

Section 3

Definitions and Terminology

3.1 General

This section includes general terminology associated with the road cross-section and terms commonly used in highway design. Reference is made to "*Highway Definitions*," AASHTO, 1968.

3.2 Cross-Section Terminology

The elements of the road cross-section are illustrated in Figure 3-A and Figure 3-B and defined as follows:

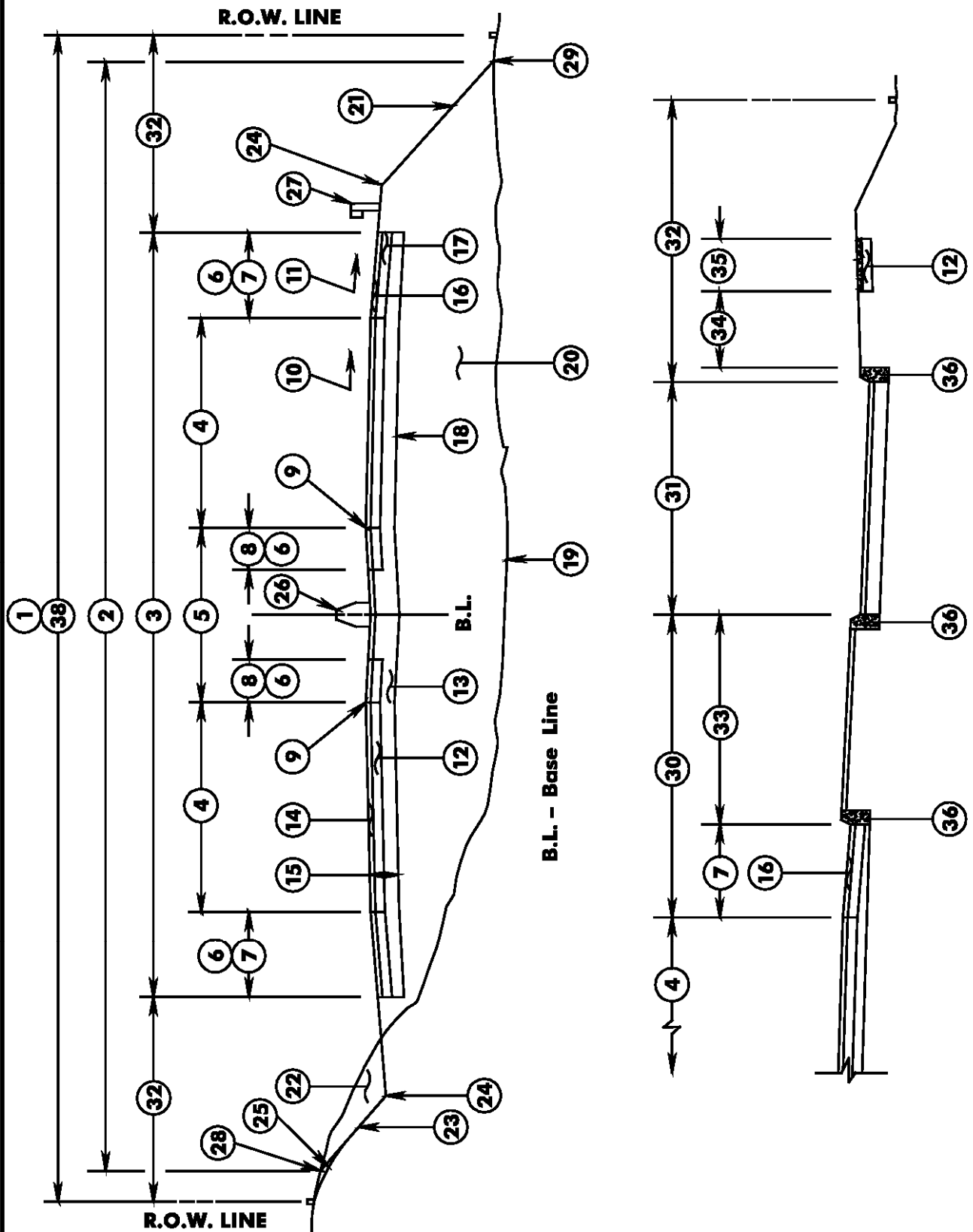
1. **Highway** - A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way lines. Recommended usage in urban areas, highway, or street; in rural areas, highway or road.
2. **Highway Section** - The portion of the highway included between top of slopes in cut and the toe of slopes in fill.
3. **Roadway** - The portion of the highway, including shoulders, for vehicular use.
4. **Traveled Way** - The portion of the roadway provided for the movement of vehicles, exclusive of shoulders, auxiliary lanes, and bicycle lanes.
5. **Median** - The portion of a divided highway separating the traveled ways for traffic in opposite directions.
6. **Shoulder** - The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles for emergency use, and for lateral support of the base and surface courses. The shoulder may be used for bicycle travel where allowed. It may also be used by pedestrians in the absence of a sidewalk.
7. **Surfaced Right Shoulder** - That portion of the outside paved shoulder to provide all weather load support.
8. **Surfaced Left Shoulder** - The portion of the median shoulder paved to provide all weather load support.
9. **Profile Line** - The point for control of the vertical alignment. Also, normally the point of rotation for superelevated sections.
10. **Pavement Cross Slope** - Lateral slope across the pavement. See Section 5.2.2.
11. **Shoulder Cross Slope** - Lateral slope across the shoulder. See Section 5.4.3.
12. **Base Course** - The layer or layers of specified or selected material of designed thickness placed on a subbase or subgrade to support a surface course.
13. **Subbase** - The layer or layers of specified or selected material placed on a subgrade to support a base course.
14. **Surface Course** - One or more layers of a pavement structure designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate.
15. **Pavement Structure** - The combination of subbase, base course and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.

16. **Shoulder Surface Course**
17. **Shoulder Base Course**
18. **Subgrade** - The top surface of the roadbed upon which the pavement structure and shoulders are constructed.
19. **Original (Existing) Ground**
20. **Embankment (Fill)**
21. **Fill Slope**
22. **Cut Section**
23. **Cut Slope** - Also called cut face.
24. **Hinge Point (P.V.I.)** - The intersection of shoulder slope planes with fill or cut slope planes.
25. **Rounding** - At the intersection of existing ground and cut slope.
26. **Median Barrier** - A longitudinal barrier used to prevent an errant vehicle from crossing the portion of a divided highway separating the traveled ways for traffic in opposite directions.
27. **Guide Rail** - A barrier whose primary function is to prevent penetration and safely redirect an errant vehicle away from a roadside or median hazard.
28. **Top of Slope** - The intersection of the cut slope and the original ground.
29. **Toe of Slope** - The intersection of the fill slope and the original ground.
30. **Outer Separation** - The portion of an arterial highway, between the traveled ways of a roadway, for through traffic and a frontage road.
31. **Frontage Road** - Also called marginal road or street. A local road, or street auxiliary, to and located on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.
32. **Roadside** - The area adjoining the outer edge of the roadway (normally applies to freeways). The term "border" or "sidewalk area" is usually referred to street type facilities.
33. **Outer Separation Island** - The space in the outer edge of roadway shoulder and frontage roadway shoulder and frontage road or street which may be landscaped or paved depending on width.
34. **Buffer Strip** - The space in the border area provided to separate the sidewalk from the vehicular travel facilities.
35. **Sidewalk** - An exterior pathway with a prepared surface (concrete, bituminous, brick, stone, etc.) intended for pedestrian use.
36. **Curb or Curb and Gutter**
37. **Drainage Swale**
38. **Right-of-Way** - A general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

ROAD CROSS SECTION TERMINOLOGY

FIGURE: 3-A

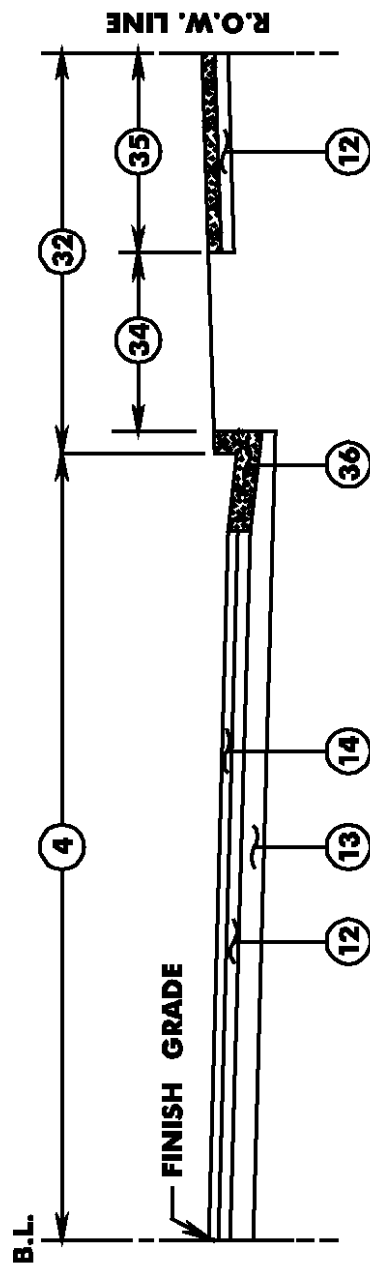
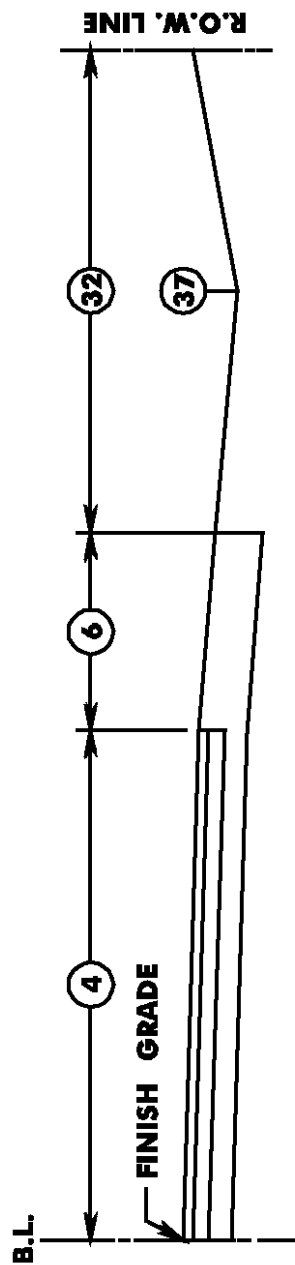
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ROAD CROSS SECTION TERMINOLOGY

FIGURE: 3-B

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3.3 Roadway Design Terms

Following are terms utilized by Roadway Designers.

Arterial Highway – This is a general term, denoting a highway used primarily for through traffic, usually a continuous route.

Auxiliary Lane - The portion of the roadway adjoining the traveled way intended for speed change, storage, weaving, climbing lane, and for other purposes supplementary to through traffic movement.

- **Acceleration Lane** - An auxiliary lane including tapered areas, primarily for the acceleration of vehicles entering the through traffic lanes.
- **Collector-Distributor Lane**- An auxiliary lane approximately ¼ to 1/5 mile in length, designated to accommodate right turn access to and from the State highway at more than one location, and normally terminating at an intersection or an interchange ramp. It is not intended for through traffic, and is not physically separated from the through lanes. (Reference: N.J.A.C 16:47-1.1)
- **Deceleration Lane** - An auxiliary lane including tapered areas, primarily for the deceleration of vehicles leaving the through traffic lanes.

Buffer space - The space that separates traffic flow from the work activity and provides recovery space for an errant vehicle. Neither work activity nor storage of equipment, vehicles, or material should occur in this space. Buffer spaces may be positioned longitudinally and laterally, with respect to the direction of traffic flow.

Capacity - The maximum number of vehicles which has a reasonable expectation of passing over a given section of a lane or a roadway in one direction or in both directions for a two-lane or a three-lane highway during a given time period under prevailing roadway and traffic conditions.

Climbing Lane - An auxiliary lane introduced at the beginning of a sustained positive grade in the direction of traffic flow, to be used by slow moving vehicles such as trucks and buses.

Collector-Distributor Road, (C-D) - An auxiliary roadway separated laterally from, but generally parallel to, an expressway which serves to collect and distribute traffic from several access connections between selected points of ingress to and egress from the through traffic lanes. Control of access is exercised outside a C-D Road.

Control of Access - The condition where the rights of owners, occupants or other persons of land abutting a highway to access, light, air or view in connection with the highway are fully or partially controlled by a public agency.

- **Full Control** - The condition under which the authority to control access is exercised to give preference to through traffic to a degree, but in addition to interchange connections with selected public roads there may be some intersections at grade.
- **Partial Control** - The condition under which the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

Corridor - A strip of land between two termini within which traffic, topography, environment, and other characteristics, are evaluated for transportation purposes.

Cul-de-Sac - A local street or road open at only one end with special provisions for turning around.

Dead-End Road - A local street or road open only at one end without special provisions for turning around.

Density - The number of vehicles per mile on the traveled way at a given instant.

Design Year - The design year for new construction and reconstruction is to be twenty years beyond the anticipated date of Plans, Specifications and Estimate (PS&E), and ten years beyond the anticipated date of PS&E for resurfacing, restoration and rehabilitation projects. The estimated design year traffic volumes are used as a basis for design.

Direct Connection - A one-way turning roadway that does not deviate greatly from the intended direction of travel.

Directional Design Hourly Volume (DDHV) - An hourly volume determined for use in design, representing traffic expected to use one direction of travel on a highway (Unless otherwise stated it is the directional hourly volume during the 30th highest hour).

Diverging - The dividing of a single stream of traffic into separate streams.

Divided Highway - A highway, street or road with opposing directions of travel separated by a median.

Expressway - A divided multi-lane arterial highway for through traffic, with full or partial control of access, and generally with grade separations at major intersections. On rare occasions, expressways may also include two lane roadways.

Freeway - An expressway with full control of access and grade separations at all intersections.

Frontage Road or Frontage Street - A local street or road auxiliary to and located on the side of an arterial highway, for service to abutting property and adjacent areas, and for control of access.

Gore - The area immediately beyond the divergence of two roadways, bounded by the edges of those roadways.

Grade Separation - A crossing of two highways, or a highway and a railroad at different levels.

Highway Overpass - A grade separation, where the subject highway passes over an intersecting highway or railroad.

Highway Underpass - A grade separation, where the subject highway passes under an intersecting highway or railroad.

Inside Lane - On a multi-lane highway the extreme left hand traffic lane, in the direction of traffic flow, of those lanes available for traffic moving in one direction. This is also referred to as the left lane.

Interchange - A system of interconnecting roadways providing for the movement of traffic between intersection legs.

Land Service Highway - An arterial or collector highway on which access to abutting property is permitted. On arterial highways and major collector roads, such access is usually regulated in order to protect the public safety and maintain the efficiency of the highway.

Left Turn Lane - A speed-change lane, within the median, to accommodate left turning vehicles.

Loads - Traffic data required for the establishment of geometric controls for highway design.

Local Authorities - County, municipal, and other local boards or bodies, having authority to enact laws relating to traffic.

Major Street or Major Road - An arterial highway with intersections at grade and direct access to abutting property, and on which geometric design and traffic control measures are used to expedite the safe movement of through traffic.

Separated Roadways - A highway with opposing directions of travel having independent alignment and gradient.

Shadow Vehicle - A traffic control truck with mounted crash cushions and arrow board showing arrow pattern positioned at an appropriate distance in advance of workers or a work vehicle during a multi-lane road moving operation. The shadow vehicle provides advance information to approaching drivers and shielding of the workers or work vehicle. The work vehicle may be a paint striping truck, cone retrieval truck or other operating vehicle.

Sight Distance - The length of roadway visible to the driver of a vehicle at a given point on the roadway when the view is unobstructed.

Slip Ramp - An angular connection between an expressway and a parallel frontage road.

Stopping Sight Distance - The distance required by a driver of a vehicle, traveling at a given speed, to bring a vehicle to a stop before reaching an object on the roadway after the object has become visible. The distances used in design are calculated on the basis of the driver's ability to see a 2 foot high object in the road ahead when driver's eye level is 3.5 feet above the roadway surface.

TCP - Traffic Control Plan - A plan for maintaining traffic in or around a work zone.

Thirtieth Highest Hourly Volume (30HV) - The hourly volume in both directions of travel that is exceeded by 29 hourly volumes during a designated year.

Through Lane - The lane or lanes signed for through traffic continuing through an interchange area.

Through Street, Road or Highway - Any roadway, or portion thereof, on which vehicular traffic is given preferential right-of-way, and at the entrances to which vehicles from intersecting highways are required by law to either stop or yield.

Traffic Control Devices - Signs, Signals, markings, and devices placed or erected for the purpose of regulating, warning, or guiding traffic by authority of a public body or official having jurisdiction over the roadway.

Traffic Barrier - A device used to prevent a vehicle from striking a more severe obstacle or feature located on the roadside or in the median. They are also used to prevent crossover median accidents. Traffic barriers include roadside barriers, median barriers, bridge railings, and crash cushions.

Traffic Lane - The portion of the roadway for the movement of a single line of vehicles.

Weaving - The crossing of traffic streams moving in the same general direction, accomplished by merging and diverging.

Work Area - A location where construction, maintenance, or a utility/permit operation is being performed.

Work Zone - The work area and the section of highway used for traffic control devices related to the work area.

3.4 Pedestrian Design Terms

Accessible Pedestrian Signal (APS) – A device that communicates information about pedestrian signal timing in non-visual format, by using audible tones (or verbal messages) and vibrating surfaces.

Americans with Disabilities Act – (ADA) 1990 Federal law establishing the civil rights of people with disabilities. Prohibits discrimination against people with disabilities and requires common places used by the public to provide an equal opportunity for access.

Crosswalk – A portion of a roadway designated for pedestrian crossing that can be either marked or unmarked. Definition per NJ Statute Title 39:1-1: ““Crosswalk” means that part of a highway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the shoulder, or, if none, from the edges of the roadway; also, any portion of the highway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other marking on the surface.”

Curb Ramp – A combined ramp and landing to accomplish a change in level at a curb, with a running grade steeper than 1:20. This element provides street and sidewalk access to pedestrians.

Detectable Warning – A standardized surface feature built in or applied to walking surfaces or other elements to warn people who are blind or visually impaired of specified hazards.

Leading Pedestrian Interval – The pedestrian “WALK” phase of a traffic signal that begins before the green interval serving parallel traffic, rather than at the same time.

Median Refuge – An area within an island or median that is intended for pedestrians to wait safely for an opportunity to continue crossing the roadway.

Mid-Block Crosswalk – A legally established crosswalk that is not at an intersection.

Pedestrian – A person walking or traveling by means of a wheelchair, electric scooter, crutches or other walking devices or mobility aids. This also includes those pulling or pushing strollers, carriages, carts and wagons, and those walking bicycles.

Pedestrian Access Route – A continuous, unobstructed path connecting all accessible elements of a pedestrian system that meets the requirements of ADAAG (Americans with Disabilities Act Accessibility Guidelines).

Pedestrian Crossing Interval – The combined phases of a traffic signal cycle provided for a pedestrian crossing in a crosswalk, after leaving the top of a curb ramp or flush landing, to travel to the far side of the vehicular way or to a median, usually consisting of the “WALK” interval plus the pedestrian clearance interval.

Pedestrian Signal Indication – The illuminated “WALK,” “DON’T WALK,” message or “Walking Person,” or “Hand” symbol that communicates the pedestrian phase of a traffic signal, and the audible and tactile equivalents.

3.5 Bicycle Design Terms

Bicycle – Every vehicle propelled solely by human power upon which any person may ride, having two tandem wheels, except scooters and similar devices. The term “bicycle” for this publication also includes three and four-wheeled human-powered vehicles, but not tricycles for children.

Bicycle Accommodations – A general term denoting improvements to increase the safety and convenience of bicycling including bicycle compatible roadways and bicycle facilities.

Bicycle Boulevard – A type of shared roadway, designed for bicycle priority.

Bicycle Compatible Roadways – Roadways that provide accommodations for the shared use of bicycles and motor vehicles including adequate operating space and obstacle removal.

Bicycle Facilities – A general term denoting improvements and provisions to accommodate and encourage bicycling, including bikeways and bicycle parking and storage facilities.

Bicycle Lane Or Bike Lane – A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Priority – A traffic condition where improvements to accommodate bicycle traffic take precedence over improvements to increase the operating characteristics of motor traffic.

Bicycle Route – A roadway segment designated by the jurisdiction having authority, with appropriate directional and informational markers, with or without a specific bicycle route number.

Bikeway – A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Shared Roadway – A roadway which accommodates both bicycle and motor vehicle travel. This may be a roadway, street with wide curb lanes, or road with paved shoulders.

Shared Use Path – A bikeway physically separated from motorized vehicular traffic by an open space or barrier. It may be within the highway right-of-way or within an independent right-of-way. Shared use paths may be used by pedestrians, skaters, wheelchair users, joggers, bicyclists and other non-motorized users.

Unpaved Path – Paths not surfaced with asphalt or concrete.