Revised: 10/31/25

# PDN - CHAPTER 10

# **INDEX OF**

# STANDARD

## **DRAWINGS**

Revised: 10/31/25

#### **CHAPTER 10 - INDEX OF STANDARD DRAWINGS**

#### **Table of Contents**

INTRODUCTION	N	1
SECTION 1 - ST	TANDARD ROADWAY DRAWINGS	3
10-100.00 S	TANDARD ROADWAY TITLE SHEET, ABBREVIATIONS, AND LEGENDS.	3
10-100.01	STANDARD ROADWAY DRAWINGS TITLE SHEET	3
10-100.02	STANDARD ABBREVIATIONS AND LEGENDS	3
10-101.00 S	TANDARD ROADWAY DRAWINGS	4
10-101.01	CONTEXTUAL TYPICAL SECTIONS AND DESIGN DECISION	4
10-101.02	RD18 ROADWAY TYPICAL SECTIONS AND DESIGN CRITERIA	4
10-101.03	RD18 ROUNDABOUT TYPICAL SECTIONS AND DESIGN CRITERIA	6
10-101.04	RD11 TYPICAL SECTIONS AND DESIGN CRITERIA	6
10-101.05	RD11 SLOPE DEVELOPMENT AND RUNOFF LENGTHS	8
10-101.06	RD11 INTERSECTION SIGHT DISTANCE	8
10-101.07	UNDERDRAINS	8
	QUATIC ORGANISM PASSAGE (AOP) DESIGN, PIPE CULVERTS, AND	
10-102.01	AQUATIC ORGANISM PASSAGE (AOP) DESIGN	
10-102.02	PIPE CULVERTS AND FLUME	
10-102.03	SAFETY CROSS DRAIN ENDWALLS	
10-102.04	SAFETY SIDE DRAIN ENDWALLS	11
10-102.05	PROTECTED ENDWALLS*	
10-103.00 D	RAINAGE ENERGY DISSIPATERS	
10-103.01	ENERGY DISSIPATERS	
10-104.00 C	ATCH BASINS AND MANHOLES	12
10-104.01	CATCH BASINS	12
10-104.02	JUNCTION BOXES	18
10-104.03	MANHOLES	19
10-104.04	PRECAST RISERS	19
10-104.05	SPRING DRAIN BOXES	19

English		Revised: 10/31/25
10-104.06	SLOTTED AND TRENCH DRAINS	20
10-105.00 S	STORMWATER CONTROL MEASURES	20
10-105.01	FILTER STRIP, SWALE, AND BIO-SWALE	20
10-106.00 F	ROADWAY, PAVEMENT APPURTENANCES, AND FENCES	20
10-106.01	CONCRETE PAVEMENT	20
10-106.02	INTERSECTIONS	21
10-106.03	CURBS	22
10-106.04	WALLS	22
10-106.05	FENCES AND RIGHT-OF-WAY MARKERS	22
10-107.00 N	MULTIMODAL	23
10-107.01	CURB RAMPS	23
10-107.02	PAVEMENT MARKINGS	24
10-107.03	SAFETY RAIL	25
10-107.04	SIDEWALK	25
10-107.05	TYPICAL SECTION	25
10-108.00 S	SAFETY DESIGN AND GUARDRAILS	26
10-108.01	CLEAR ZONE AND SAFETY PLANS	26
10-108.02	CABLE BARRIER	26
10-108.03	CRASH CUSHIONS	26
10-108.04	GUARDRAIL DETAILS	27
10-108.05	GUARDRAIL CONNECTIONS	27
10-108.06	GUARDRAIL (SPECIAL CASES)	28
10-108.07	GUARDRAIL TERMINALS	28
10-108.08	GUARDRAIL ANCHORS	29
10-108.09	CONCRETE MEDIAN BARRIERS	29
10-108.10	GUARDRAIL MAINTENANCE	30
10-109.00 E	EROSION PREVENTION AND SEDIMENT CONTROL	31
10-109.01	DEWATERING DEVICES	31
10-109.02	SLOPE DEVICES	31
10-109.03	DITCH DEVICES	32
10-109.04	INLET PROTECTION	32
10-109.05	DETAINING DEVICES	34
10-109.06	IN-STREAM DEVICES	34

<u>English</u>	Revised: 10/31/25
10-110.00 NATURAL STREAM DESIGN	35
10-110.01 DEFLECTORS, VANES, AND ENERGY DISSIPATORS .	35
SECTION 2 – STANDARD TRAFFIC DESIGN DRAWINGS	36
10-200.00 SIGNS	36
10-201.00 SIGNALS	37
10-202.00 LIGHTING AND UTILITY POLES	39
10-203.00 RAILROAD CROSSING	40
10-204.00 DESIGN - TRAFFIC CONTROL	40
10-204.01 PAVEMENT MARKINGS	40
10-204.02 WORK ZONES	42
SECTION 3 – STANDARD STRUCTURE DRAWINGS	44
10-300.00 NEW STRUCTURES	44
10-301.00 LRFD BOX CULVERTS	46
10-302.00 BRIDGE REPAIRS	54

English Revised: 10/31/25

#### INTRODUCTION

#### ROADWAY DESIGN GUIDELINES AND STANDARD DRAWINGS

Roadway Design Guidelines (RDG) and Standard Drawings have been created to ensure that there is consistency in TDOT projects across the state. The Roadway Design Guidelines and Standard Drawings indicate the current recognized design standards for new construction or reconstruction of existing highways and shall be utilized while giving due regard to topography, natural conditions, availability of road material, and prevailing traffic conditions.

Throughout these guidelines you will see the following terms used. To clarify the meanings intended in this guide, the following definitions apply:

- Design Lead / Technical Lead Preconstruction Discipline Designer, or Consultant Designer
- Project Manager assigned from Program Delivery Division to lead Project team in delivery of project within defined scope, schedule, and budget.
- Project Team Preconstruction Team consisting of a Discipline Manager, members of Roadway, Structure, Survey, Environmental, ROW, and Utilities (either TDOT staff or consulting staff), overseen by a Project Manager.
- **Concept Report** Report developed by the Concept Design Section of the Program Delivery Division.

All forms mentioned throughout this chapter can be found on the <u>Roadway Design -TDOT</u> <u>Documents</u> webpage.

# Phases of Project Development Preliminary Right-of-Way Construction 4 Stages of Project Delivery Network Context/Scoping Footprint Established Right-in-Hand PS&E

English Revised: 10/31/25

This page is left blank intentionally.

English Revised: 10/31/25

#### **SECTION 1 - STANDARD ROADWAY DRAWINGS**

## 10-100.00 STANDARD ROADWAY TITLE SHEET, ABBREVIATIONS, AND LEGENDS

10-100.01	STANDARD R	OADWAY DRAWINGS TITLE SHEET
DRAWING	REVISION DATE	DESCRIPTION
RD-TP-1	09-26-16	STANDARD ROADWAY DRAWINGS TITLE SHEET
10-100.02	STANDARD A	BBREVIATIONS AND LEGENDS
DRAWING	REVISION DATE	DESCRIPTION
RD-A-1	02-20-20	STANDARD ABBREVIATIONS A THROUGH L
RD-A-2		STANDARD ABBREVIATIONS M THROUGH Z
RD-L-1	02-20-20	STANDARD LEGEND
RD-L-1A		STANDARD LEGEND
RD-L-2	02-20-20	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	03-01-23	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	10-01-24	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-5	07-30-24	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-6	02-20-20	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-7	02-20-20	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-8	02-20-20	STANDARD LEGEND FOR NATURAL STREAM DESIGN

English Revised: 10/31/25

#### 10-101.00 STANDARD ROADWAY DRAWINGS

#### 10-101.01 CONTEXTUAL TYPICAL SECTIONS AND DESIGN DECISION

DRAWING	REVISION DATE	DESCRIPTION
RD-CTS-R1		CONTEXTUAL TYPICAL SECTIONS RURAL ARTERIAL
RD-CTS-R2		CONTEXTUAL TYPICAL SECTION RURAL COLLECTOR
RD-CTS-R3		CONTEXTUAL TYPICAL SECTION RURAL LOCAL
RD-CTS-RT1		CONTEXTUAL TYPICAL SECTION RURAL TOWN ARTERIAL
RD-CTS-RT2		CONTEXTUAL TYPICAL SECTION RURAL TOWN COLLECTOR
RD-CTS-RT3		CONTEXTUAL TYPICAL SECTION RURAL TOWN LOCAL
RD-CTS-S1		CONTEXTUAL TYPICAL SECTION SUBURBAN ARTERIAL
RD-CTS-S2		CONTEXTUAL TYPICAL SECTION SUBURBAN COLLECTOR
RD-CTS-S3		CONTEXTUAL TYPICAL SECTION SUBURBAN LOCAL
RD-CTS-U1		CONTEXTUAL TYPICAL SECTION URBAN ARTERIAL
RD-CTS-U2		CONTEXTUAL TYPICAL SECTION URBAN COLLECTOR
RD-CTS-U3		CONTEXTUAL TYPICAL SECTION URBAN LOCAL
RD-CTS-UC1		CONTEXTUAL TYPICAL SECTION URBAN CORE ARTERIAL
RD-CTS-UC2		CONTEXTUAL TYPICAL SECTION URBAN CORE COLLECTOR
RD-CTS-UC3		CONTEXTUAL TYPICAL SECTION URBAN CORE LOCAL

#### 10-101.02 RD18 ROADWAY TYPICAL SECTIONS AND DESIGN CRITERIA

DRAWING	REVISION DATE	DESCRIPTION
RD18-TS-1		RURAL LOCAL ROADS (LOW-VOLUME)
RD18-TS-2		URBAN LOCAL ROADS AND STREETS

English		Revised: 10/31/25
RD18-TS-2A		RURAL LOCAL ROADS AND STREETS
RD18-TS-3		URBAN MINOR COLLECTOR (2-3 LANE)
RD18-TS-3A		RURAL MINOR COLLECTOR (2-LANE)
RD18-TS-4		URBAN MAJOR COLLECTOR FLUSH MEDIAN (4-5-6 LANE)
RD18-TS-4A		URBAN MAJOR COLLECTOR RAISED MEDIAN (4-5-6 LANE)
RD18-TS-4B		URBAN MAJOR COLLECTOR DEPRESSED MEDIAN (4-5-6 LANE)
RD18-TS-4C		RURAL MAJOR COLLECTOR FLUSH MEDIAN (4-5-6 LANE)
RD18-TS-4D		RURAL MAJOR COLLECTORS DEPRESSED MEDIAN (4-6 LANE)
RD18-TS-5		URBAN MINOR ARTERIAL (2-3 LANE)
RD18-TS-5A	10-31-25	RURAL MINOR ARTERIAL (2-3 LANE)
RD18-TS-6		URBAN MAJOR ARTERIAL FLUSH MEDIAN (4-5-6 LANE)
RD18-TS-6A		URBAN MAJOR ARTERIAL RAISED MEDIAN (4-5-6 LANE)
RD18-TS-6B		URBAN MAJOR ARTERIAL DEPRESSED MEDIAN (4-6 LANE)
RD18-TS-6C		RURAL MAJOR ARTERIAL FLUSH MEDIAN (4-6 LANE)
RD18-TS-6D		RURAL MAJOR ARTERIAL DEPRESSED MEDIAN (4-6 LANE)
RD18-TS-7		FREEWAYS WITH DEPRESSED MEDIAN (4-6 LANE)
RD18-TS-7A		FREEWAYS WITH MEDIAN BARRIER (4-6 LANE)
RD18-TS-7B		INDEPENDENT ROADWAYS (4-6 LANE)
RD18-TS-7C		TYPICAL DETAILS FOR INSIDE LANE WIDENING OF FREEWAYS
RD18-TS-8	10-31-25	RAMPS (1-2-3 LANE)

English Revised: 10/31/25

10-101.03	RD18 ROUND	ABOUT TYPICAL SECTIONS AND DESIGN CRITERIA
DRAWING	REVISION DATE	DESCRIPTION
RD18-RTS-1		DESIGN STANDARDS FOR SINGLE LANE URBAN AND RURAL ROUNDABOUTS
RD18-RTS-2		DESIGN STANDARDS FOR MULTI-LANE URBAN AND RURAL ROUNDABOUTS
RD18-RTS-3	04-30-25	STANDARD CONSTRUCTION DETAILS FOR ROUNDABOUTS
RD18-RSD-1		SIGHT DISTANCE FOR URBAN AND RURAL ROUNDABOUTS

#### 10-101.04 RD11 TYPICAL SECTIONS AND DESIGN CRITERIA

DRAWING	REVISION DATE	DESCRIPTION
RD11-SE-1		TRANSITION AND CROSS SLOPE DETAILS
RD11-SE-2		SUPERELEVATION TRANSITION DETAILS FOR UNDIVIDED ROADWAYS
RD11-SE-2A		SUPERELEVATION TRANSITION SECTIONS FOR UNDIVIDED ROADWAYS
RD11-SE-3		SUPERELEVATION TRANSITION DETAILS FOR DIVIDED ROADWAYS
RD11-SE-3A		SUPERELEVATION TRANSITION SECTIONS FOR DIVIDED ROADWAYS
RD11-TS-1	06-28-19	DESIGN STANDARDS FOR LOW-VOLUME ROADS
RD11-TS-1A	06-28-19	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS
RD11-TS-2		DESIGN STANDARDS FOR COLLECTORS, 2-LANE ROADS AND STREETS
RD11-TS-2A		DESIGN STANDARDS FOR COLLECTOR HIGHWAYS WITH DEPRESSED MEDIAN (4 AND 6 LANE)
RD11-TS-2B		DESIGN STANDARDS FOR COLLECTOR HIGHWAYS WITH FLUSH MEDIAN (4 AND 6 LANE)

English	CHAPTE	K 10 - INDEX OF STANDARD DRAWINGS	Revised: 10/31/25
RD11-TS-3		DESIGN STANDARD FOR ARTERIAL HIGH	WAYS (2-LANE)
RD11-TS-3A	06-28-19	DESIGN STANDARDS FOR ARTERIAL HIG DEPRESSED MEDIAN (4 AND 6 LANE)	HWAYS WITH
RD11-TS-3B		DESIGN STANDARDS FOR ARTERIAL HIG FLUSH MEDIAN (4 AND 6 LANE)	HWAYS WITH
RD11-TS-3C		DESIGN STANDARDS FOR ARTERIALS WIINDEPENDENT ROADWAYS (4 AND 6 LAN	
RD11-TS-4	10-01-24	DESIGN STANDARDS FOR ARTERIAL AND RAMPS (1, 2 AND 3 LANE)	) FREEWAY
RD11-TS-5	06-28-19	DESIGN STANDARDS FOR FREEWAYS WI MEDIAN (4 AND 6 LANE)	TH DEPRESSED
RD11-TS-5B		DESIGN STANDARDS FOR FREEWAYS WI BARRIER (4 AND 6 LANE)	TH MEDIAN
RD11-TS-5W	06-15-21	TYPICAL DETAILS FOR INSIDE LANE WIDE FREEWAYS	ENING OF
RD11-TS-6		TYPICAL CURB & GUTTER SECTIONS WIT AND WITH GRASS STRIPS	H SHOULDERS
RD11-TS-6A		TYPICAL CURB & GUTTER SECTIONS WIT SHOULDERS AND WITH GRASS STRIPS	HOUT
RD11-TS-6B		TYPICAL CURB & GUTTER SECTIONS WIT AND WITHOUT GRASS STRIPS	H SHOULDERS
RD11-TS-6C		TYPICAL CURB & GUTTER SECTIONS WIT SHOULDERS AND WITHOUT GRASS STRI	
RD11-TS-7	07-17-20	DESIGN STANDARDS 2-LANE CURB & GU CONTINUOUS 2-WAY LEFT-TURN LANE W STRIPS	—
RD11-TS-7A	07-17-20	DESIGN STANDARDS 2-LANE CURB & GU CONTINUOUS 2-WAY LEFT-TURN LANE W STRIPS	
RD11-TS-7B	06-12-25	DESIGN STANDARDS 2-LANE HIGHWAYS CONTINUOUS 2-WAY LEFT-TURN LANE	WITH

English	CHAPTE	Revised: 10/31/25
10-101.05	RD11 SLOPE I	DEVELOPMENT AND RUNOFF LENGTHS
DRAWING	REVISION DATE	DESCRIPTION
RD11-LR-1		MINIMUM RUNOFF LENGTHS ( $L_R$ ) FOR URBAN HIGHWAYS
RD11-LR-2		MINIMUM RUNOFF LENGTHS ( $L_R$ ) FOR RURAL HIGHWAYS
RD11-S-11		DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT
RD11-S-11A		ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION
RD11-S-11B		DESIGN AND CONSTRUCTION DETAILS FOR ROCK CUT SLOPE AND CATCHMENT
RD11-SA-1	01-09-24	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION
10-101.06	RD11 INTERSI	ECTION SIGHT DISTANCE
DRAWING	REVISION DATE	DESCRIPTION
RD11-SD-1		INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES
RD11-SD-2		INTERSECTION SIGHT DISTANCE LANDSCAPE AND OBSTRUCTION
RD11-SD-3		INTERSECTION SIGHT DISTANCE 2-LANE ROADWAYS
RD11-SD-4		INTERSECTION SIGHT DISTANCE 4-LANE AND 5-LANE UNDIVIDED ROADWAYS
RD11-SD-5		INTERSECTION SIGHT DISTANCE 4-LANE DIVIDED HIGHWAYS
RD11-SD-6		INTERSECTION SIGHT DISTANCE 6-LANE DIVIDED HIGHWAYS
RD11-SD-7		INTERSECTION SIGHT DISTANCE FOR PASSIVE RAILROAD HIGHWAY GRADE CROSSINGS
10-101.07	UNDERDRAIN	S
DRAWING	REVISION DATE	DESCRIPTION

Franksk	CHAPTI	ER 10 – INDEX OF STANDARD DRAWINGS
<u>English</u>		Revised: 10/31/25
RD-UD-3	01-09-24	UNDERDRAIN DETAILS
RD-UD-4	06-28-19	UNDERDRAIN LATERAL DETAILS
RD-UD-6	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 1:1 & 2:1 SLOPES
RD-UD-7	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 3:1 & 4:1 SLOPES
RD-UD-8	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 5:1 SLOPES
RD-UD-9	06-28-19	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 6:1 SLOPES
	AQUATIC O S, AND ENDV	PRGANISM PASSAGE (AOP) DESIGN, PIPE VALLS
10 100 01		
10-102.01	AQUATIC OR	GANISM PASSAGE (AOP) DESIGN
DRAWING	REVISION DATE	GANISM PASSAGE (AOP) DESIGN  DESCRIPTION
	REVISION	· ,
DRAWING	REVISION	DESCRIPTION
<b>DRAWING</b> D-AOP-1	REVISION	AOP DESIGN RECESSED PIPE CULVERTS
D-AOP-1 D-AOP-2	REVISION DATE	AOP DESIGN RECESSED PIPE CULVERTS AOP DESIGN RECESSED BOX CULVERTS
D-AOP-1 D-AOP-2 D-AOP-3	REVISION DATE	AOP DESIGN RECESSED PIPE CULVERTS AOP DESIGN RECESSED BOX CULVERTS AOP DESIGN EMBEDDED BOX CULVERTS
D-AOP-1 D-AOP-2 D-AOP-3 10-102.02	REVISION DATE  PIPE CULVER REVISION	AOP DESIGN RECESSED PIPE CULVERTS AOP DESIGN RECESSED BOX CULVERTS AOP DESIGN EMBEDDED BOX CULVERTS  RTS AND FLUME
D-AOP-1 D-AOP-2 D-AOP-3 10-102.02 DRAWING	REVISION DATE  PIPE CULVER REVISION	AOP DESIGN RECESSED PIPE CULVERTS AOP DESIGN RECESSED BOX CULVERTS AOP DESIGN EMBEDDED BOX CULVERTS  RTS AND FLUME  DESCRIPTION

INSTALLATION

STANDARD DETAILS FOR CONCRETE PIPE

D-PB-1

03-01-23

English	CHAPTE	Revised: 10/31/25
D-PB-2	03-01-23	STANDARD DETAILS FOR FLEXIBLE PIPE INSTALLATION
D-PB-3	11-30-20	INDUCED TRENCH SOIL EMBANKMENT FOR PIPE CULVERT INSTALLATION
D-PB-4	01-09-24	PIPE COLLAR DETAILS
D-PG-3	06-28-19	FERROUS AND ALUMINUM CORRUGATED METAL PIPE
D-PG-4	06-28-19	FERROUS AND ALUMINUM CORRUGATED METAL PIPE ARCHES
D-PO-1	06-28-19	STANDARD OVAL AND REINFORCED CONCRETE ARCH PIPE CULVERT
D-PS-1	06-28-19	STRUTTING DETAILS FOR CORR. METAL & STRUCTURAL PLATE ROUND PIPE
10-102.03	SAFETY CRO	SS DRAIN ENDWALLS
DRAWING	REVISION DATE	DESCRIPTION
D-PE-15A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 15" PIPE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-15B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 15" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-18A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 18" PIPE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-18B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 18" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-24A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 24" PIPE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-24B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 24" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-30A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 30" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-30B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 30" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-36A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 36" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)

English	CHAPTI	Revised: 10/31/25
D-PE-36B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 36" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-42A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 42" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-42B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 42" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-48A	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 48" PIPE WITH STEEL PIPE GRATE (FOR 3:1, 4:1 & 6:1 SLOPES)
D-PE-48B	06-28-19	TYPE "U" CROSS DRAIN ENDWALL FOR 48" PIPE, BILL OF STEEL AND PRECAST NOTES
D-PE-99	03-04-21	TYPE "U" CROSS DRAIN ENDWALL DETAILS, PIPE GRATE & SKEWED CONNECTION
10-102.04	SAFETY SIDE	DRAIN ENDWALLS
DRAWING	REVISION DATE	DESCRIPTION
D-SEW-1A	07-07-23	TYPE "SAFETY" SIDE DRAIN ENDWALL WITH STEEL PIPE GRATE, FOR 15" THRU 48" PIPES, 6:1 SLOPE
D-SEW-12D	07-07-23	TYPE "SAFETY" SIDE DRAIN ENDWALL WITH STEEL PIPE GRATE, FOR 18" PIPES, 12:1 SLOPE
SD-MSE-1	06-28-19	SIDE DRAIN MITERED END SECTION
10-102.05	PROTECTED	ENDWALLS*
DRAWING	REVISION DATE	DESCRIPTION
D-PE-4	06-28-19	STRAIGHT CONCRETE ENDWALLS (PIPE SIZES 18" TO 30")
D-PE-5	06-28-19	STRAIGHT CONCRETE ENDWALLS FOR HORIZONTAL OVAL CONCRETE PIPES (ALL SIZES AND SKEWS)
D-PEW-1		PROTECTED ENDWALLS FOR ROUND & OVAL PIPES (PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)

English	Revised: 10/31/25
D-PEW-2	PROTECTED ENDWALLS FOR ROUND PIPES DETAILS & QUANTITIES (PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)
D-PEW-3	PROTECTED ENDWALLS FOR OVAL PIPES DETAILS & QUANTITIES (EQU. PIPE SIZES 18" TO 72", ALL SKEWS, 2:1 & 3:1 SLOPES)
D-PEW-4	PROTECTED STRAIGHT ENDWALLS (PIPE SIZES 18" TO 30" & EQU. OVAL PIPES)
D-PEW-5	RIP-RAP END TREATMENT FOR CORRUGATED METAL PIPE, OVAL AND PIPE ARCH CULVERTS WITH BEVELED ENDS (PIPE SIZES 42" & LARGER)

<sup>\*</sup>NOTE: THE PROTECTED ENDWALLS MAY NOT BE USED INSIDE THE CLEAR ZONE UNLESS SHIELDED BY GUARDRAIL OR OTHER SAFETY DEVICE.

#### 10-103.00 DRAINAGE ENERGY DISSIPATERS

10-103.01	ENERGY DISSIPATERS
-----------	--------------------

DRAWING	<b>REVISION</b>	DESCRIPTION
	DATE	

D-ED-1 CONCRETE FLUME ENERGY DISSIPATER

#### 10-104.00 CATCH BASINS AND MANHOLES

#### 10-104.01 CATCH BASINS

DRAWING	REVISION DATE	DESCRIPTION
D-CB-DI		ALTERNATE CATCH BASIN DROP INLET DETAILS
D-CB-10LPC	02-20-20	LOW PROFILE LOWERED CURB 32" X 26" RECTANGULAR CONCRETE NO. 10LPC CATCH BASIN
D-CB-10RA	01-28-22	STANDARD PRECAST 48" CIRCULAR NO. 10 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-10S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 10 CATCH BASIN
D-CB-10SB	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 10 CATCH BASIN

English	CHAPTE	Revised: 10/31/25
D-CB-12LP	02-20-20	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 12LP CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-12LPA		ALTERNATE REINFORCEMENT FOR PRECAST CONCRETE 32" X 32" NO. 12LP CATCH BASIN
D-CB-12P	02-20-20	STANDARD PRECAST RECTANGULAR CONCRETE NO.12 CATCH BASIN
D-CB-12RA	01-28-22	STANDARD PRECAST 48" CIRCULAR NO. 12 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-12RB	02-20-20	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 12 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-12RC	02-20-20	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 12 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-12S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12SB	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SC	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-13P	02-20-20	STANDARD PRECAST RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-13RA	01-28-22	STANDARD PRECAST 48" CIRCULAR NO. 13 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-13RB	02-20-20	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 13 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-13RC	02-20-20	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 13 CATCH BASIN FOR USE WITH 6" VERTICAL CURB
D-CB-13S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-14P	02-20-20	STANDARD PRECAST RECTANGULAR CONCRETE NO. 14 CATCH BASIN

English	CHAPTI	Revised: 10/31/25
_		
D-CB-14RB	02-20-20	STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN
D-CB-14S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 14 CATCH BASIN
D-CB-14SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 14 CATCH BASIN
D-CB-16S	07-17-20	STANDARD RECTANGULAR CONCRETE NO. 16 CATCH BASIN
D-CB-17S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 17 CATCH BASIN
D-CB-25LP	02-20-20	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 25LP CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25P	02-20-20	STANDARD PRECAST RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25RA	01-28-22	STANDARD PRECAST 48" CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25RB	02-20-20	STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25SB	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25SC	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-25SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-26P	02-20-20	STANDARD PRECAST RECTANGULAR CONCRETE NO. 26 CATCH BASIN
D-CB-26S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 26 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)

English		Revised: 10/31/25
D-CB-27S	02-20-20	STANDARD RECTANGULAR CONCRETE NO. 27 CATCH BASIN (FOR USE WITH 6" SLOPING CURB)
D-CB-31R	02-20-20	STANDARD PRECAST CIRCULAR NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-32LP	02-20-20	STANDARD 80" X 32" RECTANGULAR CONCRETE NO. 32 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-38RB	03-04-21	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN
D-CB-38S	03-04-21	STANDARD 32" X 32" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SB	03-04-21	STANDARD 4' X 4' SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SC	03-04-21	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-39RB	03-04-21	STANDARD PRECAST CIRCULAR NO. 39 CATCH BASIN
D-CB-39S	03-04-21	STANDARD 4' X 4' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SC	03-04-21	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SD	03-04-21	STANDARD 7' X 7' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SE	03-04-21	STANDARD 9' X 9' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-40S	03-04-21	STANDARD 4' X 8' RECTANGULAR CONCRETE NO. 40 CATCH BASIN
D-CB-40SE	03-04-21	STANDARD 9' X 9' SQUARE CONCRETE NO. 40 CATCH BASIN

English		Revised: 10/31/25
D-CB-41LP	02-20-20	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 41LP CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41P	02-20-20	STANDARD 4' X 3' PRECAST RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41RB	02-20-20	STANDARD PRECAST CIRCULAR NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41S	02-20-20	STANDARD 4' X 3' RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SB	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SC	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-42RB	02-20-20	STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN
D-CB-42S	02-20-20	STANDARD 32" X 32" SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SB	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SC	02-20-20	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-43R	02-20-20	STANDARD PRECAST CIRCULAR NO. 43R CATCH BASIN
D-CB-43SB	02-20-20	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 43SB CATCH BASIN

English		Revised: 10/31/25
D-CB-43SC	02-20-20	STANDARD 8' X 5' 2" RECTANGULAR CONCRETE NO. 43SC CATCH BASIN
D-CB-44SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 44 CATCH BASIN
D-CB-45S	02-20-20	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 45 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-46SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 46 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-51SC	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SD	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SE	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-52SE	02-20-20	STANDARD 9' x 9' SQUARE CONCRETE NO. 52 CATCH BASIN
D-CB-99	02-20-20	MISCELLANEOUS DETAILS FOR RECTANGULAR STRUCTURES
D-CB-99GS		CATCH BASIN DETAILS FOR GRADE SEPARATION WALL
D-CB-99R	01-28-22	MISCELLANEOUS DETAILS FOR ROUND STRUCTURES
D-CB-99RA	10-29-21	BILL OF STEEL FOR ROUND CATCH BASIN LIDS
D-CB-99RB	02-20-20	ROUND JUNCTION BOX SPRING DRAIN BOX
D-CBB-12A	06-28-19	TYPE 'B' CAST IRON FRAME, GRATE & VERTICAL INLET DETAILS FOR NOS. 10, 12, 14, 16, & 17 TYPE CATCH BASINS
D-CBB-12B	06-28-19	TYPE 'B' CAST IRON FRAME, GRATE & 6" SLOPING INLET DETAILS FOR NOS. 25, 26 & 27 TYPE CATCH BASINS
D-CBB-12D	07-07-23	TYPE "B" CAST IRON FRAME, GRATE & CURB HOOD DETAILS FOR NOS. 10, 12, 14, 16 & 17 TYPE CATCH BASINS

Enalish		Revised: 10/31/25
D-CBB-13	06-28-19	TYPE 'B' CAST IRON FRAME, GRATE & VERTICAL INLET DETAILS FOR NO. 13 TYPE CATCH BASINS
D-CBB-31	02-20-20	TYPE 'B' CAST IRON FRAME, GRATE & INLET DETAILS FOR NOS. 31, 41, 45, 46, & 51 TYPE CATCH BASINS
D-CBB-42	10-29-21	CAST IRON GRATE DETAILS FOR NOS. 42, 43 & 44 TYPE CATCH BASINS
D-RL-1		ROUND LID DETAILS FOR SINGLE CURB AND WALL INLET
D-RL-2		ROUND LID DETAILS FOR DOUBLE CURB AND WALL INLET
D-RL-3		ROUND LID DETAILS FOR SINGLE OPENING AREA DRAIN
D-RL-4		ROUND LID DETAILS FOR DOUBLE OPENING AREA DRAIN
D-RS-1		PRECAST ROUND STRUCTURES (48" THRU 120")
D-RS-2		PRECAST ROUND STRUCTURES REINFORCEMENT DETAILS
D-RS-3		MISCELLANEOUS DETAILS FOR ROUND STRUCTURES

#### **10-104.02 JUNCTION BOXES**

DRAWING	REVISION DATE	DESCRIPTION
D-JBS-1	02-20-20	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 JUNCTION BOX
D-JBS-2	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 2 JUNCTION BOX
D-JBS-3	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 3 JUNCTION BOX
D-JBS-4	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 4 JUNCTION BOX
D-JBS-5	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 5 JUNCTION BOX
D-RJB-1		PRECAST ROUND JUNCTION BOX STRUCTURES (48" THRU 120")

English	CHAPTE	Revised: 10/31/25	
10-104.03	MANHOLES		
DRAWING	REVISION DATE	DESCRIPTION	
D-MH-2	02-20-20	STANDARD PRECAST NO. 3 MANHOLE	
D-MH-3	02-20-20	TYPICAL DESIGN OF LIDS FOR NO. 3 MANHOLE	
D-MH-4	02-20-20	STANDARD NO. 3 MANHOLE CASTINGS AND STEPS	
D-MH-5	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 3 MANHOLE	
D-MH-6	02-20-20	STANDARD 7' X 7' SQUARE CONCRETE NO. 3 MANHOLE	
D-MH-7	02-20-20	STANDARD 9' X 9' SQUARE CONCRETE NO. 3 MANHOLE	
D-RMH-1		PRECAST MANHOLE STRUCTURES (48" THRU 120")	
10-104.04	PRECAST RISERS		
DRAWING	REVISION DATE	DESCRIPTION	
D-RF-1	07-30-24	STANDARD PRECAST RISER	
10-104.05	SPRING DRAII		
DRAWING	REVISION DATE	DESCRIPTION	
D-SDS-1	02-20-20	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 SPRING DRAIN BOX	
D-SDS-2A	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 2A SPRING DRAIN BOX	
D-SDS-2B	02-20-20	STANDARD 4' X 4' SQUARE CONCRETE NO. 2B SPRING DRAIN BOX	
D-SDS-3A	02-20-20	STANDARD 5' 2" X 5' 2" SQUARE CONCRETE NO. 3A SPRING DRAIN BOX	
D-RSB-1		PRECAST ROUND SPRING DRAIN BOX STRUCTURES (48" THRU 120")	

English	CHAPTE	Revised: 10/31/25		
10-104.06	SLOTTED AND TRENCH DRAINS			
DRAWING	REVISION DATE	N DESCRIPTION		
D-SLD-1	02-20-20	SLOTTED DRAINS		
D-SLD-2	02-20-20	SLOTTED DRAINS		
D-SLD-3	02-20-20	SLOTTED DRAINS		
D-TD-1	07-07-23	TRENCH DRAIN		
10-105.00	STORMWAT	ER CONTROL MEASURES		
10-105.01	FILTER STRIP	, SWALE, AND BIO-SWALE		
DRAWING	REVISION DATE	DESCRIPTION		
D-SCM-1	SCM VEGETATED FILTER STRIP			
D-SCM-2		SCM GRASS SWALE		
D-SCM-3		SCM BIO-SWALE (WITHOUT SCM UNDERDRAIN)		
D-SCM-4		SCM BIO-SWALE (WITH SCM UNDERDRAIN)		
10-106.00	ROADWAY,	PAVEMENT APPURTENANCES, AND FENCES		
10-106.01	CONCRETE PA	AVEMENT		
DRAWING	REVISION DATE	DESCRIPTION		
RP-CS-1	05-01-20	CONCRETE SHOULDER RUMBLE STRIP DETAIL (FOR 4 LANE DIVIDED HWY)		
RP-CS-2	05-01-20	CONCRETE SHOULDER RUMBLE STRIP DETAIL (FOR 6- LANE OR WIDER DIVIDED HIGHWAY)		
RP-CS-3		CONCRETE SHOULDER MILLED RUMBLE STRIP DETAILS		
RP-J-1	05-01-20	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING		
RP-J-3	05-01-20	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING		

English	CHAPTE	Revised: 10/31/25	
RP-J-5	05-01-20	TYPICAL ACCELERATION AND DECELERATION LANE JOINTYPES AND SPACING FOR CONCRETE RAMPS	
RP-J-7	05-01-20	CONCRETE RAMP JOINT TYPES AND SPACING	
RP-J-9	05-01-20	CONTRACTION AND CONSTRUCTION JOINTS FOR CONCRETE PAVEMENT	
RP-J-11	05-01-20	3/4" AND 1 3/4" EXPANSION AND EDGE PAVEMENT JOINTS	
RP-J-13	05-01-20	3/4" AND 1 3/4" ELASTOMERIC COMPRESSION JOINT SEALS	
RP-J-15	05-01-20	LONGITUDINAL CONTRACTION AND CONSTRUCTION JOINTS	
RP-J-17	05-01-20	DOWEL ASSEMBLY DEVICES	
RP-J-18	01-28-22	DOWEL ASSEMBLY DEVICES	
RP-J-19	05-01-20	DOWEL ASSEMBLY DEVICES	
RP-J-23	01-28-22	CONCRETE PAVEMENT REPAIR DETAILS	
RP-J-24	05-01-20	CONCRETE PAVEMENT SPALL AND RANDOM CRACK REPAIR DETAILS	
RP-J-25	05-01-20	CONCRETE PAVEMENT JOINT REPAIR DETAILS	
RP-EPO-1		EMERGENCY PULL OVER AREA	
10-106.02	INTERSECTIO	NS	
DRAWING	REVISION DATE	DESCRIPTION	
RP-D-15	04-01-25	DETAILS OF STANDARD CONCRETE DRIVEWAYS	
RP-D-16	04-01-25	DETAILS OF LOWERED STANDARD CONCRETE DRIVEWAYS	
RP-DHO-1	05-01-20	MEDIAN OPENINGS ON 4-LANE DIVIDED HIGHWAY	
RP-DHO-2	07-30-24	MEDIAN OPENING DETAILS FOR RESTRICTED CROSSING & J-TURN INTERSECTIONS	
RP-I-5	05-01-20	EXAMPLES OF STREET & ALLEY INTERSECTIONS	

English	СПАРТЕ	Revised: 10/31/25
RP-PMR-1	05-01-20	STANDARD DETAILS FOR PROPOSED PERMANENT MAINTENANCE RAMP
RP-R-1	04-21-25	STANDARD RAMP DETAILS FOR ROADWAYS AND DRIVEWAYS
RP-R-1A	04-21-25	STANDARD RAMP DETAILS FOR LOW VOLUME RURAL ROADWAYS
10-106.03	CURBS	
DRAWING	REVISION DATE	DESCRIPTION
RP-SC-1	05-04-22	SLOPING CONCRETE CURB AND CURB AND GUTTER
RP-VC-10	03-04-21	VERTICAL CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-VC-11	03-04-21	VERTICAL CONCRETE CURBS AND GUTTERS 6" AND 7" DEPTH
10-106.04	WALLS	
DRAWING	REVISION DATE	DESCRIPTION
W-CIP-1	05-01-20	ROADWAY FEATURES AT CAST IN PLACE RETAINING WALL
W-MSE-1	05-01-20	ROADWAY FEATURES FOR MSE SEGMENTAL PRECAST FACING RETAINING WALL
W-MSE-2	05-01-20	ROADWAY FEATURES FOR MSE MODULAR BLOCK FACING RETAINING WALL
W-SG-1	07-30-24	STANDARD GRAVITY-TYPE RETAINING WALLS
W-SP-1	05-01-20	ROADWAY FEATURES AT SOLDIER PILE AND SOIL ANCHORED RETAINING WALLS
10-106.05	FENCES AND	RIGHT-OF-WAY MARKERS
DRAWING	REVISION DATE	DESCRIPTION
S-F-1	03-01-23	HIGH VISIBILITY FENCE

Enalish		Revised: 10/31/25
S-F-10	07-17-20	STANDARD RIGHT-OF-WAY STOCK FENCE
S-F-10A	06-28-19	STANDARD RIGHT-OF-WAY STOCK FENCE WITH TIMBER POSTS
S-F-10B	06-28-19	STANDARD RIGHT-OF-WAY CHAIN LINK FENCE
S-F-10C	06-28-19	RIGHT-OF-WAY FENCE AT BRIDGE AND BOX CULVERTS
S-F-10D	06-28-19	RIGHT-OF-WAY FENCE LOCATIONS AT INTERCHANGES
S-FG-11	07-30-24	STOCK FENCE GATES AND CHAIN LINK FENCE
S-FG-20	06-28-19	EXAMPLES OF WATER GATES AND WATER CROSSINGS
S-RP-2	06-28-19	STANDARD CONCRETE RIGHT-OF-WAY MARKERS

#### 10-107.00 MULTIMODAL

#### 10-107.01 CURB RAMPS

DRAWING	REVISION DATE	DESCRIPTION
CR-GN-1		GENERAL NOTES CURB RAMPS
CR-GN-2		CURB RAMP NUMBERING
CR-DWS-1		DETECTABLE WARNING SURFACE DETAIL
CR-PLL-1		PUSH BUTTON LOCATION LAYOUT
CR-CRT-1		CURB RAMP TYPES
CR-GTL-1		GUTTER TRANSITION LAYOUT
CR-GTL-2		GUTTER TRANSITION LAYOUT
CR-PL-1		PERPENDICULAR CURB RAMP PLACEMENT LAYOUT
CR-10		PERPENDICULAR CURB RAMP
CR-11		PERPENDICULAR CURB RAMP WITH BRICK DETAILS

English	<u>OTIAL L</u>	Revised: 10/31/25
CR-PL-2		PARALLEL CURB RAMP PLACEMENT LAYOUT
CR-20	07-01-25	PARALLEL CURB RAMP 5 – FT SIDEWALK
CR-21		COMBINATION RAMP USED WITH WIDE SIDEWALK
CR-22		COMBINATION CURB RAMP
CR-23		PARALLEL CURB RAMP WITH EXISTING BRICK
CR-30		CURB RAMPS IN CURVE BI-DIRECTIONAL DUAL CROSSING
CR-31		BLENDED TRANSITION BI-DIRECTIONAL
		LOWERED CORNER RAMP
CR-32		SINGLE CROSSING CURB RAMP IN CURVE
CR-33		SINGLE CROSSING CURB RAMP IN CURVE
CR-34		MONO-DIRECTIONAL SINGLE CROSSWALK CURB RAMP
CR-40		DETAILS
CR-41		SINGLE CROSSING CURB RAMP IN CURVE
		PEDESTRIAN REFUGE
CR-50		PEDESTRIAN REFUGE
CR-51		

#### 10-107.02 PAVEMENT MARKINGS

DRAWING	REVISION DATE	DESCRIPTION
MM-PM-1		SIGNING AND PAVEMENT MARKINGS AT INTERSECTION CROSSINGS FOR SHARED-USE PATHS
MM-PM-2	07-30-24	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANE OR ROUTES
MM-PM-3	06-15-21	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES ON URBAN ROADWAYS
MM-PM-4		SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES

CHAPTER 10 - INDEX OF STANDARD DRAWINGS			
English		Revised: 10/31/25	
MM-PM-5	05-04-22	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES AT INTERSECTIONS	
10-107.03	SAFETY RAIL		
DRAWING	REVISION DATE	DESCRIPTION	
MM-BPR-1	06-12-25	BIKE AND PEDESTRIAN SAFETY RAIL	
MM-BPR-2	10-16-20	BIKE AND PEDESTRIAN MEDIAN BARRIER RAIL	
MM-BPR-3	03-24-25	BARRIER SLOPED END TREATMENT	
MM-VPR-1		VEHICLE AND PEDESTRIAN SAFETY RAIL	
10-107.04	SIDEWALK		
DRAWING	REVISION DATE	DESCRIPTION	
MM-PS-1		DETAILS FOR PEDESTRIAN STEPS AND HANDRAILS	
MM-SW-1	07-07-23	DETAILS FOR CONCRETE SIDEWALK	
MM-SW-2		ALTERNATE DETAILS FOR CONCRETE SIDEWALK (REHABILITATION)	
10-107.05	TYPICAL SEC	TION	
DRAWING	REVISION DATE	DESCRIPTION	
MM-BS-1		TYPICAL BUS STOP LOCATION	
MM-TS-1	06-15-21	BIKE ACCOMMODATION DESIGN GUIDANCE	
MM-TS-2	06-15-21	LATERAL OFFSETS FOR SIDEWALK AND SHARED USE PATH	
MM-TS-3	06-30-25	SEPARATED SHARED USE PATH TYPICAL SECTIONS	
MM-PM-3	06-15-21	SIGNING AND PAVEMENT MARKING FOR BIKE LANES ON URBAN ROADWAYS	

English Revised: 10/31/25

#### 10-108.00 SAFETY DESIGN AND GUARDRAILS

10-108.01	<b>CLEAR</b>	<b>ZONE AN</b>	ND SA	FETY	<b>PLANS</b>
-----------	--------------	----------------	-------	------	--------------

DRAWING	REVISION DATE	DESCRIPTION
S-CZ-1	06-28-19	CLEAR ZONE CRITERIA
S-PL-1	03-01-23	SAFETY PLAN AT ROADSIDE HAZARDS
S-PL-1A	03-01-23	SAFETY PLAN FOR BARRIER LENGTH OF NEED (FOR RIGID OBJECTS)
S-PL-1B	03-01-23	SAFETY PLAN FOR BARRIER LENGTH OF NEED ON CURVED ROADWAYS
S-PL-3	03-01-23	SAFETY PLAN MINIMUM INSTALLATION AT BRIDGE ENDS
S-PL-4	01-09-24	SAFETY PLAN FOR BRIDGE PIERS IN CLEAR ZONE
S-PL-4A	01-09-24	SAFETY PLAN FOR BRIDGE PIERS IN CLEAR ZONE & OUT
S-PL-5	06-28-19	SAFETY PLAN FOR BRIDGE ENDS IN MEDIANS
S-PL-6	07-30-24	SAFETY PLAN SAFETY HARDWARE PLACEMENT ON OUTSIDE EDGE
S-PL-6A	06-28-19	SAFETY PLAN SAFETY HARDWARE PLACEMENT IN MEDIAN
S-PL-7		SAFETY PLAN HARDWARE PLACEMENT AT INTERSECTIONS

#### **10-108.02 CABLE BARRIER**

DRAWING	REVISION DATE	DESCRIPTION
S-CB-1	01-09-24	CABLE BARRIER PLACEMENT
S-CB-2	07-07-23	HIGH TENSION CABLE BARRIER

#### **10-108.03 CRASH CUSHIONS**

DRAWING	REVISION	DESCRIPTION
	DATE	

	CHAFTI	LK 10 - INDLX OF STANDARD DRAWINGS
English		Revised: 10/31/25
S-CC-1	10-01-24	CRASH CUSHION
S-CC-2	06-28-19	CRASH CUSHION (GATING) BARREL ARRAY
10-108.04	GUARDRAIL I	DETAILS
DRAWING	REVISION DATE	DESCRIPTION
S-GR31-1	10-31-25	GUARDRAIL DETAILS
S-GR31-1A	06-28-19	GUARDRAIL AND BLOCK-OUT DETAILS
S-GR31-1B		GUARDRAIL FASTENING HARDWARE
S-GR31-1C	07-07-23	GUARDRAIL GENERAL NOTES AND POST DETAILS
S-GR31-1D	03-01-23	GUARDRAIL POST PLACEMENT IN ROCK
10-108.05	GUARDRAIL (	CONNECTIONS
DRAWING	REVISION	DESCRIPTION
DRAWING	DATE	DESCRIPTION
S-AGT-1		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-2		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-3		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-4		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-5		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-6		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-AGT-7		LONG SPAN APPROACH GUARDRAIL TRANSITION
S-GRC-4	10-31-25	GUARDRAIL CONNECTION TO BRIDGE RAILING CONCRETE PARAPET
S-GRC-5	10-31-25	GUARDRAIL CONNECTION TO BRIDGE ENDS (TRAILING ENDS)
S-GRC-6	10-31-25	GUARDRAIL CONNECTION TO BRIDGE ENDS FOR LOW SPEED ROADWAYS

English	CHAPTE	Revised: 10/31/25
10-108.06	GUARDRAIL (	SPECIAL CASES)
DRAWING	REVISION DATE	DESCRIPTION
S-CPW-1		CURVED PARAPET WALL ≤40 M.P.H.
S-GRS-1	06-15-21	SPECIAL CASE LONG SPAN GUARDRAIL ONE POST OMITTED
S-GRS-2	01-28-22	SPECIAL CASE GUARDRAIL ATTACHMENT TO CONCRETE DECKS
S-GRS-3	06-28-19	SPECIAL CASE GUARDRAIL FOOTING
S-GRS-4	05-04-22	SPECIAL CASE GUARDRAIL HEIGHT TRANSITION DETAIL
S-GRS-5		SPECIAL CASE WEAK-POST GUARDRAIL ATTACHMENT TO CULVERT
S-GRS-5A	06-15-21	WEAK-POST GUARDRAIL ASSEMBLY DETAILS FOR TYPE 1 & 2
S-GRS-5B		WEAK-POST GUARDRAIL ASSEMBLY DETAILS FOR TYPE 3 & 4
S-GRS-6	01-30-25	SPECIAL CASE FLEXIBILITY ON GUARDRAIL POST INSTALLATIONS
S-GRS-7	01-09-24	SHORT – RADIUS - GR SYSTEM (SRGS) CONNECTION TO BRIDGE END
S-GRS-7A	07-30-24	SHORT – RADIUS – GUARDRAIL SYSTEM (SRGS) ANCHOR DETAILS
S-GRS-7B		SHORT RADIUS – GR SYSTEM (SRGS) EYE-BOLT SPACING DETAILS
S-GRS-8		SAFETY PLAN AT SIDEROADS OR DRIVEWAYS FOR LOW SPEED ROADWAYS
10-108.07	GUARDRAIL T	ERMINALS
DRAWING	REVISION DATE	DESCRIPTION
S-GRT-1	10-29-21	TYPE 12 GUARDRAIL TERMINAL BURIED-IN-BACKSLOPE
S-GRT-1A		LAYOUT OF FLARED GUARDRAIL (TL-3)

English	OHAPIL	Revised: 10/31/25
S-GRT-1B		LAYOUT OF FLARED GUARDRAIL (TL-2)
S-GRT-2	06-28-19	TYPE 38 GUARDRAIL END TERMINAL
S-GRT-2P	10-16-20	EARTH PAD FOR TYPE 38 AND TYPE 21 TERMINAL
S-GRT-2R	06-28-19	EARTH PAD FOR TYPE 38 AND 21 TERMINALS (RETROFIT)
S-GRT-3	06-28-19	TYPE 21 GUARDRAIL END TERMINAL
S-GRT-4	01-30-25	TYPE 21 GATING END TERMINAL
S-GRT-4A		TYPE 21 GATING END TERMINAL ANCHOR DETAILS
S-GRT-4B		GATING TERMINAL POST & RAIL DETAILS
10-108.08	GUARDRAIL A	ANCHORS
DRAWING	REVISION DATE	DESCRIPTION
S-GRA-1	06-28-19	TYPE 12 GUARDRAIL ANCHOR
S-GRA-1A	06-28-19	GUARDRAIL ANCHOR FOR TYPE 12 TERMINAL (ALTERNATIVE)
S-GRA-3	01-09-24	TYPE 13 GUARDRAIL ANCHOR
S-GRA-4	03-01-23	IN-LINE GUARDRAIL ANCHOR TO PRIVATE DRIVE
S-GRA-5	06-28-19	FLARED GUARDRAIL ANCHOR
10-108.09	CONCRETE M	EDIAN BARRIERS
DRAWING	REVISION DATE	DESCRIPTION
S-SSMB-1	01-28-22	32" SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-1A	10-29-21	36" SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-2	10-29-21	51" SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-3	10-29-21	51" HALF SIZE SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-4	07-17-20	FLARED SINGLE SLOPE CONCRETE MEDIAN BARRIER WALL (VERTICAL BACK)

English		Revised: 10/31/25
S-SSMB-5	05-01-20	SINGLE SLOPE MEDIAN BARRIER WALL CATCH BASIN DETAIL
S-SSMB-6	06-28-19	32" CONCRETE SINGLE SLOPE BARRIER WALL WITH SINGLE GUARDRAIL ATTACHMENT
S-SSMB-6A		36" CONCRETE SINGLE SLOPE BARRIER WALL FOR ATTACHING GUARDRAIL
S-SSMB-6B		DUAL GUARDRAIL ATTACHMENT TO SINGLE SLOPE 36" BARRIER WALL
S-SSMB-6C		SINGLE GUARDRAIL ATTACHMENT TO SINGLE SLOPE 36" BARRIER WALL
S-SSMB-6D		51" CONCRETE SINGLE SLOPE BARRIER WALL FOR ATTACHING GUARDRAIL
S-SSMB-6E		DUAL GUARDRAIL ATTACHMENT TO SINGLE SLOPE 51" BARRIER WALL
S-SSMB-6F		SINGLE GUARDRAIL ATTACHMENT TO SINGLE SLOPE 51" BARRIER WALL
S-SSMB-9	10-29-21	SINGLE SLOPE BARRIER WALL FOR GRADE SEPARATED MEDIAN
S-SSMB-10	01-09-24	SPECIAL DETAIL FOR CONCRETE MEDIAN BARRIER WALL TRANSITION FROM 32" OR 36" TO 51"
10-108.10	GUARDRAIL N	MAINTENANCE
DRAWING	REVISION DATE	DESCRIPTION
S-GR28-1M	06-15-21	W-BEAM & THRIE BEAM BARRIER RAIL AND RUB RAIL DETAILS
S-GR28-2M	06-28-19	GUARDRAIL HARDWARE DETAILS
S-GR28-3M	01-28-22	GUARDRAIL HEIGHT ADJUSTMENT
S-GR28-4M	06-28-19	GUARDRAIL TERMINAL ANCHOR TYPE 13
S-GR28-5M	06-28-19	MEDIAN DIVIDER GUARDRAIL
S-GR28-6M	10-29-21	GUARDRAIL ATTACHMENT TO CONCRETE DECKS
S-GR28-7M	06-28-19	GUARDRAIL ATTACHMENT TO BRIDGE ENDS DETAILS

English	СПАРТЕ	Revised: 10/31/25
S-GRC-1M		GUARDRAIL CONNECTION TO BRIDGE ENDS OR BARRIER WALL
S-GRC-2M		GUARDRAIL CONNECTION TO BRIDGE END FOR LOCAL ROADS (ADT<2000)
S-GRC-3M		MEDIAN DIVIDER GUARDRAIL TRANSITION TO CONCRETE MEDIAN BARRIER
S-PL-2M		SAFETY PLAN AT SIDE ROADS OR PRIVATE DRIVES
S-SSMB-6M		GUARDRAIL ATTACHMENT TO EXISTING SINGLE SLOPE CONCRETE BARRIER WALL
10-109.00	EROSION P	REVENTION AND SEDIMENT CONTROL
10-109.01	DEWATERING	DEVICES
DRAWING	REVISION DATE	DESCRIPTION
EC-STR-1	08-01-12	DEWATERING STRUCTURE
EC-STR-2	08-01-12	SEDIMENT FILTER BAG
10-109.02	SLOPE DEVIC	ES
DRAWING	REVISION DATE	DESCRIPTION
EC-STR-3B	06-15-21	SILT FENCE
EC-STR-3C	03-01-23	SILT FENCE WITH WIRE BACKING
EC-STR-3D	03-01-23	ENHANCED SILT FENCE
EC-STR-3E	04-01-08	SILT FENCE FABRIC JOINING DETAILS
EC-STR-8	06-10-14	FILTER SOCK
EC-STR-27	08-01-12	TEMPORARY SLOPE DRAIN AND BERM
EC-STR-29	08-01-12	PERMANENT SLOPE DRAIN PIPE
EC-STR-34	05-04-22	EROSION CONTROL BLANKET FOR SLOPE INSTALLATION
EC-STR-35	08-01-12	FILTER BERMS

English Revised: 10/31/25

EC-STR-37 06-10-14 SEDIMENT TUBE

#### **10-109.03 DITCH DEVICES**

DRAWING	REVISION DATE	DESCRIPTION
EC-STR-4	07-30-24	ENHANCED SILT FENCE CHECK (TRAPEZOIDAL DITCH)
EC-STR-4A	07-30-24	ENHANCED SILT FENCE CHECK (V-DITCH)
EC-STR-4B	08-01-12	ENHANCED SILT FENCE CHECK DETAILS
EC-STR-6	11-30-20	ROCK CHECK DAM
EC-STR-6A	05-06-16	ENHANCED ROCK CHECK DAM
EC-STR-7	05-04-22	SEDIMENT TRAP WITH CHECK DAM
EC-STR-55	08-01-12	GABION CHECK DAM
EC-STR-56	04-01-08	GABION CHECK DAM DESIGN TABLES
EC-STR-57	04-01-08	GABION ASSEMBLY DETAILS
EC-STR-58	04-01-08	GABION ASSEMBLY DETAILS
EC-STR-59	08-01-12	GABION CHECK DAM GENERAL NOTES AND COMPONENT PROPERTIES
EC-STR-61	03-16-17	LEVEL SPREADERS

#### 10-109.04 INLET PROTECTION

DRAWING	REVISION DATE	DESCRIPTION
EC-STR-11	03-16-17	CULVERT PROTECTION TYPE 1
EC-STR-19	04-01-08	CATCH BASIN PROTECTION
EC-STR-39	08-01-12	CURB INLET PROTECTION TYPE 1 & 2
EC-STR-39A	08-01-12	CURB INLET PROTECTION TYPE 3 & 4
EC-STR-40		CATCH BASIN FILTER ASSEMBLY FOR CIRCULAR STRUCTURES
EC-STR-41		CATCH BASIN FILTER ASSEMBLY (TYPE 1)

	CHAPTER 10 – INDEX OF STANDARD DRAWINGS
<u>English</u>	Revised: 10/31/25
EC-STR-41A	CATCH BASIN FILTER ASSEMBLY (TYPE 1) SLIPCOVER DETAILS
EC-STR-42	CATCH BASIN FILTER ASSEMBLY (TYPE 2)
EC-STR-42A	CATCH BASIN FILTER ASSEMBLY (TYPE 2) SLIPCOVER DETAILS
EC-STR-43	CATCH BASIN FILTER ASSEMBLY (TYPE 3)
EC-STR-43A	CATCH BASIN FILTER ASSEMBLY (TYPE 3) SLIPCOVER DETAILS
EC-STR-44	CATCH BASIN FILTER ASSEMBLY (TYPE 4)
EC-STR-44A	CATCH BASIN FILTER ASSEMBLY (TYPE 4) SLIPCOVER DETAILS
EC-STR-45	CATCH BASIN FILTER ASSEMBLY (TYPE 5)
EC-STR-45A	CATCH BASIN FILTER ASSEMBLY (TYPE 5) SLIPCOVER DETAILS
EC-STR-46	CATCH BASIN FILTER ASSEMBLY (TYPE 6)
EC-STR-46A	CATCH BASIN FILTER ASSEMBLY (TYPE 6) SLIPCOVER DETAILS
EC-STR-47	CATCH BASIN FILTER ASSEMBLY (TYPE 7)
EC-STR-47A	CATCH BASIN FILTER ASSEMBLY (TYPE 7) SLIPCOVER DETAILS
EC-STR-48	CATCH BASIN FILTER ASSEMBLY (TYPE 8)
EC-STR-48A	CATCH BASIN FILTER ASSEMBLY (TYPE 8) SLIPCOVER DETAILS
EC-STR-49	CATCH BASIN FILTER ASSEMBLY (TYPE 9)
EC-STR-49A	CATCH BASIN FILTER ASSEMBLY (TYPE 9) SLIPCOVER DETAILS
EC-STR-50	CATCH BASIN FILTER ASSEMBLY (TYPE 10)
EC-STR-50A	CATCH BASIN FILTER ASSEMBLY (TYPE 10) SLIPCOVER DETAILS
EC-STR-51	CATCH BASIN FILTER ASSEMBLY (TYPE 11)

English Revised: 10/31/25

EC-STR-51A CATCH BASIN FILTER ASSEMBLY (TYPE 11) SLIPCOVER DETAILS

10-109.05	DETAINING DEVICES	
DRAWING	REVISION DATE	DESCRIPTION
EC-STR-12	08-01-12	ROCK SEDIMENT DAM
EC-STR-13	08-01-12	ROCK AND EARTH SEDIMENT EMBANKMENT
EC-STR-15	08-01-12	SEDIMENT BASIN
EC-STR-16	08-01-12	SEDIMENT BASIN RISER AND COLLAR APPURTENANCES
EC-STR-17	08-01-12	SEDIMENT BASIN EMBANKMENT DETAILS
EC-STR-18		SEDIMENT BASIN FLOATING OUTLET STRUCTURE
EC-STR-21	05-04-22	PERMANENT RIPRAP BASIN ENERGY DISSIPATORS

### 10-109.06 IN-STREAM DEVICES

DRAWING	REVISION DATE	DESCRIPTION
EC-STR-11A	08-01-12	CULVERT PROTECTION TYPE 2
EC-STR-25	08-01-12	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD
EC-STR-30		INSTREAM DIVERSION (WITHOUT TRAFFIC)
EC-STR-30A		INSTREAM DIVERSION (WITH TRAFFIC)
EC-STR-31	05-04-22	TEMPORARY DIVERSION CHANNEL
EC-STR-31A	04-01-08	TEMPORARY DIVERSION CHANNEL DESIGN
EC-STR-32	08-01-12	TEMPORARY DIVERSION CULVERTS
EC-STR-33	08-01-12	SUSPENDED PIPE DIVERSION (DOWNSTREAM)
EC-STR-33A	08-01-12	SUSPENDED PIPE DIVERSION (UPSTREAM)
EC-STR-36	05-04-22	TURF REINFORCEMENT MAT FOR CHANNEL INSTALLATION

English Revised: 10/31/25

EC-STR-38 08-01-12 FLOATING TURBIDITY CURTAIN

### 10-110.00 NATURAL STREAM DESIGN

### 10-110.01 DEFLECTORS, VANES, AND ENERGY DISSIPATORS

		, -,
DRAWING	REVISION DATE	DESCRIPTION
D-NSD-13	05-01-20	LONGITUDINAL STONE TOE
D-NSD-21	05-01-20	BOULDER CLUSTERS
D-NSD-22	05-01-20	BOULDER CROSS VANE
D-NSD-23	05-01-20	BOULDER CROSS VANE WITH STEP
D-NSD-24	05-01-20	BOULDER W-WEIR
D-NSD-25	05-01-20	BOULDER VANES AND J-HOOK
D-NSD-26	11-30-20	LOG VANES, ROOT WADS, AND BOULDER J-HOOK
D-NSD-27	11-30-20	LOG AND BOULDER STEP POOLS
D-NSD-28	05-01-20	BOULDER RIFFLES
D-NSD-28A	11-30-20	LOG RIFFLES
D-NSD-29	05-01-20	CONSTRUCTED ALLUVIAL RIFFLE
D-NSD-30	05-09-25	SUBSTRATE RESTORATION
D-NSD-31	05-01-20	CLAY CHANNEL PLUG
D-NSD-32	05-01-20	WOOD TOE WITH GEO-LIFTS
D-NSD-32A	05-01-20	BOULDER TOE WITH GEO-LIFTS
D-NSD-33	05-01-20	COIR FIBER EROSION CONTROL BLANKET AND COIR FIBER ROLLS
D-NSD-34	05-01-20	LIVE STAKES AND LIVE SILTATION
D-NSD-35	05-01-20	LIVE FASCINES
D-NSD-36	05-01-20	BRUSH MATTRESS

English Revised: 10/31/25

D-NSD-37 05-01-20 SPECIAL NOTES FOR NATURAL STREAM DESIGN

### **SECTION 2 – STANDARD TRAFFIC DESIGN DRAWINGS**

### 10-200.00 SIGNS

DRAWING	REVISION DATE	DESCRIPTION
T-S-6	07-30-25	STANDARD MOUNTING DETAILS - BOLTED EXTRUDED PANELS
T-S-9	07-30-25	STANDARD LAYOUT - GROUND MOUNTED SIGNS
T-S-10	07-30-25	STANDARD MOUNTING DETAILS FLAT SHEET SIGNS, ALUMINUM-STEEL DESIGN
T-S-11	07-30-25	DELINEATOR AND MILEPOST DETAILS
T-S-12	07-30-25	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, SQUARE TUBES
T-S-13	07-30-25	I-BEAM BREAK-AWAY LARGE SIGN SUPPORT DETAILS
T-S-14	07-30-25	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, WF-BEAMS
T-S-15	07-30-25	STANDARD CONDUIT & GROUND DETAILS FOR OVERHEAD & CANTILEVER SIGN STRUCTURES
T-S-16	07-30-25	GROUND MOUNTED ROADSIDE "U" POST SIGN PLACEMENT DETAILS
T-S-16A	07-02-15	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
T-S-17	07-30-25	STANDARD GROUND MOUNTED SIGN USING PERFORATED/KNOCKOUT SQUARE TUBE
T-S-18	07-30-25	END OF ROADWAY, DEAD END SIGNS, AND METAL BARRICADES (TYPE III)
T-S-19	07-30-25	STANDARD STEEL SIGN SUPPORTS
T-S-20	07-30-25	SIGN DETAILS

Enalish		Revised: 10/31/25
T-S-21	07-30-25	DETAILS FOR SIGNS MOUNTS ON CONCRETE MEDIAN BARRIERS
T-S-22	07-30-25	SIGN LAYOUT FOR HOV LANES
T-S-23A	07-30-25	MULTI-DIRECTIONAL SLIP BASE BREAKAWAY P-POST SIGN SUPPORT
T-S-23B	07-30-25	MULTI-DIRECTIONAL SLIP BASE BREAKAWAY ROUND POST SIGN SUPPORT
T-S-23C	07-30-25	BREAKWAY POST SIGN SUPPORTS
T-S-24	07-30-25	DETAILS OF SIGN WITH SOLAR FLASHING ASSEMBLY
T-S-25	07-30-25	SIGNING PLAN DETAILS FOR ROUNDABOUTS
T-S-26	07-30-25	SIGNING PLAN FOR RESTRICTED CROSSING & J-TURN INTERSECTIONS

### 10-201.00 SIGNALS

DRAWING	REVISION DATE	DESCRIPTION
T-SG-1	06-27-16	WOOD POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-2	06-27-16	LOOP LEAD-INS, CONDUIT AND PULL BOXES
T-SG-3	07-11-17	STANDARD NOTES AND DETAILS OF INDUCTIVE LOOPS
T-SG-3A	06-27-16	ALTERNATE DETECTION DETAILS
T-SG-4	06-27-16	SPAN WIRE AND MESSENGER CABLE DETAILS
T-SG-5	06-27-16	CONTROLLER CABINET DETAILS
T-SG-6	10-21-19	PEDESTRIAN SIGNAL DETAILS
T-SG-7	10-21-19	SIGNAL HEAD ASSEMBLIES
T-SG-7A		TYPICAL SIGNAL HEAD PLACEMENT APPROACHES WITH NO THROUGH MOVEMENTS
T-SG-7B	10-21-19	TYPICAL SIGNAL HEAD PLACEMENT APPROACHES WITH NO THROUGH MOVEMENTS
T-SG-7C		TYPICAL SIGNAL HEAD PLACEMENT ONE-LANE AND TWO-LANE APPROACHES

English		Revised: 10/31/25
T-SG-7D	09-12-23	TYPICAL SIGNAL HEAD PLACEMENT TWO-LANE APPROACHES
T-SG-7E		TYPICAL SIGNAL HEAD PLACEMENT THREE-LANE APPROACHES
T-SG-7F	07-13-17	TYPICAL SIGNAL HEAD PLACEMENT THREE-LANE APPROACHES
T-SG-7G		TYPICAL SIGNAL HEAD PLACEMENT THREE-LANE APPROACHES
T-SG-7H	10-21-19	TYPICAL SIGNAL HEAD PLACEMENT THREE-LANE AND FOUR-LANE APPROACHES
T-SG-7HH	07-13-17	TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APROACHES
T-SG-7J		TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APPROACHES
T-SG-7K	11-17-20	TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APPROACHES
T-SG-7L	10-21-19	TYPICAL SIGNAL HEAD PLACEMENT FOUR-LANE APPROACHES
T-SG-7M		TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-7N		TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-7NN	07-13-17	TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-7P		TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-7PP	07-13-17	TYPICAL SIGNAL HEAD PLACEMENT FIVE-LANE APPROACHES
T-SG-7R		TYPICAL SIGNAL HEAD PLACEMENT SIX-LANE APPROACHES
T-SG-7S	10-21-19	TYPICAL SIGNAL HEAD PLACEMENT SIX-LANE AND SEVEN-LANE APPROACHES
T-SG-8	06-27-16	STRAIN POLE DETAILS FOR SPAN MOUNTED SIGNALS

English		Revised: 10/31/25
T-SG-9	07-15-24	DETAILS OF CANTILEVER SIGNAL SUPPORT
T-SG-9A	07-12-17	MISCELLANEOUS SIGNAL DETAILS
T-SG-10	09-12-23	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-11	07-12-17	MAINTENANCE OF EXISTING SIGNALS DURING HIGHWAY CONSTRUCTION
T-SG-12	12-20-19	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS
T-SG-13	06-27-16	FLASHING BEACON DETAIL
T-SG-14	09-10-24	PEDESTRIAN HYBRID BEACON DETAIL, 2 OR 3 LANE FACILITIES
T-SG-15	09-10-24	PEDESTRIAN HYBRID BEACON DETAIL, MULTILANE FACILITIES

### 10-202.00 LIGHTING AND UTILITY POLES

DRAWING	REVISION DATE	DESCRIPTION
T-FO-1		FIBER OPTIC AERIAL ENTRANCE DETAILS
T-FO-2		FIBER OPTIC UNDERGROUND ENTRANCE DETAILS
T-FO-3		FIBER OPTIC AERIAL CONNECTION DETAILS
T-FO-4		FIBER OPTIC PULL BOX, CABINET & POLE DETAILS
T-L-1	07-15-24	STANDARD LIGHTING FOUNDATION DETAILS
T-L-1SA	07-15-24	STANDARD LIGHTING DETAILS FOR SINGLE ARM SUPPORTS
T-L-1TM	07-15-24	STANDARD LIGHTING DETAILS TENON MOUNTED OFFSET LIGHTING SUPPORTS
T-L-2	07-15-24	FOUNDATION DETAIL FOR LUMINAIRE MOUNTED ON CONCRETE MEDIAN BARRIER
T-L-3	07-15-24	STANDARD LIGHTING DETAILS PULL BOXES

English	CHAPTI	ER 10 – INDEX OF STANDARD DRAWINGS Revised: 10/31/25	
T-L-4	07-15-24	STANDARD LIGHTING DETAILS CONDUIT, CABLE INSTALLATION	
T-L-5		STANDARD LIGHTING DETAILS CONTROL CENTER DETAILS	
10-203.00	RAILROAD	CROSSING	
DRAWING	REVISION DATE	DESCRIPTION	
T-RR-1	11-01-11	TYPICAL PAVEMENT MARKING AT RAILROAD ACTIVE HIGHWAY GRADE CROSSINGS AND RAILROAD ADVANCE WARNING SIGN	
T-RR-2	11-01-11	STANDARD DRAWING FOR RAILROAD AND HIGHWAY CROSSING SIGNAL WITH GATE	
T-RR-3	11-01-11	STANDARD DRAWING FOR RAILROAD-HIGHWAY CROSSING SIGNAL	
T-RR-4	11-01-11	STANDARD DRAWING FOR TYPICAL CURB & GUTTER PLAN FOR RAILROAD-HIGHWAY CROSSING WITH OR WITHOUT GATES	
T-RR-5	11-01-11	RAILROAD-HIGHWAY CROSSING SIGNAL WITH CANTILEVER SPAN	
T-RR-6	10-25-13	TYPICAL SIGNING AND MARKING AT PASSIVE RAILROAD HIGHWAY GRADE CROSSINGS	
10-204.00	DESIGN - TI	RAFFIC CONTROL	
10-204.01	PAVEMENT MARKINGS		
DRAWING	REVISION DATE	DESCRIPTION	
T-M-1	01-24-25	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS AND MARKING ABBREVIATIONS	
T-M-2	01-24-25	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS	
T-M-3	01-24-25	MARKING STANDARDS FOR TRAFFIC ISLANDS, PAVED SHOULDERS AND MEDIANS ON CONVENTIONAL ROADS	
T-M-4	01-24-25	STANDARD INTERSECTION PAVEMENT MARKINGS	

English		Revised: 10/31/25
T-M-4A	01-24-25	STANDARD UNSIGNALIZED MID-BLOCK CROSSING
T-M-4A2		STANDARD RRFB COMMERCIAL AND STREET ENTRANCES
T-M-4B	01-24-25	STANDARD PEDESTRIAN HYBRID BEACON AT MID- BLOCK CROSSING
T-M-4B2		STANDARD PEDESTRIAN HYBRID BEACON AT COMMERCIAL AND STREET ENTRANCES
T-M-4C	01-24-25	PEDESTRIAN GATEWAY TREATMENT
T-M-5	01-24-25	MARKING DETAIL FOR EXPRESSWAY AND FREEWAYS
T-M-6	01-24-25	MARKING DETAIL FOR EXPRESSWAY AND FREEWAY INTERCHANGES
T-M-7	01-24-25	GORE MARKING DETAILS FOR EXPRESSWAY & FREEWAY INTERCHANGES
T-M-8	01-24-25	MARKING DETAILS FOR EXPRESSWAYS & FREEWAYS
T-M-9	01-24-25	PAVEMENT MARKING AND SIGNING DETAILS FOR RAMP INTERSECTIONS
T-M-9A	01-24-25	PAVEMENT MARKING AND SIGNING DETAILS FOR RAMP INTERSECTIONS
T-M-9B	07-22-25	PAVEMENT MARKING AND SIGNING DETAILS FOR RAMP INTERSECTIONS
T-M-15	01-24-25	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATES AND ACCESS CONTROLLED ROUTES
T-M-15A	01-24-25	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED RURAL ROUTES
T-M-16	01-24-25	RUMBLE STRIPE INSTALLATION LAYOUT
T-M-16A	01-24-25	RUMBLE STRIPE DETAILS FOR EDGE OF PAVEMENT AND CENTERLINE
T-M-16B		MUMBLE STRIP/STRIPE DETAILS FOR EDGE OF PAVEMENT
T-M-17	01-24-25	PAVEMENT MARKING DETAILS FOR ROUNDABOUTS

English		Revised: 10/31/25
T-M-18	01-24-25	FLEXIBLE DELINEATOR DETAILS
T-M-18A	01-24-25	DELINEATOR MOUNTING DETAILS
T-M-19	01-24-25	PAVEMENT MARKING DETAILS FOR RESTRICTED CROSSING & J-TURN INTERSECTIONS
10-204.02	WORK ZONES	
DRAWING	REVISION DATE	DESCRIPTION
T-WZ-10	03-26-25	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-11	03-26-25	ONE LANE CLOSURE DETAIL FOR DIVIDED HIGHWAYS
T-WZ-12	03-26-25	ONE LANE CLOSURE DETAIL FOR BRIDGES ON DIVIDED HIGHWAYS
T-WZ-13	03-26-25	TWO-OUTSIDE LANE CLOSURE FOR EXPRESSWAYS AND FREEWAYS
T-WZ-14	03-26-25	TWO-OUTSIDE LANE CLOSURE FOR INTERSTATES AND EXPRESSWAYS
T-WZ-15	03-26-25	INTERIOR LANE CLOSURE FOR EXPRESSWAYS AND FREEWAYS
T-WZ-16	03-26-25	LANE SHIFT FOR DIVIDED HIGHWAYS AND FREEWAYS
T-WZ-18	03-26-25	SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS
T-WZ-19	03-26-25	MEDIAN CROSS-OVER DETAIL ON FREEWAYS
T-WZ-20	03-26-25	GEOMETRIC MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS
T-WZ-21	03-26-25	LANE CLOSURE WITH LEFT HAND MERGE AND LANE SHIFT
T-WZ-22		ONE LANE CLOSURE DETAIL FOR UNDIVIDED HIGHWAYS
T-WZ-30	03-26-25	TRAFFIC CONTROL 2-LANE, 2-WAY DIVERSION (40 MPH OR LESS)
T-WZ-31	03-26-25	TRAFFIC CONTROL 2-LANE, 2-WAY DIVERSION (GREATER THAN 40 MPH)

English		Revised: 10/31/25
T-WZ-32	03-26-25	TRAFFIC CONTROL PLAN SIGNAL LAYOUT FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-33	03-26-25	TRAFFIC CONTROL PLAN FOR CLOSE INTERSECTION CONDITIONS USING TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-34	03-26-25	TRAFFIC CONTROL PLAN GENERAL NOTES FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-35	03-26-25	TRAFFIC CONTROL PLAN PAY ITEM AND SIGN DETAILS FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-36	03-26-25	LANE CLOSURE ON LOW-VOLUME 2-LANE HIGHWAY
T-WZ-40	03-26-25	RIGHT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-41	03-26-25	LEFT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-42	03-26-25	CENTER LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-55	03-26-25	SIDEWALK TRAFFIC CONTROL
T-WZ-56	03-26-25	TRANSVERSE RUMBLE STRIP USE WITHIN WORK ZONES
T-WZ-60	03-26-25	FREEWAY RESURFACING SIGNING PROCEDURES
T-WZ-61	03-26-25	ROLLING ROADBLOCK DETAIL FOR DIVIDED HIGHWAYS
T-WZ-62	08-20-25	CONSTRUCTION ACCESS/EMERGENCY PULL-OFF ON FREEWAYS
T-WZ-63	03-26-25	WORK ZONE IN THE VICINITY OF AN ENTRANCE RAMP
T-WZ-64	03-26-25	WORK ZONE IN THE VICINITY OF AN EXIT RAMP
T-WZ-65	03-26-25	LANE CLOSURE WITH LATE MERGE
T-WZ-FAB1	03-26-25	FLASHING YELLOW ARROW BOARD (Replaced T-FAB-1)
T-WZ-PBR1	03-26-25	INTERCONNECTED PORTABLE BARRIER RAIL (Replaced T-PBR-1)
T-WZ-PBR2	03-26-25	DETAILS FOR WORK ZONE CHANNELIZATION DEVICES
T-WZ-PCB1	03-26-25	10 FOOT PORTABLE CONCRETE BARRIER RAIL

<u>English</u>		Revised: 10/31/25
T-WZ-PCB2	03-26-25	20 FOOT PORTABLE CONCRETE BARRIER RAIL
T-WZ-PCB2A	03-26-25	20 FOOT PORTABLE CONCRETE BARRIER RAIL STIFFENER TUBE
T-WZ-PCB3	03-26-25	PORTABLE CONCRETE BARRIER RAIL DETAILS
T-WZ-PCB4	07-22-25	PORTABLE CONCRETE BARRIER RAIL ANCHOR PIN DETAILS

### SECTION 3 – STANDARD STRUCTURE DRAWINGS

### **10-300.00 NEW STRUCTURES**

DRAWING	REVISION DATE	DESCRIPTION
STD-1-1SS	07-09-25	BRIDGE RAILING SINGLE SLOPE CONCRETE PARAPET
STD-1-2SS	05-31-24	STEEL SLIDER PLATE ASSEMBLIES FOR SINGLE SLOPE CONCRETE PARAPET AND BRIDGE DECK DRAIN DETAILS
STD-1-3SS	05-10-21	STANDARD SINGLE SLOPE CONCRETE MEDIAN BARRIER
STD-1-4SS	05-10-21	STEEL SLIDER PLATE ASSEMBLIES FOR SINGLE SLOPE CONCRETE MEDIAN BARRIER
STD-1-5	06-05-23	REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS
STD-1-6	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" & 4' X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-7	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" & 4' X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-8	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-9	05-10-21	BRIDGE END DRAIN DETAILS 4' X 8'-7" WITH PAVEMENT AT BRIDGE ENDS
STD-1-10	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" & 4' X 8'-7" WITHOUT PAVEMENT AT BRIDGE ENDS
STD-1-11	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" & 4' X 8'-7" WITHOUT PAVEMENT AT BRIDGE ENDS

<u>English</u>		Revised: 10/31/25
STD-1-12	05-10-21	BRIDGE END DRAIN DETAILS 2' X 8'-7" WITHOUT PAVEMENT AT BRIDGE ENDS
STD-1-13	05-10-21	BRIDGE END DRAIN DETAILS 4' X 8'-7" WITHOUT PAVEMENT AT BRIDGE ENDS
STD-2-1	08-26-25	BRIDGE MOUNTED INTERCONNECTED PORTABLE BARRIER RAIL
STD-2-2	08-26-25	VERTICAL PANEL DETAILS
STD-2-3	08-26-25	BRIDGE MOUNTED INTERCONNECTED PORTABLE BARIER RAIL ALTERNATE CONNECTION DETAIL
STD-3-1	11-01-10	STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION
STD-3-2	11-01-10	STRIPSEAL EXPANSION JOINT NEW CONSTRUCTION
STD-4-1	04-08-05	STANDARD PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS
STD-4-2	04-08-05	STANDARD PRECAST PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA
STD-4-3	03-02-02	STANDARD PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS
STD-4-4	06-10-96	STANDARD PRECAST PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS
STD-5-1		STANDARD PILE DETAILS
STD-5-2		STANDARD PILE DETAILS
STD-6-1	12-08-23	STANDARD SEISMIC DETAILS
STD-6-2	11-07-94	STANDARD SEISMIC DETAILS
STD-7-1	04-15-20	STANDARD CONCRETE RAIL
STD-8-2SS		SINGLE SLOPE PARAPET STANDARD LIGHT SUPPORT DETAILS
STD-8-3SS	06-15-20	SINGLE SLOPE MEDIAN BARRIER STANDARD LIGHT SUPPORT DETAILS
STD-8-4	02-26-25	SIGN, LUMINAIRE, AND TRAFFIC SIGNAL SUPPORTS
STD-8-5	5-10-21	STANDARD PROTECTIVE FENCE DETAILS

English		Revised: 10/31/25
STD-8-6	10-03-18	TRI-STAR STATE EMBLEM FINISH DETAILS
STD-9-1	10-07-08	STANDARD REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS
STD-10-1	06-05-23	MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS
STD-10-2	06-05-23	MISC. ABUTMENT & PAVEMENT AT BRIDGE ENDS BACKFILL DETAILS
STD-10-3	01-10-24	MISC. ABUTMENT & PAVEMENT AT BRIDGE ENDS DITCH DETAILS
STD-11-1	04-15-20	BRIDGE RAILING CONCRETE PARAPET WITH STRUCTURAL TUBING
STD-11-2	04-15-20	STANDARD CONCRETE CLASSIC RAIL
STD-11-3	04-15-20	STANDARD CONCRETE PEDESTRIAN CLASSIC RAIL
STD-11-4		CONCRETE CLASSIC RAIL (42" TALL)
STD-11-4A		CONCRETE CLASSIC RAIL (42" TALL)
STD-14-1	06-05-23	STANDARD DETAILS AND INTERMEDIATE DIAPHRAGM DETAILS FOR BULB-TEE BEAMS
STD-14-2	03-06-24	STANDARD DETAILS AND INTERMEDIATE DIAPHRAGM DETAILS FOR I-BEAMS
STD-14-3	03-06-24	STANDARD DETAILS FOR PRESTRESSED BOX BEAMS

### 10-301.00 LRFD BOX CULVERTS

(See Section 2-600.01)

DRAWIN	G REVISION DATE	DESCRIPTION
STD-17-1		INDEX OF DRAWINGS
STD-17-2		TERMINOLOGY OF DRAWINGS
STD-17-3		GENERAL NOTES
STD-17-4		DESIGN SECTION LIMITS
STD-17-5	j	TYPICAL SECTIONS AND DETAILS

English		Revised: 10/31/25
STD-17-6		TYPICAL ELEVATION
STD-17-7		CURB, RAIL & EDGE BEAM DETAILS - SKEW NOT LESS THAN 45 DEG.
STD-17-8		EDGE BEAM DETAILS FOR FILLS GREATER THAN 3' - 6"
STD-17-9		INTERIOR WALL END TREATMENTS
STD-17-10		TYPICAL WINGWALL DETAILS AND NOTES
STD-17-11		WINGWALL DIMENSIONS AND QUANTITIES
STD-17-12		WINGWALL DIMENSIONS AND QUANTITIES
STD-17-13		WINGWALL DIMENSIONS AND QUANTITIES
STD-17-14		WINGWALL DIMENSIONS AND QUANTITIES
STD-17-15		WINGWALL AND SPECIAL RETAINING WALL DESIGN SECTIONS
STD-17-16		WINGWALL DESIGN SECTIONS
STD-17-17	06-01-11	BACKFILL AND DRAINAGE DETAILS
STD-17-18		BACKFILL DETAILS
STD-17-19	06-20-18	PAVED OUTLET DETAIL
STD-17-20		LOW FLOW CHANNEL CONSTRUCTION DETAILS FOR CULVERT INLET AND OUTLET
STD-17-21		DEBRIS DEFLECTION WALL FOR BOX BRIDGE
STD-17-22		DEBRIS DEFLECTION WALL FOR SLAB BRIDGE
STD-17-23		SIDEWALK AND MISCELLANEOUS DETAILS
STD-17-24		WARPED SLOPE DETAIL
STD-17-25		STAGE CONSTRUCTION JOINT DETAIL (FILL ABOVE TOP OF SLAB NOT GREATER THAN 3'-6")
STD-17-26		EXTENSION DETAILS
STD-17-27		EXTENSION DETAILS FOR SCOURED OUTLET
STD-17-28		END SECTION DETAILS

English		Revised: 10/31/25
STD-17-29		PRECAST BOX CULVERT DETAILS
STD-17-34		STANDARD INTERNAL ENERGY DISSIPATOR FOR BOX AND PIPE CULVERTS
STD-17-51	05-01-14	BOX BRIDGE, 1 BARREL AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-52		BOX BRIDGE, 1 BARREL AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-53		BOX BRIDGE, 1 BARREL AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-54		BOX BRIDGE, 1 BARREL AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-55		BOX BRIDGE, 1 BARREL AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-56		BOX BRIDGE, 1 BARREL AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-57		BOX BRIDGE, 1 BARREL AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-58		BOX BRIDGE, 1 BARREL AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-59		BOX BRIDGE, 1 BARREL AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-60		BOX BRIDGE, 1 BARREL AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-61		BOX BRIDGE, 1 BARREL AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-62		BOX BRIDGE, 1 BARREL AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-63		BOX BRIDGE, 1 BARREL AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-64		BOX BRIDGE, 1 BARREL AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-65		BOX BRIDGE, 1 BARREL AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL

English		Revised: 10/31/25
STD-17-66		BOX BRIDGE, 1 BARREL AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-67		BOX BRIDGE, 1 BARREL AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-68		BOX BRIDGE, 1 BARREL AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-71	05-01-14	BOX BRIDGE, 2 BARRELS AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-72		BOX BRIDGE, 2 BARRELS AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-73		BOX BRIDGE, 2 BARRELS AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-74		BOX BRIDGE, 2 BARRELS AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-75		BOX BRIDGE, 2 BARRELS AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-76		BOX BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-77		BOX BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-78		BOX BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-79		BOX BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-80		BOX BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-81		BOX BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-82		BOX BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-83		BOX BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-84		BOX BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL

Enalish	Revised: 10/31/25
STD-17-85	BOX BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-86	BOX BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-87	BOX BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-88	BOX BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-91	BOX BRIDGE, 3 BARRELS AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-92	BOX BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-93	BOX BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-94	BOX BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-95	BOX BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-96	BOX BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-97	BOX BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-98	BOX BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-99	BOX BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-100	BOX BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-101	BOX BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-102	BOX BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL

English	Revised: 10/31/25
STD-17-103	BOX BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-104	BOX BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-105	BOX BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-106	BOX BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-107	BOX BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-108	BOX BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-111	SLAB BRIDGE, 1 BARREL AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-112	SLAB BRIDGE, 1 BARREL AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-113	SLAB BRIDGE, 1 BARREL AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-114	SLAB BRIDGE, 1 BARREL AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-115	SLAB BRIDGE, 1 BARREL AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-116	SLAB BRIDGE, 1 BARREL AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-117	SLAB BRIDGE, 1 BARREL AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-118	SLAB BRIDGE, 1 BARREL AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-119	SLAB BRIDGE, 1 BARREL AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-120	SLAB BRIDGE, 1 BARREL AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-121	SLAB BRIDGE, 1 BARREL AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL

English	Revised: 10/31/25
STD-17-122	SLAB BRIDGE, 1 BARREL AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-123	SLAB BRIDGE, 1 BARREL AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-124	SLAB BRIDGE, 1 BARREL AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-125	SLAB BRIDGE, 1 BARREL AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-126	SLAB BRIDGE, 1 BARREL AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-127	SLAB BRIDGE, 1 BARREL AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-128	SLAB BRIDGE, 1 BARREL AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-131	SLAB BRIDGE, 2 BARRELS AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-132	SLAB BRIDGE, 2 BARRELS AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-133	SLAB BRIDGE, 2 BARRELS AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-134	SLAB BRIDGE, 2 BARRELS AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-135	SLAB BRIDGE, 2 BARRELS AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-136	SLAB BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-137	SLAB BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-138	SLAB BRIDGE, 2 BARRELS AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-139	SLAB BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL

English	Revised: 10/31/25
STD-17-140	SLAB BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-141	SLAB BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-142	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-143	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-144	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-145	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-146	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-147	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-148	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-151	SLAB BRIDGE, 3 BARRELS AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-152	SLAB BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-153	SLAB BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-154	SLAB BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-155	SLAB BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-156	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-157	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-158	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL

Enalish	Revised: 10/31/25
_	
STD-17-159	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-160	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-161	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-162	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-163	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-164	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-165	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-166	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-167	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-168	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL

### 10-302.00 BRIDGE REPAIRS

DRAWING	REVISION DATE	DESCRIPTION
SBR-2-115	06-15-16	GENERAL NOTES AND DETAILS FOR EXPANSION JOINT REPLACEMENT CONSTRUCTION TYPES "A" THRU "J" – 1991
SBR-2-116	01-04-96	GENERAL DETAILS FOR STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPES "A" THRU "J" – 1991
SBR-2-117	05-30-96	STRIPSEAL EXPANSION JOINTS - REPLACEMENT CONSTRUCTION DETAILS TYPE "A" AND TYPE "B" – 1991

English		Revised: 10/31/25
SBR-2-118	05-30-96	STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "C" AND TYPE "D" – 1991
SBR-2-119	05-30-96	STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "E" AND TYPE "F" – 1991
SBR-2-120	05-30-96	STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "G" AND "H" – 1991
SBR-2-121	01-04-96	STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "J" – 1991
SBR-2-122	01-04-96	DETAILS FOR PRECAST SLAB BRIDGE CHANNELS, SPANS 16' - 0" THRU 34' - 0", DEGREE OF SKEW 90 - 75 - 60 - 45 – 1992
SBR-2-123	01-04-96	DETAILS FOR PRECAST SLAB BRIDGE CHANNELS, SPANS 16' - 0" THRU 34' - 0", DEGREE OF SKEW 90 - 75 - 60 - 45 – 1992
SBR-2-124	01-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10' -2" ENDPOST – 1988
SBR-2-125	11-05-01	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10' -2" ENDPOST – 1988
SBR-2-126	01-04-96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10' -2" ENDPOST – 1988
SBR-2-127	11-05-01	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL – 1988
SBR-2-128	01-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL – 1988
SBR-2-129	11-05-01	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER – 1988
SBR-2-130	01-04-96	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER – 1988
SBR-2-131	01-22-02	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE SLOPE FACE ENDPOST – 1989

English		Revised: 10/31/25
SBR-2-132	01-04-96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE SLOPE FACE ENDPOST – 1989
SBR-2-133	01-22-02	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE VERTICAL FACE ENDPOST – 1989
SBR-2-134	01-04-96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE VERTICAL FACE ENDPOST – 1989
SBR-2-135	01-22-02	GUARDRAIL ATACHMENT TO EXISTING PIER PROTECTION – 1991
SBR-2-136	11-05-01	STANDARD DRAWING FOR REPLACING EXISTING CONCRETE ENDPOST AND GUARDRAIL AT EXISTING BRIDGE ENDS – 1992
SBR-2-137	11-05-01	STANDARD SHOWING DETAILS FOR ATTACHING NEW GUARDRAIL TO EXISTING END OF BRIDGE – 1992
SBR-2-138	11-05-01	STANDARD SHOWING DETAILS FOR ATTACHING NEW GUARDRAIL AT EXISTING BRIDGE END AND ALONG EXISTING BRIDGE RAIL – 1992
SBR-2-140	11-05-01	STANDARD SHOWING DETAILS FOR ATTACHING NEW GUARDRAIL ALONG EXISTING BRIDGE RAILS – 1992
SBR-2-144	01-22-02	STANDARD SHOWING DETAILS OF ATTACHING GUARDRAIL BRIDGERAIL TO TOP OF EXISTING CURBS – 1992