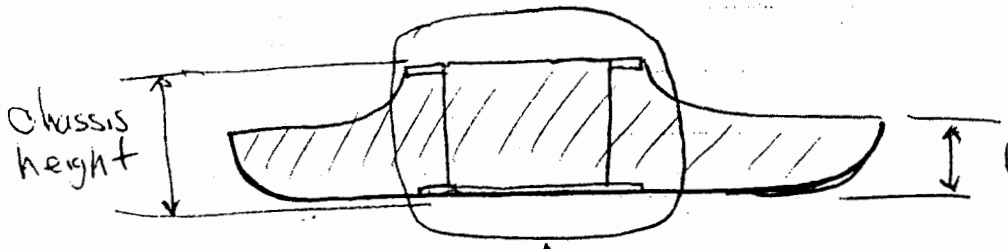
HANDOUT 8 BOREALIS CHASSIS DESIGN NOTES

TO: Solar Vehicle Mechanical Team 8/2/00
FROM: Prof Starr
Re: Chassis Design

Last week I drew a combination of honeycomb panels + rear space frame using the dimensions from Ryan Gosse's aero shape & driver location, and asked you to detail the sketches and estimate the panel areas & tube lengths to determine an approximate weight. Since then I re-examined the rear section of the chassis and considered a panel construction up to the rear swing arm mount, and found that the panels would weigh about the same as the space frame, and also provide a "box" for electrical components. Also, I met with Ryan Gosse and he was concerned about supporting the lower body shell in the rearward area, behind the rear wheel. So, I have revised the rear part of the chassis to use panels which can be extended to support the rear of the lower body shell.

Notes

(1) The shape of the bulkheads would be like this:



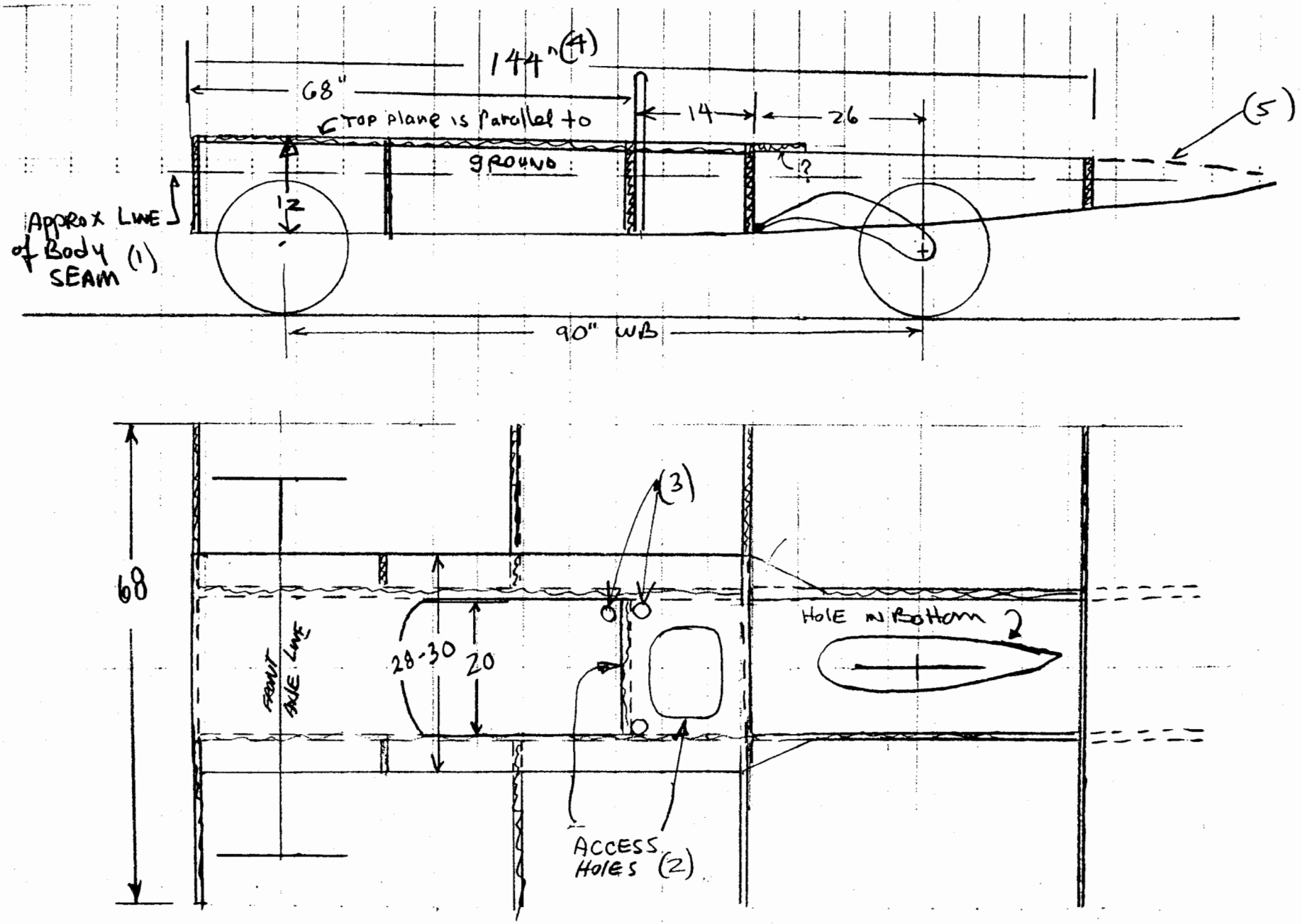
↑ This Region is structural for the chassis

(2) Access holes — in top panel & in panel behind the driver if the seat back is removeable

(3) Roll bar could have the vertical members in the cockpit (A^3) or behind the seat Back Bulkhead, (A^4)

(4) The 144" is the length of the honeycomb panel —

(5) we could add additional support behind the Rear bulk head



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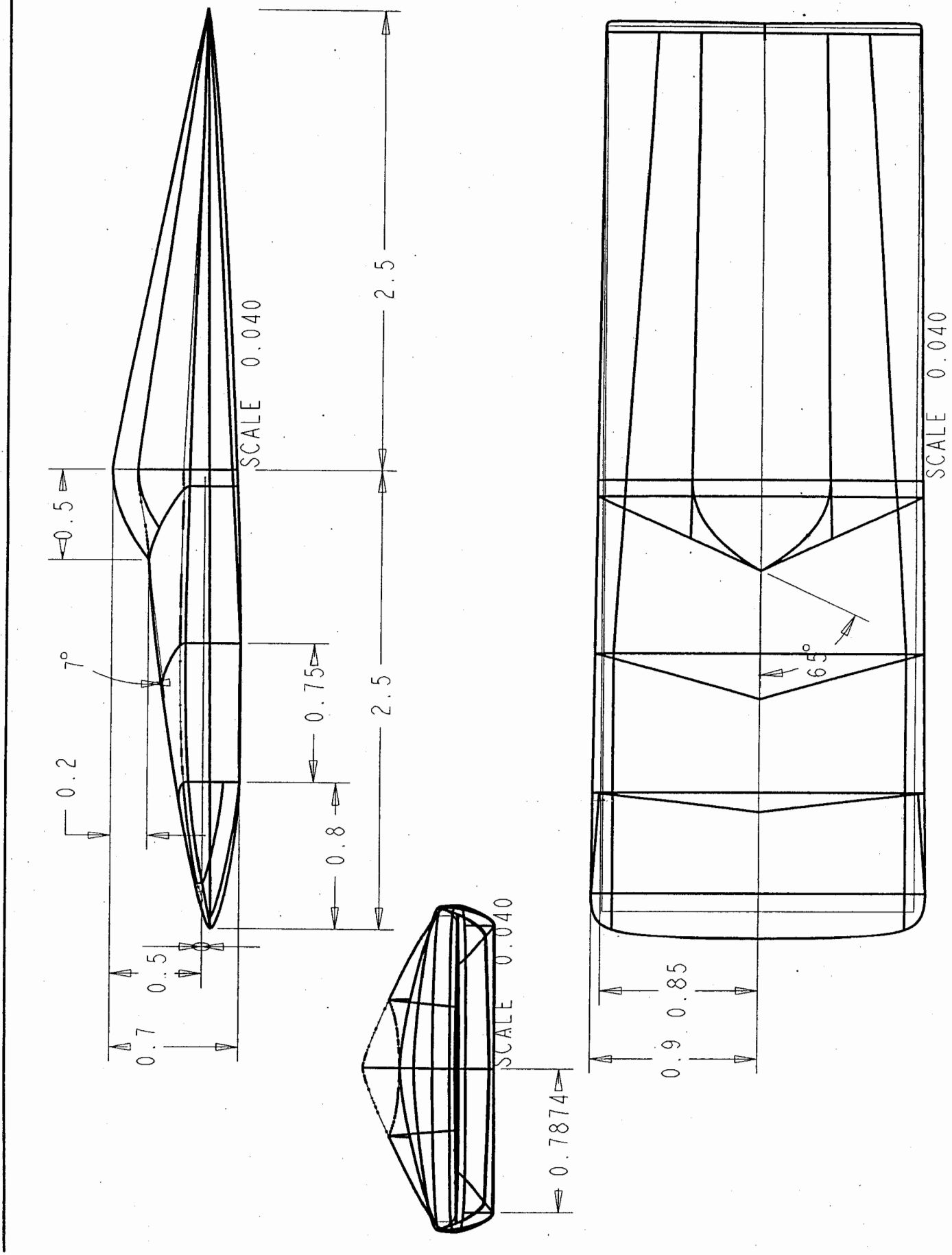
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2.5
0.5
7°
0.75
2.5
0.2
0.8
0.5
0.7
SCALE 0.040
0.7874
SCALE 0.040
65°
0.85
0.9