PERENCANAAN TEKNOLOGI & SISTEM BANGUNAN (PTSB) *03*

How architects running their job?

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

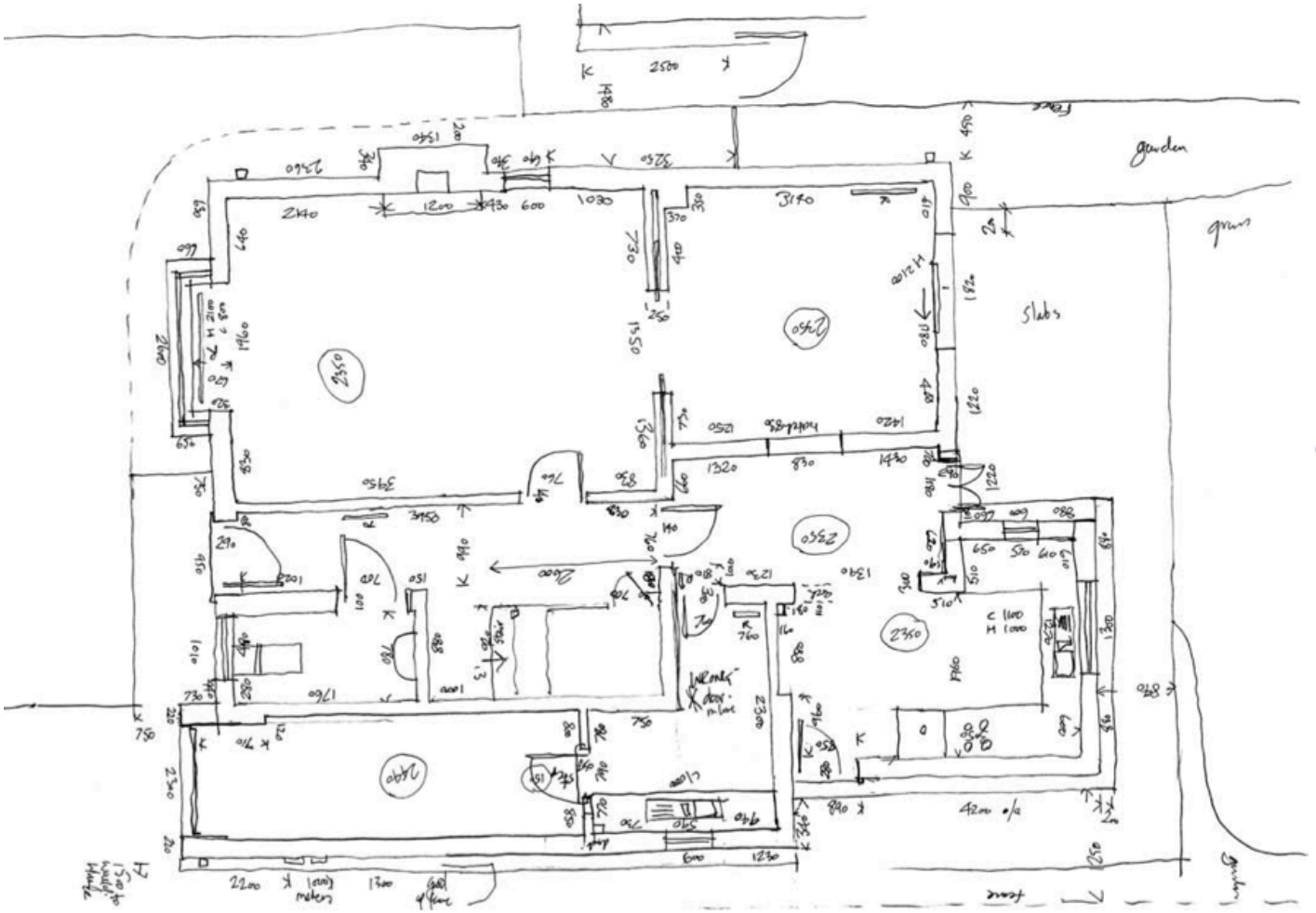
Putuskan secara tepat dan cermat apa yang akan dipelajari dari keberadaan tapak

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Survey drawings: may be done in the abstract, but generally design ideas are sketched against the constraints of a particular site; a plot of land or an existing building.



OUTLINE

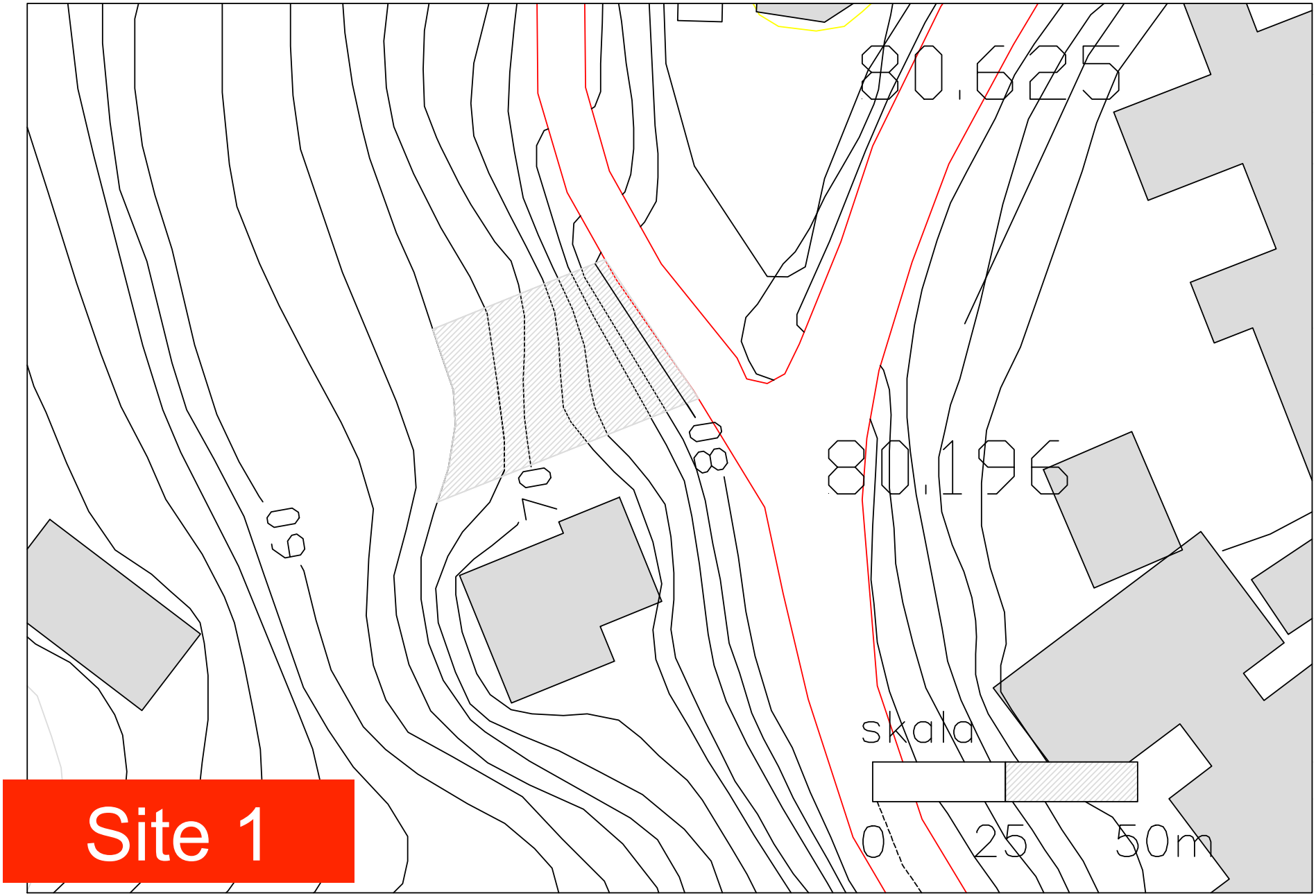
BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

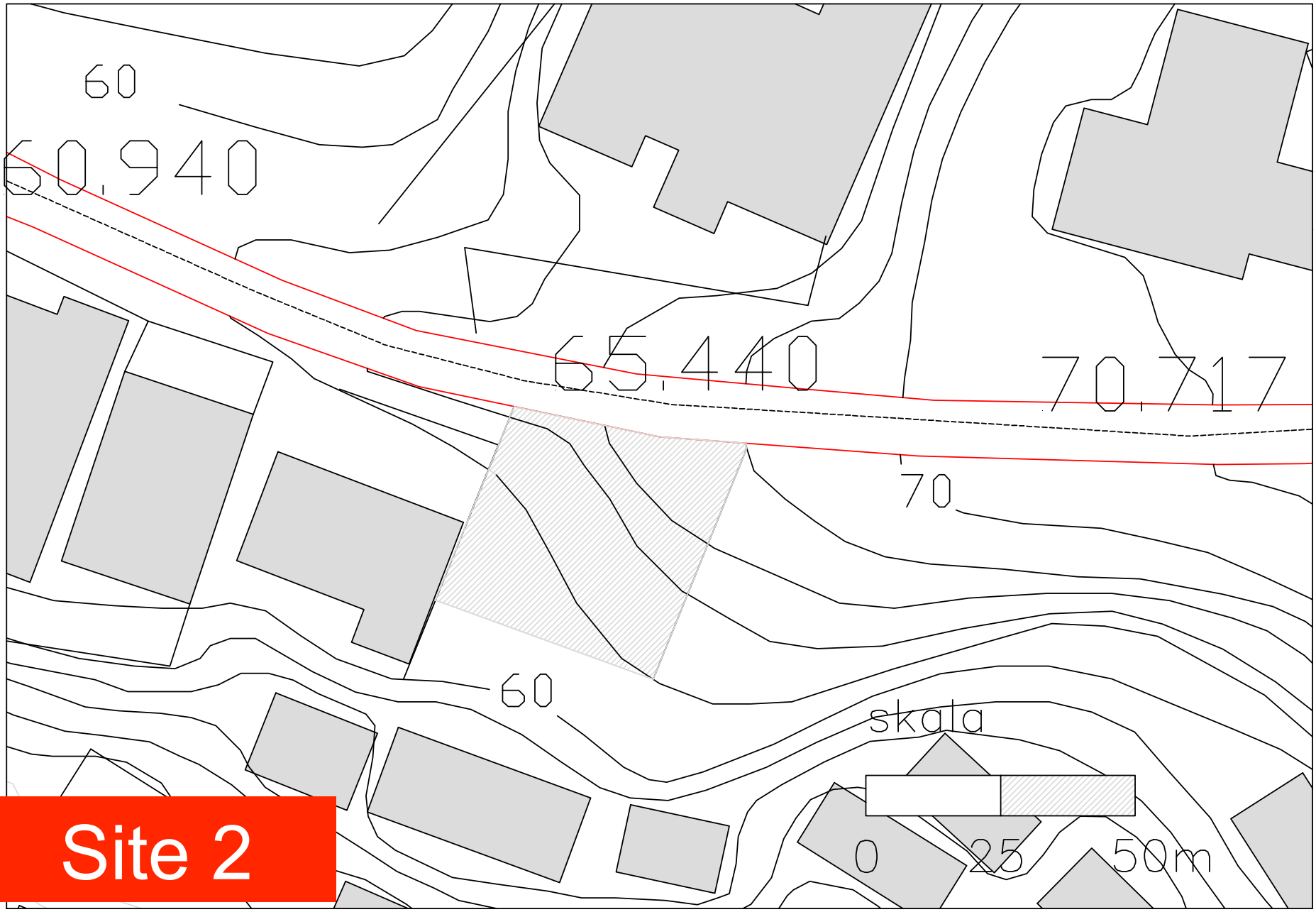

JL. KARANG
Site 1


Site 2

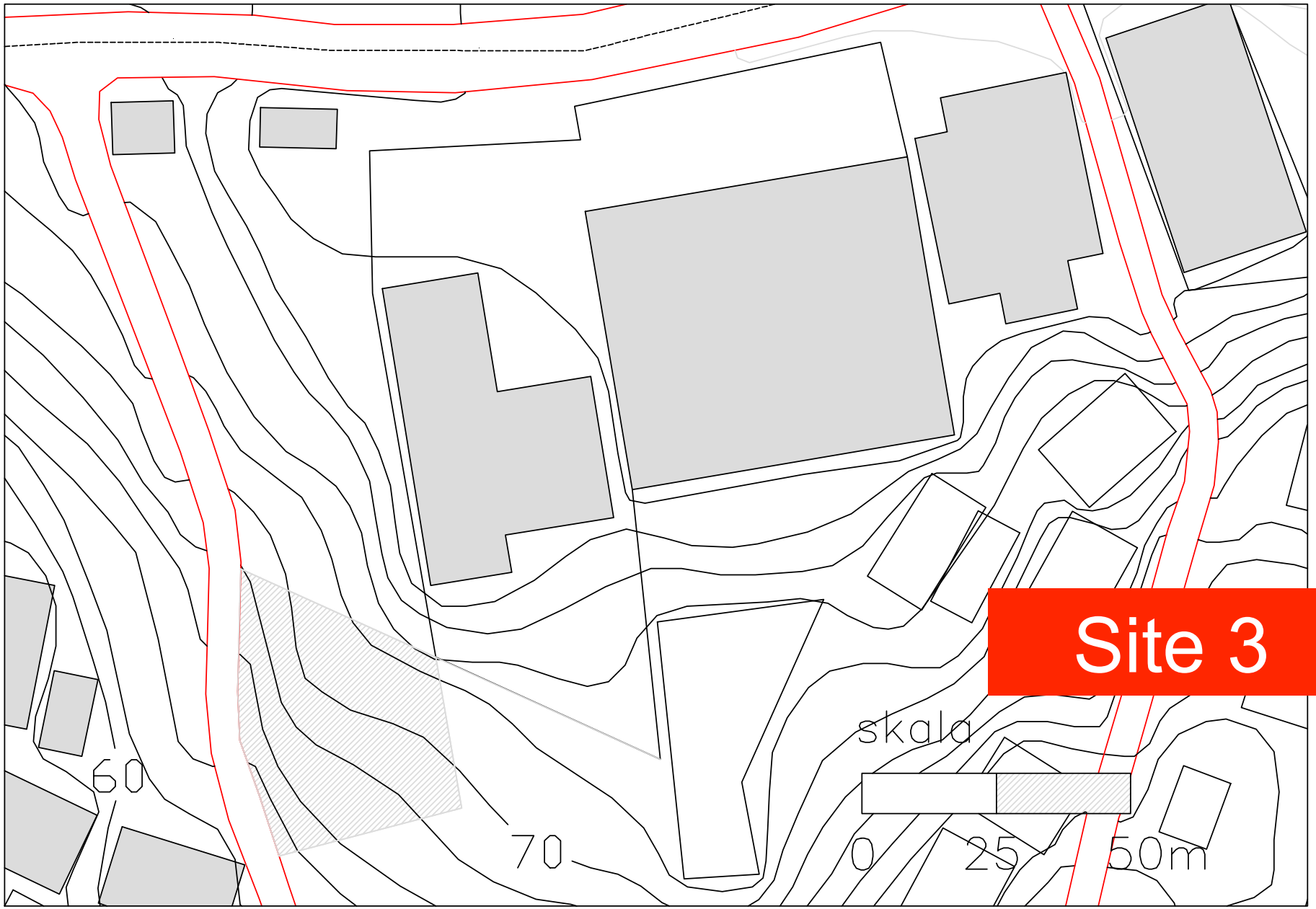

Site 3



Site 1



Site 2



Notasi umum yang digunakan dalam survey teknik

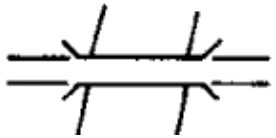
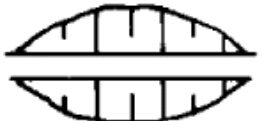
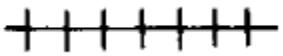
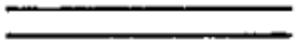
	Titik penanda sementara
	Titik penanda penting
	Titik acuan tetap *(benchmark)*
	
139.95	*Spot height* (titik ketinggian)
+ 139.95	*Spot height* (titik ketinggian)
+ 139.95	*Spot height* (titik ketinggian)

Di atas permukaan	Di bawah permukaan	Arti
		Garis jaringan atau pipa
		Jaringan air hujan *(drain)*
		Jaringan listrik *(electricity)*
		Jaringan air limbah *(sewer)*
		Jaringan telepon *(telephone)*
		Jaringan air bersih *(use water)*
		Katup *(valve)*

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

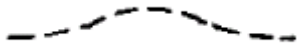
SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Simbol	Arti
	Jembatan
	Bidang tanah yang terpotong
	Tambak atau tanggul
	Rel kereta api
	Jalan tanpa marka pembatas
	Jalan dengan marka pembatas
	Jalan eksisting atau yang dianggap sebagai jalan

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Simbol	Arti
	Jalan yang sedang direncanakan
	*Track* atau jalan setapak
	Pagar pada batas tapak
	Pagar tidak pada batas tapak
	*Traffic light*
	Telephone box
	Hydrant
	*Retaining wall*
	Vegetasi Pohon

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

TOPOGRAPHY

„*Topos*“ (place) + Graphy

The art of representing on a map or chart the physical features of a place with indications of elevation

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

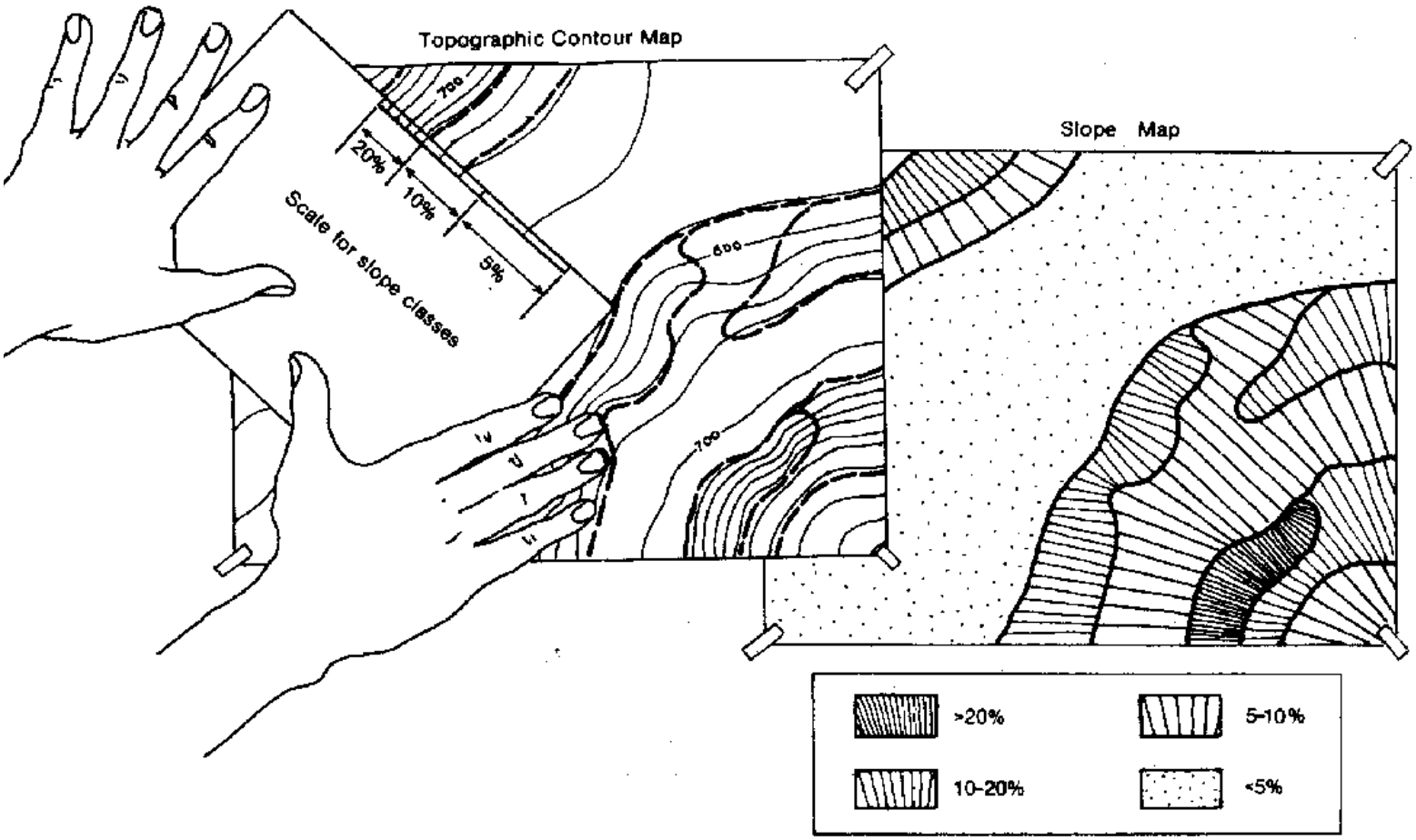
SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Slope

Ground that is not horizontal, but instead has an incline.

The state of any surface not level or essentially perpendicular to a line from a given point on the earth's surface to its center.

Step 2 : Interpret your site‘s slope !



OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Step 2 : Interpret your site‘s slope !

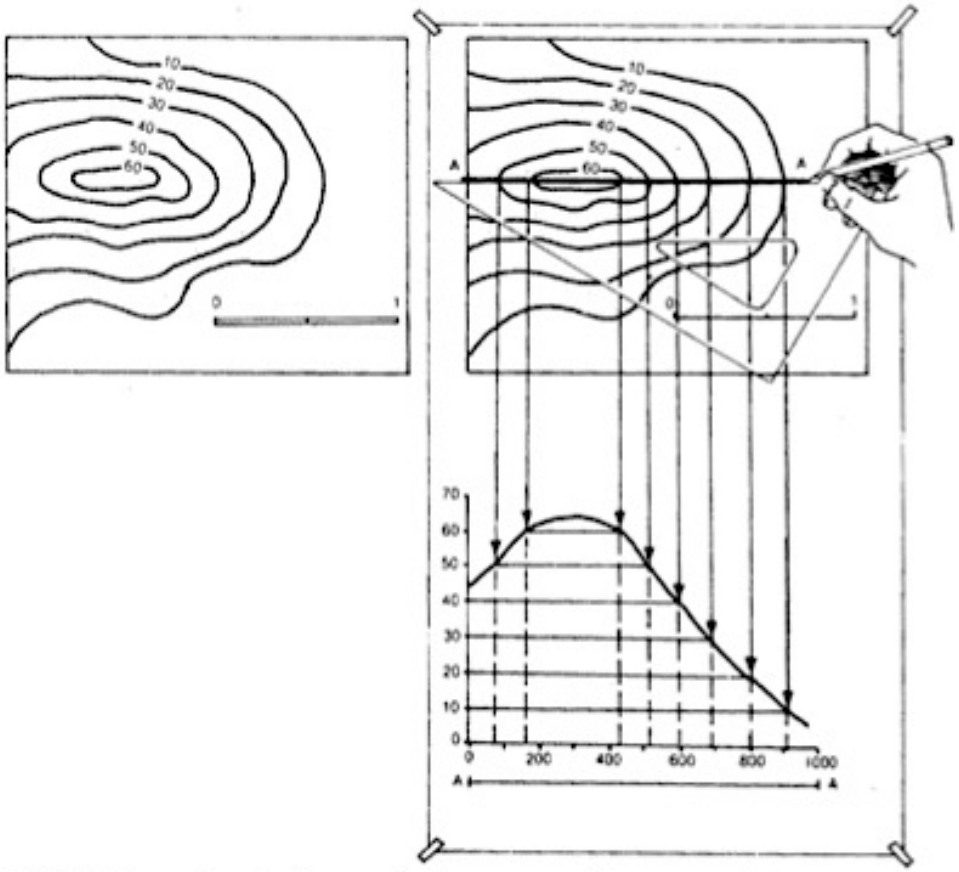


Fig. 4.6 Construction of a slope profile from a topographic contour map.

Construction of a slope profile from a topographic contour map

Contour interval: the height between each contour line.

Cross section of that shape

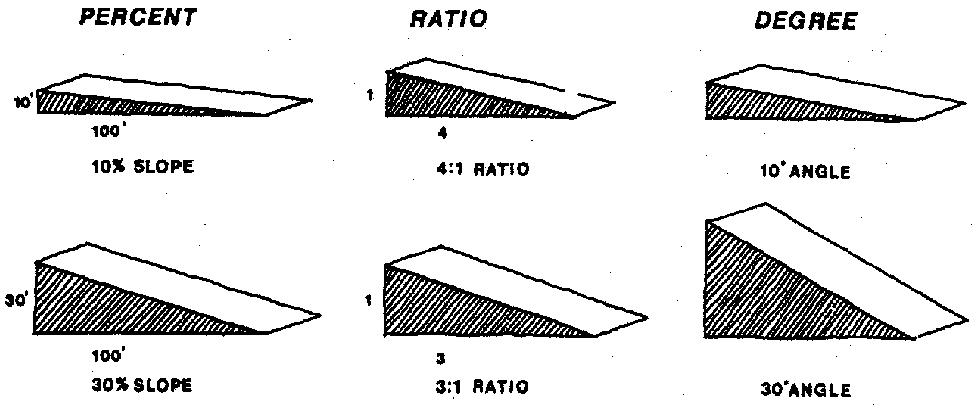
X axis represents distance, Y axis represents level change

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

- Grading formula
- G=D/L or L=D/G or D=GL
- Gradient percent = D/L*100



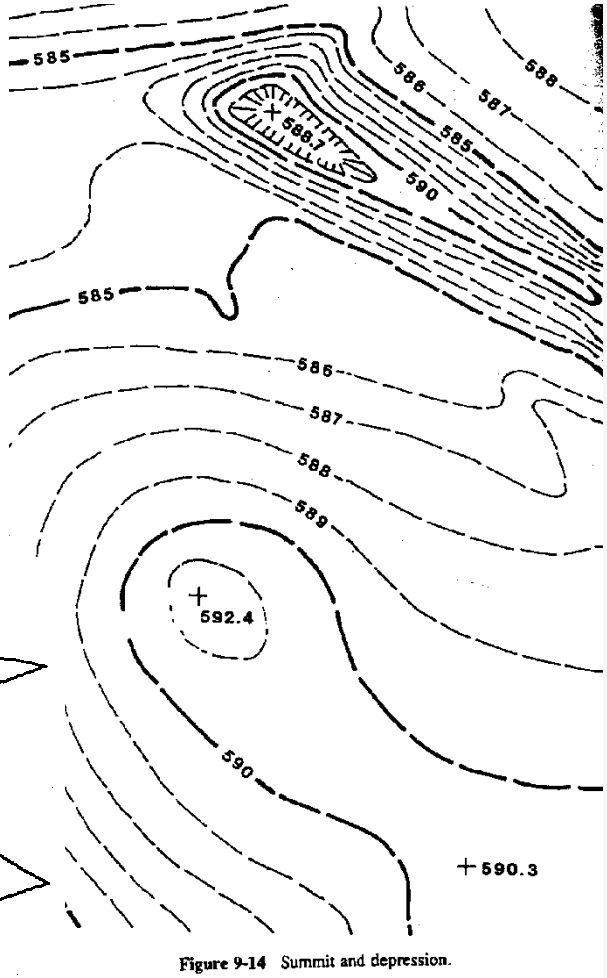


Figure 9-14 Summit and depression.

OUTLINE

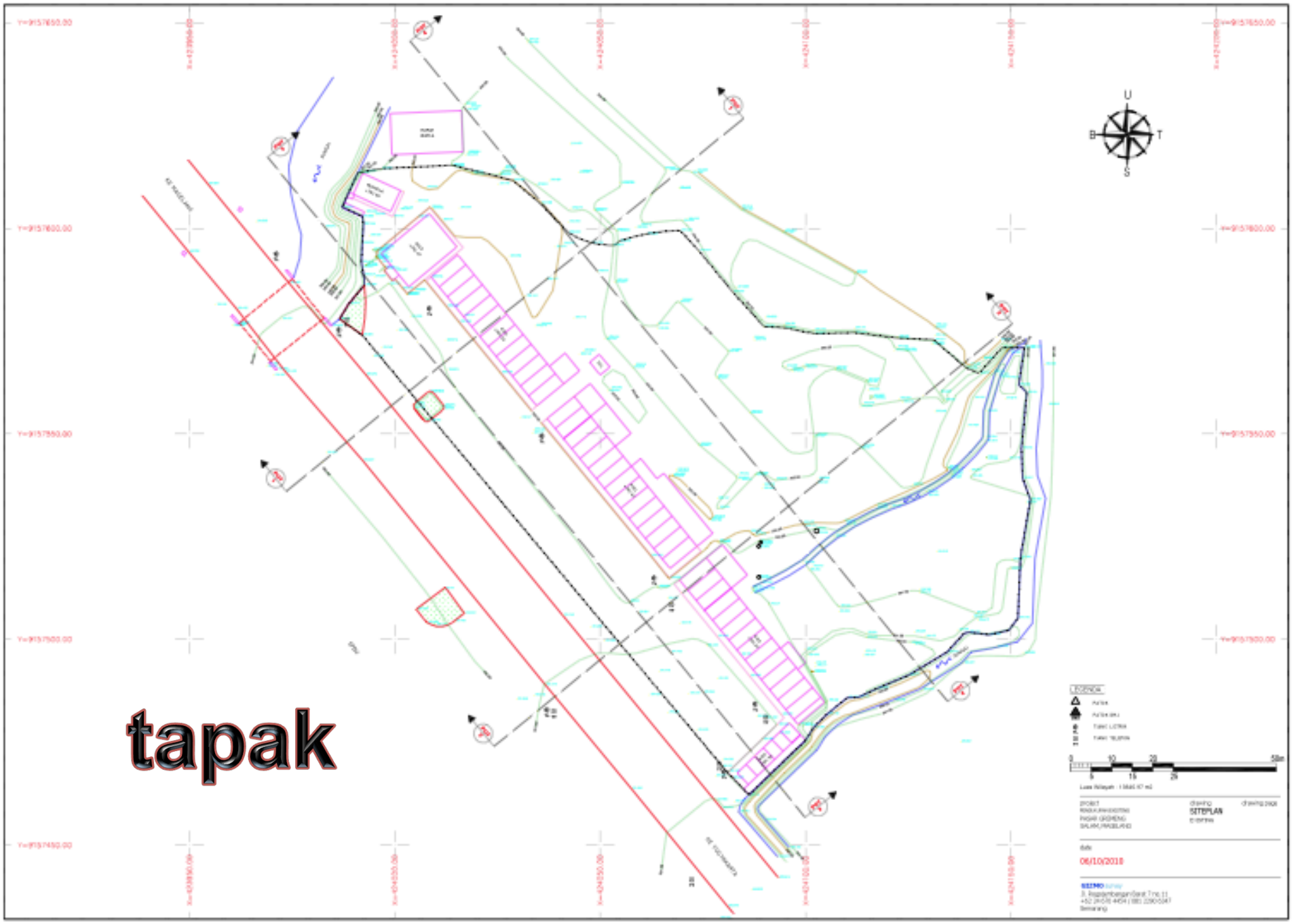
BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Guidelines for land selection/ analysis

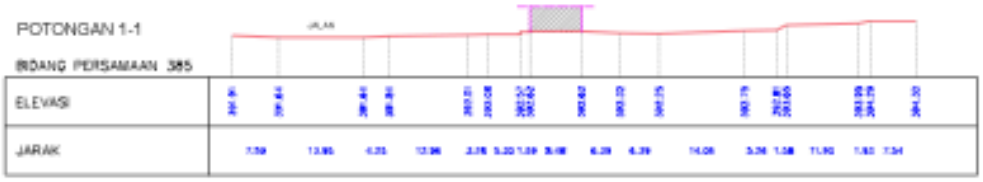
a. Slopes under 1% do not drain well.
b. Slopes under 4% seem flat and are usable for all kinds of activity.
c. Slopes of 4 to 10% are easy grades.
d. Slopes over 10% are steep.
e. Slopes at 15% approach limit of an ordinary loaded vehicle.
f. Slopes at 25% are the limit of mowed surfaces.
g. Slopes over 50% may have erosion problems.


Jalan Magelang
tapak


U
B
T
S
tapak
SITEPLAN
06/10/2018

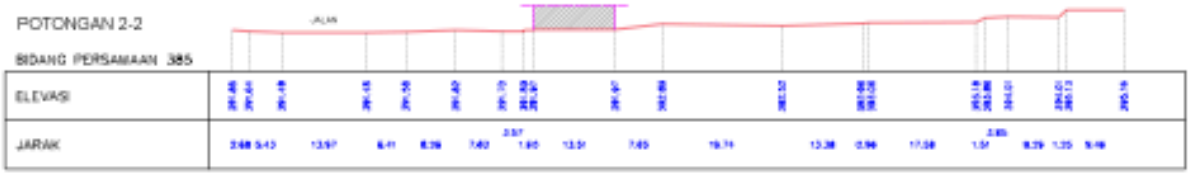
POTONGAN 1-1

BIDANG PERSAMAAN 385



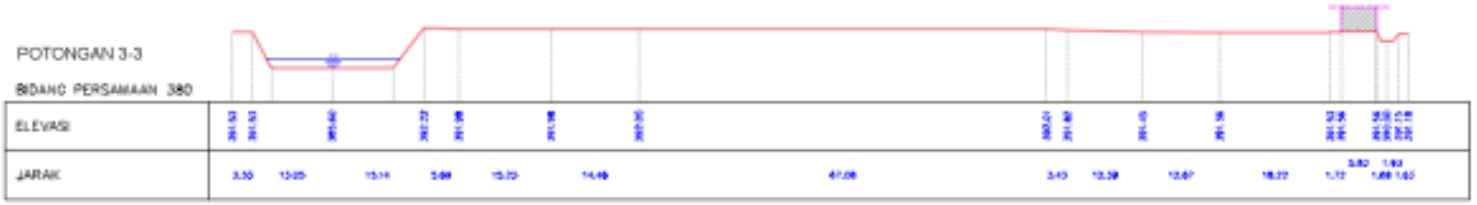
POTONGAN 2-2

BIDANG PERSAMAAN 385



POTONGAN 3-3

BIDANG PERSAMAAN 380



POTONGAN 4-4

BIDANG PERSAMAAN 385

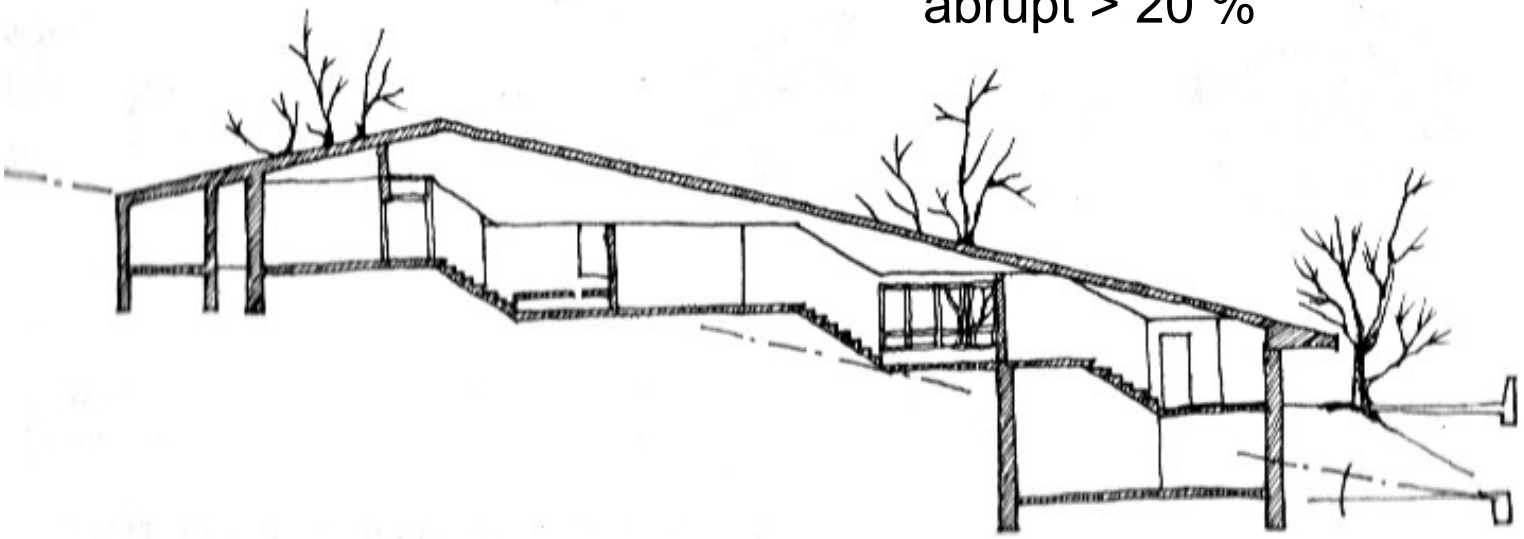
tapak

SITIPLAN

06/10/2018

Step 4 : Determine an appropriate structure

slope < 10%
steep slope 10 – 20 %
abrupt > 20 %

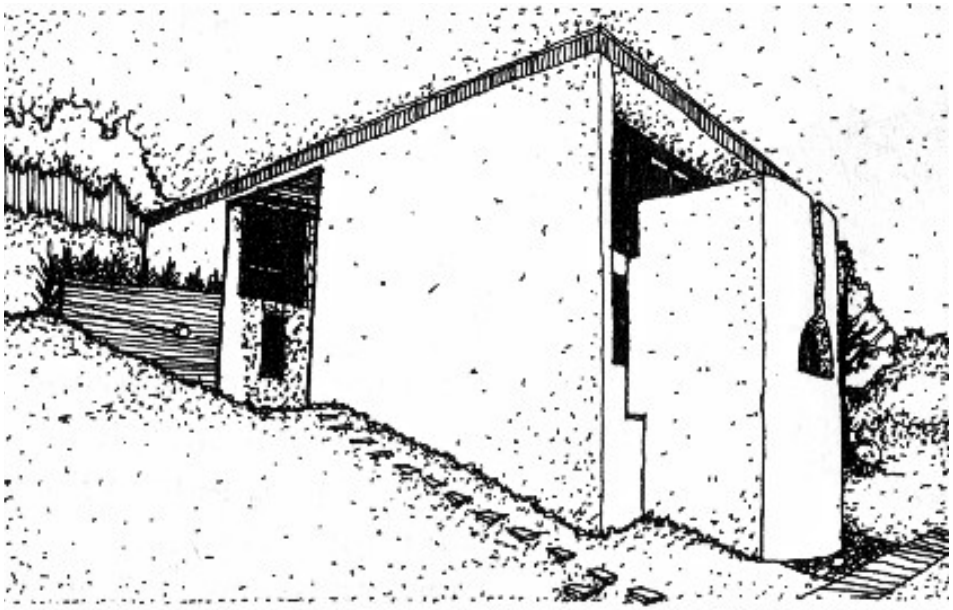


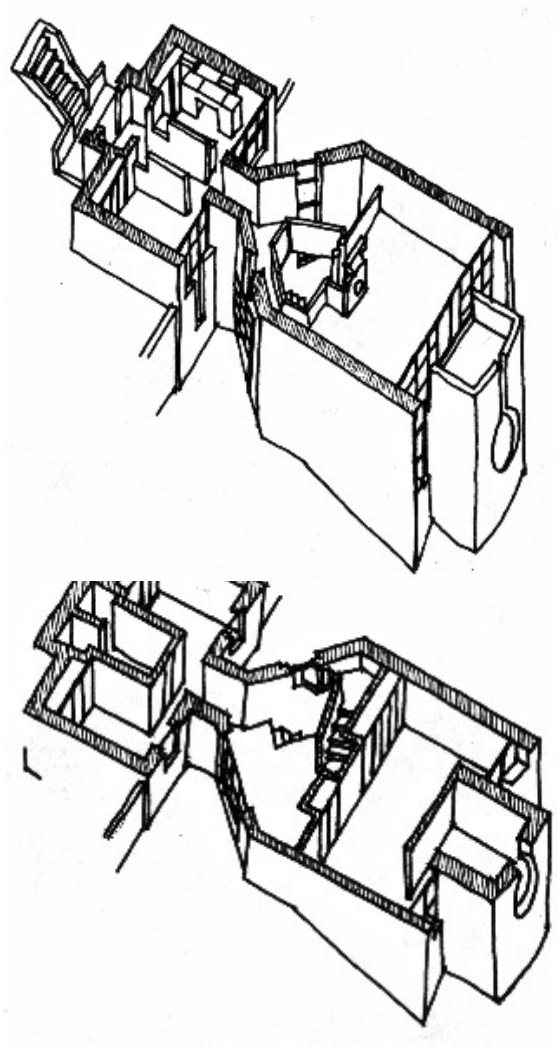
Split level <10%

Literatur : Frick, H.,*Membangun dan menghuni rumah di lerengan*, Yogyakarta, Kanisius, 2003

Step 4 : Determine an appropriate structure

slope < 10%
steep slope 10 – 20 %
abrupt > 20 %





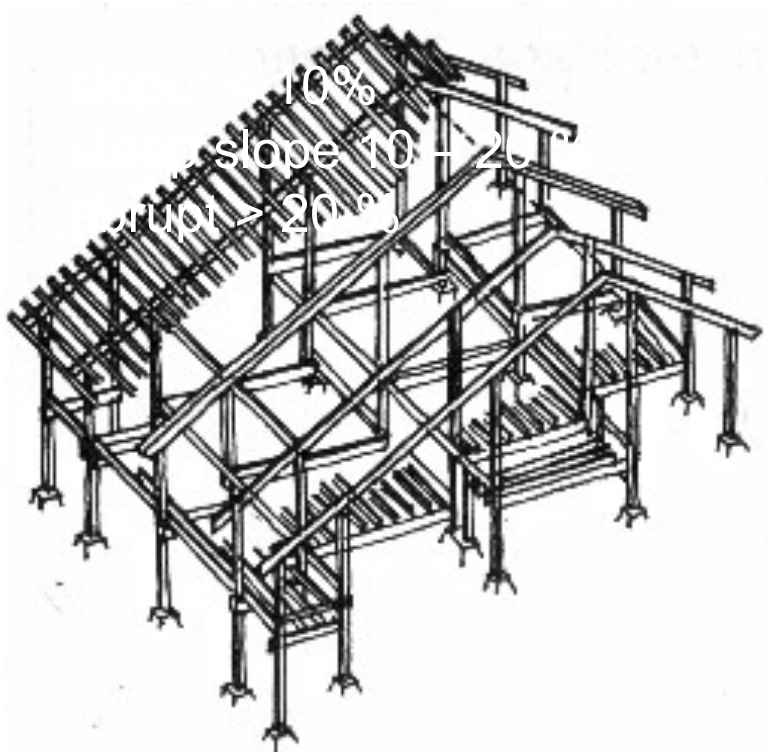
Rumah sengkedan di lerengan 10 - 20%

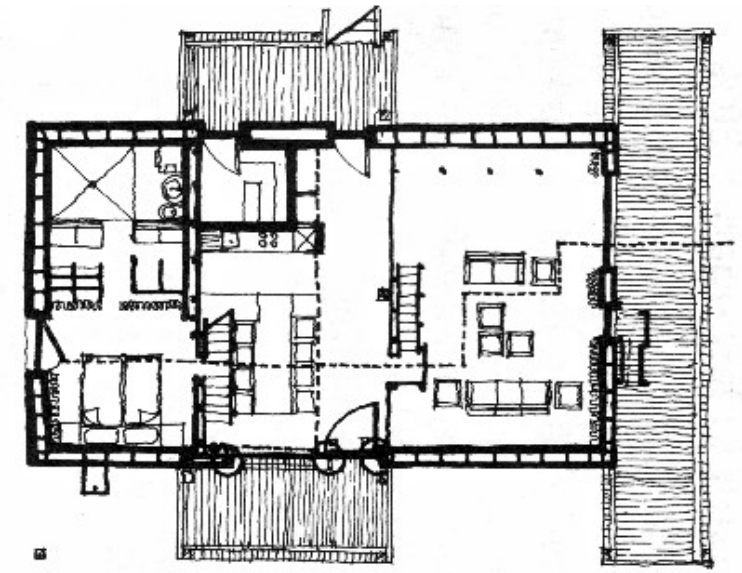
OUTLINE

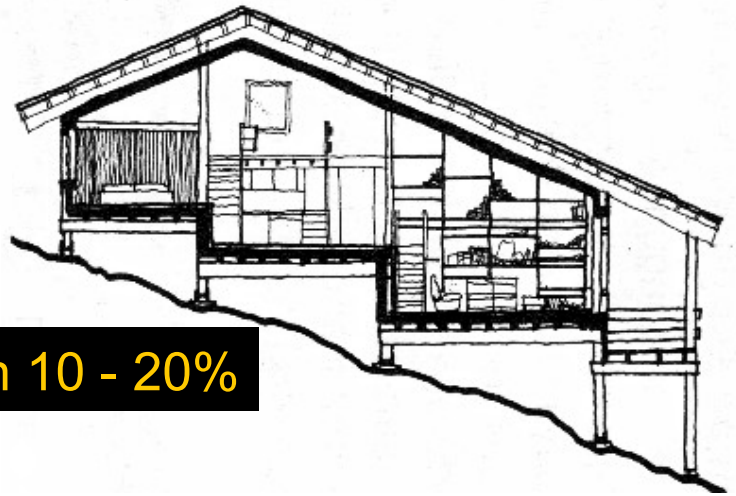
BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction

Step 4 : Determine an appropriate structure







Rumah sengkedan di lerengan 10 - 20%

OUTLINE

BUILDING SYSTEMS
Basic concept
Structural systems
Topography

SEISMIC RESISTANT BUILDING
Phenomenon
Design failure
Construction