Engineering Drawing

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Introduction

Important points to note

1. **Sectional view :** The projection of the section along with the remaining portion of the object is called a Sectional View.
2. **Section Plane :** are generally perpendicular planes described by their traces. As per B.I.S. (SP: 46-2003) cutting plane line is as follows (book represent old convention)

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1. **Sections :** The projection of the section on the reference plane to which the section plane is perpendicular will be straight line coinciding with the trace of the section plane on it. Projection on the other plane is called apparent section.
2. **True shape of the section :** Projection of the section on a plane parallel to the section plane will show the true shape of the section.

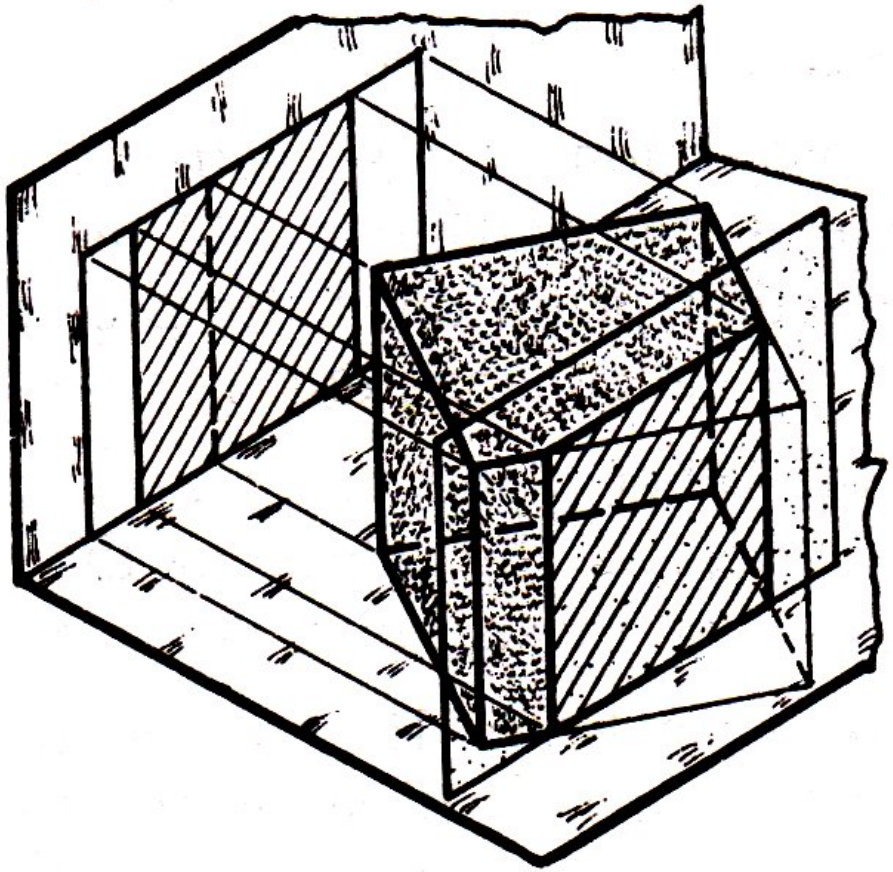
Possible cases

	Prism	Pyramid	Cylinder	Cone	Sphere
$\parallel$ to VP	X	X	X	X	X
$\parallel$ to HP	X	X	X	X	X
Inclined to VP	X	X	X	X	X
Inclined to HP	X	X	X	X	X

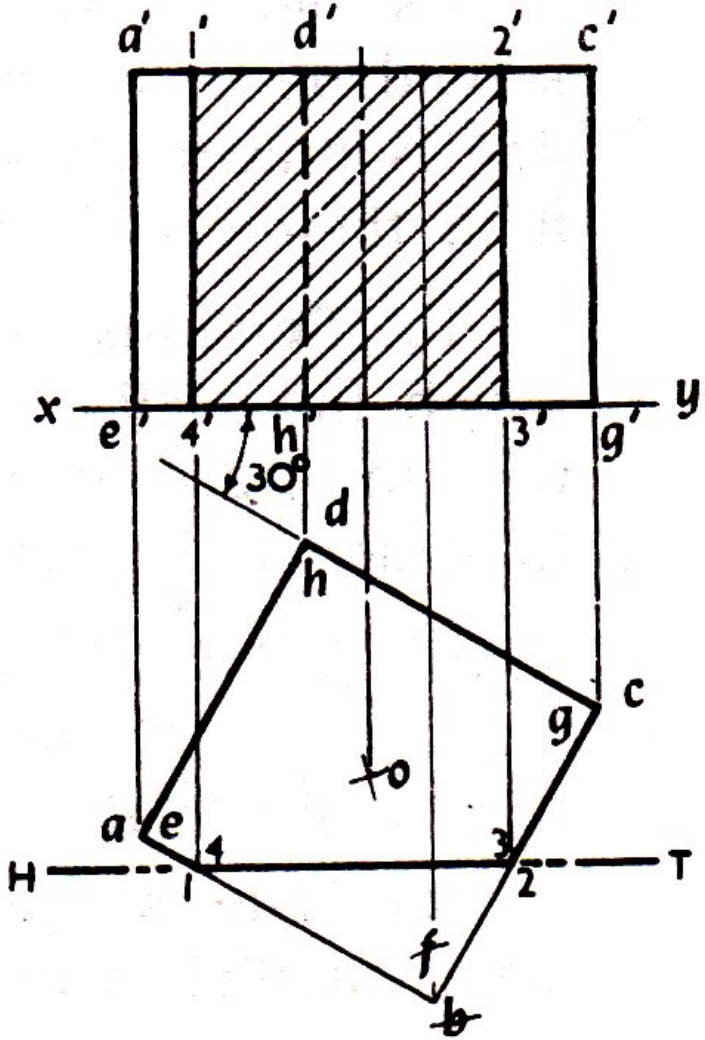
True shape of a cross section

1. Section Plane is $\parallel$ to HP $\Longrightarrow$ **sectional top view**
2. Section Plane is $\parallel$ to VP $\Longrightarrow$ **sectional front view**
3. Section Plane inclined $\Longrightarrow$ **projected on an auxiliary plane parallel to section plane**
4. Section Plane perpendicular $\Longrightarrow$ **side view**

Section plane parallel to VP



(i)



(ii)

Observations

Section plane

It is a line with long dashes and dots

Axis line

It is a chain line with long and short dashes

Naming of the points

Section plane intersection points are denoted with numeric values

Observations

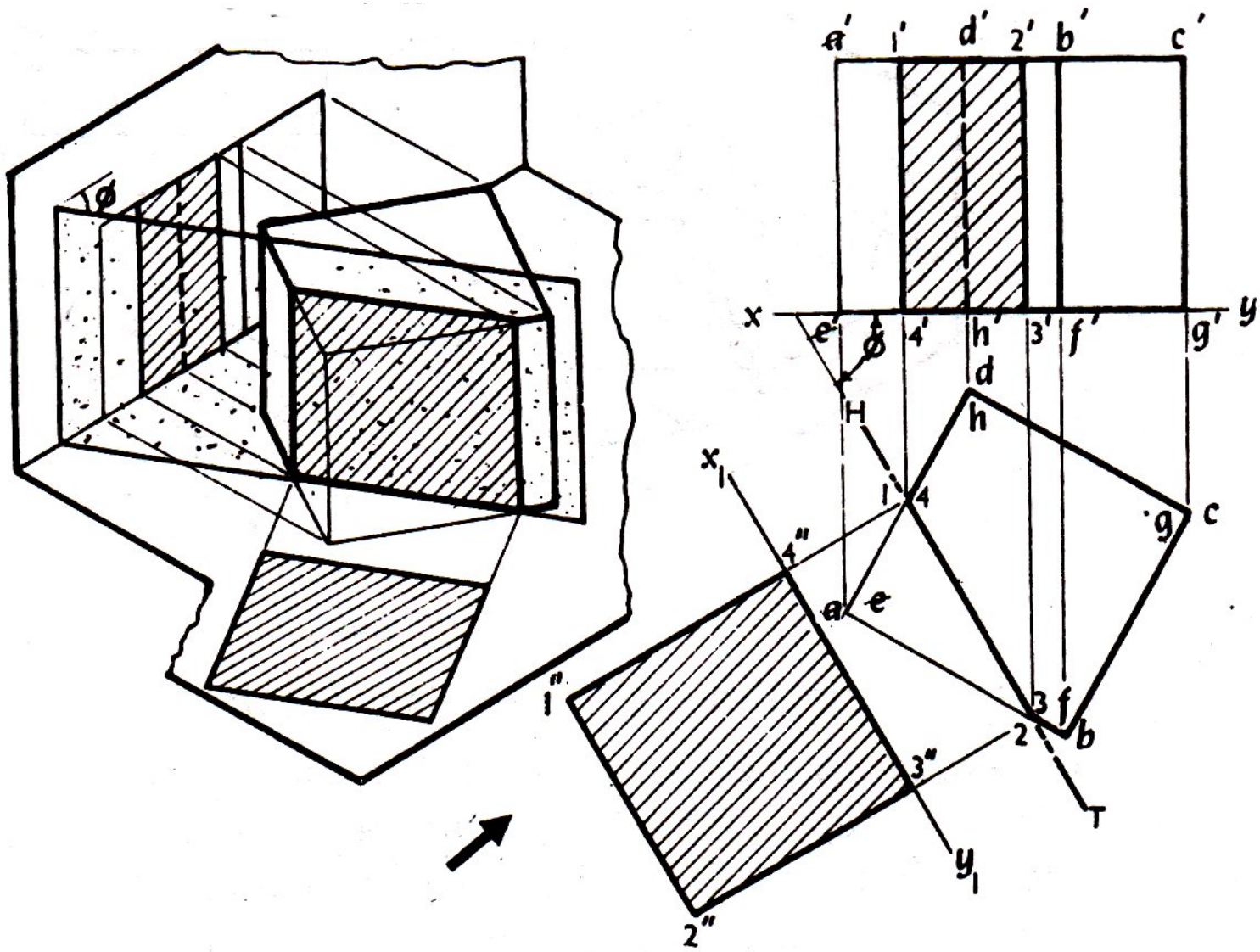
The cut out portion of the solid

It is denoted by thin lines (construction lines) and alpha numeric digits are cut across.

Section plane

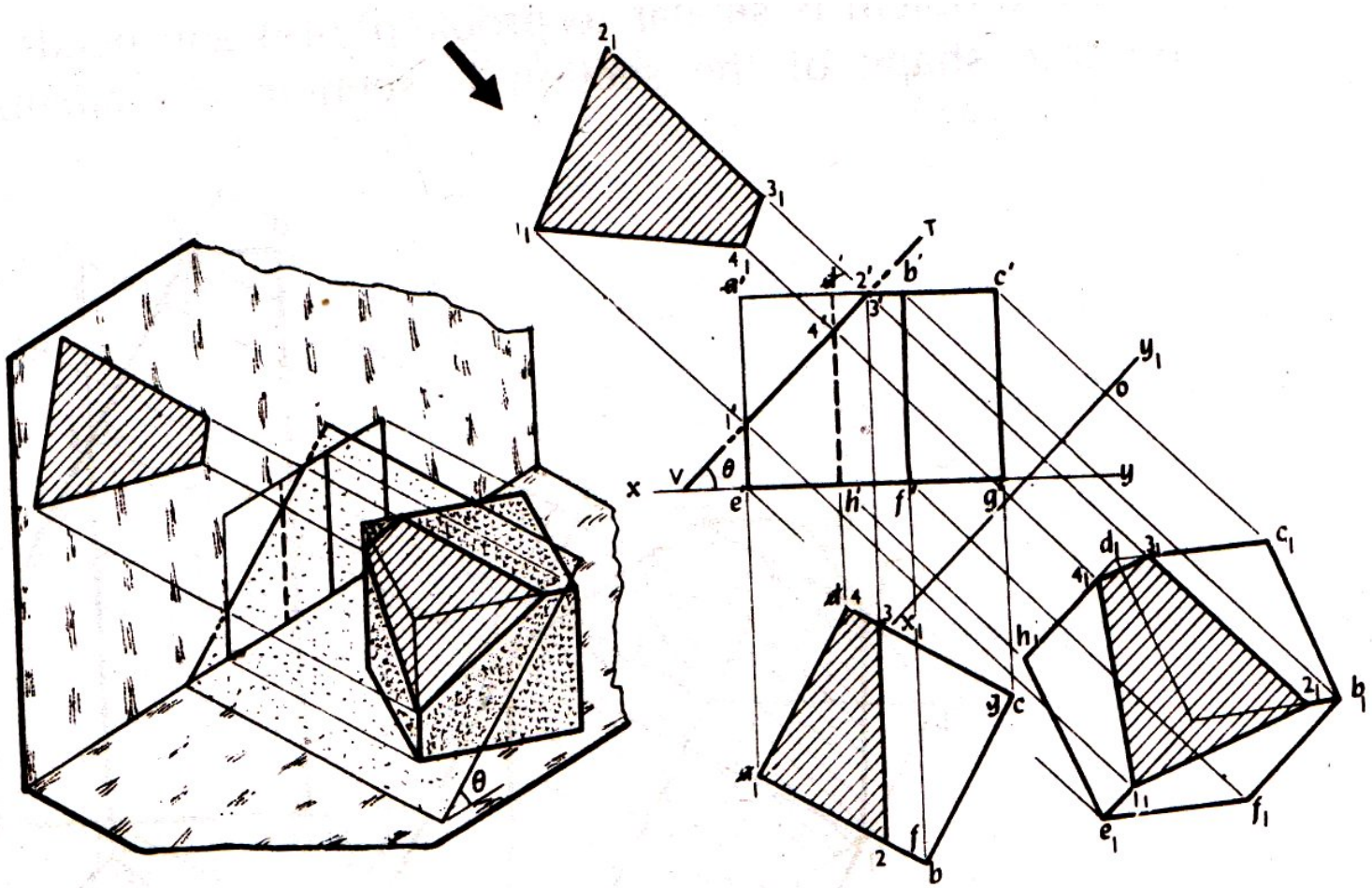
A section plane is denoted by equidistant hatch, separated @ 2/3mm at 45^0 if not coinciding with any other line.

Section plane perpendicular to HP and inclined to VP



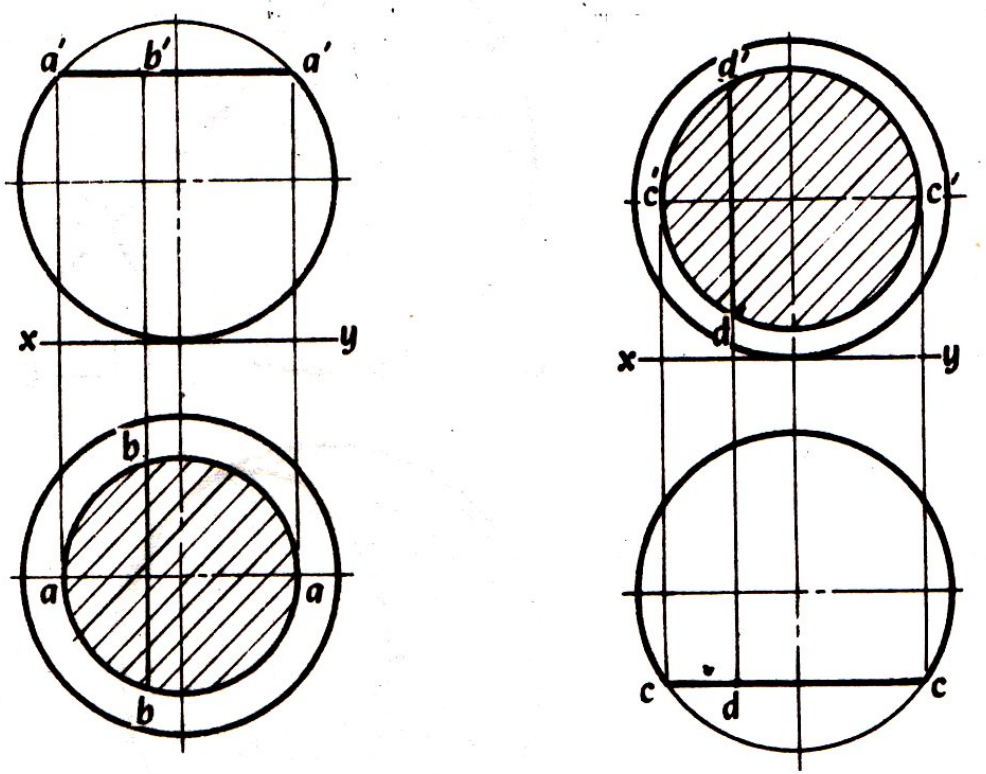
1. True shape is drawn on a plane $\parallel$ to section plane

Section plane perpendicular to VP and inclined to HP



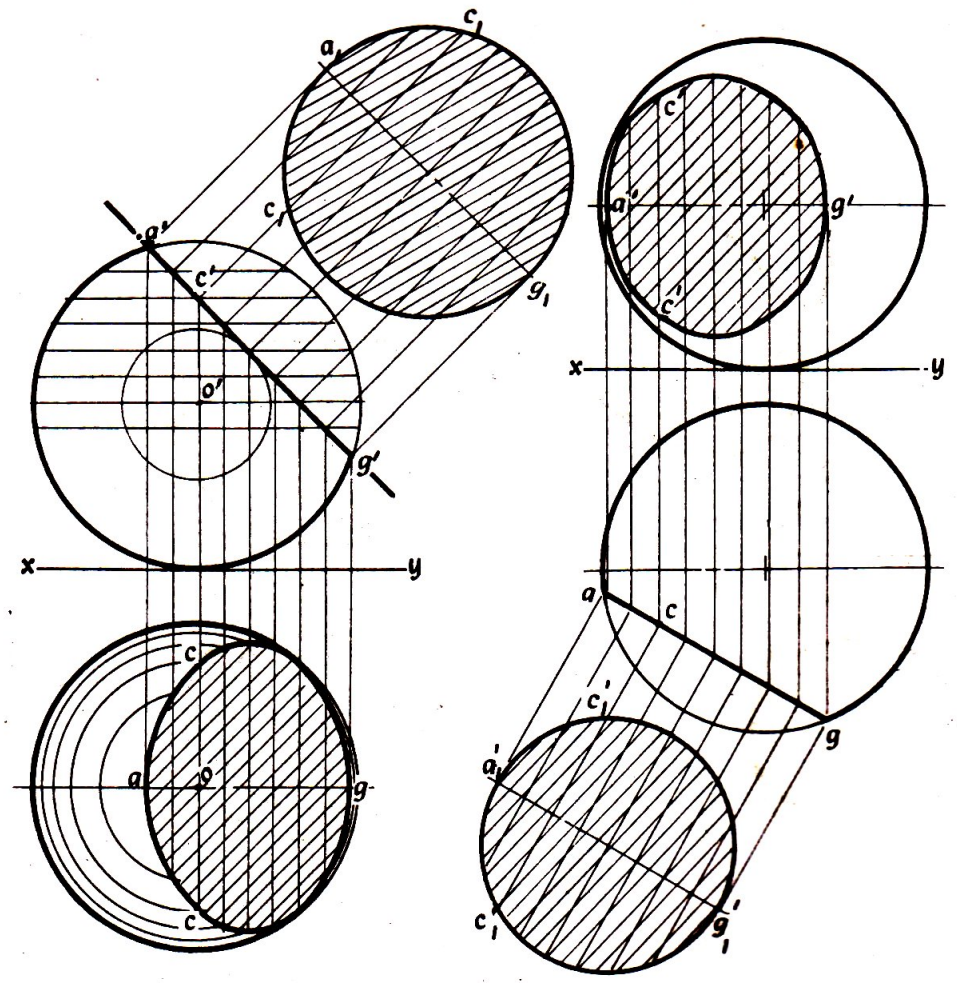
1. True shape is drawn on a plane $\parallel$ to section plane
2. View of the solid can also be drawn along with the true view of the section.

Projection of truncated sphere



1. Section planes are parallel to any one reference plane
2. Sphere remains the same when it is not truncated

Projection of truncated sphere



Procedure 1

1. Let us assume a horizontal plane passing through c'
2. Cut on the vertical projector point c with center o with a radius of the horizontal plane.

Procedure 2

1. Diameter of the circle in true view is $a'g'$. It may be completed.
2. Use opposite process of drawing auxiliary plane projection to complete.

Procedure 1 is used to find sectional view points for pyramids and prisms also.

Compound body problem