|  |
| --- |
| Bureau of land management - arizona |
| AZ-956 Engineering Survey Descriptor Codes |
| For use on all AZ-956 engineering survey projects. |
| **4/3/2015**This document contains a list of standard survey key codes for AZ-956 to be used on all engineering survey projects. Codes are listed by type and then by object. With all codes, additional data can be entered with the code as either an attribute or as a description. In the Code List, the Data Format Column shows which codes have attributes, such as a diameter for a pipe.This list is not all inclusive, if there is an object that is needed that is not on this list, note the object and code used in your survey notes and notify the Field Chief so the list can be updated.**Using the Codes**Each point should begin with a Code from the list, followed by the Linework Code, if applicable, any attributes, and then any additional description. If a second code applies to the point, add it to the end of the description. Use spaces to separate each Code, Linework Code, Attribute or Description.**Attributes** are used for specific Codes such as pipes, trees, culverts and signs, where it is typical to get a measurement or description with the Code. These should follow the Code or Linework Code, separated by a space. Codes that have Attributes are shown under Data Format.**Descriptions** are any additional information that you want to include for a point that isn’t an Attribute. These should follow the Code, Linework Code or Attribute and begin with a ‘/’. If a second code is used for the point, end the Description with a ‘/’ also.Some examples:1. BRK (point on Breakline)
2. CMP 24 (24” diam. Corrugated Metal Pipe)
3. TR 0817O (8”DBH OAK, 17’Radius dripline)
4. RE B /HWY 22/ CLF 8 – (Begin Road Edge for Highway 22, and 8’ Chain Link Fence)

**No Elevation Points**All points that are not intended to be used for creating contour lines should have the Descriptor “NOEL” added.**Linework Codes**For linear features, such as breaklines, road edges, centerlines, fences, etc., use Linework Codes to show which codes belong to the same line. These codes will allow for lines to be auto-generated in Civil 3D.There are several different Linework Codes that can be used and will be listed at the end of this document and in the Civil 3D documentation, but the two codes used most often are B (begin line) and E (end line).Linework is processed by Point Number, so, where possible, try and collect points in one direction. To begin a line, on the first point collected on the line use a B after the code (ex: BRK B). If there are multiple lines of the same type, use an E on the last point of the initial line, and a B at the first point of the next line.If you are creating linework for multiple lines of the same type at the same time, such as both edges of a road, you can use a number after the code to mark which side it belongs to, such as RE1 for the right edge, and RE2 for the left.The following example shows a case where two road edges and a breakline were collected by working one direction along the road. The resulting linework would create lines BRK, RE1 and RE2.

|  |  |  |  |
| --- | --- | --- | --- |
| Pt # | Desc | Pt # | Desc |
| 1001 | BRK B | 1006 | RE1 |
| 1002 | RE1 B | 1007 | BRK |
| 1003 | RE2 B | 1008 | RE1 E |
| 1004 | RE2 | 1009 | RE2 |
| 1005 | RE1 | 1010 | RE2 E |

The Close Line code (C) would be used to end the linework at the beginning point. Such as a square concrete pad. In this instance you would use the following code sequence to create a closed “square” figure instead of an open “C” shape: CC B, CC, CC, CC C.To create a 3 point circular curve you would use the Begin Curve (BC) and End Curve (EC) codes. To code a Road Edge for example: RE B, RE, RE BC, RE, RE EC, RE E. The shot taken between the BC and EC should be as close to the approximate mid-curve as possible to avoid skewing the curve radius. The same attention needs to be paid to the location of BCs and ECs.**Linework Codes:**B – Begin Line BC – Begin CurveE – End Line EC – End CurveC – Close Line |
| **Control Markers** | **Code** | **Data format** |
| Aluminum Disk | AD | AD |
| Benchmark | BM | BM (name) |
| Lath | LTH | LTH |
| Nail | NAIL | NAIL |
| Rebar | RB | RB |
| Rebar, with cap | RBC | RBC |
| Right-of-way | ROW | ROW |
| **Features** | **Code** | **Data format** |
| Fence, Chain link | CLF | CLF (height FT) |
| Fence, Wire | WIF | WIF (height FT) |
| Fence, Wood | WDF | WDF (height FT) |
| Fence Corner | FNC | FNC (type) (num1) (num2) |
| Gate | GT | GT |
| Handrail | HR | HR |
| Post | PS | PS (diameter IN) |
| Sign | SG | SG |
| Vault | VLT | VLT |
| **Hydro** | **Code** | **Data format** |
| Flowline | FL | FL |
| Ground shot, water | GSW | GSW |
| High water mark | HWM | HWM |
| Water edge | WE | WE |
| Well | WELL | WELL |
| Water surface | WS | WS |
| **Structures** | **Code** | **Data format** |
| Building, corner | BLDC | BLDC |
| Building, face | BLDF | BLDF |
| Concrete | CC | CC |
| Concrete, Top | TOC | TOP CONC |
| Concrete, Edge | ECC | ECC |
| Culvert | CLV | CLV (diameter IN) |
| Pipe Invert | INV | INV (diameter IN) |
| Pipe, Corrugated Metal | CMP | CMP (diameter IN) |
| Pipe, Corrugated, Plastic | CPP | CPP (diameter IN) |
| Pipe, Top | PT | PT (diameter IN) |
| Wall | WALL | WALL (height FT) |
| **Transportation** | **Code** | **Data format** |
| Back of curb, top | TBC | TBC |
| Bridge | BRDG | BRDG |
| Centerline | CL | CL |
| Face of curb, top | TFC | TFC |
| Face of curb, bottom | BFC | BFC |
| Guard rail | GR | GR |
| Pavement, edge | EP | EP |
| Road, edge | RE | RE |
| **Topography** | **Code** | **Data format** |
| Asphalt | AC | AC |
| Breakline | BRK | BRK |
| Ground shot | GS | GS |
| Riprap | RP | RP |
| Toe of Slope | TOE | TOE |
| Top of Slope | TOP | TOP |
|  |  |  |
| **Utilities** | **Code** | **Data format** |
| Anchor, guy wire | GWA | GW |
| Drain Inlet | DI | DI |
| Electric line, buried | ELB | ELB |
| Electric line, overhead | ELO | ELO |
| Electrical panel | ELP | ELP (height IN) (width IN) (depth IN) |
| Fire hydrant | FH | FH |
| Gas | GAS | GAS (diameter IN) |
| Gas meter | GM | GM |
| Gas valve | GV | GV |
| Manhole, Drain | DMH | DMH (diameter IN) |
| Manhole, Sewer | SMH | SMH (diameter IN) |
| Overhead utility | OHU | OHU |
| Pole, guy | GP | GP |
| Pole, light | LP | LP |
| Pole, power | PP | PP |
| Pole, utility | UP | UP |
| Sewer | SWR | SWR (diameter IN) |
| Telephone line, buried | TLB | TLB |
| Telephone line, overhead | TLO | TLO |
| Transformer | TRN | TRN |
| Water | WTR | WTR |
| Water line, buried | WLB | WLB |
| Water meter | WM | WM |
| Water valve | WV | WV |
| **Vegetation** | **Code** | **Data format** |
| Brush line | BL | BL |
| Dripline | DRIP | DRIP |
| Shrub | SH | SH |
| Stump | STP | STP (diameter IN) (height FT) |
| Tree | TR | TR (trk diam IN)(dripline rad. FT) (type)TR 08 12 F = 8” FIR with 12’ driplineD=DeciduousE=EvergreenF=FirO=OakP=PineR=Redwood |
| Tree, two trunks | TRD | TRD (trk diam IN)(dripline rad. FT) (type) |
| Tree, three trunks | TRT | TRT (trk diam IN)(dripline rad. FT) (type) |
| Tree, cluster | TRC | TRC (trk diam IN)(dripline rad. FT) (type) |
| Vegetation | VEG | VEG |
|  |  |  |
| **Miscellaneous** | **Code** | **Data format** |
| Miscellaneous | X | X |