

# Idaho Transportation Department

## *Standard Drawing Change Log*

The Idaho Transportation Department's Standard Drawings are available on its website at <https://apps.itd.idaho.gov/apps/StandardDrawings/StandardDrawings.htm>

As drawings are changed, this log file will be updated to document the changes.

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April 2023

To update Standard Drawing documents dated April 2022, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
212-15	212-15	Petroleum Storage Area	Revised
-	605-28	Vane Grate Inlet	New Drawing
616-5	616-5	Steel Sign Post and Foundation Type A – Wide Flange Post	Revised
616-6	616-6	Steel Sign Post and Foundation Type B – Steel Tube Post	Revised
616-7	616-7	Steel Sign Post and Foundation Type E – Perforated Steel Tube Post	Revised
616-10	616-10	Wood Sign Post, Type D – Wood Post	Revised

The following changes have been made to the Standard Drawings:

212-15 Petroleum Storage Area

- Note no. 7 was revised to remove the requirement that removal of hazardous stormwater be by a certified waste removal contractor.
- Miscellaneous minor revisions.

605-28 Vane Grate Inlet

- A new drawing based on a Standard Drawing from the Colorado DOT.

616-5 Steel Sign Post and Foundation, Type A – Wide Flange Post

- A comprehensive revision to coincide with comprehensive revisions to Standard Specification 616 – Signs, Sign Posts, and Sign Structures.
- Revised in conjunction with Standard Drawings 616-6, 616-7, and 616-10 to provide a consistent user experience across sign post Standard Drawings.
  - Renamed the drawing from Breakaway Steel Sign Post Installation, Type A
  - Combined several tables into one table.
  - Added a plan view and elevation view of a wide flange post.
  - Simplified sign assembly measurements and eliminated unnecessary measurements.
  - Simplified sign post spacing.
  - Allowed three posts to be used for one sign.
  - Revised foundation and stub details.
  - Combined, organized, and placed notes on the right side of the last sheet.
  - Stated which sign types can be used with wide flange posts.

#### 616-6 Steel Sign Post and Foundation, Type B – Steel Tube Post

- A comprehensive revision to coincide with comprehensive revisions to Standard Specification 616 – Signs, Sign Posts, and Sign Structures.
- Revised in conjunction with Standard Drawings 616-5, 616-7, and 616-10 to provide a consistent user experience across sign post Standard Drawings.
  - Renamed the drawing from Breakaway Steel Sign Post Installation, Type B
  - Combined several tables into one table.
  - Added plan, side, and front views of a steel tube post.
  - Placed sign assembly examples adjacent to each other.
  - Simplified sign assembly measurements and eliminated unnecessary measurements.
  - Revised foundation and stub details.
  - Combined, organized, and placed notes on the right side of the last sheet.
  - Moved clip and cover plate information from Standard Drawing 616-16 and renamed it to sign brace mount.
  - Stated which sign types can be used with steel tube posts.

#### 616-7 Steel Sign Post and Foundation, Type E – Perforated Steel Tube Post

- A comprehensive revision to coincide with comprehensive revisions to Standard Specification 616 – Signs, Sign Posts, and Sign Structures.
- Revised in conjunction with Standard Drawings 616-5, 616-6, and 616-10 to provide a consistent user experience across sign post Standard Drawings.
  - Renamed the drawing from Breakaway Steel Sign Post Installation, Type E
  - Combined several tables into one table.
  - Added a plan view and elevation view of a perforated steel tube post.
  - Placed sign assembly examples adjacent to each other.
  - Simplified sign assembly measurements and eliminated unnecessary measurements.
  - Allowed three posts to be used for one sign.
  - Combined foundation details.
  - Revised foundation and stub details.
  - Combined, organized, and placed notes on the right side of the sheet.
  - Stated which sign types can be used with perforated steel tube posts.

#### 616-10 Wood Sign Post, Type D – Wood Post

- A comprehensive revision to coincide with comprehensive revisions to Standard Specification 616 – Signs, Sign Posts, and Sign Structures.
- Revised in conjunction with Standard Drawings 616-5, 616-6, and 616-7 to provide a consistent user experience across sign post Standard Drawings.
  - Renamed the drawing from Breakaway Sign Posts, Type D – Wood Post.
  - Added plan, side, and front views of a wood post.
  - Placed sign assembly examples adjacent to each other.
  - Simplified sign assembly measurements and eliminated unnecessary measurements.
  - Allowed three posts to be used for one sign.
  - Combined, organized, and placed notes on the right side of the last sheet.
  - Stated which sign types can be used with wood posts.

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April 2022

To update Standard Drawing documents dated April 2021, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
-	605-35	Drywell	New Drawing
606-2	606-2	Edge Drain	Revised
617-1	617-1	Delineators	Revised
656-2	656-2	Frangible Base Traffic Signal Poles	Revised
-	657-1	Flashing Beacons	New Drawing

The following changes have been made to the Standard Drawings:

605-35 Drywell

- New Standard Drawing developed based on Washington State DOT Standard Plans.
- Accompanied by revisions to Section 605 in the 2022 Supplemental Standard Specifications for Highway Construction.

606-2 Edge Drain

- Revised Note no. 1 to correct material specifications.

617-1 Delineators

- Changed delineator bolt material from aluminum to galvanized steel.

656-2 Frangible Base Traffic Signal Poles

- Newly redrawn and revised in coordination with new Standard Drawing 657-1.
- Relocated the Warning Beacon to the new Standard Drawing.
- Removed "Cast" from the drawing title.
- Changed Pedestrian Signal and Vehicle and Pedestrian Signal pole material from galvanized steel to aluminum based on the recommendation from multiple suppliers to use the same post and base material.
- Showing Frangible Cast Aluminum Base, but a note allows Frangible Coupling System Bases, approved in the QPL, to be substituted.
- Revised the Pedestrian Pushbutton Pole to coordinate with the designs of other highway agencies in Idaho.

657-1 Flashing Beacons

- New Standard Drawing developed to show materials and construction details for Rectangular Rapid Flashing Beacons (RRFB) coinciding with FHWA's MUTCD Interim Approval IA-21.
  - FHWA has permitted RRFBs to be used on ITD highways for several years
  - RRFBs have been in the ITD Traffic Manual since 2016
  - ITD has used a RRFB special provision in construction contracts for several years
- Relocated Warning Beacon from Standard Drawing 656-2 to this new drawing.

- Changed pole material from galvanized steel to aluminum based on the recommendation from multiple suppliers to use the same post and base material
  - Revised Warning Beacon design to reflect materials currently available in the marketplace
- Showing Frangible Cast Aluminum Base, but a note allows Frangible Coupling System Bases, approved in the QPL, to be substituted
- Accompanied by new Section 657 in the 2022 Supplemental Standard Specifications for Highway Construction

April 2021

To update Standard Drawing documents dated April 2020, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
212-1	212-1	Erosion and Sediment Control Example Applications	Revised
212-3	212-3	Temporary Erosion and Sediment Control Silt Fence, Fiber Wattle, and Compost Sock	Revised
212-6	212-6	Temporary Erosion and Sediment Control Stabilized Construction Entrance and Vehicle Washdown	Revised
212-7	212-7	Temporary Erosion and Sediment Control Inlet Protection	Revised
212-11	212-11	Permanent Erosion and Sediment Control Stone Filter Berms, Dams, and Weirs	Revised
212-12	212-12	Permanent Erosion and Sediment Control Slope and Channel Protection	Revised
601-1	601-1	Pipe and Conduit Installation	Revised
605-26	605-26	Inlet Median Drain, Type 9	Revised
612-7	612-7	Guardrail Terminal, Flared	Revised
612-8	612-8	Guardrail Terminal, Tangent	Revised
612-18	612-18	Precast Concrete Barrier	Revised
616-5	616-5	Breakaway Steel Sign Post Installation Type A – Wide Flange	Revised
617-1	617-1	Delineators	Revised
<del>630-1</del>	<del>630-1</del>	<del>Pavement Markings</del>	<del>Revised</del>

The following changes have been made to the Standard Drawings:

212-1 Erosion and Sediment Control – Example Applications

- Removed “Temporary” from the drawing title.
- Enlarged detail to 140% of original size to improve clarity
- Added references to Standard Drawings on each of the call-outs.
- Removed “Temporary” from the General Notes title and from notes nos. 1 and 2.
- Added new note no. 3
- Changed “Siltation Berm to Contain Runoff from Construction Support Area” to “Berm to Contain Runoff from Petroleum Storage Area” in the upper right corner of the drawing to align with Standard Drawing 212-15.

### 212-3 Temporary Erosion and Sediment Control – Silt Fence, Fiber Wattle, and Compost Sock

- Revised order of Notes to group Silt Fence notes together and Fiber Wattle notes together.
- Revised Note no. 1 to remove “Temporary”
- Removed Note no. 5 - “Ensure that Silt Fence material.....”
- Added Note no. 8, which used to be on Standard Drawing 212-11 – Note no. 12. Check Dams were removed from that drawing, so the note was too.
- Added dimension to left side of Compost Sock and Fiber Wattle Temporary Check Dam Detail. “See Note 8”

### 212-6 Temporary Erosion and Sediment Control – Stabilized Construction Entrance and Vehicle Washdown

- Section C-C
  - Moved Drain Rock callout to left side of detail
  - Added 9”-15” dimension to pipe.
- Revised Note no. 1 to remove “Temporary”

### 212-7 Temporary Erosion and Sediment Control – Inlet Protection

- Removed Gravel and Wire Mesh Filter detail and Section A-A.
- Fiber Wattle Filter Detail
  - Added “Per STD. DWG. 212-3” to the “Stakes” callout.
  - Added callout “Additional BMPS required (See Note No. 6)”
- Renumbered and revised Note no. 1 to remove “Temporary”
- Removed Note no. 5 that discussed “Gravel and Wire Mesh Filter” since that detail was removed from the drawing.
- Added new Note no. 6 – “Use in conjunction with other inlet protection devices, not as the sole BMP. See Section SC-6 in the BMP manual.”

### 212-11 Permanent Erosion and Sediment Control – Stone Filter Berms, Dams, and Weirs

- Revised Note no. 9 - Removed “Plastic Ties.”
- Deleted Note no. 12 – Check Dams are not shown on this sheet.

### 212-12 Permanent Erosion and Sediment Control – Slope and Channel Protection

- Removed Channel Check Slot Detail
- Revised Slope Installation Example
  - Revised “See Note No. 2” to “See Note No. 3” on header
  - Revised callout from “Stakes or Staples at 2” Spacing” to “Stakes or Staples per Manufacturer’s Recommendation”.
  - Added leader lines to additional rows of staples from “Stakes” callout.
- Revised Wire Staple Detail header - reference Note no. 5 instead of Note no. 4.
- Added Note no. 2 – “Application can be Temporary or Permanent.”

#### 601-1 Pipe and Conduit Installation

- Materials and Compaction Table – Revised “Inside Roadway Prism”-“Compaction Requirement” to include “Or 95% of IT-74”
- Added new Note no. for materials placement reference to Section 210.
- Added new Note no. 8 – “Do Not Disturb the Installed Pipe or Conduit, or Leave Voids When Using Trench Boxes or Shields.”

#### 605-26 Inlet Median Drain, Type 9

- Reworded notes to active voice and imperative mood.

#### 612-7 Guardrail Terminal, Flared

- Revised the drawing to better reflect the product that is available on the market. The revisions include replacing the impact head, changing the offset distance, and revising notes 4 and 5.

#### 612-8 Guardrail Terminal, Tangent

- Revised the drawing to better reflect the product that is available on the market. The revisions include revising notes 4 and 5.

#### 612-18 Precast Concrete Barrier

- Corrected dimensions on sheet 3.

#### 616-5 Breakaway Steel Sign Post Installation, Type A – Wide Flange

- Removed Typical Sign Installation with Route Markers detail and associated legend. The MUTCD discourages this practice.
- On the sign dimensions, revised dimension measuring from pavement edge elevation to Hinge to measure from pavement edge elevation to bottom of lower sign and changed the dimension from 5’ Min. to 7’ Min. to match MUTCD Section 2A.18 paragraph 11.

#### 617-1 Delineators

- On the Rigid Post, changed the holes dimension from 26” to 26” MIN. Suppliers often ship delineator posts with more than 26 holes and the additional holes do not adversely affect the performance of the delineator posts.

#### 630-1 Pavement Markings

- ~~Changed normal markings to 6” width and wide markings to 12” width.~~
- ~~Added a new note 10.~~
- ~~Removed option to use normal or wide lines for certain lines.~~
- ~~Revised the taper length on the Example Parallel Entrance Ramp to correspond with the AASHTO “Green Book.”~~

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April 2020

To update Standard Drawing documents dated April 2019, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
612-1	612-1	31" W-Beam Guardrail	Revised
612-6	612-6	Guardrail Terminal, Buried-in-Backslope	Revised
612-10	612-10	Guardrail Transition, Low Speed	Revised
612-11	612-11	Guardrail Transition, High Speed	Revised
612-18	612-18	Precast Concrete Barrier	Revised
612-20	612-20	Precast Concrete Barrier Terminals	Revised
613-1	613-1	Bullnose Crash Cushion	Revised
630-1	630-1	Pavement Markings	Revised
630-2	-	Freeway Pavement Markings	Discontinued
656-2	656-2	Frangible Cast Base Traffic Signal Poles	Revised

The following changes have been made to the Standard Drawings:

612-1 31" W-Beam Guardrail

- Added a hole in the posts to allow the guardrail to be raised and added new note no. 11. The changes is based on TTI Report 608421 which found the blockouts can be raised without affecting the crashworthiness of the guardrail system.
- Noted that the holes in the wide-flange post should extend through the front and back flanges.

612-6 Guardrail Terminal, Buried-in-Backslope

- Added a buried-in-backslope design for 10:1 or flatter ditch foreslopes (Sheet 2) as recommended by the instructors of the FAST Act Guardrail Training.

612-10 Guardrail Transition, Low Speed

- Added dimensions for drill holes through barrier for the thrie-beam terminal connector (sheet 1).
- Changed length of structural hex bolt, item no. 10, to 15 inches (sheets 1 and 2).

612-11 Guardrail Transition, High Speed

- Added dimensions for drill holes through barrier for the thrie-beam terminal connector (sheet 1).

612-18 Precast Concrete Barrier

- Corrected dimensions for drill holes through barrier for the thrie-beam terminal connector (sheet 3).
- Modified note no. 5. Added information about anchoring end of free-standing barrier. Revised note to clarify that median barrier can be free-standing or anchor pinned.

#### 612-20 Precast Concrete Barrier Terminals

- Revised note no. 3 to indicate that concrete with higher strength than class 30 can be used.

#### 613-1 Bullnose Crash Cushion

- Added dimensions between posts 9 and 14.
- Changed steel post to wide-flange post to correlate with other Standard Drawings.

#### 630-1 Pavement Markings

- Renamed from Pavement Markings for Arterial and Collector Roadways.
- The drawing has been extensively revised with descriptions of pavement markings and examples.

#### 630-2 Freeway Pavement Markings

- Discontinued. Combined with Standard Drawing 630-1.

#### 656-2 Frangible Cast Base Traffic Signal Poles

- Revised the Warning Beacon.
- Revised notes.

April 2019

To update Standard Drawing documents dated December 2018, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
612-1	612-1	31" W-Beam Guardrail	Revised
612-2	-	Thrie-Beam Guardrail	Discontinued
612-6	612-6	Guardrail Terminal, Buried-in-Backslope	Revised
612-11	612-11	Guardrail Transition, High Speed	Revised
612-15	-	20' Concrete Barrier	Discontinued
612-16	-	10' Concrete Barrier	Discontinued
612-17	-	Tall Concrete Median Barrier	Discontinued
-	612-18	Precast Concrete Barrier	New Drawing
612-20	612-20	Precast Concrete Barrier Terminals	Revised
612-21	-	Concrete Parapet to Thrie Beam Guardrail Connector	Discontinued
612-22	-	Concrete Barrier to Thrie Beam Guardrail Connector	Discontinued
612-23	-	Tall to Standard Concrete Barrier Transition	Discontinued
-	612-24	F-Shape to New Jersey Shape Transition	New Drawing
-	612-25	F-Shape to Single Slope Shape Transition	New Drawing

The following changes and corrections have been made to the Standard Drawings:

#### 612-1 31" W-Beam Guardrail

- Changes have been made that reflect suggestions from the instructors of the Fast-Act Guardrail Training course. Those changes include:
  - Addition of a hinge point application for wide-flange posts. Renaming of the timber post steep slope application to hinge point application.
  - Change in post length for the timber post hinge point application from 90 inches to 72 inches.
  - Made the use of blockouts optional, if approved by the engineer, on the wide-flange post normal and hinge point applications.
  - Steepened the slope behind the non-blocked application to 2:1 or flatter.
  - Changed "deflection distance" to "working width" on the placement detail and in the deflection table. Revised the distances in the deflection table and added a line for hinge point.
  - Added columns to the shy-line offset table for flare rates.
  - Added a plan view and elevation for reducing post spacing.
  - Rearranged details that were previously on sheets 3 and 4 to sheets 3, 4, and 5.
  - Revised note numbers 5, 6, 7, 10, 16, and 17.

### 612-2 Thrie-Beam Guardrail

- Thrie-beam guardrails have not yet passed MASH crash testing. Thrie-beam guardrail is rarely used in Idaho so the drawing has been discontinued. Inclusion of a thrie-beam guardrail will be reevaluated if a design is successfully crash tested.

### 612-6 Guardrail Terminal Buried-in-Backslope

- Changed guardrail splice points, as tested in Roadside Safety Pooled Fund Report 608431-01-1&2, to match the splice points of the 31" W-Beam Guardrail.
- Changes have been made that reflect suggestions from the instructors of the Fast-Act Guardrail Training course. Those changes include:
  - Revising the drawing and notes so the buried-in-backslope guardrail terminal can be used in a wider variety of situations. The ditch foreslope can be flatter, the ditch backslope can be steeper, and the ditch can be wider.
  - Allowed the flare rates to be flatter to bury the anchor sooner if possible.
  - Moved the length of need point 75 feet upstream of the hazard.
  - Added details for 4-space w-beam guardrail and modified 4-space w-beam guardrail.
  - Revised note numbers 2, 3, 4, 5, and 7.

### 612-11 Guardrail Transition, High Speed

- Shortened the length of curb by suggestion of the instructors of the Fast-Act Guardrail Training course.
- Simplified the post designs by using 7' posts for wide-flange or timber post applications.
- Simplified the blockouts by eliminating the steel tube blockout. Timber or polyethylene blockouts will be used with wide-flange posts. Revised the components table, Section A-A, and other details and tables to reflect the change.
- Revised the Stiffener Dimension Table to include F-Shape in the column heading.
- Revised notes. Included additional information about varying barrier connections.

### 612-15 20' Concrete Barrier

- Discontinued as part of MASH implementation.

### 612-16 10' Concrete Barrier

- Discontinued as part of MASH implementation.

### 612-17 Tall Concrete Median Barrier

- Discontinued as part of MASH implementation.

### 612-18 Precast Concrete Barrier

- New Standard Drawing as part of MASH implementation. The Precast Concrete Barrier is based on the following crash tests through the Roadside Safety Pooled Fund:
  - MASH Testing of Free-Standing and Pinned Temporary Concrete Barrier (607911)
  - MASH Testing of Pinned Temporary Concrete Barrier on Concrete Pavement (610231-01)

- Guidebook to Assist Implementation of Pinned Down Barrier (605071)
- Transition Design for Temporary Concrete Barrier Pinned on Asphalt to Rigid Concrete Barrier (605641)
- Transition for Anchored Temporary Concrete Barrier System in Asphalt Pavement – Phase II (601651)
- Temporary Precast Concrete Barrier with Pinning Holes on Both Sides (405160-37)
- Transition Design for Temporary Concrete Barrier (405160-26)
- Anchored Temporary Concrete Barrier on Asphalt and Soil (405160-25)

#### 612-20 Precast Concrete Barrier Terminals

- Renamed from Concrete Barrier Terminals.
- Cross section shape changed to F-Shape. Connecting Pin and End Loop Bar Details changed to match 612-18. Reinforcing steel changed to match the F-Shape.
- Simplified of notes.
- Reorganized plan sheets.

#### 612-21 Concrete Parapet to Thrie Beam Guardrail Connector

- Discontinued as part of MASH implementation.

#### 612-22 Concrete Barrier to Thrie Beam Guardrail Connector

- Discontinued as part of MASH implementation.

#### 612-23 Tall to Standard Concrete Barrier Transition

- Discontinued as part of MASH implementation.

#### 612-24 F-Shape to New Jersey Shape Transition

- New Standard Drawing as part of MASH implementation. The transition will allow connection between the new F-Shape precast concrete barrier and the New Jersey shape precast concrete barrier that has been in use to this point. The drawing is based on concepts from new Standard Drawing 612-18 and the now discontinued Standard Drawings 612-15 and 612-16.

#### 612-25 F-Shape to Single Slope Shape Transition

- New Standard Drawing as part of MASH implementation. The drawing is based on the following crash tests through the Roadside Safety Pooled Fund:
  - Transition Design for Temporary Concrete Barrier Pinned on Asphalt to Rigid Concrete Barrier (605641)
  - Guidebook to Assist Implementation of Pinned Down Barrier (605071)

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December 2018

To update Standard Drawing documents dated June 2018, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
601-1	601-1	Pipe and Conduit Installation	Revised
628-1	628-1	Snow Poles	Revised

The following changes and corrections have been made to the Standard Drawings:

601-1 Pipe and Conduit Installation

- Modified pipe trenching, pipe bedding, and trench backfilling requirements to align with ISPWC specifications and standard drawings.
- Modified the pipe bedding zone material, placement and compaction requirements.
- Revised the notes.

628-1 Snow Poles

- Changed bolts from 3/16" diameter to 1/4" diameter.
- Change the bolt connecting the flexible snow pole to the delineator post to steel and added a second bolt.
- Removed the double delineator or reflector.
- Revised the notes.

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June 2018

To update Standard Drawing documents dated December 2017, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
405-2	405-2	Mailbox Turnout	Corrected cross reference
601-1	601-1	Pipe and Conduit Installation	Revised
611-2	611-2	Cattle Guard, Pavement Markings	Revised
612-1	612-1	31" W-Beam Guardrail	Revised
612-2	612-2	Thrie-Beam Guardrail	Revised
612-7	612-7	Guardrail Terminal, Flared	Revised
612-8	612-8	Guardrail Terminal, Tangent	Revised
612-10	612-10	Guardrail Transition, Low Speed	Revised
612-11	612-11	Guardrail Transition, High Speed	Revised
614-3	614-3	Curb Ramps	Corrected cross reference
615-1	615-1	Curb and Gutter	Revised
617-1	617-1	Delineators	Revised

The following changes and corrections have been made to the Standard Drawings:

405-2 Mailbox Turnout

- Corrected a cross-reference to an old Standard Drawing number.

601-1 Pipe and Conduit Installation

- Revised note no. 6. Utility owners and local public agencies may have different minimum cover depths.

611-2 Cattle Guard, Pavement Markings

- Revised the pavement markings to return to the pattern shown on the Standard Drawing prior to December 2015.

612-1 31" W-Beam Guardrail

- Modified the Guardrail Bolt (Button-headed) detail to reflect changes to the FBB01-05 details in "A Guide to Standardized Highway Barriers."
- Revised dimensions on the wide-flange post curb application and note no. 3 after reviewing MwRSF TRP-03-139-04 Development of the *Midwest Guardrail System* (MGS) for Standard and Reduced Post Spacing and in Combination with Curbs. Guardrail tested with curb 6" in front of the face of the guardrail was assumed to be a worst case scenario. The authors of the crash test therefore concluded that curbs constructed less than 6" from the face of the guardrail are also anticipated to perform within testing parameters.

#### 612-2 Thrie-Beam Guardrail

- Modified the Guardrail Bolt (Button-headed) detail to reflect changes to the FBB01-05 details in “A Guide to Standardized Highway Barriers.”
- Revised the dimension between thrie-beam bolts from 7 ¾” to 7 5/8” to correlate with details in “A Guide to Standardized Highway Barriers.”

#### 612-7 Guardrail Terminal, Flared

- Added note no. 6 to clarify how to transition between the guardrail terminal and a guardrail transition.

#### 612-8 Guardrail Terminal, Tangent

- Added note no. 6 to clarify how to transition between the guardrail terminal and a guardrail transition.

#### 612-10 Guardrail Transition, Low Speed

- Modified the Guardrail Bolt (Button-headed) detail to reflect changes to the FBB01-05 details in “A Guide to Standardized Highway Barriers.”
- Corrected structural hex bolt and nut size.
- Revised note no. 8 to be better applicable to all guardrail terminals.

#### 612-11 Guardrail Transition, High Speed

- Modified the Guardrail Bolt (Button-headed) detail to reflect changes to the FBB01-05 details in “A Guide to Standardized Highway Barriers.”
- Revised the dimension between thrie-beam bolts from 7 ¾” to 7 5/8” to correlate with details in “A Guide to Standardized Highway Barriers.”
- Corrected the hole pattern on the thrie-beam wide-flange steel tube blackout detail.
- Added a wide-flange post cross section to Section B-B on sheet 1.
- Changed the bolts shown on the wide-flange post cross section on Section A-A and updated the High Speed Guardrail Transition Hardware Components Table and component numbers to correspond.
- Corrected structural hex bolt and nut size.
- Modified the Thrie-Beam Terminal Connector Plate to work with New Jersey Shape or Single Slope Concrete Barrier.
- Revised note no. 11 to be better applicable to all guardrail terminals.

#### 614-3 Curb Ramps

- Corrected cross-references to an old Standard Drawing number.

#### 615-1 Curb and Gutter

- Revised note no. 5 to include all curb and gutter and curb types.

#### 617-1 Delineators

- Modified the Horizontal Curve Spacing Table to correlate with Table 3F-1 in the MUTCD.
- Removed delineator types 5, 6, 7, and 8. Delineator Type 9 achieves the same purpose as delineator types 5, 6, 7, and 8.

December 2017

To update Standard Drawing documents dated June 2017, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
405-1	405-1	Rural Approaches	Corrected cross reference
411-2	411-2	Urban Concrete Pavement Manhole Collars	Corrected cross reference
605-10	605-10	Manhole Type A	Corrected cross reference
607-2	607-2	Embankment Protector with Slotted Drain	Corrected cross reference
612-15	612-15	20' Concrete Barrier	Corrected cross reference
612-16	612-16	10' Concrete Barrier	Corrected cross reference
612-21	612-21	Concrete Parapet to Thrie Beam Guardrail Connector	Corrected cross reference
612-22	612-22	Concrete Barrier to Thrie Beam Guardrail Connector	Corrected cross reference
612-23	612-23	Tall to Standard Concrete Barrier Transition	Corrected cross reference
616-6	616-6	Breakaway Steel Sign Post Installation, Type B	Corrected cross reference
616-10	616-10	Breakaway Sign Posts, Type D	Corrected cross reference
617-1	617-1	Delineators	Corrected cross reference
619-1	619-1	Light Pole Foundation Detail	Corrected cross reference
656-1	656-1	Mast Arm Traffic Signal Poles	Corrected cross reference
656-2	656-2	Frangible Cast Base Traffic Signal Poles	Corrected cross reference

On each of these Standard Drawings, references to old Standard Drawing numbers were corrected to correspond to the new Standard Drawing numbers. No revisions were made to the content of the Standard Drawings.

June 2017

To update Standard Drawing documents dated December 2016, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	-	Standard Drawing List	Discontinued
C-2-A	-	Shoulder Rumble Strips and Rumble Stripes	See 631-1
C-2-C	-	Centerline Rumble Strips for Two-Way Roadways	See 631-1
G-1-A-1	-	Guardrail Slope Treatment Types A & B	Replaced by 612-1, see Standard Details for old drawings
G-1-A-2	-	W-Beam Guardrail Installation Assemblies	Replaced by 612-1, see Standard Details for old drawings
G-1-A-3	-	W-Beam Guardrail Post, Blockouts, & Hardware	Replaced by 612-1, see Standard Details for old drawings
G-1-A-4	-	Guardrail Bolting Hardware for W-Beam & Thrie Beam	Replaced by 612-1, see Standard Details for old drawings
G-1-A-5	-	Thrie Beam Guardrail	Replaced by 612-2
G-1-B	-	Guardrail Terminals Type 1 & 1-A	Replaced by 612-5
G-1-C-1	-	Guardrail Terminal Type 2-A, With 10:1 or Flatter Foreslope	Replaced by 612-6
G-1-C-2	-	Guardrail Terminal Type 2-B, With 10:1 to 6:1 Foreslope	Replaced by 612-6
G-1-E	-	Guardrail Terminal, Type 3	Replaced by 612-11
G-1-F-1	-	Guardrail Terminals Type 5, Alternate "A"	Replaced by 612-7
G-1-F-2	-	Guardrail Terminals Type 5, Alternate "B"	Replaced by 612-7
G-1-H	-	Guardrail terminals, Type 7 & 8	Temporarily Renumbered, see 612-3
G-1-I	-	Guardrail Terminal Type 11	Discontinued
G-1-J	-	Guardrail Terminal Types 4-A & 4-B	Discontinued
G-1-K	-	Guardrail Terminal Type 9	Discontinued
G-1-L	-	Guardrail Installation for Minor Structures & Large Culverts	Replaced by 612-1
G-1-M	-	Guardrail Terminals Type 10	Replaced by 612-8
G-1-N	-	Guardrail Terminal Type 12	Discontinued
G-2-A	-	Concrete Barrier Terminals	See 612-20
G-2-A-1	-	20' Concrete Barrier	See 612-15

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
G-2-A-2	-	10' Concrete Barrier	See 612-16
G-2-C	-	Concrete Parapet to Thrie Beam Guardrail Connector	See 612-21
G-2-D	-	Concrete Barrier to Thrie Beam Guardrail Connector	See 612-22
G-2-H	-	Special Cast-in-place Concrete Barrier	Discontinued, see Standard Details for old drawings
G-2-I-1	-	Tall Concrete Median Barrier	See 612-17
G-2-I-2	-	Tall to Standard Concrete Barrier Transition	See 612-23
H-2-C	-	Pedestrian Pushbutton Placement	See 656-15
H-4-A	-	Rural Approaches (Private, Commercial, & Public)	See 405-1
H-4-B	-	Mailbox Turnout & Installation	See 405-2
I-5	-	Loop Detectors 10 ft/sec <sup>2</sup> Deceleration Rate	See 656-10
I-6-A	-	Mast Arm Traffic Signal Poles	See 656-1
I-6-B	-	Frangible Cast Base Traffic Signal Poles	See 656-2
I-7-A-1	-	Signal Cabinet & Service Pedestal Foundation Details	See 656-5
I-7-A-2	-	Signal Cabinet Foundation Details	See 656-6
I-7-B-1	-	Electronic Cabinet Foundation Detail	Discontinued, see Standard Details for old drawings
I-7-B-2	-	Electronic Cabinet & Service Pedestal Foundation Detail	Discontinued, see Standard Details for old drawings
I-7-C	-	Mast Arm Signal Pole, lighting Pole and Pedestrian Pole Foundation Details	Divided, see 619-1 and 656-3
I-8-A	-	Breakaway Steel Sign Post Installation, Type A	See 616-5
I-8-D	-	Breakaway Steel Sign Post Installation, Type B	See 616-6
I-8-E	-	Breakaway Steel Sign Post Installation, Type D	See 616-10
I-8-F	-	Breakaway Steel Sign Post Installation, Type E	See 616-7
I-9-A-1	-	B Post and Brace Angle Detail	See 616-16
I-9-A-2	-	B Post and Brace Angle Detail	See 616-16
I-9-B	-	Cardinal Route Marker Assemblies	See 616-17
I-9-C	-	Route Marker Bracket Details	See 616-15
I-10-A	-	Extruded Aluminum Signs	See 616-2
I-10-B	-	Exit Number Panels	See 616-2
I-12-F	-	Punching Schedule for Type "B" or Type "E" Signs	See 616-1
I-21	-	Standard Pavement Markings for Arterial and Collector Roadways	See 630-1

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
I-22	-	Freeway Pavement Markings	See 630-2
-	405-1	Rural Approaches	Was H-4-A
-	405-2	Mailbox Turnout	Was H-4-B
601-1	601-1	Pipe and Conduit Installation	Revised
-	612-1	31" W-Beam Guardrail	New Guardrail Standards
-	612-2	Thrie-Beam Guardrail	Was G-1-A-5
-	612-3	Guardrail Terminal Types 7 & 8	Was G-1-H
-	612-5	Guardrail Anchor	New Guardrail Standards
-	612-6	Guardrail Terminal, Buried-in-Backslope	New Guardrail Standards
-	612-7	Guardrail Terminal, Flared	New Guardrail Standards
-	612-8	Guardrail Terminal, Tangent	New Guardrail Standards
-	612-10	Guardrail Transition, Low Speed	New Guardrail Standards
-	612-11	Guardrail Transition, High Speed	Was G-1-E
-	612-15	20' Concrete Barrier	Was G-2-A-1
-	612-16	10' Concrete Barrier	Was G-2-A-2
-	612-17	Tall Concrete Median Barrier	Was G-2-I-1
-	612-20	Concrete Barrier Terminals	Was G-2-A
-	612-21	Concrete Parapet to Thrie Beam Guardrail Connector	Was G-2-C
-	612-22	Concrete Barrier to Thrie Beam Guardrail Connector	Was G-2-D
-	612-23	Tall to Standard Concrete Barrier Transition	Was G-2-I-2
615-1	615-1	Curb and Gutter	Revised
-	616-1	Punching Schedule for Type "B" or Type "E" Signs	Revised, was I-12-F
-	616-2	Extruded Aluminum Signs	Was I-10-A & I-10-B
-	616-5	Breakaway Steel Sign Post Installation, Type A	Was I-8-A
-	616-6	Breakaway Steel Sign Post Installation, Type B	Was I-8-D
-	616-7	Breakaway Steel Sign Post Installation, Type E	Was I-8-F
-	616-10	Breakaway Sign Posts, Type D	Was I-8-E
-	616-15	Route Marker Bracket Details	Was I-9-C
-	616-16	B Post and Brace Angle Detail	Was I-9-A-1 & I-9-A-2
-	616-17	36" Route and Auxiliary Sign Brace Angle Assemblies	Was I-9-B
-	619-1	Light Pole Foundation Details	Was part of I-7-C
-	630-1	Standard Pavement Markings for Arterial and Collector Roadways	Was I-21
-	630-2	Standard Pavement Markings for Arterial and Collector Roadways	Was I-22
-	631-1	Rumble Strips	Was C-2-A & C-2-C
-	656-1	Mast Arm Traffic Signal Poles	Was I-6-A
-	656-2	Frangible Cast Base Traffic Signal Poles	Was I-6-B

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
-	656-3	Mast Arm Signal Pole, lighting Pole and Pedestrian Pole Foundation Details	Was part of I-7-C
-	656-5	Signal Cabinet & Service Pedestal Foundation Details	Was I-7-A-1
-	656-6	Signal Cabinet Foundation Details	Was I-7-A-2
-	656-10	Loop Detectors 10 ft/sec <sup>2</sup> Deceleration Rate	Was I-5
-	656-15	Pedestrian Pushbutton Placement	Was H-2-C

The following changes have been made to the drawings:

#### General Changes

- Standard Drawing files in PDF and Microstation file formats are now available on the Standard Drawing website.
- Each of the Standard Drawings has been renumbered to correlate with the 2017 *Standard Specifications for Highway Construction* and pay items.
- Standard Drawing Lists have not been updated for the June 2017 release of the Standard Drawings. Because the Standard Drawings correlate with the Standard Specifications and pay items, the Standard Drawing Lists that have historically been included at the beginning of ITD plans are obsolete.
- New guardrail standards have been developed to put the AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) into effect.

#### 405-1 Rural Approaches

- Drawing renumbered 405-1 to align with the 2017 *Standard Specifications for Highway Construction*.

#### 405-2 Mailbox Turnout

- Drawing renumbered 405-2 to align with the 2017 *Standard Specifications for Highway Construction*.

#### 601-1 Pipe and Conduit Installation

- The compaction requirement in the Materials and Compaction Table for pipes located inside the roadway prism in the trench zone was changed from 90% to 95%. The option to compact to Class A compaction for pipes inside the roadway prism and the trench zone was removed.

#### 612-1 31" W-Beam Guardrail

- The 31" W-Beam Guardrail Standard Drawing has been created to satisfy the AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum which requires w-beam barrier installations after December 31, 2017 to have been evaluated using MASH criteria.
- The 31" W-Beam Guardrail Standard Drawing replaces Standard Drawings G-1-A-1, G-1-A-2, G-1-A-3, G-1-A-4, and G-1-L.

- The 31" W-Beam Guardrail Standard Drawing is based on crash testing and research reports performed by the Texas A&M Transportation Institute (TTI) and the Midwest Roadside Safety Facility (MwRSF). The following reports used in the development of the Standard Drawing:
  - 31" W-Beam Guardrail, wide-flange post, 8" blockouts –TTI Report 9-1002-4
  - 31" W-Beam Guardrail, wide-flange post on 2:1 Slope – TTI Report 405160-20, MwRSF Report TRP-03-185-10
  - 31" W-Beam Guardrail, timber post on 2:1 Slope – MwRSF Report TRP-03-234-10
  - 31" W-Beam Median Barrier – TTI Report 9-1002-12-8
  - 31" W-Beam Guardrail with no blockouts - MwRSF TRP-03-262-12
  - 31" W-Beam Guardrail with curb –MwRSF TRP-03-139-04, TRP-03-221-09
  - 31" W-Beam Guardrail deflection – TTI Report 603481, MwRSF TRP-03-139-04
  - 31" W-Beam Guardrail Long Span application – MwRSF TRP-03-187-07
  - Transition to 31" W-Beam Guardrail – MwRSF TRP-03-335-16, Trinity Highway Products Drawing No. SS-664
  - 31" W-Beam Guardrail flare rates – MwRSF TRP-03-191-08
  - Shy-line offset distances – *Roadside Design Guide* pages 5-40 to 5-41
  - Rock installation and pavement cutouts – *Roadside Design Guide* pages 5-61 to 5-65
  - Drawings and hardware components from *A Guide to Standardized Highway Barrier Hardware*

#### 612-2 Thrie-Beam Guardrail

- The Thrie-Beam Guardrail replaces Standard Drawing G-1-A-5.
- The design of the thrie-beam guardrail was not changed. The Standard Drawing was redrawn to match Standard Drawings 612-1 and 612-5 through 612-11.

#### 612-3 Guardrail Terminal Types 7 & 8

- Drawing renumbered 612-3 to align with the 2017 *Standard Specifications for Highway Construction*.
- The guardrail terminal types 7 & 8 design is anticipated to soon be replaced by a MASH tested short-radius guardrail design and included in Standard Drawing 612-1.

#### 612-5 Guardrail Anchor

- The Guardrail Anchor drawing replaces Standard Drawing G-1-B.
- The "type" number has been replaced with a description of the component.
- The design is based on TTI 9-1002, MwRSF TRP-03-279-13, and TxDOT Standard Plan GF (31) DAT-14.

#### 612-6 Guardrail Terminal, Buried-in-Backslope

- The Guardrail Terminal, Buried-in-Backslope drawing replaces Standard Drawings G-1-C-1 and G-1-C-2.
- The design is based on TTI 405160-39, FHWA eligibility letter CC53A, and TTI 404211-F.

#### 612-7 Guardrail Terminal, Flared

- The Guardrail Anchor drawing replaces Standard Drawings G-1-F-1 and G-1-F-2.
- The “type” number has been replaced with a description of the terminal.
- The design is based on Roadside Design Guide pages 8-4 to 8-6.
- Because flared guardrail terminals are proprietary, a generic terminal with grading considerations is shown. See manufacturer installation instructions for specific products.

#### 612-8 Guardrail Terminal, Tangent

- The Guardrail Anchor drawing replaces Standard Drawing G-1-M.
- The “type” number has been replaced with a description of the terminal.
- The design is based on Roadside Design Guide pages 8-4 to 8-6.
- Because tangent guardrail terminals are proprietary, a generic terminal with grading considerations is shown. See manufacturer installation instructions for specific products.

#### 612-10 Guardrail Transition, Low Speed

- The Guardrail Transition, Low Speed replaces Standard Drawing G-1-N.
- The design is based on TTI 9-1002-8 and TXDOT Standard Drawing GF(31)TL2-11.

#### 612-11 Guardrail Transition, High Speed

- The Guardrail Transition, High Speed replaces Standard Drawing G-1-E.
- The design of the transition was not changed. The Standard Drawing was redrawn to match Standard Drawings 612-1 through 612-10.

#### 612-15 20' Concrete Barrier

- Drawing renumbered 612-15 to align with the 2017 *Standard Specifications for Highway Construction*.
- Changed concrete material in note no. 1 to class 40AF.
- Added Horizontal Bar H-3.

#### 612-16 10' Concrete Barrier

- Drawing renumbered 612-16 to align with the 2017 *Standard Specifications for Highway Construction*.
- Changed concrete material in note no. 1 to class 40AF.
- Added an option for a 3'-10" scupper. A 3'-10" scupper was an option on the “old” 10' concrete barrier. The Midwest Roadside Safety Facility (MwRSF) has shared their expertise that scupper size does not change the performance of the barrier.

#### 612-17 Tall Concrete Median Barrier

- Drawing renumbered 612-17 to align with the 2017 *Standard Specifications for Highway Construction*.

#### 612-20 Concrete Barrier Terminals

- Drawing renumbered 612-20 to align with the 2017 *Standard Specifications for Highway Construction*.

#### 612-21 Concrete Parapet to Thrie Beam Guardrail Connector

- Drawing renumbered 612-21 to align with the 2017 *Standard Specifications for Highway Construction*.

612-22 Concrete Barrier to Thrie Beam Guardrail Connector

- Drawing renumbered 612-22 to align with the 2017 *Standard Specifications for Highway Construction*.

612-23 Tall to Standard Concrete Barrier Transition

- Drawing renumbered 612-23 to align with the 2017 *Standard Specifications for Highway Construction*.

615-1 Curb and Gutter

- Sheet 2 of the Standard Drawing, showing curb and gutter sections used prior to 2015 was removed.

616-1 Punching Schedule for Type “B” or Type “E” Signs

- Drawing renumbered 616-1 to align with the 2017 *Standard Specifications for Highway Construction*.
- Revised the dimensions for the 36” x 18” sign blank.

616-2 Extruded Aluminum Signs

- Two drawings have been combined and renumbered 616-2 to align with the 2017 *Standard Specifications for Highway Construction*.

616-5 Breakaway Steel Sign Post Installation, Type A

- Drawing renumbered 616-5 to align with the 2017 *Standard Specifications for Highway Construction*.

616-6 Breakaway Steel Sign Post Installation, Type B

- Drawing renumbered 616-6 to align with the 2017 *Standard Specifications for Highway Construction*.

616-7 Breakaway Steel Sign Post Installation, Type E

- Drawing renumbered 616-7 to align with the 2017 *Standard Specifications for Highway Construction*.

616-10 Breakaway Sign Posts, Type D

- Drawing renumbered 616-10 to align with the 2017 *Standard Specifications for Highway Construction*.

616-15 Route Marker Bracket Details

- Drawing renumbered 616-15 to align with the 2017 *Standard Specifications for Highway Construction*.

616-16 B Post and Brace Angle Detail

- Two drawings have been combined and renumbered 616-16 to align with the 2017 *Standard Specifications for Highway Construction*.

616-17 36” Route and Auxiliary Sign Brace Angle Assemblies

- Drawing renumbered 616-17 to align with the 2017 *Standard Specifications for Highway Construction*.
- Increased the length of the vertical brace angles to accommodate the 36” x 18” Cardinal Direction auxiliary signs shown in the 2009 MUTCD.
- Renamed from “Cardinal Route Marker Assemblies.”

619-1 Light Pole Foundation Detail Mattress

- The light pole elements have been separated from Standard Drawing I-7-C to align with the *Standard Specifications for Highway Construction*.

630-1 Pavement Markings for Arterial and Collector Roadways

- Drawing renumbered 630-1 to align with the 2017 *Standard Specifications for Highway Construction*.

630-2 Freeway Pavement Markings

- Drawing renumbered 630-2 to align with the 2017 *Standard Specifications for Highway Construction*.
- Combined Standard Drawings C-2-A and C-2-C.
- Changed wording of “rumble strips” and “rumble stripes” to “rumble strips adjacent to pavement markings” and “rumble strips under pavement markings.”
- Drawing numbered 631-1 to align with the 2017 *Standard Specifications for Highway Construction*.

631-1 Rumble Strips

- Combined Standard Drawings C-2-A and C-2-C.
- Changed wording of “rumble strips” and “rumble stripes” to “rumble strips adjacent to pavement markings” and “rumble strips under pavement markings.”
- Drawing numbered 631-1 to align with the 2017 *Standard Specifications for Highway Construction*.

656-1 Mast Arm Traffic Signal Poles

- Drawing renumbered 656-1 to align with the 2017 *Standard Specifications for Highway Construction*.

656-2 Frangible Cast Base Traffic Signal Pole Foundation Details

- Drawing renumbered 656-2 to align with the 2017 *Standard Specifications for Highway Construction*.

656-3 Mast Arm Signal Pole and Pedestrian Pole Foundation Details

- Drawing renumbered 656-3 to align with the 2017 *Standard Specifications for Highway Construction*.
- Moved the light pole foundation details to Standard Drawing 619-1 and revised the title.
- Made minor revisions.

656-5 Signal Cabinet & Service Pedestal Foundation Detail

- Drawing renumbered 656-5 to align with the 2017 *Standard Specifications for Highway Construction*.

656-6 Signal Cabinet Foundation Detail

- Drawing renumbered 656-6 to align with the 2017 *Standard Specifications for Highway Construction*.

656-10 Loop Detectors 10 ft/sec<sup>2</sup> Deceleration Rate

- Drawing renumbered 656-10 to align with the 2017 *Standard Specifications for Highway Construction*.

656-15 Pedestrian Pushbutton Placement

- Drawing renumbered 656-15 to align with the 2017 *Standard Specifications for Highway Construction*.

#### C-2-A Shoulder Rumble Strips and Rumble Stripes

- Drawing combined with C-2-C and renumbered 631-1 to align with the 2017 *Standard Specifications for Highway Construction*

#### C-2-C Centerline Rumble Strips for Two-way Roadways

- Drawing combined with C-2-A and renumbered 631-1 to align with the 2017 *Standard Specifications for Highway Construction*

#### G-1-A-1 Guardrail Slope Treatment Types A & B

- The AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum requires w-beam barrier installations after December 31, 2017 to have been evaluated using MASH criteria. As a result, the Standard Drawing has been discontinued and replaced.
- The drawing will be available through the Standard Details.

#### G-1-A-2 W-Beam Guardrail Installation Assemblies

- The AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum requires w-beam barrier installations after December 31, 2017 to have been evaluated using MASH criteria. As a result, the Standard Drawing has been discontinued and replaced.
- The drawing will be available through the Standard Details.

#### G-1-A-3 W-Beam Guardrail Post, Blockout, & Hardware

- The AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum requires w-beam barrier installations after December 31, 2017 to have been evaluated using MASH criteria. As a result, the Standard Drawing has been discontinued and replaced.
- The drawing will be available through the Standard Details.

#### G-1-A-4 Guardrail Bolting Hardware for W-Beam & Thrie Beam

- The AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum requires w-beam barrier installations after December 31, 2017 to have been evaluated using MASH criteria. As a result, the Standard Drawing has been discontinued and replaced.
- The drawing will be available through the Standard Details.

#### G-1-A-5 Thrie Beam Guardrail

- Replaced by Standard Drawing 612-2.

#### G-1-B Guardrail Terminals Type 1 & 1-A

- Guardrail Terminal Types 1 and 1-A have been replaced with a recently tested, 31" guardrail anchor.

#### G-1-C-1 Guardrail Terminal Type 2-A, With 10:1 or Flatter Foreslope

- Guardrail Terminal Type 2-A has been replaced with a recently tested, 31" buried-in-backslope guardrail terminal.

#### G-1-C-2 Guardrail Terminal Type 2-B for less than 10:1 to 6:1 Foreslope

- Guardrail Terminal Type 2-B has been replaced with a recently tested, 31" buried-in-backslope guardrail terminal.

#### G-1-E Guardrail Terminal Type 3

- Replaced by Standard Drawing 612-11.

#### G-1-F-1 Guardrail Terminal Type 5 Alternate "A"

- Guardrail Terminal Type 5 Alternate "A" has been replaced with a generalized flared guardrail terminal Standard Drawing based on design guidance in the *Roadside Design Guide*.

#### G-1-F-2 Guardrail Terminal Type 5 Alternate "B"

- Guardrail Terminal Type 5 Alternate "B" has been replaced with a generalized flared guardrail terminal Standard Drawing based on design guidance in the *Roadside Design Guide*.

#### G-1-H Guardrail Terminal Types 7 & 8

- Drawing renumbered 612-3 to align with the 2017 *Standard Specifications for Highway Construction*.

#### G-1-I Guardrail Terminal Type 11

- The type 11 guardrail terminal Standard Drawing has been discontinued in anticipation of the June 30, 2018 AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum date requiring terminals to have been evaluated using MASH criteria.

#### G-1-J Guardrail Terminal Types 4-A & 4-B

- The type 4-A and 4-B guardrail terminal Standard Drawing has been discontinued in anticipation of the June 30, 2018 AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum date requiring terminals to have been evaluated using MASH criteria.

#### G-1-K Guardrail Terminal Type 9

- The stacked w-beam transition for 31" guardrail performed poorly in MASH crash testing and Finite element analysis. The type 9 guardrail terminal Standard Drawing has therefore been discontinued in anticipation of the December 31, 2019 AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum date requiring terminals to have been evaluated using MASH criteria.

#### G-1-L Guardrail Installation for Minor Structure & Large Culverts

- The Guardrail Installation for Minor Structures & Large Culverts has been replaced with a recently tested, 31" w-beam guardrail long-span application. The long span application has been integrated into Standard Drawing 612-1.

#### G-1-M Guardrail Terminal Type 10

- Guardrail Terminal Type 10 has been replaced with a generalized tangent guardrail terminal Standard Drawing based on design guidance in the *Roadside Design Guide*.

#### G-1-N Guardrail Terminal Type 12

- Replaced with TxDOT low speed transition and renumbered 612-10.

#### G-2-A Concrete Barrier Terminals

- Drawing renumbered 612-20 to align with the 2017 *Standard Specifications for Highway Construction*.

#### G-2-A-1 20' Concrete Barrier

- Drawing renumbered 612-15 to align with the 2017 *Standard Specifications for Highway Construction*.

G-2-A-2 10' Concrete Barrier

- Drawing renumbered 612-16 to align with the 2017 *Standard Specifications for Highway Construction*.

G-2-C Concrete Parapet to Thrie Beam Guardrail Connector

- Drawing renumbered 612-21 to align with the 2017 *Standard Specifications for Highway Construction*.

G-2-D Concrete Barrier to Thrie Beam Guardrail Connector

- Drawing renumbered 612-22 to align with the 2017 *Standard Specifications for Highway Construction*.

G-2-H Special Cast-in-place Concrete Barrier

- The AASHTO/FHWA Joint Implementation Agreement for Manual for Assessing Safety Hardware (MASH) memorandum requires cast-in-place concrete barrier installations after December 31, 2017 to have been evaluated using MASH criteria. As a result, the Standard Drawing has been discontinued.
- The drawing will be available through the Standard Details.

G-2-I-1 Tall Concrete Median Barrier

- Drawing renumbered 612-17 to align with the 2017 *Standard Specifications for Highway Construction*.

G-2-I-2 Tall to Standard Concrete Barrier Transition

- Drawing renumbered 612-23 to align with the 2017 *Standard Specifications for Highway Construction*.

H-2-C Pedestrian Pushbutton Placement

- Drawing renumbered 656-15 to align with the 2017 *Standard Specifications for Highway Construction*.

H-4-A Rural Approaches (Private, Commercial, & Public)

- Drawing renumbered 405-1 to align with the 2017 *Standard Specifications for Highway Construction*.

H-4-B Mailbox Turnout & Installation

- Drawing renumbered 405-2 to align with the 2017 *Standard Specifications for Highway Construction*.

I-5 Loop Detectors 10 ft/sec<sup>2</sup> Deceleration Rate

- Drawing renumbered 656-10 to align with the 2017 *Standard Specifications for Highway Construction*.

I-6-A Mast Arm Traffic Signal Poles

- Drawing renumbered 656-1 to align with the 2017 *Standard Specifications for Highway Construction*.

I-6-B Frangible Cast Base Traffic Signal Poles

- Drawing renumbered 656-2 to align with the 2017 *Standard Specifications for Highway Construction*.

I-7-A-1 Signal Cabinet & Service Pedestal Foundation Detail

- Drawing renumbered 656-5 to align with the 2017 *Standard Specifications for Highway Construction*.

I-7-A-2 Signal Cabinet Foundation Detail

- Drawing renumbered 656-6 to align with the 2017 *Standard Specifications for Highway Construction*.

I-7-B-1 Electronic Cabinet Foundation Detail

- Drawing moved to Standard Details.

I-7-B-2 Electronic Cabinet & Service Pedestal Foundation Detail

- Drawing moved to Standard Details.

I-7-C Mast Arm Signal Pole and Pedestrian Pole Foundation Details

- Moved the light pole foundation details to Standard Drawing 619-1 and revised the title.
- Drawing renumbered 656-3 to align with the 2017 *Standard Specifications for Highway Construction*.

I-8-A Breakaway Steel Sign Post Installation, Type A

- Drawing renumbered 616-5 to align with the 2017 *Standard Specifications for Highway Construction*.

I-8-D Breakaway Steel Sign Post Installation, Type B

- Drawing renumbered 616-6 to align with the 2017 *Standard Specifications for Highway Construction*.

I-8-E Breakaway Sign Posts, Type D

- Drawing renumbered 616-10 to align with the 2017 *Standard Specifications for Highway Construction*.

I-8-F Breakaway Steel Sign Post Installation, Type E

- Drawing renumbered 616-7 to align with the 2017 *Standard Specifications for Highway Construction*.

I-9-A-1 B post and Brace Angle Detail

- Drawing combined with I-9-A-2 and renumbered 616-16 to align with the 2017 *Standard Specifications for Highway Construction*.

I-9-A-2 B post and Brace Angle Detail

- Drawing combined with I-9-A-1 and renumbered 616-16 to align with the 2017 *Standard Specifications for Highway Construction*.

I-9-B 36" Route and Auxiliary Sign Brace Angle Assemblies

- Drawing renumbered 616-17 to align with the 2017 *Standard Specifications for Highway Construction*.

I-9-C Route Marker Bracket Details

- Drawing renumbered 616-15 to align with the 2017 *Standard Specifications for Highway Construction*.

I-10-A Extruded Aluminum Signs

- Drawing combined with I-10-B and renumbered 616-2 to align with the 2017 *Standard Specifications for Highway Construction*.

I-10-B Exit Number Panels

- Drawing combined with I-10-A and renumbered 616-2 to align with the 2017 *Standard Specifications for Highway Construction*.

I-12-F      Punching Schedule for Type “B” or Type “E” Signs

- Drawing renumbered 616-1 to align with the 2017 *Standard Specifications for Highway Construction*.

I-21      Pavement Markings for Arterial and Collector Roadways

- Drawing renumbered 630-1 to align with the 2017 *Standard Specifications for Highway Construction*.

I-22      Freeway Pavement Markings

- Drawing renumbered 630-2 to align with the 2017 *Standard Specifications for Highway Construction*.

December 2016

To update Standard Drawing documents dated June 2016, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two sheets
F-2-A	-	Standard Barbed, Woven, Mesh, Combination Wire Fences, & Fencing Details	See 610-1 & 610-3
F-2-B	-	High Tension 8 Wire Fence	Discontinued
F-2-C	-	Gate Types 1, 1A, & 2	See 610-2
F-2-D	-	Chain Link Fence – Fence Type 4	See 610-1 & 610-2
F-2-E	-	Wildlife Fence – Fence Type 9	See 610-1 & 610-3
I-6-B	I-6-B	Frangible Cast Base Traffic Signal Poles	Revised
I-8-A	I-8-A	Breakaway Steel Sign Post Installation, Type A	Revised
I-8-D	I-8-D	Breakaway Steel Sign Post Installation, Type B	Revised
I-8-F	I-8-F	Breakaway Steel Sign Post Installation, Type E	Revised
I-11-A	-	Standard Route Markers	Discontinued, See Sign Chart
I-11-C	-	Route Marker Auxiliary Panels	Discontinued, See Sign Chart
I-12-A	-	Standard Regulatory Signs	Discontinued, See Sign Chart
I-12-D	-	Standard Warning Signs	Discontinued, See Sign Chart
I-13	-	Interstate Exit Number Panels	Discontinued, See Sign Chart
I-21	I-21	Pavement Markings for Arterial and Collector Roadways	Revised
P-1-A	-	Temporary Erosion Control Slope Drains	See 212-2
P-1-B	-	Temporary Sediment Control Barriers	See 212-3
P-1-C	-	Temporary Sediment Trap	See 212-4
P-1-D	-	Temporary Erosion Control Berms, Dikes, and Swales	See 212-1
P-1-E	-	Erosion and Sediment Control for Temporary Roads	See 212-5
P-1-F	-	Temporary Sediment Control Inlet Protection	See 212-5 & 212-6
P-1-H	-	Temporary Sediment Control Inlet Protection	See 212-7
P-2-A	-	Erosion and Sediment Control Gabions and Revet Mattresses	See 212-10
P-2-B	-	Sediment Control Rock Check Dam Types	See 212-11
P-2-C	-	Permanent Erosion Control Culvert Outlet Protection	See 212-12

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
P-2-D	-	Chutes and Flumes	Discontinued
P-2-F	-	Permanent Erosion Control Culvert Outlet Protection	See 607-1
P-3-E	-	Vehicle and Equipment Washdown	See 212-6
P-4-A	-	Erosion & Sediment Control Retention Basin	Discontinued
P-5-A	-	Petroleum Storage Area	See 212-15
P-5-B	-	Temporary Concrete Washout	See 212-16
-	212-1	Temporary Erosion and Sediment Control – Example Applications	Was P-1-D
-	212-2	Temporary Erosion and Sediment Control – Slope Drains	Was P-1-A
-	212-3	Temporary Erosion and Sediment Control – Silt Fence, Fiber Wattle, and Compost Sock	Was P-1-B
-	212-4	Temporary Erosion and Sediment Control – Sediment Trap	Was P-1-C
-	212-5	Temporary Erosion and Sediment Control – Diversion Channel, Ditch, Swale, Dike, Berm, Waterbar, and Rolling Dip	Was P-1-D, P-1-E, & P-1-F
-	212-6	Temporary Erosion and Sediment Control – Stabilized Construction Entrance and Vehicle Washdown	Was P-1-F & P-3-E
-	212-7	Temporary Erosion and Sediment Control – Inlet Protection	Was P-1-H
-	212-10	Permanent Erosion and Sediment Control – Gabion and Revet Mattress	Was P-2-A
-	212-11	Permanent Erosion and Sediment Control – Stone Filter Berms, Dams, and Weirs	Was P-2-B
-	212-12	Permanent Erosion and Sediment Control – Slope and Channel Protection	Was P-2-C
-	212-15	Petroleum Storage Area	Was P-5-A
-	212-16	Temporary Concrete Washout	Was P-5-B
-	610-1	Fences	Was F-2-A, F-2-D, F-2-E
-	610-2	Gates	Was F-2-C, F-2-D
-	610-3	Fence Braces	Was F-2-A

The following changes have been made to the drawings:

212-1 Temporary Erosion and Sediment Control – Example Applications

- Drawing renumbered 212-1 and renamed to align with the *Standard Specifications for Highway Construction*.
- Diversion Channel, Diversion Ditch, and relevant notes moved to 212-5.
- The General Notes were simplified.

212-2 Temporary Erosion and Sediment Control – Slope Drains

- Drawing renumbered 212-2 and renamed to align with the *Standard Specifications for Highway Construction*.

212-3 Temporary Erosion and Sediment Control – Silt Fence, Fiber Wattle, and Compost Sock

- Drawing renumbered 212-3 and renamed to align with the *Standard Specifications for Highway Construction*.

212-4 Temporary Erosion and Sediment Control – Sediment Trap

- Drawing renumbered 212-4 and renamed to align with the *Standard Specifications for Highway Construction*.

212-5 Temporary Erosion and Sediment Control – Diversion Channel, Ditch, Dike, Berm, Waterbar, and Rolling Dip

- Drawing renumbered 212-5 and renamed to align with the *Standard Specifications for Highway Construction*.
- Combined elements of P-1-D and P-1-E. Diversion Channel, Diversion Ditch, and relevant notes moved from P-1-D.

212-6 Temporary Erosion and Sediment Control – Stabilized Construction Entrance and Vehicle Washdown

- Drawing renumbered 212-6 and renamed to align with the *Standard Specifications for Highway Construction*.
- Combined elements of P-1-F and P-3-E.

212-7 Temporary Erosion and Sediment Control – Inlet Protection

- Drawing renumbered 212-7 and renamed to align with the *Standard Specifications for Highway Construction*.

212-10 Permanent Erosion and Sediment Control – Gabion and Revet Mattress

- Drawing renumbered 212-10 and renamed to align with the *Standard Specifications for Highway Construction*.

212-11 Permanent Erosion and Sediment Control – Stone Filter Berms, Dams, and Weirs

- Drawing renumbered 212-11 and renamed to align with the *Standard Specifications for Highway Construction*.

212-12 Permanent Erosion and Sediment Control – Slope and Channel Protection

- Drawing renumbered 212-12 and renamed to align with the *Standard Specifications for Highway Construction*.

#### 212-15 Petroleum Storage Area

- Drawing renumbered 212-15 and renamed to align with the *Standard Specifications for Highway Construction*.

#### 212-16 Temporary Concrete Washout

- Drawing renumbered 212-16 and renamed to align with the *Standard Specifications for Highway Construction*.

#### 610-1 Fences

- Drawing numbered 610-1 to align with the *Standard Specifications for Highway Construction*.
- Combined the fence types from Standard Drawings F-2-A, F-2-D, and F-2-E.
- Reduced the number of fence types. Several fence types were similar, were not being used, or were being used infrequently.
- Revised the Type 9 Wildlife Fence wire spacing and introduced three options for barbed and smooth wire.
- Separated the fence brace details to a separate drawing (except the Type 4 Chain Link Fence braces) to better align with the *Standard Specifications for Highway Construction*.
- Separated the gate details from the Type 4 Chain Link Fence to a separate drawing to better align with the *Standard Specifications for Highway Construction*.

#### 610-2 Gates

- Drawing number changed from F-2-C and F-2-D to 610-2 to better align with the *Standard Specifications for Highway Construction*.
- Combined the gate types from Standard Drawings F-2-C and F-2-D.

#### 610-3 Fence Braces

- Drawing numbered 610-3 to align with the *Standard Specifications for Highway Construction*.
- Separated the fence brace details from Standard Drawing F-2-A.

#### F-2-B High Tension 8 Wire Fence

- Discontinued as a Standard Drawing and moved to Standard Details.
- The drawing was infrequently used.

#### I-6-B Frangible Cast Base Traffic Signal Poles

- Added pole & base collar assembly.

#### I-8-A Breakaway Steel Sign Post Installation, Type A

- Added the Solid Bedrock Foundation detail and Foundation in Solid Bedrock Material Quantities table.
- Revised some notes and other minor revisions.

#### I-8-D Breakaway Steel Sign Post Installation, Type B

- Added the Solid Bedrock Foundation detail and Foundation in Solid Bedrock Material Quantities table.
- Revised some notes and other minor revisions.

#### I-8-F Breakaway Steel Sign Post Installation, Type E

- Added the Solid Bedrock Foundation detail and Foundation in Solid Bedrock Material Quantities table.
- Revised some notes and other minor revisions.

#### I-11-A Standard Route Markers

- The drawing duplicates information that is in the FHWA Standard Highway Signs and Markings Book and conflicts with the new ITD Traffic Manual and new ITD Sign Chart: Idaho Supplement to the Standard Highway Signs and Markings Book.
- A revised Idaho Route Sign (M1-5) will be detailed in the new ITD Sign Chart: Idaho Supplement to the Standard Highway Signs and Markings Book.

#### I-11-C Route Marker Auxiliary Panels

- The drawing duplicates information that is in the FHWA Standard Highway Signs and Markings Book.

#### I-12-A Standard Regulatory Signs

- The drawing duplicates information that is in the FHWA Standard Highway Signs and Markings Book.

#### I-12-D Standard Warning Signs

- The drawing duplicates information that is in the FHWA Standard Highway Signs and Markings Book.

#### I-13 Interstate Exit Number Panels

- These plaques, which differ from those shown in the FHWA Standard Highway Signs and Markings Book per Idaho Administrative Code 39.03.41 – Rules Governing Traffic Control Devices – and will be detailed in the new ITD Sign Chart: Idaho Supplement to the Standard Highway Signs and Markings Book.

#### I-21 Pavement Markings for Arterial and Collector Roadways

- Removed “Standard” from the Drawing title.
- Removed the broken line pattern of an 8’ line segment and 17’ gap to align with the new Traffic Manual.
- Added optional bike lane to five lane markings detail.
- The location of the left turn arrow and the wide white line at the entrance of the left-turn lane has been revised to match the MUTD to align with the new Traffic Manual.
- Some minor revisions to the drawings were made.

#### P-2-D Chutes and Flumes

- Discontinued as a Standard Drawing.
- The drawing was infrequently used.

#### P-3-E Vehicle and Equipment Washdown

- Integrated into 212-6.

#### P-4-A Sediment Basins

- Discontinued as a Standard Drawing.
- 212-4 exists for temporary erosion and sediment control. Permanent sediment basins are site specific and therefore poorly suited for a Standard Drawing.

June 1, 2016

To update Standard Drawing documents dated December 2015, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two sheets
A-1	-	Freeway Grading	Discontinued Moved to Std. Details
A-2	-	Rural Principal Arterial Grading	Discontinued Moved to Std. Details
A-3	-	Rural Minor Arterial Grading	Discontinued Moved to Std. Details
A-4	-	Rural Major Collector Grading	Discontinued Moved to Std. Details
A-5	-	Superelevation	Discontinued Moved to Std. Details
A-6	-	Typical Roadside Slope Treatment	Discontinued Moved to Std. Details
A-7	-	Median Crossovers	Discontinued Moved to Std. Details
A-8	-	Standard Template	Discontinued Moved to Std. Details
A-9	-	ITD Roadway Nomenclature Location & Examples	Discontinued Moved to Std. Details
A-10	-	Parabolic Crown	Discontinued Moved to Std. Details
C-1-A-1	-	Urban Concrete Pavement Details	Renumbered 411-1
C-1-A-2	-	Manhole Collars (PCC Pavement Roundouts)	Renumbered 411-2
C-1-B	-	Doweled Concrete Pavement Details	Renumbered 409-1
C-1-C	-	Ramp Gore Details	Renumbered 409-2
D-4-A	-	Watertight Coupling Bands for Corrugated Metal Pipes	Renumbered 706-6
D-4-B	-	12" Thru 30" Slotted Drain	Renumbered 605-1
E-6-A	-	Inlets & Catch Basins, Types 1, 2, & 3	Renumbered 605-20
E-6-B	-	Inlets & Catch Basins, Types 1A, 2A, & 3A	Renumbered 605-21
E-6-C	-	Inlets & Catch Basins, Types 4 & 5	Renumbered 605-22
E-6-D	-	Catch Basin, Type 6	Renumbered 605-23
E-6-E	-	Catch Basin, Type 7	Renumbered 605-24
E-6-F	-	Inlet, Type 8	Renumbered 605-25
E-6-G	-	Inlet Median Drain, Type 8	Renumbered 605-26
E-6-H	-	Catch Basin, Type 10	Renumbered 605-27
E-7	-	Manhole Type A	Renumbered 605-10

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
E-7-C	-	Manhole Types C & D	Renumbered 605-12
E-8	-	Manhole Type B	Renumbered 605-11
E-9	-	Manhole Frame, Cover, & Concrete Collar	Renumbered 605-13
P-3-A	-	Sediment Control Box (Catch Basin)	Renumbered 605-30
P-3-B	-	Water Pollution Control Sediment & Oil Trap	Renumbered 605-31
P-3-D	-	Water Pollution Control In Street Sediment & Oil Trap	Renumbered 605-32
R-1-A	-	Highway – Railroad Grade Crossing Signal Type 1	Discontinued Moved to Std. Details
R-1-B	-	Highway – Railroad Grade Crossing Signal Type 2	Discontinued Moved to Std. Details
R-1-C	-	Highway – Railroad Grade Crossing Signal Type 3	Discontinued Moved to Std. Details
R-2	-	Highway – Railroad Grade Crossing Area	Discontinued Moved to Std. Details
-	409-1	Portland Cement Concrete Pavement	Was C-1-B
-	409-2	Portland Cement Concrete Pavement Ramp Gore Details	Was C-1-C
-	411-1	Urban Concrete Pavement	Was C-1-A-1
-	411-2	Urban Concrete Pavement Manhole Collars	Was C-1-A-2
601-1	601-1	Pipe and Conduit Installation	Revised
-	605-1	Storm Sewer Pipe, 12" thru 30" Slotted Drain	Was D-4-B
-	605-10	Manhole Type A	Was E-7
-	605-11	Manhole Type B	Was E-8
-	605-12	Manhole Types C & D	Was E-7-C
-	605-13	Manhole Frame, Cover, & Concrete Collar	Was E-9
-	605-20	Inlets & Catch Basins, Types 1, 2, & 3	Was E-6-A
-	605-21	Inlets & Catch Basins, Types 1A, 2A, & 3A	Was E-6-B
-	605-22	Inlets & Catch Basins, Types 4 & 5	Was E-6-C
-	605-23	Catch Basin, Type 6	Was E-6-D
-	605-24	Catch Basin, Type 7	Was E-6-E
-	605-25	Inlet, Type 8	Was E-6-F
-	605-26	Inlet Median Drain, Type 9	Was E-6-G
-	605-27	Catch Basin, Type 10	Was E-6-H
-	605-30	Sediment Control Catch Basin	Was P-1-A
-	605-31	Sediment and Oil Trap Manhole	Was P-1-B
-	605-32	Sediment and Oil Trap Manhole (In Street)	Was P-1-D
608-3	608-3	Metal Safety Slope Apron	Revised
611-2	611-2	Cattle Guard, Pavement Markings	Revised
617-1	617-1	Delineators	Revised
-	706-6	Corrugated Metal Pipe Watertight Coupling Bands	Was D-4-A

The following changes have been made to the drawings:

409-1 Portland Cement Concrete Pavement

- Drawing number changed from C-1-B to 409-1 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from DOWELED CONCRETE PAVEMENT DETAILS to PORTLAND CEMENT CONCRETE PAVEMENT.
- No revisions were made to the Standard Drawing.

409-2 Portland Cement Concrete Pavement Ramp Gore Details

- Drawing number changed from C-1-C to 409-2 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from RAMP GORE DETAILS to PORTLAND CEMENT CONCRETE PAVEMENT RAMP GORE DETAILS.
- Deleted repetitive notes from sheet 1. Changed the on sheet 2 from a passive to an active voice.

411-1 Urban Concrete Pavement

- Drawing number changed from C-1-A-1 to 411-1 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from URBAN CONCRETE PAVEMENT DETAILS to URBAN CONCRETE PAVEMENT.
- No revisions were made to the Standard Drawing.

411-2 Urban Concrete Pavement Manhole Collars

- Drawing number changed from C-1-A-2 to 411-2 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from MANHOLE COLLARS (PCC PAVEMENT ROUNDOUTS) to URBAN CONCRETE PAVEMENT MANHOLE COLLARS.
- No revisions were made to the Standard Drawing.

601-1 Pipe and Conduit Installation

- Added the allowance of compaction to 90% of T-180 or IT-74 for materials in the Pipe Zone and Trench Zone.
- In note no. 3, added "Density test may not be required for material in the haunch and sides of the pipe."
- Added note no. 6 addressing the minimum depth of cover for conduits.

605-1 Storm Sewer Pipe, 12" thru 30" Slotted Drain

- Drawing number changed from D-4-B to 605-1 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from WATERTIGHT COUPLING BANDS FOR CORRUGATED METAL PIPES to CORRUGATED METAL PIPE WATERTIGHT COUPLING BANDS.
- No revisions were made to the Standard Drawing.

605-10 Manhole Type A

- Drawing number changed from E-7 to 605-10 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-11 Manhole Type B

- Drawing number changed from E-8 to 605-11 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-12 Manhole Types C & D

- Drawing number changed from E-7-C to 605-12 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-13 Manhole Frame, Cover, & Concrete Collar

- Drawing number changed from E-9 to 605-13 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-20 Inlets & Catch Basins, Types 1, 2, & 3

- Drawing number changed from E-6-A to 605-20 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-21 Inlets & Catch Basins, Types 1A, 2A, & 3A

- Drawing number changed from E-6-B to 605-21 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-22 Inlets & Catch Basins, Types 4 & 5

- Drawing number changed from E-6-C to 605-22 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-23 Catch Basin, Type 6

- Drawing number changed from E-6-D to 605-23 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-24 Catch Basin, Type 7

- Drawing number changed from E-6-E to 605-24 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-25 Inlet, Type 8

- Drawing number changed from E-6-F to 605-25 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

605-26 Inlet Median Drain, Type 9

- Drawing number changed from E-6-G to 605-26 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 605-27 Catch Basin, Type 10

- Drawing number changed from E-6-H to 605-27 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 605-30 Sediment Control Catch Basin

- Drawing number changed from P-3-A to 605-30 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from SEDIMENT CONTROL BOX (CATCH BASIN) to SEDIMENT CONTROL CATCH BASIN.
- No revisions were made to the Standard Drawing.

#### 605-31 Sediment and Oil Trap Manhole

- Drawing number changed from P-3-B to 605-31 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from WATER POLLUTION CONTROL SEDIMENT & OIL TRAP to SEDIMENT AND OIL TRAP MANHOLE.
- No revisions were made to the Standard Drawing.

#### 605-32 Sediment and Oil Trap Manhole (In Street)

- Drawing number changed from P-3-D to 605-32 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from WATER POLLUTION CONTROL IN STREET SEDIMENT & OIL TRAP to SEDIMENT AND OIL TRAP MANHOLE (IN STREET).
- No revisions were made to the Standard Drawing.

#### 608-3 Metal Safety Slope Apron

- Removed one of the Side Views of Parallel Drainage Apron.
- Replaced Type 3 connection with Tapered Sleeve for Attaching Steel End Sections to Concrete or Smooth Pipe and Smooth Tapered Sleeve Detail.
- Revised tables on sheet 2. Revised structure lengths. Added more 10:1 sloped structures.
- Revised notes.
- Other minor revisions throughout.

#### 611-2 Cattle Guard, Pavement Markings

- Revised note no. 5 to use System C paint rather than ITD Formula No. 9.

#### 617-1 Delineators

- Changed the Rigid Post hole diameter from  $\frac{1}{4}$ " to  $\frac{3}{8}$ ".

#### 706-6 Corrugated Metal Pipe Watertight Coupling Bands

- Drawing number changed from D-4-A to 706-6 to better align with the *Standard Specifications for Highway Construction*.
- Renamed from WATERTIGHT COUPLING BANDS FOR CORRUGATED METAL PIPES to CORRUGATED METAL PIPE WATERTIGHT COUPLING BANDS.
- No revisions were made to the Standard Drawing.

#### A-1 Freeway Grading

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-2 Rural Principal Arterial Grading

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-3 Rural Minor Arterial Grading

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-4 Rural Major Collector Grading

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-5 Superelevation

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-6 Typical Roadside Slope Treatment

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-7 Median Crossovers

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-8 Standard Template

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-9 ITD Roadway Nomenclature Location & Examples

- Discontinued as a Standard Drawing
- Moved to Standard Details

A-10 Parabolic Crown

- Discontinued as a Standard Drawing
- Moved to Standard Details

R-1-A Highway – Railroad Grade Crossing Signal Type 1

- Discontinued as a Standard Drawing
- Moved to Standard Details

R-1-B Highway – Railroad Grade Crossing Signal Type 2

- Discontinued as a Standard Drawing
- Moved to Standard Details

R-1-C Highway – Railroad Grade Crossing Signal Type 3

- Discontinued as a Standard Drawing
- Moved to Standard Details

R-2 Highway – Railroad Grade Crossing Area

- Discontinued as a Standard Drawing
- Moved to Standard Details

December 21, 2015

To update Standard Drawing documents dated June 2015, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two sheets
D-1-A	-	Runoff Drain or Embankment Protector	Renumbered 607-1
D-1-B	-	Runoff Drain or Embankment Protector with Slotted Drain	Renumbered 607-2
D-2-A	-	Culvert Inlet Headwall	Renumbered 609-1
D-3-C	-	Metal Safety Slope Aprons	Renumbered 608-3
D-5	-	Galvanized Steel Aprons for Pipe Culverts	Renumbered 608-1
D-5-A	-	Concrete Aprons for Pipe Culverts	Renumbered 608-2
D-6	-	Precast Concrete Headgate	Renumbered 609-6
D-7	-	Concrete Headwall for Twin Pipe Culverts	Renumbered 609-3
D-8	-	Concrete Headwall for Single Pipe Culverts	Renumbered 609-2
D-9	-	Concrete Headwall for Arch Pipe Culvert	Renumbered 609-4
D-10	-	Concrete Headwall for Siphons	Renumbered 609-5
D-12	-	Pipe & Conduit Installation	Renumbered 601-1
D-13	-	Conduit Installation for Existing Roadways & Approaches	Discontinued
F-1-A	-	Cattle Guard Type A	Renumbered 611-1
F-1-B	-	Cattle Guard Type B	Discontinued
F-1-C	-	Cattle Guard Type C, Painted Cattle Guard	Renumbered 611-2
G-1-G	-	Guardrail Terminal Type 6 Options 1, 2, & 3 (Bullnose Guardrail System)	Renumbered 613-1
I-2-A	-	Monument Markers & Witness Posts	Renumbered 618-1
I-2-B	-	Street Monument Marker & Installation	Combined with I-2-A and renumbered 618-1
-	I-7-C	Mast Arm Signal Pole, Lighting Pole and Pedestrian Foundation Details	Was I-7-C-1 and I-7-C-2
I-7-C-1	-	Mast Arm Signal Pole, Lighting Pole and Pedestrian Foundation Details	Combined with I-7-C-2 and renumbered I-7-C
I-7-C-2	-	Mast Arm Signal Pole, Lighting Pole and Pedestrian Foundation	Combined with I-7-C-1 and renumbered I-7-C
I-8-F	I-8-F	Breakaway Steel Sign Post Installation, Type E	
-	I-21	Standard Pavement Markings for Arterial and Collector Roadways	Was I-21-A
I-21-A	-	Standard Pavement Markings for Arterial and Collector Roadways	Renumbered I-21
-	601-1	Pipe and Conduit Installation	Was D-12 and D-13
-	607-1	Embankment Protector	Was D-1-A

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
-	607-2	Embankment Protector with Slotted Drain	Was D-1-B
-	608-1	Galvanized Steel Aprons for Pipe Culverts	Was D-5
-	608-2	Concrete Aprons for Pipe Culverts	Was D-5-A
-	608-3	Metal Safety Slope Apron	Was D-3-C
-	609-1	Culvert Inlet Headwall	Was D-2-A
-	609-2	Concrete Headwall for Single Pipe Culvert	Was D-8
-	609-3	Concrete Headwall for Twin Pipe Culverts	Was D-7
-	609-4	Concrete Headwall for Arch Pipe Culvert	Was D-9
-	609-5	Concrete Headwall for Siphons	Was D-10
-	609-6	Precast Concrete Headgate	Was D-6
-	611-1	Cattle Guard Type A	Was F-1-A
-	611-2	Cattle Guard, Pavement Markings	Was F-1-C
-	613-1	Bullnose Crash Cushion	Was G-1-G
617-2	617-2	Milepost Assemblies	Renamed
-	618-1	Marker Posts, Witness Posts, and Street Monuments	Was I-2-A and I-2-B

The following changes have been made to the drawings:

I-7-C Mast Arm Signal Pole, Lighting Pole, and Pedestrian Pole Foundation Details

- Combined drawing numbers I-7-C-1 and I-7-C-2 and renamed drawing to I-7-C.
- Other minor revisions throughout.

I-8-F Breakaway Steel Sign Post Installation, Type E

- Revised height dimension on foundation.
- The notes were revised and rewritten.
- Other minor revisions throughout.

I-21 Standard Pavement Markings for Arterial and Collector Roadways

- Drawing renumbered to I-21 from I-21-A.
- Changed the gap length based on findings in NCHRP Report 745.
- Removed one of the reverse curve details.
- Removed the median detail.
- The notes were revised and rewritten.
- Other minor revisions throughout.

601-1 Pipe and Conduit Installation

- Combined drawing numbers D-12 and D-13 and changed the number to 601-1 to better align with the *Standard Specifications for Highway Construction*.
- Added Jacking, Driving, or Boring Utility Conduits.
- Added note for utility cover.

#### 607-1 Embankment Protector

- Drawing number changed from D-1-A to 607-1 to better align with the *Standard Specifications for Highway Construction*. Removed RUNOFF DRAIN from the drawing name to coincide with the standard specification.
- Minor changes throughout.
- Removed notes and Types 5 and 6.

#### 607-2 Embankment Protector with Slotted Drain

- Drawing number changed from D-1-B to 607-2 to better align with the *Standard Specifications for Highway Construction*. Removed RUNOFF DRAIN from the drawing name to coincide with the standard specification.
- No revisions were made to the Standard Drawing.

#### 608-1 Galvanized Steel Aprons for Pipe Culverts

- Drawing number changed from D-5 to 608-1 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 608-2 Concrete Aprons for Pipe Culverts

- Drawing number changed from D-5-A to 608-2 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 608-3 Metal Safety Slope Apron

- Drawing number changed from D-3-C to 608-3 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 609-1 Culvert Inlet Headwall

- Drawing number changed from D-2-A to 609-1 to better align with the *Standard Specifications for Highway Construction*.
- Minor CADD Standards revisions were made to the Standard Drawing, but the Standard Drawing content was not revised.

#### 609-2 Concrete Headwall for Single Pipe Culvert

- Drawing number changed from D-8 to 609-2 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 609-3 Concrete Headwall for Twin Pipe Culverts

- Drawing number changed from D-7 to 609-3 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 609-4 Concrete Headwall for Arch Pipe Culvert

- Drawing number changed from D-9 to 609-4 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 609-5 Concrete Headwall for Siphons

- Drawing number changed from D-10 to 609-5 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 609-6 Precast Concrete Headgate

- Drawing number changed from D-6 to 609-6 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 611-1 Cattle Guard, Type A

- Drawing number changed from F-1-A to 611-1 to better align with the *Standard Specifications for Highway Construction*.
- No revisions were made to the Standard Drawing.

#### 611-2 Cattle Guard, Pavement Markings

- Drawing number changed from F-1-C to 611-2 to better align with the *Standard Specifications for Highway Construction*.
- Drawing renamed from CATTLE GUARD TYPE C PAINTED CATTLE GUARD to CATTLE GUARD PAVEMENT MARKINGS to remove the suggestion that only paint can be used to mark the cattle guard.
- Revised the cattle guard marking pattern.
- Revised the cattle guard wing design and details.
- Revised the Materials Table.
- Revised and simplified the drawing notes.
- Other minor revisions throughout.

#### 613-1 Bullnose Crash Cushion

- Drawing number changed from G-1-G to 613-1 to better align with the *Standard Specifications for Highway Construction*.
- Simplified and corrected the drawing name from GUARDRAIL TERMINAL TYPE 6, OPTIONS 1, 2, & 3 to BULLNOSE CRASH CUSHION.
- Added asymmetrical options.
- Added the option to use steel posts.
- Allowed the use of two-piece nose sections.

#### 617-2 Milepost Assemblies

- Drawing renamed to MILEPOST ASSEMBLIES from MILEPOSTS
- Revised height dimension on foundation.
- The notes were revised and rewritten.
- Other minor revisions throughout.

#### 618-1 Marker Posts, Witness Posts, and Street Monuments

- Combined drawing numbers I-2-A and I-2-B and changed the number to 618-1 to better align with the *Standard Specifications for Highway Construction*. Renamed drawing to reflect the combination of the two drawings.
- Some notes have been reworded.

June 26, 2015

To update Standard Drawing documents dated December, 2014, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two sheets
A-1	A-1	Freeway Grading	
A-2	A-2	Rural Principal Arterial Grading	
A-3	A-3	Rural Minor Arterial Grading	
A-4	A-4	Rural Major Collector Grading	
D-4-C	-	Edge Drain	Renumbered 606-2
G-1-E	G-1-E	Guardrail Terminal Type 3	Corrected referenced drawings
G-3-A	-	Delineators	Renumbered 617-1
G-3-B	-	Snow Poles	Renumbered 628-1
H-1-A	-	Curb and Gutter	Renumbered 615-1
H-1-B	-	Sidewalks, Islands, and A.D.A. Curb & Gutters	Discontinued
H-2-A	-	Sidewalks & A.D.A. Facilities: New Construction	Renamed and Renumbered 614-3
H-2-B	-	Sidewalks & A.D.A. Facilities: Retrofit Applications	Discontinued
H-3	-	Urban Approaches & Concrete Sidewalk	Renamed and Renumbered 614-2
H-5-A	-	Mailbox Assemblies & Mounting Hardware	Renamed and Renumbered 634-1
H-5-B	-	Mailbox Snow Shield	Renumbered 634-2
-	606-2	Edge Drain	Was D-4-C
-	614-1	Sidewalks	New Drawing
-	614-2	Driveways	Was H-3
-	614-3	Curb Ramps	Was H-2-A
-	615-1	Curb and Gutter	Was H-1-A
-	617-1	Delineators	Was G-3-A
-	617-2	Mileposts	Was I-20
-	628-1	Snow Poles	Was G-3-B
-	634-1	Mailboxes	Was H-5-A
-	634-2	Mailbox Snow Shield	Was H-5-B
I-2-A	I-2-A	Monument Markers & Witness Posts	Corrected referenced drawings
-	I-8-A	Breakaway Steel Sign Post Installation, Type A	New Drawing
I-8-A-1	-	Breakaway Sign Post Installation Type A-1	Discontinued
I-8-A-2	-	Breakaway Sign Post Installation Type A-1	Discontinued

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
I-8-B-1	-	Breakaway Sign Post Installation Type A-2, A-3, & A-4	Discontinued
I-8-B-2	-	Breakaway Sign Post Installation Type A-2, A-3, & A-4	Discontinued
I-8-C-1	-	Breakaway Sign Post Installation Type A-8, A-9	Discontinued
I-8-C-2	-	Breakaway Sign Post Installation Type A-8, A-9	Discontinued
-	I-8-D	Breakaway Steel Sign Post Installation, Type B	New Drawing
I-8-D-1	-	Breakaway Sign Post Installation Type B-2	Discontinued
I-8-D-2	-	Breakaway Sign Post Installation Type B-3 & B-4	Discontinued
I-8-D-3	-	Breakaway Sign Post Installation Type B-2, B-3, & B-4	Discontinued
I-8-F	I-8-F	Breakaway Sign Posts Type E	
I-9-B	I-9-B	Cardinal Route Marker Assemblies	Corrected referenced drawings
-	I-13	Interstate Exit Number Panels	New Drawing
I-13-B	-	Interstate Exit Number Panels E1-5	Discontinued
I-20	-	Mileposts	Renumbered 617-2
-	I-22	Freeway Pavement Markings	New Drawing
I-22-A	-	Standard Pavement Markings, Freeways With 22 Foot Wide Shoulders	Discontinued
I-22-B	-	Standard Pavement Markings, Freeways With 22 Foot Wide Shoulders	Discontinued

The following changes have been made to the drawings:

A-1 FREEWAY GRADING

- On the SUPERELEVATION – FOUR LANE detail, the maximum roll over was changed from 0.07 ft./ft. to 0.08 ft./ft. in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*.

A-2 RURAL PRINCIPAL ARTERIAL GRADING

- On the SUPERELEVATION WITH ROLL OVER detail, the maximum roll over was changed from 0.07 ft./ft. to 0.08 ft./ft. in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*.

A-3 RURAL MINOR ARTERIAL GRADING

- On the SUPERELEVATION WITH ROLL OVER detail, the maximum roll over was changed from 0.07 ft./ft. to 0.08 ft./ft. in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*.

A-4 RURAL MAJOR COLLECTOR GRADING

- On the SUPERELEVATION WITH ROLL OVER detail, the maximum roll over was changed from 0.07 ft./ft. to 0.08 ft./ft. in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*.

#### G-1-E GUARDRAIL TERMINAL Type 3

- Reference to H-1-A was changed to 615-1.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### 606-2 EDGE DRAIN

- Drawing number changed from D-4-C to 606-2 to better align with the *Standard Specifications for Highway Construction*.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### 614-1 SIDEWALKS

- New Standard Drawing. Pertinent elements were taken from the H-1-B Standard Drawing when it was eliminated.
- Drawing number assigned to align with the *Standard Specifications for Highway Construction*.

#### 614-2 DRIVEWAYS

- Drawing number changed from H-3 to 614-2 better align with the *Standard Specifications for Highway Construction*.
- Drawing renamed from “URBAN APPROACHES” to “DRIVEWAYS” to better align with the *Standard Specifications for Highway Construction*.
- Reduced the number of driveways from ten to three. The five bituminous types were eliminated. Two concrete types were similar to others and were eliminated.
- Types were eliminated in favor of descriptive names. The names for the different driveway variations were taken from *NCHRP Report 659 – Guide for the Geometric Design of Driveways*.
- Gray shading was added to indicate the extents of driveway pay items.
- The drawing was generally simplified.

#### 614-3 CURB RAMPS

- Drawing number changed from H-2-A to better align with the *Standard Specifications for Highway Construction*.
- Drawing renamed from “SIDEWALKS & A.D.A. FACILITIES: NEW CONSTRUCTION” to better align with industry terminology and the *Standard Specifications for Highway Construction*.
- The Standard Drawings for curb ramps in new construction and curb ramps in retrofit scenarios have been combined into one drawing.
- The three types of curb ramps described in PROWAG (Perpendicular, Parallel, and Combination) have been emphasized. The drawing is based explicitly on the curb ramp technical requirements described in PROWAG. Types were eliminated in favor of descriptive names.
- The sheets have been arranged so that each type of curb ramp is shown in detail on the left side of sheets 1 through 3 with example applications of that curb ramp shown on the right side of the sheet.
- Gray shading was added to indicate the extents of curb ramp pay items.
- The drawing was generally simplified.

#### 615-1 CURB AND GUTTER

- Drawing number changed from H-1-A to 615-1 to better align with the *Standard Specifications for Highway Construction*.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### 617-1 DELINEATORS

- Drawing number changed from G-3-A to 617-1 to better align with the *Standard Specifications for Highway Construction*.
- Corrected an error in the note numbering.

#### 617-2 MILEPOSTS

- Drawing number changed from I-20 to 617-2 to better align with the *Standard Specifications for Highway Construction*.
- The two piece anchor foundation has been removed.
- The sheet layout was improved.
- Milepost plate layout dimension have been removed. The dimensions are found in the *Standard Highway Signs* book.
- The Milepost plate punching schedule has been improved.
- The notes were revised and rewritten.

#### 628-1 SNOW POLES

- Drawing number changed from G-3-B to 628-1 to better align with the *Standard Specifications for Highway Construction*.
- Reference to G-3-A changed to 617-1.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### 634-1 MAILBOXES

- Drawing number changed from H-5-A to 634-1 to better align with the *Standard Specifications for Highway Construction*.
- Drawing renamed from "MAILBOX ASSEMBLIES & MOUNTING HARDWARE" to "MAILBOXES."
- References to other Standard Drawings removed.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### 634-1 MAILBOX SNOW SHIELD

- Drawing number changed from H-5-B to 634-2 to better align with the *Standard Specifications for Highway Construction*.
- Hardware terminology was changed to match the Supplemental Specifications for 2010 Idaho *Standard Specifications for Highway Construction*.
- The Snow Shield Shelf was simplified.
- The notes were revised and rewritten.

#### I-2-A MONUMENT MARKERS & WITNESS POSTS

- Reference to G-3-A was changed to 617-1.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### I-8-A BREAKAWAY STEEL SIGN POST INSTALLATION, TYPE A

- New Standard Drawing. Pertinent elements were taken from the I-8-A-1, I-8-A-2, I-8-B-1, I-8-B-2, I-8-C-1, and I-8-C-2 Standard Drawings when they were eliminated. Installation instructions included with proprietary products was not included.

#### I-8-D BREAKAWAY STEEL SIGN POST INSTALLATION, TYPE B

- New Standard Drawing. Pertinent elements were taken from the I-8-D-1, I-8-D-2, and I-8-D-3 Standard Drawings when they were eliminated. Installation instructions included with proprietary products was not included.

#### I-8-F BREAKAWAY STEEL SIGN POST INSTALLATION, TYPE E

- Drawing renamed from “BREAKAWAY SIGN POST TYPE E” to “BREAKAWAY STEEL SIGN POST TYPE E” to better align with the *Standard Specifications for Highway Construction*.
- The two piece anchor foundation has been removed.
- The notes were revised and rewritten.
- Other minor revisions throughout.

#### I-9-B CARDINAL ROUTE MARKER ASSEMBLIES

- References to I-8-D-1, I-8-D-2, and I-8-D-3 were changed to I-8-D.
- No engineering changes made. Engineers seal, signature, and date still valid.

#### I-13 INTERSTATE EXIT NUMBER PANELS

- New Standard Drawing. Pertinent elements were taken from the I-13-B Standard Drawing when it was eliminated.
- Sheet 1 is a revised version of the prior I-13-B Standard Drawing to better align with the E1-5 plaque in the *Manual on Uniform Traffic Control Devices* (MUTCD). The plaque is 6” taller than the MUTCD plaque to allow the use of 12” extruded aluminum panels.
- Sheet 2 is new and shows a modified version of the E1-5P plaque in the MUTCD. The plaque is 6” taller than the MUTCD plaque to allow the use of 12” extruded aluminum panels.

#### I-22 FREEWAY PAVEMENT MARKINGS

- New Standard Drawing. Pertinent elements were taken from the I-22-A AND I-22-B Standard Drawing when they were eliminated.
- The drawing combines pavement marking information for various ramp widths.

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December 1, 2014

To update Standard Drawing documents dated June, 2014, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
StdList	StdList	Standard Drawing List	Two sheets
G-2-A	G-2-A	Concrete Barrier Terminals	Two sheets, Drawing Renamed
H-1-A	H-1-A	Curb and Gutter	Two sheets, Drawing Renamed
I-7-C-2	I-7-C-2	Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation	
I-8-A-2	I-8-A-2	Breakaway Sign Post Installation Type A-1	
I-8-B-2	I-8-B-2	Breakaway Sign Post Installation Type A-2, A-3, & A-4	
I-8-C-2	I-8-C-2	Breakaway Sign Post Installation Type A-8 & A-9	
I-8-D-1	I-8-D-1	Breakaway Sign Post Installation Type B-2	
I-8-D-2	I-8-D-2	Breakaway Sign Post Installation Type B-3 & B-4	
I-10-A	I-10-A	Extruded Aluminum Signs	
I-10-B	I-10-B	Exit Number Panels	
I-22-A	I-22-A	Standard Pavement Markings, Freeways with 22 Foot Wide Ramps	
I-22-B	I-22-B	Standard Pavement Markings, Freeways with 26 Foot Wide Ramps	
P-2-C	P-2-C	Permanent Erosion Control Slope & Channel Protection	

The following changes have been made to the drawings:

G-2-A Concrete Barrier Terminals

- The drawing has been renamed from “Concrete Barrier & Terminal Type A” to “Concrete Barrier Terminals.”
- The “old” 10’ Concrete Barrier was removed from the drawing. The “old” design has not been approved for new construction since 2002.
- Terminal B was added on sheet 2. Terminal B is based on the design described in 8.4.4.1 of the *AASHTO Roadside Design Guide* and *NCHRP Report 358: Recommended Practices for Use of Traffic Barrier and Control Treatments for Restricted Work Zones* and the Utah DOT’s BA 2B Standard Drawing.
- Reinforcing Steel Tables were added for Terminals A and B.
- The Wire Rope Loop on Terminal A was replaced with the ¾” diameter ASTM A36 steel loop bars that are used in ITD’s other concrete barrier designs.
- The End View of Terminal A was modified to match the End View used in several of ITD’s other concrete barrier designs.
- The notes were rewritten. Notes not related to the terminals were removed.

#### H-1-A Curb and Gutter

- The drawing has been renamed from “Curbs, Gutters, Traffic Separators, & Raised Channelization End Treatment” to “Curb and Gutter” to align with Section 615 of the *Standard Specifications for Highway Construction*.
- The drawing has been expanded to two sheets. Sheet 1 reflects substantial changes made to Section 615 of the *Standard Specifications for Highway Construction* for the 2015 Supplemental Specifications. Sheet 2 remains unchanged from the 2010 revision of the Standard Drawing and reflects the older specifications. The two sheets will be necessary until all projects are using the 2015 or newer Supplemental Specifications.
- Changes made to sheet 1:
  - The notes have been simplified and rewritten. Descriptions of types A, B, C, and D have been removed to coincide with changes to Section 615 of the *Standard Specifications for Highway Construction*.
  - The Typical Curb Installation detail has been removed.
  - The Raised Channelization End Treatment details have been removed.
  - The curb sections have been grouped into curb and gutter, curb, traffic separator, and gutter. The sections have been renumbered and renamed to “Types.” Previously, ITD pay items referred to curb, gutter, combination curb and gutter, or traffic separator, but the terms did not coincide with specific sections on the Standard Drawing.
  - Added Curb Type 2. This curb section was on Standard Drawing H-1 until June, 1973 and continues to remain in use in the Idaho Standards for Public Works Construction (ISPWC).
  - Gutter type 1 was widened from 36” to 60” with the same depth. The change flattens the gutter slopes from 12:1 to 20:1.
  - The Typical Grout Joint has been redrawn and renamed Key Detail to
  - A pin detail has been added as an alternative to the pavement key.

#### I-7-C-2 Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details

- Excavation Note 2 – Corrected an error in the note

#### I-8-A-2 Breakaway Sign Post Installation Type A-1

- Revised the Foundation Note.
- Changed the H to T in the legend and on the two typical sign installations drawings.
- Removed the Q from the two typical sign installations drawings. No longer applies.
- Revised note number 2.
- Revised note number 5.
- Added note number 6.

#### I-8-B-2 Breakaway Sign Post Installation Type A-2, A-3, & A-4

- Revised the Foundation Note.
- Changed the # symbol to NO. in bracket table.
- Changed the H to T in the legend and on the typical sign installation drawing.
- Removed the Q from the typical sign installation drawing. No longer applies.
- Revised note number 2.
- Revised note number 5.
- Added note number 6.

#### I-8-C-2 Breakaway Sign Post Installation Type A-8 & A-9

- Revised the Foundation Note.
- Changed the # symbol to NO. in bracket table.
- Changed the H to T in the legend and on the typical sign installation drawing.
- Removed the Q from the typical sign installation drawing. No longer applies.
- Revised note number 2.
- Revised note number 5.
- Added note number 6.

#### I-8-D-1 Breakaway Sign Post Installation Type B-2

- Revised the Foundation Note.
- Added callout to Typical Top View.
- Revised note number 5.
- Added note number 6.
- Some minor revisions were made.

#### I-8-D-2 Breakaway Sign Post Installation Type B-3 & B-4

- Revised the Foundation Note.
- Added callout to Typical Top View.
- Added detail name for the post and base assemblies.
- Revised note number 5.
- Added note number 6.
- Some minor revisions were made.

#### I-10-A Extruded Aluminum Signs

- Added aluminum specifications to two callouts.
- Placed sections into alphabetical order
- Added note number 4.
- Added note number 5.
- Some minor revisions were made.

#### I-10-B Exit Number Panels

- Added left exit panel drawing.
- Added angle bot detail for the 120" high left exit panel.
- Added aluminum specifications to two callouts.
- Placed sections into alphabetical order
- Added note number 4.
- Some minor revisions were made.

#### I-22-A Standard Pavement Markings, Freeways with 22 Foot Wide Ramps

- Renumbered notes.
- Added note number 1.
- Added note number 4.

I-22-B Standard Pavement Markings, Freeways with 26 Foot Wide Ramps

- Note 2 – Corrected an error.
- Added note number 3.

P-2-C Permanent Erosion Control Slope & Channel Protection

- ECTC recommends a 6"x 6" check slot. Changed all depths to be 6" min.
- On the "Slope Installation Example" corrected the direction of the flow arrow.
- Modified note no. 3 to start on the upstream end or crest of slope to match ECTC guidance.
- Deleted the "Lower Terminal Anchor Detail." Reference to the channel terminal/erosion stop detail instead.
- Changed min stake length to 8". That provides a stake depth of 6" with 2" of the stake exposed.

July 14, 2014

To update Standard Drawing documents dated December, 2013, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two sheets
A-11	-	Urban Parkway Section (Low Speed Design)	Drawing Eliminated
A-12	-	Suburban Parkway Section (High Speed Design)	Drawing Eliminated
A-13	-	Rural Parkway Section (High Speed Design)	Drawing Eliminated
C-2-A	C-2-A	Shoulder Rumble Strips and Rumble Stripes	Two sheets, Drawing Renamed
C-2-B	-	Shoulder Rumble Strips for Two-Way Roadways Options A&B	Drawing Eliminated, Combined with C-2-A
-	D-4-C	Edge Drain	New Drawing, Two Sheets
D-12	D-12	Pipe & Conduit Installation	Drawing Renamed
G-2-A-1	G-2-A-1	20' Concrete Barrier	Three Sheets
G-2-A-2	G-2-A-2	10' Concrete Barrier	Three Sheets
G-3-A	G-3-A	Delineators	Drawing Renamed, Reduced to one sheet
G-3-B	G-3-B	Snow Poles	
H-2-C	H-2-C	Pedestrian Pushbutton Placement	Drawing Renamed
I-6-A	I-6-A	Mast Arm Traffic Signal Poles	
I-6-B	I-6-B	Frangible Cast Base Traffic Signal Poles	
I-7-A	-	Foundation Details for Signal Cabinets	Drawing Eliminated, Split into I-7-A-1 and I-7-A-2
-	I-7-A-1	Signal Cabinet & Service Pedestal Foundation Details	New Drawing
-	I-7-A-2	Signal Cabinet Foundation Detail	New Drawing
I-7-B	-	Electronic Cabinet Foundation Detail	Drawing Eliminated, Split into I-7-B-1 and I-7-B-2
-	I-7-B-1	Electronic Cabinet Foundation Detail	New Drawing
-	I-7-B-2	Electronic Cabinet & Service Pedestal Foundation Detail	New Drawing
I-7-C	-	Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details	Drawing Eliminated, Split into I-7-C-1 and I-7-C-2
-	I-7-C-1	Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details	New Drawing

-	I-7-C-2	Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details	New Drawing
I-8-A-1	I-8-A-1	Breakaway Sign Post Installation Type A-1	
I-8-A-2	I-8-A-2	Breakaway Sign Post Installation Type A-1	
I-8-B-1	I-8-B-1	Breakaway Sign Post Installation Type A-2, A-3, & A-4	
I-8-B-2	I-8-B-2	Breakaway Sign Post Installation Type A-2, A-3, & A-4	
I-8-C-1	I-8-C-1	Breakaway Sign Post Installation Type A-8 & A-9	
I-8-C-2	I-8-C-2	Breakaway Sign Post Installation Type A-8 & A-9	
I-8-E	I-8-E	Breakaway Sign Post Installation Type D	
I-8-F	I-8-F	Breakaway Sign Post Installation Type E	
I-9-A-1	I-9-A-1	B Post and Brace Angle Detail	
I-9-A-2	I-9-A-2	B Post and Brace Angle Detail	
I-9-C	I-9-C	Route Marker Bracket Details	
I-10-A	I-10-A	Extruded Aluminum Signs	
I-10-B	I-10-B	Exit Number Panels	
I-11-A	I-11-A	Standard Route Markers	
I-11-C	I-11-C	Router Marker Auxiliary Panels	
I-12-A	I-12-A	Standard Regulatory Signs	
I-12-D	I-12-D	Standard Warning Signs	
I-12-F	I-12-F	Punching Schedule for Type "B" or Type "E" Signs	
I-13-B	I-13-B	Interstate Exit Number Panels E1-5	
I-20	I-20	Mileposts	
I-22-A	I-22-A	Standard Pavement Markings Freeways With 22 Foot Wide Ramps	
I-22-B	I-22-B	Standard Pavement Markings Freeways With 26 Foot Wide Ramps	

The Standard Drawing List Sheets and the [Standard Drawing web site](#) show the revision date for the approved drawings.

The following changes have been made to the drawings:

#### C-2-A Shoulder Rumble Strips and Rumble Stripes

- Standard Drawings C-2-A and C-2-B have been combined.
- The Standard Drawing name has been changed from “Rumble Strips for Multi-Lane Roadways Options A & B” to “Shoulder Rumble Strips and Rumble Stripes.”
- From page 1 of 2 of C-2-A, the “Single Lane Off” and “Single Lane On” details have been redrawn and placed side by side. The “Two Lane Off” and “Single Lane Off (One Lane Reduction)” details have been removed. The information shown was redundant. The “Narrowed Shoulder” and “Intersection” details have been added from C-2-B.
- The “Gap Detail” moved from sheet 2 of 2 to sheet 1 of 2. The “Gap Detail” has been modified to match what was shown on C-2-B.
- On Sheet 2 of 2, a “Rumble Strip and Rumble Strip Dimension Table” has been added.
- Options A and B changed to Rumble Strip and Rumble Stripe.
- Modified the perspective view to show Rumble Strip and Rumble Stripe.
- Added a “Concrete Pavement Joint Detail.”
- Section B-B has been removed.
- Notes from C-2-A and C-2-B have been combined and rewritten.

#### D-12 Pipe & Conduit Installation

- The Standard Drawing name has been changed from “Conduit Installation for New Roadways & Approaches” to “Pipe & Conduit Installation.”
- The drawing has been entirely redrawn and simplified.

#### G-2-A-1 20' Concrete Barrier

- The drawing has been expanded from two sheets to three sheets. Findings from research conducted on California K-Rail staking configurations have been added to the drawing.
- Added 20'-0"  $\pm 1/4$ " dimension from center of connecting pin to center of connecting pin.
- Removed H-3 reinforcing bars. These bars are not needed.
- Changed some reinforcing steel numbers. Changed S-1 to V-2 and S-2 to H-3. Modified the location descriptions of the reinforcing steel.
- Modified the Concrete Barrier Shy-Line Offset and Flare Rate Table. Added columns for staked and not staked barrier.
- The “Standard Installation” section has been revised. Three sections are shown on sheet 2 to show Non-Staked Barrier, Staked Median Barrier, and Staked Shoulder Barrier. The distance behind the barrier has been modified based on discussions with other DOT's and a review of crash testing reports of the Idaho 20' Concrete Barrier and the California K-Rail.
- An Anchor Bolt Assembly has been added as an additional bridge deck anchor option based on guidance from CalTrans and NCDOT Standard Drawings/Details.
- Note 11 has been modified to correspond with the deflection distances shown in FHWA acceptance letter B-70.
- Note 9 has been removed and replaced with a new note.
- Minor changes to the notes.
- Minor annotation changes throughout.

### G-2-A-2 10' Concrete Barrier

- The drawing has been expanded from two sheets to three sheets. Findings from research conducted on staking configurations have been added to the drawing.
- Added 10'-0"  $\pm 1/4$ " dimension from center of connecting pin to center of connecting pin.
- Removed H-3 reinforcing bars. These bars are not needed.
- Changed some reinforcing steel numbers. Changed S-2 to H-3. Modified the location descriptions of the reinforcing steel.
- Modified the Concrete Barrier Shy-Line Offset and Flare Rate Table. Added columns for staked and not staked barrier.
- The "Standard Installation" section has been revised. Three sections are shown on sheet 2 to show Non-Staked Barrier, Staked Median Barrier, and Staked Shoulder Barrier. The distance behind the barrier has been modified based on discussions with other DOT's and a review of crash testing reports of NCDOT Portable Concrete Barrier (ITD 10' Concrete Barrier is based on the NCDOT design).
- An Anchor Bolt Assembly has been added as an additional bridge deck anchor option based on guidance from CalTrans and NCDOT Standard Drawings/Details.
- Note 10 has been modified to correspond with the deflection distances shown in FHWA acceptance letter B-70.
- Note 9 has been removed and replaced with a new note.
- Minor changes to the notes.
- Minor annotation changes throughout.

### G-3-A Delineators

- The Standard Drawing name has been changed from "Delineators & Installation" to "Delineators."
- The Standard Drawing has been reduced from 2 sheets to 1 sheet.
- The "Spacing for Horizontal Curves" table (renamed Horizontal Curve Spacing Table) has been modified to coordinate with the 2009 MUTCD, Chapter 3F.
- The "Crest Vertical Curve" and "Spacing for Vertical Curves" table has been removed. The 2009 MUTCD does not provide any guidance on changing delineator spacing on vertical curves, the values in the table could not be verified, and neighboring states do not use the practice. Note no. 2 now indicates to "reduce delineator spacing on crest vertical curves."
- The "Delineator Orientation on Horizontal Curves" detail has been removed. Angling delineators on curves has been determined to be less important with modern reflective sign sheeting.
- Height dimensions have been changed from measuring to the top of the delineator to measuring to the bottom of the delineator to coordinate with the 2009 MUTCD.
- Alternates A and B have been changed to Single or Double delineators to coordinate with the 2009 MUTCD.
- The "Lateral Placement" table (renamed Placement Table) has been modified to ensure adequate post embedment. Delineator post length did not change with this revision, but with the change to measuring to the bottom of the delineator, the post embedment length changed. The offset distances have been modified to reflect this change.
- The "Old 10' Concrete Guardrail Installation" on sheet 2 of 2 has been moved to the Standard Detail for the Old 10' Concrete Barrier.

- The “10’ & 20’ Concrete Barrier Installation Details” on sheet 2 of 2 has been removed. The anti-rotation bar is difficult to install and maintenance has indicated that it is not needed.
- The notes have been rewritten.

#### G-3-B Snow Poles

- Standard Drawing G-3-B has been revised to coordinate with revisions to G-3-A.

#### H-2-C Pedestrian Pushbutton

- The Standard Drawing name has been changed from “Sidewalks & A.D.A. Pedestrian Pushbutton Details” to “Pedestrian Pushbutton Placement.”
- The drawing has been entirely redrawn to coordinate with the 2009 MUTCD and PROWAG.

#### I-6-A Mast Arm Traffic Signal Poles

- Changed the pushbutton location on the signal pole.
- Changed pedestrian pushbutton sign to 9” x 15”.
- Removed the pedestrian pushbutton H assembly mounting detail.
- Added the pedestrian pushbutton mounting note.

#### I-6-B Frangible Cast Base Traffic Signal Poles

- Changed the pushbutton location on the pedestrian pushbutton pole, pedestrian signal pole and the vehicle and pedestrian signal pole.
- Changed pedestrian pushbutton sign to 9” x 15”.
- Revised the mounting note for the mounting of the pedestrian pushbutton assembly.
- Increased the height of the pedestrian pushbutton pole to 60 inches. It was 48 inches.
- Changed the pole material to 4” Galvanized Rigid Steel Conduit. The material was 4” std. galvanized pipe.

#### I-8-A-1 Breakaway Sign Post Installation Type A-1

- Removed information which is on Standard Drawing I-8-A-2.
- Added the post dimension table.
- Revised general note and some of the installation notes.
- Item 9 Anchor – Added information.
- Updated to current ITD CADD standards.

#### I-8-A-2 Breakaway Sign Post Installation Type A-1

- Updated the Typical Anchor Template information.
- Revised legend.
- Some minor revisions.
- Updated to current ITD CADD standards.

#### I-8-B-1 Breakaway Sign Post Installation Type A-2, A-3, & A-4

- Removed information which is on Standard Drawing I-8-B-2.
- Revised general note and some of the installation notes.
- Updated the Bracket Selection Table.
- Item 12 Anchor – Added information.
- Updated to current ITD CADD standards.

#### I-8-B-2 Breakaway Sign Post Installation Type A-2, A-3, & A-4

- Updated the Typical Anchor Template information.
- Revised legend.
- Some minor revisions.
- Updated to current ITD CADD standards.

#### I-8-C-1 Breakaway Sign Post Installation Type A-8, & A-9

- Removed information which is on Standard Drawing I-8-C-2.
- Revised general note and some of the installation notes.
- Updated the Bracket Selection Table.
- Changed the Post Type A-8 to W12-19 from W12-14.
- Item 12 Anchor – Added information.
- Some minor revisions
- Updated to current ITD CADD standards.

#### I-8-C-2 Breakaway Sign Post Installation Type A-8, & A-9

- Updated the Typical Anchor Template information.
- Revised legend
- Some minor revisions.
- Updated to current ITD CADD standards.

#### I-8-E Breakaway Sign Posts Type D

- Added title Sign Post Details table for table.
- Added Note 2 to Sign Post Details table clarifying the location of 8" X 8" wood posts.
- Added Section A-A and Section B-B.
- Changed orientation of view in Section B-B.
- Added Typical Sheet Aluminum and Plywood Signs Mounted on Wood Post view and note.
- Added exploded view to Typical Extruded Aluminum Sign Mounted on Wood Posts side view.
- Updated to current ITD CADD standards.

#### I-8-F Breakaway Sign Posts Type E

- Revised verbiage in some of the notes.
- Corrected a few line styles.
- Added Note 7.
- Updated to current ITD CADD standards.

#### I-9-A-1 B Post and Brace Angle Detail

- Revised the Column C, Column E dimensions and Weight Column for the 48" X 24" Warning Large Arrow in the Brace Angle Specification table.
- Revised the details.
- Updated to current ITD CADD standards.

#### I-9-A-2 B Post and Brace Angle Detail

- Revised the Column C, Column E dimensions and Weight Column for the 48" X 24" Warning Large Arrow in the Brace Angle Specification table.
- Revised some of the details.
- Added top cover plate details
- Updated to current ITD CADD standards.

#### I-9-C Route Marker Bracket Details

- Increased the size of the  $\frac{3}{8}$ " x  $\frac{3}{4}$ " slot detail.
- Corrected minor errors in note 3 & note 6.
- Updated to current ITD CADD standards.

#### I-10-A Extruded Aluminum Signs

- Added the Punch Hole Detail.
- Revised note 2.

#### I-10-B Exit Number Panels

- In Section AA and Section BB the 6" panel was removed. All panels depicted are now 12" panels.
- Galvanized was added to the three callouts which specified angle iron.
- Added 304 Stainless Steel and 1" length to bolt callout for the detail on right.
- Added Stainless Steel and to bolt callout for Typical Clip Installation for Extruded Aluminum Panels.
- Added the center part of extruded aluminum panels in the detail in upper left of sheet.
- Moved the D distance note to left side and added a leader line.
- Added callout to Section AA.
- Corrected some minor drafting errors.

#### I-11-A Standard Route Markers

- Added the three numeral Interstate shield. M1-1(3) & M1-1A(3).
- Removed the Interstate Business Spur shield. M1-3 & M1-3A.
- Removed the County shield. It is no longer used.
- Revised the dimension table for Idaho route markers.
- Note no. 2 removed. Note no. 3 changed to note no. 2.
- Some minor revisions.
- Updated to current ITD CADD standards.

#### I-11-C Route Marker Auxiliary Panels

- Updated to current ITD CADD standards.

#### I-12-A Standard Regulatory Signs

- Removed the R2-4, R2-4A & R2-4B, Minimum Speed sign.
- Removed the dimension form the R8-8, Authorized and Emergency Vehicle sign. The dimensions are available on the ITD web-site.
- Changed Note 3.

#### I-12-D Standard Warning Signs

- Revised Note 3.
- Updated to current ITD CADD standards.

#### I-12-F Punching Schedule for Type “B” or Type “E” Signs

- Removed the County shield.
- Added the 30” X 24” Interstate shield.
- Added the 45” X 36” Interstate shield.
- Added the 54” X 36” Rectangular sign.
- Updated to current ITD CADD standards.

#### I-13-B Interstate Exit Number Panels E1-5

- Changed [34] E MOD to Changed [2] E MOD in the Exit 2 detail.
- Changed [34] E MOD to Changed [234] E MOD in the Exit 234 detail.
- Updated to current ITD CADD standards.

#### I-20 Mileposts

- Revised note 8.
- Added notes 9 and note 10.
- Some minor revisions.
- Updated to current ITD CADD standards.

#### I-22-A Standard Pavement Markings Freeways with 22 Foot Wide Ramps

- Removed the hatching from the off ramp physical gore.
- Added solid white to the \*\* callout.
- Added white to a callout for the on ramp.
- Updated to current ITD CADD standards.

#### I-22-B Standard Pavement Markings Freeways with 26 Foot Wide Ramps

- Removed the hatching from the off ramp physical gore.
- Added solid white to the \*\* callout.
- Added white to a callout for the on ramp.
- Updated to current ITD CADD standards.

The following Standard Drawings have been added:

D-4-C     Edge Drain

- This is a new Standard Drawing added in accordance with Section 550 of the ITD *Materials Manual* and Section 606 of the *Standard Specifications for Highway Construction*.

I-7-A-1     Signal Cabinet & Service Pedestal Foundation Details

- This Standard Drawing was I-7-A.
- Changed the title of the drawing.
- Removed the signal cabinet foundation only from the foundation schedule and placed on new Standard Drawing I-7-A-2.
- Added the service pedestal anchor bolt size to the foundation schedule.
- Removed note 6 and note 10.
- Renumbered the notes.
- Added note 11.
- Some minor revisions were made.
- Updated to current ITD CADD standards.

I-7-A-2     Signal Cabinet Foundation Detail

- This is a new Standard Drawing for a standalone signal cabinet.

I-7-B-1     Electronic Cabinet Foundation Detail

- This is a new Standard Drawing for a standalone electronic cabinet.

I-7-B-2     Electronic Cabinet & Service Pedestal Foundation Detail

- The Standard Drawing number has changed from I-7-B.
- Changed the title of the drawing.
- Increased the height of the foundation from 6" to 18".
- Removed the electronic cabinet foundation only from the foundation schedule and placed it on new Standard Drawing I-7-B-1.
- Added the service pedestal anchor bolt size to the foundation schedule.
- Added notes 9 & 10.
- Some other minor revisions have been made.
- Updated to current ITD CADD standards.

I-7-C-1     Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details

- The Standard Drawing number has changed from I-7-C.
- Section AA title has been changed to Typical Foundation in Drilled Hole.  
Revised note 9.
- Added to title, Requires Std. Dwg. I-7-C-2.

I-7-C-2 Mast Arm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details

- This is a new Standard Drawing. The following new information has been added:
  - Typical pole foundation in excavation.
  - Typical pole foundation in bed rock.

The following Standard Drawings have been discontinued:

A-11 Urban Parkway Section (Low Speed Design)

- The drawing is out of date and parkway cross sections should be project specific. As a result, a decision has been made to discontinue the drawing at this time.

A-12 Suburban Parkway Section (High Speed Design)

- The drawing is out of date and parkway cross sections should be project specific. As a result, a decision has been made to discontinue the drawing at this time.

A-13 Rural Parkway Sections (High Speed Design)

- The drawing is out of date and parkway cross sections should be project specific. As a result, a decision has been made to discontinue the drawing at this time.

C-2-B Shoulder Rumble Strips for Two-Way Roadways Options A&B

- Standard Drawing C-2-B has been combined with Standard Drawing C-2-A.

I-7-A Foundation Details for Signal Cabinets

- Standard Drawing I-7-A has been split to become Standard Drawings I-7-A-1 and I-7-A-2.

I-7-B Electronic Cabinet Foundation Detail

- Standard Drawing I-7-B has been split to become Standard Drawings I-7-B-1 and I-7-B-2.

I-7-C Mastarm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details

- Standard Drawing I-7-C has been split to become Standard Drawings I-7-C-1 and I-7-C-2.

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December 6, 2013

To update Standard Drawing documents dated June, 2013, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
StdList	StdList	Standard Drawing List	Two sheets
G-2-C	G-2-C	Concrete Parapet to Thrie Beam Guardrail Connector	Two sheets
G-2-D	G-2-D	Concrete Barrier to Thrie Beam Guardrail Connector	Three sheets
K-7	-	Methods of Planting Trees and Shrubs	Moved to BMP Manual
P-1-A	P-1-A	Temporary Erosion Control Slope Drains	
P-1-C	P-1-C	Temporary Sediment Trap	
P-2-C	P-2-C	Permanent Erosion Control Slope & Channel Protection	
P-4-B	-	Methods of Planting Trees, Shrubs, & Wattling (Facines)	Moved to BMP Manual
P-5-A	P-5-A	Petroleum Storage Area	
P-5-B	P-5-B	Temporary Concrete Washout	

The Standard Drawing List Sheets, available for download on the [Standard Drawing web site](#), show the revision date for the approved drawings.

The following are changes reflected in drawings:

General:

- The Department has rewritten the notes with an emphasis on the active voice and the imperative mood. The change was made to coincide with the 2012 *Standard Specifications for Highway Construction*.
- An effort was made to improve consistency between drawings and the *Standard Specifications for Highway Construction* with regard to terminology and symbols.

G-2-C CONCRETE PARAPET TO THRIE BEAM CONNECTOR

- The drawing was redrawn and reordered. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes, placement related notes, and anchoring related notes.
- Redundant delineator information was removed from the connecting pin detail. Standard Drawing G-3-A, Delineators & Installation is referenced.

## G-2-D CONCRETE BARRIER TO THREE BEAM CONNECTOR

- The drawing was redrawn and reordered. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches. The drawing now consists of three sheets.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes, placement related notes, and anchoring related notes.
- Redundant delineator information was removed from the connecting pin detail. Standard Drawing G-3-A, Delineators & Installation is referenced.

## P-1-A TEMPORARY EROSION CONTROL SLOPE DRAINS

- Changed drawing name from TEMPORARY EROSION CONTROL INLET/OUTLET.
- Removed extraneous wording.
- Added reference to Standard Drawing D-5 – GALVANIZED STEEL APRONS FOR PIPE CULVERTS.
- Changed sediment basin drain rock size to  $D_{50}=6"$ .
- Added note that liner should extend at least 3.5' in front of slope inlet based on BMP manual recommendation.
- Inserted berm into Section A-A that is shown on plan view.
- Included a riprap and erosion control geotextile liner under rock in sediment basin.
- Inserted liner at top of Slope Drain (Liner).
- Removed "20' max" end length and added note 8 to be consistent with the IDEQ BMP manual.

## P-1-C TEMPORARY SEDIMENT TRAP

- Changed drawing name from EROSION & SEDIMENT CONTROL SEDIMENT TRAP BASIN.
- Removed reference to Standard Drawing P-4-B.
- Removed isometric view. Section B-B was previously moved to Standard Drawing P-2-B – SEDIMENT CONTROL ROCK CHECK DAM TYPES.
- Notes 4, 5, 7, and 8 were removed.
- Removed "and the Sediment Removal Table given on Standard Drawing (P-4-A) (Erosion & Sediment Control Retention Basin)" from Note 2. The table is not applicable.
- Modified note 2 to include 3,600 ft<sup>3</sup>/acre requirement from the construction general permit.
- Moved riprap/erosion control geotextile notes from the plan and Section A-A views to become notes 4 and 5.
- Reduced max slope to 3:1. Increases safety and maintenance.
- Modified depth to be 3' < depth < 5'. 3' minimum imply that 3' of water had to be maintained in the trap. 3' minimum allows for sedimentation to occur and less than 5' improves safety.

- Removed the term “treated outflow” from drawing and replaced it with “overflow.” Sedimentation is not a treatment it is a process. The purpose of the sediment trap is to capture the volume associated with the water quality design storm. Any volume beyond that is meant to safely overflow the weir.
- Added minimum 3ft separation between the bottom of the trap and the ground water level based on professional judgment and consultation with hydraulics engineers.

#### P-2-C PERMANENT EROSION CONTROL SLOPE & CHANNEL PROTECTION

- Modified “Channel Installation Example” to be a “Slope Installation Example”. Drawing title includes both but didn’t have a detail for both and felt that channel installation was adequately covered in the “Channel & Intersection Detail.” Moved the “channel check detail” to the “Channel & Intersection Detail.”
- Added a minimum depth of 8” to the channel check slot detail.
- Removed note 2.
- Simplified note 3 and renumbered it to note 2.
- Simplified note 4 and renumbered it to note 3.
- Simplified note 5 and renumbered it to note 4.

#### P-5-A PETROLEUM STORAGE AREA

- Changed drawing name from HAZARDOUS MATERIALS CONTAINMENT PETROLEUM STORAGE.
- Changed reference to Standard Drawing P-1-E.
- Removed “Equipment staging area” detail.
- Modified Petroleum Storage Area Type 1 and 2 to have dimensions of “varies” to fit site constraints.
- Removed center berm on Type 1 because this is a petroleum storage area, all material should be compatible.
- Removed storage from off the top of the internal berm.
- Decreased required secondary containment to 110% of total storage volume. This is in line with industry standards.
- Integrated General Notes for Hazardous Materials Containment into the notes. Removed general note 4.
- Added notes about treatment of contaminated stormwater, storage of incompatible materials, and storing materials in original packaging.

#### P-5-B TEMPORARY CONCRETE WASHOUT

- Made dimension 10’ x 10’ rather than “varies” as a minimum to clarify.
- Removed lath and flagging around three sides of a berm temporary concrete washout.
- Added note to reference the ITD BMP Manual.
- Added “not to scale” note.

The following Standard Drawings have been discontinued:

K-7 METHODS OF PLANTING TREES AND SHRUBS

- ITD Maintenance, Environmental, and Highway Program Oversight sections decided to discontinue this drawing because the material does not require engineering and is instructional in nature. The relevant information will be moved to the Environmental Best Management Practices Manual.

P-4-B METHODS OF PLANTING TREES, SHRUBS, & WATTLING (FACINES)

- ITD Maintenance, Environmental, and Highway Program Oversight sections decided to discontinue this drawing because the material does not require engineering and is instructional in nature. The relevant information will be moved to the Environmental Best Management Practices Manual.

June 1, 2013

To update Standard Drawing documents dated February, 2013, make the following changes:

REMOVE	ADD	STANDARD DRAWING NAME	COMMENTS
StdList	StdList	Standard Drawing List	Two sheets
A-8	A-8	Standard Template	
C-1-B	C-1-B	Doweled Concrete Pavement Details	Three sheets
G-2-A-1	G-2-A-1	20' Concrete Barrier	Two sheets
G-2-A-2	G-2-A-2	10' Concrete Barrier	Two sheets
G-2-E	-	Concrete Transition Barrier	Drawing eliminated
G-2-H	G-2-H	Special Cast-In-Place Concrete Barrier	Two sheets
G-2-I-1	G-2-I-1	Tall Concrete Median Barrier	Reduced to one sheet
G-2-I-2	G-2-I-2	Tall to Standard Concrete Barrier Transition	Reduced to one sheet
I-11-B	-	Route Marker Numeral Details	Drawing eliminated
I-13-A	-	Standard Guide and Service Signs	Drawing eliminated
K-10	-	Rest Area & Roadside Facilities Symbols	Drawing eliminated

The Standard Drawing List Sheets, available for download on the [Standard Drawing web site](#), show the revision date for the approved drawings.

The following are changes reflected in drawings:

General:

- The Department has rewritten the notes with an emphasis on the active voice and the imperative mood. The change was made to coincide with the 2012 *Standard Specifications for Highway Construction*.
- An effort was made to improve consistency between drawings and the *Standard Specifications for Highway Construction* with regard to terminology and symbols.

A-8 STANDARD TEMPLATE

- Removed extraneous "HIGHWAYS PROGRAM OVERSIGHT ENGINEER" text.
- Updated some terminology and symbols to match Standard Drawing A-9.

C-1-B DOWELED CONCRETE PAVEMENT DETAILS (SHEETS 1, 2, AND 3)

- Modified the Bar Diameter Table pavement thicknesses on sheet 1. Changed  $T \leq 11"$  to  $T < 11"$  and  $11" < T \leq 13"$  to  $11" \leq T \leq 13"$ .
- Added a width dimension to the Widened Cut Detail on sheet 3.
- Removed a dimension from the Multiple Lane Roadway Detail showing the distance between the construction and sawed joints. The dimension was incorrect and is defined in note no. 5.

#### G-2-A-1 20' CONCRETE BARRIER (SHEETS 1 & 2)

- The drawing was redrawn and reordered. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes, placement related notes, and anchoring related notes.
- The dimensions on the top view (Sections D-D and E-E) were corrected.
- Redundant delineator information was removed from the connecting pin detail. Standard Drawing G-3-A, Delineators & Installation is referenced.
- The barrier offset distance on the Standard Installation detail was increased to 1'-8" so the face of a guardrail connected to the concrete barrier remains two feet from the edge of normal shoulder as shown on Standard Drawing G-1-A-1.
- The Concrete Barrier Shy-Line Offset and Flare Rate Table replaced the Table of Maximum Tapers for Concrete Barrier and corresponds with Tables 5-7 and 5-9 of the *Roadside Design Guide*, 4<sup>th</sup> Edition.

#### G-2-A-2 10' CONCRETE BARRIER (SHEETS 1 & 2)

- The drawing was redrawn and reordered. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes, placement related notes, and anchoring related notes.
- Redundant delineator information was removed from the connecting pin detail. Standard Drawing G-3-A, Delineators & Installation is referenced.
- The barrier offset distance on the Standard Installation detail was increased to 1'-8" so the face of a guardrail connected to the concrete barrier remains two feet from the edge of normal shoulder as shown on Standard Drawing G-1-A-1.
- The Concrete Barrier Shy-Line Offset and Flare Rate Table replaced the Table of Maximum Tapers for Concrete Barrier and corresponds with Tables 5-7 and 5-9 of the *Roadside Design Guide*, 4<sup>th</sup> Edition.

#### G-2-E CONCRETE TRANSITION BARRIER (DRAWING ELIMINATED)

- The transition barrier is infrequently used. The transition is for connection to old bridge parapet that is 2' 9<sup>3</sup>/<sub>4</sub>" tall. The ITD 20' concrete barrier or the 10' concrete barrier is the same New Jersey safety shape may be connected directly to the 2' 9<sup>3</sup>/<sub>4</sub>" tall parapet. The drawing will remain available to ITD designers, but it will be removed as a Standard Drawing.

#### G-2-H SPECIAL CAST-IN-PLACE CONCRETE BARRIERS (SHEETS 1 & 2)

- The drawing was redrawn and reordered. The sheet layout was revised to be closer in appearance to Standard Drawings G-2-A-1 and G-2-A-2. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.

- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes.
- The vertical reinforcing steel dimensions were corrected and the total bar length is now shown.

#### G-2-I-1 TALL CONCRETE MEDIAN BARRIER

- The drawing was redrawn and reordered and reduced to one plan sheet. The sheet layout was revised to be closer in appearance to Standard Drawings G-2-A-1 and G-2-A-2. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes and placement related notes.
- Connecting pin length was corrected. Redundant delineator information was removed from the connecting pin detail. Standard Drawing G-3-A, Delineators & Installation is referenced.

#### G-2-I-2 TALL TO STANDARD TRANSITION BARRIER

- The drawing was redrawn and reordered and reduced to one plan sheet. The sheet layout was revised to be closer in appearance to Standard Drawings G-2-A-1 and G-2-A-2. Some dimensions that were shown as feet and inches, such as the barrier height, were changed to inches.
- The barrier concrete was changed to class 40A to coincide with changes made to the *Standard Specifications for Highway Construction*.
- The notes were rewritten and reorganized. The sub-notes were integrated into the notes. The notes were grouped into casting related notes and placement related notes.
- The reinforcing steel shape and dimensions were simplified.
- The Connecting Pin Detail was added.
- Standard Drawings G-2-A-2 and G-2-I-1 were added as drawings required for use with drawing. Some of the dimensions for the Tall Median Barrier and the 10' Barrier are not shown on G-2-I-2 but are shown elsewhere.

#### I-11-B ROUTE MARKER NUMERAL DETAILS (DRAWING ELIMINATED)

- The information on the drawing is available in the ITD Sign Chart, the ITD Sign Design Files, and the FHWA Standard Highway Signs Book.

#### I-13-A STANDARD GUIDE AND SERVICE SIGNS (DRAWING ELIMINATED)

- The signs on this drawing are available in the ITD Sign Chart and the ITD Sign Design Files.

#### K-10 REST AREA & ROADSIDE FACILITIES SYMBOLS (DRAWING ELIMINATED)

- In 2009 the topography, utilities, and right of way symbols were removed from the Standard Drawings. The Standard Drawings showing rest area and roadside feature facilities were also removed. K-10 is no longer needed.

February 12, 2013

To update Standard Drawing documents dated December, 2011, make the following changes:

<b>REMOVE</b>	<b>ADD</b>	<b>STANDARD DRAWING NAME</b>	<b>COMMENTS</b>
StdList	StdList	Standard Drawing List	Two Sheets
D-1-B	D-1-B	Runoff Drain or Embankment Protector With Slotted Drain	Two sheets
D-2-A	D-2-A	Culvert Inlet Headwall	
D-3-C	D-3-C	Metal Safety Slope Aprons	Two sheets
D-4-B	D-4-B	12" Thru 30" Slotted Drain	
D-5-A	D-5-A	Concrete Aprons For Pipe Culverts	
-	E-6-H	Catch Basin Type 10	New Drawing
F-1-A	F-1-A	Cattle Guard Type A	
F-1-C	F-1-C	Cattle Guard Type C, Painted Cattle Guard	
F-2-A	F-2-A	Standard Barbed, Woven, Mesh, Combination Wire Fences, & Fencing Details	Three sheets
F-2-B	F-2-B	High Tension 8 Wire Fence	
F-2-C	F-2-C	Gate Types 1, 1A, & 2	Two sheets
F-2-D	F-2-D	Chain Link Fence, Fence Type 4	Two sheets
I-2-A	I-2-A	Monument Markers & Witness Posts	
I-2-B	I-2-B	Street Monument Marker & Installation	
H-4-B	H-4-B	Mailbox Turnout & Installation	
H-5-A	H-5-A	Mailbox Assemblies & Mounting Hardware	Five sheets
P-1-B	P-1-B	Temporary Sediment Control Barriers	
P-1-D	P-1-D	Temporary Erosion Control Diversion Devices & Site Example	
P-1-E	P-1-E	Temporary Sediment Control Berms, Dikes, and Swales	Two sheets
P-1-F	P-1-F	Erosion And Sediment Control For Temporary Roads	
P-1-G	-	Temporary Erosion Control Berms/Dikes & Swales	Drawing Eliminated
P-1-H	P-1-H	Temporary Sediment Control Inlet Protection	
P-2-A	P-2-A	Erosion And Sediment Control Gabions and Revet Mattresses	
P-2-B	P-2-B	Sediment Control Rock Check Dam Types	
P-3-E	P-3-E	Erosion & Sediment Control Equipment Washdown	

The Standard Drawing Index Sheets, available for download on the [Standard Drawing web site](#), show the revision date for the approved drawings.

The following are changes reflected in drawings:

General:

- The Department has rewritten the notes on the revised Standard Drawings with an emphasis on the active voice and the imperative mood. The change was made to correspond with the 2012 *Standard Specifications for Highway Construction*.
- An effort was made to improve consistency between drawings and the *Standard Specifications for Highway Construction* with regard to terminology and symbology.

D-1-B RUNOFF DRAIN OR EMBANKMENT PROTECTOR WITH SLOTTED DRAIN (SHEETS 1 & 2)

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- The catch basin details shown on the drawing were removed and placed on a new standard drawing. See new Standard Drawing E-6-H.

D-2-A CULVERT INLET HEADWALL

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- A column was added to the Dimension Table for the cutoff wall height.
- Updated to current ITD CADD standards.

D-3-C METAL SAFETY SLOPE APRONS (SHEETS 1 & 2)

- The notes were revised by the by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Added optional toe plate extension to details.
- Updated to current ITD CADD standards.

D-4-B 12" THRU 30" SLOTTED DRAIN

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Note added stating that the slotted drain is "NOT TO BE USED IN TEMPORARY OR PERMANENT TRAFFIC LANES. USE ONLY WHERE TRAFFIC IS OCCASIONAL, SUCH AS ON HIGHWAY SHOULDERS."
- Updated to current ITD CADD standards.

D-5-A CONCRETE APRONS FOR PIPE CULVERTS

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated to current ITD CADD standards.

E-6-H CATCH BASIN TYPE 10 (NEW DRAWING)

- The catch basin detail was removed from standard drawing D-1-B and placed on a new drawing to become catch basin type 10. The D-series of drawings contains primarily pipes and pipe hardware. The E-series of drawings contains catch basins, inlets, and manholes. The catch basin detail fits better with the E-series of drawings.

#### F-1-A CATTLE GUARD TYPE A

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated to current ITD CADD standards.

#### F-1-C CATTLE GUARD TYPE C - PAINTED CATTLE GUARD

- Drawing renamed for consistency with other cattle guard types.
- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Cattle Guard steel surface treatment changed from paint to galvanization.
- Updated to current ITD CADD standards.

#### F-2-A STANDARD BARBED, WOVEN, MESH, COMBINATION WIRE FENCES, & FENCING DETAILS (SHEETS 1 - 3)

- The notes were revised by ITD Materials Engineers to correct misspelling.
- Updated drawing components to ensure consistency with other F-2 drawings.
- Updated to current ITD CADD standards.

#### F-2-B HIGH TENSION 8 WIRE FENCE

- Notes modified by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated drawing components to ensure consistency with other F-2 drawings.
- Updated to current ITD CADD standards.

#### F-2-C GATE TYPES 1, 1A, & 2 (SHEETS 1 & 2)

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated drawing components to ensure consistency with other F-2 drawings.
- Updated to current ITD CADD standards.

#### F-2-D CHAIN LINK FENCE, FENCE TYPE 4 (SHEETS 1 & 2)

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated drawing components to ensure consistency with other F-2 drawings.
- Updated to current ITD CADD standards.

#### H-4-B MAILBOX TURNOUT & INSTALLATION

- The drawing was thoroughly revised and redrawn to coordinate with the 2011 AASHTO *Roadside Design Guide*. Graphics and tables shown on the drawing emulate those found in the *Roadside Design Guide* on Figures 11-4 and 11-5 and Table 11-1.
- Typical Mailbox Installations shown for installations on shoulders, behind guardrail, and behind curb and gutter.
- Mailbox offset distances were added to the Turnout Width Table.
- The notes were rewritten to be concise. Policy statements were removed from the notes. Information found on other Standard Drawings was removed and replaced by references to those drawings.

#### H-5-A MAILBOX ASSEMBLIES & HARDWARE (SHEETS 1 THROUGH 5)

- The drawing was entirely redrawn to coordinate with the 2011 AASHTO *Roadside Design Guide* and to use hardware that is commercially available.
- Due to the comprehensive revisions to the drawing, the following is a list of the changes that may be viewed as those most significant.
  - The Type A, B, and C supports have been renamed as Type A Assembly with a secondary title indicating the post material type.
  - The Type D support was renamed as Type B Assembly.
  - A new type, Type C Assembly, has been added based on information contained in the *Roadside Design Guide*.
  - New exploded isometric views are shown for each type of assembly.
  - The hardware shown was simplified and used on multiple assembly types when practicable. An attempt was made to use *off-the-shelf* hardware whenever practicable.
  - The depth of the Steel Tube Post embedded depth and Anti-Twist Plate depth have been revised to reflect guidance given in the *Roadside Design Guide*.
  - Some proprietary systems are shown as examples of potentially acceptable alternatives, but less emphasis was given to detailing such systems. Notes were used to ensure acceptable performance standards of alternative systems.
- The notes were rewritten and revised. Emphasis was placed on performance, such as MASH or NCHRP 350 testing requirements, and less emphasis was placed on construction practices.

#### I-2-A MONUMENT MARKERS & WITNESS POSTS

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Updated to current ITD CADD standards.

#### I-2-B STREET MONUMENT MARKER & INSTALLATION

- The notes were revised by ITD Materials Engineers to reflect changes in the 2012 *Standard Specification for Highway Construction* manual.
- Monument casing and collar are now flush with the pavement.
- Updated to current ITD CADD standards.

#### P-1-B TEMPORARY SEDIMENT CONTROL BARRIERS

- Renamed from Temporary Erosion Control Barriers & Fence Devices.
- The Silt Fence Lap Table w/o Wire Mesh and Silt Fence Lap Table w/ Wire Mesh were removed.
- The Silt Fence (No Wire Backing) and Silt Fence (Wire Backing) drawings were moved to the top of the sheet. The drawings now show a minimum of 6" of the silt fence being buried. References to Geotextile were removed.
- References to Geotextile were replaced with Silt Fence.
- The Silt Fence Spacing Table was revised to show different slopes and distances based on soil types.
- Compost Sock Side View removed.
- On the Compost Sock & Fiber Wattle Overlapping Detail the overlap spacing was changed and a minimum distance between the stake and the end of the compost sock or fiber wattle was defined.

- The Fiber Wattle Side View was renamed Compost Sock and Fiber Wattle. The slope figure was removed. The minimum fiber wattle size was removed. The depth of the fiber wattle placed in the ground was changed from 3"-5" to 1"-3". The stake depth past the compost sock or fiber wattle was defined. The length of stake daylighting above the compost sock or fiber wattle was defined.
- The Fiber Wattle & Compost Sock Spacing Table was modified with a new slope, new size, and new spacing values.

#### P-1-D TEMPORARY EROSION CONTROL DIVERSION DEVICES & SITE EXAMPLE

- The General Notes for Temporary Erosion Control were revised and simplified.
- Note and terminology revisions throughout the drawing to coordinate with the 2012 *Standard Specification for Highway Construction* manual and other standard drawings.
- Section A-A renamed Diversion Channel Detail.
- References to other Standard Drawings were added where appropriate.

#### P-1-E TEMPORARY SEDIMENT CONTROL BERMS, DIKES, AND SWALES (SHEETS 1 & 2)

- Renamed from Erosion and Sediment Control Dikes & Swales.
- Standard Drawing P-1-G was combined with P-1-E and became sheet 2 of 2. Notes on P-1-G were similar to those on P-1-E and were integrated into the notes on Sheet 1.
- On the Embankment Section – Diversion Dike section, the note to incorporate dike into next lift was removed.
- On the Grassed Swale detail, the Total Swale Length was changed to a maximum of 250 feet.
- Various detail notes were changed from saying "Sediment Trapping Device" to "Sediment Control" to match the terminology on Standard Drawing P-1-D.
- The Dike with Swale section was enlarged, mirrored, and moved to the top of the sheet.

#### P-1-F EROSION AND SEDIMENT CONTROL FOR TEMPORARY ROADS

- Ballast Detail modified.
- Waterbar detail modified. The Cross Section was renamed Section A-A. The waterbar dimensions were moved from lettered notes to the section.
- Note and terminology revisions throughout the drawing to coordinate with the 2012 *Standard Specification for Highway Construction* manual and other standard drawings.

#### P-1-G TEMPORARY SEDIMENT CONTROL BERMS/DIKES & SWALES

##### **(DRAWING ELIMINATED)**

- This drawing was eliminated. The content of the drawing was revised and combined with Standard Drawing P-1-E.

#### P-1-H TEMPORARY SEDIMENT CONTROL INLET PROTECTION

- Notes 4 and 5 removed.
- Note added (now number 6) to ensure water quality standards.
- Temporary/Permanent Fiber Wattle Protection detail renamed to Fiber Wattle Filter.
- Nail Strip removed from Framed Wire/Fabric Filter detail.
- On the Gravel and Wire Mesh Filter detail, the dimensions showing the maximum distance between concrete blocks was simplified.

#### P-2-A EROSION AND SEDIMENT CONTROL GABIONS AND REVET MATTRESSES

- The drawing was renamed from Permanent Erosion Control Gabions & Revet Mattresses.
- The General Notes for Permanent Erosion Control were revised and simplified.
- The Gabion Retaining Walls details and isometric detail were removed.
- The Gabions detail in the top left corner was renamed Gabion Outlet Weir. The gabion height dimension was changed to 3' minimum for consistency with the other dimensions. A reference to note 4 was added to the 4" depth dimension.
- Revet Mattresses and Gabions detail renamed Revet Mattresses with Gabions.
- Plan View renamed to Gabion Check Dam.
- On Section B-B, the metal stakes or posts lengths were removed.
- On the Slope Revetment detail, the note by the asterisk was combined with the detail note.
- The guidance on small revet mattresses was removed from note 2 and notes 5 and 11 were removed.

#### P-2-B SEDIMENT CONTROL ROCK CHECK DAM TYPES

- Renamed from Erosion Control Rock Check Dams.
- Stone Filter Type Table and Check Dam Spacing Table removed. Replaced by the addition of note 12.
- Types 1, 2, and 3 were removed from Filter Berm, Section B-B, Section C-C, and notes.
- On Section A-A, a maximum height was shown and the slope note and diagram were modified.
- The Plan View detail was renamed Filter Weir with a reference to note nos. 7 & 8. The "V" Notch Weir – Type 2 – Section B-B name was shortened to Section B-B. A Level Crested Weir detail was added as Section B'-B'. A Galvanized Woven Wire Mesh note was added to Section B-B.
- The Plan detail was renamed Filter Dam with a reference to note nos. 9 through 11 and moved to the bottom left corner of the sheet. The Filter Dam – Types 2 & 3 – Section C-C was shortened to Section C-C.

#### P-3-E EROSION & SEDIMENT CONTROL EQUIPMENT WASHDOWN

- Note and terminology revisions throughout the drawing to coordinate with the 2012 *Standard Specification for Highway Construction* manual and other standard drawings.
- Ballast Detail modified.

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December 6, 2011

The following drawings have changed:

A-8 Standard Template  
C-1-A-1 Urban Concrete Pavement Details  
C-1-A-2 Manhole Collars (PCC Pavement Roundouts) (Sheets 1 & 2)  
C-1-B Doweled Concrete Pavement Details (Sheets 1 Through 3)  
C-1-C Ramp Gore Details (Sheets 1 & 2)  
C-2-B Shoulder Rumble Strips For Two-Way Roadways Options A&B  
(Sheets 1 & 2)  
C-2-C Centerline Rumble Strips For Two-Way Roadways (Sheets 1 & 2)  
F-1-A Cattle Guard Type A  
G-1-A-1 Guardrail Slope Treatment Types A & B  
G-1-E Guardrail Terminal Type 3 (Sheets 1 & 2)  
G-3-A Delineators And Installation  
H-1-B Sidewalk, Islands, and A.D.A. Curb & Gutters  
H-2-A Sidewalks & A.D.A. Facilities: New Consecution (Sheets 1 – 4)  
H-2-B Sidewalks & A.D.A. Facilities: Retrofit Applications (Sheets 1 – 4)  
H-5-A Mailbox Assemblies And Mounting Hardware  
H-5-B Mailbox Snow Shield  
I-8-D-2 Breakaway Sign Post Installation Type B-2  
I-9-A-1 B Post And Brace Angle Detail  
I-9-A-2 B Post And Brace Angle Detail  
I-12-D Standard Warning Signs  
P-1-B Temporary Erosion Control Barriers & Fence Devices (Sheets 1 & 2)  
P-1-C Erosion & Sediment Control Sediment Trap Basin  
P-1-D Temporary Erosion Control Diversion Devices & Sight Example  
P-1-E Erosion And Sediment Control Dikes & Swales  
P-1-F Erosion And Sediment Control For Temporary Roads  
P-1-H Temporary Erosion Control Inlet Protection  
P-2-A Permanent Erosion Control Gabions & Revet Mattresses  
P-2-B Erosion Control Rock Check Dams  
P-3-A Sediment Control Box (Catch Basin)  
P-3-B Water Pollution Control Sediment & Oil Trap  
P-3-E Erosion & Sediment Control Equipment Washdown

The following are changes reflected in drawings:

A-8 Standard Template

1. The roadway typical section titles were corrected.

C-1-A-1 Urban Concrete Pavement Details

1. The electronic file issue that was caused by the conversion from MicroStation V7 to V8 has been corrected.
2. The doweling details were change in accordance with the Materials Section's, request.
3. The Standard Drawing name was changed from C-1-A to C-1-A-1.

C-1-A-2 Manhole Collars (PCC Pavement Roundouts) (Sheets 1 & 2)

1. This is a new Standard Drawing.

C-1-B Doweled Concrete Pavement Details (Sheets 1 Through 3)

1. The doweling details were change in accordance with the Materials Section's, request.
2. Sheet 1 of 3, Detail for "Alignment Tolerance for Pavement Dowel Bars" changed to show a bar length of 18" as opposed to 20".
3. Sheet 1 of 3, Sub-Note \*c changed from "D/2 +/- 1" to "T/2 +/- 1"
4. The electronic file issue that was caused by the conversion from MicroStation V7 to V8 has been corrected.

C-1-C Ramp Gore Details (Sheets 1 & 2)

1. The doweling details were change in accordance with the Materials Section's, request.
2. The electronic file issue that was caused by the conversion from MicroStation V7 to V8 has been corrected.

C-2-B Shoulder Rumble Strips For Two-Way Roadways Options A&B (Sheets 1 & 2)

1. The Standard Drawing was revised by adding an additional sheet to show rumble strip placement details for various lane configurations.
2. The gap for bicycle was increase to meet the minimum of 12 ft gap given in bicycle guidance literature.
3. The detail for the gap in rumble strips for cross-walk considerations was added.

C-2-C Centerline Rumble Strips For Two-Way Roadways (Sheets 1 & 2)

1. This is a new Standard Drawing.

F-1-A Cattle Guard Type A

1. Note 3 has been changed to refer to specific sections of ITD Standard Specifications instead of a specific paint specification.

G-1-A-1 Guardrail Slope Treatment Types A & B

1. Note 1 reference to a 7' 2" post was changed to read 7' 4" post.

G-1-E Guardrail Terminal Type 3 (Sheets 1 & 2)

1. The title block was changed to refer to Standard Drawing H-1-A instead of H-1.

G-3-A Delineators And Installation

1. The number of holes in the steel delineator post has been changed from 26 minimum to 26 total.
2. The Horizontal Curve post spacing chart has been changed from degree of curve spacing designation to curve radius spacing designation.
3. Note 9 updated to reflect a reference to concrete barrier standard drawings.

4. Directional arrow on detail for delineators mounting was changed to clarify the detail.

#### H-1-B Sidewalk, Islands, And A.D.A. Curb & Gutters

1. NOTE 5 was added to the drawing: "SIDEWALKS IN PEDESTRIAN ACCESS ROUTES THAT ARE LESS THAN 5.0' IN CLEAR WIDTH SHALL PROVIDE PASSING SPACES AT INTERVALS OF 200' MAXIMUM. PEDESTRIAN ACCESS ROUTES AT PASSING SPACES SHALL BE 5' WIDE FOR DIST OF 5' MIN"
2. Unreferenced dimension lines between Section 2-A and 5-A were deleted.

#### H-2-A Sidewalks & A.D.A. Facilities: New Consecution (Sheets 1 – 4)

1. Some text weight discrepancies were corrected.
2. The size of wheel chair landings were designated an absolute minimum dimension of 4'X4' and an absolute maximum slope in any direction of 2%. See NOTE 9.
3. Note 14 was changed to indicate the maximum cross-slope on ramps is to be 2%. Note 14 reference was inserted into the legends.

#### H-2-B Sidewalks & A.D.A. Facilities: retrofit applications (sheets 1 – 4)

1. The drawing of the Type R-B3 ADA ramp and landing detail was corrected to show the correct ADA 4' minimum dimension.
2. The line going to the back of the curb needed to go to the front of the curb to furnish the required ADA landing area of 4' by 4' absolute minimum.
3. Note 13 was modified to reflect guidance given in the PROWAG related to diagonal curb ramps.

#### H-5-A Mailbox Assemblies And Mounting Hardware

1. Corrected NOTE 1 to reference ASTM with B 695 instead of B 454 (testing method B 454 withdrawn in 1981 and replaced with B 695).
2. Corrected NOTE 4: Change "galvanized" to "fabricated". ASTM A 568 is "The Standard Specification for Steel, Sheet, Carbon Structural, High strength, low alloy, hot rolled & cold rolled, general requirements for".

#### H-5-B Mailbox Snow Shield

1. Corrected NOTE 1 to reference Standard Drawing H-5-A instead of H-4-A.

#### I-8-D-2 Breakaway Sign Post Installation Type B-2

1. A spelling error and a number error have been corrected in the Coupling Assembly notes.

#### I-9-A-1 B Post And Brace Angle Detail

1. The post sizes in the header of the Brace Angle Specifications Table have been corrected.

#### I-9-A-2 B Post And Brace Angle Detail

1. The B-4 post V Dimension has been corrected to 6" in the table on right side of sheet.

#### I-12-D Standard Warning Signs

1. The W3-5, speed reduction ahead sign with the speed limit face has been added.
2. Sign faces have been placed by sign numbers.
3. The text version of the speed reduction ahead sign has had the sign number changed to W3-5T.
4. In note 2, the diameter of the mounting holes has been corrected to 3/8" from 3/4".
5. In note 3 added "such" before the "as" in line 4.
6. Added note 4.

#### P-1-B Temporary Erosion Control Barriers & Fence Devices (Sheets 1 & 2)

1. Addition of note #4 "SILT FENCES SHALL BE IN CONFORMANCE WITH SECTION 718.09 OF THE IDAHO STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION."
2. Addition of a second sheet, moved wattles (sediment retention fiber rolls) to this sheet.
3. Addition of detail and notes for compost sock
4. Addition of overlapping detail for fiber wattle/compost sock
5. Correction and expansion of spacing table
6. Edit of note # 6 (now Note #7) on page 1 of 2 to place end of wattles/socks upward instead of downward (this is based on industry recommendations of the Erosion Control Technology Council)
7. Addition of note #8; "Remove sediment from the upslope side of compost socks and fiber wattles when accumulation has reached 1/2 of the effective height of the roll."
8. Addition of channel application.

#### P-1-C Erosion & Sediment Control Sediment Trap Basin

1. Clarification on slopes. Section B-B change from 2:1 to 2H:1V. Section A-A change from 1V:2H to 2H:1V
2. Note # 2, change 4.95 acre to 5 acre
3. Addition of note in Section A-A: "RIPRAP/EROSION CONTROL GEOTEXTILE FABRIC SHALL BE TYPE II IN CONFORMANCE WITH SUBSECTION 718.06 OF THE ITD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE SUPPLEMENTAL SPECIFICATIONS"
4. Addition of note: RIPRAP/EROSION CONTROL GEOTEXTILE FABRIC COVERED WITH RIPRAP IN CONFORMANCE WITH SUBSECTION 711.04 OF THE ITD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE SUPPLEMENTAL SPECIFICATIONS

P-1-D Temporary Erosion Control Diversion Devices & Sight Example

1. Removal of note: "Mini benching, permanent erosion control" from the Site Example. Mini benching was previously moved to the "A" series drawings and is no longer part of the "P" series drawings. In addition, seed & mulch or erosion blankets (liquids or rolls) are a much better BMP.
2. Addition of "H" and "V" to slope drain note on Site Example
3. Note 2, addition of wording "rock size and type, and liner" was added to be determined by design note

P-1-E Erosion And Sediment Control Dikes & Swales

1. Detail "Interceptor Dike" addition of flow direction arrow

P-1-F Erosion And Sediment Control For Temporary Roads

1. Addition of note #6, reference to tire wash on standard drawing sheet P-3-E
2. Addition of detail for construction entrance perpendicular to existing pavement
3. Ballast Detail Change: Changed to 12" aggregate for granular subbase, max allowable size of 6"
4. Edit of note # 4 to reflect change to aggregate granular subbase instead of 2" stone

P-1-H Temporary Erosion Control Inlet Protection

1. Addition of pre-manufactured sediment filters detail.

P-2-A Permanent Erosion Control Gabions & Revet Mattresses

1. Detail Section B-B
2. Change of "\*" to a diameter symbol
3. Notes - #6, change of "\*" to a diameter symbol

P-2-B Erosion Control Rock Check Dams

1. Removal of "Permanent" from the title

P-3-A Sediment Control Box (Catch Basin)

1. Complete redesign – simplification of design to make it more generic. Detailed drawing from manufacturer must be submitted

P-3-B Water Pollution Control Sediment & Oil Trap

1. Complete redesign – simplification of design to make it more generic. Detailed drawing from manufacturer must be submitted

P-3-E Erosion & Sediment Control Equipment Washdown

1. Addition of tire wash detail, and note (#3)
2. Change of ballast detail to 12" of aggregate for granular subbase, instead of 3"-4" top dressing of 2" stone, and 6-8" compacted fractured stone.

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December 21, 2010

The following drawings have changed:

- A-9 ITD Roadway Nomenclature Location & Examples
- A-10 Parabolic Crown
- A-11 Urban Parkway Section (Low Speed Design)
- A-12 Suburban Parkway Section (High Speed Design)
- D-1-A Runoff Drain or Embankment Protector
- D-1-B Runoff Drain or Embankment Protector with Slotted Drain
- D-12 Conduit Installation for New Roadways & Approaches
- E-6-G Conduit Installation for New Roadways & Approaches
- E-7 Manhole Type A
- E-9 Standard Manhole Frame, Cover, & Concrete Collar
- F-2-A Standard Barbed, Woven, Mesh, Combination Wire Fences, & Fencing Details
- G-1-A-1 Guardrail Slope Treatment Types A & B
- G-1-A-2 W-Beam Guardrail Installation Assemblies
- G-1-A-3 W-Beam Guardrail Post, Blockouts, & Hardware
- G-1-A-5 Thrie Beam Guardrail
- G-1-B Guardrail Terminals Type 1 & 1-A
- G-1-C-1 Guardrail Terminal Type 2-A, With 10:1 or Flatter Foreslope
- G-1-C-2 Guardrail Terminal Type 2-B for Less Than 10:1 to 6:1 Foreslope
- G-1-E Guardrail Terminal Type 3
- G-1-F-2 Guardrail Terminal Type 5 Alternate "B"
- G-1-G Guardrail Terminal Type 6 Options 1, 2, & 3 (Bullnose Guardrail System)
- G-1-H Guardrail Terminals Type 7 & 8
- G-1-I Guardrail Terminal Type 11
- G-1-K Guardrail Terminal Type 9
- G-1-L Guardrail Installation for Minor Structures & Large Culverts.
- G-1-M Guardrail Terminal Type 10
- G-1-N Guardrail Terminal Type 12
- G-2-A Concrete Barrier & Terminal Type A
- G-2-A-1 20' Concrete Barrier
- G-2-A-2 10' Concrete Barrier
- G-2-C Concrete Parapet to Thrie Beam Connector
- G-2-E Concrete Transition Barrier
- K-7 Methods of Planting Trees and Shrubs
- P-1-A Temporary Erosion Control Slope Drains
- P-1-B Temporary Erosion Control Erosion Dams, Barriers, & Fence Devices
- P-1-C Temporary Erosion Control Sediment Trap
- P-1-D Temporary Erosion Control Diversion Devices & Site Example
- P-1-E Temporary Erosion control Earth Berms/Dikes & Swales
- P-1-F Temporary Erosion Control for Temporary Roads
- P-1-G Temporary Erosion Control Siltation Berm & Stabilized Construction Entrance
- P-1-H Temporary Erosion Control Inlet & Basin Protection
- P-2-A Permanent Erosion Control Gabions & Revet Mattresses
- P-2-B Permanent Erosion Control Stone Filter Weirs/Berms/Dams

- P-2-C Permanent Erosion Control Slope & Channel Protection
- P-2-D Temporary Erosion Control Erosion Dams, Barriers, & Fence Devices
- P-2-F Permanent Erosion Control Culvert Outlet Protection
- P-3-E Water Pollution Control Equipment Washdown
- P-4-A Sediment Control Sediment Basin
- P-4-B Sediment Control Grassed Swale & Wattling
- P-5-A Hazardous Materials Containment Petroleum Storage
- P-5-B Temporary Concrete Washout

The following are changes reflected in drawings:

A-9 ITD Roadway Nomenclature Location & Examples

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

A-10 Parabolic Crown

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

A-11 Urban Parkway Section (Low Speed Design)

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.
2. Edge of Traveled Way designation on Typical Section drawing move from the lip of gutter to its proper place.

A-12 Suburban Parkway Section (High Speed Design)

1. Edge of Traveled Way designation on Typical Section drawing move from the lip of gutter to its proper place.

D-1-A Runoff Drain or Embankment Protector

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

D-1-B Runoff Drain or Embankment Protector with Slotted Drain

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

D-12 Conduit Installation for New Roadways & Approaches

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

E-6-G Conduit Installation for New Roadways & Approaches

1. Note 1 reference to ASTM C478 changed to ASTM C913.

E-7 Manhole Type A

1. Minor changes made to patterns and drawing.

E-9 Standard Manhole Frame, Cover, & Concrete Collar

1. Minor changes made to patterns and drawing.

F-2-A Standard Barbed, Woven, Mesh, Combination Wire Fences, & Fencing Details

1. Minor changes made to patterns and drawing.

G-1-A-1 Guardrail Slope Treatment Types A & B

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.
2. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-A-2 W-Beam Guardrail Installation Assemblies

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-A-3 W-Beam Guardrail Post, Blockouts, & Hardware

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-A-5 Thrie Beam Guardrail

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-B Guardrail Terminals Type 1 & 1-A

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. Note added to Terminal Type 1-A, Steel Tub Foundation, detail that post should be a modified BCT post.

G-1-C-1 Guardrail Terminal Type 2-A, With 10:1 or Flatter Foreslope

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-C-2 Guardrail Terminal Type 2-B for Less Than 10:1 to 6:1 Foreslope

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-E Guardrail Terminal Type 3

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. On sheet 2 of 2, Elevation View, corrected dimension from the edge of shoulder to the parapet from 1' - 4" to 1' - 8".
3. Symmetric transition changed to an asymmetric transition (see standard drawing G-1-A-5).
4. Sheet 1 of 2, Type 3 Wood Blockout Details, note added to detail to toe nail the blockout.

G-1-F-2 Guardrail Terminal Type 5 Alternate "B"

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. Post spacing measurements removed from drawing. Manufacture specification governing installation.
3. Change notes to reflect installation to be done as per manufactures specifications.

G-1-G Guardrail Terminal Type 6 Options 1, 2, & 3 (Bullnose Guardrail System)

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-H Guardrail Terminals Type 7 & 8

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-I Guardrail Terminal Type 11

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. Removed "BCT POST" from note 7. The BCT post has been modified from the standard highway barrier hardware guide to accommodate the 2" rail height change. See G-1-A-3 for modified post dimensions.
3. Changed sub-note \*f to reflect Modified BCT Post.

G-1-K Guardrail Terminal Type 9

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-L Guardrail Installation for Minor Structures & Large Culverts.

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. Note 4 reference to "H-1" changed to "H-1-A."
3. Note 5 added: THE 3 POST ON EITHER SIDE OF OPENING NEED TO MAINTAIN A MINIMUM 3'4" EMBEDMENT DEPTH. TO ACHIEVE THIS EMBEDMENT DEPTH, MOUNT RAIL AND BLOCKOUTS FLUSH WITH THE TOP OF THE POSTS WHILE KEEPING A 29" TOP OF RAIL HEIGHT.

G-1-M Guardrail Terminal Type 10

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-1-N Guardrail Terminal Type 12

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.

G-2-A Concrete Barrier & Terminal Type A

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

G-2-A-1 20' Concrete Barrier

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

G-2-A-2 10' Concrete Barrier

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.

G-2-C Concrete Parapet to Thrie Beam Connector

1. Rail height changed in response to May 17, 2010 FHWA Memorandum HSSD, regarding Roadside Design: Steel Strong Post W-beam Guardrail.
2. On the elevation the Bolt hole dimension is listed as 3-1/2". The dimension should be 3-13/16".

G-2-E Concrete Transition Barrier

1. Subgrade/Ballast/Roadbed callouts were changed to match the Materials Manual and ITD Standard Specifications.
2. Title block requirement for Standard Drawing G-2-A corrected.

These drawings are being changed for unit conversions to English and to meet current standards relating to storm water control on projects.

- K-7 Methods of Planting Trees and Shrubs
- P-1-A Temporary Erosion Control Slope Drains
- P-1-B Temporary Erosion Control Erosion Dams, Barriers, & Fence Devices
- P-1-C Temporary Erosion Control Sediment Trap
- P-1-D Temporary Erosion Control Diversion Devices & Site Example
- P-1-E Temporary Erosion control Earth Berms/Dikes & Swales
- P-1-F Temporary Erosion Control for Temporary Roads
- P-1-G Temporary Erosion Control Siltation Berm & Stabilized Construction Entrance
- P-1-H Temporary Erosion Control Inlet & Basin Protection
- P-2-A Permanent Erosion Control Gabions & Revet Mattresses
- P-2-B Permanent Erosion Control Stone Filter Weirs/Berms/Dams
- P-2-C Permanent Erosion Control Slope & Channel Protection
- P-2-D Temporary Erosion Control Erosion Dams, Barriers, & Fence Devices
- P-2-F Permanent Erosion Control Culvert Outlet Protection
- P-3-E Water Pollution Control Equipment Washdown
- P-4-A Sediment Control Sediment Basin
- P-4-B Sediment Control Grassed Swale & Wattling
- P-5-A Hazardous Materials Containment Petroleum Storage
- P-5-B Temporary Concrete Washout

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September 24, 2010

The following drawings have changed:

H-1-A	Curbs, Gutters, Traffic Separators, & Raised Channelization End Treatment
H-1-B	Sidewalks, Islands, and A.D.A. Curb & Gutter
H-2-A	Sidewalks & A.D.A Facilities: New Construction
H-2-B	Sidewalks & A.D.A Facilities: Retrofit Applications
H-2-C	Sidewalks & A.D.A. Pedestrian Pushbutton Details
H-3	Urban Approaches And Sidewalk
H-5-A	Mailbox Assemblies & Mounting Hardware
H-5-B	Mailbox Snow Shield
I-5	Loop Detectors 10 ft/sec <sup>2</sup> Deceleration Rate
I-6-A	Mast Arm Traffic Signal Poles
I-6-B	Frangible Cast Base Traffic signal Pole
I-7-C	Mastarm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details
I-8-D-1	Breakaway Sign Post Installation Type B-1
I-8-D-2	Breakaway Sign Post Installation Type B-2, B-3, & B-4
I-8-D-3	Breakaway Sign Post Installation
I-9-A-1	B Post and Brace Angle Detail
I-9-A-2	B Post and Brace Angle Detail
I-9-B	Cardinal Route Marker Assemblies
I-21-A	Standard Pavement Markings for Arterial and Collector Roadways
R-1-A	Highway - Railroad Grade Crossing Signal Type 1
R-1-B	Highway - Railroad Grade Crossing Signal Type 2

The following are changes reflected in drawings:

H-1-A Curb, Gutters, Traffic Separators, & Raised Channelization End Treatments

1. Additional curb sections were needed to address A.D.A. issues. Standard drawing designation changed from "H-1" to "H-1-A" to cover non-A.D.A. curb sections, while drawing "H-1-B" was created for A.D.A. related curb sections.
2. Note 3 was modified to allow for pining of curb sections.
3. Electronic drawing file was updated from Microstation V7 to V8.

### H-1-B Sidewalks, Islands, and A.D.A. Curb & Gutters

1. Drawing H-1-B was created to address curb & gutter sections that are associated with A.D.A. sidewalk and ramp details.

### H-2-A Sidewalks & A.D.A Facilities: New Construction

1. "H-2-A Urban Approches & Concrete Sidewalk" changed to "H-2-A Sidewalks & A.D.A Facilities: New Construction." Existing drawing "H-2-A," relating to urban approaches, will now be "H-3." Existing drawing "H-2-B" relating to A.D.A. curb features now designated as "H-2-A."
2. Drawings modified to better reflect best management practices associated with ADA guidelines/law.
3. Electronic drawing file was updated from Microstation V7 to V8.

### H-2-B Sidewalks & A.D.A Facilities: Retrofit Applications

1. Drawing created to address retrofit applications relating to sidewalk pedestrian ramps features.

### H-2-C Sidewalks & A.D.A. Pedestrian Pushbutton Details

1. Drawing created to address new construction and retrofit applications relating to pedestrian pushbuttons and clear space requirements next to the pushbuttons.

### H-3 Urban Approaches & Concrete Sidewalk

1. Drawing previously "H-2-A." Drawing designation changed to better keep vehicle approach details together (i.e. H-4-A Rural Approaches)
2. Drawings modified to better reflect best management practices associated with ADA guidelines/law.
3. Electronic drawing file was updated from Microstation V7 to V8.

### H-5-A Mailbox Assemblies & Mounting Hardware

1. Call outs for the mail box types is modified to be more consistent between drawings and notes.
2. Electronic drawing file was updated from Microstation V7 to V8.

### H-5-B Mailbox Assemblies & Mounting Hardware

1. Call outs for the mail box types is modified to be more consistent between drawings and notes.
2. Electronic drawing file was updated from Microstation V7 to V8.

#### I-5 Loop Detectors 10 ft/sec<sup>2</sup> Deceleration Rate

1. Removed the third turn from the Loop #1.
2. Removed the third cable from Method A (Existing Pavement), Method B New (Construction Multiple courses or Overlay Existing Single Courses) and Method C (New Construction Single Course).
3. Added Method D (Concrete Construction).
4. Revised the note to read TYP. 2" Plastic Conduit to Cabinet or Junction Box in the Junction Box and Conduit Detail.

#### I-6-A Mast Arm Traffic Signal Poles

1. The four section vehicle signal head has replaced the five section vehicle signal head (Dog House).
2. View A-A, Revised callout to Wire Entrance, Drill Pole to Accept Casting.
3. Changed the Pedestrian Signal Head Face. Changed to a countdown face.
4. Added the pushbutton clears space callout.
5. Added in the title block Requires Standard Drawing H-2-C.

#### I-6-B Frangible Cast Base Traffic signal Pole

1. Changed the title to Frangible Cast Base Traffic signal Pole.
2. Note 7 – Added concrete in front of the word foundation.
3. Typical Signal Pedestal Connector Installation – Changed clip to loop in call out beginning with Tension and change the line style to solid in the foundation for the tension loop.
4. Added the pushbutton clears space callout.
5. Added in the title block Requires Standard Drawing H-2-C.

#### I-7-C Mastarm Signal Pole, Lighting Pole and Pedestrian Pole Foundation Details

1. Note #3 Changed reinforcement steel to the word Rebar.
2. Note #10 has been revised because of changes to the Idaho Standard Specifications.
3. Added the Slip Plane callout to the breakaway couple diagram.
4. Added an asterisk to the slip plane and the to the slip plane callouts in the diagrams.

#### I-8-D-1 Breakaway Sign Post Installation Type B-1

1. This is a new Standard Drawing for the Type B-2 steel sign post.

#### I-8-D-2 Breakaway Sign Post Installation Type B-2, B-3, & B-4

1. Removed the Type B-2 steel sign post from this Standard Drawing.
2. The Type B-3 steel sign post size change to a 5" X 5" Square Tube.
3. The Type B-4 steel sign post size change to a 6" X 6" Square Tube.
4. The break-away device has been increased to larger size.
5. The reasons for the above changes are the 6" X 4" steel sign post and the 8" X 4" steel sign post weights, pounds per foot, were too heavy for the couplings used on the break-away device depicted on the current Standard Drawing I-8-D-2 and the increase in the AASHTO wind loading.
6. Increased the diameter of the foundation to 30" for adequate clearance between the rebar cage and the anchors.
7. This will be a Type A-1 foundation and the Materials Quantities have been changed.
8. Removed redundant information.
9. Revised Notes and some of the installation notes.
10. Define anchor washer with a call out on the drawing.

#### I-8-D-3 Breakaway Sign Post Installation

1. Corrected several spelling errors.
2. Note 1 – Deleted the under bars after Type B.
3. Added that Standard Drawing I-8-D-1 OR to the title block.
4. Deleted note 6 and revised Note 5 to read; Sign faces 36" or over in width shall have brace angles.
5. Notes 7 & 8 are now Notes 6 & 7.
6. Revised Note 7 to read; within 30' of the travel way. Instead of reading; the clear zone.

#### I-9-A-1 B Post and Brace Angle Detail

1. Deleted the Typical Light Pole Clip Angle Attachment. There several commercial clamps and brackets available.
2. Typical of Sign Mounts – Change 6" X 4" to 5" X 5" and 8" X 4" to 6" X 6" posts.
3. Note 4 - Added I-8-D-1 to the note.
4. Placed the Typical Hole detail on the bottom and the Typical Slot detail on top.
5. Rotated the two top views.
6. Note 4 - Added I-8-D-1 to the note.
7. Added 2X symbol to the welding callout on the typical light pole sign clip attachment detail.

#### I-9-A-2 B Post and Brace Angle Detail

1. Added the top post clip detail and bottom clip detail for the B-3 post (5" X 5") and the B-4 post (6" X 6") due to post size change.
2. There are two dimension tables for the top clip. One for the B-2 post and one for the B-3 and B-4 posts.
3. Changed the weights for the B-3 post and B-4 post in the weight schedule.
4. Note 1 - Added I-8-D-1 to the note.
5. Added welding symbol to left side of the side view for the Type B-2, B-3, and B-4 Posts.
6. Changed to the dimensions on the top view of the B-2 post to match the dimension table.
7. Changed the washer callout on the Type B-2 side view to 3/8" X 7/8" flat washer.

#### I-9-B Cardinal Route Marker Assemblies

1. The top view and Sec. AA were revised for the 4" X 3" post.
2. The top view was section A-A and section B-B remained on the 5" X 5", three route marked assembly.
3. The post size was changed to a 5" X 5" from the 4" X 6".
4. Corrected some minor errors.
5. Removed unnecessary dimension lines.
6. Added that Standard Drawing I-8-D-1 OR to the title block

#### I-21-A Standard Pavement Markings for Arterial and Collector Roadways

1. Changed the order of precedence for the left turn layout. Place the gap layout on top and then the reverse curve layouts underneath.
2. Added the Layout for the paint truck setup drawing and related information.
3. The offset nose is now optional.
4. Changed the 4"-6" to 4", 5" or 6" in several places on the drawing.
5. Added to the 10' and 12' median layout width  $W = 10'$  or  $12'$ .
6. Added to the 14' and 16' median layout width  $W = 14'$  or  $16'$ .
7. Moved Detail "A" and placed leader lines to typical plan view (Median) and typical plan view (Two-Way Left Turn Lane).

#### R-1-A Highway - Railroad Grade Crossing Signal Type 1

1. Gate arm stripes have been changed to vertical strips from 45 degree diagonal stripes.
2. Note 7 – Changed 45 degree diagonal stripes to vertical stripes.

R-1-B Highway - Railroad Grade Crossing Signal Type 2

1. Gate arm stripes have been changed to vertical strips from 45 degree diagonal stripes.
2. Note 7 – Changed 45 degree diagonal stripes to vertical stripes.

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August 28, 2009

The following drawings have changed:

A-1	Freeway Grading
A-2	Rural Principal Arterial Grading
A-3	Rural Minor Arterial Grading
A-4	Rural Major Collector Grading
A-6	Typical Roadside Slope Treatment
A-8	Standard Template
I-6-B	Pedestal Traffic Signal Poles
S-1-A-1	Topography (1)
S-1-A-2	Topography (2)
S-1-B-1	Utilities (1)
S-1-B-2	Utilities (2)
S-1-C-1	Right of Way (1)
S-1-C-2	Right of Way (2)

Standard Drawings A-1, A-2, A-3, A-4, A-6, and A-8

1. Changes to the definition of "subgrade" prompted the changes to these drawings. All references to subgrade as the surface between the pavement structure and the subgrade have been changed to "Roadbed".
2. Minor note that had no significance to these drawings were eliminated.
3. These drawings were ported over to MicroStation V8

Standard Drawing I-6-B

1. The callout for nonfused single pole connectors on the Typical Signal Pedestal Connector Installation detail has been changed to read nonfused breakaway single pole connectors.
2. Added missing callout - 5/8" diameter hole to Frangible Cast Iron Pipe Flange.
3. Deleted note 9.
4. Added top view of signal head for hazard identification beacon.
5. Added the "Sealed Closures Are Required" callout with leader lines to the top view of signal heads.
6. Corrected the mounting pole top bracket callout to read Pole Top Terminal Compartment Bracket for the Pedestrian Signal detail.

Standard Drawing S-1-A-1 , S-1-A-2, S-1-B-1, S-1-B-2, S-1-C-1, and S-1-C-2

Drawings are pending changes to reflect current CADD standards and have been removed. In interim refer to the CADD Standards manual for appropriate levels and feature attributes.

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February 24, 2009

The following drawings have changed:

- E-6-A Inlets & Catch Basins Types 1, 2, & 3
- E-6-B Inlets & Catch Basins Types 1A, 2A, & 3A
- E-6-C Inlets & Catch Basins Types 4 & 5
- E-6-D Catch Basins Types 6
- E-6-E E-6-E Catch Basins Types 7
- E-6-F Inlet Type 8
- G-1-A-3 W-Beam Guardrail Post, Blockouts, & Hardware
- G-1-E Guardrail Terminal Type 3
- G-2-F Interim Bridge Rail Retrofit

E-6-A Inlets & Catch Basins Types 1, 2, & 3

1. Drawing was updated to current CAD standards and split into two sheets.
2. Note on grate details specifying resistant welding requirement was removed.
3. Note 2, changed "ASTM C478" to "ASTM C 913"

E-6-B Inlets & Catch Basins Types 1A, 2A, & 3A

1. Drawing was updated to current CAD standards and split into two sheets.
2. Note on grate details specifying resistant welding requirement was removed.
3. Note 2, changed "ASTM C478" to "ASTM C 913"

E-6-C Inlets & Catch Basins Types 4 & 5

1. Drawing was updated to current CAD standards.
2. Note on grate details specifying resistant welding requirement was removed.
3. Note 2, changed "ASTM C478" to "ASTM C 913"

E-6-D Catch Basins Types 6

1. Drawing was updated to current CAD standards.
2. Note on grate details specifying resistant welding requirement was removed.
3. Note 1, changed "ASTM C478" to "ASTM C 913"

E-6-E Catch Basins Types 7

1. Drawing was updated to current CAD standards and split into two sheets.
2. Note on grate details specifying resistant welding requirement was removed.
3. Note 1, changed "ASTM C478" to "ASTM C 913"

#### E-6-F Inlet Type 8

1. Drawing was updated to current CAD standards and split into two sheets.
2. Note 1, changed "ASTM C478" to "ASTM C 913"

#### G-1-A-3 W-Beam Guardrail Post, Blockouts, & Hardware

1. Drawing was updated to current CAD standards.
2. Sheet 1, W-Beam Terminal Connector detail, removed center hole from drawing.

#### G-1-E Guardrail Terminal Type 3

1. Drawing was updated to current CAD standards.
2. Sheet 2, Post No. 9 detail, steel post notes changed "W6x9x6'-9" to "W6x9x6'-0"
3. Sheet 2, Post No. 9 detail, steel post notes changed ""Steel Post & Thrie Beam Tube Blockout" to "Standard Steel Post, Wood Blockout."

#### G-2-F Interim Bridge Rail Retrofit

Discontinued Drawing, removed from active drawings.