

CE503 Homework 5 – Topographic Map Compilation
Assigned 24 October, 2005, due 16 November (2.5 weeks)

1. Individually 3 points in one of the models described below: a building corner, a well defined surface point, and not well defined point on flat grass area. For the first two points measure independently 10 times and tabulate statistics for XY and Z. For the third point measure height 10 times and tabulate statistics for Z only. Use this as an indication of measurement precision. Use stereo vision – not the two mono view for this. Let me know if you have serious problems with stereo!
2. Find the “orthobase block file” i70_3456i.blk, it contains data for photos 16_3, 16_4, 16_5, 16_6, or models 3-4, 4-5, 5-6. *Find new version of the images & blockfile under folder i70\ver2. The radiometry is much better for stereo collection.* We will work in groups:
3. Fuller, Squellati, R. Gaztambide: model 3-4, Monty, Kim, Jung: model 4-5, L. Gaztambide, D’Hulst, Yannian: model 5-6.
4. Create a “feature project” with the following features:
 - a. Railroad (use existing feature “railroad single”)
 - b. Edge of Pavement Interstate (create feature ep_interstate)
 - c. Edge of Pavement Road (create feature ep_road)
 - d. Edge of Pavement Parking Lot (create feature ep_parking)
 - e. Edge of Pavement Sidewalk, Trail (create feature ep_sidewalk)
 - f. Elevation Point (use existing feature “spot elevation”)
 - g. Building Footprint (use existing feature “building 2”)
 - h. Vegetation, Tree (use existing feature “woods”)
 - i. Fence (create feature “fence”)
 - j. Breakline (create feature “breakline”)
 - k. Road Centerline (create feature road_centerline)
5. We will use a,b,c,d,e,j,k as terrain breaklines and f as mass terrain points for creating a TIN digital terrain model.
6. Suggest dividing up the work by feature class so you can work in parallel.
7. Should be able to display, plot, edit, add annotation in Arcview or ArcGIS, etc.
8. Final map should have title block, scale, info about photography, coordinate grid, info about reference coordinate system(s), scale, date acquired, company, symbology should be appropriate for plotted scale
9. I need digital files, also hardcopy plot (will specify scale later)
10. Notes: (a) if the z-motion ever stops, you just exceeded some internal counter, so call the utility – position tool, enter a new z-value, and “enter”, close the position tool, right click in the model, then z should be active again. (b) to open a new stereo model, go to view – stereo model chooser, then set the “overlap” entry to 35%, otherwise it will not display any of our models, then choose the line desired, “apply”, and “close”. (c) for cursor display options, right click, “stereo analyst options”, then “shape” = X, “size” = 15, “thickness” = 2, “render” = standard, “color” = black. Some other options make the 3d cursor hard (or impossible) to see, and some options make the motion, very jerky and unusable. Useful keyboard commands: x + left mouse + L/R movement = quick x-parallax re-index, this is much faster than using the “position tool”, c + left mouse + F/B movement =

quick change of cursor elevation, this is much faster than the z-wheel. Either of these can also be used for measuring height if you prefer them to the z-wheel.