

ROADWAY STANDARD DRAWINGS



DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT Edition Date: July 18, 2006

Standard Drawings included in this issue are current as of July 18, 2006. Note any Standard Drawings applicable to individual projects by reference in the plans.

This book is effective for all projects referring to it and all maintenance projects until a new edition is issued by the Project Services Unit.

Any variations from the Standard Drawings shown herein are by special details shown in the project plans, by reference in the general notes or by special provisions.

These Standard Drawings are prepared and compiled by the PLANS and STANDARDS section of the PROJECT SERVICES UNIT.

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
	DIVISION 1 - GENERAL REQUIREMENTS	
	No Roadway Standard Drawings for this section.	
	DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II	200.02
200.03	Method of Clearing - Method III	200.03
225.01	Guide for Grading Subgrade - Interstate and Freeway	225.01
225.02	Guide for Grading Subgrade - Secondary and Local	225.02
225.03	Deceleration and Acceleration Lanes	225.03
225.04	Method of Obtaining Superelevation - Two Lane Pavement	225.04
225.05	Method of Obtaining Superelevation - Divided Highways	225.05
225.06	Method of Grading Sight Distance at Intersections	225.06
225.07	Grading for False Cut at Grade Separations	225.07
225.08	Earth Berm Median Pier Protection	225.08
225.09	Guide for Shoulder and Ditch Transition at Grade Separations	225.09
240.01	Guide for Berm Ditch Construction	240.01

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
DIVISION 3 - PIPE CULVERTS		
300.01	Method of Pipe Installation - Method 'A'	300.01
300.02	Method of Pipe Installation - Method 'B'	300.02
300.03	Method of Structural Plate Pipe and Pipe Arch Installation - Method 'A'	300.03
300.04	Method of Structural Plate Pipe and Pipe Arch Installation - Method 'B'	300.04
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe	310.02
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe	310.03
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe	310.04
310.05	Cross Pipe End Section - Prefabricated Steel Section for 18" to 30" Pipe	310.05
310.10	Driveway Pipe Construction	310.10
DIVISION 4 - MAJOR STRUCTURES		
422.10	Reinforced Bridge Approach Fills	422.10
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS		
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I	560.01
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II	560.02

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
DIVISION 6 - ASPHALT BASES AND PAVEMENTS		
610.01	Guide for Paving Shoulders Under Bridges - Method I	610.01
610.02	Guide for Paving Shoulders Under Bridges - Method II	610.02
610.03	Guide for Paving Shoulders Under Bridges - Method III	610.03
610.04	Asphalt Wearing Surface on Approach Slab	610.04
654.01	Pavement Repairs	654.01
665.01	Asphalt Shoulders - Milled Rumble Strips	665.01
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS		
700.01	Concrete Pavement Joints - Construction and Contraction Joints	700.01
700.02	Expansion Joint Layout - for Rigid Doweled Pavement at Bridges	700.02
700.03	Dowel Assembly	700.03
700.04	Concrete Pavement Header Board	700.04
700.05	Tying Proposed Pavement to Existing Pavement	700.05
710.01	Concrete Pavement - Station Marking	710.01
720.01	Concrete Shoulders - Stamped or Rolled Rumble Strips, Milled Rumble Strips	720.01
Sheet 3 of 15		

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
DIVISION 8 - INCIDENTALS		
806.01	Concrete Right-of-Way Marker	806.01
806.02	Granite Right-of-Way Marker	806.02
815.03	Pipe Underdrain and Blind Drain	815.03
816.01	Concrete Pads - for Shoulder Drain Installation	816.01
816.02	Aggregate Shoulder Drain	816.02
816.03	Geocomposite Shoulder Drain	816.03
816.04	Markers for Drainage Structure and Concrete Pad	816.04
820.01	Funnel and Funnel Drain - 12" Metal Funnel	820.01
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90° Skew	838.01
838.02	Concrete Endwall and Sluice Gate - 15" thru 36" Pipe 90° Skew	838.02
838.04	Conc. Endwall for Single & Double Pipe Culverts - 17"x13" thru 71"x47" Arch 90° Skew	838.04
838.05	Concrete 'L' Endwall for Single Pipe Culverts - 15" thru 48" Pipe	838.05
838.06	Concrete 'L' Endwall for Single Pipe Culverts - 17"x13" thru 71"x47" Pipe Arch	838.06
838.07	Conc. Endwall for Single & Double Pipe Culverts - 40"x31" thru 66"x51" Arch 90° Skew	838.07
838.08	Concrete 'L' Endwall for Single Pipe Culverts - 40"x31" thru 66"x51" Pipe Arch	838.08
838.10	Concrete Endwall for Outfall - 4", 6" or 8" Pipe	838.10
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90° Skew	838.11
838.14	Brick Endwall for Single & Double Pipe Culverts - 17"x13" thru 71"x47" Arch 90° Skew	838.14
838.15	Brick 'L' Endwall for Single Pipe Culverts - 15" thru 48" Pipe	838.15
838.16	Brick 'L' Endwall for Single Pipe Culverts - 17"x13" thru 71"x47" Pipe Arch	838.16
838.17	Brick Endwall for Single & Double Pipe Culverts - 40"x31" thru 66"x51" Arch 90° Skew	838.17

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
838.18	Brick Endwall for Single Pipe Culverts - 40"x31" thru 66"x51" Pipe Arch	838.18
838.20	Brick Endwall for Outfall - 4", 6" or 8" Pipe	838.20
838.21	Reinforced Concrete Endwall - for Single 54" Pipe 90° Skew	838.21
838.22	Reinforced Concrete Endwall - for Double and Triple 54" Pipes 90° Skew	838.22
838.27	Reinforced Concrete Endwall - for Single 60" Pipe 90° Skew	838.27
838.28	Reinforced Concrete Endwall - for Double and Triple 60" Pipes 90° Skew	838.28
838.33	Reinforced Concrete Endwall - for Single 66" Pipe 90° Skew	838.33
838.34	Reinforced Concrete Endwall - for Double and Triple 66" Pipes 90° Skew	838.34
838.39	Reinforced Concrete Endwall - for Single 72" Pipe 90° Skew	838.39
838.40	Reinforced Concrete Endwall - for Double and Triple 72" Pipes 90° Skew	838.40
838.45	Notes for Reinforced Concrete Endwall - Std. Dwg.s 838.21 thru 838.40	838.45
838.51	Reinforced Brick Endwall - for Single 54" Pipe 90° Skew	838.51
838.52	Reinforced Brick Endwall - for Double and Triple 54" Pipes 90° Skew	838.52
838.57	Reinforced Brick Endwall - for Single 60" Pipe 90° Skew	838.57
838.58	Reinforced Brick Endwall - for Double and Triple 60" Pipes 90° Skew	838.58
838.63	Reinforced Brick Endwall - for Single 66" Pipe 90° Skew	838.63
838.64	Reinforced Brick Endwall - for Double and Triple 66" Pipes 90° Skew	838.64
838.69	Reinforced Brick Endwall - for Single 72" Pipe 90° Skew	838.69
838.70	Reinforced Brick Endwall - for Double and Triple 72" Pipes 90° Skew	838.70
838.75	Notes for Reinforced Brick Endwall - Std. Dwg.s 838.51 thru 838.70	838.75
838.80	Precast Endwalls - 12" thru 72" Pipe 90° Skew	838.80

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
840.00	Concrete Base Pad for Drainage Structures	840.00
840.01	Brick Catch Basin - 12" thru 54" Pipe	840.01
840.02	Concrete Catch Basin - 12" thru 54" Pipe	840.02
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin	840.03
840.04	Concrete Open Throat Catch Basin - 12" thru 48" Pipe	840.04
840.05	Brick Open Throat Catch Basin - 12" thru 48" Pipe	840.05
840.13	Concrete Bridge Approach Drop Inlet - 12" thru 24" Pipe	840.13
840.14	Concrete Drop Inlet - 12" thru 30" Pipe	840.14
840.15	Brick Drop Inlet - 12" thru 30" Pipe	840.15
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg.s 840.14 and 840.15	840.16
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe	840.17
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe	840.18
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe	840.19
840.20	Frames and Wide Slot Flat Grates	840.20
840.22	Frames and Wide Slot Sag Grates	840.22
840.24	Frames and Narrow Slot Sag Grates	840.24
840.25	Anchorage for Frames - Brick or Concrete	840.25
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe	840.26
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe	840.27
840.28	Brick Grated Drop Inlet Type 'D' - 12" thru 36" Pipe	840.28
840.29	Frames and Narrow Slot Flat Grates	840.29
840.30	Driveway Drop Inlet	840.30

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
840.31	Concrete Junction Box - 12" thru 66" Pipe	840.31
840.32	Brick Junction Box - 12" thru 66" Pipe	840.32
840.33	Angled Vane Grates and Frames	840.33
840.34	Traffic Bearing Junction Box - for Use with Pipes 42" and Under	840.34
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates	840.35
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates	840.36
840.37	Steel Grate and Frame	840.37
840.41	Spring Box - Concrete or Brick	840.41
840.45	Precast Drainage Structure	840.45
840.46	Traffic Bearing Precast Drainage Structure	840.46
840.51	Brick Manhole - 12" thru 36" Pipe	840.51
840.52	Precast Manhole - 4', 5' and 6' Diameter	840.52
840.53	Precast Manhole with Masonry Base - 12" thru 42" Pipe	840.53
840.54	Manhole Frame and Cover	840.54
840.66	Drainage Structure Steps	840.66
840.71	Concrete and Brick Pipe Plug	840.71
840.72	Pipe Collar	840.72
846.01	Concrete Curb, Gutter and Curb & Gutter	846.01
846.02	Drop Inlet Installation in Expressway Gutter	846.02
846.03	Funnel Drain Installation in Shoulder Berm Gutter	846.03
846.04	Drop Inlet Installation in Shoulder Berm Gutter	846.04
848.01	Concrete Sidewalk	848.01

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
848.02	Driveway Turnout - Radius Type	848.02
848.03	Driveway Turnout - Drop Curb Type	848.03
848.04	Street Turnout	848.04
848.05	Wheelchair Ramp - Curb Cut	848.05
848.06	Wheelchair Ramp - Retrofitting of Existing Curb	848.06
850.01	Concrete Paved Ditches	850.01
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe	850.10
850.11	Guide for Berm Drainage Outlet - 24" and 30" Pipe	850.11
852.01	Concrete Islands	852.01
852.02	Concrete Mountable Median - for Use with Rigid or Flexible Pavement	852.02
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter	852.04
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter	852.05
852.06	Method for Placement of Drop Inlets in Concrete Islands	852.06
852.10	Median Construction - with Curb and Gutter	852.10
854.01	Double Faced Concrete Barrier - Types I, II, III and IV	854.01
854.02	Double Faced Concrete Barrier - Types 'T', 'T1' and 'T2'	854.02
854.04	Concrete Median Barrier - Precast Permanent	854.04
854.05	Concrete Median Transition Barrier - Location of Overhead Assembly	854.05
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced	857.01
862.01	Guardrail Placement	862.01
862.02	Guardrail Installation	862.02
862.03	Structure Anchor Units	862.03

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units	862.04
865.01	Cable Guiderail	865.01
866.01	Chain Link Fence - 4', 5' and 6' High Fence	866.01
866.02	Woven Wire Fence - with Wood Post	866.02
866.03	Woven Wire Fence - with Steel Post	866.03
866.04	Barbed Wire Fence - with Wood Posts (2 - 7 Strands)	866.04
866.05	Glare Screen - Chain Link Fabric/Guardrail Mounted	866.05
876.01	Rip Rap in Channels	876.01
876.02	Guide for Rip Rap at Pipe Outlets	876.02
876.03	Drainage Ditches with Class 'A' Rip Rap	876.03
876.04	Drainage Ditches with Class 'B' Rip Rap	876.04

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
DIVISION 9 - SIGNING		
901.10	Type 'A' Signs - Welded Stud Construction	901.10
901.20	Type 'B' Signs - Welded Stud Construction	901.20
901.30	VHB Tape Construction - for Type 'A' Signs	901.30
901.40	VHB Tape Construction - for Type 'B' Signs	901.40
901.50	Arrows and Shields	901.50
901.60	Rivet Spacing for Overlaid Signs	901.60
901.70	Sign Stringers and Support Spacing	901.70
901.80	Sign Mounting Details - Type 'A' and 'B' Signs	901.80
903.10	Ground Mounted Sign Supports	903.10
903.20	Wood Sign Post	903.20
903.30	Barrier Sign Support Assembly	903.30
903.40	Median Barrier Sign Support and Anchorage	903.40
904.10	Orientation of Ground Mounted Signs	904.10
904.20	Secondary Sign Mounting	904.20
904.30	Supplemental Sign Mounting	904.30
904.40	Milepost and Placement	904.40
904.50	Mounting of Type 'D', 'E' and 'F' Signs on 'U' Channel Posts	904.50
904.80	Typical Signing Series for Highway Entrances into the State	904.80
905.10	Lighting System for Overhead Sign Assemblies	905.10
909.60	Typical Signing Series for Highway Entrances into the State	909.60

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
	DIVISION 10 - MATERIALS	
	No Roadway Standard Drawings for this section.	
	DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	Work Zone Advance Warning Signs	1101.01
1101.02	Temporary Lane Closures	1101.02
1101.03	Temporary Road Closures	1101.03
1101.04	Temporary Shoulder Closures	1101.04
1101.05	Work Zone Vehicle Accesses	1101.05
1101.06	Warning Signs for Blasting Zones	1101.06
1101.11	Traffic Control Design Tables	1101.11
1110.01	Stationary Work Zone Signs - Mounting Height & Lateral Clearance	1110.01
1110.02	Portable Work Zone Signs - Mounting Height & Lateral Clearance	1110.02
1115.01	Flashing Arrow Panels	1115.01
1130.01	Drum	1130.01
1135.01	Cones	1135.01
1145.01	Barricades - Type III	1145.01
1150.01	Flagging Devices	1150.01
1160.01	Temporary Crash Cushion - Reflective End Treatment	1160.01
1165.01	Truck Mounted Impact Attenuator - Delineation	1165.01
1170.01	Portable Concrete Barrier	1170.01
1180.01	Skinny Drum	1180.01

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
DIVISION 12 - PAVEMENT MARKINGS, MARKERS AND DELINEATION		
1205.01	Pavement Markings - Line Types and Offsets	1205.01
1205.02	Pavement Markings - Divided and Undivided Roadways	1205.02
1205.03	Pavement Markings - Interchanges	1205.03
1205.04	Pavement Markings - Intersections	1205.04
1205.05	Pavement Markings - Turn Lanes	1205.05
1205.06	Pavement Markings - Thru Lane Drops	1205.06
1205.07	Pavement Markings - Pedestrian Crosswalks	1205.07
1205.08	Pavement Markings - Symbols and Word Messages	1205.08
1205.09	Pavement Markings - Painted Islands	1205.09
1205.10	Pavement Markings - School Areas	1205.10
1205.11	Pavement Markings - Railroad Crossings	1205.11
1205.12	Pavement Markings - Bridges	1205.12
1250.01	Pavement Marker Spacing	1250.01
1251.01	Raised Pavement Markers - Permanent and Temporary	1251.01
1253.01	Snowplowable Raised Pavement Markers	1253.01
1261.01	Guardrail and Barrier Delineator Spacing	1261.01
1261.02	Guardrail and Barrier Delineator Types	1261.02
1262.01	Guardrail End Delineation	1262.01
1264.01	Object Markers	1264.01
1264.02	Placement of Object Markers	1264.02
1267.01	Flexible Delineator Installation	1267.01

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
1267.02	Flexible Delineator Spacing	1267.02
1267.03	Flexible Delineator - Interchanges	1267.03
DIVISION 14 - LIGHTING		
1401.01	High Mount Standard	1401.01
1402.01	High Mount Foundation	1402.01
1403.01	High Mount Luminaires	1403.01
1404.01	Light Standards	1404.01
1405.01	Standard Foundation	1405.01
1406.01	Light Standard Luminaires	1406.01
1407.01	Electric Service Pole and Lateral	1407.01
1408.01	Light Control System	1408.01
1409.01	Electrical Duct	1409.01
1410.01	Feeder Circuits	1410.01
1411.01	Electrical Junction Boxes	1411.01
1412.01	Underpass Lighting	1412.01
DIVISION 15 - UTILITIES		
1525.01	Precast Sanitary Sewer Manholes - 4' and 5' Diameter	1525.01
1525.02	Precast Sanitary Sewer Drop Manhole - 4' Diameter Outside Drop	1525.02
1525.03	Precast Sanitary Sewer Drop Manhole - 5' Diameter Outside Drop	1525.03
1525.04	Precast Sanitary Sewer Drop Manhole - 5' Diameter	1525.04

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
1525.05	Precast Concrete and Brick Sanitary Sewer Manhole	1525.05
1525.06	Precast Concrete Sanitary Sewer Manhole	1525.06
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT		
1604.01	Railroad Erosion Control	1604.01
1605.01	Temporary Silt Fence	1605.01
1606.01	Special Sediment Control Fence	1606.01
1607.01	Gravel Construction Entrance	1607.01
1622.01	Guide for Temporary Berms and Slope Drains	1622.01
1630.01	Riser Basin	1630.01
1630.02	Silt Basin Type 'B'	1630.02
1630.03	Temporary Silt Ditch	1630.03
1630.04	Stilling Basin For Pumped Effluent	1630.04
1630.05	Temporary Diversion	1630.05
1630.06	Special Stilling Basin	1630.06
1632.01	Rock Inlet Sediment Trap Type 'A'	1632.01
1632.02	Rock Inlet Sediment Trap Type 'B'	1632.02
1632.03	Rock Inlet Sediment Trap Type 'C'	1632.03
1633.01	Temporary Rock Silt Check Type 'A'	1633.01
1633.02	Temporary Rock Silt Check Type 'B'	1633.02
1634.01	Temporary Rock Sediment Dam Type 'A'	1634.01
1634.02	Temporary Rock Sediment Dam Type 'B'	1634.02

STD. NO.	STANDARD DRAWING TITLES	STD. NO.
1635.01	Rock Pipe Inlet Sediment Trap Type 'A'	1635.01
1635.02	Rock Pipe Inlet Sediment Trap Type 'B'	1635.02
DIVISION 17 - Signals and Traffic Management Systems		
1700.01	Electrical Service Options	1700.01
1700.02	Electrical Service Grounding	1700.02
1705.01	Signal Heads - Vehicular Signal Heads	1705.01
1705.02	Signal Heads - Pedestrian Assemblies	1705.02
1715.01	Underground Conduit - Trenching	1715.01
1716.01	Junction Boxes	1716.01
1720.01	Wood Poles	1720.01
1721.01	Guy Assemblies	1721.01
1725.01	Inductive Detection Loops	1725.01
1730.01	Fiber-Optic Cable - Spare Cable Storage	1730.01
1743.01	Signal Pedestal - Foundation Installation	1743.01
1751.01	Controllers and Cabinets - Cabinet Component Layout	1751.01
1751.02	Controllers and Cabinets - Power, Ground and Auxiliary	1752.01