PROTOCOLS FOR TAPHONOMIC DATA COLLECTION

1) **SURFACE COLLECTION:**
   - GPS and geomorphology of the area
   - Walk in restricted lined zones
   - Collect everything bigger than 2cm, including micro-fauna and fossil fragments (both identifiable and not).
   - Keep each specimen in a separate plastic bag labeled with the date, locality, reference of the restricted lined zone where found, name of the collector, and give a correlative number which should be referred to in the diary containing other relevant data and observations.
   - Sweep the surface and sieve the swept sediment.

   1.1) When the Fossil is embedded:
   - Dig around the fossil.
   - Take data on orientation and tilt from fossils/specimens that are twice as long as broad.
   - Mark the fossils with a dot made with a permanent marker on the highest exposed part of the fossil.
   - Take a picture of the fossil and context (sediments)
   - Describe the sediments (fine vs. coarse; crumbly vs. soft vs. hard; clay vs. sand vs. gravel vs. stones; color; cemented vs. loose, etc)

2) **EXCAVATION COLLECTION = Protocol 1.1 (above) plus:**
   - Advisable size of excavation squares: $1m^2$ and give alpha-numeric names (letters/numbers). Start giving the square names using intermediate numbers and letters, i.e. never start at a square named A1 (see Figure 2 as an example).
   - Fix an excavation zero point (datum) that should be the top of the sediment height. All vertical coordinates have to be referred to this reference point. Fix excavation North, which may or may not coincide with magnetic North (see Figure 2).
   - Data collection using excavation spreadsheet (see Figure 1)
   - Take detailed three-dimensional coordinates (X, Y, Z) of both small mammals and fossil concentrations. Map all fossils, reference stones, and important context traits in a millimeter square scaled drawing. Digitalize squares.
   - Collect the excavated sediment in buckets and gather 2-3 buckets into sacs for later sieving.
   - Take the vertical coordinate (Z) of the excavated sediment before and after filling the sac.
   - Label sacs: **S**ite, **D**ate, **S**quare **N**umber, **V**ertical placement (Z).
   - Systematic dry sieving, when no water source is available, using a minimum of 1mm mesh or 0.5mm (2mm is too large to recover small mammals or flake debris).
   - Systematic wet sieving using stacked 2mm, 1mm, 0.5mm meshes.
   - Special precautions for dating, isotopic, and DNA sample collection: wearing gloves, take the sample, wrap it in foil, and include sediment underneath the fossil. Wear gloves and a mask if sampling DNA. Also take sediment from the same excavation square but away from the fossil as a control sample.

SITE NAME:											
Date:				Unit:				Square:			
Personnel:											
Number	Material	Type	Identification	X (cm)	Y (cm)	Z (cm)	Dimensions (Length/width/ thickness mm)	Orientation	Tilt	Sediment	Remarks

Example:

Material	Type	Identification							Sediment	Remarks
bone/tooth/antler: yellow	anat.elemt/frag.indet	bovid/cervid/equid/suid…	never forget to mark the black dot with the marker						clay/sand/gravel	DNA sample
stone tool:blue	quartz/flint/limestone	flake/debris/hand-axe/	never forget to mark the black dot with the marker							
Exotic raw-material:pink	Type of mineral	flake/debris/hand-axe/	never forget to mark the black dot with the marker						cemented/loose	dating sample
shells: green	univalve/bivalve	gastropod/marine shell	never forget to mark the black dot with the marker						crumbly/hard/soft	broken while extracting
charcoal:black									color	needs restoration
cave block:red	limestone/chert	angular/rounded	Not collected						hetero/homogeneous	etc

Figure 1. Example spreadsheet for recording taphonomic data. As organized here, each square is recorded on a separate sheet.

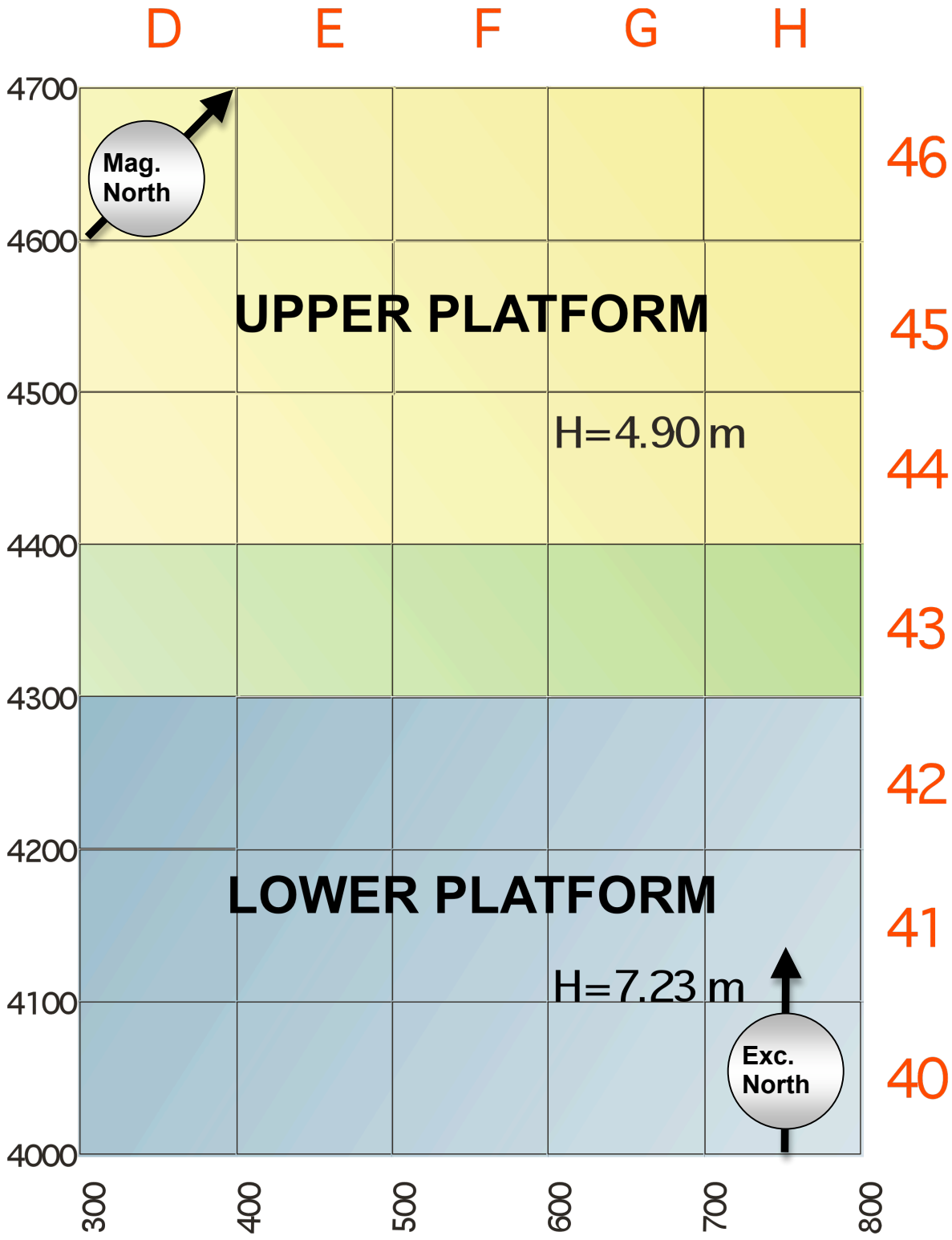

Figure 2. Scheme of alphanumeric labelling of a hypothetical excavation area (rows are numbers, columns are letters). Note that magnetic North and excavation North are not coincident. There are two heights: the Lower Platform is 7.23m below datum, and the Upper Platform is 4.90m below datum.