

| | | | |
|----------------|---------------------------------|-----------|--------------------------------------|
| Δ | total central angle | M.L. | main line |
| Δc | curve central angle | M.P. | mile post |
| ∅ | diameter | matl. | material |
| θs | spiral central angle | max. | maximum |
| abut. | abutment | MGAL | thousand gallon |
| ADT | average daily traffic | min. | minimum |
| AH | ahead | mon. | monument |
| appr. | approach | N | north |
| BK | back | NC | normal crown |
| b.f. | back face | o.c. | on center |
| BM | bench mark | o. to o. | out to out |
| BP | balance point | OD | outside diameter |
| br. | bridge | OG | original ground |
| brg. | bearing | OHWM | ordinary high water mark |
| btwn | between | PC | point of curve |
| cc or c. to c. | center to center | PCC | point of compound curve |
| cl. | clear | PCS | point of curve to spiral |
| CMP | corrugated metal pipe | PI | point of intersection |
| col. | column | pl. | plate |
| conc. | concrete | POC | point on curve |
| conn. | connection | POS | point on spiral |
| constr. jt. | construction joint | POT | point on tangent |
| cont. | continuous | PS | point of tangent to spiral |
| CS | point of curve to spiral | PSF | pounds per square foot |
| ctrs. | centers | PSI | pounds per square inch |
| CUFT | cubic foot (feet) | PSC | point of spiral to curve |
| culv. | culvert | PST | point of spiral to tangent |
| CUYD | cubic yard(s) | PT | point of tangent |
| D | diameter | pvmt. | pavement |
| DHV | design hourly volume | R | radius |
| dia. | diameter | R. | range |
| diaph. | diaphragm | R/W | right-of-way |
| dist. | distance | rdwy. | roadway |
| drwg(s). | drawing(s) | reinf. | reinforcement |
| E | east | reqd. | required |
| e | superelevation rate | rt. or RT | right |
| e.f. | each face | rte. | route |
| El. 94.16 | elevation in feet | S | south |
| elev. | elevation | SADT | seasonal average daily traffic |
| emb. | embankment | SC | point of spiral to curve |
| EOP | edge of pavement | sect. | section |
| EQ or eq. | equation | shldr. | shoulder |
| EW | edge of water | SLRY | slurry unit |
| exc. | excavation | spa. | spacing, spaces or spaced |
| exp. jt. | expansion joint | SQFT | square foot |
| f.f. | front face | SQYD | square yard |
| fin. | finish | SRS | point of spiral to reverse spiral |
| flg. | flange | SS | point of spiral to spiral (no curve) |
| ftg. | footing | ST | point of spiral to tangent |
| ga. | gage (gauge) | STA, Sta. | station |
| galv. | galvanized | std. | standard |
| ID | inside diameter | strg. | stringer |
| IE | invert elevation | stiff. | stiffener |
| jt. | joint | struc. | structural |
| KSI | thousand pounds per square inch | STS | point of spiral to tangent spiral |
| L | length of curve | T | tangent distance |
| lat. | latitude | T. | township |
| LNFT | linear foot (feet) | TBM | temporary bench mark |
| long. | longitudinal | thd. | thread |
| LPSM | lump sum | TS | point of tangent to spiral |
| Ls | length of spiral | Ts | tangent distance (spiraled curve) |
| lt. or LT | left | typ. | typical |
| LW | low water | V | design speed (velocity) |
| | | 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 | |
| Parcel Number | |
| National Park Boundary | |
| National Forest Boundary | |
| National Wildlife Refuge Boundary | |
| BLM Lands Boundary | |
| Indian Reservation Boundary | |
| Existing Roadway (Paved, Gravel) | |
| Railroad | |
| Trail | |
| Fiber Roll | |
| Silt Fence | |
| Sandbag | |
| 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; Antenna; Grave | |
| Cooking Grate; Garbage Can; Picnic Table | |
| Flagpole; Fire Hydrant | |
| Gas & Water Meter; Gas & Water Valve | |
| Control Point (Terrestrial and GPS) | |

| | | | |
|---|---------------------------|----------|----------|
| North Arrow | | EXISTING | PROPOSED |
| Slope Stake Limits | Top of Cut Toe of Fill | | |
| Construction Limits | - no symbol - | | |
| Bottom of Ditch | | | |
| Fence | | | |
| Gate with Fence | | | |
| Cattleguard | | | |
| Guardrail | | | |
| Concrete Barrier and Guard Wall | | | |
| 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, TP = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain | | | |
| Building | | | |
| Right-of-Way Line | | | |
| Permanent Easement | | | |
| Construction Easement | - no symbol - | | |
| Riprap | | | |
| | Section A-A | | |

NO SCALE

| | |
|--|----------------------------|
| U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY | WFLHD DETAIL W101-1 |
| PLAN SYMBOLS AND ABBREVIATIONS | SPECIFICATION FP-14 |
| | APPROVED FOR USE 6/2022 |

NOTE:

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

| | | | |
|----------------|--------------------------|-----------|--------------------------------------|
| Δ | total central angle | M.L. | main line |
| Δc | curve central angle | M.P. | mile post |
| ∅ | 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 |
| b.f. | back face | NC | normal crown |
| BM | bench mark | o.c. | on center |
| BP | balance point | o. to o. | out to out |
| br. | bridge | OD | outside diameter |
| brg. | bearing | OG | original ground |
| btwn | between | OHWM | ordinary high water mark |
| cc or c. to c. | center to center | PC | point of curve |
| cl. | centerline | PCC | point of compound curve |
| clr. | clear | PCS | point of curve to spiral |
| CMP | corrugated metal pipe | PI | point of intersection |
| col. | column | pl. | plate |
| conc. | concrete | POC | point on curve |
| conn. | connection | POS | point on spiral |
| constr. jt. | construction joint | POT | point on tangent |
| cont. | continuous | PS | point of tangent to spiral |
| CS | point of curve to spiral | PSC | point of spiral to curve |
| ctrs. | centers | PST | point of spiral to tangent |
| culv. | culvert | PT | point of tangent |
| D | diameter | pvmt. | pavement |
| DHV | design hourly volume | R | radius |
| dia. | diameter | R. | range |
| diaph. | diaphragm | R/W | right-of-way |
| dist. | distance | rdwy. | roadway |
| drwg(s). | drawing(s) | reinf. | reinforcement |
| E | east | reqd. | required |
| e | superelevation rate | rt. or RT | right |
| e.f. | each face | rte. | route |
| El. 94.016 | elevation in meters | S | south |
| elev. | elevation | SADT | seasonal average daily traffic |
| emb. | embankment | SC | point of spiral to curve |
| EOP | edge of pavement | sect. | section |
| EQ or eq. | equation | shldr. | shoulder |
| EW | edge of water | SLRY | slurry unit |
| exc. | excavation | spa. | spacing, spaces or spaced |
| exp. jt. | expansion joint | SRS | point of spiral to reverse spiral |
| f.f. | front face | SS | point of spiral to spiral (no curve) |
| fin. | finish | ST | point of spiral to tangent |
| flg. | flange | STA, Sta. | station |
| ftg. | footing | std. | standard |
| ga. | gage (gauge) | stgr. | stringer |
| galv. | galvanized | stiff. | stiffener |
| ID | inside diameter | struc. | structural |
| IE | invert elevation | STS | point of spiral to tangent spiral |
| jt. | joint | T | tangent distance |
| K.P. | kilometer post | T. | township |
| L | length of curve | TBM | temporary bench mark |
| lat. | latitude | thd. | thread |
| long. | longitudinal | TS | point of tangent to spiral |
| LPSM | lump sum | Ts | tangent distance (spiraled curve) |
| Ls | length of spiral | typ. | typical |
| lt. or LT | left | V | design speed (velocity) |
| LW | low water | 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 | |
| Parcel Number | |
| National Park Boundary | |
| National Forest Boundary | |
| National Wildlife Refuge Boundary | |
| BLM Lands Boundary | |
| Indian Reservation Boundary | |
| Existing Roadway (Paved, Gravel) | |
| Railroad | |
| Trail | |
| Fiber Roll | |
| Silt Fence | |
| Sandbag | |
| 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; Antenna; Grave | |
| Cooking Grate; Garbage Can; Picnic Table | |
| Flagpole; Fire Hydrant | |
| Gas & Water Meter; Gas & Water Valve | |
| Control Point (Terrestrial and GPS) | |

| | | | |
|---|---------------------------|----------------------------|----------|
| North Arrow | | EXISTING | PROPOSED |
| Slope Stake Limits | Top of Cut Toe of Fill | | |
| Construction Limits | - no symbol - | | |
| Bottom of Ditch | | | |
| Fence | | | |
| Gate with Fence | | | |
| Cattleguard | | | |
| Guardrail | | | |
| Concrete Barrier and Guard Wall | | | |
| 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, TP = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain | | | |
| Building | | | |
| Right-of-Way Line | | | |
| Permanent Easement | | | |
| Construction Easement | - no symbol - | | |
| Riprap | | | |
| | Section A-A | | |
| This drawing contains Metric units of measure. Dimensions without units are millimeters. | | | |
| U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY | | WFLHD DETAIL WM101-1 | |
| PLAN SYMBOLS AND ABBREVIATIONS | | SPECIFICATION FP-14 | |
| NO SCALE | | APPROVED FOR USE 6/2022 | |

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.

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