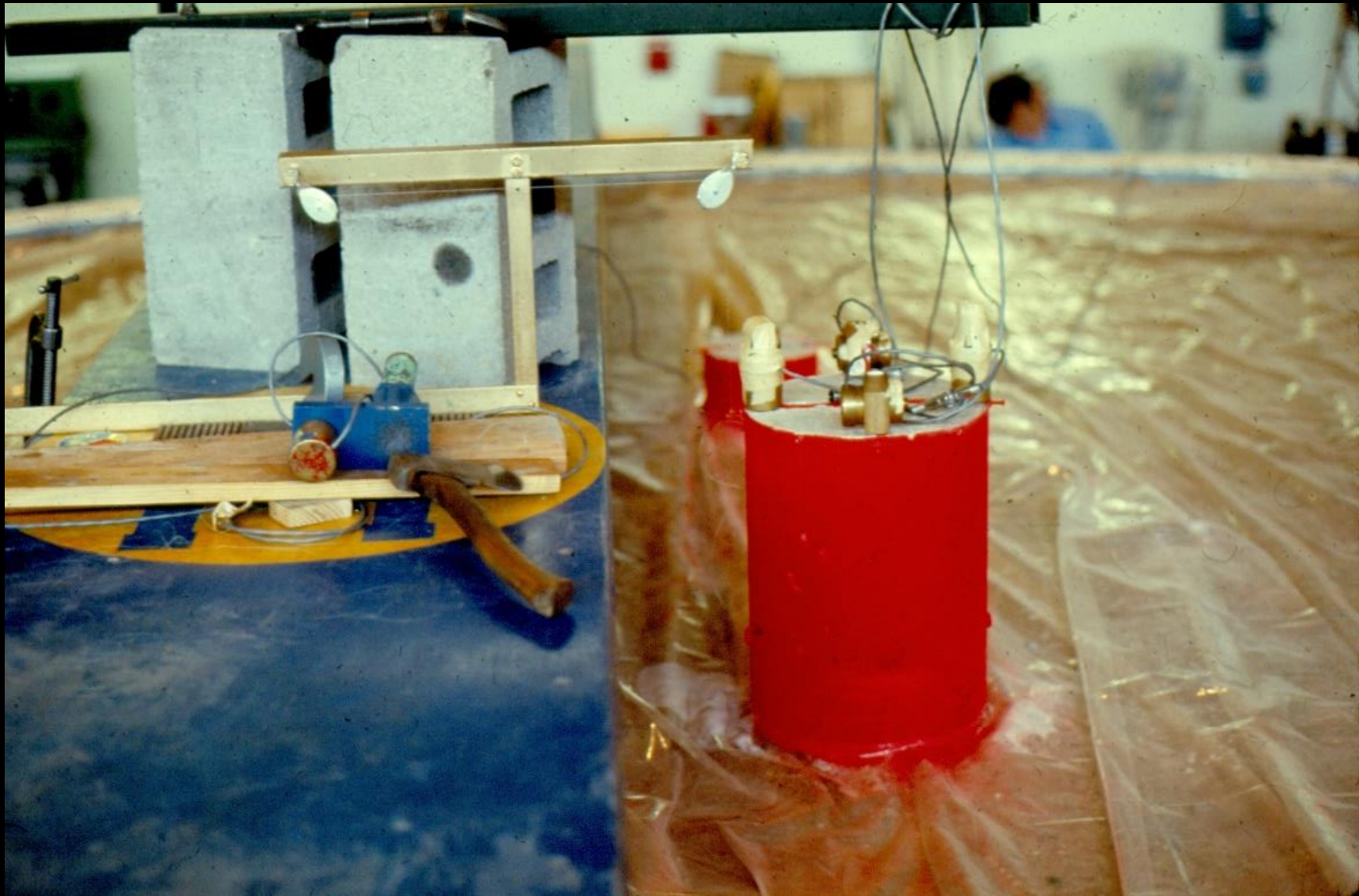


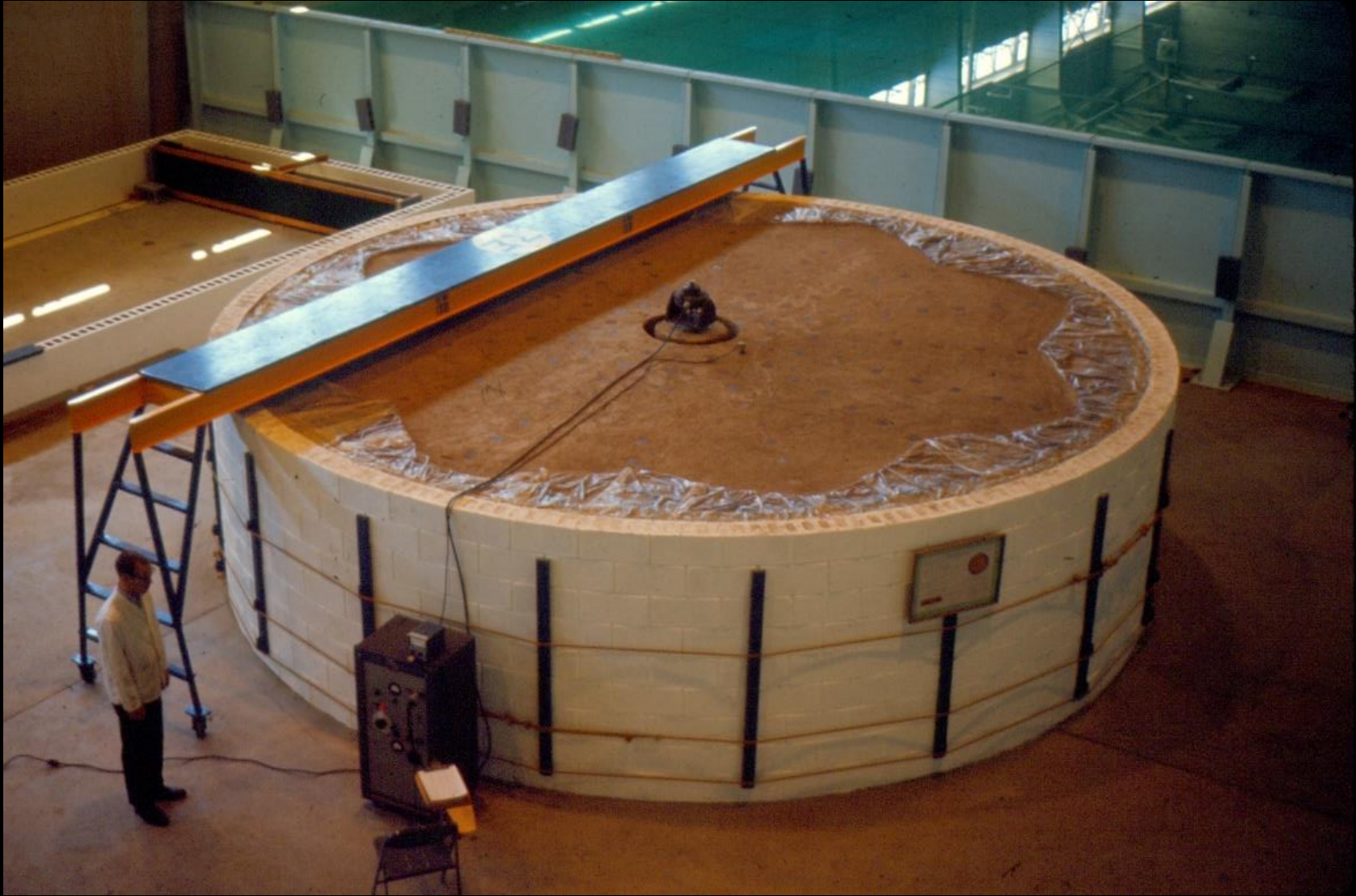
Exciting — in Civil Engineering

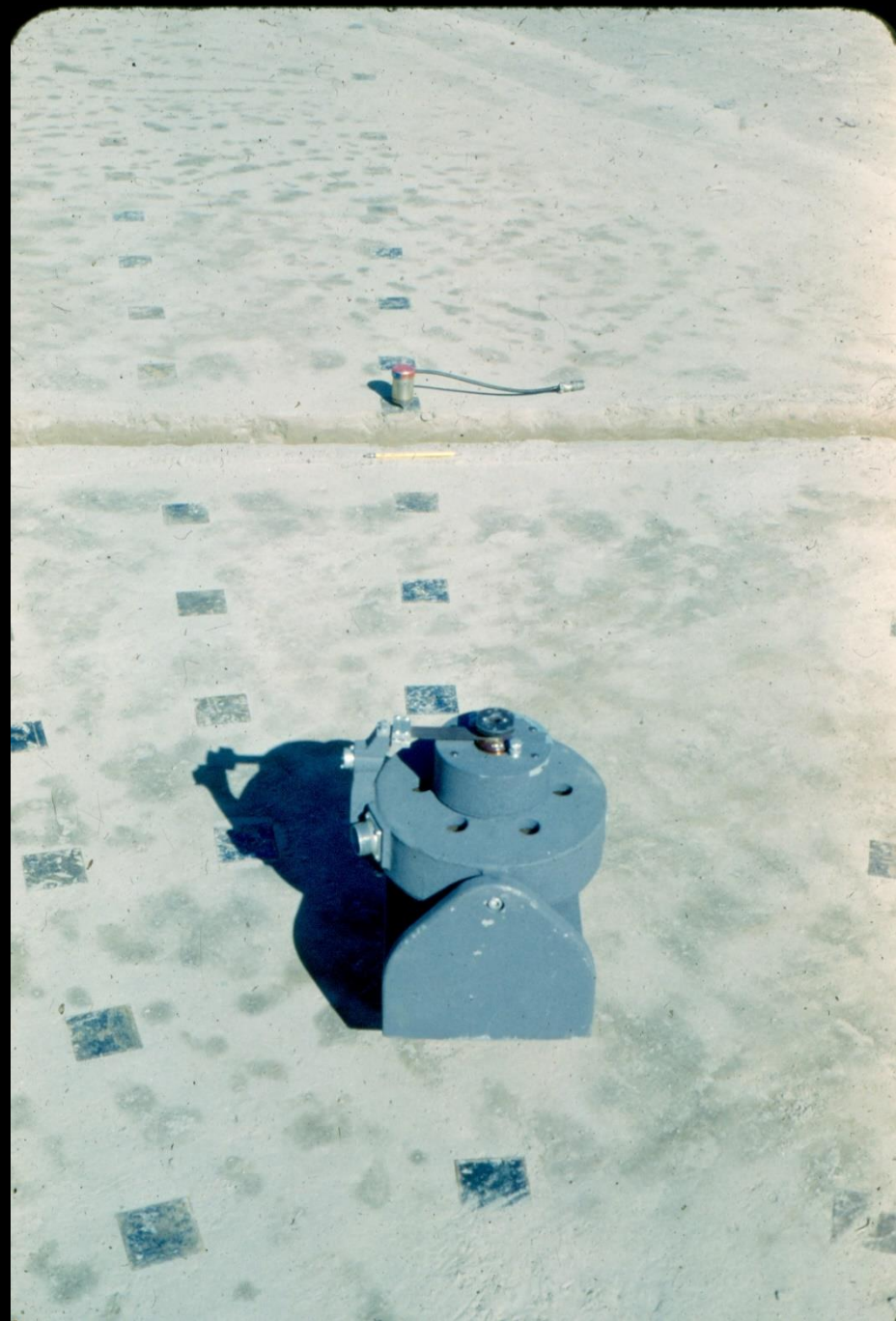
How to get more bang for your buck!

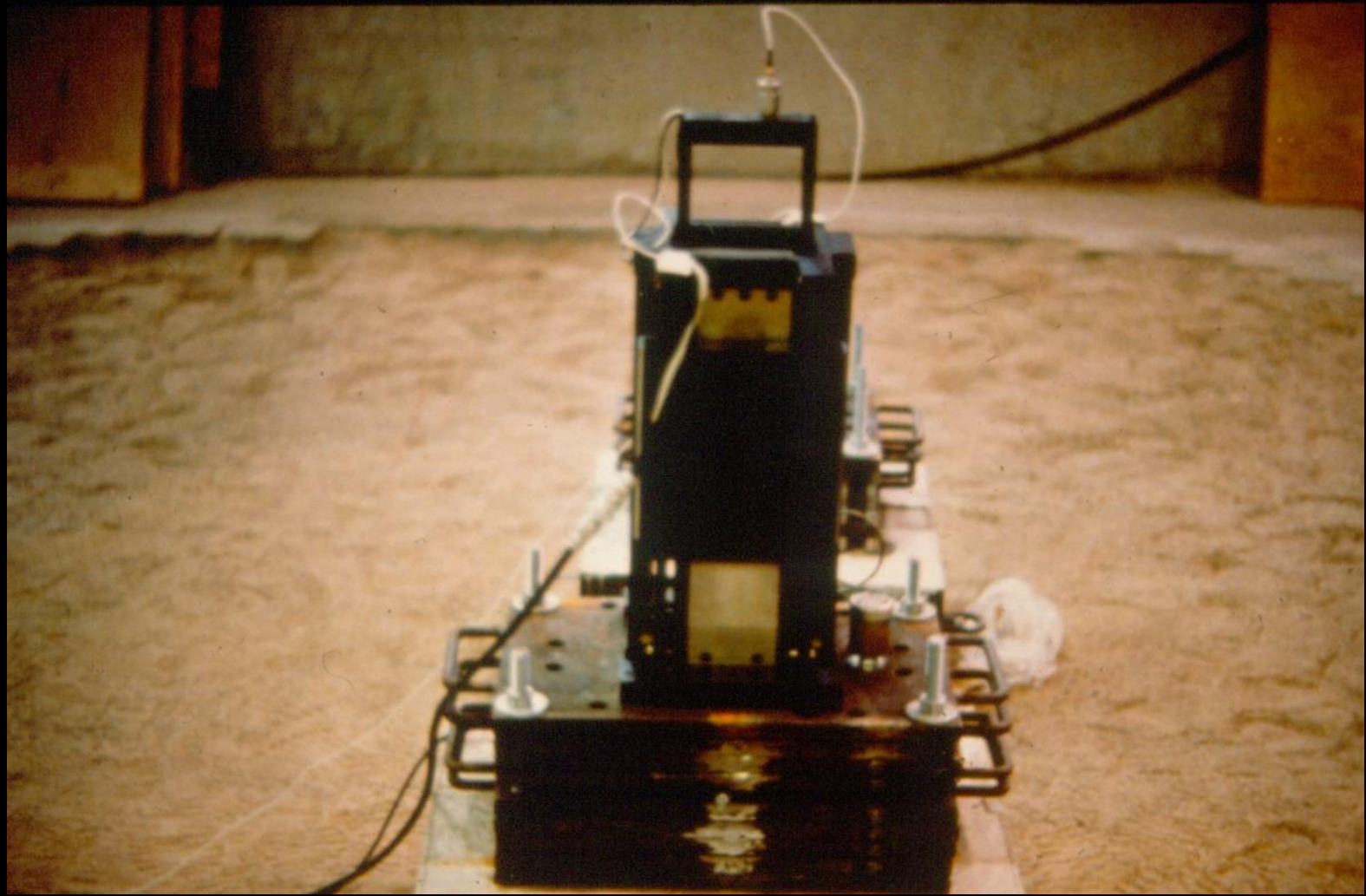
August 3, 2017
RICHARD D. WOODS
University of Michigan













LAZAN OSCILLATOR

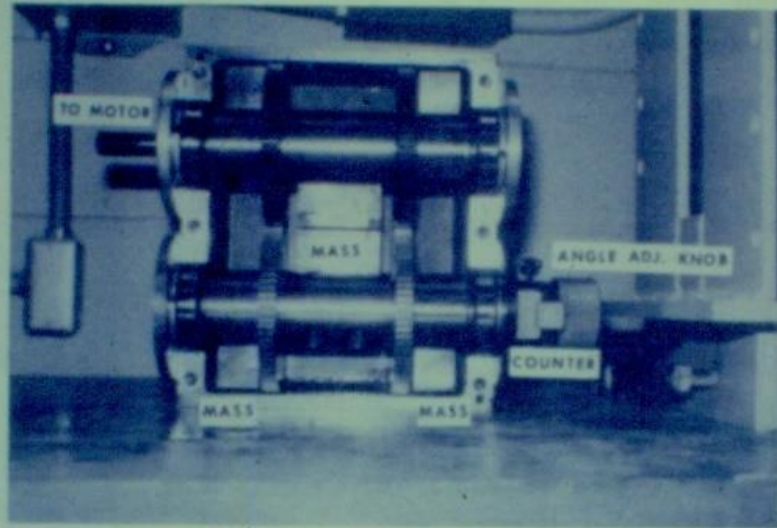
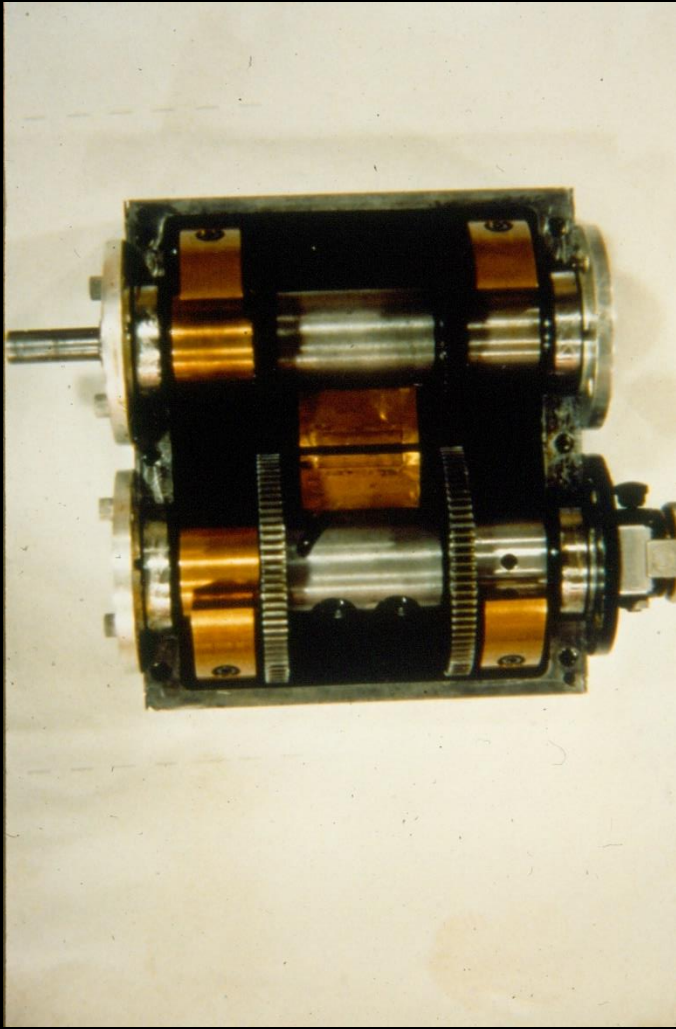
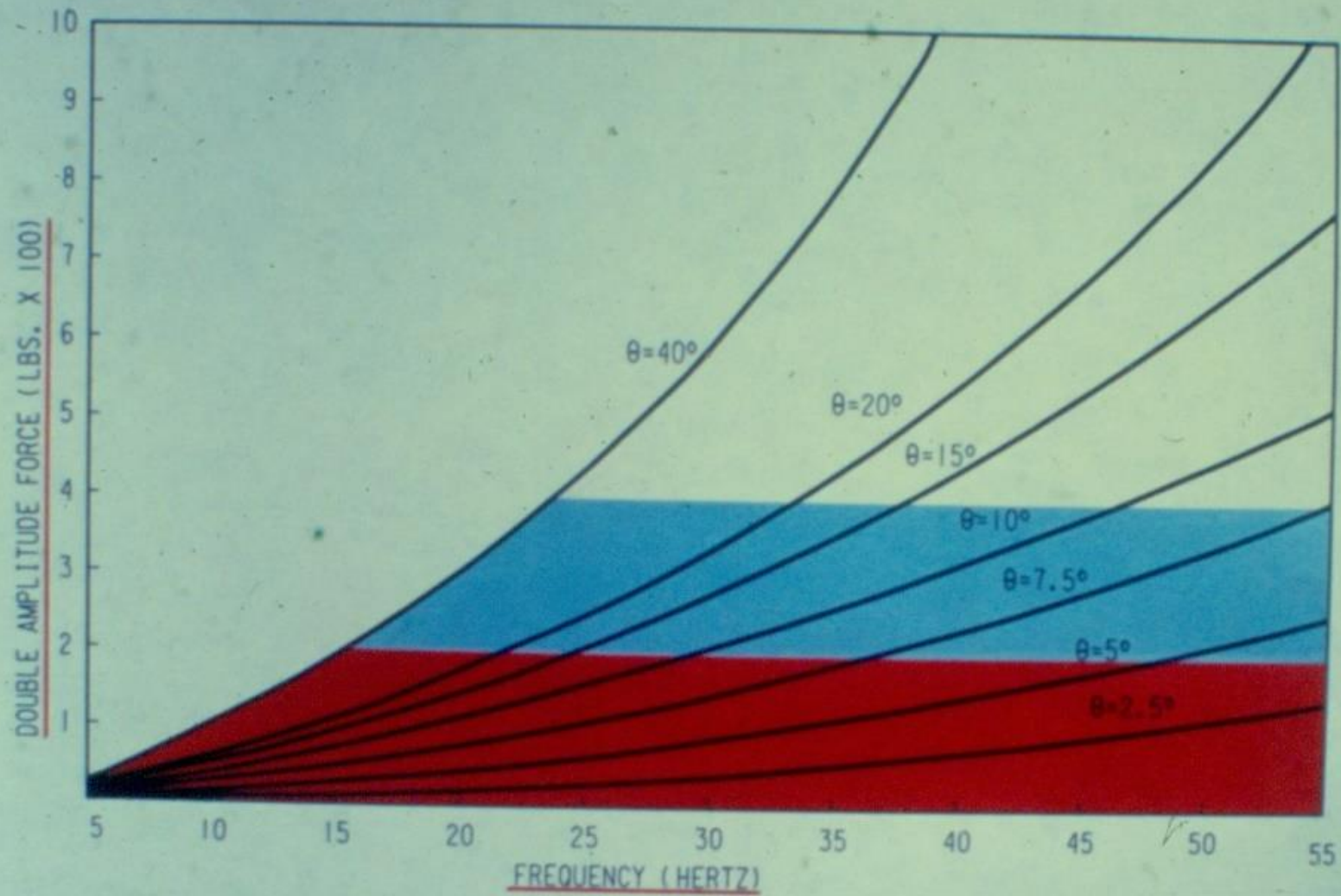


Figure 3.3 Interior of the Lazan oscillator showing rotating eccentric masses

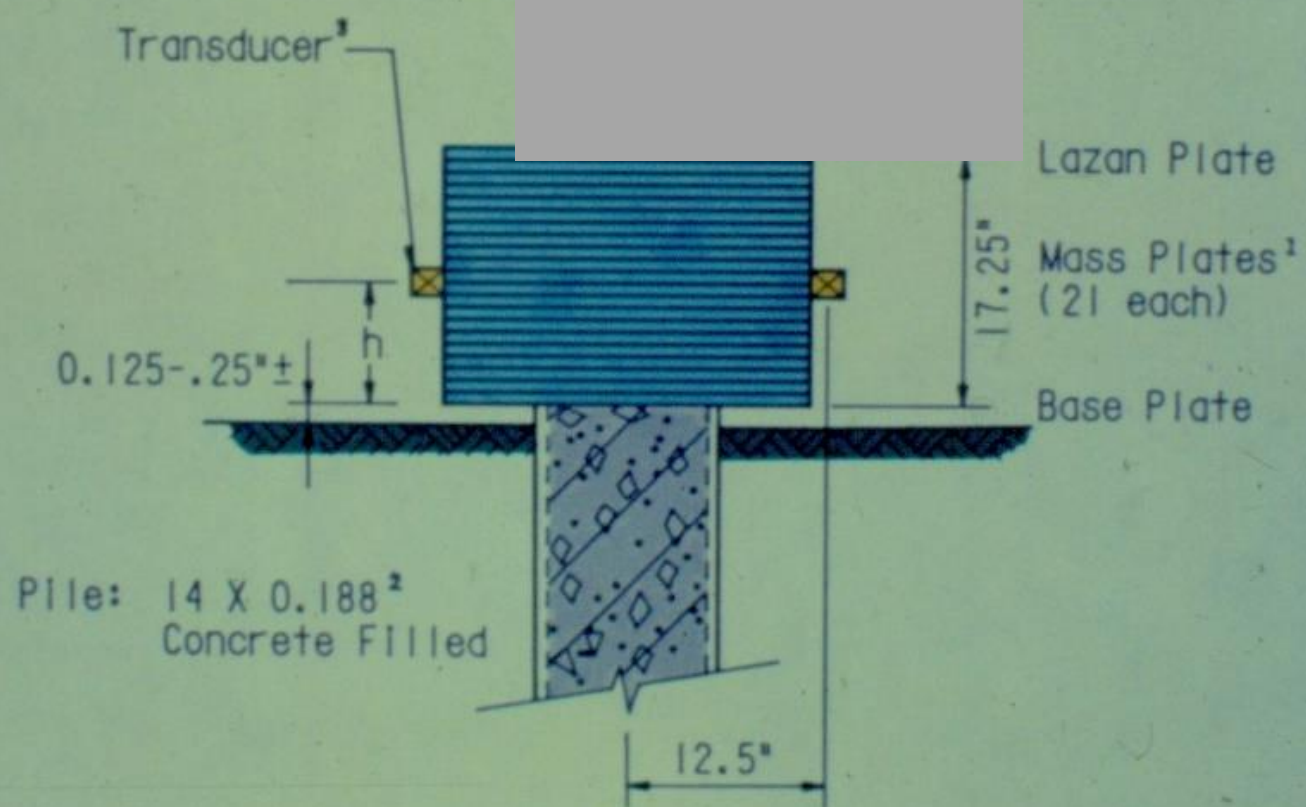


Lazan Oscillator Force Level Versus Frequency

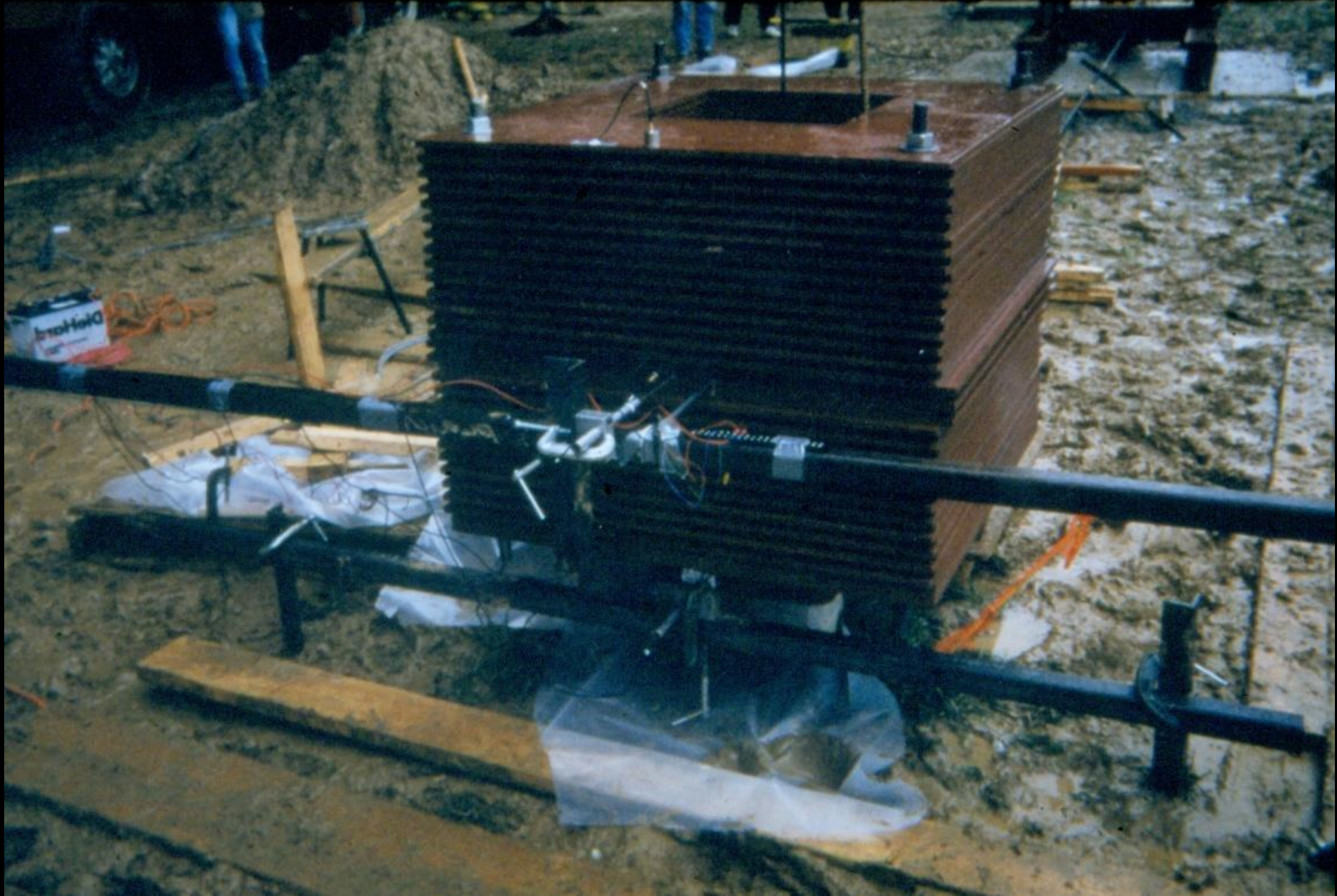






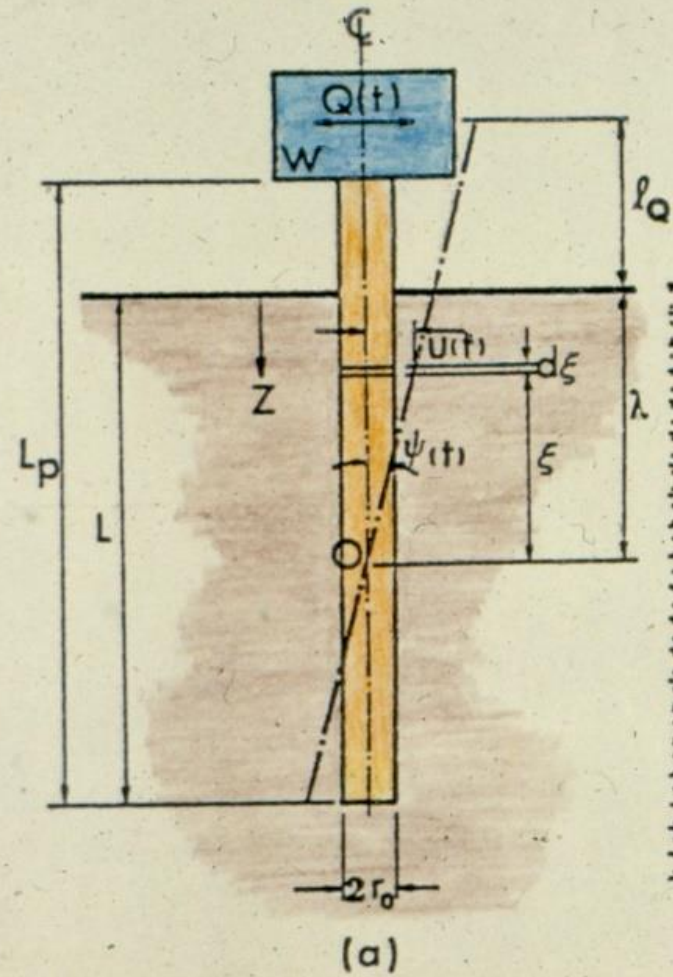




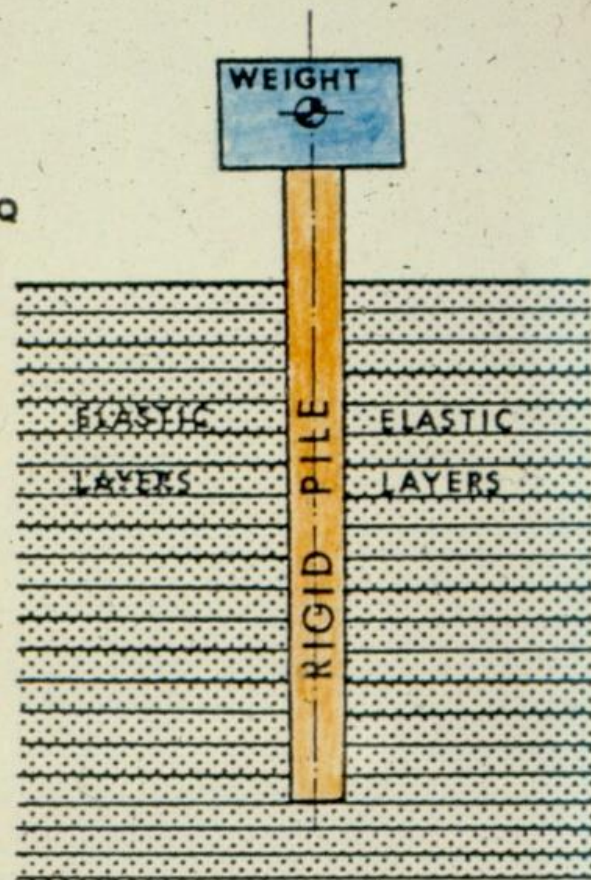






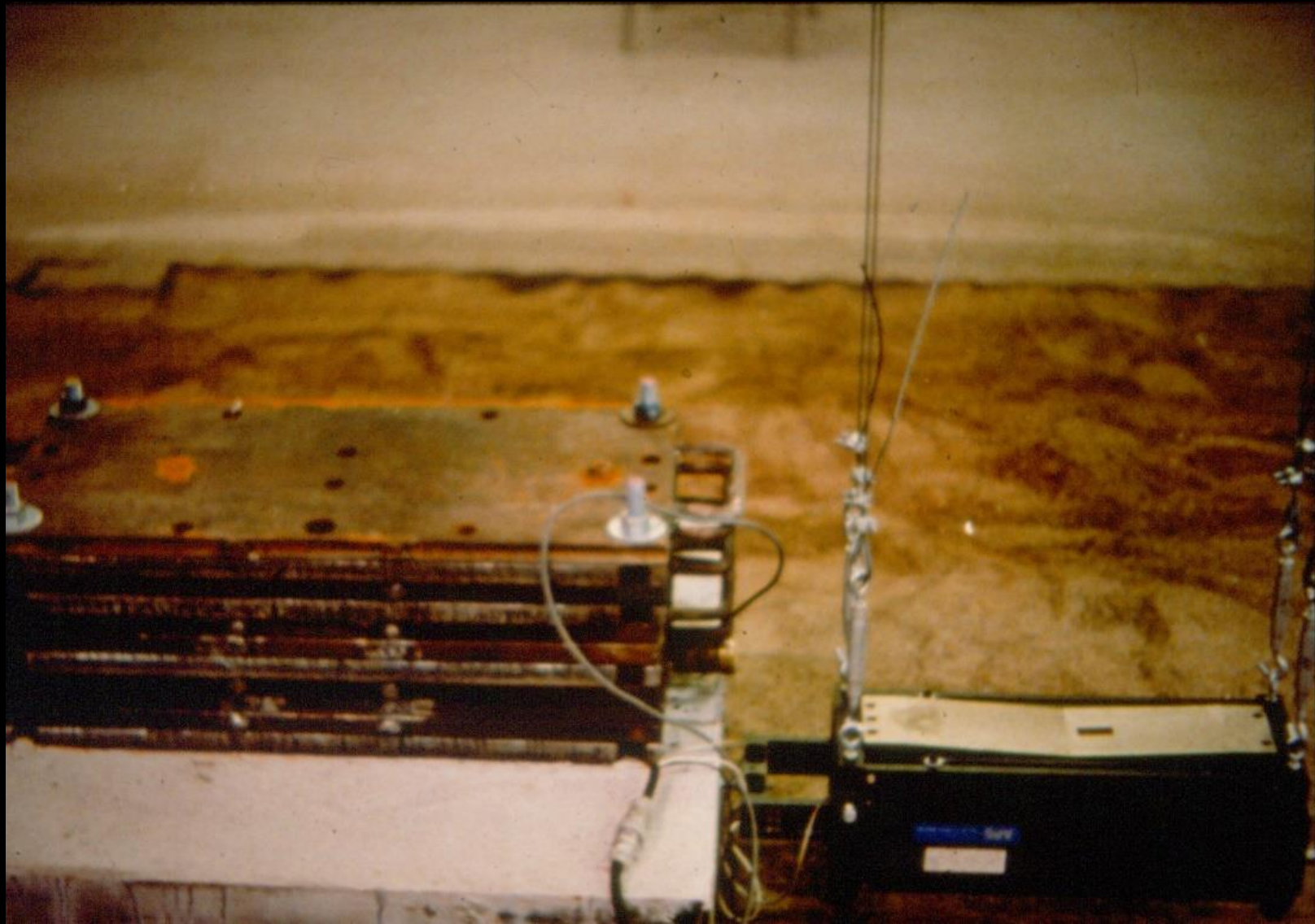


(a)



(b)





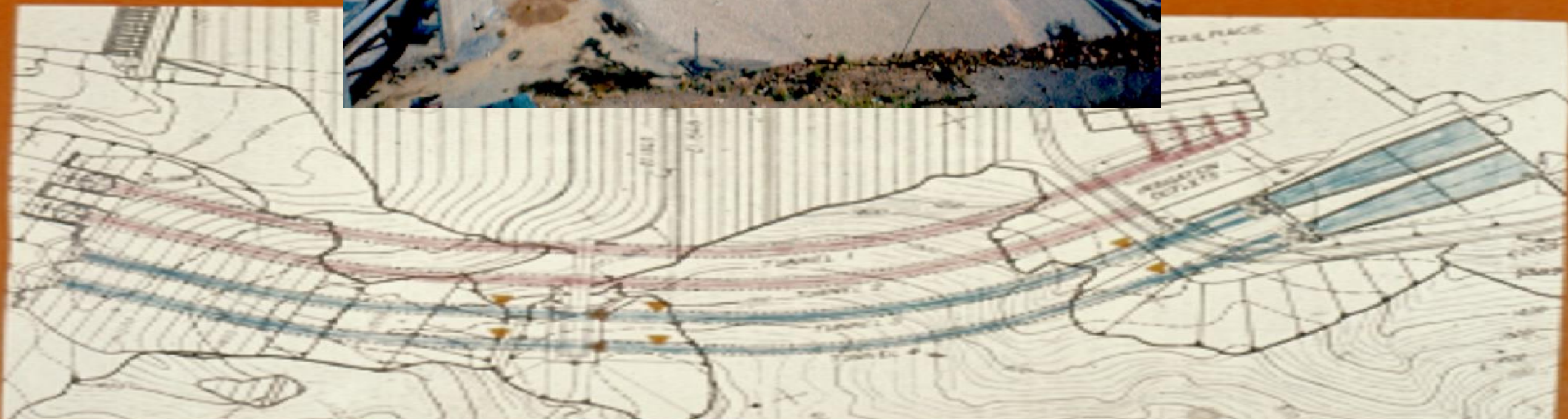




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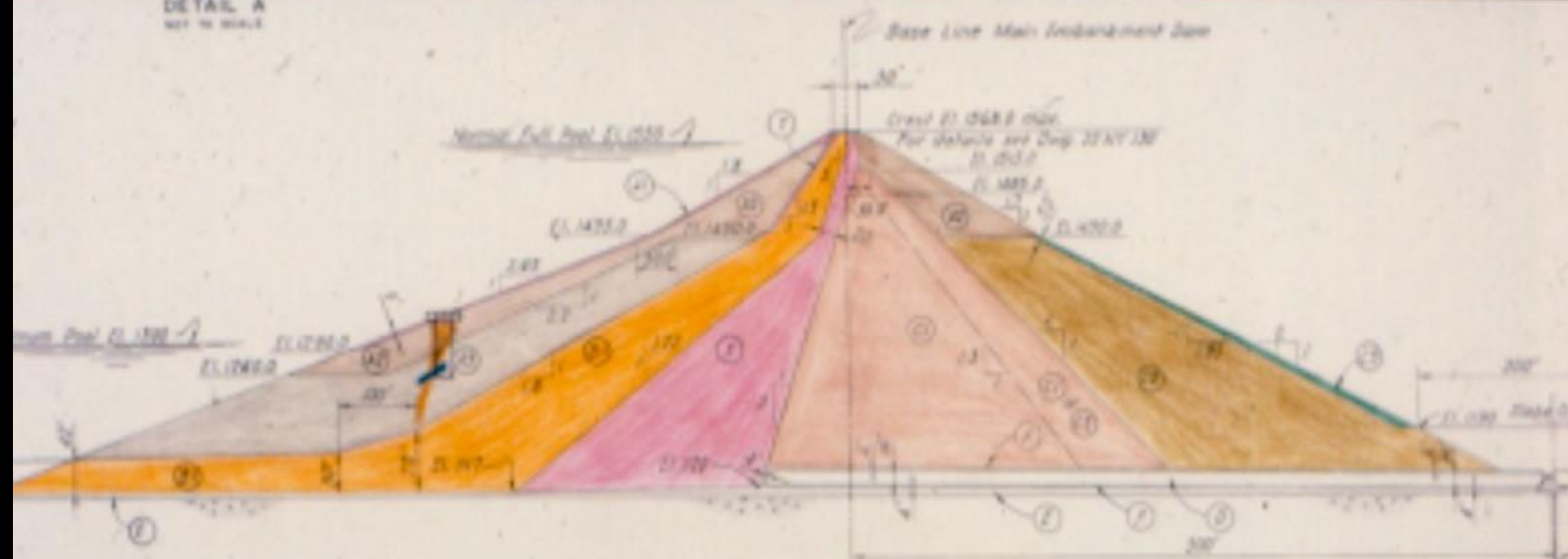
“BIG” STEADY-STATE



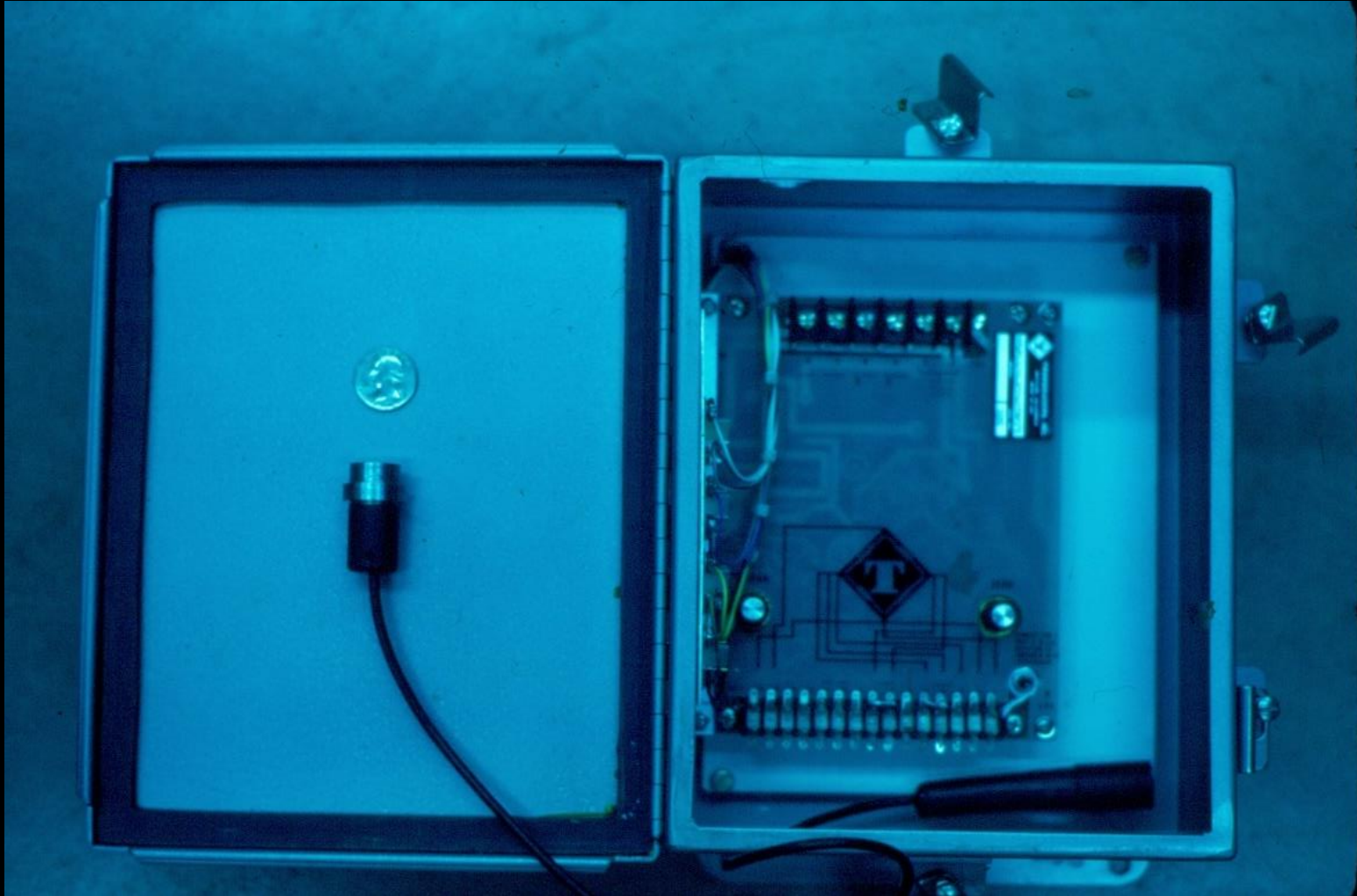




DETAIL A
NOT TO SCALE

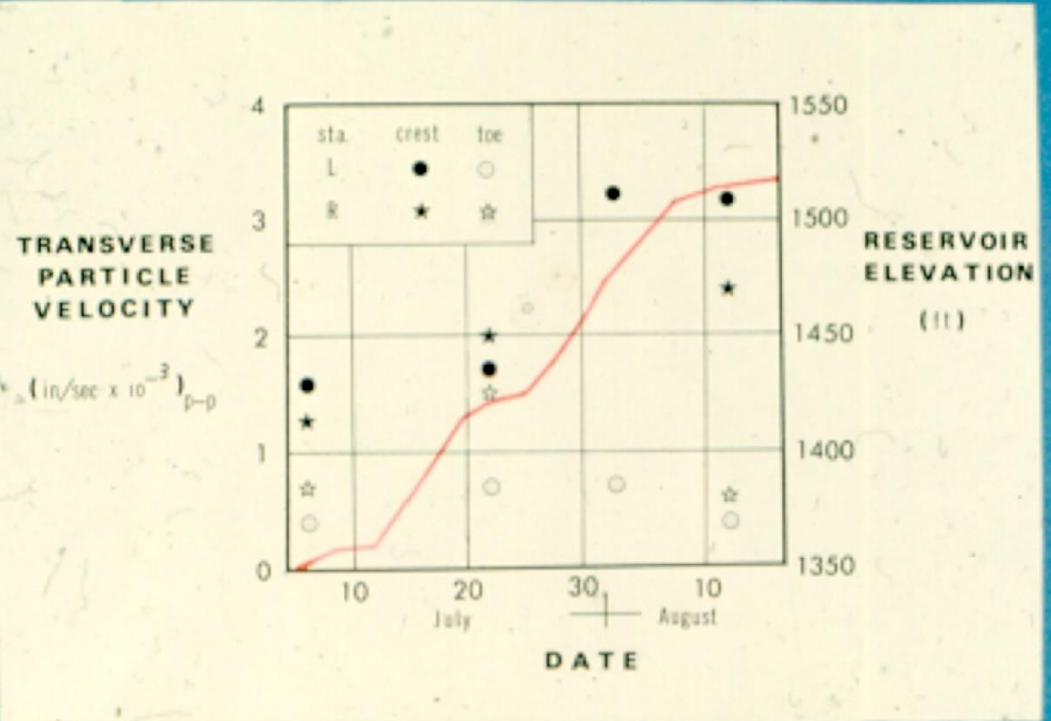
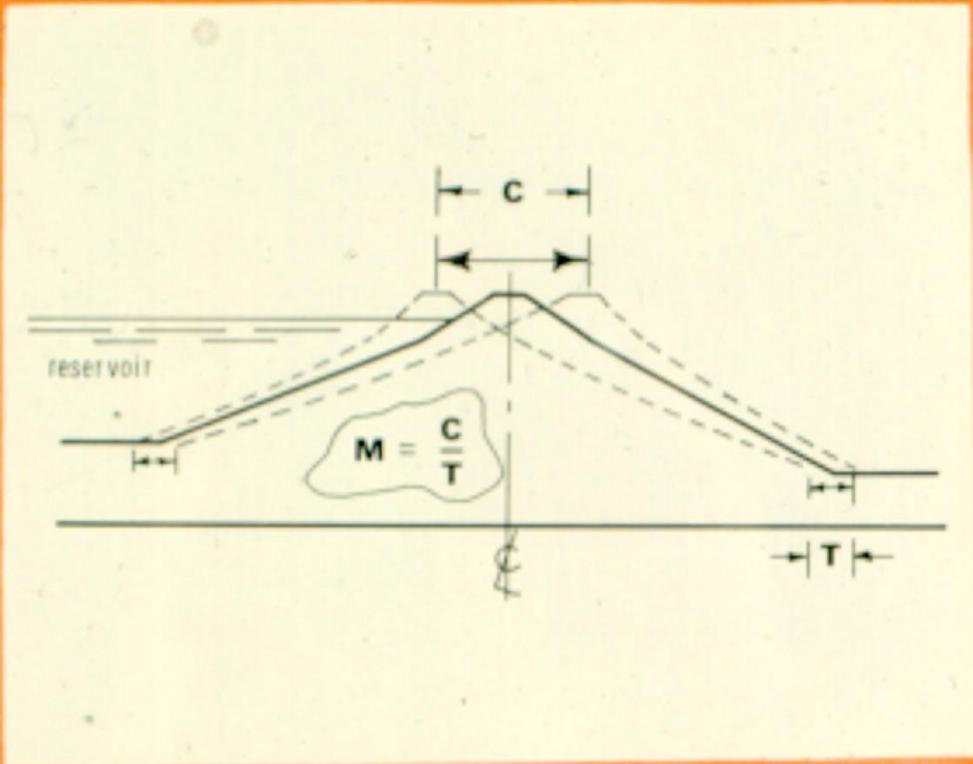


TYPICAL SECTION MAIN EMBANKMENT-RIVER AREA



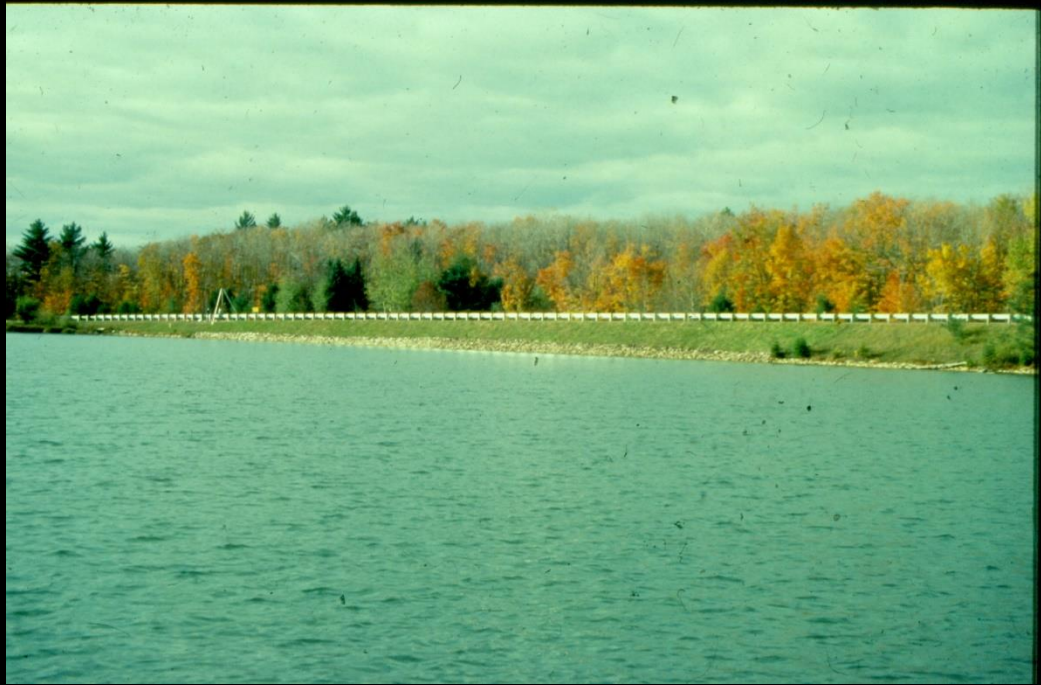








“UNINTENDED” STEADY-STATE





IMPULSE

TRIED-N-TRUE

T.N.T.

YOU'LL GET A

BANG

BLASTING
POWDERS

OUT OF
T.N.T.

GUN POWDER
SALTPETER





THE END