



STANDARD DETAIL DRAWINGS (Examiner's List)

These drawings will be included when applicable in plans scheduled for the **May 2024 PS&E** due date Project Letting Process.

MANHOLES, CATCH BASINS AND INLET COVERS

8A5-21a ^(A)	Inlet Covers Type A, H, A-S, H-S, & Z
8A5-21b ^(A)	Inlet Covers Type B, B-A, C, MS, MS-A & WM
8A5-21c ^(A)	Inlet Covers Type F, HM, HM-S, S, T, HM-GJ, & HM-GJ-S
8A5-21d ^(A)	Inlet Covers Type V, V-B, & VV-B
8A5-21e ^(A)	Inlet Covers, Type BW, Manhole Covers, Type K, J, J-S, L & M
<u>Note:</u> ^(A)	Sheets "a," "b," "c," & "d" of SDD 8A5 are independent of each other. See design notes on SDDs for cover placement.
8A8-3	Catch Basins 3-FT, 4-FT, 5-FT, and 6-FT Diameter
8A9-3	Catch Basins 2x3-FT and 2.5x3-FT
8B9-4	Manholes 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, and 10-FT Diameter
8B10-3	Manholes 3x3-FT, 4x4-FT, 5x5-FT and 6x6-FT
8B11-3	Manholes Variable Tee and Special 4-FT Diameter
8C6-3	Inlets 3-FT and 4-FT Diameter
8C7-3	Inlets 2x2-FT, 2x2.5-FT, 2x3-FT, 2.5x3-FT, and 2x3.5-FT
8C8-3	Inlet Median 1 and 2 Grate
8C9-2	Inlets Median 3 and 4 Grate
8D1-23a, b	Concrete Curb & Gutter, Concrete Curb, Ties & Gutter Applications (Always include sheets a & b together) - All items labeled as Type A, G, K, R or TBTT include tie bars, (Curb types = G, J, A, D) (18" C&G = A, D) (30" C&G = A, D, K, L, G, J) (36" C&G = A, D) (Roundabout C&G= R and T) (Thrie Beam Transition C&G = TBT and TBTT), Note: Non-standard C&G needs SPV item and construction detail.
8D2-8a, b & c	Concrete Surface Drains, Flume Type at Structures (Always include sheets a, b & c together) (Pavement Ties required at existing bridge wing walls) (Bridge Section must be notified to include tie bars in wing wall plans for new bridges)
8D3-9a & b	Concrete Surface Drains, Drop Inlet Type at Structures (Always include sheets a & b together) (Pavement Ties required at existing bridge wing walls) (Bridge Section must be notified to include tie bars in wing wall plans for new bridges) (Bid Inlets 2x2 FT.)
8D4-7	Concrete Surface Drains and Asphaltic Flumes (For use at ends or intermediate areas of Concrete C&G)
8D5-21a	Curb Ramps Types 1 & 1-A (List type on plan) (See FDM 11-46-10) Always requires 8D5-b, c, d, e, f & g
8D5-21b	Curb Ramps Types 2 & 3 Always requires 8D5-a, c, d, e, f & g
8D5-21c	Curb Ramps Type 4A & 4A1 Always requires 8D5-a, b, d, e, f & g
8D5-21d	Curb Ramps Type 4B & 4B1 Always requires 8D5-a, b, c, e, f & g
8D5-21e	Curb Ramps Type 5, 6, 7A, 7B & 8 Always requires 8D5-a, b, c, d, f & g
8D5-21f	Curb Ramps Radial Detectable Warning Field Applications Always requires 8D5-a, b, c, d, e & g
8D5-21g	Curb Ramps Rectangular and Radial Detectable Warning Plates Always requires 8D5-a, b, c, d, e & f
8D13-2	Slotted Corrugated Metal Pipe Surface Drains (Bid items 521.2005.S)
8D14-2	Slotted Vane Drain (Paid for as a 611.9900.S)

8D15-5a	Edgedrain Outlet and Outfall Markers Always requires "b" or "c" of 8D15
8D15-5b	Edgedrain and Base Aggregate Open Graded
8D15-5c	Edgedrain and Base Aggregate Open Graded
8D16-11	Concrete Gutter, Curb & Gutter and Pav't. Ties (C&G = 19", 22" & 31") (Gutter = 24") (Typically only used in Milwaukee)
8D17-6	Manholes, Manhole & Inlet Covers (M.H.= 11, 12, 13, & 14) (Covers = Q, R, W, X) (Typically only used in Milwaukee)
8D18-4	Driveway and Sidewalk Ramps Types X & Y
8D19-4	Driveway and Sidewalk Ramps Type Z
8D20-1	Driveways with Curb and Gutter Returns
8D21-1	Driveways without Curb and Gutter
8D22-1	Driveways without Curb and Gutter Resurfacing Projects Rural
8E5-2	Sodded Backslope Flume and Intercepting Embankment
8E8-3	Typical Installations of Erosion Bales/Temporary Ditch Checks (use double row of bales in channels, ditch checks, or altered flow applications; this is always required with items 628.1104 and 628.7504.
8E9-6	Silt Fence (do not use silt fence in channels)
8E10-2	Inlet Protection Type A, B, C and D
8E11-2	Turbidity Barrier
8E12-1	Silt Screen
8E14-1	Tracking Pad
8E15-1	Culvert Pipe Checks (measured and paid by the individual bag used in the check)
8F1-11	Apron Endwalls for Culvert Pipe
8F2-1	Apron Endwalls for Pipe Arch and Elliptical Pipe
8F3-3	Details for Pipe Cattle Pass, Concrete Endwalls & Steps (Bid "Concrete Masonry, Endwalls" and "Concrete Steps" where req'd.)
8F4-8	Joint Ties for Concrete Pipe and Concrete Collar Detail (Include with concrete culvert pipe or concrete storm sewer outfalls. Also include with Concrete Collars for Culvert Pipe, bid item 520.8000)
8F6-4	Reinforced Concrete Apron Endwalls for Pipe Underdrain (Detailed for 4" & 6" PVC, Sch. 40 pipe outfalls) (612.0804 item = 4" endwall & 612.0806 item = 6" endwall) (Special Details necessary if 8" or 10" P.U. size endwalls req'd.)
8F7-5	Steel Apron Endwalls for Culvert Pipe and Pipe Arch Sloped Side Drains (For Sideroads and Driveways, 4:1, 6:1 and 10:1 sloped side drain endwalls. Bid Items 521.1500 - 521.1699 for culvert pipe, 521.1700 - 521.1899 for pipe arch).
8F8-2	Steel Apron Endwalls for Culvert Pipe and Pipe Arch Sloped Cross Drains (4:1 and 6:1 sloped cross drain endwalls. Bid Items 521.0300 - 521.0499 for culvert pipe, 521.0500-521.0699 for pipe arch).
8F10-2	Concrete Masonry Endwalls for Culvert Pipe & Pipe Arch

9A1-14a	At Grade Side Road Intersection, Types "B1", "B2", "C" and "D" and Tee Intersection Bypass Lane (Always include sheet "b" of 9A1) (C&G SDD 8D1 req'd. if Conc. C&G req'd and SDD 8D4 req'd if Conc. or Asph. Flumes req'd.)
9A1-14b	At Grade Side Road Intersection, Type "A1" & "A2" (Island curb nose detail included) (8D1 req'd for C&G and Curb) (8D4 req'd if concrete or asphalt flumes are req'd)

SIGNAL & LIGHTING STANDARDS

9B2-10	Conduit
9B4-12	Pull Box (Do not use in asphalt pavements over crushed aggregate base course)
9B16-2	Pull Box Non-Conductive
9C2-9	Concrete Bases, Types 1, 2, 5 and 6 (For Traffic Signals and Street Lights) (Type 1-654.0101, Type 2-654.0102, Type 5-654.0105, Type 6-654.0106)
9C3-4	Transformer/Pedestal Bases (Transformer 657.0255-std 11 1/2 "Bolt Circle & Pedestal

	657.0100)
9C4-4	Concrete Base Bolt Repair
9C5-10	Concrete Control Cabinet Bases (Type = 6, 7, 8, 9 & 10)
9C6-7	Concrete Control Cabinet Bases, Type 9 Special (item 654.0217) (For use where 2 intersections are served from one T.C. Cabinet)
9C8-6	Concrete Base, Type 7 (654.0107)
9C9-6	Concrete Base, Type 8 (654.0108)
9C10-3	Transformer Base for 15" Bolt Circle (Transformer Base Breakaway 13-15 Inch Bolt Circle, 657.0205 & 15-17 Inch Bolt Circle 657.0210)
9C11-10	Concrete Base Type 10
9C12-9a,b	Concrete Base Type 13 (Always include sheets a & b)
9C13-3	Concrete Base Type 10 and Type 13 Extension
9C14-3	Concrete Control Cabinet Base, Type L
9C15-1	Concrete Base Type 10 Special (Also include 9C16)
9C16-1	Concrete Base Type 10 Special Extension (Always include with 9C15)
9D1-5	Cabinet Service Installation (Meter Breaker Pedestal) 656.0200 (Traffic signals or lighting) (Non-cabinet service installations, items 656.0100 Meter Socket & 656.0300 Unmetered, require special details or 9D3)
9D2-3	Signal Control Cabinet Usually required 9C5 and-or 9C6.
9D3-3	Post Mounted Controller Service Installation (Concrete Controller Base, Type 10-654.0220, Pedestal Base-657.0100, Electric Service Meter Socket – 656.0100) (Requires 9C3 and 9C5)
9D4-3	Lighting Control Cabinet 120/240 Volt
9D5-2	L30 Lighting Control Cabinet 240/480Volt
9E1-15a	Pole Mountings for Traffic Signals, Type 2 (Always include 9E1- sheet g)
9E1-15b	Pole Mountings for Traffic Signals and Lighting Units, Type 3 (Heavy Duty) (Always include 9E1- sheet g)
9E1-15c	Pole Mountings for Traffic Signals and Lighting Units, Type 4 (Always include 9E1- sheet g) (Signal on pole) (item 657.0315)
9E1-15d	Pole Mountings for Lighting Units, Type 5 (30 foot) (items 657.0321 and 657.0322) (Always include 9E1- sheet g)
9E1-15e	Pole Mountings for Lighting Units, Type 6 (Always include 9E1- sheet g) (35 foot) (items 657.0326 and 657.0327)
9E1-15f	Pole Mountings for Lighting Units, Type 17 (Always include 9E1- sheet g) (40 feet) (items 657.0336 and 657.0337)
9E1-15g	Hardware Details for Pole Mountings (req'd with all pole mounting SDD's) [Bid as "Traf. Sig. Mtg. Hdwre, (Loc.) - 1 L.S. (item 658.5069) - Only when poles with traffic signals on them are bid]
9E2- 5 ^(B)	Freeway Lighting Unit Pole Wiring (Non-pedestrian traffic area)
9E3- 6 ^(B)	Non-Freeway Lighting Unit Pole Wiring (Pedestrian traffic area)
<u>Note:</u> ^(B)	At least one of these pole wiring SDDs shall be used when lighting is involved.
9E4-6	Walkway Lighting Unit and Concrete Base, Type 11 (Lighting Units, Walkway Lights = 659.0700; Concrete Base, Type 11 = 654.0111)
9E5-6	Traffic Signal Standard Ornamental Bracket Mountings Typical for 13 ft. or 15 ft. (Aluminum 657.0420, 657.0425)
9E6-5	Traffic Signal Standard Poly Bracket Mountings Typical 13 ft or 15 ft. Aluminum – 657.0420, 657.0425)
9E7-6	Traffic Signal Standard Pedestrian and Flasher Typical Mounting Details (Pedestal Base 656.0100; Traffic Signal Standards, Aluminum, 10-ft.or 3.5 ft.-657.0405 or 657.0430; Signs Type II Reflective H637.2210 or Type II Reflective H Folding 637.2215 (Stop Signs), Pedestrian Signal Faces 12 - Inch – 658.0412 Pedestrian Push Buttons (includes Pedestrian Signs - List Correct "R10" Sign Designations in Miscellaneous Quantity List; Traffic Signal Standards, 13-ft or 15 ft Aluminum 657.0420 or 657.0425) (SDD 9C2 Concrete Bases, and SDD 9C3 Pedestal Bases)
9E8-9a	Type 9 Pole 15' - 30' Monotube Arm (Always include 9E8 sheet k)

9E8-9b	Type 9 Special Pole 35' Monotube Arm
9E8-9c	Type 9 Special Pole 40' Monotube Arm (Always include 9E8 sheet k)
9E8-9d	Type 9 Special Pole 45' Monotube Arm (Always include 9E8 sheet k)
9E8-9e	Type 10 Pole 15' – 30' Monotube Arm (Always include 9E8 sheet k)
9E8-9f	Type 10 Special Pole 35' Monotube Arm (Always include 9E8 sheet k)
9E8-9g	Type 10 Special Pole 40' Monotube Arm (Always include 9E8 sheet k)
9E8-9h	Type 10 Special Pole 45' Monotube Arm (Always include 9E8 sheet k)
9E8-9i	Type 12 Pole 35' – 55' Monotube Arm (Always include 9E8 sheet k)
9E8-9j	Type 13 Pole 35' – 55' Monotube Arm (Always include 9E8 sheet k)
9E8-9k	General Notes and Hardware Details For Types 9, 10, 9/10 Special, 12 and 13 Poles with Monotube Arms
9E12-1a	Over Height Type 9 Pole 15'-30' for Monotube Arm (Always Include 9E12 sheet e)
9E12-1b	Over Height Type 10 Pole 15'-30' Monotube Arm (Always Include 9E12 sheet e)
9E12-1c	Over Height Type 12 Pole 35'-55' Monotube Arm (Always Include 9E12 sheet e)
9E12-1d	Over Height Type 13 Pole 35'-55' Monotube Arm (Always Include 9E12 sheet e)
9E12-1e	General Notes & Hardware Details for Over Height Type 9, 10, 12 & 13 Poles with Monotube Arms

LOOP DETECTOR STANDARDS

9F1-4 (F)	Details for Installation of Temporary Traffic Signal Loop Detector Wires in any Existing Pavement
9F4-5 (C,E)	Loop Detector Installed in New Concrete Pavement, Round CSCP Pullbox
9F7-5 (C,E)	Loop Detector Installed in New Concrete Base with New Asphaltic Overlay, Round CSCP Pullbox
9F8-4 (C)	Loop Detector Placed in Crushed Aggregate Base (New Asphaltic Pavement)
9F9-5 (C,E)	Loop Detector Placed in Crushed Aggregate Base (New Concrete Pavement), with round CSCP Pull Box
9F10-4 (C,F)	Loop Detector Installed in Existing or New Asphaltic Pavement with New Asphaltic Overlay
9F11-4 (C,F)	Loop Detector Installed in Existing Concrete Pavement with New Asphaltic Overlay
9F12-4 (C,F)	Loop Detector Installed in Existing Concrete Pavement
9F13-4 (C,F)	Loop Detector Installed in Existing Asphaltic Pavement
9F14-3 (C,E)	Loop Detector Installed in New Concrete Pavement, Round CSCP Pullbox, 45 degree Elbows to Pull Box
9F15-4a (C,E)	Loop Detector Installed in Base Course with Pull (Splice) Box Off Roadway (Option 1)
9F15-4b (C,E)	Loop Detector Installed in Base Course with Pull (Splice) Box Off Roadway (Option 2)

NOTES:

(C)	Bid "Loop Detector Conduit, item 652.0800
(D)	Bid "Junction Boxes, 8x8x8-inch" item 653.0208
(E)	Bid correct size and item number for "Pull Boxes, ___x___-inch" (see bid items 653.0105 thru 653.0145)
(F)	Loop Detector Slots item 652.0900
9F16-2	Two Loop Detectors Installed in New Concrete Pavement, Round CSCP Pullbox, 45 degree Elbows to Pull Box

TEMPORARY TRAFFIC SIGNALS

9G1-4a	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4b	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4c	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4d	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4e	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4f	Span Wire Temporary Traffic Signal - Always include sheets d-g
9G1-4g	Span Wire Temporary Traffic Signal - Always include sheets d-g

9G2-5a	Bridge Temporary Traffic Signal Installations – Always include 9G2-b & c, and 15D33
9G2-5b	Bridge Temporary Traffic Signal Installations – Always include 9G2-a & c, and 15D33
9G2-5c	Bridge Temporary Traffic Signal Installations – Always Include 9G2-a & b, and 15D33

INTELLIGENT TRANSPORTATION SYSTEMS

9H1-1	Base ITS Controller Cabinet
9H3-1	2 Circuit Meter Breaker Pedestal
9H4-1	2 Circuit Electrical Service Meter Breaker Pedestal and Breaker Disconnect Box
9H5-1	Cabinet Breaker Disconnect Box Installation
9H6-2	Signal Assembly Advanced Flasher Type 1
9H7-1	Signal Assembly Ramp Control Sidemount
9H8-3	Communications Manhole Detail
9H9-2	Communications Vault Type 1
9H10-1	Communications Vault Type - Round
9H11-1	Identification Plaque Requirements and Placements
9H14-1	Wireless Detection Sensor Mounting
9H15-1	Mounted Controller Microwave Detector Assembly and Mounted Controller Installation
9H16-1	Install Wireless Antenna

FREEWAY LIGHTING DESIGN

10A1-4	Electrical Handheld Wiring
10A2-3	Identification Plaques Light Poles
10A3-3	Circuit Identification Plaques Sign Bridges
10A4-3	Identification Plaques Underdeck and High Mast Lighting
10A5-3	Electrical Details Ground Mount Light Poles Isolated Neutral Systems
10A6-3	Electrical Details Ground Mount Light Poles Grounded Neutral Systems
10A7-3	Electrical Details Ground Mount Light Poles Phase-to-Phase Systems
10A8-3	Electrical Details Structure Mount Light Poles Isolated Neutral Systems
10A9-3	Electrical Details Structure Mount Light Poles Grounded Neutral Systems
10A10-3	Electrical Details Structure Mount Light Poles Phase-to-Phase Systems
10A11-3	Electrical Details Median Mount Light Poles Isolated Neutral Systems
10A12-3	Electrical Details Median Mount Light Poles Grounded Neutral Systems
10A14-3a&b	Electrical Details High Mast Lighting (Always include sheets a & b)
10A15-4a&b	Electrical Details Underdeck Lighting (Always include sheets a & b)
10A17-5a	Poles Type 7
10A17-5b	Poles Type A
10A17-5c	Poles Type E
10A17-5d	Poles Type F
10A18-5a&b	Luminaire Arms, Single Member & Truss Type, 6-Inch Clamps

MEDIANS

11A1-6	Maintenance Crossover for Freeways
11B1-5	Concrete Corrugated Median (620.0100)
11B2-2	Concrete Median Nose (Blunt nose, item 620.0200; Sloped nose, item 620.0300)

STRUCTURES

12A3-10	Name Plate for Structures (for all including retaining walls)
12A4-3	Structure Identification Plaques, Sign Bridge, Ramp Gate, Overhead Sign Supports & Traffic Signals (Use with sign bridges, ramp gates, and overhead sign supports)

CONCRETE PAVEMENT STANDARDS

13A3-7	Concrete Pavement Shoulders (Transverse Joint SDD req'd, 13C11 or 13C13)
13A5-6a&b	Shoulder Rumble Strips, Divided Roadway (Always include sheets a & b) (item 465.0510 and 602.3210) Req.'d for shoulders of freeways and expressways, outside median (see FDM)

	11-15-1).
13A7-2	Continuously Reinforced Concrete Pavement Repair and Replacement
13A8-2	Transvers Rumble Strips, Asphaltic
13A9-2	Transverse Rumble Strips, Concrete
13A10-3a-h	2-Lane Rural Shoulder Rumble Strips , (Always include sheets g & h, include a – f, as applicable)
13A11-4a-d	2-Lane Rural Center Line Rumble Strips , (Always include sheets d, include a – c, as applicable)
13B1-11a & b	Pavement Details for R.R. Approach & Typical Sections (For asphalt & Concrete, always include sheets a & b)
13B2-9a&b	Concrete Pavement Approach Slab Sheet a can stand alone. Sheets a and b are required on all IH and USH bridges when Structural Approach Slab in included on the structure plan.
13C1-19	Concrete Pavement Longitudinal Joints and Ties Req'd. for all Conc. Pav't. (No Sealant)
13C4-17	Urban Non-Doweled Concrete Pavement (No Sealant & Non-Doweled)
13C8-2	Concrete Pavement Partial Depth Repair
13C9-17a,b,c	Concrete Pavement Repair and Replacement. Must use sheets a, b & c together in plan sets. Not to be used when pavement to be overlaid. For overlaid pavement repairs use 13C14.
13C10-3	Retrofit Dowel Bars (Pay for as "Pavement Dowel Bars Retrofit Warranted", Item 416.0623.S, see STSP 416-010)
13C11-14a&b ^(F)	Rural Doweled Concrete Pavement. Must use sheets a & b together in plan sets. Includes detail for drilling dowel bars into existing pavement (bid item 416.0620.) Always include SDD 13C1.
13C13-11 ^(F)	Urban Doweled Concrete Pavement (Transv. Joints) (No Sealant) Note: Includes details for drilling dowel bars into existing pavement (bid item 416.0620.) Always include SDD 13C1.
<u>NOTE:</u> ^(F)	Check for tining requirements, Std. Specs. 415.3.8 (Surface Finishing)
13C14-7a,b,c	Base Patching Concrete. For pavement repairs that are overlaid. Must use sheets a, b, & c together in plan sets.
13C15-8a & b	Concrete Base. Must use sheets a & b together in plan sets.
13C16-2a&b	Detail for Right Turn Lane/ Tee Intersection Bypass Lane on a Concrete Highway (Always include sheets a & b) SDD 13C1 required. Also add the appropriate transverse joint SDD.
13C18-8a	Concrete Pavement Jointing (Always include sheets b – d & f)
13C18-8b	Concrete Pavement Steel Reinforcement (Always include sheets a, c – d & f)
13C18-8c	Concrete Pavement Joint Types (Always include sheets a, b, d & f)
13C18-8d	Concrete Pavement Jointing at Utility Fixtures (Always include sheets a – c & f)
13C18-8e	Concrete Pavement Jointing and Steel Reinforcement in Roundabouts
13C18-8f	Concrete Pavement Intersection Boxout for Integral Curb and Gutter (Always include sheets a – d)
13C18-8g	Concrete Pavement Jointing Acceleration/Deceleration Lane
13C19-3	HMA Longitudinal Joints – Longitudinal joint (centerline & lane line) for main line paving.
14A1-3	Tree Preservation Details - Riprap must be bid - also bid construction of tree wells or use other pay items.
14A2-1	Tree Planting Detail - Plant data chart required in plan. Work is covered under the pertinent planting bid items.
14B7-16a-n	Concrete Barrier Temporary Precast, 12'-6" - All sheets are needed. Review the need for crash cushions or arrays.
14B8-2a-e	Crash Cushion/Sand Barrel Array and other Temporary Layout Details - All sheets are needed.
14B11-3	Concrete Barrier, Double Faced - Note: See sheets "a" and "b" of SDD 14B22 for Concrete Barrier, Single Faced. New concrete barrier installations require the use of single slope barrier design.
<u>CLASS "A" BEAM GUARD & THRIE BEAM STANDARDS</u>	
14B15-11a-c	Steel Plate Beam Guard, Class "A" Installation & Elements – Always include sheets a-c

14B16-4a&b	Anchorage for Steel Plate Beam Guard Type 2 - Requires SDD 14B15.
14B18-6a	Steel Plate Beam Guard, Class "A", (At Bridges, Obstacles and Sideroads/Driveways) - Requires SDD 14B15.
14B18-6b	Steel Plate Beam Guard, Class "A", at Median Approach to Bridges - Usually requires SDD 14B15 - a&b, 14B18 - a, and 14B20 - a and one or more of the Thrie Beam Structure Connection SDDs.
14B20-12a	Steel Thrie Beam Structure Approach (item 614.0200) - Usually requires SDD 14B15.
14B20-12b	Steel Thrie Beam Structure Approach, Connection to Square End Parapets - Usually requires SDD 14B15.
14B20-12c	Steel Thrie Beam Structure Approach, Connection to Vertical Faced Parapets - Usually requires SDD 14B15.
14B20-12d	Steel Thrie Beam Structure Approach, Connection to Sloped End Parapets - Usually requires SDD 14B15.
14B20-12e	Steel Thrie Beam Structure Approach, Connection to Bridge Railing Type "F" and "W" - Usually requires SDD 14B15.
14B20-12f	Steel Thrie Beam Structure Approach, Connection to Bridge Railing Type "M" - Usually requires SDD 14B15.
14B20-12g	Steel Thrie Beam Structure Approach, Connector Plate Detail - Usually requires SDD 14B15.
14B20-12h	Steel Thrie Beam Structure Approach, Single Slope Attachment - Usually requires SDD 14B15.
14B22-7a&b	Concrete Barrier, Single-Faced (With Anchorage) - design may also need SDD 14B20.
14B24-9a,b&c	Steel Plate Beam Guard Energy Absorbing Terminal - Always include 14B15.
14B25-1	Steel Plate Beam Guard, Class "A", Over Low Fill Culverts - For use over low fill box, and pipe culvert structures with cover less than 4'-0". Requires SDD 14B15.
14B26-5a-h	Steel Thrie Beam Bullnose Terminal - may need SDD 14B20.
14B27-1a,b&c	Steel Plate Beam Guard Short Radius Terminal - requires SDD 14B15.
14B28-4a&b	Guardrail Mow Strips - refer to backside for associated SDDs.
14B29-1	Safety Edge - Include with paved shoulders 3 feet wide or less; or if the plans show safety edge.
14B41-3a&b	Single Slope Roadside Retaining Wall
14B42-7a-d	Midwest Guardrail System (MGS)
14B43-4a-c	Midwest Guardrail System Long Span (MGS L) - Requires SDD 14B42.
14B44-4a-c	Midwest Guardrail System (MGS) Terminal - Requires SDD 14B42.
14B45-5a-l	Midwest Guardrail System (MGS) Thrie Beam Transition - Requires SDD 14B42.
14B47-5a-g	Midwest Guardrail System (MGS) Type 2 Terminal - Requires SDD 14B42.
14B48-1a, b	Retrofit Cantilever Blunt End
14B49-1a,b	Retrofit Cantilever Sloped End
14B50-1a,b,c	Thrie Beam Approach Retrofit Installation of Missing Post
14B51-3a,b,c	Anchor Post Assembly Top-Mounted
14B52-3a-c	Cable Barrier Type 1 Layout
14B53-2a-i	Short Radius Beam Guard (MGS)

CONCRETE BARRIER

14B32-10a-h	Concrete Barrier, Single Slope
14B33-2a-h	Concrete Barrier, Single Slope Thrie Beam Anchorage
14B34-2a-c	Concrete Barrier, Single Slope, Type B
14B35-2a-f	SF NJ Shape Concrete Barrier to Single Slope Concrete Barrier Transition
14B36-2a-j	SF F Shape Concrete Barrier to Single Slope Concrete Barrier Transition
14B37-2a&b	DF NJ Shape Concrete Barrier to Single Slope Concrete Barrier Transition
14B38-2a-d	DF F Shape Concrete Barrier to Single Slope Concrete Barrier Transition
14B39-2a,b,c	Single Slope Concrete Barrier to Single Slope Concrete Barrier Height Transition
14B40-2a-j	Vertical Shape Concrete Barrier to Single Slope Concrete Barrier Transition

WAYSIDES

14C1-3	Timber Rail Guard Fence, Curb & Guard Post and Marker Post
14C2-3	Historical Marker Construction
14C3-4	Roadside Picnic Table
14C6-6a&b	Wayside Well Shelter and Pump and Well Platform
14C7-4a&b	Picnic Table, Single Pedestal (Both drawings always required)
15A1-13a,b	Marker Posts for R/W - Markers ROW item 633.5100.
15A3-2a&b	Flexible Marker Post for Culvert End - Markers culvert end item 633.5200.
15A4-7a-e	Delineators and Delineator Posts
15A7-2	Object Marker for Hazardous Culvert
15B1-8a&b	Fence Woven Wire (Both drawings required)
15B3-15a&b	Chain Link Fence (Includes vehicle & Pedestrian gate details) (Both drgs. Always required)
15B10-1a,b&c	Wood Gate (Double Leaf) (All details required) (see STSP Doc 616-040)
15B11-1a&b	Wood Gate (Single Leaf) (All details required) (See STSP Doc 616-035)
15B12-1a&b	Pipe Gate Details (All details required) (See STSP Doc 616-045)
15C2-9a	Barricades and Signs for Mainline Closures Always requires b
15C2-9b	Barricades and Signs for Various Closures Always requires a
15C2-9c	Detour Signing for Mainline Closures
15C2-9d	On-Ramp Lane Closure
15C2-9e	Off-Ramp Lane Closure
15C2-9f	Advanced Width Restriction Signing
15C2-9g	Traffic Control for Entrance Ramp Closure
15C2-9h	Modified Route Assembly for Detour Signing
15C3-5	Barricades and Signs for Sideroad Closures
15C4-5	Traffic Control, Advance Warning Signs, 45 MPH or Greater Two-Way Undivided Road Open to Traffic (For projects open to all traffic.)
15C5-5	Traffic Control, Advance Warning Signs, 40 MPH or Less Two-Way Undivided Road Open to Traffic (For projects open to all traffic.)
15C6-12	Signing and Marking for Two Lane Bridges (i.e.-Narrow Bridge Marking) (Includes W5-52 Signs, pay as Signs Type II, Reflective F, item 637.2230 and wood posts, 4" X 6"x 12', item 634.0612)

PAVEMENT MARKING

15C7-15a	Pavement Marking Symbols (Arrows, Preferential Lane Symbol and Handicap Parking Stall Symbol) (Show location in plans)
15C7-15b	Pavement Marking Words
15C7-15c	Pavement Marking Arrows
15C7-15d	Roundabout Arrows
15C7-15e	Pavement Marking for Bike Lane
15C8-23a	Permanent Longitudinal Pavement Markings (15C8 sheet "a" stands alone)
15C8-23b	Temporary Longitudinal Pavement Markings
15C8-23c	Pavement Marking (Turn Lanes) (Two Way Left Turn Lane, Always requires 15C8- a)
15C8-23d	Pavement Marking (Turn Lanes) (Arrow and word marking placement for turn bay greater than 48'. Always requires 15C8-a)
15C9-13a	Signing and Pavement Marking Details for R. R. – Highway Grade Crossing
15C9-13b	Truck Stopping Lane Pavement Markings

TRAFFIC CONTROL (See also 15C2, 15C4, 15C5 & 15C6)

15C11-10a,b	Channelizing Devices (Sheet a, Flexible Tubular Marker Posts and Bases, items 643.0500 and 643.0600). Add 15% undistributed quantity to posts & bases for maintenance replacements. (Sheet b, Traffic Control Drums, Barricades Type II & III, Cones 42" and Vertical Panels)
15C12-9a	Traffic Control for Lane Closure with Flagging Operations - This detail is only appropriate

for daytime lane closures on 2-lane roadways - special details required for any closure more extensive than daylight flagging operation.

15C12-9b	Traffic Control, Lane Closure with Automated Flagger Assistance Device
15C14-4	Aerial Enforcement Bars Pavement Marking Details
15C18-8a	Median Island Pavement Marking
15C18-8b	Pavement Markings Median Island Nose
15C18-8c	Median Pavement Markings Double Arrow Warning Sign Placement
15C19-8a	Moving Pavement Marking Operation Two-Lane Two-Way Roadway
15C19-8b	Moving Pavement Marking Operation Multi-Lane Undivided Roadway
15C19-8c	Moving Pavement Marking Operation Multi-Lane Divided Roadway
15C20-2	Yield Marking
15C21-11	Signing and Marking for Two Lane to Four Lane Divided Transition
15C26-4	End-of-Roadway Signing
15C29-8a	Bicycle Lane Marking
15C29-8b	Pavement Marking for Shared Lane 35mph or Less
15C31-6a	Pavement Marking Exit Ramp and Parallel Exit Ramp Always requires 15C8- a
15C31-6b	Pavement Marking Major Split Freeway to Freeway
15C31-6c	Pavement Marking Entrance Ramp and Parallel Entrance Ramp
15C31-6d	Pavement Marking Lane Drop and Lane Reduction
15C33-4	Stop Line and Crosswalk Pavement Marking
15C34-4	Standard Application for Temporary Raised Pavement Markers, Type II
15C35-6a	Pavement Marking (Intersections)
15C35-6b	Pavement Marking & Signing (Climbing Lane & Passing Lane)
15C35-6c	Pavement Marking & Signing (Climbing Lane & Passing Lane)
15C36-1	Parking Stall Marking (646.8305 Marking Parking Stall Paint & 646.8320 Marking Parking Stall Epoxy)
15D4-1	Traffic Control, Ramp Construction Staging (Typical Sections)
15D5-6	Traffic Control, Single Lane Crossover Entrance with Barrier This requires 15D12 Lane Closure Detail
15D6-6	Traffic Control, Two Lane Two Way Operation To be used when one or more of 15D5, 15D7, 15D8, 15D9, 15D10 or 15D11 are used
15D7-6	Traffic Control, Temporary Exit Ramp Crossover
15D8-9	Traffic Control, Temporary Entrance Ramp Crossover
15D9-7	Traffic Control, Single Lane Crossover Exit This SDD requires 15D11
15D10-6	Traffic Control, Single Lane Crossover Exit with Barrier This SDD requires 15D11
15D11-9	Traffic Control, Single Lane Crossover (Normally requires one or more of these SDD: 15D5, 15D6, 15D9, or 15D10)
15D12-12a	Traffic Control, Lane Closure (Requires 15D11 <u>ONLY IF</u> approaching a crossover)
15D12-12b	Traffic Control Lane Closure Speed Reduction
15D12-12c	Traffic Control Dynamic Late Merge System
15D12-12d	Traffic Control Lane Closure Basic Traffic Queue Warning System
15D12-12e	Traffic Control Lane Closure Traffic Queue Warning System
15D12-12f	Traffic Control Lane Closure with Temporary Rumble
15D13-2	Temporary Emergency Pullouts
15D14-6	Traffic Control, Two Lane Closure on Freeway or Expressway (For roadways with signalized at-grade intersections or no grade-separated interchanges, SDD15D22 would normally be more appropriate.)
15D15-7a - e	Traffic Control, Exit and Entrance Ramp Within Lane Closure (Requires use of a separate lane closure detail such as 15D12 or 15D14) (New traffic control detail for use with other lane closure details)
15D16-6	Traffic Control, Exit Ramp Closure

15D20-7a	Traffic Control, Single Lane Closure, Divided Non-Freeway/Expressway (For freeways or expressways, See 15D12).
15D20-7b	Traffic Control, Single Right Lane Closure, Undivided Non-Freeway/Expressway
15D20-7c	Traffic Control, Single Left Lane Closure, Undivided Non-Freeway/Expressway
15D21-7a&b	Traffic Control, Intersection Within Single Right and Left Lane Closure (Requires use of a separate lane closure detail such as 15D20, 15D12) (New traffic control detail for use with other lane closure details)
15D22-6	Traffic Control, Two Lane Closure, Divided Non-Freeway/Expressway (For two-lane short-term closures on freeways or expressways, see SDD 15D14)
15D23-7a&b	Traffic Control Intersection Within Two Lane Closure (Always include sheets a & b together) (Requires use of a separate two-lane closure detail such as 15D22) (Same note as 15D21) (New traffic control detail for use with other lane closure details)
15D27-3	Traffic Control, Shoulder Closure on Divided Roadway, Speeds Greater than 40 MPH
15D28-4	Traffic Control Work on Shoulder or Parking Lane, Undivided Roadway
15D29-6	Traffic Control, Vehicle Entrance/Exit or Haul Road
15D30-9a-l	Traffic Control, Pedestrian Accommodation (Always include sheets a, b & c together. Sheet d can be used independently. When including sheets e –l, sheets a, b & c must also be included.)
15D31-5	Traffic Control, Temporary Bypass Roadway (Requires separate details to show layout and dimensions of the temporary road.)
15D32-7	Traffic Control, One Lane Road Stop Condition
15D33-9	Traffic Control, One Lane Road with Temporary Signals (Requires separate temporary wiring details.) (Same note as for 15D32)
15D35-3a,b,c	Ramp Gate Hard Wired
15D36-1	Barricade Rack
15D37-3	Traffic Control, 2-Lane Roundabout
15D39-2	Traffic Control, Drop-off Signing
15D40-5a	Traffic Control, Full Lane Shift Non-Freeway/Expressway or Multilane Divided 45 MPH and Under
15D40-5b	Traffic Control, Full Lane Shift Multilane Divided 50 MPH and Over
15D40-5c	Traffic Control, Partial Lane Shift Non-Freeway/Expressway or Multilane Divided 45 MPH and Under
15D40-5d	Traffic Control, Partial Lane Shift Multilane Divided 50 MPH and Greater
15D41-4a	Traffic Control, Multiple Lane Shift Multilane Divided Road
15D41-4b	Traffic Control, Multiple Lane Shift Divided Road Temporary Rumble Strips
15D42-1	Traffic Control, Two Lane Full Freeway Closure
15D43-2	Traffic Control, Short Duration Mobile Operations
15D44-2	Traffic Control, Signing on Roadways with Milled Surfaces
15D45-3	Traffic Control, Signing on Roadways with Loose Gravel
15D46-1	Traffic Control One-Way Signing
15D47-3a	Traffic Control Ingress/Egress with Barrier
15D47-3b	Traffic Control Ingress/Egress without Barrier
15D48-1	Traffic Control, Lane Shift in Flagging Operation During Culvert Work
15D49-2	Traffic Control, System Ramp Closure
15D50-3a	Traffic Control, Added Lane Closure without Lane Shift
15D50-3b	Traffic Control, Added Lane Closure with Lane Shift
15D51-1	Traffic Control, Mobile Operations on an Undivided Roadway
16A1-7	Landmark Reference Monuments and Cover (item 621.0100, etc.)