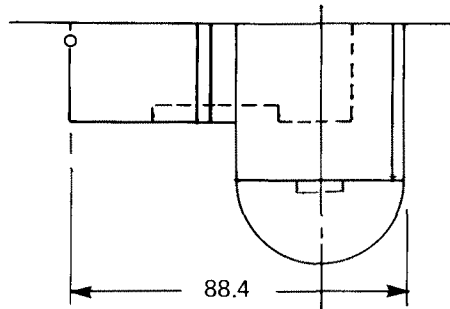


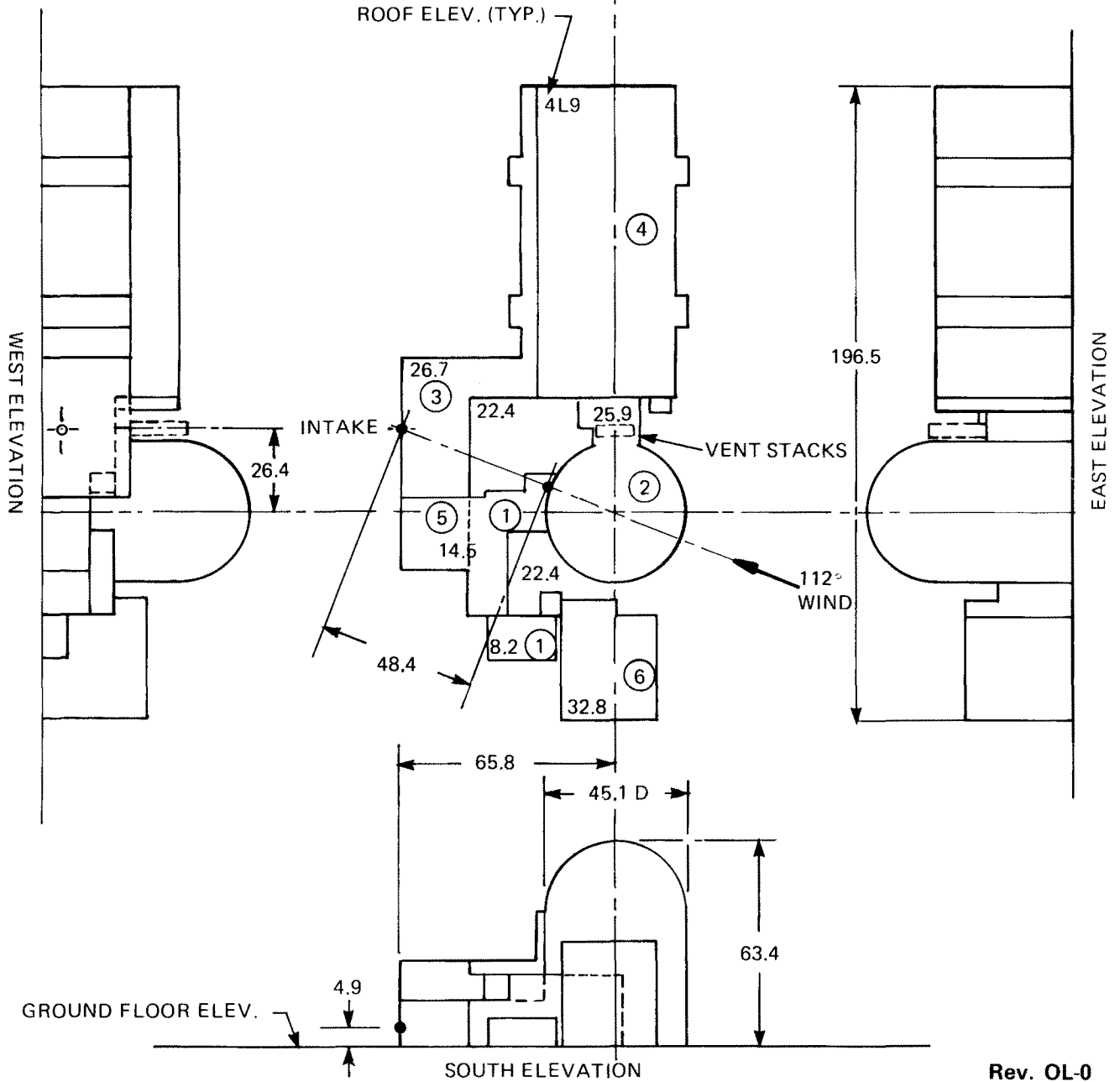
**BUILDING KEY**

- ① AUXILIARY/HOT SHOPS
- ② REACTOR
- ③ CONTROL/COMM. COR.
- ④ TURBINE
- ⑤ DIESEL
- ⑥ FUEL

NORTH ELEVATION



DIMS. IN METERS  
DWG. SCALE 1:2000

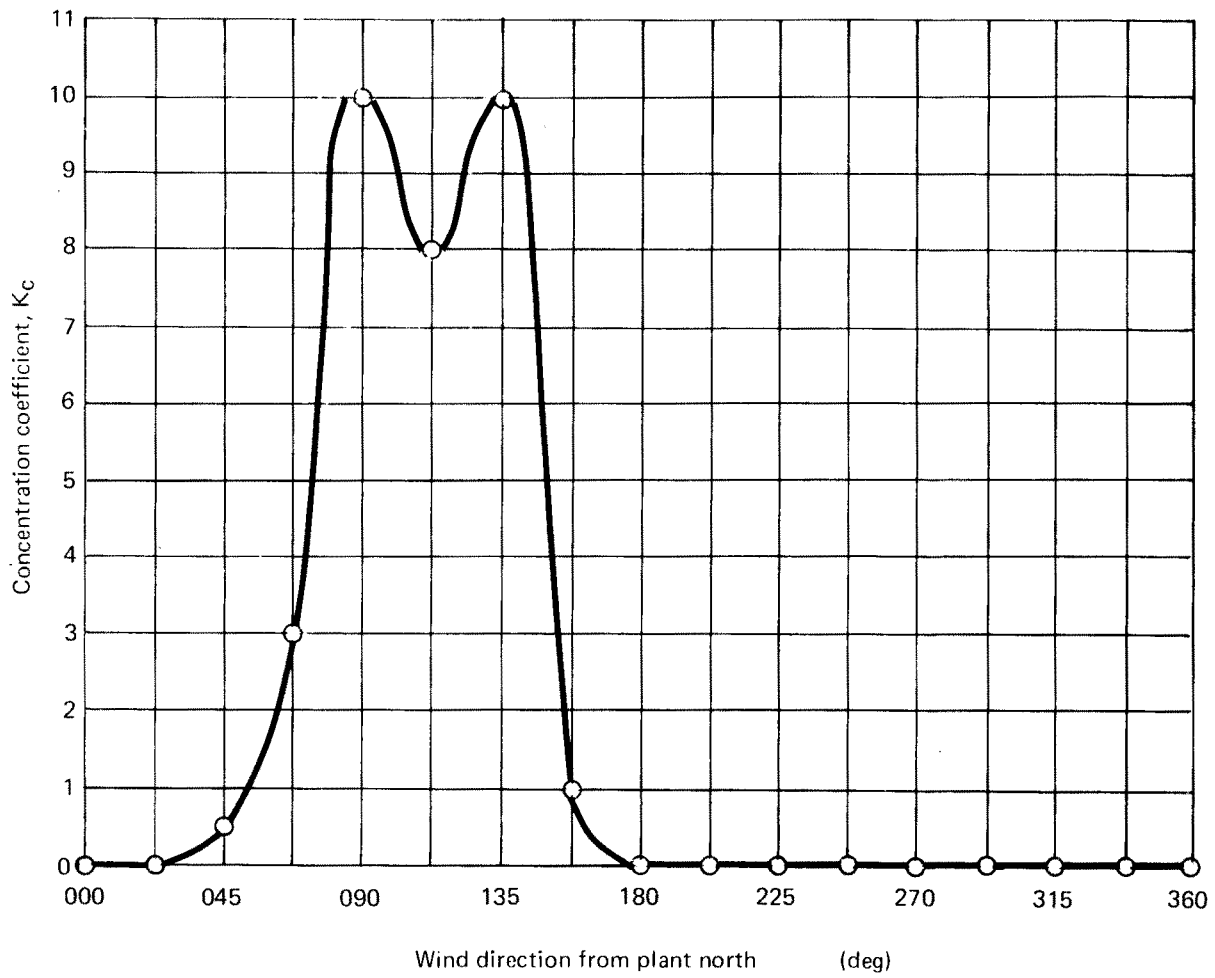


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**CALLAWAY PLANT**

**FIGURE 2.3-1**

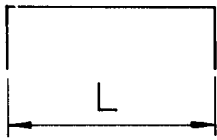
**CONTIGUOUS BUILDING ARRANGEMENT – ONE-UNIT PLANT**



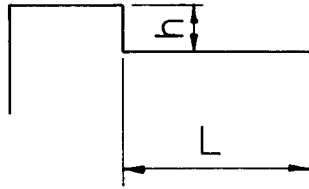
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<b>CALLAWAY PLANT</b>
<b>FIGURE 2.3-2</b>
<b>VARIATION OF INTAKE <math>K_c</math> WITH WIND DIRECTION</b>

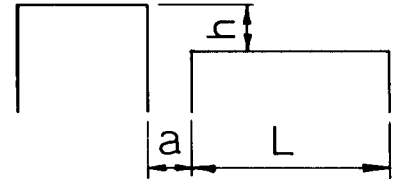
# ROOF GEOMETRY



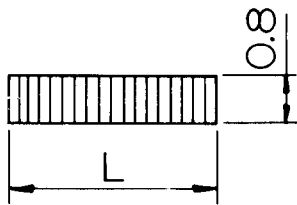
FLAT EXPOSED ROOF,  
UPPER LEVEL OF  
MULTI-LEVEL ROOFS,  
AND DOMES.



LOWER LEVEL OF MULTI-LEVEL ROOFS  
WHEN UPPER ROOF IS PART OF THE  
SAME BUILDING OR AN ADJACENT  
BUILDING NOT MORE THAN 15FT. AWAY.

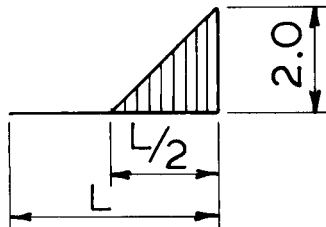


# DISTRIBUTION COEFFICIENTS

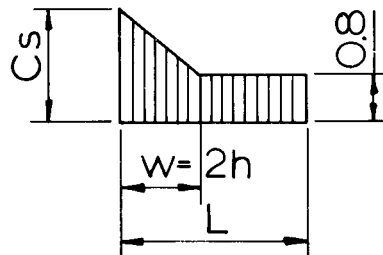


$C_s = 0.8$  FOR ALL EXPOSED  
UNSHELTERED ROOFS.

IN ADDITION  
FOR SPHERICAL  
DOMES:



REFERENCE: AMERICAN  
NATIONAL STANDARD A58.1-  
1972, SECTION 7.1, FIGURES  
5 AND 6.



$C_s = 15 \frac{h}{g}$   
WHEN  $15 \frac{h}{g} < 0.8$  USE  $C_s = 0.8$   
WHEN  $15 \frac{h}{g} > 3.0$  USE  $C_s = 3.0$

$w = 2h$   
WHEN  $h < 5$  FT. USE  $w = 10$  FT.  
WHEN  $h > 15$  FT. USE  $w = 30$  FT.

WHERE

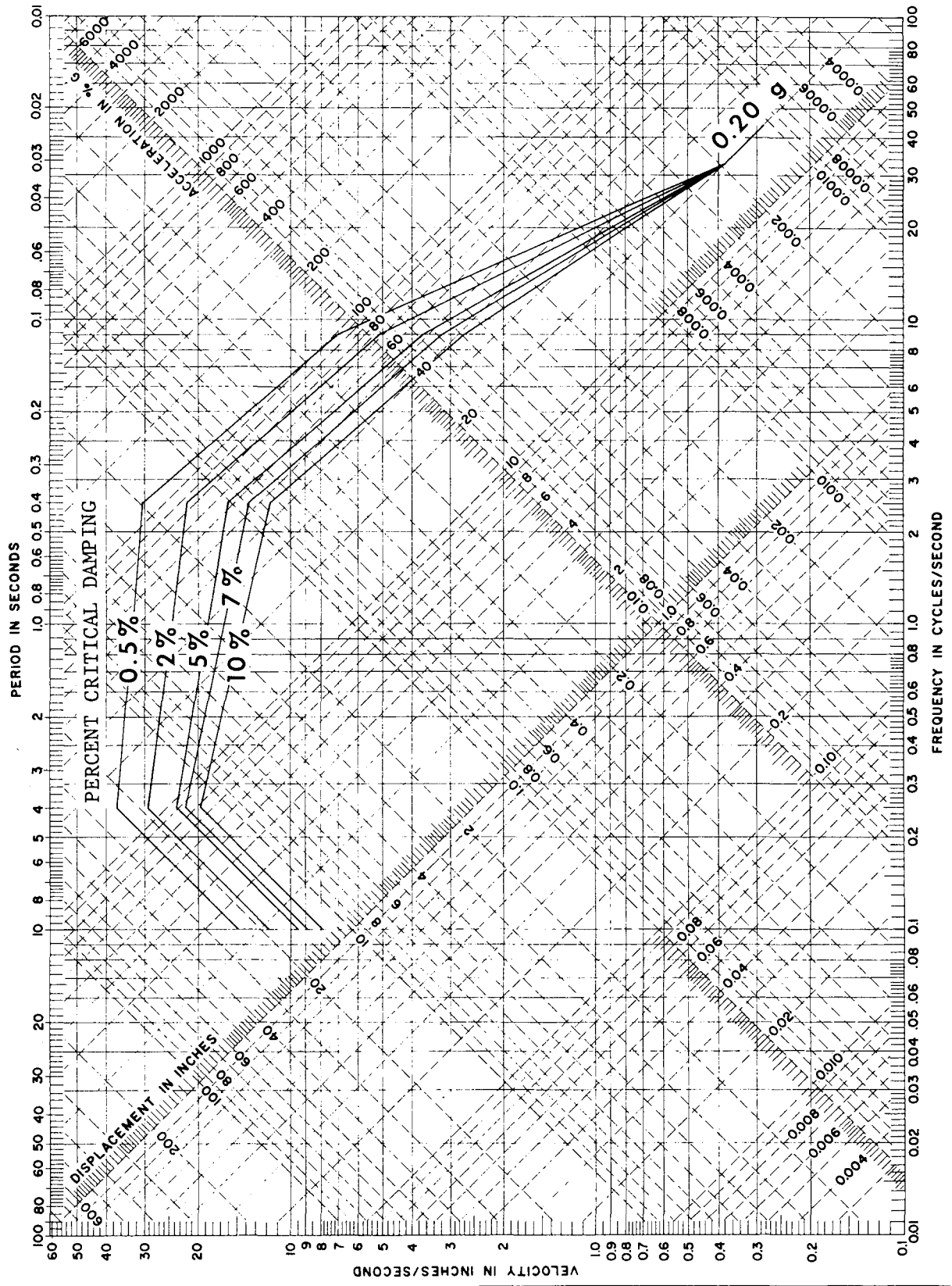
$h$  = DIFFERENCE IN ROOF HT. IN FT.  
 $g$  = GROUND SNOW LOAD IN PSF  
 $w$  = WIDTH OF DRIFT IN FT.  
 $a$  = DISTANCE BETWEEN  
BUILDINGS  $< 15$  FT.

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**CALLAWAY PLANT**

**FIGURE 2.4-1**

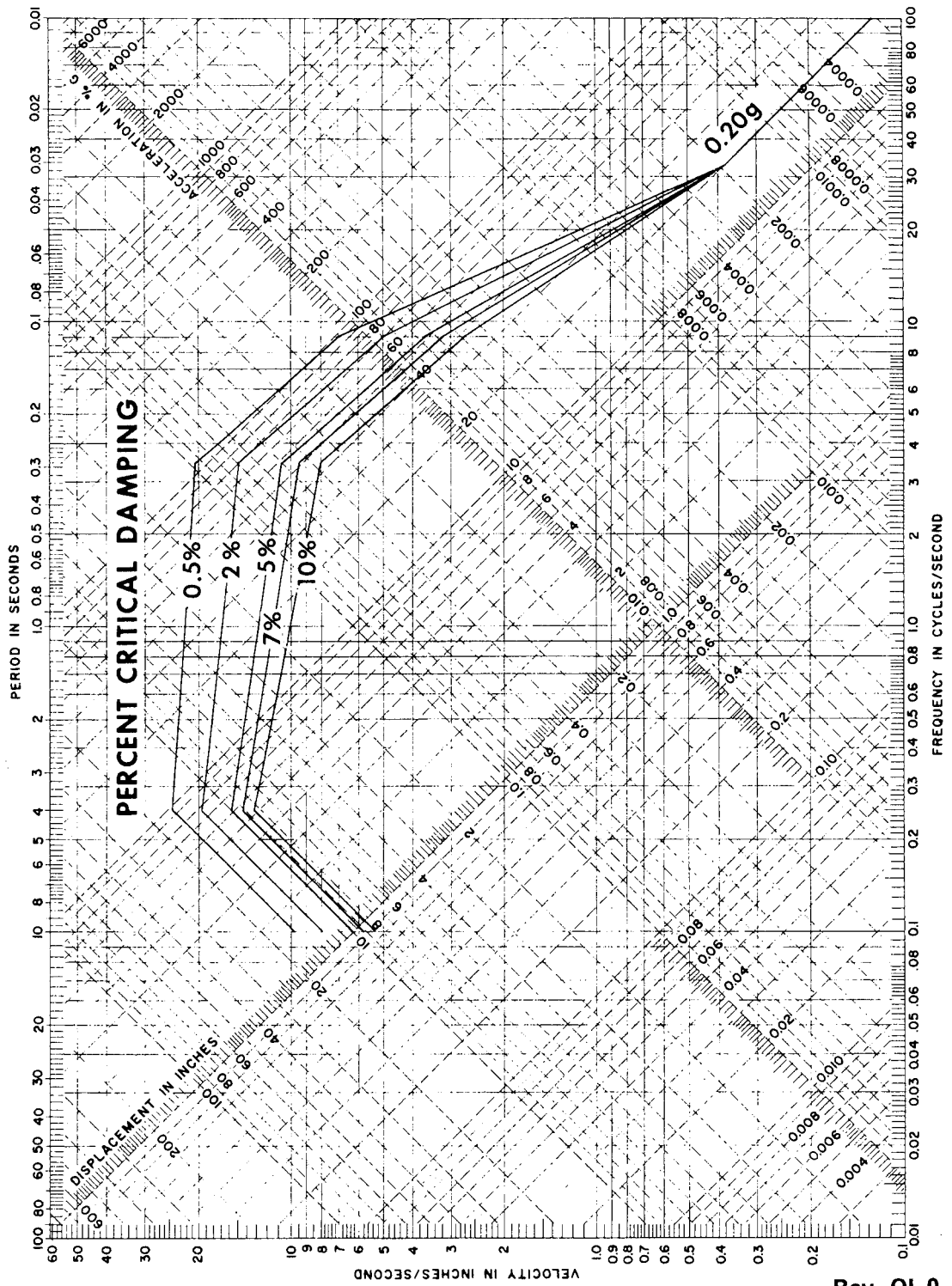
**SNOW LOAD DISTRIBUTIONS  
AND COEFFICIENTS**



**CALLAWAY PLANT**

**FIGURE 2.5-1**

**SSE HORIZONTAL DESIGN SPECTRA**

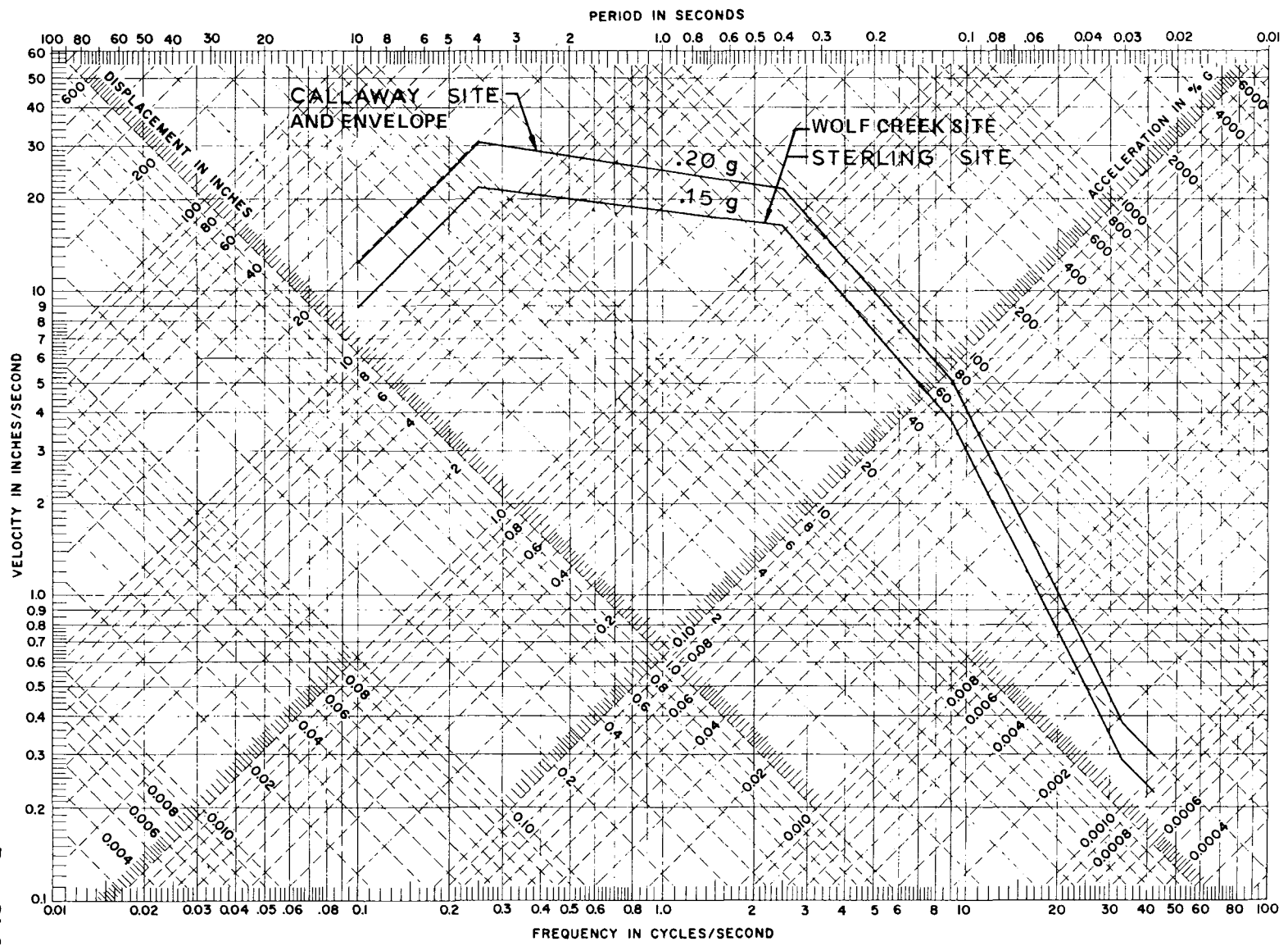


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**CALLAWAY PLANT**

FIGURE 2.5-2

**SSE VERTICAL DESIGN SPECTRA**

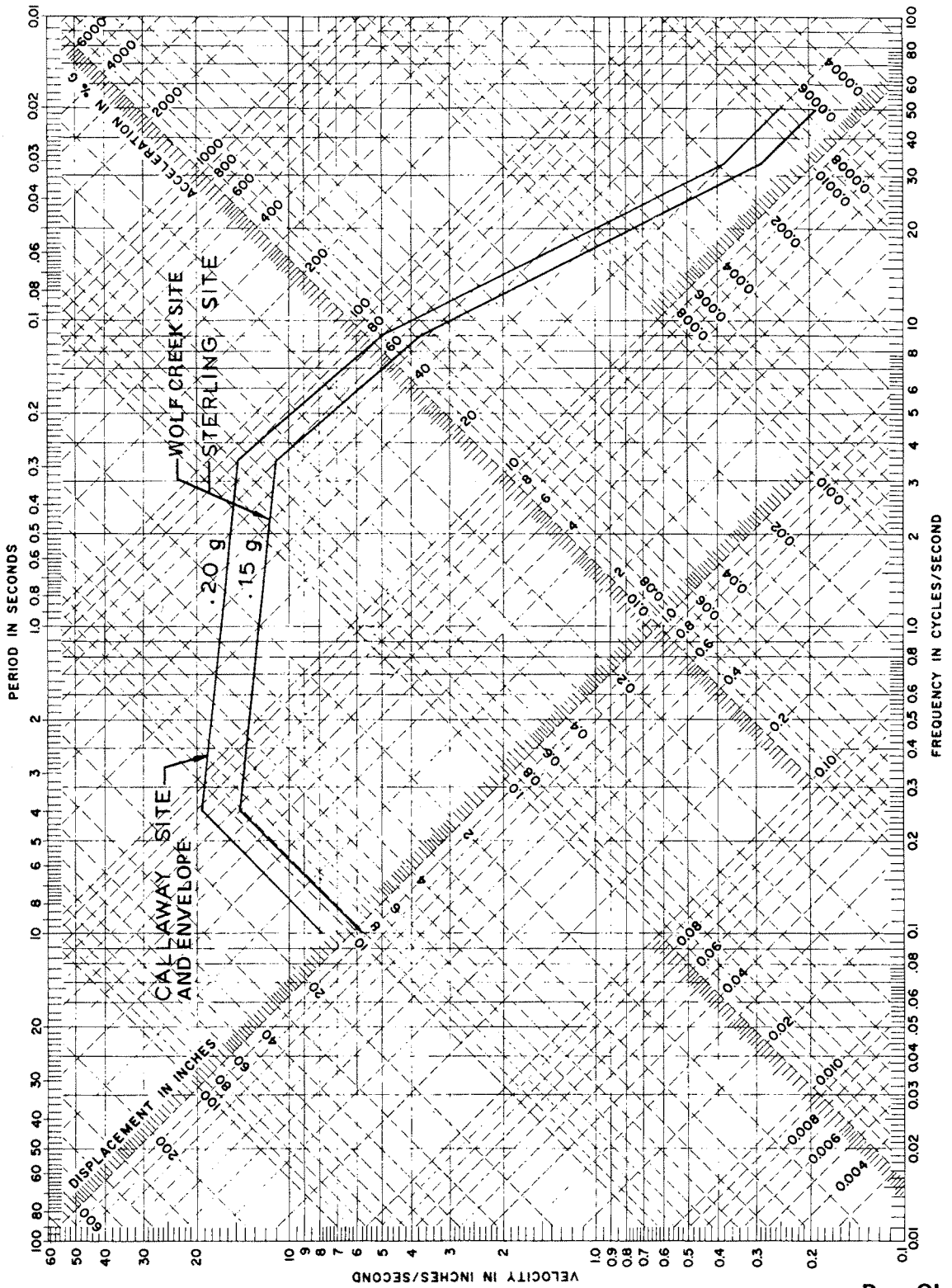


**CALLAWAY PLANT**

FIGURE 2.5-3

**ENVELOPE OF SITE SSE HORIZONTAL  
DESIGN SPECTRA FOR 2% DAMPING**

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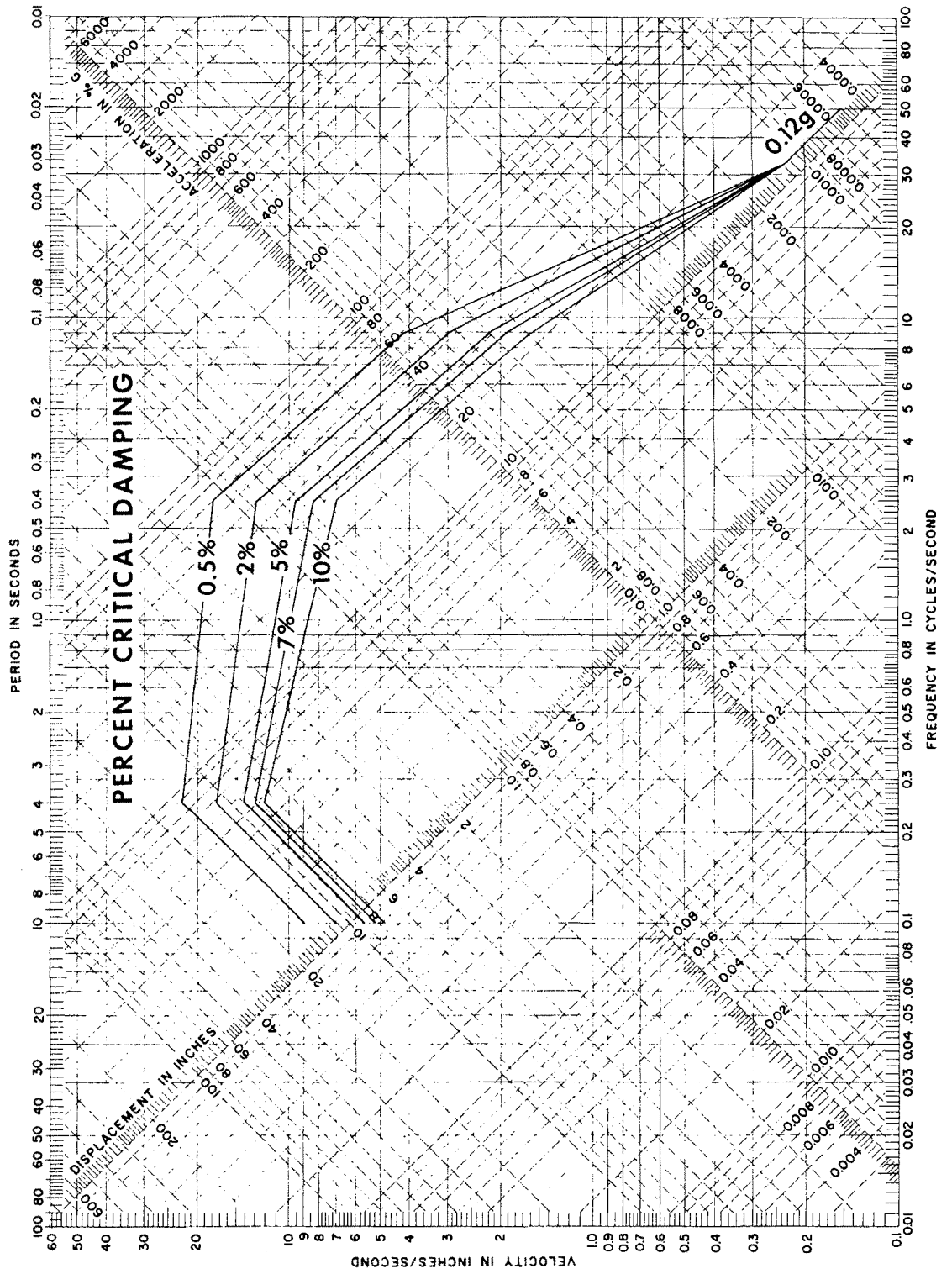


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**CALLAWAY PLANT**

FIGURE 2.5-4

**ENVELOPE OF SITE SSE VERTICAL  
DESIGN SPECTRA FOR 2% DAMPING**



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**CALLAWAY PLANT**

**FIGURE 2.5-5**

**OBE HORIZONTAL DESIGN SPECTRA**

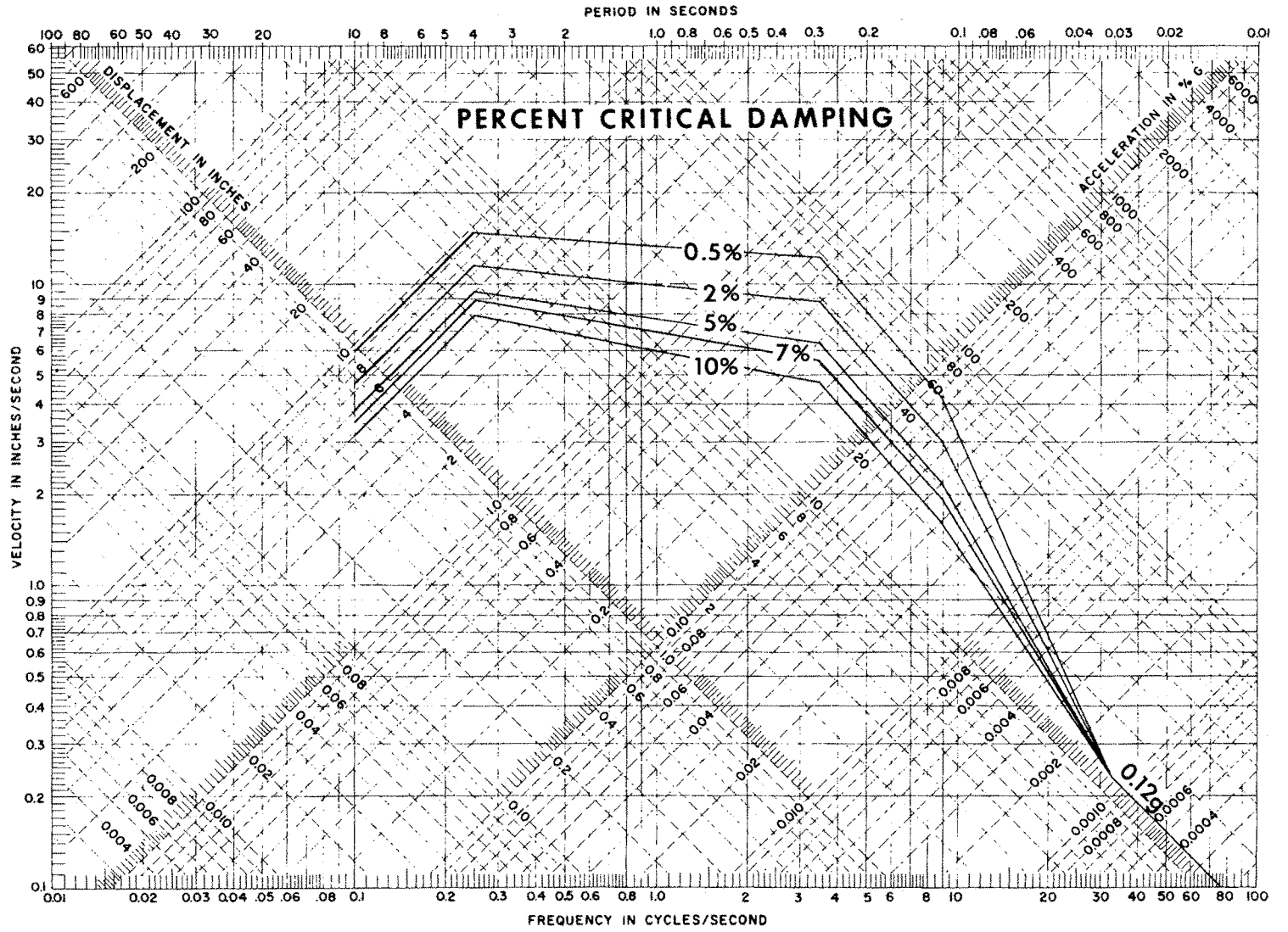


**CALLAWAY PLANT**

**FIGURE 2.5-6**

**OBE VERTICAL DESIGN SPECTRA**

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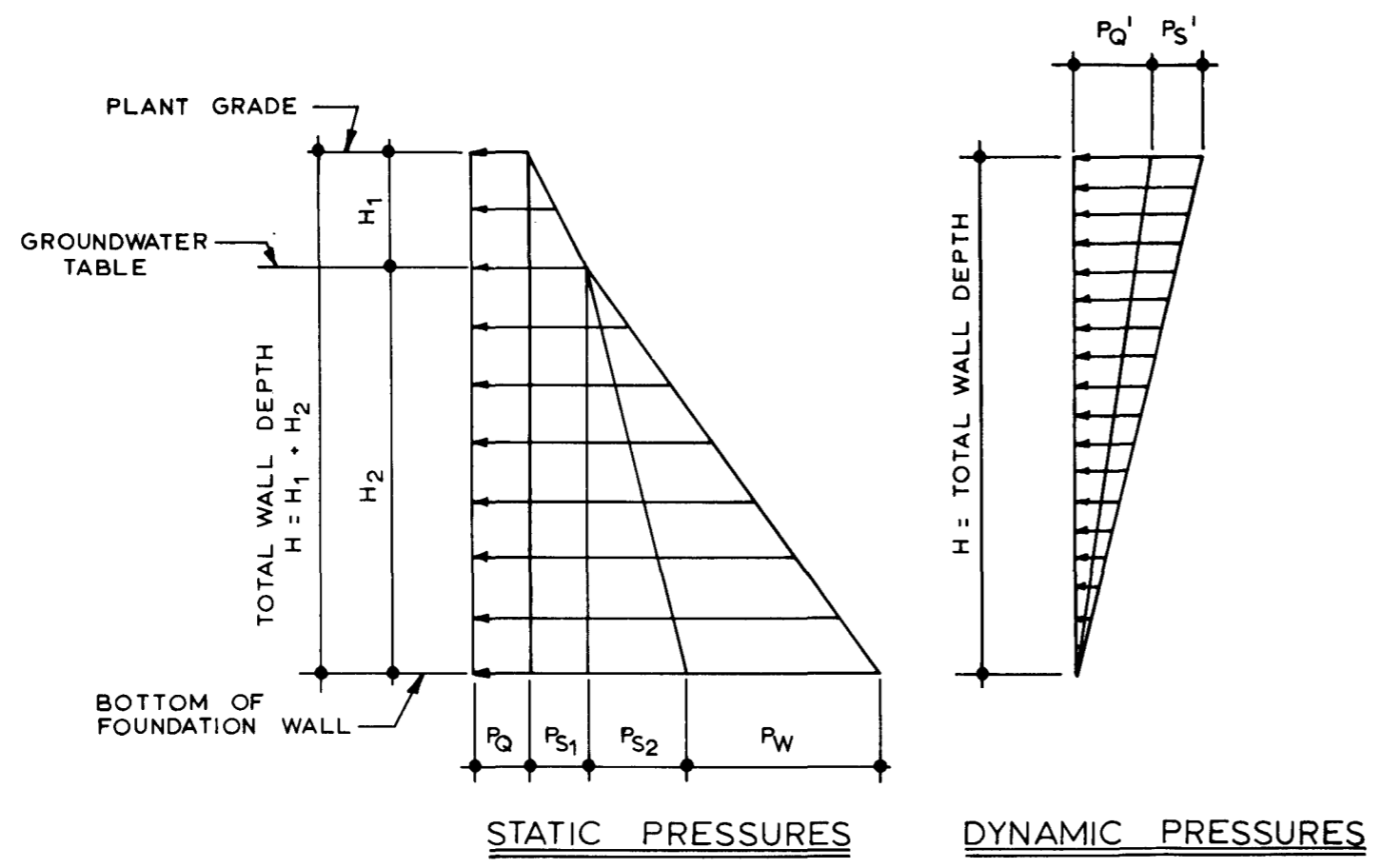


LATERAL EARTH PRESSURE EQUATIONS

SITE	DESIGN WATER TABLE ELEVATION	UNIT WEIGHTS (PCF)			STATIC PRESSURES				DYNAMIC PRESSURES			
		MOIST	SATURATED	BUOYANT	$P_Q$	$P_{S1}$	$P_{S2}$	$P_W$	ENVELOPING OBE = 0.12 G		ENVELOPING SSE = 0.20 G	
									$P_Q'$	$P_S'$	$P_Q'$	$P_S'$
TYRONE ENERGY PARK (5)	BELOW GRADE $H_1 = 7.50'$	125	133	70	$0.75 Q$	$94 H_1$	$52.5 H_2$	$62 H_2$	$.42 Q$	$\frac{1476 + 395H_2 + 14.7H_2^2}{(7.5 + H_2)}$	$.82 Q$	$\frac{2882 + 771H_2 + 28.7H_2^2}{(7.5 + H_2)}$
	BELOW WALL $H_2 = 0$				$0.75 Q$	$94 H_1$	—	—	$.42 Q$	$26 H_1$	$.82 Q$	$51 H_1$
WOLF CREEK	AT GRADE $H_1 = 0$	—	130	68	$0.65 Q$	—	$106 H_2^{(4)}$	—	$.18 Q$	$15 H_2^{(4)}$	$.30 Q$	$27 H_2^{(4)}$
CALLAWAY	AT GRADE $H_1 = 0$	—	150	88	$.33 Q$	—	$92 H_2^{(4)}$	—	$.18 Q$	$18 H_2^{(4)}$	$.30 Q$	$30 H_2^{(4)}$
STERLING	AT GRADE $H_1 = 0$	—	127	65	$0.70 Q$	—	$108 H_2^{(4)}$	—	$.12 Q$	$11 H_2^{(4)}$	$.20 Q$	$19 H_2^{(4)}$

NOTES:

- THE EQUATIONS SHOWN IN THE TABLE ARE USED TO COMPUTE THE LATERAL EARTH PRESSURES AT THE TOP AND BOTTOM OF THE CATEGORY I FOUNDATION WALLS OF THE STANDARD PLANT AT EACH SITE. THE DYNAMIC EFFECT OF THE EARTH PRESSURES AT EACH SITE IS BASED ON THE ENVELOPING SSE AND OBE.
- THE MAXIMUM EARTH PRESSURES COMPUTED AT THE TOP AND BOTTOM OF THE WALLS ARE TAKEN AS THE ENVELOPING PRESSURES AND ARE USED IN DESIGN OF THE CATEGORY I STRUCTURES.
- THE FOLLOWING DEFINITIONS APPLY:
  - $P_Q$  = STATIC PRESSURE DUE TO SURCHARGE LOADING
  - $P_{S1}$  = STATIC PRESSURE DUE TO SOIL ABOVE WATER TABLE
  - $P_{S2}$  = STATIC PRESSURE DUE TO SOIL BELOW WATER TABLE
  - $P_W$  = HYDROSTATIC PRESSURE DUE TO GROUNDWATER
  - $P_S'$  = DYNAMIC PRESSURE DUE TO SOIL
  - $P_Q'$  = DYNAMIC PRESSURE DUE TO SURCHARGE LOADING
  - $H_1$  = DEPTH TO GROUNDWATER TABLE
  - $H_2$  = DEPTH FROM GROUNDWATER TABLE TO BOTTOM OF FOUNDATION WALL
  - $H$  = TOTAL DEPTH OF WALL  
 $= H_1 + H_2$
- INCLUDES EFFECT OF HYDROSTATIC PRESSURE.
- THE LATERAL EARTH PRESSURES AT THE TYRONE ENERGY PARK SITE ARE ANALYZED FOR THE CONDITIONS OF GROUNDWATER AT 7.50' BELOW GRADE AND GROUNDWATER BELOW THE FOUNDATION WALL.
- ALL PRESSURES IN POUNDS PER SQUARE FOOT (PSF).



**CALLAWAY PLANT**  
**FIGURE 2.5-7**  
**LATERAL EARTH PRESSURE SCHEMATIC**

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