

CHAPTER 1B – NOMENCLATURE

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SECTION 1B.1 - PRINCIPAL ABBREVIATIONS

ABBREVIATIONS

The following abbreviations may be found in this manual as well as in other design reference materials:

AASHTO	- American Association of State Highway and Transportation Officials.
ABC	- Alcohol Beverage Control
ACOE	- Army Corps of Engineers
ADT	- Annual Average Daily Traffic
AFS	- Automated Fuel System
AHS	- Automated Highway Systems
APS	- Automated Purchasing System
ARTS	- Advanced Rural Transportation System
ASAP	- Alcohol Safety Action Program
ASCE	- American Society of Civil Engineers
ASTM	- American Society for Testing and Materials
ATIS	- Advanced Traveler Information System
ATMS	- Advanced Traffic Management Systems
BAMS	- Bid Analysis Management System
BMS	- Bridge Management System
BPR	- Business Process Reengineering
BOCA	- Building Officials and Code Administration
CA	- Certification Acceptance
CADD	- Computer Aided Drafting and Design
CBLAD	- Chesapeake Bay Local Assistance Department
CBR	- California Bearing Ratio
CE	- Categorical Exclusion
CEQ	- Council on Environmental Quality
CERCLA	- Comprehensive Environmental Response Compensation and Liability Act
CFS	- Cubic feet per second
CM	- CADD Manual*
CMAQ	- Congestion Mitigation and Air Quality
CMS	- Congestion Management Study
COE	- Corps of Engineers
CSIP	- Corridor Safety Improvement Program
CRSI	- Concrete Reinforcing Steel Institute

* Rev. 7/06

CVO	- Commercial Vehicle Operations
CZM	- Coastal Zone Management
DCR	- Department of Conservation and Recreation
DDHV	- Directional Design Hourly Volume
DEIS	- Draft Environmental Impact Statement
DEQ	- Department of Environmental Quality
DHR	- Department of Historic Resources
DHV	- Design Hourly Volume
DMME	- Department of Mines, Minerals and Energy
DMV	- Department of Motor Vehicles
DNH	- Division of Natural Heritage
DOC	- Department of Commerce
DOE	- Department of Education
DOI	- Department of the Interior
DSP	- Department of State Police
DWM	- Department of Waste Management
EA	- Environmental Assessment
EAR	- Expected Accident Rate
ED	- Environmental Division
EIR	- Environmental Impact Report
EIS	- Environmental Impact Statement (DEIS-Draft, FEIS-Final)
EMS	- Emergency Medical Services
EPA	- Environmental Protection Agency
EPMS	- Equipment Preventive Maintenance System
E & S	- Erosion and Sediment
FA	- Federal-Aid
FAI	- Federal-Aid Interstate
FAP	- Federal-Aid Primary
FAPM	- Federal Aid Program Manual
FARS	- Fatal Accident Reporting System
FAS	- Federal-Aid Secondary
FAU	- Federal-Aid Urban
FEA	- Final Environmental Assessment
FEIS	- Final Environmental Impact Statement
FHWA	- Federal Highway Administration
FI	- Field Inspection
FIFRA	- Federal Insecticide Fungicide Rodenticide Act
FIS	- Flood Insurance Study
FMS	- Financial Management System II
FONSI	- Finding of No Significant Impact
FPS	- Feet Per Second
FTA	- Federal Transit Administration
FY	- Fiscal Year

GDHS	- "A Policy on the Geometric Design of Highways and Streets"
GIS	- Geographic Information System
GPS	- Global Positioning System
GSA	- General Services Administration
HCM	- Highway Capacity Manual
HPMS	- Highway Performance Monitoring System
HTRIS	- Highway and Traffic Records Information System
HOV	- High-Occupancy Vehicle
IACM	- Interagency Coordination Meeting
IDMS	- Integrated Document Management System
IECC	- Interagency Environmental Coordination Meeting
IIM	- Instructional and Informational Memoranda (L & D)
IGRDS	- Interactive Graphic Roadway Design System
IMMS	- Integrated Maintenance Management System
IPM	- Integrated Project Manager
ITD	- Information Technology Division
ISO	- International Standardization Organization
ISTEA	- Intermodal Surface Transportation Efficiency Act of 1991
ITE	- Institute of Traffic Engineers
IVHS	- Intelligent Vehicle Highway System
L & D	- Location and Design (Division)
LDSM	- Survey Manual
LOP-1	- Letter of Permission #1
MATS	- Materials Test System
MASH	- AASHTO Manual for Assessing Safety Hardware (2009)*
MHW	- Mean High Water
MIS	- Major Investment Study
MOA	- Memorandum of Agreement
MPO	- Metropolitan Planning Organization
MTRS	- Micro Traffic Records System
MUTCD	- Manual of Uniform Traffic Control Devices
NAAQS	- National Ambient Air Quality Standards
NCHRP	- National Cooperative Highway Research Program
NCTRP	- National Cooperative Transit Research and Development
NEPA	- National Environmental Policy Act
NGS	- National Geodetic Survey (Formerly USC & GS)
NHS	- National Highway System

* Rev. 1/12

NHTSA	- National Highway Traffic Safety Administration
NIST	- National Institute of Standards and Technology
NMFS	- National Marine Fisheries Service
NPDES	- National Pollution Discharge Elimination System
NPS	- National Park Service
NWR	- National Wildlife Refuge
OA	- Outdoor Advertising
OEMS	- Office of Emergency Medical Services
PCE	- Programmatic Categorical Exclusion
PCES	- Project Cost Estimating System
PDC	- Planning District Commission
PE	- Preliminary Engineering
PH	- Public Hearing
PIM	- Public Involvement Manual
PMS	- Pavement Management System
PPR	- Preliminary Plan Review
PS & E	- Plans, Specifications and Estimates
PGL	- Profile Grade Line*
PTMS	- Public Transportation Management System
PVC	- Polyvinylchloride
QMAC	- Quality Management, Assurance and Compliance
RB Spec.	- Road and Bridge Specifications
RBS	- Road and Bridge Standards
RCRA	- Resource Conservation and Recovery Act
RDG	- AASHTO Roadside Design Guide
RDM	- Road Design Manual (L & D)
ROD	- Record of Decision
RRR	- Resurfacing, Restoration, and Rehabilitation
R/W	- Right of Way
SAAP	- Special Advertisement and Award Process
SAE	- Society of Automotive Engineers
SARA	- Superfund Amendments and Reauthorization Act
SCS	- Soil Conservation Service
SDSD	- Special Design Section Drawing
SERP	- State Environmental Review Process
SI	- International System of Units
SIP	- State Implementation Program
SMS	- Safety Management System
SR	- State Route

* Rev. 7/09

SUE	- Subsurface Utility Engineering
SWM	- Storm Water Management
SWPPP	- Stormwater Pollution Prevention Plan*
SYP	- Six Year Plan
TED	- Traffic Engineering Division
TEDM	- Traffic Engineering Design Manual*
TIP	- Transportation Improvement Program
TMS	- Traffic Monitoring System
TPD	- Transportation Planning Division
TRB	- Transportation Research Board
TSCA	- Toxic Substances Control Act
TSTC	- Transportation Safety Training Center
TVA	- Tennessee Valley Authority
USCE	- United States Corps of Engineers
USCG	- United States Coast Guard
USFWS	- United States Fish and Wildlife Service
USGS	- United States Geological Survey
UVA	- University of Virginia
VDM	- VDOT Drainage Manual
VASAP	- Virginia Alcohol Safety Action Program
VCU	- Virginia Commonwealth University
VDACS	- Virginia Department of Agriculture and Consumer Services
VDGIF	- Virginia Department of Game and Inland Fisheries
VDH	- Virginia Department of Health
VDOT	- Virginia Department of Transportation
VESCSWM	- VDOT Erosion & Sediment Control & Stormwater Program Manual
VESCH	- VDOT Erosion & Sediment Control Handbook
VGP-1	- Virginia General Permit #1
VIMS	- Virginia Institute of Marine Science
VSWMH	- Virginia Stormwater Management Handbook
VWAPM	- Virginia Work Area Protection Manual
VMRC	- Virginia Marine Resources Commission
VOF	- Virginia Outdoors Foundation
VPDES	- Virginia Pollution Discharge Elimination System
VSP	- Virginia State Police
VTRC	- Virginia Transportation Research Council
VTTTC	- Virginia Transportation Technology Transfer Center
WWPP	- Virginia Water Protection Permit

* Added 10/20

SECTION 1B.2 - HIGHWAY TERMS

DEFINITIONS

The definitions of highway terms that follow have been approved by the Department or adopted by AASHTO and are by no means a complete listing. However, it is felt that this list embraces the range of definitions applicable to design requirements.

A

ABANDONMENT - The relinquishment of the public interest in right of way or activity thereon with no intention to reclaim or use again for highway purposes.

ACCELERATION - The rate of change of velocity with respect to time.

ACCESS MANAGEMENT - The process that provides (or manages) access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity and speed. The control of and improvements to the location, number, spacing, and design of entrances, median openings, turn lanes, street intersections, traffic signals, and interchanges.*

ACQUISITION OR TAKING - The process of obtaining right of way.

ASPHALT COATING

Prime coat - An application of a low viscosity liquid asphalt material to coat and bind mineral particles preparatory to placing a base or surface course.

Seal coat - A thin treatment consisting of asphalt material, usually with cover aggregate, applied to a surface course. The term includes but is not limited to sand-seal, chip seal, slurry seal, contrast seal, fog seal, and blot seal.

AUXILIARY LANE – See “LANE”

AVERAGE RUNNING SPEED – See Speed

AXLE LOAD - The total load transmitted by all wheels, the centers of which may be included between two parallel transverse vertical planes (40 inches) apart, extending across the full width of the vehicle.

* Rev 10/20

B

BACKFILL - Material used to replace or the act of replacing material removed during construction; may also denote material placed or the act of placing material adjacent to structures.*

BARRIER - A device which provides a physical limitation through which a vehicle would not normally pass. It is intended to contain or redirect an errant vehicle.*

BASELINE - Alignment on which the proposed right of way and construction is based.

BINDER COURSE - A plant mix of graded aggregate (generally open graded) and asphalt material which constitutes the intermediate course between the base course and the surfacing material.

BOARD - Commonwealth Transportation Board of Virginia.

BORROW - Suitable material not available from designated Regular Excavation or other sources of useable materials on-site that is used primarily for embankment.*

BREAKAWAY - A design feature which allows a device such as a sign, luminaire, or traffic signal support to yield or separate upon impact. The release mechanism may be a slip plane, plastic hinges, fracture elements, or a combination of these.*

BRIDGE - A structure, including supports, erected over a depression or an obstruction such as water, highway or railway and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than twenty feet between inner faces of abutments.

Bridge length - The greater dimension of a structure measured along the baseline of the roadway between backs of abutment backwalls or between ends of bridge floor.

Bridge roadway width - The clear width of structure measured at right angles to the center of the roadway between the bottom of curbs or, if curbs are not used, between the base of the inner faces of parapets or railings at the edge of shoulder.

C

CAPACITY (Traffic) - The maximum volume of vehicles per hour that can pass a certain point or section of a road in a given time under the ideal condition (most ideal road way, traffic and control conditions that can possibly be attained)*

* Rev 10/20

CERTIFICATION ACCEPTANCE - Form of documentation by VDOT for FHWA (on all Federal-Aid projects except Interstate) showing that all Federal requirements have been met.

CHORD - Segment whose endpoints (chord points) lie on a circle or curve.

CLEAR ZONE - An unobstructed, traversable roadside area starting at the edge of the through traveled way (edge of pavement) that allows a driver to stop safely, or regain control of a vehicle that has left the roadway. This area includes shoulders, bike lanes, and auxiliary lanes, except those auxiliary lanes that function like through lanes.

COMMISSIONER - Commonwealth Transportation Commissioner of Virginia and Vice-Chairman of the Commonwealth Transportation Board.

CONDEMNATION - The legal process of acquiring private property for public use or purpose through the Commonwealth's power of eminent domain.

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

CRASH CUSHION - Also known as impact attenuators, are typically attached to or placed in front of concrete barriers (median barriers, roadside barriers, or bridge railings) or other rigid fixed objects, such as bridge piers, to prevent an errant vehicle from impacting fixed objects by gradually decelerating the vehicle to a safe stop or by redirecting the vehicle away from the obstacle.*

CULVERT - A conduit which provides a passage for water, vehicles, animals, or people through a highway or railroad embankment (For detailed definition refer to VDOT's Drainage Manual).

D

DESIGN SPEED – See Speed*

DESIGN VEHICLE - The selected motor vehicle whose weight, dimensions and operating characteristics are used to establish highway design.

DETOUR - A temporary rerouting of road users onto an existing highway or pedestrians onto an existing accessible access route, sidewalk or shared use path.*

DISPOSAL AREA- An area generally located outside of the Construction Limits identified in the Contract where unsuitable or surplus material is deposited.*

DISPOSABLE MATERIAL - Material generally found to be unsuitable for roadway construction or surplus material that is to be placed in a disposal area.*

* Rev 10/20

DIVERSION – A temporary rerouting of road users onto a temporary highway or pedestrians onto an existing accessible access route, sidewalk or shared use path.*

E

EASEMENT - A right acquired by public authority to use or control property for a designated highway purpose.*

EMBANKMENT - A structure of soil, soil-aggregate or broken rock between the existing ground and the subgrade.

END TREATMENT - The designed modification of the end of roadside or median barriers, including anchorages, terminals, and crash cushions.*

ENGINEER - The person representing the Virginia Department of Transportation-

EXPRESSWAY - A divided highway facility with partial control of access and two or more lanes for the exclusive use of through traffic in each direction; includes grade separations at most major intersections.*

EXTRA WORK - An item of work not provided for or included in the contract as awarded but found by the Engineer to be essential for the satisfactory fulfillment of the contract within its intended scope. See R&B Spec Book for additional information*

F

FEE SIMPLE - An estate or ownership of land, without any limitation as to class of heirs or restriction as to right to dispose of same.*

FLEXIBLE PAVEMENT - A pavement structure comprised of aggregates, as opposed to rigid portland cement concrete pavement.

FORCE ACCOUNT WORK - Prescribed work paid for on the basis of actual costs and appropriate additions.

FREEWAY - A divided highway facility with full control of access and two or more lanes for the exclusive use of through traffic in each direction.*

G

GORE - The area immediately beyond the divergence or before the convergence of two roadways bound by the edges of those roadways.

* Rev 10/20

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

Overpass - A grade separation where the subject highway passes over a highway or railroad.

Underpass - A grade separation where the subject highway passes under a highway or railroad.

GRADIENT - The degree of inclination, or the rate of ascent or descent, along the baseline of a highway, railroad, etc.*

GREENWAY - Linear Corridor of private or public recreation lands and waters, providing access to open space and recreational activities and linking rural and urban spaces (e.g. bicycle facilities, utility corridors, scenic roads and highways, abandoned railroad rights-of-way, etc.)

H

HARD CONVERSION - Conversion from one measurement system to another using the numerical conversion factor to calculate quantities in a new system and then, rounding to a convenient dimension.

HECTARE - The derived unit of area equal to 10,000 m². One hectare is equal to 2.47 acres

HIGHWAY - The entire width between the boundary lines of every way or place open to the use of the public for purposes of vehicular travel in the Commonwealth, including the streets and alleys, and, for law-enforcement purposes. See [Code of Virginia § 46.2-100. Definitions*](#)

HISTORIC SITE - A building, monument, park, cemetery or other site having public interest and National, regional or State significance, which should be considered in the location and design of a highway.

HYDROPLANING - A condition where one or more tires of a moving vehicle are separated from the pavement by a film of water; usually due to a combination of depth of water, pavement surface texture, vehicle speed, tread pattern, tire condition and other factors.

* Added 10/20

I

IMPACT ATTENUATOR—See Crash Cushion*

INTERCHANGE - A system of interconnecting roadways usually in conjunction with one or more grade separations, providing for the movement of traffic between two or more roadways on different levels.

INTERCHANGE ELEMENTS

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

Ramp - A turning roadway at an interchange for travel between intersection legs.

Loop - A one-way turning section of roadway that curves to the right to accommodate a left-turning movement.

Outer connection - A one-way turning roadway primarily for the right-turning movement, outside of a loop.

Two-way ramp - A ramp for traveling in two directions.

INTERCHANGE TYPES

Cloverleaf - A 4-leg interchange with loops for left turn movements and outer connections for right turns or two-way ramps for these turns.

Diamond interchange - A 4-leg interchange with a single one-way ramp in each quadrant. All left turns are made directly on the minor highway.

Directional interchange - An interchange, generally having more than one highway grade separation, with direct connections for the major left-turning movement(s).

INTERSECTION - The general area where two or more highways join or cross, within which are included the roadway and roadside facilities for traffic movements in that area.

INVERT - The lowest point in the internal cross section of a pipe, **culvert** or other drainage structure.

* Added 10/20

L

LAND DEVELOPMENT - A manmade change to the land surface that potentially changes its runoff characteristics as a permanent condition.

LANE

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

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

Speed-change lane - An auxiliary lane, primarily for the acceleration or deceleration of vehicles entering or leaving the through traffic lanes.

Turn Lane - An auxiliary lane to accommodate turning vehicles.

LENGTH OF NEED - Total length of a longitudinal barrier needed to shield an area of concern*

LEVEL OF SERVICE - A qualitative rating of the effectiveness of a highway in serving traffic, measured in terms of operating conditions. Note: The Highway Capacity Manual identifies operating conditions ranging from "A" for best operation (low volume, high speed) to "F" for poor operation where volumes are below capacity.

General Operating Conditions for Level of Service:

- A - Free flow, with low volumes and high speeds
- B - Stable flow, but speeds beginning to be restricted by traffic conditions
- C - In stable flow zone but most drivers restricted in freedom to select their own speeds
- D - Approaches unstable flow; drivers have little freedom to maneuver
- E - At or near capacity of highway, flow is unstable, may be short delays
- F - Forced flow at low speeds, many delays, volumes are below capacity

(A Guide for Selection of Design Levels of Service may be found in AASHTO's [A Policy on Geometric Design of Highways and Streets](#).)

LIMITED ACCESS - The regulated limitation of public access rights to and from properties abutting a highway facility. This limited access can be either "full", providing access to selected public roads and prohibiting crossings at grade and direct driveway connections, or "partial", providing access to selected public roads, crossings at grade, and some private driveway connections. See [Code of Virginia § 33.2-400. Definitions](#).

* Added 10/20

LOGICAL TERMINI - Overall limits of project (all connected "C" projects)

M

***MEASURES OF EFFECTIVENESS** -A criterion used to assess changes in system behavior, capability, or operational environment that is tied to measuring the attainment of an end state. MOEs used in Traffic Operations can be found in the Traffic Engineering Division [Traffic Operations and Safety Manual \(TOSAM\)](#).

MEDIAN - The portion of a divided highway separating the traveled ways for traffic.

MINIMUM TURNING RADIUS - The radius of the minimum turning path of the outside of the outer front tire. (Vehicle manufacturers' data books give minimum turning radius to the centerline of the outer front tire.)

N

***NORMAL CROWN** - Designates a traveled way cross section used on curves that are so flat that the elimination of adverse cross slope is not needed, and thus the normal cross slope sections can be used. Undivided travel ways on tangents shall have a crown or high point in the middle and a cross slope of 1.5% to 2% downward to the outside edge of pavement.

O

OPERATING SPEED - The speed at which drivers are observed operating their vehicles during free-flow conditions. The 85th percentile of the distribution of observed speeds is the most frequently used measure of the operating speed associated with a particular location or geometric feature.*

OUTER SEPARATION - The portion of a highway between the traveled ways of a roadway for through traffic and a frontage street or road.

P

PARKWAY - An arterial highway for non-commercial traffic, with full or partial control of access and usually located within a park or a ribbon of park like developments.

PEDESTRIAN – A Person of foot or by wheelchair.

PLANS - The contract drawings which show a location, character and dimensions of the prescribed work, including layouts, profiles, cross sections and other details.

* Rev. 10/20

***PROFESSIONAL ENGINEER** - A person who is qualified to practice engineering by reason of their special knowledge and use of mathematical, physical and engineering sciences and the principles and methods of engineering analysis and design acquired by engineering education and experience, and whose competence has been attested by the Board through licensure as a professional engineer.

PROFFER - Land offered for dedication to the Department/Municipality/County by a property owner or developer for the purpose of making road improvements.

PROPOSED - The term "proposed" is to be used for roadways, lanes, interchanges and items that are not construction items in the contract (e.g. - Prop. [□] Prop. W.B.L., Prop. R/W, etc.).

* Added 10/20

R

RADIAN - The supplementary unit of plane angles with its vertex at the center of a circle that is subtended by an arc equal in length to the radius.

RAMP - Includes all types, arrangements and sizes of turning roadways that connect two or more legs at an interchange. The components of a ramp include a terminal at each leg and a connecting road.

RAMP LENGTH – The measurement of the turning roadway that connects from a painted nose gore to the intersection curb line or from painted nose of gore to painted nose of gore.

RAMP PROPER - Includes the portion of the ramp that connects the two terminals. The ramp proper begins or ends at the physical nose of the gore area or the functional intersection area.

RAMP TERMINAL - Includes the portion of the ramp that is adjacent to the through traveled way, including speed-change lanes (auxiliary lanes) and tapers. There are two basic designs for freeway ramp terminals: tapered and parallel.

REQUIRED - The term "required" is to be used to apply to items to be constructed by the contractor for which payment will be made (e.g. - St'd. CG-6 Req'd., St'd. DI-3B Req'd., St'd. GR-8 Req'd., etc.).

RESPONSIBLE CHARGE - The direct control and supervision of the practice of architecture, professional engineering, landscape architecture, or land surveying.*

RIGHT OF WAY - A general term denoting land, property or interest therein, acquired for or devoted to transportation purposes.

RIGID PAVEMENT - A pavement structure constructed of portland cement concrete slabs resting on a prepared subbase of granular material or directly on a granular subgrade. Load is transmitted through the slabs to the underlying subgrade by flexure of the slabs

ROADBED - The graded portion of a highway, within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

ROADWAY - That portion of a highway improved, designed, or ordinarily used for vehicular travel, exclusive of the shoulder. A highway may include two or more roadways if divided by a physical barrier or barriers or an unpaved area. See [Code of Virginia § 46.2-100. Definitions*](#)

ROOTMAT - Stumps, roots, and other perishable plant material located in the area to be graded or in areas of clearing and grubbing.

* Added 10/20

S

SELECT MATERIAL - Suitable native material obtained from roadway cuts or borrow areas or other similar material used for subbase roadbed material, shoulder surfacing, slope cover or other specific purposes.

SHY LINE OFFSET - A distance beyond which a roadside object will not be perceived as a threat by a driver.

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.

SLIP RAMP - An angular connection between an expressway and a parallel road.

SOFT CONVERSION - Conversion from one measurement system to another using the numerical conversion factor to calculate quantities in a new system.

SPECIAL PROVISIONS - Additions and revisions to the standard and supplemental specifications applicable to an individual project.

SPECIFICATIONS - The compilation of provisions and requirements for the performance of prescribed work.

Standard specifications - A book of specifications approved for general application and repetitive use.

Supplemental specifications - Approved additions and revisions to the standard specifications for general use.

SPEED - The rate of vehicular movement, generally expressed in miles per hour.

Average highway speed - The weighted average of the design speeds within a highway section.

Average running speed - For all traffic, or component thereof, the summation of distances divided by the summation of running time.

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

Running speed - The length of the highway section divided by the time for a typical vehicle to travel through the section.

* Rev 10/20

STORM SEWER SYSTEM - Drainage system installed to carry storm water runoff, consisting of two or more pipes in a series connected by one or more drop inlets.

STREET - A general term denoting a public way for purposes of vehicular travel.

SUBSTRUCTURE - That part of a bridge structure below the bearings of simple and continuous spans, skewbacks of arches and top of footings of rigid frames; including backwalls, wingwalls and wing protection railings.

SUPERSTRUCTURE - That part of a bridge structure above the bearings of simple and continuous spans, skewbacks of arches and top of footings of rigid frames; excluding backwalls, wingwalls and wing protection railings.

T

Traveled Way – The portion of the roadway that allows for the movement of through traffic, including vehicles, transit, and freight. It does not include such facilities as curb and gutter, shoulders, turn lanes, bicycle facilities, sidewalks, or parking lanes.*

U

UNSUITABLE MATERIAL - Material that is not adequate for use in the normal roadway prism, but may be used in other areas on the project.

V

VEHICLE -

Bus - A motor vehicle designed for the transportation of more than 10 persons.

Design vehicle - A selected motor vehicle, the weight, dimensions and operating characteristics of which are used in highway design.

House trailer - A trailer or semitrailer which is designed, constructed and equipped as a dwelling place, living abode or sleeping place either permanently or temporarily and is equipped for use as a conveyance on streets and highways.

Light delivery truck - A single unit truck, such as a panel or pick-up truck, with size and operating characteristics similar to those of a passenger car and commonly used for short-haul light delivery service. For capacity analysis purposes it is considered to be a passenger car.

Parked vehicle - A vehicle stopped for temporary storage.

* Added 7/21

Passenger Car - A motor vehicle, except motorcycles, designed for carrying 10 passengers or less and used for the transportation of persons.

Semitrailer - A vehicle designed for carrying persons or property and for being drawn by a motor vehicle and so constructed that some part of its weight and that of its load rests upon or is carried by another vehicle.

Standing vehicle - A vehicle stopped for a brief interval as when loading or unloading.

Trailer - A vehicle designed for carrying persons or property and drawn by a motor vehicle which carries no part of the weight of the vehicle and load of the trailer.

Truck tractor - A motor vehicle designed for drawing other vehicles but not for a load other than a part of the weight of the vehicle and load drawn.

VOLUME (Traffic) - The number of vehicles passing a given point during a specified period of time.

Average daily traffic - The average 24-hour volume, being the total volume during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year.

Design volume - A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.

Thirtieth highest hourly volume - The hourly volume that is exceeded by 29 hourly volumes during a designated year.

Z

ZONE OF INTRUSION (ZOI)* - The region measured above and behind the face of a barrier system where an impacting vehicle or any major part of the system may extend during an impact.

* Added 10/20

SECTION 1B.3 - PLAN ABBREVIATIONS

ABBREVIATIONS

Abbreviations should be avoided on plans where possible. Certain abbreviations are, of course, helpful and often necessary. The following is a list of abbreviations allowable for use on plans. Undoubtedly there are other acceptable abbreviations but this list should serve as a guide for standardization of our road plans.

Ac.	- Acre
Aban.	- Abandon or Abandoned
Abut.	- Abutment
Accel.	- Acceleration
ADT	- Average Daily Traffic
Aggr.	- Aggregate
Ahd.	- Ahead
Approx.	- Approximate
Asph.	- Asphalt
Avg.	- Average
Base.	- Basement
Beg.	- Beginning or Begin
Bk.	- Back
Ⓡ	- Baseline
Bl.	- Block
Bldg.	- Building
Blvd.	- Boulevard
BM	- Bench Mark
Br.	- Brick or Bridge*
C	- Cut
CATV	- Cable Television
C.B.	- Cinder Block
CBR	- California Bearing Ratio
C-C	- Center to Center, Curb to Curb
Cem.	- Cement or Cemetery
CG	- Change of Grade
C&G	- Curb & Gutter
Ch.	- Chord
Chan. Ch.	- Channel Change
Cl.	- Class, Clearance
C.L., Corp. Lim.	- Corporate Limits
Cl. & Gr.	- Clearing & Grubbing
Ⓢ	- Centerline

* Rev. 7/06

CM	- Corrugated Metal
C.S.	- Circular Curve to Spiral
Co.	- County, Company
Conc.	- Concrete
Cond.	- Condition
Conn.	- Connection
Constr.	- Construction
Cont.	- Continuous, Continuously
Corp.	- Corporate or Corporation
Cu. Yds., CY	- Cubic Yards
Culv.	- Culvert
D=	- Degree of Curve (Curve Data)
DB	- Deed Book
Dbl.	- Double
DE=	- Spiral Angle
Decel.	- Deceleration
Dept.	- Department
Des.	- Design
DHV	- Design Hourly Volume
DI	- Drop Inlet
Dia.	- Diameter
Dispos.	- Disposable
Dist.	- Distance
Distr.	- District
Dr.	- Drive, Drainage
Dwl.	- Dwelling
D=	- "Delta" Deflection Angle Between Tangents (Central Angle)
Dc=	- Central Angle between S.C. & C.S.
DS=	- Spiral Angle
E	- Electric
E=	- Superelevation Rate
Ease.	- Easement
EBL	- East Bound Lane
Elev.	- Elevation
EW	- Endwall
ES	- End Section
ES=	- External Distance
Engr.	- Engineer, Engineering
Entr.	- Entrance
EP	- Edge of Pavement
Eq.	- Equality
Est.	- Estimate or Estate
Excav.	- Excavation
Exist.	- Existing

F	- Fill
fc=	- Deflection Angle of Spiral Curve
Fr.	- Frame or From
G	- Gas
Gal., Gals.	- Gallon (s)
Galv.	- Galvanized
Gar.	- Garage
Gr.	- Gravel or Guardrail
GV	- Gas Valve
HEC	- Horizontal Elliptical Concrete Pipe*
Hor.	- Horizontal
Hydr.	- Hydraulic
Hwy.	- Highway
Incl.	- Included, Including
Int.	- Intersection
In Pl.	- In Place
Inv.	- Invert
I.P.	- Iron Pin
Jct.	- Junction
k=	- Simple Curve Coordinate (Abcissa)
L=	- Length of Circular Curve (Curve Data)
Lb(s)	- Pound(s)
LC=	- Length of Circular Curve
LF	- Linear Feet
LH=	- Long Chord
Lim. Acc.,L/A	- Limited Access
Liq.	- Liquid
Ln.	- Lane
Loc.	- Location
LS	- Lump Sum
Ls=	- Length of Spiral
LT=	- Long Tangent
Lt.	- Left
m	- Meter
Maint.	- Maintenance
Matl.	- Material
Max.	- Maximum
Med.	- Median
MH	- Manhole (Storm Water)
Mi.	- Mile
Min.	- Minimum

Mod.	- Modified
Mon.	- Monument
N	- North
NBL	- North Bound Lane
N&C	- Nail & Cap
NGS	- National Geodetic Survey
No.	- Number
Off.	- Office
Ohd., O.H., Ovhd.	- Overhead
Orig.	- Original
p=	- Simple Curve Coordinate (Ordinate)
Pave.	- Pavement
PB	- Plat book
P.C.	- Point of Curvature
PCC	- Point of Compound Curvature
Perm.	- Permanent
Pg.	- Page
Pkwy.	- Parkway
Pl.	- Place
P.I.	- Point of Intersection
ℙ	- Property Line
POC	- Point on Curve
POST	- Point on Sub Tangent
POT	- Point on Tangent
PRC	- Point of Reverse Curvature
Prel.	- Preliminary
Proj.	- Project
Prop.	- Proposed
PSY	- Per Square Yard
P.T.	- Point of Tangency
PTP	- Permanent Turning Point
PVC	- Polyvinyl Chloride
Pvt.	- Private
Quan.	- Quantity
R=	- Radius of Circular Curve (Curve Data)
RC=	- Radius of Circular Curve
Rd.	- Road
Ref.	- Reference
Reinf.	- Reinforced
Reloc.	- Relocated
Req'd.	- Required
Ret.	- Retaining

Rev.	- Revision - Revised
Rt.	- Right
Rte.	- Route
R/W	- Right of way
RR	- Railroad
Rwy.	- Railway
SBL	- South Bound Lane
S.C.=	- Spiral to Circular Curve
S.D.S.D.	- Special Design Standard Drawing
SFM	- Sanitary Force Main
SSMH	- Sanitary Sewer Manhole
Sect.	- Section
Spec. Des.	- Special Design
Sq. Yd., SY	- Square Yard
Sty.	- Story
St.	- Street
Sta.	- Station
ST	- Short Tangent
S.T.=	- Spiral to Tangent
Stab.	- Stabilized
St'd.	- Standard
SS	- Storm Sewer
Str.	- Stream
Struct.	- Structure
SU	- Single Unit (Trucks)
Subgr.	- Subgrade
Super.	- Superelevation
Sur.	- Survey
Surf.	- Surface
Surf. Tr.	- Surface Treated
SW	- Sidewalk
T=	- Tangent Distance (Curve Data)
T.C.=	- Tangent of Circular Curve
Tel. Ped.	- Telephone Pedestal
Temp.	- Temporary
Topo.	- Topography, Topographic
TP	- Turning Point
Trans.	- Transition
Trav.	- Traverse
T.S.=	- Tangent to Spiral Distance
Typ.	- Typical
U=	- Long Tangent
Ult.	- Ultimate

Unsuit.	- Unsuitable
USC & GS	- United States Coast & Geodetic Survey (Now National Geodetic Survey)
USGS	- United States Geological Survey
V=	- Velocity
v=	- Short Tangent
Var.	- Variable
VC	- Vertical Curve
Vert.	- Vertical
VDOT	- Virginia Department of Transportation
Vol.	- Volume
VPD	- Vehicles Per Day
VSD	- Vertical Sight Distance
Va.	- Virginia
W	- Water
W/	- With
W/O	- Without
WB	- Will Book
WBL	- West Bound Lane
WV	- Water Valve
WM	- Water Meter
X=	- Tangent Distance for SC
XS=	- Tangent Distance for S.C.
X-Sect.	- Cross Section
X-over	- Crossover
Y=	- Tangent Offset for SC
YS=	- Tangent offset of the S.C.

SECTION 1B.4 - SHALL AND WILL LANGUAGE

SHALL AND WILL LANGUAGE

The following policy applies to all information included in plan assemblies:

All actions referring to the Contractor will be referenced using the word “shall” and all actions referring to the Department will be referenced using the word “will”. “Shall” indicates the Contractor is contractually bound to performing that task or function and “will” indicates the Department is bound to performing its task or function.

Such terms as “to be”, “is to be”, or “must” will be avoided when referring to actions by the Contractor or the Department.

SECTION 1B.5 – RAILROADS IN VIRGINIA

GENERAL

The listed Railroads in this table operate in Virginia

*Holding Companies – Not Railroads

FORMER NAMES	FORMER NAMES	FORMER NAMES	CURRENT NAMES
B & O - BALTIMORE & OHIO C & O - CHESAPEAKE & OHIO W & P - WINCHESTER & POTOMAC W & S - WINCHESTER & STRASBURG	*CHESSIE SYSTEM	CSX TRANSPORTATION	CSX TRANSPORTATION
CC & O - CAROLINA, CLINCHFIELD & OHIO CLINCHFIELD HAYSI L & N - LOUISVILLE & NASHVILLE SCL - SEABOARD COASTLINE	SBD - SEABOARD SYSTEM		
		RF & P - RICHMOND, FREDERICKSBURG, & POTOMAC RAILWAY COMPANY [*NS CORPORATION - NORFOLK SOUTHERN]	NORFOLK SOUTHERN RAILWAY
	NF & D - NORFOLK, FRANKLIN & DANVILLE	N & W - NORFOLK & WESTERN	
	NS - NORFOLK SOUTHERN	CNW - CAROLINA NORTHWESTERN	
	SOU - SOUTHERN	NS - NORFOLK SOUTHERN RAILWAY COMPANY	
		D & W - DANVILLE & WESTERN INTER - INTERSTATE RAILROAD COMPANY V & S - VIRGINIA & SOUTHWESTERN	
		CW - CHESAPEAKE WESTERN	CW - CHESAPEAKE WESTERN
		[*CSXT & *NS COMBINED] N & PBL - NORFOLK & PORTSMOUTH BELT LINE RAILROAD	N & PBL - NORFOLK & PORTSMOUTH BELT LINE RAILROAD [INDEPENDENT RAILROADS] AMTRAK - NATIONAL RAILROAD PASSENGER CORPORATION W & W- WINCHESTER & WESTERN RAILROAD ESHR - EASTERN SHORE RAILROAD [OTHER RAILROADS] COMMONWEALTH RAILWAY COMPANY SALTVILLE RAILROAD - MUNICIPAL OWNED NORTH CAROLINA & VIRGINIA R.R. CO. METRO - WASHINGTON METROPOLITAN AUTHORITY CHESAPEAKE AND ALBEMARLE RAILROAD CO. BUCKINGHAM BRANCH RAILROAD CO. VIRGINIA SOUTHERN RAILROAD SHENANDOAH VALLEY RAILROAD