

ROAD DESIGN MANUAL

INDEX

A

	PAGE
Abbreviations.....	1B-1, 1B-17
Acceleration Lanes.....	Appendix F-82
Access Control Policy	Appendix F-10
Access, Limited	2E-47
Access Management Concepts.....	Appendix F-7
Accessible Parking Spaces	Appendix A(1)-87
Accessible Routes.....	Appendix A(1)-48
Accident Records	Appendix A-84
Accommodating Pedestrians and Bicyclists.....	Appendix F-51
Activity Center Amenities Summary	Appendix B(2)-17
Additional Data-Requesting	2A-5
Additional Survey Data	2E-81
Administration Approval	2A-3
Advertisement	2G-31
Aggregate Base Material	2G-17
Agritourism Entrance Standards.....	Appendix F-115
Airport Clearance Requirements	Appendix A-108
Alternative Intersection and Interchange Policies	Appendix A-39
Approval of Noise Study	Appendix C-4
Approval of Project Plans.....	2F-10, 2G-31
Approved Plans to Scheduling & Contract Division for (final) Submission.....	2G-31
Approval Process for Roundabouts.....	Appendix A-58
Areas for Entrance Gutter - Standard CG-9D	Appendix D-34
Areas and Quantities.....	2D-20
Arranging Field Review (On-Site).....	2A-8
"As-Built" Plans.....	2G-36
Assembling Additional Available Data.....	2A-6
Assembling Photographs and Mapping.....	2A-7
Availability of Plans	2B-12

B

Barrier Type Selection.....	Appendix I-15, Appendix J-7
Baseline Stationing	2C-6
Bearings	2C-6
Bench Marks and Permanent Turning Points	2C-10
Bicycle Facility Guidelines	2E-29, Appendix A(1)-3
Bid Proposal	2G-29
Biddability Review	2G-30
Boarding and Alighting Areas	Appendix A(1)-106
Borrow Material	2E-1
Box Culvert "D" Numbers.....	2E-62
Bridges	2D-27, 2E-80
Bridge Identification Numbers.....	2E-63
Bridge Only Contract.....	2G-28
Buffer Strips.....	Appendix A(1)-69
Building Data Report.....	2F-2
Bulb-Outs.....	Appendix B(1)-59, Appendix B(2)-13
Bus Turnouts Design	Appendix A(1)-101
Bus Stops, Shelters and Boarding and Alighting Areas.....	Appendix A(1)-106

C

Cable Guardrail	Appendix I-5
Capacity Analyses.....	2B-6, 2C-12, 2D-9, Appendix B(1)-2
Capital Outlay Code	2E-58
Cattle Passes	2E-36
Certification Acceptance	2A-2
Check for Accuracy and Completeness	2F-1, 2G-23
Checklist-Quality Control	1E-2

Checklist For Site Plan Completeness	Appendix C-35
Chord Points (TC-5.01)	See <u>Road and Bridge Standards</u>
Clear Zone	Appendix A-27
Clear Zone Guidelines	Appendix A-27
Clear Zone Cost-Effectiveness Analysis	Appendix A-32
Clearing and Grubbing	2G-10
Coal Tar Pitch Emulsion	2G-17
Collector & Arterial Roadways	Appendix B(1)-5
Commercial Entrances	Appendix F-91
Commercial Entrance Channelization Island Options	Appendix F-98
Commercial Entrance Designs along Highways with Shoulders	Appendix F-108
Commercial Entrance Designs along Highways with Curb and Gutter	Appendix F-109
Commercial Entrance Designs along Local Streets with Curb and Gutter or Shoulders	Appendix F-110
Commercial Entrance Designs along Highways with Shoulders at Intersection	Appendix F-111
Commercial Entrance Designs along Highways with Curb and Gutter at Intersection	Appendix F-112
Commercial Entrance Designs to Serve A Private Subdivision Road / Street	Appendix F-107
Commercial Entrance Designs to Serve Drive-In Type Businesses	Appendix F-113
Commercial Entrance Separation from an Intersection	Appendix F-96
Commercial Entrance Sight Distance	Appendix F-95
Commercial Entrance Spacing	Appendix F-99
Compliance with Federal Regulations	2F-4
Complete Surveys	2B-2
Computation and Summarization of Earthwork Quantities	2G-8
Conducting the Public Hearing	2D-29
Constructability	Appendix A-147, 2B-11
Constructability Quality Review	2B-11, 2D-28, 2E-75 & 2G-25, Appendix E-1
Construction Areas	1C-1
Construction of Cattle Passes	2E-36
Construction Cost Estimate	2E-74, 2G-24
Construction Easements	2E-40
Construction Limits	2D-26
Construction Plan Revision	2G-33
Construction Plans	2G-1
Construction Quantities	2F-7
Construction Type Codes	2E-65
Contact with Construction Personnel	2G-32
Contacting Local Government and/or Agencies	2A-10
Contents of Information Brochures	2D-2
Continuous Left-Turn Lanes	Appendix F-72
Coordinating Time Schedules	2C-2
Coordination with Environmental Division	2B-3
Coordination with Landscape Architect	2B-3
Coordination with Other Divisions and Agencies	2B-3, 2B-8
Coordination with Other State Agencies	2B-3
Corner Clearance Downstream on a Minor Side Street	Appendix F-99
Correspondence Files	2G-35
Cost Estimate	2B-10, 2E-74, 2F-8, 2G-24
Counties and Municipalities	1C-1
Crest and Sag Vertical Curves	Appendix A-91, 2D-17
Criteria for Placement of Right Of Way Monuments	Appendix C-6
Cross Sections and Earthwork Quantities	2D-19
Crossover Grades	Appendix F-45
Crossover Spacing	Appendix F-26
Crusher Run Aggregate	2G-17
Cul – De – Sacs and Turnarounds	Appendix B(1)-23
Curb and Gutter	Appendix. B(1)-26, 2E-8, 2E-35
Curb	2E-9, 2E-35
Curb Extensions	Appendix. B(1)-59, Appendix. B(2)-13
Curb Ramp and Pedestrian Access Route Goals and Objectives	Appendix A(1)-49
Curb Ramp Application Details	Appendix A(1)-56
Curb Ramp Elements and Types	Appendix A(1)-51
Curb Cut Ramps (CG-12)	Appendix A(1)-49
Curve Data	2C-6

D

	PAGE
Data For Environmental Document	2B-9
Data Required For Plan Coordination Review	2G-28
Data Required From Project Manager (Ground surveys & R/W Authorization).....	2B-2, 2F-9
Data To Be Submitted (Environmental Evaluation)	2B-9
Deceleration Lanes	Appendix F-82
Definitions of Highway Terms	1B-6
Demolition of Buildings and Clearing of Parcels	2G-20
Demolition of Pavement - Obscuring Old Road	2E-30
Depicting Bridges on Plans.....	2E-38
Depicting Drainage on Plans	2E-7
Depicting Horizontal Alignment on Plans	2D-10
Depicting Limited Access Right of Way.....	2E-52
Depicting Tentative Design on Plans.....	2C-11
Depicting Vertical Alignment on Plans.....	2D-16
Description (Project).....	2E-60
Design Approval.....	2D-32
Design-Build Preliminary Engineering Guide	Appendix H-1
Design Exceptions	2D-18, Appendix A-9
Design Features Note	2E-73
Design or Combined Location and Design Public Hearing.....	2D-2
Design Requirements – Subdivision Street Design Guide	Appendix B(1)-2
Design Speed.....	Appendix A-3, A-86
Design Vehicle	Appendix A-8
Design Waivers	Appendix A-8, 2D-18
Design Traffic Volumes.....	Appendix A-86
Determination of Roadway Design.....	2B-6
Determining Approximate Length of Bridge	2E-38
Determining Approximate Width of Bridge	2E-38
Determining Areas and Quantities.....	2D-20
Determining Clear Zone Width	Appendix A-27
Determining Construction Quantities.....	2B-10, 2F-7
Determining Permanent Easements	2E-41
Determining Preliminary Engineering and Construction Cost	2B-10
Determining Project Limits	2D-24
Determining Right of Way and Utility Limits	2D-24, 2E-39
Determining Slope Easements	2E-40
Determining Surplus Right of Way	2E-55
Determining Width of Pavement.....	2D-20
Distribution of Copies of Permit Applications	Appendix C-21
Distribution of Prints.....	2D-32, 2E-82, 2F-10
Districts and Residencies.....	1C-1
Diverging Diamond Interchange	Appendix A-61
Diversions.....	2G-21
Double (Dual) Left Turn Lanes	Appendix F-72
Draft EIS.....	Appendix C-2
Drainage-Box Culvert Numbers.....	2E-62
Drainage Summary	2H-18
Drawing Requirements for Permits.....	Appendix C-12

E

Earthwork	2D-19
Easements	2E-40
Effective Turning Radius.....	Appendix B(1)-23
Elements of Typical Section – Subdivision Street Design Guide	Appendix B(1)-21
Embankment Slopes.....	Appendix A-33
Engineering Commentary	2D-8
Entrances	2D-22, Appendix I-23, Appendix B(1)-28, Appendix F-88
Entrances Affected By Highway Construction Project	Appendix F-105
Entrance Connections on Opposite Sides of a Roadway	Appendix F-101
Entrance Consolidation (Shared Use Entrances)	Appendix F-102
Entrance Definitions.....	Appendix F-88
Entrance Design Principles.....	Appendix F-88
Environmental Consideration.....	2B-3, 2B-8, Appendix A-85, Appendix C-2
Establishing Priorities (Coordinating Time Schedules).....	2C-2

	PAGE
Estimating Quantities - Preparation of Estimate	2E-74
Evaluating Alternatives.....	2A-9
Evaluation - Post Construction Review	2G-38
Exceptions.....	Appendix F-32, Appendix A-9
Expansion Joints (Rigid Pavement).....	Appendix C-78

F

Federal Regulations	2F-4
Fence.....	2E-15
FHWA Approval	2D-33
Field Inspection	2E-78
Field Inspection Prints.....	2E-82
Field Review	2A-8
Field Reconnaissance	2C-4
Final Environmental Document.....	2D-33
Final Environmental Impact Statement (EIS)	Appendix C-3
Final Estimate.....	2G-24
Final Notebook	2G-36
Final Preparation of Plans For Construction	2G-28
Final Right of Way Data Sheet	2F-1
Final Scoping.....	2A-11
Final Scoping Certification	2D-34
Final Submission.....	2G-31
Finalizing Plans	2G-1
Fixed Objects	Appendix I-15, Appendix J-7
Flexibility in Design.....	Appendix A-1
Formal Construction Revisions.....	2G-33
Formal Plan Revisions	2F-11
Frontage Road (Service Road).....	2C-11, Appendix F-104
Functional Classification	2E-63, Appendix A-9, Appendix B(1)-2, Appendix. F-8
Future Construction (Project Termini)	2D-26

G

General Construction Notes and Erosion and Siltation Control Narrative.....	Appendix C-21
General Intersection and Entrance Spacing Criteria.....	Appendix F-25
Geometric Design Standards.....	Appendix A-1
Gore Details	Appendix C-73
Government Stream Gauging Stations	2G-28
Grading Contours.....	2E-36
Grading Diagram & Summary.....	2H-25, 2G-13, 2G-8
Greenways	2E-29
Ground Surveys	2B-1
Guardrail.....	Appendix I-1, Appendix J-1
Guidelines For Curb Ramp Location	Appendix A(1)-50
Guidelines For RRR Projects.....	Appendix A-81

H

Hand Rail Requirements.....	Appendix A(1)-75
Hazardous Material/Waste Sites	2F-3
Highway Capital Outlay Code.....	2E-58
Highway Terms	1B-6
Historical Marker Relocation	2E-37
Holding the Field Inspection.....	2E-78
Horizontal Alignment.....	2A-9, 2B-7, 2C-10
Hydraulic Commentary For Permit Applications	Appendix C-20
Hydraulics (Preliminary).....	2B-3
Hydrologic Data Sheet.....	2H-7, 2E-71

I

	PAGE
Identification (Plan & Profile Sheets, Items)	2C-5, 2C-9, 2D-9, 2E-58
Illustration of Directional Median Opening for Left Turns and U-Turns	Appendix F-77
Impact Attenuators (Crash Cushions)	Appendix I-10, Appendix J-5
Incidental Items	2E-8
Incidental Items (Labeling)	2E-35
Incidental Summary	2H-26, 2G-18
Incorporating Changes into Plans	2B-13
Incorporating Comments into Design	2C-13
Index of Sheets	2H-4, 2E-66
Informational Brochure and Data for Environmental Document	2D-2
Informal Revisions – Minor Changes	2F-13
Initial Design	2C-11
Innovative Design Proposals – Subdivision Street Design Guide	Appendix B(1)-61
Innovative Intersections & Interchanges	Appendix A-39, Appendix F-48
Integrated Project Manager	2F-7, 2G-1, 2G-23
Interchange Design	Appendix A-22, 2B-7
Interparcel Vehicular Connections	Appendix F-102
Intersecting Cross Road Grades	Appendix F-48
Intersection Design	Appendix F-14, Appendix A-39
Intersection Design Objectives	Appendix F-14
Intersection Design Principles	Appendix F-15
Intersection Sight Distances	2D-14, Appendix F-40, Appendix B(1)-19
Interstate Survey	2B-1
Interstate and Primary Projects	2A-2
Interstate, Primary, Urban and Secondary Projects	2D-4
Items Not in Contract	2F-4

L

Labeling Incidental Items	2E-35
Landscape Consideration	B(1)-45
Layout	2C-5, 2E-59
Lane Transitions	Appendix A-11
Left and Right Turn Lane Criteria	Appendix F-55
Limited Access Establishment and Change Guidelines	2E-47
Limited Access Fencing	2E-51
Limited Access Lines	2E-51
Limits of Maintenance Responsibility for Private and Commercial Entrances	Appendix F-96
Local Roadways	Appendix A-25, Appendix B(1)-5
Location Map	2H-3, 2E-64, 2E-68
Location Public Hearing	Appendix C-3
Location Corridor Study	2A-1

M

Mail Box and Cluster Box Units	Appendix B(1)-56
Match lines	2C-6
Median Barriers	Appendix I-10
Medians	2E-9, Appendix A-26, Appendix F-75
Median Crossover Location Approval Process	Appendix F-34
Median Crossover Grades	Appendix F-45
Mini-Roundabouts	Appendix A-50
Median Openings/Crossovers	Appendix F-45
Metes and Bounds	2C-8
Minimum Angle of Intersections	Appendix F-21
Minimum Plan Projects	Appendix A-119
Minor Structure Excavation (Ratio)	Appendix D-17
Moderate Volume Commercial Entrance Design Along Highways with Shoulders	Appendix F-114
Mountable Curb	2E-35
Multimodal Design Standards for Mixed-Use Urban Centers	Appendix B(2)-1

	N	PAGE
No Plan Projects.....		Appendix A-112, A-117
Noise Abatement.....		Appendix C-2
Nomenclature.....		1B-1
Non-Recoverable Parallel Slopes.....		Appendix A-37
North Arrow.....		2C-7
Notes.....		2E-64
Notice of Willingness to Hold Public Hearing.....		2D-6
Numbers - Parcels and Buildings.....		2F-1
Numbering (Plan & Profile Sheets).....		2C-5, 2C-9

	O	
Obtaining Administrative Approval.....		2D-33
Obscuring Old Roadway.....		2E-30
Occupiable Space / Building on Roadway Projects.....		2B-4
Operating Speed.....		Appendix A-7
Operational Analysis.....		Appendix B(1)-2, 2B-6, 2C-12, 2D-9
Original Right Of Way Plans.....		2F-10
Other Design Considerations – Subdivision Street Design Guide.....		Appendix B(1)-41
Outdoor Advertising Signs on Plans.....		2F-3

	P	
Parcel Numbers and Building Demolition Numbers.....		2F-1
Parking Spaces.....		Appendix A(1)-77
Pavement Cross Slopes.....		Appendix A-93, 2E-70
Pavement Recommendations.....		2D-27
Pavement Summary.....		2H-24, 2G-16
Pavement Termination.....		2D-25
Pavement Transitions.....		Appendix A-11, Appendix F-61
Pedestrian Access Routes.....		Appendix A(1)-48
Pedestrian Ramps.....		2E-35
Permanent Easements.....		2E-41
Permit Application Procedure.....		Appendix C-8
Permit Assembly.....		2F-7
Permit Determination.....		2B-8
Permit Sketches and Procedure.....		Appendix C-8
Plan Abbreviations and Symbols.....		1B-17
Plan Assembly (Field Inspection).....		2E-76
Plan Changes.....		2F-13
Plan Operation - Post Construction Review.....		2G-38
Plan Process – Partial Take Parcel.....		2F-4
Plan Quantities – Determination of Plan Quantities.....		2G-14
Plan Revisions.....		2E-57, 2F-11, 2G-33
Plans Prepared by Other Divisions.....		2G-5
Plotting Construction Limits.....		2D-26
Plotting Cross Sections.....		2D-19
Plotting Edges of Pavement.....		2D-22
Plotting Entrances and Median Crossovers.....		2D-22
Plotting of Profile Sheets.....		2C-8
Policy - Final Scoping.....		2A-11
Post-Certification Plan Changes.....		2G-28
Post Construction Review.....		2G-38
Posted Speed.....		Appendix A-7
Pre-advertisement Meeting.....		2G-27
Predetermined Design.....		2C-11
Pre-hearing Meeting.....		2D-5, 2D-29
Preliminary Design.....		2C-1
Preliminary Engineering (Authorization).....		2A-1
Preliminary Field Inspection.....		2B-12
Preliminary Plan Development.....		2A-5
Preparation of Construction Cost Estimate.....		2G-24
Preparation and Processing of Public Hearing Data.....		2D-4

	PAGE
Preparation of Engineering Commentary	2D-8
Preparation of Final Estimate	2G-37
Preparation of Inspection Reports	2B-13
Preparation of Plan Assembly For Construction	2G-28
Preparation of Plan and Profile Sheets	2C-5
Preparation of Project Cost Estimate and Report	2B-13, 2F-8
Preparation of Report.....	2A-10
Preparation of Informational Brochures.....	2D-2
Pre-Public Hearing Meeting.....	2D-5, 2D-29
Principal Abbreviations.....	1B-1
Principal-Minor Arterial.....	2B-1
Private Entrance Detail	Appendix B(1)-28, Appendix F-89
Private Entrances (Existing State Highways).....	Appendix B(1)-28, Appendix F-89
Procedures For An Informal (Open Forum) Public Hearing.....	2D-30
Procedures For Determining The Location and Design of Curb Ramps.....	Appendix A(1)-51
Procedures For A Formal The Public Hearing	2D-29
Processing Formal Plan Revisions.....	2F-12
Profiles.....	2D-16, 2C-9
Project Approval.....	2D-32, 2F-10, 2G-29
Project Assignment and Field Reconnaissance.....	2C-4
Project Development.....	2A-1, Appendix A-85
Project Development Process	1D-1
Project Final Scoping Certification.....	2D-34
Project Initiation.....	2A-1
Project Length Tabulation Block.....	2E-60
Project Limits.....	2D-24
Project Location Map	2H-3, 2E-68
Project Management.....	2C-4
Project Managers Responsibilities	2D-4
Project Numbers	2C-5, 2E-64
Project Review	2C-1, 2D-1
Project Section Number.....	2E-64
Project Scoping.....	2A-11
Project Termini	2D-24
Projected Traffic	Appendix B(1)-2
Projecting Horizontal Alignment.....	2A-9
Projecting Vertical Alignment.....	2A-9
Proposed Conveyances of Residue Parcels.....	2F-13
Proposed Right Of Way and Limited Access	2E-39
Public Hearing Data	2D-27
Public Involvement Program.....	2A-10
Publishing Notice of the Public Hearing	2D-7
Pug Mill Mix Aggregates	2G-16
Purpose and Scope - Post Construction Review	2G-38

Q

Quantity Totals	2E-74
Quality Control (Review)	1E-1
Quality Control Checking Procedure	2G-26
Quality Control Checklist.....	1E-2

R

	PAGE
Rails With Trails	Appendix A(1)-46
Railroad Force Account – Railway Flagging and Watchman	2G-4
Railroads-Highway Construction Adjacent to Railway Tracks	2E-27
Railroads in Virginia	1B-23
Ramp Design.....	Appendix A-22
Ramp Terminal and Speed Change Lane Design	Appendix C-71
Ratios for Minor Structure Excavation	Appendix D-17
Recommendation for Approval	2F-10
Recommending a Solution.....	2D-31
Record Retention	2G-35, 2G-36, 2G-45
Recreational Access Road	Appendix A-15
Reference Block.....	2C-7
Reference Points.....	2C-7
Refining Horizontal Alignment	2B-7, 2D-10
Refining Vertical Alignment.....	2B-8, 2D-11
Reinforced Soil Slopes.....	2E-21
Reports - Post Construction Review.....	2G-38
Request for Additional Survey Data	2E-81
Request for Appropriate Environmental Document	2B-9
Request for Approval of Major Design Features	2D-33
Request for Cost Estimates	2B-10, 2F-8
Request for Environmental Evaluation	2B-9
Request for Hydraulic Evaluation	2B-3
Request for Public Hearing.....	2D-6
Request for Right Of Way Authorization from FHWA	2F-9
Request for Soils Data (Preliminary)	2B-3
Request for Sound Wall Design.....	2E-80
Request for Special Design Plans	2E-79
Request for Supplemental Data.....	2D-27
Request for Traffic Data	2A-6
Requesting Photographic Coverage/Topographic Mapping.....	2A-7
Resolution of Borrow/Surplus and Unsuitable Material.....	2E-1
Resolution of Pending Construction Details	2G-1
Resolution of Public Hearing Questions.....	2D-31
Responsibility of the Project Manager & the District Public Affairs Section	2D-4
Rest Areas.....	Appendix A(1)-95
Restricted Vertical Clearances	2D-13
Restricting Left Turn Movements and Commercial Entrances	Appendix F-97
Retaining Structure	2E-21
Retaining Walls	2E-17
Retaining Wall Excavation	2E-18
Retention of Design Files.....	2G-35
Review of Correspondence	2C-3
Review of Data-Setting Up Files.....	2C-3
Review of Draft Environmental Document	2D-2
Review of Plans.....	2F-1, 2G-23
Review of Public Hearing Transcript and Post-Hearing Correspondence	2D-31
Review of Work Load (Coordinating Time Schedules).....	2A-4, 2C-2
Review Process - Post Construction Review	2G-38
Reviewing and Setting Up Route File (Electronic)	2C-3
Reviewing Reports.....	2G-1
Reviewing The Proposed Method of Development	2B-13
Reviewing Work Load and Assembling Data	2C-2, 2A-4
Revision Data Sheet (Construction)	2H-6, 2G-44
Revision Data Sheet (Right of Way).....	2G-42
Revisions (Construction).....	2G-33
Right Of Way	2C-8, Appendix C-4
Right Of Way Data Sheet.....	2H-5, 2E-68, 2F-1
Right Of Way Monuments.....	Appendix C-5
Right Of Way Note on Title Sheet	2G-23
Right Of Way Plans.....	2F-1
Right Of Way Revisions	2F-11
Right Turn Lanes.....	Appendix F-78
Road and Street Names	2C-8

	PAGE
Roadside Development.....	2H-19, 2G-18
Roadway Geometric Design Criteria – Subdivision Street Design Guide	Appendix B(1)-5, B(2)-9
Roundabouts	2H-27, Appendix A-47, Appendix B(1)-52, Appendix F-48
Route Files	2C-3, 2G-35
RRR Projects.....	Appendix A-81
Rural Roadway Design	Appendix A-13

S

Safety Analysis.....	2B-6
Safety Items and Sequence of Construction.....	2E-78
Safety Projects	Appendix I-26, Appendix C-32
Safety Rest Areas	Appendix A(1)-95
Sag Vertical Curve	2A-9, 2B-7, 2D-17, Appendix A-91
Scale.....	2C-7
Scheduling Preliminary Field Inspection	2B-12
Scheduling Project with Work Load.....	2A-4
Scheduling the Public Hearing.....	2D-7
Secondary Projects.....	2B-2, Appendix A-2,
Secondary Roads (Arterial-Collector-Local Roads)	2B-2
Security of Estimates	2E-74
Sequence of Construction.....	Appendix A-131, A-134
Service Roads	2C-11, Appendix A-21
Setting Project Termini.....	2D-25
Setting Up Correspondence Files (Electronic)	2C-3
Setting Up Route Files	2C-3
Shared Entrances and Internal Site Interconnection	Appendix F-103
Shared Roadways.....	Appendix A(1)-15
Shared Use Path.....	Appendix A(1)-22
Sheet Numbers	2E-66
Shoulder Design.....	Appendix A-24
Showing Bridge Limits	2E-38
Showing Project Termini on Plans.....	2D-24
Sidewalk	Appendix A(1)-71, 2E-27
Sidewalk Transition From Roadway onto Bridge	Appendix A(1)-76
Sight Distance	2D-11, Appendix A-69, Appendix A-92, Appendix B(1)-19, Appendix F-40
Signalized Intersection Spacing.....	Appendix F-24
Signs.....	2F-3
Sign Islands.....	2E-27
Site Plan Review	Appendix C-35
Site Plans	Appendix C-67, 2C-8
Slope Easement.....	2E-39
Slopes For Approach Barriers	Appendix I-19, Appendix J-10
Soil Data (Final).....	2E-1
Soil Data (Preliminary)	2B-3
Soil Survey and Pavement Design	2E-1
Soliciting Comments Within Division and Completing Design	2C-13
Sound Barrier Wall Design Procedure	2E-24
Spacing Standards for Commercial Entrances, Intersections, & Median Crossovers	Appendix F-26
Spacing Standards for Commercial Entrances, Intersections Near Interchange Ramps	Appendix F-30
Special Design Bridges.....	2G-21
Special Design Drawings	2E-79, 2G-2
Specialty Summaries	2G-18
Spline Grades.....	2D-16
Staking For Concrete Items	2E-11
Standard JB-1 Junction Box	Appendix D-16
Steps and Handrails.....	2E-26
Stippling.....	2D-24
Stone for Erosion Control.....	Appendix D-1
Stopping Sight Distance.....	2D-11, Appendix A-92, Appendix B(1)-19, Appendix F-42
Stormwater Management	2H-20, 2G-20
Street Names	2C-8
Streetscape	Appendix B(1)-43
Studying Alternate Solutions.....	2A-9, 2D-31
Subbase End Areas at Curb and Gutter Locations.....	Appendix D-33

	PAGE
Subdivision Street Design Guide	Appendix B(1)-1
Submission of Plan Assembly	2F-9, 2G-31
Summary Sheets	2G-6
Supplemental Sheets	2E-58
Surplus Material	2E-1
Survey Authorization	2B-1
Systems Operations Regions	1C-8

T

Taper Lengths	Appendix F-61
Temporary Diversion	Appendix A-23, 2G-21
Temporary Easement (Construction)	2E-42
Temporary Traffic Control Plans	Appendix A-137
Terminals	Appendix I-2
Title Sheet	2H-1, 2H-2, 2E-58
Topographic Mapping	2A-7
Topography	2C-7
Tort Liability	Appendix A-99
Traditional Neighborhood Design – Subdivision Street Design Guide	Appendix B(1)-58
Traffic Barriers	Appendix I-2, I-15
Traffic Calming – Subdivision Street Design Guide	Appendix B(1)-51
Traffic Data	2A-6
Trails and Trailheads	Appendix A(1)-43
Transit (Bus) Facilities Design Criteria	Appendix A(1)-101
Transit Signs, Benches, Stops and Shelters	Appendix A(1)-106
Transition Curves (TC-5.01)	See <u>Road and Bridge Standards</u>
Transitions and Turn Lanes	Appendix A-10, Appendix F-61
Transportation Facilities (Rail Platforms and Station Signs)	Appendix A(1)-111
Tree Walls and Tree Wells	2E-35
Turning Lanes	Appendix F-55
Type Codes	2E-61
Types of Permits	Appendix C-8
Typical Section Sheet	2H-16, 2H-17, 2E-70

U

Underdrains	2E-29
Underground Storage Tanks	2F-2
Unsignalized Intersection Spacing	Appendix F-26
Unsuitable Material	2E-1
Updating Plan Identification	2D-9
Urban Roadway Design	Appendix A-17
Urban Surveys	2B-1
Urban Projects	2A-1
Utilities	2C-7, 2G-21
Utility Adjustments	2G-21
Utility Easements	2E-44
Utility Field Inspection	2E-83

V

Value Engineering	2B-14
Vertical Alignment	2A-9, 2B-7, 2D-11
Vertical Clearance	2D-13
Vertical Control Data	2C-10

W

Warrants for Left Turn Storage Lanes on Four-Lane Highways	Appendix F-57
Warrants for Left Turn Storage Lanes on Two-Lane Highways	Appendix F-58
Water Related Permits	Appendix C-8
Wells	2F-2
Weights of Asphalt Concrete	2G-17
Widths, Roadway and Travelway	Appendix A-85