

A

AAC	Aluminum Arch Culvert
AADT	Annual Average Daily Traffic
ABC	Aggregate Base Course
Abut	Abutment
ACM	Abestos Containing Materials
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AE	Architect-Engineer, Architecture, Engineering
AEC	Architecture, Engineering and Construction
AGA	American Gas Association
Alt	Alternate
API	American Petroleum Institute
APL	Approved Products List
Approx	Approximate
APWA	American Public Works Association
AQCC	Air Quality Control Commission
ARE	Additional Requested Element (Design/Build Terminology)
AREMA	American Railway Engineering & Maintenance-of-Way Association
AHSTA	Ahead Station
ARA	Asphalt Rejuvenating Agent
ASBI	American Segmental Bridge Institute
ASD	Allowable Stress Design
ASDP	American Society of Photogrammetry
ASR	Alkali Silica Reactivity
ASSE	American Society of Sanitary Engineering, American Society of Safety Engineers
Asst	Assistant
ATB	Asphalt Treated Base
ATM	Active Traffic Management
AUTS	Actual Ultimate Tensile Strength

B

Bk to Bk	Back to Back
BEI	By Equal Increments
BM	Bench mark
BPF	Blows Per Foot
BAFO	Best and Final Offer
Bbl	Barrels
BC	Bolt Circle
Beg	Begin
Bk	Back
Bldg	Building
BLM	Bureau of Land Management

Blvd	Boulevard
BMP	Best Management Practice
BNSF	Burlington Northern & Santa Fe Railroad
Bott	Bottom
BP	Bearing Pressure
Brg	Bearing
Bk Sta	Back Station
BT	Beginning of Transition
Btwn	Between

C

℄	Centerline
C&G	Curb and Gutter
CA	Concrete Arch
CAC	Concrete Arch Culvert
CAD	Computer Aided Design, Computer Aided Drafting
CADD	Computer Aided Design and Drafting
CBC	Concrete Box Culvert
CBG	Concrete Box Girder
CBGC	Concrete Box Girder Continuous
CBGCP	Concrete Box Girder Continuous Prestressed
CBGP	Concrete Box Girder Prestressed
CBGS	Concrete Box Girder Segmented
CBR	California Bearing Ratio
CCR	Code of Colorado Regulations, as amended
CDTPG	Concrete Double-Tee Prestressed Girder
CE	Construction Engineering
CF	Cubic Feet
CFS	Cubic Feet per Second
CG	Center of Gravity
CHP	Colorado Highway Patrol
CI	Cast Iron or Concrete on Rolled I-Beam
CIC	Concrete on Rolled I-Beam Continuous
CICK	Concrete on Rolled I-Beam Continuous & Composite
CICKP	Concrete on Rolled I-Beam Continuous & Composite Prestressed
CIK	Concrete on Rolled I-Beam Composite
CIKP	Concrete on Rolled I-Beam Composite Prestressed
CIP	Cast-in-Place or Cost in Place
CIR	Cold In-Place Recycling
Clr	Clear
cm	Centimeters
CM	Corrugated Metal

CMAQ	Congestion Mitigation Air Quality
CMP	Corrugated Metal Pipe
CMU	Concrete Masonry Unit
COC	Certificate of Compliance
Col	Column
Comp	Composite
Conc	Concrete
Conn	Connection
Const	Construction
Const Jt	Construction Joint
Cont	Continuous
Corr	Corrugated
CPE	Corrugated Polyethylene Pipe
CPG	Concrete Prestressed Girder (Precast)
CPGC	Concrete Prestressed Girder Continuous (Precast)
CPT	Corrugated Polyethylene Tubing
CR	County Road
CRF	Concrete Rigid Frame
CS	Curve to Spiral, Commercial Standard, Concrete Slab
CSC	Concrete Slab Continuous
CSG	Concrete Slab & Girder (Poured in Place)
CSGC	Concrete Slab & Girder Continuous (Poured in Place)
CSGCP	Concrete Slab & Girder Continuous Prestressed (Poured in Place)
CSGP	Concrete Slab & Girder Prestressed (Poured in Place)
Csk	Countersunk
CSL	Cross Hole Sonic Logging
CSP	Corrugated Steel Pipe or Concrete Slab Prestressed
CSPC	Concrete Slab Prestressed Continuous
CTB	Cement Treated Base
CTR	Certified Test Reports
Ctr	Center
CY	Cubic Yards
CZ	Clear Zone

D

D	Degree of Curvature, or Density
DB	Design Build
DAS	Deformed Anchor Stud
dB	decibels
DBA	Deformed Bar Anchor
Dbl	Double

GENERAL NOTES

- ABBREVIATIONS SHOULD BE UPPER AND LOWER CASE LETTERS EXCEPT WHERE ALL UPPER CASE LETTERS ARE REQUIRED.
Const Jt = Construction Joint
- ACRONYMS SHALL BE ALL UPPER CASE LETTERS.
CBC = Concrete Box Culvert
- ABBREVIATIONS SHALL BE USED ONLY WHEN THE WORDS CANNOT BE COMPLETELY SPELLED OUT DUE TO MULTIPLE FACTORS, SUCH AS A LACK OF SPACE ON THE SHEET.

Deg, °F, °C,	Degrees (Thermal) - Degrees Fahrenheit, Degrees Celsius
Dgn	Design or Microstation Drawing
DH	Design Height or Avg height for qty calculations
DHV	Design Hour Volume
DHW	Design High Water
DI	Ductile Iron
Dia	Diameter
DNR	Department of Natural Resources
DOW	Division of Wildlife (Colorado)
DRCDG	Denver Regional Council of Governments
DTD	Division of Transportation Development (CDOT)
DTM	Digital Terrain Model
Dwg	AutoCAD Drawing

E

e.g.	Exempli Gratia (For Example)
EA	Environmental Assessment
EATB	Emulsified Asphalt Treated Base
EB	Eastbound
EF	Each Face
Elev	Elevation
Engr	Engineer
EPA	Environmental Protection Agency
EPDM	Ethylene Propylene Diene Monomer-class rubber
Eq	Equal
ESAL	Equivalent Single Axle Load
Est	Estimate
ET	Ending of Transition
EVT	Event Point (InRoads Terminology)
EW	Each Way
E	Expansion Bearing
Exc	Excavation
Exp Jt	Expansion Joint
Ext	Exterior

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ACRONYMS AND ABBREVIATIONS

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STANDARD PLAN NO.

M-100-2

Standard Sheet No. 1 of 4

Project Sheet Number:

F

F Fixed Bearing
 FL Flow Line
 FAA Federal Aviation Administration
 FASB Foamed Asphalt Stabilized Base
 FCM Fracture Critical Member
 FDR Full Depth Reclamation
 Fed Federal
 FEMA Federal Emergency Management Agency
 FES Flared End Section
 FF Far Face or Front Face
 Fig Figure
 Fin Finished
 Fl Floor
 Flg Flange
 FM Factory Mutual
 FMM Field Materials Manual
 FPM Feet Per Minute
 FPS Feet Per Second
 FRA Federal Railroad Administration
 Freq Frequency
 FRP Fiber Reinforced Polymer
 FS Planned Finish Surface
 Ft Feet
 Ft Kip Foot Kips
 Ft Lb Foot Pounds
 FTA Federal Transit Administration
 Ftg Footing
 FWD Falling Weight Deflectometer

G

Ga Gage or Gauge
 Gal Gallons
 Galv Galvanized
 Gd Guided expansion bearing
 Gir, G Girder
 GIS Geographical Information System
 GL Girt Line
 GPM Gallons Per Minute
 GPS Global Positioning System
 GRI Geosynthetic Research Institute
 GRS Geosynthetic Reinforced Soil
 GSI Geosynthetic Institute

H

HAS Headed Anchor Stud
 HAZMAT Hazardous Materials
 HC Horizontal Clearance
 HCL Horizontal Control Line
 HCM Highway Capacity Manual
 Hd Head
 HDPE High Density Polyethylene
 HDPP High Density Polypropylene
 Hex Hd Hexagonal Head
 HID High Intensity Discharge (Lamps)
 HIR Hot In-Place Recycling
 HLMR Highload Multi-Rotational
 HMA Hot Mix Asphalt
 Horiz Horizontal
 HDV High-Occupancy Vehicle
 HP Horsepower
 HPC High Performance Concrete
 HS High Strength
 Ht Height
 HW High Water
 Hwy Highway
 Hyd Hydraulic

I

ICEA Insulated Cable Engineers Association
 ID Inside Diameter
 IMP Incident Management Plan
 In. Kips Inch Kips
 In. Lb. Inch Pounds
 In. Inches
 Incl Included
 Int Interior
 Inv Invert
 IRI International Roughness Index
 ISO International Organization for Standards
 ITAA Information Technology Association of America
 ITS Intelligent Transportation System
 IVHS Intelligent Vehicle Highway System

J

JB Junction Box
 JPCP Jointed Plain Concrete Pavement
 Jt Joint

K

Kip Thousand Pounds
 KSF kips per square foot
 KSI Kips per square inch
 KW Kilowatt

L

L Length, Angle (steel)
 Lb Pounds
 Lb/Ft pound per foot
 Lb/SY Pounds per square yard
 Lb-Ft pound foot
 LCCA Life Cycle Cost Analysis
 LED Light Emitting Diode
 LEED Leadership in Energy and Environmental Design
 LF Linear Feet
 LFD Load Factor Design
 LL Liquid Limit
 LLDPE Linear Low-Density Polyethylene
 LRFD Load and Resistance Factor Design
 LS Lump Sum or Length of Spiral
 Lt Left
 LTB Lime Treated Base
 LTDS Required Long Term Design Strength
 Lum Luminaire

M

m Meters
 MA Mobile Attenuator
 Maint Maintenance
 MARV Minimum Average Roll Value
 Matl Material
 Max Maximum
 MBTA Migratory Bird Treaty Act

MFBM Thousand Foot Board Measure
 Mfg Manufactured or Manufacturer
 MHT Method of Handling Traffic
 Mi Mile
 Min Minimum
 Misc Miscellaneous
 mm Millimeters
 MP Milepost
 MPH Miles Per Hour
 MR Resilient Modulus
 MR Modulus of Rupture

N

NAD North American Datum
 NAVD North American Vertical Datum
 NB Northbound, Total Number of Blocks
 NDES Recommended SuperPave™ Gyratory Design Revolution
 NDT Nondestructive Testing
 NECA National Electrical Contractors Association
 NEPA National Environmental Policy Act
 NESC National Electric Safety Code
 NF Near Face
 NFPA National Fire Protection Association
 NGS National Geodetic Survey
 NGVD National Geodetic Vertical Datum of 1929
 NHS National Highway System
 NICET National Institute for Certification of Engineering Technologies
 NIP Nail in Place
 NMAS Nominal Maximum Aggregate Size
 No Number
 Nom Nominal
 NPDES National Pollutant Discharge Elimination System
 NPT National Pipe Thread
 NS Near Side
 NTCIP National Transportation Communications for ITS Protocol
 NTP Notice to Proceed
 NTS Not to Scale

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Standard Sheet No. 2 of 4

Project Sheet Number:

O

OC On Center
 OD Outside Diameter
 OGFC Open Grade Friction Course
 OJT On-the-Job Trainee or On-the-Job Training
 Opp Hand Opposite Hand
 oz Ounces

P

PC Point of Curve
 PCA Portland Cement Association
 PCBC Concrete Box Culvert Precast
 PCC Point of Compound Curve
 PCCP Portland Cement Concrete Pavement
 PDA Pile Driving Analyzer
 PE Preliminary Engineering, or Professional Engineer or Permanent Easement
 Ped Pedestrian
 PG Profile Grade or Performance Grade
 PGL Profile Grade Line
 PI Point of Intersection
 PL, PI Plate
 PLS Professional Land Surveyor
 PM Project Manager
 PMBB Plant Mix Bituminous Base
 PMBP Plant Mix Bituminous Pavement
 PMSC Plant Mix Seal Coat
 PDC Point on Curve
 PDSS Point of Slope Selection
 PDT Point on Tangent
 PPE Personal Protective Equipment
 PRC Point of Reverse Curve
 Proj Project or Projection
 psf Pounds per square foot
 psi Pounds per square inch
 PT Point of Tangent
 PTFE Polytetrafluoroethylene
 PTI Post-Tensioning Institute
 PUC Public Utilities Commission
 PVC Poly Vinyl Chloride (pipe), Point of Vertical Curve
 PVI Point of Vertical Intersection
 Pvmt Pavement
 PVT Point of Vertical Tangency

Q

Q Peak Discharge or Flow Volume
 QA Quality Assurance
 QC Quality Control
 QMP Quality Management Plan
 QML Qualified Manufacturers List

R

R Radius
 RA Rubble Arch
 RAC Rubble Arch Culvert
 rad radians
 RAP Reclaimed Asphalt Pavement
 RAS Reclaimed Asphalt Shingles
 RC Reverse Crown
 RCC Roller Compacted Concrete
 RCP Reinforced Concrete Pipe
 RCPC Reinforced Concrete Pipe Culvert
 Rdwy Roadway
 RE Resident Engineer or Railroad Easement
 Ref Reference
 Reinf Reinforcing
 Rem Remove or Removal
 Repl Replace
 Req Required
 Rev Revised, Revision
 RG Riveted Plate Girder
 RGC Riveted Plate Girder Continuous
 RL Reinforcement Length
 RME Region Materials Engineer
 rpm Revolutions Per Minute
 RSC Rigid Steel Conduit
 RSS Reinforced Soil Slope
 Rt Right
 RTD Region Transportation Director or Regional Transportation District
 RWIS Road Weather Information System

S

SA Steel Arch
 SAC Steel Arch Culvert
 San Sanitary
 SB Southbound
 SBA Small Business Administration
 SBG Steel Box Girder
 SBGC Steel Box Girder Continuous
 SC Spiral to Curve
 Sch Schedule
 SCS Spiral Curve Spiral
 SDG Steel Deck Girder
 SDGC Steel Deck Girder with Floor Beam System
 SDGCK Steel Deck Girder Continuous & Composite
 SDI Steel Decks Institute
 SDT Steel Deck Truss
 Sdwk Sidewalk
 Sect Section
 SF Square Feet
 SH State Highway
 Shldr Shoulder
 SHPD State Historic Preservation Office
 SHRP Strategic Highway Research Program
 Sht Sheet
 SIGN Overhead Sign
 SIGNB Overhead Sign-Butterfly
 SIGNC Overhead Sign-Cantilever
 SIGND Overhead Sign + Cantilever
 Sim Similar
 SIP Stay in Place
 SJI Steel Joists Institute
 SLT Steel Low Truss
 SMA Stone Matrix Asphalt
 SN Structural Number
 Spa Spaces or Spaced
 Specs Specifications
 SpG Specific Gravity
 Spl Splice
 Sq In Square Inches
 Sq Mi Square Miles
 Sq Square

SRW Segmental Retaining Walls
 SSE Steel Stringer-Earth Filled
 SSM Steel Stringer-Metal Plank Deck
 SSMC Steel Stringer-Metal Plank Deck Continuous
 SSPC Society for Protective Coatings
 SSS Steel Stringer-Timber Deck
 SSSC Steel Stringer-Timber Deck Continuous
 ST Spiral to Tangent
 St Straight or Street
 Sta Station
 Std Standard
 STG Steel Thru Girder
 Str Structure, Structural
 STT Steel Thru Truss
 SUSP Suspension Bridge
 SY Square Yards
 Sym Symmetrical

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STANDARD PLAN NO.

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Standard Sheet No. 3 of 4

Project Sheet Number:

T

T&B	Top and Bottom
T&E	Threatened & Endangered Species
T	Tons
TAS	Threaded Anchor Stud
TBC	Timber Box Culvert
TC	Tangent to Curve
TCD	Traffic Control Devices
TCP	Traffic Control Plan
TD	Timber Stringer (Untreated) Concrete Deck
TDH	Total Dynamic Head
Temp	Temporary or Temperature
Thd	Thread
THHN	Thermoplastic High Heat-resistant Nylon coated (Insulation designation for wire)
THWN	Thermoplastic High Water-resistant Nylon coated (Insulation designation for wire)
TIG	Tungsten Inert Gas (Welding)
TLA	Timber Laminated Arch (Gluelam)
TLS	Timber Laminated Stringer (Gluelam)
TLT	Timber Low Truss
TM	Timber Stringer (Untreated) Metal Deck
TMP	Transportation Management Plan
Tot	Total
TPI	Threads per Inch
TS	Tangent to Spiral, Timber Stringer (Untreated) Timber Deck
TSLAB	Timber Slab
TTC	Timber Culvert
TTD	Timber Stringer-Concrete Deck
TTM	Timber Stringer- Metal Deck
TTS	Timber Stringer- Timber Deck
TTT	Timber Thru Truss
TUNC	Tunnel-Concrete Lined
TUNR	Tunnel-Thru Rock-No Lining
Typ	Typical

U

UG	Underground
UNC	Uniform National Coarse (screw thread)
UNCC	Utility Notification Center of Colorado
UNF	Uniform National Fine (screw thread)
UND	Unless Noted Otherwise
UPRR	Union Pacific Railroad
UPS	Uninterruptible Power Supply
USACE	United States Army Corp of Engineers
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USDDT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	US Geological Survey
Util	Utility or Utilities
UV	Ultraviolet

V

VC	Vertical Curve
VCP	Vitrified Clay Pipe
Veh	Vehicle
Vert	Vertical
VFA	Voids Filled With Asphalt
VMA	Voids in the Mineral Aggregate
VMS	Variable Message Sign
Vol	Volume
VPC	Vertical Point of Curvature
VPI	Vertical Point of Intersection
VPT	Vertical Point of Tangency

W

W/C	Water-Cement Ratio
WALL	Retaining Wall
WB	Westbound
WBS	Work Breakdown Structure
WF	Wide Flange (Steel section)
WG	Welded Girder
WGC	Welded Girder Continuous
WGCK	Welded Girder Continuous & Composite
WGCKP	Welded Girder Continuous, Composite Prestressed
WGK	Welded Girder Composite
WGKP	Welded Girder Composite Prestressed
WIMS	Weigh-In-Motion Station
WP	Work Point
WQCD	Water Quality Control Division (Colorado Department of Public Health and Environment)
WRI	Wire Reinforcement Institute
WS	Water Surface
WSN	Weighted Structural Number
Wt	Weight
WWF	Welded Wire Fabric, typically referred to very light gauge wire for crack control
WWR	Welded Wire Reinforcement

Y

Yd	Yard
----	------

SYMBOLS

400	#4 REBAR BENDING SHAPE
500	#5 REBAR BENDING SHAPE
600	#6 REBAR BENDING SHAPE
@	at
&	and
φ ∅	Diameter
°, ', "	Degrees, Minutes, Seconds
', "	Feet, inches
#	Number or Pound
ⓔ	Epoxy Coated Rebar
Ⓝ	Non-Epoxy Coated Rebar
GXX	Girder Label
°F	Fahrenheit
°C	Celsius
≈	Approximate
Ⓜ	Interstate Highway
Ⓡ	US Highway
Ⓢ	State Highway

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