

The information contained in the Glossary, dated July 2006, has been updated to reflect the December 2018 Errata. The errata addresses errors, changes in procedure, changes in NDOT department titles, changes in other Roadway Design Manual chapters and other reference material citations occurring since the latest publication of the Glossary.

## 1. GLOSSARY

### A. Acronyms, Abbreviations and Symbols

2-A	Aerial photo plan sheets
2-H	Horizontal alignment and control points plan sheets
2-K	Summary of soil and materials survey information plan sheets
2-L	Large scale plan sheets
2-N	General information plan sheets
2-S	Summary of quantities plan sheets
2-T	Typical cross-section plan sheets
2-W	Wetlands plan sheets
3C	Continuing, cooperative, comprehensive planning process
3R	Resurfacing, restoration and rehabilitation projects
AASHTO	<b>American Association of State Highway and Transportation Officials</b>
ADA	Americans with Disabilities Act
ADT	Average daily traffic
BCT	Breakaway cable terminals
CA	Certification acceptance program agreement
CADD	Computer-aided drafting and design
CE	Categorical exclusion
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CRT	Controlled releasing terminals
DA	Diameter of culvert
DEA	Draft environmental assessment
DEIS	Draft environmental impact statement
DHV	Design hourly volume
DR Form 73	Highway Improvement Planning Request Form
DR Form 342	Project Information Sheet
DR Form 334	Project Data Revision Sheet
DR Form 335	Request for Project Authorization Form
EA	Environmental assessment
EIS	Environmental impact statement
EPA	<b>Environmental Protection Agency</b>

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<b>ESAL</b>	Equivalent single axle load
<b>e</b>	Superelevation rate
<b>e<sub>max</sub></b>	Maximum superelevation rate
<b>f</b>	Side friction factor
<b>f<sub>max</sub></b>	Limiting side friction factor
<b>FEMA</b>	<b>Federal Emergency Management Agency</b>
<b>FHWA</b>	<b>Federal Highway Administration</b>
<b>FONSI</b>	Finding of no significant impact
<b>H rating</b>	<b>AASHTO</b> bridge live load rating corresponding to weight of a two-axle truck or lane loading (a uniformly distributed and concentrated load)
<b>HS Rating</b>	<b>AASHTO</b> bridge live load rating representing a tractor truck with semitrailer, or the corresponding lane loading
<b>HSIP</b>	Highway Safety Improvement Program
<b>HW</b>	Headwater
<b>IES</b>	<b>Illuminating Engineering Society</b>
<b>K</b>	Rate of vertical curvature, the length of vertical curve per percentage change in the algebraic difference between two tangent grades
<b>L</b>	Length of curve, distance from the PC to PT along a curve
<b>L<sub>r</sub></b>	Superelevation runoff length
<b>L<sub>min</sub></b>	Minimum superelevation runoff length
<b>MELT</b>	Modified eccentric loader terminals
<b>mph</b>	Miles per hour
<b>MPO</b>	Metropolitan planning organization
<b>MSE</b>	Mechanically stabilized earth
<b>MUTCD</b>	The <u>Manual of Uniform Traffic Control Devices</u>
<b>NC</b>	Normal crown section
<b>NCHRP</b>	<b>National Cooperative Highway Research Program</b>
<b>NDEQ</b>	<b>Nebraska Department of Environmental Quality</b>
<b>NDOT</b>	<b>Nebraska Department of Transportation</b>
<b>NEPA</b>	National Environmental Policy Act
<b>NFIP</b>	National Flood Insurance Program
<b>NHPP</b>	National Highway Performance Program
<b>NWP</b>	Nationwide permits
<b>OI</b>	Nebraska Department of Transportation Operating Instruction
<b>OSHA</b>	<b>Occupational Safety and Health Administration</b>
<b>P</b>	Any point on a curve
<b>P<sub>o</sub></b>	The high or low point of the curve

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PC	Point of curvature for a horizontal curve
PCC	Point of compound curvature
PI	Point of intersection of tangents for a horizontal curve
PRC	Point of reverse curvature
<i>Proposed Guidelines</i>	<u>Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way</u>
PS&E	<b>Plans, Specifications and Estimates Section</b> in the <b>Construction Division</b>
PSI	Pavement serviceability index
PSS	Preconstruction Scheduling System
PT	Point of tangency for a horizontal curve
PVC	Point of curvature for a vertical curve
PVI	Point of intersection of tangents for a vertical curve
PVT	Point of tangency for a vertical curve
Q	Culvert capacity
Q <sub>design</sub>	Overtopping frequency or the frequency based on the allowable water surface elevation, whichever is more critical
R	Radius of a horizontal curve
R-*	Right-of-way plan sheets
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-way
RR	Railroad
RRZ	Rail Highway Crossings Program
SCS	<b>Soil Conservation Service</b>
SEE	Social, economic and environmental review
SHPO	<b>State Historic Preservation Officer</b>
SPUI	Single point urban interchange
STBG	Surface Transportation Block Grant Program
STP	Surface Transportation Program
STIP	Statewide Transportation Improvement Program
T	Tangent length, distance from PC or PT to PI
TCP	Traffic control plan
TR	Tangent runout length
TRB	<b>Transportation Research Board</b>
TWLTL	Two-way left turn lane
USDOT	<b>United States Department of Transportation</b>
USGS	<b>U.S. Geologic Survey</b>
VC	Vertical curves
X-*	Roadway cross-section sheets

**B. Terms and Definitions**

<b>Abandonment</b>	The act of abandoning an existing roadway and right-of-way when the road is not needed on the state highway system.
<b>Access</b>	A means of ingress or egress between a highway and abutting property or an intersecting local public road or street.
<b>Access Control</b>	Restriction of the number and location of access points along the highway; it varies by the functional classification of the roadway.
<b>Accessible Route</b>	A continuous and unobstructed pedestrian circulation path in the public right-of-way, the various components of which adhere to the guidance found in the <i>Proposed Guidelines</i> .
<b>Accessibility</b>	A measure of the ability of users to utilize the transportation system.
<b>ADA</b>	The Americans with Disabilities Act of 1990 which provides comprehensive civil rights protection to individuals with disabilities in the areas of employment, transportation, public accommodations, state and local government services, and telecommunications.
<b>Adjusted Embankment</b>	The volume of embankment that results from the balance factor being multiplied by the measured embankment.
<b>Alignment Book</b>	A construction book that provides a listing of alignment information for referencing and relocating the centerline.
<b>Allocation</b>	Assigning funds to particular uses.
<b>Alteration</b>	Defined by the <i>Proposed Guidelines</i> as “A change to a facility in the public right-of-way that affects or could affect pedestrian access, circulation, or use. Alterations include, but are not limited to, resurfacing, rehabilitation, reconstruction, historic restoration, or changes or rearrangement of structural parts or elements of a facility.”
<b>Ambient Air Quality</b>	The quality of the surrounding air measured in terms of presence of ozone, hydrocarbons, nitrogen oxide, and carbon monoxide based on national standards.
<b>Annual General Stormwater Runoff Permit</b>	A permit obtained annually by the <b>Construction Division</b> relative to stormwater discharge.
<b>Archeological Resources</b>	Prehistoric cultural assets.
<b>Armor Coat</b>	A surface treatment consisting of sequential applications of asphalt and stone chips which may be made either in one or more layers to build up a structure roughly one inch or more in thickness.
<b>Arterial Highway</b>	Defined by <b>AASHTO</b> as “A highway primarily for through traffic, usually on a continuous route.”

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<b>At-Grade Intersections</b>	Locations where two or more roadways or entrances cross and/ or meet each other at the same elevation.
<b>Auxiliary Lanes</b>	Lanes that are not considered through travel lanes that are intended for use by vehicular traffic for specific functions, such as left and right turns, climbing/ passing, acceleration/ deceleration, weaving, etc.
<b>Average Daily Traffic</b>	The average of 24 hr. traffic counts collected over a number of days greater than one but less than a year.
<b>Backslope</b>	A cut slope, the segment of the roadside geometry that slopes up from the outside edge of a ditch to intersect with the existing ground.
<b>Balance</b>	When the amount of available excavation equals the amount of needed embankment.
<b>Balance Points</b>	A location along a roadway where an earthwork balance occurs.
<b>Balance Factors</b>	Multipliers applied to embankment volumes to adjust for shrinkage or swell of the soils used for embankment.
<b>Barrier</b>	A structure used to protect traffic from hazardous conditions along the roadside or medians.
<b>Barrier Curb</b>	Steep-face curb design to inhibit encroachment on state right-of-way.
<b>Base Course</b>	The layer or layers of specified or selected material of designed thickness placed on a subbase or a subgrade to support a pavement surface course.
<b>Benefit-Cost Comparison</b>	An economic evaluation to determine if a given design is warranted and justified based on the costs and benefits associated with it.
<b>Bid</b>	A contractor's written offer to construct a project based on the contract documents (plans, specifications, special provisions, etc.) at a specified price.
<b>Bicycle Facilities</b>	Defined by <i>MUTCD</i> as "A general term denoting improvements and provisions that accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically defined for bicycle use."
<b>Bicycle Lane</b>	Defined by <i>MUTCD</i> as "A portion of a roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs."
<b>Bicycle Path</b>	A facility physically separated from motorized traffic facilities, either within a highway right-of-way or on another alignment, for either the preferential or exclusive use by bicyclists.

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<b>Bikeway</b>	Defined by <i>MUTCD</i> as “A generic term for any road, street, path or way that 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.”
<b>Blended Transition</b>	Defined by the <i>Proposed Guidelines</i> as “A raised pedestrian street crossing, depressed corner, or similar connection between the pedestrian access route at the level of the sidewalk and the level of the pedestrian street crossing that has a grade of 5 percent or less.”
<b>Blue Top Book</b>	A construction book that provides a format for finish stake (blue top) notes to be recorded. Stations and subgrade elevations at the centerline, edge of surface and edge of subgrade shoulder are the information provided.
<b>Borrow</b>	Additional material required when the amount of embankment needed exceeds the amount of excavation available.
<b>Borrow Pit</b>	Areas that are approved by the state for the source of borrow; they can be either contractor-furnished or state-furnished.
<b>Borrow Restoration</b>	Upon completion of removal of borrow from a site, the pit is to be scarified and then stockpiled topsoil replaced and seeded.
<b>Breakaway Support</b>	A support used for traffic signs, traffic signals, streetlights, etc. that is designed to breakaway or bend on impact with an errant vehicle.
<b>Bridge</b>	A structure for carrying traffic erected over a depression or an obstruction and having an opening greater than 20 feet as measured along the centerline of the roadway.
<b>Bridge Approach Section</b>	A transition section from guardrail to a bridge rail.
<b>Broken Back Curve</b>	A curve consisting of two consecutive curves deflecting in the same direction joined by a short tangent section.
<b>Budgeting</b>	The process of outlining future funding needs based on anticipated highway projects.
<b>Bullnose Guardrail</b>	A guardrail configuration in which the guardrail is curved around a hazard, forming a “nose”. It is often used in medians to shield a hazard from traffic in both directions.
<b>Cable Guardrail</b>	Guardrail constructed of multiple steel cables stretched between support posts.
<b>CADD Coordination Policy</b>	A schedule of required drafting activities for roadway design.

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<b>Capacity</b>	The maximum flow in vehicles per hour that can be reasonably expected on a segment of highway during a given time period under prevailing roadway, traffic and control conditions.
<b>Capacity Analysis</b>	Study that estimates the amount of traffic that can be accommodated by a given facility while maintaining a predetermined level of service.
<b>Categorical Exclusion</b>	An environmental classification for a project indicating that no significant environmental impacts are anticipated (Class II project).
<b>Center Of Gravity</b>	The location where a vertical line divides an area of cut or fill into two equal areas; the area left of the center of gravity equals the area right of the center of gravity.
<b>Center Pivot</b>	A structure that pumps water from the ground to an aerial sprinkler system that rotates about the structure; used for crop irrigation.
<b>Changes In Concept</b>	Alterations in the original project idea during the planning and/or design stages.
<b>Changes In Scope</b>	Modifications in the extent or size of the project.
<b>Change Order</b>	A written order to the contractor covering changes in the contract.
<b>Channelization</b>	The physical separation of vehicular and/ or pedestrian traffic movements to regulate conflicting movements.
<b>Channelized Intersection</b>	An intersection at which various traffic movements are separated by auxiliary lanes, medians, islands, etc.
<b>Clarity</b>	A computerized system that programs, schedules and monitors projects through preconstruction stages. The <b>Project Scheduling Section</b> of the <b>Program Management Division</b> manages it.
<b>Class I Project</b>	A project that may significantly impact the environment and for which an environmental impact statement is required.
<b>Class II Project</b>	A project that has been determined will not significantly affect the environment.
<b>Class III Project</b>	A project on which the environmental impact must be determined and for which an environmental assessment must be prepared.
<b>Clean Air Act</b>	A federal law passed to protect and enhance the quality of the nation's air resources.
<b>Clean Water Act</b>	A federal law passed in 1977 to protect the quality of the nation's water resources.

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<b>Clear Zone</b>	The total roadside border area, starting at the edge of the traveled way, available for use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/ or a clear run-out area. The desired width depends on the traffic volumes and speeds, and on the roadside geometry. Also called the recovery area or lateral obstacle clearance distance.
<b>Climbing Lanes</b>	Additional lane(s) provided on crest vertical curves to accommodate slow moving vehicles.
<b>Cloverleaf Interchange</b>	Four-leg interchanges with loop ramps to accommodate left turn movements. A full cloverleaf has loops in all quadrants.
<b>Collector-Distributor Roads</b>	An auxiliary road system parallel to but separate from a freeway/ interstate that collects and distributes local traffic with the intent of limiting the number of entrance and exit points on a freeway while satisfying the demand for access to the freeway. Similar to frontage roads but collector-distributor roads do not provide access to abutting properties.
<b>Comfort Criteria</b>	Design consideration of motorists' willingness and/ or ability to accept discomfort while traversing a roadway.
<b>Complex Interchanges</b>	A combination of two or more interchange configurations, within very limited spacing, connecting several different roadways.
<b>Compound Curve</b>	Two curves which join on the same side of a common tangent with no tangent length between the curves.
<b>Comprehensive Plan</b>	A plan developed for a local, regional or statewide area that considers social, economic, cultural, transportation, environment, and other concerns.
<b>Condemnation</b>	A legal proceeding <b>NDOT</b> pursues when an agreement cannot be reached with a landowner on the purchase of right-of-way.
<b>Consolidation</b>	The settling of existing ground under the weight of embankment, causing the embankment to settle.
<b>Construction Joint</b>	A joint made necessary by a prolonged interruption in the placing of concrete.
<b>Construction Sequencing</b>	The construction of a roadway in different phases so that the project may be built while maintaining through traffic and/ or access to local residences or businesses.
<b>Contaminated Soils</b>	Soil that has unacceptable impurities in it.
<b>Contour Grading Plans</b>	Plans that show proposed contour lines for the areas adjacent to the roadway surfaces for use in construction.
<b>Contract Plans</b>	Plans used to bid on and construct a project.
<b>Contraction Joint</b>	A joint normally placed at recurrent intervals in a rigid slab to control transverse cracking.

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<b>Controlled Access Facility</b>	A facility designed for through traffic and upon which <b>NDOT</b> may regulate, restrict or prohibit access for efficient traffic flow and the reduction of areas of traffic conflict.
<b>Corridor Protection</b>	A procedure whereby <b>NDOT</b> notifies appropriate local governmental agencies and the general public of the intent to acquire right-of-way along a highway corridor in order to restrict the amount of development which may occur adjacent to the intended improvement minimizing acquisition costs and design complexity.
<b>Corridor Protection Plans</b>	Plans, often aerial sheets, filed with the local government showing property ownership and the corridor width to be protected.
<b>Corridor Studies</b>	Studies of projects that may involve some relocation and/ or community bypass. Study results usually are published in report form and include alignment location factors and cost estimates. Plan and profile sheets may also be included.
<b>Cost Estimate</b>	The anticipated cost of a project at different stages of planning and design.
<b>Cost Sharing</b>	The division of project expenses among governmental (and possibly other) entities involved in the project.
<b>Covenant Agreement</b>	A written agreement or contract between the state and local cities, towns or villages that outlines the respective responsibilities in planning, designing, constructing or maintaining a highway or their associated facilities, such as roadway lighting, traffic signals, etc.
<b>Covenant Relinquishment Agreements</b>	Agreements prepared prior to public hearings in which the provisions of relinquishment of roadway maintenance and operation functions to a local government are described.
<b>Crash Cushions</b>	A protective system that prevents errant vehicles from impacting roadside obstacles by decelerating the vehicle to a stop when the cushion is hit head on or redirecting the vehicle away from the obstacle when the cushions are hit from the side.
<b>Critical Length Of Grade</b>	The maximum length of a designated upgrade on which a loaded truck can operate without an unreasonable reduction in speed.
<b>Critical Path</b>	Tasks and activities that must be completed prior to the start of other activities.
<b>Critical Slope</b>	A slope that is considered non-recoverable, non-traversable and one on which a vehicle is likely to overturn. A slope steeper than 1:3.
<b>Cross Slope (Roadway)</b>	The slope across traffic lanes and shoulders perpendicular to the flow of traffic.
<b>Cross Slope (Sidewalk)</b>	Defined by the <i>Proposed Guidelines</i> as "The grade that is perpendicular to the direction of pedestrian travel."

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<b>Crossover</b>	Temporary pavement constructed on divided highways to temporarily route traffic across the median to the opposite lanes so that construction can occur on the vacated side.
<b>Crosswalk</b>	The Nebraska Revised Statutes, Chapter 60 Motor Vehicles defines a crosswalk as: <ol style="list-style-type: none"><li>1. "That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of such roadway measured from the curbs or, in the absence of curbs, from the edge of the roadway; or</li><li>2. Any portion of a roadway at an intersection or elsewhere distinctly designated by competent authority and marked for pedestrian crossing by lines, signs, or other devices."</li></ol>
<b>Crowned Typical Section</b>	A cross-section of roadway that has the high point of the pavement located at the center of the traveled way and slopes to both shoulders.
<b>Cul-De-Sacs</b>	A turning area provided at the closed end of a street opened at one end only.
<b>Culvert</b>	A structure under the roadway with a clear opening of less than 20 feet as measured along the center of the roadway.
<b>Curb Cut</b>	A depression in the curb that is provided at curb ramps and entrances.
<b>Curb Ramp</b>	A connection between the pedestrian access route at the level of the sidewalk and the level of the pedestrian street crossing that has a grade which is between 5 percent and 8.3 percent inclusive in the direction of pedestrian travel. Curb ramps can be perpendicular or parallel, or a combination of parallel and perpendicular ramps."
<b>Cut Slope</b>	A positive grade side-slope generally going upward and outward from the shoulder edge or ditch bottom to intersect the natural ground.
<b>Daylighting</b>	Flattening the roadway backslope to intersect with the natural ground at a lower elevation than the typical backslope. This is done to gain excavation or to improve sight distance.
<b>Decision Sight Distance</b>	The distance required for a driver to complete the following actions: 1) detect an unexpected or otherwise difficult-to-perceive information source or obstacle in a roadway environment; 2) recognize the obstacle or its threat potential; 3) select an appropriate speed and path; and 4) initiate and complete the required maneuver.
<b>Deed</b>	A signed legal document to convey or transfer rights, ownership, etc.
<b>Delineators</b>	Retroreflective devices mounted at the side of the roadway used to guide traffic, especially at night.

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<b>Depressed Median</b>	A median that is constructed at a lower elevation than the travel lanes. They are typically used on freeways and other divided arterials.
<b>Design Checklist</b>	A list of tasks associated with roadway design activities.
<b>Design Hourly Volume</b>	The two-way design hourly volume in number of vehicles during the thirtieth highest hour for the design year.
<b>Design Process Outline</b>	An outline of regular roadway design activities.
<b>Design Relaxation or Exception</b>	A deviation from the design standards requiring approval by the appropriate state and/ or federal officials.
<b>Design Speed</b>	The maximum speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern. Limits of curvature, sight distance, roadway clearance, maximum gradient and other geometric features are a function of design speed.
<b>Design Vehicle</b>	A theoretical motor vehicle whose weight, dimensions and operating characteristics are used to establish highway design controls such as radius returns and turning roadways.
<b>Design Year</b>	The year 20 years after the initial construction of a new/ reconstructed project. For 3R projects use 20 years for Portland Cement Concrete surfacing and 10 years for hot mixed asphalt surfacing.
<b>Detour</b>	A signed alternate route within an existing roadway system that guides traffic around a construction zone outside of the project right-of-way instead of through the construction zone.
<b>Diamond Interchange</b>	A simple interchange with four ramps configured similarly to a diamond and having a stop condition on the side road.
<b>Directional Island</b>	Raised, flush or painted medians used to guide and protect traffic during turning movements. Also, known as channeling islands.
<b>Directional Interchange</b>	An interchange that provides continuous high-speed free-flow operations for both through and turning movements.
<b>Distribution Analysis</b>	An analysis of the volumes of excavation and embankment by station for the purpose of determining if the project earthwork will be balanced, borrow or waste.
<b>Dowel</b>	A load transfer device in a rigid slab, usually consisting of a plain round steel bar.
<b>Driver Expectancy</b>	A drivers' memory of previous roadway experiences that he/ she relies on when responding to new situations.
<b>Driveways</b>	Access openings to adjoining properties from roadways.
<b>Dry Run</b>	Rehearsal for public hearing.

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<b>Easement</b>	A legal right afforded a person, agency, etc. to make limited use of another's land usually for specific purposes, such as construction, utility, access, etc. Easements may be permanent or temporary.
<b>Embankment</b>	Material that must be filled or placed to construct the proposed roadway and its associated components.
<b>Embankment Foundation Report</b>	A report by the <b>Soils Mechanics Unit</b> recommending steps to minimize settlement and slope stability problems in areas of poor foundation soils.
<b>End Areas</b>	The areas of cut and fill computed between cross-sections from which total volumes of embankment and excavation may be made for the entire project.
<b>Endangered Species</b>	A species that is in danger of extinction throughout all or any portion of its range.
<b>Endangered Species Act</b>	A federal law passed in 1973 to insure that actions authorized, funded or carried out by state or federal agencies do not jeopardize, destroy or critically modify the continued existence of endangered or threatened species and their habitat.
<b>Engineering Review</b>	A process by the <b>Project Development Division Location Studies Section</b> early in the project to establish the concept of work to be performed and the initial itemized cost estimate for major, non-interstate projects. The review summarizes the existing highway conditions, traffic, classification, adjacent sections, alignment, and environmental conditions. It is sometimes completed by the <b>Roadway Design Division</b> for smaller projects.
<b>Enhancement Projects</b>	Transportation infrastructure projects by local, regional and state governments that are not eligible for funding from other programs, e.g., historic preservation, trails and scenic byways projects.
<b>Entrance Ramp</b>	A ramp that provides access onto an expressway or interstate.
<b>Environmental Assessment</b>	A study required for environmental Class III projects for which the significance of environmental effects of a proposed project must be determined. If it is determined that the project will have no significant environmental impacts, it remains a Class III project and a finding of no significant impact (FONSI) statement is prepared. If significant effects are possible, the project is reclassified as a Class I project.
<b>Environmental Classification</b>	Federal designation of a project based on its potential impact on the environment.
<b>Environmental Impacts</b>	The possible effects of projects on the quality of the social, cultural or natural environment.

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<b>Environmental Impact Statement</b>	A statement that describes the anticipated social, economic and environmental impacts of a Class I project (projects that may have significant impact on the environment).
<b>Environmental Summary Sheet</b>	A form from the <b>Project Development Division</b> that outlines the measures to be taken to mitigate the effects of a project on the environment, the applicable permits, etc.
<b>Equivalent Single Axle Loads</b>	Summation of equivalent 18,000-pound single axle loads used to combine mixed traffic to design pavement for traffic in the design period.
<b>Erosion</b>	A process in which soil and/ or rock is loosened from its resting place and is carried by wind and/ or runoff and deposited elsewhere.
<b>Erosion Control</b>	A program to control the displacement of soil particles by water, wind or other agents.
<b>Erosion Control Permit</b>	A part of the Section 404 permit process related to controlling water and siltation due to runoff into any water body including wetlands.
<b>Established Quantities</b>	Quantities of earthwork material determined from cross-sections by Design and used for the payment of earthwork.
<b>Estimate Checklist</b>	A listing of items required for a cost estimate.
<b>Excavation</b>	Material that must be cut to construct the proposed roadway, ditches, channels, entrances, etc.
<b>Exempt Projects</b>	Projects exempt from <b>FHWA</b> oversight, e.g., new/ reconstructed or 3R NHS projects estimated at less than \$5 million or off-NHS projects.
<b>Exit Ramp</b>	A ramp that provides egress from an expressway or interstate.
<b>Expansion Joint</b>	A joint located to provide for the expansion of a rigid slab, without damage to itself, adjacent slabs or structures.
<b>Exposure Factor</b>	A factor used to evaluate whether grade separation of a railroad/ roadway crossing is necessary based on the number of vehicles times the number of trains per day. If this factor is 50,000 or greater, a grade separation should be considered.
<b>Expressway</b>	A divided highway for through traffic with full or partial control of access with interchanges at major intersections and at-grade intersections at designated minor public road intersections. It serves urban centers of 15,000 population or more not served by the interstate system.
<b>Federal Aid Projects</b>	Projects that are partially or entirely funded by the federal government. They must comply with federal regulations, including environmental regulations.

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<b>Federal Funding</b>	Funds provided by the federal government from various funding appropriation sources for transportation-related projects. Depending on the appropriation restrictions, some portions of projects may be participating (federal funds may be used for those items) or nonparticipating (items are not eligible for those particular federal funds).
<b>Fill Slope</b>	A downward embankment slope connecting the graded shoulder at the hinge point to the ditch bottom or natural ground.
<b>Final Plans</b>	Contract plans used by contractors, inspectors, etc. to construct the project.
<b>Flare Rate</b>	The allowable variable offset distance of a barrier to move the barrier end further from the traveled way.
<b>Floodplain</b>	The area adjoining a watercourse or drainage way that has been or may be covered by floodwaters.
<b>Floodway</b>	The channel of a watercourse or drainage way and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a reasonable height.
<b>Flush Median</b>	A median that is on the same plane as the travel lanes, it is usually delineated by paint stripping on the pavement.
<b>Fog Seal</b>	A surface application of dilute emulsion with no aggregate that seals the pavement surface and generally provides a very distinct delineation between the mainline pavement and the shoulder.
<b>Foreslope</b>	The segment of the roadway cross-section from the hinge point sloping downward to the inside edge of the ditch.
<b>Foundation Course</b>	The graded portion of a highway prepared as the foundation for the pavement structure and shoulder.
<b>Foundation Report</b>	A report that summarizes field investigations of foundation soils and makes recommendations to minimize settlement and slope stability problems.
<b>Freeway</b>	An arterial highway with full control of access.
<b>Frontage Roads</b>	Restricted access roads, paralleling the mainline, to maintain capacity on the mainline and provide access to adjoining property.
<b>Functional Classification</b>	The grouping of highways and roads by the primary service they provide, access, mobility or a combination of access and mobility. It is used to determine the design standards to be used.
<b>Functional Design</b>	The stage of design after the plan-in-hand inspection and prior to the public hearing.

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<b>Future Access</b>	A future means of ingress or egress between a highway and abutting property or an intersecting local public road or street that will not be built by <b>NDOT</b> but will be built by the owner at some future date when the development of the property requires construction of the driveway.
<b>Gore</b>	The area between a through roadway and an exit/ entrance ramp.
<b>Gore Neutral Area</b>	The triangular area between the gore nose and the physical nose and the triangular area between the physical nose and the painted nose.
<b>Gore Nose</b>	A point, having some dimensional width separating the shoulders of the through traveled way and the ramp, upstream from the gore area.
<b>Grade Separation</b>	The separation of traffic at an intersection of two or more roadways by constructing the roadways at different elevations; provides for free flow of traffic on all highways through the intersection but does not provide for access for turning traffic.
<b>Granular Subdrain</b>	A drain that is constructed of a porous, granular material designed to drain water from the foundation of the pavement.
<b>Guardrail</b>	A longitudinal barrier that shields roadside hazards from vehicles that may leave the traveled way.
<b>Habitat</b>	The place(s) a given species of animal or plant naturally lives or grows that has the necessary food, cover, water and other species-specific conditions essential to well-being.
<b>Haul</b>	The distance that excavated material is moved, as shown on the plans, from the location where the material is obtained to the location where the material is to be deposited.
<b>Headwater</b>	The depth of water impounded upstream of a culvert due to the influence of the culvert construction, friction and configuration.
<b>Height Of Eye</b>	The height of driver's eye above the road surface used for calculating sight distances. For stopping and passing sight distances, passenger vehicle height of eye is 3.5 feet.
<b>Height Of Object</b>	The height of an object within the roadway used for calculating sight distances.
<b>Highway Commission Statement</b>	An official communication from <b>Roadway Design</b> to the <b>Highway Commission</b> regarding a proposed project.
<b>Hinge Point</b>	The point where the rate of slope either continues at 1:6 or changes to a steeper slope based on the difference in elevation between the edge of the finished shoulder and the end of the foreslope.
<b>Horizontal Alignment</b>	The line of roadway curvature as related to the horizontal direction.

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<b>Horizontal Sight Distance</b>	The clearance required from the center of the inside lane to an obstruction located off the pavement area on the inside of a horizontal curve. The straight-line distance a driver can look through a horizontal curve to the road ahead.
<b>Impact Attenuators</b>	Barriers designed to act as cushions, absorbing most of the energy from errant vehicles that leave the roadway before striking a roadside hazard.
<b>Inertial Barriers</b>	Impact attenuators that are modules filled with sand used for protection of poles, column bases, lighting supports, etc.
<b>Intercepting Dikes</b>	Small dikes constructed at the top of cut slopes that prevent stormwater from flowing down the cut slopes by intercepting the runoff and redirecting the flow to where it can be discharged into a ditch, creek, stream, etc.
<b>Interchange</b>	A combination of ramps and grade separations designed to increase capacity, reduce or eliminate traffic conflicts, and reduce the potential for crashes at the junction of two or more roadways. They separate the through traffic movements and also provide for turning traffic movements.
<b>Intergovernmental Agreements</b>	Agreements prepared by the <b>Agreements Section</b> in the <b>Project Development Division</b> that outline the scope and participation of the governmental parties involved in a project and are executed for projects involving other units of government.
<b>Intersection Sight Distance</b>	The unobstructed sight distance along both road approaches at an intersection and across their included corners for a distance that will allow vehicle operators, approaching simultaneously, to see each other in time to prevent collisions.
<b>Interstate</b>	A national defense highway system established to connect most cities of 50,000 or more population in the U.S., with complete access control and a minimum of two 12 feet wide lanes in each direction, divided in most instances by wide medians.
<b>Interval</b>	A discrete portion of a traffic signal cycle during which signal indications do not change.
<b>Island</b>	A flush or raised channelizing device.
<b>Joint Access</b>	A single access provided to two or more properties.
<b>Land Water Conservation Fund Act</b>	An act administered by the <b>National Park Service</b> to preserve public parklands. The Act provides funds to purchase and develop public parklands, and to preserve those lands from conversion to other uses.
<b>Landscaping</b>	Plantings, scenic view development, retaining walls, median treatments, slope rounding or berms, aesthetic treatment, etc. for environmental, functional or aesthetic purposes.

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<b>Lane Balance</b>	A condition in which there is a balance in the number of traffic lanes on a freeway and the number of lanes on ramps to provide for efficient traffic operations through and beyond interchanges. The number of lanes and the rate that lanes are added and dropped at interchanges are appropriate for the interchange.
<b>Lateral Extent Of Hazard</b>	The distance from the edge of the traveled way to the far side of a hazard, if the hazard is a fixed object, or to the outside edge of the clear zone if the hazard is an embankment or fixed object that extends beyond the clear zone.
<b>Lateral Obstacle Clearance Distance</b>	The unobstructed, relatively flat area provided beyond the edge of the travel way for the recovery of errant vehicles. The width depends on the traffic volumes, design speed and side slopes of roadway section. Also known as the recovery area or clear zone.
<b>Level Of Service</b>	A rating system from A to F that classifies roads or highways according to the operating conditions of the roadway given the design traffic volumes, A being a roadway providing an optimum level of service and F being a roadway providing a very poor level of service. The operating conditions that characterize levels of service are described in terms of density, average travel speeds, volume to capacity ratios, and stop delays at intersections.
<b>Life Cycle Cost Analysis</b>	The economic analysis of pavement design alternatives based on initial construction costs, maintenance costs, salvage values at the end of the life of the pavement and replacement costs.
<b>Limits Of Construction Plans</b>	Design plans, developed after the public hearing, showing the extent of the area required for the construction of the project. They include culverts, driveways, intersections, dikes, etc. for use in right-of-way design.
<b>Living Snow Fence</b>	A barrier of trees and shrubs planted to reduce snow drifting along a highway, usually at or near the right-of-way line.
<b>Load Transfer Device</b>	Devices, e.g., steel dowel bars, used at transverse joints to properly distribute load stresses without offering resistance to longitudinal movement at the joint.
<b>Local Roads</b>	Rural roads not classified otherwise except minimum maintenance roads.
<b>Location Studies</b>	Studies to address social, economic, environmental and other issues associated with alternative project locations for specific "spot" projects or for longer corridors.
<b>Longitudinal Slope</b>	The slope of the travel lane along the length of the travel lane.
<b>Longitudinal Joint</b>	A joint normally placed between traffic lanes in rigid pavements to control longitudinal cracking.

<b>Loop</b>	A curved ramp that has a less direct travel path and distance than normal ramps and often will redirect the path of a vehicle almost 290°.
<b>Lump Sum Funding Splits</b>	A method of allocating funds from several funding sources by dividing the total costs on a pro rata basis.
<b>Mailbox Turnout</b>	A designated area, outside the travel lanes, provided for the use of vehicles accessing mailboxes.
<b>Major Arterials</b>	Roadways linking cities, towns and other traffic generators, that are capable of carrying long distance travel and form a network with higher systems to provide interstate and inter-county service.
<b>Major Collectors</b>	Roadways that serve the dual function of property access and feeding arterials; they generally consist of shorter trip lengths.
<b>Markings</b>	Traffic control devices, such as pavement markings, object markings or delineators, used to channelize traffic into proper lane position on the roadway. They may either supplement regulatory and warning signs or independently warn or regulate traffic.
<b>Mass Diagram</b>	A graphical representation of the amount of embankment and excavation on a project and the way in which the earth is to be moved. It shows balance point locations, direction of haul and amounts of earth taken from or to each location.
<b>Mass Ordinate</b>	The cumulative algebraic sums of volumes of cut and fill by station.
<b>Medians</b>	The portion of a divided highway separating the traveled ways for traffic in opposite directions.
<b>Median Barrier</b>	A longitudinal barrier placed on the left side of traffic lanes of a divided highway designed to redirect vehicles striking either side of the barrier.
<b>Median Openings</b>	A gap in a median provided for crossing and turning traffic.
<b>Median Width</b>	The distance between the inside edges of the inside travel lanes of a multi-lane divided highway.
<b>Metropolitan Planning Organization (MPO)</b>	Transportation planning organization composed of state and local government officials and citizens responsible for continuing, cooperative and comprehensive planning process in metropolitan areas.
<b>Milling</b>	A process in which asphalt is removed from the roadway by a machine that “scrapes” off the top layer of asphalt.
<b>Minimum Maintenance Roads</b>	Rural roads used occasionally by limited numbers of people as alternative access roads.
<b>Maintenance Resurfacing Standards</b>	Maintenance for each functional classification of roadway type as established by <b>the Board of Public Roads Classifications and Standards.</b>

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<b>Minor Arterials</b>	Routes to provide linkage of cities, towns and other traffic generators, integrating interstate and inter-county service.
<b>Mitigation</b>	Measures taken to offset or minimize the impact of construction on the environment.
<b>Mobilization</b>	The costs associated with startup activities such as movement of personnel, equipment, supplies and other incidentals to the project site.
<b>Moisture Content</b>	The amount of water in the soil which impacts compaction.
<b>Mountable Curb</b>	A curb designed so that errant vehicles can cross them easily.
<b>Mow Strip</b>	A 2 feet surfaced section between the curb and a turf median or around area inlets.
<b>MSE Wall</b>	A mechanically stabilized earth retaining wall of blocks or panels.
<b>Multi-Leg Intersections</b>	Intersections having five or more legs.
<b>National Highway System</b>	An interconnected system of principal arterial routes which will serve major population centers, international border crossings, ports, airports, public transportation facilities, other intermodal transportation facilities and other major travel destinations.
<b>National Register Of Historic Places</b>	A federal listing of places with significant historic value.
<b>Nationwide Permits</b>	A type of permit issued by the <b>U.S. Army Corps of Engineers</b> for projects that have minimal environmental impacts.
<b>Needs Assessment</b>	An annual review of the condition of existing roadways throughout the state conducted by the <b>Classification, Needs, and Pavement Management Unit</b> in the <b>Materials and Research Division</b> . A summary of the results are published in the <u>State Highway Inventory Report</u> .
<b>New Jersey Barriers</b>	Concrete rigid barriers generally used as median barriers and as barriers in work zones.
<b>Noise</b>	Unwanted sound.
<b>Noise Abatement</b>	Measures taken to reduce noise through design features or location of a project.
<b>Noise Barriers</b>	Devices installed beyond the lateral obstacle clearance distance to reduce the effects of noise on nearby noise sensitive areas.
<b>Nonparticipating</b>	That portion of a project that a particular federal fund does not cover, e.g., federal bridge funds may not be used for mainline construction.
<b>Nonpoint Source Pollution</b>	Pollution that cannot be attributed to a specific source.

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<b>Non-Recoverable Slope</b>	A slope on which a motorist will not be able to stop his/ her vehicle or return to the roadway but generally will reach the bottom of the slope without overturning; a slope between 1:4 and 1:3.
<b>No Passing Zones</b>	Segments of two-lane, two-way highways that do not have sufficient passing sight distance for motorists to pass slower moving vehicles. Pavement markings and warning signs are used to inform drivers of no passing zones.
<b>Object Markers</b>	Traffic control devices that warn motorists of physical obstructions or roadside conditions within or adjacent to the roadway that pose a hazard to motorists. They are considered a maintenance item and are not included in roadway quantities and cost estimates.
<b>Off-Street Parking</b>	A parking facility, parking lot or garage that is provided outside of the roadway right-of-way and is not considered a part of the roadway.
<b>Off-System County Roads</b>	County roads that are not part of the federal or state highway system.
<b>Off-System Rural Projects</b>	Projects on rural roads for which local road standards have been developed.
<b>Off-System Urban Projects</b>	Urban transportation projects in cities of the first class that are eligible for specific federal funding.
<b>On-Street Parking</b>	Parking that is provided adjacent to the traveled way of a roadway within the roadway right-of-way; it is considered a part of the roadway.
<b>Operating Speed</b>	The highest overall speed at which a driver can travel on a given highway under favorable weather conditions and under prevailing traffic conditions without exceeding the design speed on a section-by-section basis.
<b>Outer Separation</b>	The area between the traveled way of a roadway for through traffic and a frontage road or street.
<b>Overlay</b>	The resurfacing of an existing pavement to a specified depth to extend the structural life of the pavement.
<b>Painted Gore Nose</b>	A point, having no dimensional width, occurring at the separation of the pavements at a ramp.
<b>Parallel Fill Slope</b>	A fill slope that parallels the roadway.
<b>Partial Cloverleaf Interchange (Parclo)</b>	A cloverleaf interchange with loops in some but not all quadrants.
<b>Passing Sight Distance</b>	The distance required for an overtaking vehicle to pass another vehicle on a two-lane, two-way roadway.
<b>Pavement Markings</b>	Traffic devices in the form of line markings, symbols, arrows, raised reflective markers, etc. that are on the roadway pavement to channelize the traffic and to warn motorists.

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<b>Pavement Structure</b>	A combination of subbase, base course and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.
<b>Pavement Serviceability Index</b>	A numerical value derived by formula from measurements of certain physical features of the pavement.
<b>Pavement Subdrain</b>	Subgrade drainage treatments, which vary depending on the subgrade soils plasticity index.
<b>Pedestrian</b>	Defined by <i>MUTCD</i> as “ A person on foot, in a wheelchair, on skates, or on a skateboard.”
<b>Pedestrian Crossing</b>	A pedestrian crossing facilitates the movement of the non-motorized public (e.g. pedestrians, bicyclists) across highways, railroad tracks, and rivers or streams.
<b>Pedestrian Ramp</b>	A part of an accessible route that has a running slope which is between 5% and 8.3% inclusive in the direction of pedestrian travel.
<b>Pedology</b>	Study of the genesis and classification of soils.
<b>Permanent Easement</b>	A property easement in which <b>NDOT</b> has the use of or access to land that remains in private ownership. The owner may do as he/ she chooses with the property as long as it does not conflict with the purpose of the easement.
<b>Phasing</b>	The division of a construction project into several stages over time.
<b>Physical Gore Nose</b>	A point, having a dimensional width separating the pavements, upstream of the gore area.
<b>Pivot Irrigation System</b>	Custom irrigation systems varying in size and configuration that consist of center pivot structure and a boom that holds the sprinkler heads and rotates around the center pivot.
<b>Plan-In-Hand</b>	A field inspection of the proposed project, after preliminary design, by <b>NDOT</b> representatives and others as appropriate.
<b>Planning</b>	Advance consideration, development and description of anticipated projects, activities and scheduling.
<b>Point Of Convergence</b>	The point of intersection of a ramp and the through travel lane.
<b>Posted Speed</b>	The speed limit on advisory signs posted on the roadway; usually the 85th percentile speed.
<b>Preliminary Design</b>	The initial design of a project following the engineering review.
<b>Preliminary Plans</b>	Plans developed prior to preliminary design, from a survey or as-built plans, showing existing features only.
<b>Principal Arterials</b>	Roadways that provide corridor movement with trip length and density compatible with significant statewide or interstate travel.

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<b>Priority Commercial System</b>	A roadway designation for routes that carry heavy traffic volumes and/ or large volumes of commercial vehicles.
<b>Profile</b>	The grade line of a roadway, usually along the roadway centerline.
<b>Project Numbering</b>	The assignment of a unique number to a transportation project which identifies the funding source, type of project, and project location.
<b>Public Hearing</b>	A formal process presided over by a <b>Highway Commissioner</b> to present the proposed project to the public and to obtain public input. Hearing guidelines must be followed for notice of hearing, information presented and hearing procedures. The hearing is recorded and a transcript is made of the verbal testimony.
<b>Public Information Meetings</b>	Informal meetings held to inform the public of the proposed project location and/ or design, to obtain public input and to answer questions from the public. They are usually held for major relocations and location studies, right-of-way appraisal, design and scope changes and sometimes for engineering review.
<b>Radius Return</b>	The turning radius of an intersection.
<b>Public Right-of-Way</b>	Defined by the <i>Proposed Guidelines</i> as "Public land or property, usually in interconnected corridors, that is acquired for or dedicated to transportation purposes."
<b>Raised Median</b>	A median that is elevated above the travel lanes to control access and left turns on urban highways and streets.
<b>Ramp Angle</b>	The angle the ramp makes with the mainline highway.
<b>Ramps</b>	Any type, arrangement and size of turning roadway that connects two or more legs at an interchange.
<b>Ramp Terminal</b>	The portion of a ramp adjacent to the through traveled way, including speed change lanes, tapers and islands.
<b>Reconstructed Bridges</b>	An existing bridge that is to be either widened, significantly remodeled or rehabilitated.
<b>Recoverable Slope</b>	A slope on which a motorist can stop his/ her vehicle or slow it and then return to the roadway; a slope of 1:4 or flatter.
<b>Recovery Taper</b>	The taper downstream of a weaving section that enables motorists to merge with the traffic on the expressway.
<b>Reimbursable Costs</b>	The eligible non-betterment expenditures a utility owner incurs in relocating utilities to accommodate a proposed project.
<b>Relinquishment</b>	A process by which <b>NDOT</b> maintains ownership of right-of-way for utility easement purposes but cedes responsibility for maintenance and operation of the roadway to a local government.

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<b>Relocation Assistance</b>	Financial assistance provided to residents and business entities that are relocated due to right-of-way acquisition.
<b>Reverse Curves</b>	Two curves on opposite sides of a common tangent with a relatively short tangent length between the curves.
<b>Right-Of-Way</b>	Land, property or interest therein, usually in strip, dedicated for transportation purposes.
<b>Right-Of-Way Appraisal Plans</b>	R.O.W. Ownership plans with the addition of limits of construction, construction details, right-of-way design, permanent and/ or temporary easements, access control and summary of areas.
<b>Right-Of-Way Certification</b>	Certificate stating that the right-of-way is available to the contractor and clear of improvements or the estimated date when the non-complying tracts will be clear and available.
<b>Right-Of-Way Costs</b>	Costs associated with acquisition of right-of-way including real property, relocation assistance, fencing, improvements, etc.
<b>Right-Of-Way Marker</b>	A concrete monument, iron pipe, or pin marker used to indicate the location of a highway's right-of-way, where the right-of-way changes width or where a curve in the right-of-way begins or ends.
<b>Right-Of-Way Negotiation Plans</b>	Right-of-way plans that reflect right-of-way contracts and changes made during negotiations.
<b>Right-Of-Way Ownership Plans</b>	Right-of-way plans showing plotted section and quarter section lines, surveyed centerline, topography, property lines, existing R.O.W. boundaries, and ownership data.
<b>Right-Of-Way Survey</b>	A survey conducted to establish section corners, quarter-section corners and lot corners.
<b>Rivers And Harbors Act</b>	A federal act originally passed in 1899 to regulate structures or work affecting navigable waters of the U.S.
<b>Roadside Geometry</b>	The area outside of the hinge points; it is comprised of sideslopes, foreslopes, backslopes, ditch bottoms, benches, etc.
<b>Roadway Lighting</b>	Lighting which is provided along a roadway or highway to improve nighttime visibility.
<b>Rollover Rate</b>	The algebraic difference in rate of cross slope between adjacent lanes.
<b>Route Continuity</b>	Providing a continuous through route on which the motorist is not expected to change lanes or "exit" a roadway. Route continuity of minor roadways should yield to preserve road continuity of major roadways.
<b>Running Slope</b>	Defined by the <i>Proposed Guidelines</i> as "The grade that is parallel to the direction of pedestrian travel."

<b>Running Speed</b>	The actual speed of a vehicle over specified section of highway; the distance traveled divided by the time the vehicle is in motion (running time).
<b>Runout Length</b>	The theoretical distance needed for an errant vehicle that has left the roadway to come to a stop.
<b>Rural Area</b>	An area where property abutting the roadway is predominately used for agricultural purposes and lies outside municipal boundaries. It may include isolated tracts devoted to light industrial purposes.
<b>Safe Drinking Water Act</b>	Federal regulations of potable water supply.
<b>Safety Improvement Project</b>	A project that is generally small in size and located at specific high accident sites.
<b>Scenic Byways</b>	A road or byway with roadsides or corridors of aesthetic, cultural or historic value.
<b>Scoping</b>	The initial estimation of project magnitude once a DR 73 form has been initiated.
<b>Section 4(f)</b>	A portion of the 1966 Transportation Act which limits use of publicly owned parks, recreation areas, wildlife/ waterfowl refuges, and lands having historic sites of national, state or local significance.
<b>Section 6(f)</b>	A portion of the Land and Water Conservation Fund Act restricting use of public park land funded with Section 6(f) monies.
<b>Section 10 Permits</b>	Permits for construction activity that impacts navigable waterways.
<b>Section 401 Permits</b>	Permits from the <b>Nebraska Dept. of Environmental Quality</b> for activities involving waters of Nebraska, including wetlands. This permit is generally acquired in conjunction with Section 404 individual permits.
<b>Section 402 Permits</b>	Permits required for projects with point source discharge, e.g., rest areas.
<b>Section 404 Permits</b>	Permits from the <b>U.S. Army Corps of Engineers</b> for activities involving waters of the U.S., including wetlands.
<b>Segregation Damages</b>	Damages that may occur to a landowner when property is split by the construction of a highway.
<b>Select Placement</b>	The setting aside of certain excavated soils and/ or materials during earthwork construction for a specific placement within the limits of the project. For example, topsoil will often be excavated and separated from other soils for final placement in the top four inches within the construction area.
<b>Semi-Directional Interchange</b>	An interchange that has some high-speed free-flow connections but has one or more connections that are indirect in alignment yet more direct than loops.

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<b>Serviceability</b>	The ability, at the time of observation, of a pavement to serve the traffic (autos and trucks) that uses the facility.
<b>Service Volumes</b>	The number of vehicles traveling in a lane for a given time period. The number of vehicles “served” by a traffic lane for a given time period.
<b>Service Ramps</b>	Ramps, usually low-speed ( $\leq 45$ mph), that transfer traffic between an Interstate or expressway and an arterial.
<b>Shared Roadway</b>	Defined by <i>MUTCD</i> as “A roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated.”
<b>Shared-Use Path</b>	Defined by <i>MUTCD</i> as “A bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.”
<b>Shear Lines</b>	Lines used for simplifying earthwork calculations at intersections and other locations where irregularly shaped excavations or embankments may be encountered due to channel changes, etc.
<b>Shop Plans</b>	Plans developed by the contractor to show how the contractor intends to construct specific structures, such as bridges, retaining walls, etc.
<b>Shoulder</b>	The area adjacent to the travel lanes for rural cross-sections or the area behind the curb and gutter for urban cross-sections.
<b>Shrinkage</b>	The decrease in volume of soil when it is excavated, hauled and compacted into an embankment.
<b>Sidewalk</b>	Defined by <i>MUTCD</i> as “That portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved and intended for use by pedestrians.”
<b>Sight Distance</b>	The length of roadway ahead that is visible to the driver.
<b>Signalized Intersection</b>	An intersection where traffic movement is controlled by traffic signals.
<b>Single Axle Load</b>	The total load transmitted by all wheels whose centers may be included between two parallel transverse vertical planes 40 inches apart, extending across the full width of the vehicle.
<b>Single Point Urban Interchange</b>	An interchange configuration where all legs of the interchange intersect at a single point.
<b>Skew Angle</b>	The degree of deviation from a 90° intersection.

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<b>Slope Stake Book</b>	A construction notebook that provides elevation and distance information necessary for the construction of back slopes, fore slopes and side slopes.
<b>Slurry Seal</b>	An application of diluted asphalt emulsion mixed with sand-size aggregate and then squeegeed onto the pavement surface. It is generally less than 3/8-inch in depth.
<b>Snowshots</b>	Cut stations where the toe of the backslope is less than 60 feet from the centerline and the backslope elevation is greater than the centerline elevation.
<b>Soil Horizon</b>	The underlying formations of soil layers.
<b>Soil Profile</b>	The combined horizons or layers of soil.
<b>Soil Survey</b>	Research of the soil characteristics and water table condition provided by the <b>Materials and Research Division</b> .
<b>Soil And Situation Report</b>	A report of the results of the soil survey.
<b>Spacing</b>	The number of access locations to the mainline per mile between each mile road or county road.
<b>Special Investigations</b>	Research about specific topics for a proposed project (e.g. accident records, traffic counts).
<b>Special Plans</b>	Plans used for items subject to frequent change, e.g., guardrail.
<b>Special Provisions</b>	A document that outlines unique construction items or procedures not covered in the Standard Specifications.
<b>Speed-Change Lane</b>	An auxiliary lane, including taper, used primarily for the acceleration or deceleration of vehicles entering or exiting the through traffic lanes.
<b>Spot Speed Studies</b>	A traffic study that measures the individual speeds of a sample of vehicles passing a given point (spot) on a roadway.
<b>Spread</b>	The width of stormwater from the curb onto the roadway that flows along the pavement.
<b>Stage Construction</b>	The phasing of an entire construction project over several time periods.
<b>Standard Details</b>	Details not large enough to warrant a special plan or standard plan or details of items that are not paid for directly.
<b>Standard Items</b>	Construction and other items, as defined by <b>NDOT</b> that are common project materials or activities.
<b>Standard Plans</b>	Plans that have been developed for common construction items and have been approved by the <b>Standard Plans Committee</b> .
<b>Standard Specifications</b>	The definition and delineation of how activities, materials, etc. are to be provided for <b>NDOT</b> projects.

<b>State-Funded Projects</b>	Projects that are partially or entirely funded by state agencies. They are not required to comply with all federal regulations, but must address environmental concerns.
<b>State Highway Commission</b>	A group of individuals appointed by the <b>Governor</b> to conduct studies, advise the public, and hold public hearings regarding Nebraska highways and the activities of <b>NDOT</b> .
<b>State Highway Inventory Report</b>	A summary of results from the needs assessment.
<b>Station Funding Definition</b>	The identification of limits of funding source coverage by station location.
<b>Stopping Sight Distance</b>	The minimum length of roadway ahead visible to the driver that is long enough to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Stopping sight distance is the sum of the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant that the brakes are applied and the distance required to stop the vehicle from the instant brake application begins.
<b>Storage Area</b>	The portion of a turn lane used for vehicle queuing.
<b>Storage Length</b>	The length of lane needed to store vehicles for a given time period.
<b>Structural Snow Fence</b>	Temporary or permanent fencing panels installed along a highway to reduce the snow drifting along a highway.
<b>Subbase</b>	The layer or layers of specified or selected material of designed thickness placed on a subgrade to support a base course (or in the case of rigid pavements, the Portland cement concrete slab).
<b>Subgrade</b>	The top surface of a roadbed on which the pavement structure and shoulders are constructed.
<b>Subgrade Survey</b>	A survey conducted for projects to surface previously graded roads to identify soil sections, stability, and other conditions.
<b>Subgrade And Situation Report</b>	A report issued when there is a period of time between grading and preparation of paving plans. The report describes existing surface conditions, foundation course requirements, existing topography and pedology, drainage, compaction requirements, etc.
<b>Subsidiary Earthwork</b>	Earthwork that is not paid for directly but is included in other earthwork or other construction pay items.
<b>Subsoil</b>	Soils beneath the topsoil that vary in thickness from a few inches to three or more feet. They are characterized by the presence of additional clay and soluble material that has been removed from the topsoil.

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<b>Substructure</b>	The part of a structure below the bearings of simple and continuous spans, skewbacks or arches and the top of footings of rigid frames including backwalls, wingwalls, and wing protection railings.
<b>Superelevation</b>	Raising the outer edge of a curve to offset the tendency for vehicles to slip on the outward sloping of a crowned roadway, allowing the driver to maintain average speed through the curve without having to overcorrect steering.
<b>Superelevation Runoff Length</b>	The length of highway needed to accomplish the change in cross slope from a section with adverse crown removed to a fully superelevated section, or vice versa.
<b>Superstructure</b>	The part of a structure above the bearings of simple and continuous spans, skewbacks or arches and top of footings of rigid frames, excluding backwalls, wingwalls and wing protection railings.
<b>Surcharge</b>	The placement of additional embankment on top of a fill to account for settlement or to speed up settlement.
<b>Surcharge Loading</b>	The loading or forces a retaining wall may experience from embankment and traffic.
<b>Surface Transportation Program</b>	A federal funding program which includes public roads not on the NHS and not functionally classified as minor rural collectors or local roads or streets.
<b>Swell</b>	The increase in volume of rock when it is excavated, broken and placed into the embankment.
<b>System Ramps</b>	High-speed ramps that transfer traffic from freeway to freeway and/ or interstate to interstate.
<b>Tangent Runout</b>	The distance required to transition a roadway from a normal crown section to a section with the adverse crown removed, or vice versa.
<b>Tangent Section</b>	A segment of roadway that has a “straight” horizontal alignment with no curvature.
<b>Tangent Typical Section</b>	A cross-section of a roadway that has the high point of the pavement on the inside shoulder and slopes continuously from the inside shoulder to the outside shoulder.
<b>Taper Ramp</b>	A ramp that only consists of a taper either before or after the point of convergence depending on whether it is an exit or entrance ramp, respectively. On taper entrance ramps, acceleration occurs before the point of convergence. On taper exit ramps, deceleration occurs after the point of convergence.

<b>Technically Infeasible</b>	Defined by the Department of Justice in the <u>2010 ADA Standards for Accessible Design</u> as “ ... or because other existing physical or <i>site</i> constraints prohibit modification or <i>addition of elements, spaces</i> , or features that are in full and strict compliance with the minimum requirements.” (emphasis original to DOJ) A finding of “technically infeasible” still requires that the element of the pedestrian path in question be built to the minimum applicable standards to the maximum extent possible.
<b>Temporary Easements</b>	Easements that permit the use of private property for a time period not to exceed the duration of the project and for specific purposes such as channel cleanout.
<b>Temporary Road</b>	Temporary detours within the project right-of-way, generally on temporary embankments, to bypass a construction site.
<b>Threatened Species</b>	A species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its habitat.
<b>Thrie Beam Guardrail</b>	A roadside barrier system similar to W-beam but with an additional rib in the rail to accommodate a wider range of vehicle sizes.
<b>Tie Bar</b>	A deformed steel bar or connector embedded across a joint in a rigid slab to prevent separation of abutting slabs.
<b>Title</b>	Legal evidence of right to property or the right itself.
<b>Title Research</b>	A search conducted by right-of-way agent of records for property ownership, existing easements, encumbrances and other interests. Provides information for plotting property lines and identifying ownership.
<b>Toe Of Slope</b>	The intersection of the foreslope with level ground or with a backslope, forming a ditch.
<b>Topsoil</b>	Soil, usually dark in color, that extends from the surface of the ground to a depth of as much as two feet.
<b>Traffic Control Device</b>	A sign, signal, marking or other device on or adjacent to a roadway to regulate, warn or guide traffic.
<b>Traffic Control Plan</b>	An essential part of the overall design of the roadway that provides for the routing of traffic through and/ or around the construction zone while providing an adequate working area for the contractor.
<b>Traffic Signals</b>	Traffic control devices used to direct conflicting movements of vehicles and/ or pedestrians by assigning the right-of-way to various movements at different times.
<b>Transit</b>	A public transportation service.
<b>Transition Length</b>	The distance required transitioning a roadway from a normal crown section to full superelevation. It consists of the tangent runoff and the superelevation runoff length.

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<b>Transition Section</b>	A section of roadway that provides a gradual change between different typical cross-sections.
<b>Transverse Contraction Joint</b>	Contraction joints in concrete pavement placed either perpendicular to the centerline with load transfer devices across the joint or skewed from the perpendicular for noise reduction and riding comfort.
<b>Transverse Construction Joint</b>	Joints placed at the end of each day's work or when paving ceases for over 30 minutes. They are placed perpendicular to the centerline.
<b>Transverse Fill Slope</b>	A fill slope that is perpendicular to the roadway and is associated with cross roads, entrances, median crossings or ditch plugs, etc. It is generally more critical to vehicles than parallel fill slopes because errant vehicles tend to run into the transverse slope head on.
<b>Trumpet Interchange</b>	An interchange configuration used where there are only three approaches to be served.
<b>Turning Roadways</b>	Channelized turn lanes at at-grade intersections to provide free flow turn movements.
<b>Unchannelized Intersection</b>	An at-grade intersection consisting of two crossing roadways connected by radius returns, without channelizing devices.
<b>Underdrain Pipe</b>	A pipe in a granular trench, that parallels the edge of pavement and base course, designed to intercept water that gets into the base and subgrade and carry it away from the pavement structure.
<b>Unsuitable Material</b>	Materials (soil, rock, muck, debris, etc.), which are inappropriate for use in the embankment.
<b>Urban Area</b>	A built-up area located adjacent to or within municipal boundaries.
<b>Utility</b>	A privately, publicly or cooperatively owned line, facility or system for producing, transmitting or distributing communications, cable television, electricity, light, heat, gas, oil, crude products, water, steam, waste, stormwater not connected with highway drainage, or other similar commodity including a fire or police signal system or street lighting system.
<b>Valley Gutter</b>	A depressed pavement area that is constructed across a side road at an intersection to carry runoff across the side road.
<b>Vertical Alignment</b>	The line of the roadway curvature as related to the vertical direction.
<b>Vertical Clearance</b>	The clearance provided above the roadway to allow vehicles to successfully pass under a structure.
<b>Vertical Sight Distance</b>	The distance a driver can see through a vertical curve to the roadway ahead.

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<b>Visual Impacts</b>	Impacts of the proposed project on potential viewers of and from the project.
<b>Volume Studies</b>	Traffic studies conducted to determine the levels of traffic during specified time periods, e.g., average daily traffic (ADT), peak hour traffic, etc.
<b>W-Beam Guardrail</b>	A roadside barrier system with railing that is W-shaped.
<b>Waste</b>	The situation where the amount of available excavation exceeds the amount of needed embankment.
<b>Waste Sites</b>	Areas established for the disposal of excess excavation or unsuitable materials.
<b>Waterway Permit Data Sheet</b>	A data form from the <b>Environmental Permits Unit</b> that includes information about waterway permits, historic bridges and other environmental issues.
<b>Weaving Sections</b>	Highway segments where the pattern of traffic entering and leaving at contiguous points of access/ egress result in vehicle paths crossing each other.
<b>Wetlands</b>	Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

