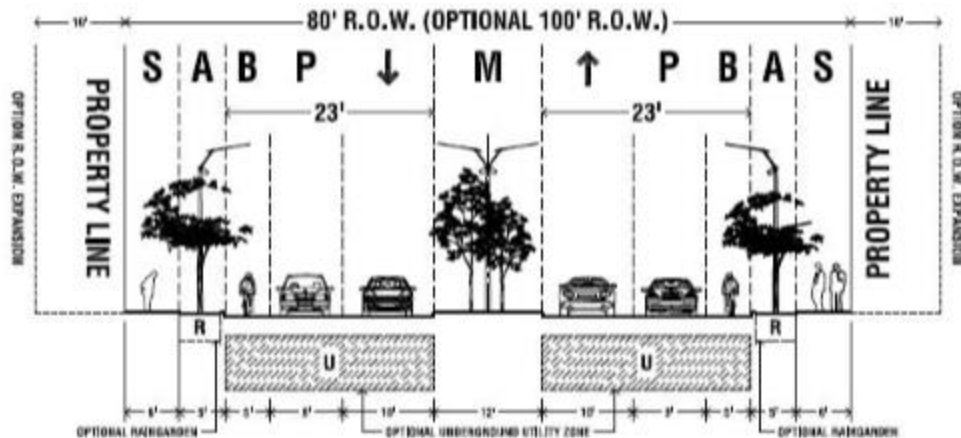
An Avenue is a main thoroughfare of high vehicular capacity and low to moderate speed, acting as a short distance connector between urbanized commercial and residential areas. Avenues are typically equipped with a single center turn lane; an optional landscaped berm when a turn lane is not needed; wide, tree lined sidewalks and streetscape; dedicated bicycle lanes in both directions; and on street parking on both sides of the street. The right-of-way for all avenues is typically one hundred and ten feet (110'), consisting of two (2) travel lanes in both directions.

Avenue Details	
Street Type	Avenue
Development Districts (Allowed)	MC TC
Right of Way Width	110'
Pavement Width	78'
Median	Optional
Travel Lane(s)	10' (4)
Turn Lane	12'
Bike Lane(s)	5' (2; dedicated)
Amenity Zone	5' (2)
Sidewalk(s)	11' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	17.7 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Tree Wells
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Optional Berm
Curb Type	Concrete Curb
Curb Radius	10'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Free Movement
Maximum Design Speed	35 MPH
Minimum Gradient	1%
Maximum Gradient	6%-8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	63"- 42"
Front of Sidewalk to Back of Curb	N/A



6.2.3D Main Street

Figure 6.2.3D Typical Main Street Cross Section



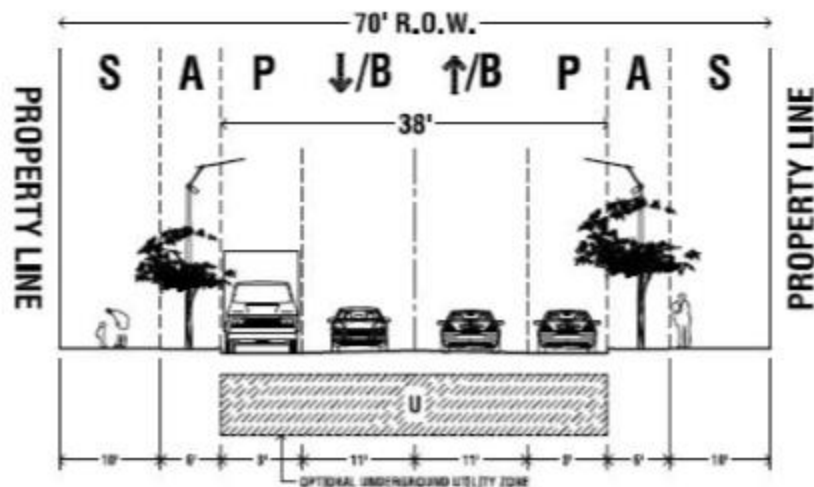
A Main Street is a thoroughfare designed for moderate vehicular capacity and moderate speed, traversing an urbanized, mixed-use type of area. Main streets are typically equipped with a landscaped median, tree lined sidewalks, and enhanced streetscape and amenities zones, bicycle lanes, and on street parking on both sides of the street. The right-of-way for all parkways is typically eighty feet (80'), consisting of two (2) travel lanes in both directions. For town center areas, optional additional sidewalks can be added increasing the right-of-way to one hundred feet (100'). Bicycle transportation is accommodated with dedicated bicycle lanes adjacent to the curbs.

Main Street Details	
Street Type	Main Street
Development Districts (Allowed)	MC TC
Right of Way Width	80' (optional 100')
Pavement Width	46' (total)
Median	12' (1)
Travel Lane(s)	10' (2)
Turn Lane	When Necessary
Bike Lane(s)	5' (2; dedicated)
Amenity Zone	5' (2)
Sidewalk(s)	6' (2; optional 16')
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	4.3 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Tree Wells
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Optional Rain Garden
Curb Type	Concrete Curb
Curb Radius	15'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Free Movement
Maximum Design Speed	35 MPH
Minimum Gradient	1%
Maximum Gradient	8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3E Commercial Street 1

Figure 6.2.3E Typical Commercial Street 1 Cross Section



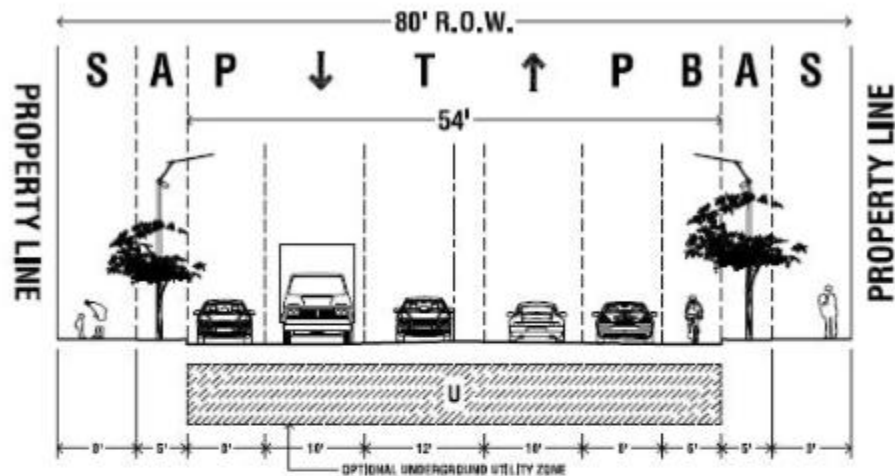
Commercial Street 1 is a thoroughfare designed for moderate vehicular capacity and moderate speed, traversing an urbanized commercial or mixed-use area. These commercial streets are typically equipped with tree lined sidewalks, an enhanced streetscape, and on street parking on both sides of the street. The right-of-way for these commercial streets is typically seventy feet (70'), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a bicycle boulevard throughout the length of the street.

Commercial Street 1 Details	
Street Type	Commercial Street 1
Development Districts (Allowed)	TC GN
Right of Way Width	70'
Pavement Width	38
Median	None
Travel Lane(s)	11' (2)
Turn Lane	None
Bike Lane(s)	11' (2; shared street)
Amenity Zone	6' (2)
Sidewalk(s)	10' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Bike Boulevard
Pedestrian Crossing Time	6.3 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Tree Wells
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	None
Curb Type	Concrete Curb
Curb Radius	15'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3F Commercial Street 2

Figure 6.2.3F Typical Commercial Street 2 Cross Section



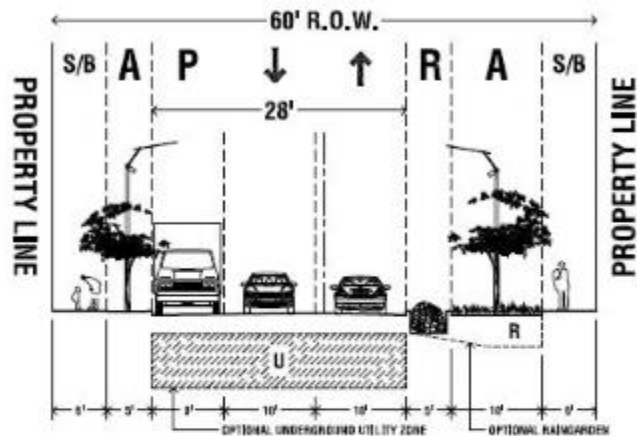
Commercial Street 2 is a thoroughfare designed for moderate vehicular capacity, moderate speed, and free movement traversing an urbanized commercial or mixed-use area. These commercial streets are typically equipped with tree lined sidewalks, an enhanced streetscape, a center turn lane, and or street parking on both sides of the street. The right-of-way for these commercial streets is typically eighty feet (80'), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a dedicated bicycle boulevard along one side throughout the length of the street.

Commercial Street 2 Details	
Street Type	Commercial Street 2
Development Districts (Allowed)	MC TC GN
Right of Way Width	80'
Pavement Width	54'
Median	None
Travel Lane(s)	10' (2)
Turn Lane	12'
Bike Lane(s)	6' (1)
Amenity Zone	5' (2)
Sidewalk(s)	8' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Bicycle Lane (1)
Pedestrian Crossing Time	10.8 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Tree Wells
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	None
Curb Type	Concrete Curb
Curb Radius	15'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3G Commercial Street 3

Figure 6.2.3G Typical Commercial Street 3 Cross Section



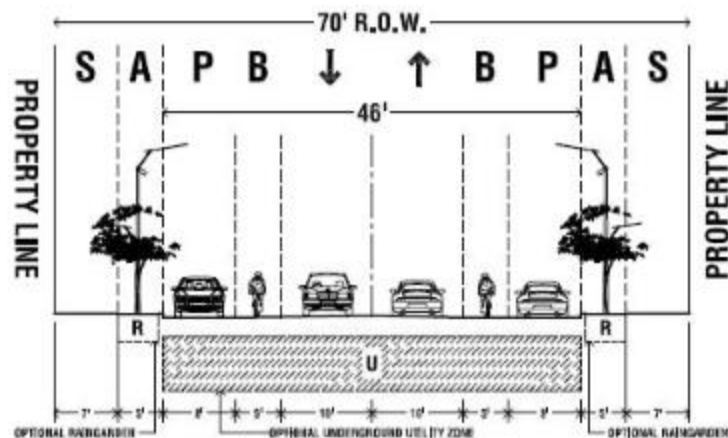
Commercial street 3 is a low-impact thoroughfare designed for moderate vehicular capacity and moderate speed, traversing an urbanized commercial or mixed-use area. Particular to low impact, these commercial streets are typically equipped with raingarden along the street (optional expanded/interconnected raingarden system), an enhanced streetscape, and on street parking along one (1) side of the street. The right-of-way for these commercial streets is typically sixty feet (60'), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a shared sidewalk.

Commercial Street 3 Details	
Street Type	Commercial Street 3
Development Districts (Allowed)	MC TC GN
Right of Way Width	60'
Pavement Width	28'
Median	None
Travel Lane(s)	10' (2; pervious)
Turn Lane	None
Bike Lane(s)	None
Amenity Zone	10' (pervious)
Sidewalk(s)	6' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Shared Sidewalk
Pedestrian Crossing Time	5.7 Seconds
Parking Lanes	8' (1)
On Street Parking	One Side
Planter Type	Tree Wells or Raingarden
Landscape Type (Tree)	Trees @ 40' On Center or Raingarden
Landscape Type (Other)	Optional Raingardens
Curb Type	Concrete Curb
Curb Radius	15'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3H Neighborhood Street 1

Figure 6.2.3 H Typical Neighborhood Street 1 Cross Section



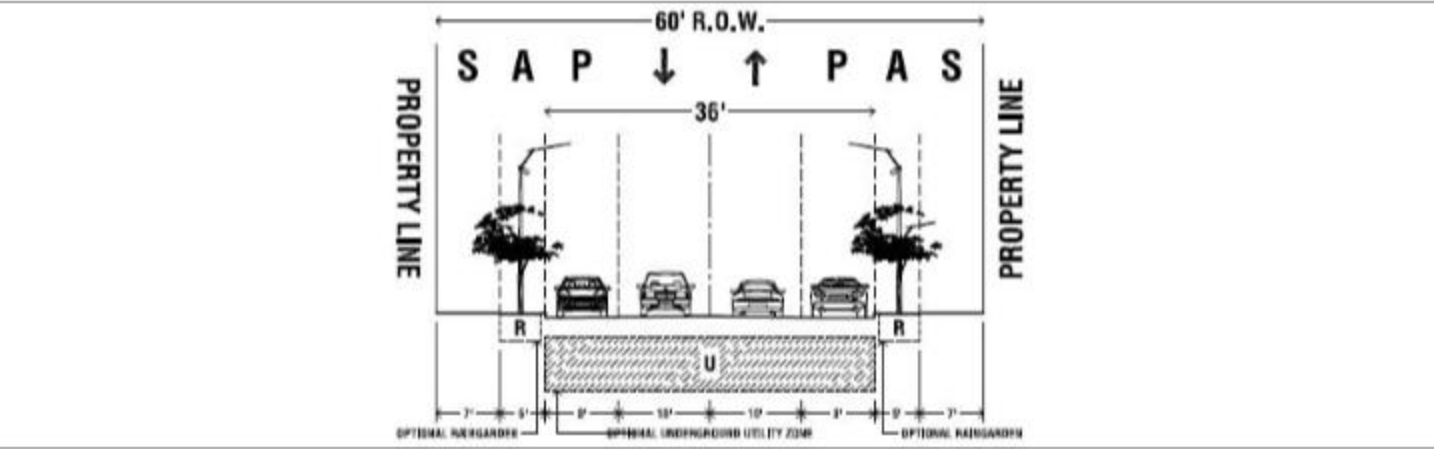
Neighborhood Street 1 is a thoroughfare designed for low vehicular capacity and low vehicular speed, traversing and connecting residential areas. These neighborhood streets are typically equipped with tree lined sidewalks, and on street parking on both sides of the street. The right-of-way for these commercial streets is typically seventy feet (70'), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a dedicated bicycle lanes along both sides of the street. Particular to the street, optional raingardens are allowed along the streetscape in place of planters.

Neighborhood Street 1 Details	
Street Type	Neighborhood Street 1
Development Districts (Allowed)	TC GN NR RR
Right of Way Width	70'
Pavement Width	46'
Median	None
Travel Lane(s)	10' (2)
Turn Lane	None
Bike Lane(s)	5' (2)
Amenity Zone	5' (2)
Sidewalk(s)	7' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	8.6 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Planter
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Optional Raingardens
Curb Type	Concrete Curb
Curb Radius	10'
Residential Driveway Access	No
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-12%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	4'6"



6.2.3I Neighborhood Street 2

Figure 6.2.3I Typical Neighborhood Street 2 Cross Section



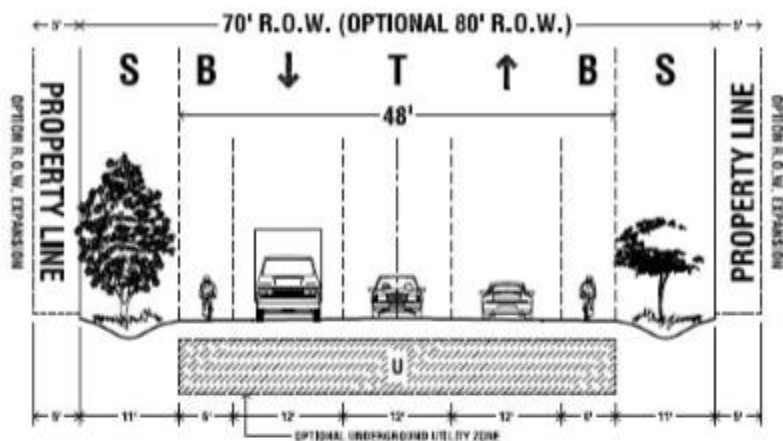
Neighborhood Street 2 is a thoroughfare designed for low vehicular capacity and low vehicular speed, traversing and connecting residential areas. These neighborhood streets are typically equipped with tree lined sidewalks, and on street parking on both sides of the street. The right-of-way for these commercial streets is typically sixty feet (60'), consisting of two (2) travel lanes in both directions. Particular to the street, optional raingardens are allowed along the streetscape in place of planters.

Neighborhood Street 2 Details	
Street Type	Neighborhood Street 2
Development Districts (Allowed)	TC GN NR RR
Right of Way Width	60'
Pavement Width	36'
Median	None
Travel Lane(s)	10' (2)
Turn Lane	None
Bike Lane(s)	None
Amenity Zone	5' (2)
Sidewalk(s)	7' (2)
Trail	None
Walkway Type	Sidewalk
Transportation Provision	Shared Sidewalk
Pedestrian Crossing Time	5.7 Seconds
Parking Lanes	8' (2)
On Street Parking	Both Sides
Planter Type	Planter
Landscape Type (Tree)	Trees @ 40' On Center
Landscape Type (Other)	Optional Raingardens
Curb Type	Concrete Curb
Curb Radius	10'
Residential Driveway Access	Yes (Rural Residential only)
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-12%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	4'6"



6.2.3J Road 1

Figure 6.2.3J Typical Road 1 Cross Section



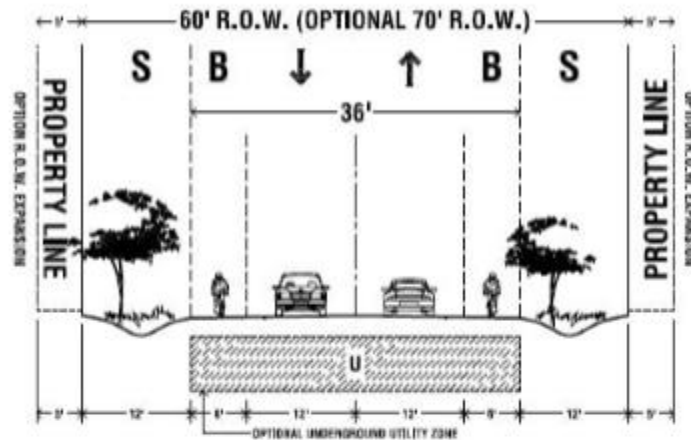
Road 1 is a thoroughfare designed for low vehicular capacity, low vehicular speed, and free movement traversing and connecting urban residential and campus areas. These roads are typically equipped with tree lined swales, a center turn lane, and bicycle lanes. The right-of-way for these roads is typically seventy feet (70'), consisting of two (2) travel lanes in both direction. When traversing residential or campus areas, optional sidewalks are allowed increasing the right-of-way to eighty feet (80'). Bicycle transportation is accommodated with a dedicated bicycle lanes on both sides of the street, and swales include random/natural clustering of trees.



Road 1 Details	
Street Type	Road 1
Development Districts (Allowed)	NR RR
Right of Way Width	70' (optional 80')
Pavement Width	48'
Median	None
Travel Lane(s)	12' (2)
Turn Lane	12'
Bike Lane(s)	6' (2)
Amenity Zone	None
Sidewalk(s)	5' (2; optional)
Trail	None
Walkway Type	Optional Sidewalk
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	13.4 Seconds
Parking Lanes	None
On Street Parking	None
Planter Type	None
Landscape Type (Tree)	Trees Clustered
Landscape Type (Other)	11' (2; swales)
Curb Type	None (swale)
Curb Radius	N/A
Residential Driveway Access	Yes
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-12%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A

6.2.3K Road 2

Figure 6.2.3K Typical Road 2 Cross Section



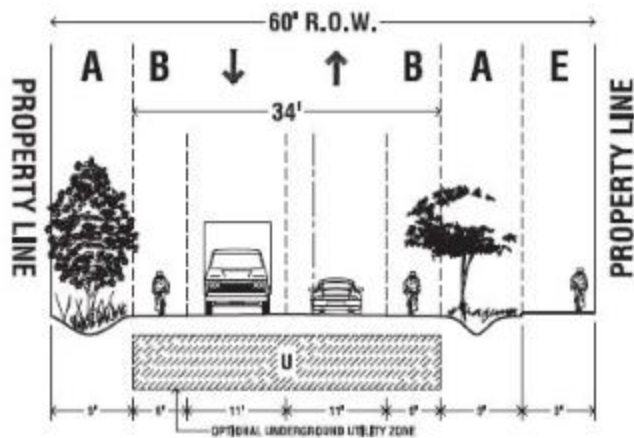
Road 2 is a thoroughfare designed for low vehicular capacity and low vehicular speed, traversing and connecting urban residential and campus areas. These roads are typically equipped with tree lined swales and bicycle lanes. The right-of-way for these roads is typically sixty feet (60'), consisting of two (2) travel lanes in both directions. When traversing residential or campus areas, optional sidewalks are allowed increasing the right-of-way to seventy feet (70'). Bicycle transportation is accommodated with a dedicated bicycle lanes on both sides of the street, and swales include random/natural clustering of trees.

Road 2 Details	
Street Type	Road 2
Development Districts (Allowed)	NR RR
Right of Way Width	60' (optional 70')
Pavement Width	36'
Median	None
Travel Lane(s)	12' (2)
Turn Lane	None
Bike Lane(s)	6' (2)
Amenity Zone	None
Sidewalk(s)	5' (2; optional)
Trail	None
Walkway Type	Optional Sidewalk
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	10.3 Seconds
Parking Lanes	None
On Street Parking	None
Planter Type	None
Landscape Type (Tree)	Trees Clustered
Landscape Type (Other)	12' (2; swales)
Curb Type	None (swale)
Curb Radius	N/A
Residential Driveway Access	Yes
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-12%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3L Lane 1

Figure 6.2.3L Typical Lane 1 Cross Section



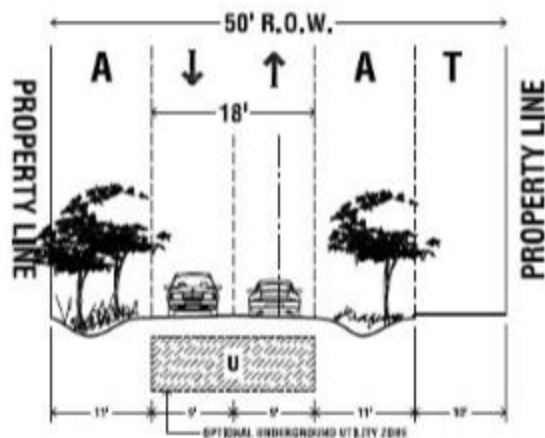
Lane 1 is a thoroughfare designed for low vehicular capacity and low vehicular speed, transversing and connecting rural residential and campus areas. These lanes are typically equipped with swales, bicycle lanes, and a joined trail. The right-of-way for these lanes is typically sixty feet (60’), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a dedicated bicycle lanes on both sides of the street, and swales include random/natural clustering of trees. The joined trail along one (1) side of the lanes length is dedicated to equestrian and pedestrian transportation only.

Lane 1 Details	
Street Type	Lane 1
Development Districts (Allowed)	RR
Right of Way Width	60'
Pavement Width	34'
Median	None
Travel Lane(s)	11' (2)
Turn Lane	None
Bike Lane(s)	6' (2)
Amenity Zone	None
Sidewalk(s)	None
Trail	8 (1; shared)
Walkway Type	N/A
Transportation Provision	Bicycle Lanes
Pedestrian Crossing Time	9.7 Seconds
Parking Lanes	None
On Street Parking	None
Planter Type	None
Landscape Type (Tree)	Trees Clustered
Landscape Type (Other)	9' (2; swales)
Curb Type	None (swale)
Curb Radius	N/A
Residential Driveway Access	Yes
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-14%
Utility Zone	None
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3M Lane 2

Figure 6.2.3M Typical Lane 2 Cross Section



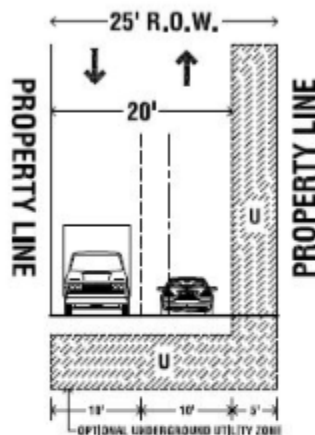
Lane 2 is a thoroughfare designed for low vehicular capacity and low vehicular speed, transversing and connecting rural residential and campus areas. These lanes are typically equipped with swales including random/natural clustering of trees, and a joined trail. The right-of-way for these lanes is typically fifty feet (50'), consisting of two (2) travel lanes in both directions. Bicycle transportation is accommodated with a joined trail along one (1) side of the lanes length.

Lane 2 Details	
Street Type	Lane 2
Development Districts (Allowed)	RR
Right of Way Width	50'
Pavement Width	18'
Median	None
Travel Lane(s)	9' (2)
Turn Lane	None
Bike Lane(s)	None
Amenity Zone	None
Sidewalk(s)	None
Trail	10' (1)
Walkway Type	N/A
Transportation Provision	Optional Path
Pedestrian Crossing Time	5.1 Seconds
Parking Lanes	None
On Street Parking	None
Planter Type	None
Landscape Type (Tree)	Trees Clustered
Landscape Type (Other)	11' (2; swales)
Curb Type	None (swale)
Curb Radius	N/A
Residential Driveway Access	Yes
Commercial Driveway Access	400' Apart (minimum)
Movement	Slow Movement
Maximum Design Speed	20 MPH
Minimum Gradient	1%
Maximum Gradient	8%-14%
Utility Zone	Optional Underground
Centerline of Hydrant to Back of Curb	36"-42"
Front of Sidewalk to Back of Curb	N/A



6.2.3N Commercial Alley

Figure 6.2.3N Typical Commercial Alley Cross Section



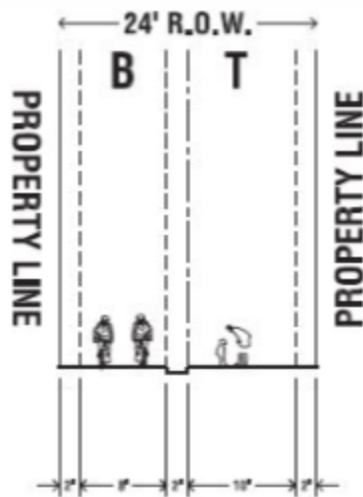
A commercial alley is a service thoroughfare designed for extremely low vehicular capacity and speed, servicing urbanized commercial and mixed-use areas, town center areas, as well as urbanized residential areas. The right-of-way for alleys is typically twenty-five feet (25’), consisting of two (2) travel lanes in both directions. Bicycle transportation is not accommodated. All utilities are within an above ground utility zone, and optional underground zone.



Commercial Alley Details	
Street Type	Commercial Alley
Development Districts (Allowed)	MC TC GN
Right of Way Width	25'
Pavement Width	25'
Median	None
Travel Lane(s)	10' (2)
Turn Lane	None
Bike Lane(s)	None
Amenity Zone	None
Sidewalk(s)	None
Trail	None
Walkway Type	N/A
Transportation Provision	N/A
Pedestrian Crossing Time	N/A
Parking Lanes	None
On Street Parking	N/A
Planter Type	N/A
Landscape Type (Tree)	None
Landscape Type (Other)	None
Curb Type	Inverted Crown
Curb Radius	Taper
Residential Driveway Access	N/A
Commercial Driveway Access	N/A
Movement	Slow Movement
Maximum Design Speed	10 MPH
Minimum Gradient	1%
Maximum Gradient	N/A
Utility Zone	5'
Centerline of Hydrant to Back of Curb	N/A
Front of Sidewalk to Back of Curb	N/A

6.2.30 Joined Trail

Figure 6.2.30 Typical Joined Trail Cross Section



A joined trail is an alternative transportation and recreational trail designed for pedestrian, bicycle, and equestrian traffic connecting and traversing all types of urban and rural areas. The right-of-way for joined trails is typically twenty-four feet (24'), consisting of a two way bicycle and pedestrian trail and separate two way equestrian trail. Minimum buffer widths are required between both trails, as well as along the outer edges of each trail.

Joined Trail Details	
Street Type	Joint Trail
Development Districts (Allowed)	All Districts
Right of Way Width	24'
Pavement Width	N/A
Median	None
Travel Lane(s)	None
Turn Lane	None
Bike Lane(s)	8' (1)
Amenity Zone	None
Sidewalk(s)	None
Trail	18' (total width)
Walkway Type	N/A
Transportation Provision	Bicycle Path
Pedestrian Crossing Time	N/A
Parking Lanes	None
On Street Parking	None
Planter Type	N/A
Landscape Type (Tree)	Naturalistic
Landscape Type (Other)	N/A
Curb Type	N/A
Curb Radius	N/A
Residential Driveway Access	N/A
Commercial Driveway Access	N/A
Movement	Dual Direction
Maximum Design Speed	N/A
Minimum Gradient	N/A
Maximum Gradient	N/A
Utility Zone	N/A
Centerline of Hydrant to Back of Curb	N/A
Front of Sidewalk to Back of Curb	N/A



6.3 DESIGN STANDARDS

6.3.1 General

- A. The arrangement, character, extent, width and locations of all streets within any development shall be properly related to the following:
1. Existing and planned streets
 2. Reasonable circulation of traffic
 3. Topographic conditions
 4. Runoff of storm water
 5. Satisfactory access for police, firefighting, other emergency services, snow removal, and sanitation and road maintenance equipment
 6. Public convenience and safety
 7. Proposed uses of the land to be served by the streets, and shall meet the standards set forth in this Article.
- B. The following standards are understood to be the minimum and at the recommendation of the appropriate individual or designee, higher standards comporting with accepted engineering practices may be imposed for streets in the Mixed Use Commercial District and Town Center District.
- C. All streets shall be properly related to special traffic generators such as industries, business districts, schools, churches, and shopping centers; to population densities; and to the pattern of existing and proposed land uses.

6.3.2 Right-of-Way and Pavement Widths

Every street right-of-way established is to be separate and distinct from the lots or parcels adjoining such right-of-ways and not included within the dimensions or areas of such lots or parcels. All rights-of-ways shall be dedicated to the public by the developer unless a variance to provide private streets has been obtained. In this case, dedication shall be to the lot owners and association with maintenance covenants and escrow funding provided. The minimum right-of-way and pavement widths shall be as follows:

Table 6.3.2 Right-of-Way and Pavement Widths

Type of Street	Minimum Right-of-Way	Minimum Pavement Width
Parkway	140' (optional 120')	64' Total
Boulevard	110' (optional 90')	60' Total
Avenue	110'	78'
Main Street	80' (optional 100')	46' Total
Commercial Street 1	70'	38'
Commercial Street 2	80'	54'
Commercial Street 3	60'	28'
Neighborhood Street 1	70'	46'
Neighborhood Street 2	60'	36'
Road 1	70' (optional 80')	48'
Road 2	60' (optional 70')	36'
Lane 1	60'	34'
Lane 2	50'	18'
Commercial Alley	25'	25' (optional 35')
Joined Trail	24'	N/A

6.3.3 Excessive Right-of-Way Widths

Right-of-way widths in excess of the standards designated in this Development Code shall be accepted due to any of the following conditions:

- A. Topographical conditions require additional width necessary to provide adequate earth slopes. Such slopes shall not be in excess of three to one (3:1).

- B. The requirements of a bridge, box culvert or pipe culvert.
- C. The requirements of overpasses, underpasses, and approaches thereto.

6.3.4 Topographical Considerations

Streets shall be related appropriately to topography. Grades of streets shall conform as closely as possible to the existing natural topography, but shall not exceed the maximum grade nor be less than the minimum grade indicated under each street type. Consideration should also be given to the provision of efficient drainage and utility systems. All streets shall be arranged so that as many as possible of the building sites are at or above street grade. A combination of steep grades and curves shall be avoided.

6.3.5 Railroads

Railroad rights-of-ways where so located as to affect the development of adjoining lands, shall be treated as follows:

- A. In all residential districts, a buffer strip at least twenty-five feet (25') in depth in addition to the normal depth of the lot required in the district shall be provided adjacent to the railroad right-of-way or limited access highway. This strip shall be part of the platted lots and shall be designated on the plat: "This strip is reserved for screening. The placement of structures on this land is prohibited."
- B. In districts zoned for business, commercial, or industrial uses, the nearest street extending parallel or approximately parallel to the railroad right-of-way shall, wherever practicable, be at a sufficient distance from the railroad right-of-way to ensure suitable depth for commercial or industrial sites.
- C. When streets parallel to the railroad right-of-way intersect a street which crosses the railroad right-of-way at grade, they shall, to the extent practicable, be at a distance of at least one hundred fifty feet (150') from the railroad right-of-way. Such distance shall be determined with due consideration of the minimum distance required for future separation of grades by means of appropriate approach gradients.

6.3.6 Temporary Stub Streets and Permanent Dead End Streets

- A. Temporary Stub Streets: Streets shall be so arranged to provide for the continuation of principal streets between adjacent development parcels in order to ensure for the convenient movement of traffic, effective fire and police protection, and efficient provision of utilities. If the adjacent development parcel is undeveloped and the street must dead end temporarily, the right-of-way shall be extended to the property line, and no strip that would prevent connections with future streets shall be reserved. A temporary turnabout shall be provided at the terminus of any temporary stub street with the notation on the development plat that land outside the normal street right of way shall revert to abutters whenever the street is continued. The appropriate jurisdiction or designee may limit the length of temporary stub streets in accordance with the standards contained within this Development Code. The temporary turnabout pavement shall meet the same standards as for permanent dead end streets.
- B. Permanent Dead End Streets: A permanent dead end street should be avoided wherever possible and should only occur in the case of topographical conditions or in order to protect cultural and natural resources, or wherever existing built features prohibit the connection. The terminus of a permanent dead end street shall not be closer than fifty feet (50') to the boundary of an adjacent development parcel or site boundary line. A turnaround or hammerhead, having a minimum pavement radius of forty feet (40'), shall be provided at the end of every permanent dead end street. For greater convenience to traffic and more effective police and fire protection, permanent dead end streets shall be limited to a street segment with a cul-de-sac or hammerhead (with no outlet) up to a maximum of five hundred feet (500') in length from the street.

6.3.7 Commercial Alleys

- A. Alleys shall be utilized for service and rear access to development parcels and lots in Mixed-Use Commercial, General Neighborhood, and Town Center Districts.
- B. Alleys shall also be utilized for the Utility Zone and therefore close coordination with all utility providers is essential in the planning, design and construction of the alley.

C. When required or provided, alleys shall meet the following design standards:

1. Length: Alleys shall be of a similar length as their associated opposite and parallel primary service streets, except for any additional length required for turnout returns to the primary service street. Dead end alleys are prohibited. An alley with only one outlet shall be provided with an approved turn-around.
2. Width: Alleys' right-of-way shall be twenty feet (20') with a matching twenty foot (20') paving width in any residential only area, and in any Mixed Use District and/or Non- Residential Districts the alley right-of-way shall be twenty-five feet (25') with a matching twenty-five foot (25') paving width.
3. Paving: Alleys shall be paved with concrete in accordance with street design standards and specifications. Alley paving shall have a minimum grade of one half of one percent (0.5%) and a maximum grade of ten percent (10%).
4. Intersection with Streets: Alleys shall intersect streets at right angles or radial to curved streets. The intersection of a street and an alley shall be constructed as a standard driveway approach. Entrance widths to alleys shall match the alley width and therefore be constructed either twenty feet (20') or twenty five feet (25') wide.
5. Alley Turnouts: Alley turnouts shall be paved to the property line with turnouts to be not less than twenty feet (20') wide. At alley turnouts, the distance from the alley right-of-way to any gate, building, or garage opening shall be at least twenty-five feet (25'). In cases where two (2) alleys intersect or turn at a sharp angle, lot corners shall be platted so that a triangular area of twenty-five feet by twenty-five feet (25' x 25') or greater is dedicated as part of the alley for the purpose of providing a minimum required radius of thirty feet (30) to the inside edge of the alley paving.
6. Low-Impact Construction: Alleys have the option to be implemented with low-impact construction techniques, including:
 - a. Proper pitching and grading in order to prevent flooding of adjacent properties
 - b. The use of permeable/porous concrete, asphalt or pavers to reduce storm water burdens on sewers
 - c. Lightly shaded, high albedo pavements to reflect light and mitigate any heat island effects
 - d. The use of recycled materials, including aggregate and the use of rubber- or slag-based surfaces
 - e. Dark-sky compliant light fixtures.

6.3.8 Sidewalks

- A. Sidewalks shall be provided on both sides of each street as shown on all street types except lane 1, lane 2, commercial alleys, and joined trails.
- B. The developer may submit an alternate sidewalk plan which shall be reviewed in accordance with Article 1.0 of this Development Code and submit its recommendation to the appropriate individual (in accordance with Article 1.0 of this Development Code) with transmittal of the preliminary plat. Modifications from the sidewalk requirement may be granted in the following cases:
 1. Where the alternate sidewalk plan meets the intention of the Complete Streets and Context Sensitive Street Design
 2. Where the alternate sidewalk plan provides for low impact stormwater solutions, such as rain gardens, etc.
 3. Where tracts of land are created having at least three hundred feet (300') of frontage which could be re-subdivided into smaller lots at a future time
 4. Where the subdivision designer has submitted for review a proposed sidewalk plan that provides for more direct and safer movement of pedestrian traffic.

6.3.9 Intersections

- A. Not more than two (2) streets shall intersect at any one point.
- B. Streets shall be laid out so as to intersect as nearly as possible at right angles; in no case shall two (2) streets intersect at an angle of less than seventy-five degrees (75°). An oblique street shall be curved approaching an intersection and shall be approximately at right angles with said intersection for at least one hundred feet (100') from the centerline intersection

unless a lesser distance would be in accordance with safe and accepted traffic engineering practices and is accepted by the municipality.

- C. Proposed new intersections along one (1) side of an existing street shall, whenever practicable, coincide with any existing intersections on the opposite side of such street. Street jogs with centerline offsets of less than one hundred fifty feet (150') shall not be permitted, except where the intersected street has divided lanes without median breaks at either intersection. Intersections of two parkways, boulevards, avenues and/or main streets or a mixture of said streets shall be at least eight hundred feet (800') apart.
- D. To permit safe vehicular movements at corners, the minimum curb radius at the intersection of two (2) streets shall be under each Street Type (See Article 6.0 Section 6.5.3). When two (2) streets with differing minimum curb radii intersect, the more stringent (or smaller) curb radius applies to both streets.
- E. Flat Grade: Intersections shall be designed with a flat grade wherever practical. In hilly terrain, an area having not greater than a three percent (3%) slope for a distance of one hundred feet (100') from the nearest right-of-way line of the intersecting street shall be provided at the approach to an intersection.
- F. The cross-slopes on all streets, including intersections, shall not exceed three percent (3%).
- G. Where any street intersection will involve earth banks or existing vegetation inside any lot corner that would create a traffic hazard by limiting visibility, the developer shall cut such ground and/or vegetation (including trees) in connection with the grading of the public right-of-way to the extent deemed necessary to provide an adequate sight distance as per the Illinois Department of Transportation design standards in the *Administrative Policy Manual for Local Roads and Streets* for new construction.

6.3.10 Reverse Curves

A tangent at least one hundred feet (100') long shall be introduced between reverse curves on all streets. A shorter tangent may be approved in accordance with Article 1.0 of this Code. Where a street changes direction (for example, where a center line deflection angle occurs), a circular curve having a minimum center line radius of 75 feet (75') for neighborhood street 1, neighborhood street 2, lane 1, lane 2, commercial alleys shall be introduced, and for all other streets a circular curve having a minimum center line radius of 250 feet (250') shall be introduced.

6.3.11 Improvements to Existing Streets

Whenever any development abuts an existing street which is narrower than the standards indicated under this Article, the developer shall dedicate sufficient right-of-way on the side abutting the development to permit compliance with those standards. Transition lengths shall be subject to approval in accordance with Article 1.0 of this Development Code. The costs of improving the realignment or widening of the street may be shared between the relevant jurisdiction and the developer upon determination by the appropriate individual (in accordance with Article 1.0 of this Development Code) that the cost of the realignment or widening exceeds the cost of providing necessary access to the development.

6.3.12 Frontage on Improved Streets

- A. No development shall be approved unless the area to be developed shall have frontage on and access from an existing street and unless such street is:
 - 1. An existing State, County, Township, City or Village street; or
 - 2. A street shown upon a plat approved by the State, County, Township, City or Village and recorded in the Office of the Recorder of Deeds. Such streets or highways must be suitably improved as required by the State, County, Township, City or Village rules, regulations, specifications, or orders, or be secured by a performance bond required under this Development Code, with the width and right of way required by this Development Code.
- B. Frontage streets shall be improved and dedicated by the developer at their expense to the full width as required by these subdivision regulations.

- C. Land reserved for any street purposes may not be counted in satisfying yard or area requirements of the ordinance whether the land is to be dedicated to the County, Township, City or Village in fee simple or an easement is granted to the County, Township, City or Village.

6.3.13 Dedication or Reservation of Right-of-Way

- A. When a right-of-way needs to be dedicated for future public streets and alleys the following applies:
 - 1. The developer shall dedicate the minimum right-of-way required whenever they propose to build any of the street or alley components.
 - 2. Whenever the developer proposes to build any of the components, they shall dedicate a right-of-way in excess of the stated minimum where, in the appropriate individual's professional opinion (in accordance with Article 1.0 of this Development Code):
 - a. Due to topography, additional width is necessary to provide adequate sight lines and adequate earth slopes
 - b. Due to the location of streams, railroad tracks, and other topographical features, additional width is needed to construct bridges, box culverts, pipe culverts, underpasses, or safe approaches thereto
 - c. When right-of-way must be reserved, the developer shall reserve said right-of-way. If the governmental entity requiring the reservation has not purchased the right-of-way or acquired it through condemnation proceedings within one (1) year from the date the final plat is recorded, the reservation shall cease to legally bind on the developer.
 - 3. Whenever the State, County, or any township or municipality within the County has gone on record as desiring to relocate or construct any street, alley or highway through or adjacent to any proposed development, the developer shall reserve sufficient right-of-way in the locations prescribed by the governmental entity.
 - 4. Whenever a development abuts an existing street or alley that does not meet the standards set forth in this Code's standards, the developer shall reserve sufficient right-of-way along the side of the street or alley abutting the development so that, when additional right-of-way is acquired on the other side, it will be possible to comply with the standards.
- B. Right-of-way is not part of minimum requirement for setbacks. Any land that is dedicated or reserved for public right-of-way shall not be counted in determining compliance with the lot size and setback requirements set forth in the this Development Code.
- C. Street systems in new developments shall be laid out so as to eliminate or avoid new perimeter half streets. Where an existing half street is adjacent to a new development, the other half of the street shall be improved and dedicated by the developer. The appropriate individual (in accordance with Article 1.0 of this Development Code) or designee may authorize a new perimeter street where the developer improves and dedicates the entire required street right-of-way width within its own development boundary.

6.3.14 Private Streets and Alleys

No private street and/or alley shall be created unless a variance has been granted. To obtain such a variance, the developer must satisfactorily demonstrate that there is virtually no current or potential public interest in the proposed private street and/or alley. In every case, a variance to permit a private street and/or alley shall be subject to the following conditions:

- A. That no additional, adjacent or future development shall utilize the said private streets and alleys as a means of access to a public street
- B. That the final plat will show the location and the width of all the private streets and alleys
- C. That the final plat will include a certificate stating essentially as follows:

I, _____, owner of tract and the private street and alley shown hereon, declare that the private street and alley is not dedicated to the public, but shall remain private, to be maintained by and for the adjoining lot owners until such time that said street(s) and alley(s) are accepted by the appropriate Township, City, or Village or Madison County, Illinois.

Date: _____ Signed: _____

- D. Other stipulations regarding private streets and alleys shall be defined with the grant of variance from the appropriate City, Village or Madison County.

6.3.15 Reserve Strips

The creation of reserve strips shall not be permitted adjacent to a proposed street in such a manner as to deny access from adjacent property to the street.

6.3.16 Fire Lane Design Standards (Emergency Access Easements)

- A. Easement Width: Fire lanes shall not be less than twenty-four feet (24') wide at the outer easement lines and clear of all lateral obstructions.
- B. Vertical Obstructions: There shall be no vertical obstruction of a fire lane within the area between the top of the paving surface to a vertical height of fourteen feet (14').
- C. Roadway Paving Surface: An all-weather hard paving surface, meeting the standards of the applicable jurisdiction and comprised of either reinforced concrete or Hot Mix Asphalt Concrete (HMAC) over an approved base, shall comprise the fire lane roadway. The roadway shall be centered within the fire lane easement at a width of not less than twenty-four feet (24'), face to face of curbs if constructed, and capable of supporting a twelve thousand five hundred pounds (12,500 lbs.) wheel load.
- D. Turnouts: Fire Lane turnouts shall not be less than a twenty-five feet (25') inside turning radius, and a minimum outside turning radius of fifty feet (50'), measured at both the easement line and roadway paving surface edge.
- E. Dead End Turnarounds: All dead end fire lanes in excess of one hundred fifty feet (150') in length shall be provided with a turnaround meeting the County, City and/or Village's geometric and surfacing standards for a standard cul-de-sac design, or other such configuration and design as approved by the fire department of the applicable jurisdiction.
- F. Grade: Grade incline of fire lanes shall not exceed ten percent (10%).
- G. Markings: Fire Lane markings and striping shall comply with fire code requirements and fire department policy of the applicable jurisdiction.