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UNIT WEIGHTS, VOID RATIO, POROSITY, AND DEGREE OF SATURATION
(DISPLACEMENT METHOD)

Date _____

PROJECT _____

BORING NO. _____

Water Content								
SAMPLE OR SPECIMEN NO.								
TARE NO.								
Weight in Grams	TARE PLUS WET SOIL							
	TARE PLUS DRY SOIL							
	WATER	W_w						
	TARE							
	DRY SOIL	W_s						
Water content		W	%	%	%	%	%	%
WEIGHT - VOLUME RELATIONS								
SAMPLE OR SPECIMEN NO.								
TEST TEMPERATURE OF WATER, T.C.								
WEIGHT IN GRAMS	SOIL AND WAX IN AIR							
	WET SOIL	W						
	WAX							
	WET SOIL AND WAX IN WATER							
	DRY SOIL h	W_s						
SPECIFIC GRAVITY OF SOIL		G_s						
VOLUME IN CC	WET SOIL AND WAX 2							
	WAX							
	WET SOIL	V						
	DRY SOIL = W_S / G_S	V_S						
LB PER CU FT	WET UNIT WT = (W/V) 62.4	Y_m						
	DRY SOIL WT = (W_S /V) 62.4	Y_d						
VOID RATIO= (V_S - V)/ V_S		e						
POROSITY, % = [(V_S-V) /V]x100		n	%	%	%	%	%	%
DEGREE OF SATURATION, % =[V_w / (V_S - V)] x 100		S	%	%	%	%	%	%

VOLUME OF WAX= $\frac{\text{WEIGHT OF WAX}}{\text{SPECIFIC GRAVITY OF WAX}}$ = _____

h IF NOT MEASURED DIRECTLY, MAY BE COMPUTED AS FOLLOWS: $W_s = \frac{W}{1 + 0.01\,x}$

2 VOLUME OF WET SOIL AND WAX = $\frac{(\text{WEIGHT OF WET SOIL AND WAX IN AIR}) - (\text{WEIGHT OF WET SOIL AND WAX IN WATER})}{\text{DENSITY OF WATER AT TEST TEMPERATURE}}$

Remarks _____

Technician _____ Computed By _____ Checked By _____