

# CSS Toolbox

## Glossary of Selected Terms

**AASHTO** – Abbreviation for the American Association of State Highway and Transportation Officials.

**ADT** – Abbreviation for Average Daily Traffic.

**Advisory Signing** – Signs warning drivers of potential hazards. For example, a “narrow shoulder” sign.

**Average Daily Traffic (ADT)** - The average 24-hour volume, being the total volume during a stated period divided by the number of days in that period, normally a year or the number of days the road is actually open to public travel.

**Backage Road** – An access roadway that is parallel to a highway and is located between behind businesses that face the highway.

**Backslope** – In cuts, the slope from the bottom of the ditch to the top of the cut.

**Bridge** – A structure exceeding 20 feet clear span measured along the centerline of the roadway, that carries traffic over a watercourse or opening.

**Broken Boulevard Curve** – An arrangement of curves in which a short tangent separates two curves in the same direction.

**Button Hook** – see “Interchange Types.”

**Capacity** – The maximum number of vehicles that has a reasonable expectation of passing over a given section of lane or roadway during a given time period under prevailing roadway and traffic conditions.

**Centerline** – (1) For a two-lane road, the centerline is the middle of the traveled way; and for a divided road, the centerline may be the center of the median. For a divided road with independent roadways, each roadway has its own centerline. (2) The defined and surveyed line shown on the plans from which road construction is controlled.

**Choker** – Permanent structures that cause roadway to narrow, used for traffic calming.

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**Clear Zone** – Area that extends beyond the right-of-way of a freeway and is clear of any structures or elements that may potentially be struck if a car leaves the freeway. The extent of the clear zone depends on several factors, such as the design speed or slopes.

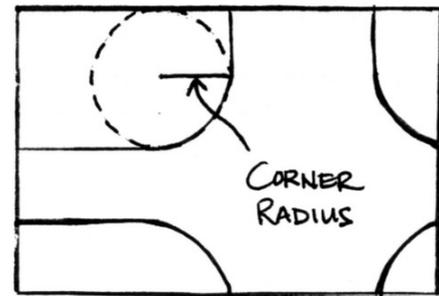
**Cloverleaf** – See “Interchange Types.”

**Compressed Diamond** – See “Interchange Types.”

**Cost Participation** – Amount of funding each agency involved in the project is committed to contributing.

**Corner Radius** – The radius of a circle used to fillet the curb line at an intersection.

**Critical Length of Grade** – That combination of gradient and length of grade that will cause a designated vehicle to operate at some predetermined minimum speed. A lower speed than this is unacceptable and usually requires that an auxiliary climbing lane be provided for slow-moving vehicles.



corner radius

**Cross Section** – The transverse profile of a road showing horizontal and vertical dimensions.

**Culvert** – Any structure under the roadway with a clear opening of 20 feet or less measured along the center of the roadway. (See “Bridge” if greater than 20 feet).

**Curve Widening** – The widening of the traveled way on sharp curves to compensate for the fact that the rear wheels of a vehicle do not follow exactly in the track of the front wheels.

**Curvilinear Alignment** – A flowing alignment in which the majority of its length is composed of circular and spiral curves.

**Cut Section** – That part of the roadway that, when constructed, is lower in elevation than the original ground.

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**Design Exception** – Process to approve a section of a project that does not meet initial design criteria. For example, a design exception would be required if a particular curve in the proposed project was sharper than specified in the governing design criteria; the curve necessitates a design exception.

**Design Speed** – A selected speed used to determine the various geometric design features of a roadway.

**Design Variance** – State-aid process to approve a section of a project that does not meet initial design criteria.

**Design Vehicle** – A selected motor vehicle, the weight, dimensions, and operating characteristics of which are used as a control in road design.

**Design Vehicle Turning Radius** – The turning radius of a Design Vehicle, used primarily to determine the minimum radius used in the design of turning and intersecting roadways.

**Design Volume** – A volume determined for use in design, representing the traffic expected to use the road.

**Diamond** – See “Interchange Types”.

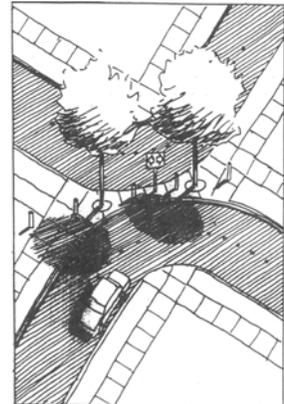
**Diverter** – Street design used for traffic calming.

**Directional** – See “Interchange Types”.

**Embankment** – A raised earth structure on which the roadway pavement structure is placed.

**Enhancements** – Aesthetic additions to a project, such as trees or street scaping.

**Environmental Justice** – The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences



diverter

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resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

**FIII Section** – see “Embankment.”

**Folded Diamond** – see “Interchange Types.”

**Foreslope** – The slope from the edge of the surfaced shoulder to the bottom of the embankment, or the bottom of the ditch in cuts.

**Free Flow** – Traffic flow that is not impeded.

**Frontage Road** – An access roadway that is parallel to a highway and is located between the highway and adjacent businesses.

**Functional Classification** – The grouping of individual roads in a road system according to their purpose or function and the type of traffic or use they serve.

**Geometric Design** – The arrangement of the visible elements of a road, such as alignment, grades, sight distances, widths, slopes, etc.

**Grade** – (1) The profile of the center of the roadway, or its rate of ascent or descent. (2) To shape or reshape an earth road by means of cutting or filling. (3) Elevation.

**Grade Separation** – A structure that provides for traffic to pass over or under another road or railroad.

**Green Book** – Refers to *A Policy on Geometric Design of Highways and Streets*, published by AASHTO.

**Gutter Width** – Distance between the pavement edge of a street and the face of the curb; typical gutter widths vary from one to three feet.

**Half Diamond** – see “Interchange Types.”

**Horizontal Alignment** – Horizontal geometrics of the roadway.

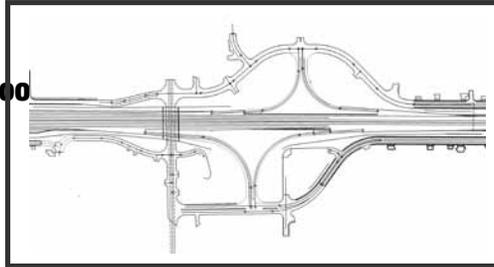
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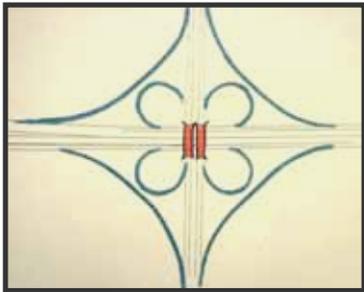
**Horizontal Curve** – A curve or transitional by means of which a road can change direction to the right or left.

### Interchange Types –

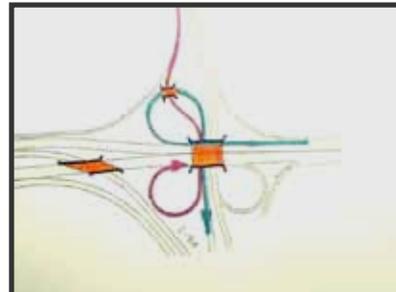
**Button Hoop**



**Cloverleaf**



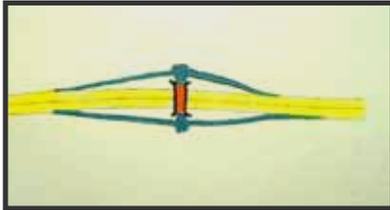
**Cloverleaf with Bridged Loops**



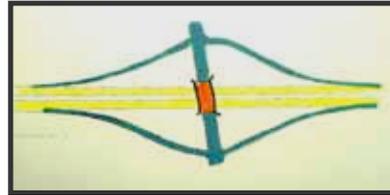
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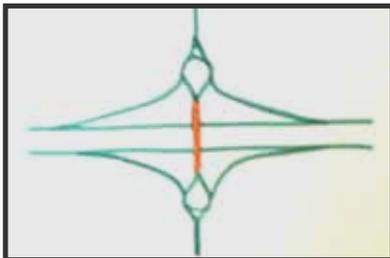
**Compressed Diamond**



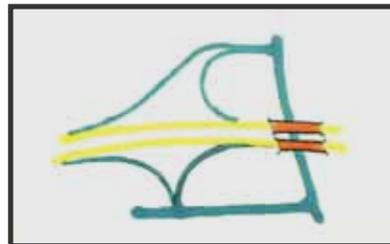
**Diamond (standard)**



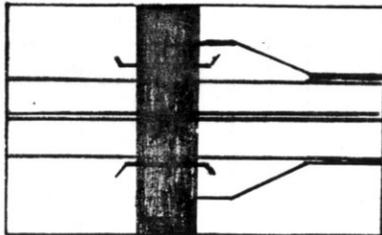
**Diamond with Roundabouts**



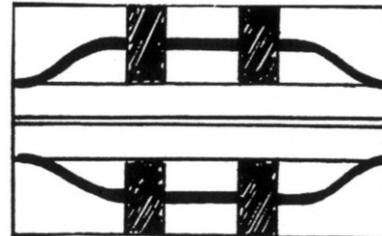
**Folded Diamond**



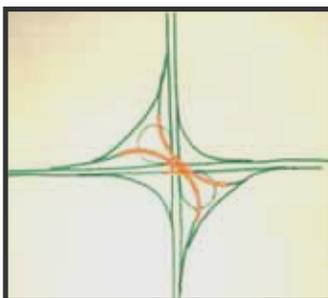
**Half Diamond**



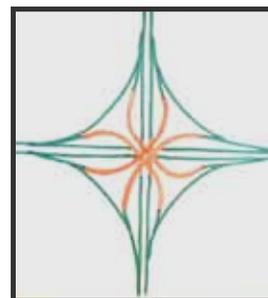
**Split Diamond**



**Directional**



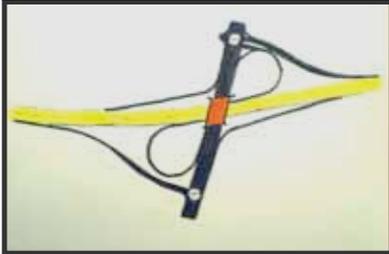
**Four-level Directional**



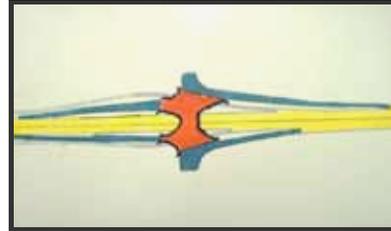
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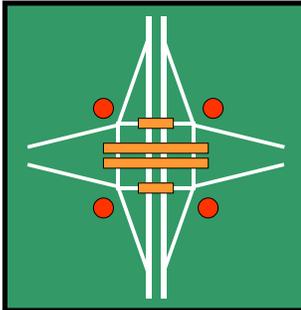
**Partial Cloverleaf (Parclo)**



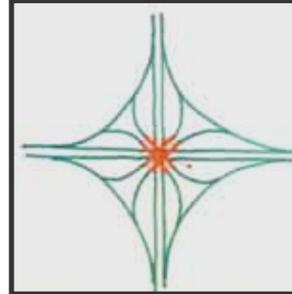
**Single Point**



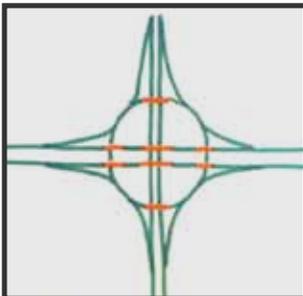
**Three-level Diamond**



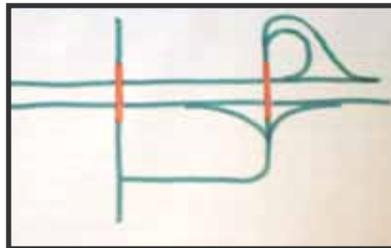
**Three-level Single Point**



**Three-level Rotary**



**Trumpet Interchange**



**Intersection Angle** – The angle between two intersecting roads.

**ITE** – Abbreviation for the Institute of Transportation Engineers

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### **Lanes –**

**Auxiliary Lane** – The portion of the roadway adjoining the traveled way for parking, speed change, turning, storage for turning, weaving, truck climbing, or for other purposes supplementary to through traffic movement.

**Bike Lane** – A lane on the roadway reserved for bicycle use through striping and pavement markings.

**Center Turn Lane** – A speed-change and storage lane within the median to accommodate left-turning vehicles.

**Continuous Two-Way Left Turn Lane** – A continuous center lane reserved for left turns.

**Parking Lane** – An auxiliary lane primarily for the parking of vehicles.

**Passing Lane** – A section of two-lane, two-directional road where sufficient clear sign distance exists to allow a safe passing maneuver to be performed.

**Turn Lane** – A traffic lane within the normal surfaced width of a roadway, or an auxiliary lane adjacent to or within a median, reserved for vehicles turning left or right at an intersection.

**Traffic Lane** – The portion of the traveled way for the movement of a single line of vehicles in one direction.

**Level of Service** – A qualitative rating of the effectiveness of a road relative to the service it renders to its users, measured in terms of a number of factors, such as operating speed, travel time, traffic interruptions, freedom to maneuver and pass, driving safety, comfort, and convenience.

**Median** – The portion of a divided roadway separating the traveled ways for traffic in opposite directions.

**MEPA** – Abbreviation for the Minnesota Environmental Policy Act.

**Merging** – The converging of separate streams of traffic to a single stream.

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**MUTCD** – Abbreviation for the Manual of Uniform Traffic Control Devices.

**Natural Preservation Route** – A route within the state-aid highway system that is selected and designated as a ‘Natural Preservation Route’ due to particular scenic, environmental, pastoral, or historical characteristics.

**NEPA** – Abbreviation for the National Environmental Policy Act.

**Operating Speed** – Actual speed at which traffic flows.

**Parclo (part cloverleaf)** – see “Interchange Types.”

**Passing Sight Distance** – The minimum sight distance that must be available to enable the driver of a vehicle to pass another safely and comfortably without interfering with the speed of an oncoming vehicle traveling at the design speed should it come into view after the overtaking maneuver is started.

**Pavement Markings** – Devices or paint placed on the roadway to mark pavement for vehicular and pedestrian traffic control.

**Platooned Flow** – A number of vehicles moving together at the same speed as a group. Traffic leaving a signalized intersection when the light turns green is a platoon.

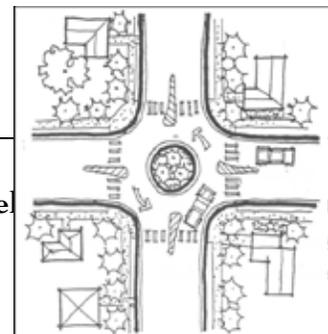
**Posted Speed** – The maximum speed limit that may not be legally exceeded.

**Profile** – A longitudinal section of a roadway, drainage course, etc.

**Reaction Time** – Amount of time needed for drivers to perceive and process expected and unexpected events. Typical reaction times are approximately 0.5 to 3 seconds.

**Retaining Wall** – Structure that prevents soil from collapsing or eroding.

**Reverse Curve** – A curve consisting of two arcs of the same or different radii curving in opposite directions and having a common tangent or transition curve at their point of junction.



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**Roundabout** – A type of circular intersection where traffic flows in a counter-clockwise direction around a central island.

**Running Speed** – For all traffic, or a component thereof, the summation of distances traveled divided by the summation of running time

**Rural Cross Section** – Any roadway without curb along its outer edge.

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**Section 4(f) – of the US DOT Act. Applies to FHWA or FTA-funded or approved projects only and requires the protection of public parks, recreation areas, historic properties, and wildlife and waterfowl refuges. Documentation of avoidance, minimization, and mitigation is required.**

round-

**Section 6(f) – of the Land and Water Conservation Act (LAWCON). Applies to parks or recreation areas where LAWCON funds were used for acquisition, development, or equipment within the park boundaries. Documentation of avoidance, minimization, and mitigation is required.**

**Section 106 – of the National Historic Preservation Act. Requires properties of historic significance to be protected. Any federally funded or permitted project must be evaluated for the presence of eligible properties. If found, such properties are evaluated for potential effects due to the project. Documentation of avoidance, minimization, and mitigation is required.**

**Shoulder – The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.**

**Sight Corner – Area of the intersecting road that is visible to the driver when approaching an intersection.**

**Sight Distance – The length of roadway ahead visible to a driver.**

**Single Point – see “Interchange Types.”**

**Skid Resistance – The frictional force between a locked tire and a pavement, which force resists motion.**

**Slope – The face of an embankment or cut section; any ground the surface of which makes an angle with the plane of the horizon.**

**Speed Hump – Bump in the pavement used for traffic calming.**

**Spiral Curve – see “Transition Curve.”**

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**Split Diamond** - See "Interchange Types."

**Standard** – Criteria having recognized and usually permanent values that are established formally as a model or requirement.

**Stopping Sight Distance** – The distance required by a driver of a vehicle, traveling at a given speed, to bring his vehicle to a stop after an object on the roadway becomes visible, including the distance traveled during the perception and reaction times, as well as the vehicle braking distance.

**Superelevation** - The elevating of the outside edge of a curve to partially offset the centrifugal force generated when a vehicle rounds the curve.

**Superelevation Runoff** – The transition distance between normal crown and fully superelevated roadway.

**Sustained Grade** – A continuous road grade of appreciable length and consistent, or nearly consistent, gradient.

**Tangent** – Straight section of a roadway.

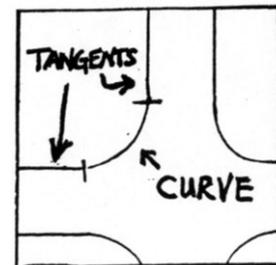
**TEA-21** – Abbreviation for the Transportation Equity Act for the 21<sup>st</sup> Century.

**Traffic Calming** – Street design or regulatory features that cause motorists to drive more slowly and therefore with a greater degree of attentiveness.

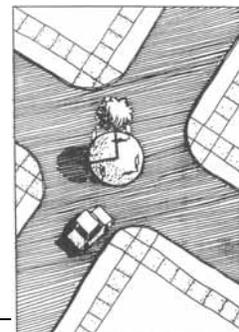
**Traffic Control Device** – A sign, signal, marking or other device placed on or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn, or guide traffic.

**Traffic Circle** – Street design used for traffic calming.

**Traffic Island** – Any permanent raised structure completely surrounded by the roadway; typically a median.



tangent



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## Glossary of Selected Terms

**Transition** – A section of variable pavement width required when changing from one width of traveled way to a greater or lesser width.

traffic  
circle

**Transition Curve (Spiral)** – A curve of variable radius intended to effect a smooth transition from tangent to curve alignment.

**Turning Path** – The path of a designated point on a vehicle making a specified turn.

**Turning Track Width** – The radial distance between the turning paths of the outside of the outer front tire and the outside of the rear tire that is nearest the center of the turn.

**Urban Section** – Any roadway with curb and gutter.

**Variance** – Approval obtained that allows a project to fall outside statute regulations.

**Vertical Alignment (Profile Grade)** – The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadbed, being either elevation or gradient of such trace according to the context.

**Vertical Curve** – A curve on the longitudinal profile of a road providing a change of gradient.