

# Reading US National Grid (USNG) Coordinates: "Read right, then up."

Information Sheet 1 in this series.

FGDC-STD-011-2001

From www.fgdc.gov/usng

The example below locates the Jefferson Pier at USNG: 18S UJ 23371 06519.

U.S. National Grid	
100,000-m Square ID	
UJ	<sup>43</sup> 00
UH	
Grid Zone Designation	18S

A USNG value has three components.

Some maps may give this leading information in a grid reference box.

**Grid Zone Designation (GZD):**

6° x 8° longitude zone / latitude band.

**100,000-m Square Identification:**

18S UJ 2337 0651

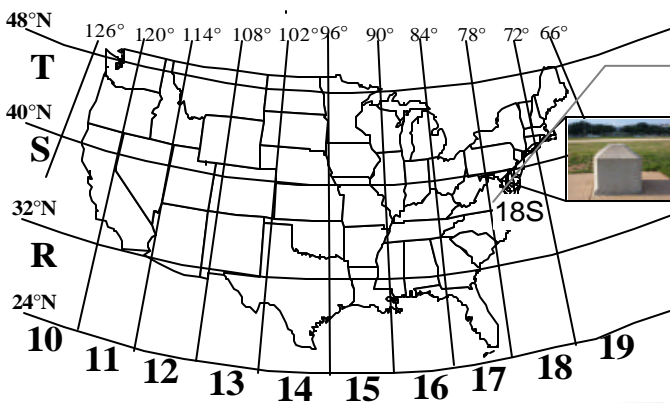
**Grid Coordinates:**

Read right, then up.

"Read right, then up."

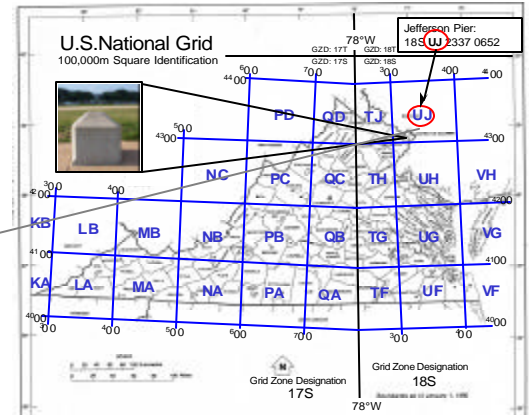
USNG values have three components as seen above. The GZD gives a USNG value world-wide context with 60 longitudinal zones each 6° wide. Zones 10 - 19 cover the conterminous U.S. as seen below left. UTM zones are divided into 8° latitudinal bands. Together these make up 6° x 8° Grid Zone Designations (GZD). Example: 18S

## U UTM/USNG Grid Zone Designations



Example:

18S UJ



GZDs are further subdivided into large squares with 100,000-m Square Identifications. In this example, the Jefferson Pier is located in UJ. These squares are organized and lettered so they do not repeat themselves but every 18°, which is approximately 1,000 miles in the mid-latitudes. The illustration at above right depicts the organization of 100,000-m Square ID's over a particular state -- Virginia in this case. In the conterminous U.S. a given value such as UJ 2337 0651 is unique out of the entire state it is located in, as well as all surrounding states.

- Grid lines are identified by **Principal Digits**. Ignore the small superscript numbers like those in the lower left corner of this map.

## Reading USNG Grid Coordinates.

- Coordinates are always given as an even number of digits (i.e. 23370651).

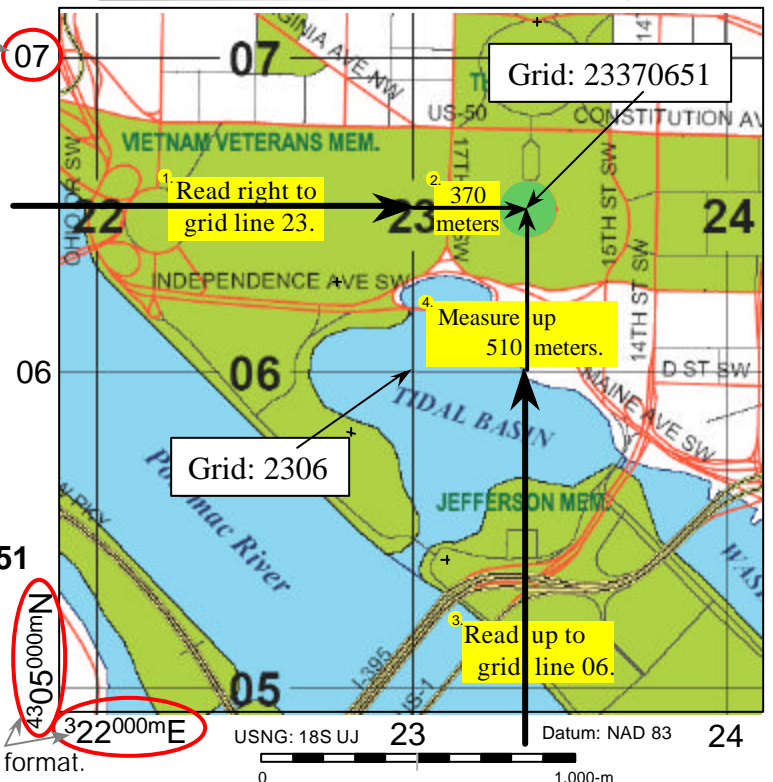
- Separate coordinates in half (2337 0651) into the easting and northing components.

1. Read right to grid line 23. 2. Then measure right another 370 meters. (Think 23.37)

3. Read up to grid line 06. 4. Then measure up another 510 meters. (Think 06.51)

**A complete reference is: 18S UJ 2337 0651**

Grid:	Point of Interest:	
228 058	FDR Memorial:	+
231 054	George Mason Memorial:	+
2338 0710	Zero Milestone:	+
2275 0628	DC War Memorial:	+
222 065	Lincoln Memorial:	



UTM format.

USNG: 18S UJ 23 Datum: NAD 83 24

Ignore the small UTM superscript numbers that are provided for reference purposes. UTM numerical values are best suited for determining direction and distance as in surveying. USNG alpha-numeric values are best suited for position referencing because they can be given as only grid coordinates in a local area and with only the precision required for a particular task.