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Δ	total central angle
Δc	curve central angle
\emptyset	diameter
θ_s	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
€	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft2	square foot
ft3	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water

M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
reinf.	reinforcement
reqd.	required
rt. or RT	right
rte.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
SLRY	slurry unit
spa.	spacing, spaces or spaced
SQFT	square foot
SQYD	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd2	square yard
yd3	cubic yard(s)

National Boundary	
State Boundary	
County Boundary	
City Boundary	
Township or Range Line	
Section Line	
Section Corner (Found, Projected)	
1/4 Section Line	
1/4 Section Corner (Found, Projected)	
1/16 Section Line	
1/16 Section Corner (Found, Projected)	
Property Line w/Found Property Corner	
Parcel Number	
National Park Boundary	
National Forest Boundary	
National Wildlife Refuge Boundary	
BLM Lands Boundary	
Indian Reservation Boundary	
Existing Roadway (Road, Paved, Gravel)	
Railroad	
Trail	
Fiber Roll or Wattle	
Silt Fence	
Intermittent Drainage or Small Creek	
Large Creek or River	
Lake, Pond or Reservoir; Marshland	
Spring or Seep	
Treeline; Individual Trees	
Material Source; Bore Hole; Test Pit	
Spot Elevation; Coordinate Grid Tick	
Above Ground Tank; Underground Tank	
Boulder; Well; Satellite Dish; Grave	
Cooking Grate; Garbage Can; Picnic Table	
Flagpole; Fire Hydrant	
Gas & Water Meter; Gas & Water Valve	
Control Point (Terrestrial and GPS); Jump Hub	

North Arrow	
Slope Stake Limits	
Fence	
Gate with Fence	
Cattleguard	
Guardrail	
Concrete Barrier	
Retaining Wall	
Signs (single, double post; portable)	
Delineators	
Pipe Culvert (arrow shows flow)	
Pipe Culvert with End Section	
Pipe Culvert with Headwall	
Pipe Culvert with Drop Inlet	
Box Culvert	
Underdrain	
Overhead/Above Ground Utilities	
Underground Utilities	
Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)	
Miscellaneous Utility Features	
Building	
Right-of-Way Line with Monument	
Permanent Easement	
Construction Easement	
Riprap	

STATE	PROJECT	SHEET NUMBER
EXISTING		
PROPOSED		
Slope Stake Limits	Top of Cut	
	Toe of Fill	
	Transition	
Fence		
Gate with Fence		
Cattleguard		
Guardrail		
Concrete Barrier		
Retaining Wall	wall face	
Signs (single, double post; portable)		
Delineators		
Pipe Culvert (arrow shows flow)		
Pipe Culvert with End Section		
Pipe Culvert with Headwall		
Pipe Culvert with Drop Inlet		
Box Culvert		
Underdrain		
Overhead/Above Ground Utilities		
Underground Utilities		
FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA = sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water		
Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)		
Miscellaneous Utility Features		
EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain		
Building		
Right-of-Way Line with Monument		
Permanent Easement		
Construction Easement	- no symbol -	
Riprap		

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

**PLAN SYMBOLS
AND ABBREVIATIONS**

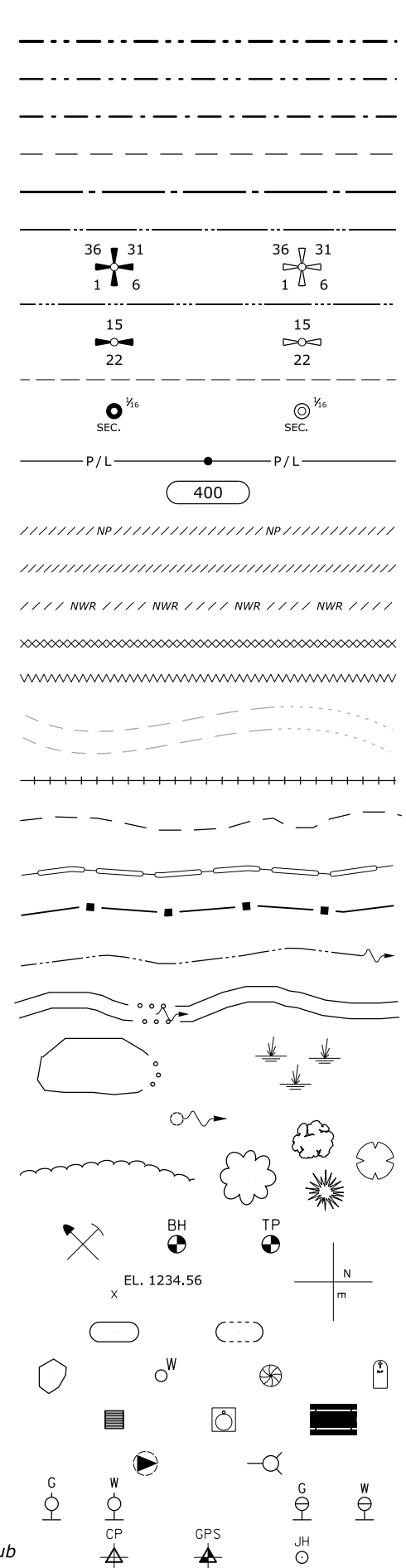
DETAIL APPROVED FOR USE 11/2001
REVISED: 9/2005 1/2007 10/2009 10/2014

DETAIL
W101-1

Δ	total central angle	M.L.	main line
Δc	curve central angle	M.P.	mile post
\emptyset	diameter	m2	square meter
θs	spiral central angle	m3	cubic meter
abut.	abutment	matl.	material
ADT	average daily traffic	max.	maximum
AH	ahead	min.	minimum
appr.	approach	mon.	monument
BK	back	N	north
BM	bench mark	NC	normal crown
BP	balance point	o. c.	on center
br.	bridge	o. to o.	out to out
brg.	bearing	OD	outside diameter
cc or c. to c.	center to center	OG	original ground
ℓ	centerline	PC	point of curve
clr.	clear	PCC	point of compound curve
CMP	corrugated metal pipe	PCS	point of curve to spiral
col.	column	PI	point of intersection
conc.	concrete	pl.	plate
conn.	connection	POC	point on curve
constr. jt.	construction joint	POS	point on spiral
cont.	continuous	POT	point on tangent
CS	point of curve to spiral	PS	point of tangent to spiral
ctrs.	centers	PSC	point of spiral to curve
culv.	culvert	PST	point of spiral to tangent
D	diameter	PT	point of tangent
DHV	design hourly volume	pvmt.	pavement
dia.	diameter	R	radius
diag.	diagonal	R.	range
diaph.	diaphragm	R/W	right-of-way
dist.	distance	rdwy.	roadway
drwg(s).	drawing(s)	rein.	reinforcement
E	east	reqd.	required
e	superelevation rate	rt. or RT	right route
El. 94.061 m	elevation with number	S	south
elev.	elevation	SADT	seasonal average daily traffic
emb.	embankment	SC	point of spiral to curve
EP	edge of pavement	sec.	section
EQ or eq.	equation	shldr.	shoulder
ER	edge of road	slry	slurry unit
EW	edge of water	spa.	spacing, spaces or spaced
exc.	excavation	SRS	point of spiral to reverse spiral
exp. jt.	expansion joint	SS	point of spiral to spiral (no curve)
fin.	finish	ST	point of spiral to tangent
flg.	flange	Sta.	station
ftg.	footing	std.	standard
ga.	gage (gauge)	stgr.	stringer
galv.	galvanized	stiff.	stiffener
hdwl.	headwall	struct.	structural
hex.	hexagon	STS	point of spiral to tangent spiral
HW	high water	sym.	symmetrical
ID	inside diameter	T	tangent distance
jt.	joint	T.	township
K.P.	kilometer post	TBM	temporary bench mark
L	length of curve	thd.	thread
lam.	lamination	TS	point of tangent to spiral
lat.	latitude	Ts	tangent distance (spiraled curve)
long.	longitudinal	typ.	typical
LPSM	lump sum	V	design speed
Ls	length of spiral	vph	vehicles per hour
lt. or LT	left	VPI	vertical point of intersection
LW	low water	W	west

M.L.	main line	National Boundary	-----
M.P.	mile post	State Boundary	-----
m2	square meter	County Boundary	-----
m3	cubic meter	City Boundary	-----
matl.	material	Township or Range Line	-----
max.	maximum	Section Line	-----
min.	minimum	Section Corner (Found, Projected)	
mon.	monument	1/4 Section Line	-----
N	north	1/4 Section Corner (Found, Projected)	
NC	normal crown	1/16 Section Line	-----
o. c.	on center	1/16 Section Corner (Found, Projected)	
o. to o.	out to out	Property Line w/Found Property Corner	
OD	outside diameter	Parcel Number	
OG	original ground	National Park Boundary	//// NP ////
PC	point of curve	National Forest Boundary	//// NFW ////
PCC	point of compound curve	National Wildlife Refuge Boundary	//// NWR ////
PCS	point of curve to spiral	BLM Lands Boundary	xxxx
PI	point of intersection	Indian Reservation Boundary	~~~~~
pl.	plate	Existing Roadway (Road, Paved, Gravel)	
POC	point on curve	Railroad	+++++
POS	point on spiral	Trail	-----
POT	point on tangent	Fiber Roll or Wattle	
PS	point of tangent to spiral	Silt Fence	
PSC	point of spiral to curve	Intermittent Drainage or Small Creek	
PST	point of spiral to tangent	Large Creek or River	
PT	point of tangent	Lake, Pond or Reservoir; Marshland	
pvmt.	pavement	Spring or Seep	
R	radius	Treeline; Individual Trees	
R.	range	Material Source; Bore Hole; Test Pit	
R/W	right-of-way	Spot Elevation; Coordinate Grid Tick	
rdwy.	roadway	Above Ground Tank; Underground Tank	
rein.	reinforcement	Boulder; Well; Satellite Dish; Grave	
reqd.	required	Cooking Grate; Garbage Can; Picnic Table	
rt. or RT	right route	Flagpole; Fire Hydrant	
S	south	Gas & Water Meter; Gas & Water Valve	
SADT	seasonal average daily traffic	Control Point (Terrestrial and GPS); Jump Hub	
SC	point of spiral to curve		
sec.	section		
shldr.	shoulder		
slry	slurry unit		
spa.	spacing, spaces or spaced		
SRS	point of spiral to reverse spiral		
SS	point of spiral to spiral (no curve)		
ST	point of spiral to tangent		
Sta.	station		
std.	standard		
stgr.	stringer		
stiff.	stiffener		
struct.	structural		
STS	point of spiral to tangent spiral		
sym.	symmetrical		
T	tangent distance		
T.	township		
TBM	temporary bench mark		
thd.	thread		
TS	point of tangent to spiral		
Ts	tangent distance (spiraled curve)		
typ.	typical		
V	design speed		
vph	vehicles per hour		
VPI	vertical point of intersection		
W	west		

National Boundary	-----
State Boundary	-----
County Boundary	-----
City Boundary	-----
Township or Range Line	-----
Section Line	-----
Section Corner (Found, Projected)	
1/4 Section Line	-----
1/4 Section Corner (Found, Projected)	
1/16 Section Line	-----
1/16 Section Corner (Found, Projected)	
Property Line w/Found Property Corner	
Parcel Number	
National Park Boundary	//// NP ////
National Forest Boundary	//// NFW ////
National Wildlife Refuge Boundary	//// NWR ////
BLM Lands Boundary	xxxx
Indian Reservation Boundary	~~~~~
Existing Roadway (Road, Paved, Gravel)	
Railroad	+++++
Trail	-----
Fiber Roll or Wattle	
Silt Fence	
Intermittent Drainage or Small Creek	
Large Creek or River	
Lake, Pond or Reservoir; Marshland	
Spring or Seep	
Treeline; Individual Trees	
Material Source; Bore Hole; Test Pit	
Spot Elevation; Coordinate Grid Tick	
Above Ground Tank; Underground Tank	
Boulder; Well; Satellite Dish; Grave	
Cooking Grate; Garbage Can; Picnic Table	
Flagpole; Fire Hydrant	
Gas & Water Meter; Gas & Water Valve	
Control Point (Terrestrial and GPS); Jump Hub	



North Arrow	
Slope Stake Limits	
Fence	
Gate with Fence	
Cattleguard	
Guardrail	
Concrete Barrier	
Retaining Wall	
Signs (single, double post; portable)	
Delineators	
Pipe Culvert (arrow shows flow)	
Pipe Culvert with End Section	
Pipe Culvert with Headwall	
Pipe Culvert with Drop Inlet	
Box Culvert	
Underdrain	
Overhead/Above Ground Utilities	
Underground Utilities	
Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)	
Miscellaneous Utility Features	
Building	
Right-of-Way Line with Monument	
Permanent Easement	
Construction Easement	
Riprap	

EXISTING **PROPOSED**

Top of Cut -----

Toe of Fill -----

Transition -----

----- wall face -----

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA = sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water

EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001

REVISIION: 9/2005 1/2007 10/2009 10/2014

DETAIL WM101-1

NO SCALE

NOTE:

- Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.
- Dimensions in this plan set are in millimeters unless otherwise noted.