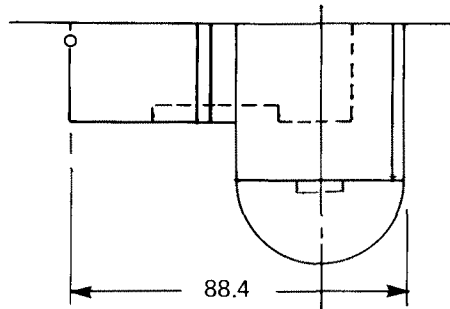


**BUILDING KEY**

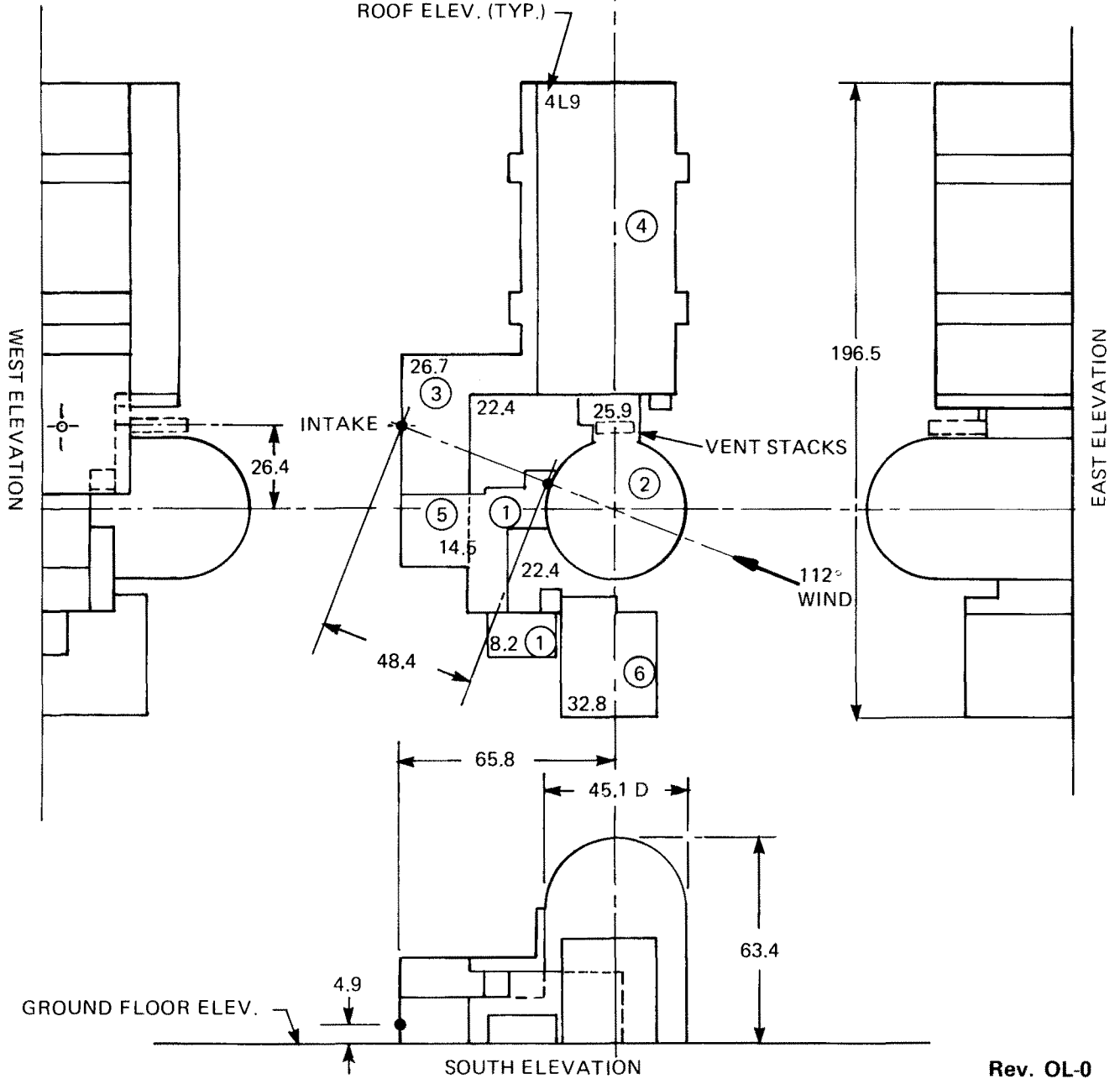
- ① AUXILIARY/HOT SHOPS
- ② REACTOR
- ③ CONTROL/COMM. COR.
- ④ TURBINE
- ⑤ DIESEL
- ⑥ FUEL

NORTH ELEVATION



DIMS. IN METERS  
DWG. SCALE 1:2000

ROOF ELEV. (TYP.)

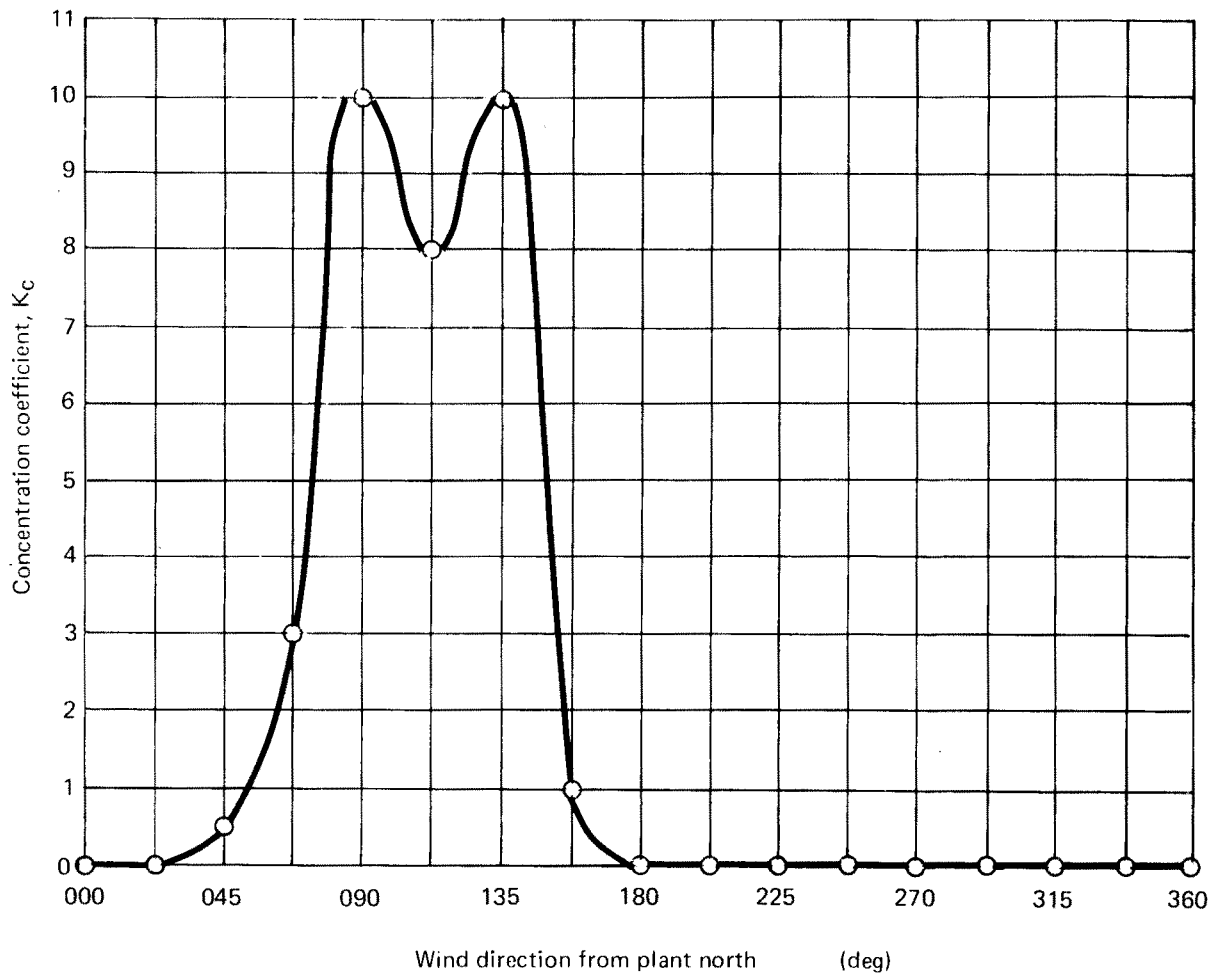


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**CALLAWAY PLANT**

**FIGURE 2.3-1**

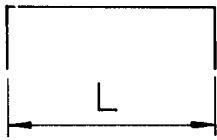
**CONTIGUOUS BUILDING ARRANGEMENT – ONE-UNIT PLANT**



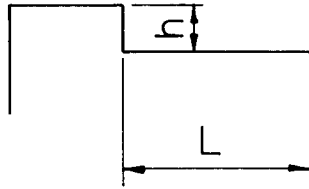
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<b>CALLAWAY PLANT</b>
<b>FIGURE 2.3-2</b>
<b>VARIATION OF INTAKE <math>K_c</math> WITH WIND DIRECTION</b>

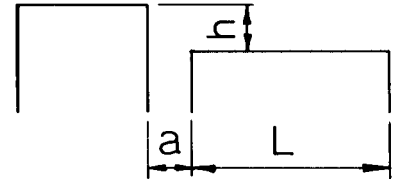
# ROOF GEOMETRY



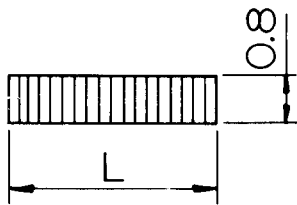
FLAT EXPOSED ROOF,  
UPPER LEVEL OF  
MULTI-LEVEL ROOFS,  
AND DOMES.



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

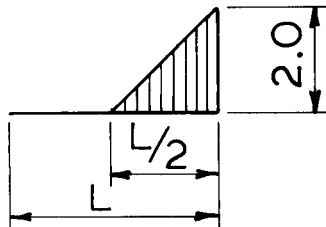


# DISTRIBUTION COEFFICIENTS

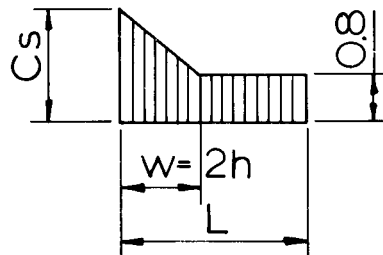


$C_s = 0.8$  FOR ALL EXPOSED  
UNSHelterED ROOFS.

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

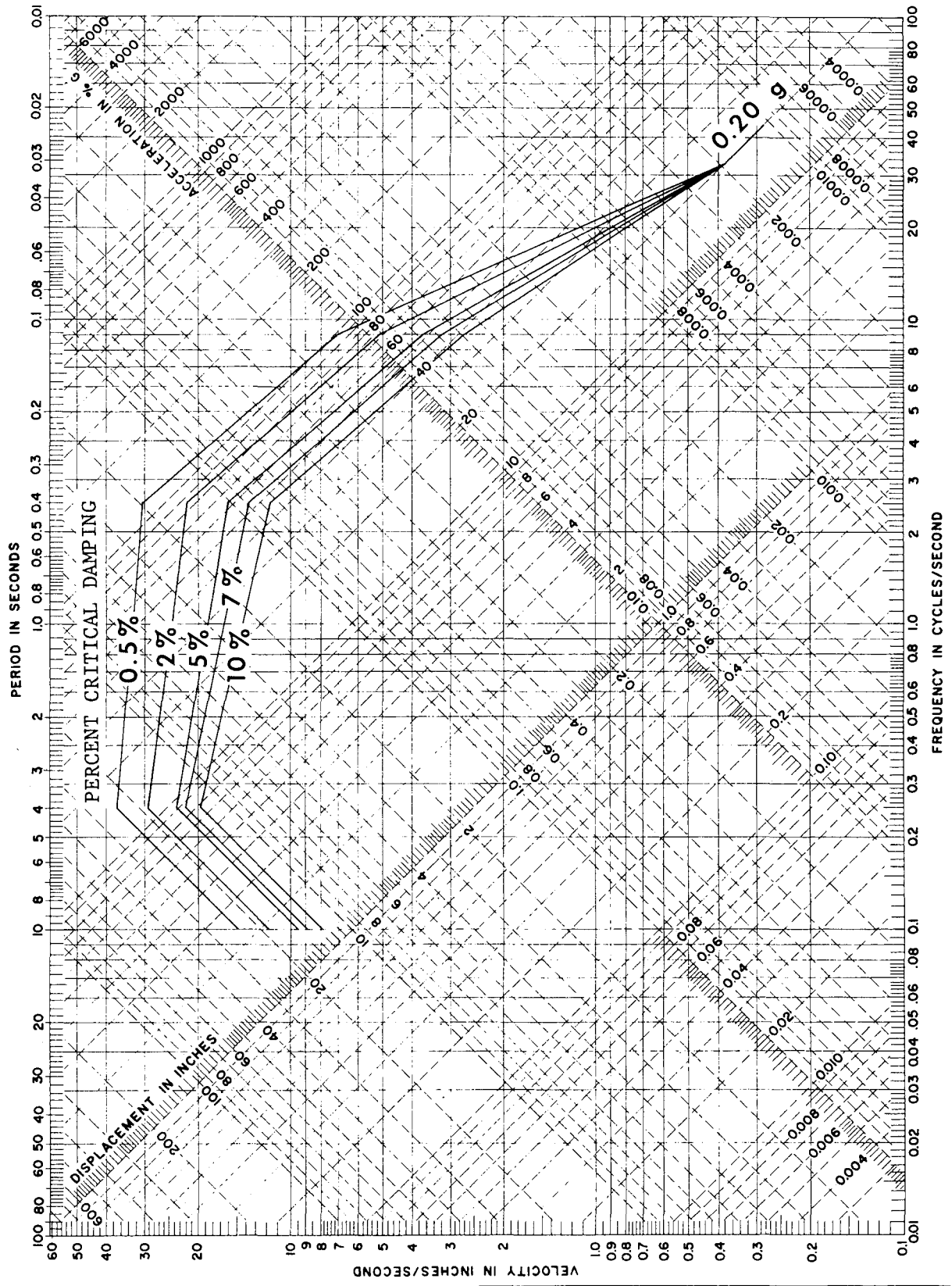
$h$  = DIFFERENCE IN ROOF HT. IN FT.  
 $g$  = GROUND SNOW LOAD IN PSF  
 $w$  = WIDTH OF DRIFT IN FT.  
 $a$  = DISTANCE BETWEEN  
BUILDINGS  $< 15$  FT.

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**CALLAWAY PLANT**

**FIGURE 2.4-1**

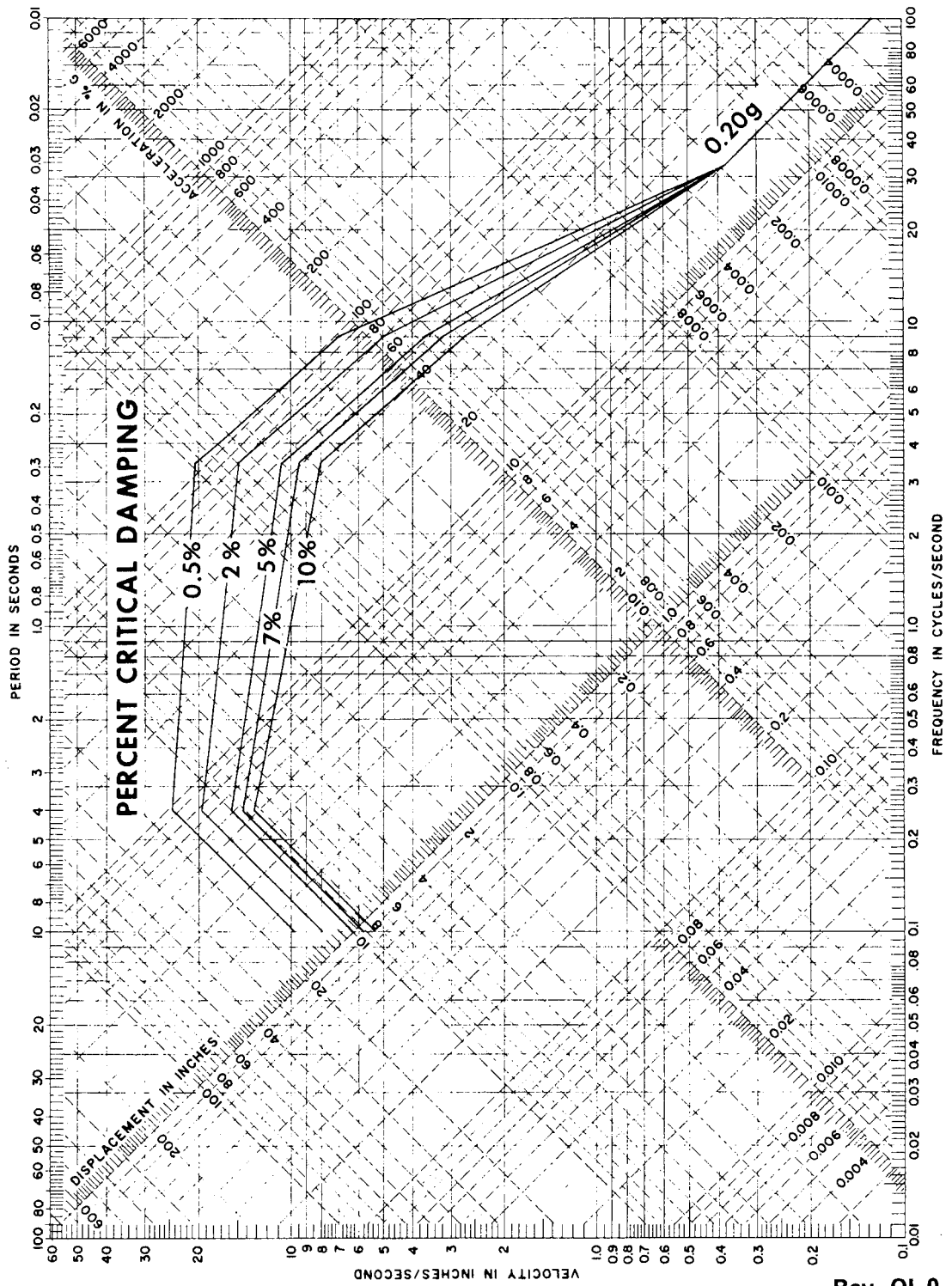
**SNOW LOAD DISTRIBUTIONS  
AND COEFFICIENTS**



**CALLAWAY PLANT**

**FIGURE 2.5-1**

**SSE HORIZONTAL DESIGN SPECTRA**

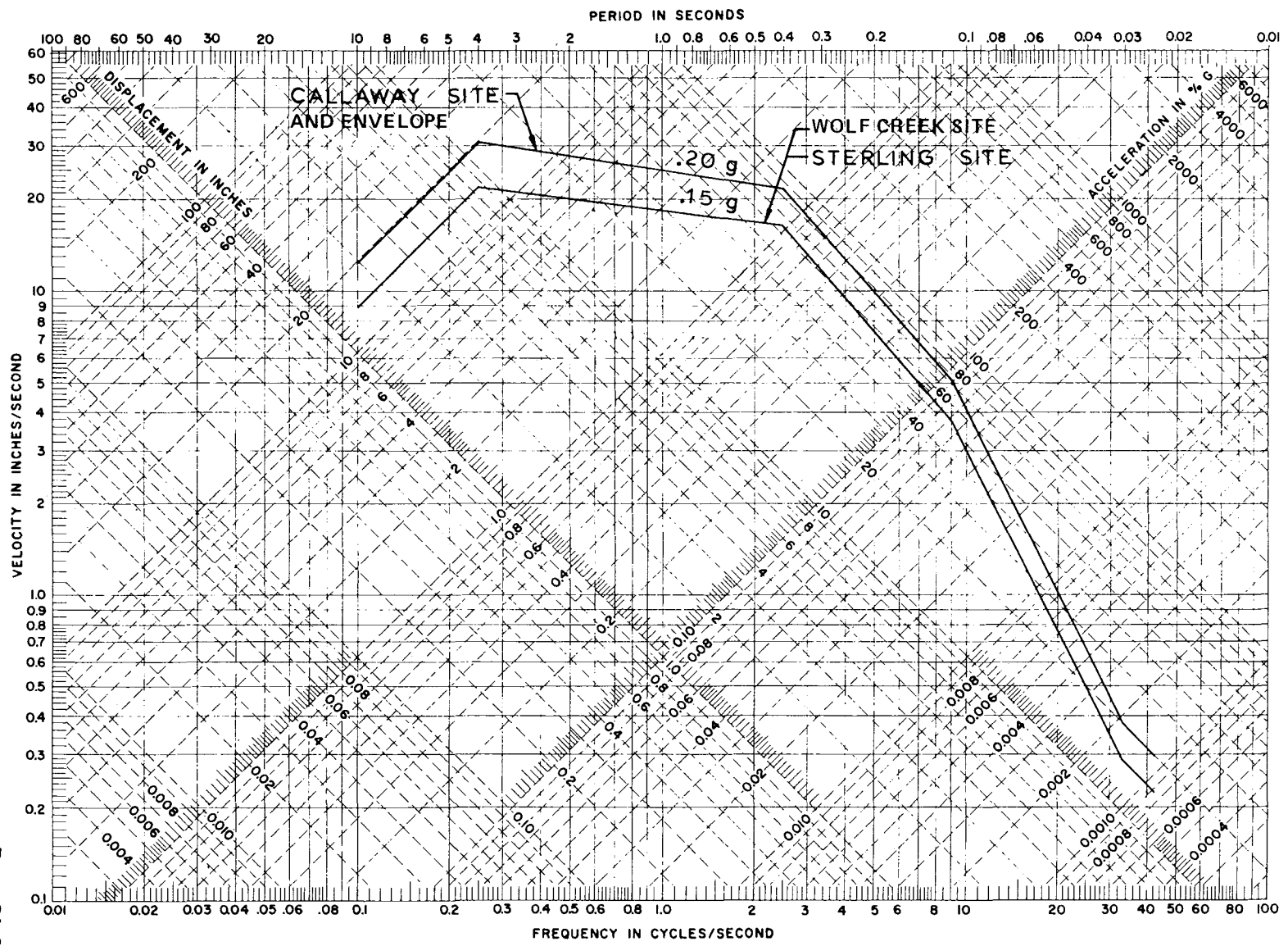


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**CALLAWAY PLANT**

**FIGURE 2.5-2**

**SSE VERTICAL DESIGN SPECTRA**

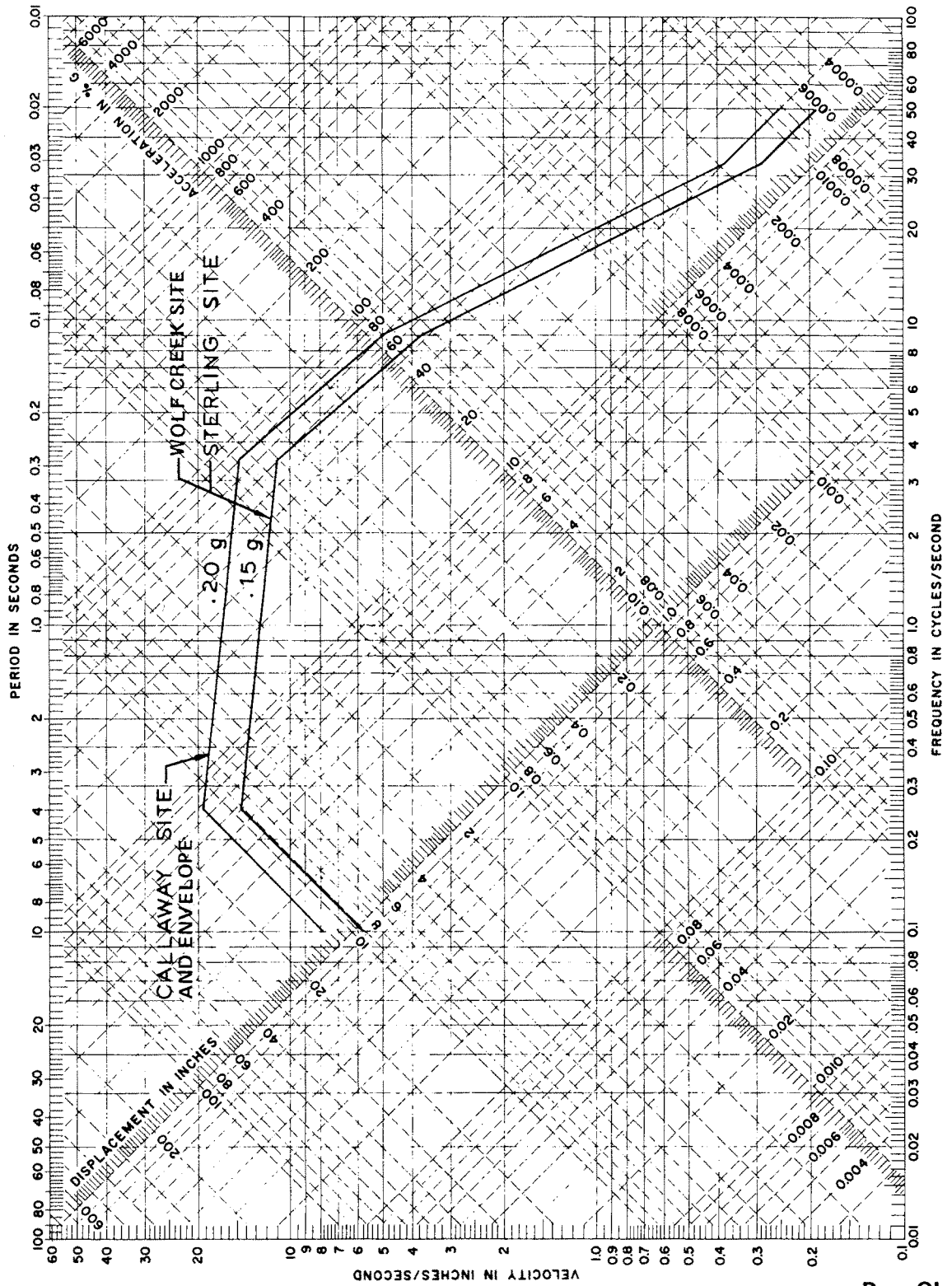


**CALLAWAY PLANT**

FIGURE 2.5-3

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

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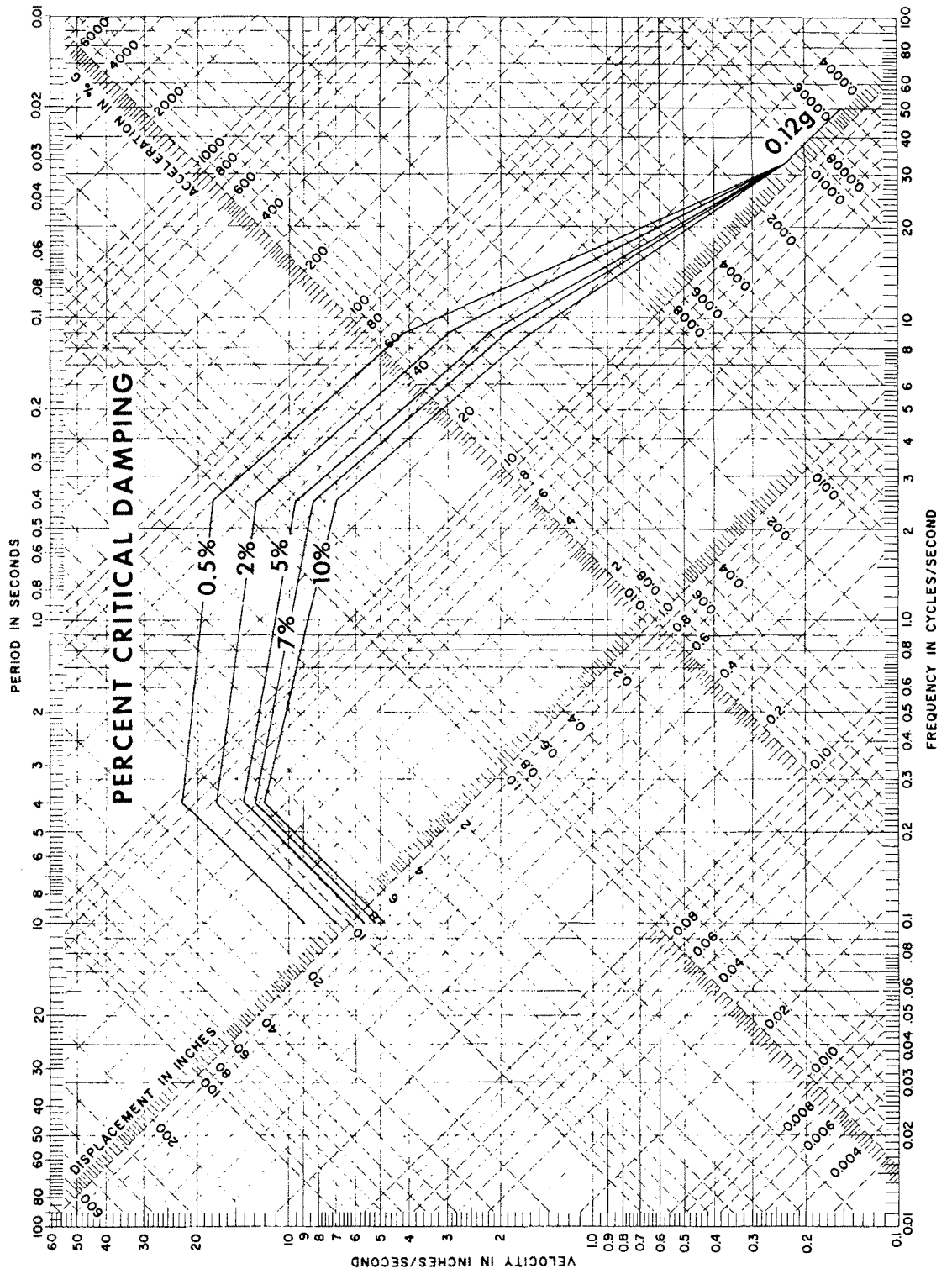


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**CALLAWAY PLANT**

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**

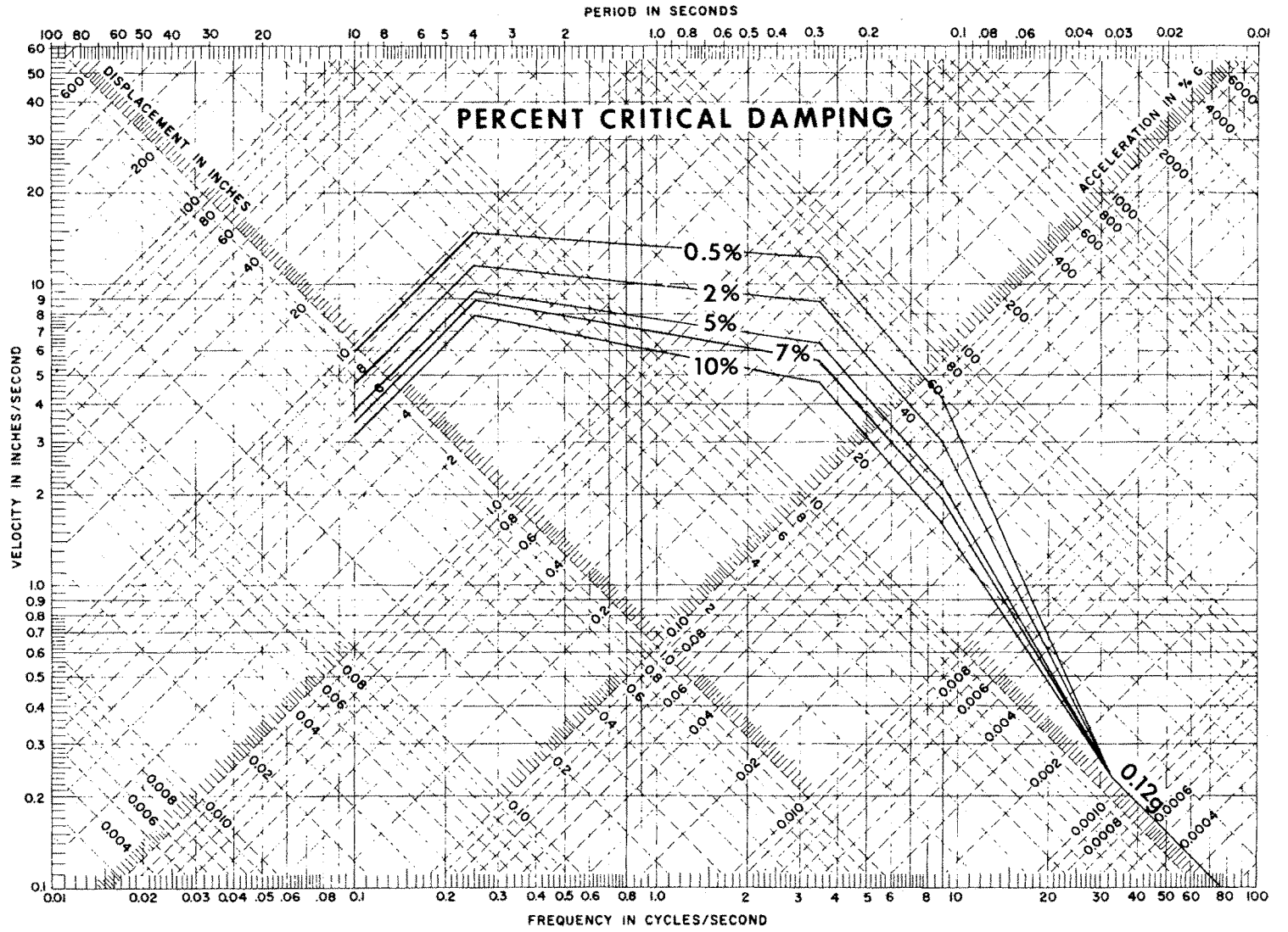


**CALLAWAY PLANT**

**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	$0.75 Q$	$94 H_1$	$52.5 H_2$	$62 H_2$	$.42 Q$	$\frac{1476 + 395 H_2 + 14.7 H_2^2}{(7.5 + H_2)}$	$.82 Q$	$\frac{2882 + 771 H_2 + 28.7 H_2^2}{(7.5 + H_2)}$
	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:

1. 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.

2. 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.

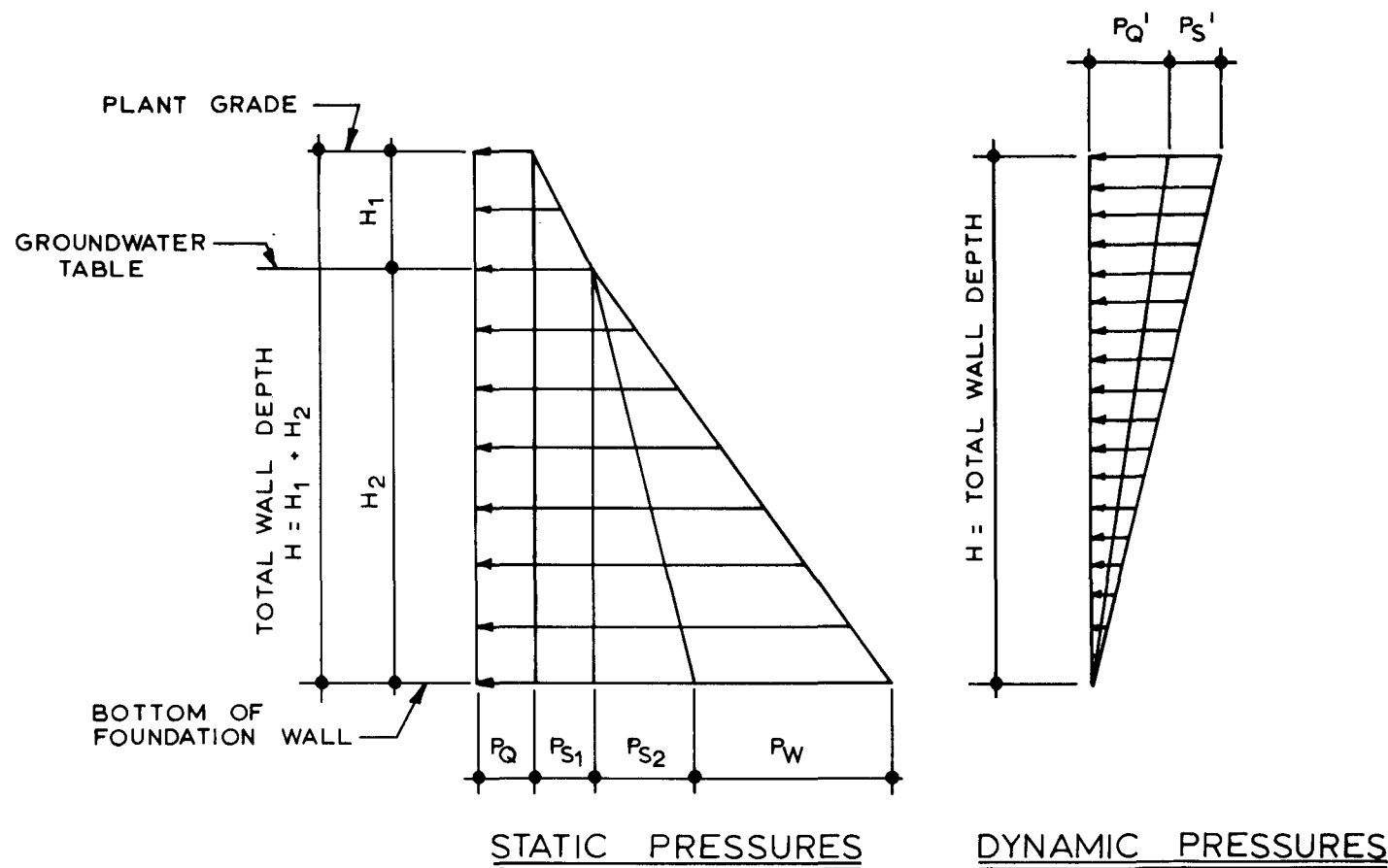
3. THE FOLLOWING DEFINITIONS APPLY:

- $P_Q$  = 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  
=  $H_1 + H_2$

4. INCLUDES EFFECT OF HYDROSTATIC PRESSURE.

5. 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.

6. ALL PRESSURES IN POUNDS PER SQUARE FOOT (PSF).



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

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