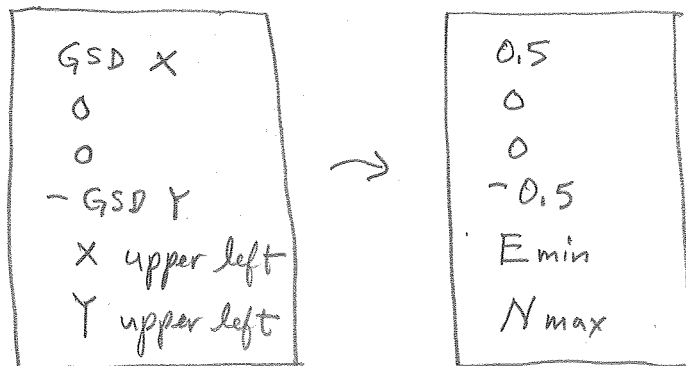
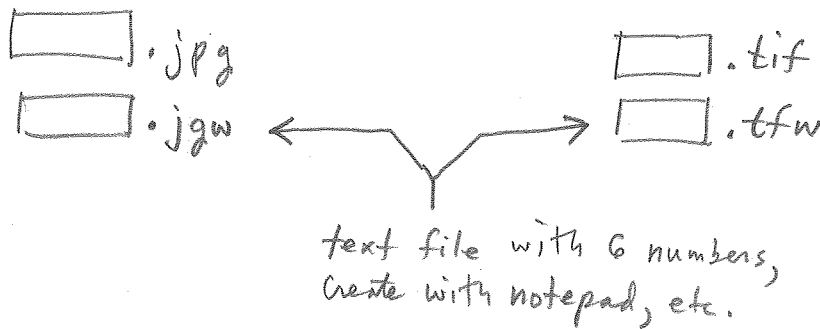


Calling details for my UTM → GEO function:

$$\begin{bmatrix} \phi \\ \lambda \end{bmatrix} = \text{ftmgeo_utm213}(E, N)$$

← radians
← meters

When output image is complete, construct by hand using a text editor the necessary "ESRI World File" to accompany your .jpg file:



This will permit ArcGIS to place rectified image in correct location (with respect to other images and vector overlays).

type conversions : $gd = \text{double}(g)$ % unsigned int → double
 $gm = \text{uint8}(\text{round}(gd))$ % double → unsigned int

$$(0 \leq gd \leq 255)$$

data must be double before doing math

data must be uint8 before assigning to image array.

for vector overlay:

create a clipping rectangle for your tile;
(in matlab)

```
Bdry.Geometry = 'Polygon';
```

```
Bdry.X = [ E1 E2 E3 E4 E1 NaN ];
```

```
Bdry.Y = [ N1 N2 N3 N4 N1 NaN ];
```

```
Bdry.Name = 'Boulder Ortho';
```

```
Bdry.Bounding Box = [ min(Bdry.X) min(Bdry.Y) ; max(Bdry.X) max(Bdry.Y) ];
```

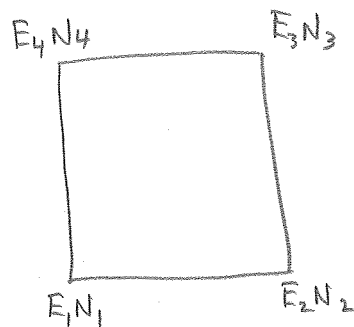
```
% = [ E1 N1 ; E2 N3 ];
```

```
shapewrite(Bdry, 'boundary');
```

```
% This will write boundary.shp, .shx, .dbf
```

```
% you will use this to clip the vector data to just overlay
```



```
% your image
```



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To clip the vector data:

Start ArcMap

- blank map
- connect to folder  (catalog tab)
- add data 

- highways
- major roads
- local roads
- rail lines 100K
- lakes
- streams
- boundary (created above)

- geoprocessing

- clip

- clip dialogue

input feature
clip feature
output feature
xy tolerance 0.5

- OK

Hand In:

1. code handcopy + email
(incl. any functions)
2. Handcopy map
image + vector overlay
arrange intensity + colors
so visible
3. Zoom in to show
registration in a "few"
places, consistent?
4. .jpg, .jgw

I will merge all
submissions into a
mosaic.