

# HILLSIDE DISTRICT PLAN – White Paper

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## ROADWAY CLASSIFICATION

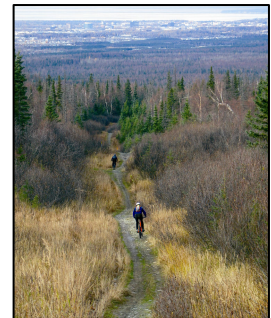
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*PUBLIC REVIEW  
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# ROADWAY CLASSIFICATION

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## Overview

The Municipality of Anchorage (MOA) has initiated the Hillside District Plan to supplement the Anchorage 2020 Anchorage Bowl Comprehensive Plan. A goal of the Hillside District Plan is to establish sound public policy that reflects the vision of residents and landowners for future Hillside growth. The transportation study is just one component of the Hillside District Plan. The Municipality of Anchorage (MOA) held three public workshops in March, 2007, to solicit community input for the development of the Hillside District Plan. During those meetings it became evident there are transportation issues on the Hillside which involve the character/function and/or intended character/function of the roadways. Residents voiced concerns that certain local roadways were being used as collectors or arterials which were not designed for that use. Other residents expressed concerns with travel speeds, roadway widths, and site distances on the major roadways. To fully understand these issues it is important to understand how and why roads are classified as they are and how that affects roadway design and the implications for planning. This white paper will provide an overview of the planning and regulatory process which guides the ultimate character and design of the roads, and provide a discussion of the functional classification network on the Hillside. The character and type of roads are discussed to provide a “menu” of the character of roads that meet various functions.

## Existing Context and Regulatory Framework

The 2005 Anchorage Bowl Long-Range Transportation Plan (LRTP) provides the framework for future transportation development and planning in the Anchorage Bowl and will be used as a guide for the more detailed level of planning found in this study. The Anchorage LRTP is considered a “functional plan.” A functional plan provides more specific direction than the Anchorage 2020, in this case, related to the functions associated with travel in the Anchorage Bowl. As an area-wide plan, the LRTP establishes the overall transportation system beyond the boundaries of any given area’s specific plan. Similar to its relationship with Anchorage 2020, the Hillside district must also be consistent with the LRTP. Appendix C of the LRTP provides an excellent overview of the street classification system used in the MOA.

The MOA’s Official Streets and Highways Plan (OS&HP) (1996) provides a means for integrating the LRTP into the roadway design. The LRTP forms much of the basis for the recommendations contained in the OS&HP. The OS&HP is a key implementing tool for the plan by officially identifying in ordinance the locations, classifications, and minimum right-of-way (ROW) requirements of the street and highway system needed to meet long range transportation goals over the next 25-year period.

On a local level, the MOA classifies roadways according to their function as one of the following: freeways, expressways, minor/major arterials, collectors, and local roads. This is outlined in the OS&HP. Roadways should be designed to serve their respective functions. The OS&HP and the MOA’s Design Criteria Manual (2007) serve as a guide to prepare for future development. The OS&HP is used during land subdivision development, along with the Design Criteria Manual and the conditions set out in the Anchorage Municipal Code (AMC) (Title 21 and 24) to ensure that an adequate amount of ROW is reserved for planned roads. See the *Existing Roads figure*, which depicts Hillside roads and their functional classification.

Road design based partly based on the functional intent of the road as expressed in the OS&HP thereby insures that the design is consistent with the planned usage of the road network. Road design in Anchorage is subject to local, state, and federal regulations, standards, and guidelines. No single document completely defines the design standards. Besides the OS&HP, Titles 21 and 24 specifically define local regulations for road construction in Anchorage. State owned and maintained roads are designed in cooperation with the MOA but may be subject to separate design guidelines.

## **Title 21**

This Municipal Code has five different sections that regulate road construction standards based on classification.

AMC21.05.030, *Elements* adopts the OS&HP as a part of the Anchorage comprehensive plan. The OS&HS establishes street classification for existing and proposed primary roads, and these classifications directly relate to design criteria for each road type.

AMC21.15.015, “*Public Facility Site Review*” identifies “any street of collector or greater capacity” as defined by the OS&HP as a “public facility”, subject to site plan review by the Planning and Zoning Commission.

AMC21.75.035, “*Definitions and Rules of Construction*” establishes terminology and definitions for developing subdivisions.

AMC 21.80 “*Subdivision Standards: Dedication, Reserve Tracts and Design*” establishes design standards for building streets in new subdivisions. In particular it establishes dedication of right-of-way (ROW) and street design standards for alignment, grade, snow storage, screening landscaping, and intersection angles.

AMC 21.85, “*Subdivision Standards: Improvements*” establishes design and construction standards for streets constructed as a part of private land development under subdivision agreements. In particular, Tables A, B, C, and D establish minimum standards for streets.

## **Title 24**

AMC 24.20.030, “*Approval of Plan Required*” states that the work performed will be in accordance with Municipal standards and specifications, including applicable standards in Title 21.

## **MOA Design Criteria Manual**

The *Design Criteria Manual* also provides design criteria for roads. Projects designed and constructed jointly by the Municipality and state are to adhere to the design criteria in this manual as well as to appropriate criteria (mandated by federal laws) contained in state manuals. This can be a point of conflict with the state, since Municipal standards are sometimes more stringent than the states highway standards.

The codes and standards discussed in this section do not apply to state transportation construction projects within state ROW. State road construction is subject to the state's *Preconstruction Manual*, *Right-of-Way Manual*, and *Alaska Traffic Manual Supplement*. The state has also adopted the guidelines in the American Association of State Highway & Transportation Officials (AASHTO) "Green Book" for highway design.

## Roadway Classification

Roadways are classified into hierarchy groups, or "functional classes," based on the character of traffic service they are intended to provide. Functional classification recognizes that individual roads and streets do not serve travel independently. Rather, most travel involves movement through networks of roads and can be categorized relative to such networks in a logical and efficient manner. Thus, functional classification of roads and streets should be consistent with categorization of travel related to trip length and purpose (AASHTO 2001). Travel mobility and access are key elements of roadway classification and design. All roads are grouped into one of these functional classes, depending upon the character of the trips and traffic (i.e., local or long distance) and the degree of land access they allow. Table 1 indicates how roadways are classified by the MOA.

The reason for functional classification of roadways is to provide consistency and continuity to the transportation road network. For instance, residential roads would generally all have similar, lane widths, design speeds and posted speeds, pavement, shoulders, curb and gutter, and sidewalks. However, the criteria could change because of location and the physical conditions. Continuity in the transportation road network provides for the hierarchy of roads to work together, whereby low volume, low speed residential roads flow into or connect with collector roads and collectors connect to arterials. At the low end of the functional system (local roads) the emphasis is on access to adjacent property and the high end (freeways), the emphasis is on mobility (getting timely from place to place).

Another way to look at functional classification of roadway is through traffic movements. Roadways are designed to accommodate distinct travel movements. Distinct travel movements include the main movement, transition, distribution, collection, access, and termination. Main movements generally occur on freeways or expressways. When approaching destinations from the freeway, vehicles reduce speeds on the freeway ramps (transitional movement) and enter an arterial (distribution) that brings the vehicle closer to the vicinity of their destination. The trip continues onto the collector roadway system that enters the neighborhood, where it connects with local access roads and provides access via driveways to individual properties (AASHTO 2001).

Table 1 – Municipality of Anchorage (OS&HP) Functional Roadway Classification

Classification	Function	Characteristics	Examples in the HDP
Freeways	Carry through-traffic	<ul style="list-style-type: none"> <li>Limited access</li> <li>High speed</li> </ul>	None. The only freeway is the New Seward Highway, which borders the west boundary of the HDP area.
Expressways	Carry through-traffic, though at somewhat slower speeds than freeways	<ul style="list-style-type: none"> <li>Full or partial control of access</li> <li>Generally has grade-separated intersections</li> </ul>	None. International Airport Road, outside of the HDP boundary, is Anchorage's only classified expressway.
Major Arterials	Rapidly move large volumes of traffic from one location to another	Access to adjacent lands carefully controlled	<ul style="list-style-type: none"> <li>New Seward Highway (south from Rabbit Creek Road)</li> <li>O'Malley Road (between Lake Otis Parkway and New Seward Highway)</li> </ul>
Minor Arterials	<ul style="list-style-type: none"> <li>Carry traffic parallel to or connecting with major arterials</li> <li>Provide land access</li> </ul>	Serve less concentrated traffic- generating areas, such as neighborhood shopping areas and schools	<ul style="list-style-type: none"> <li>Abbott Road (between Lake Otis Parkway &amp; Hillside Drive)</li> <li>O'Malley Road (between Lake Otis Parkway &amp; Hillside Drive)</li> <li>Huffman Road (between New Seward Highway &amp; Elmore Road)</li> <li>De Armoun Road (between New Seward Highway &amp; just east of Elmore Road)</li> <li>Rabbit Creek Road (between New Seward Highway &amp; Goldenview Drive)</li> <li>Lake Otis Parkway (between Abbott Road and Huffman Road)</li> </ul>
Collectors	<ul style="list-style-type: none"> <li>Collect traffic between arterials and local streets</li> <li>Conduct traffic to local traffic generators, such as shopping centers or schools</li> </ul>	<ul style="list-style-type: none"> <li>Limited mobility</li> <li>High level of access</li> </ul>	<ul style="list-style-type: none"> <li>Elmore Road</li> <li>Birch Road</li> <li>Hillside Drive</li> <li>Rabbit Creek Road</li> <li>Huffman Road (east of Elmore Road)</li> <li>Upper O'Malley Road</li> <li>Upper De Armoun Road</li> <li>Glen Alps Road</li> <li>Canyon Road</li> <li>Old Seward Highway</li> <li>Potter Valley Road</li> <li>Potter Heights Drive</li> <li>Goldenview Drive</li> <li>Clark's Road</li> <li>Prospect Drive</li> </ul>
Local	Provide access to abutting properties	<ul style="list-style-type: none"> <li>High access</li> <li>Lower speeds</li> <li>Through traffic discouraged</li> </ul>	Streets in neighborhoods

Problems can occur where roadways are not designed for the functions they are being called upon to accommodate or when the same roadway is trying to accommodate two distinct functions (e.g., a high volume major arterial with direct access to businesses). Problems can also be created when the hierarchy skips several levels. For example, in Anchorage there are many places where residential roads connect directly to an arterial. The arterial is meant to move a lot of traffic efficiently without a lot of interruptions. In cases where too many of these connections occur the arterial is acting like a collector and not functioning the way it was intended or designed to operate. This can affect the level of service and can also cause unsafe conditions. Driver expectations based on the design do not correlate with the volumes of side traffic they encounter. Or in the case of the Hillside, the driveways of private properties connect directly to a major arterial, such as O'Malley Road. The quality and level of service that a road provides depends on how well each road is performing in relation to its primary purposes and in relation to its operational characteristics (OS&HP 1996). There can be a great deal of frustration when a roadway is not performing its intended purpose and function.

Ideally, in a developing community such as Anchorage, the location of major and minor arterials and collector streets must be established in advance of land subdivision activity, in order to avoid the need to acquire the necessary ROW for planned highways and streets at a higher cost in later years (OS&HP 1996).

## **Street Typology Additions to Functional Classification**

The Anchorage Bowl 2025 LRTP recognizes and retains most of the MOA existing classification system categories adopted by either the MOA or Alaska Department of Transportation & Public Facilities (DOT&PF) for freeways, expressways, arterials, collectors, and local streets, but recommended refining the designations of some of the streets.

Since the adoption of Anchorage 2020: Anchorage Bowl Comprehensive Plan (Anchorage 2020) prepared by the MOA in 2001, the traditional functional classification system needed to be supplemented to reflect emphasis on a more balanced street function that considers land use and includes all users—pedestrians, bicyclists, transit users, and motorists. The following street typology system is intended to augment the traditional functional classification system:

- Residential Street
- Main Street
- Transit street
- Commercial Street
- Industrial street
- Mixed use street
- Park land street
- Institutional district street
- Low-Density residential street

Previous discussion about functional classification of a street broadly defines its design and operational characteristics as they primarily relate to the movement of motor vehicles. By contrast, the street typologies further refine street designs by relating them to the adjacent land uses and their functions for other users — pedestrians, bicyclists, and transit riders. Traditional functional classification often neglects other modes of travel. The design of a street, its intersections, sidewalks, and transit stops should reflect the adjacent land uses because the type and intensity the adjacent land use directly influences the level of use by other modes.

The street typologies attempt to strike a balance among functional classification, adjacent land use, and the competing travel needs and uses. Each street typology prioritizes various design elements by looking at factors related to both the adjacent land uses and the functional classification. Where sufficient public ROW exists, all design elements may be accommodated. Within constrained public ROW, however, trade-offs between priority design elements are required to balance the function and needs of various travel modes. The trade-offs will be resolved during the design public process by using context-sensitive design principles. (Anchorage Bowl 2025 LRTP, Appendix C)

The MOA Street Typology that directly applies to the Hillside includes residential and low-density residential typologies (see Table 2). A more detailed description of these two street typologies is included in the Functional Classifications descriptions under arterials and collector streets. A summary of all the MOA Street Typologies may be found in the Anchorage Bowl 2025 LRTP, Appendix C.

Table 2 – Municipality of Anchorage Street Typology Summary

Type of street	Functional Class	Primary Elements	Secondary Elements	Traffic Management
Residential	Collector, arterial	Sidewalks Tree lawns On-Street parking Landscaped medians Bike lanes on designated bicycle routes	Number and width of travel lanes (especially collector and local streets)	Medians On-street parking Street trees Narrower travel lanes Traffic circles and roundabouts Reduced pedestrian crossing distances at intersections, using curb extensions, traffic islands, and other measures
Low-Density Residential	Collector, arterial	Bicycle lanes on designated bike routes Separated bike trails where designated Retention of natural vegetation	Width and number of travel lanes	Narrower travel lanes

Source: Anchorage Bowl 2025 LRTP, Appendix C



## State and Municipal Functional Classification

It is important to note that there are differences in design standards between the Municipality and state, and in some cases there are differences in how functional classification is interpreted and applied, depending on road ownership. Generally, if the state owns the road, then state functional classification applies as do state design standards. This is of particular importance on the Hillside, since the state owns some of the major roads, including Abbott, O'Malley, Huffman, DeArmoun, Clark, Rabbit Creek, Seward Highway and sections of Bragaw/Abbott Loop. Road beginning points and termini often varies between the state and the municipality's functional classification. Functional classification of Municipal roads are broken into subcategories, such as, Neighborhood Collector/IC or Residential Collector/I. State functional classifications follow those in AASHTO's Green Book, which are divided into rural and urban roads with classifications of principal arterials, minor arterials, collectors, and local roads. The following table shows road ownership, termini, and functional classification of some of the major Hillside roads.

Table 3 –Municipal and State Functional Classifications for State-owned Facilities on the Hillside

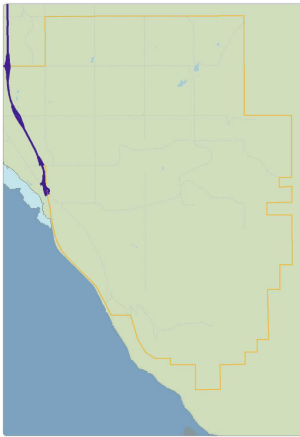
Road	Beginning	Terminus	Municipal	State
Abbott Loop	Abbott Rd	O'Malley	ResidentCollector/I	N/A
Abbott Road	Lake Otis	Hillside Drive	Minor Arterial/II	Urban Collector
Birch Rd	Abbott Rd	Huffman Rd	ResidentCollector/I	Urban Local Rd
Birch Rd	Huffman Rd	DeArmoun Rd	ResidentCollector/I	Urban Local Rd
Bragaw Street	Abbott Rd	O'Malley	ResidentCollector/I	N/A
Bragaw Street	O'Malley	DeArmoun	ResidentCollector/I	N/A
Clarks Road	Rabbit Creek	East terminus	NeighbCollector/IC	Urban Collector
DeArmoun Rd	Old Seward Hwy	140th Ave	Minor Arterial/II	Urban Collector
Elmore Rd	DeArmoun Rd	Rabbit Creek Rd	NeighbCollector/IC	Urban Local Rd
Hillside Drive	Abbott Rd	DeArmoun Rd	NeighbCollector/IC	Urban Collector
Huffman Rd	Old Seward Hwy	Elmore	Minor Arterial/II	Urban Collector
Huffman Rd	Elmore	Hillside Drive	NeighbCollector/IC	Urban Collector
New Seward Hwy	15th Ave	Rabbit Creek	Freeway/V	Urban Interstate
O'Malley	New Seward	Lake Otis	Major Arterial/IIIB	Urban Collector
O'Malley Rd	Lake Otis	Hillside Drive	Minor Arterial/II	Urban Collector
Rabbit Creek Rd	New Seward Hwy	Goldenview Dr	Minor Arterial/II	Urban Collector
Rabbit Creek Rd	Goldenview Dr	DeArmoun Rd	ResidentCollector/I	Urban Collector

While the table identifies the differences in functional classification between the Municipality and the state, the state design standards prevail on state owned roads. In some cases, state design standards are higher than the Municipality's on higher classification roads, and the Municipality's standards are higher than ADOT&PF on mid to lower functionally classified roads. In both the Municipality's and state's functional classification, the emphasis should be on how the road actually functions.

## **Relationship between Functional Classification and Design**

This section explores the relationship between the functional classification of the road network and the design. The focus is on roads within the Hillside District Plan study area to provide a breadth of different road characters and functional intents in current plans. The attached figure shows the functional classification network according to the OS&HP.

## Freeways



**Definition:** Commonly defined as a limited access, high-speed roadway with grade-separated interchanges with the purpose of carrying through-traffic.

**Example:** The only freeway in the HDP area is the New Seward Highway, which borders the west HDP boundary. Where the New Seward Highway is divided, it is classified as a freeway. Just south of Rabbit Creek Road (at the northern end of Potter Marsh), the New Seward Highway is classified as a major arterial where it becomes a single lane, two-way roadway.

**Primary Function:** To carry through traffic.

**Characteristics:** Freeways are intended to be highly efficient transports of goods and people for longer trips. Access is controlled and limited, which allows for safety at high speeds.



In the foreground of the photo, the **New Seward Highway** is divided and is classified as a freeway. Its classification changes to a major arterial where the divided highway ends and the roadway becomes a single-lane in each direction.

## **Expressways**

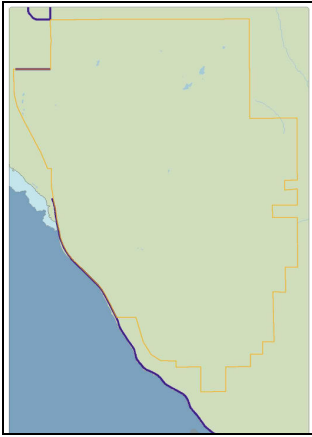
**Definition:** Commonly defined as a divided arterial highway for through traffic with full or partial control of access, with intersections generally grade-separated, though sometimes at-grade.

**Example:** There are no expressways specifically identified within the HDP area. The only expressway in Anchorage is International Airport Road.

**Function:** To carry through traffic, though at somewhat slower speeds than freeways. Some side friction can be anticipated.

**Characteristics:** Access is full or partially controlled. Partial control access means through traffic is given preference, but there may be some limited at-grade crossings. Residential and collector streets, such as private driveway connections, should not allow access onto expressways.

## Major Arterials



**Definition:** Commonly defined as a major facility for rapidly moving large volumes of traffic from one location to another.

**Examples:** There are two major arterials along the HDP area border. A portion of the New Seward Highway (south of Rabbit Creek Road) and a portion of O'Malley Road (between Lake Otis Parkway and New Seward Highway) are designated as major arterials.

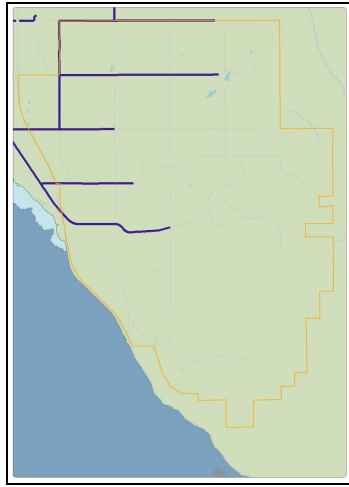
**Functions:** Travel mobility is the primary function. Access to adjacent lands is a secondary function.

**Characteristics:** Major and minor arterials generally serve as routes for utilities and as a means of providing access to open space. Because of its traffic carrying function, access to major arterials should be carefully controlled.



**O'Malley Road**, between Lake Otis Parkway and New Seward Highway is designated a major arterial. As driveways and side streets have proliferated conflict occurs between the roadways through function and its function for access to adjacent property.

## Minor Arterials



**Definition:** Minor arterials are primarily intended to move through traffic, however, these roadways also provide an important land access function.

**Street typology:** As arterials, residential streets balance multimodal mobility with land use. Residential streets tend to be more pedestrian oriented. Residential streets generally consist of two to four travel lanes, but place a higher priority on pedestrian- and bicycle-friendliness than on automobile mobility.

**Examples:** There are six segments of minor arterials within the HDP area. These are:

- (1) Abbott Road (between Lake Otis Parkway and Hillside Drive);
- (2) O'Malley Road (between Lake Otis Parkway and Hillside Drive);
- (3) Huffman Road (between New Seward Highway and Elmore Road);
- (4) DeArmoun Road (between New Seward Highway and just east of Elmore Road);
- (5) Rabbit Creek Road (between New Seward Highway and Goldenview Drive); and
- (6) Lake Otis Parkway (between Abbott Road and Huffman Road).

**Functions:** To move through traffic, while providing land access.

**Characteristics:** Minor arterials serve less concentrated traffic-generating areas, such as schools, neighborhood shopping areas, and recreational facilities. Minor arterials should have a significant degree of access control with access preferably not less than block intervals. Direct access to minor arterials from individual lots should be discouraged.

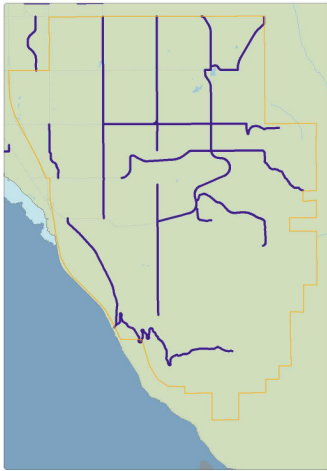


Examples of minor arterials. From left to right: **O'Malley Road**, east of Abbott Loop Road near the entrance to the zoo [Notice there are more private driveways off this O'Malley Road segment, compared to the major arterial segment on the previous page]; **Elmore Road**, south of Huffman Road.

Issues occur where the function of the road for access conflicts with a design that emphasizes through movement, especially where driver expectation and desire for longer trips becomes impeded by side friction.



## Collectors



**Definition:** Collects traffic from local streets and conducts it to arterials, other local streets, and activity centers.

**Street Typology:** Residential streets and collectors are designed to emphasize walking, bicycling, and land access over mobility. Low Density Residential areas have lower volumes of traffic and long distances between destinations reducing walking trips.

**Examples:** Many. See Table 1.1 for a complete list.

**Function:** To collect and move traffic, while providing high level of access.

**Characteristics:** Collectors accumulate traffic from local streets and provide connections to activity centers, such as shopping centers, schools, and other commercial and community centers. Sometimes collectors function as an easement for utilities. Parking along collectors should be discouraged. Collectors should be designed so that through traffic is discouraged between larger residential areas or between larger residential areas and major activity areas.



Examples of collectors. Clockwise from top left: **Huffman Road**, near the Birch Road curve; **Upper De Armoun**, west of Hillside Drive; **Goldenview Drive**, south of Rabbit Creek Road; and Rabbit Creek Road, east of Goldenview Drive.

## Local Roads

Definition: Local roads provide access to adjacent properties.

Examples: Streets in neighborhoods.

Function: Provide the highest level of access.

Characteristics: Local roads connect residential properties to other parts of the roadway network. Speeds are slow and through travel is discouraged. Local roads provide space for on street parking and for utilities. Hillside residents have expressed frustration over drivers using local roads for a thorough-traffic, rather than traveling on collector roads.



Examples of local roads. Clockwise from top right: **Bluebell Drive** east of Goldenvue Drive; **E. 142nd**, north of Rabbit Creek Road; **Ashland Drive**, east of Bluebell Drive.



## Roadway Design and Function Considerations

### Roadway Characteristics

The factor underlying all road design standards is the functional classification of the road. *What is the road's intended purpose? How much access and how much mobility should the road be designed to accommodate?* Other road design factors include speed, lane and shoulder width, road curvature, maximum grade, and access control. The following are key considerations relating functional classification to design and the resultant character of the roadway in the finished product.

### Speed

Speed is a factor in road design. Roads designed for increased speed need wider lanes, wider clear zones, obstructions removed, flattened ditches, and reduced road curvature to allow for a greater stopping sight distance at higher speeds. Roadways should be designed to operate at a speed that satisfies the need of the users (MOA 2007).

### Lane and Shoulder Width

Lane width influences safety and driving comfort. Wider lanes give drivers a greater ability to maneuver and an increased area of cushion. Narrow lanes require drivers to operate their vehicles closer laterally. Narrow lanes also can contribute to reduced vehicle speed. Hillside residents have expressed the desire for both wider-lane roads (to get on and off the Hillside quicker) and narrower-lane roads (to reduce speed and improve safety conditions). Widening shoulders also provides greater maneuverability and traffic flow when cars are turning off a road. Pedestrians and bicycles benefit from an increased safety zone.

### Road curvature

Hills can limit sight distance and reduce the ability to maintain speed. The safety margin is increased going around a curve if it is a flatter curve. Reducing road curvature allows for a greater stopping sight distance at higher speeds. Reducing road curvature also increases the visual field.

### Access

Access can affect the velocity of the traffic stream. Accidents commonly occur at access points, such as locations where driveways turn off from main roads. See the *Traffic Accidents figure*, which depicts traffic accidents on the Hillside. Most of these accidents have occurred on major or minor arterials.

## Roadway Design Typical Characteristics

This section and Attachment 1 provide information on how the various functional classifications and design considerations translate into roadways. The MOA has a design criteria manual, updated in January 2007, which guides local road design. Attachment A shows typical cross sections of roadways from the MOA design criteria manual (see sidebar). The cross sections integrate the function of the roadway with the design considerations described below. As mentioned earlier, State owned roads may be designed to standards which vary from MOA standards. State design criteria for the various functional classifications are in Table 3.

Table 4 – Summary of State DOT&PF road design

	Urban Arterial	Rural Arterial	Collector	Local
Lane Width	12 ft	12 ft	12 ft	12 ft
Shoulder (Shy)	2 ft	4--8—10 ft	6-8 ft function of ADT	6-8 ft function of ADT, curb, and gutter
Median	16 ft	0—50 ft	Function of ADT	Function of ADT
Sidewalk	4 ft min	---	4 ft	4 ft
Separation Sidewalk	NA at ROW	NA at ROW	Behind curb or planter strip	Behind curb or planter strip
Pathway	10 ft	10 ft	10 ft	10 ft
Separation Pathway	Behind curb or at ROW	At ROW	Behind curb or at ROW	Behind curb or at ROW
ROW	100 ft min	150 ft min to 300 ft	60 ft	60 ft

Source: DOT&PF Preconstruction Manual and AASHTO Green Book (2001)

Lane width, shoulder width, and pathway width is based on specific traffic volume and design speed. Other considerations include terrain, utilities, and ROW limitations.

Road design must consider conditions 20 years in the future, calculated from the time the road is operational.

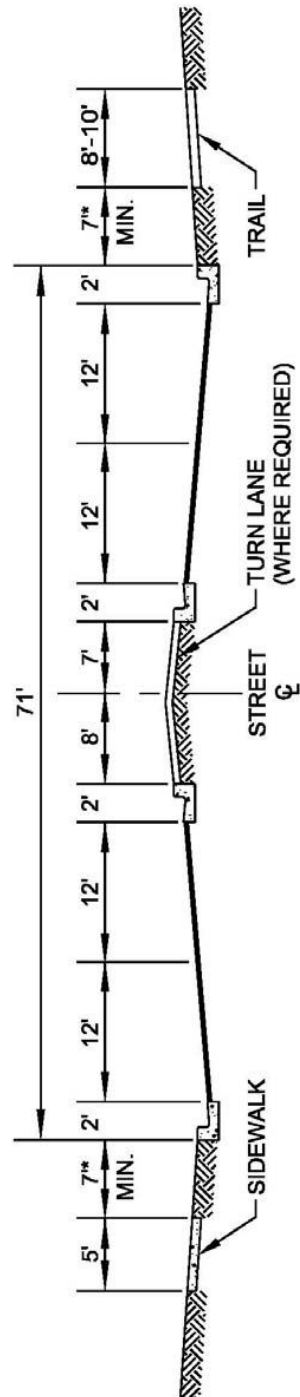
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American Association of State Highway and Transportation Officials (AASHTO). 2001. A Policy on Geometric Design of Highways and Streets.

Municipality of Anchorage (MOA). 2007. Design Criteria Manual.

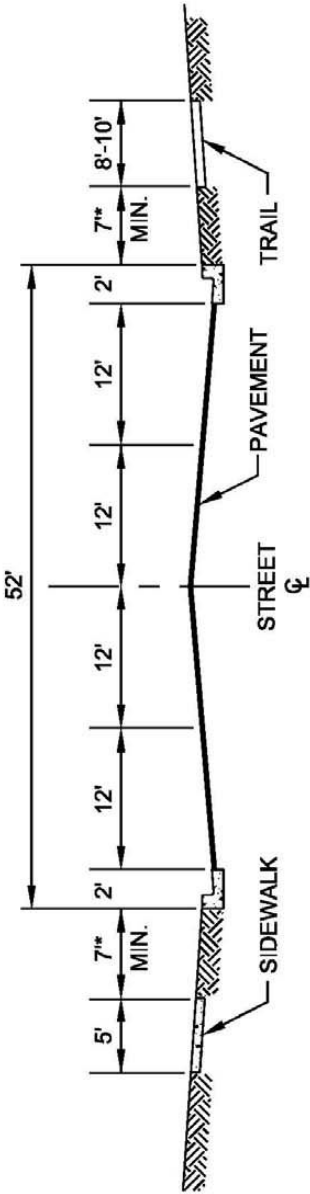
\_\_\_\_\_. 1996. Official Streets and Highways Plan (OS&HP).

Attachment 1- 1  
Class III Major Divided Arterial Typical



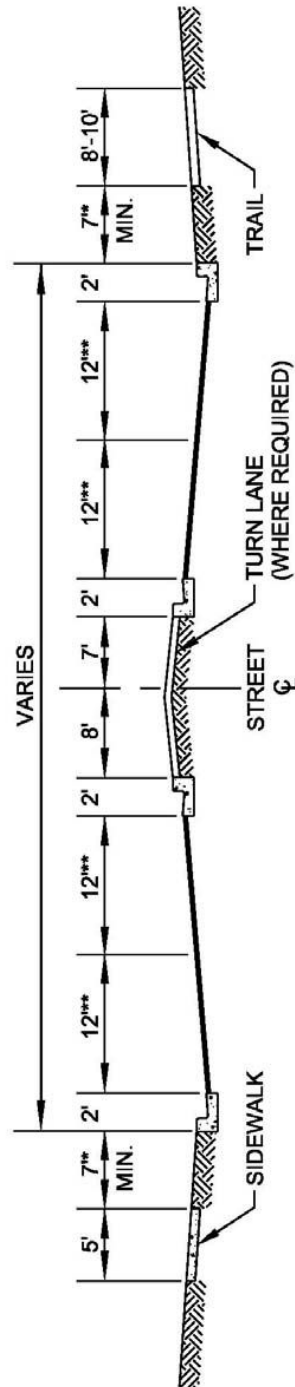
\* ALL STREET RIGHT-OF-WAY SHALL INCLUDE AN OPEN AREA FOR SNOW STORAGE THAT EXTENDS 7 FT. BEYOND THE BACK OF CURB (REF. AMC 21.80.330). WHEN VEGETATION IS PRESENT, THE SIDEWALK/TRAIL SEPARATION FROM CURB AND GUTTER IS 10-FOOT MINIMUM.

Attachment 1- 2  
Class IIIC Major Undivided Arterial Typical



\* ALL STREET RIGHT-OF-WAY SHALL INCLUDE AN OPEN AREA FOR SNOW STORAGE THAT EXTENDS 7 FT. BEYOND THE BACK OF CURB (REF. AMC 21.80.330). WHEN VEGETATION IS PRESENT, THE SIDEWALK/TRAIL SEPARATION FROM CURB AND GUTTER IS 10-FOOT MINIMUM.

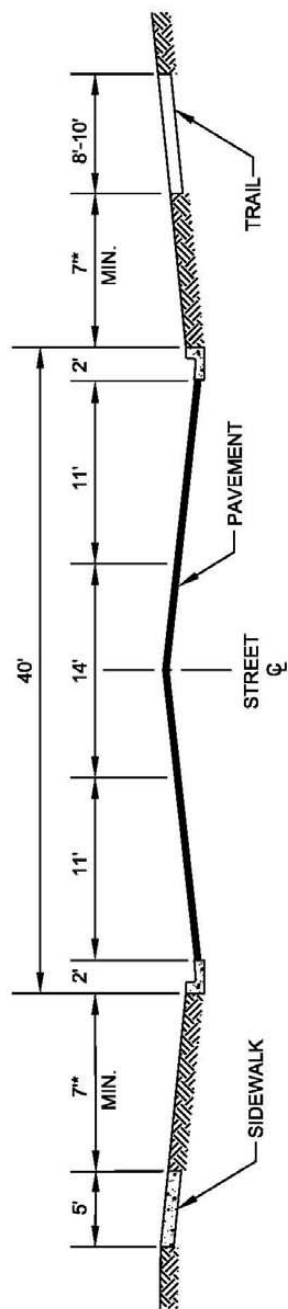
Attachment 1- 3  
Class IIIA Major Divided Arterial Typical



\* ALL STREET RIGHT-OF-WAY SHALL INCLUDE AN OPEN AREA FOR SNOW STORAGE THAT EXTENDS 7 FT. BEYOND THE BACK OF CURB (REF. AMC 21.80.33). WHEN VEGETATION IS PRESENT, THE SIDEWALK/TRAIL SEPARATION FROM CURB AND GUTTER IS 10 FOOT MINIMUM.

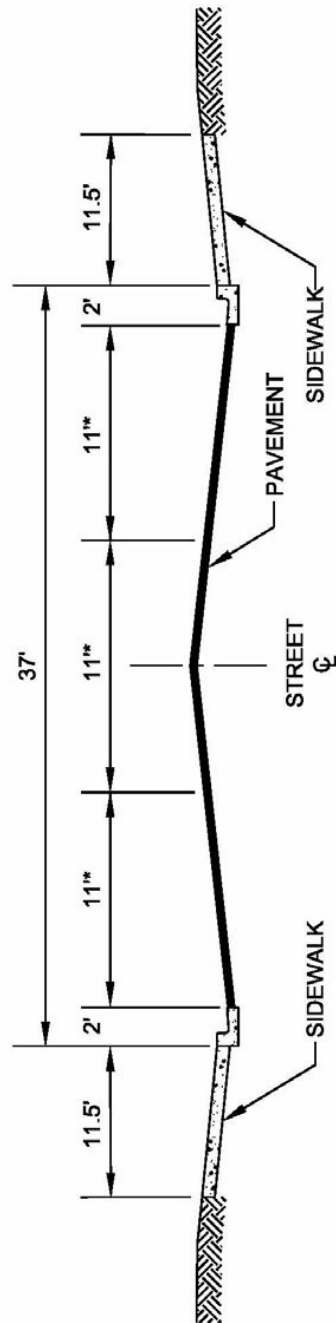
\*\* NUMBER OF LANES IS VARIABLE (4-6)

Attachment 1- 4  
Class II Urban Minor Arterial Typical



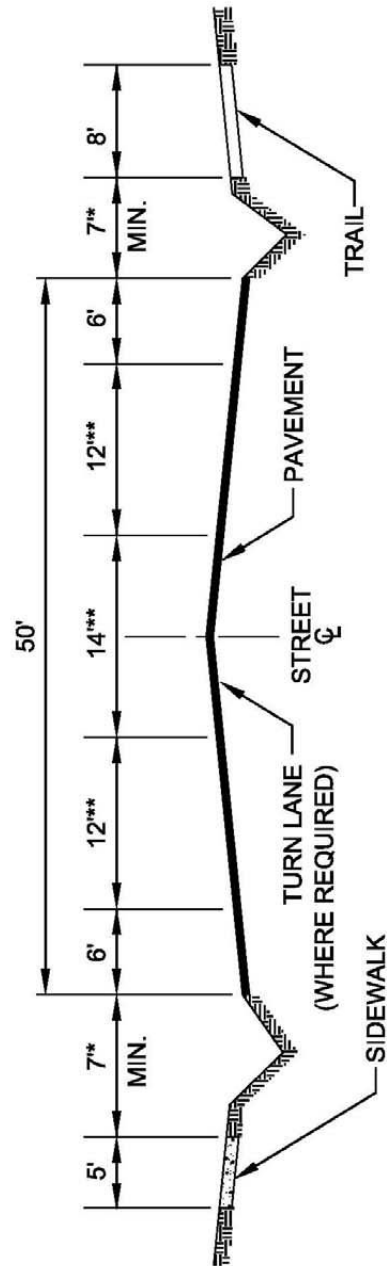
\* ALL STREET RIGHT-OF-WAY SHALL INCLUDE AN OPEN AREA FOR SNOW STORAGE THAT EXTENDS 7 FT. BEYOND THE BACK OF CURB (REF. AMC 21.80.33). WHEN VEGETATION IS PRESENT, THE SIDEWALK/TRAIL SEPARATION FROM CURB AND GUTTER IS 10-FOOT MINIMUM.

Source: MOA Design Criteria Manual



\* NUMBER OF LANES IS VARIABLE (2-4).  
\* PARKING MAY BE ALLOWED WITH 2 THROUGH LANES.

Attachment 1- 6  
Class II Rural Minor Arterial Typical

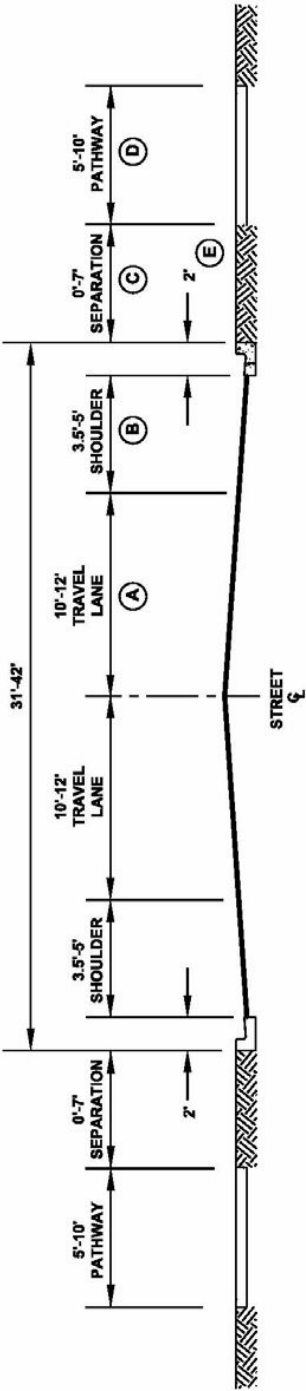


\* ALL STREET RIGHT-OF-WAY SHALL INCLUDE AN OPEN AREA FOR SNOW STORAGE THAT EXTENDS 7 FT. BEYOND THE EDGE OF PAVEMENT (REF. AMC 21.80.330). WHEN VEGETATION IS PRESENT, THE SIDEWALK/TRAIL SEPARATION FROM CURB AND GUTTER IS 10-FOOT MINIMUM.

\*\* NUMBER OF LANES IS VARIABLE (2-4)



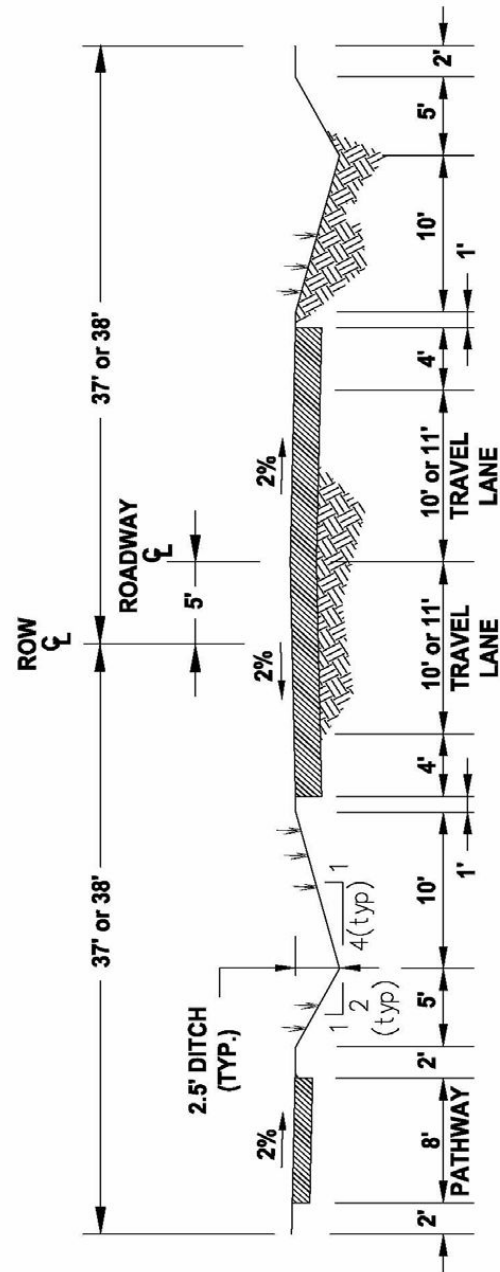
Attachment 1- 7  
Collector road typical section

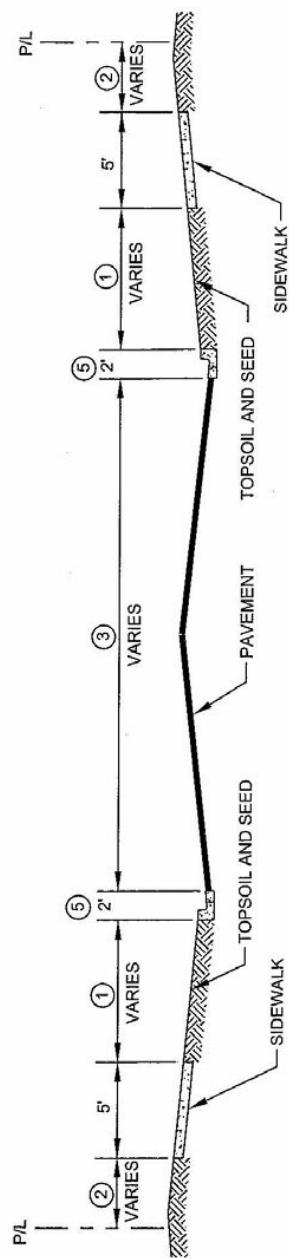


NOTES:

- (A) 12-FOOT TRAVEL LANES SHALL BE USED ONLY ON INDUSTRIAL/COMMERCIAL COLLECTORS OR RESIDENTIAL/NEIGHBORHOOD COLLECTORS WITH HIGH TRUCK TRAFFIC.
- (B) A 7-FOOT SHOULDER WILL ONLY BE ALLOWED WHERE THERE IS ON-STREET PARKING. ON- STREET PARKING MAY ONLY BE PROVIDED ON ONE SIDE OF A NEIGHBORHOOD OR RESIDENTIAL COLLECTOR ROADWAY. PARKING WILL BE ALLOWED ON ONE OR BOTH SIDES OF AN INDUSTRIAL/COMMERCIAL COLLECTOR.
- (C) THE DESIRABLE SEPARATION FOR PEDESTRIAN FACILITIES ALONG ALL COLLECTORS IS 7 FEET. IN SOME CASES THE PEDESTRIAN FACILITIES MAY BE ATTACHED TO THE BACK OF CURB PROVIDING THERE IS A 5-FOOT SHOULDER. THE MINIMUM MAINTAINABLE WIDTH FOR A VEGETATED BUFFER IS 3 FEET.
- (D) PEDESTRIAN FACILITIES MUST BE PROVIDED ON BOTH SIDES OF A COLLECTOR ROAD. THE MINIMUM WIDTH OF A SIDEWALK IS 5 FEET. MULTI-USE PATHWAYS MAY VARY IN WIDTH BETWEEN 8 TO 10 FEET.
- (E) CURB AND GUTTER MUST BE TYPE 1 (REF. DCM SECTION 1.9F DESIGN COMPONENTS).

Source: MOA Design Criteria Manual

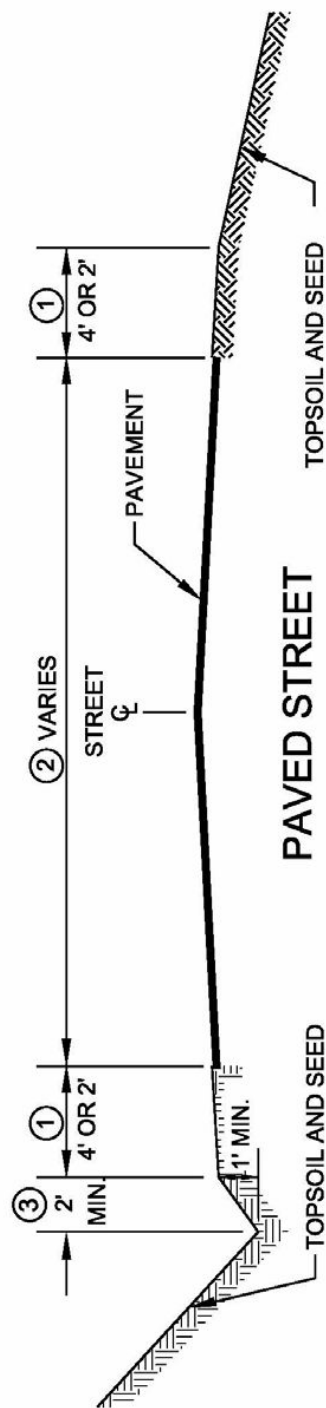




NOTES:

- ① SIDEWALK REQUIREMENTS AND SEPARATION FROM CURB AND GUTTER IS DISCUSSED IN CHAPTER 4.
- ② SIDEWALK SEPARATION FROM PROPERTY LINE VARIES WITH THE WIDTHS OF RIGHT-OF-WAY AND PROPOSED STREET SECTION.
- ③ PAVEMENT WIDTHS VARY WITH TRAFFIC VOLUMES AND TYPES AS LISTED IN TABLES 1-5 AND 1-6.
- ④ SEE SECTION 1.3F FOR INFORMATION ON AVERAGE DAILY TRIPS DETERMINATION.
- ⑤ CURB AND GUTTER SHALL BE TYPE 2 (REF. DCM SECTION 1.9F DESIGN COMPONENTS).

## URBAN SECONDARY STREETS



NOTES:

- ① MINIMUM SHOULDER WIDTHS ARE 2 - 4 FEET FOR RESIDENTIAL STREETS AND 4 FEET FOR INDUSTRIAL/COMMERCIAL STREETS.
- ② STREET WIDTHS VARY WITH TRAFFIC VOLUMES AS LISTED IN TABLES 1-4 AND 1-6.
- ③ MINIMUM DITCH DEPTH SHOULD ALLOW FOR 18-INCH DRIVEWAY CULVERT WITH 1-FOOT OF COVER.
- ④ SEE SECTION 1.3F FOR INFORMATION ON AVERAGE DAILY TRIPS.
- ⑤ PATHWAY REQUIREMENTS ARE DISCUSSED IN CHAPTER 4.