

USGS DEM Header and Record Definitions

The DEM below is from GTOPO 1km elevation data. The source data was converted to a tiff in ArcGIS, then converted to a DEM using the following GDAL command:
D:\Projects\VIRESORE\GIS_Data\Raster\GTOPO>gdal_translate -of USGSDEM raster30.tif raster30.dem

raster30.dem - Notepad2 (Administrator)

```

File Edit View Settings ?
[Icons]
Filename
raster30.dem
1 1 1 13 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
50.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
50.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
50.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
-1.027793253586135D+06 6.546135228249993D+06 -1.027793253586135D+06 6.567333202449642D+06
-4.277275223961031D+05 6.567333202449642D+06 -4.277275223961031D+05 6.546135228249993D+06
-6.628000000000000D+03 2.159000000000000D+03 0.0 08.153067D+028.153067D+021.000000D+00
51 737 0 1 4
50
-5.918000000000000D+03 -4.938000000000000D+03 -5563 -5389 -5089 -4994 -4938 -5014 -5127 -5339 -5368 -5423 -5391
-5068 -5117 -5280 -5385 -5296 -5100 -5117 5120 -5296 -5441 -5628 -5806 -5811 -5918 -5838
-5831
row and colID# of dem profile contained in this record
m,n array of number of elevs in DEM profile, n normally = 1
1 2 27 1 -1 026977946886148D+06 6.546135228249993D+06 0.000000D+00
-5.692000000000000D+03 -4.831000000000000D+03 -5397 -5140 -5015 -4831 -4874 -4907 -4992 -5207 -5133 -5203 -5292
-5155 -5223 -5366 -5416 -5371 -5152 -5230 -5410 -5397 -5411 -5559 -5671 -5679 -5603 -5685
-5692
min/max elevations for the profile
Info taken from Appendix 2-A, Standards for Digital Elevation Models, Part 2: Specifications.
USGS. Google "1DEM0897.pdf" to find it on the web.
1 3 27 1 -1.026162640186162D+06 6.546135228249993D+06 0.000000D+00
-5.739000000000000D+03 -4.636000000000000D+03 -5064 -4851 -4914 -4636 -4733 -4758 -4862 -4983 -4810 -5110 -5241
-5220 -5309 -5367 -5426 -5437 -5307 -5187 -5221 -5322 -5301 -5415 -5542 -5586 -5385 -5710
-5739
Ln 1:1 Col 2,130 Sel 0 738 KB ANSI CR+LF INS Default Text
  
```

Header:

- Filename: raster30.dem
- 1 = UTM
- 13 = UTM zone
- 0.0 = horz units, 2 = meter
- 0.0 = vert units, 2 = meter
- 0.0 = number of sides in polygon area
- array of corner coords, clockwise from SW corner. Pairs of E/N
- 08.153067D+028.153067D+021.000000D+00 = Min/max elevations
- 51 737 = No. of rows, columns (m,n). When m=1, n=no. of cols. in dem file
- 0 1 4 = Spatial resolution for x, y, z
- 0.000000D+00 = Elev of local datum for profile

Record 1:

- row and colID# of dem profile contained in this record
- m,n array of number of elevs in DEM profile, n normally = 1
- 1 2 27 1 -1 = m,n array of elevations for profile (27 in this case). This value is multiplied by z spatial res value (1 here), then added to elev of local datum (0 here) to obtain elevation for the point
- Ground coords of 1st coords (xy) in profile
- min/max elevations for the profile

Record 2:

Record 3:

Info taken from Appendix 2-A, Standards for Digital Elevation Models, Part 2: Specifications. USGS. Google "1DEM0897.pdf" to find it on the web.