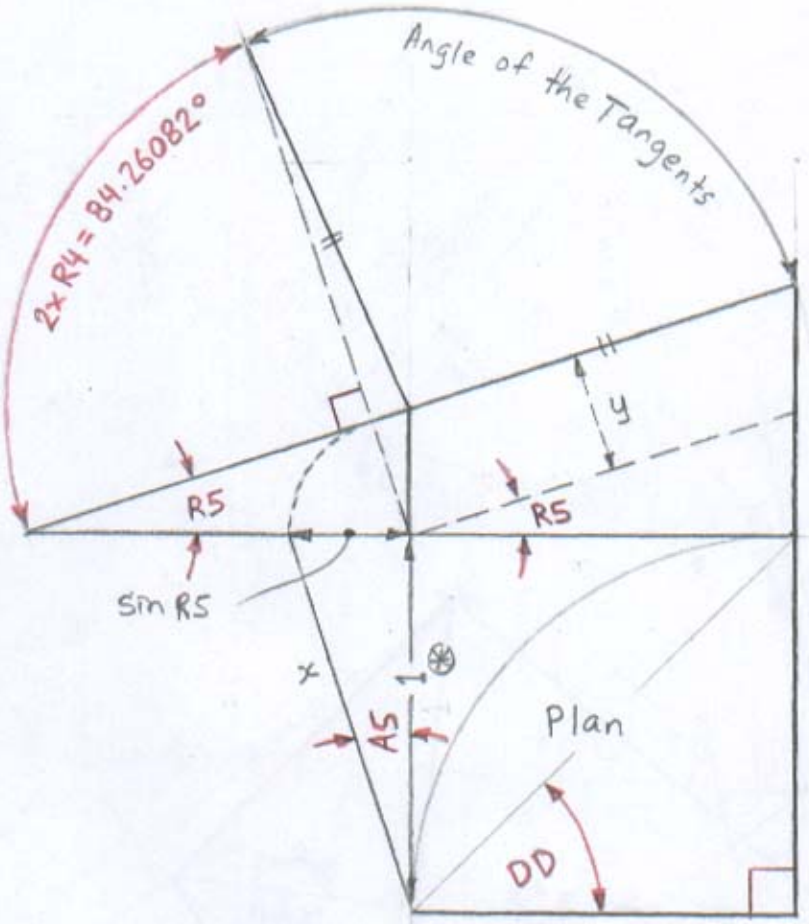
Study of Tangent Handrail Geometry

Equal Slopes, Square Footprint (90° Corner Angle)

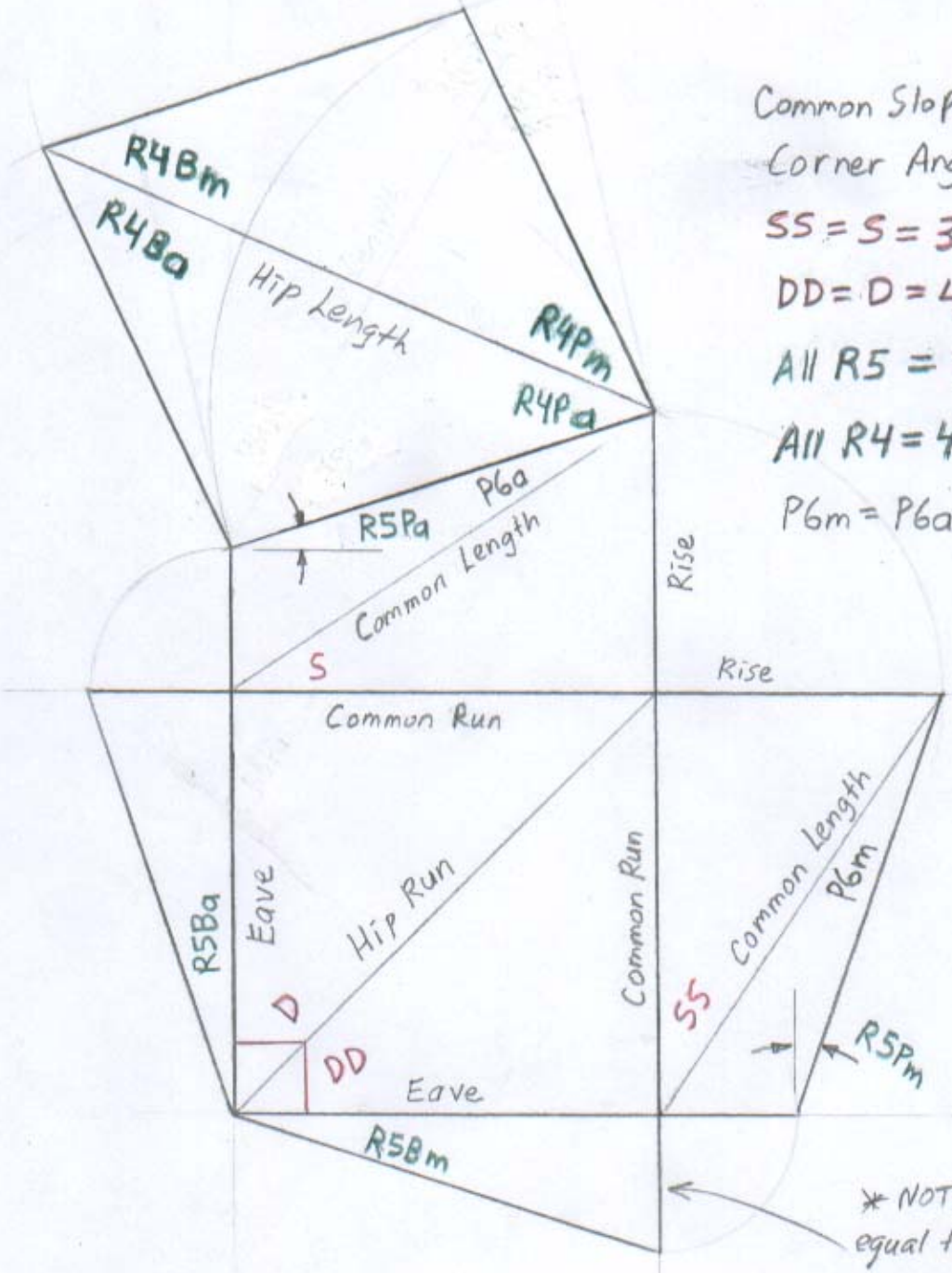


After: Figure 5, Plate 30
A Simplified Guide to
Custom Stairbuilding
and Tangent Handrailing
by
George R. Di Christina

$\circledast 1 = \tan 45°$
$= \tan DD$

$\tan ASB = \sin RSB \tan DD$
$\tan ASP = \sin RSP / \tan DD$

SS = 33.69007° (8/12 slope angle)
DD = 45°
R1 = 25.23940°
R4 = 42.13041°
R5 = 18.43495° (4/12 slope angle)
A5 = 17.54840°



Common Slopes = 8/12

Corner Angle = 90°

SS = S = 33.69007°

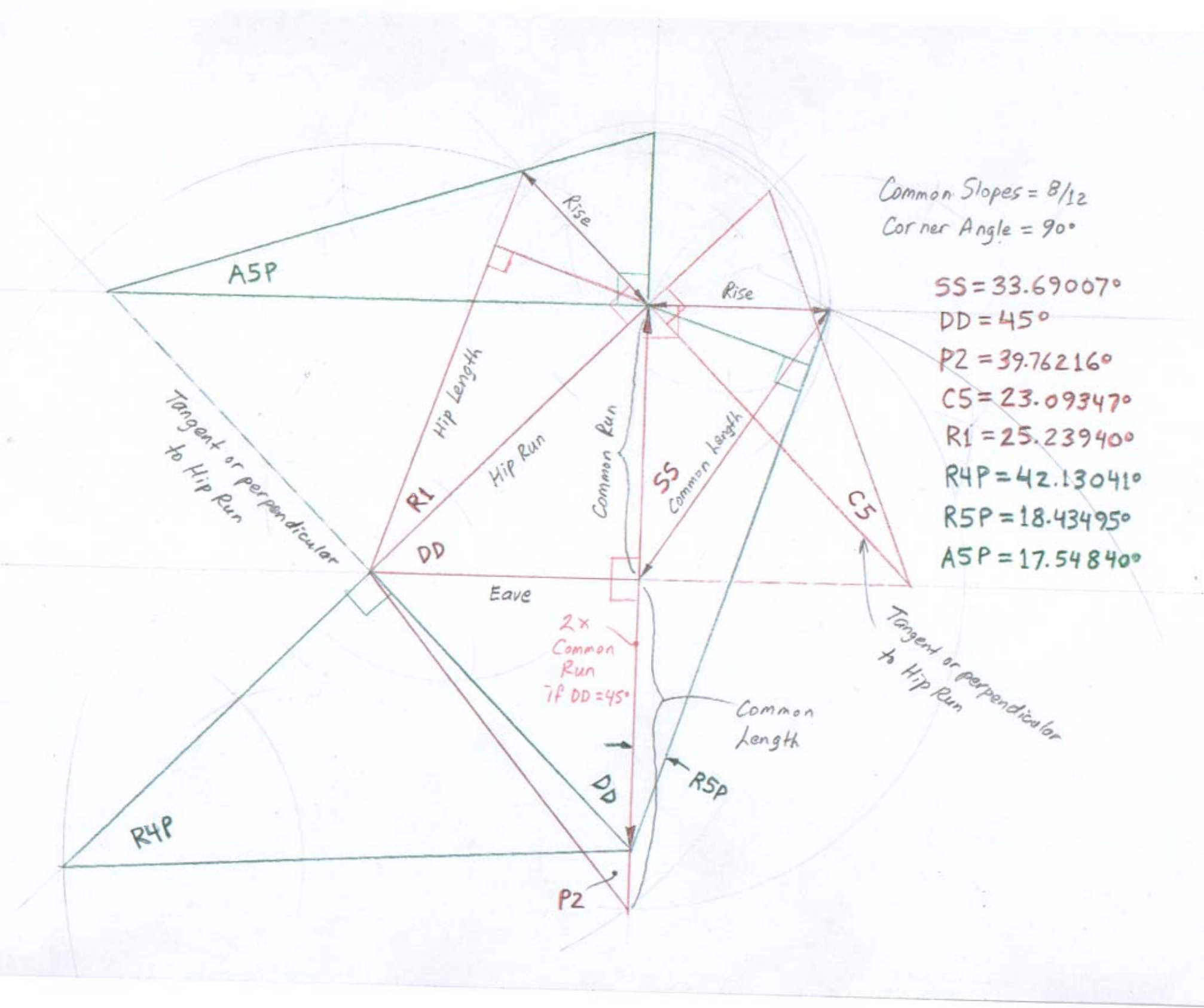
DD = D = 45°

All R5 = 18.43495° * NOTE!

All R4 = 42.13041°

P6m = P6a = 15.25512°

* NOTE!
equal to ½ Rise for
equal Common Slopes
at 90° Corner Angle
(Square footprint)


Common Slopes = 8/12
Corner Angle = 90°
SS = 33.69007°
DD = 45°
P2 = 39.76216°
C5 = 23.09347°
R1 = 25.23940°
R4P = 42.13041°
R5P = 18.43495°
A5P = 17.54840°
A5P
Rise
Rise
Hip Length
Hip Run
Common Run
SS
Common Length
C5
R1
DD
Tangent or perpendicular to Hip Run
Eave
2x Common Run If DD = 45°
Common Length
Tangent or perpendicular to Hip Run
DD
R5P
R4P
P2