

## INDEX

Page	Page
<b>A</b>	
Abbreviations .....	1
Acceptance .....	73
Final .....	73
Partial .....	73
Acceptance and Final Payment.....	177
“Act of God” Clause.....	130
Adjust Structures .....	250
Advertisement, definition .....	2
Affected Area, definition .....	2
AGGREGATE BASE COURSE..	311
Aggregate .....	311
Commercial Mineral Fillers .....	311
Mixing.....	311
Placing .....	311
Shaping and Compaction .....	311
AGGREGATES .....	771
Aggregate for Bases.....	773
Classification Table	
for Aggregate Base Course....	773
Aggregate for	
Cover Coat Material.....	777
Gradation Table.....	778
Aggregate for	
Hot Mix Asphalt .....	774
Master Range Table.....	775
Aggregate for Median Cover ...	781
Bed Course Material .....	779
Coarse Aggregate	
for Concrete .....	773
Concrete Aggregate Table.....	772
Filter Material .....	780
Gradation Table.....	781
Fine Aggregate for Concrete....	773
Mineral Filler .....	780
Structure Backfill Material.....	780
Air Quality Control.....	131
Air-entraining Admixtures.....	806
Altered Quantities,	
Compensation for.....	163
Anti-Collusion Affidavit.....	17
Archaeological and	
Paleontological Discoveries .....	131
Aramid Fiber Bonded	
Corrugated Steel Pipe .....	701, 793
Asphalt Cements .....	761
ASPHALT MATERIALS....	352, 761
Chip Seal .....	349
Prime Coat .....	345
Tack Coat .....	345
Asphalt Pavers.....	325
Authority and Duties of	
Project Engineer .....	70
Authority of the Engineer.....	29
Award, definition .....	2
Award of Contract.....	19
AWARD AND EXECUTION	
OF CONTRACT .....	18
<b>B</b>	
Barricades.....	593, 621
Barricades and Signs.....	124, 784
Base Course, Definition .....	7
Bases, Types	
Aggregate Base Course .....	311
Lime Treated Subgrade .....	314
Basis of Payment, definition .....	2
BEARING DEVICE .....	458
Certification.....	463
Packaging .....	464
Testing and Acceptance.....	461
Type I .....	461
Type II .....	462
Type III.....	463
Bearing Materials .....	783
Bed Course Material .....	207
Best Management Practices (BMPs)	
Definition .....	3
Bids, Invitation for, definition.....	6
Bidder	
Definition.....	3
Prequalification of .....	14

	Page
<b>BIDDING REQUIREMENTS AND CONDITIONS.....</b>	<b>14</b>
Bituminous Coated Corrugated Steel Pipe.....	701, 792
<b>BITUMINOUS MATERIALS .....</b>	<b>761</b>
Asphalt Cements .....	761
Emulsified Asphalts .....	762
Hot Poured Joint and Crack Sealant.....	770
Recycling Agents .....	766, 768
Rejuvenating Agent.....	769
Blading.....	199
Blotter Material.....	345
Bolts, Nuts and Washers for Steel Structures .....	426, 449
Bonds, Contract .....	18
Requirements of .....	18, 276
Borrow .....	189, 194
Brick	
Clay or Shale.....	782
Concrete .....	782
Concrete Masonry Bricks.....	782
Bridge Decks	
Curing .....	531
Placing, Consolidating, Finishing .....	526
Bridge, definition.....	3
Brush Layer Cuttings .....	271
Buy America Requirements.....	115
<b>C</b>	
Caissons, Drilled.....	392
Calcium Chloride.....	807
Calendar Day, definition.....	3
Cast Iron Pipe .....	668
<b>CATTLE GUARDS.....</b>	<b>577</b>
<b>CEMENT (See HYDRAULIC CEMENT)</b>	
Certificate of Compliance .....	116
Definition .....	3
Certified Invoice, definition.....	3
Certified Test Report .....	117
Definition.....	3
Chain Link Fabric .....	803

	Page
Changes, Force Account Work, Compensation for.....	164
Character of Workers; Methods And Equipment.....	150
Check Dam, Rock .....	218
<b>Chemical Admixtures (Concrete).....</b>	<b>806</b>
<b>CHIP SEAL.....</b>	<b>349</b>
Application of Cover Coat Material.....	350
Applying Asphalt Emulsion.....	350
Asphalt Emulsion .....	349
Cover Coat Material .....	349
Equipment.....	349
Preparation of Surface .....	350
Weather Limitations .....	349
Claims for Unresolved Disputes.....	88
Cleaning Surfaces to be Painted .....	444, 452
Cleaning Up, Final .....	22
<b>CLEARING AND GRUBBING ..</b>	<b>179</b>
<b>COLD ASPHALT PAVEMENT (RECYCLE).....</b>	<b>341</b>
Compacting and Finishing .....	342
Compactors .....	344
Milling .....	341
Mixing .....	342
Paver .....	344
Recycling Train .....	343
Smoothness .....	344
Spreading .....	342
Weather Limitations .....	341
Combination or Conditional Proposals.....	16
Compensation for Altered Quantities.....	163
Compensation for Compensable Delays .....	177
Concrete Barrier .....	561
<b>CONCRETE, STRUCTURAL.....</b>	<b>489</b>
Acceptance and Pay Factors .....	533
Admixtures .....	806
Aggregate Gradation Table.....	772
Air Content Adjustment.....	503

	Page
Batching .....	499
Bridge Decks.....	526, 531
Classification.....	487
Curing (Bridge Decks).....	531
Curing (Other than Bridge Decks).....	521
Epoxy Bonding Agent.....	814
Falsework .....	510
Fiber-Reinforced Concrete.....	492
Finishing (Bridge Decks) ..	526, 529
Finishing (Other than Bridge Decks).....	523
Forms .....	503
Forms, Permanent	
Steel Bridge Deck.....	508
Forms, Precast Panel Deck .....	507
Maturity Meters	496, 506, 514, 520
Mixing.....	501
Placing (Bridge Decks) .....	526, 528
Placing (Other than Bridge Decks).....	514
Prestressed.....	630
Proportioning .....	495
Structural Concrete Coating.....	524
Sulfate Resistance .....	492
Table of Classes (601-1) .....	487
Weather Limitations.....	515, 516
Concrete Pavement	
(See PORTLAND CEMENT CONCRETE PAVEMENT)	
CONCRETE AND CLAY PIPE ..	790
Coated Concrete Pipe.....	791
Drain Tile .....	790
Nonreinforced Concrete Pipe ..	790
Perforated Concrete Pipe .....	790
Porous Concrete Pipe .....	791
Reinforced Concrete Pipe .....	790
Vitrified Clay Pipe .....	791
CONCRETE CURING	
MATERIALS AND	
ADMIXTURES .....	806
Air-entraining Admixtures .....	806
Chemical Admixtures .....	806
Curing Materials .....	806

	Page
Conduit, Electrical.....	585, 821
Conformity, definition.....	4
Conformity to the Contract .....	34
Conformity to the Contract of Hot Mix Asphalt .....	41
Conformity to the Contract of Portland Cement Concrete Pavement .....	46
Conformity to the Contract of Superpave Performance Graded Binders.....	40
Conformity to Roadway Smoothness Criteria.....	51, 60
Consideration of Proposals .....	18
Construction Drawing .....	29, 32
Definition .....	4
Construction Over and Adjacent to Navigable Waters .....	124
Construction Requirements, definition .....	4
Construction Stakes, Lines and Grades .....	69
Contractor Surveying.....	69
Department Surveying.....	69
CONSTRUCTION	
SURVEYING.....	706
Accuracy and Tolerances.....	708
Changes .....	709
Contractor Surveying.....	707
Pay Quantities Measurements... ..	709
Reset Monuments and Stakes ..	708
Responsibility and Inspection... ..	708
Survey Records.....	709
CONSTRUCTION ZONE	
TRAFFIC CONTROL .....	734
Advance Warning Signs (Electronic) .....	736
Channelizing Device (Fixed) ...	737
Concrete Barrier (Temporary) ..	738
Emergency Pull-Off Area .....	747
Flagging and Pilot Car Operation.....	746
Flashing Beacon (Portable) .....	739
Signs and Barricades .....	734

	Page
Temporary Channelizing	
Devices.....	737
Temporary Masking Signs .....	744
Temporary Portable Rumble	
Strip.....	747
Temporary Traffic Signals .....	736
Traffic Cones.....	736
Traffic Control Management.....	743
Transportation Management	
Plan.....	739
Public Information.....	743
Traffic Control Plan.....	739
Transportation Operations	
Plan.....	742
Contents of Proposal Forms.....	14
<b>CONTRACT</b>	
Award of .....	18
Bonds, Requirements of .....	18, 276
Contract, definition .....	4
Default of .....	155
Execution and Approval of .....	18
Intent of.....	19
Item (Pay Item), definition .....	4
Payment Bond, definition.....	4
Performance Bond, definition .....	4
Modification Order, definition .....	4
Subletting of.....	141
Termination of.....	156
Time, definition.....	4
Time, Determination and	
Extension of.....	151
Contract Modification Order .....	4, 19
Contract Time (see Determination	
and Extension of Contract Time)	
<b>Contractor</b>	
Definition .....	4
Cooperation by .....	67
Contractor Submittals, Table .....	33
<b>Contractors</b>	
Cooperation Between .....	68
Cooperation with Utilities.....	67
Responsibility for Work.....	129
Contractor's Engineer, definition.....	5
<b>CONTROL OF MATERIAL</b> .....	95

	Page
<b>CONTROL OF WORK</b> .....	29
Cooperation by Contractor .....	67
Cooperation Between Contractors..	68
Cooperation with Utilities .....	67
Coordination of Plans, Specifications,	
Supplemental Specifications, and	
Special Provisions.....	67
Copper Pipe.....	668
<b>Corrosion Resistant Culverts</b>	
(See DRAINAGE PIPE).....	701
Corrugated Aluminum Pipe..	547, 701
Corrugated Steel Pipe.....	547, 701
County, definition.....	5
Cover Coat Material .....	349
Culvert, definition .....	5
Culverts, Corrosion Resistant.....	701
<b>CULVERTS AND SEWERS (Type</b>	
<b>of Materials Specified) .....</b>	<b>547</b>
Backfilling .....	549
Bedding for Concrete	
or Clay Conduit.....	548
Deflection Testing of	
Metal and Plastic Pipe.....	550
Excavation .....	547
Elongation.....	549
Jacking .....	548
Joining Conduit.....	549
Placing Conduit .....	548
Repair .....	550
<b>CURB AND GUTTER</b> .....	<b>571</b>
Bed Course Material .....	571
Bituminous.....	573
Cast-in-Place Concrete .....	571
Fog Coat .....	573
Ramps .....	568
Tack Coat.....	573

## D

<b>Damage Claims,</b>	
Responsibility for .....	126
<b>DAMPPROOFING</b> .....	<b>473</b>
Asphalt.....	762
Day, definition.....	5
Default of Contract.....	155

	Page
Delay (see Determination and Extension of Contract Time)	
DEFINITIONS AND TERMS .....	1
DELINEATORS AND REFLECTORS .....	578
Steel Posts .....	578
Flexible Posts .....	578
Reflector Strip .....	580
Reflectors .....	580, 582, 820
Department, definition .....	5
Department Furnished Materials ..	115
Determination and Extension of Contract Time .....	151
Detours, Approved.....	21
Detours, Maintenance of.....	21
Differing Site Conditions, Suspensions of Work and Significant Changes in the Character of Work.....	19
Direct Burial Cable.....	614, 821
Dispute Resolution .....	73
Dispute Review Board.....	77
Ditches (Roadway Excavation) ....	188
Dowel Bars .....	355, 802
Dozing .....	199
Drain Gates .....	626
Drain Tile.....	556
Drain Valves and Valve Boxes.....	625
DRAINAGE PIPE.....	701
Materials Allowed for Class of Pipe, Table.....	703
Resistivity Requirements for Metal Pipes .....	704
DRILLED CAISSONS.....	392
Cleaning and Inspection.....	392
Concrete .....	394
Drilled Holes.....	392
Price Adjustments .....	395
Reinforcing Steel .....	393
Steel Casing .....	393
Driving Piles.....	387
Dust Palliative .....	247
Duties of the Inspector.....	70

## E

	Page
Earthwork.....	188
Elastometric Bearing Pads .....	458
Electrical Conduit .....	585, 839
ELECTRICAL MATERIALS (See LIGHTING AND ELECTRICAL MATERIALS)	
Electronic Advance Warning Signs .....	736
Eliminated Items .....	167
EMBANKMENT	
Embankment Material .....	189
Embankment Placement and Compaction .....	196
General Embankment Construction.....	194
Embankment Protector.....	626
Emulsified Asphalt.....	762
Engineer	
Authority of .....	29
Definition.....	5
ENVIRONMENTAL, HEALTH AND SAFETY MANAGEMENT	292
Asbestos – Containing Material Management .....	305
Health and Safety Officer (HSO) .....	293
Health and Safety Plan (HASP) .....	295
Heavy Metal Based Paint Management .....	300
Material Handling.....	302
Methamphetamine Lab Sites ....	307
Monitoring Technician (MT)....	294
Sample Delivery .....	304
Epoxy (For Bonding Concrete)....	814
Equipment, definition.....	5
Erosion Bales .....	217
EROSION CONTROL.....	216
Aggregate Bag .....	220, 237
Best Management Practices for Stormwater .....	230, 234
Check Dam, Rock.....	218, 234
Concrete Washout Structure .....	219, 235

	Page
Construction of BMPs.....	234
Erosion Bales .....	217, 234
Erosion Control Management ...	223
Erosion Logs .....	218, 235
Failure to Perform	
Erosion Control .....	239
Items to Be Accomplished	
Prior to Final Acceptance .....	242
Limits of Disturbance.....	239
Materials Handling and	
Spill Prevention .....	238
Project Review, Schedule, and	
Erosion	
Control Management .....	222
Riprap Outlet Protection.....	234
Sediment Trap .....	218, 235
Seeding, Mulching, Sodding,	
Soil Retention Blanket.....	234
Silt Dike .....	219, 235
Silt Fence.....	217, 234
Silt Berm .....	218, 234
Stabilization .....	231
Stockpile Management.....	239
Storm Drain Inlet	
Protection.....	221, 234
Surface Roughening .....	237
Temporary Berms.....	218, 234
Temporary Diversion .....	234
Temporary Slope Drains ...	218, 234
Vehicle Tracking Pad.....	219, 237
Vertical Tracking .....	237
Examination of Plans,	
Specifications, Special Provisions	
and Site of Work .....	15
EXCAVATION AND	
EMBANKMENT .....	188
Blading .....	199
Borrow .....	189, 194
Dozing.....	199
Embankment Material .....	189
Embankment Placement and	
Compaction Requirements.....	196
Excavation.....	188, 193
General Embankment	

	Page
Construction Requirements ...	194
Potholing.....	189 194
Rock Embankment.....	189, 197
Rock Excavation.....	188, 193
Rock Fill .....	189, 197
Soil Embankment .....	189, 196
Stripping .....	188, 194
Unclassified Excavation ...	188, 193
Unsuitable Material .....	188, 194
EXCAVATION AND BACKFILL	
FOR STRUCTURES .....	203
Bed Course Material .....	207, 209
Filter Material .....	207, 209
Structure Backfill.....	203, 208
Structure Backfill	
(Flow-Fill).....	203, 208
Structure Backfill, Imported .....	205
Structure Excavation.....	207
Execution and Approval	
of Contract .....	18
Explosives, Use of.....	125
Extra Work .....	20
Extra Work, definition.....	5
<b>F</b>	
Failure to Complete	
Work on Time .....	154
Failure to Maintain	
Roadway or Structure.....	72
Falsework .....	510
Federal Aid Provisions .....	119
FENCES .....	565
Reset Fences.....	249
FENCE AND GUARDRAIL	
(Materials) .....	803
Barbed Wire.....	803
Chain Link Fabric .....	803
Fence Posts .....	804
Guardrail Hardware .....	805
Guardrail Posts .....	805
“W” Beam Rail.....	803
Snow Fence.....	803
Timber for Wood Sound	
Barrier .....	804
Woven Wire.....	803

	Page
Fertilizer .....	253
Field Cleaning and Painting of Steel .....	452
FIELD FACILITIES.....	671
Commercial Plant Laboratory .....	671
Field Laboratories .....	671
Field Offices.....	671
Maintenance, Service and Utilities.....	673
Sanitary Facilities.....	672
Filter Material .....	556, 780
Final	
Acceptance of Work.....	73, 177
Cleaning Up .....	22
Estimate .....	177
Payment .....	177
Flagging and Pilot Car Operation.....	746
Flume (See PARSHALL MEASURING FLUME) .....	626
Fly Ash .....	759
Portland Cement Concrete Pavement.....	355
Structural Concrete .....	491
Force Account Work, definition .....	5
Force Account Work, Changes, Compensation for.....	164
Forest Protection.....	126
Forms.....	503
Permanent Steel Bridge Decks.....	508
Foundation Pads and Light Standards .....	582
Frames, Grates, Covers and Steps .....	553, 807
French Drain.....	557
Furnishing Right of Way .....	130

## G

Gabions .....	415
Gabions and Slope Mattresses (Materials).....	811
Galvanizing (See SPECIFIC MATERIAL)	

	Page
Gaskets, Pipe .....	843
Gates (Fence) .....	565
GEOSYNTHETICS .....	379
Erosion Control and Drainage ..	380
Geotextile Materials .....	809
Geotextile Separator .....	380
Impervious Lining .....	380
Landscaping Weed Barrier .....	381
Materials .....	808
Paving .....	379
Glass Beads .....	818
Grubbing, Clearing and .....	179
GUARDRAIL .....	559
Concrete Barrier, Type 7 .....	561
Concrete Barrier, Type 7, Temporary.....	738
End Anchorages.....	561
Post and Rail Elements .....	560
Reset .....	250
Thrie Beam, Type 6.....	559
“W” Beam, Type 3.....	559
Gutter (See CURB AND GUTTER)	

## H

Hammers, Pile Driving.....	385
Handling Materials.....	115
Headgates .....	626
HEATING AND SCARIFYING TREATMENT .....	339
HERBICIDE TREATMENT .....	290
Highway, definition.....	5
Holidays, definition.....	6
HOT MIX ASPHALT.....	337
Hydrated Lime .....	807
HYDRAULIC CEMENT.....	759
Fly Ash .....	759
Portland Cement .....	759
Silica Fume .....	760
High-Reactivity Pozzolans .....	760

## I

INLETS.....	553
Inspection and Testing of Work .....	70
Inspector, Duties of .....	70
Inspector, definition .....	6
Insurance .....	126

	Page
Intent of Contract.....	19
Interpretation of Plans and Specifications .....	15
Interpretation of Quantities In Proposal Form.....	14
Invitation for Bids, definition .....	6
Irregular Proposals.....	15
<b>IRRIGATION SYSTEM .....</b>	<b>689</b>
Automatic Controllers .....	689
Backflow Preventer .....	689
Cleanup .....	698
Control Wiring .....	690
Drip Emitters.....	691
Drip Systems .....	695
Excavation and Backfill .....	694
Final Landscape Acceptance.....	698
Flow Sensor.....	691
Inspections .....	696
Keys and Components.....	698
Kick Blocks.....	694
Maintenance Manuals and Training .....	697
Pipe Installation.....	694
Plastic Pipe and Fittings .....	691
Pressure and Coverage test, and Adjustments .....	696
Remote Control .....	690
Site Review .....	693
Sprinkler Heads.....	690
Strainer .....	693
System Flushing.....	695
Valve Box .....	693, 695
Valves.....	692
Warranty.....	697
Wiring .....	694
Irrigation Water, Interruption of Flow .....	126
Items, Eliminated.....	167

## J

Job Mix Formula, Plant Mix Pavements.....	321
<b>JOINT AND CRACK SEALANT .....</b>	<b>347</b>

	Page
<b>JOINT, WATERPROOFING AND BEARING MATERIALS .....</b>	<b>783</b>
Bearing Materials.....	783
Compression Ring .....	783
Gaskets .....	783
Joint Fillers .....	783
Pipe Joint Sealing Compound...	783
Protective Covering for Bridge Deck, etc.....	788
Prefabricated Reinforced Membrane, etc.....	789
Single Component, etc. ....	789
Waterstop.....	789
Watertight Joint Systems .....	783
<b>Joints</b>	
Asphalt.....	329
Construction (Concrete Pavement).....	361
Expansion (Concrete Pavement).....	367
Sawed (Concrete Pavement).....	361
Weakened Plane (Concrete Pavement).....	363

## L

Laboratory, definition.....	6
Laboratory, Field.....	671
Lamps.....	585
Landscape Border.....	267
Laws to be Observed .....	119
<b>LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC 119</b>	
Licenses and Taxes (Permits).....	119
<b>LIGHTING.....</b>	<b>582</b>
Conduit .....	582, 585
Foundation.....	582, 584
LED Luminaires .....	582
Light Standard .....	582, 585
Lighting Control Center....	583, 588
Luminaires and Lamps ....	582, 585
Secondary Service Pedestal .....	583, 588
Technical Support.....	584
Testing .....	588
Wiring.....	583, 588



	Page
<b>LIGHTING AND ELECTRICAL</b>	
MATERIALS.....	832
Concrete Foundation Pads.....	832
Conduit.....	839
LED Drivers.....	838
LED Luminaires.....	836
Lighting Circuitry and Wiring ..	839
Light Standards .....	832
Light Standard Foundations and Concrete Foundation Pads .....	832
Luminaires and Lamps.....	834
Secondary Service Pedestals and Lighting Control Centers	839
<b>LIME TREATED SUBGRADE...</b>	<b>314</b>
Compaction .....	316
Construction Joints.....	318
Finishing and Curing.....	317
Lime .....	314
Preparation of Subgrade.....	314
Processing Materials .....	315
Thickness Acceptance .....	318
Limitation of Operations .....	150
Liquidated Damages, Schedule of.....	154
Liquid Membrane-Forming Compounds .....	806
Load Restrictions.....	71
Longitudinal Joints Concrete Pavement .....	363
Plant Mix Pavement .....	329, 333
<b>Lumber (See TIMBER)</b>	
Luminaires.....	582
<b>M</b>	
Maintaining Traffic (Also see Construction Zone Traffic Control).....	21
Approved Detours .....	21
During Suspension of Work.....	21
During Free Time.....	21
Directed by the Engineer.....	22
Maintenance During Construction.....	72
<b>MANHOLES, INLETS AND METER VAULTS .....</b>	<b>533</b>

	Page
Backfilling .....	554
Excavation .....	553
<b>MASONRY UNITS (Materials) ..</b>	<b>782</b>
Clay or Shale Brick .....	782
Concrete Brick.....	782
Concrete Masonry Blocks .....	782
Masonry Mortar.....	782
Material, Department Furnished ..	115
Material Sources .....	95
Available .....	95
Contractor.....	96
Material Found on Work, Rights In and Use of .....	22
Material Guaranty .....	17
Material Inspection at Plant.....	114
Material on Hand, Payment for....	176
<b>MATERIAL, CONTROL OF .....</b>	<b>96</b>
Alternative .....	95
Definition.....	6
Department Furnished .....	115
Guaranty .....	17
Samples, Tests, and Cited Specifications .....	97
Source of Supply and Quality of .....	95
Storage of .....	114
<b>MEASUREMENT AND PAYMENT .....</b>	<b>159</b>
Measurement of Quantities .....	159
Median Barrier Reflector .....	580
<b>MEDIAN COVER MATERIAL. 575</b>	
Messages, Sign.....	818
<b>METAL PIPE (Materials) .....</b>	<b>792</b>
Aluminized Corrugated Steel Pipe Type 2 .....	794
Bituminous Coated Corrugated Steel Pipe and Pipe Arches ...	792
Bituminous Coated Corrugated Steel Pipe for Underdrains ....	793
Corrugated Aluminum Pipe.....	794
Corrugated Aluminum Pipe for Underdrains .....	794
Corrugated Steel Pipe and Pipe Arches .....	792

	Page
Corrugated Steel Pipe	
for Underdrains.....	793
Coupling Bands.....	792, 793, 794
Ductile Iron Pipe.....	792
Extensions.....	794
Polymer Precoated Corrugated Steel Pipe.....	794
Repair of Damaged Coating.....	794
Semicircular.....	792
Method of Measurement, definition .	6
Mineral Filler.....	778
<b>MISCELLANEOUS (Materials) ..</b>	<b>807</b>
Calcium Chloride.....	807
Epoxy (For Bonding Concrete) .	814
Frames, Grates, Covers and Steps.....	807
Gabions and Slope Mattresses...	811
Geocomposite Drains.....	814
Geosynthetics.....	808
Geomembrane.....	808
Geotextiles.....	809
Hydrated Lime.....	807
Plastic Pipe.....	814
Plastic Pipe for Underdrain.....	814
Precast Concrete Units.....	807
Water.....	807
Mixing Temperature	
Plant Mix Pavement.....	329
<b>MOBILIZATION.....</b>	<b>711</b>
<b>Mortar</b>	
Masonry.....	782
Slope and Ditch Paving.....	417
<b>MULCHING.....</b>	<b>261</b>
<b>N</b>	
Nestable Steel Pipe.....	547
Nonreinforced Concrete Pipe.....	547
Notice to Proceed.....	141
Definition.....	6
No Waiver of Legal Rights.....	131
<b>O</b>	
Offices, Field.....	671
Opening Sections of Project to Traffic.....	129
Operations, Limitation of.....	150

	Page
Order of Precedence.....	67
Original Contract Amount, definition.....	7
Outlet Protection.....	218
<b>P</b>	
<b>PAINTS.....</b>	<b>795</b>
Aluminum Paint.....	796
Inspection and Testing.....	801
Pavement Marking Materials....	796
Pavement Primers.....	800
List of Paints.....	795
Materials – Specifications.....	800
Structural Concrete Coating.....	801
Structural Steel	
Bridge Paint.....	796
Parking of Vehicles & Equipment..	21
Parshall Measuring Flume.....	626
Partial Payments.....	168
Standard Amount Retained.....	168
Patching (HMA).....	337
Patented Devices, Material, and Processes.....	119
<b>PAVEMENT MARKING.....</b>	<b>713</b>
High Build Acrylic Paint ..	715, 797
Low Temperature	
Acrylic Paint.....	715, 797
Modified Epoxy	
Pavement Marking.....	716, 827
Methyl-Methacrylate.....	719, 830
Pavement Marking Tape...	722, 826
Preformed Plastic	
Pavement Marking.....	720, 824
Preformed Thermoplastic	
Pavement Marking.....	722, 826
Raised Pavement Markers	723, 830
Removal.....	185
Temporary.....	714
Thermoplastic Pavement	
Marking.....	717, 823
Pavement Structure, definition.....	7
Payment	
Acceptance and Final.....	177
Altered Quantities.....	163

	Page
Asphalt Cement Cost	
Adjustment .....	173
Changes and Force Account.....	164
For Material on Hand	
(Stockpiled Material).....	176
Fuel Cost Adjustment.....	171
Partial .....	168
Pay Item, definition.....	4
Scope of .....	163
Schedule.....	149
<b>PEDESTRIAN AND</b>	
<b>BIKEWAY RAILING</b> .....	466
Combination.....	467
Pipe .....	466
Steel Tube .....	466
Timber.....	466
Permits, Licenses, and Taxes.....	119
Personal Liability of	
Public Employees.....	130
<b>PILING</b> .....	385
Approval of Pile	
Driving Equipment .....	386
Capping Piles .....	389
Cut Offs, Payment .....	391
Defective Piling .....	390
Drilling Holes to Facilitate	
Pile Driving .....	388
Driving Piles .....	387
Extensions and Splices.....	389
Painting Steel Piles.....	390
Pile Driving Equipment .....	385
Pile Tips .....	390
Steel Piling .....	385
Water Jetting .....	388
Welding.....	389
Pilot Car Operation, Flagging.....	746
Pins and Rollers	
(Steel Structures).....	426
Pipe (See TYPE)	
Planned Force Account, definition ...	9
Plans	
Shop Drawings,	
Working Drawings and	
Construction Drawings .....	29

	Page
Definition .....	7
Examination of .....	15
<b>PLANT MIX PAVEMENTS –</b>	
<b>GENERAL</b> .....	321
Aggregates.....	323
Asphalt Cements.....	324
Asphalt Mixing Plant.....	325
Asphalt Pavers .....	325
Compaction.....	332
Compaction Test Section.....	333
Composition of Mixtures	
(Job-Mix Formula).....	321
Hauling Equipment.....	325
Hydrated Lime.....	323
Joints.....	335
Mineral Filler.....	323
Mixing .....	328
Mixing Temperature .....	329
Moisture Susceptibility.....	323
Pavement Samples.....	336
Preparation of Aggregates .....	328
Dry Lime.....	328
Lime Slurry .....	328
Preparation of Asphalt Cement.....	327
Safety Edge.....	326
Segregation .....	326
Spreading and Finishing .....	329
Surface Conditioning.....	327
Surface Smoothness.....	336
Tack Coat .....	327
Weather Limitations .....	324
<b>PLANTING</b> .....	270
Brush layer Cuttings .....	271
Landscape Establishment .....	274
Wetland Perennial Plants.....	271
Plastic Pipe.....	814
Plastic Pipe for Underdrain .....	814
Plug Structures .....	181
Portland Cement.....	759
<b>PORTLAND CEMENT</b>	
<b>CONCRETE PAVEMENT</b> .....	355
Batching.....	355
Classification .....	355
Construction by Form Method..	372

	Page
Construction by	
Slip Form Method.....	373
Curing .....	367
Curing in Cold Weather .....	368
Determining Pavement	
Thickness .....	374
Equipment .....	356
Finishing.....	359
Joints .....	361
Limitations of	
Placing Concrete.....	359
Maturity Meter .....	368, 376
Mixing.....	356
Opening to Traffic .....	376
Placing Concrete .....	359
Preparation of Subgrade.....	358
Price Adjustment.....	377
Proportioning .....	355
Repair of Defective	
Concrete Pavement.....	369
Sealing Joints .....	371
Surface Smoothness .....	371
Test Specimens.....	359
Texturing.....	361
Posts	
Fence .....	804
Guardrail .....	805
Sign .....	591
Precast Concrete Units.....	807
Preconstruction Conference,	
definition.....	7
Preparation of Proposal.....	15
Prequalification of Bidders .....	14
Preservative Treatment, Timber...	421
PRESTRESSED CONCRETE .....	630
Bonding and Grouting.....	649
Curing .....	658
Equipment .....	655
Fabrication .....	639
Prestressed Members.....	632
Pretensioned and Combination	
Tensioned Members .....	656
Concrete .....	656
Inspection .....	635

	Page
Notification of Fabrication.....	634
Other Fabrication	
Requirements .....	661
Post-tensioning Anchorages and	
Distribution .....	647
Product Shipping Strength.....	665
Repairs .....	659
Shop Drawings .....	632
PRESTRESSED UNIT	
MATERIALS .....	831
Anchorage Assemblies .....	831
Post-Tensioning Products .....	831
Prestressing Steel.....	831
Prewetting .....	247
Price Reduction Factors, Table of ..	36
PRIME COAT, TACK COAT and	
REJUVENATING AGENT .....	345
Application of Asphalt Material	346
Application of Blotter Material.	346
Asphalt Material .....	345
Blotter Material.....	345
Equipment.....	345
Preparation of Surface .....	346
Weather Limitations .....	345
Profile Grade, definition .....	7
Project, definition .....	7
Project Engineer	
Authority and Duties of .....	7
Definition.....	7
Project Schedule.....	141
Baseline Schedule.....	147
Definitions .....	141
General .....	143
Methods Statements.....	147
Payment .....	149
Preliminary Schedule.....	147
Project Schedule Update.....	147
Schedule Revision .....	148
Schedule Submittals.....	144
Weekly Planning Schedule .....	148
Project Special Provisions,	
definition .....	8
Project Termini, definition .....	8
Prompt Payment .....	169

	Page
Good Cause Exception.....	171
Retainage by the Contractor.....	169
Proof Rolling .....	199
Property and Landscape Protection.....	125
Proposal	
Combination or Conditional.....	16
Definition .....	8
Form, definition .....	8
Form, Contents of Proposal.....	14
Guaranty, definition .....	8
Irregular.....	15
Preparation of.....	15
PROSECUTION AND PROGRESS .....	141
Character of Workers; Methods and Equipment.....	150
Default of Contract.....	155
Determination and Extension of Contract Time .....	151
Failure to Complete Work on Time .....	154
Limitation of Operations .....	150
Notice to Proceed .....	141
Payment Schedule .....	149
Project Schedule.....	141
Subletting of Contract .....	141
Termination of Contract.....	156
Workplace Violence.....	151
Public Convenience and Safety ...	124

## Q

Qualification of Testing Personnel and Laboratories.....	97
Quantities	
Changes in.....	20
Compensation for altered .....	163
Measurement of .....	159

## R

Railroad-Highway Provisions.....	124
RECONDITIONING.....	313
Record Set, definition .....	8
Recycling Agents.....	766
Reflector, Median Barrier ....	580, 820
Reflectors.....	818

	Page
Region Transportation Director, definition .....	8
Reinforced Concrete Pipe .....	547
REINFORCING STEEL.....	542
Bar List .....	542
Bending .....	542
Epoxy Coated .....	542
Placing and Fastening .....	543
Protection of Materials .....	542
REINFORCING STEEL AND WIRE ROPE.....	802
REJUVENATING AGENT .....	345
Relay Pipe .....	249
REMOVAL OF STRUCTURES AND OBSTRUCTIONS .....	181
Asphalt Mat (Planing) .....	184
Clean Culvert.....	185
Detours .....	184
General .....	181
Pavement Markings .....	183
Pavements, Sidewalk, Curbs ....	184
Portions of Structures .....	184
Salvable Material .....	182
Signs and Traffic Signals.....	182
Removal of Unacceptable Work and Unauthorized Work .....	71
Requirement of Contract Bonds ....	18
RESET STRUCTURES .....	249
Responsibility for Damage Claims, Insurance Types, and Coverage Limits .....	126
REST AREAS AND BUILDINGS .....	674
Barricades .....	675
Carpentry .....	679
Ceramic Tile .....	677
Comfort and Sanitary Station Signs .....	677
Construction Material .....	674
Descriptive Brochures .....	674
Doors, Frames, and Windows...	677
Electrical Work.....	684
Factory Representative .....	686
Flagpole .....	686

	Page
Glass and Glazing .....	680
Heating and Ventilation .....	684
Interior Insulation .....	679
Leaching Field.....	686
Maintenance Manuals .....	675
Masonry Work .....	675
Metal Specialties .....	677
Painting, etc.....	680
Plumbing and Drainage.....	681
Roofing, etc.....	678
Sanitary Napkin Disposal.....	677
Sanitary Sewer, etc.....	686
Septic Tank .....	686
Sewage Facilities.....	686
Shop Drawings and Descriptive Brochures .....	674
Temporary Heat .....	675
Temporary Utilities .....	675
Trash Receptacles.....	680
<b>REST AREA AND BUILDING MATERIALS .....</b>	<b>846</b>
Carpentry.....	846
Ceramic Tile.....	947
Doors, Frames, and Windows ...	847
Electrical .....	851
Glass and Glazing .....	848
Heating and Ventilating .....	850
Interior Insulation.....	848
Leaching Field.....	852
Masonry .....	846
Masonry Wall Reinforcement ..	846
Metal Specialties .....	846
Mortar for Masonry.....	846
Mortar for Structural Glazed Tile .....	846
Paint, etc.....	849
Plumbing .....	849
Roofing, etc.....	848
Sanitary Napkin Disposal.....	847
Sanitary Station .....	852
Septic Tank .....	852
Sewer.....	852
Sewer Lift Station .....	852
Trash Receptacles.....	849

	Page
Restoration of Surfaces	
Opened by Permit .....	119
Retainage (see Partial Payments)	
Right of Way, definition.....	8
Right of Way, Furnishing.....	130
Rights in and Use of Materials	
Found on the Work .....	22
RIPRAP.....	412
RIPRAP (GABIONS) AND SLOPE MATTRESS.....	414
Road, definition.....	8
Roadbed, definition .....	8
Roadside, definition .....	8
Roadside Development, definition ...	9
Roadway, definition .....	9
Roadway Prism, definition.....	9
Rock Excavation .....	188
Rock Fill.....	190, 197
Rumble Strips.....	621
<b>S</b>	
Safety Critical Work, definition .....	9
Safety, Health, and	
Sanitation Provisions .....	120
Contractor Responsibilities.....	122
Project Safety and	
Health Requirements .....	123
Project Safety Management	
Plan .....	120
Project Safety Manager.....	122
Safety Stand-Down.....	123
Salvable Material, definition .....	9
Samples, Tests, Cited	
Specifications.....	97
Sampling and Testing	
HMA.....	97
Portland Cement	
Concrete Paving .....	105
Sanitary Facilities.....	672
Safety, Health, and	
Sanitary Provisions .....	120
Sawing Concrete (for Removal)...	181
Scales, Vehicle .....	159
Schedule (See Project Schedule)..	141
Scope of Payment.....	163

	Page
SCOPE OF WORK .....	19
SEAL COAT (See CHIP SEAL) ..	349
Sediment Trap .....	218
SEEDING, FERTILIZER, SOIL CONDITIONER, AND SODDING.....	253
Lawn Grass Seeding.....	257
Native Seeding .....	258
Seed, Soil Conditioner, Fertilizer, and Sod .....	253
Seeding Seasons.....	256
Sodding .....	258
Sewage Lift Station .....	686
Sheet Lead .....	786
SHEET PILING, STEEL.....	383
Shop Drawings .....	29
Definition .....	9
Shop Painting, Steel.....	444
SHORING .....	212
SHOTCRETE.....	753
Acceptance.....	757
Curing Shotcrete .....	755
General.....	754
Submittals .....	753
Shoulder, definition .....	10
Sidewalk, definition.....	10
SIDEWALKS AND BIKEWAYS	568
Bed Course Material .....	568
Bituminous Sidewalks and Bikeways .....	569
Concrete Sidewalks and Bikeways .....	568
Curb Ramps .....	568
Joints .....	569
Signing (see TRAFFIC CONTROL DEVICES or MATERIALS)	
Sign Posts .....	591
Silica Fume.....	760
Silt Fence.....	217
SIPHONS .....	627
Concrete Pipe .....	627
Drain Pipe .....	627
Drain Valves and Valve Boxes ..	627
Trash Guards.....	627

	Page
Site of Work, Examination of .....	15
Slide Headgate .....	626
SLOPE AND DITCH PAVING... 417	
Asphalt.....	418, 419
Concrete.....	417, 418
Dry Rubble .....	417, 419
Grouted Riprap .....	417, 419
Grouted Rubble .....	417, 419
Mortar.....	417
SLOPE MATTRESS.....	414
Sodding .....	258
Soil Conditioners and Fertilizer ..	253
SOIL RETENTION COVERING	282
Soil Retention Blanket (Excelsior).....	283
Soil Retention Blanket (Coconut) .....	283
Soil Retention Blanket (Straw-Coconut).....	282
Turf Reinforcement Mat.....	285
Source of Supply and Quality Requirements.....	95
Special Provisions, definition.....	10
Specifications	
Coordination of Plans, Specifications, .....Supplemental Specifications and .....Special Provisions.....	67
Definition of .....	10
Examination of .....	15
Standard, definition .....	10
Supplemental, definition.....	10
Specified Completion Date, definition of .....	10
Splicing Piles	
Steel.....	389
Steel Sheet .....	383
Stakes, Lines, and Grade for Construction.....	69
Standard Special Provisions, definition .....	10
State, definition .....	10
State Waters, definition .....	10
Steel Piling .....	385

	Page
STEEL SHEET PILING .....	383
STEEL STRUCTURES .....	425
Materials.....	425
Anchor Bolts.....	426
Bolts.....	426
Galvanized and	
Metallized Steel .....	426
High Strength Bolts .....	426
High-Strength Low-Alloy	
Structural Steel .....	425
Mill Test Reports .....	427
Pins and Rollers .....	426
Self Weathering Tubing.....	425
Structural Carbon Steel.....	425
Structural Tubing.....	426
Welded Stud Shear	
Connectors .....	427
Shop Fabrication and	
Inspection Requirements .....	427
Galvanizing.....	443
General Fabrication	
Requirements .....	434
Inspection .....	428
Marking .....	445
Nondestructive Testing.....	429
Notice of Fabrication .....	427
Plans and Shop Drawings .....	428
Shop Assembly.....	442
Shop Cleaning and	
Painting of Steel .....	444
Shop Connections Using	
High Strength Bolts .....	443
Shop Facilities for	
Fabrication .....	428
Welding .....	440
Field Construction	
Requirements .....	445
Connections Using	
High Strength Bolts .....	449
Erection of Steel Structures .....	445
Field Welding and Inspection .....	445
Fracture Control Plan .....	452
Structure Number .....	452
Storage of Materials.....	114

	Page
Storm Water Management Plan,	
definition.....	11
Street, definition .....	11
Stripping .....	188, 194
STRUCTURAL CONCRETE (See	
CONCRETE, STRUCTURAL)	
Structural Concrete Coating .	524, 801
STRUCTURAL PLATE	
STRUCTURES .....	455
Backfilling .....	456
Elongation.....	456
Excavation .....	456
Erection.....	456
Fabrication .....	455
Structure Backfill .....	203
Structure Backfill Material.....	780
Structure Excavation .....	203
Structure Number, Steel .....	452
Structure Number, Timber .....	423
Structures, definition .....	11
Stud Shear Connectors .....	427
Subbase, definition .....	7
Subcontractor, definition.....	11
Subgrade, definition .....	11
Subletting of Contract .....	141
Substructure.....	11
Subsurface Investigations.....	15
SUBSURFACE DRAINS .....	556
French Drain .....	557
Geocomposite Drains.....	557
Pipe Underdrain and	
Pipe Edge Drain .....	556
Subsurface Drain Outlet .....	557
Superintendent, definition .....	11
Superpave Performance	
Graded Binders .....	761
Superstructure, definition .....	12
Supplemental Specification,	
definition.....	12
Surety, definition.....	12
Surface Course, definition.....	7
SURVEY MONUMENTATION .	726
Installing Monuments .....	730
Locating Monuments .....	728



	Page
Monument Box .....	732
Preserving and Referencing Monuments .....	728
<b>T</b>	
TACK COAT .....	345
Taxes, Permits, Licenses and .....	119
Termination of Contract .....	156
Test Piles .....	388
Third Party Beneficiary .....	131
Tie Bars .....	362
Timber Posts, Guardrail.....	805
Timber Sign Posts.....	591
TIMBER STRUCTURES.....	421
Hardware.....	422
Holes and Bolts .....	423
Inspection.....	421
Painting .....	423
Structure Number.....	423
Treated Timber.....	421
Time Count.....	151
TOPSOIL.....	214
Topsoil, Stockpile .....	214
Topsoil, Wetland.....	214
TRAFFIC CONTROL	
DEVICES .....	591
Barricades .....	593, 621
Flashing Beacon.....	592
Highway Signs and Traffic Signals.....	613
Overpass Mounted Sign Bracket.....	592
Rumble Strips.....	621
Sign Illumination and Illuminated Signs.....	592
Sign Panels.....	592
Sign Posts and Sign Structures..	591
Traffic Signal Materials .....	593
Traffic Signal Systems Construction .....	615
TRAFFIC CONTROL MATERIALS .....	817
Modified Epoxy Pavement Marking Material .....	827

	Page
Glass Beads for Traffic Markings .....	818
Hardware .....	818
Methyl Methacrylate Pavement Marking.....	830
Pavement Marking Tape.....	826
Pavement Marking Tape (Removable).....	827
Preformed Plastic Material .....	824
Preformed Thermoplastic Material.....	826
Quality Requirements of Reflective Materials.....	820
Raised Pavement Marker.....	830
Reflectors.....	818
Sampling and Inspection .....	819
Sign Message Materials.....	818
Signs – General.....	817
Table of Aluminum and Steel Sign Materials .....	817
Thermoplastic Marking Material.....	823
Traffic Signals .....	821
Traffic Control Plan (TCP), definition .....	12
Traffic Maintenance During Suspension of Work .....	21
Traffic, Maintaining .....	21
Approved Detours .....	21
Directed by the Engineer .....	22
During Free Time .....	21
Traffic Signal Materials .....	593
Backplates .....	601
Controller Cabinets.....	596
Controllers (General).....	594
Electrical Conductors and Control Cable .....	602
Magnetic Detectors.....	599
Micro Loop Detectors.....	599
Pedestrian Push Buttons .....	600
Programmed Visibility Vehicle Signal Faces.....	601
Traffic Signal Faces.....	601
Traffic Signal Poles .....	601

	Page
Vehicle Detector Amplifier .....	604
<b>Traffic Signal Systems</b>	
Construction .....	615
Bonding and Grounding .....	616
Electrical Conductors and Control Cable .....	615
Excavation and Backfilling .....	617
Field Tests and Turn On.....	620
Foundations .....	617
Loop Detector Installation.....	618
Magnetic Detector Installation .	619
Maintaining Existing and Temporary Electrical System .....	620
Painting .....	619
<b>TRANSPLANTING</b> .....	278
Ball Sizes for Collected Plants .....	278, 279
Trash Guards.....	627
Traveled Way, definition .....	12
<b>U</b>	
Unauthorized Work .....	71
Unclassified Excavation .....	188, 193
Underdrains (See SUBSURFACE DRAINS)	
Use of Explosives .....	125
Utilities, Cooperation with.....	67
<b>V</b>	
Value Engineering Change Proposal .....	22
Definition .....	12
Valves .....	627
Valve Boxes.....	627
Vibrating, Concrete.....	517
<b>W</b>	
<b>WALLS</b> .....	396
Approval and Qualifications of MSE Wall Installer.....	404
Backfill.....	400
Certifications, Calculations, and Testing Reports.....	402
Concrete Panel Facing Mechanically Stabilized Earth	

	Page
(MSE) Wall System .....	396
Facial Panel Process Control, Placing Plan, and Daily Placement Logs .....	406
Excavation and Backfill.....	406
Geomembrane and Joint .....	400
Fill under Leveling Pad .....	409
Hybrid MSE Wall Systems.....	403
Leveling Pad .....	400, 408
Panel Facing .....	408
Pre-Cast Concrete Panel Facing Unit and Panel Joint Material .....	401
Reinforcement .....	408
Shop Drawings .....	396
Technical Representative of Wall Product Supplier .....	405
Wall With Curved Alignments, Tight Curved Corners, and Sections Adjacent To Bridge Abutment..	406
Wall Test Segment.....	404
Wooden Wedges.....	408
Water .....	807
Water, Landscaping.....	248
<b>WATER CONTROL DEVICES</b> ..	626
Drainage, Automatic .....	628
Embankment Protector .....	626
Parshall Measuring Flume .....	626
Slide Headgate .....	626
<b>WATER LINE MATERIALS</b> .....	843
Cast Iron Pipe .....	843
Copper Pipe .....	844
Galvanized Pipe.....	844
Plastic Pipe .....	844
Valves and Valve Boxes .....	844
Welded Steel Pipe.....	843
<b>WATER LINES</b> .....	668
Jacked Pipe .....	669
<b>WATERING AND DUST PALLIATIVES</b> .....	247
Dust Palliative.....	247
Landscaping .....	248
Meters .....	248
Moisture and Density Control..	247

	Page
Prewetting .....	247
Sprinkling Equipment .....	247
Water Measuring Devices	
Meters .....	162
Parshall Measuring Flume .....	626
Water Quality Control (See also EROSION CONTROL) .....	131
Construction Requirements .....	132
Definitions.....	132
Measurement and Payment .....	140
Stormwater Construction Permit .....	137
WATERPROOFING .....	474
Waterproofing Materials (See JOINT, WATERPROOFING, AND BEARING MATERIALS)	
WATERPROOFING MEMBRANE .....	469
Concrete Sealer .....	469, 471
WATERSTOPS AND EXPANSION JOINTS .....	476
Asphaltic Expansion Devices .....	476, 479
Elastomeric Concrete End Dams .....	478, 484
Elastomeric Expansion Devices .....	476, 479
Modular Expansion Devices .....	477, 481
Waterstops.....	476, 479
Welded Steel Pipe.....	843
Welding (See STEEL STRUCTURES)	
Wire Rope.....	802
Wiring.....	583
Work	
Contractor's Responsibility for .	129
Definition .....	12
Extra.....	20
Extra and Force Account.....	164
Failure to Complete Work on Time .....	154
Inspection and Testing of.....	70

	Page
Removal of Unacceptable and Unauthorized .....	71
Working Day, definition .....	12
Working Drawing .....	32
Definition.....	12
Workers, Methods, and Equipment, Character of .....	150
Working Time Limitation .....	39
Workplace Violence.....	151
Definition.....	13

## NOTES