

ROAD DESIGN MANUAL

INDEX

A

	PAGE
Abbreviations.....	1B-1, 1B-17
Acceleration Lanes.....	Appendix F-99
Access, Limited.....	2E-49
Access Management Concepts.....	Appendix F-7
Accessible Parking Spaces.....	Appendix C-4
Accessible Routes.....	Appendix A-110
Accident Records.....	Appendix A-41
Accommodating Pedestrians and Bicyclists.....	Appendix F-70
Activity Center Amenities Summary.....	Appendix B(2)-17
Additional Data-Requesting.....	2A-5
Additional Survey Data.....	2E-83
Administration Approval.....	2A-3
Advertisement.....	2G-34
Aggregate Base Material.....	2G-18
Airport Clearance Requirements.....	Appendix A-128
Alternative Intersection Design.....	Appendix F-69
Approval of Noise Study.....	Appendix C-27
Approval of Project Plans.....	2F-10, 2G-34
Approved Plans to Scheduling & Contract Division for (final) Submission.....	2G-34
Approval Process for Roundabouts.....	Appendix F-45
Areas for Entrance Gutter - Standard CG-9D.....	Appendix D-34
Areas and Quantities.....	2D-16
Arranging Field Review (On-Site).....	2A-8
"As-Built" Plans.....	2G-39
Assembling Additional Available Data.....	2A-6
Assembling Photographs and Mapping.....	2A-7
Availability of Plans.....	2B-10

B

Barrier Type Selection.....	Appendix I-14
Baseline Stationing.....	2C-6
Bearings.....	2C-6
Bench Marks and Permanent Turning Points.....	2C-10
Berm Ditch Locations.....	2E-11
Bicycle Facility Guidelines.....	2E-31, Appendix A-64
Bid Proposal.....	2G-32
Biddability Review.....	2G-33
Borrow Material.....	2E-1
Box Culvert "D" Numbers.....	2E-22
Bridges.....	2D-23, 2E-82
Bridge Approach.....	2E-11
Bridge Identification Numbers.....	2E-62
Bridge Only Contract.....	2G-31
Buffer Strips.....	Appendix A-121
Building Data Report.....	2F-2
Bus Pullouts.....	Appendix F-99

C

Cable Guardrail.....	Appendix I-5
Capacity Analyses.....	2B-4, 2C-12, 2D-9, Appendix B(1)-2
Capital Outlay Code.....	2E-59
Cattle Passes.....	2E-38
Certification Acceptance.....	2A-2
Check for Accuracy and Completeness.....	2F-1, 2G-26
Checklist-Quality Control.....	1E-2
Checklist For Site Plan Completeness.....	Appendix C-58
Chord Points (TC-5.01).....	See <u>Road and Bridge Standards</u>

	PAGE
Clear Zone.....	Appendix A-25
Clear Zone Guidelines	Appendix A-25
Clear Zone Cost-Effectiveness Analysis	Appendix A-30
Clearing and Grubbing.....	2G-10
Coal Tar Pitch Emulsion	2G-18
Collector & Arterial Roadways.....	Appendix B(1)-5
Commercial Entrances.....	Appendix F-108
Commercial Entrance Channelization Island Options	Appendix F-115
Commercial Entrance Designs along Highways with Shoulders.....	Appendix F-125
Commercial Entrance Designs along Highways with Curb and Gutter	Appendix F-126
Commercial Entrance Designs along Local Streets with Curb and Gutter or Shoulders.....	Appendix F-127
Commercial Entrance Designs along Highways with Shoulders at Intersection.....	Appendix F-128
Commercial Entrance Designs along Highways with Curb and Gutter at Intersection	Appendix F-129
Commercial Entrance Designs to Serve A Private Subdivision Road / Street.....	Appendix F-124
Commercial Entrance Designs to Serve Drive-In Type Businesses	Appendix F-130
Commercial Entrance Separation From an Intersection.....	Appendix F-113
Commercial Entrance Sight Distance.....	Appendix F-112
Commercial Entrance Spacing	Appendix F-116
Commercial Entrance Separation from an Intersection	Appendix F-113
Compliance with Federal Regulations	2F-4
Complete Surveys.....	2B-2
Computation and Summarization of Earthwork Quantities	2G-8
Conducting the Public Hearing	2D-25
Constructability.....	Appendix A-181, 2B-9
Constructability Quality Review	2B-9, 2D-24, 2E-77 & 2G-28, Appendix E-1
Construction Areas.....	1C-1
Construction of Cattle Passes	2E-38
Construction Cost Estimate	2E-76, 2G-27
Construction Easements.....	2E-44
Construction Limits.....	2D-22
Construction Plan Revision.....	2G-36
Construction Plans	2G-1
Construction Quantities.....	2F-7
Construction Type Codes	2E-66
Contact with Construction Personnel	2G-35
Contacting Local Government and/or Agencies	2A-10
Contents of Study Reports.....	2D-2
Continuous Left-Turn Lanes	Appendix F-89
Coordinating Time Schedules.....	2C-2
Coordination with Environmental Division	2B-3
Coordination with Other Divisions and Agencies	2B-3, 2B-6
Coordination with Other State Agencies	2B-3
Corner Clearance Downstream on a Minor Side Street	Appendix F-116
Correspondence Files	2G-38
Cost Estimate	2B-8, 2E-76, 2F-8, 2G-27
Counties and Municipalities	1C-1
Crest and Sag Vertical Curves	Appendix A-48, 2D-12
Criteria for Placement of Right Of Way Monuments.....	Appendix C-29
Cross Sections and Earthwork Quantities.....	2D-15
Crossover Grades	Appendix F-37
Crossover Spacing.....	Appendix F-23
Crusher Run Aggregate.....	2G-18
Cul – De – Sacs and Turnarounds	Appendix B(1)-23
Curb and Gutter.....	APPEN. B(1)-26, 2E-13, 2E-37
Curb.....	2E-14, 2E-37
Curb Ramp and Pedestrian Access Route Goals and Objectives	Appendix A-105
Curb Ramp Application Details.....	Appendix A-115
Curb Ramp Elements and Types	Appendix A-107
Curb Cut Ramps (CG-12)	2E-37, Appendix A-115
Curve Data	2C-6

D

	PAGE
Data For Environmental Document	2B-7
Data Required For Plan Coordination Review	2G-31
Data Required From Project Manager (Ground surveys & R/W Authorization)	2B-2, 2F-9
Data To Be Submitted (Environmental Evaluation)	2B-7
Deceleration Lanes	Appendix F-99
Definitions of Highway Terms	1B-6
Demolition of Buildings and Clearing of Parcels	2G-23
Demolition of Pavement - Obscuring Old Road	2E-32
Depicting Bridges on Plans.....	2E-40
Depicting Drainage on Plans	2E-7
Depicting Horizontal Alignment on Plans	2D-10
Depicting Tentative Design on Plans.....	2C-11
Depicting Vertical Alignment on Plans.....	2D-12
Description.....	2E-61
Design Approval.....	2D-28
Design-Build Preliminary Engineering Guide	H-1
Design Exceptions	2D-13, Appendix A-8
Design Features Note	2E-75
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-43
Design Waivers	Appendix A-8, 2D-13
Design Traffic Volumes	Appendix A-43
Designing Drainage.....	2E-7
Determination of Roadway Design	2B-4
Determining Approximate Length of Bridge	2E-40
Determining Approximate Width of Bridge	2E-40
Determining Areas and Quantities.....	2D-16
Determining Clear Zone Width	Appendix A-25, A-27M
Determining Construction Quantities	2B-8, 2F-7
Determining Permanent Easements	2E-43
Determining Project Limits	2D-20
Determining Right of Way and Utility Limits	2D-20, 2E-41
Determining Slope Easements	2E-42
Determining Surplus Right of Way	2E-54
Determining Width of Pavement.....	2D-16
Distribution of Copies of Permit Applications	Appendix C-44
Distribution of Prints	2D-28, 2E-84, 2F-10
Districts and Residencies.....	1C-1
Diverging Diamond Interchange	Appendix F-52
Diversions.....	2G-24
Double (Dual) Left Turn Lanes	Appendix F-89
Draft EIS	Appendix C-25
Drainage-Box Culvert Numbers.....	2E-62
Drainage Design	2E-7
Drainage Summary	2H-18, 2G-16
Drawing Requirements for Permits.....	Appendix C-35

E

Earthwork	2D-16
Easements	2E-42
Effective Turning Radius.....	Appendix B(1)-23
Elements of Typical Section – Subdivision Street Design Guide	Appendix B(1)-21
Embankment Slopes.....	Appendix A-31
End Sections for Pipe Culverts	2E-9
Engineering Commentary	2D-8
Entrances	2D-18, Appendix I-23, Appendix B(1)-28, Appendix F-105
Entrance Connections on Opposite Sides of a Roadway	Appendix F-118
Entrance Consolidation (Shared Use Entrances)	Appendix F-119
Entrance Definitions	Appendix F-105
Entrance Design Principles.....	Appendix F-105
Environmental Consideration.....	2B-3, 2B-6, Appendix A-42, Appendix C-25
Establishing Priorities (Coordinating Time Schedules).....	2C-2

	PAGE
Estimating Quantities - Preparation of Estimate	2E-76
Evaluating Alternatives.....	2A-9
Evaluation - Post Construction Review	2G-41
Exceptions.....	Appendix F-29, Appendix A-8
Expansion Joints (Rigid Pavement).....	Appendix C-101
Extension of Existing Pipe	2E-11

F

Federal Regulations	2F-4
Fence.....	2E-20
FHWA Approval	2D-29
Field Inspection	2E-80
Field Inspection Prints.....	2E-84
Field Review	2A-8
Field Reconnaissance	2C-4
Final Environmental Document.....	2D-29
Final Environmental Impact Statement (EIS)	Appendix C-26
Final Estimate.....	2G-27
Final Notebook	2G-39
Final Preparation of Plans For Construction	2G-31
Final Right of Way Data Sheet	2F-1
Final Scoping.....	2A-11
Final Scoping Certification	2D-30
Final Submission.....	2G-34
Finalizing Plans	2G-1
Fixed Objects	Appendix I-14
Flexibility in Design.....	Appendix A-1
Formal Construction Revisions.....	2G-36
Formal Revisions - Major Changes	2F-11
Frontage Road (Service Road).....	2C-11, Appendix F-121
Functional Classification	2E-65, Appendix A-8, Appendix B(1)-2, Appendix. F-8
Future Construction (Project Termini)	2D-22

G

General Construction Notes and Erosion and Siltation Control Narrative.....	Appendix C-44
General Intersection and Entrance Spacing Criteria.....	Appendix F-22
Geometric Design Standards.....	Appendix A-1
Gore Details	Appendix C-94
Government Stream Gauging Stations	2G-31
Grading Contours	2E-38
Grading Diagram & Summary	2H-25, 2G-13, 2G-9
Greenways	2E-31
Ground Surveys	2B-1
Guardrail.....	Appendix I-1
Guidelines For Curb Ramp Location	Appendix A-106

H

Hazardous Material/Waste Sites	2F-3
Highway Capital Outlay Code.....	2E-59
Highway Terms	1B-6
Historical Marker Relocation.....	2E-39
Holding the Field Inspection.....	2E-80
Horizontal Alignment.....	2A-9, 2B-5
Hydraulic Commentary For Permit Applications	Appendix C-43
Hydraulics (Preliminary).....	2B-3
Hydraulics Coordination.....	2C-4
Hydrologic Data Sheet.....	2H-7, 2E-73

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-94
Impact Attenuators (Crash Cushions)	Appendix I-10
Incidental Items	2E-13
Incidental Items (Labeling)	2E-37
Incidental Summary	2H-26, 2G-19
Incorporating Changes into Plans	2B-11
Incorporating Comments into Design	2C-13
Index of Sheets	2H-4, 2E-67
Informal Revisions - Minor Changes	2F-13
Informational Brochure and Data for Environmental Document	2D-2
Initial Design	2C-11
Innovative Design Proposals – Subdivision Street Design Guide	Appendix B(1)-57
Integrated Project Manager	2F-7, 2G-1, 2G-26
Interchange Design	Appendix A-20, 2B-4
Interparcel Vehicular Connections	Appendix F-119
Intersecting Cross Road Grades	Appendix F-40
Intersection Design	Appendix F-11
Intersection Design Objectives	Appendix F-11
Intersection Design Principles	Appendix F-12
Intersection Sight Distances	Appendix F-35, 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-37
Layout	2C-5, 2E-60
Lane Transitions	Appendix A-10
Left and Right Turn Lane Criteria	Appendix F-73
Limited Access Fencing	2E-52
Limited Access Establishment and Change Guidelines	2E-49
Limited Access Lines	2E-52
Limits of Maintenance Responsibility for Private and Commercial Entrances	Appendix F-113
Load Carrying Grate	2E-10
Local Roadways	Appendix B(1)-5
Location Map	2H-3, 2E-63, 2E-68
Location Public Hearing	Appendix C-26
Location Corridor Study	2A-1

M

Match lines	2C-6
Median Barriers	Appendix I-11
Medians	2E-14, Appendix F-92
Median Crossover Location Approval Process	Appendix F-30
Median Crossover Grades	Appendix F-37
Mini-Roundabouts	Appendix F-51
Median Openings/Crossovers	Appendix F-37
Metes and Bounds	2C-8
Minimum Angle of Intersections	Appendix F-18
Minimum Plan Projects	Appendix A-139
Minor Structure Excavation	2E-8
Minor Structure Excavation (Ratio)	Appendix D-17
Moderate Volume Commercial Entrance Design Along Highways with Shoulders	Appendix F-112, F-131
Mountable Curb	2E-37
Multimodal Design Standards for Mixed-Use Urban Centers	Appendix B(2)-1

N	PAGE
No Plan Projects.....	Appendix A-132
Noise Abatement.....	Appendix C-25
Nomenclature.....	1B-1
Non-Recoverable Parallel Slopes.....	Appendix A-35
Non-Standard Roadside Ditches.....	2E-8
North Arrow.....	2C-7
Notes.....	2E-65
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-28
Obscuring Old Roadway.....	2E-32
Operating Speed.....	Appendix A-7
Operational Analysis.....	Appendix B(1)-2, 2B-4, 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 B(1)-21, Appendix C-1
Pavement Cross Slopes.....	Appendix A-50, 2E-72
Pavement Recommendations.....	2D-23
Pavement Summary.....	2H-24, 2G-16
Pavement Termination.....	2D-21
Pavement Transitions.....	Appendix A-10, Appendix F-78
Pedestrian Access Routes.....	Appendix A-110
Pedestrian Ramps.....	2E-37
Permanent Easements.....	2E-43
Permit Application Procedure.....	Appendix C-31
Permit Assembly.....	2F-7
Permit Determination.....	2B-6
Permit Sketches and Procedure.....	Appendix C-31
Pipe Endwalls with Load Carrying Grate.....	2E-10
Plan Abbreviations and Symbols.....	1B-17
Plan Assembly (Field Inspection).....	2E-78
Plan Library.....	2G-37
Plan Operation - Post Construction Review.....	2G-41
Plan Quantities – Determination of Plan Quantities.....	2G-14
Plan Revisions.....	2E-58, 2F-11, 2G-36
Plans Prepared by Other Divisions.....	2G-5
Plotting Construction Limits.....	2D-22
Plotting Cross Sections.....	2D-15
Plotting Edges of Pavement.....	2D-18
Plotting Entrances and Median Crossovers.....	2D-18
Plotting of Profile Sheets.....	2C-8
Policy - Final Scoping.....	2A-11
Post-Certification Plan Changes.....	2G-31
Post Construction Review.....	2G-41
Posted Speed.....	Appendix A-7
Pre-advertisement Meeting.....	2G-30
Predetermined Design.....	2C-11
Pre-hearing Meeting.....	2D-5, 2D-25
Preliminary Design.....	2C-1
Preliminary Engineering (Authorization).....	2A-1
Preliminary Field Inspection.....	2B-10
Preliminary Plan Development.....	2A-5
Preparation of Construction Cost Estimate.....	2G-27
Preparation and Processing of Public Hearing Data.....	2D-4

	PAGE
Preparation of Engineering Commentary	2D-8
Preparation of Final Estimate	2G-40
Preparation of Inspection Reports	2B-11
Preparation of Plan and Profile Sheets	2C-5
Preparation of Project Cost Estimate and Report	2B-11, 2F-8
Preparation of Report.....	2A-10
Preparation of Study Reports & Informational Brochures	2D-2
Principal Abbreviations.....	1B-1
Principal-Minor Arterial.....	2B-1
Private Entrance Detail	Appendix B(1)-28, Appendix F-106
Private Entrances (Existing State Highways)	Appendix B(1)-28, Appendix F-106
Procedure for the Public Hearing.....	2D-25
Processing of Plan Revisions	2F-12
Profiles.....	2D-11, 2C-9
Project Approval.....	2D-28, 2F-10, 2G-32
Project Assignment and Field Reconnaissance.....	2C-4
Project Development.....	2A-1, Appendix A-42
Project Development Process	1D-1
Project Final Scoping Certification	2D-30
Project Initiation	2A-1
Project Length Tabulation	2E-61
Project Limits	2D-21
Project Location Map	2H-3, 2E-70
Project Management.....	2C-4
Project Managers Responsibilities	2D-4
Project Numbers	2C-5, 2E-65
Project Review	2C-1, 2D-1
Project Section Number.....	2E-65
Project Scoping	2A-11
Project Termini	2D-20
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-41
Public Hearing Data	2D-23
Public Involvement Program.....	2A-10
Publishing Notice of the Public Hearing	2D-7
Pug Mill Mix Aggregates	2G-17
Purpose and Scope - Post Construction Review	2G-41

Q

Quantity Totals	2E-76
Quality Control (Review).....	1E-1
Quality Control Checking Procedure	2G-29
Quality Control Checklist.....	1E-2

R

	PAGE
Rails With Trails	Appendix A-103
Railroad Force Account – Railway Flagging and Watchman	2G-4
Railroads-Highway Construction Adjacent to Railway Tracks	2E-29
Railroads in Virginia	1B-23
Ramp Terminal and Speed Change Lane Design	Appendix C-94
Ratios for Minor Structure Excavation	Appendix D-17
Recommendation for Approval	2F-10
Recommending a Solution.....	2D-27
Record Retention	2G-38, 2G-39, 2G-48
Reference Block.....	2C-7
Reference Points.....	2C-7
Refining Horizontal Alignment	2B-5, 2D-10
Refining Vertical Alignment.....	2B-6, 2D-11
Removal of Bridge Approaches.....	2E-11
Removal of Existing Pipes	2E-11
Reports - Post Construction Review.....	2G-41
Request for Additional Survey Data	2E-83
Request for Appropriate Environmental Document	2B-7
Request for Approval of Major Design Features.....	2D-29
Request for Cost Estimates	2B-8, 2F-8
Request for Environmental Evaluation	2B-7
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-82
Request for Special Design Plans	2E-81
Request for Supplemental Data.....	2D-23
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-27
Responsibility of the Project Manager & the District Public Affairs Section	2D-4
Rest Areas.....	Appendix C-19
Restricted Vertical Clearances	2D-11
Restricting Left Turn Movements and Commercial Entrances	Appendix F-114
Retaining Walls	2E-22
Retention of Design Files.....	2G-38
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-26
Review of Public Hearing Transcript and Post-Hearing Correspondence	2D-27
Review of Work Load (Coordinating Time Schedules)	2C-2
Review Process - Post Construction Review	2G-41
Reviewing and Setting Up Route File (Electronic)	2C-3
Reviewing Reports.....	2G-1
Reviewing The Proposed Method of Development	2B-11
Reviewing Work Load and Assembling Data	2C-2, 2A-4
Revision Data Sheet	2H-6, 2G-47
Revisions (Construction).....	2G-36
Right Of Way	2C-8, Appendix C-28
Right Of Way Data Sheet.....	2H-5, 2E-70, 2F-1
Right Of Way Monuments.....	Appendix C-28
Right Of Way Note on Title Sheet	2G-26
Right Of Way Plans.....	2F-1
Right Of Way Revisions	2F-11
Right Turn Lanes.....	Appendix F-95
Road and Street Names	2C-8
Roadside Development.....	2H-19, 2G-19
Roadway Geometric Design Criteria – Subdivision Street Design Guide	Appendix B(1)-5

	PAGE
Roundabouts	2H-27, Appendix B(1)-50, Appendix F-40
Route Files	2C-3, 2G-38
RRR Projects.....	Appendix A-38
Rural Roadway Design	Appendix A-11

S

Safety Analysis.....	2B-4
Safety Items and Sequence of Construction.....	2E-80
Safety Projects	Appendix I-24, Appendix C-55
Safety Rest Areas	Appendix C-19
Sag Vertical Curve	2A-9, 2B-5, 2D-12, Appendix A-48
Scale.....	2C-7
Scheduling Preliminary Field Inspection.....	2B-10
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-76
Sequence of Construction.....	Appendix A-165, A-168
Service Roads	2C-11, Appendix A-19
Setting Project Termini.....	2D-21
Setting Up Correspondence Files (Electronic)	2C-3
Setting Up Route Files	2C-3
Shared Entrances and Internal Site Interconnection	Appendix F-119
Shared Roadways.....	Appendix A-77
Shared Use Path.....	Appendix A-82
Sheet Numbers	2E-67
Showing Bridge Limits	2E-40
Showing Project Termini on Plans.....	2D-24
Sidewalk	Appendix A-122, Appendix 2E-29
Sight Distance	Appendix B(1)-19, Appendix F-59, F-34, F-35
Signalized Intersection Spacing.....	Appendix F-21
Signs.....	2F-3
Sign Islands.....	2E-29
Site Plan Review	Appendix C-58
Site Plans	Appendix C-58, 2C-8
Skew Angle of Drainage Structure	2E-12
Slope Easement.....	2E-42
Slopes For Approach Barriers	Appendix I-18
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-26
Spacing Standards for Commercial Entrances, Intersections, & Median Crossovers	Appendix F-23
Spacing Standards for Commercial Entrances, Intersections Near Interchange Ramps	Appendix F-27
Special Design Bridges.....	2G-24
Special Design Drawings.....	2E-81, 2G-2
Specialty Summaries	2G-19
Staking For Concrete Items	2E-16
Standard JB-1 Junction Box	Appendix D-16
Steps and Handrails.....	2E-28
Stippling.....	2D-20
Stone for Erosion Control.....	Appendix D-1
Stopping Sight Distance.....	Appendix A-49, Appendix F-34, B(1)-19
Stormwater Management	2H-20, 2G-23
Street Names	2C-8
Streetscape	Appendix B(1)-43
Studying Alternate Solutions.....	2A-9, 2D-27
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-59
Surplus Material	2E-1
Survey Authorization	2B-1
Systems Operations Regions	1C-8

T

Temporary Diverson.....	Appendix A-21, 2G-24
Temporary Easement (Construction)	2E-44
Temporary Traffic Control Plans.....	Appendix A-171
Terminals.....	Appendix I-2
Title Sheet	2H-1, 2H-2, 2E-58
Topographic Mapping	2A-7
Topography	2C-7
Tort Liability	Appendix A-56
Traditional Neighbor Design – Subdivision Street Design Guide	Appendix B(1)-54
Traffic Barriers	Appendix I-2, I-16
Traffic Calming – Subdivision Street Design Guide	Appendix B(1)-49
Traffic Data	2A-6
Trails and Trailheads.....	Appendix A-100
Transition Curves (TC-5.01)	See <u>Road and Bridge Standards</u>
Transitions and Turn Lanes	Appendix A-10, Appendix F-73
Tree Walls and Tree Wells.....	2E-37
Turning Lanes	Appendix F-73
Type Codes	2E-61
Types of Permits	Appendix C-31
Typical Section Sheet	2H-16, 2H-17, 2E-72

U

Underdrains.....	2E-31
Underground Storage Tanks	2F-2
Unsignalized Intersection Spacing	Appendix F-23
Unsuitable Material	2E-1
Updating Plan Identification	2D-9
Urban Roadway Design	Appendix A-15
Urban Surveys.....	2B-1
Urban Projects.....	2A-1
Utilities	2C-7, 2G-24
Utility Adjustments.....	2G-24
Utility Easements.....	2E-46
Utility Field Inspection	2E-85

V

Value Engineering.....	2B-12
Vertical Alignment	2A-9, 2B-5, 2D-11
Vertical Clearance.....	2D-11

W

Warrants for Left Turn Storage Lanes on Four-Lane Highways.....	Appendix F-75
Warrants for Left Turn Storage Lanes on Two-Lane Highways	Appendix F-76
Water Related Permits.....	Appendix C-31
Wells.....	2F-2
Weights of Asphalt Concrete	2G-18
Widths, Roadway and Travelway	Appendix A-42