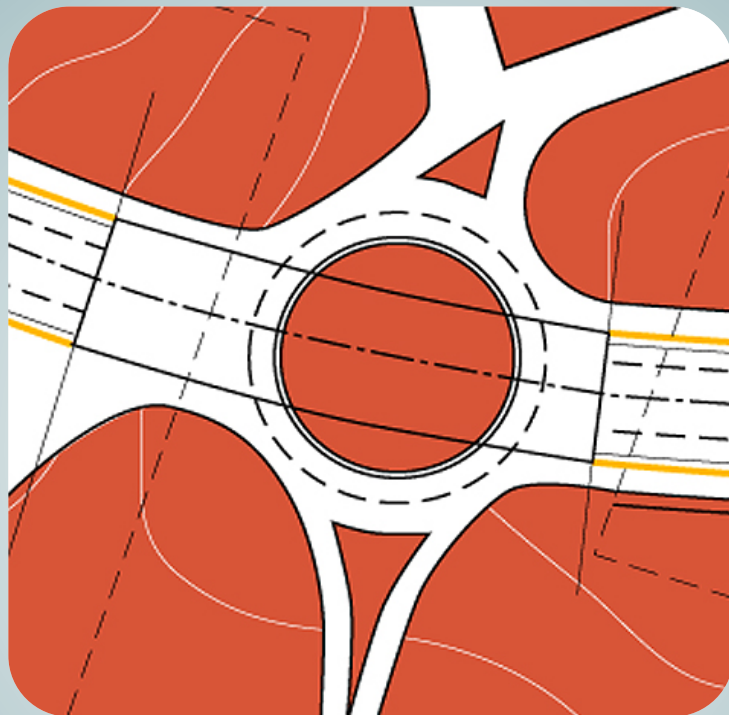


Workshop on Projects

Week 2. Activity Lecture Week 2 Script



César Otero González

Valentín Gómez Jáuregui

Cristina Manchado del Val

Department of Geographical Engineering and
Graphic Expression Techniques

This work is published under a License:

[Creative Commons BY-NC-SA 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/)

CIVIL 3D INTERFACE: MAIN ELEMENTS

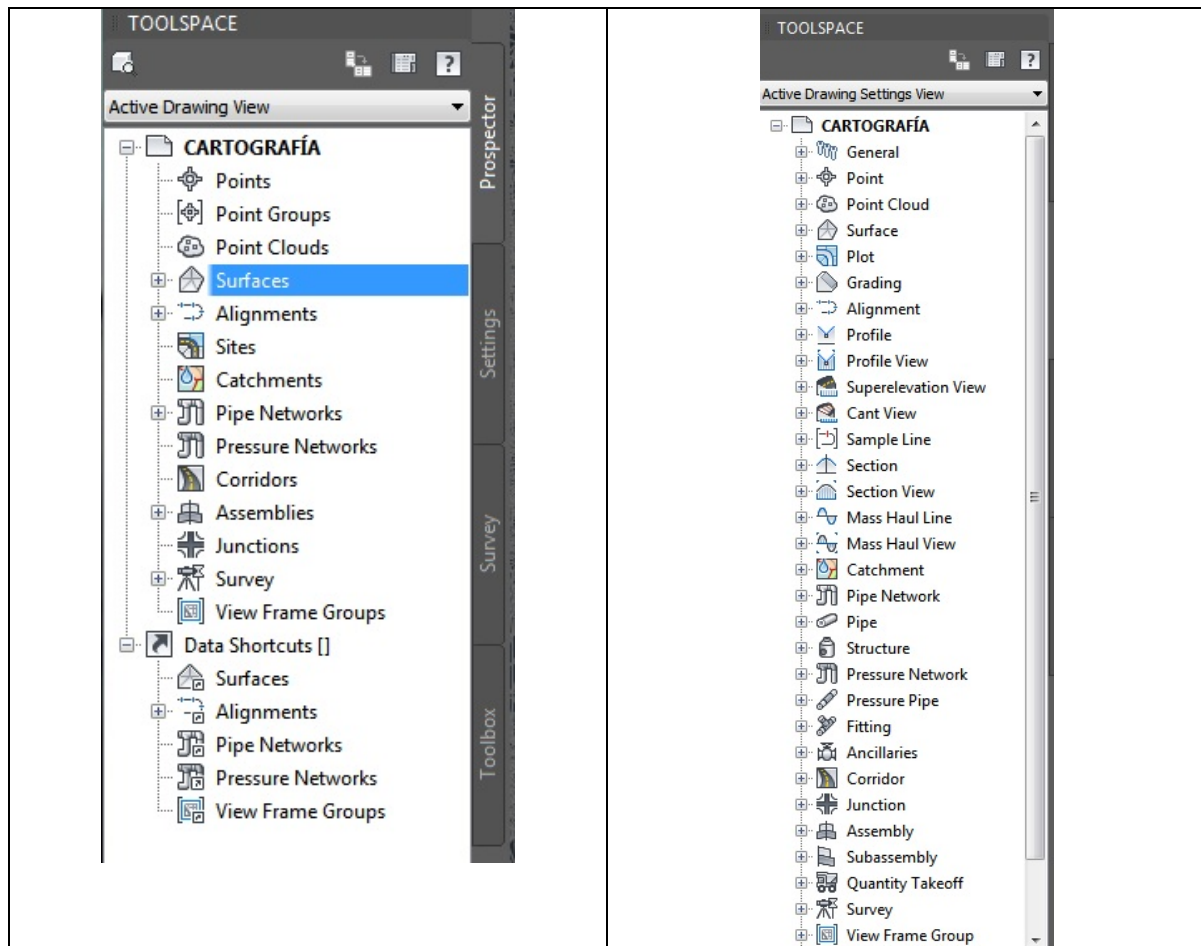
TOOLSPACE -> 4 TABS:

PROSPECTOR -> MAIN OBJECTS IN CIVIL ENGINEERING

SETTINGS -> STYLES





















































































SURVEY -> COLLECTIONS OF INPUT DATA

TOOLBOX -> AUXILIARY TOOLS



SET OF LAYERS IN CIVIL 3D. LAYERS FOR TOPOGRAPHY AND TIN

(UNLIKE AUTOCAD)

 C-TINN				 182	Continu...	—	Defa...	0	Color_...		 Triangulated irregular network
 C-TINN-BNDY				 110	Continu...	—	Defa...	0	Color_...		 Triangulated irregular network: boundary
 C-TINN-VIEW				 252	Continu...	—	Defa...	0	Color_...		 Triangulated irregular network: triangle view
 C-TOPO-CONT-TEXT				 wh...	Continu...	—	Defa...	0	Color_7		 Topography: contour labels
 C-TOPO-FEAT				 94	Continu...	—	Defa...	0	Color_94		 Topography: feature line
 C-TOPO-GRAD				 94	Continu...	—	Defa...	0	Color_94		 Topography: grading
 C-TOPO-MAJR				 9	Continu...	—	Defa...	0	Color_9		 Topography: major gridlines
 C-TOPO-MINR				 8	Continu...	—	Defa...	0	Color_8		 Topography: minor gridlines
 C-TOPO-TEXT				 wh...	Continu...	—	Defa...	0	Color_7		 Topography: text
 C-TOPO-USER				 40	Continu...	—	Defa...	0	Color_40		 Topography: user contours
 C-TOPO-WSHD				 141	Continu...	—	Defa...	0	Color_...		 Topography: watershed
 C-TOPO-WSHD-TEXT				 wh...	Continu...	—	Defa...	0	Color_7		 Topography: watershed text

(Remark: layer TOPO does not exist).

CREATING A SURFACE OBJECT FROM A SET OF CONTOUR LINES

CHOOSE THIS TEMPLATE: AutoCAD Civil 3D (Metric) NCS.dwt

DATA: A COLLECTION OF CONTOUR LINES (VIDEO 1) LOCATED IN LAYER: _____

- 1. CREATING AN INSTANCE OF SURFACE OBJECT. (VIDEO 1).**
 - HOW MANY DIFFERENT TYPES OF SURFACE ARE THERE IN CIVIL 3D?
 - WHICH ARE THE MAIN PROPERTIES TO BE DETERMINED WHEN CREATING THIS OBJECT?

- 2. PROVIDING DATA COLLECTIONS. (VIDEO 2).**
 - WHAT ARE THE DIFFERENT TYPES OF COLLECTIONS?
 - IS IT NECESSARY TO FILL IN ALL OF THEM?
 - DO YOU HAVE TO FILL IN AT LEAST ONE OF THEM?

IF BOTH ANSWERS ARE FALSE:

- (OPINION: DISCUSS WITH YOUR PARTNERS) COULD DIFFERENT SETS OF INCONSISTENT COLLECTIONS BE ACCEPTED BY THE CAD SYSTEM? FOR EXAMPLE, A SET OF CONTOURS AND A SET OF BREAKING LINES.

- 3. CREATING AND EDITING A SURFACE STYLE: DESIGN. (VIDEO 3).**
 - TURNING ON THE BORDER LAYER. EXACTLY WHAT IS THE BORDER LINE?
 - PAY ATTENTION TO THE MANAGEMENT OF LAYERS. REGARDING LAYERS, CIVIL 3D DOES NOT WORK LIKE AUTOCAD. AFTER THIS CLASS, WE SHOULD BE ABLE TO UNDERSTAND HOW TO WORK WITH A SURFACE MODEL AND HOW TO SHOW/ HIDE TITS CHARACTERISTIC LINES.
 - WHAT ARE THESE CHARACTERISTIC LINES? WHAT EXACTLY DOES THIS EXPRESSION MEAN?

4. CREATING AND EDITING A SURFACE STYLE: LAYOUT. (VIDEO 4).

5. EDITING THE SURFACE OBJECT: ADDING A NEW BREAKING LINE. (VIDEO 5).

- TRY TO MAKE THAT OUR SURFACE MODEL LOOKS LIKE THE ONE SHOWN AT THE BEGINNING OF VIDEO 5.
- BRIEFLY DESCRIBE WHAT A BREAKING LINE IS. ALSO, DESCRIBE WHAT KIND OF RESTRICTION IT CAUSES WITHIN A SURFACE OBJECT.

CREATING A SURFACE OBJECT FROM A SET OF POINTS

- OPEN THE FILE Surface-1A-PENZD (space delimited).TXT AND SEE ITS STRUCTURE.
- LOADING THIS SET OF POINTS, CREATE A NEW SURFACE S2.
- EDIT ITS STYLE TO SEE ITS TRIANGLES, CONTOUR LINES, ETC.
- EXPORT THIS SURFACE TO A DEM FILE (REFERENCE WGS84, UTM Z30N).
- OPEN A NEW FILE.
- IMPORT THE DEM FILE.

TECHNICAL ENGLISH WORDS REFERRING TO A SURFACE OBJECT.

DITCH (CREEK)

BOUNDARY (AS A LINE OF TERRAIN)

BREAKLINE

CONTOUR

CONTOUR INTERVAL

MINOR CONTOUR INTERVAL / MAYOR CONTOUR INTERVAL

TIN

DTM

RESOLUTION

MANHOLE

POND

POOL