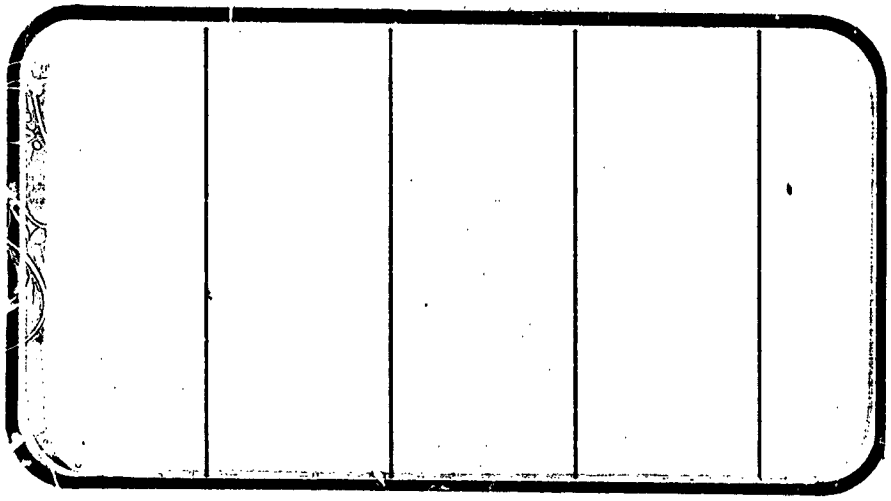
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(NASA-CR-144619) TERMINAL AREA ENERGY MANAGEMENT REGIME INVESTIGATIONS UTILIZING AN 0.03-SCALE MODEL (47-O) OF THE SPACE SHUTTLE VEHICLE ORBITER CONFIGURATION 140A/B/C/R IN THE AMES RESEARCH CENTER 11 X G3/02

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

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TERMINAL AREA ENERGY MANAGEMENT REGIME INVESTIGATIONS UTILIZING AN 0.030-SCALE MODEL (47-O) OF THE SPACE SHUTTLE VEHICLE ORBITER CONFIGURATION 140A/B/C/R IN THE AMES RESEARCH CENTER 11 X 11 FOOT TRANSONIC WIND TUNNEL (OA148)

by

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Prepared under NASA Contract Number NAS9-13247

by

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for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	ARC 11-073
NASA Series Number:	OA148
Model Number:	47-0
Test Dates:	May 5 through May 17, 1975
Occupancy Hours:	220

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TERMINAL AREA ENERGY MANAGEMENT REGIME INVESTIGATIONS UTILIZING AN 0.030-SCALE MODEL (47-0) OF THE SPACE SHUTTLE VEHICLE ORBITER CONFIGURATION 140A/B/C/R IN THE AMES RESEARCH CENTER 11 x 11 FOOT TRANSONIC WIND TUNNEL (OA148)

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P. J. Hawthorne, Rockwell International Space Division

ABSTRACT

This report documents data obtained in wind tunnel test OA148.

The objectives of the test series were to:

1) obtain pressure distributions, forces and moments over the vehicle 5 Orbiter in the terminal area energy management (TAEM) and approach phases of flight.

2) obtain elevon and rudder hinge moments in the TAEM and approach phases of flight.

3) obtain body flap and elevon loads for verification of loads balancing with integrated pressure distributions.

4) obtain pressure distributions near the short OMS pods in the high subsonic, transonic and low supersonic Mach number regimes.

Testing was conducted over a Mach number range from 0.6 to 1.4 with Reynolds number variations from 4.57×10^6 to 2.74×10^6 per foot. Model angle-of-attack was varied from -4 to 16 degrees and angles of side slip ranged from -8 to 8 degrees.

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PLOTTED COEFFICIENTS SCHEDULE:

A) CY, CYN and CBL versus BETA

B) CN, CA and CLM versus ALPHA

C) CHEO, CHEI, CHETOT and CHBF versus ALPHA

D) CP versus X/LB

E) CP versus X/CW

F) CP versus X/CV

NOMENCLATURE

Symbol	Plot Symbol	Definition
A_b	AB	total Orbiter base area, ft^2
A_i	Ai	area over which P_i acts, ft^2
A_{sb}	ASB	speed brake base area, ft^2
b	BREF, BW	Orbiter wing span, in
b_v	BV	vertical tail reference span, in
C_{A_u}	CAU	Orbiter uncorrected axial force coefficient
C_A	CA	Orbiter axial force coefficient with sting cavity adjusted to average base pressure
C_{A_F}	CAF	Orbiter forebody axial force coefficient.
$C_{A_{sc}}$	CASC	Orbiter sting cavity axial force coefficient.
C_{D_U}	CDU	Orbiter uncorrected drag coefficient
$C_{h_{bf}}$	CHBF	body flap hinge moment coefficient, about hinge line X_0 = 1532.0
$C_{h_{ei}}$	CHEI	inner elevon hinge moment coefficient, about hinge line X_0 = 1387.0
$C_{h_{eo}}$	CHEO	outer elevon hinge moment coefficient, about hinge line X_0 = 1387.0
$C_{He_{TOT}}$	CHETOT	total right elevon hinge moment coefficient
C_{L_U}	CLU	Orbiter uncorrected lift coefficient
C_ℓ	CBL	Orbiter rolling moment coefficient, body axis system

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
C_m	CLM	Orbiter pitching moment coefficient with sting cavity adjusted to average base pressure, referenced to Orbiter MRC.
C_{m_u}	CLMU	Orbiter uncorrected pitching moment coefficient
C_{m_F}	CLMF	Orbiter forebody pitching moment coefficient referenced to orbiter MRC.
$C_{m_{sc}}$	CLMSC	Orbiter sting cavity pitching moment coefficient, referenced to Orbiter MRC
C_{N_u}	CNU	Orbiter uncorrected normal force coefficient
C_N	CN	Orbiter normal force coefficient with sting cavity adjusted to average base pressure
C_{N_F}	CNF	Orbiter forebody normal force coefficient
$C_{N_{sc}}$	CNSC	Orbiter sting cavity normal force coefficient
C_n	CYN	Orbiter yawing moment coefficient. body axis system
C_{pi}	CPi	surface tap pressure coefficient, port i, $(P_i - P_\infty)/q$
C_Y	CY	Orbiter side force coefficient
$C_{[X][Y]}$	C[X][Y]	base area force and moment coefficients. The first subscript (post fix) designates the type of coefficient, the second the pressure tap and it's associated area. The symbolic vectors [X] and [Y] are defined below.
[X]=		
A	A	axial force
N	N	normal force
Y	Y	side force
m	LM	pitching moment
n	YN	yawing moment
ℓ	BL	rolling moment

NOMENCLATURE (Continued)

Symbol	Plot Symbol [Y]=	Definition
1,2,3 4,5,6 sc bf	1,2,3 4,5,6 SC BF	areas associated with pressure taps 1 through 6 see figure 2b sting cavity area upper body flap area
l_b	LB	Orbiter reference body length, IML nose to X_o = 1528.3, in.
ℓ_{REF}	LREF	longitudinal reference length, Orbiter mean aerodynamic chord, in
	LU/DU	uncorrected lift to drag ratio, CLU/CDU
M	MACH	freestream Mach number
Φ	PHI	angular cylindrical coordinate position around Orbiter body - deg.
P_i	Pi	pressure at surface tap i, PSF
P_∞	P	freestream static pressure, PSF
P_t	PT	freestream total pressure, PSF
q	Q	freestream dynamic pressure, PSF
	RN/L	unit Reynolds number, million per foot
S	SREF	wing reference area, ft^2
T_t	TTR	freestream total temperature, °R
X_{cp}	XCP/L	center of pressure location referred to l_b
X_o/L_o	X/LB	longitudinal location of body surface, fraction of body length

NOMENCLATURE (Concluded)

Symbol	Plot Symbol	Definition
X/C	X/CW	chordwise location on wing surface, fraction of local chord
X/C_v	X/CV	chordwise location on vertical tail, fraction of local chord
η_v	Z/BV	spanwise location on vertical tail, fraction of vertical tail span
η	2Y/BW	spanwise location on wing, fraction of semi span
X_{mrp}	XMRP	longitudinal location of moment reference point
X_T	XT	longitudinal moment transfer distance from Orbiter balance center to Orbiter MRC, in
Y_{mrp}	YMRP	lateral location of moment reference point
Z_T	ZT	vertical moment transfer distance from Orbiter balance center to Orbiter MRC, in
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
δ_{bf}	BDFLAP	body flap deflection, degrees
δ_{eL}	ELVN-L, L-ELVN	left elevon deflection, degrees
δ_{eR}	ELVN-R, R-ELVN	right elevon deflection, degrees
δ_r	RUDDER	rudder deflection, degrees
δ_{sb}	SPDBRK	speed brake deflection, degrees
Z_{mrp}	ZMRP	vertical location of moment reference point
	$$	mask character used to indicate all possible values for this test 01 through 85

REMARKS

During the course of the test it was necessary to replumb the scanivalves. The resultant time loss necessitated deleting the priority 4 runs which incorporated the use of the metric vertical tail.

Data obtained from pressure taps 184, 296 and 347 are suspect due to slow leaks noticed while leak checking individual model pressure taps.

Body flap hinge moment data for datasets RE8001 through RE8005 have a -15% drift while datasets RE8006 and RE8007 have a +10% drift due to data recording system errors. System checks during the remainder of the test indicate a system error of less than 4% for body flap hinge moment data.

Rolling moment data has an approximate -.003 bias in the coefficient. The reason for this was not determined, but possible sources are fabrication tolerances and/or differential stiffness of the left and right elevon panels.

Distortion of the instrumented elevon shaft appears to have occurred around run 310 due to model assembly difficulties and the maximum loads encountered at these test conditions. A comparison of measured elevon deflection before and after the test with the nominal setting is presented below:

Elevon Panel	Nominal	Pre-Test	Post-Test
Inboard right	-10	-9° 36'	-8° 55'
	-4	-3° 34'	-2° 55'
	0	+0° 10'	+1° 02'
	4	+4° 26'	+4° 28'
	10	+10°32'	+10°39'
Outboard right	-10	-9° 36'	-8° 15'
	-4	-3° 34'	-2° 20'
	0	+0° 10'	+1° 05' *
	4	+4° 26'	+3° 59'
	10	+10°32'	+10°18'

* Inboard only was measured but was the same as outboard panel(see Ref 2)

CONFIGURATION INVESTIGATED

The Rockwell International model 47-0 Space Shuttle Orbiter Vehicle was utilized in this test series. The model was originially constructed to -140A/B lines, but was modified prior to this test with the addition of the -140C OMS pods, six inch bevelled interpanel elevon gaps and uncovered RCS forward thrustor parts. To denote these additions, the additional designations "C" (for -140C OMS pods) and "R" (for RCS thrustors) were added, and the slashes deleted for convenience on Table II(designated "-140 ABCR").

In data sets RE8069 to 085 the RCS thrustor ports in the nose were filled reverting the configuration to -140A/B/C modified with body B_{26}.

The following nomenclature denotes the model components:

Component	Description
B_{26}	140A/B fuselage (VL70-000140A, VL70000140B)
B_{70}	140A/B fuselage (VL70-000140A, VL70-000145, VL70-000140B, VL70-000143A, VL70-000139) with RCS thrustor parts (VL70-08501, VL70-08502, VL70-08296)
C_9	140A/B basic canopy (VL70-000140A, VL70-000143A)
E_{44}	140A/B elevons (VL70-000200, VL70-006089, VL70-006092) with six inch bevelled interpanel gaps, no flipper door
F_9	140A/B body flap (VL70-000140B, VL70-000200)
M_{16}	OMS-RCS pods for 140C Orbiter
N_{28}	OMS basic nozzles
R_5	basic Orbiter rudder (VL70-000146A, VL70-000095)
V_8	basic Orbiter vertical tail (VL70-000140A, VL70-000146A)
W_{116}	basic 140A/B wing (VL70-000140B, VL70-000200)

CONFIGURATIONS INVESTIGATED (Concluded)

Designated configurations are:

-140ABCR $\equiv B_{70}\ C_9\ E_{44}\ F_9\ M_{16}\ N_{28}\ R_5\ V_8\ W_{116}$

-140 ABC $\equiv B_{26}\ C_9\ E_{44}\ F_9\ M_{16}\ N_{28}\ R_5\ V_8\ W_{116}$

TEST FACILITY DESCRIPTION

The Ames Research Center Unitary Plan 11- by 11-Foot Transonic Wind Tunnel is a closed-circuit, air-medium, variable-density facility capable of attaining Mach numbers from 0.6 to 1.4 at Reynolds numbers from 1.7 x 10^6/ft to 9.4 x 10^6/ft. The test section is 22 feet long, and models are installed on internal strain-gauge balances mounted to sting-type support systems.

Shadowgraph and Schlieren photographic equipment is available, and pressure transducer instrumentation is provided.

Tunnel operating temperature is 580°R. Extended high Reynolds number runs are restricted by power availability.

DATA REDUCTION

Standard NASA/Ames data reduction equations were used to reduce forces, moments, and pressures to coefficient form. Orbiter main balance force and moment coefficients were computed using the following equations:

Symbol	Orbiter main balance measurement
NF	Normal Force
AF	Axial Force
PM	Pitching Moment
YM	Yawing Moment
SF	Side Force
RM	Rolling Moment

$$C_{A_u} = AF / (q\,S) \qquad C_{L_u} = C_{N_u} \cos\alpha - C_{A_u} \sin\alpha$$

$$C_{N_u} = NF / (q\,S) \qquad C_{D_u} = C_{N_u} \sin\alpha + C_{A_u} \cos\alpha$$

$$C_Y = SF / (q\,S)$$

$$C_{m_u} = \frac{PM}{qSc} + \frac{C_A \cdot Z_T}{c} - \frac{C_N \cdot X_T}{c}$$

$$C_\ell = \frac{R\,M}{qSb} + \frac{C_Y \cdot Z_T}{b}$$

$$C_n = \frac{YM}{qSb} - \frac{C_Y \cdot XT}{b}$$

Moment Transfer Distances

X_T = 0.572 in.
Y_T = 0
Z_T = 0.450 in.

The Moment Reference Center about which the data was reduced is located at

	Orbiter (Full Scale)
X_O	1076.68
Y_O	0
Z_O	375.00

Balance coefficients were grouped into datasets RE80$$.

DATA REDUCTION (Continued)

Hinge moments and hinge moment coefficients were computed using the following equations:

Elevon hinge moments (inboard and outboard).

$HM_{e_I} = (HM1-HM2)\ (M1/D1) + HM1$

$HM_{eo} = (HM3-HM4)\ (M3/D3) + HM3$

where

HMi = measured moment on strain gage i

D1 = distance between gages 1 and 2, .49335 in.

D3 = distance between gages 3 and 4, .45800 in.

M1 = moment transfer distance for inboard elevon, .93825 in.

M3 = moment transfer distance for outboard elevon, .92250 in.

Elevon hinge moment coefficients

Inboard, $C_{H_{e_I}} = H_{M_{e_I}} / (q\ S_e\ c_e)$

Outboard, $C_{H_{eo}} = H_{M_{e_o}} / (q\ S_e\ c_e)$

Total, $C_{H_{e_{TOT}}} = C_{H_{e_I}} + C_{H_{e_o}}$

S_e = elevon reference area, 0.189 ft.^{2}

c_e = elevon reference MAC, 2.721 in.

Body flap hinge moment coefficient

$C_{H_{bf}} = HM_{bf} / (q\ S_{bf}\ c_{bf})$

HM_{bf} = measured body flap hinge moment

S_{bf} = body flap reference area, 0.12834 ft.^{2}

c_{bf} = body flap reference MAC, 2.541 in.

Hinge moment coefficients are part of datasets RE8X$$.

Pressure coefficients for all model orifice pressure measurements were computed using this equation:

$$C_{P_i} = (P_i - P_\infty)/q$$

where P_i = pressure at model orifice i

P_∞ = tunnel static pressure

q = tunnel dynamic pressure

Other data reduction constants include:

S = wing reference area, 2.4210 ft.^{2}

c = wing reference chord, 14.2443 in.

b = wing reference span, 28.1004 in.

After the data had been reduced to coefficient form by NASA/AMES,DMS interpolated it to nominal α's and β's. Then 2 types of base and sting cavity area coefficients were calculated. When they are applied 3 types of balance coefficient data exists. These can be distinguished by the last subscript (symbolic name) or postfix (mnemonic name). The key is given below

U - uncorrected coefficients.

- coefficients with sting cavity pressure corrected to base pressure (without a suffix).

F - forebody coefficients with the base area pressure corrected to freestream pressure.

Only the correction coefficients associated with base pressure tapes 1 through 4 were applied to the longitudinal orbiter coefficients.

Figure 2b illustrates the base area associated with each pressure tap. Alphabetic characters bf and sc designate body flap and sting cavity areas, respectively. Base area coefficient names have a numeric character which designates the pressure tap number. Base coefficients for vertical tail areas 5 and 6 were calculated but not applied to the total orbiter coefficients. Base area coefficient values are tabulated in the appendix. A detailed derivation of these coefficients follows. It is concluded by a matrix of base area geometric properties.

The orbiter sting cavity force and moment coefficients were computed as:

$$C_{A_{sc}} = \frac{(C_{p2} - C_{p1})\, A_1}{S}$$

$$C_{N_{sc}} = \frac{(C_{p2} - C_{p1})\, A_1 \tan 12.55°}{S}$$

$$C_{m_{sc}} = C_{A_{sc}} \frac{Z_t}{c} - C_{N_{sc}} \frac{X_{sc}}{c}$$

The orbiter force and moment coefficients corrected for the difference between balance cavity pressure and orbiter base pressure:

$$C_A = C_{A_u} - C_{A_{sc}}$$

$$C_N = C_{N_u} - C_{N_{sc}}$$

$$C_m = C_{m_u} - C_{m_{sc}}$$

These orbiter coefficients are part of datasets KE80$$.

DATA REDUCTION (Continued)

Orbiter base force and moment coefficients were calculated as follows:

Upper base area

$$C_{N2u} = -(C_{p2}\ A_{2u} \tan 16°)/S$$

$$C_{A2u} = -(C_{p2}\ A_{2u})/S$$

$$C_{m2u} = \frac{C_{A2u}\ Z_{2u}}{c} - \frac{C_{N2u}\ X_{2u}}{c}$$

Lower base area

$$C_{N2_\ell} = -(C_{p2}\ A_{2_\ell} \tan 10°)/S$$

$$C_{A2_\ell} = -(C_{p2}\ A_{2_\ell})/S$$

$$C_{m2_\ell} = C_{A2_\ell}\ \frac{Z_{2\ell}}{c} - C_{N2_\ell}\ \frac{X_{2\ell}}{c}$$

Total base area, A_2

$$C_{N2} = C_{N2_u} + C_{N2_\ell}$$

$$C_{A2} = C_{A2_u} + C_{A2_\ell}$$

$$C_{m2} = C_{m2_u} + C_{m2_\ell}$$

OMS pod base area, A_3

(This assumes the surface is perpendicular to the orbiter X-axis)

$$C_{A3} = -(C_{p3}\ A_3)/S$$

$$C_{m3} = C_{A3}\ \frac{Z_3}{c}$$

OMS pod base area, A_4

(This assumes the surface is perpendicular to the orbiter X-axis)

$$C_{A4} = -(C_{p4}\ A_4)/S$$

$$C_{m4} = C_{A4}\ \frac{Z4}{c}$$

Coefficients for the above areas are grouped into datasets EE8D$$.

Upper surface of body flap

$$C_{A_{bf}} = \frac{-C_{p_{bf}}\ A_{bf}}{S} \sin\ (\delta_{bf} + 6.88°)$$

$$C_{N_{bf}} = \frac{-C_{p_{bf}}\ A_{bf}}{S} \cos\ (\delta_{bf} + 6.88°)$$

$$C_{m_{bf}} = \frac{C_{A_{bf}}\ Z_{bf}}{c} - \frac{C_{N_{bf}}\ X_{bf}}{c}$$

where:

$$C_{p_{bf}} = \frac{C_{p200} + C_{p201} + C_{p204} + C_{p205}}{4}$$

The orbiter force and moment coefficients adjusted to free stream pressure (forebody coefficients).

$$C_{A_F} = C_{A_u} - \left(\frac{-C_{p1}\ A_1}{S} + \sum_{i\ =\ 2}^{4} C_{A_i} + C_{A_{bf}}\right)$$

$$C_{N_F} = C_{N_u} - \left(C_{N_2} + C_{N_{bf}}\right)$$

$$C_{m_f} = C_{mu} - \left(\sum_{i\ =\ 2}^{4} C_{m_i} + C_{m_{bf}}\right)$$

These orbiter coefficients are part of datasets KE80$$.

Vertical tail "undercarriage" area, A_5

Top Segment:

$$C_{N5t} = (C_{p5}\ A_{5t} \tan 63.75°)/S$$

$$C_{A5t} = -(C_{p5}\ A_{5t})/S$$

$$C_{m5t} = C_{A5t}\ \frac{Z_{5t}}{c} - C_{N5t}\ \frac{X_{5t}}{c}$$

Middle Segment:

$$C_{N5m} = (C_{p5}\ A_{5m} \tan 26.1426°)/S$$

$$C_{A5m} = -(C_{p5}\ A_{5m})/S$$

$$C_{m5m} = C_{A5m}\ \frac{Z_{5m}}{c} - C_{N5m}\ \frac{X_{5m}}{c}$$

Bottom Segment:

$$C_{N5b} = (C_{p5}\ A_{5b} \tan 21.94°)/S$$

$$C_{A5b} = -(C_{p5}\ A_{5b})/S$$

$$C_{m5b} = C_{A5b}\ \frac{Z_{5b}}{c} - C_{N5b}\ \frac{X_{5b}}{c}$$

Total area, A_5:

$$C_{N5} = C_{N5t} + C_{N5m} + C_{N5b}$$

$$C_{A5} = C_{A5t} + C_{A5m} + C_{A5b}$$

$$C_{M5} = C_{m5t} + C_{m5m} + C_{m5b}$$

Vertical Tail base area, A_6:

Segment above rudder

$$C_{N6u} = (C_{p6}\ A_{6u} \tan 63.75°)/S$$

$$C_{A6u} = (C_{p6}\ A_{6u})/S$$

$$C_{m6u} = C_{A6u}\ \frac{Z_{6u}}{c} - C_{N6u}\ \frac{X_{6u}}{c}$$

Rudder/Speed brake base:

$$C_{A6_\ell} = C_{p6}\, A_{6'_\ell} [\sin(\theta - 55.1667°)\cos 55.1667° + \cos(\theta - 55.1667°)\sin 55.1667°\cos(\delta r)]/S$$

$$C_{N6_\ell} = C_{p6}\, A_{6'_\ell} [\sin(\theta - 55.1667°)\sin 55.1667° - \cos(\theta - 55.1667°)\cos 55.1667°\cos(\delta r)]/S$$

$$C_{Y6_\ell} = C_{p6}\, A_{6'_\ell} \cos(\theta - 55.1667°)\sin \delta r/S$$

$$C_{m6_\ell} = [C_{A6_\ell}(Z_{6_\ell}) - C_{N6}(X_{6_\ell})]/c$$

$$C_{\ell 6_\ell} = [C_{Y6_\ell}(Z_{6_\ell})]/b$$

$$C_{n6_\ell} = -[C_{Y6}(X_{6_\ell})]/b$$

$$\theta = \tan^{-1}\left[\frac{5.456791 + .573209\cos\left(\frac{\delta SB}{2}\right)}{3.797715 - .823715\cos\left(\frac{\delta SB}{2}\right)}\right]$$

$$A_{6'_\ell} = A_{6_\ell}/\sin\theta$$

Total area, A_6:

$$C_{A6} = C_{A6u} + C_{A6\ell}$$

$$C_{N6} = C_{N6u} + C_{N5\ell}$$

$$C_{Y6} = C_{Y6\ell}$$

$$C_{m6} = C_{m6u} + C_{m6\ell}$$

$$C_{\ell 6} = C_{\ell 6\ell}$$

$$C_{n6} = C_{n6_\ell}$$

Vertical tail area coefficient data are grouped into datasets GE8D$$.

BASE GEOMETRIC PROPERTIES MATRIX

Description	Sub-script	Area A - ft.^{2}	Distance between Centroid and MRC vertical Z - in.	Distance between Centroid and MRC longitudinal X - in.
Sting cavity	sc	0.076699	0.45	12.199
Body flap upper surface	bf	0.128	- 2.64	13.659
Orbiter balance cavity	1	0.076699	0.45	12.199
Orbiter base orifice 2 lower	2ℓ	0.133889	- 1.32	12.617
Orbiter base orifice 2 upper	2u	0.0818055	2.07	12.384
Lower OMS pod	3	0.030472	2.68	NA
Upper OMS pod	4	0.074166	3.63	NA
Vertical tail "undercarriage" bottom	5b	0.003565	4.612	12.395
Vertical tail "undercarriage" middle	5m	0.002610	5.336	14.079
Vertical tail "undercarriage" top	5t	0.000341	5.97	15.185
Vertical tail above rudder	6u	0.000798	12.656	18.482
Base area of speed brake	6ℓ	Varies with speed brake deflection		

NOTES: Sting cavity and Orbiter balance cavity are synonymous.

NA - not applicable.

DATA REDUCTION (Continued)

δ_{sb}	$\Delta\theta_\ell$ ft
0	0.0066036
25	0.0456000
35	0.0621000
55	0.0950800
85	0.1551400

$$X_{6\ell} = 15.045 + 1.442277\ [1-\cos\ (\delta sb/2)]$$

$$Z_{6\ell} = 9.755 + 0.501827\ [1-\cos\ (\delta sb/2)]$$

Standard DMS loads cycle test procedures were used to process the OA148 pressure data. First numerous pressure distribution plots were released. Analysis of these produced bad pressure data list. This list is reproduced below:

DATA REDUCTION (Continued)

OA148 Bad Pressure Data

Component	Dataset No.	Tap No.	β	α
Fuselage (B)	1	143	4	-4
	1	148	4	-4
	1	150	4	-4
	1	152	4	-4
	1	186	4	-4
	1	187	4	-4
	1	189	4	-4
	1	191	4	-4
	1	193	4	-4
Lower Wing (L)	1 → 7	231	ALL	ALL
	1 → 85	290	ALL	ALL
	1	316	4	-4
	1	317	4	-4
	1	337	4	-4
	1	338	4	-4
	1	358	4	-4
	1	378	4	-4
	1	379	4	-4
	1	398	4	-4
Upper Wing (U)	1 → 7	247	ALL	ALL
	1	357	4	-4
Body Flap (F)	24	205	-4	12
Speed Brake (K)	1 → 85	822	ALL	ALL
Vertical Tail (V)	8	443	ALL	ALL
	ALL	1444	ALL	ALL
	79	1453	-4	-4
	79	1454	-4	-4

Note: Wind tunnel pressure data tabulated in the appendix have the original bad data values.

These points were eliminated from further processing. The remaining data were interpolated to nominal alpha and beta values. Processing was completed with the release of a magnetic tape containing the final interpolated pressure coefficients.

This report contains plots and tabular listings for both force and pressure data. Plotted force data illustrates lateral-directional, longitudinal and hinge moment characteristics of the configuration tested. Plotted pressure data illustrates the effect of several control deflections and attitude changes on local pressure distributions. The multiple volume appendix contains a tabulated listing of the basic force and pressure data. Listing of the interpolated base area coefficients is also included. The plotted and tabulated data are arranged in the following manner:

VOLUME NO.	CONTENTS
1	Force data plots showing lateral-directional longitudinal and hinge moment characteristics.
2	Plots illustrating the effect of control surface deflections on fuselage, wing and vertical tail pressure distributions.

DATA REDUCTION (Concluded)

VOLUME NO.

CONTENTS

3 Tabulated Force Data

Dataset	Data type
RE80$$	source balance coefficients
RE8X$$	source hinge moment coefficients
RE8Y$$	source base pressure coefficients
KE80$$	interpolated balance coefficients adjusted for cavity pressure and forebody coefficients
EE8D$$ FE8D$$	interpolated base and cavity area coefficients
GE8D$$	interpolated vertical tail base area coefficients

Tabulated Pressure Data

	Component	Fourth Character*	Page
4, 5	orbiter fuselage	B	1
6,7,8	lower wing	L	1271
9,10,11	upper wing	U	3147
12	upper body flap	F	5405
12	lower body flap	G	5774
13	speed brake	K	6143
13	vertical tail	V	6547

* The fourth character in each dataset identifier (i.e., XE8BXX, B for Fuselage) represents the individual component.

REFERENCES

1. SD75-SH-0106, "Pretest Information for 0A148 of the 0.03-Scale 47-0 Pressure Loads Space Shuttle Model in the 11 x 11 Foot Leg of the NASA/ARC Unitary Plan Wind Tunnel," April 18, 1975.

2. MG-75-07-11, Rockwell International Corporation Internal Letter: "Model design Dimensional Varification Task 36: Elevon Deflection Angle Check of the 0.03-Scale SSV Model 47-0 (140A/B Configuration)". SAS/WTO/75-283, July 29, 1975.

TABLE I

TEST : OA148 DATE : May 1975

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per foot)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.60	4.57×10^6	4.166	120
0.90	3.41×10^6	4.166	120
1.10	3.05×10^6	4.166	120
1.25	2.86×10^6	4.166	120
1.40	2.74×10^6	4.166	120

BALANCE UTILIZED: ARC Task MK XX A

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	3000 lbf/gage		
SF	1500 lbf/gage		
AF	600 lbf		
PM	27,000 in-lbf		
RM	4000 in-lbf		
YM	10,500 in-lbf		

COMMENTS: Maximum normal and side force dependent upon point of application

ARC 11-073

TABLE II.

TEST: OA 148 — DATA SET RUN NUMBER COLLATION SUMMARY — DATE: Post Test

DATA SET IDENTIFIER	CONFIGURATION	α	β	δ_R	δ_{SB}	δ_{BF}	δ_{EL}	δ_{EB}	α: -4	0	4	8	12	16	MACH NUMBERS	TEST RUN NUMBER
RE8001	-140 ABCR	B	D	0	55	163	0	0	32	33	34	35	58	59	1.4	
002		A	D						38	39	40	41	42		1.25	
003		A	D						43	44	45	46	47		1.1	
004		A	D						48	49	50	51	52		0.9	
005		A	C						53	54	55	56	57		0.6	
006	-140 ABCR	A	C	0	55	225	0	0	60	61	62	63	64		0.6	
007		A	D						65	68	67	69	70		0.9	
008	-140 ABCR	B	D	0	85	225	0	0	71	72	73	74	75	76	1.4	
009		A	D						77	78	79	80	81		1.25	
010		A	D						82	83	84	85	86		1.1	
011		A	D						87	88	89	90	91		0.9	
012		A	C						92	93	94	95	96		0.6	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS — IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

A_α = -4, 0, 4, 8, 12

B_α = -4, 0, 4, 8, 12, 16

C_β = -8, -4, 0, 4, 8

D_β = -4, 0, 4

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TABLE II - Continued.

TEST: OA 148 — DATA SET RUN NUMBER COLLATION SUMMARY — DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	α	β	δ_e	δ_{ss}	δ_{BF}	δ_{BL}	δ_{BR}	α: -4	0	4	8	12	16	MACH NUMBERS	TEST RUN NUMBER
RE8013	-140 ABCR	B	D	0	35	0	0	0	97	98	99	100	101	102	1.4	
014		A	D						103	104	105	106	107		1.25	
015		A	D						108	109	110	111	112		1.1	
016		A	D						113	114	115	116	117		0.9	
017		A	C						118	119	120	121	122		0.6	
018	-140 ABCR	B	D	0	0	-11.7	0	0	123	124	125	126	127	128	1.4	
019		A	D						131	129	130	132	133		1.25	
020		A	D						134	135	136	137	138		1.1	
021		A	D						139	140	141	142	143		0.9	
022		A	C						144	145	146	147	148		0.6	
023	-140 ABCR	B	D	0	0	0	0	0	149	150	151	152	153	154	1.4	
024		A	D						155	156	157	158	159		1.25	
025		A	D						160	161	162	163	164		1.1	
026		A	D						165	166	167	168	169		0.9	
027		A	C						170	171	172	173	174		0.6	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS — IDVAR (1) — IDVAR (2) — NDV

α OR β SCHEDULES

NASA-MSFC-MAF

TABLE II. - Continued.

TEST: OA 148 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: Post Test

DATA SET IDENTIFIER	CONFIGURATION	α	β	δ_r	δ_{SB}	δ_{BF}	δ_{EL}	δ_{EE}	α: -4	0	4	8	12	16	MACH NUMBERS	TEST RUN NUMBER
RE8028	140 ABCR	B	D	-10	35	163	10	0	175	176	177	178	179	180	1.4	
029		A	D						181	182	183	184	185		1.25	
030		A	D						186	187	188	189	190		1.1	
031		A	D						191	192	193	194	195		0.9	
032		A	C						196	197	198	199	200		0.6	
033	140 ABCR	B	D	+10	35	163	0	10	201	202	203	204	205	206	1.4	
034		A	D						207	208	209	210	211		1.25	
035		A	D						212	213	214	215	216		1.1	
036		A	D						217	218	219	220	221		0.9	
037		A	C						222	223	224	225	226		0.6	
038	140 ABCR	B	D	+10	85	163	10	10	227	228	229	230	231	232	1.4	
039		A	D						233	234	235	236	237		1.25	
040		A	D						238	241	240	241	242		1.1	
041		A	D						243	244	245	246	247		0.9	
042		A	C						248	249	250	251	252		0.6	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS — IDVAR (1) — IDVAR (2) — NDV

α OR β SCHEDULES

NASA-MSFC-MAF

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TABLE II. - Continued.

TEST: OA 148 | DATA SET RUN NUMBER COLLATION SUMMARY | DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION								α						MACH NUMBERS				TEST RUN NUMBER
		X	β	δ_R	δ_{SB}	δ_{BF}	δ_{EL}	δ_{EB}	-4	0	4	8	12	16					
ZE8043	140 ABCR	A	D	0	55	225	10	10	253	254	255	256	257			0.9			
044		A	C						258	259	260	261	262			0.6			
045	140 ABCR	A	D	0	55	225	4	4	263	264	265	266	267			0.9			
046		A	C						268	269	270	271	272			0.6			
047	140 ABCR	B	D	-10	85	163	4	4	273	274	275	276	277	278		1.4			
048		A	D						279	280	281	282	283			1.25			
049		A	D						284	285	286	287	288			1.1			
050		A	D						289	290	291	292	293			0.9			
051		A	C						294	295	296	297	298			0.6			
052	140 ABCR	B	D	-10	55	163	-4	+4	299	300	301	302	303	304		1.4			
053		A	D						305	306	307	308	309			1.25			
054		A	D						310	311	312	313	314			1.1			
055		A	D						315	316	317	318	319			0.9			
056		A	C						320	321	322	323	324			0.6			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

NASA-MSFC-MAF

TABLE II. - Continued.

TEST: OA 148 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	α	β	δ_R	δ_{SB}	δ_{BF}	δ_{BL}	δ_{BR}	α: -4	0	4	8	12	16	MACH NUMBERS			
RE8057	-140ABCR	B	D	10	55	16.3	4	-4	325	326	327	328	329	330		1.4		
058		A	D						331	332	333	334	335			1.25		
059		A	D						336	337	338	339	340			1.1		
060		A	D						340	342	343	344	345			0.9		
061		A	C						346	347	348	349	350			0.6		
062	-140ABCR	B	D	+5	55	16.3	-4	-4	351	352	353	354	355	356		1.4		
063		A	D						357	358	359	360	361			1.25		
064		A	D						362	363	364	365	366			1.1		
065		A	D						367	368	369	370	371			0.9		
066		A	C						372	373	374	375	376			0.6		
067	-140ABCR	A	D	0	55	22.5	-4	-4	377	378	379	380	381			0.9		
068		A	C						382	383	384	385	386			0.6		
069	-140 ABC	A	D	0	55	22.5	-10	-10	387	388	389	390	391			0.9		
070		A	C						392	393	394	395	396			0.6		

TEST RUN NUMBER

1 7 13 19 25 31 37 43 49 55 61 67 73 76

α OR β SCHEDULES — COEFFICIENTS — IDVAR (1) — IDVAR (2) — NDV

NASA-MSFC-MAF

TABLE II. - Concluded.

TEST: OA148 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	α	β	δ_R	δ_{SB}	δ_{BF}	δ_{EL}	δ_{EB}	α: -4	0	+4	8	12	16	MACH NUMBERS	TEST RUN NUMBER
R=8071	-140 ABC	B	D	-5	55	16.3	-10	-10	397	398	399	400	401	402	1.4	
072		A	D						403	404	405	406	407		1.25	
073		A	D						408	409	410	411	412		1.1	
074		A	D						413	414	415	416	417		0.9	
075		A	C						418	419	420	421	422		0.6	
076	-140 ABC	B	D	-10	0	-11.7	+10	-10	423	424	425	426	427	428	1.4	
077		A	D						429	430	431	432	433		1.25	
078		A	D						434	435	436	437	438		1.1	
079		A	D						439	440	441	442	443		0.9	
080		A	C						444	445	446	447	448		0.6	
081	-140 ABC	B	E	10	0	-11.7	-10	+10	449	450	451	452	453	454	1.4	
082		A	E						455	456	457	458	459		1.25	
083		A	E						460	461	462	463	464		1.1	
084		A	F						465	466	467	468	469		0.9	
085		A	O						470	471	472	473	474		0.6	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICIENTS

E_β = 0 @ α = -4, 0, 8, 16
-4, 0, 4 @ α = 4, 12

F_β = 0 @ α = -4, 0, 8, 12
-4, 0, 4 @ α = 4

IDVAR (1) IDVAR (2) NDV

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TABLE III

MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B_{26}

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage

NOTE: B_{26} is identical to B_{24} except underside of fuselage has been refaired to accept W_{116}.

MODEL SCALE: 0.030 MODEL DRAWING: SS-A00147, Release 12

DRAWING NUMBER : VL70-000143B, -000200, -000205, -006089, -000145
VL70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta. X_0 =235), In.	1293.3	38.799
Length (IML: Fwd Sta X =238), In.	1290.3	38.709
Max Width (@ X_0 = 1528.3), In.	264.0	7.920
Max Depth (@ X_0 = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft^2		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Continued)

MODEL COMPONENT : BODY - B_{70}

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage with forward fuselage RCS thruster ports, otherwise B_{70} is identical to B_{26}.

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000140A, -000140B, -000143B, -000145, -000200, VL70-000205, -006089, -008501, -008502, -008296

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta X_O=235), In.	1293.3	38.799
Length (IML: Fwd Sta X_O =238), In.	1290.3	38.709
Max Width (@ X_O = 1528.3), In.	264.0	7.920
Max Depth (@ X_O = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft^2		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT : CANOPY - C_9

GENERAL DESCRIPTION : Configuration 3A. Canopy used with fuselage B_{26}.

MODEL SCALE: 0.030 MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER : VL70-000143A

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length (X_0=434.643 to 578), In.	143.357	4.301
Max Width (@ X_0 = 513.127), In.	152.412	4.572
Max Depth (@ X_0 = 485.0), In.	25.00	0.750
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT ELEVON - E_{44}

GENERAL DESCRIPTION 6.0 In. F.S. gaps machined into E_{26} elevon. Flipper doors conterbody pieces, and tipseals are not simulated. (Data are for one of two sides.)

MODEL SCALE: 0.030

DRAWING NUMBER

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft^2	210.0	0.189
Span (equivalent) , In.	349.2	10.476
Inb'd equivalent chord, In.	118.0	3.54
Outb'd equivalent chord , In.	55.19	1.656
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Trailing Edge	- 10.056	- 10.056
Hingeline	0.0	0.0
Area Moment (Product of Area & $\bar{c}$)$_3$, Ft^3	1587.25	0.0429
Mean Aerodynamic Chord, In.	90.7	2.721

TABLE III (Cont'd)

MODEL COMPONENT : BODY FLAP - F_9

GENERAL DESCRIPTION : Configuration 140A/B

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000140B, -000200

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (Chord), In.	84.7	2.541
Max Width , In.	262.308	7.869
Max Depth , In.	23.00	0.690
Fineness Ratio		
Area - Ft^2		
Max. Cross-Sectional		
Planform	142.60	0.128
Wetted		
Base	41.90	0.0377

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TABLE III (Cont'd)

MODEL COMPONENT : OMS POD - M_{16}

GENERAL DESCRIPTION : Configuration 140C orbiter OMS pod - short pod. External contour is to referenced drawings with 1/2" added to simulate TPS.

MODEL SCALE: 0.015

DRAWING NUMBER : VL70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta X_0 =1310.5), In.	258.50	7.755
Max Width (@ X_0 = 1511), In.	136.8	4.104
Max Depth (@ X_0 = 1511), In.	74.70	2.241
Fineness Ratio	2.484	2.484
Area - Ft^2		
Max. Cross-Sectional	58.865	0.053
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: OMS NOZZLES - N_{28}

GENERAL DESCRIPTION: Configuration 140A/B orbiter OMS nozzles.

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140A (Location), SS-A00106, Release 9 (Contour)

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft^2		
Exit		
Throat		
Gimbal Point (Station) - In.		
Left Nozzle		
X_0	1518.0	45.54
Y_0	- 88.0	- 2.64
Z_0	492.	14.76
Right Nozzles		
X_0	1518.0	45.54
Y_0	88.0	2.64
Z_0	492.0	14.76
Null Position - Deg.		
Left Nozzle		
Pitch	15°49'	15°49'
Yaw	12°17'	12°17'
Right Nozzle		
Pitch	15°49'	15°49'
Yaw	12°17'	12°17'

TABLE III (Cont'd)

MODEL COMPONENT RUDDER - R_5

GENERAL DESCRIPTION Configuration 140C orbiter rudder (identical to configuration 140A/B rudder).

MODEL SCALE: 0.030

DRAWING NUMBER VL70-000146B, -000095

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft^2	100.15	0.090
Span (equivalent), In.	201.00	6.030
Inb'd equivalent chord, In.	91.585	2.748
Outb'd equivalent chord, In.	50.833	1.525
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Trailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Product of area & $\bar{c}$), Ft^3	610.92	0.0165
Mean Aerodynamic Chord, In.	73.2	2.196

TABLE III (Cont'd)

MODEL COMPONENT: VERTICAL - V_8

GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail. (Identical to configuration 140A/B vertical tail.)

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140C, -000146B

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	0.372
Span (Theo) - In.	315.72	9.472
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.000	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	8.055
Tip (Theo) WP	108.47	3.254
MAC	199.81	5.994
Fus. Sta. of .25 MAC	1463.35	43.901
W.P. of .25 MAC	635.52	19.066
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Leading Wedge Angle - Deg.	10.0	10.0
Trailing Wedge Angle - Deg.	14.92	14.92
Leading Edge Radius	2.0	0.060
Void Area	13.17	0.0019
Blanketed Area	0.0	0.0

TABLE III (Conl'd)

MODEL COMPONENT: WING-W_{116}

GENERAL DESCRIPTION: Configuration 4

NOTE: Identical to W_{111} except airfoil thickness. Dihedral angle is along trailing edge of wing.

MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2 Planform	2690.00	2.421
Span (Theo in.	936.68	28.10
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.24	20.677
Tip, (Theo) B.P.	137.85	4.136
MAC	474.81	14.244
Fus. Sta. of .25 MAC	1136.83	34.105
W.P. of .25 MAC	290.58	8.717
B.L. of .25 MAC	182.13	5.464
EXPOSED DATA		
Area (Theo) Ft^2	1751.50	1.576
Span, (Theo) In. BP108	720.68	21.620
Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
Root BP108	562.09	16.863
Tip 1.00 $\frac{b}{2}$	137.85	4.136
MAC	392.83	11.785
Fus. Sta. of .25 MAC	1185.98	35.579
W.P. of .25 MAC	295.30	8.829
B.L. of .25 MAC	251.77	7.555
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ =	0.113	0.113
Tip $\frac{b}{2}$ =	0.120	0.120
Data for (1) of (2) Sides		
Leading Edge Cuff Planform Area Ft^2	113.18	0.102
Leading Edge Intersects Fus M. L. @ Sta	500.0	15.0
Leading Edge Intersects Wing @ Sta	1025.0	30.720

TABLE IV.

FUSELAGE PRESSURE TAP LOCATIONS –

ORBITER – IN.			Φ RADIAL LOCATION – DEGREES																					
FULL	MODEL	X/L	0	20	40	55	70	90	105	110	120	135	140	150	151	156	162	165	169	176	180	NO TAPS	Σ NO TAPS
235	7.05	0	7																			1	1
245	7.35	.008	8					9													10	3	4
265	7.95	.023	11	12	13	14	15	16			17			18							19	9	13
295	8.85	.046		24	25	26	27	28			29			30							31	8	21
325	9.75	.070		36	37	38	39	40			41			42							43	8	29
330	11.40	.112	47	48	49	50	51	52			53			54							55	9	38
440	13.20	.158																		59		1	39
450	13.50	.166	60	61	62	63	64	65			66			67					68		69	10	49
465	13.95	.177													73		74					2	51
500	15.00	.204	75	76	77	78	79	80			81		82	83				84			85	1	62
560	16.80	.251	89		90		91	92			93			94				95			96	8	70
625	18.75	.301	98		99		100	101			102			103				104			105	8	78
725	21.75	.378	107		108		109	110			111			112				113			114	8	86
880	26.40	.497	116		117		118	119			120			121				122			123	8	94
980	29.40	.574	125		126																	2	96
1080	32.40	.652	128		129		130	131			132			133				134			135	8	104
1180	35.40	.729	137		138		139	140			141			142							143	7	111

TABLE IV. - Concluded.

FUSELAGE PRESSURE TAP LOCATIONS

ORBITER - IN.			Φ RADIAL LOCATION ~ DEGREES																								NO TAPS	Σ NO TAPS
FULL	Model	X/L_o	0	20	40	55	70	90	105	110	120	135	140	150	151	156	162	165	169	174	180	305	320	340				
1245	37.35	.779	145		146		147	148	149		150	151		152				153			154					10	10
1300	39.0	.821	156		157		158	159	160		161	162		163							164					9	19
1375	41.25	.879	166		167		168	169	170		171	172		173				174								9	28
1430	42.9	.921	176		177		178	179	180		181	182		183				184								9	37
1480	44.4	.960	186		187		188	189	190		191	192		193				194								9	46
1530	45.9	.999								196 198	197 199															4	50

TABLE V.

Y_t	Y_o	LEFT WING PRESSURE TAP LOCATIONS																No TAPS	Σ No TAPS
.235	110	X/C	0	.041	.113	.217	.429	.547	.633	.727	.793								9
		TOP	208	209	210	211	212	213	214	215	216							9	
		BOT	—	—	—	—	—	—	—	—	—							0	
.299	140	X/C	0	.010	.020	.050	.0944	.229	.362	.497		.700	.834	.865	.900	.965			34
		TOP	217	218	219	220	221	222	223	224		225	226	227	228	229		13	
		BOT		230	231	232	233	234	235	236		237	238	239	240	241		12	
.364	170	X/C	0	.010	.020	.040	.086	.163	.246	.390		.637	.798	.839	.879	.919	.955		61
		TOP	242	243	244	245	246	247	248	249		250	251	252	253	254	255	14	
		BOT		256	257	258	259	260	261	262		263	264	265	266	267	268	13	
.427	200	X/C	0	.010	.020	.040	.083	.177	.274	.402	.565	.760	.808	.857	.905	.953	1.00		89
		TOP	269	270	271	272	273	274	275	276	277	278	279	280	281	282		14	
		BOT		283	284	285	286	287	288	289	290	291	292	293	294	295	296	14	
.534	250	X/C	0	.010	.020	.050	.080	.150	.250	.400	.550	.725	.775	.950	.900	.950			116
		TOP	297	298	299	300	301	302	303	304	305	306	307	308	309	310		14	
		BOT		311	312	313	314	315	316	317	318	319	320	321	322	323		13	

TABLE V. - Concluded.

η	Y_0	LEFT WING PRESSURE TAP LOCATIONS																No TAPS	Σ No TAPS
.641	300	X/C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920	1.00				123
		TOP										333	334	335				3	
		BOT										341	345	346	347			4	
.673	315	X/C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920	1.00				140
		TOP	324	325	326	327	328	329	330	331	332							9	
		BOT		336	337	339	339	340	341	342	343							8	
.780	365	X/C	0	.010	.020	.050	.150	.250	.650	.750	.850	.950							159
		TOP	348	349	350	351	352	353	354	355	356	357						10	
		BOT		358	359	360	361	362	363	364	365	366						9	
.887	415	X/C	0	.010	.020	.050	.150	.250	.400	.600	.750	.900	1.0						179
		TOP	367	368	369	370	371	372	373	374	375	376						10	
		BOT		377	378	379	380	381	382	383	384	385	386					10	
.972	455	X/C	0	.020	.069	.157	.345	.503	.670	.862									194
		TOP	387	388	389	390	391	392	393	394								8	
		BOT		395	396	397	398	399	400	401								7	
1.0	469	X/C	.418	.723															196
		TOP	402	403														2	
		BOT																	

TABLE VI.

ORBITER VERTICAL TAIL & SPEED BRAKE

PRESSURE TAP LOCATIONS

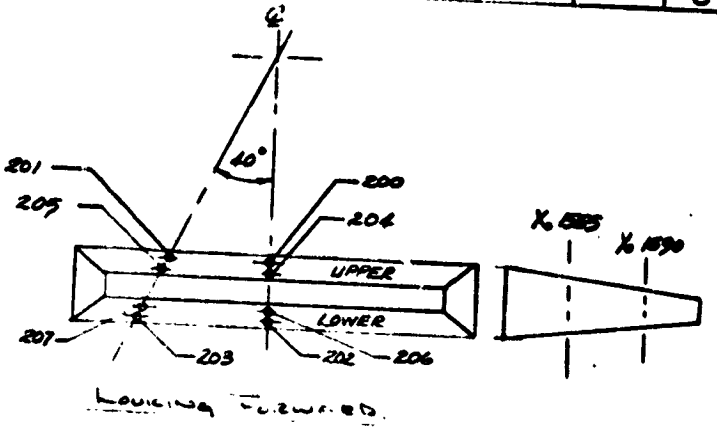
VERTICAL (LH ONLY)		X/C_V												
Z_o FULL SCALE	Z_o MODEL SCALE	η_V	0	.025	.05	.15	.30	.52	.685	.775	.90	NO TAPS	Σ NO TAPS
550	16.5	.153	430	431	432	433	434	435	436	437		8	8
600	18.0	.316	438	439	440	441	442	443	444	445	446	9	17
645	19.35	.458							1434	1435	1445	3	20
690	20.70	.600	447	448	449	450	451	452	453	454	455	9	29
720	21.6	.720							1453	1454	1455	3	32
765	22.95	.820	456	457	458	459	460	461	462	463	464	9	41
792	2376	.925	465	466	467	468	469	470	471	472	473	9	50

SPEED BRAKE (R N INSIDE)		X/SB_V							
Z_o FULL SCALE	Z_o MODEL SCALE	η/SB	.10	.25	.40	.65	.90	NO TAPS	Σ NO TAPS
600	18.0	.110	801	802	803	804	805	5	5
630	18.9	.254	806	807	808	809	810	5	10
666	19.8	.407	811	812	813	814	815	5	15
690	20.7	.567	816	817	818	819	820	5	20
720	21.6	.706	821	822	823	824	825	5	25
750	22.5	.856	826	827	828	829	830	5	30

TABLE VII.

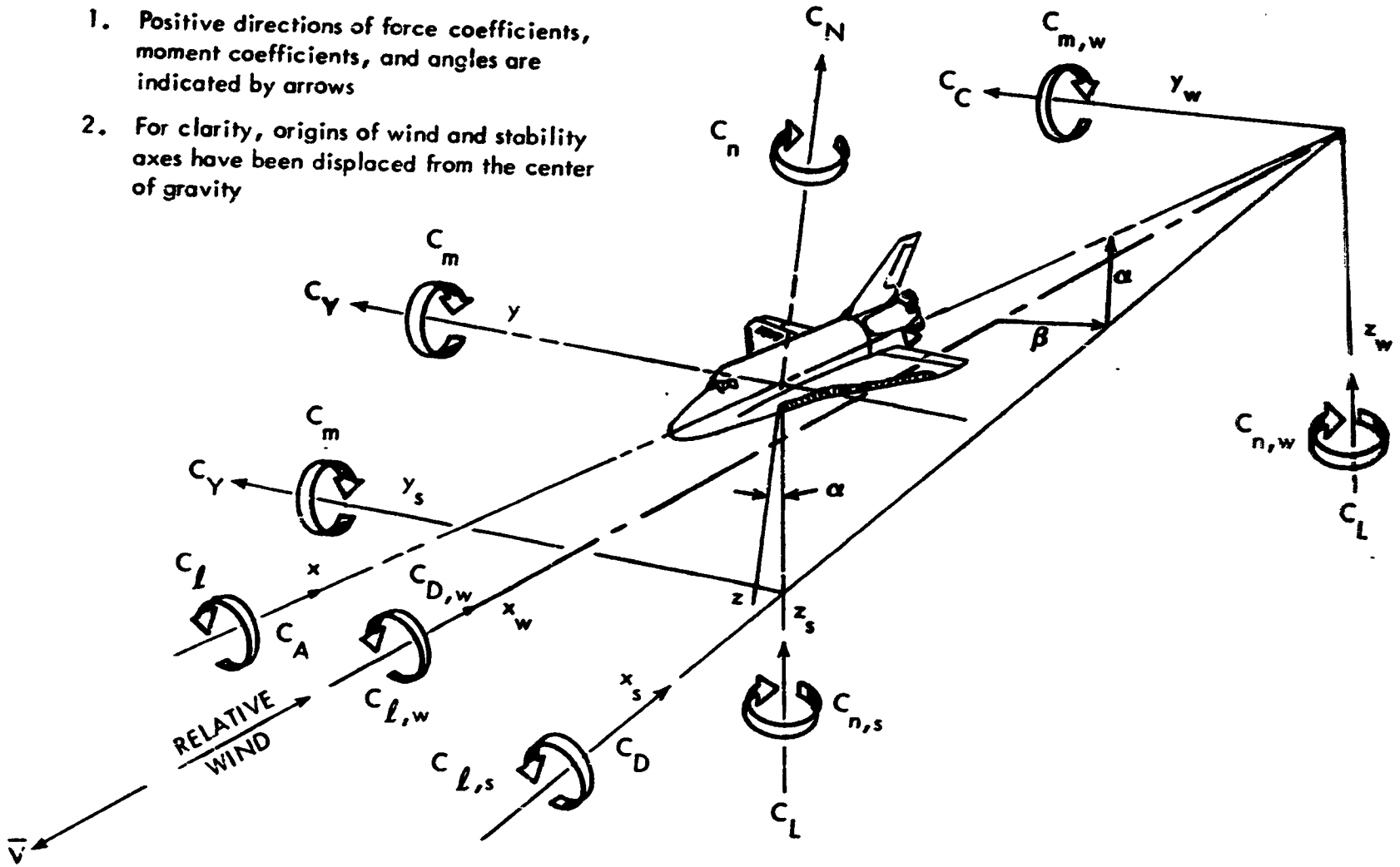
BODYFLAP PRESSURE TAP LOCATIONS

ORBITER-X_o			ϕ - DEGREES			
FULL SCALE	MODEL SCALE	X_o/L_o	0	40	No. TAPS	Σ No TAPS
1555 U	46.65	1.018	200	201	2	2
1555L	46.65	1.018	202	203	2	4
1590 U	47.70	1.046	204	205	2	6
1590 L	47.70	1.046	206	207	2	8



Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

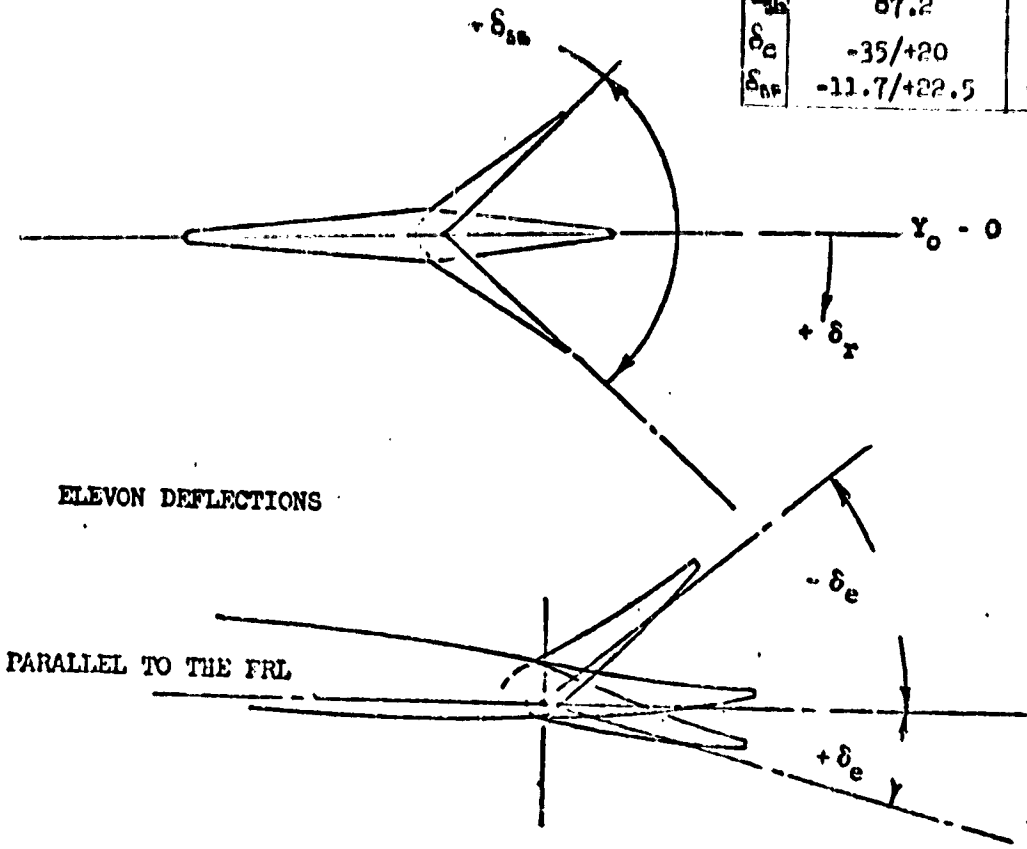


a. Orbiter Axis Systems

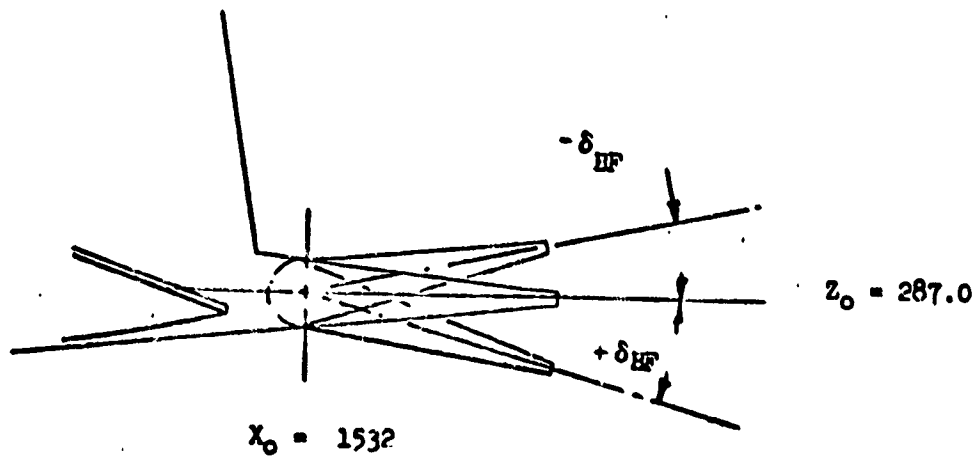
Figure 1. - Axis systems and sign conventions

RUDDER AND SPEED BRAKE DEFLECTIONS
(PARALLEL TO THE FRL)

	Maximum Deflections	
	Vehicle [illegible]	Test CAIAB
δ_r	22.8	± 10
δ_{sb}	87.2	85
δ_e	-35/+20	± 10
δ_{BF}	-11.7/+22.5	-11.7/+22.5

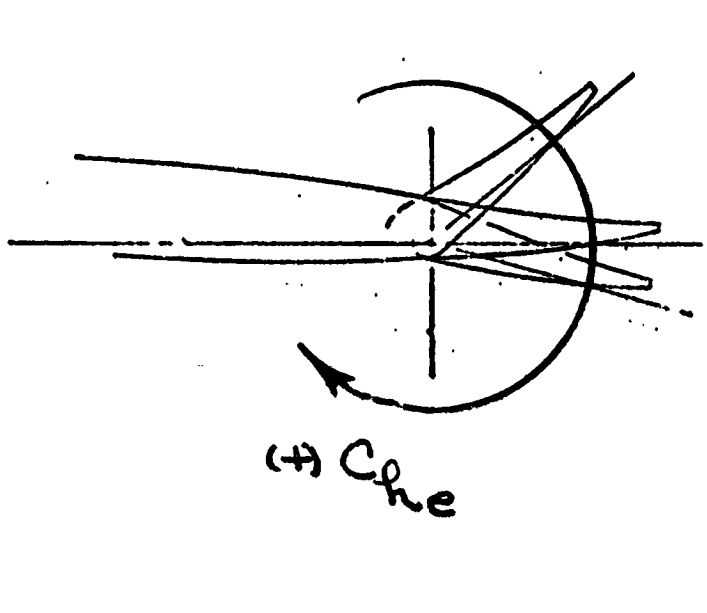


BODY FLAP DEFLECTIONS



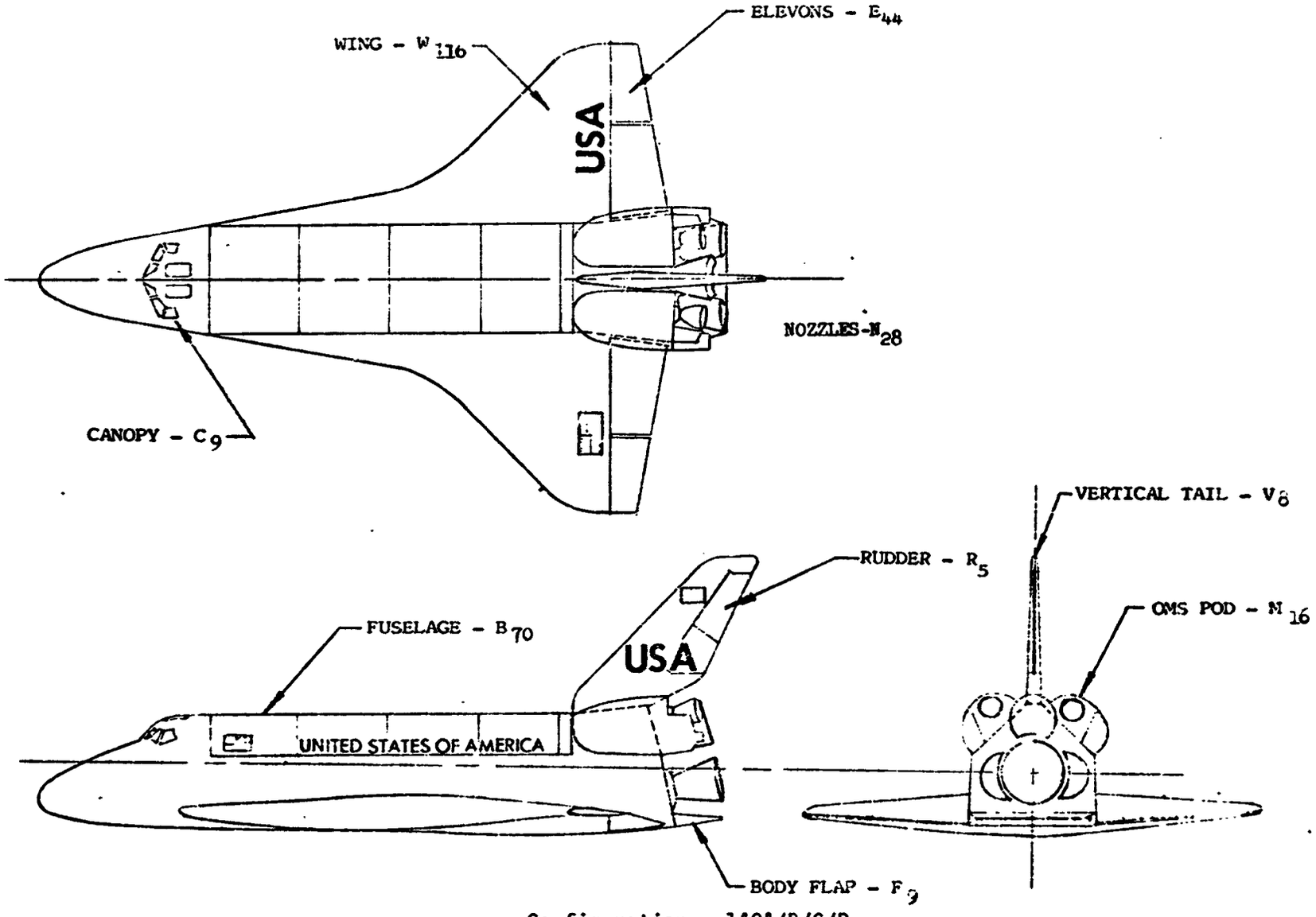
b. Definition of Angular Measurements

Figure 1. - Continued.



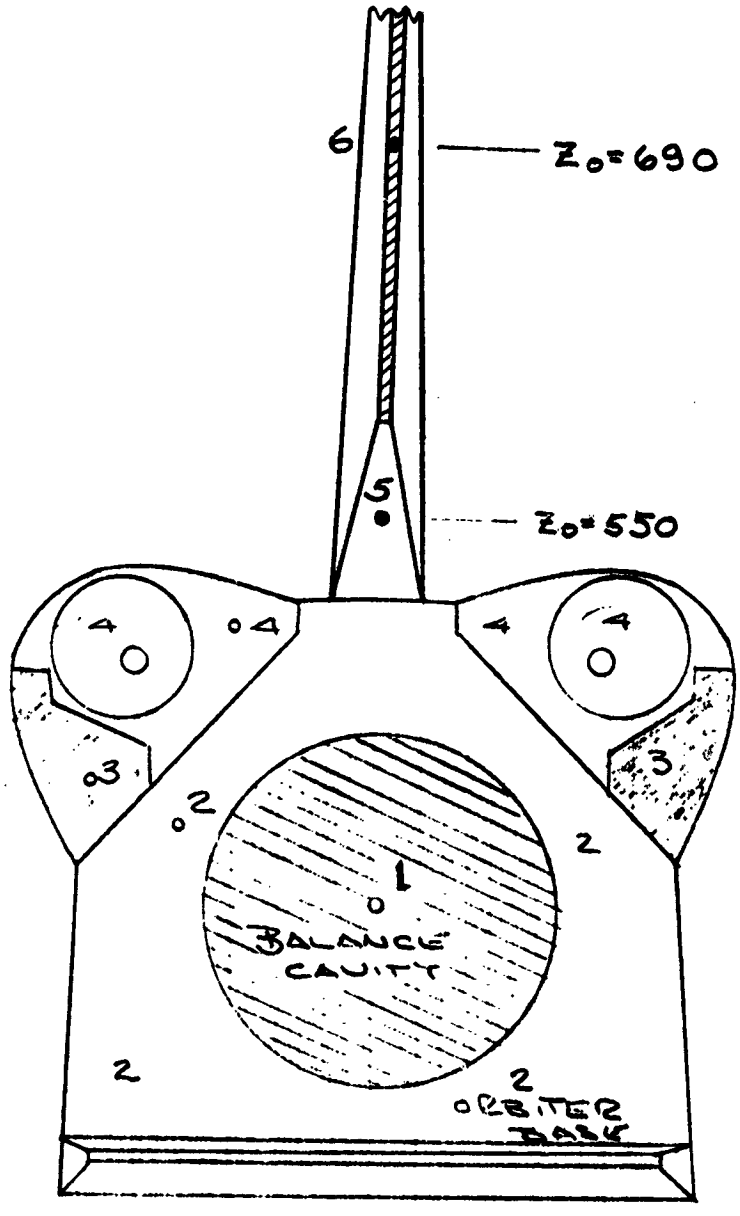
c. Elevon Hinge Moment Sign Convention

Figure 1. - Concluded.



a. Configuration - 140A/B/C/R

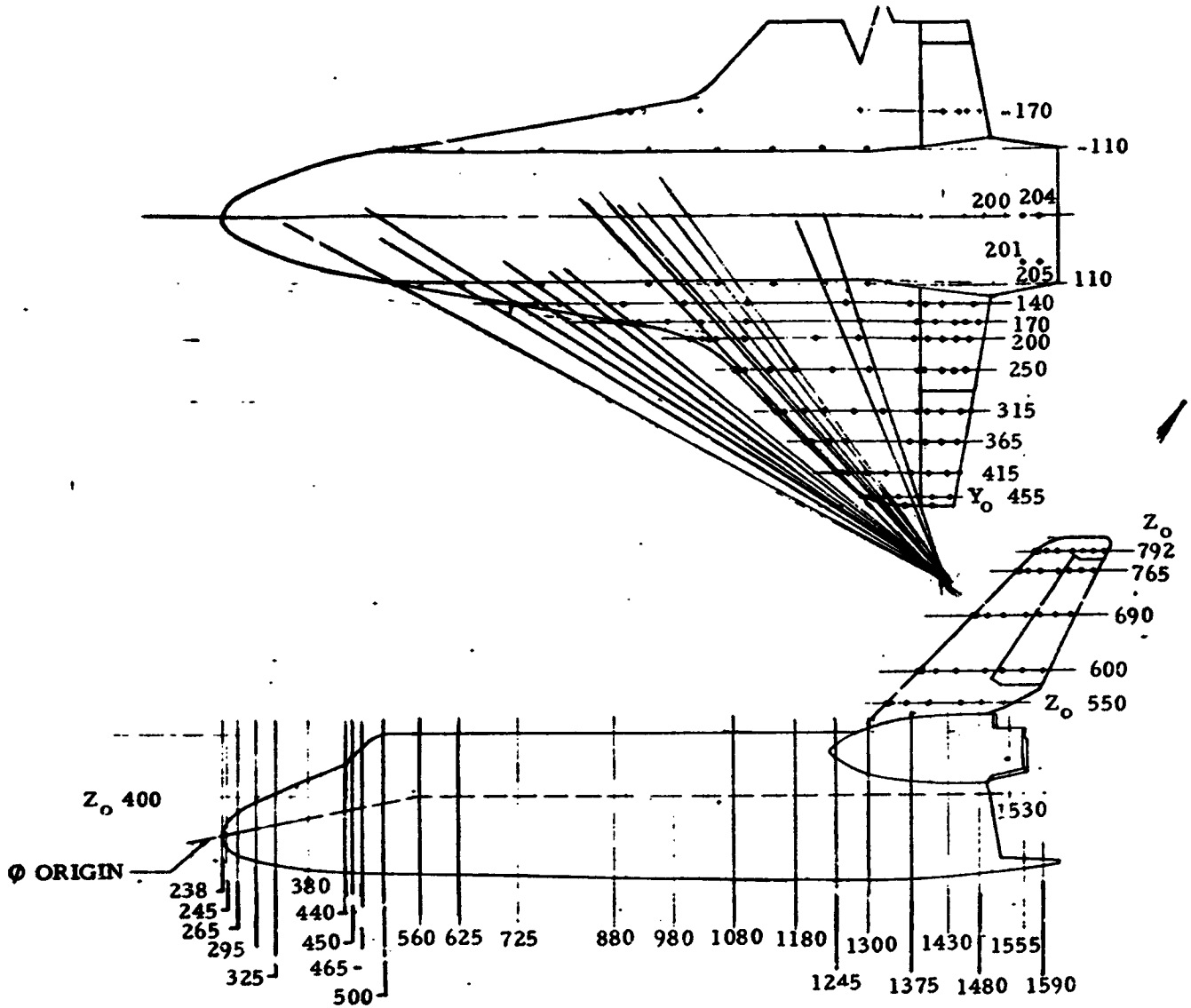
Figure 2. - Model sketches.



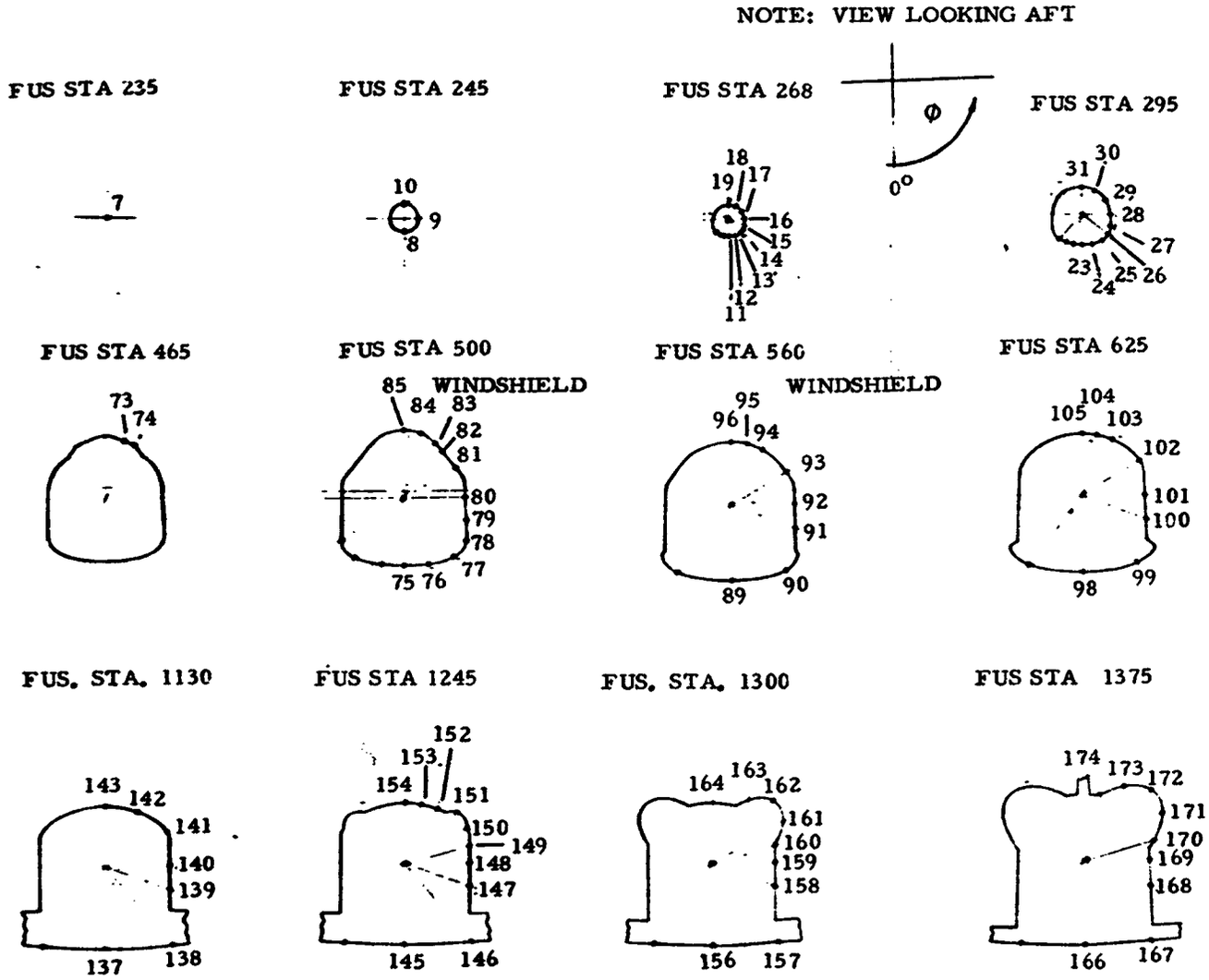
AREA NO.	PROJECTED AXIAL VALUE
A1	0.076699 ft²
A2	0.215695 ft²
A3	0.034072 ft²
A4	0.074167 ft²

b. Base Pressure Taps and Areas

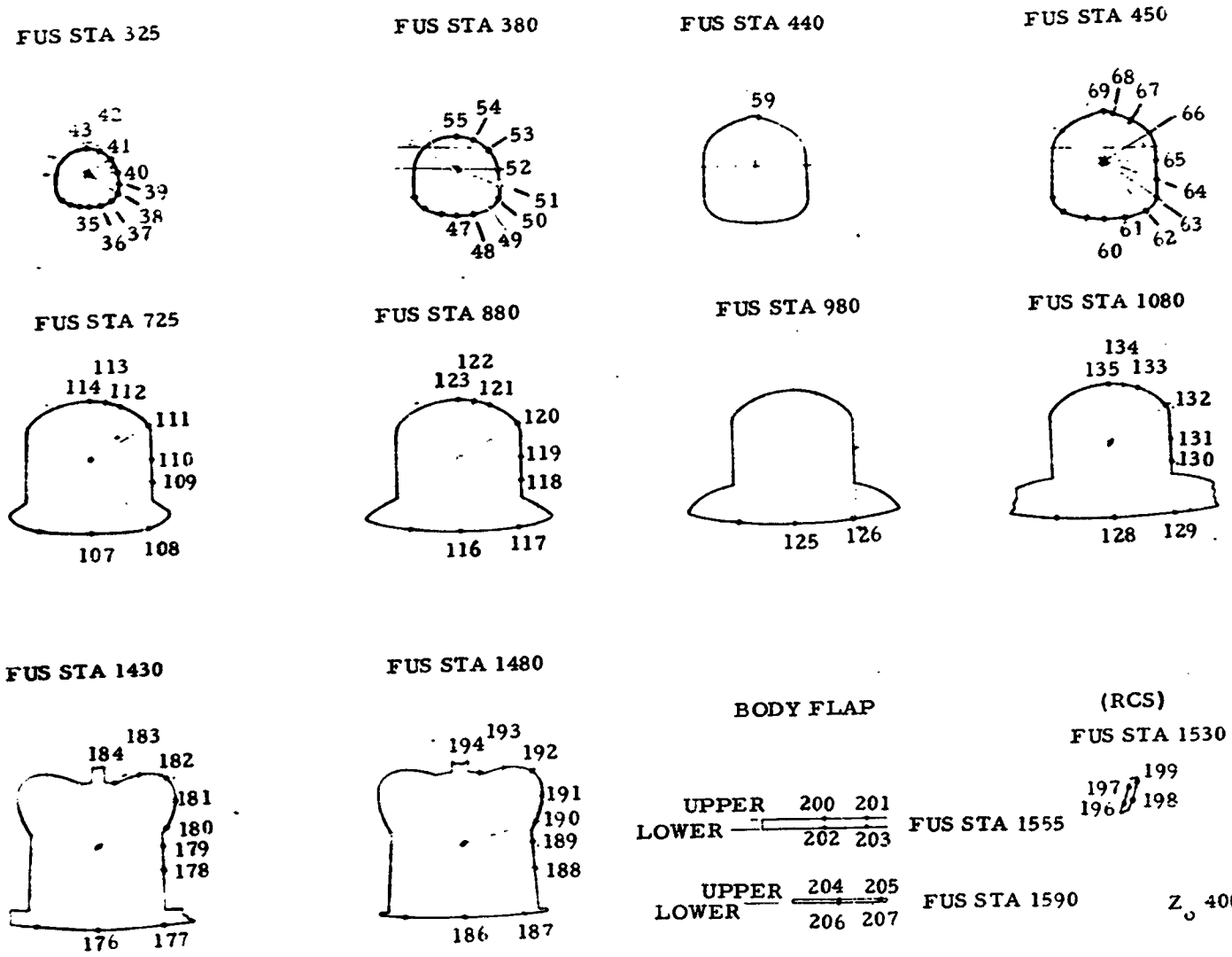
Figure 2. - Continued.



c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

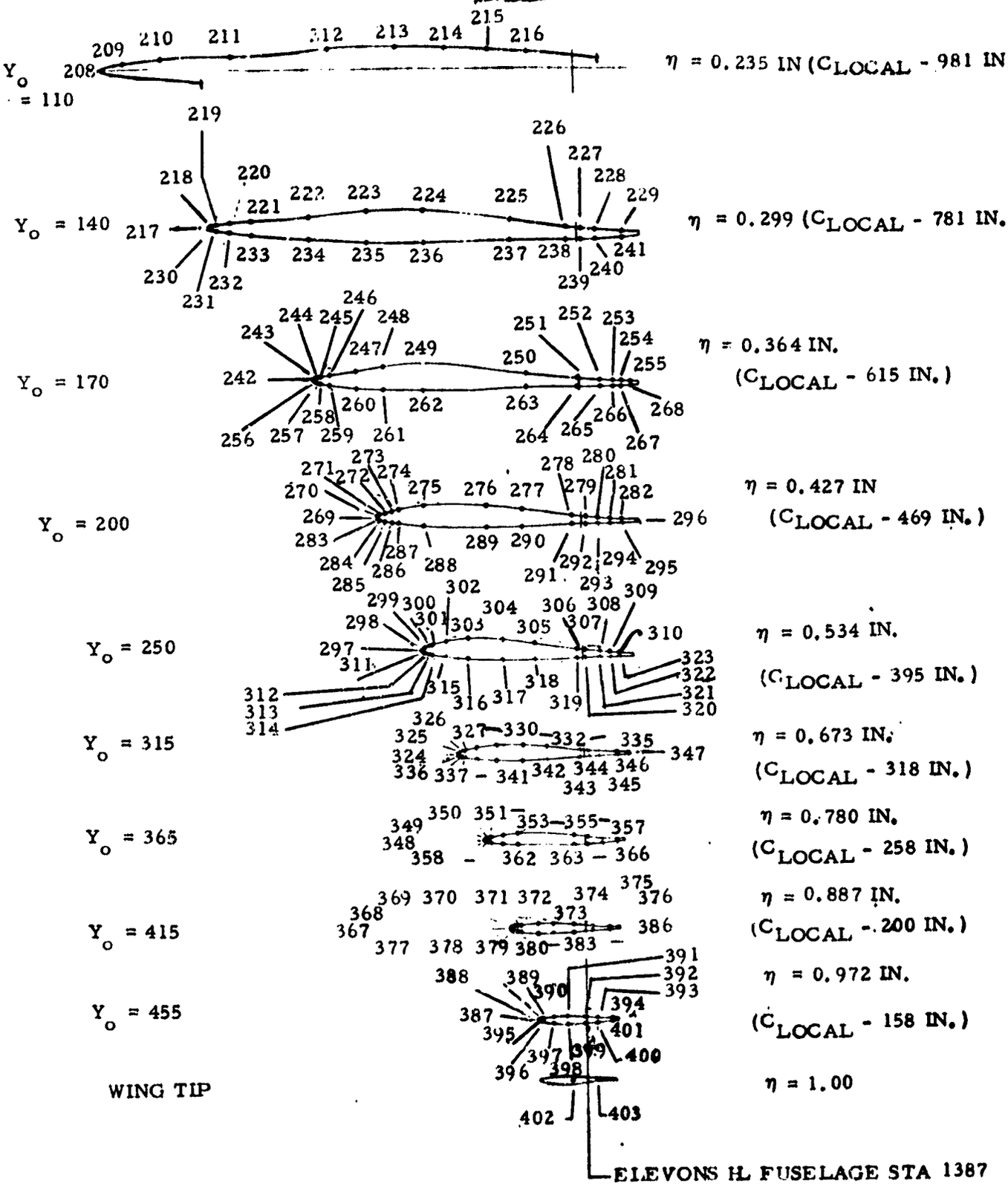


c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.



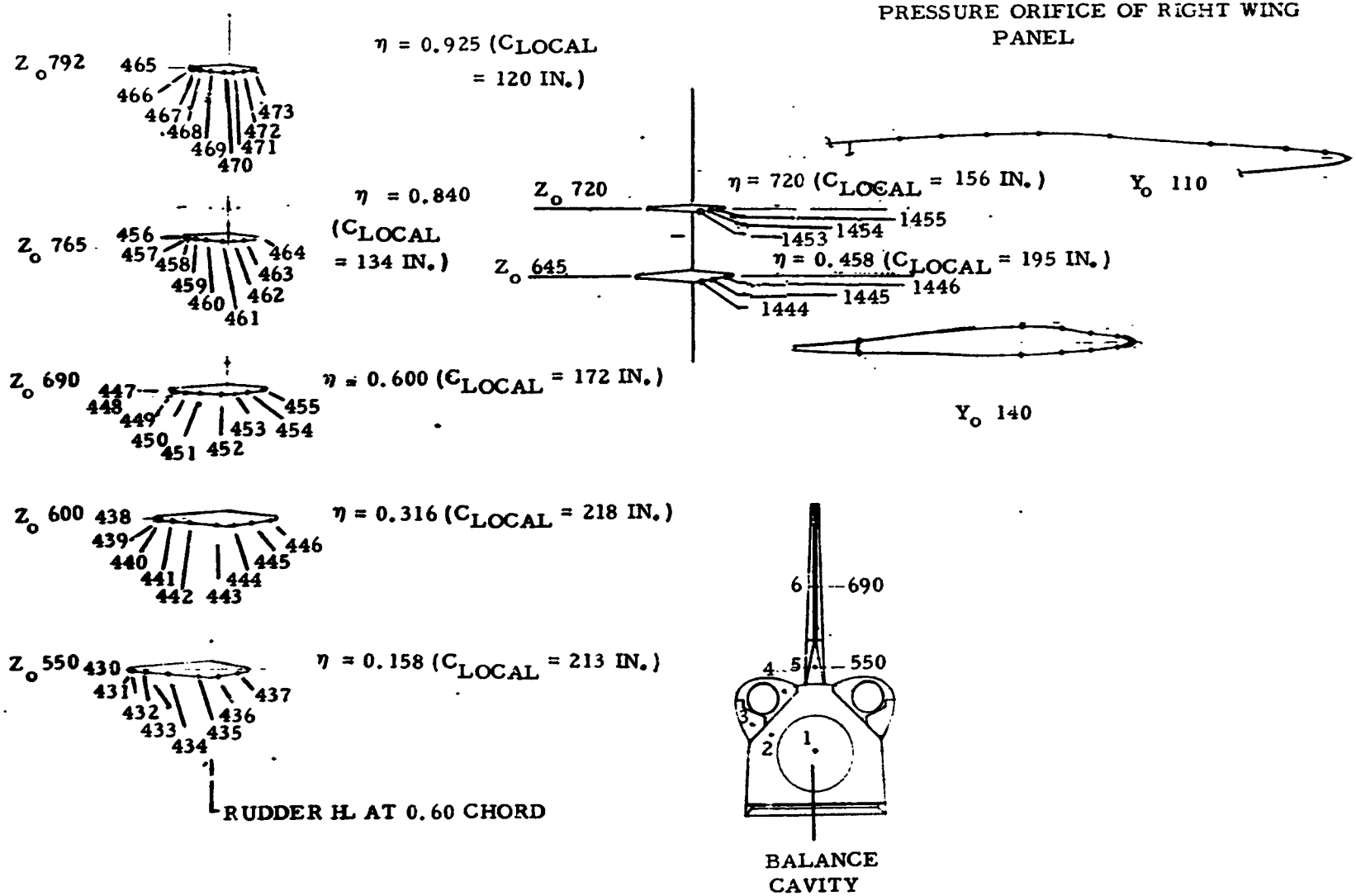
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

PRESSURE ORIFICE LOCATION OF LEFT WING PANEL



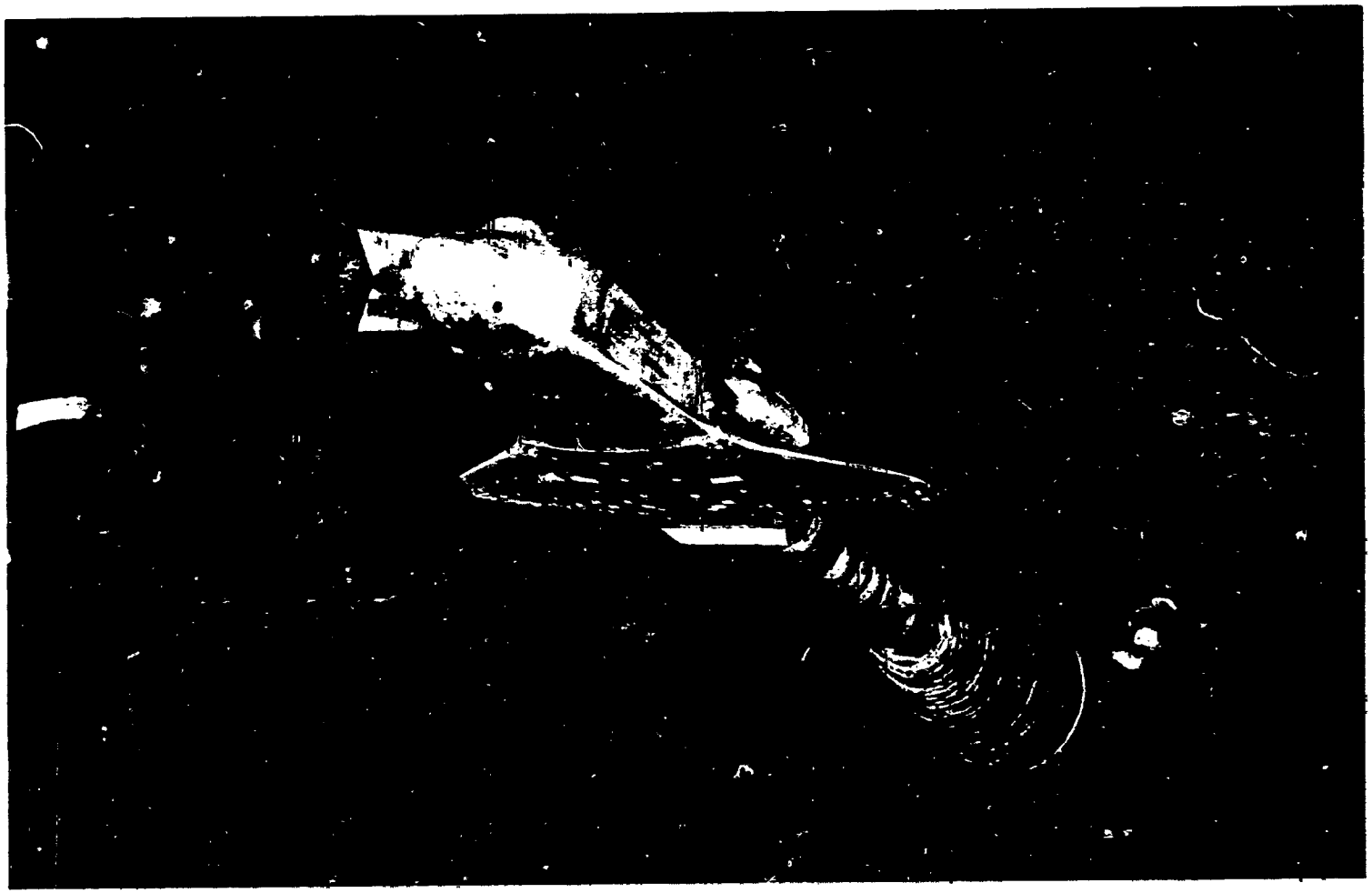
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR



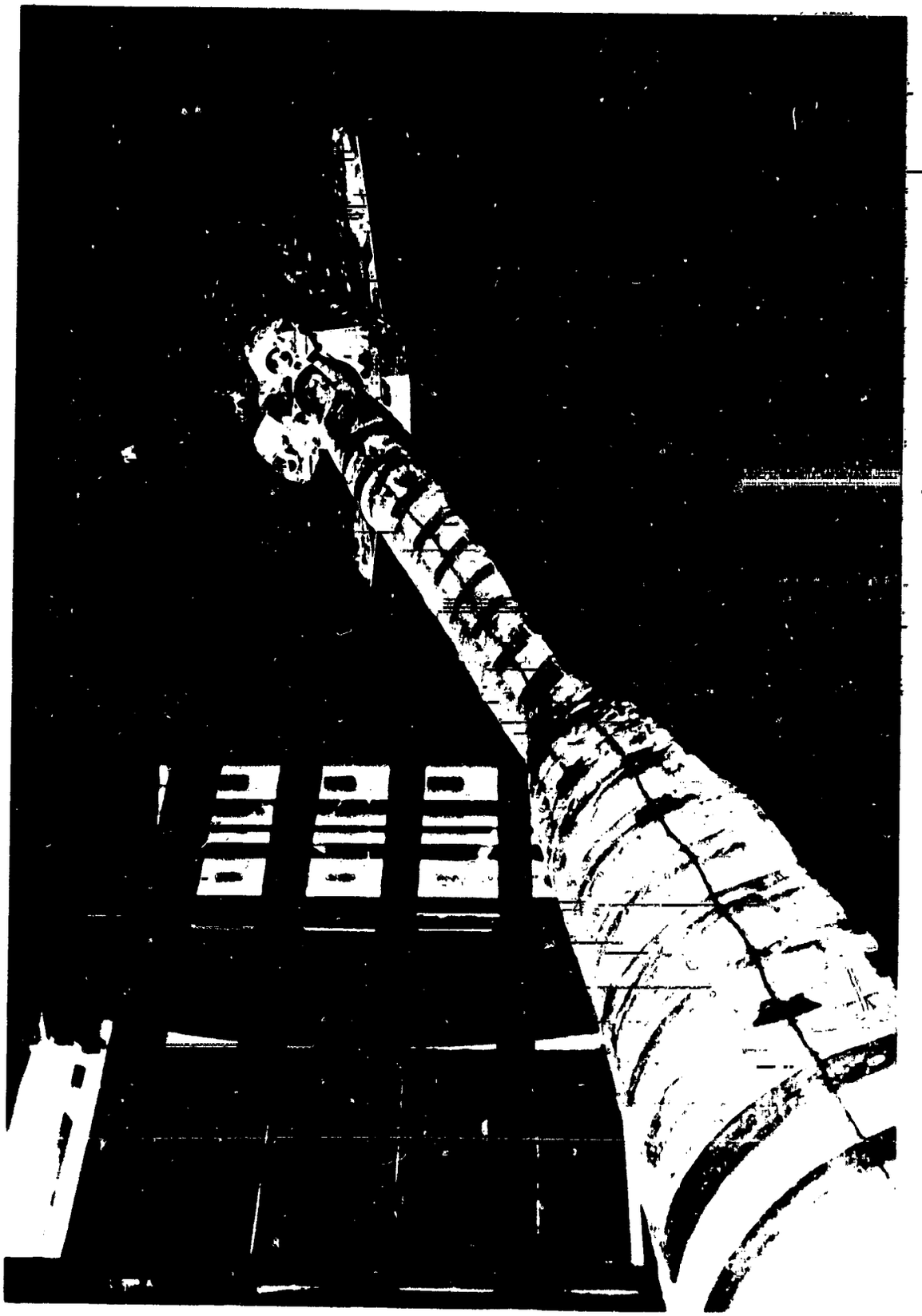
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations

Figure 2. - Concluded.



a. Three Quarter Front View of model 47-O in the ARC 11 x 11 UPWT

Figure 3. - Model installation photographs.



b. Three Quarter Rear View of Model 47-O in the ARC 11 x 11 UPWT

Figure 3. - Concluded.

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DATA FIGURES

Volume 1	Plotted force data
Volume 2	Plotted pressure data

Tabulations of plotted data are available on request from Data Management Services

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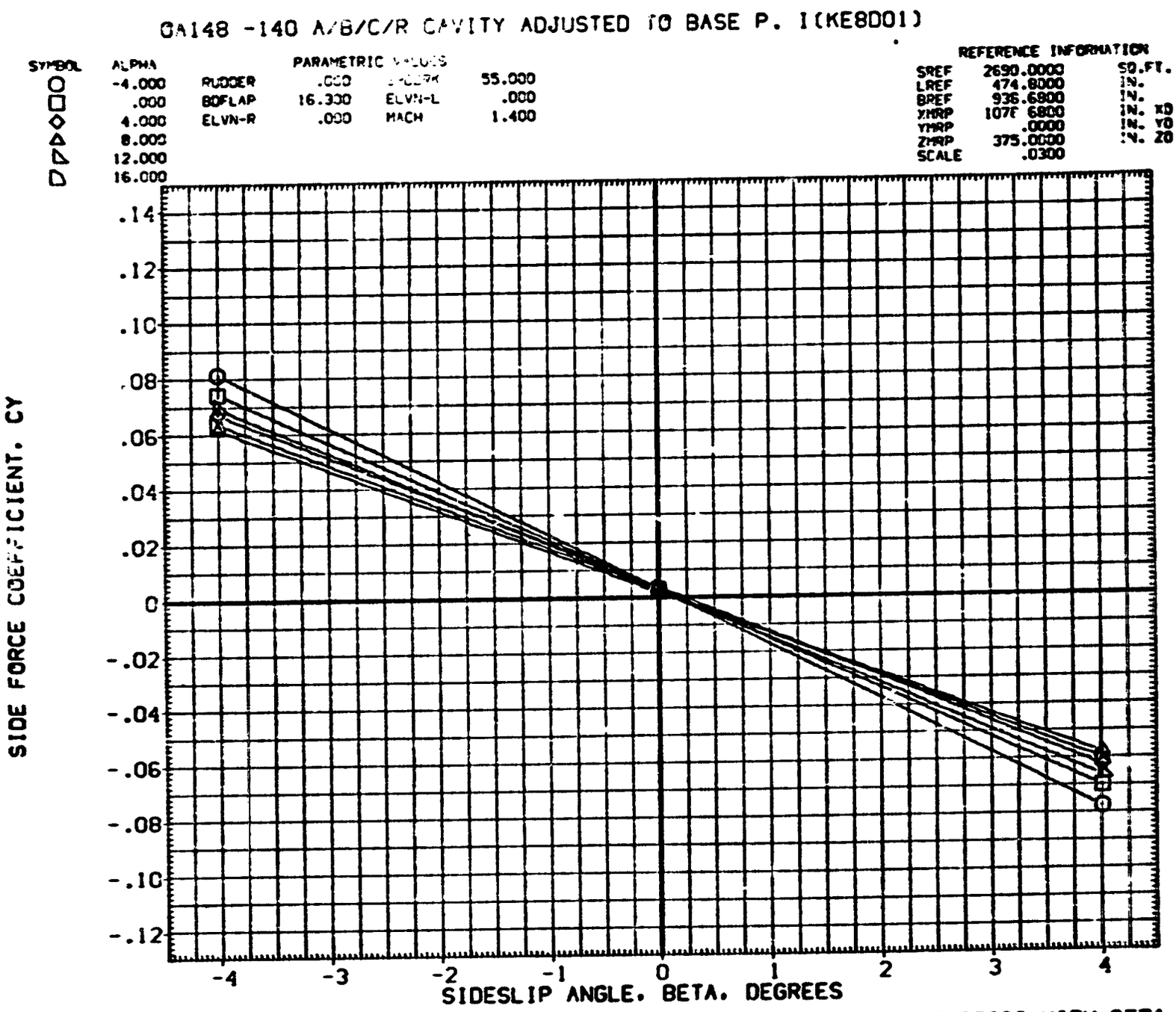


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8001)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▽	12.000
▷	16.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	16.300	ELVN-L	.000
ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION

SREF	269C.0000	SQ.FT.
LREF	474.5000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

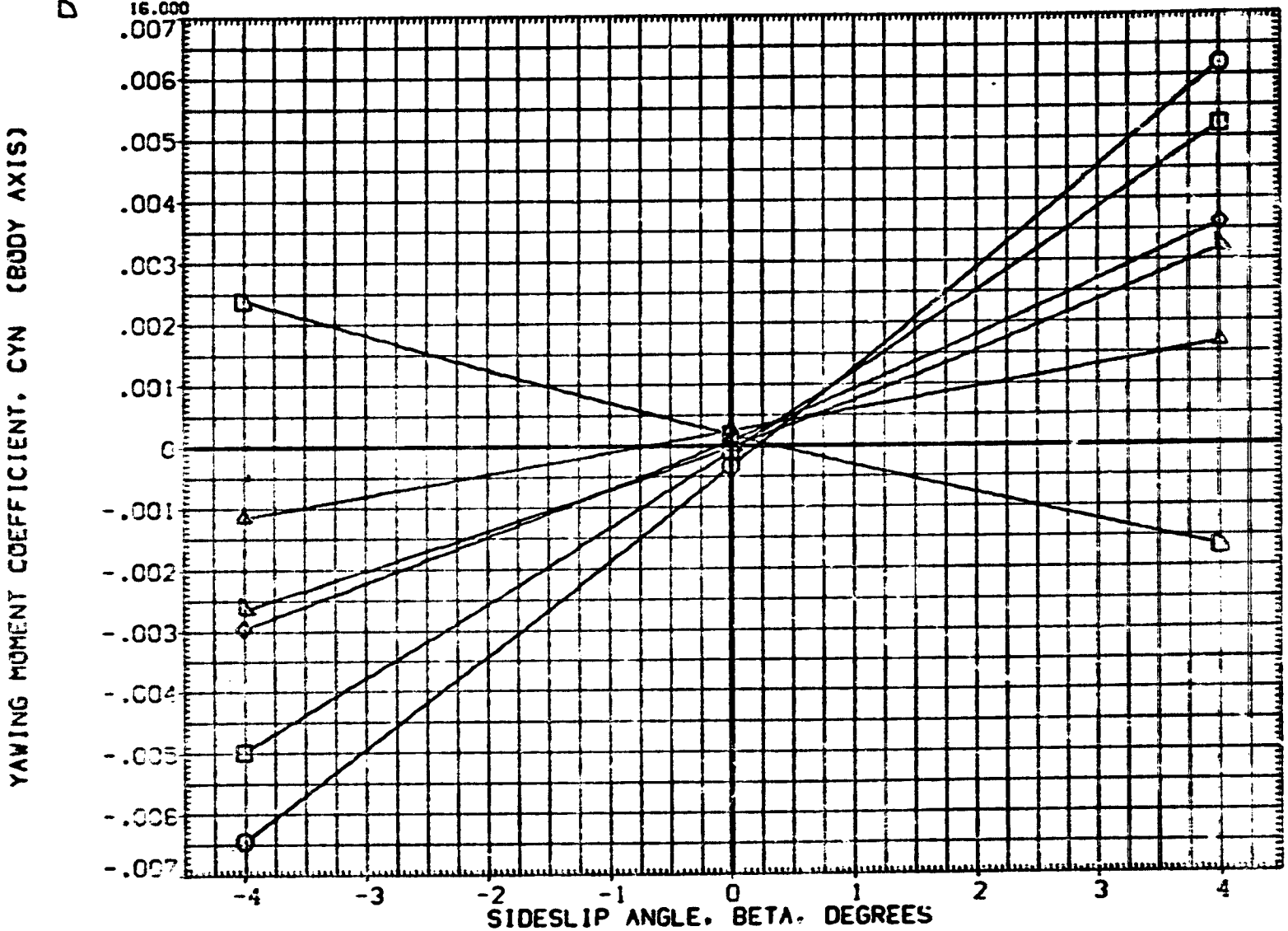


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

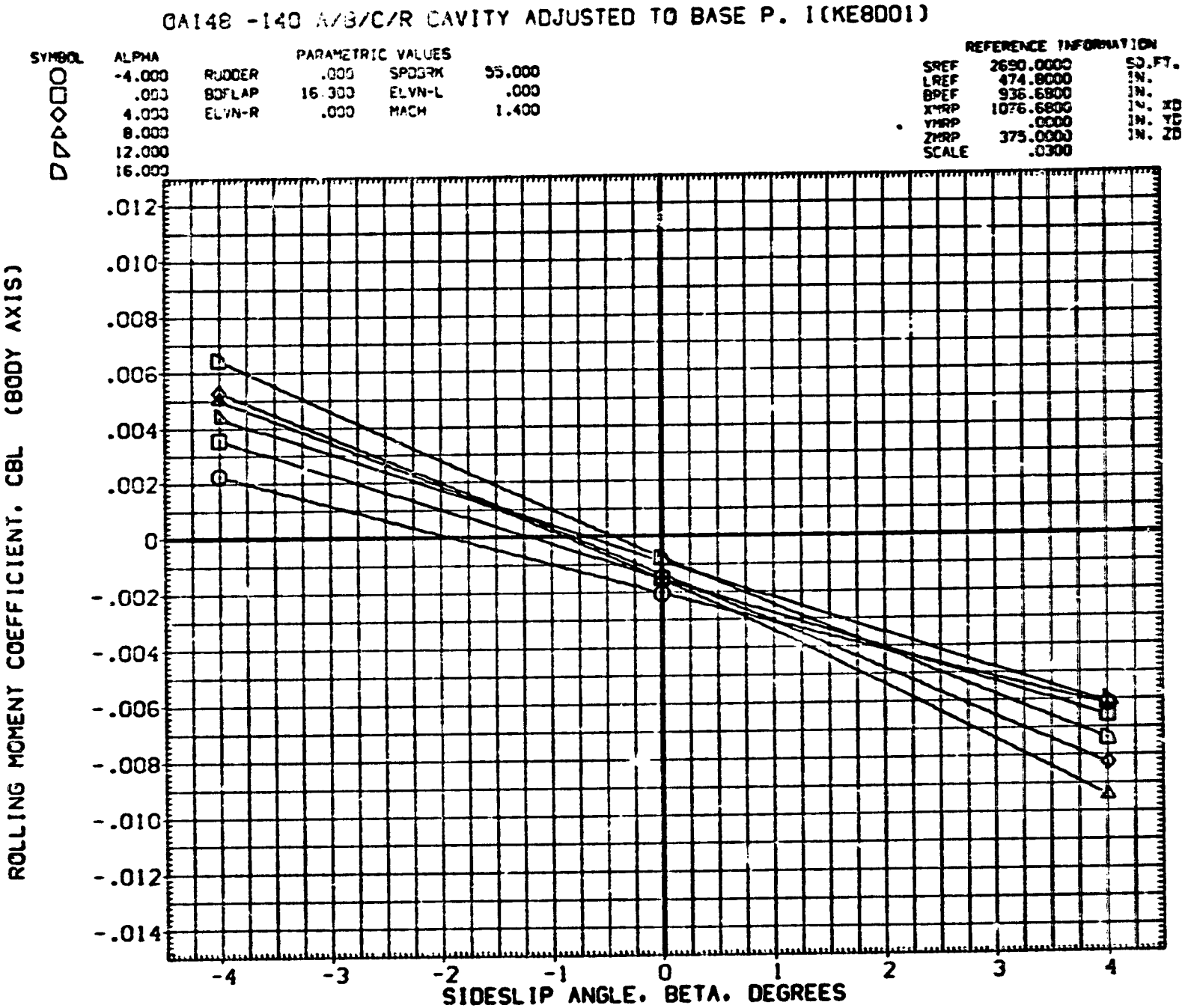


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D02)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▷	12.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	16.300	ELVN-L	.000
ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

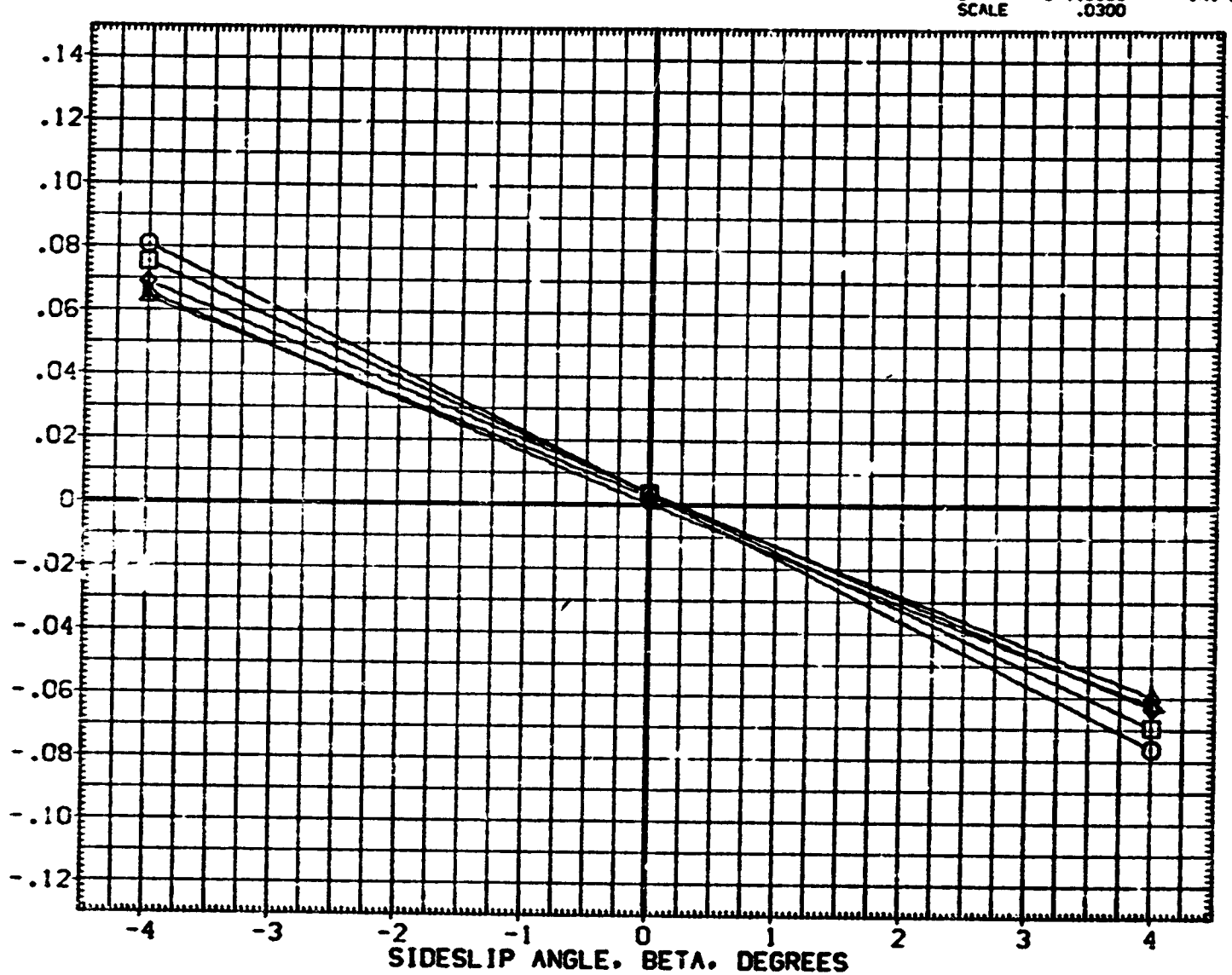


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

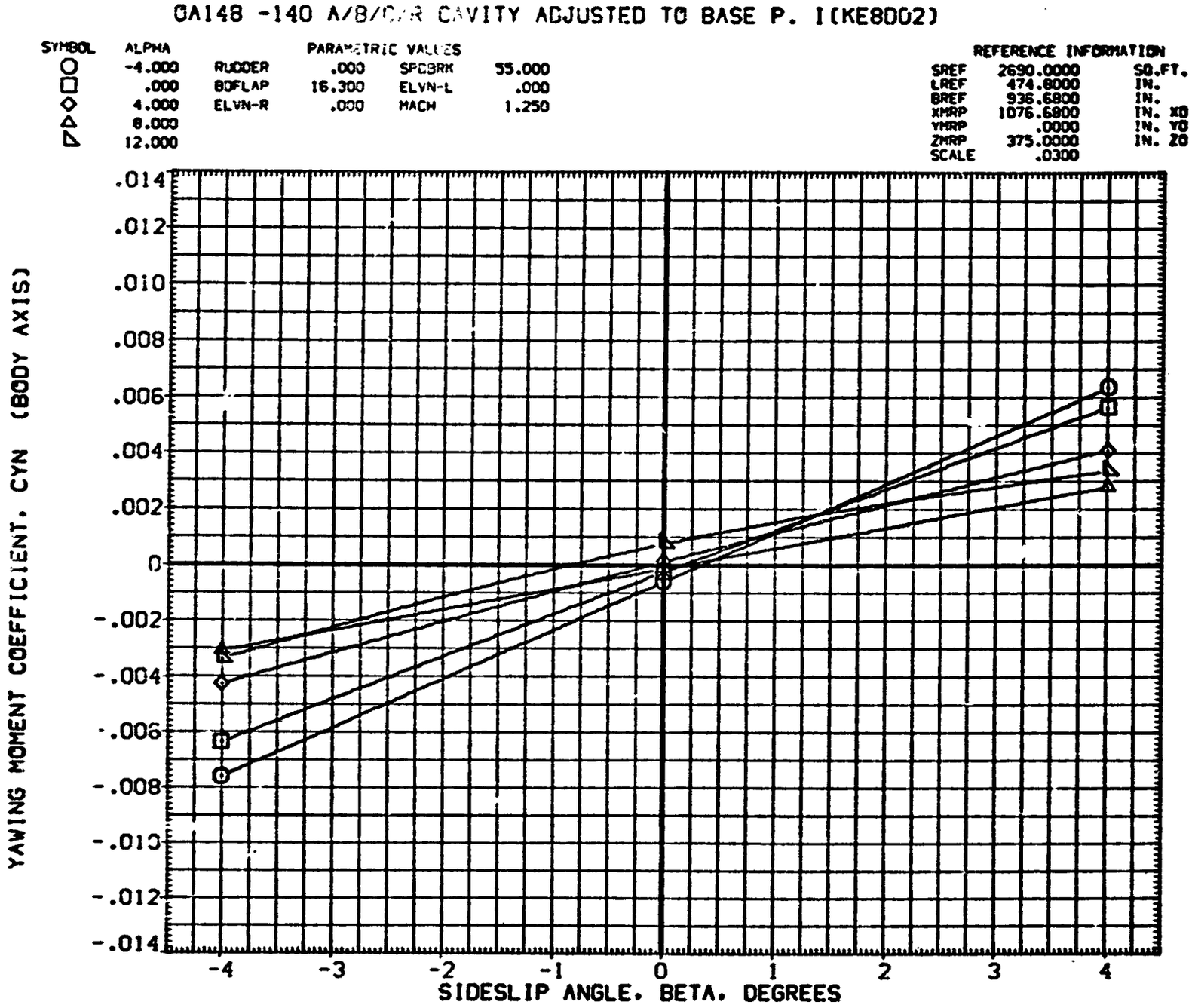


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8002)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

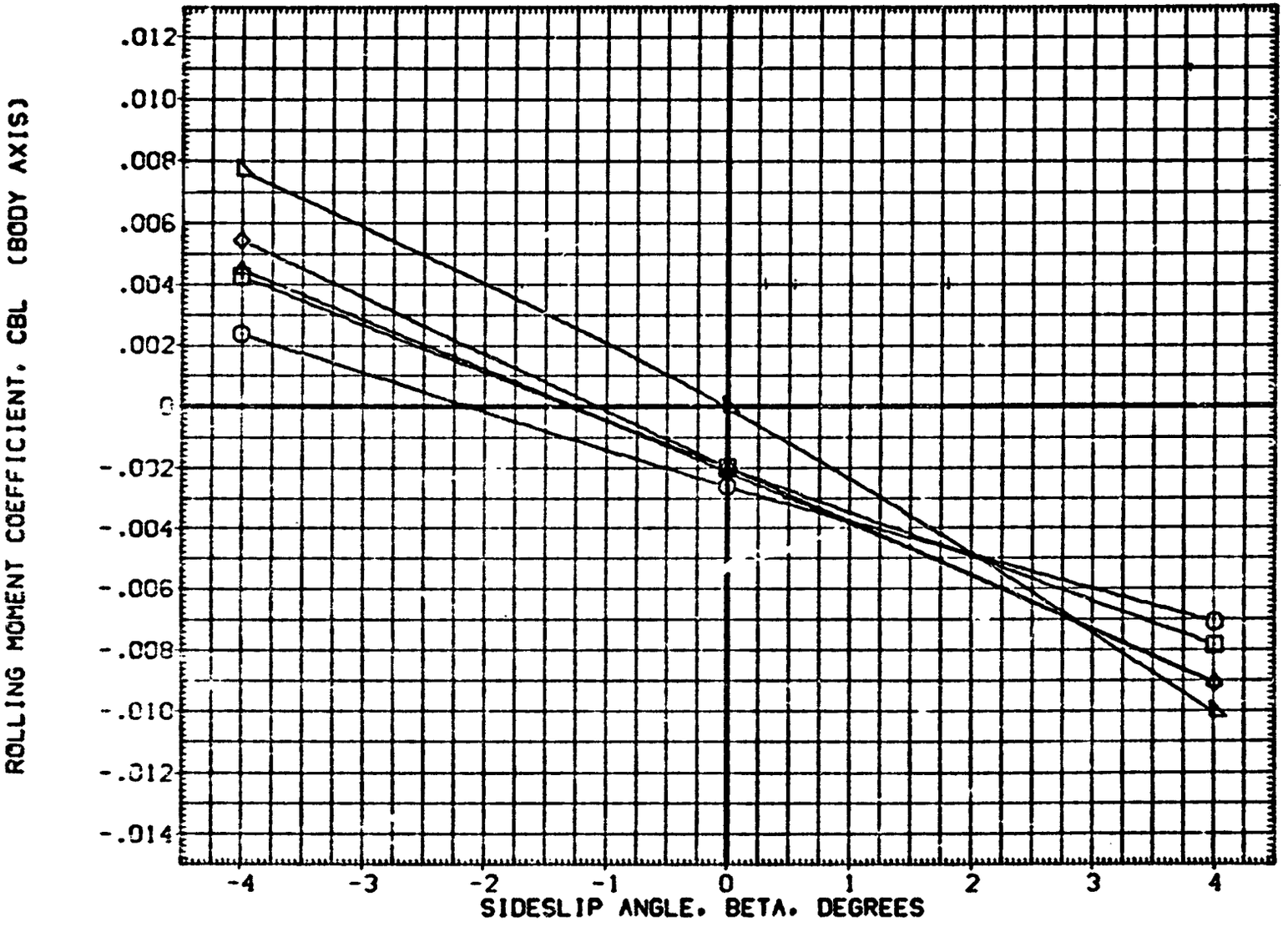


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

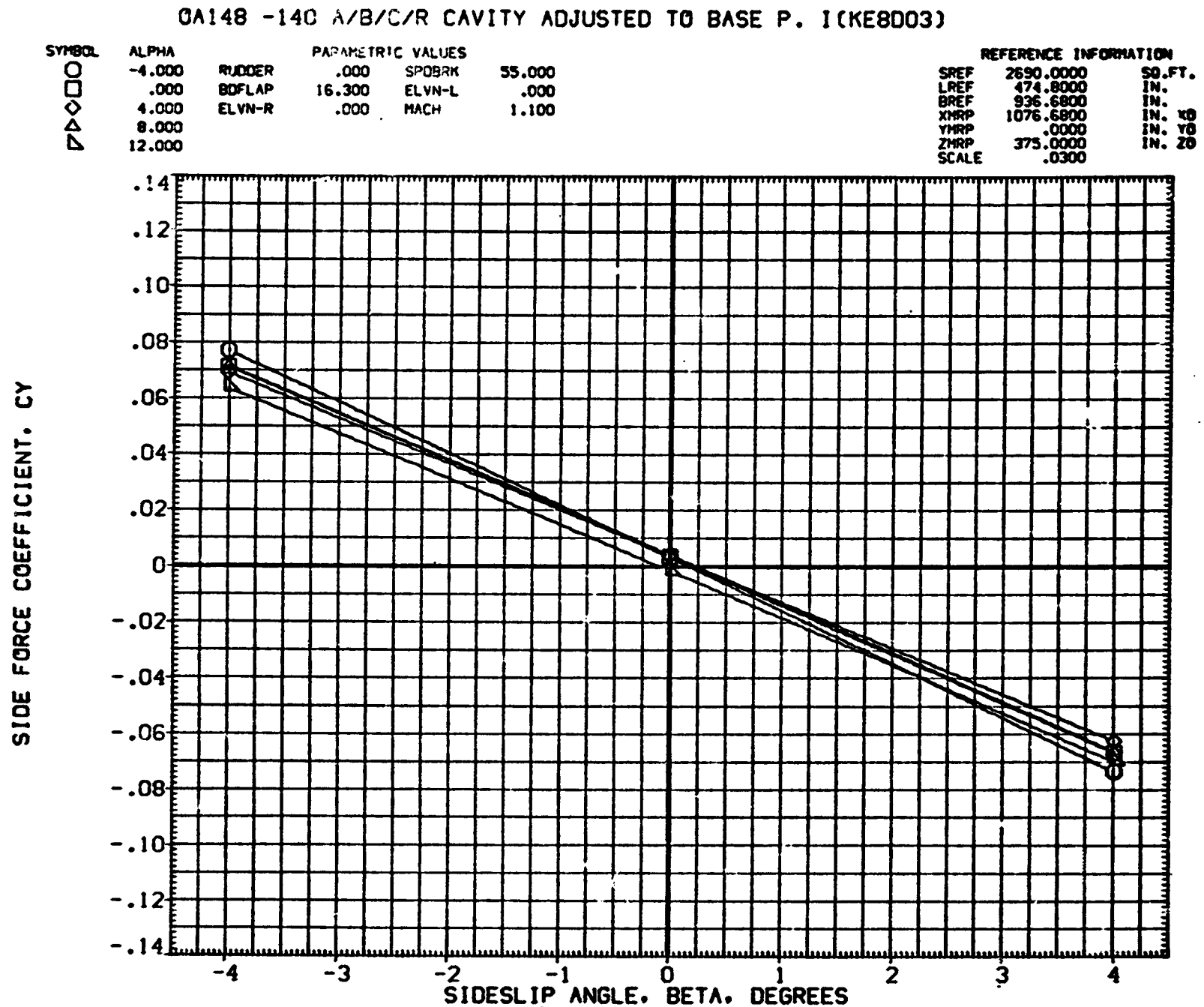


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

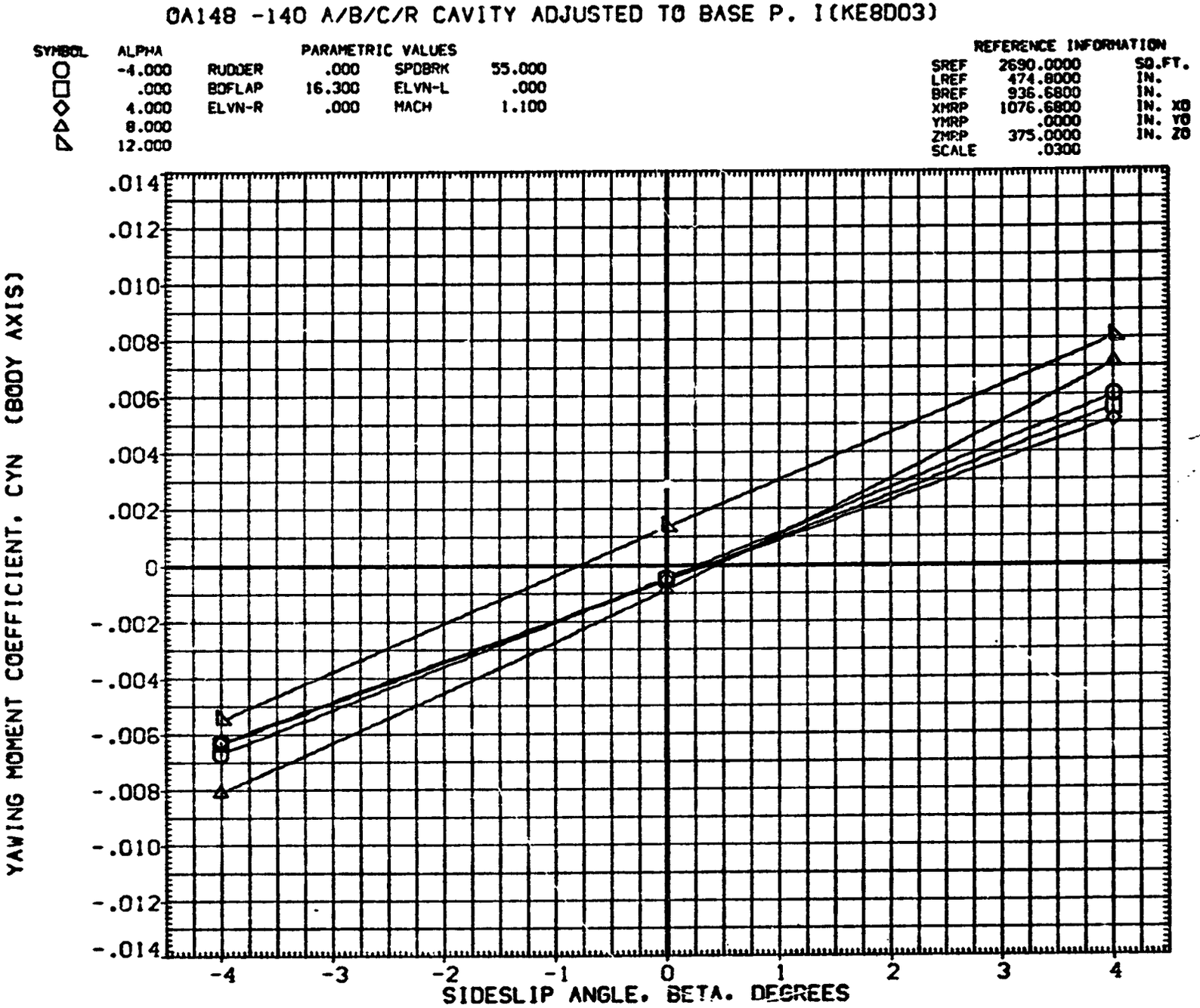


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

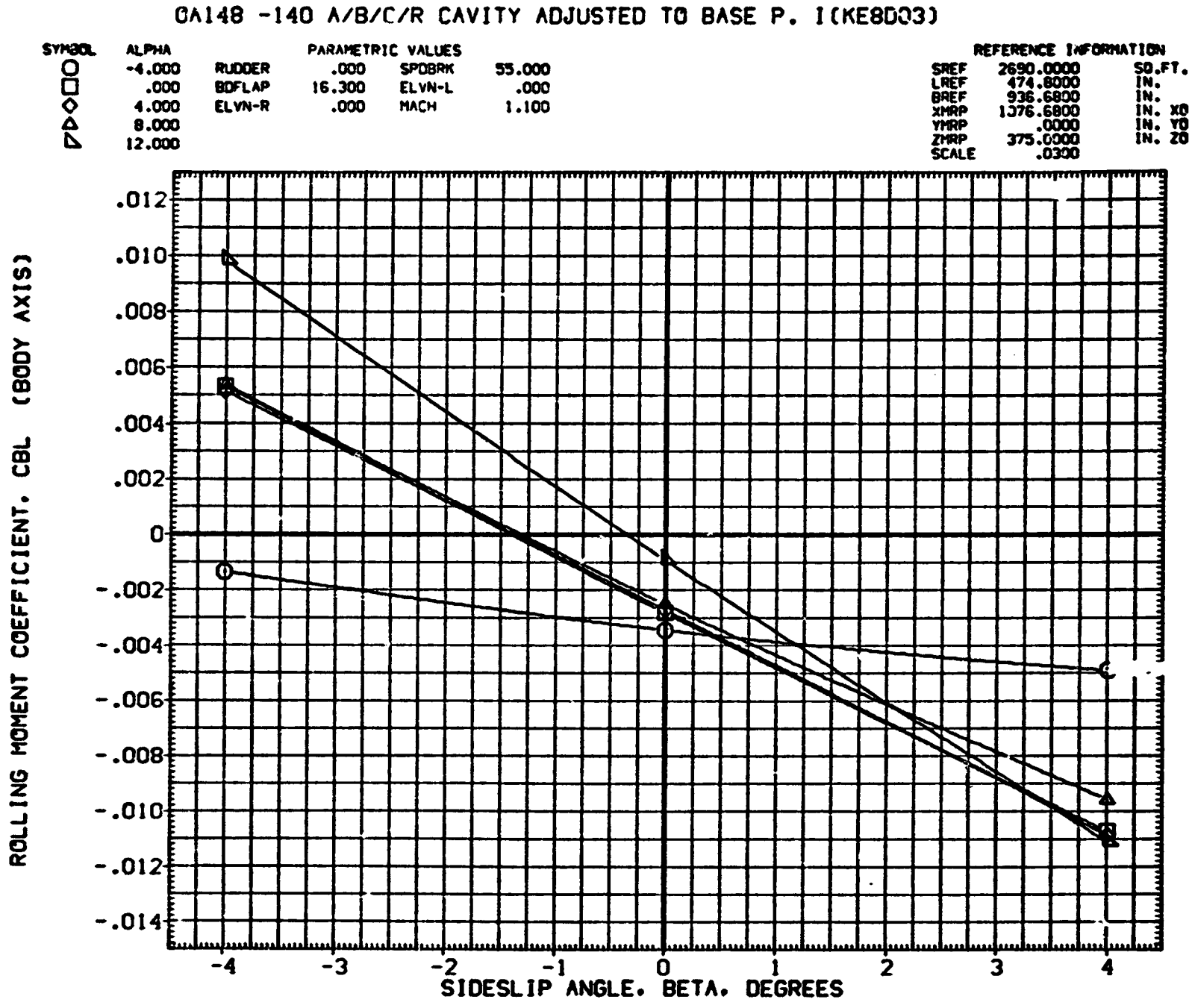


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

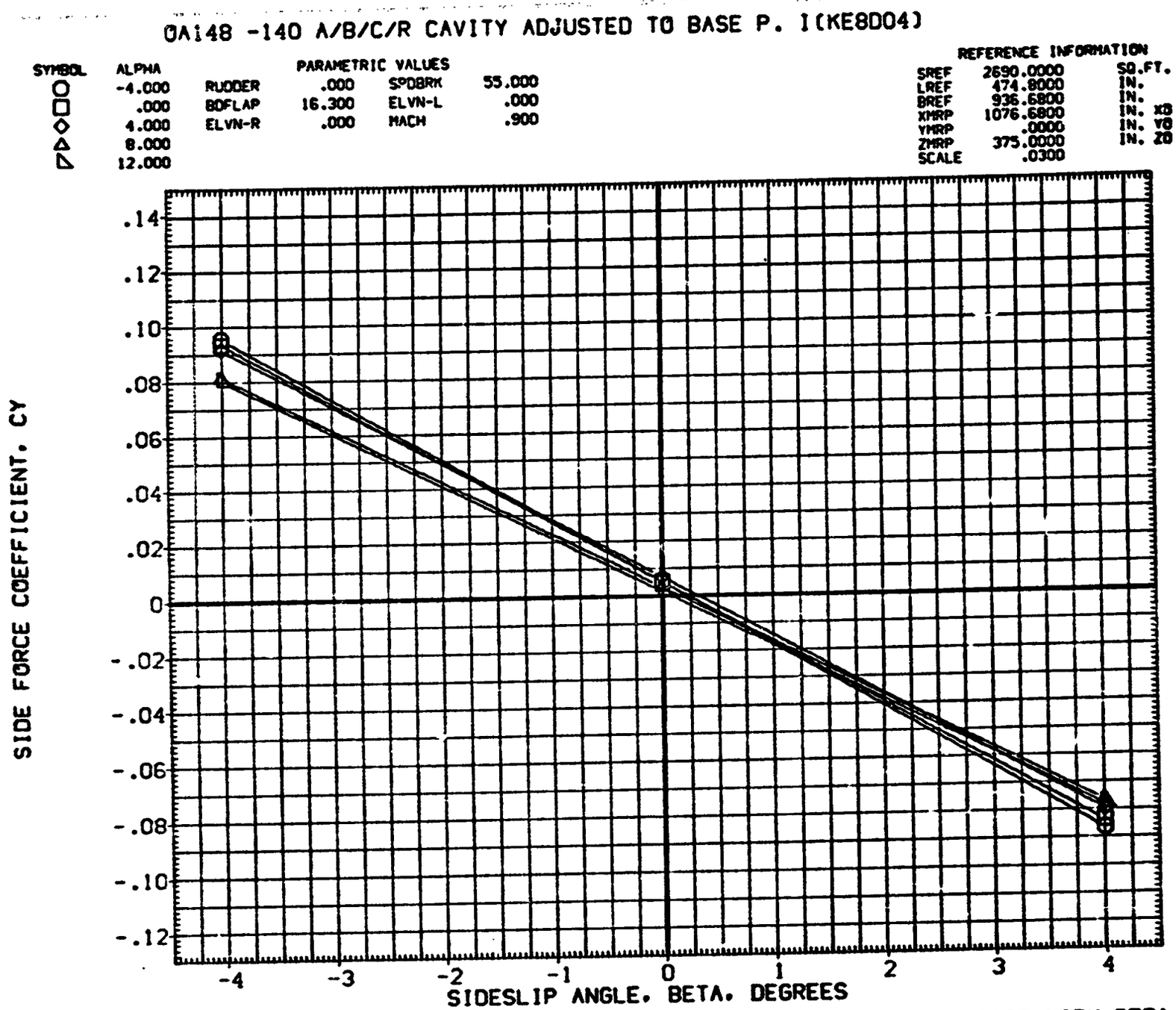


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

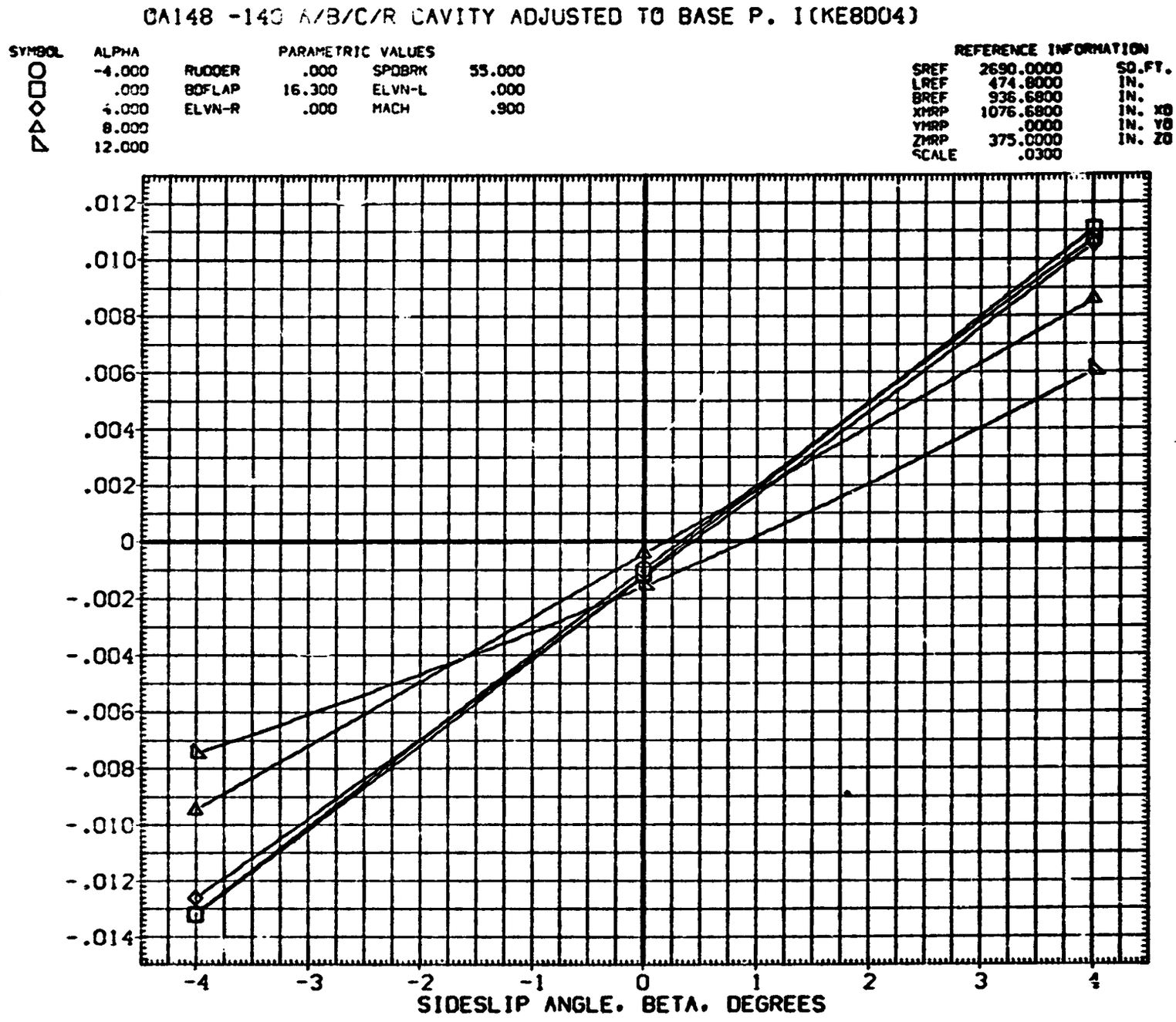


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

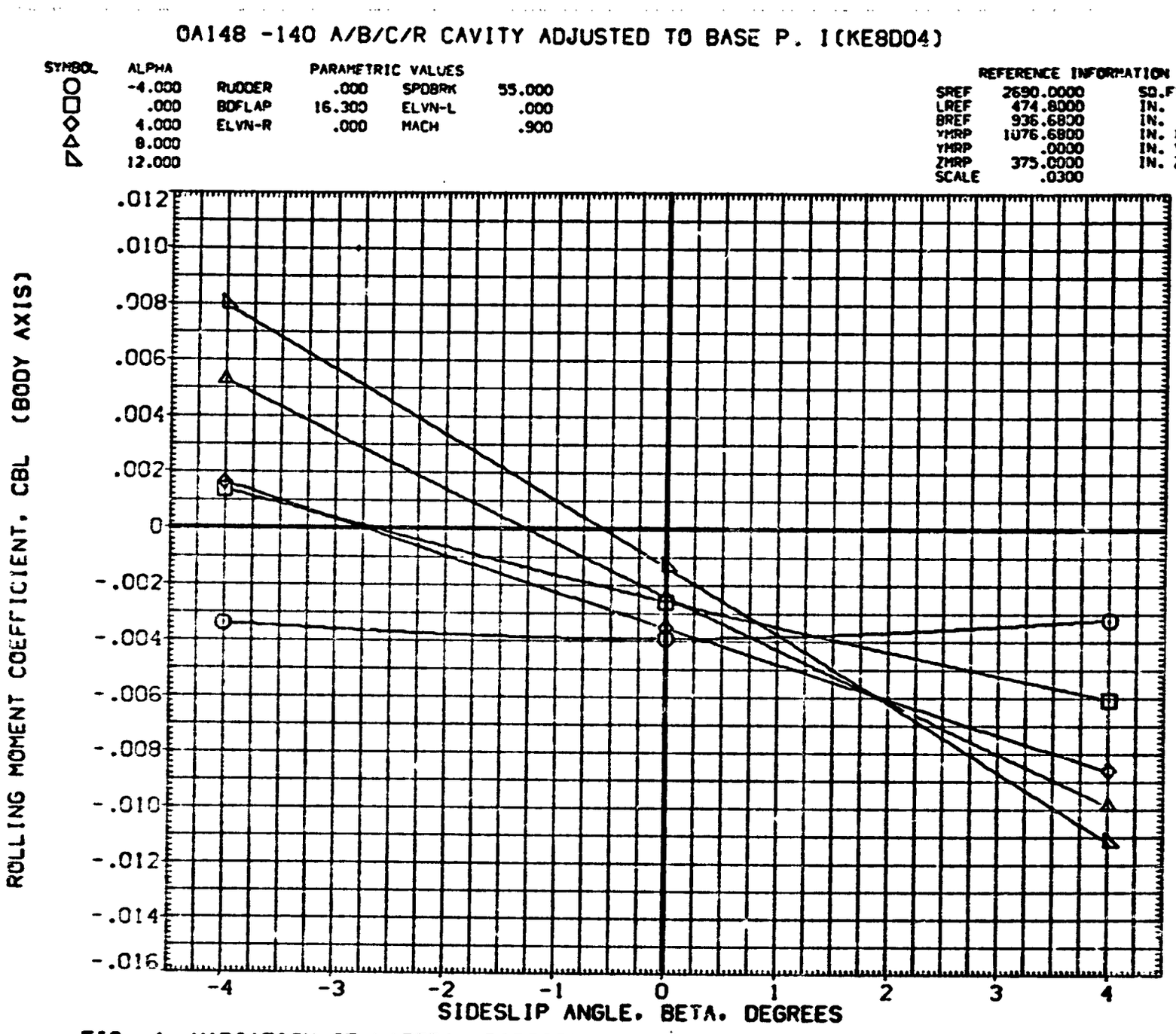


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D05)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.600
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.680	IN. XB
YMRP	.00	IN. YB
ZMRP	375.00	IN. ZB
SCALE	.0300	

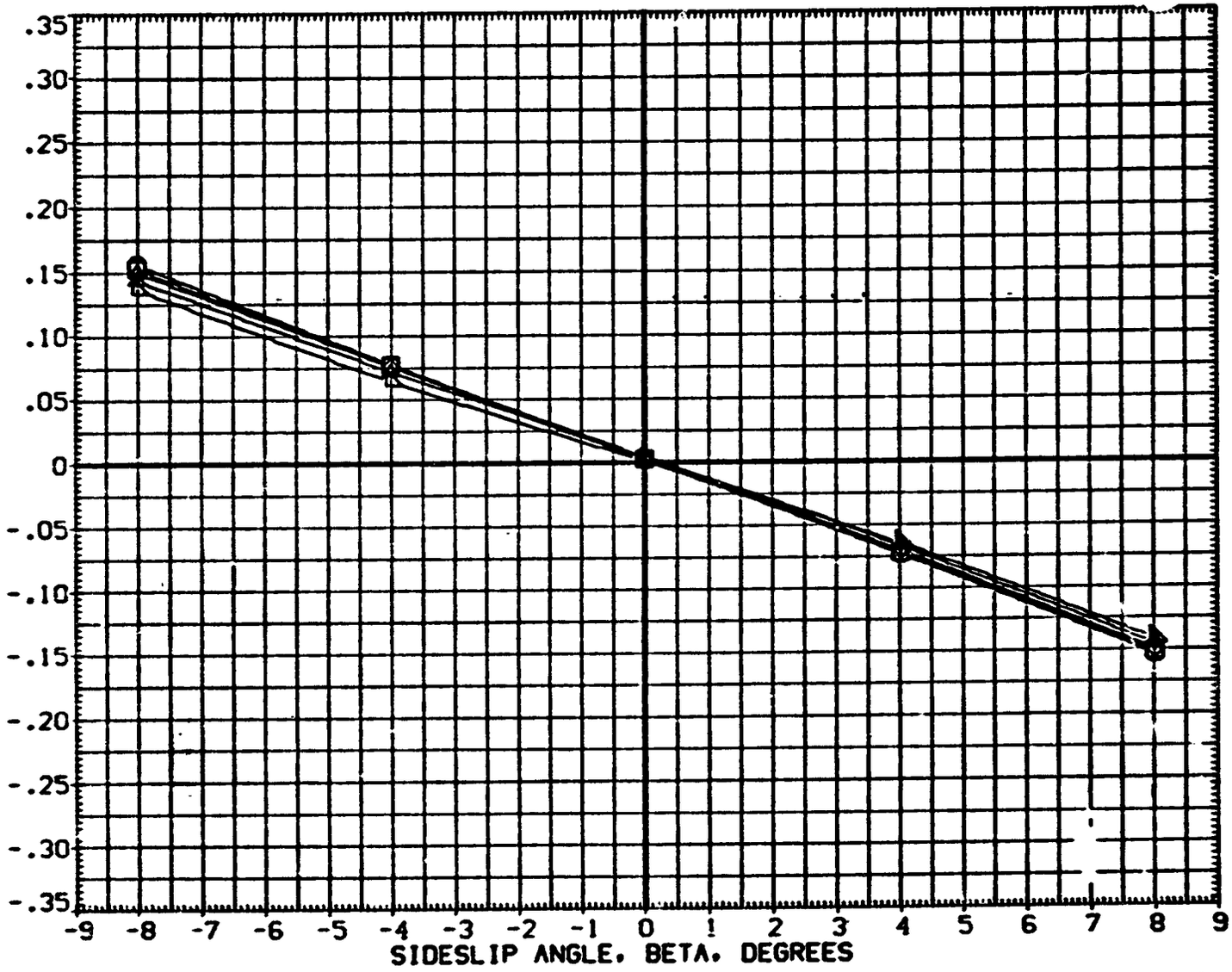


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

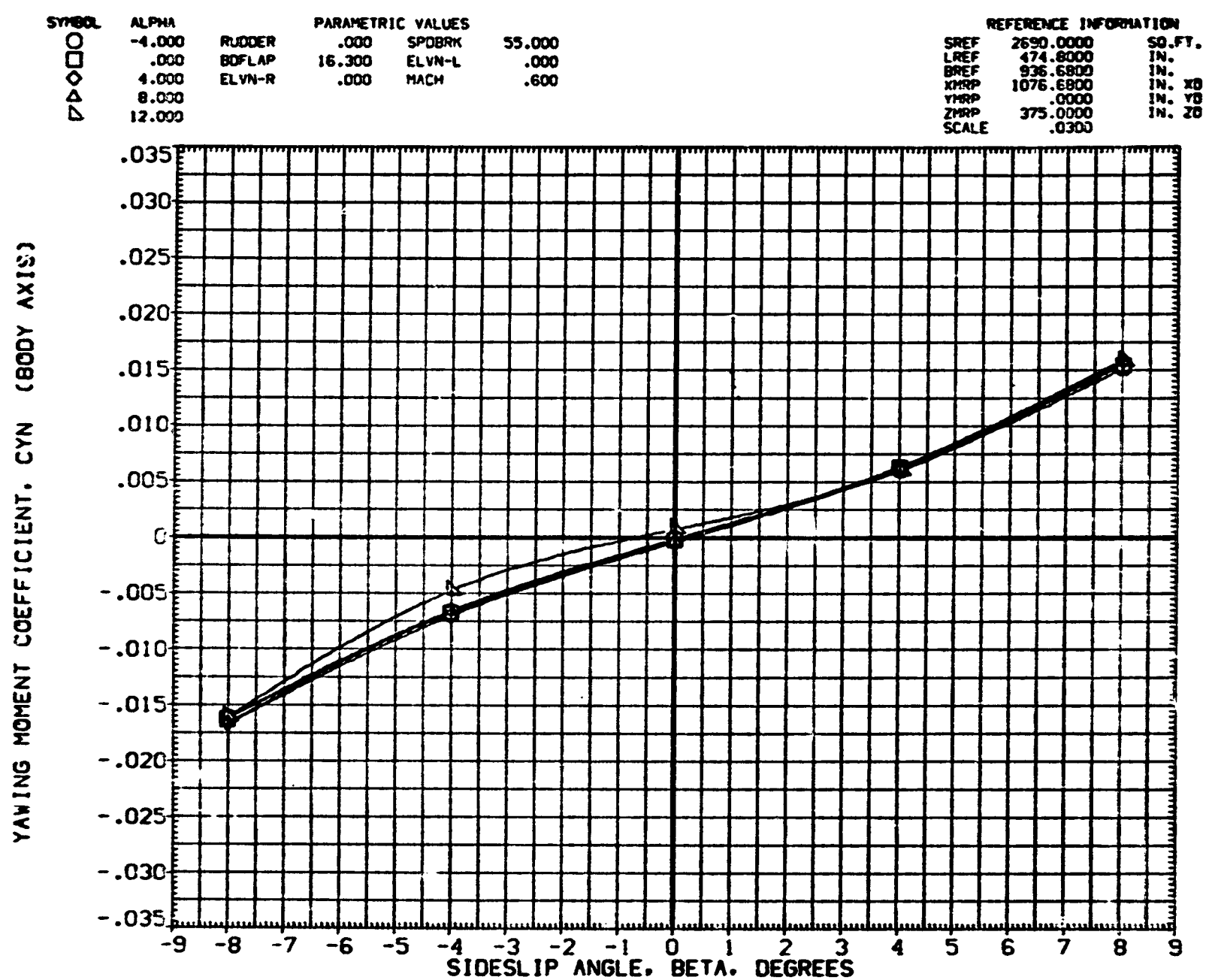


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

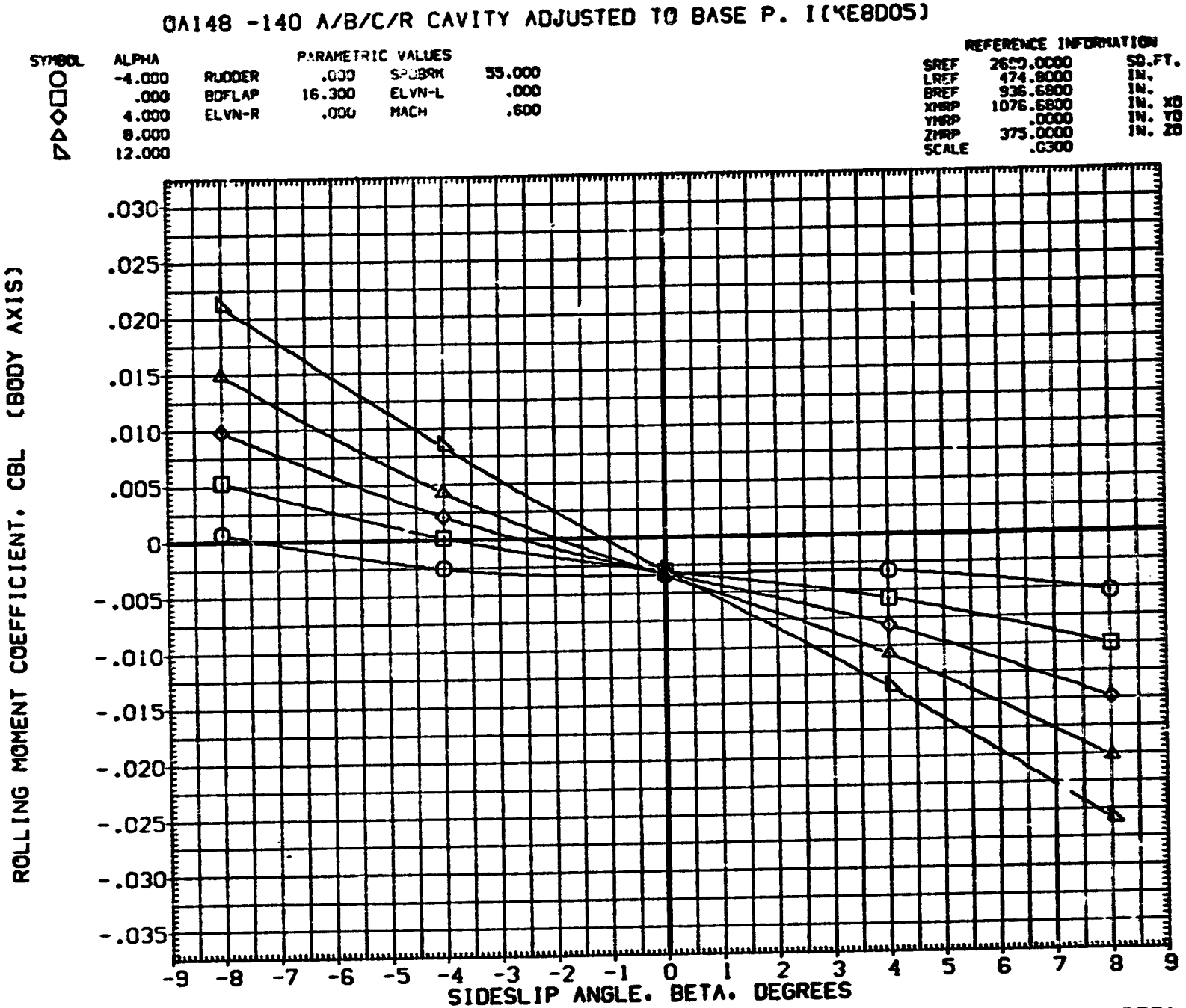


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

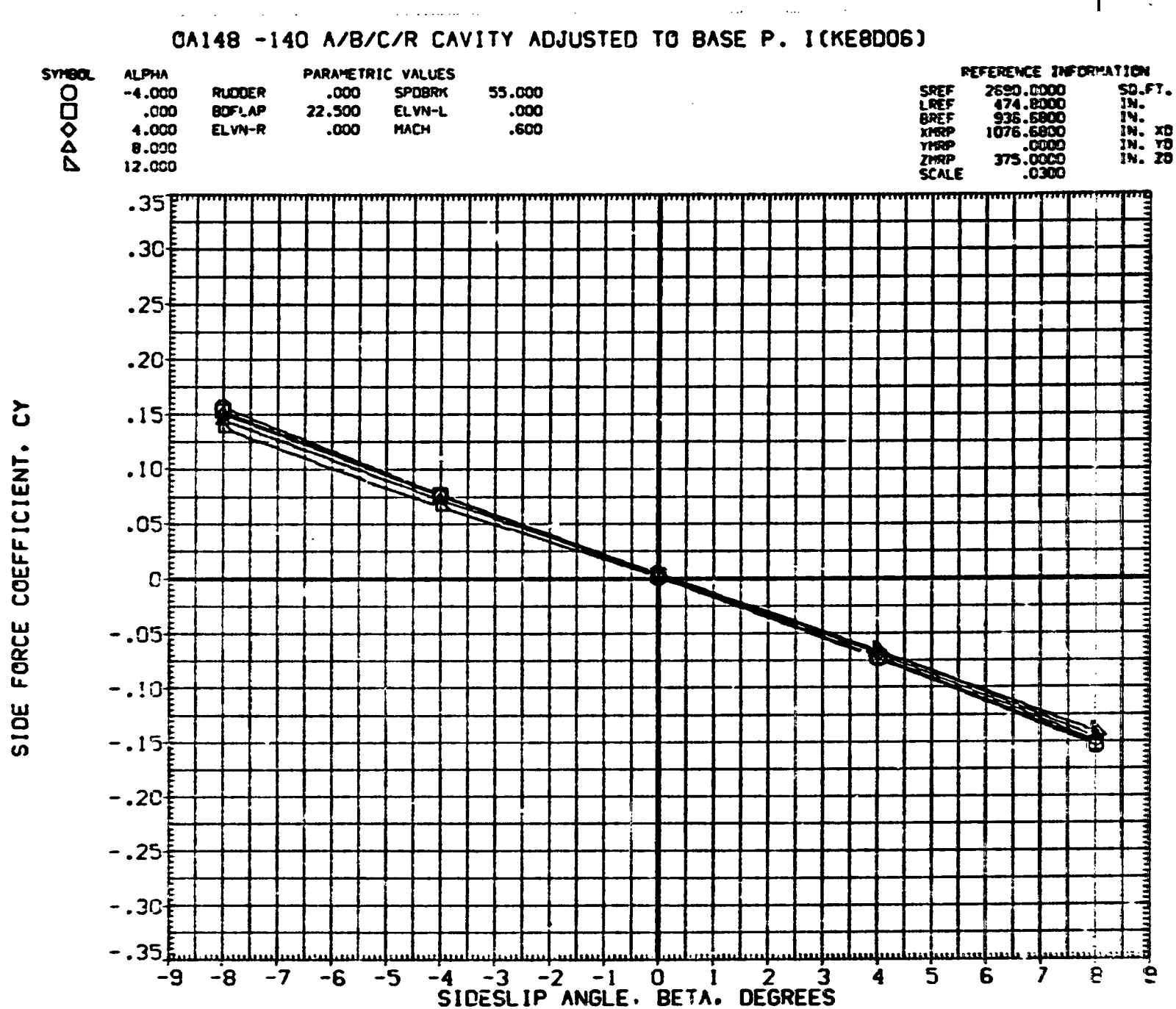


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

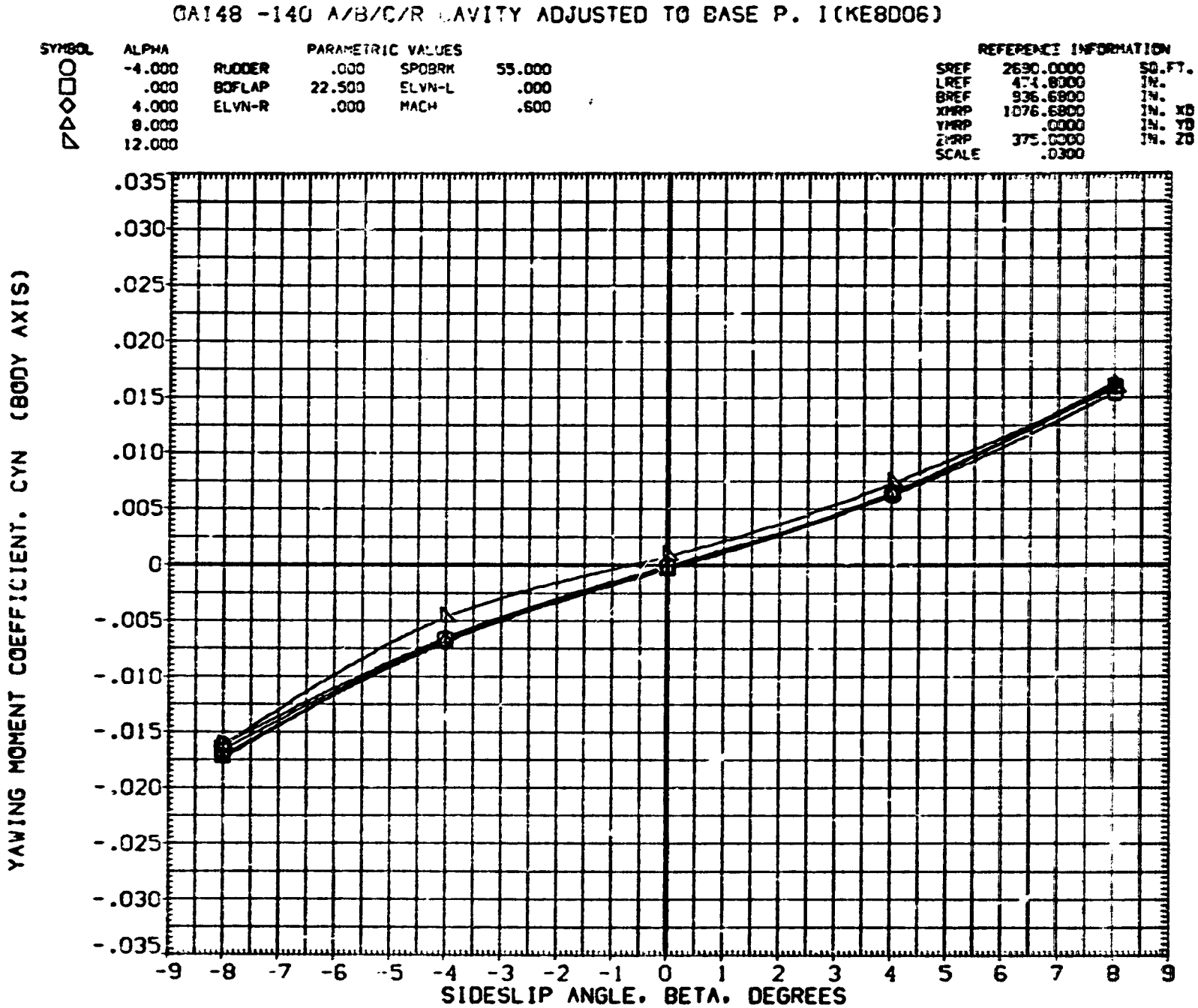


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

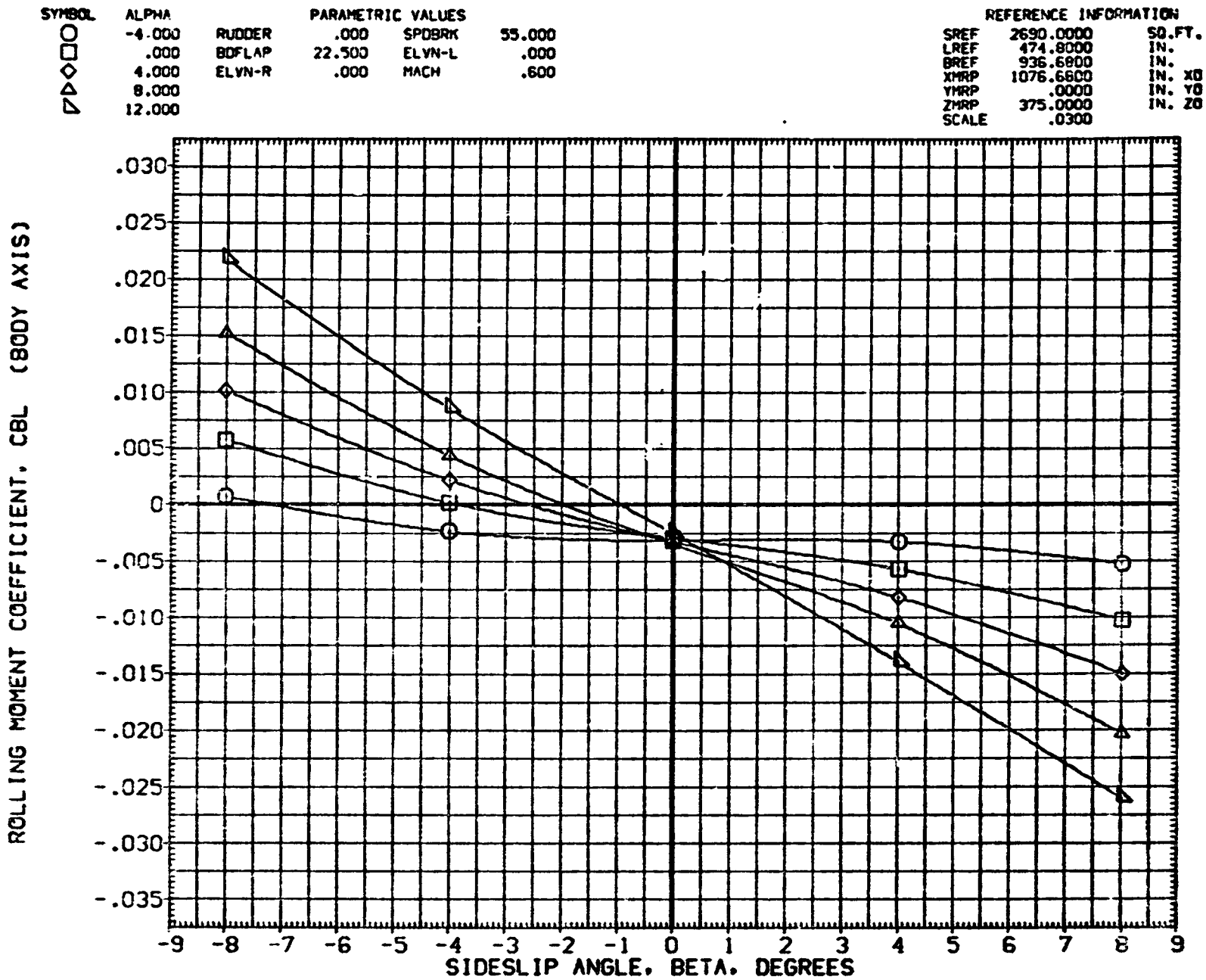


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

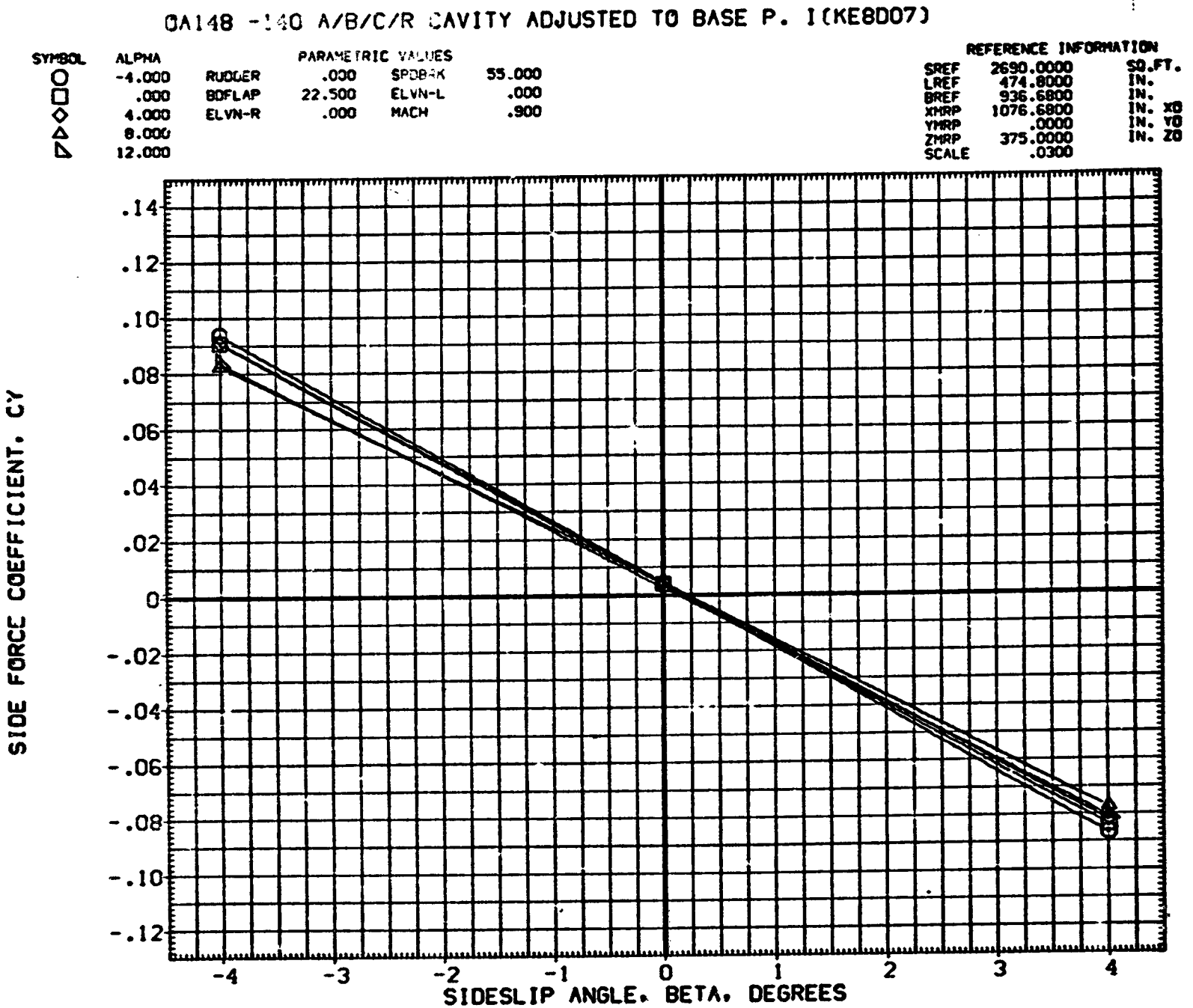


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

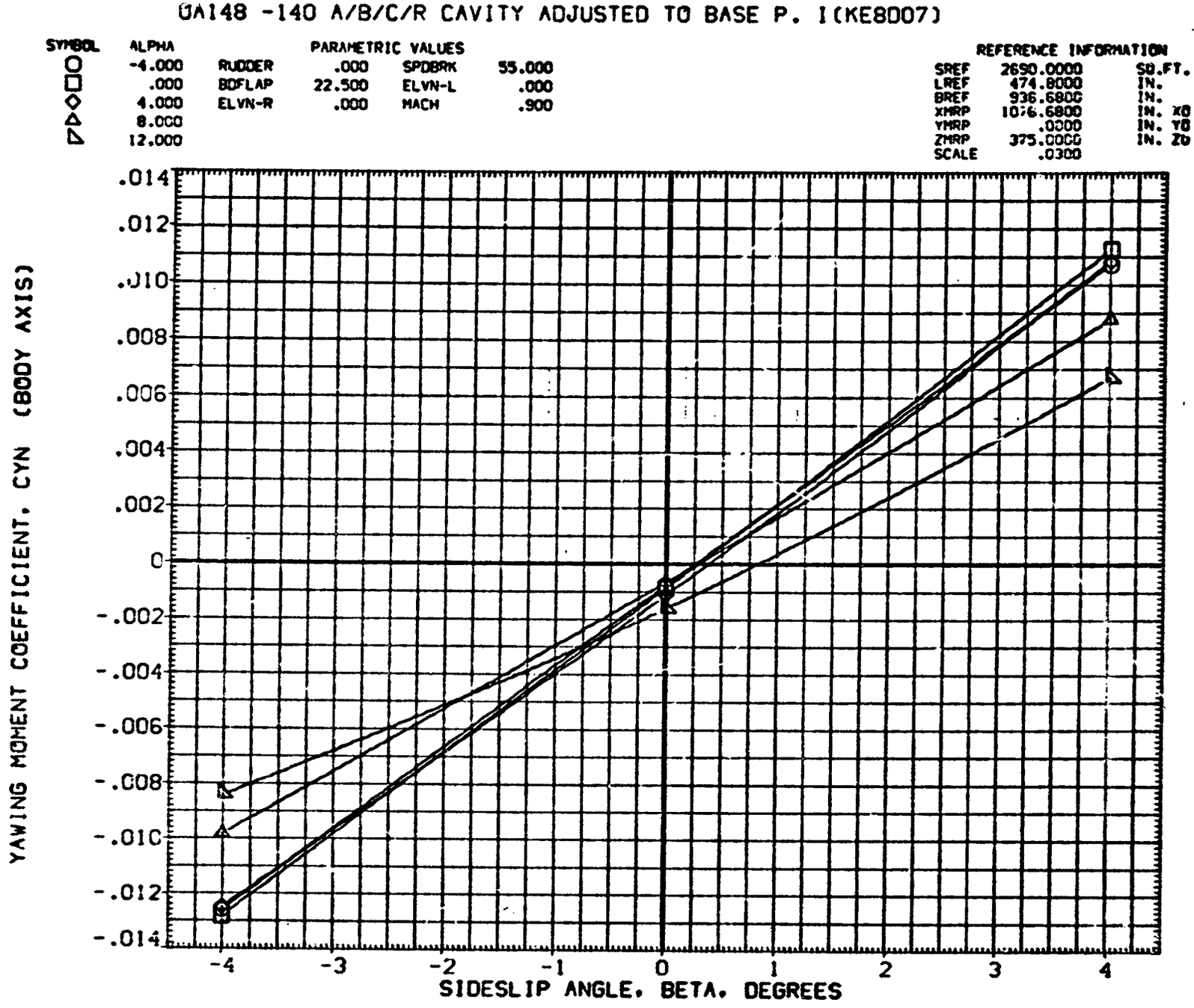


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

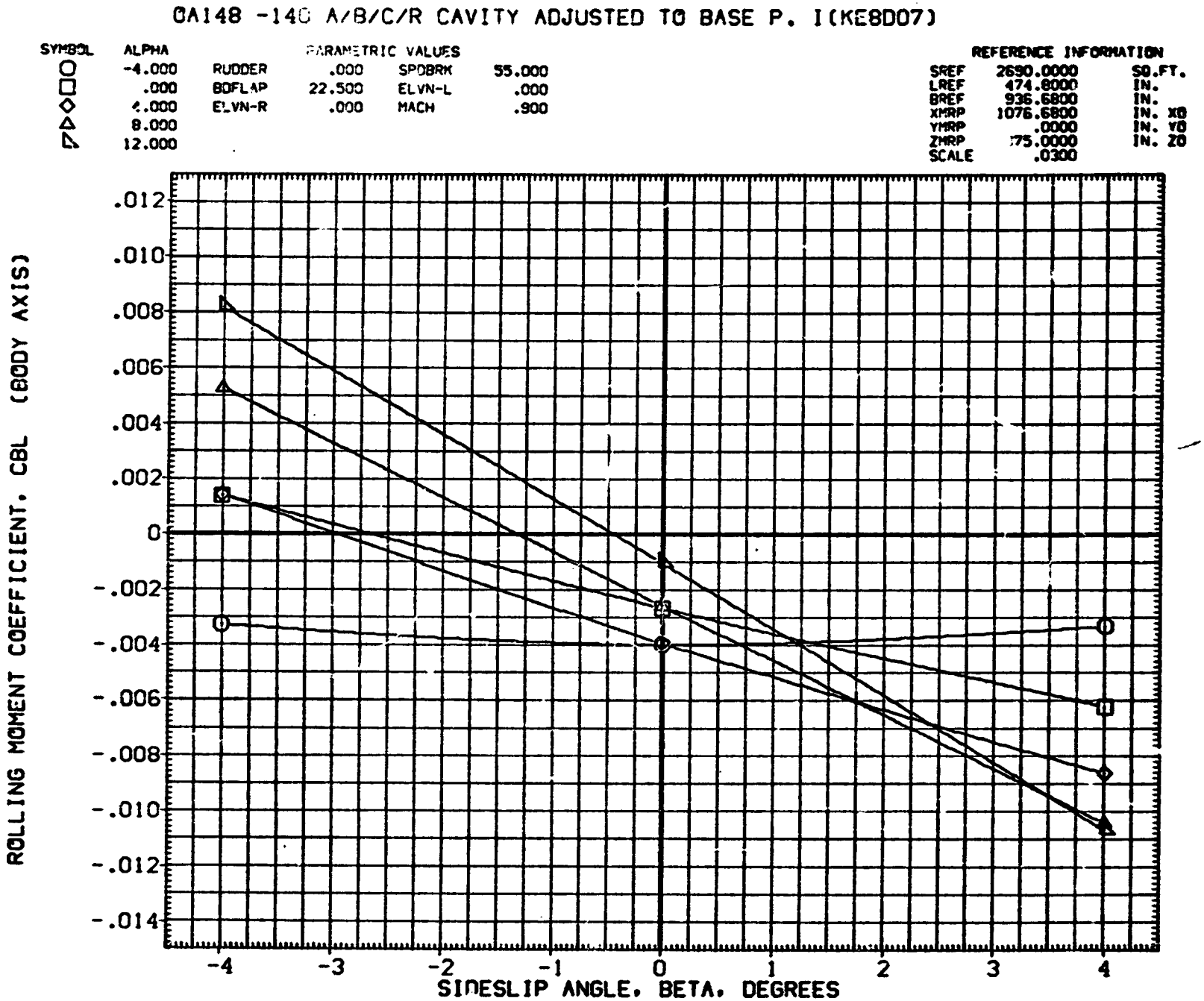


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

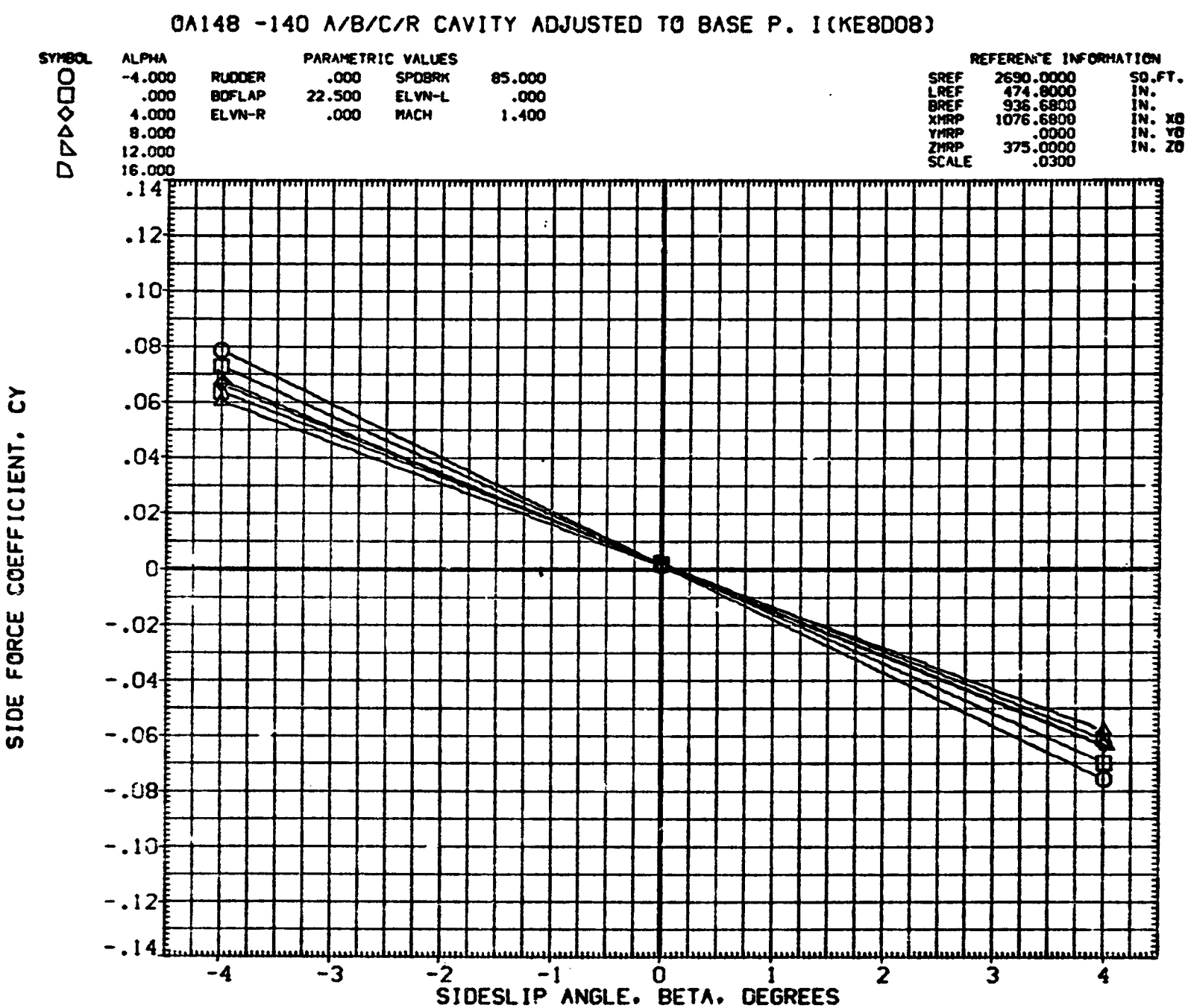


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

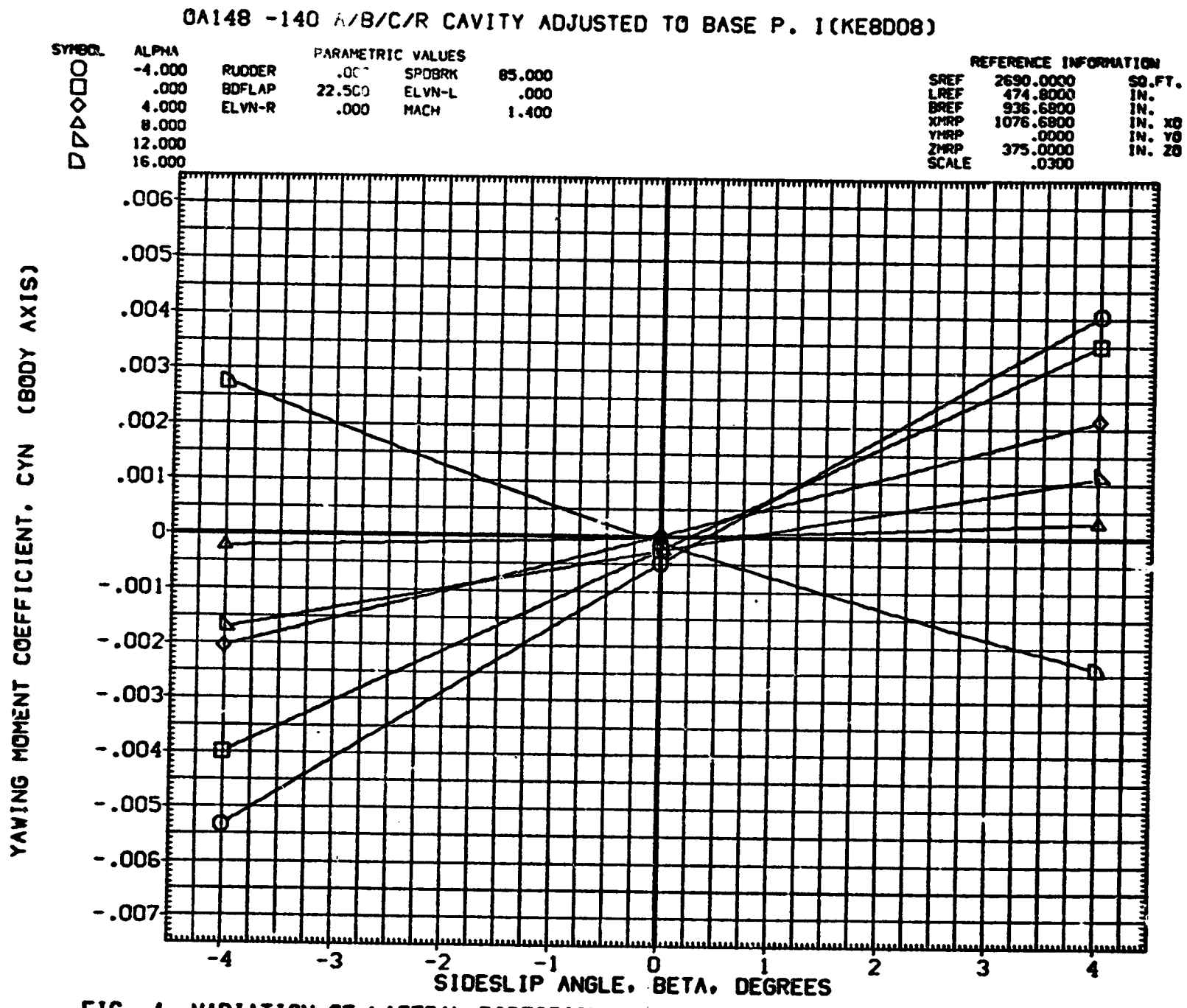


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

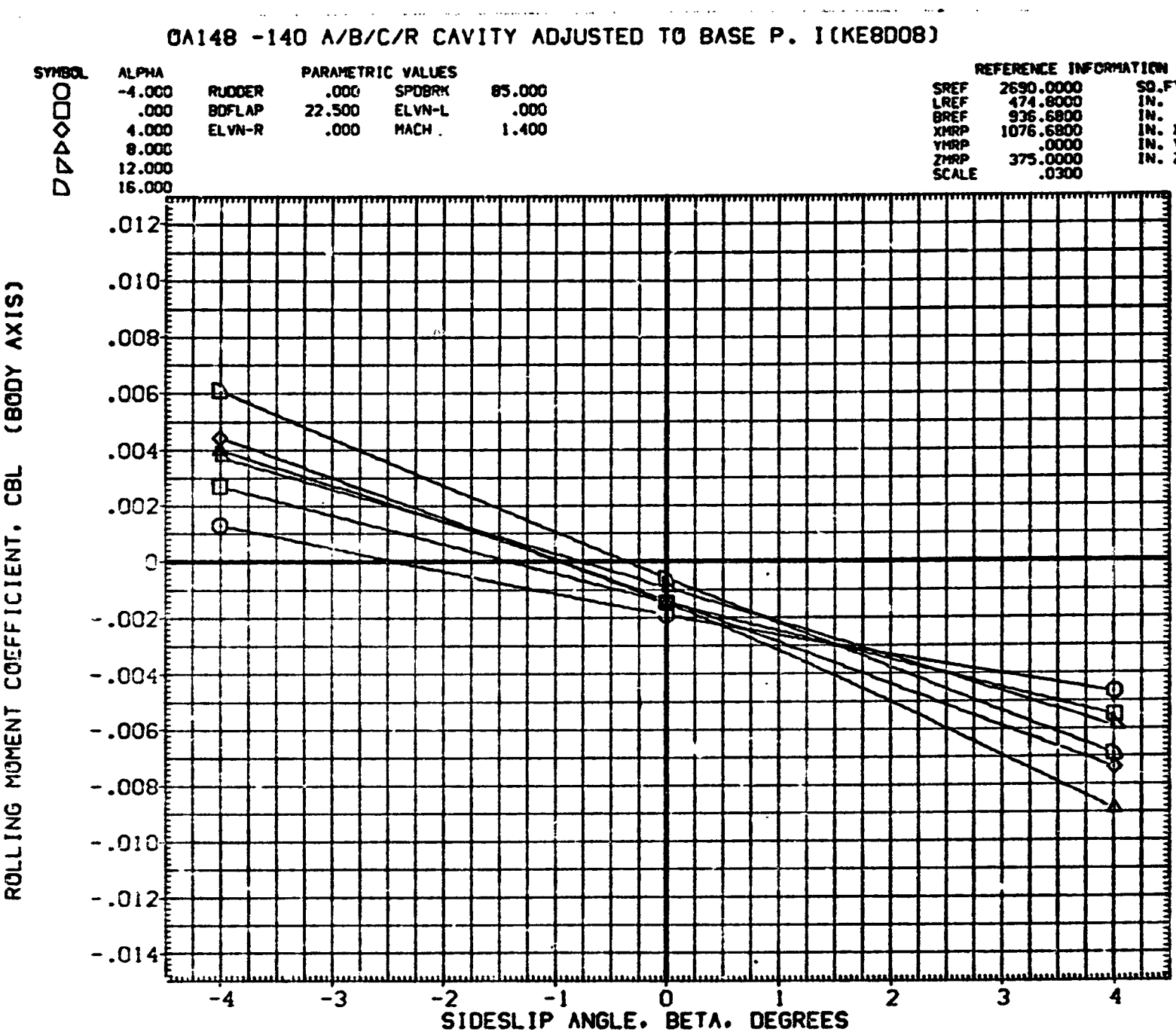


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

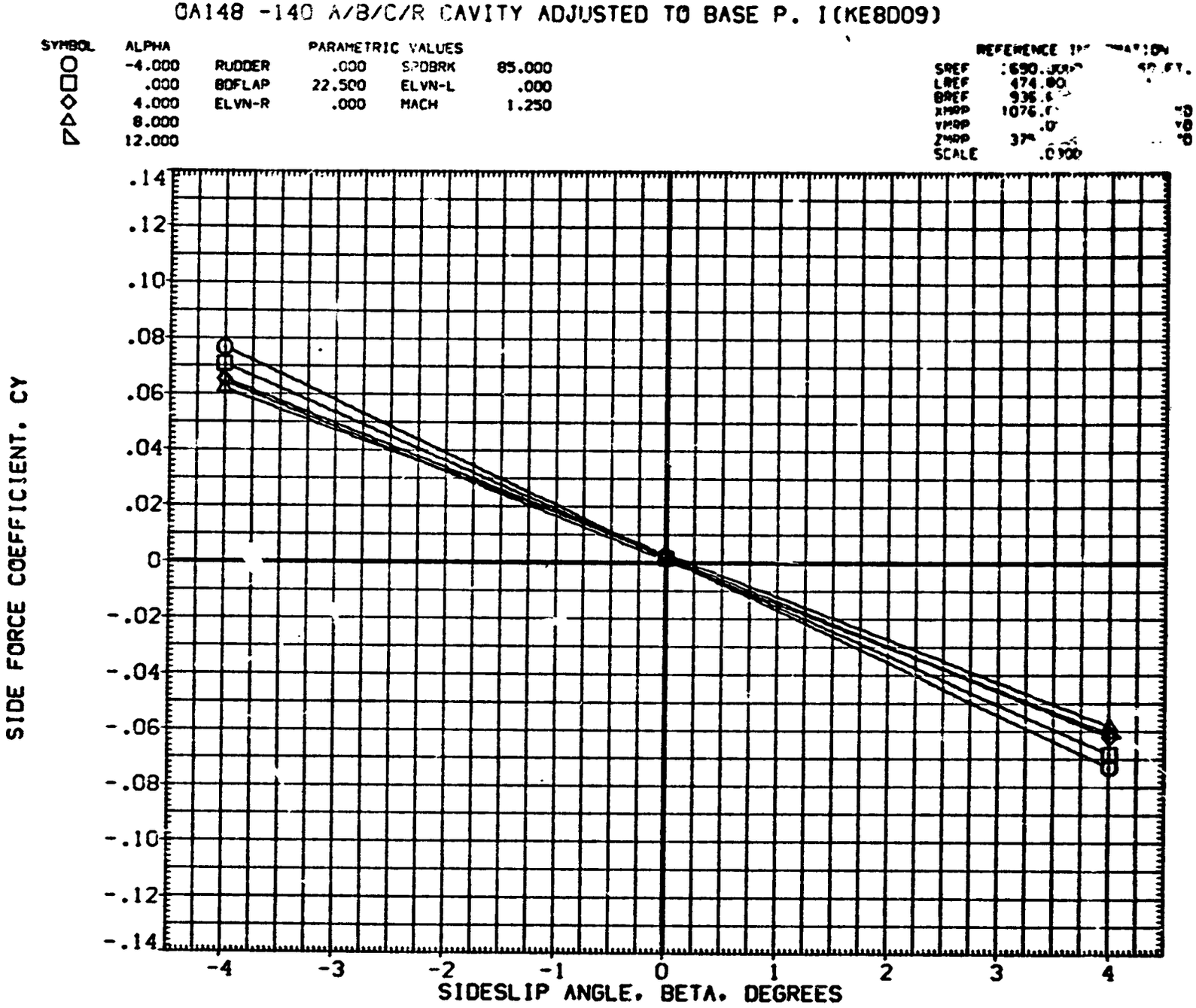


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

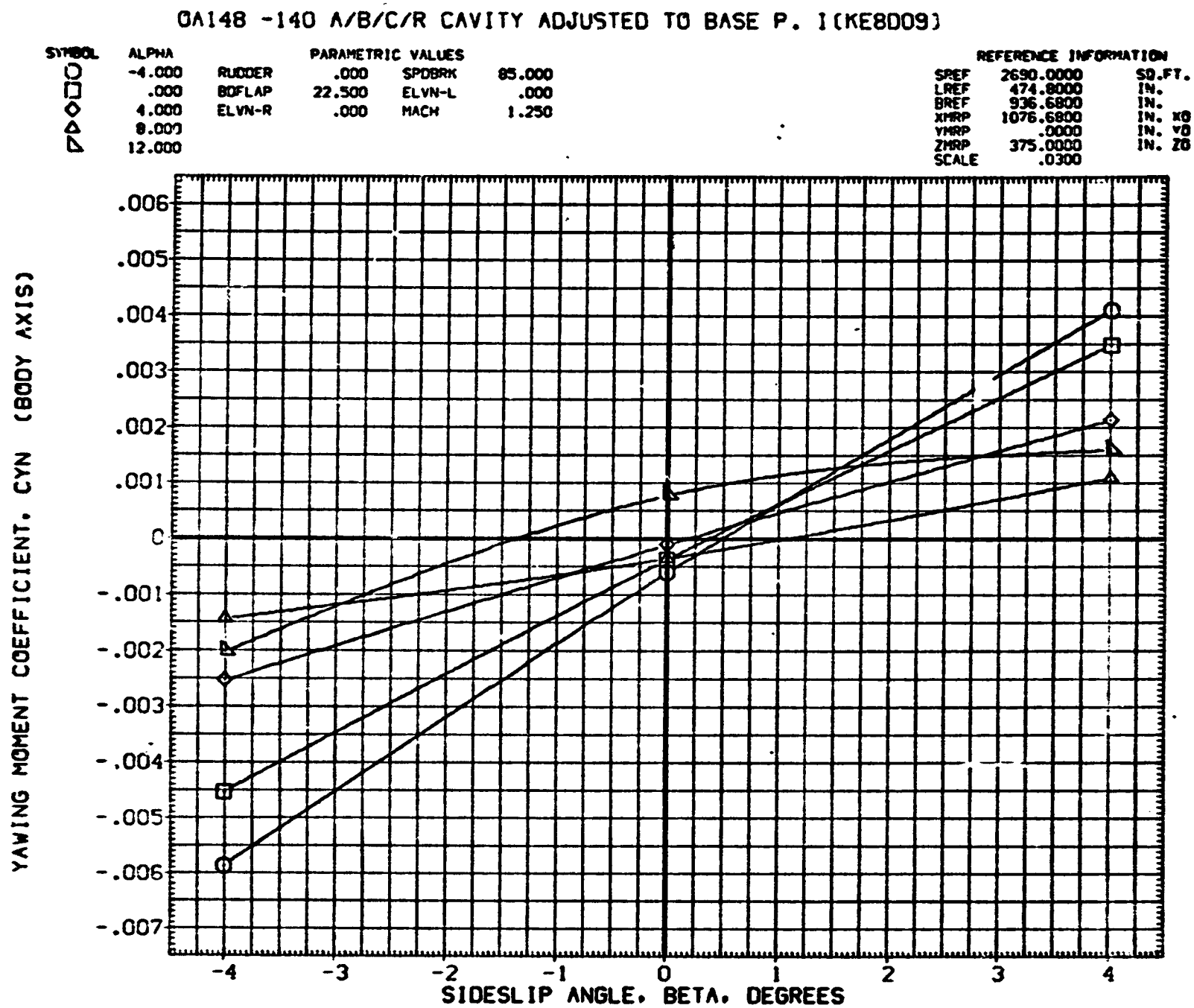


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

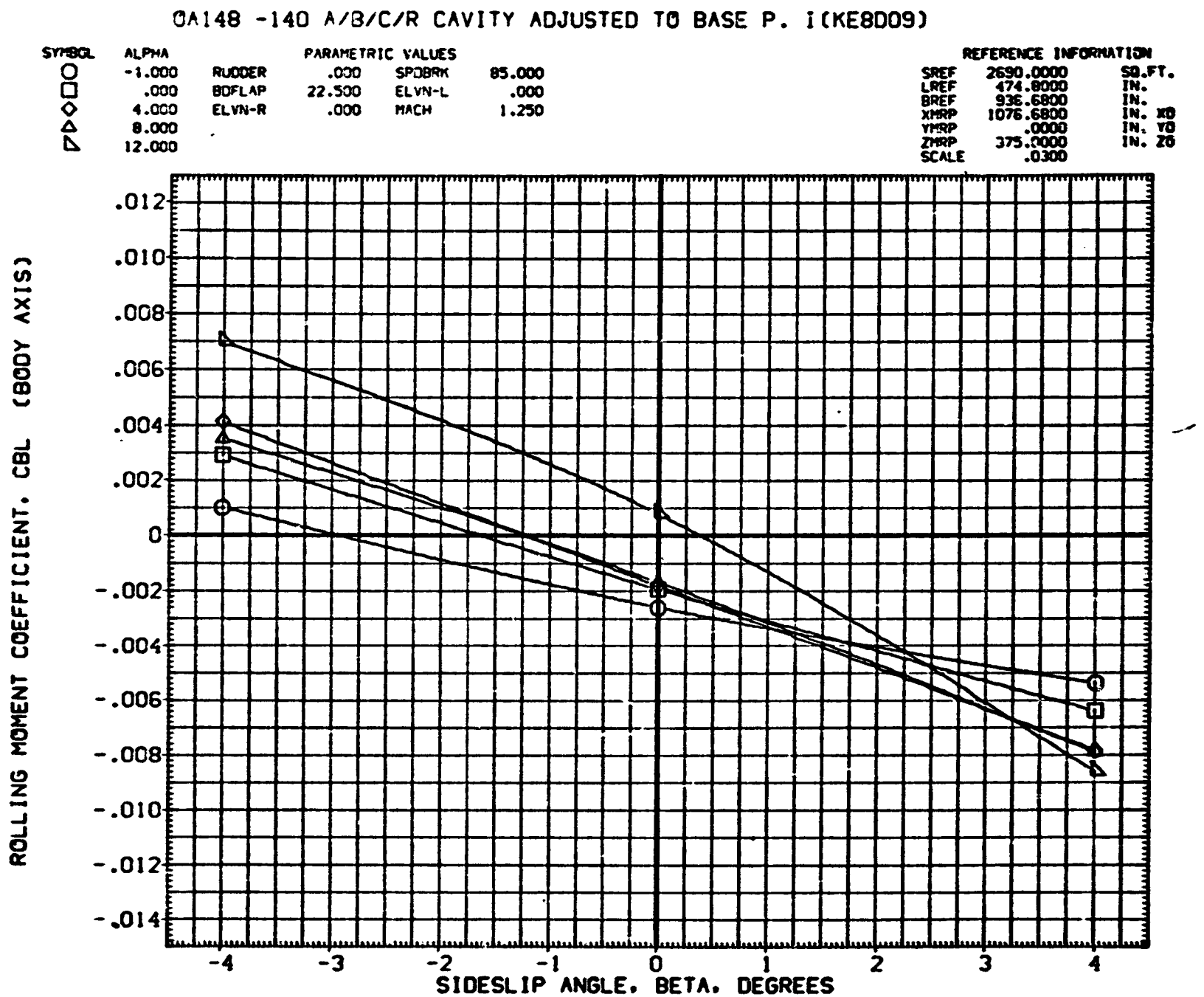


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

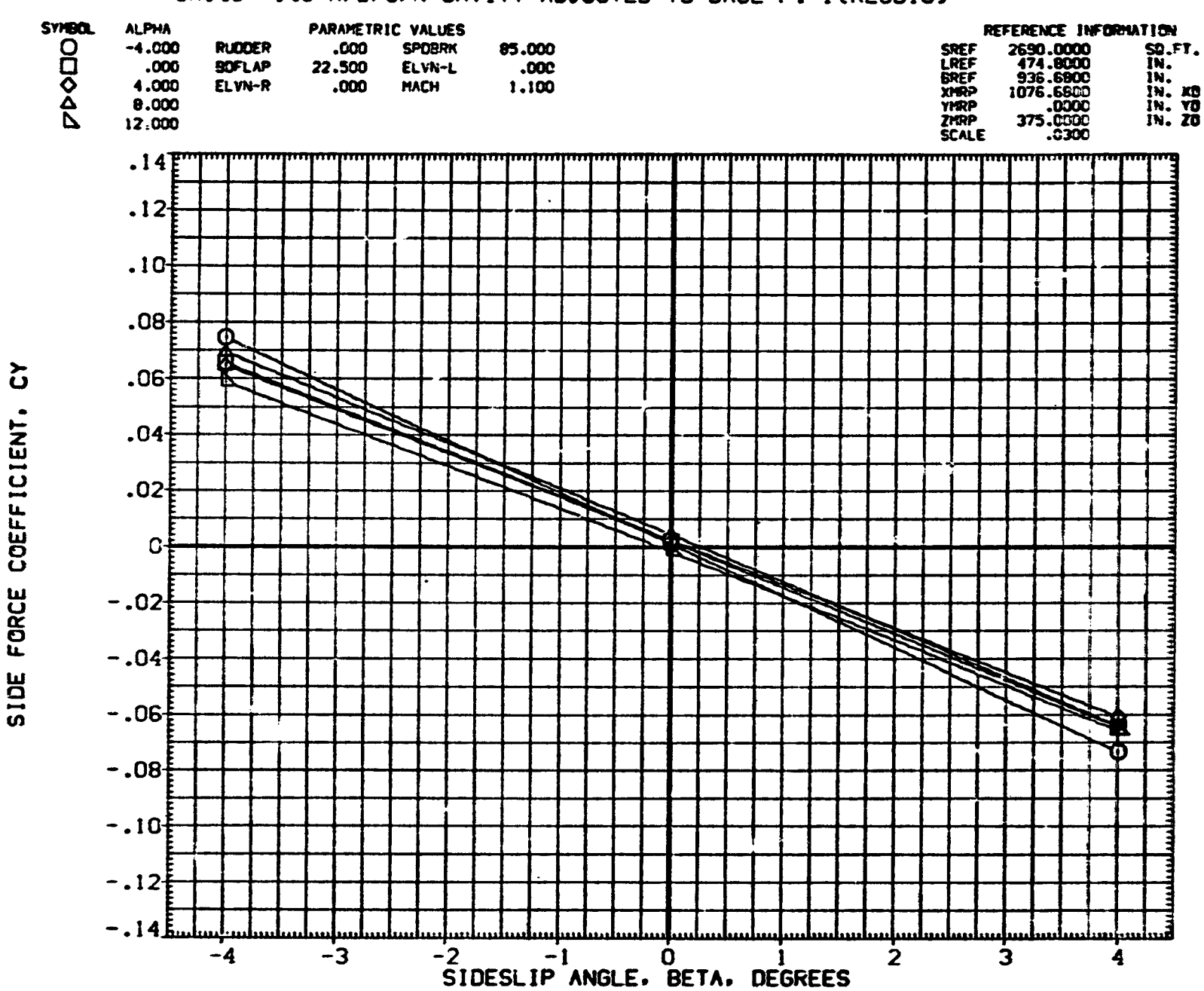


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

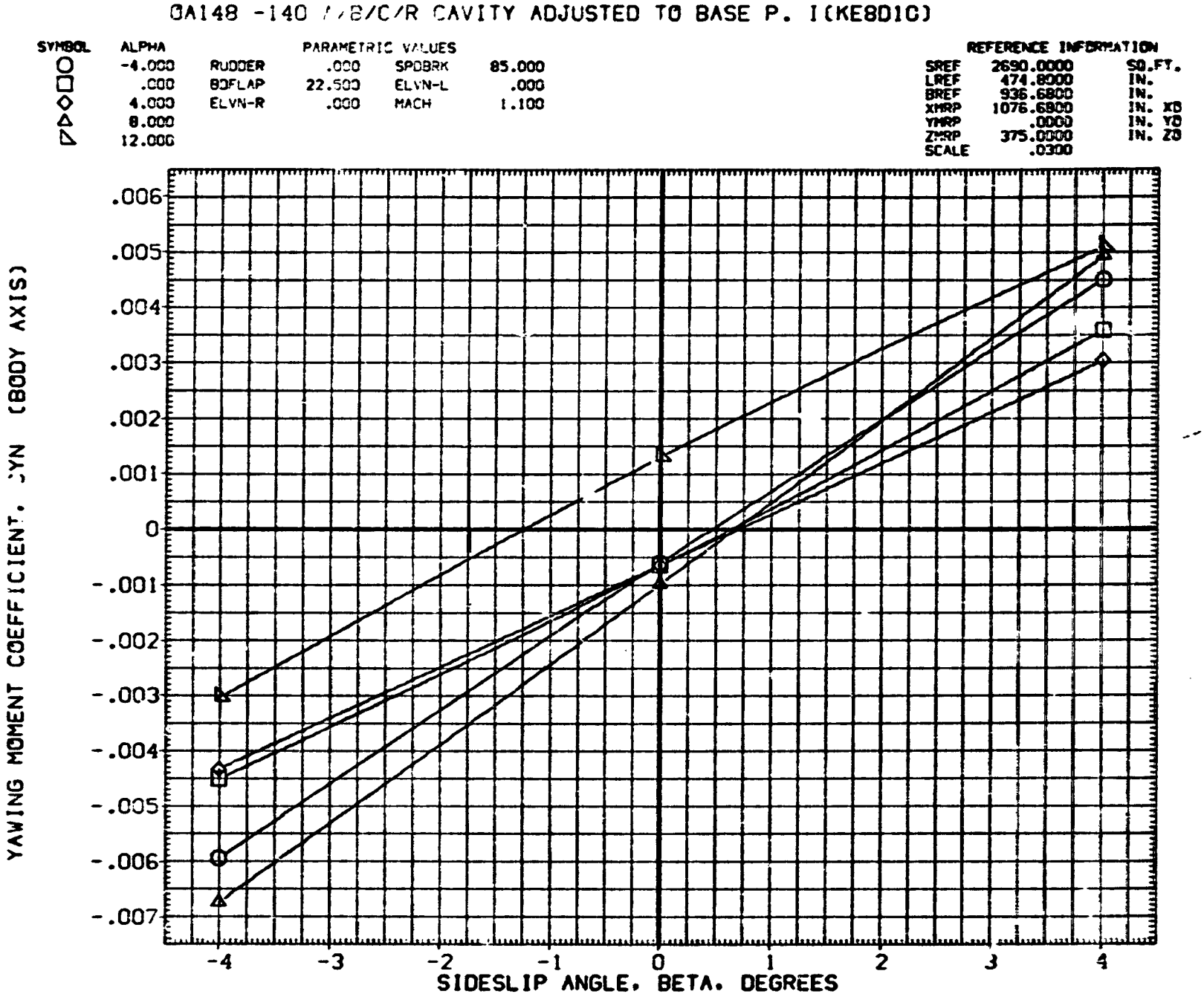


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	85.000
□	.000	BOFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100
△	8.000				
	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

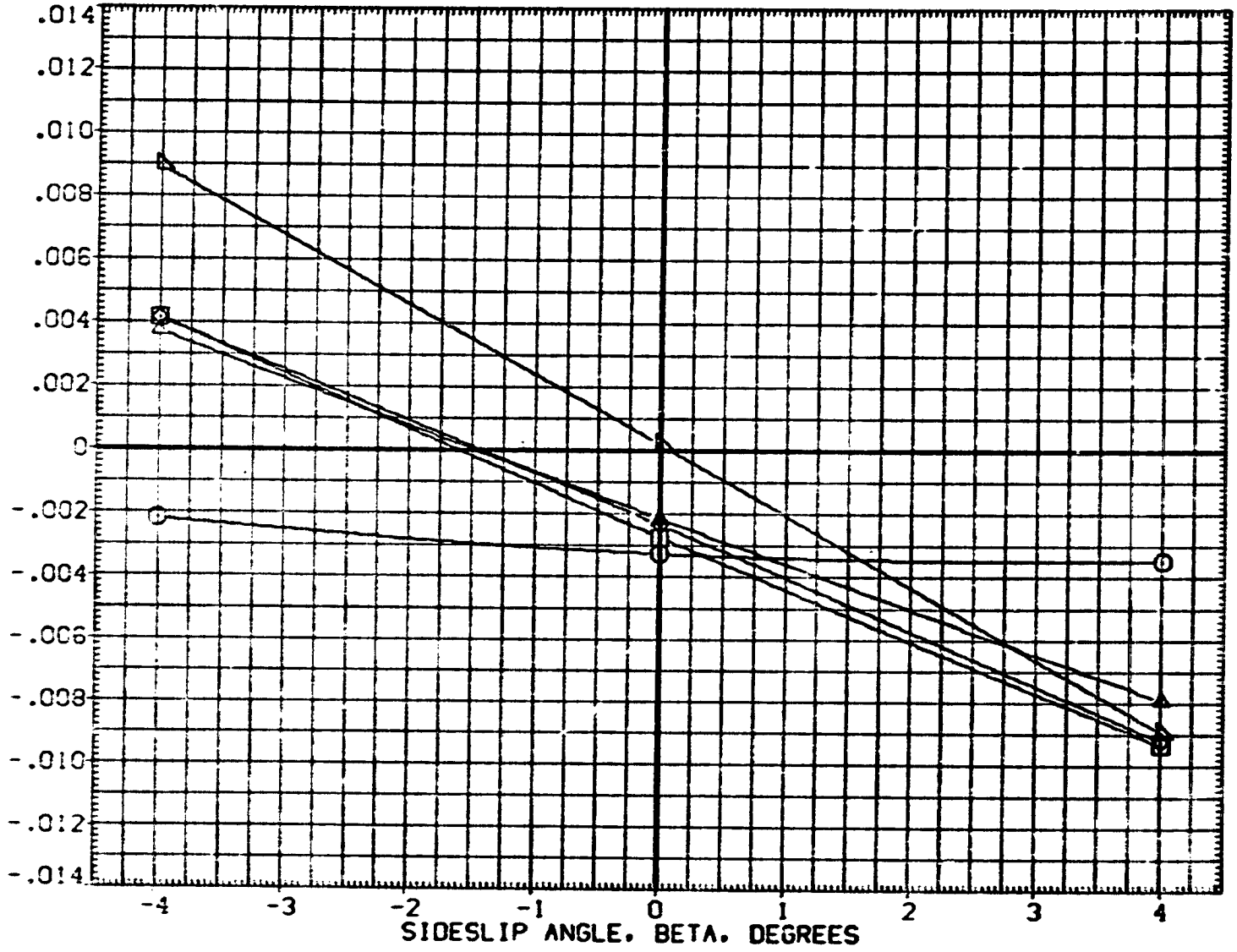


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

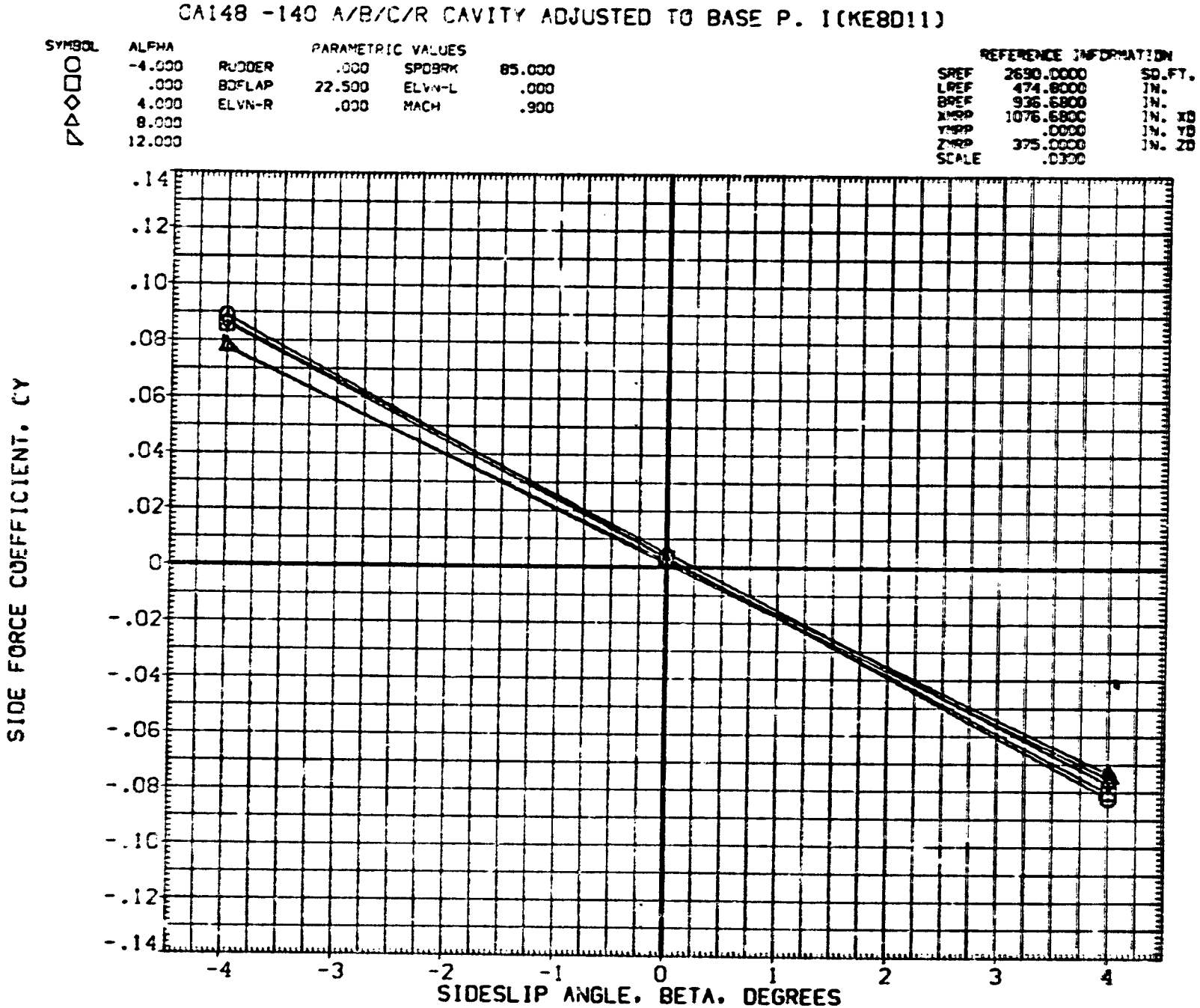


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

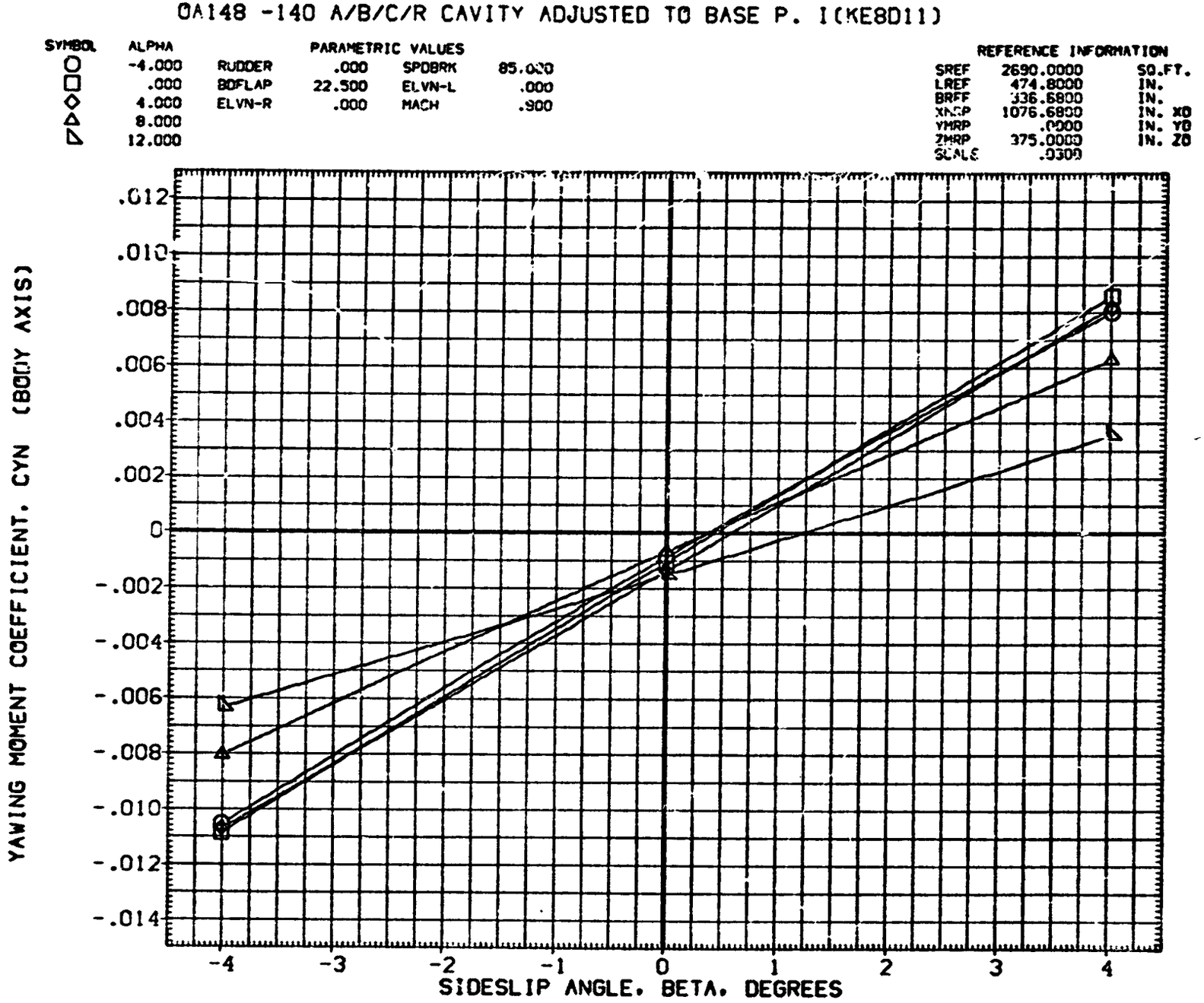


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

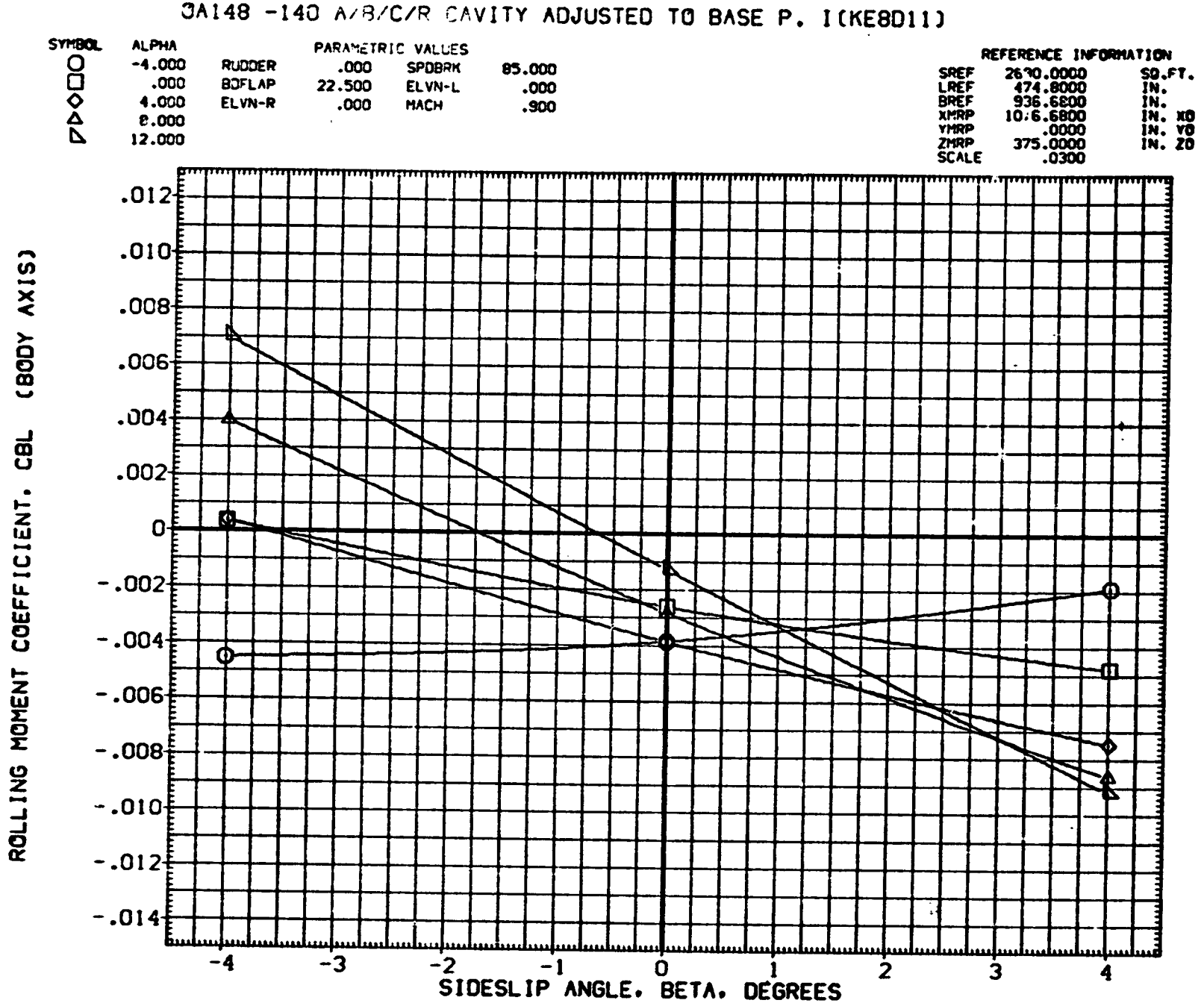


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D12)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▷	12.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	85.000
BDFLAP	22.500	ELVN-L	.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

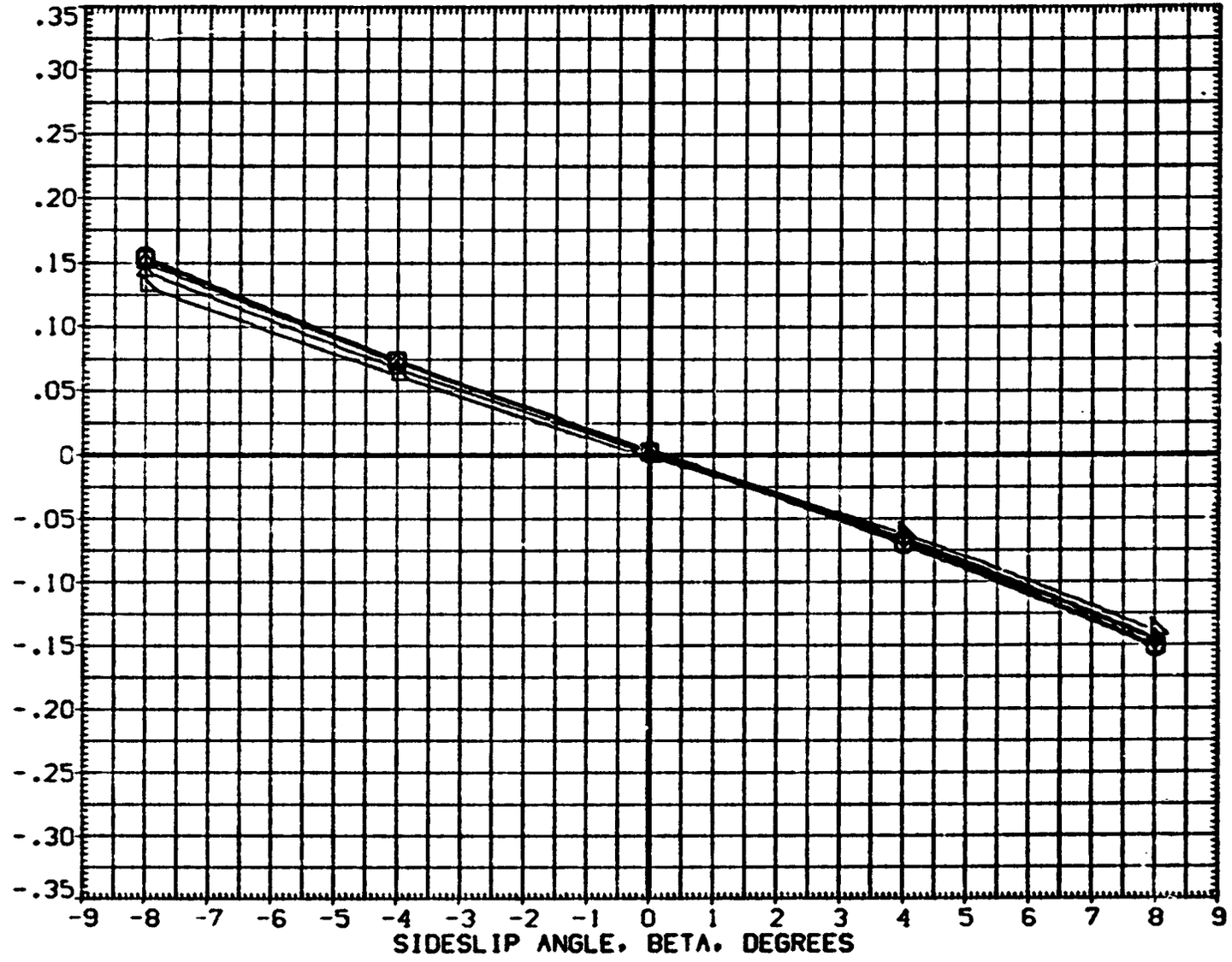


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

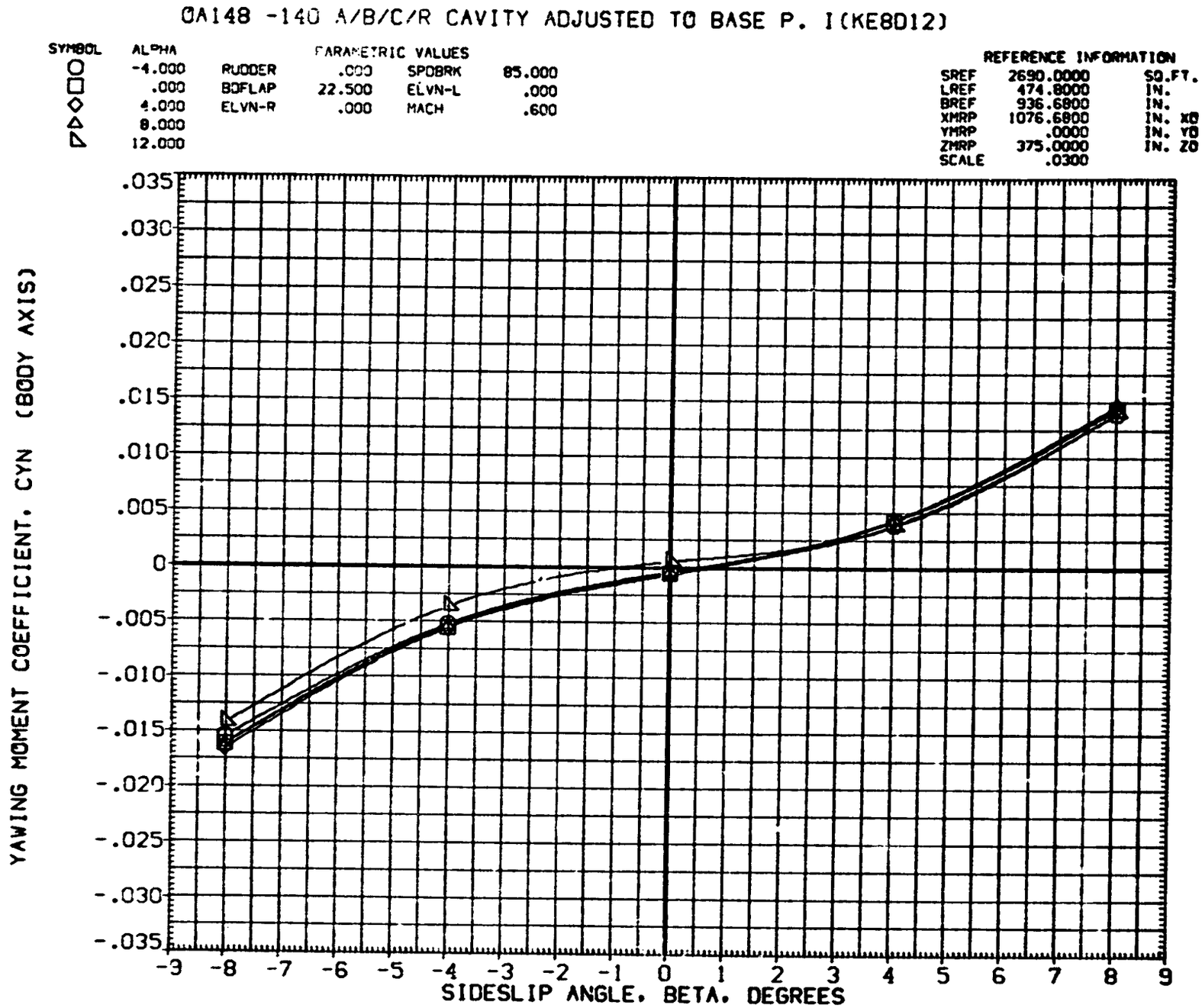


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

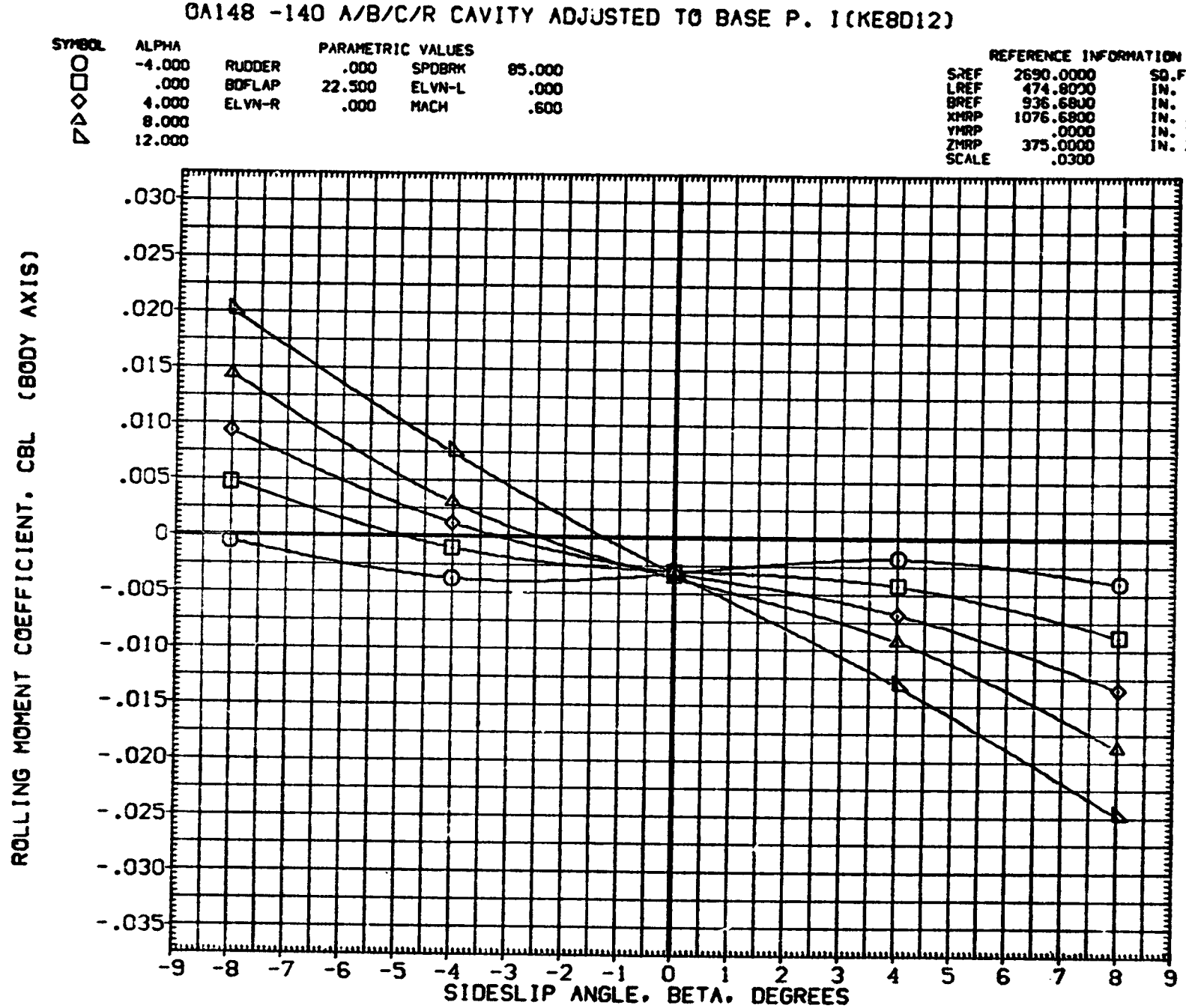


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

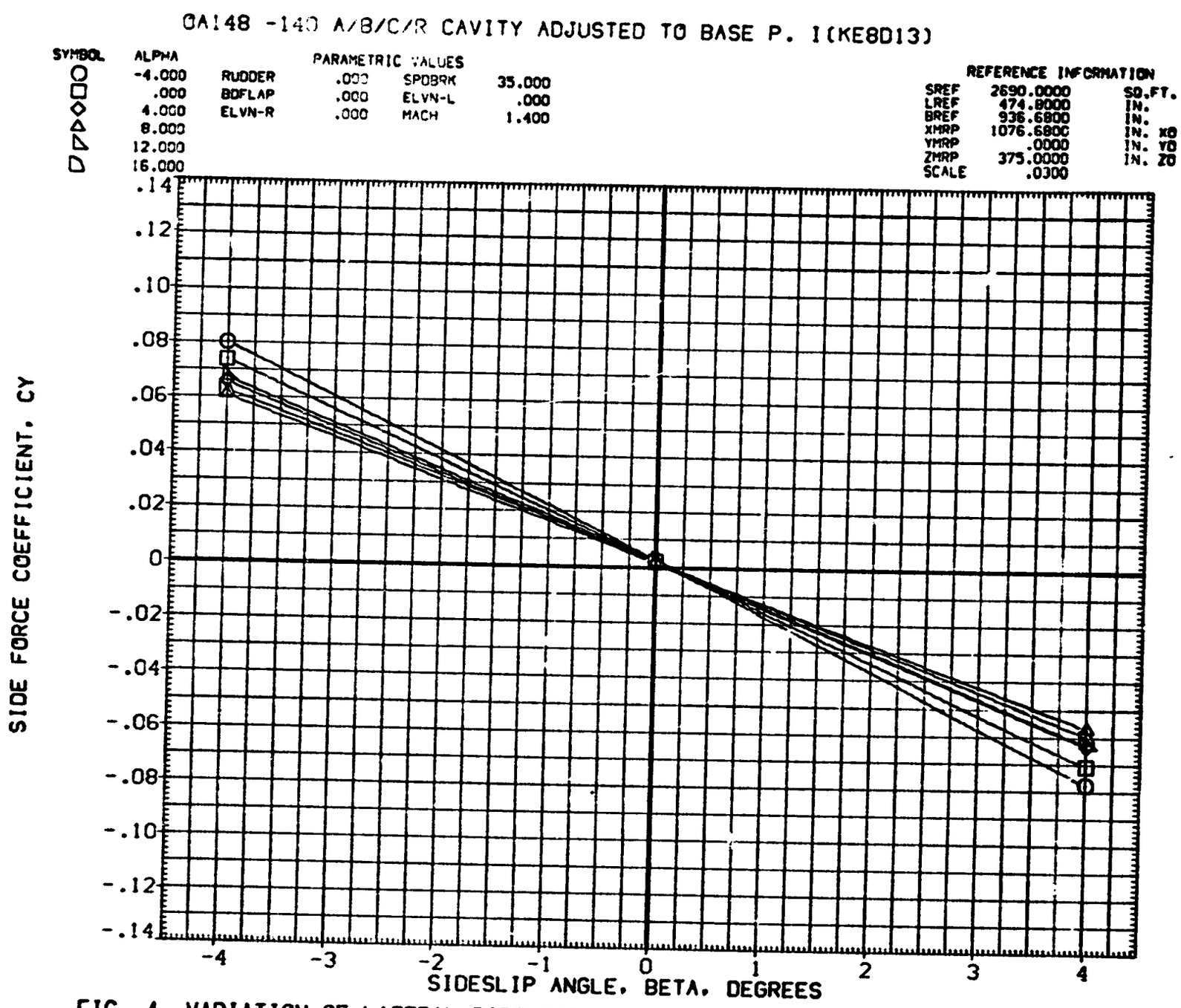


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

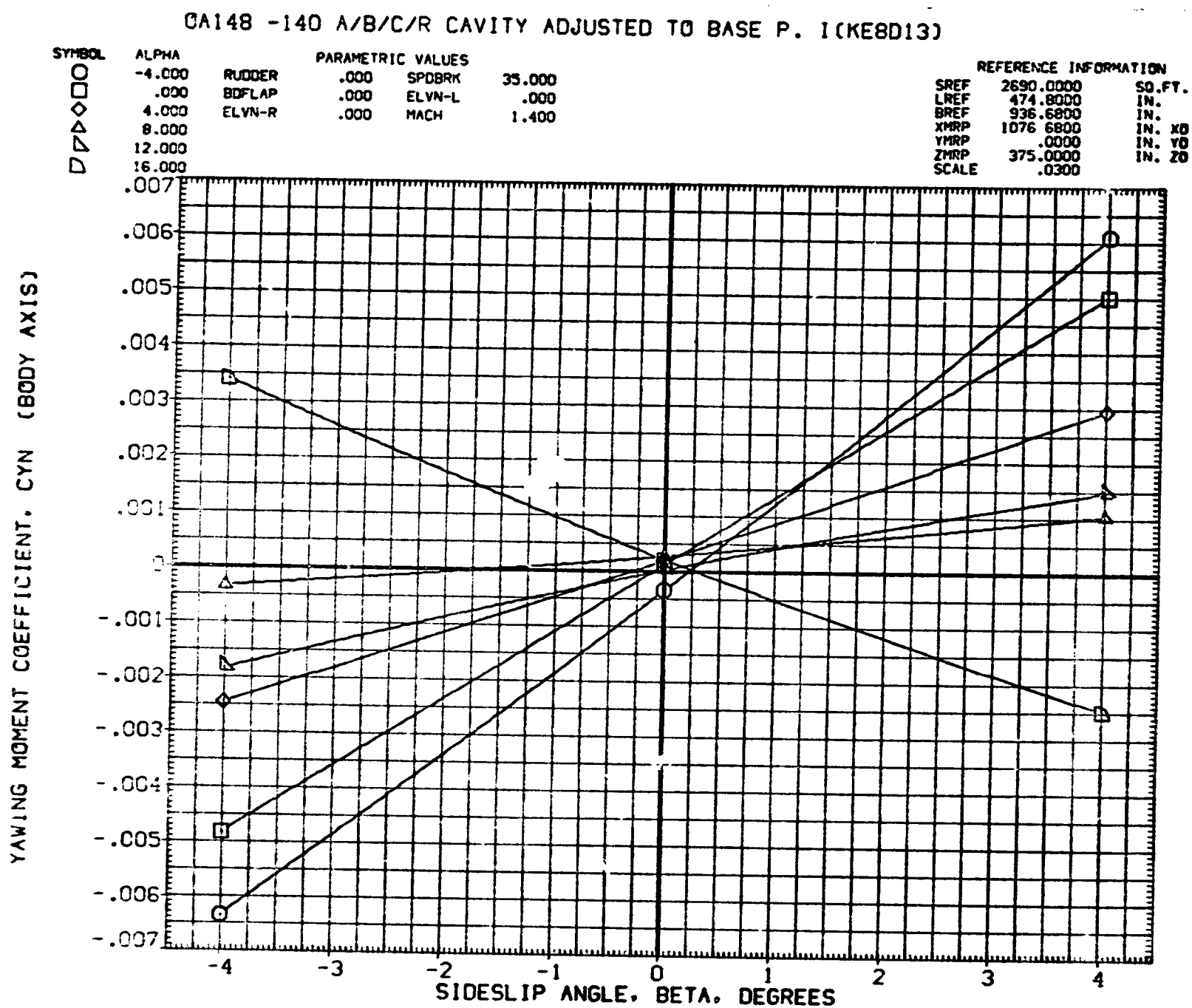


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

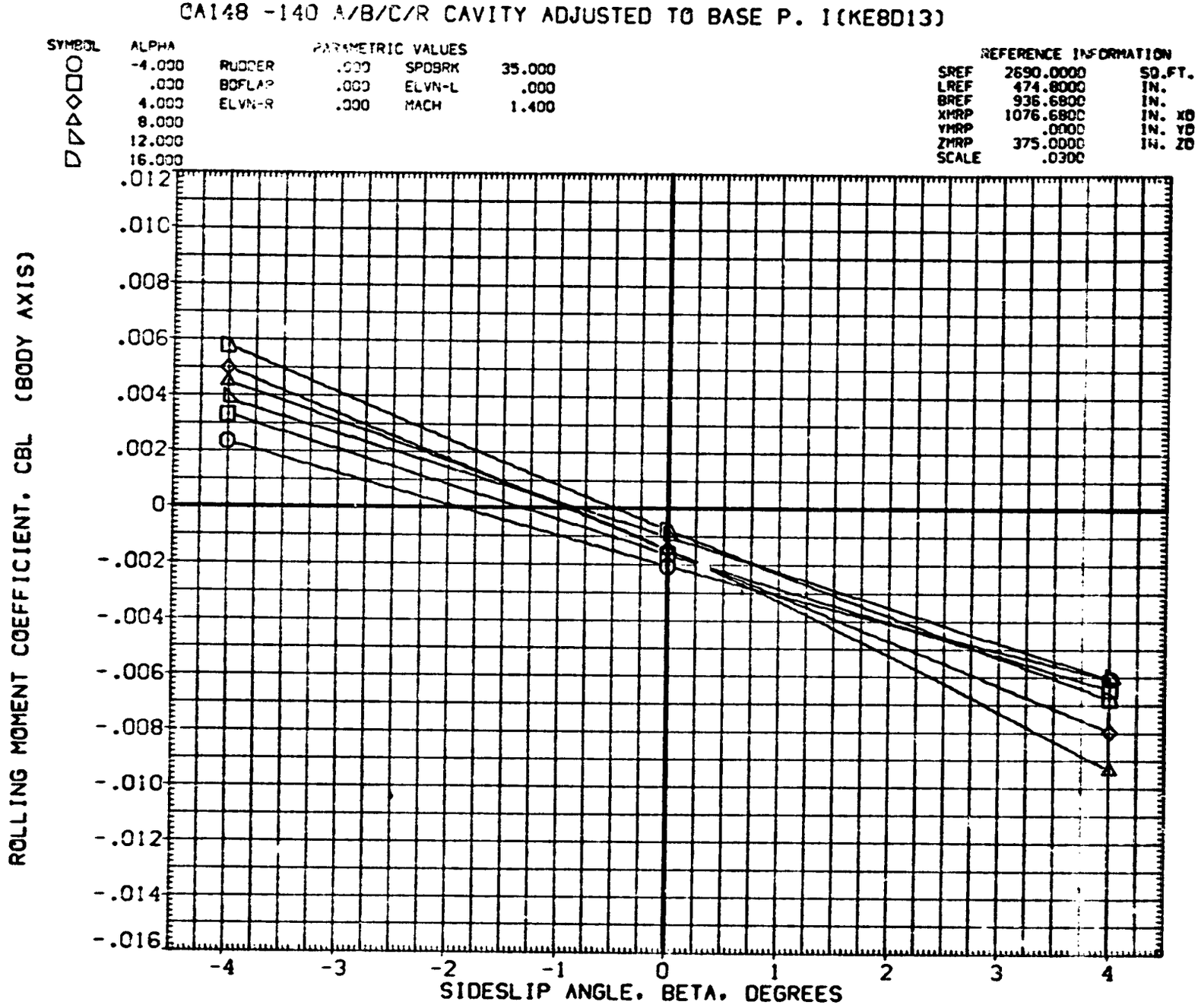


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

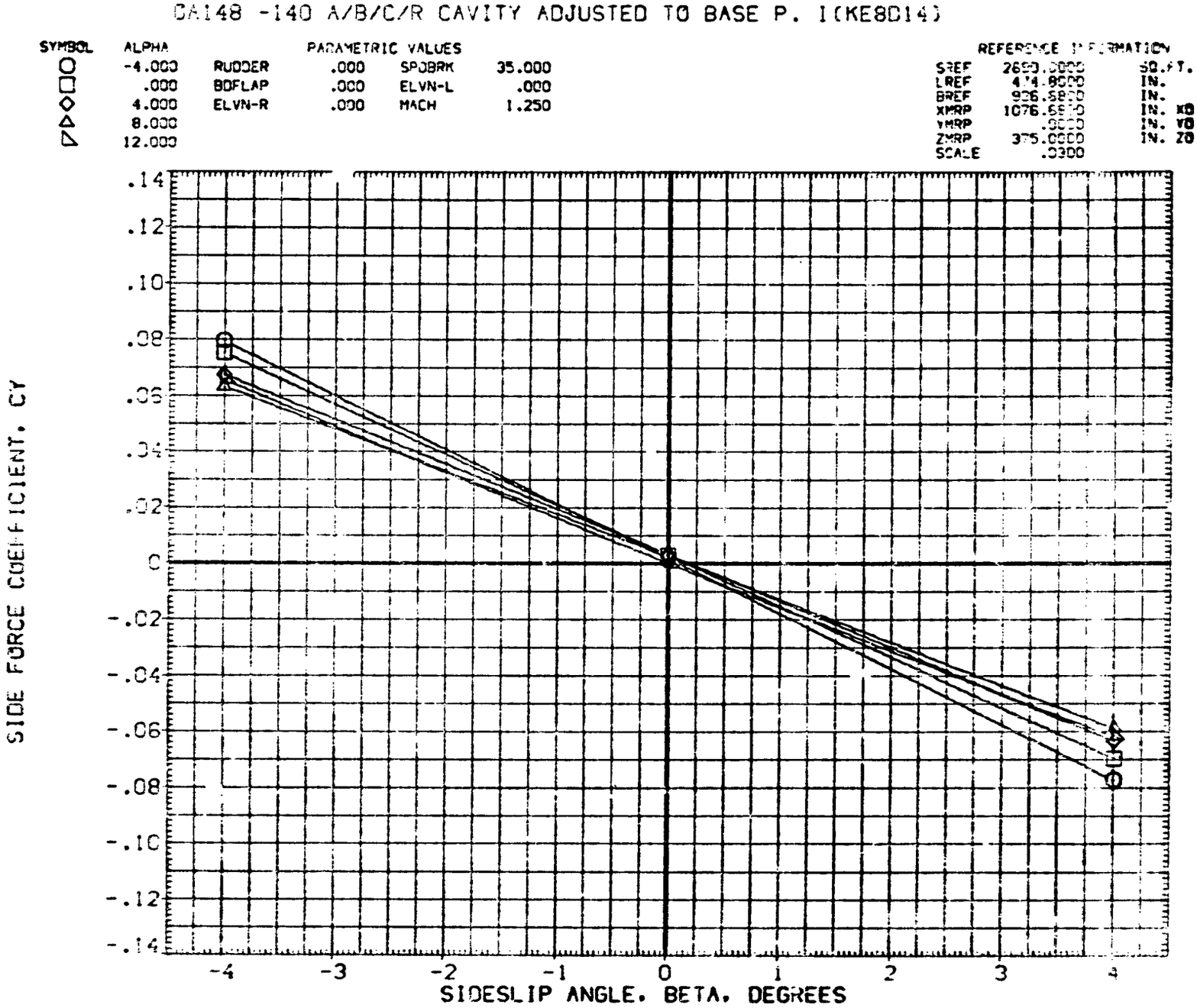


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

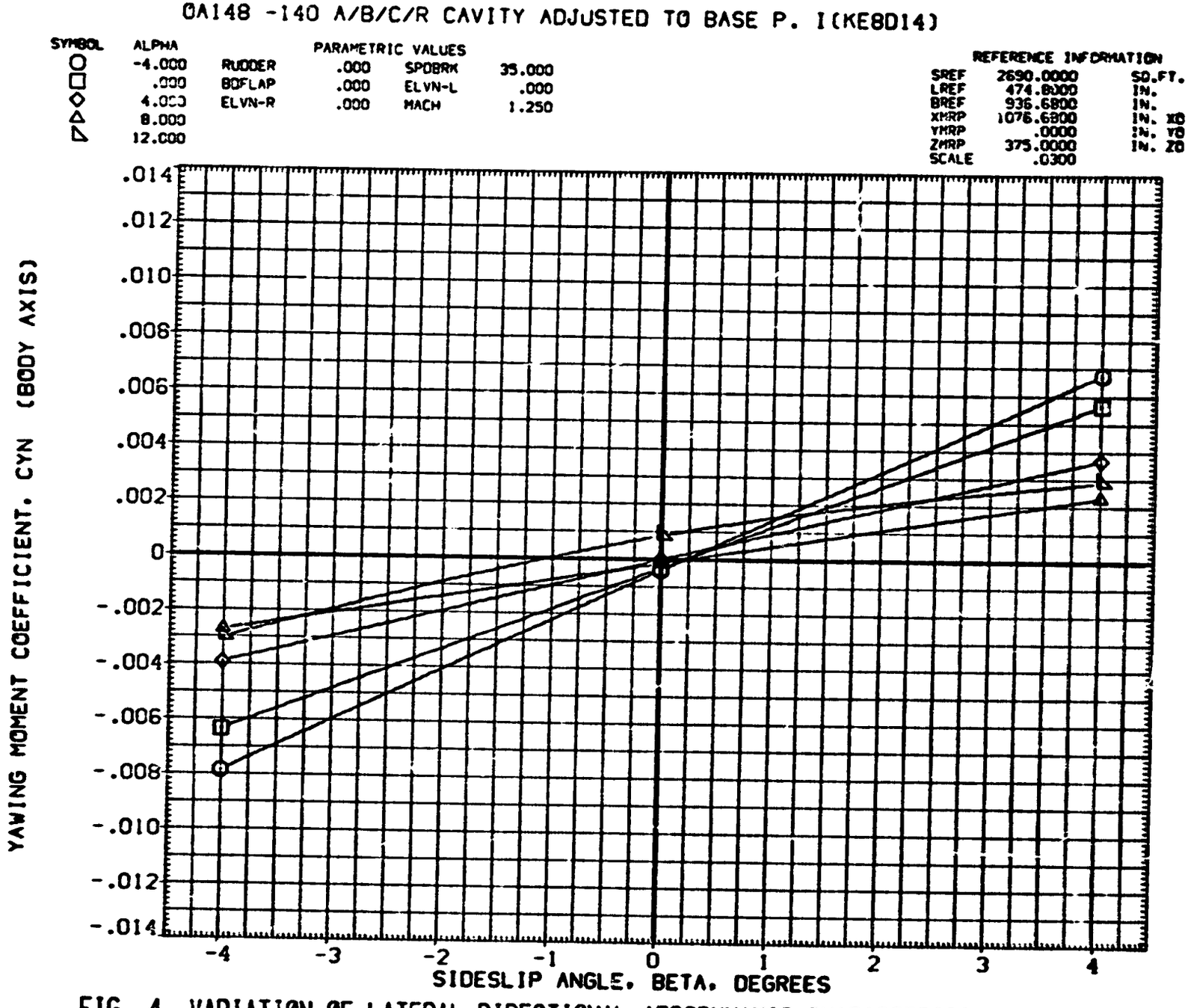


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

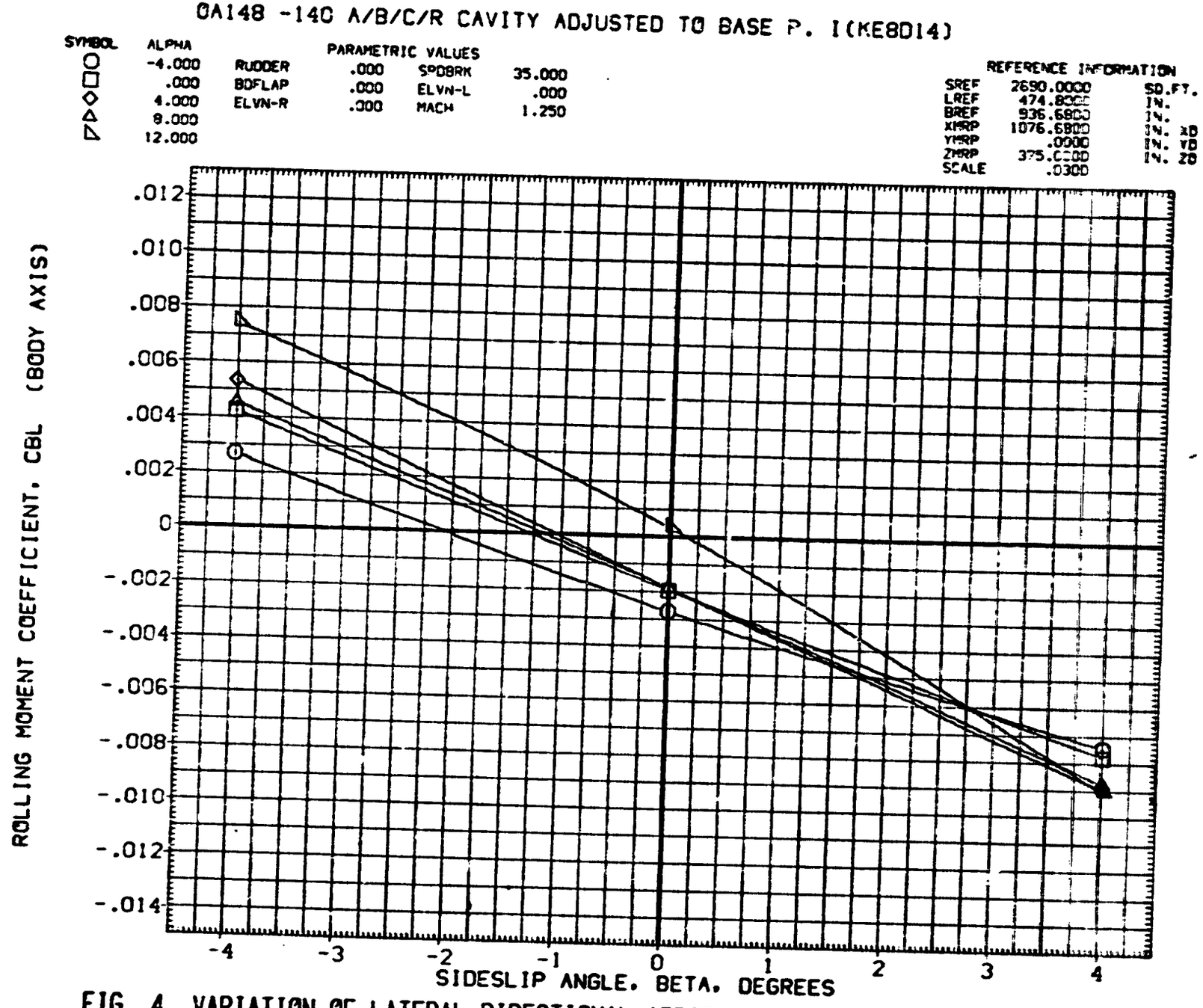


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY
ORIGINAL

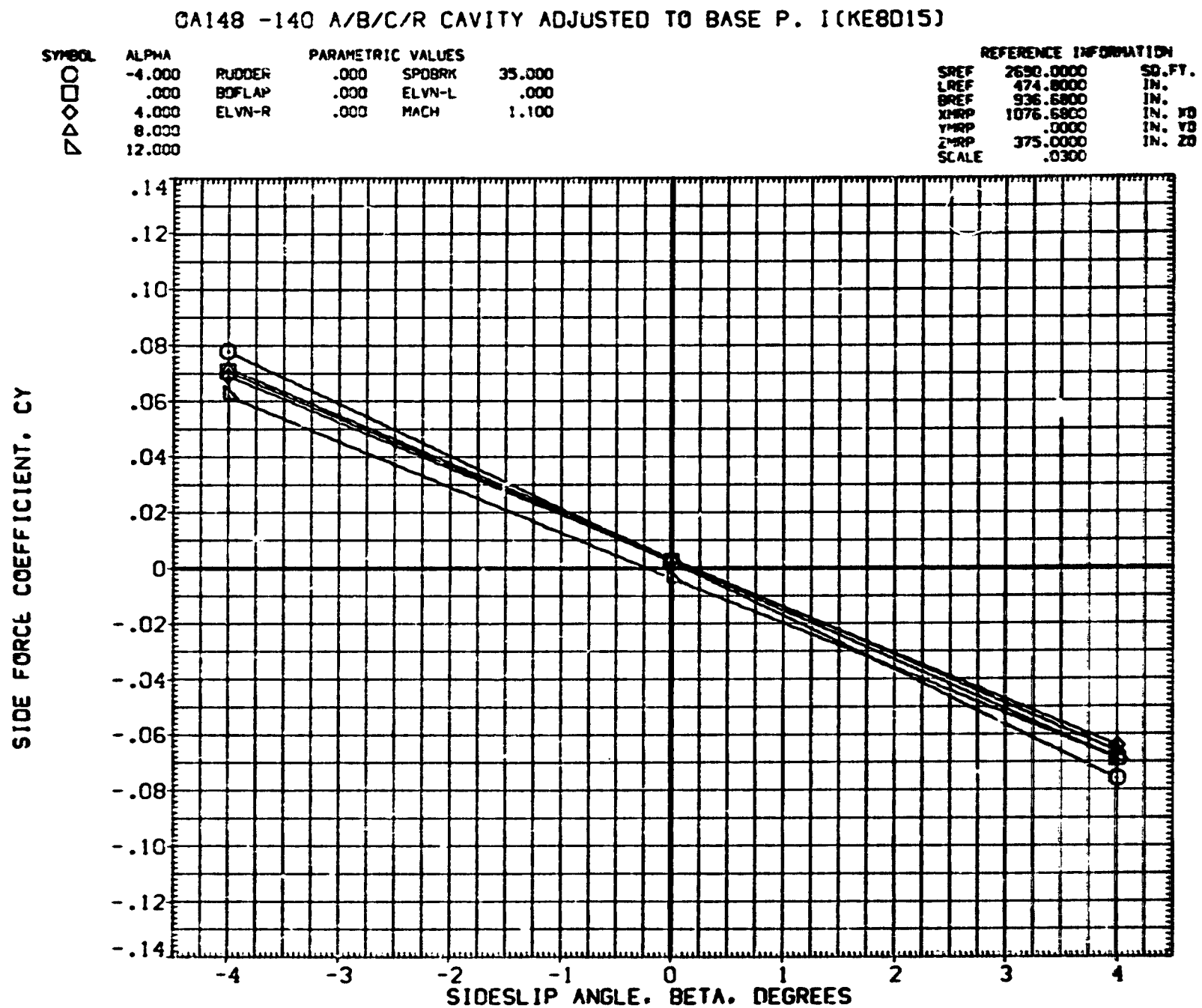


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

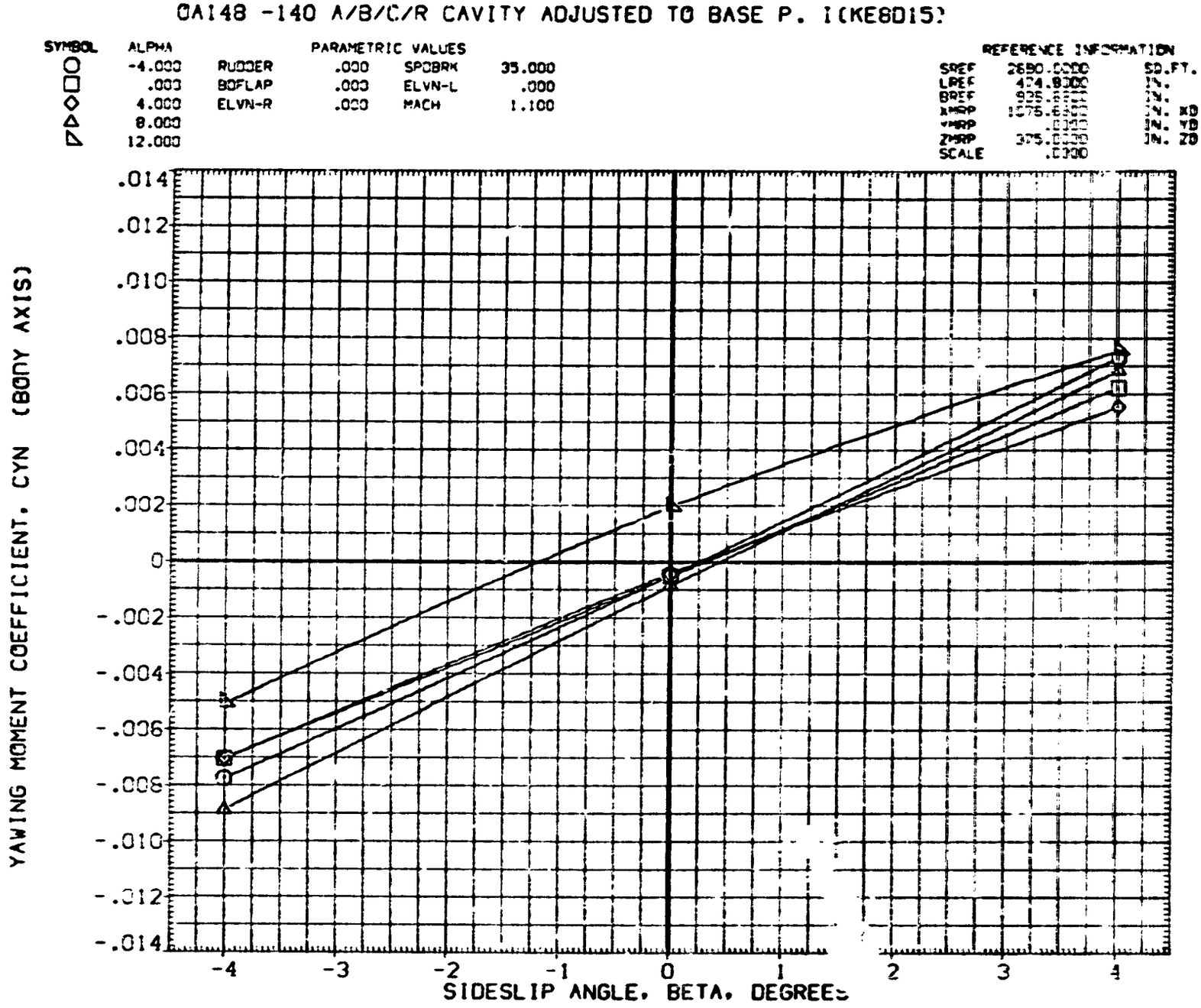


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

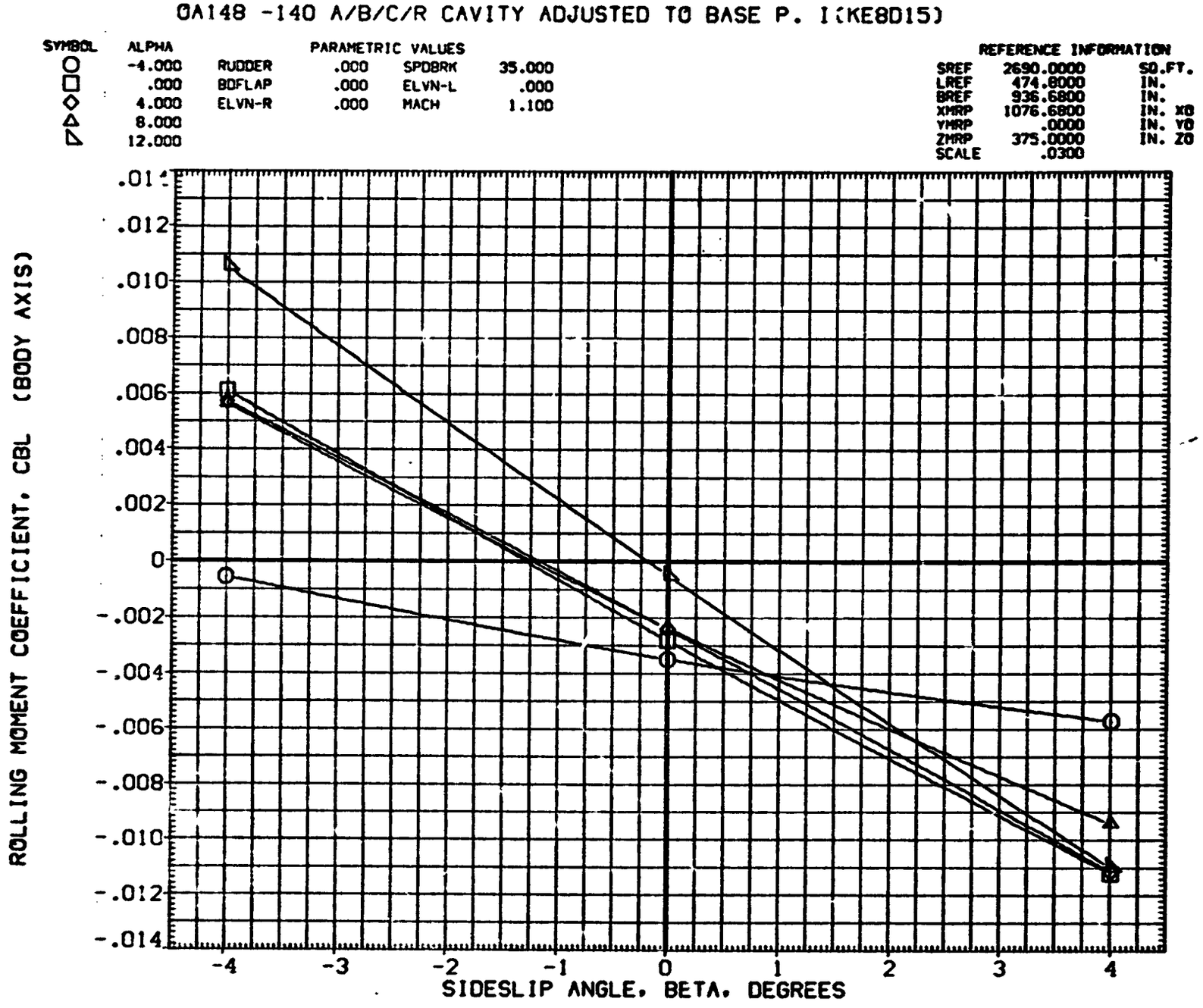


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D16)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
◁	12.000

PARAMETRIC VALUES

RUDDER	.000	SPOBRK	35.000
BDFLAP	.000	ELVN-L	.000
ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

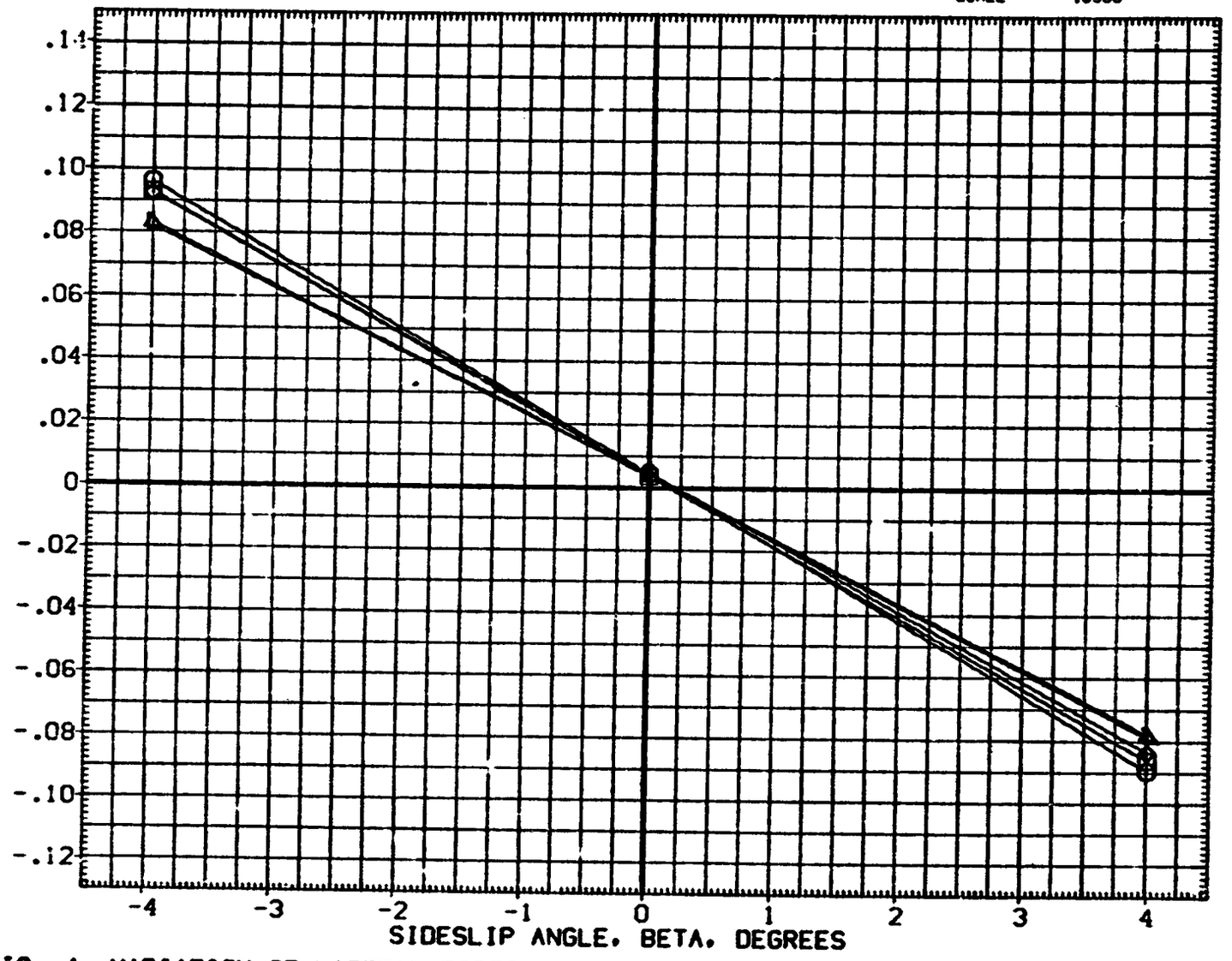


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

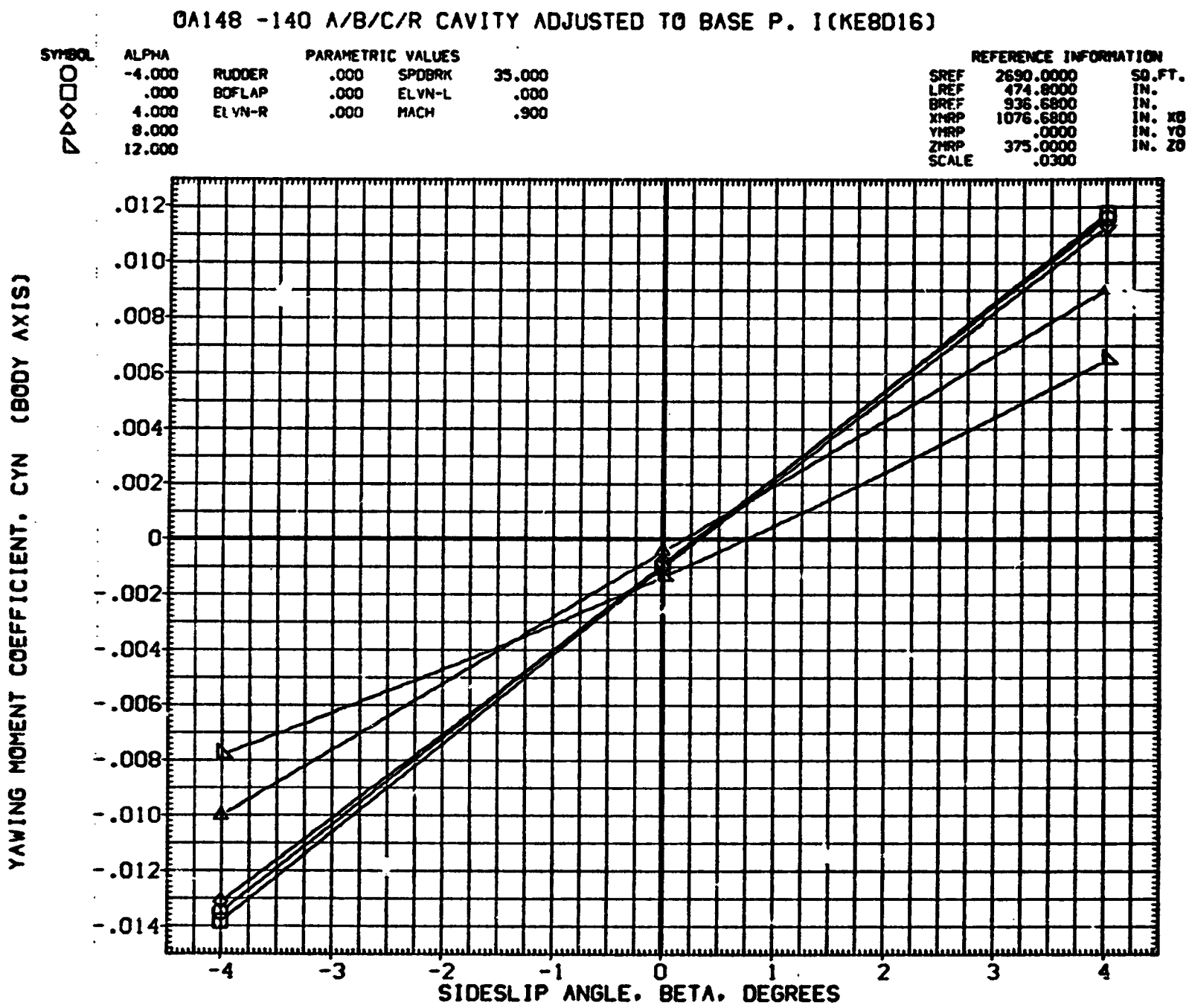


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

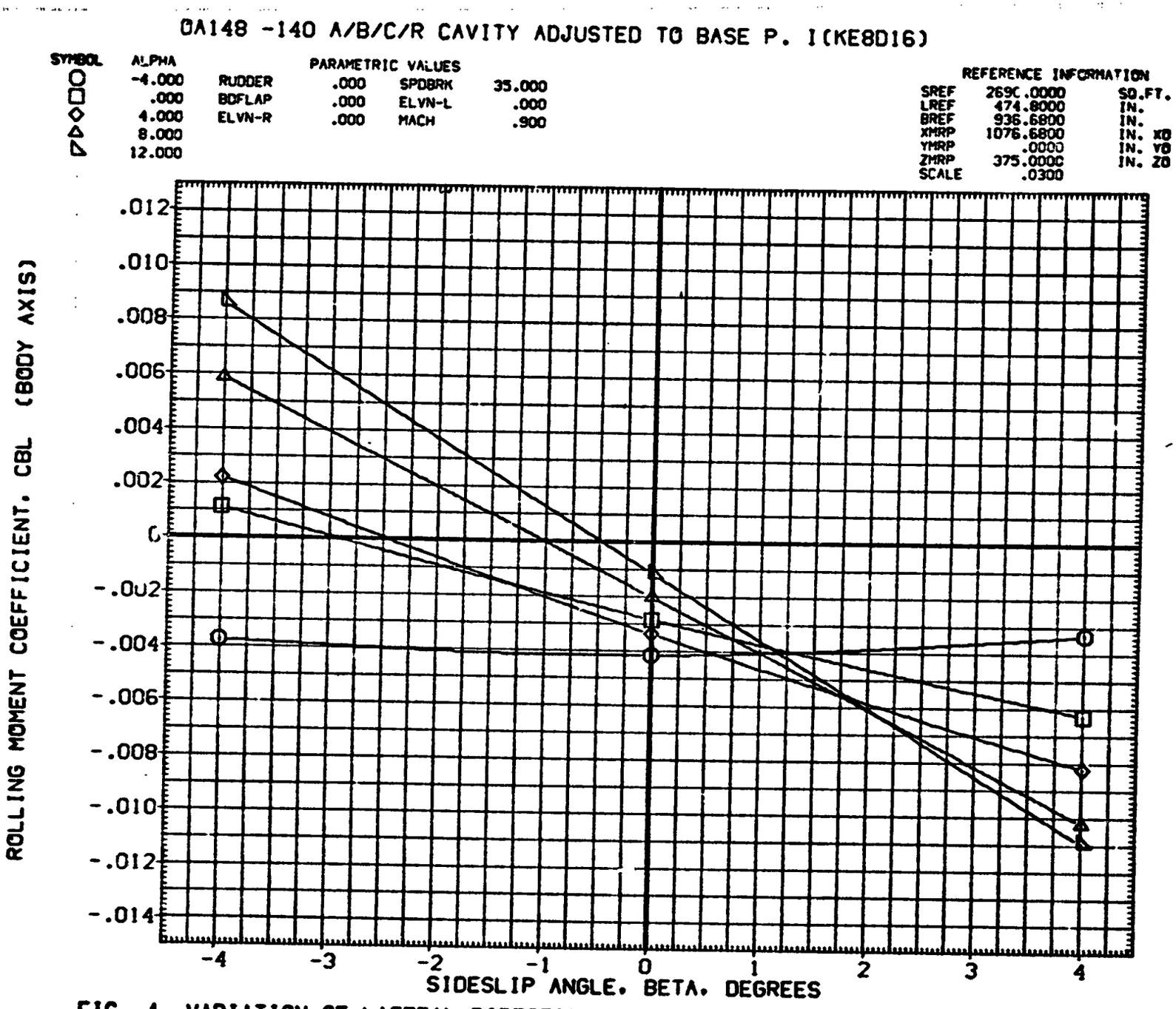


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

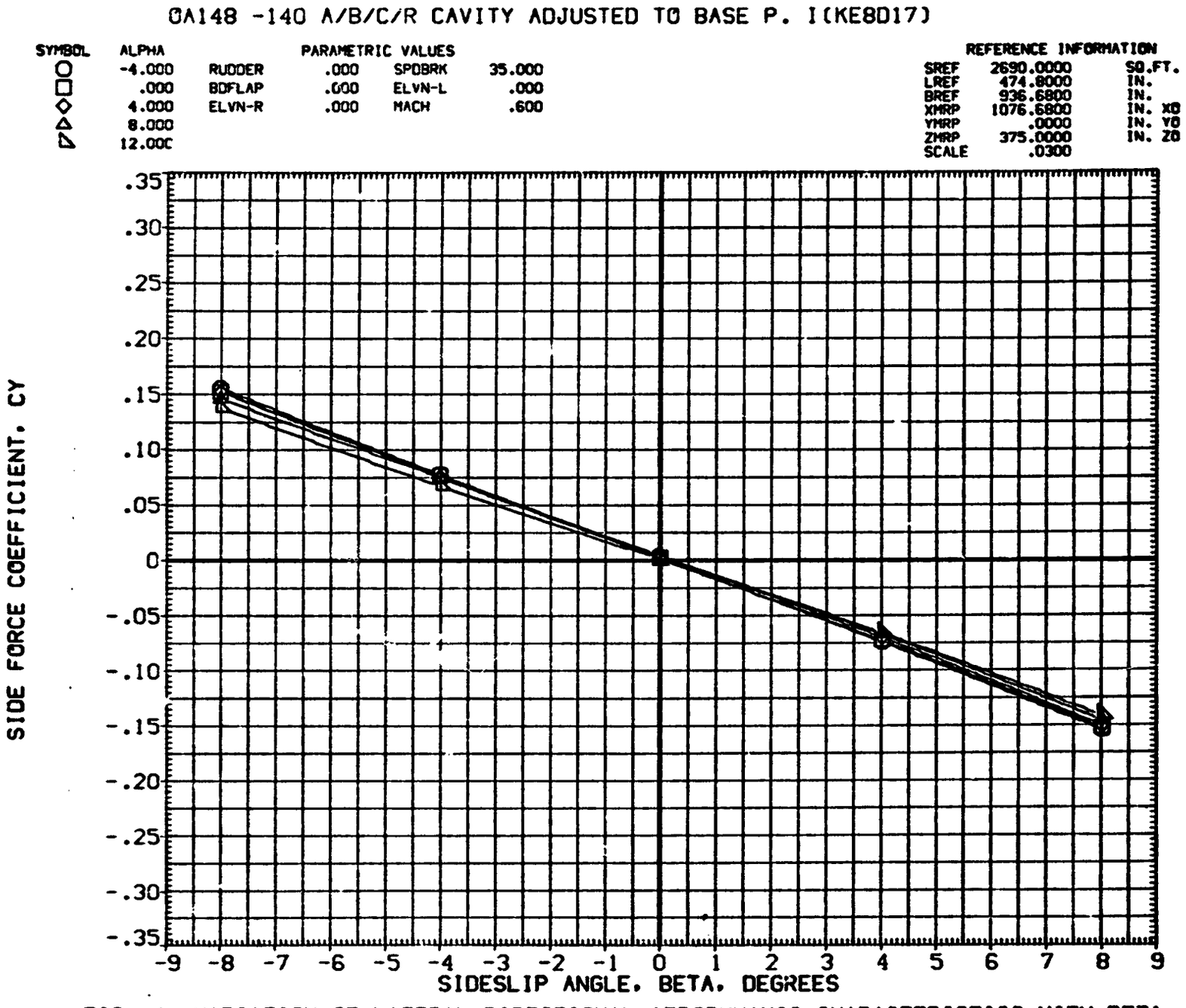


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.600
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

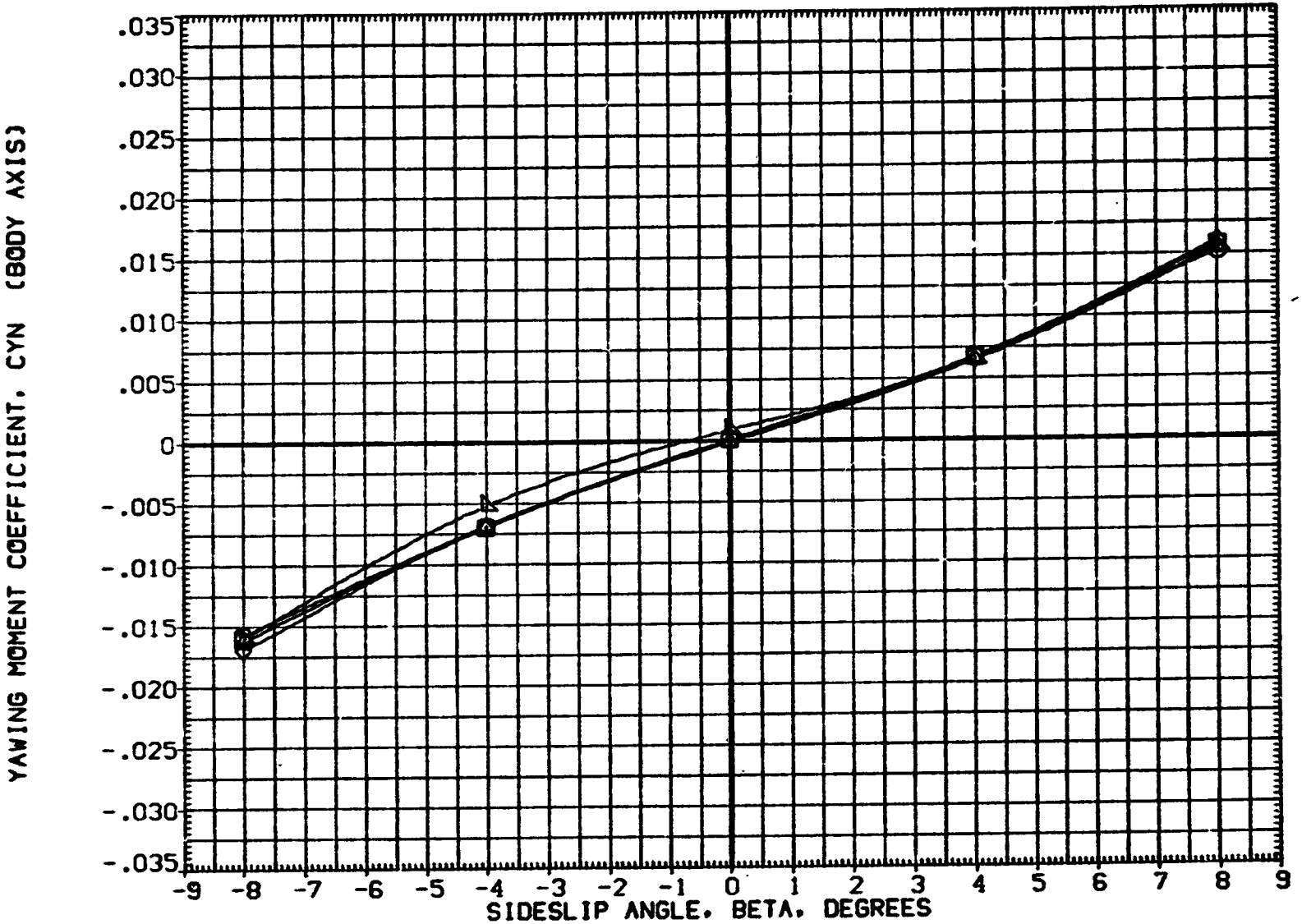


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

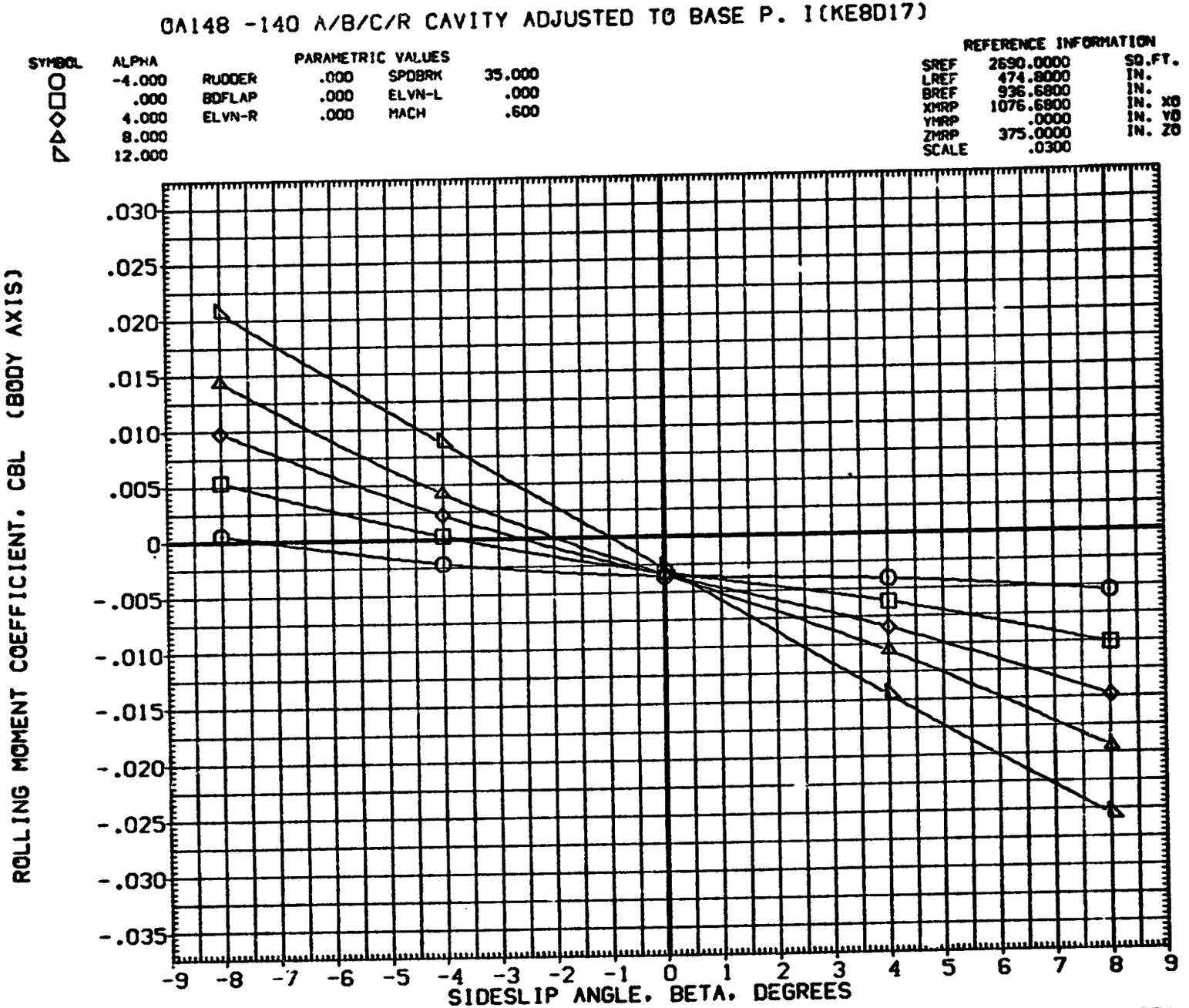


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

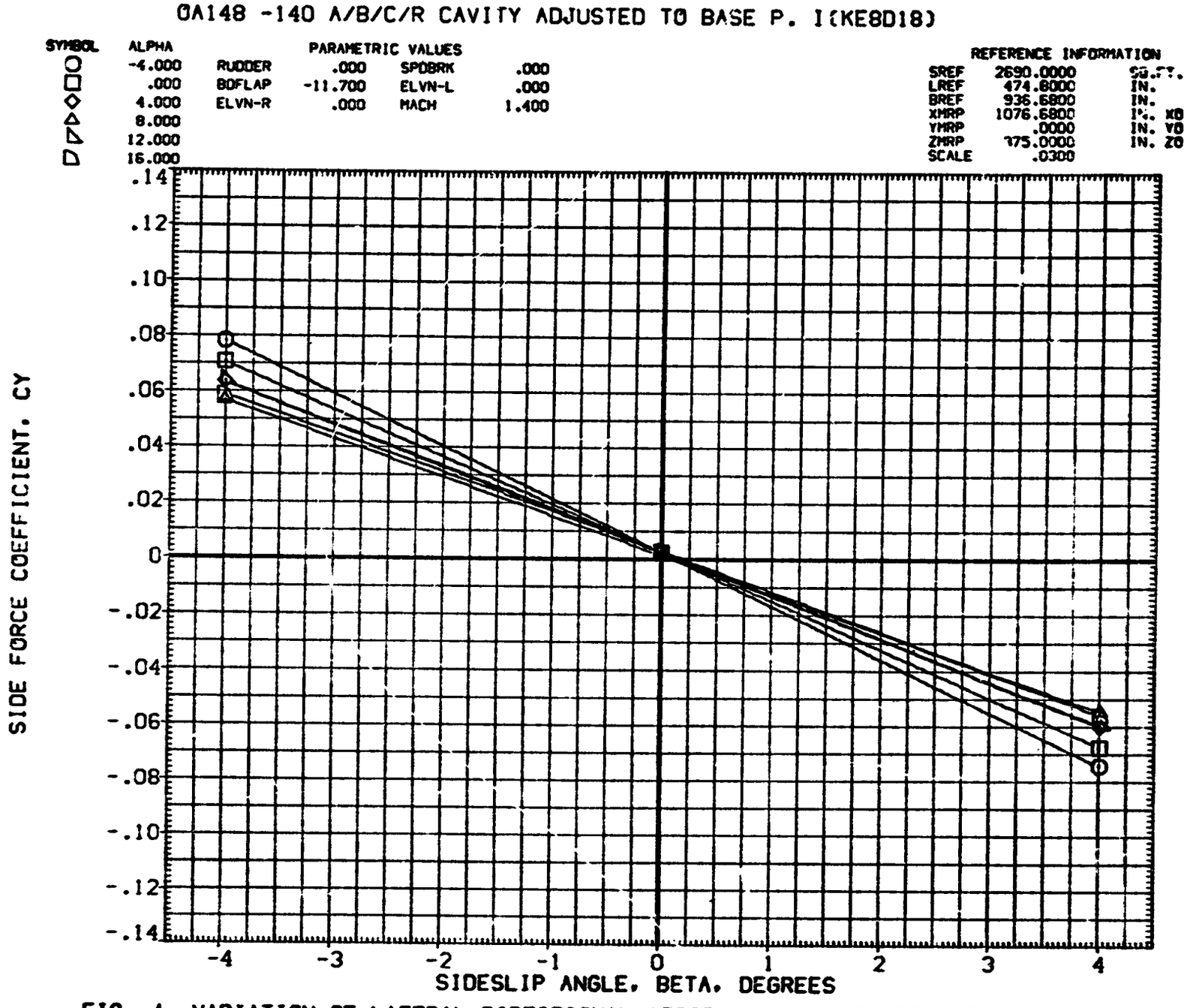


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

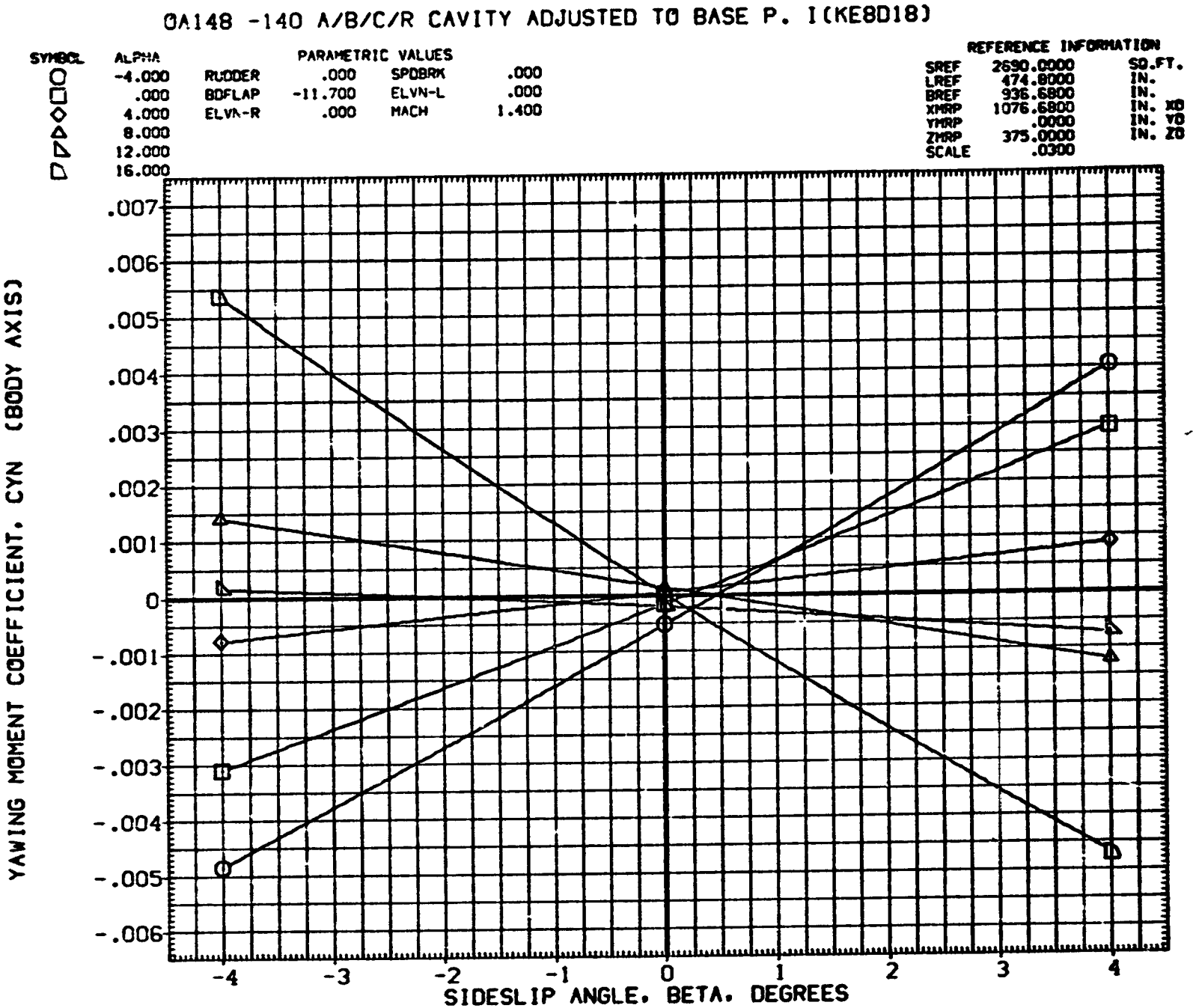


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

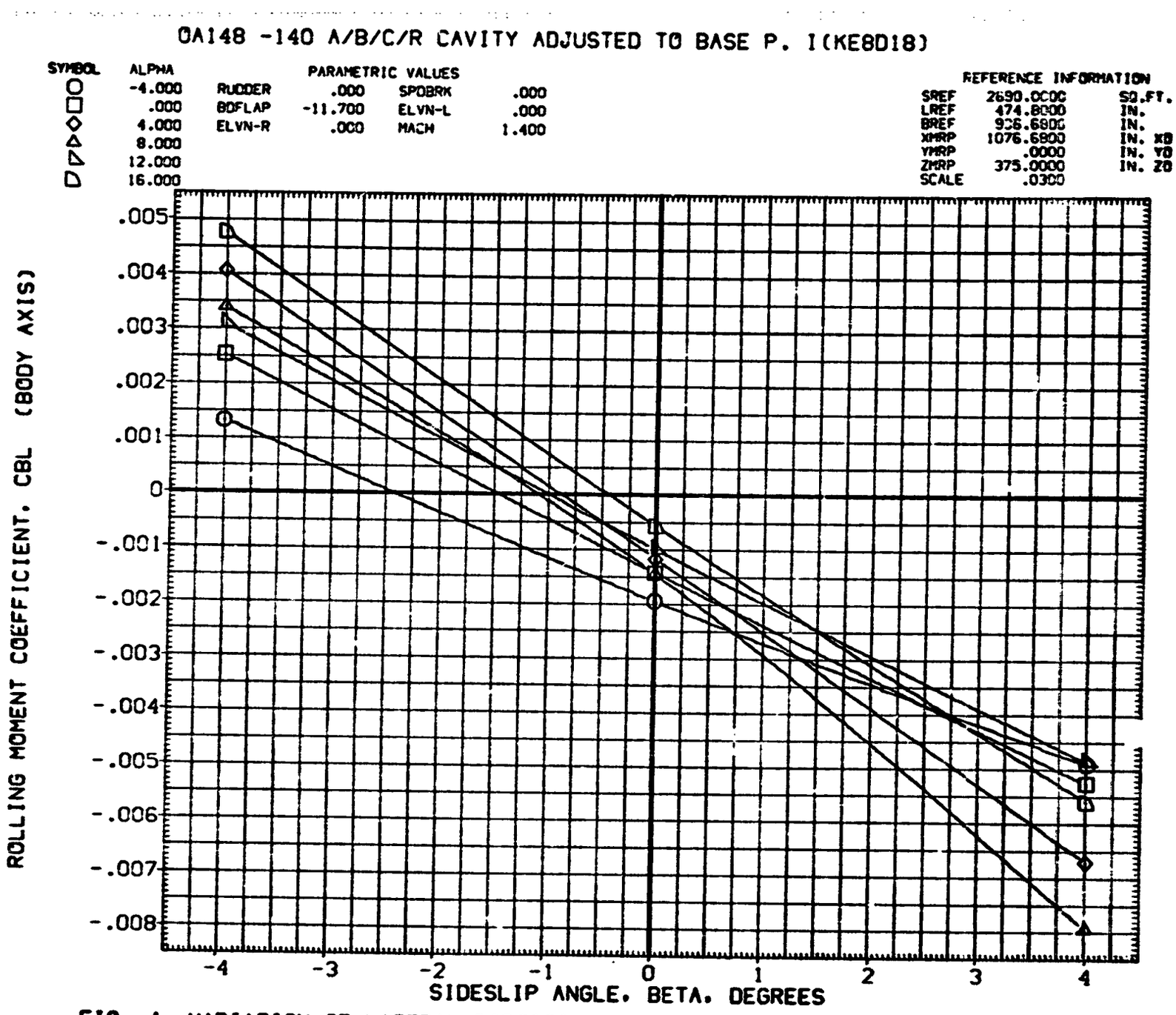


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

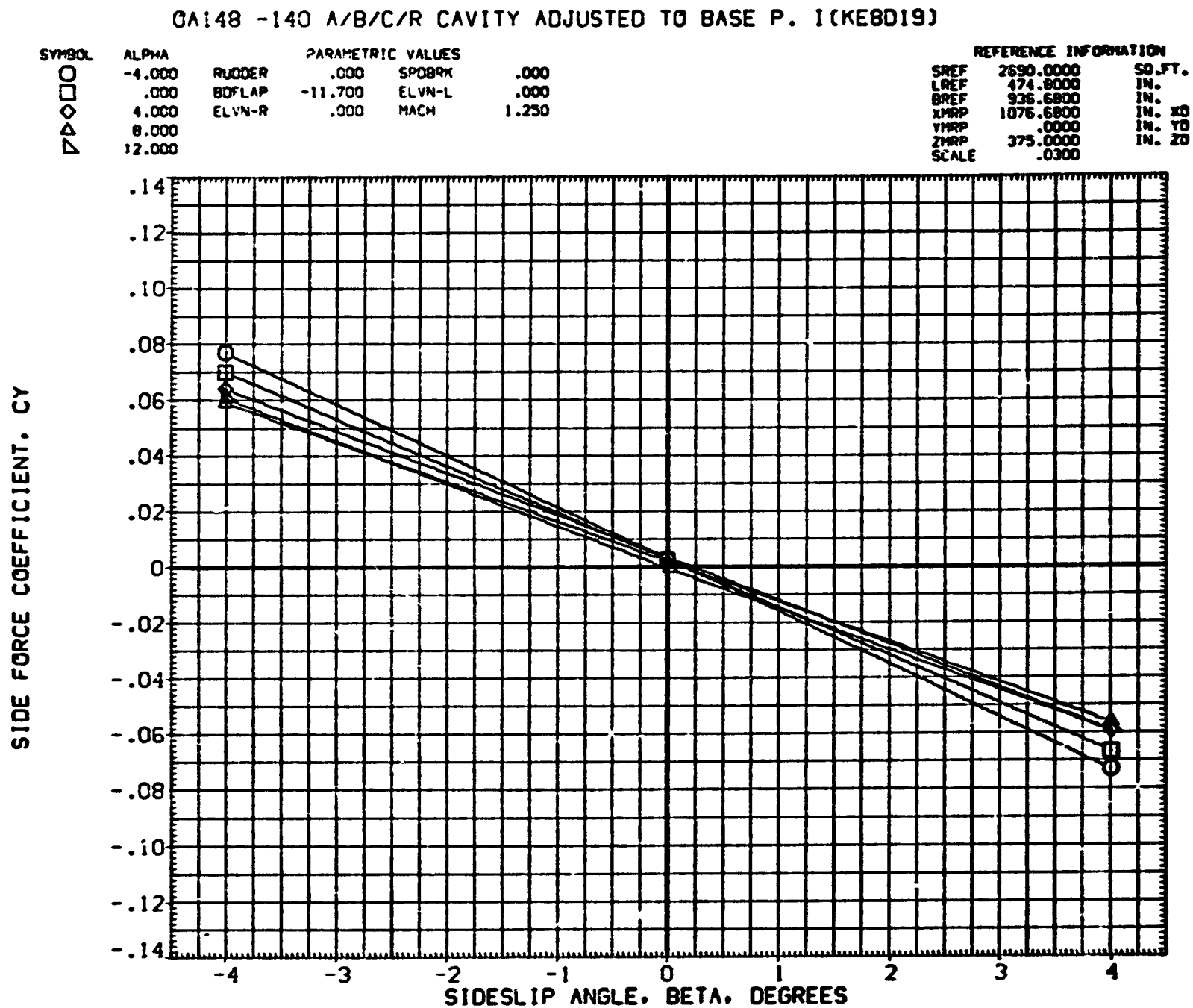


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D19)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

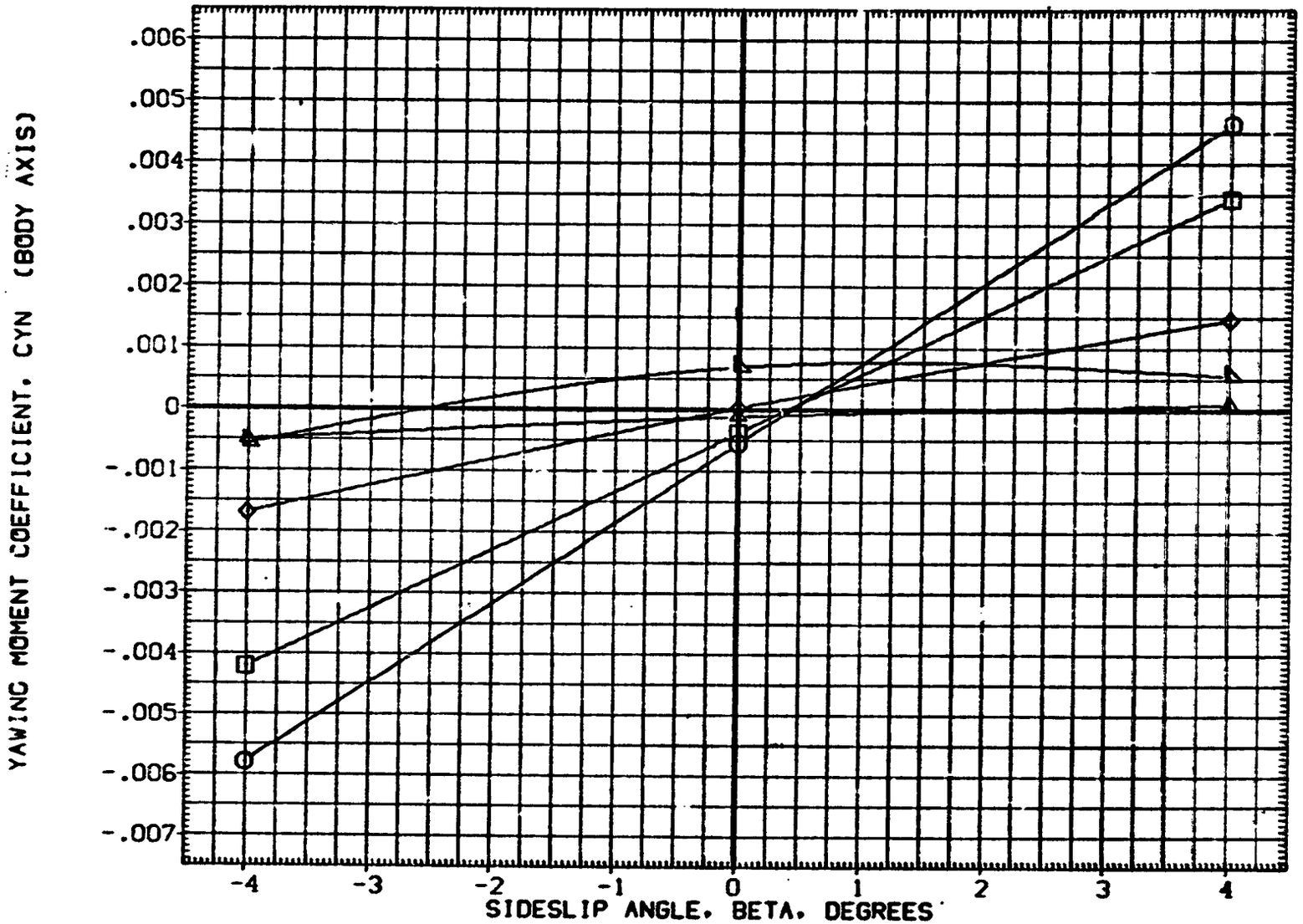


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

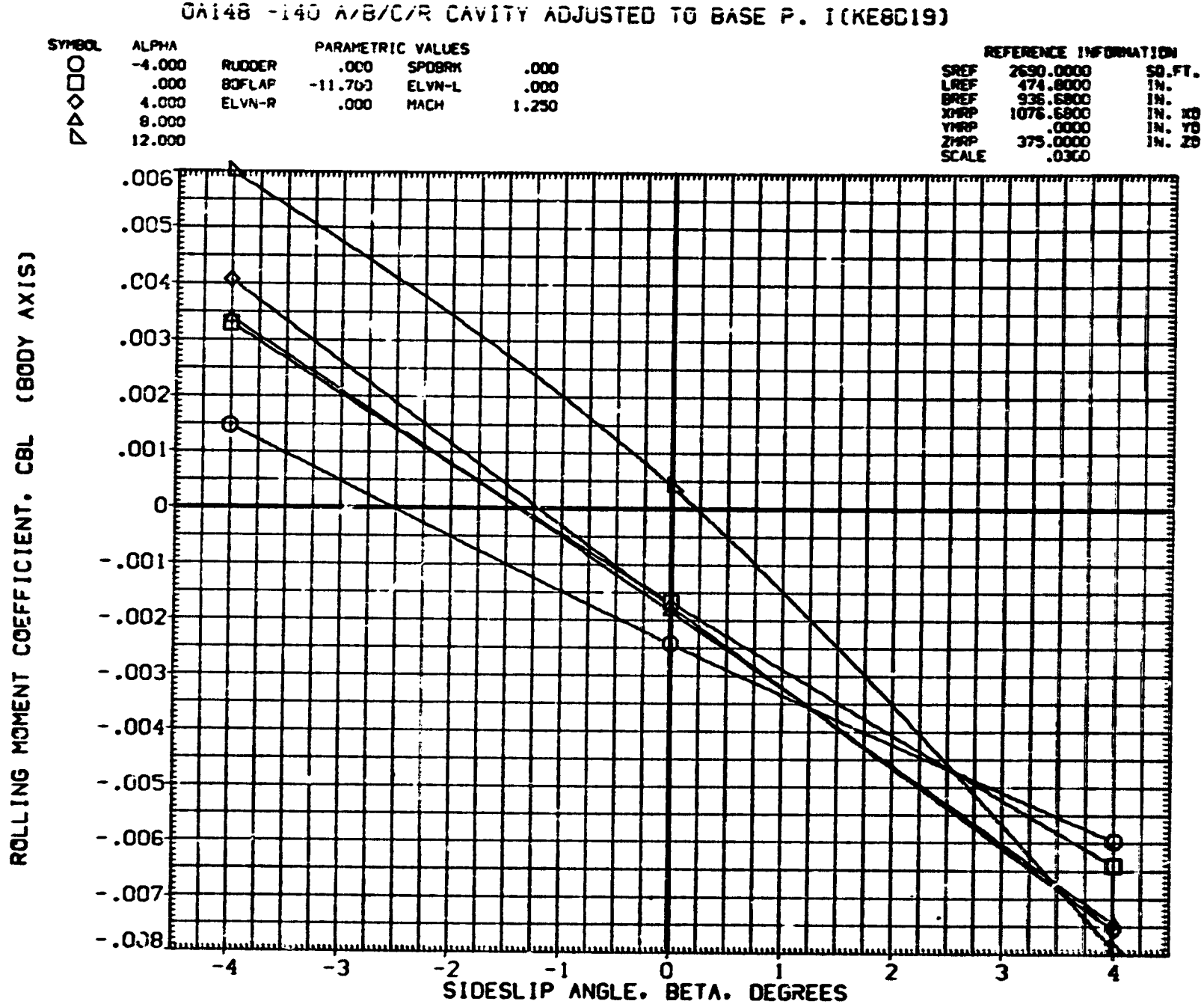


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

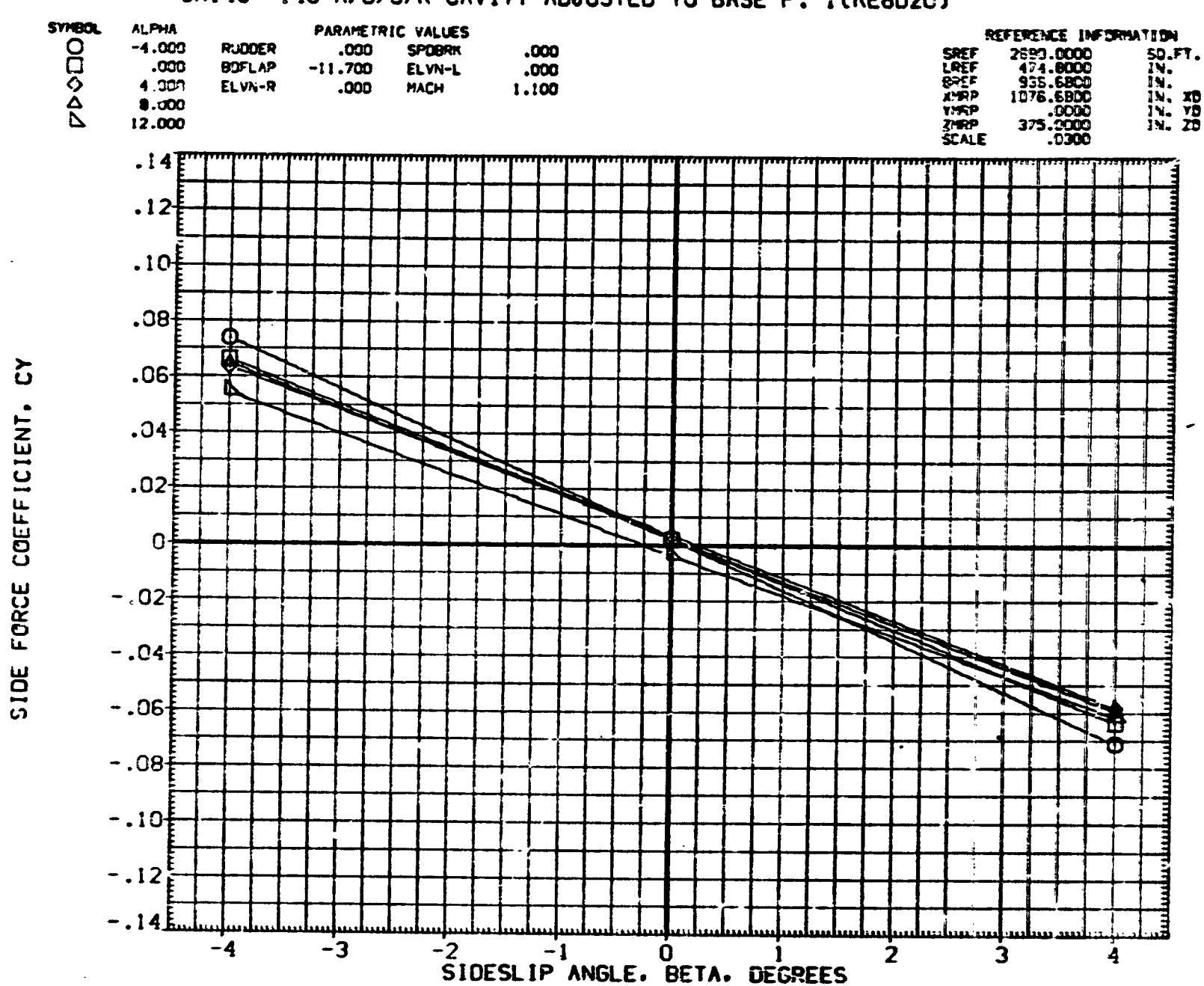


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D20)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

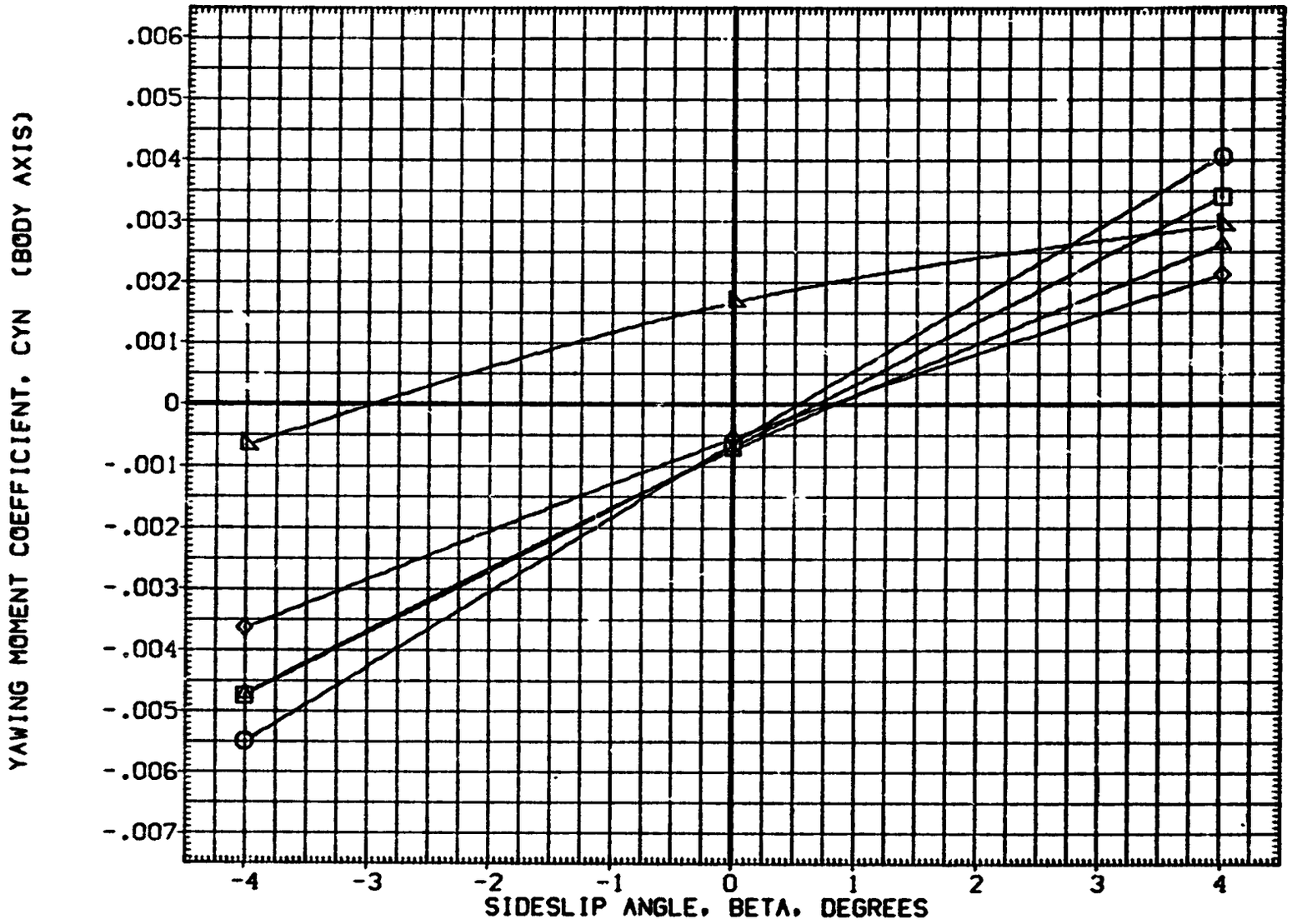


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

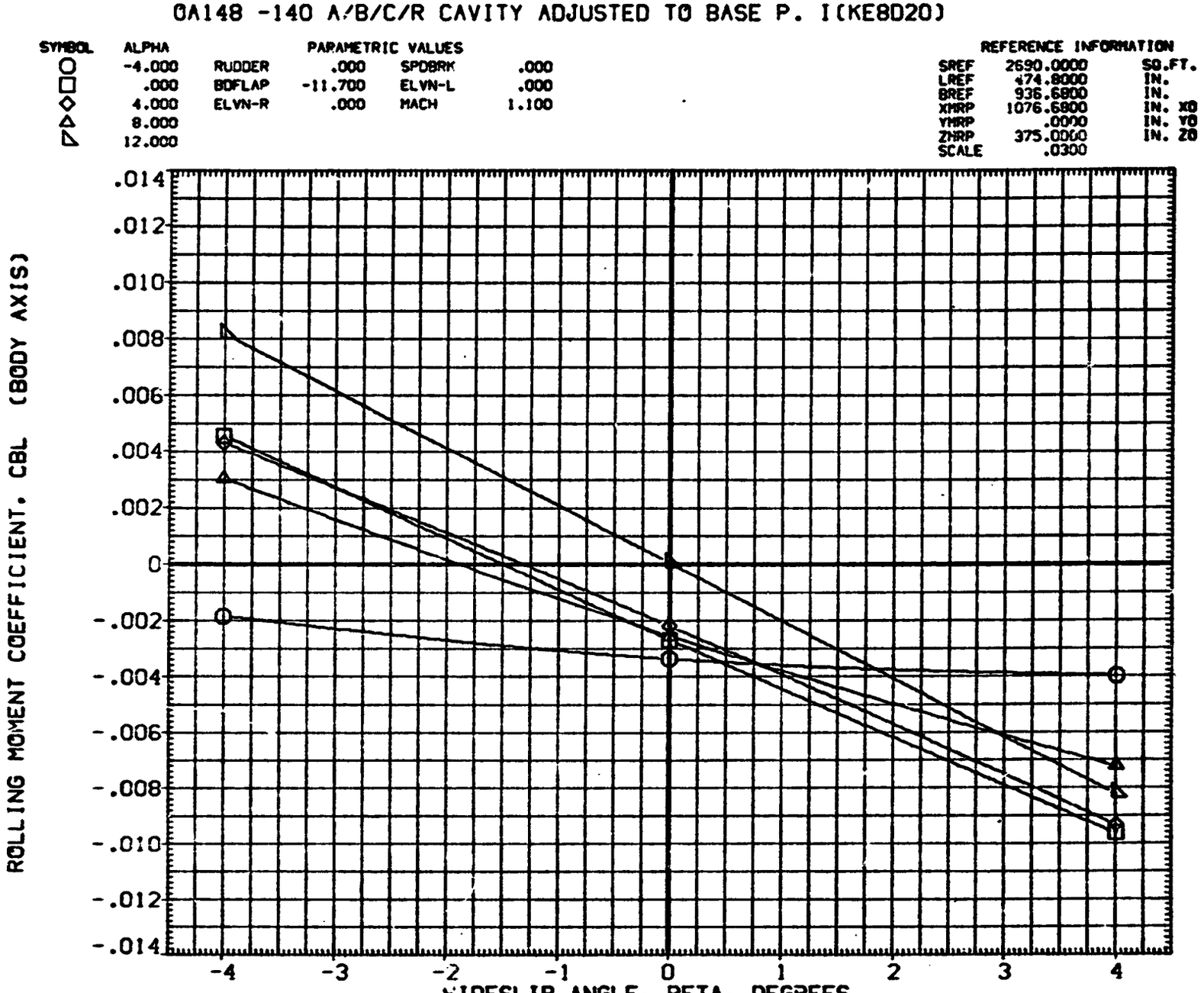


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

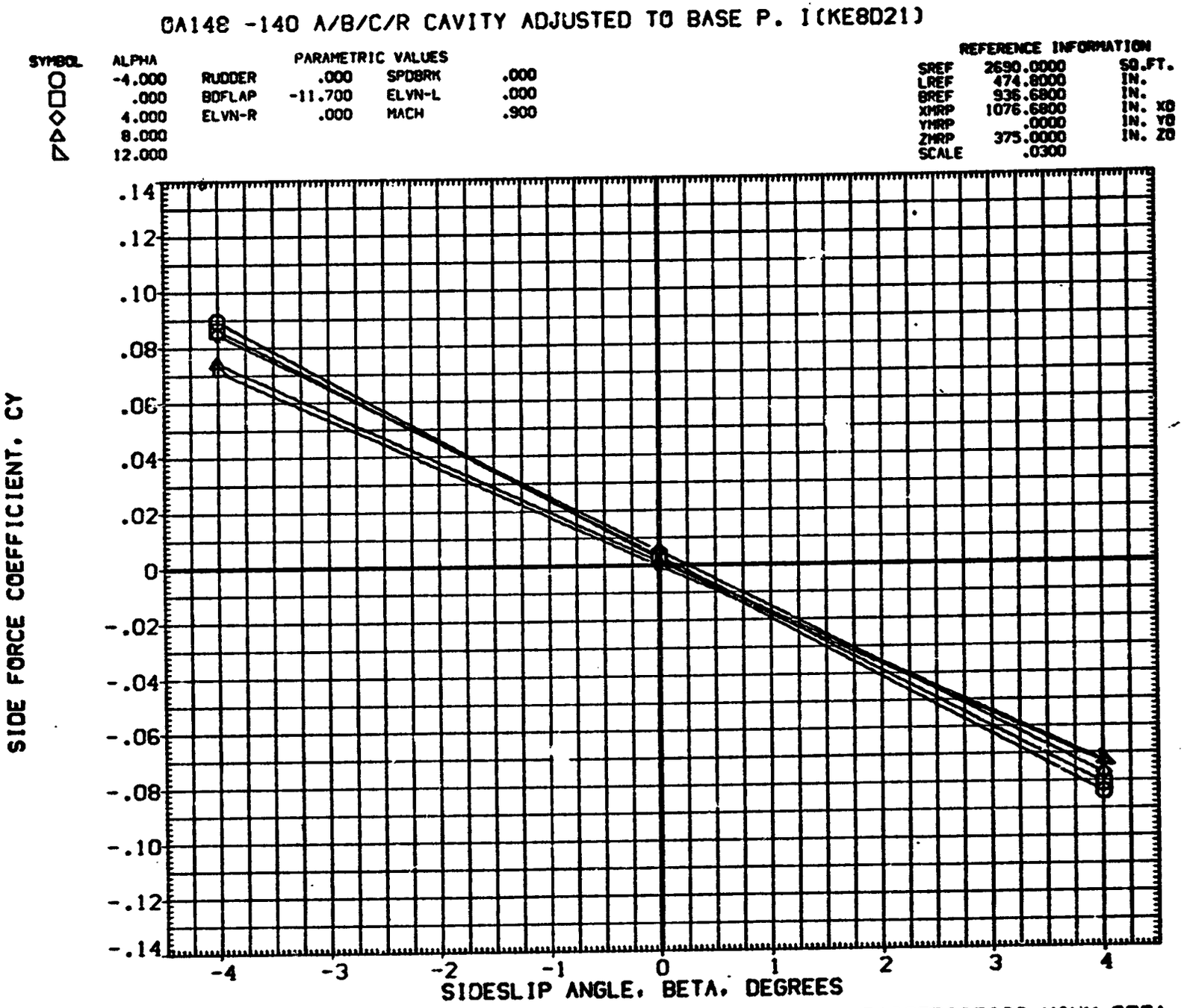


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

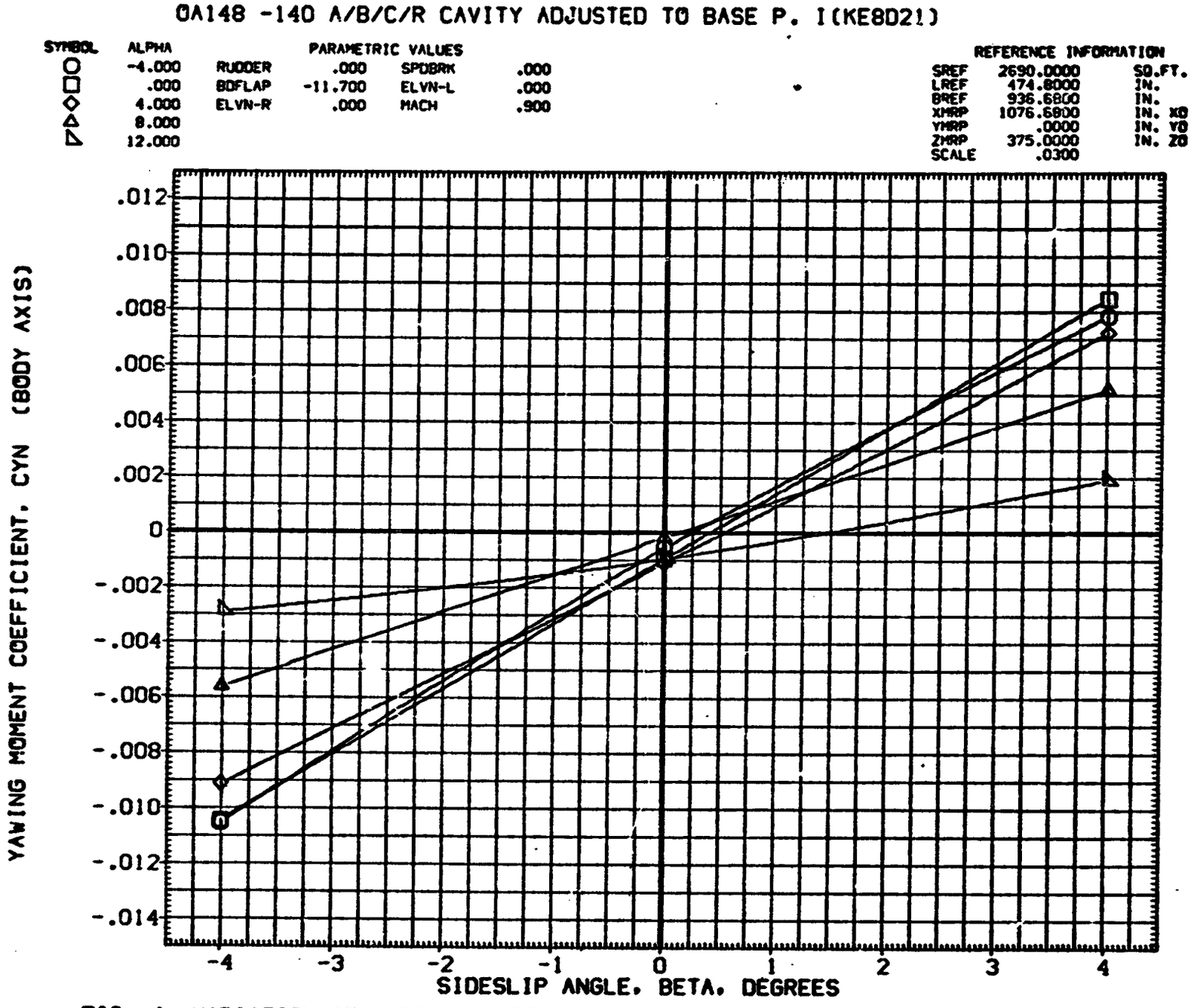


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

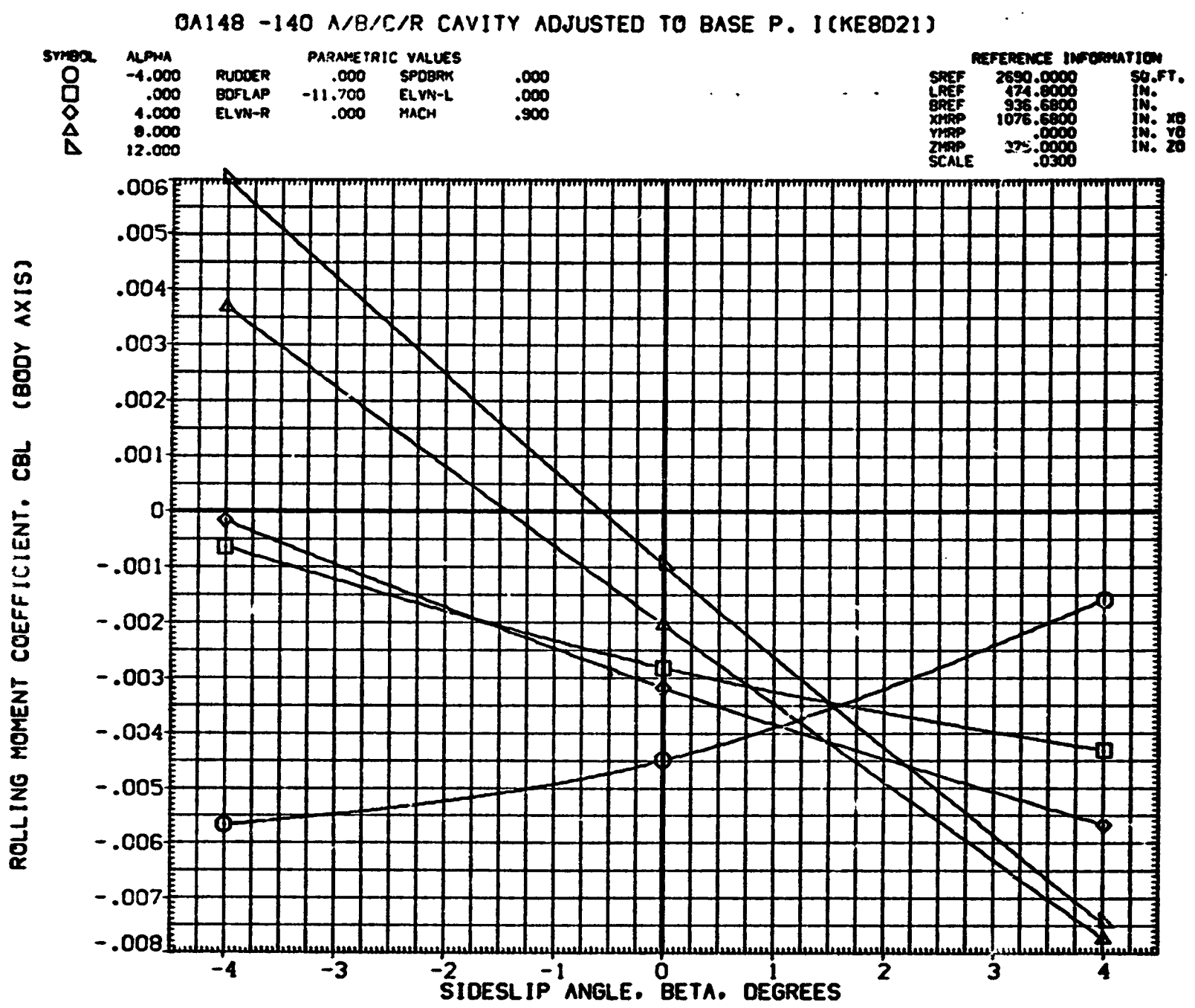


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

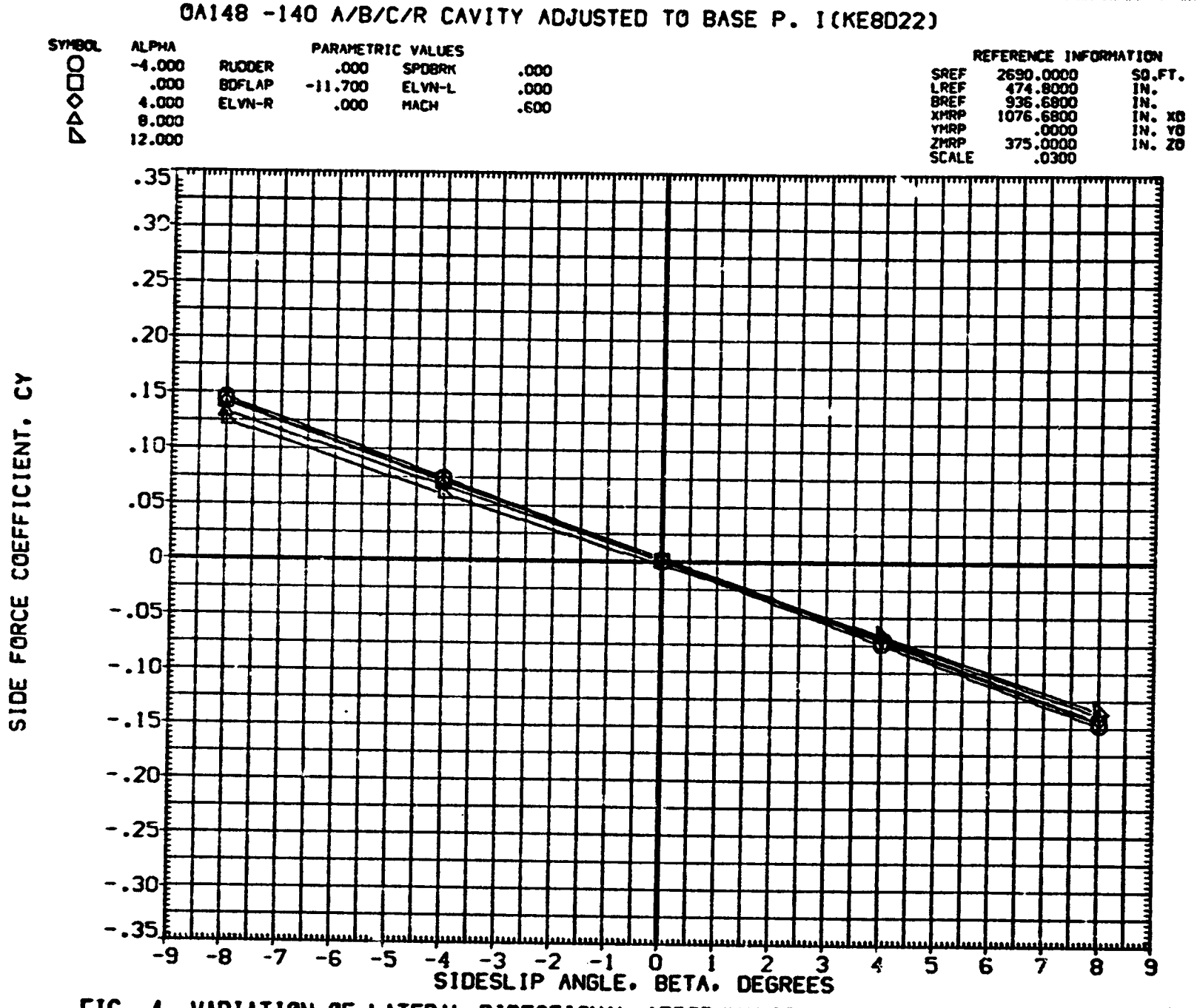


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

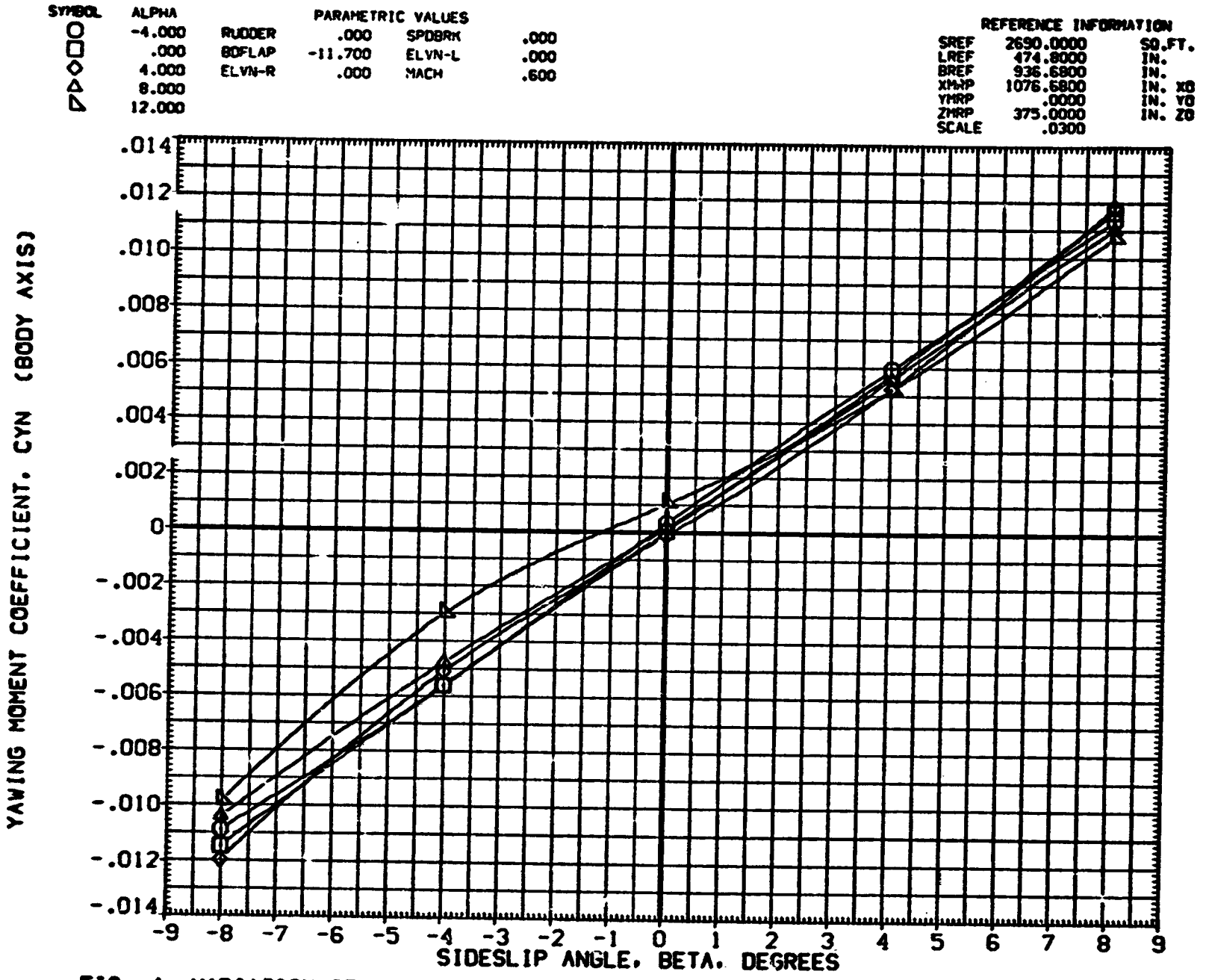


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

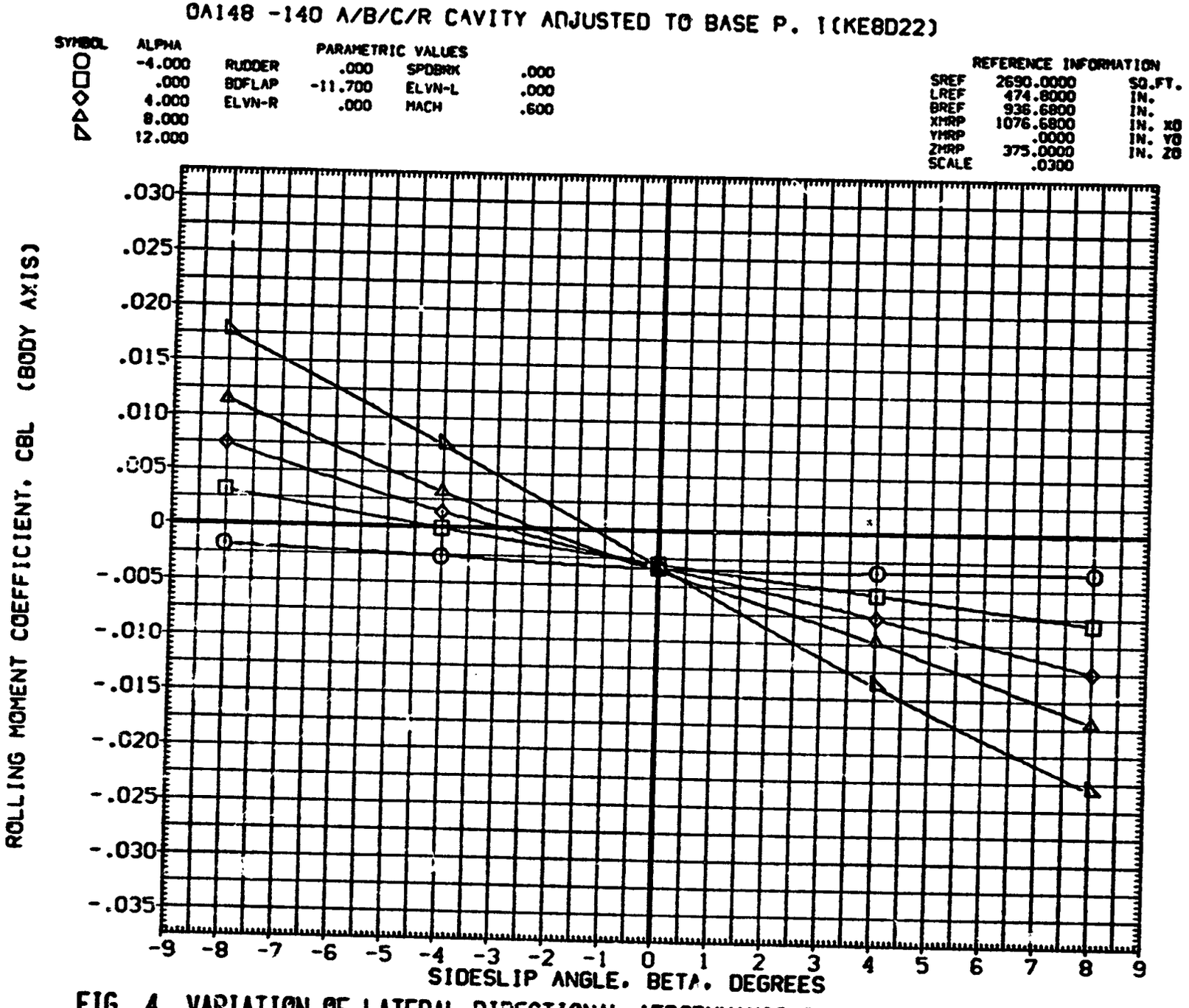


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

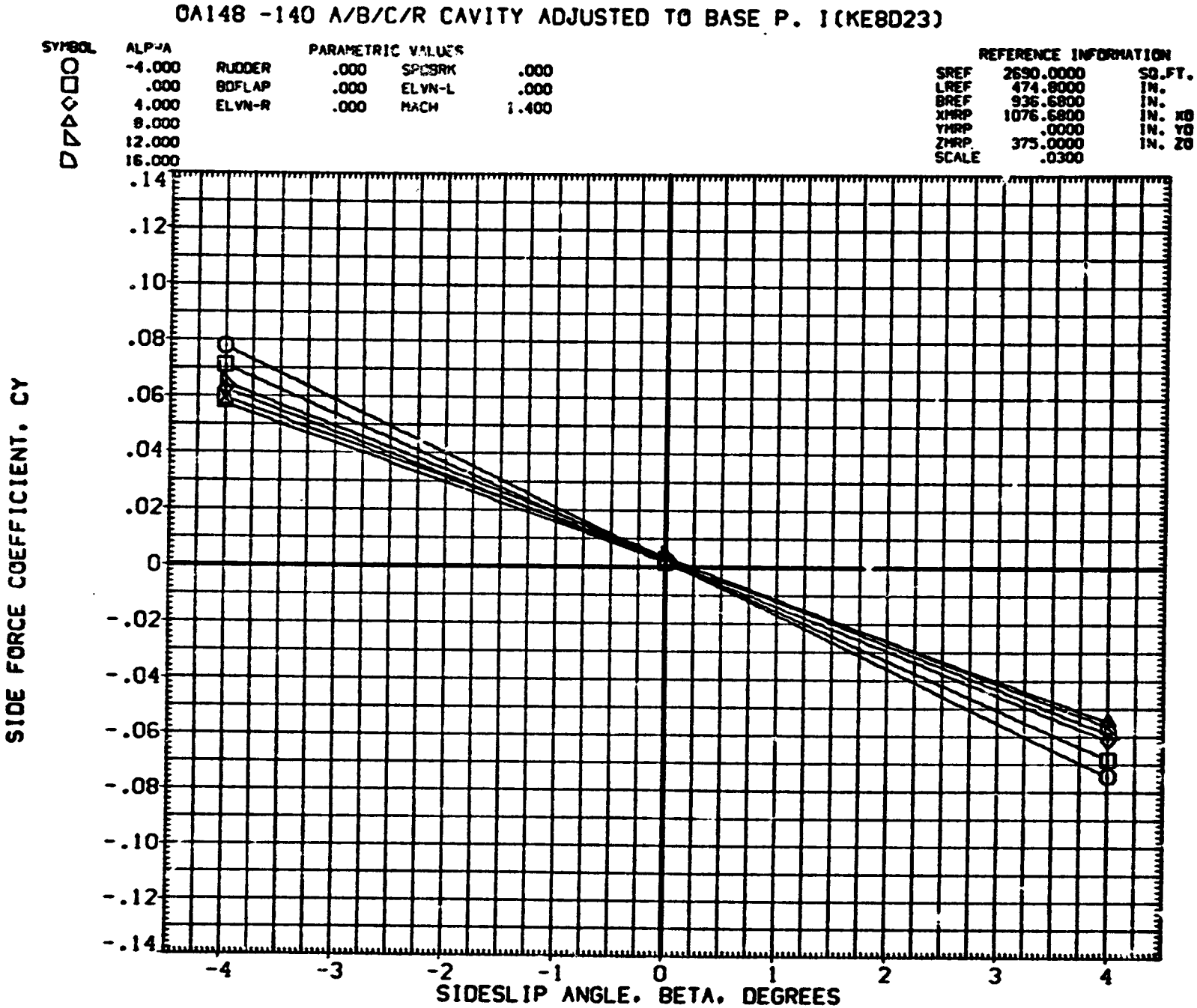


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

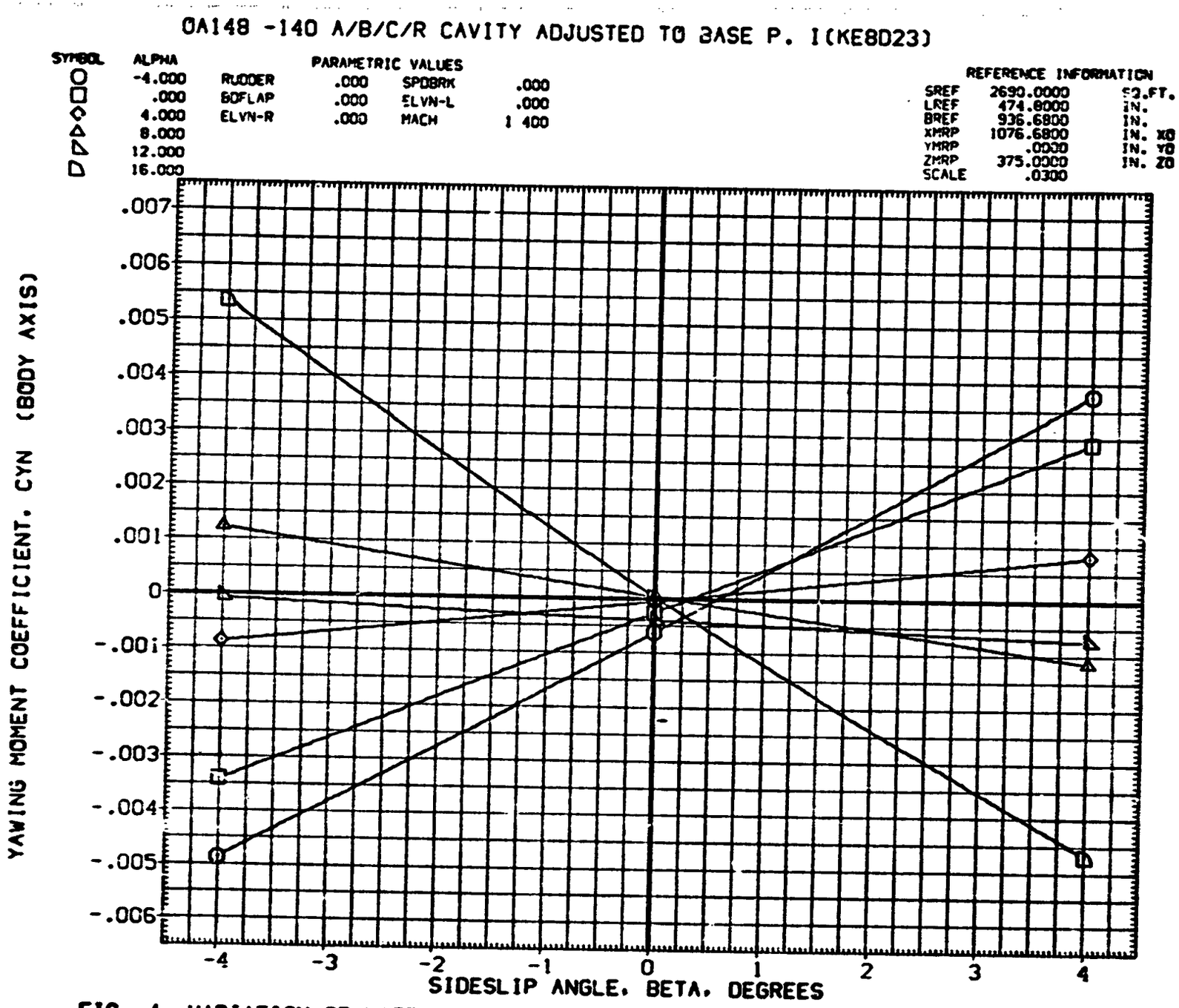


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

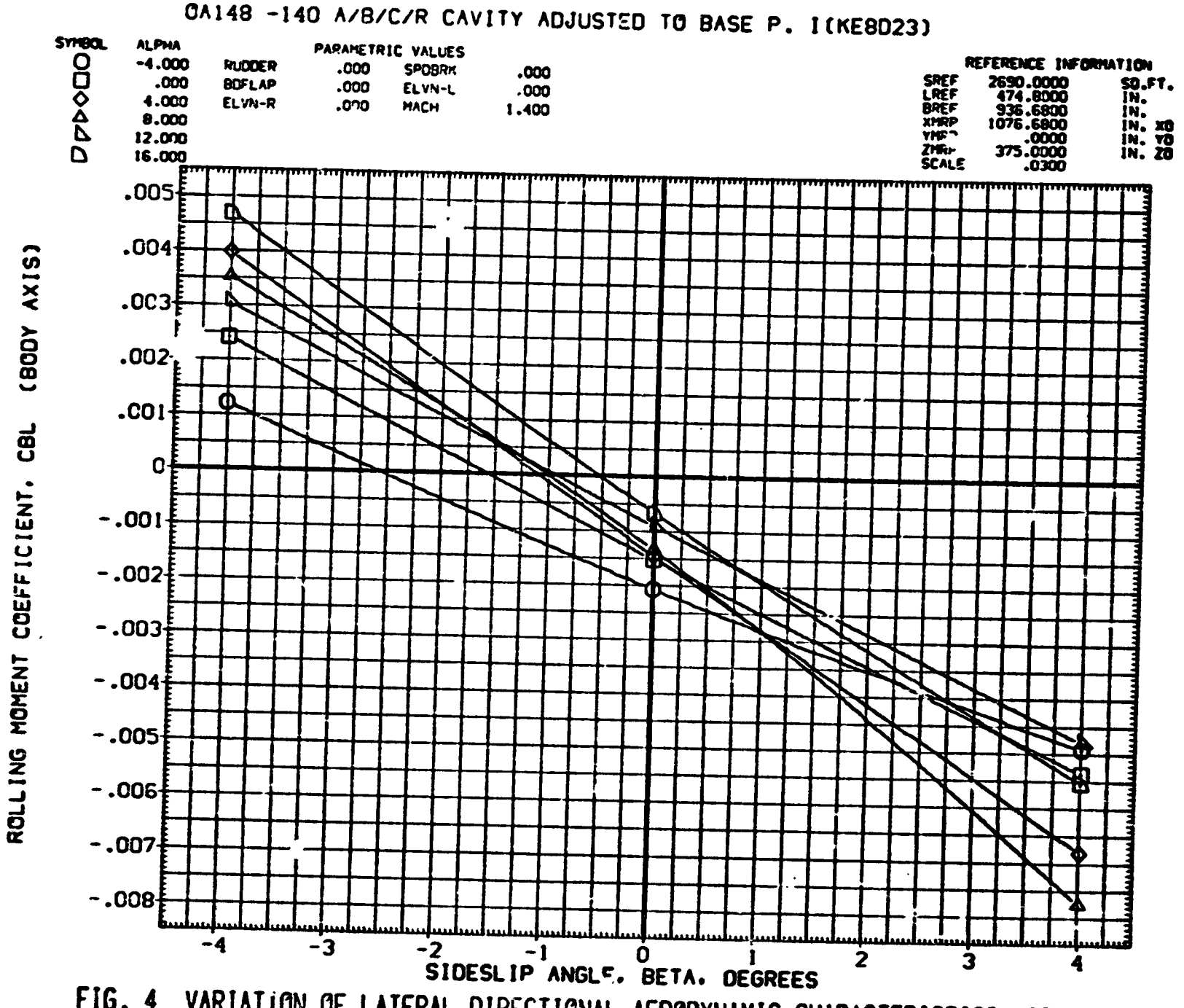


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D24)

SYMBOL	ALPHA		PARAMETRIC VALUES		
O	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BOFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250
△	8.000				
	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

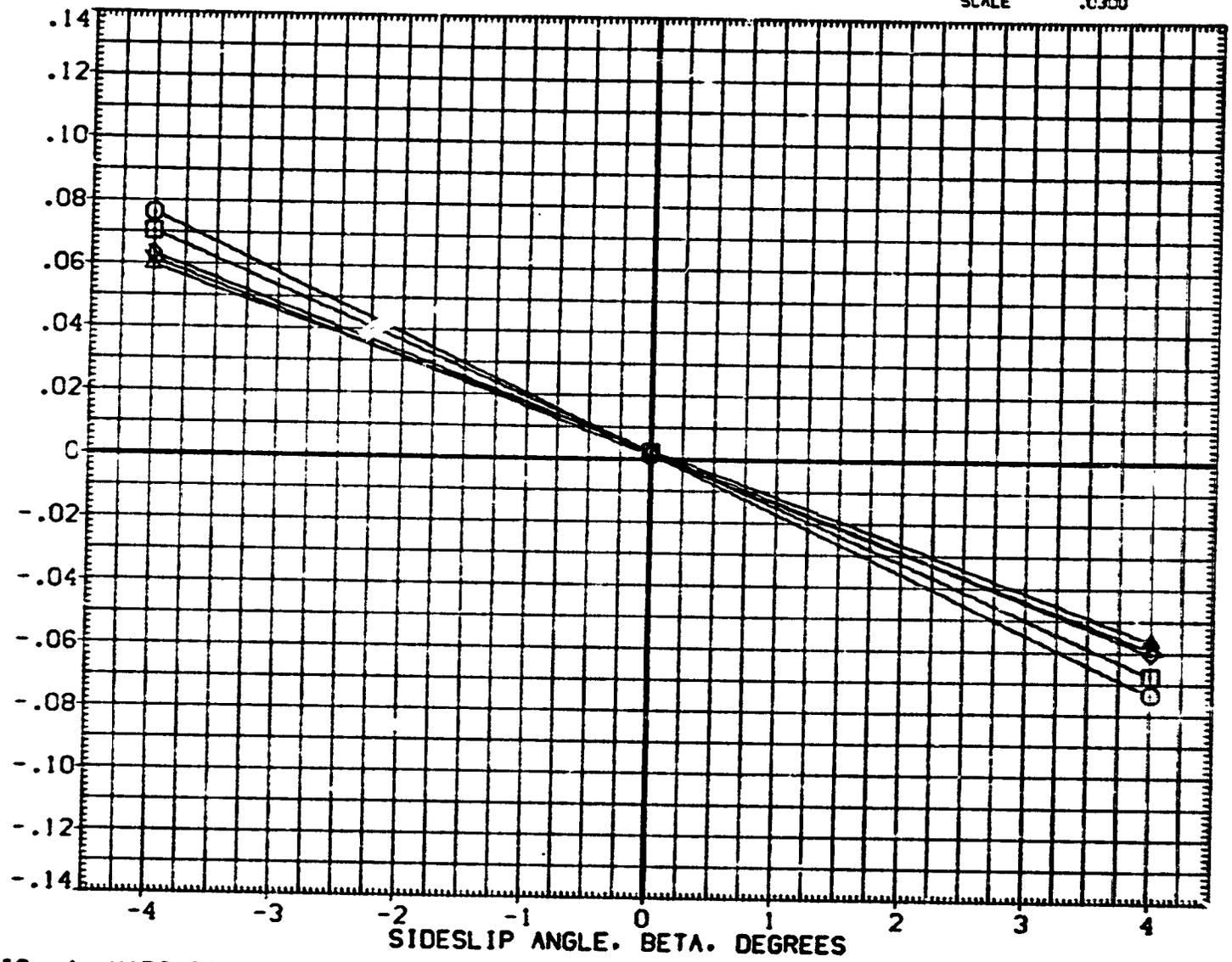


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

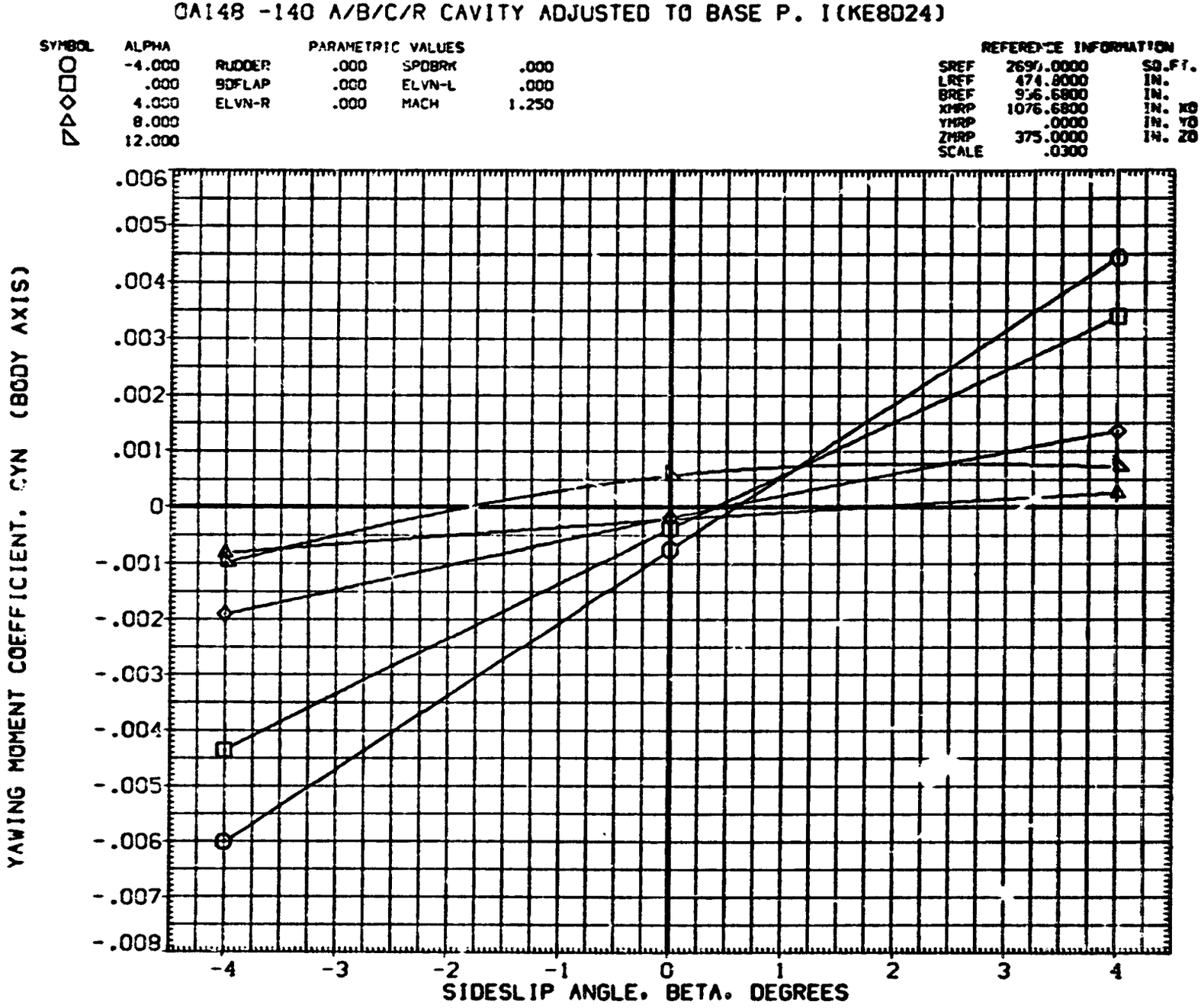


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

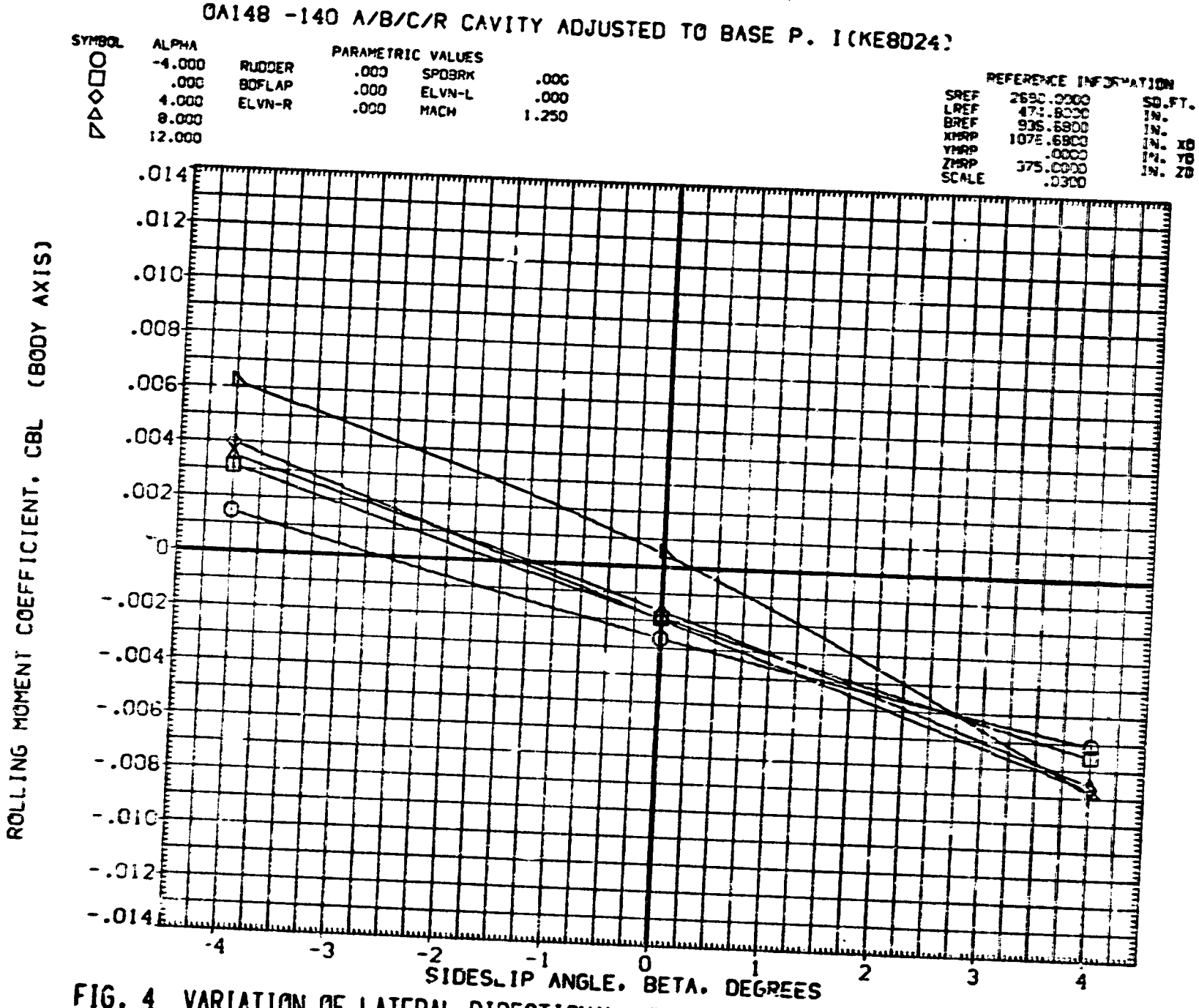


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

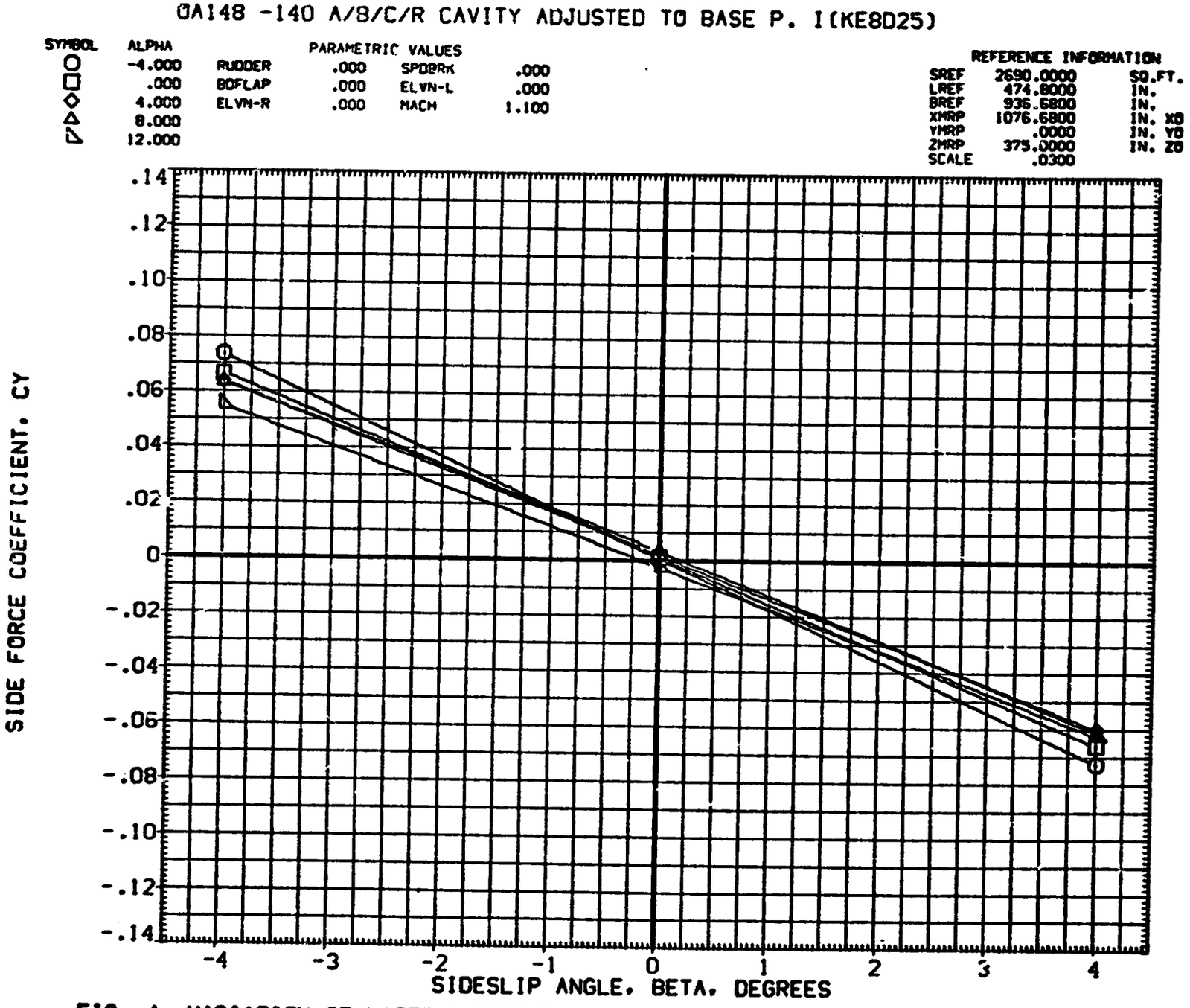


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

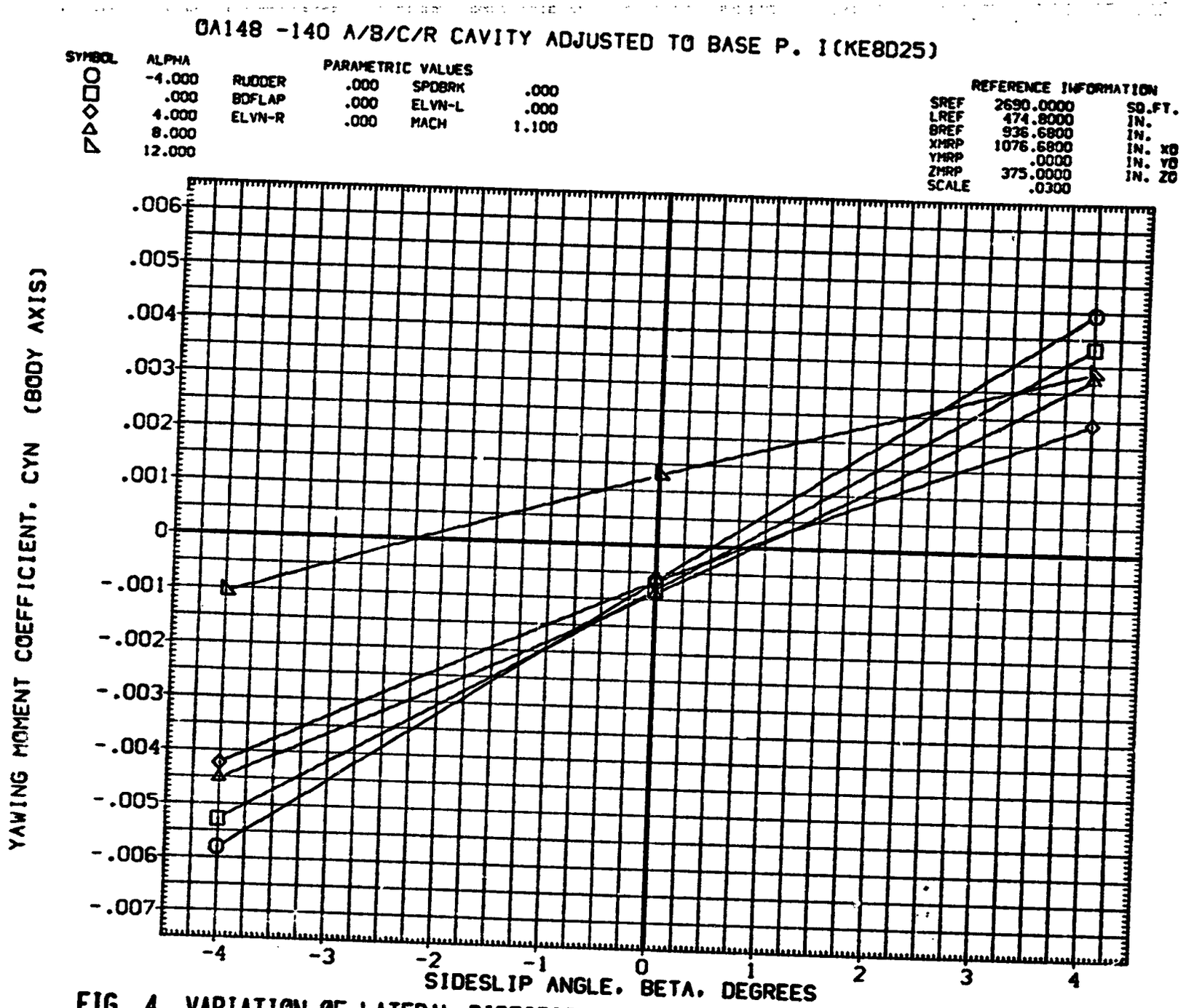


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

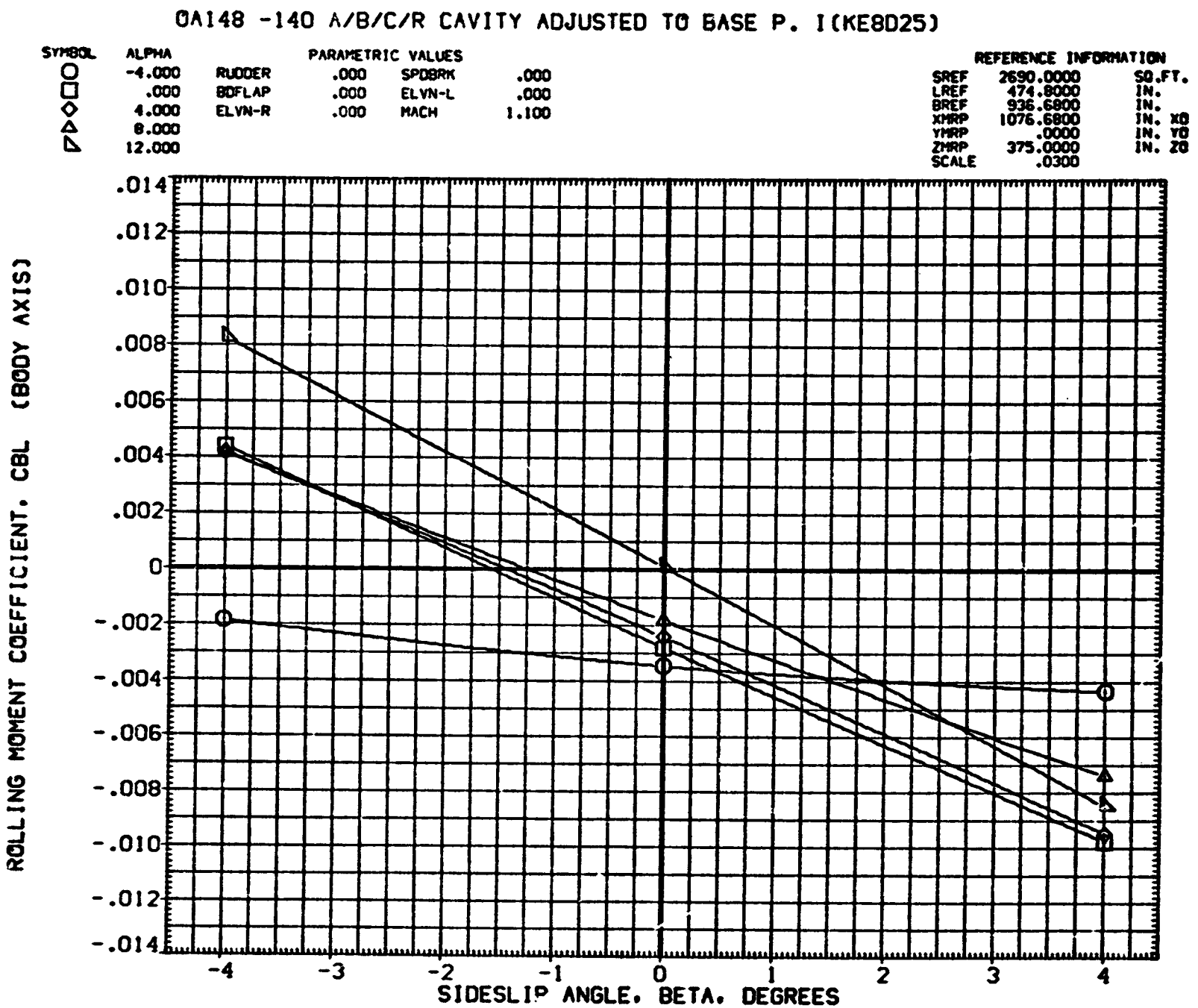


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

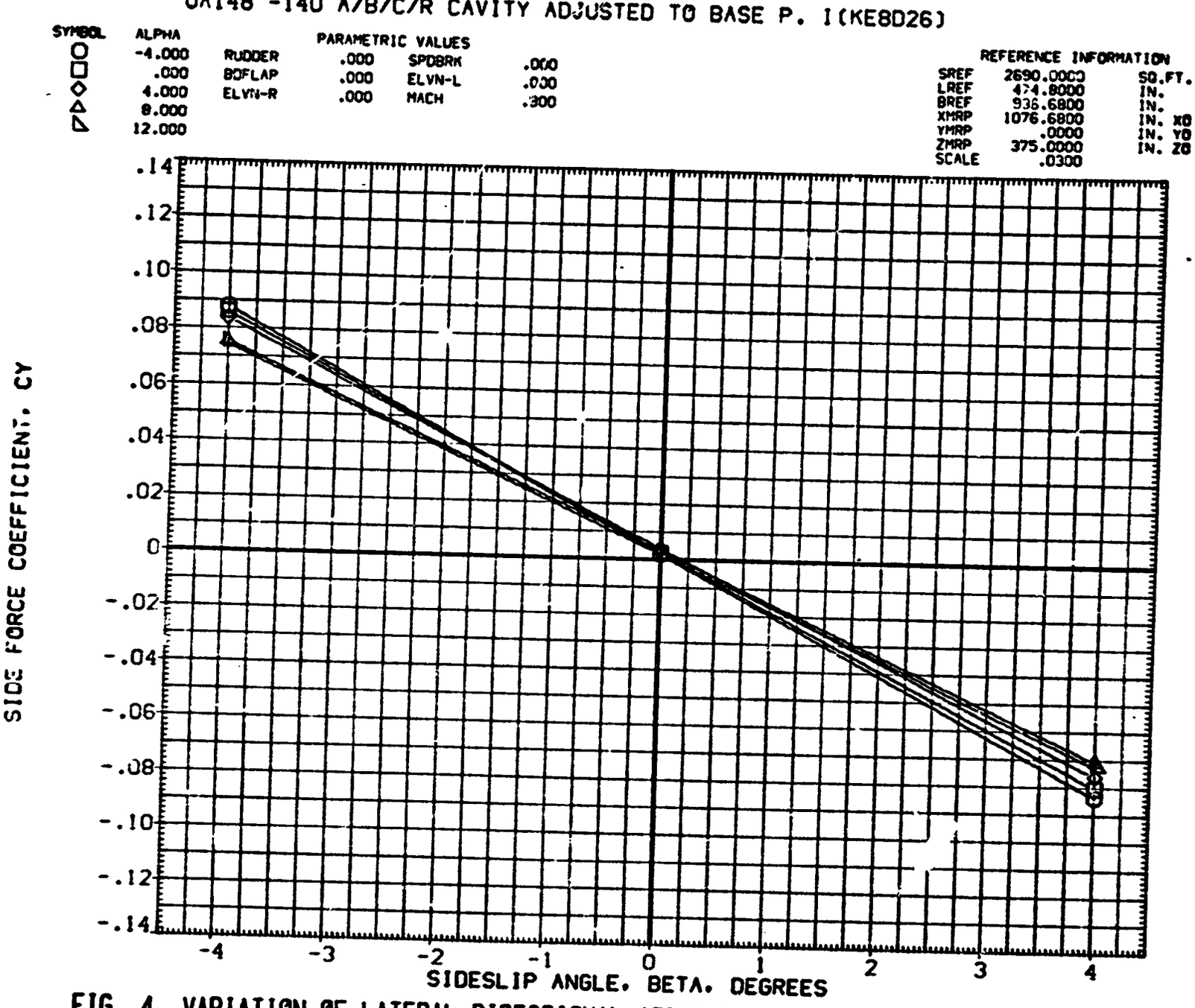


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

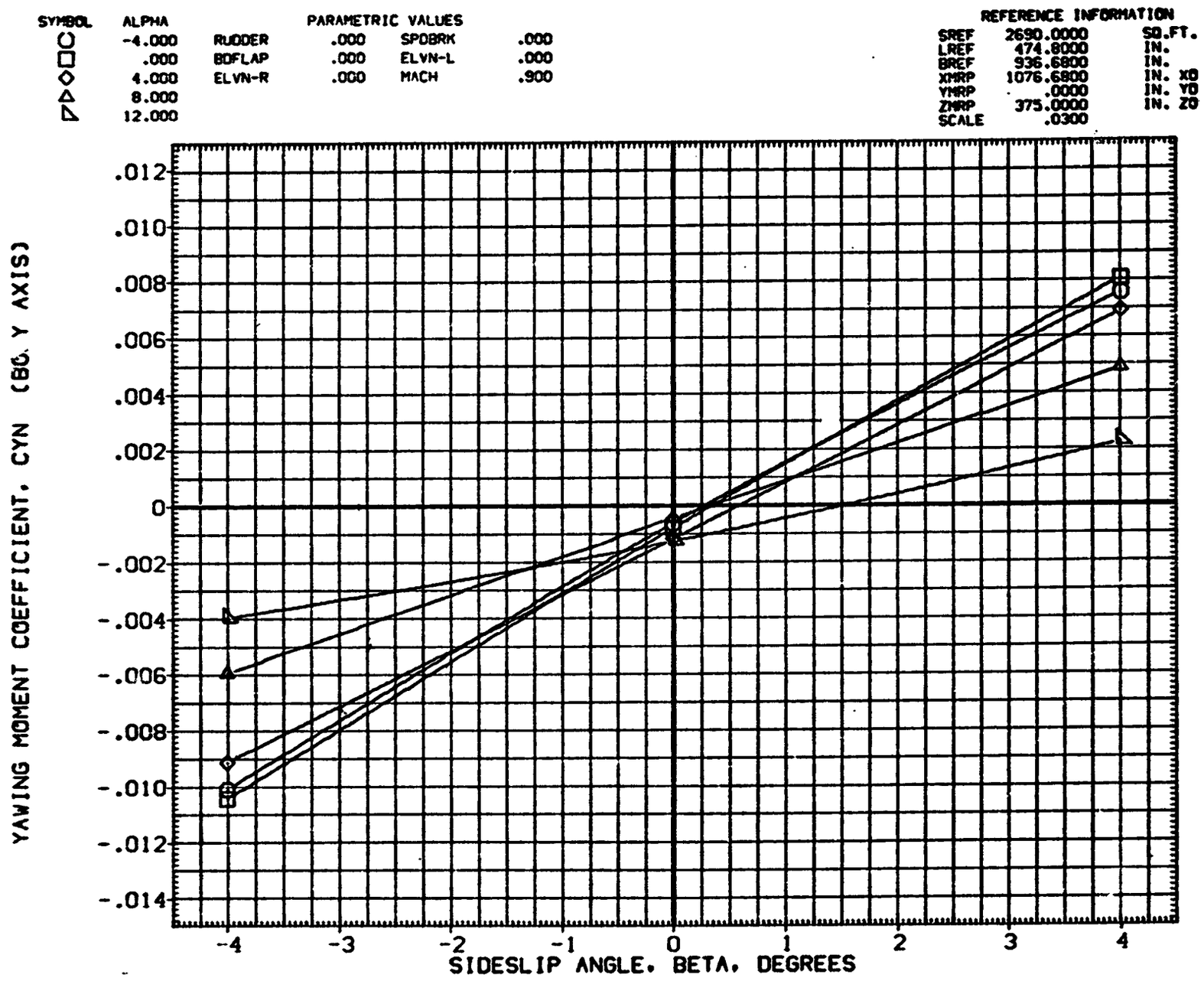


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

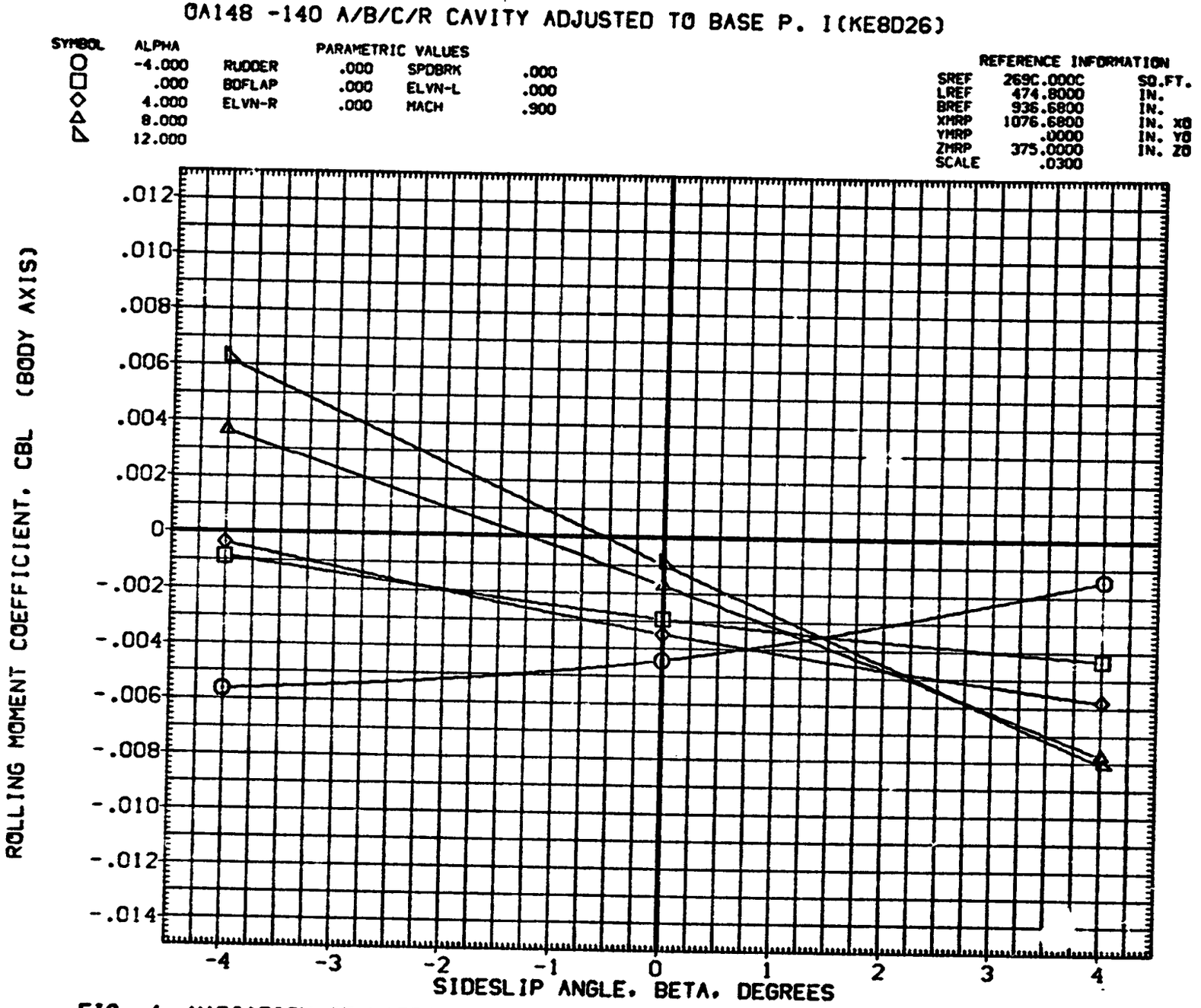


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

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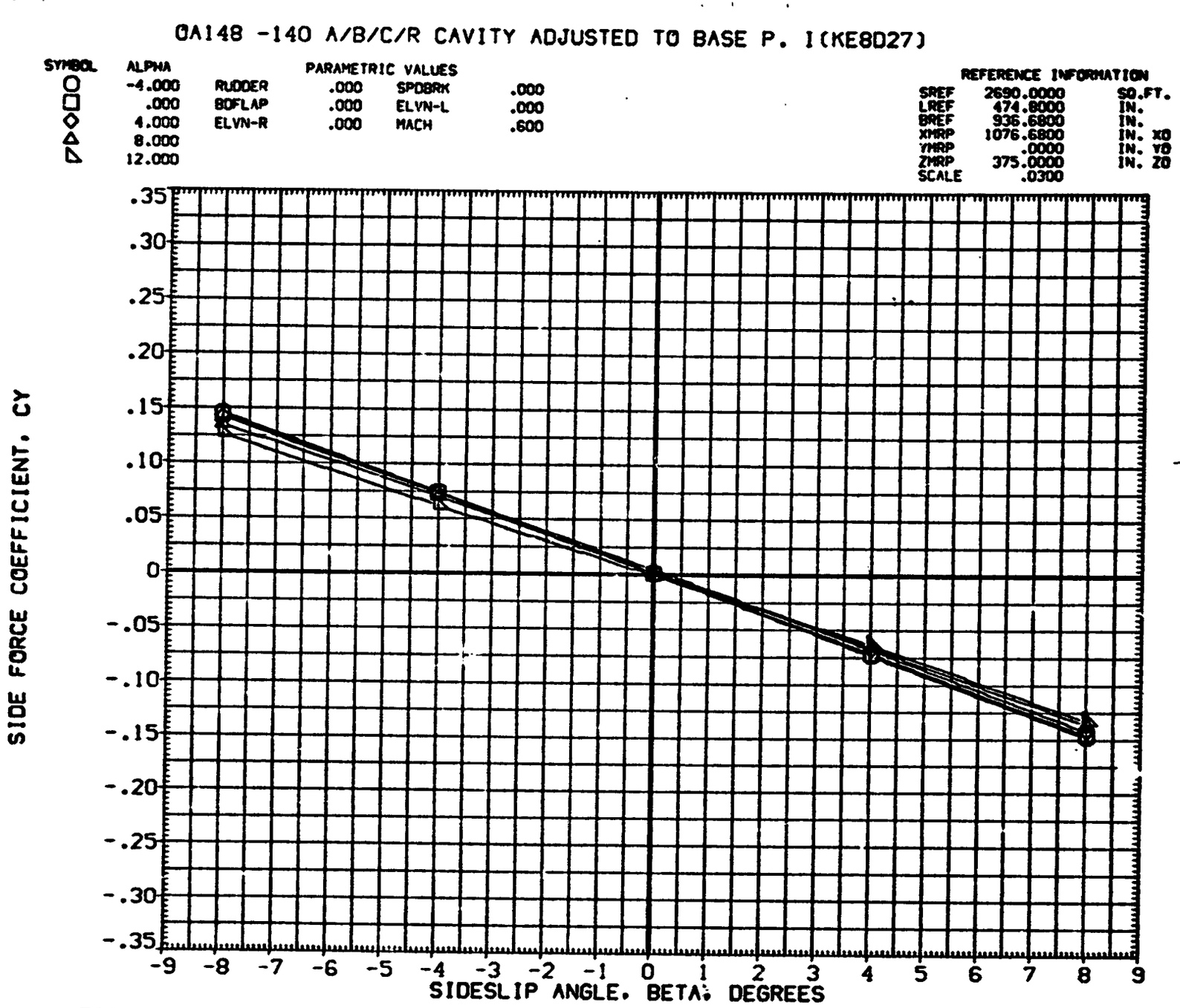


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

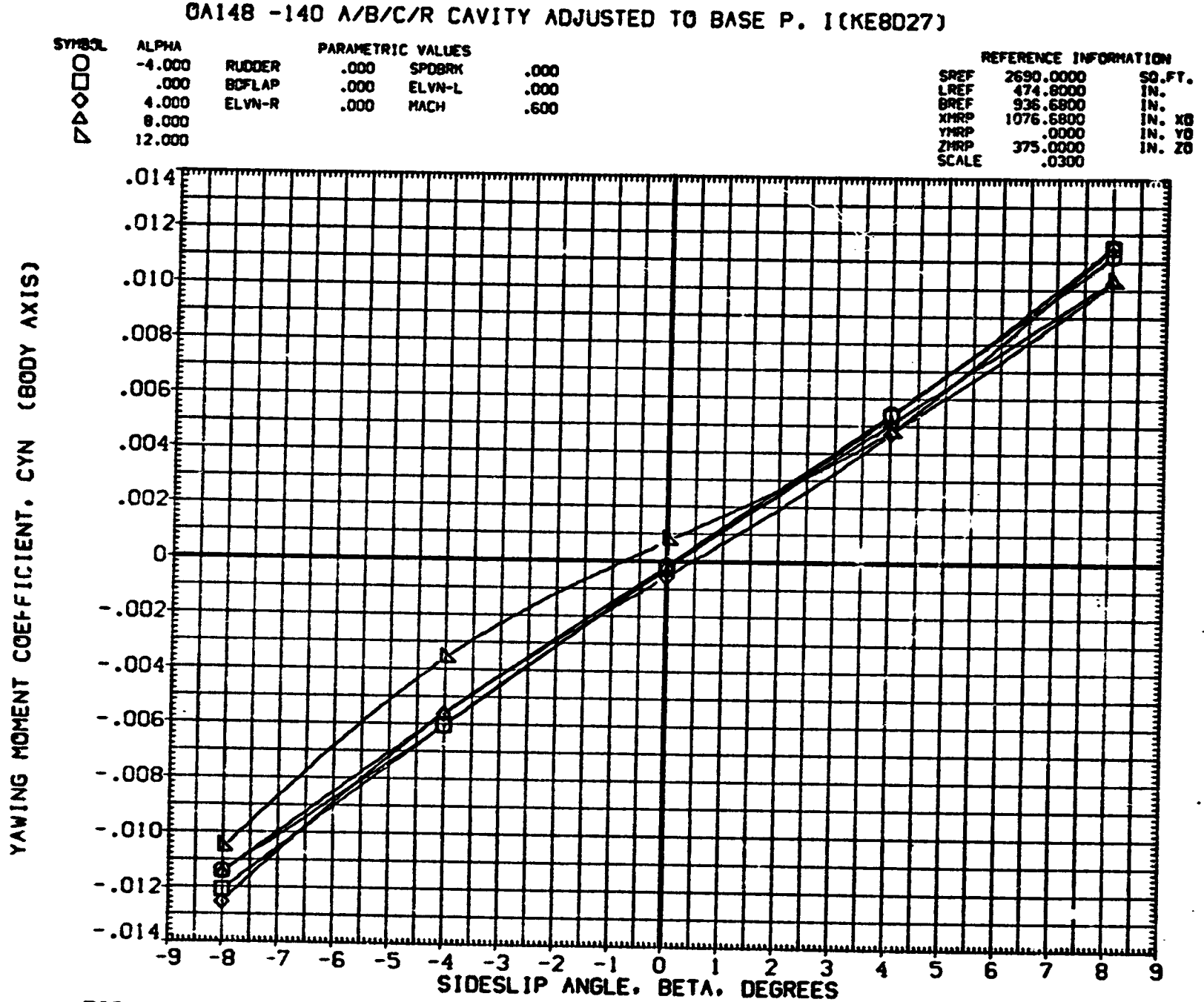


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

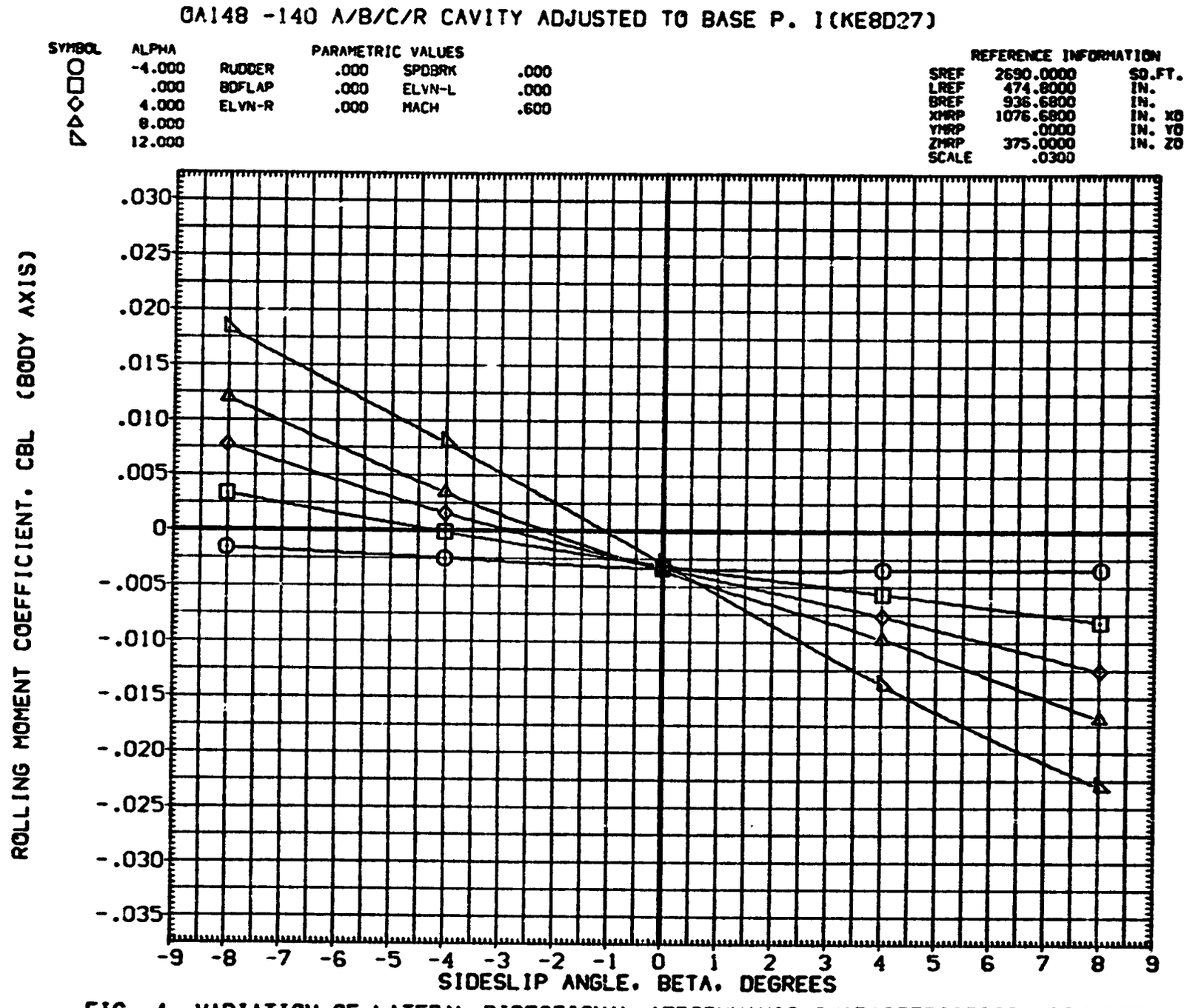


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

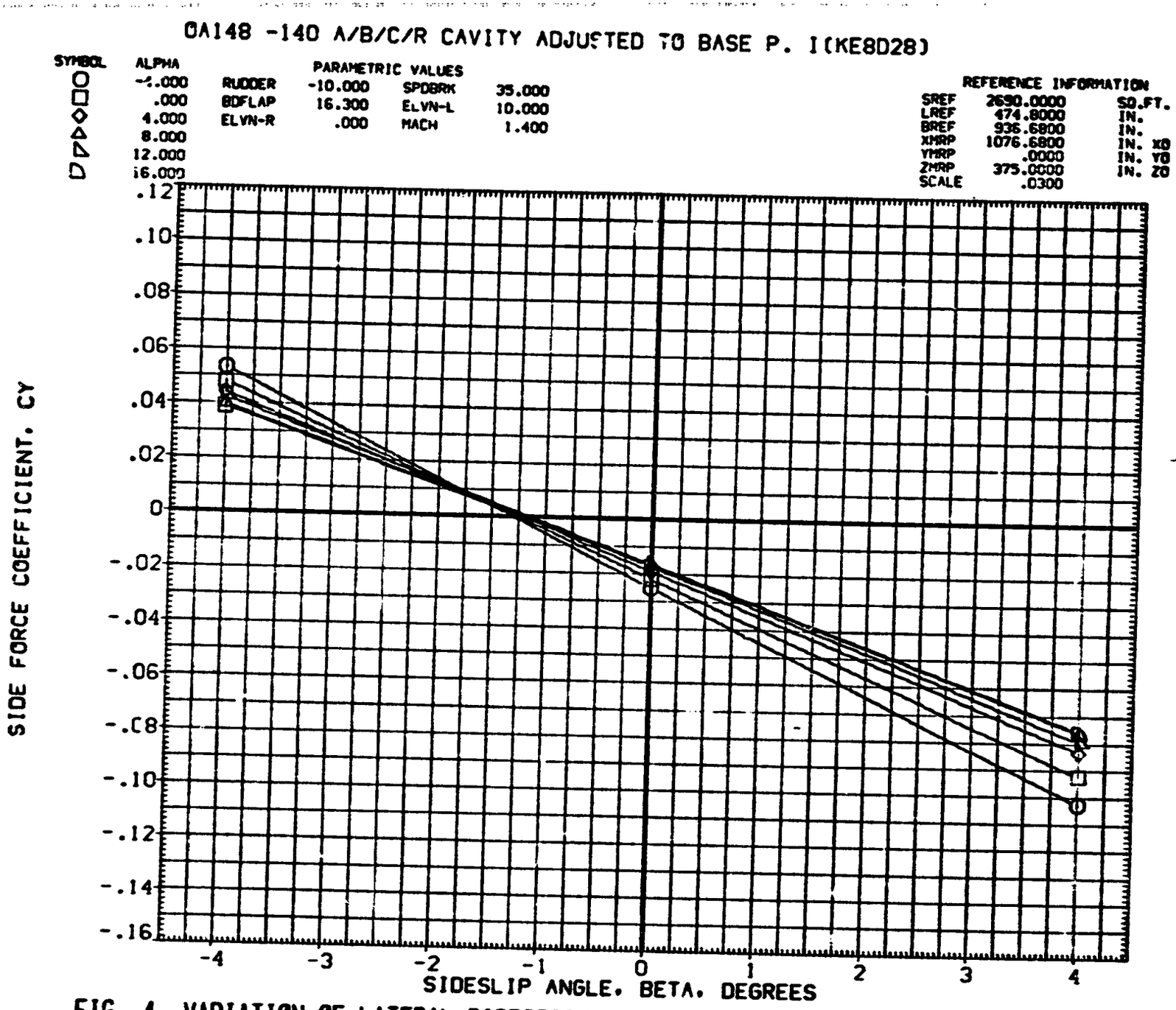


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

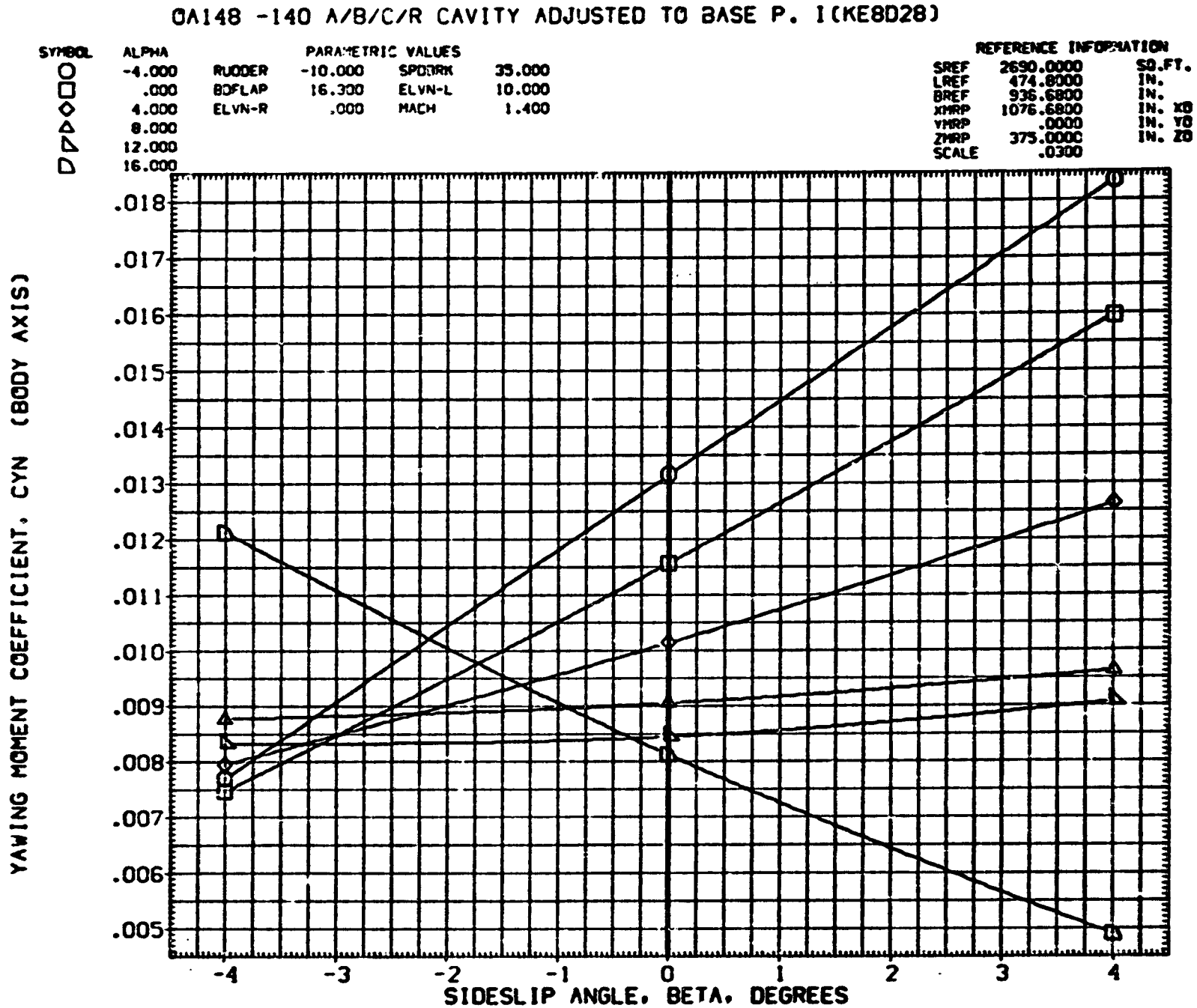


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

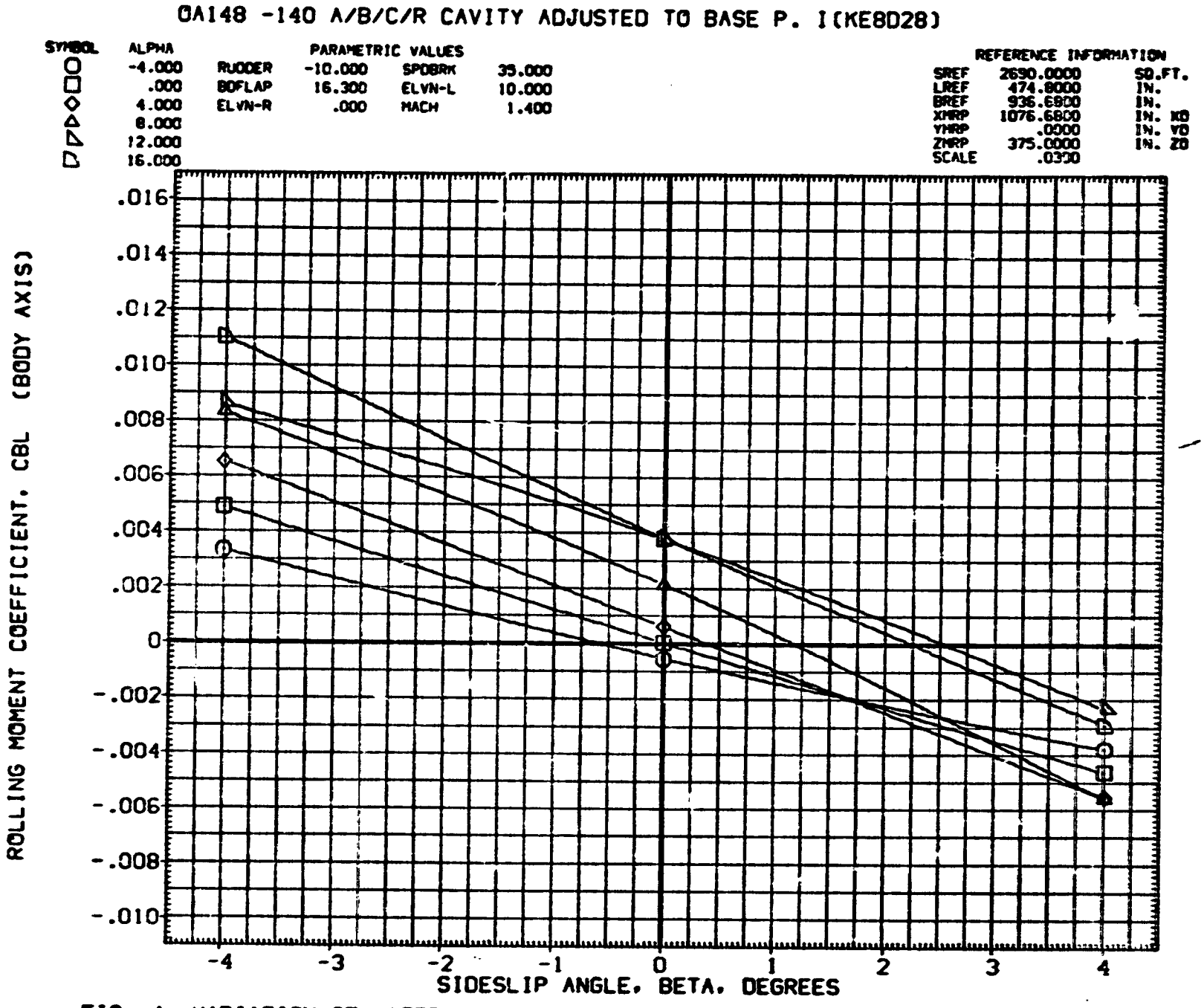


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

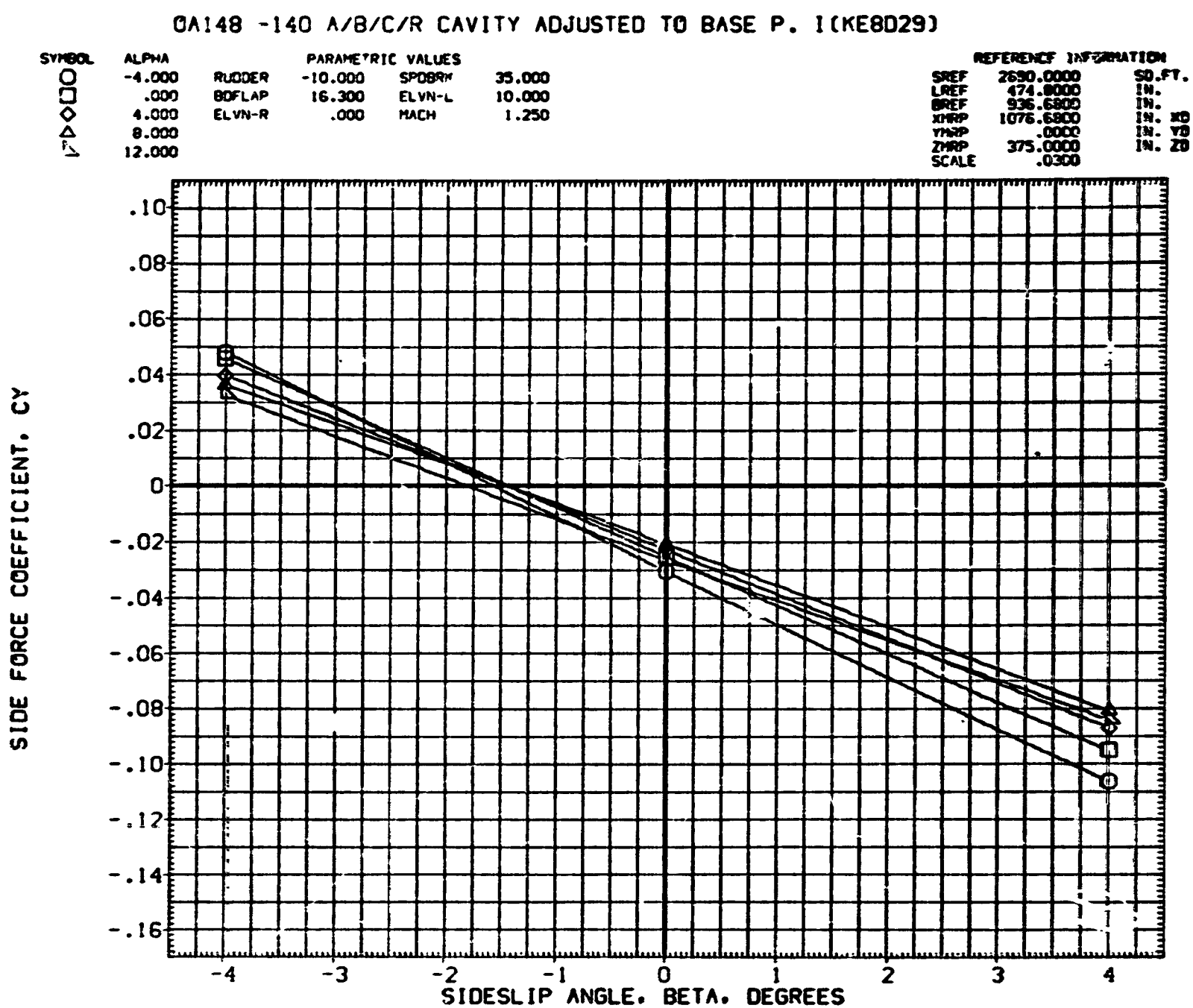


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

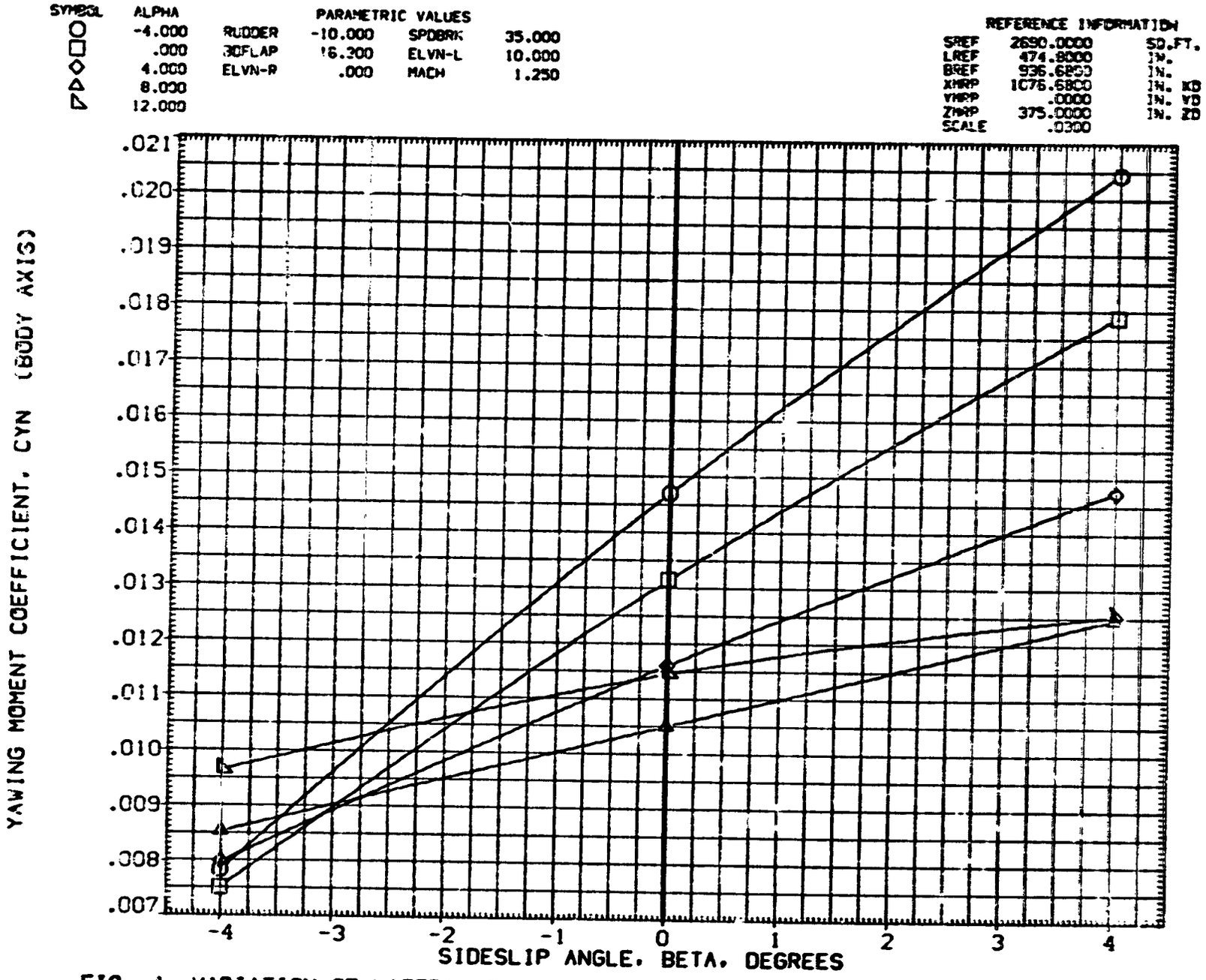


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

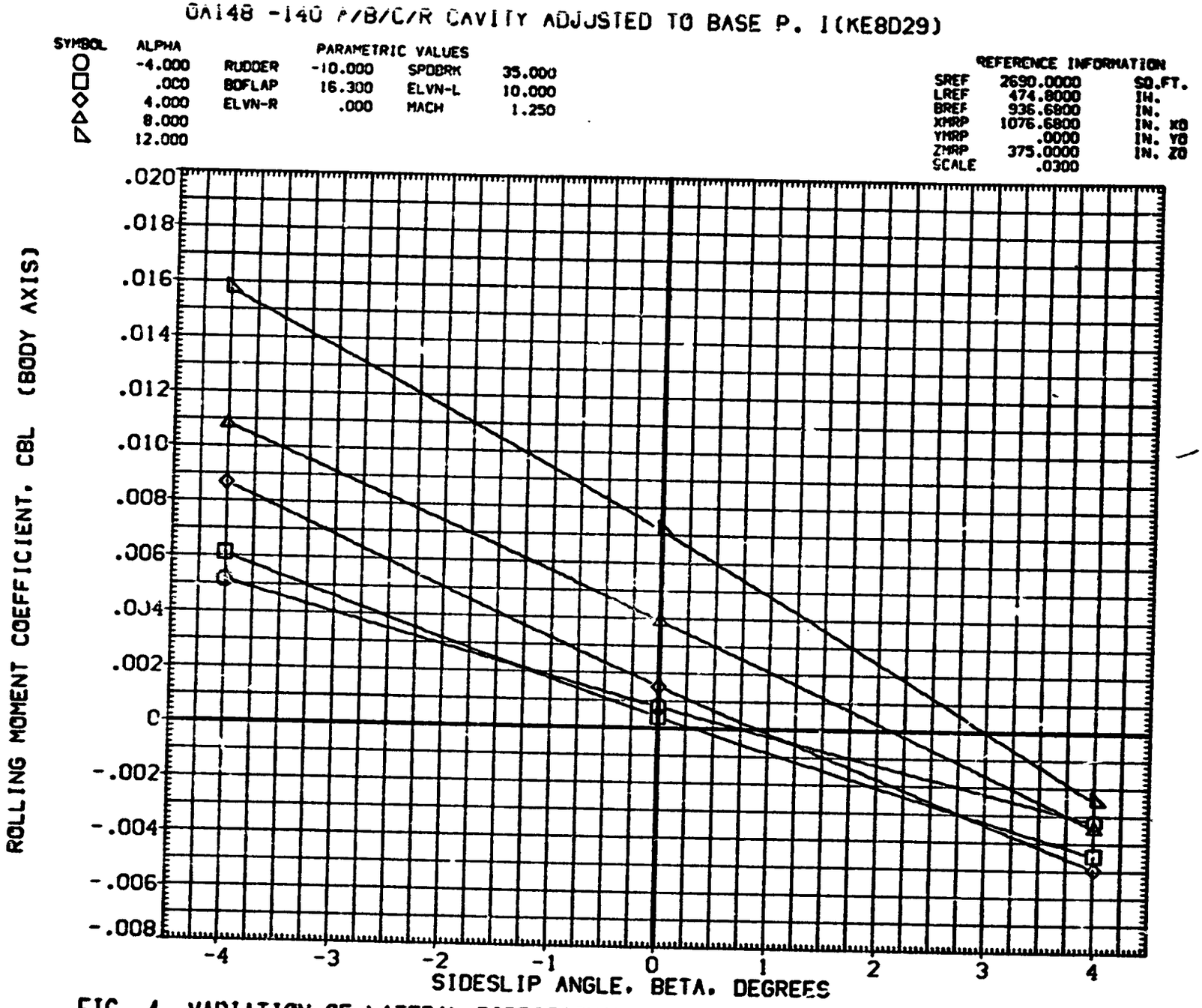


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	.000	MACH	1.100
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

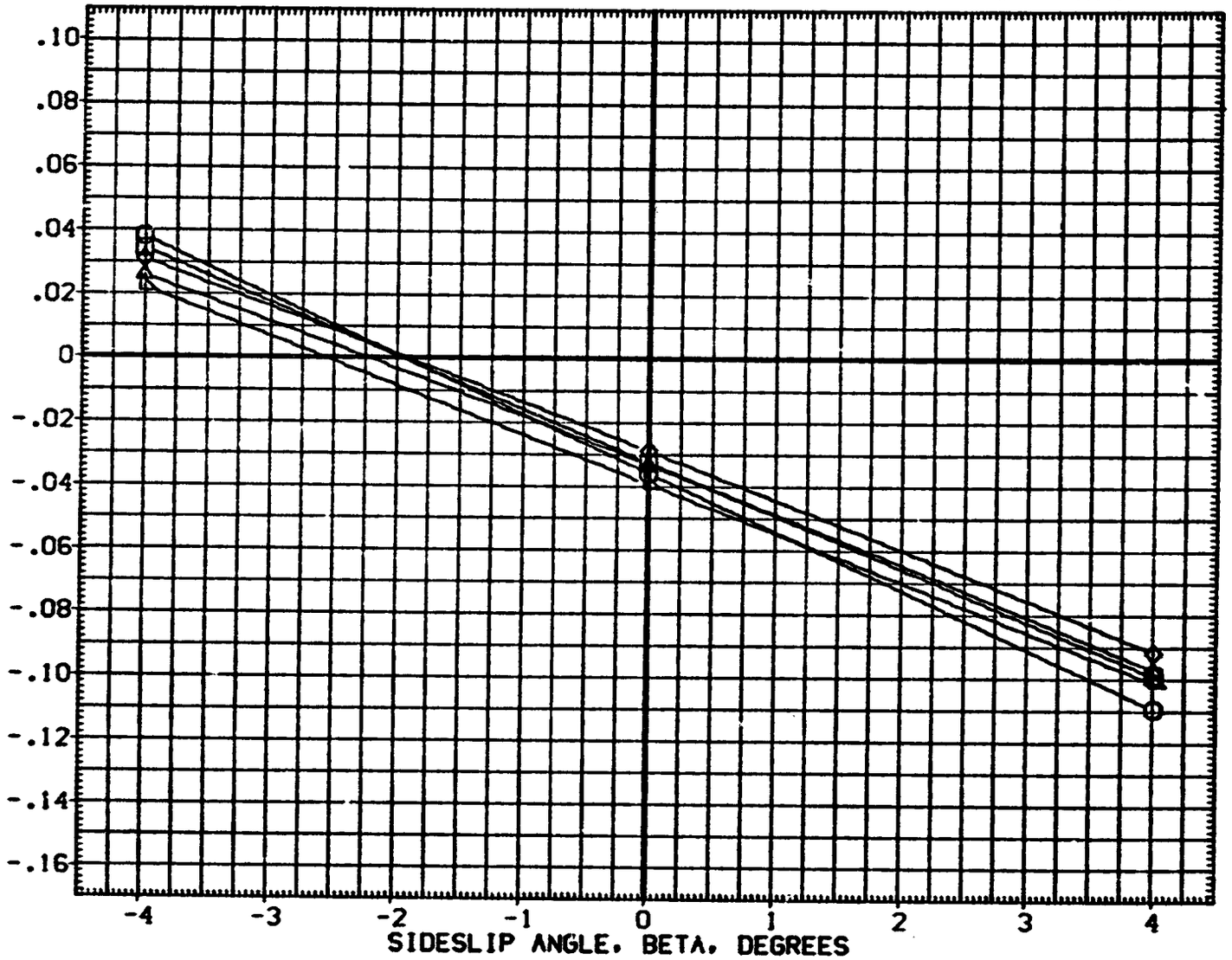


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

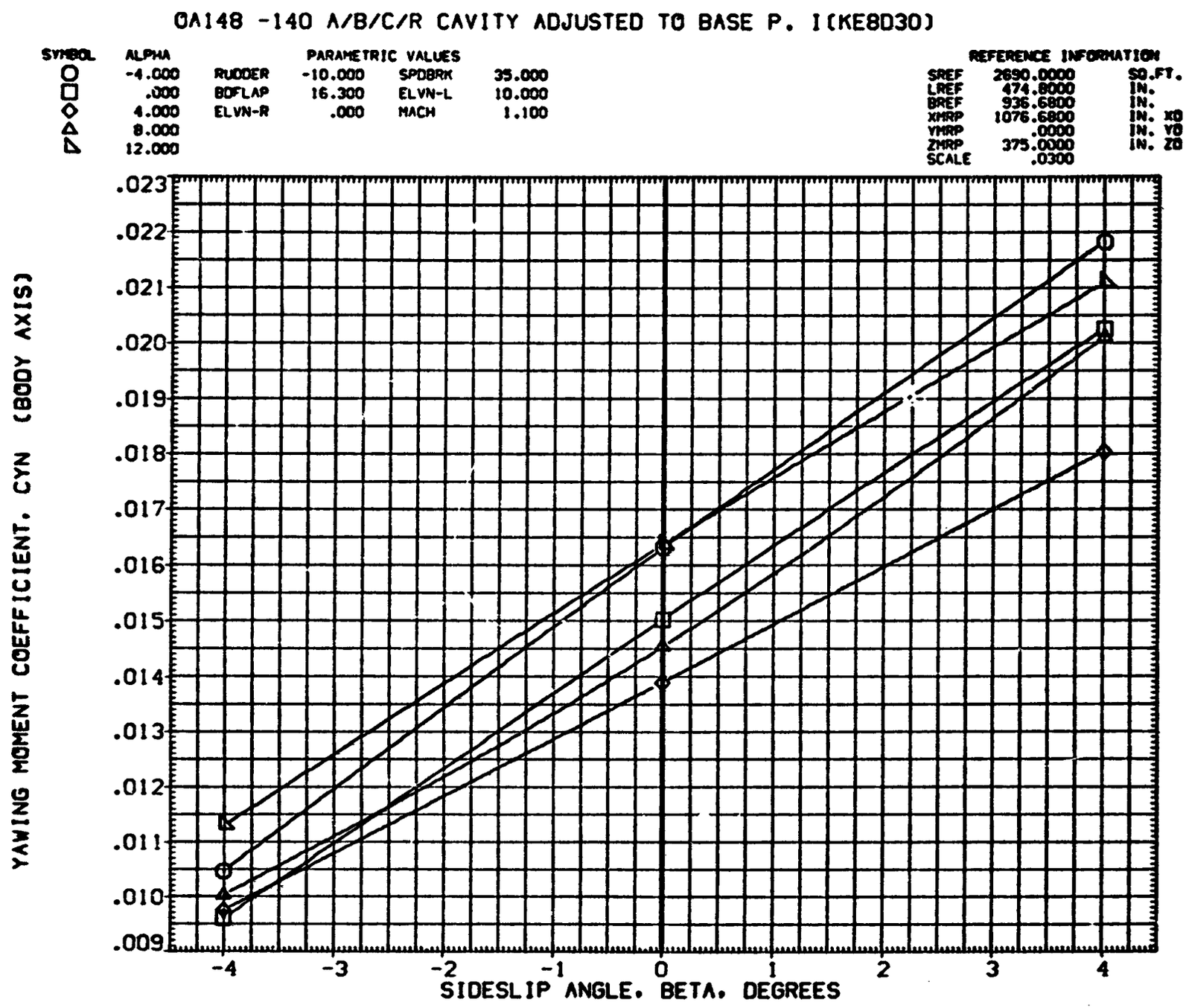


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

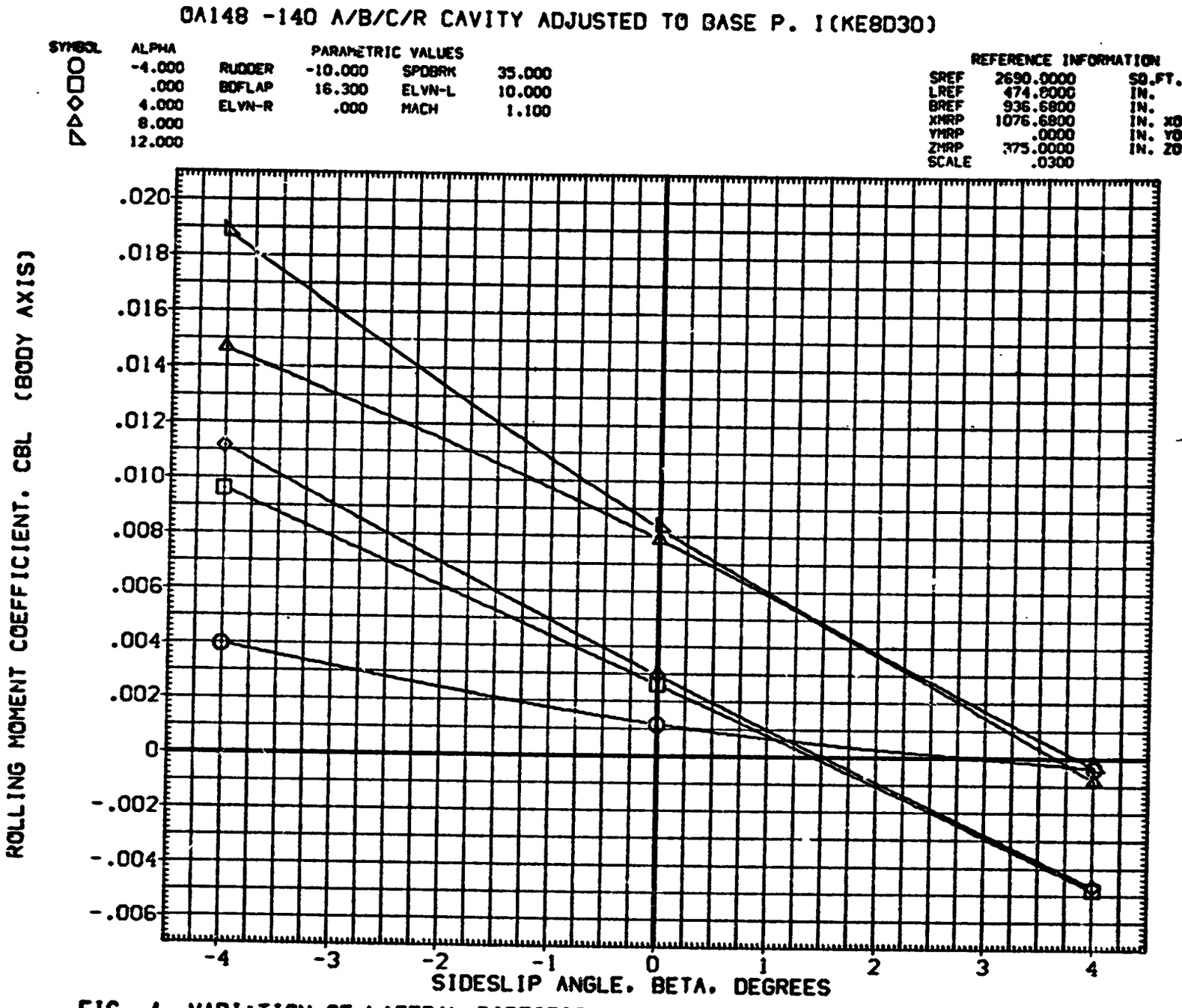


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

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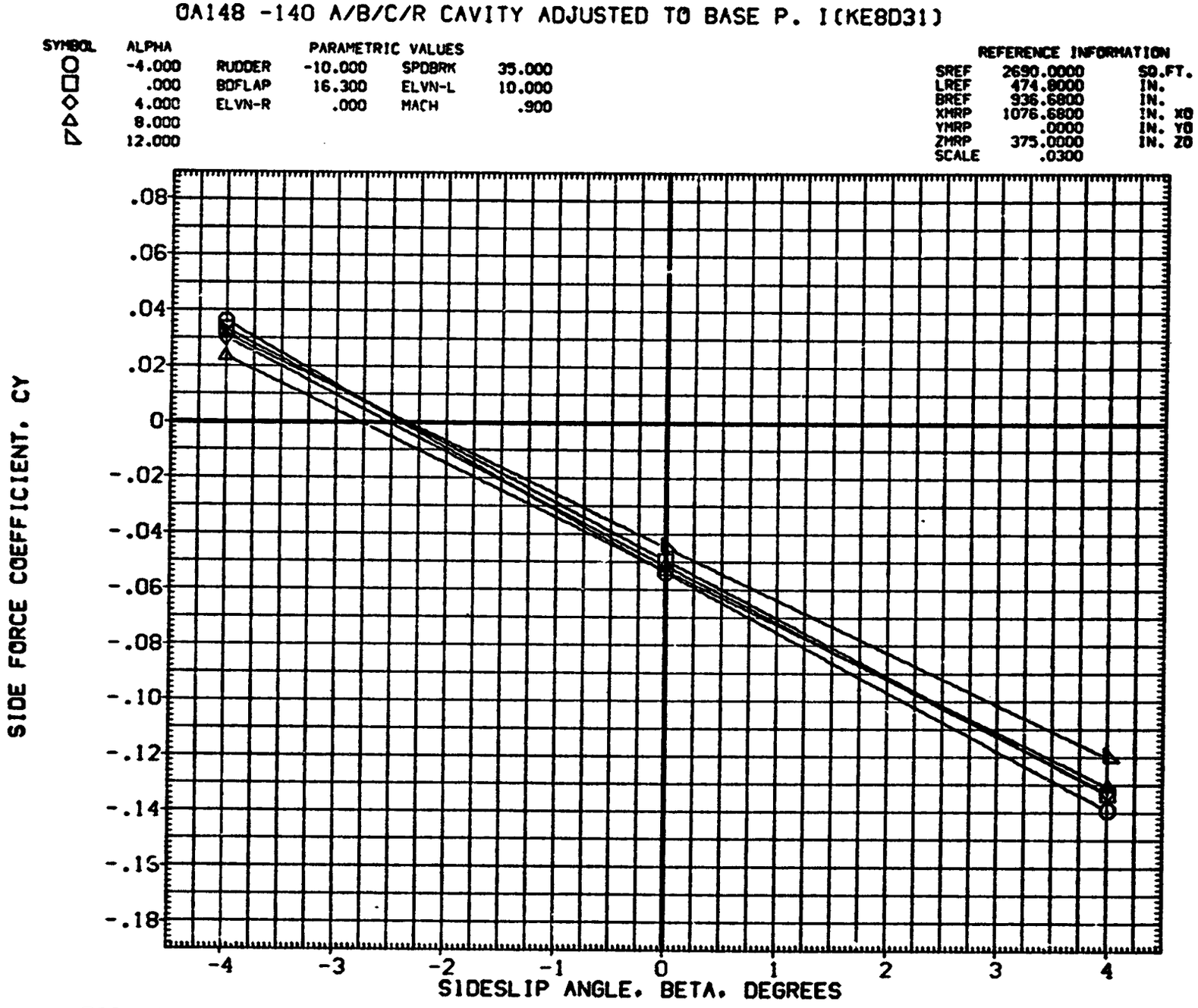


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

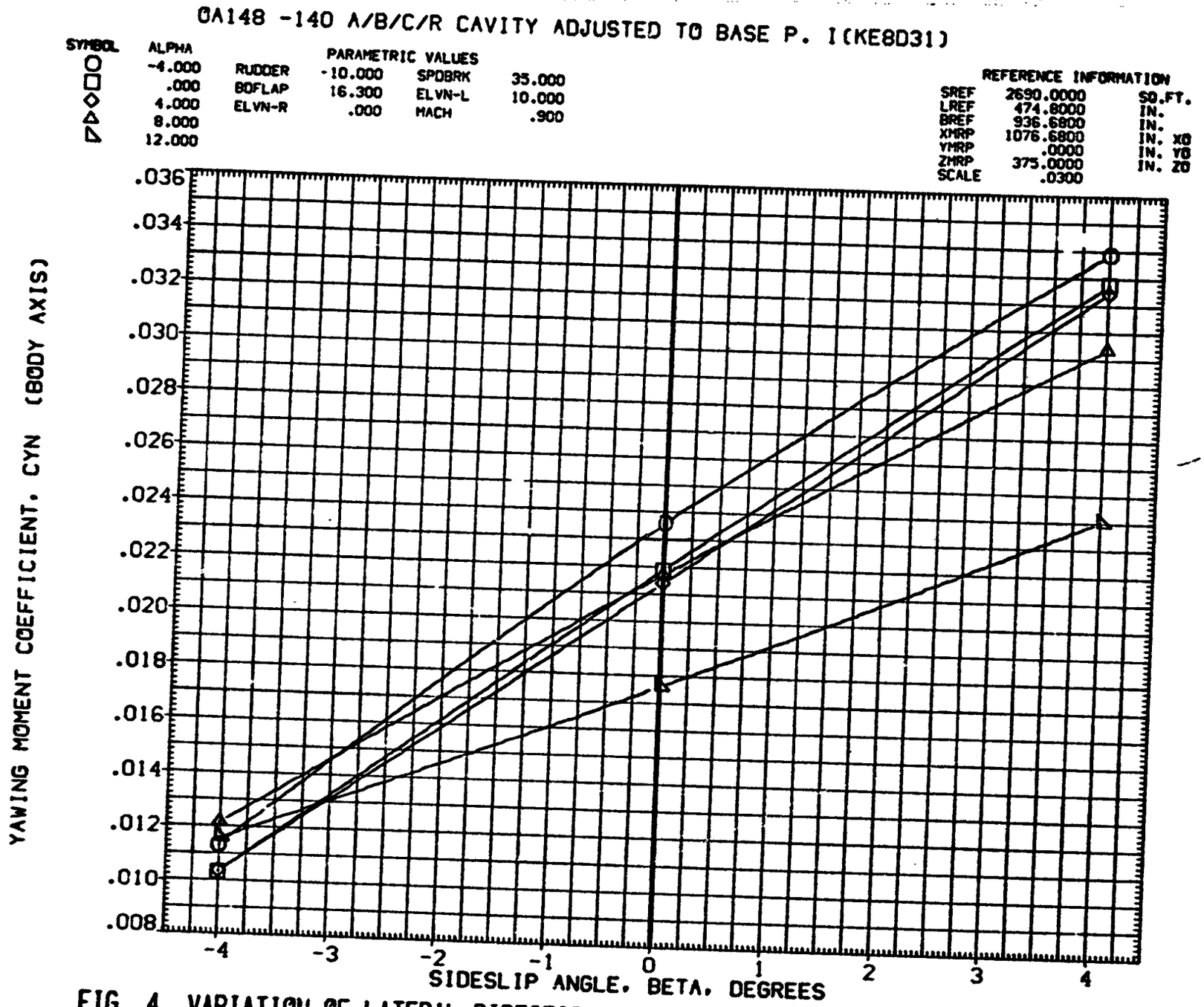


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

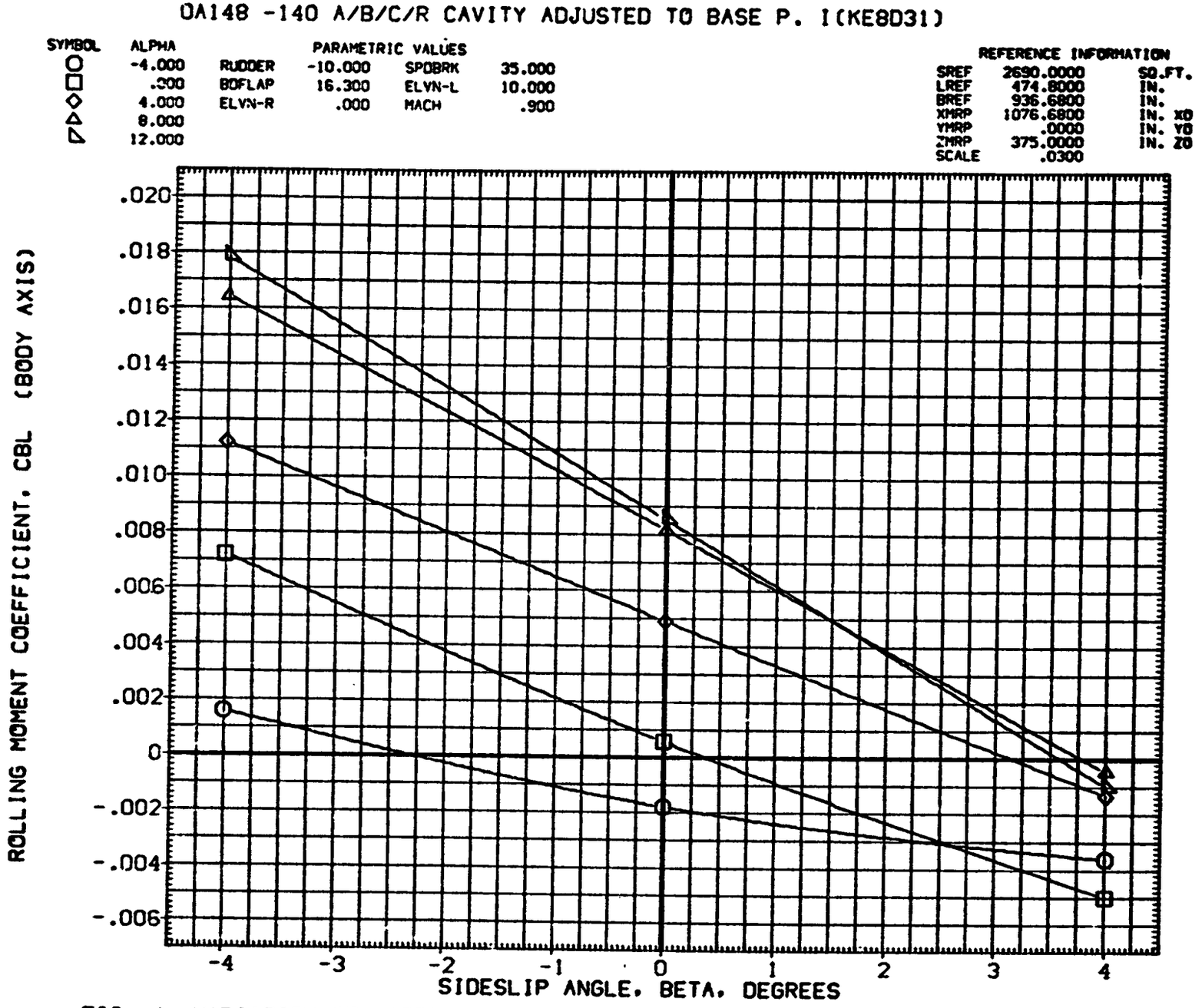


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D32)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
◁	12.000

PARAMETRIC VALUES

RUDDER	-10.000	SPDBRK		35.000
BDFLAP	16.300	ELVN-L		10.000
ELVN-R	.000	MACH		.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

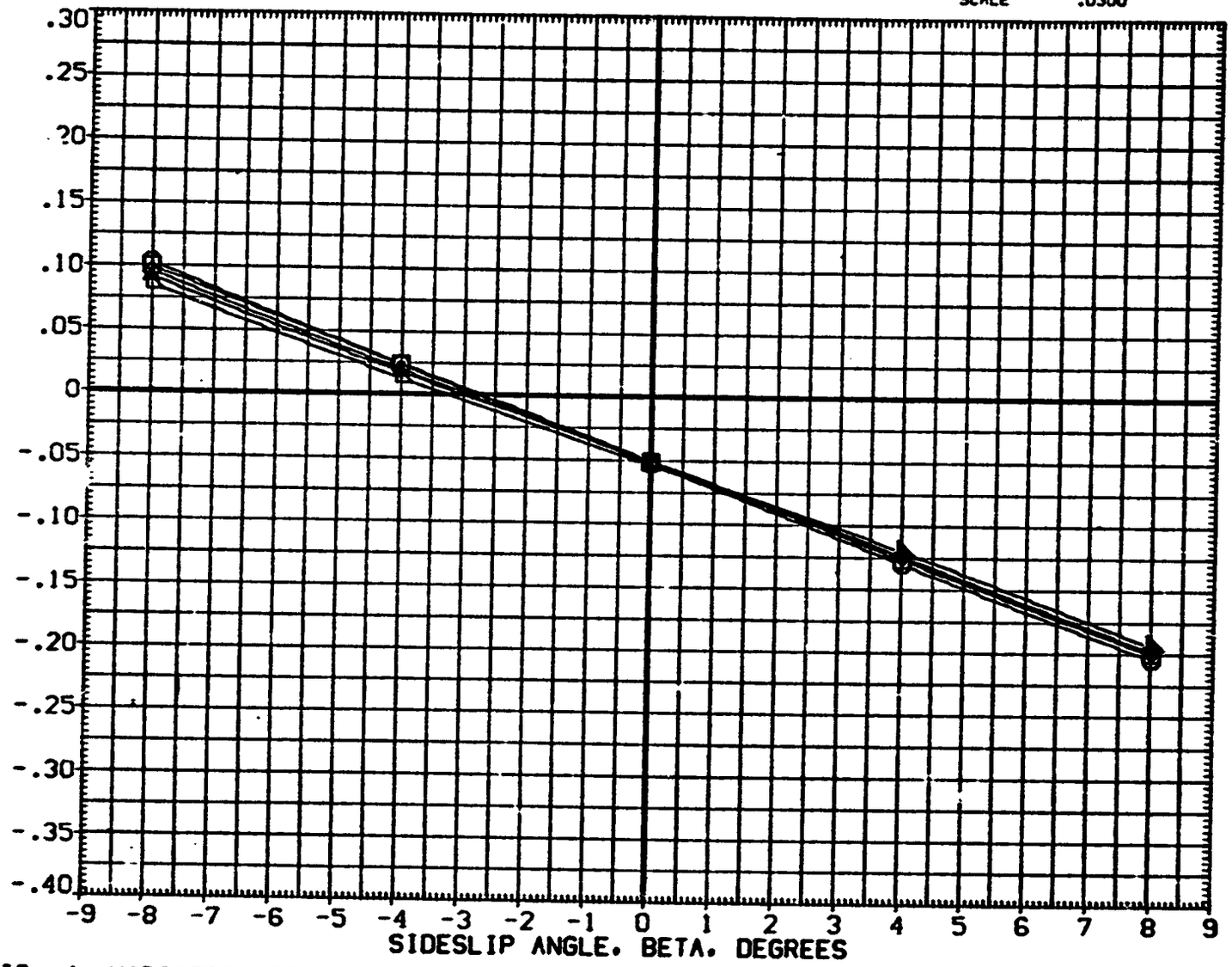


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

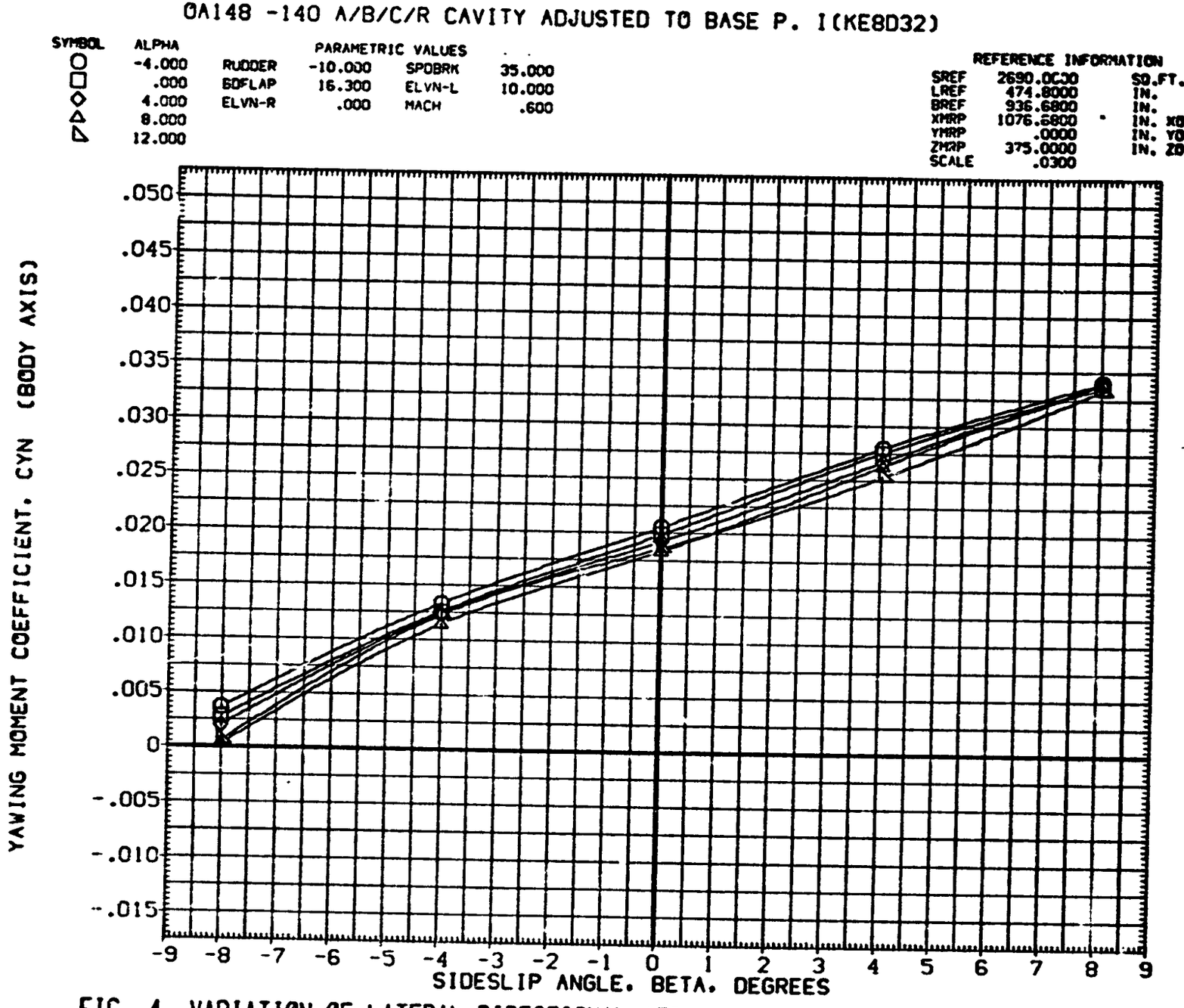


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D32)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▽	12.000

PARAMETRIC VALUES

RUDDER	-10.000	SPOBRK	35.000
BOFLAP	16.300	ELVN-L	10.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

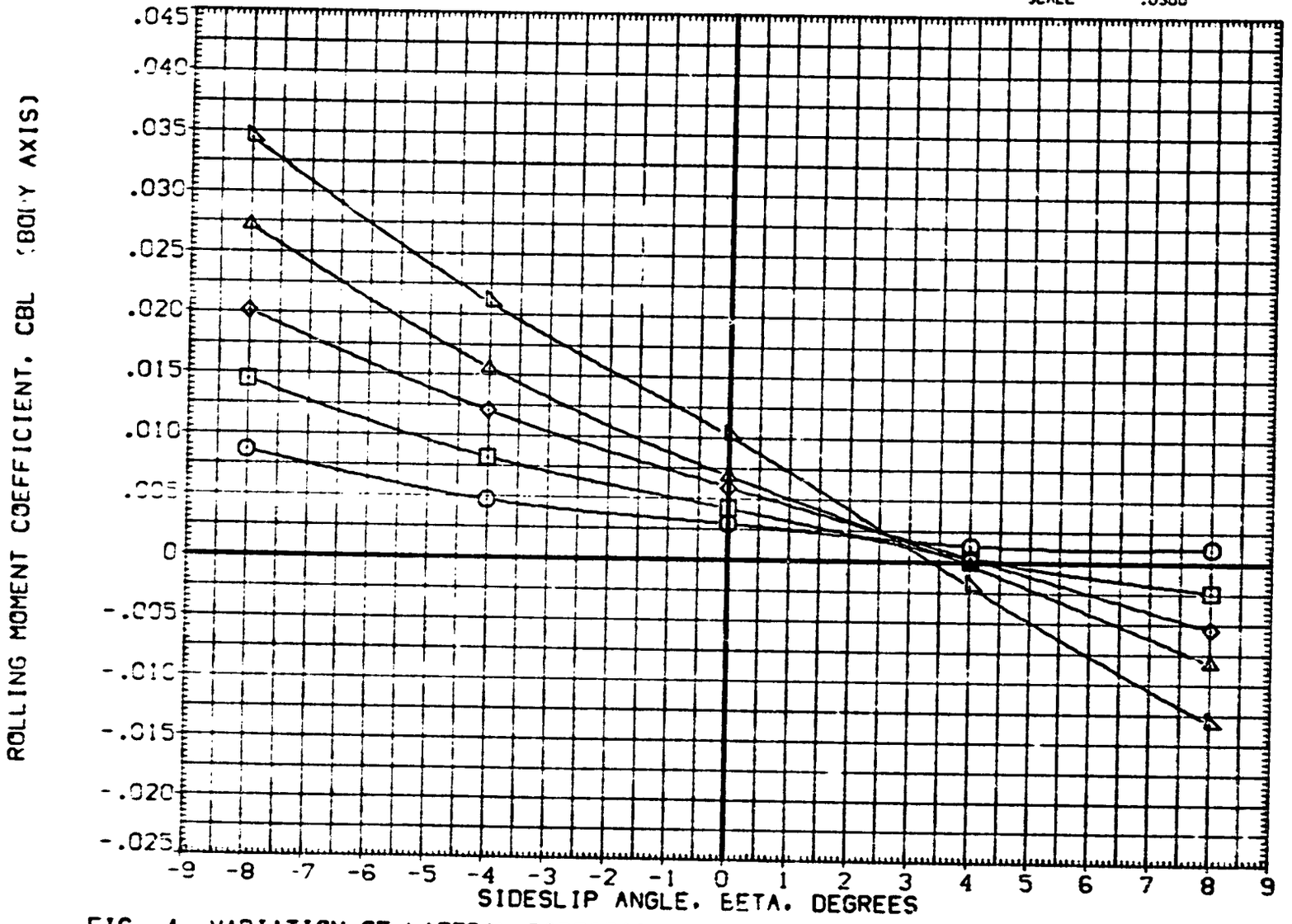


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D33)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▽	12.000
▷	16.000

PARAMETRIC VALUES

RUDDER	10.000	SPDBRK	35.000
BOFLAP	16.300	ELVN-L	.000
ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

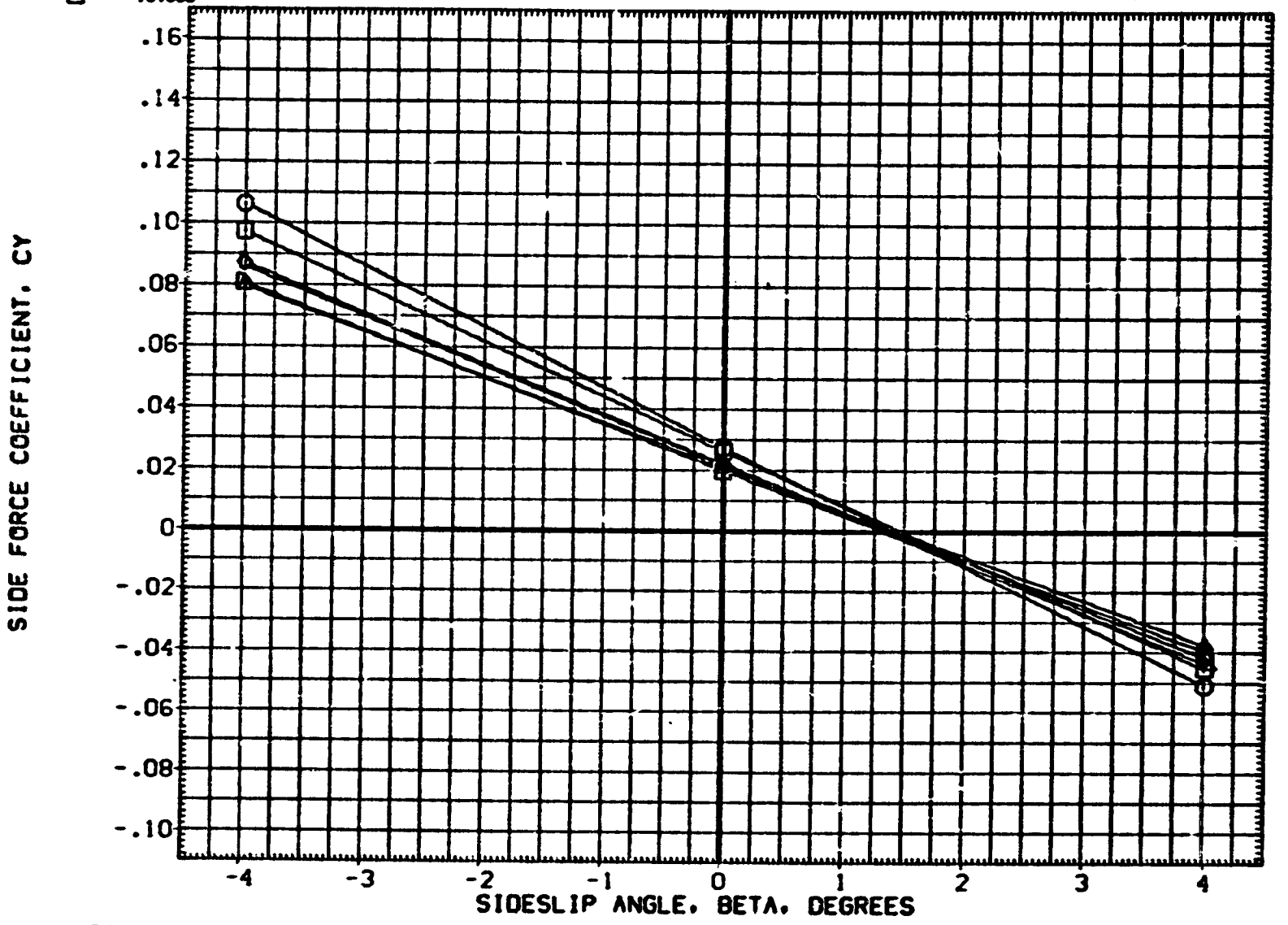


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

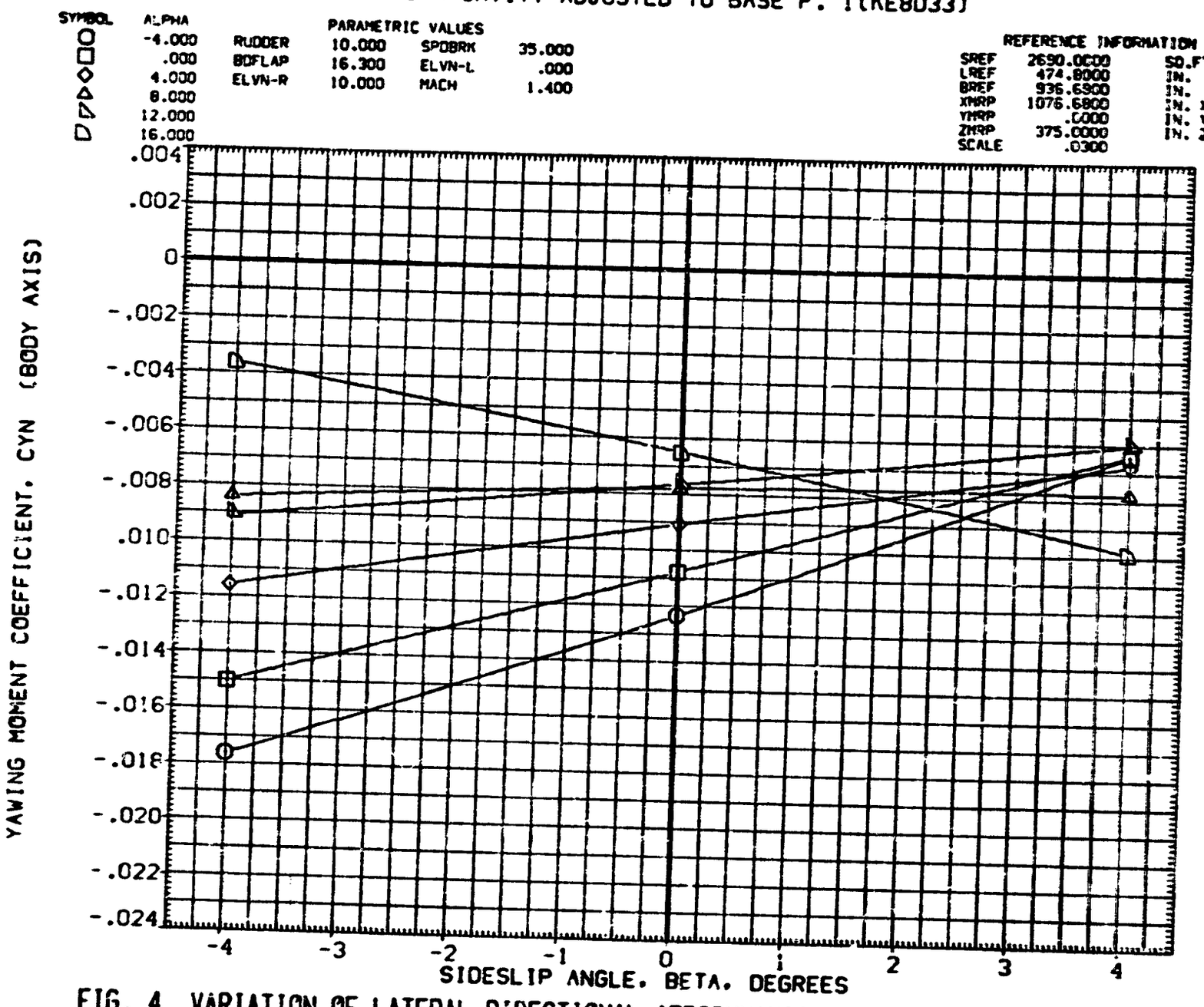


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

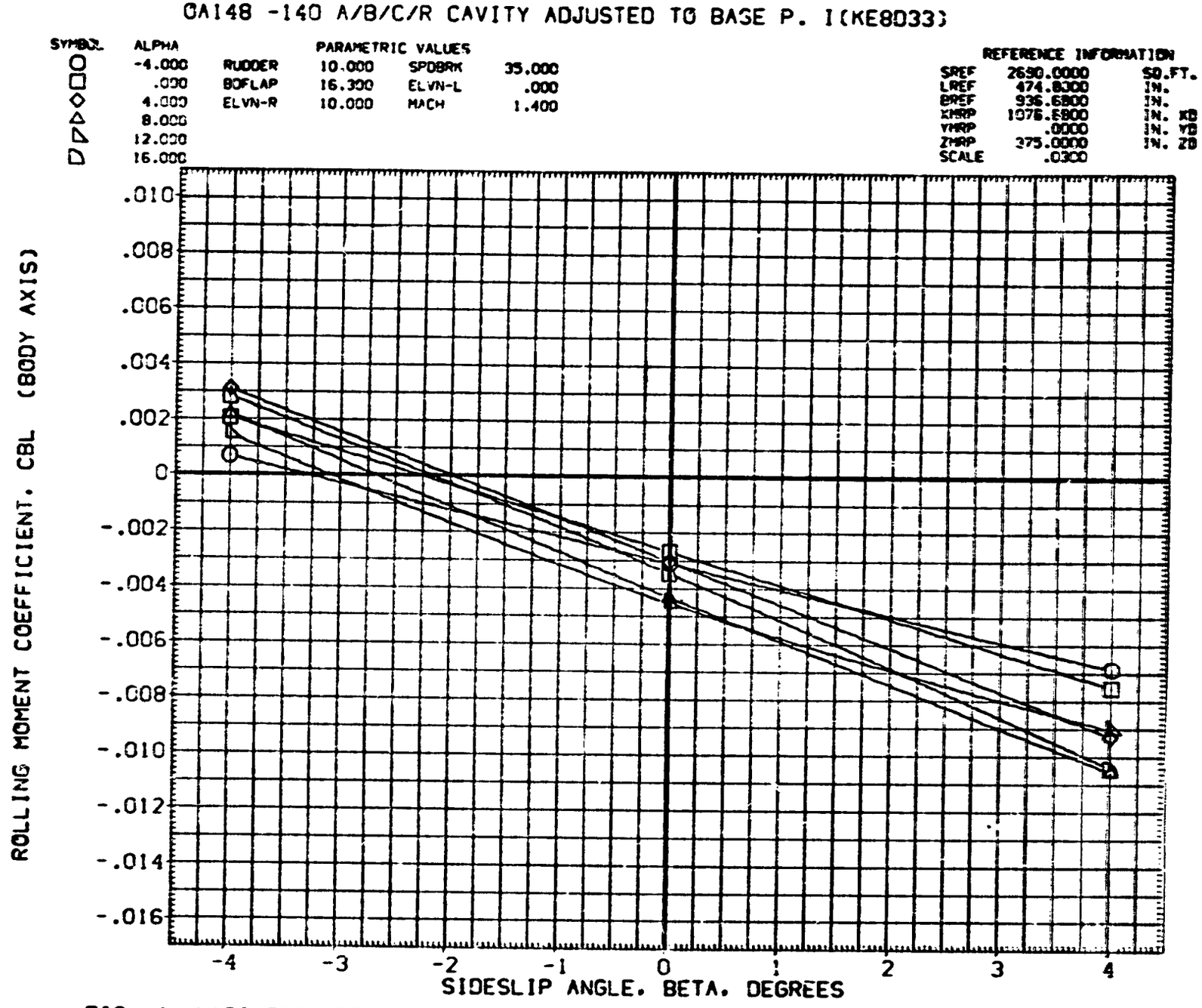


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
□	-4.000	RUDDER	10.000	SPOBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.250
◁	8.000				
△	12.000				

REFERENCE INFORMATION

SREF	2850.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.5800	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

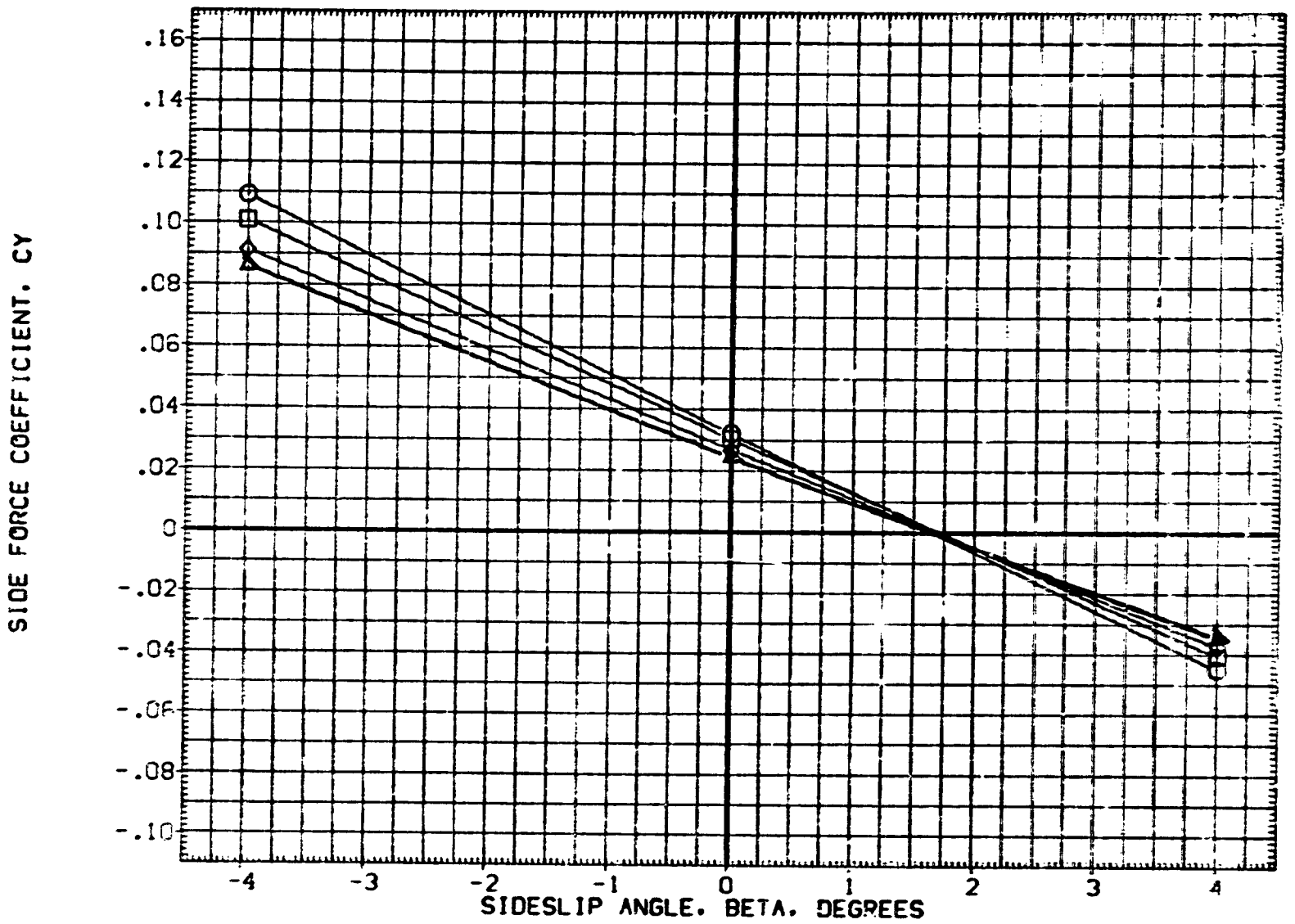


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

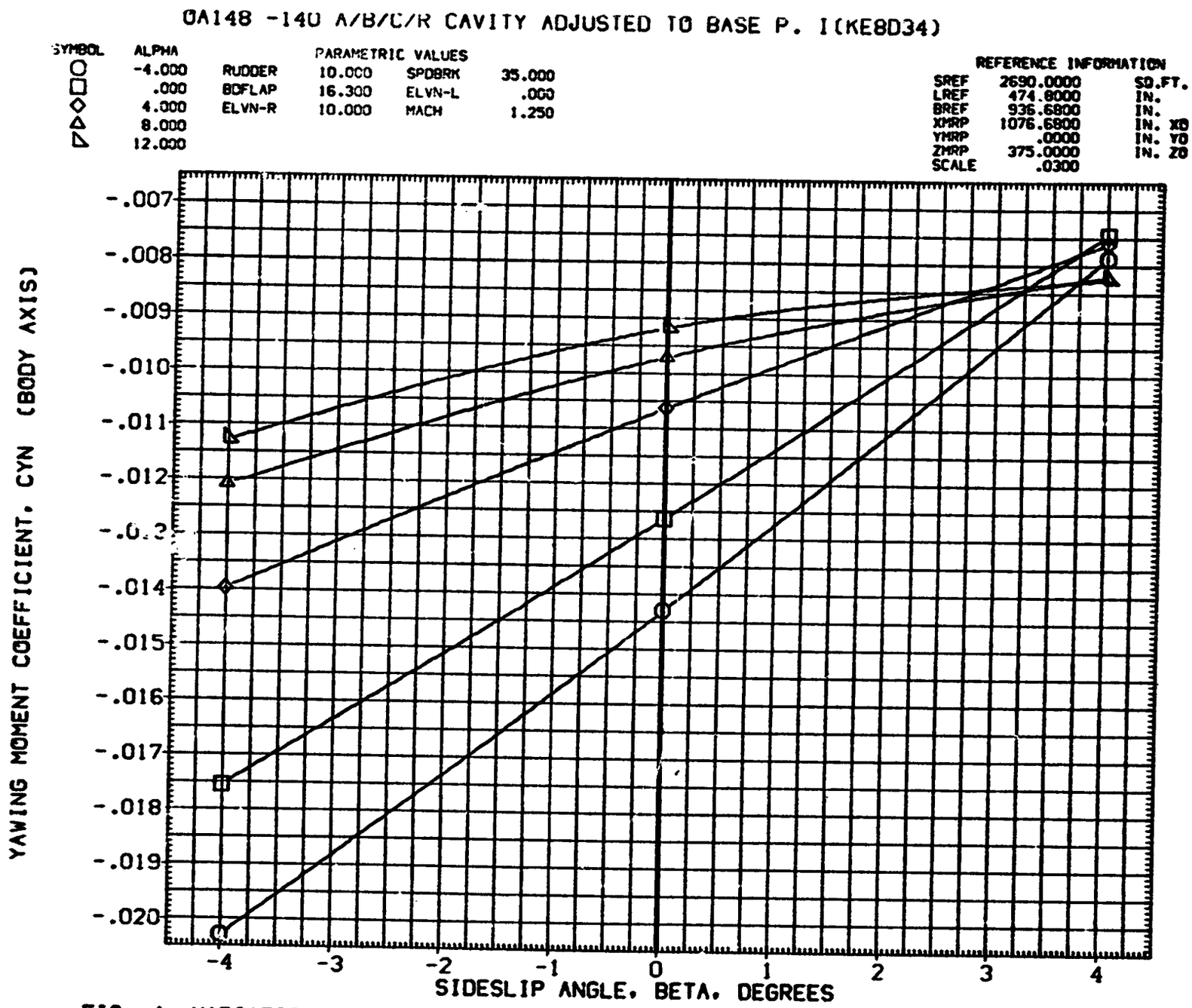


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▽	12.000

PARAMETRIC VALUES

RUDDER	10.000	SPDBRK	35.000
BDFLAP	16.300	ELVN-L	.000
ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

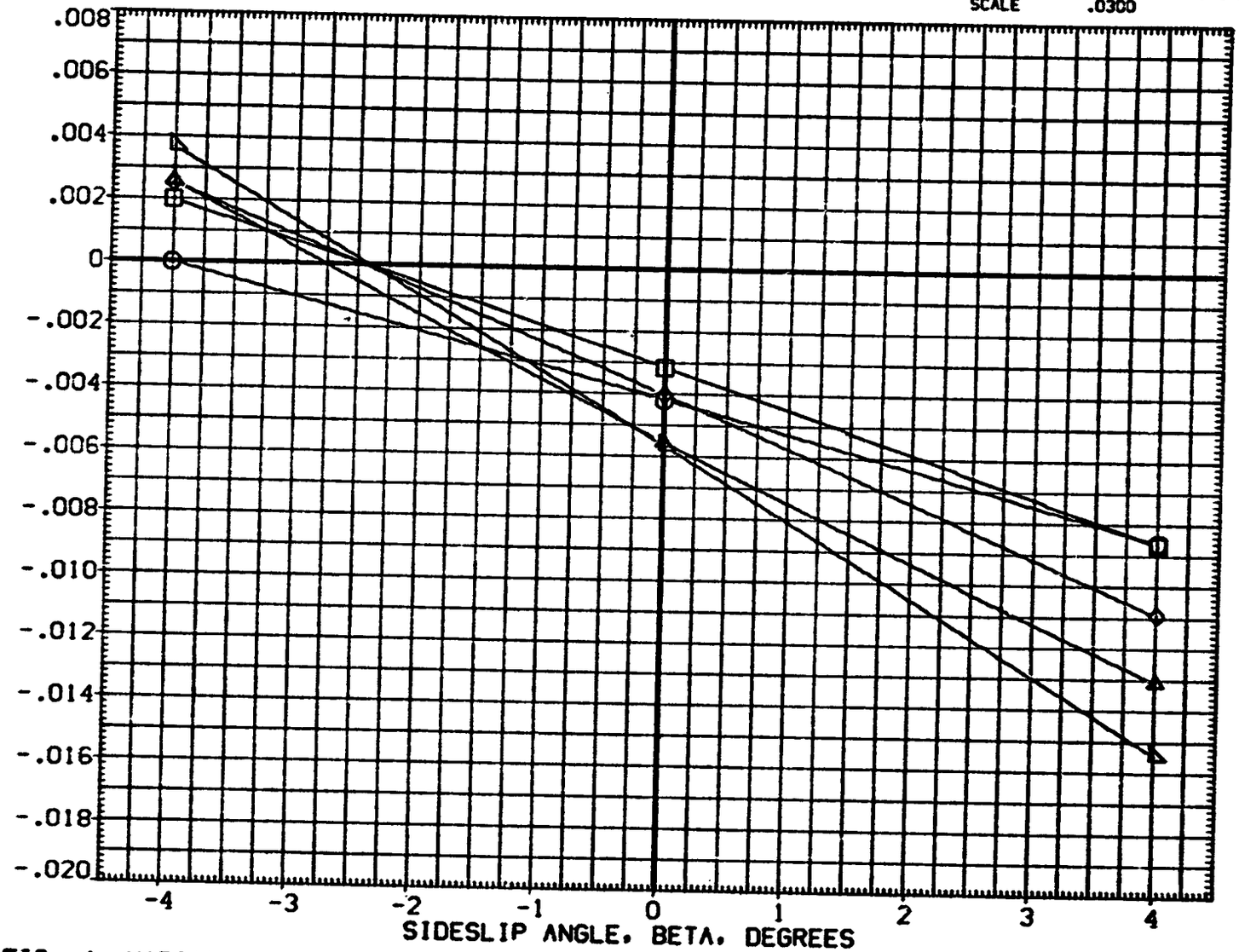


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

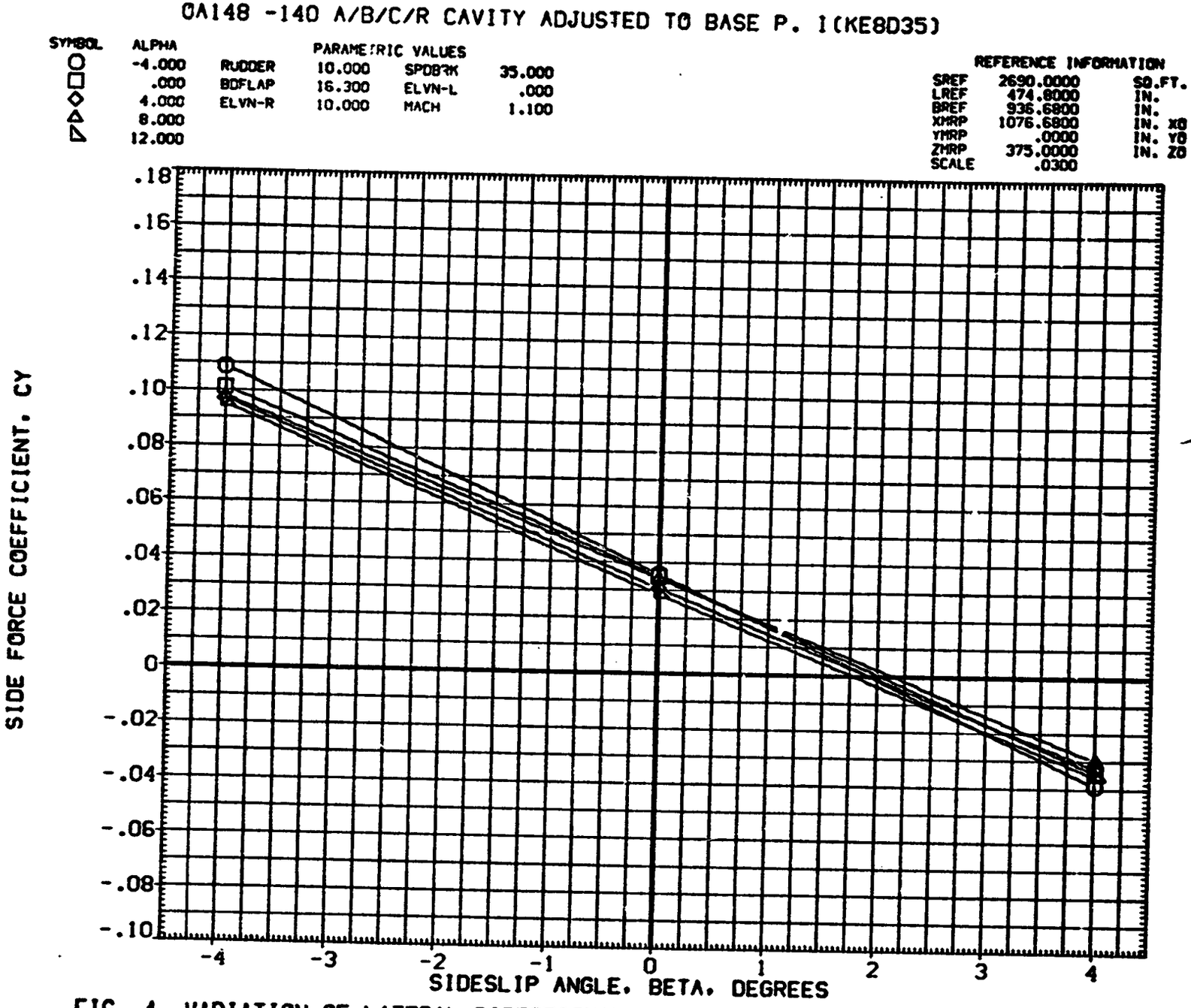


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

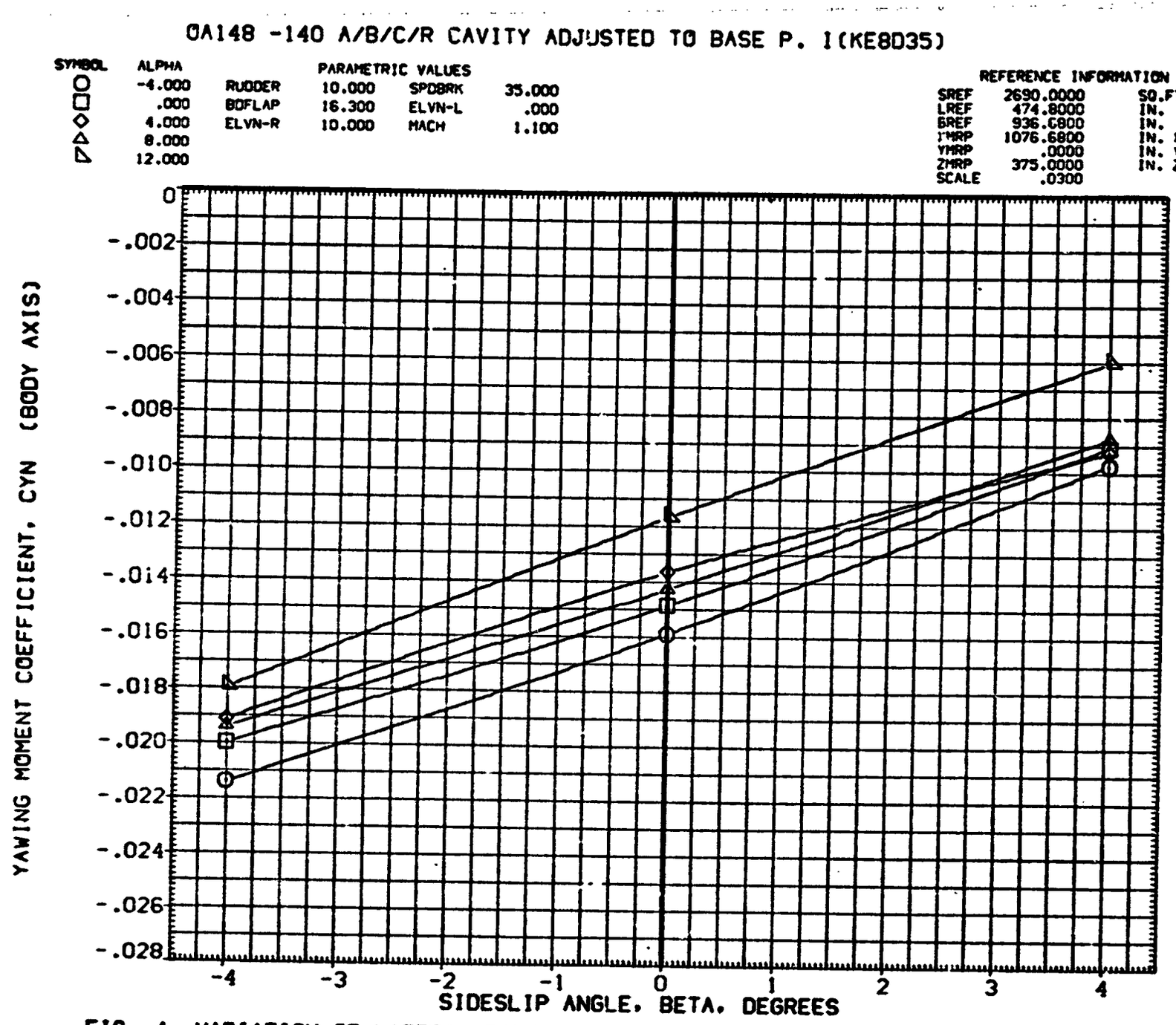


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

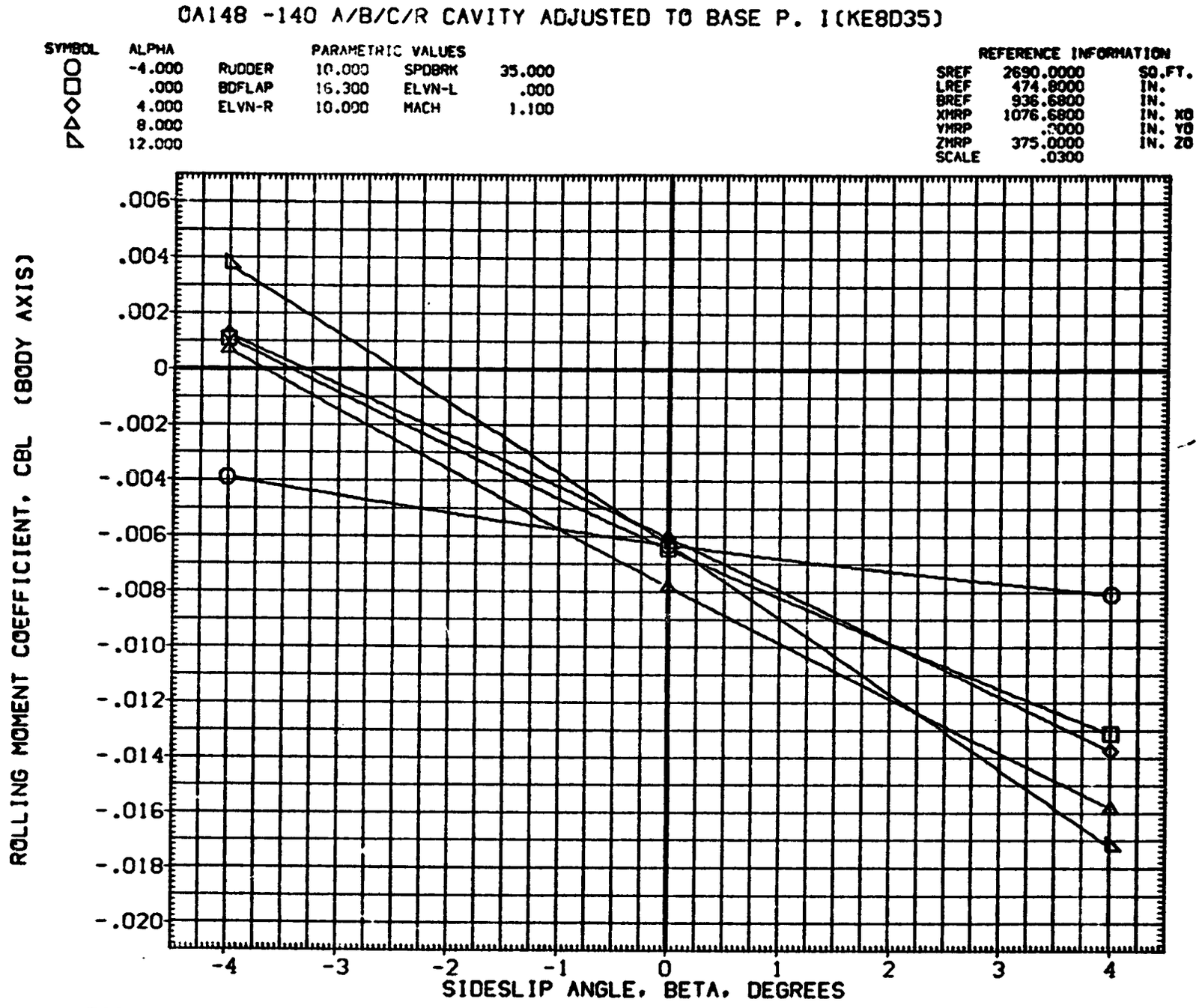


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

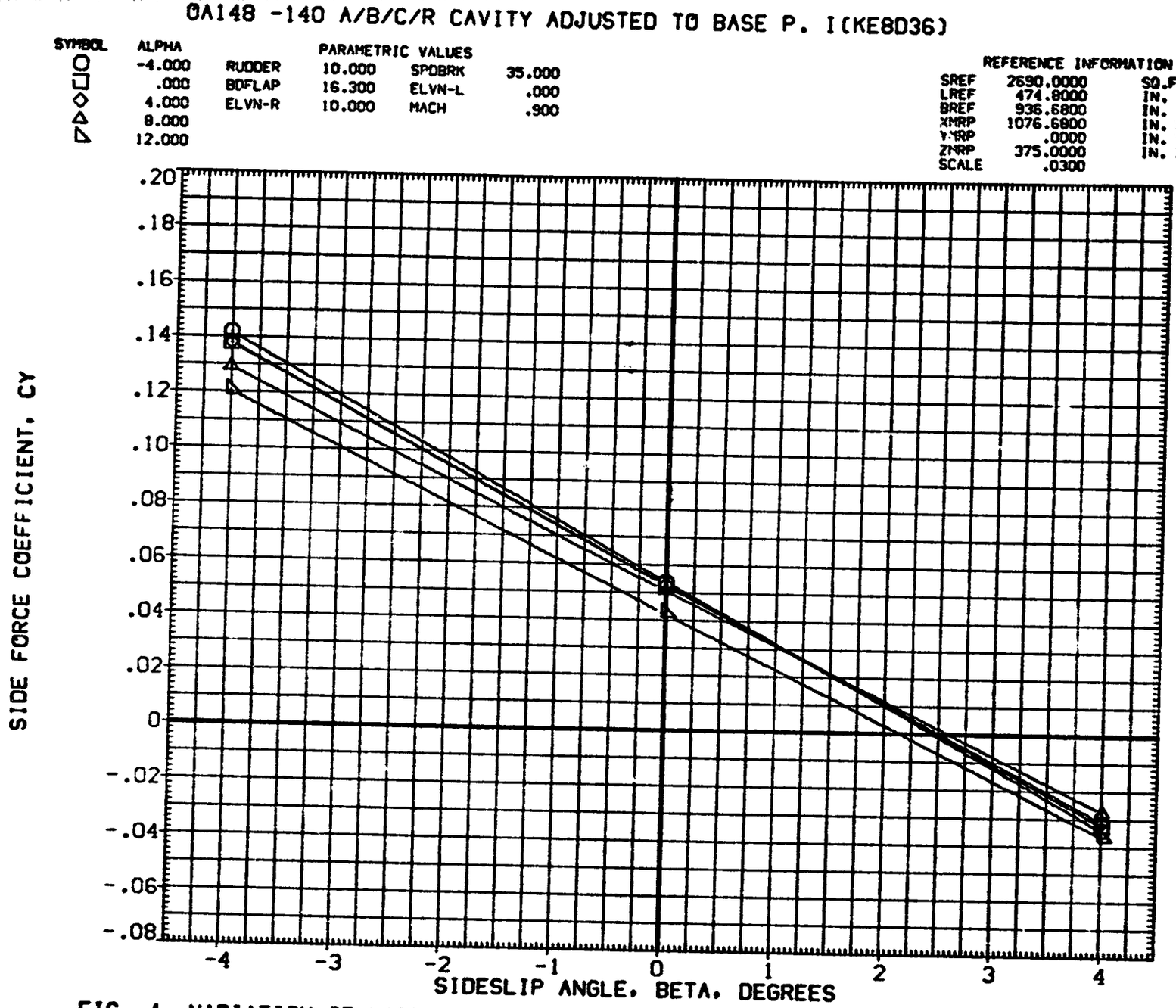


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

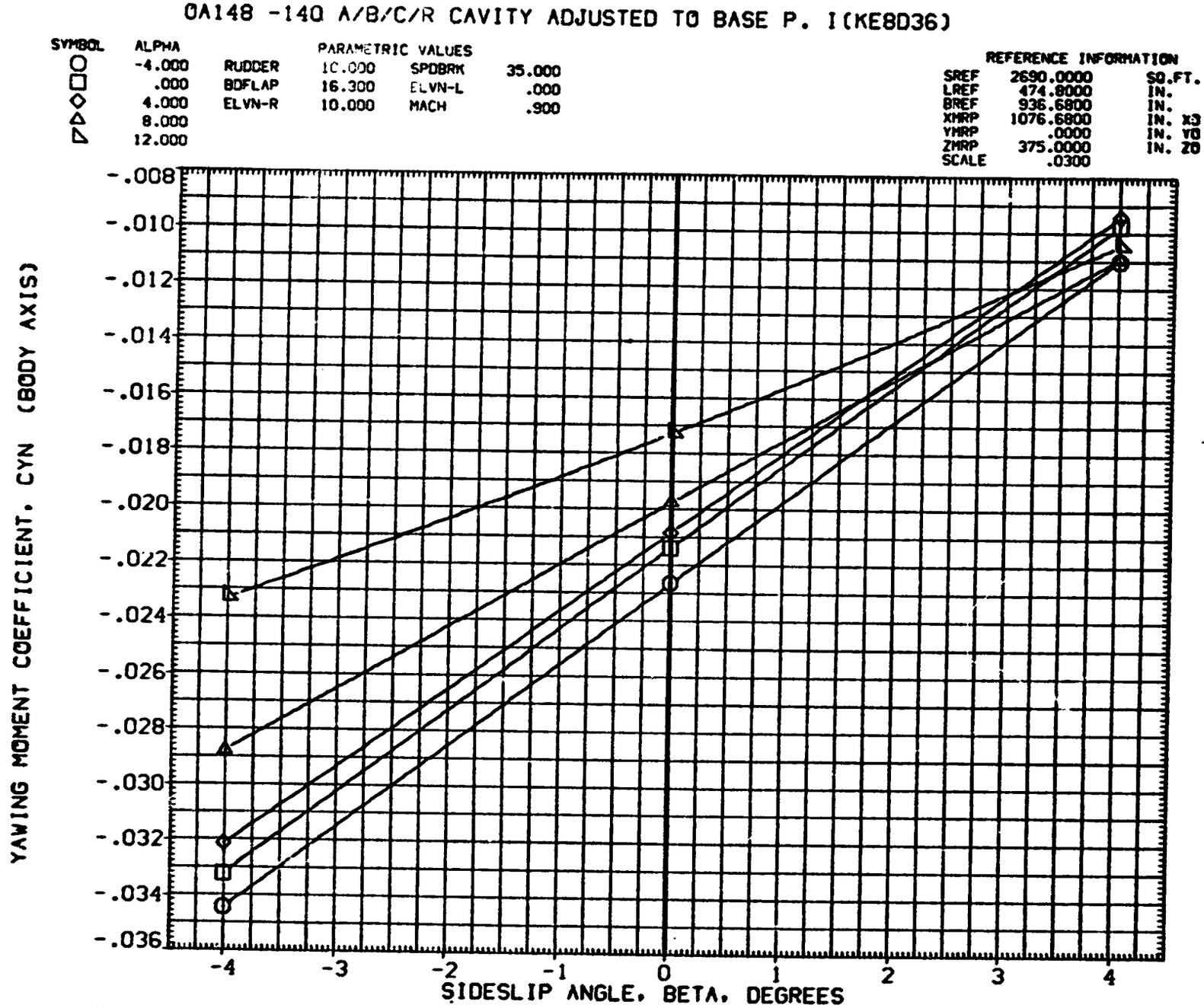


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

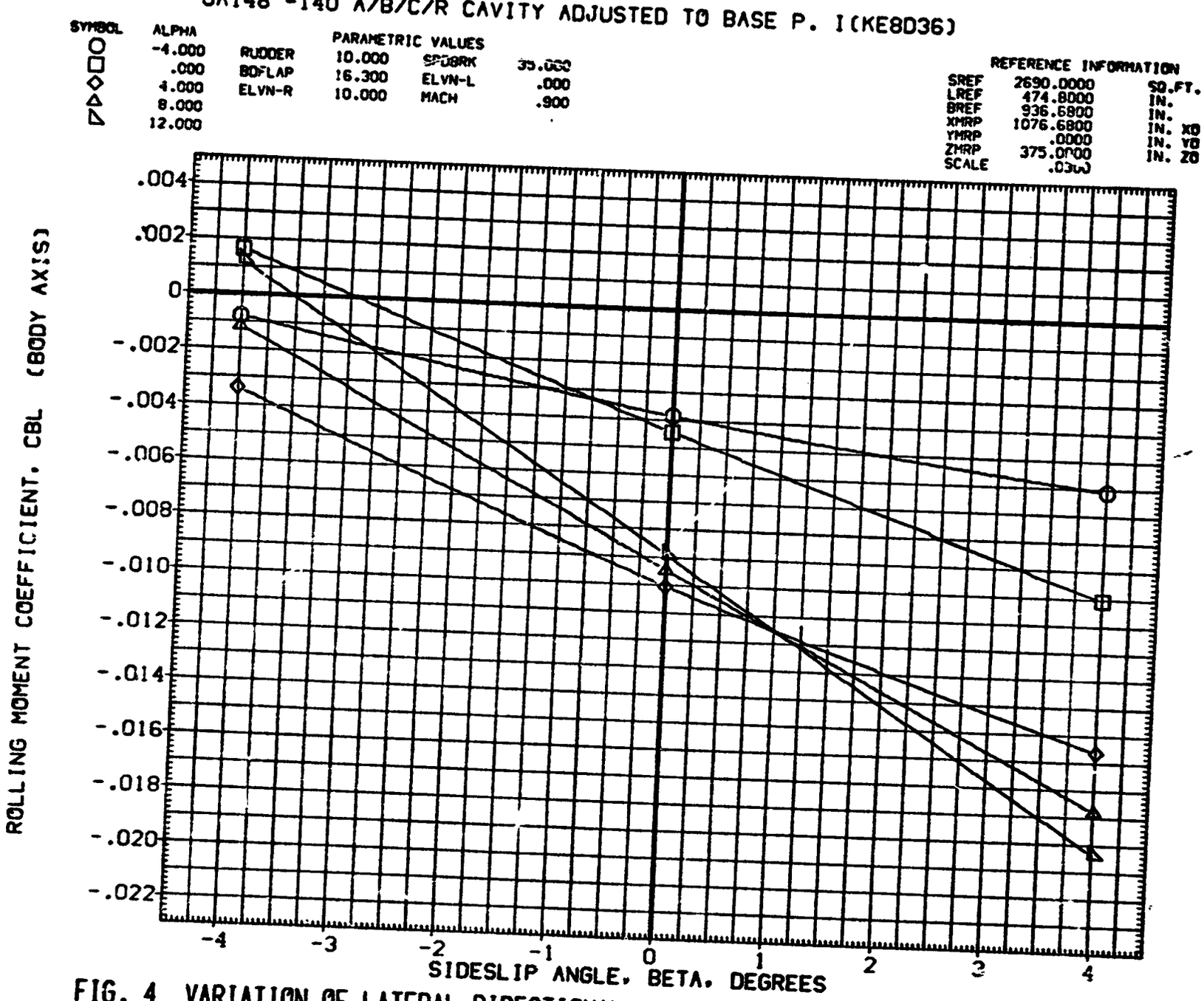


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

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ORIGINAL PAGE IS POOR

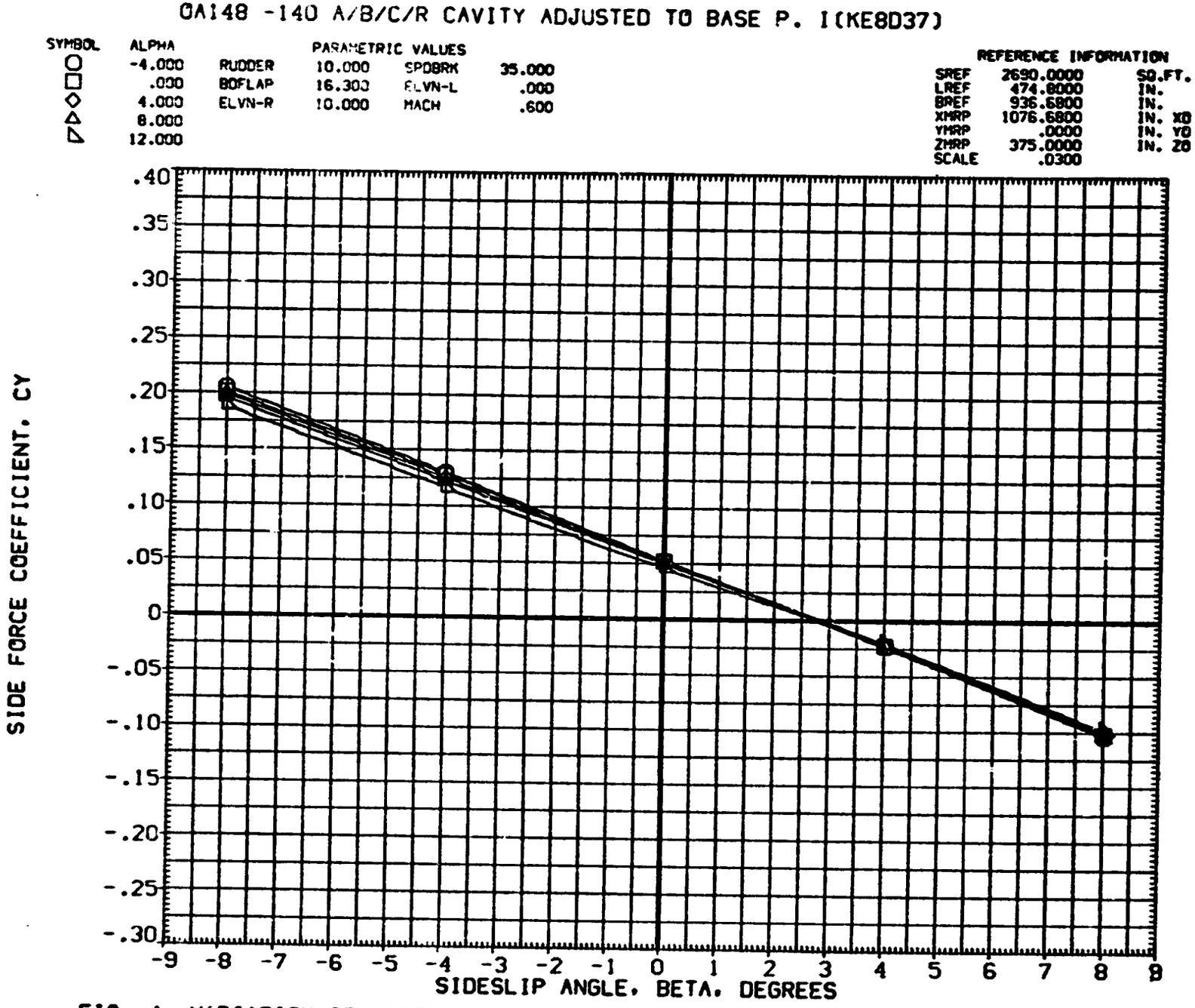


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

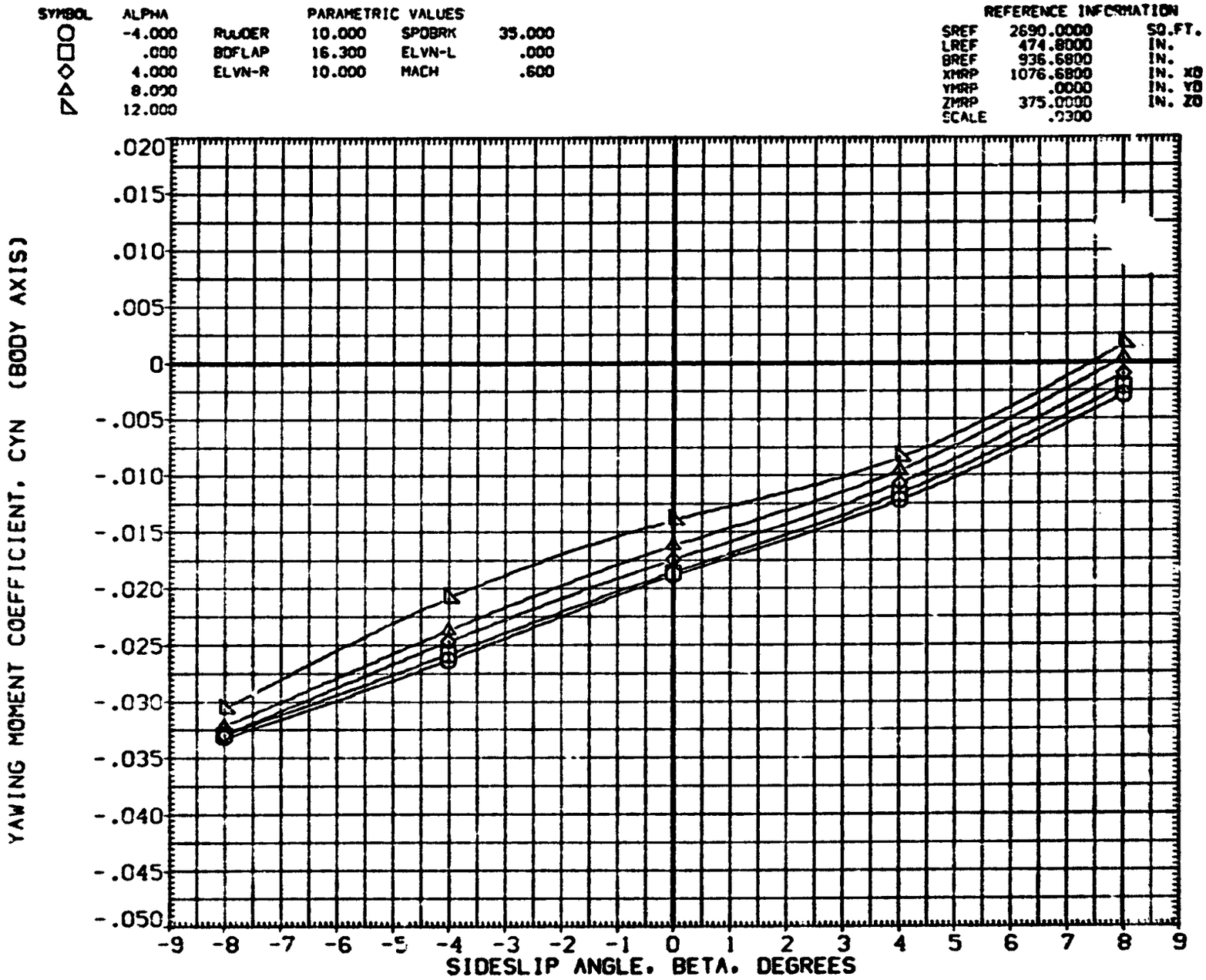


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

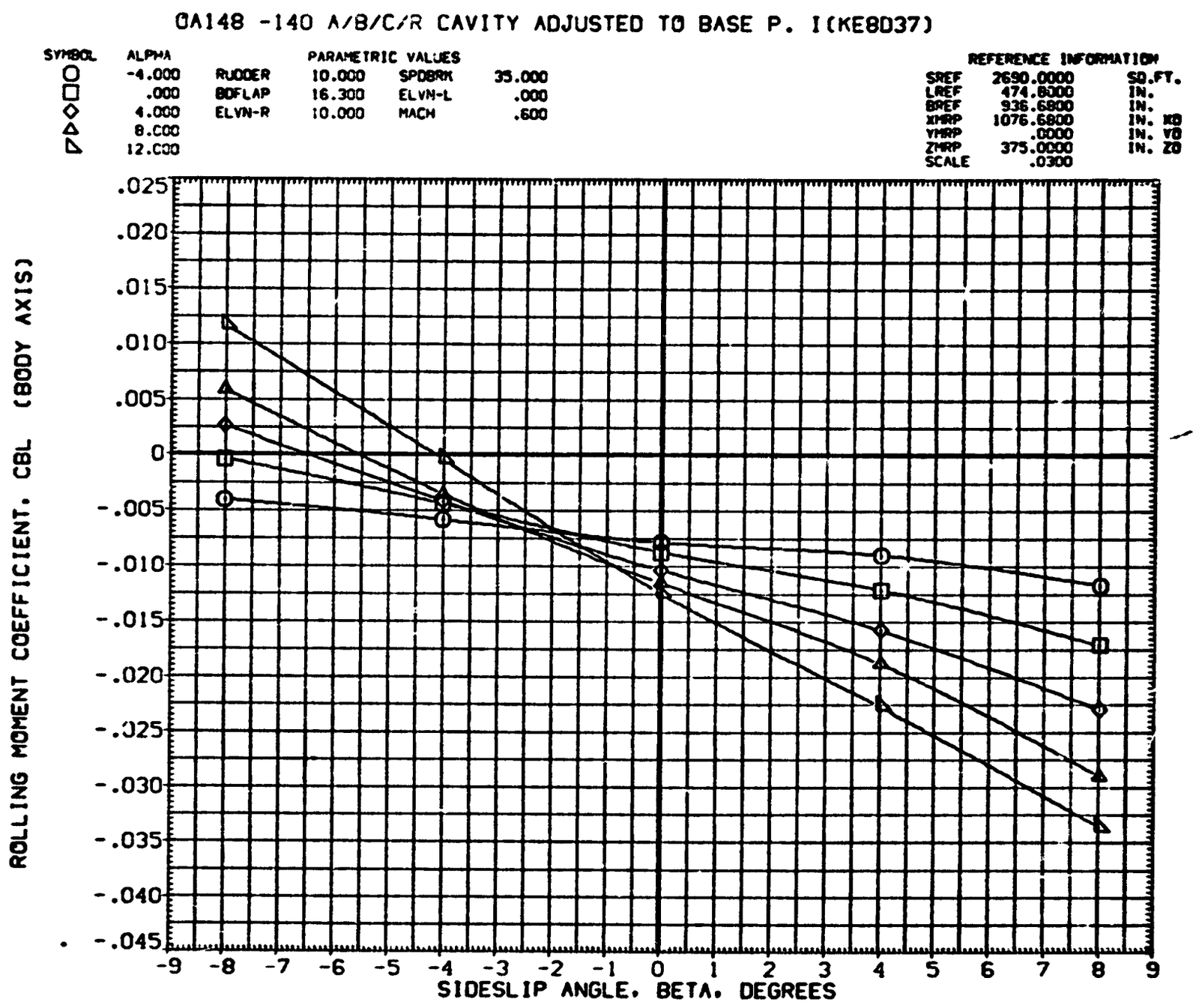


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

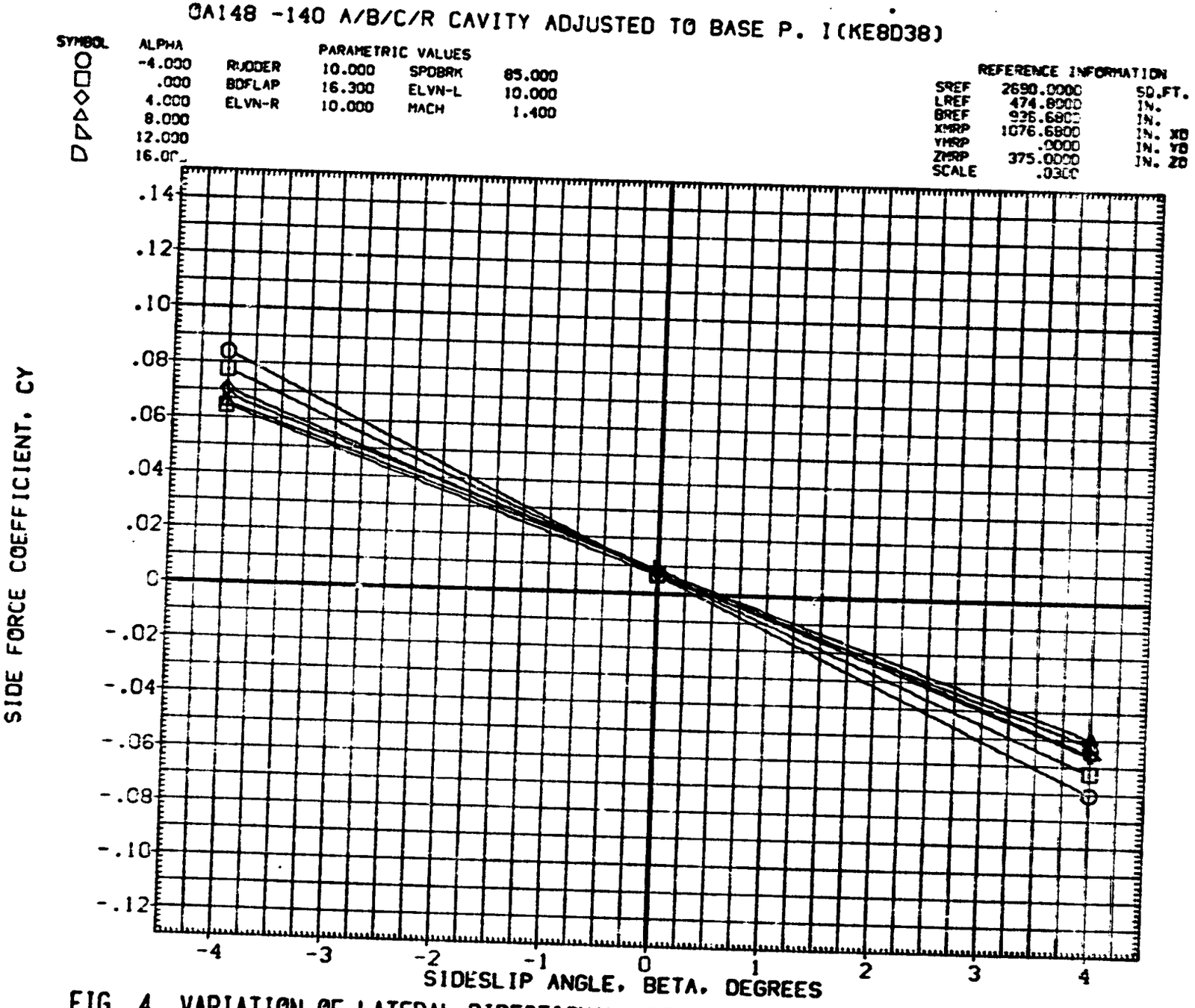


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

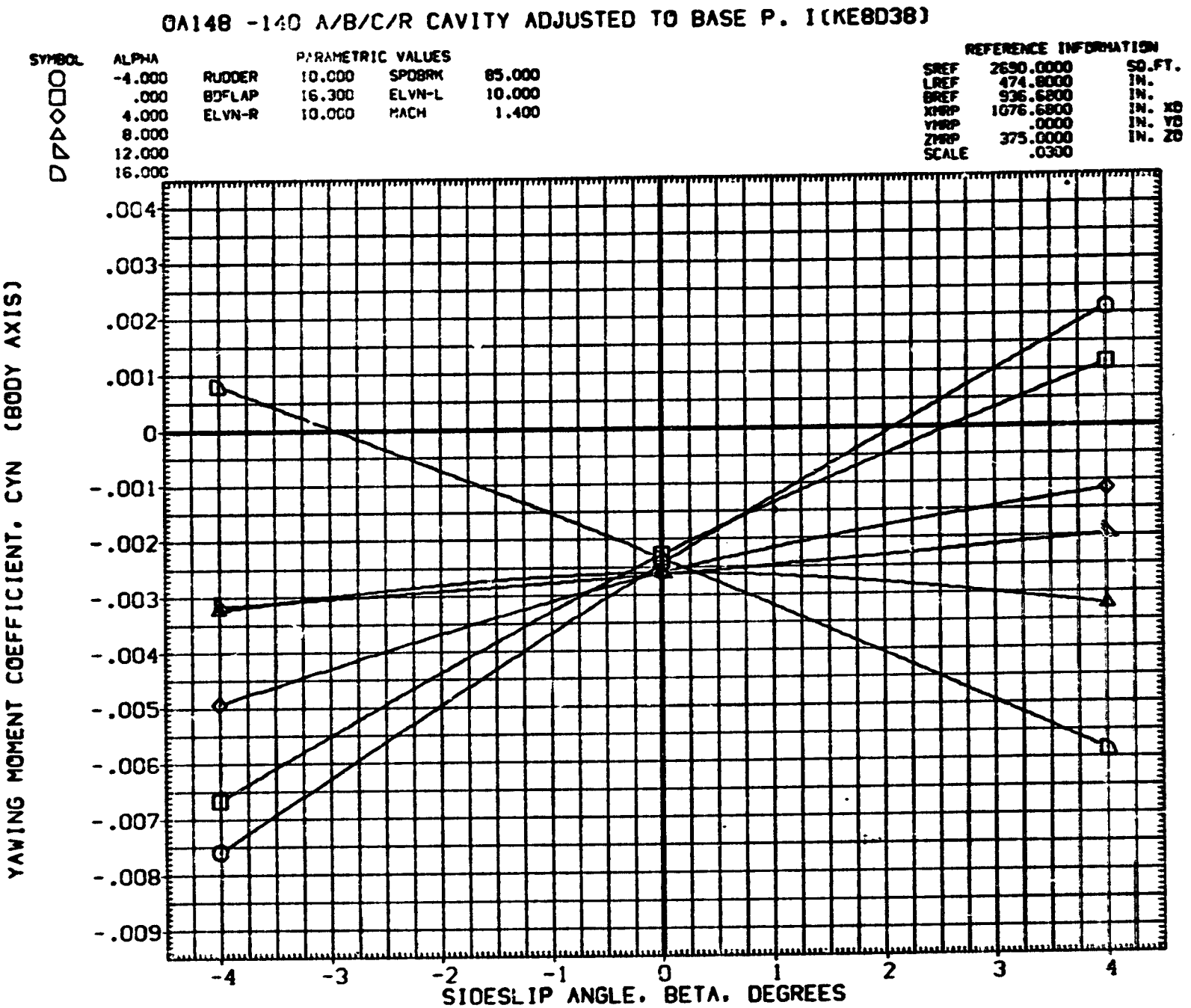


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D38)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
△	12.000
△	16.000

PARAMETRIC VALUES

RUDDER	10.000	SPOBRK	85.000
BOFLAP	16.300	ELVN-L	10.000
ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.5800	IN.
XMRP	1075.5800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

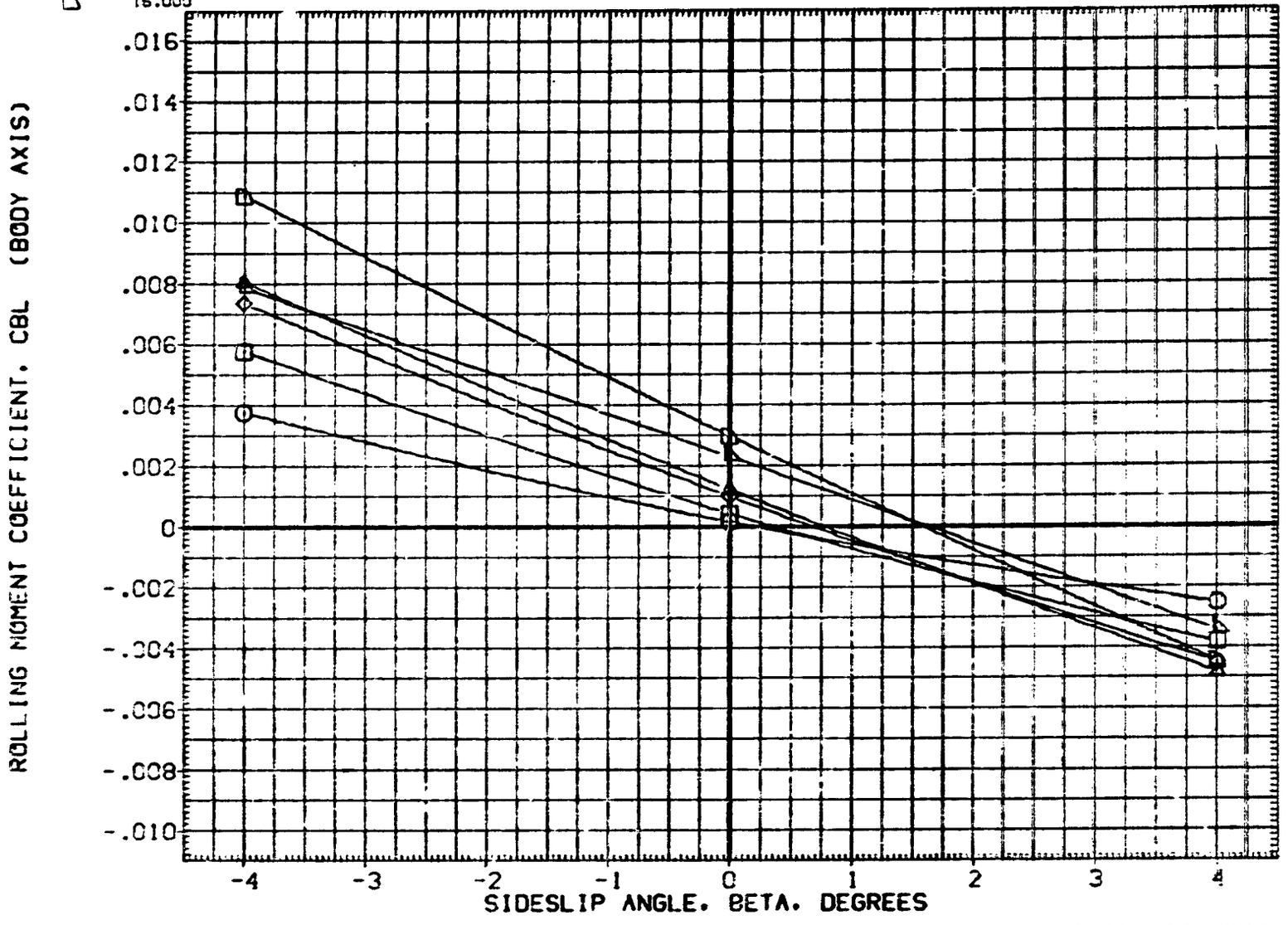


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

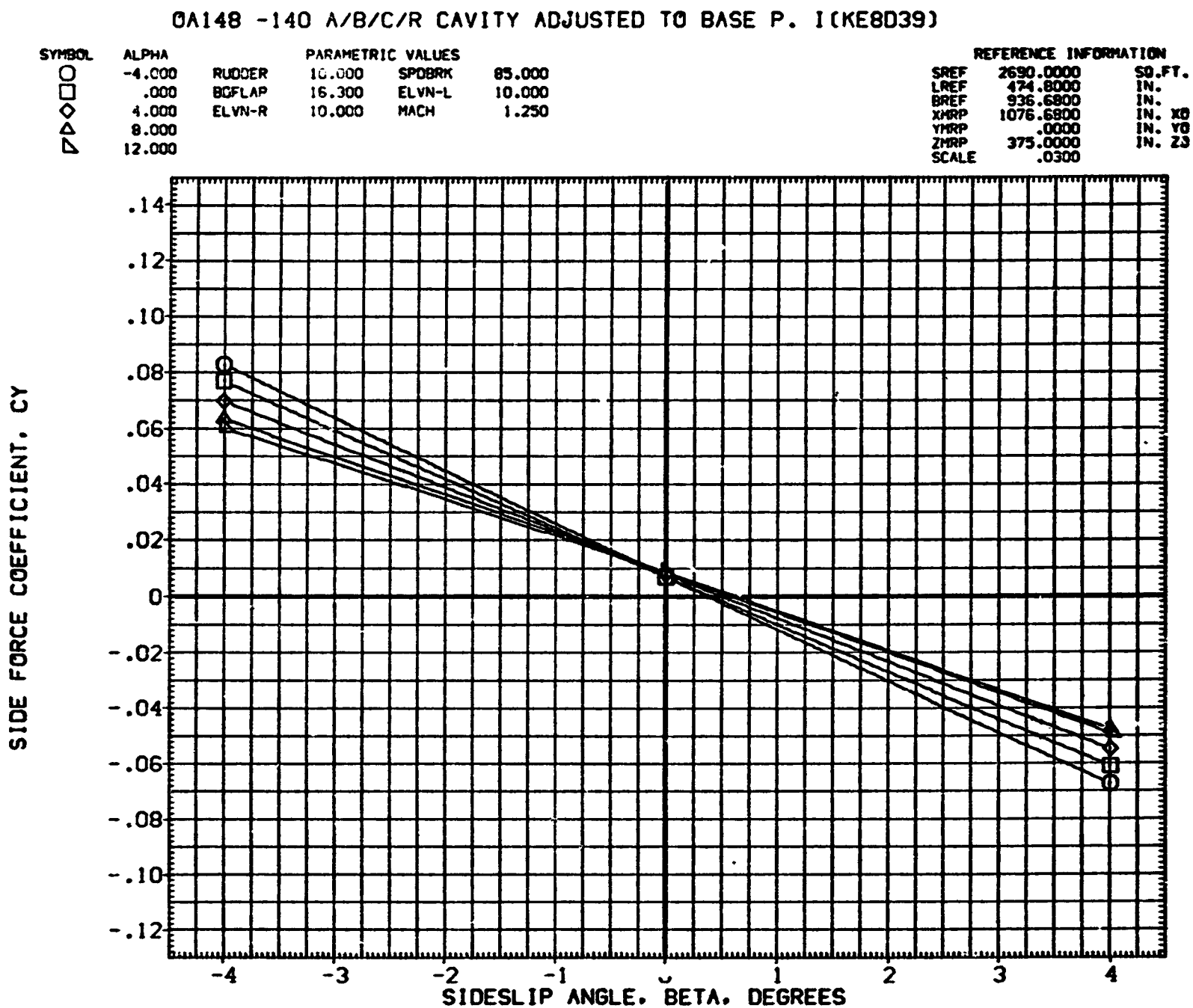


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

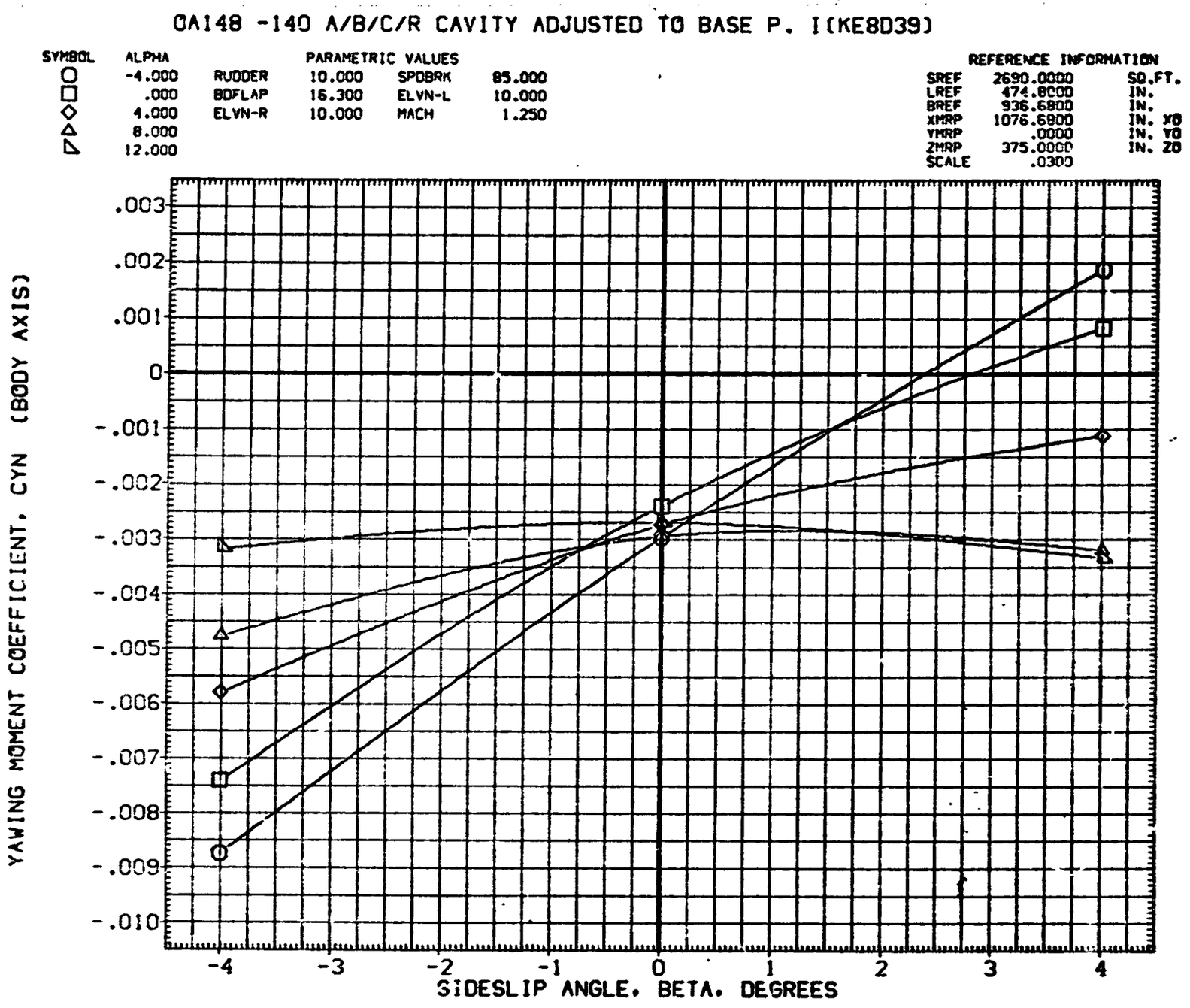


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

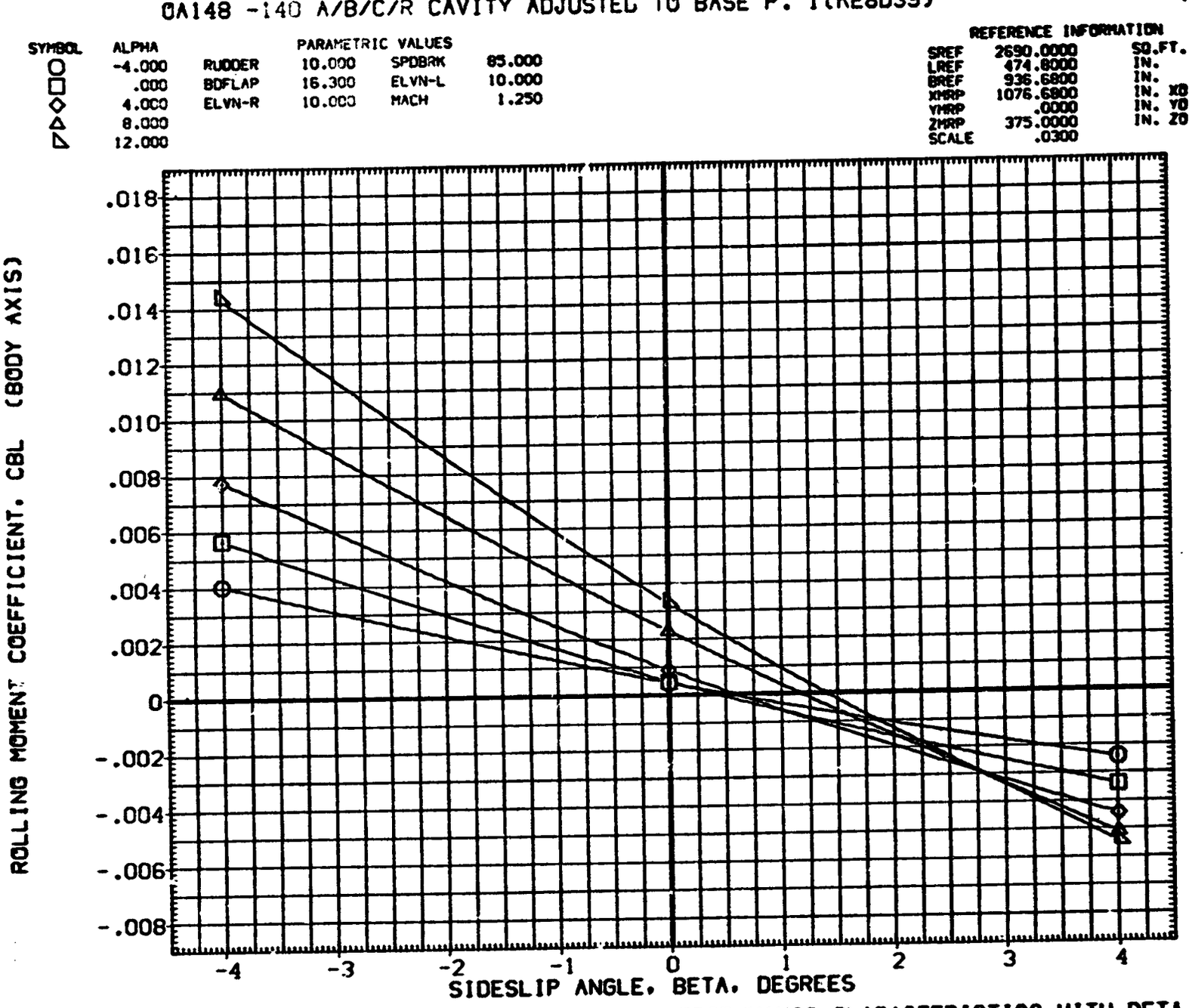


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8040)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	1.100
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.8900	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

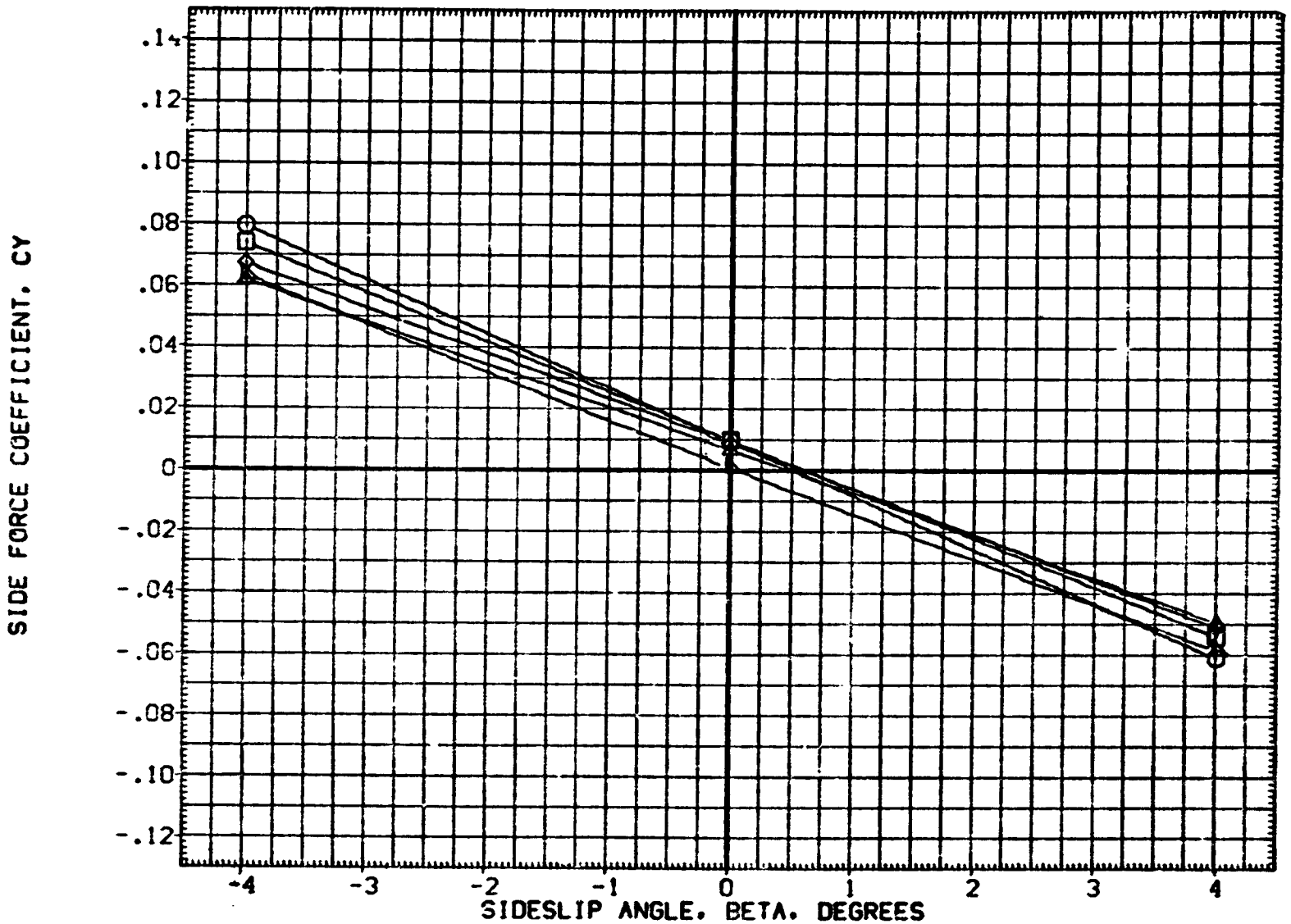


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

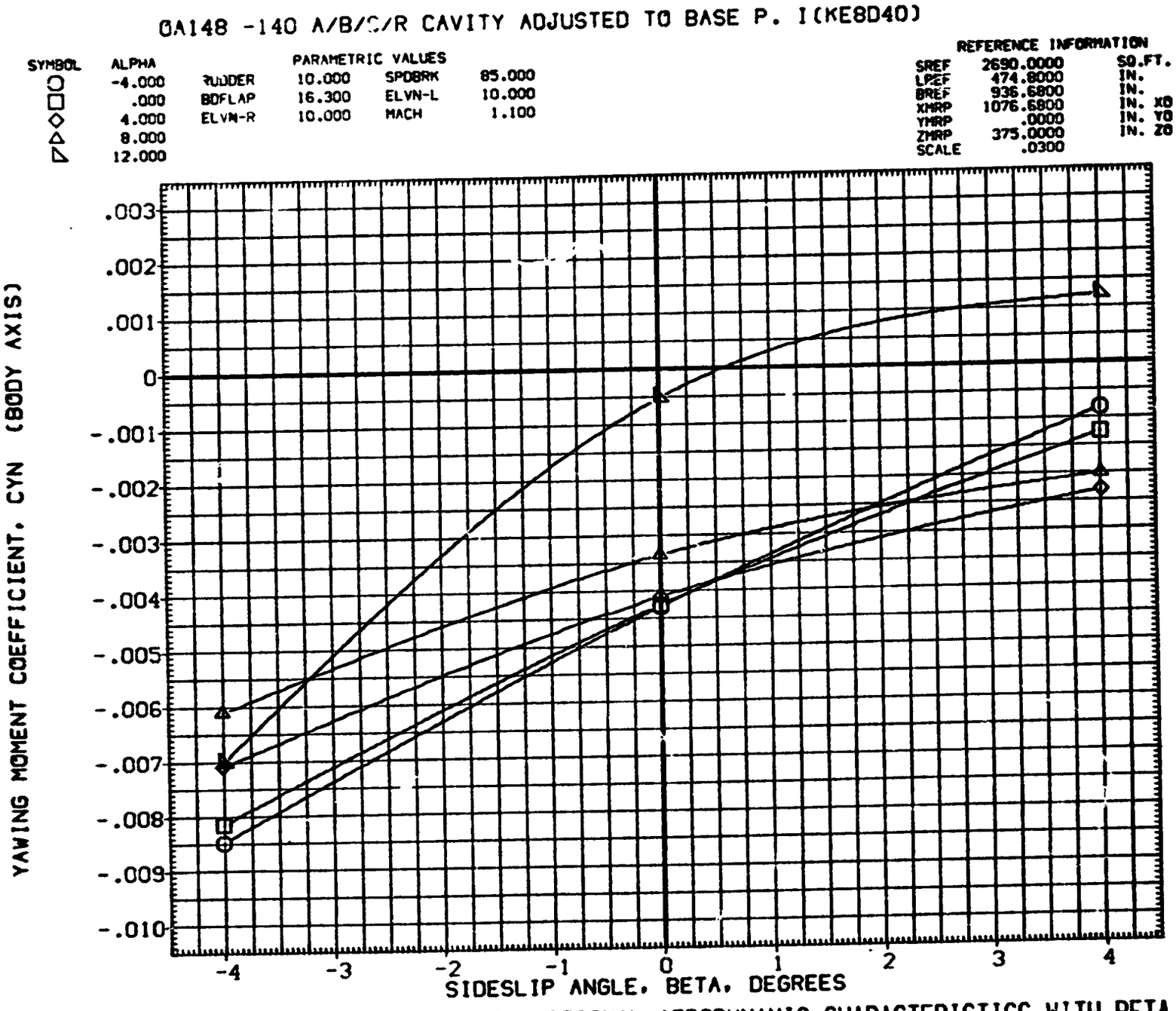


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

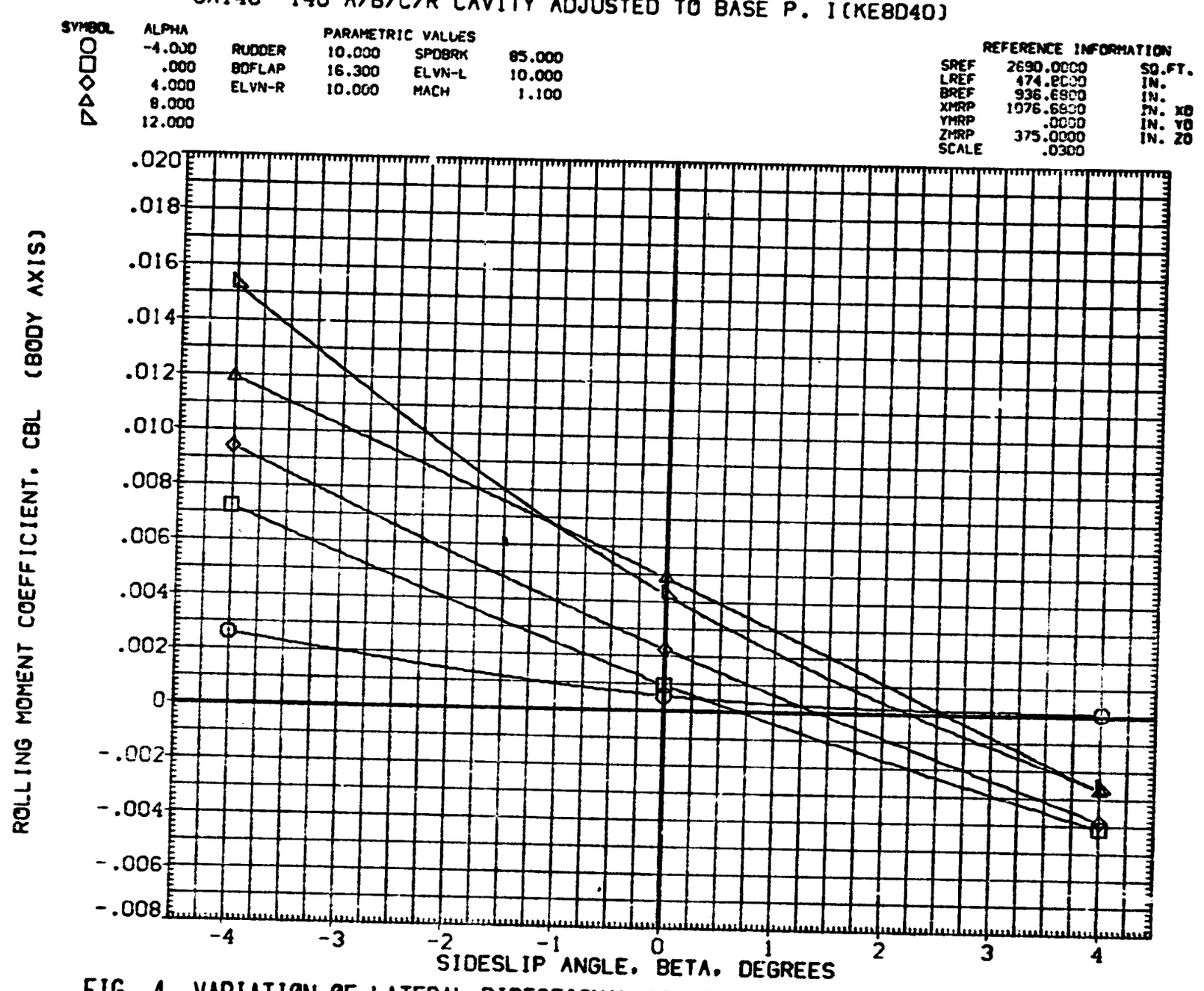


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

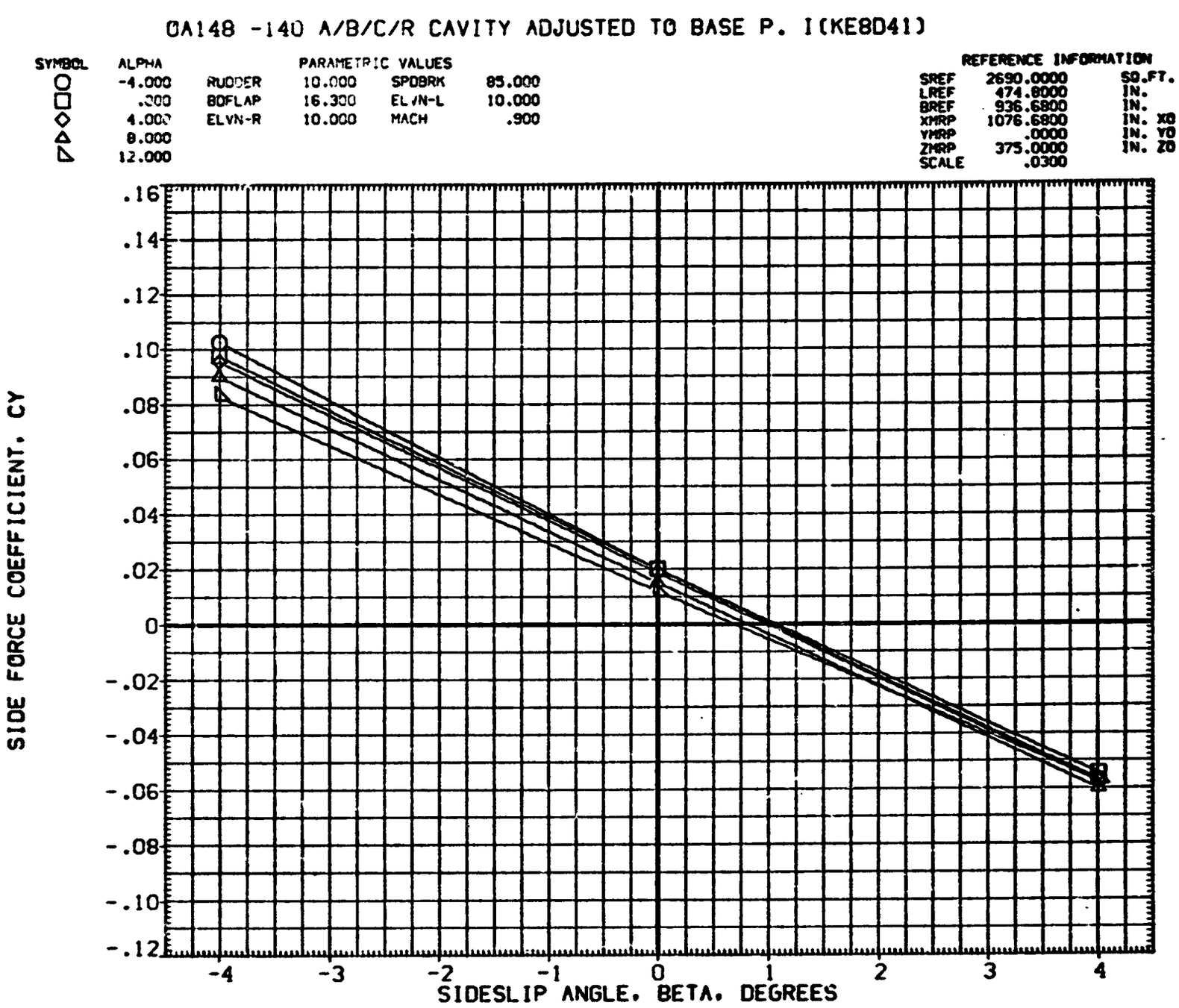


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

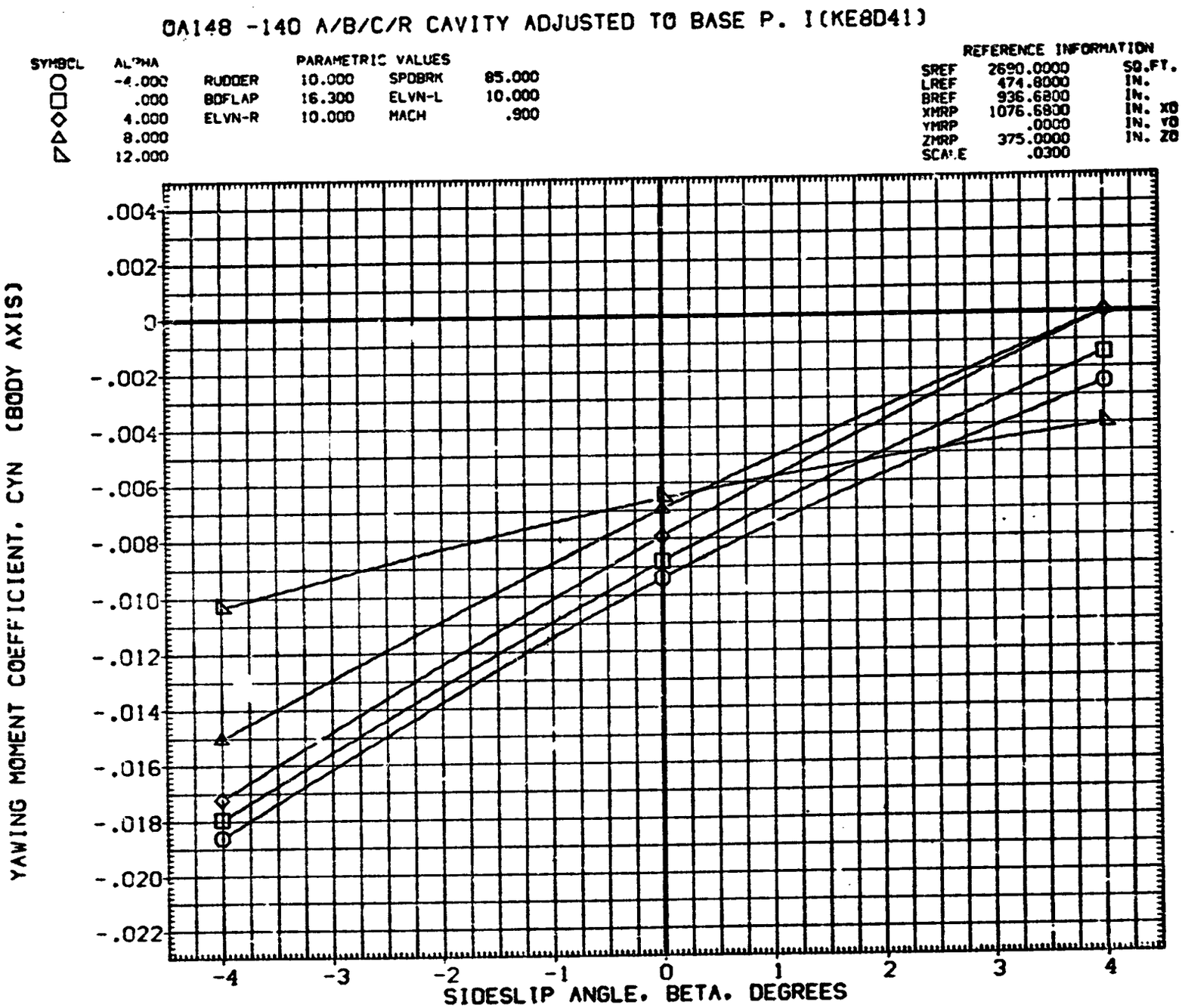


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

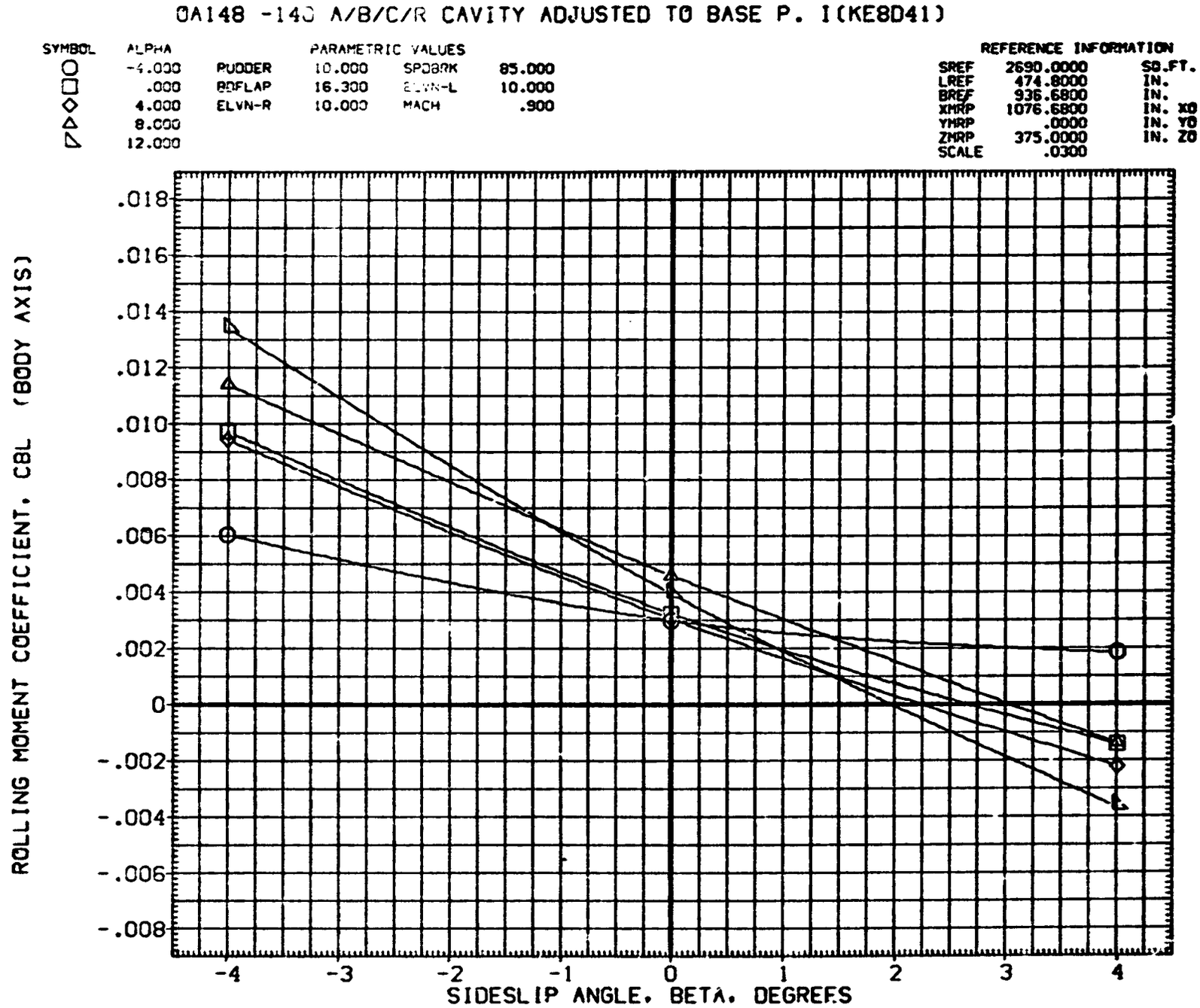


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

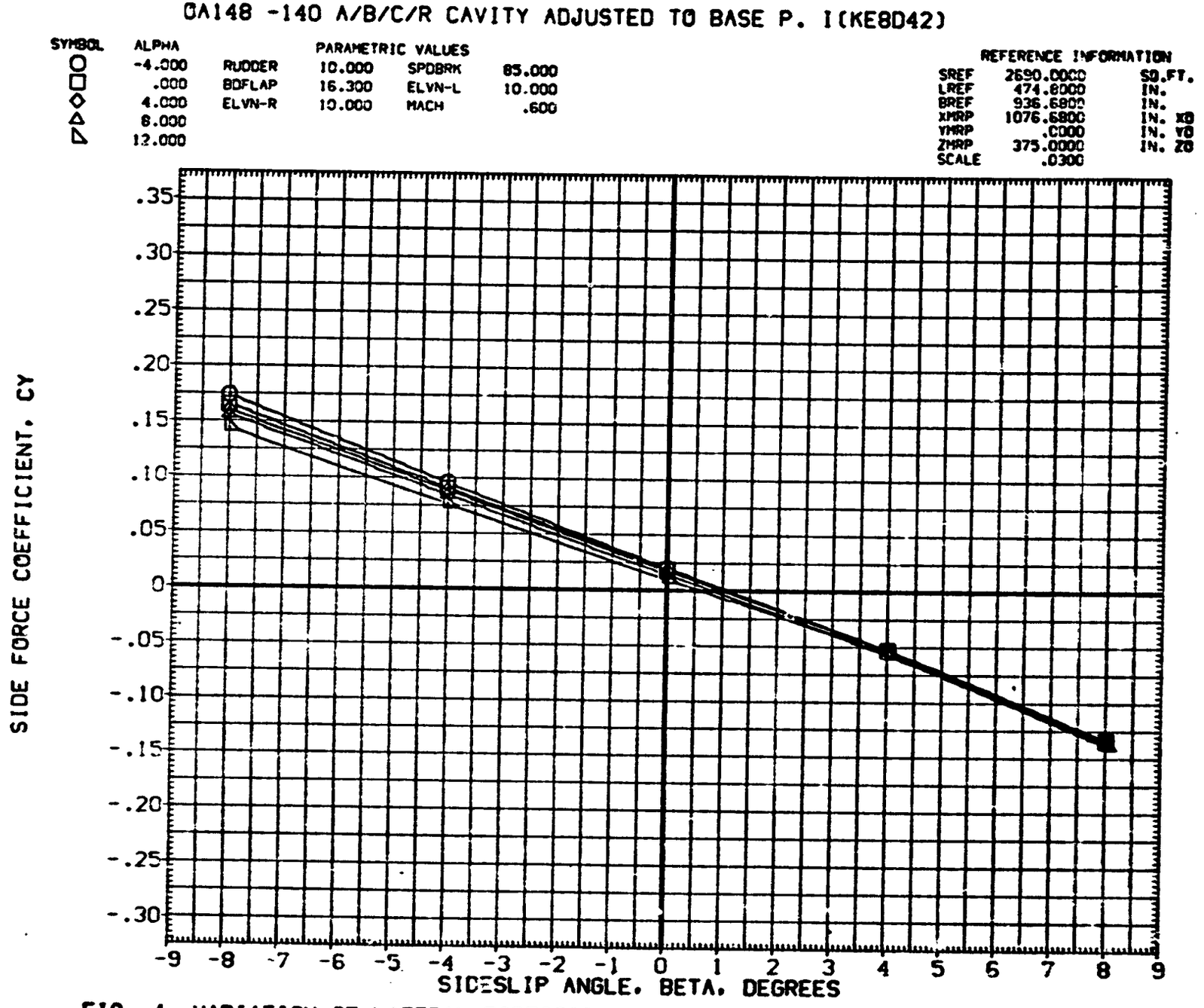


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

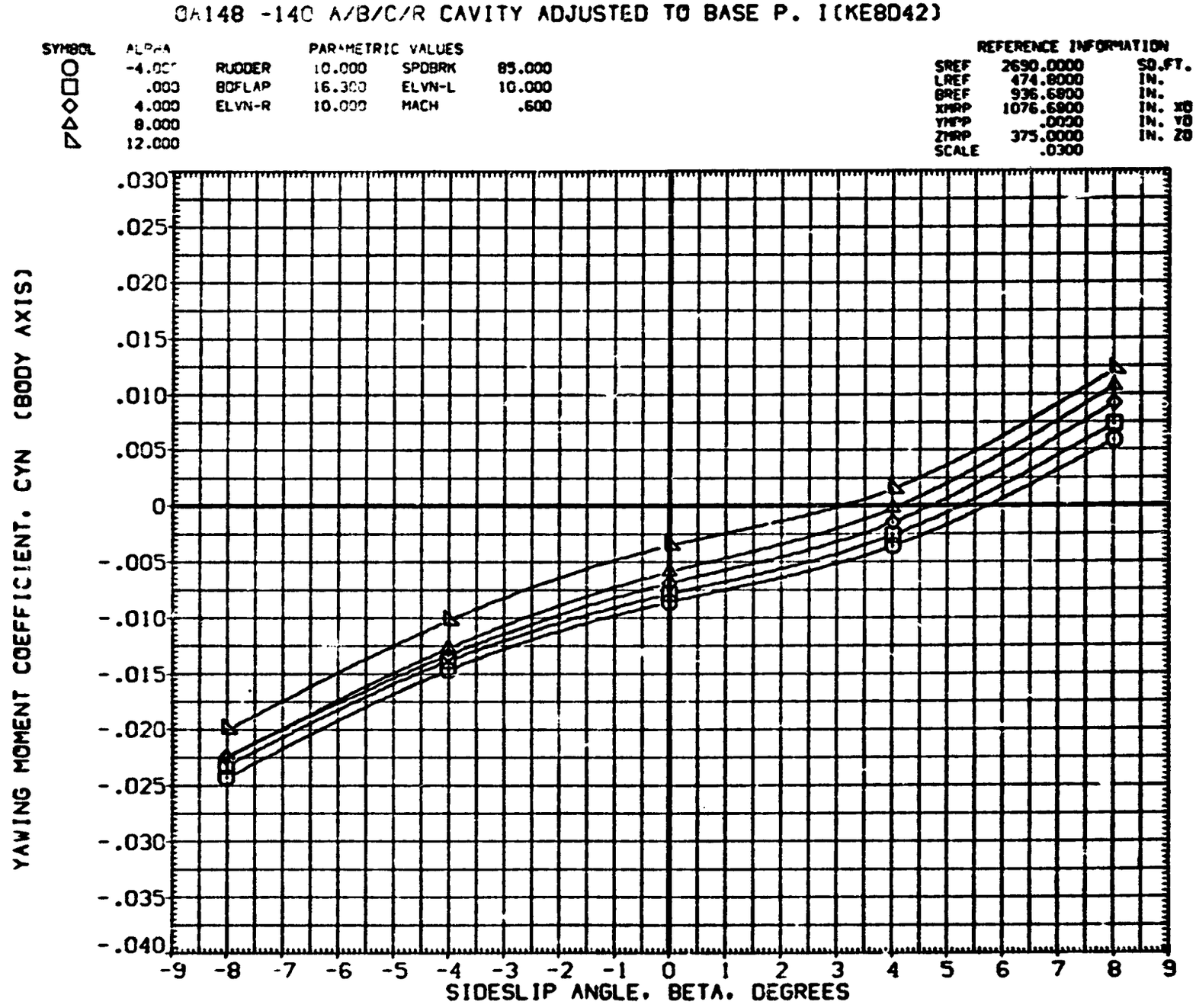


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

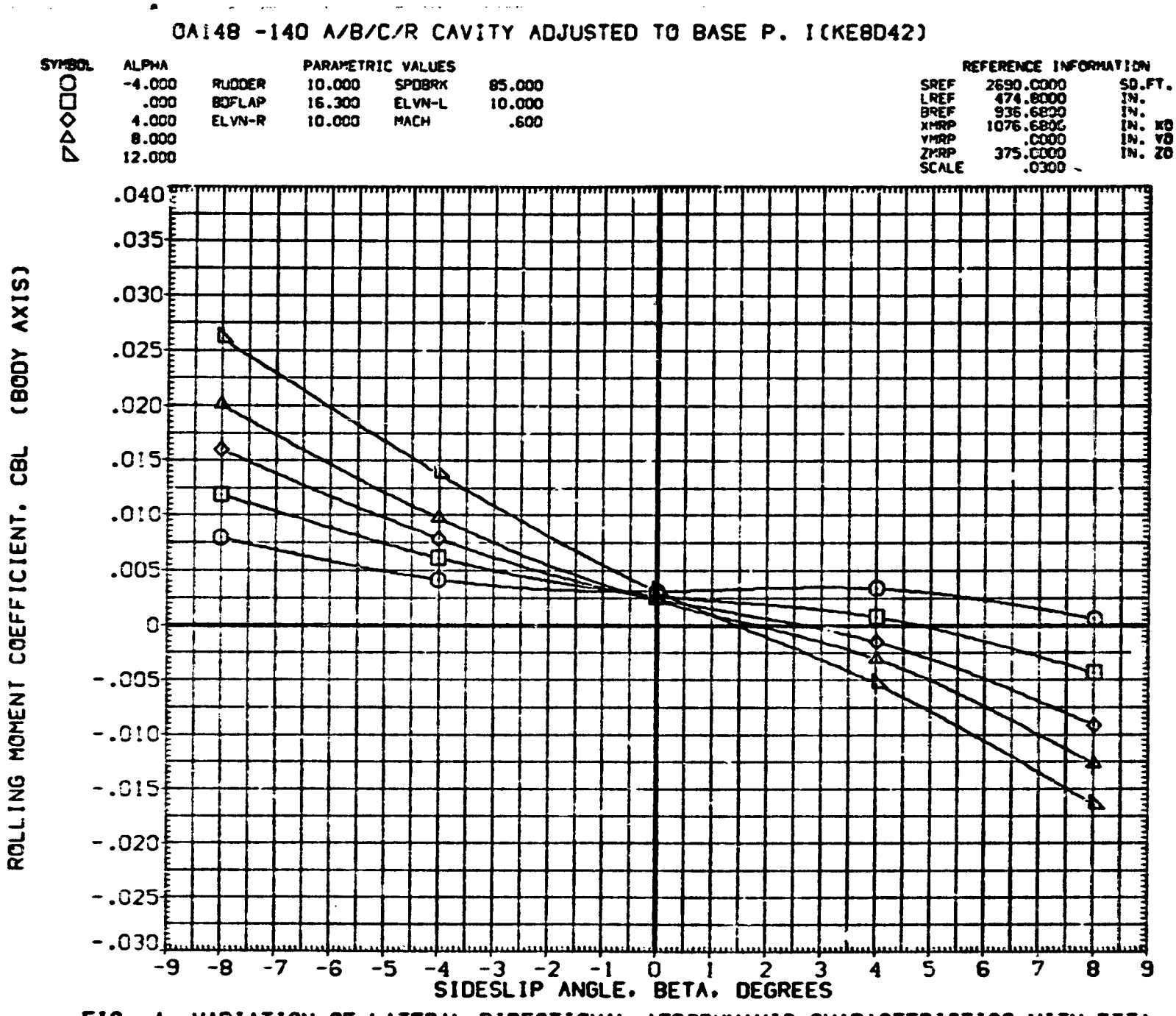


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D43)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBPR	55.000
□	.000	BDFLAP	22.500	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	.900
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XD
YMRP	.0000	IN. YD
ZMRP	375.0000	IN. ZD
SCALE	.0300	

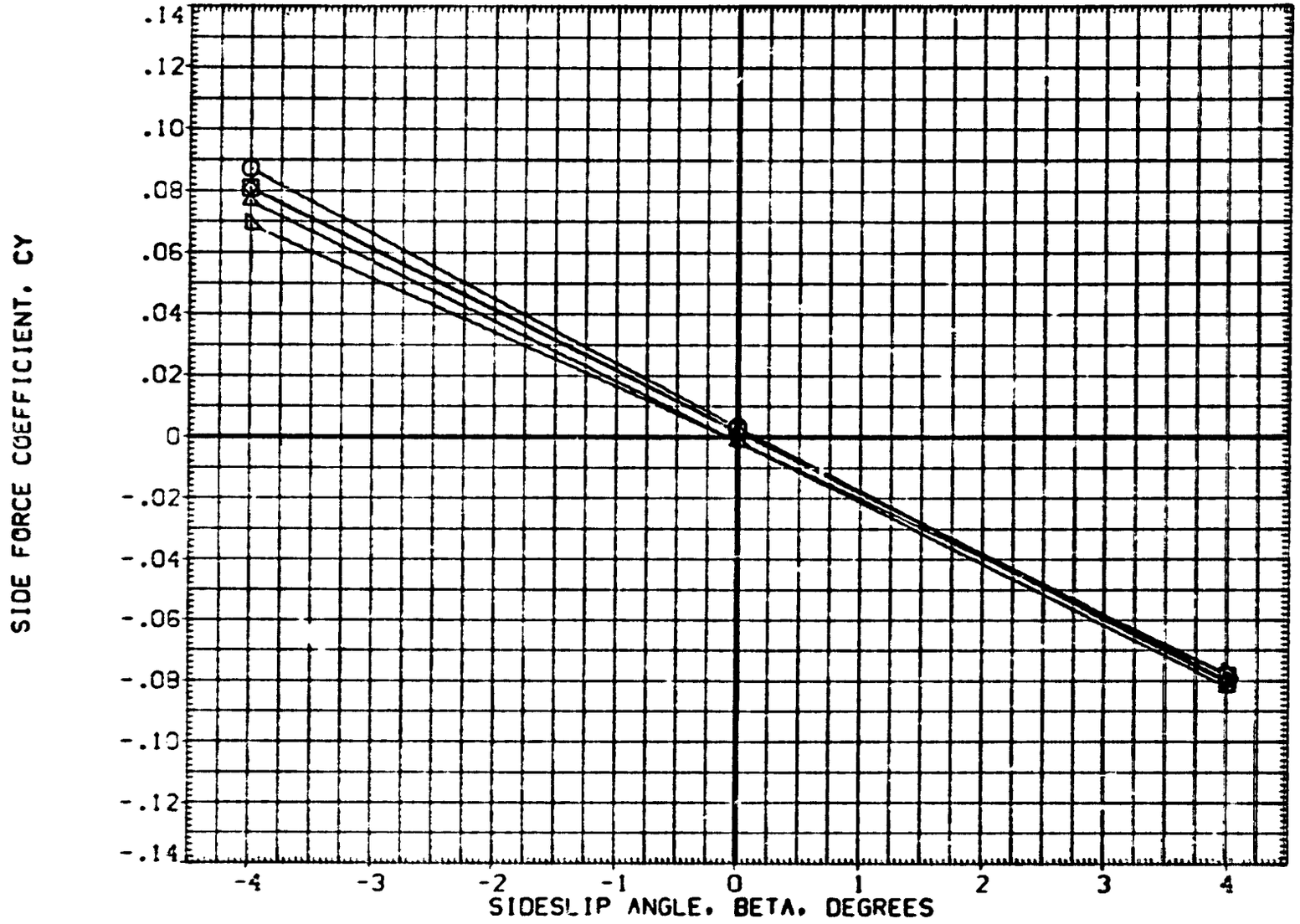


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

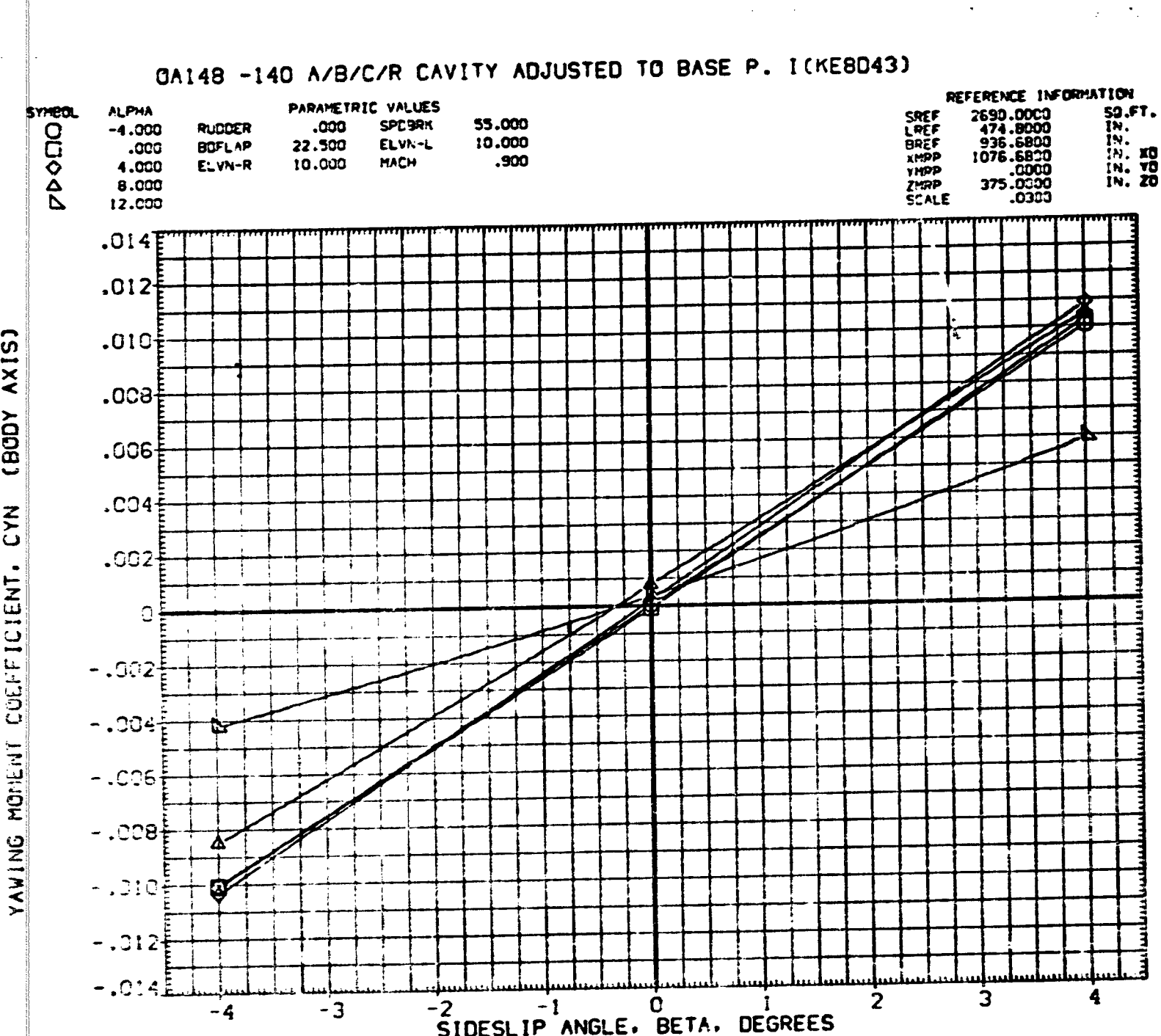


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

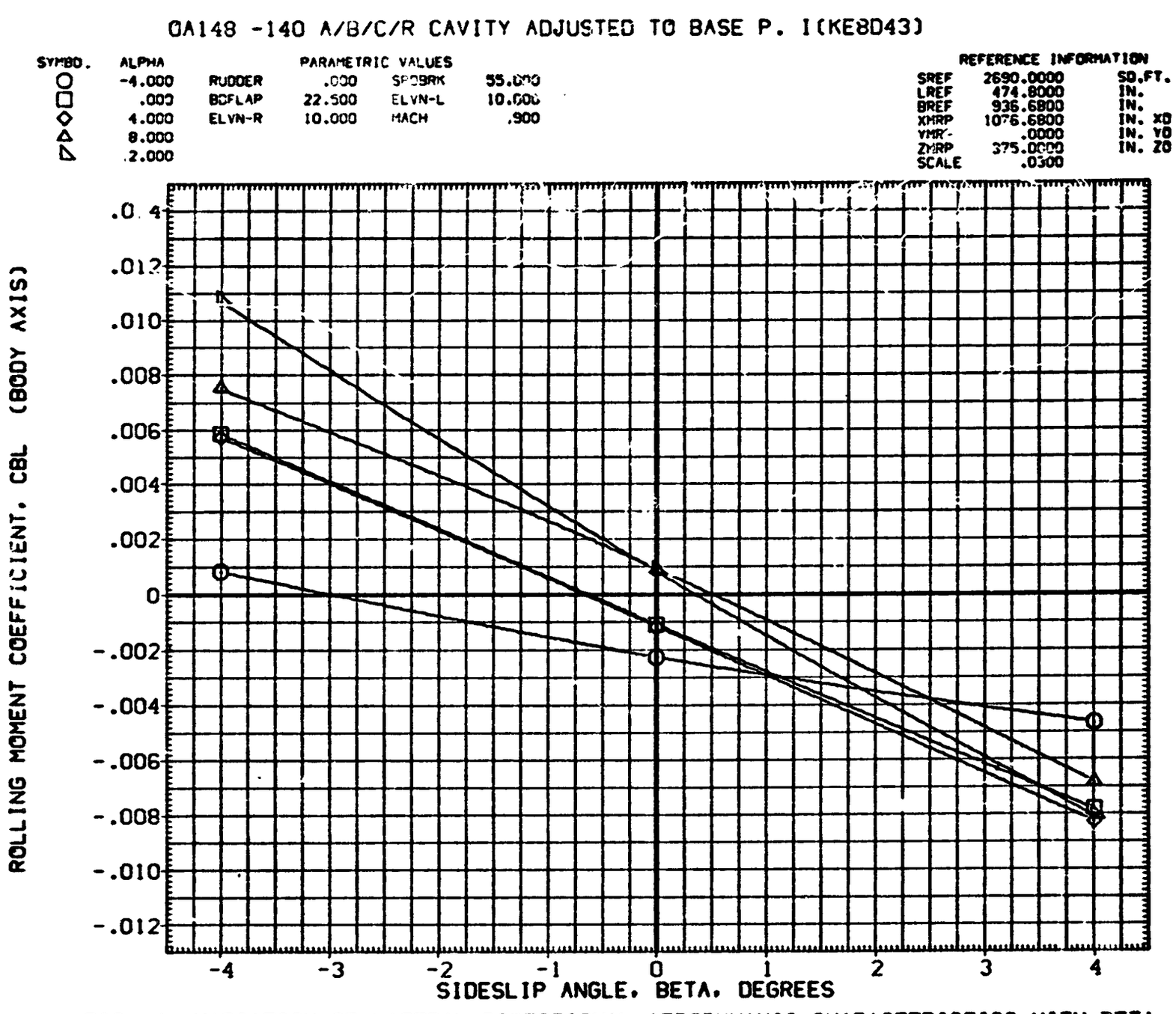


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

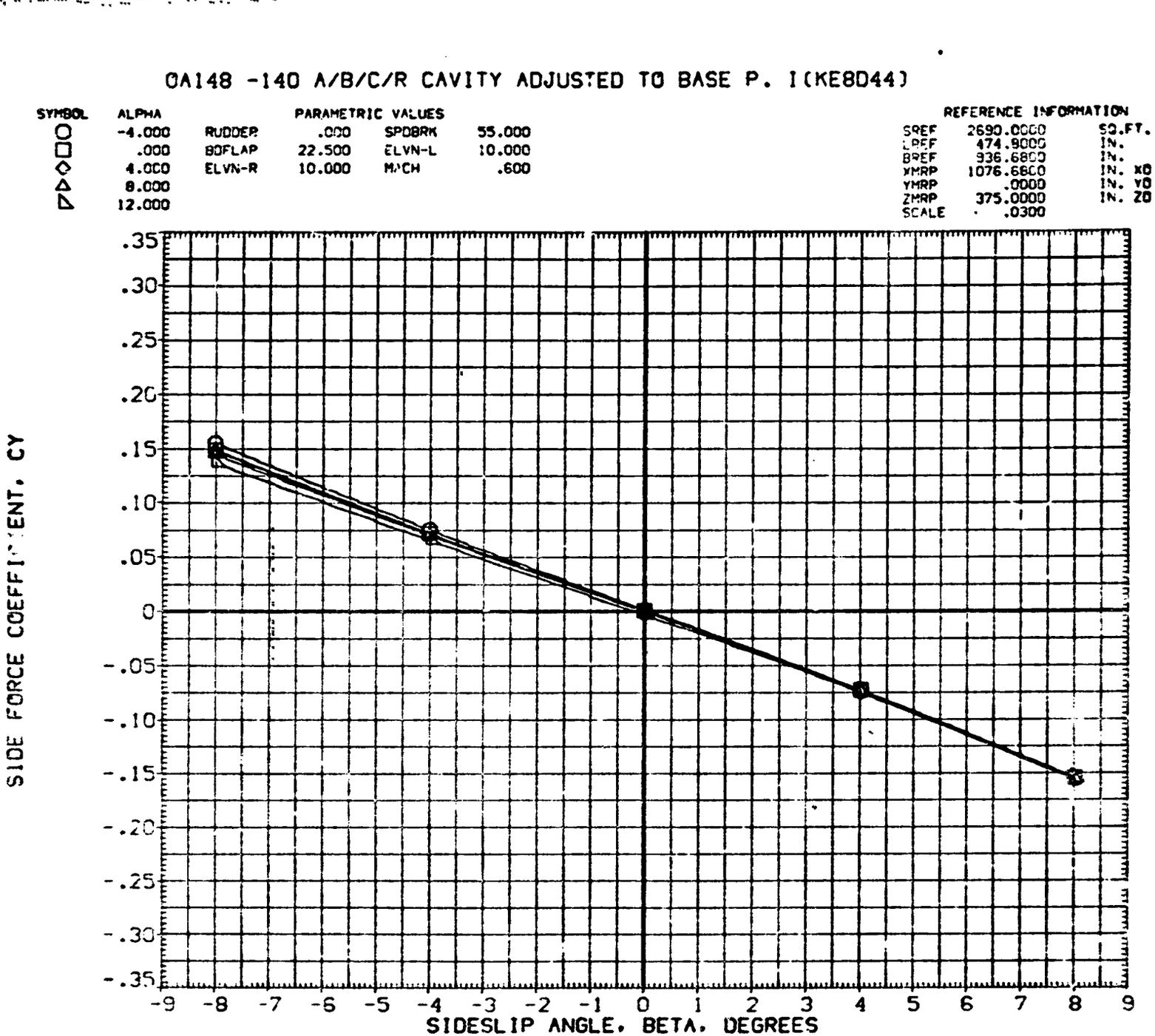


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

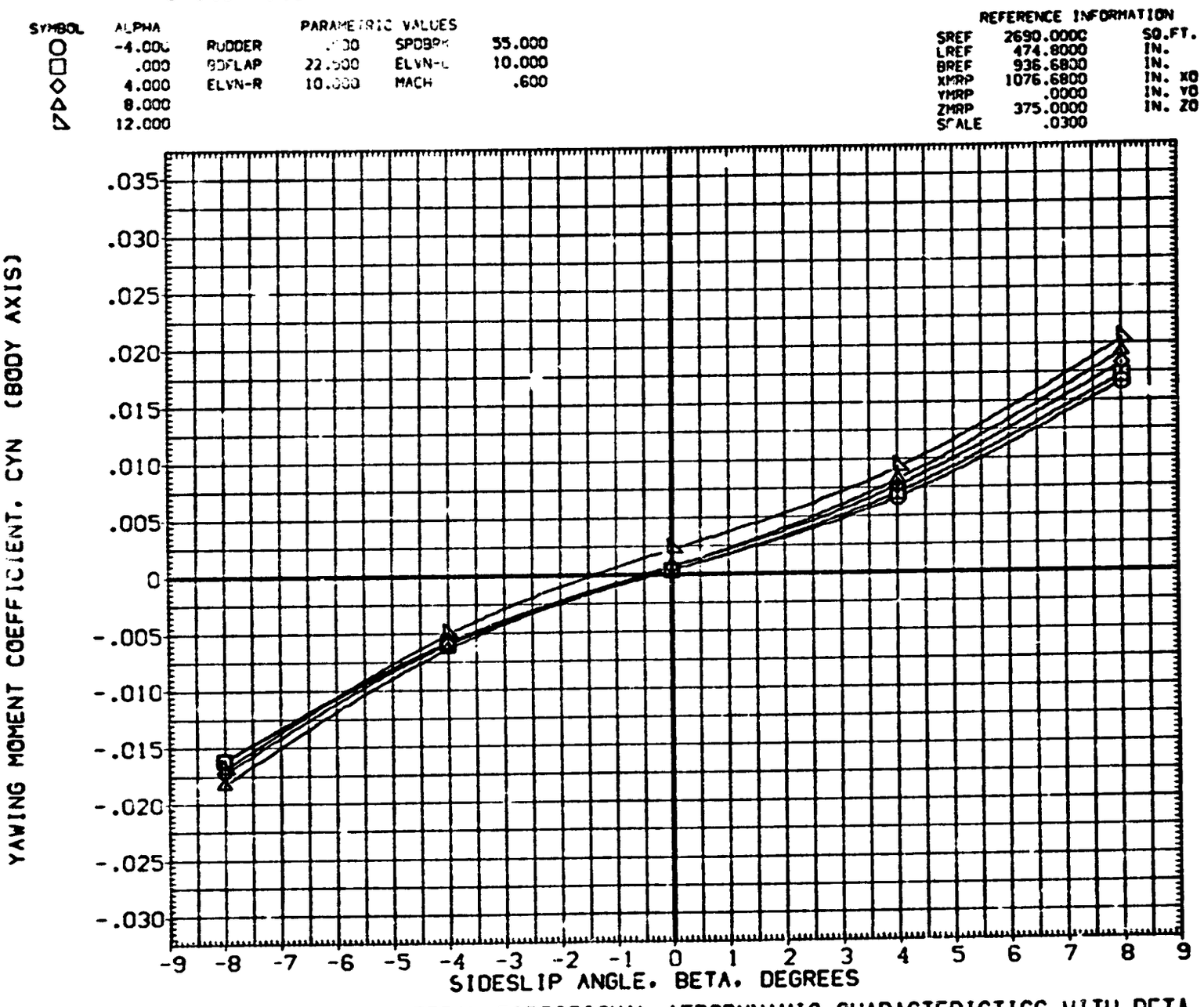


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

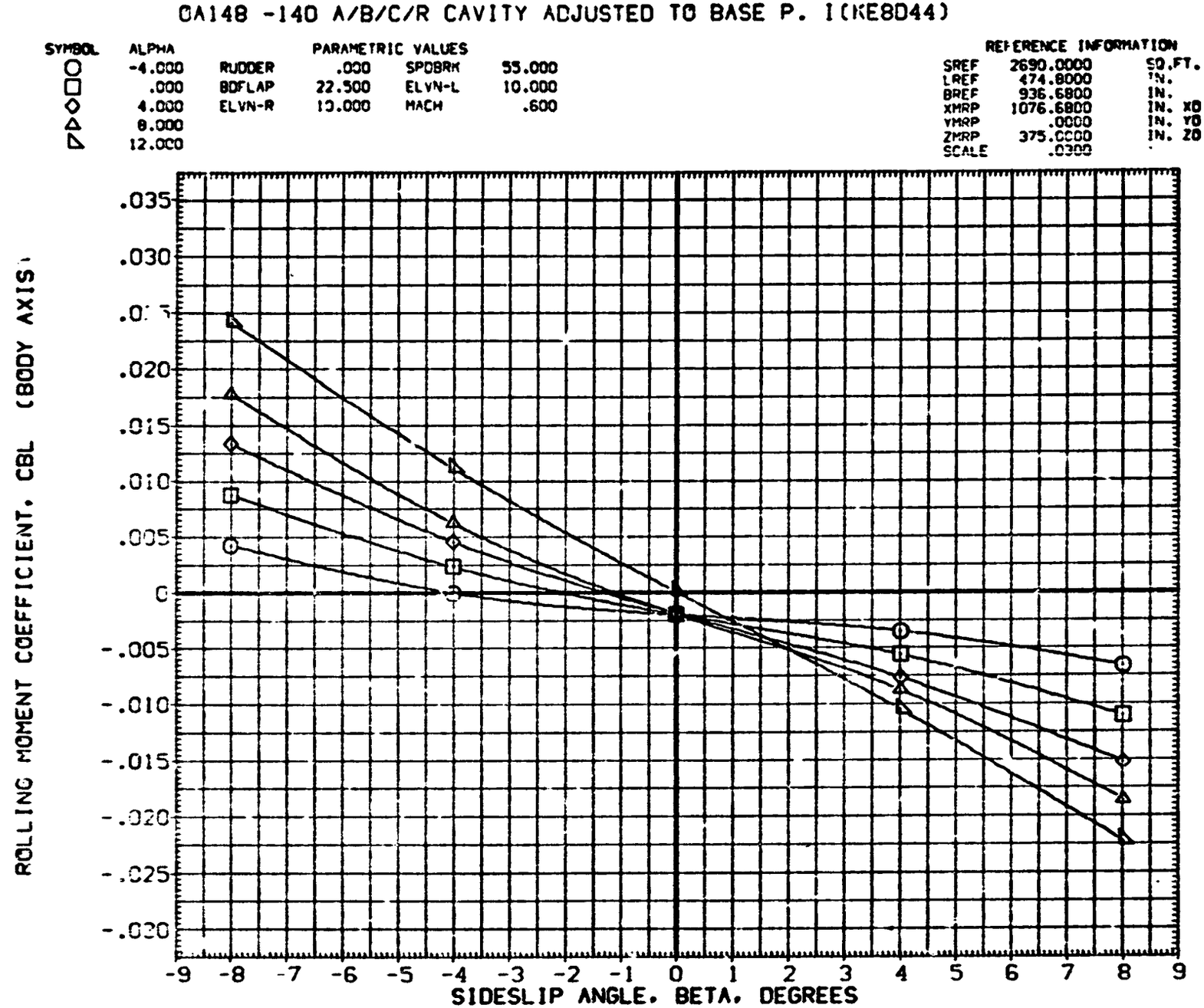


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

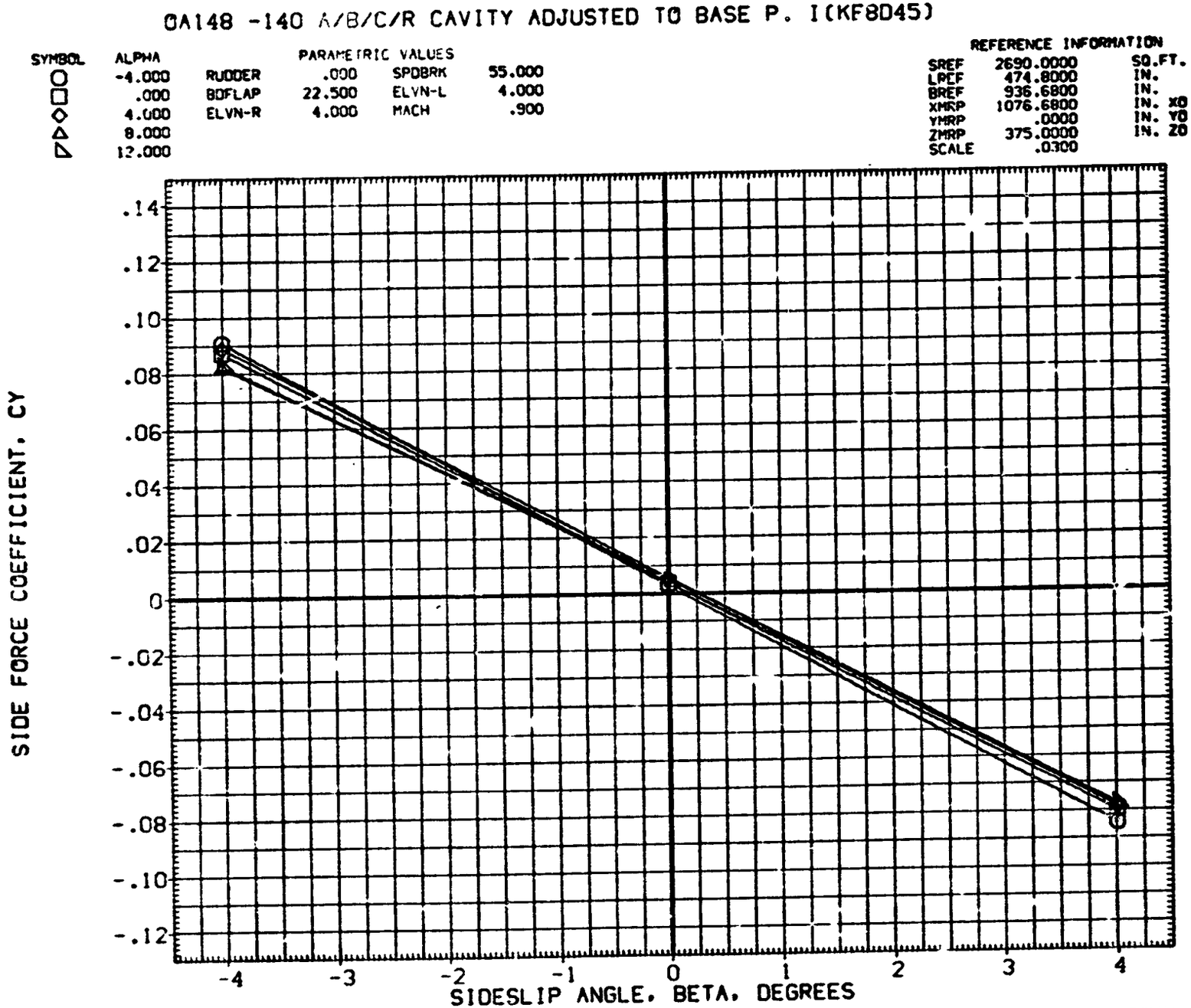


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

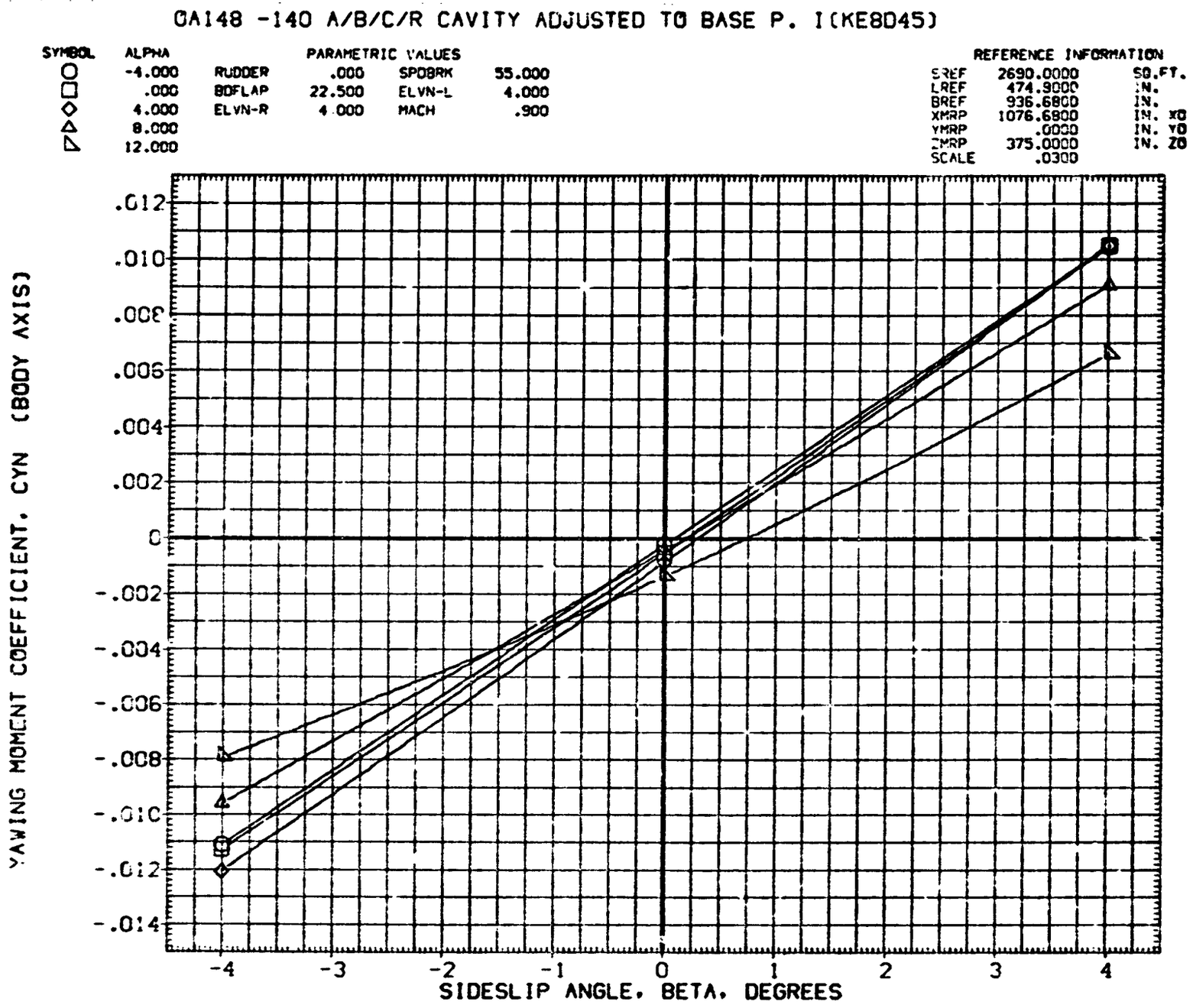


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

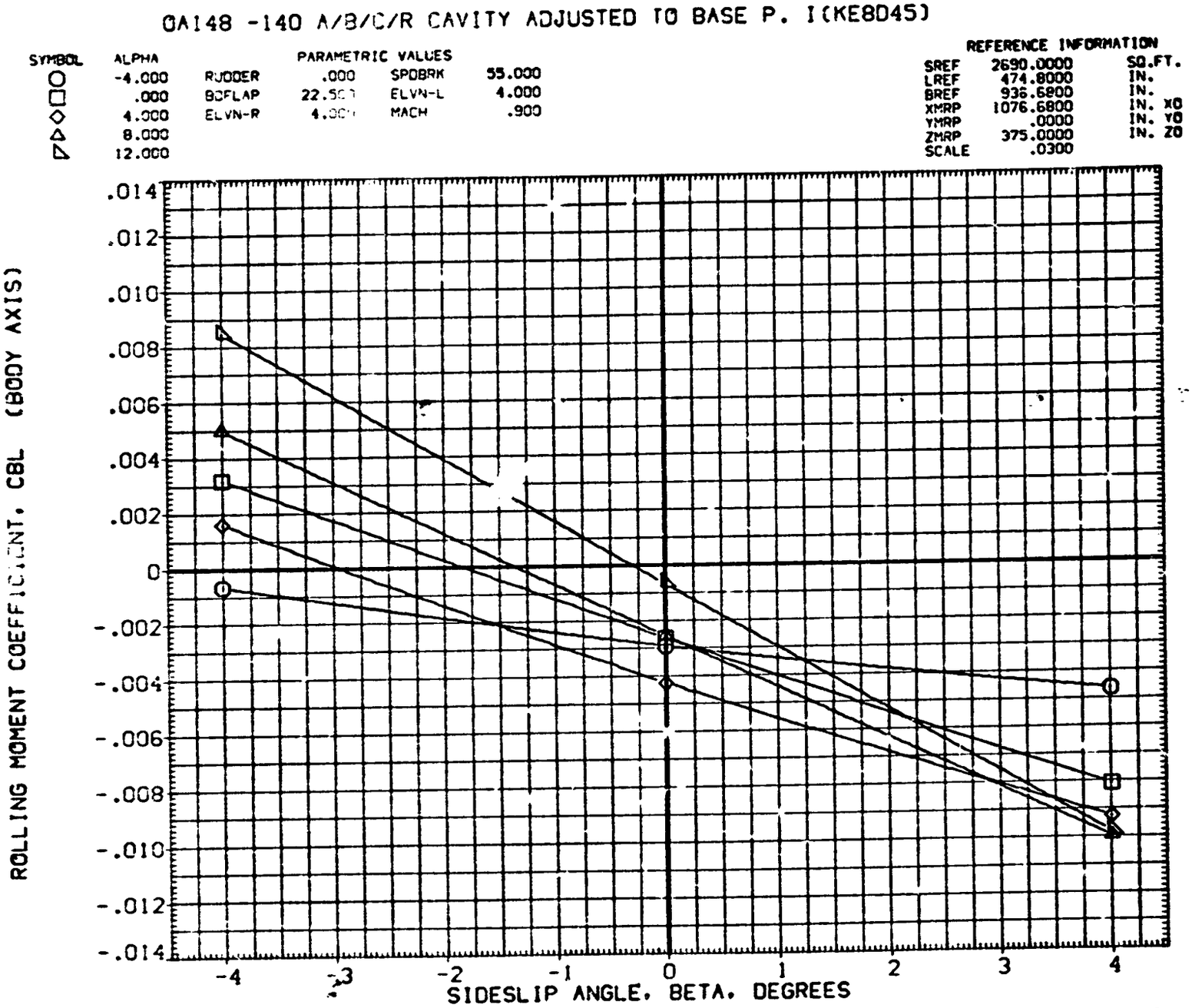


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D46)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
△	12.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	22.500	ELVN-L	4.000
ELVN-R	4.000	MACH	.600

REFERENCE INFORMATION:

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

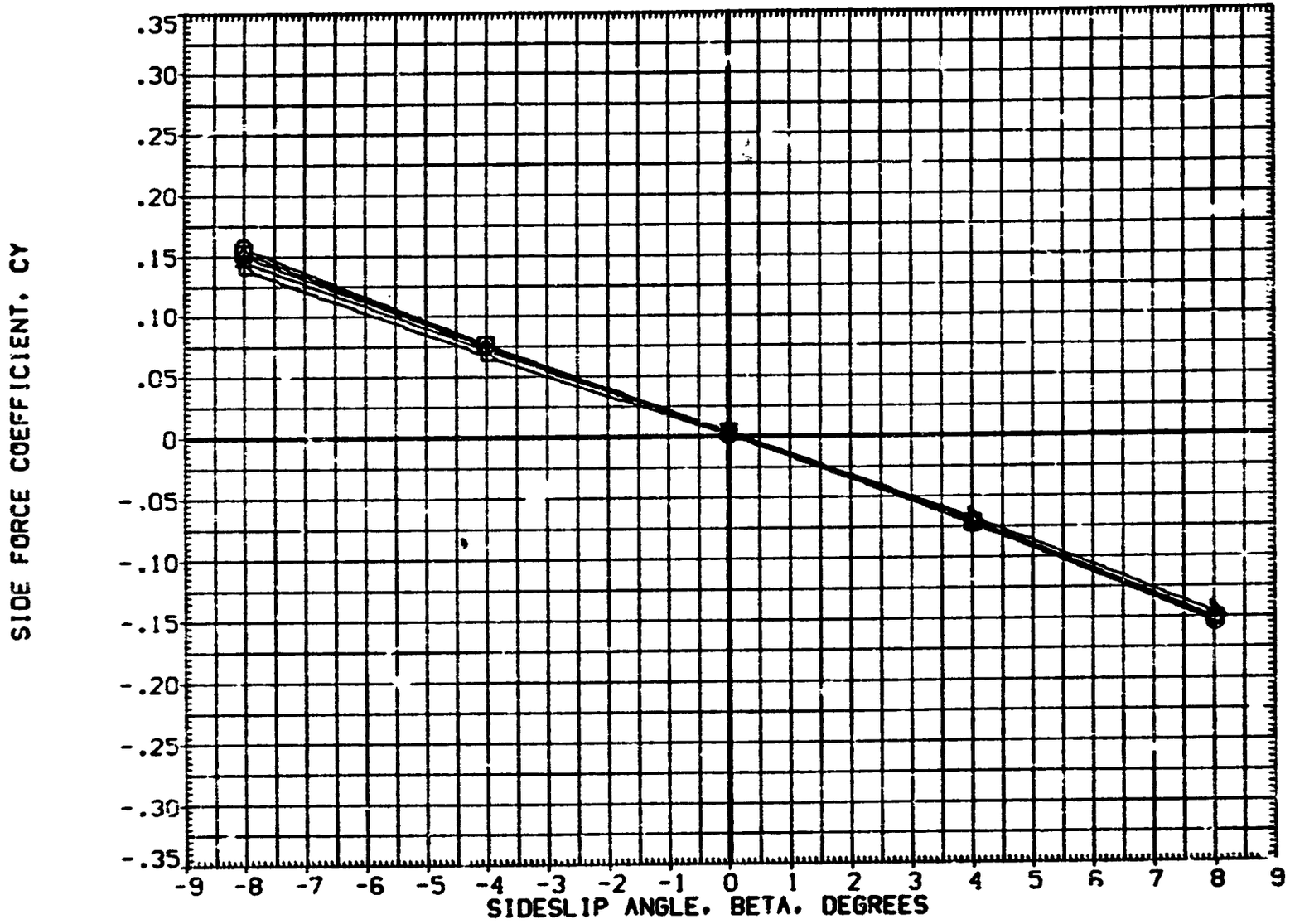


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

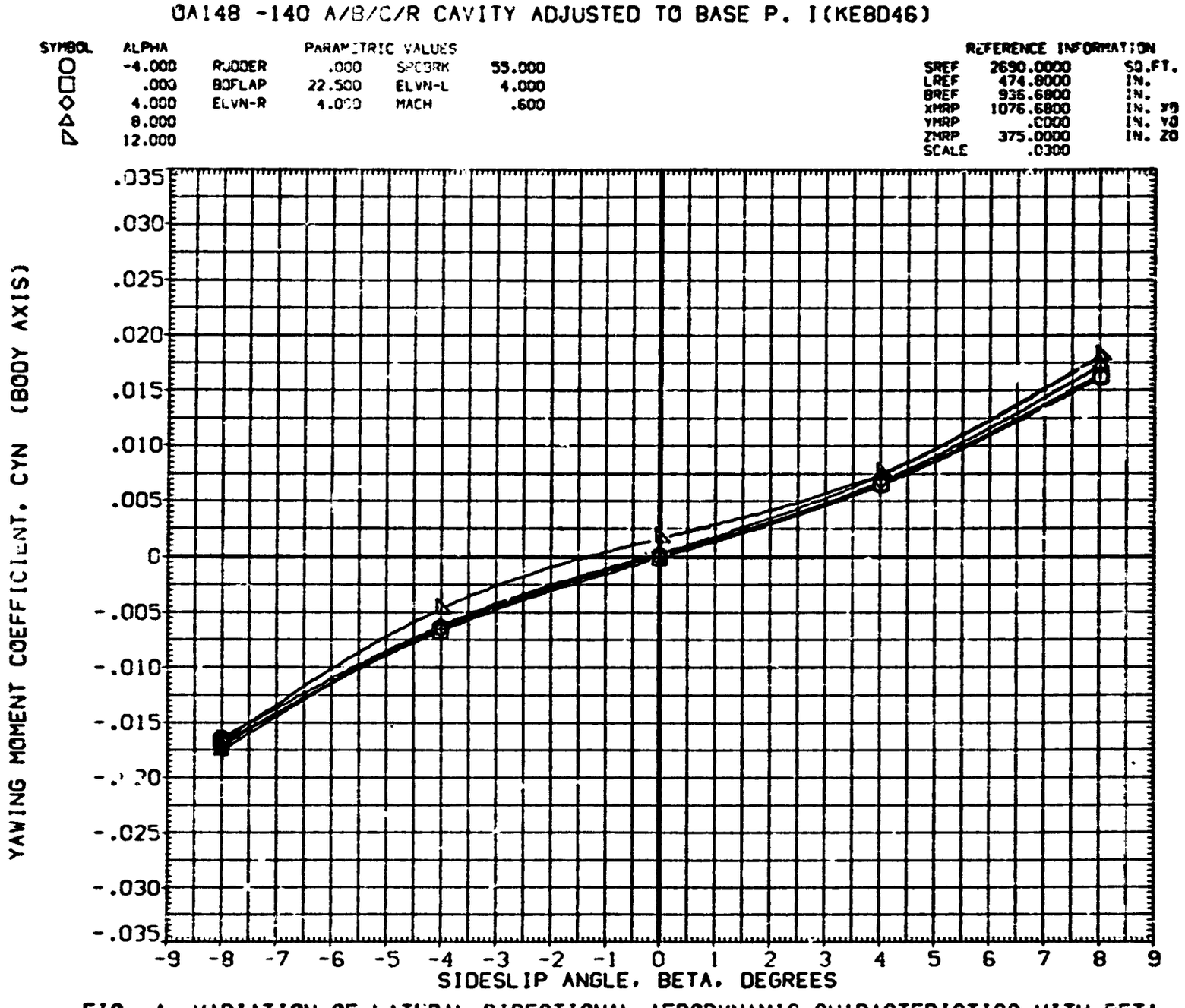


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

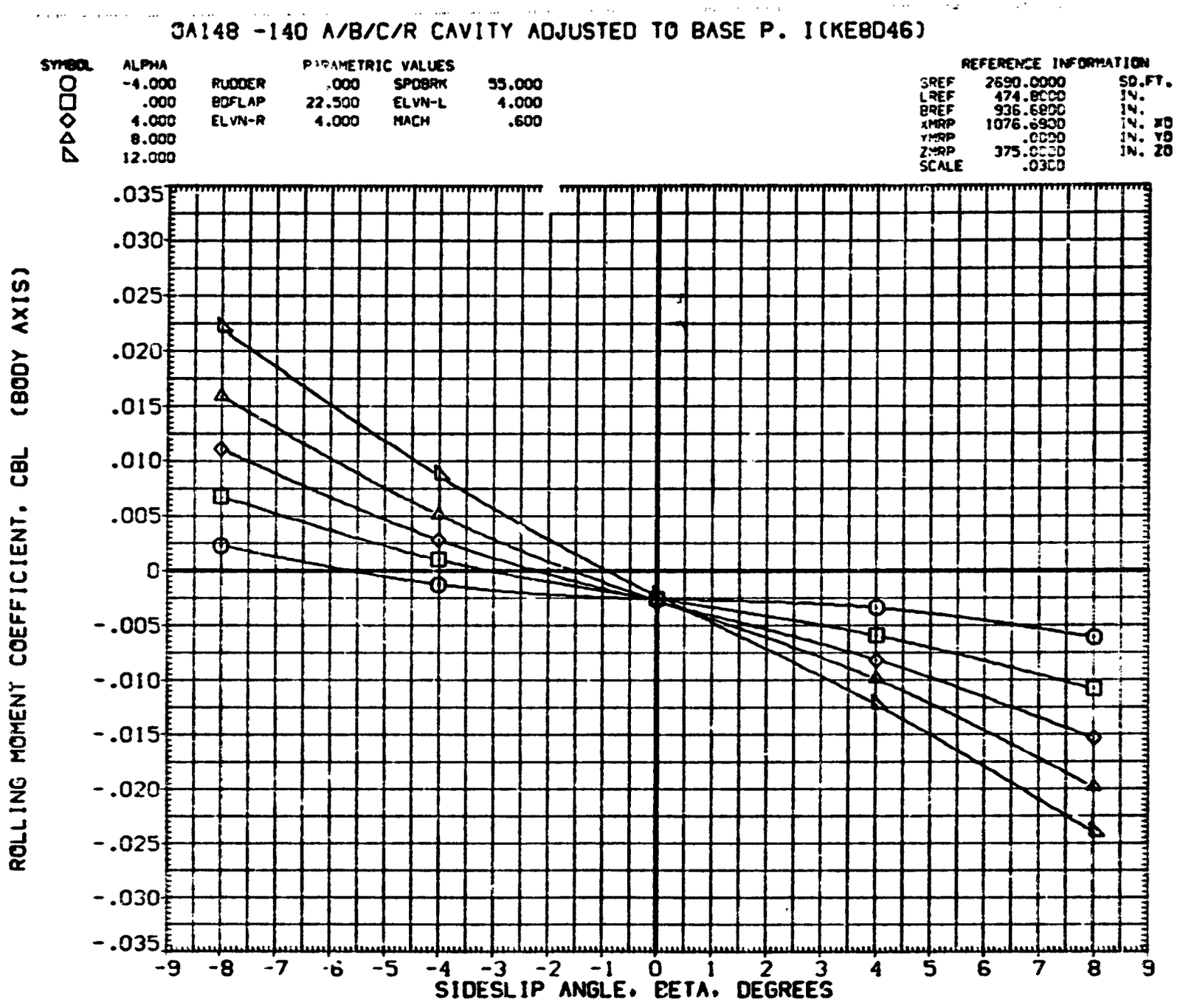


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

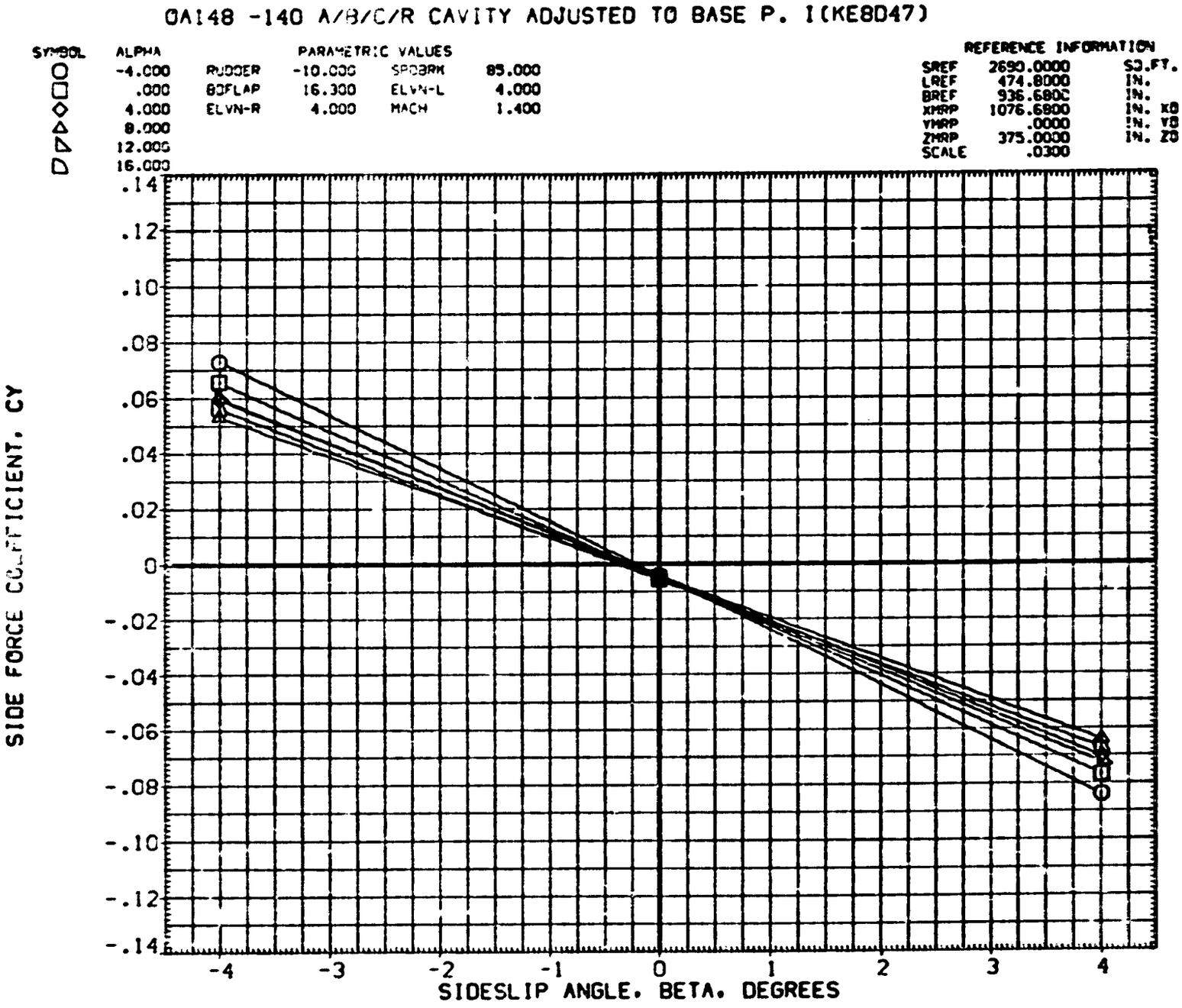


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

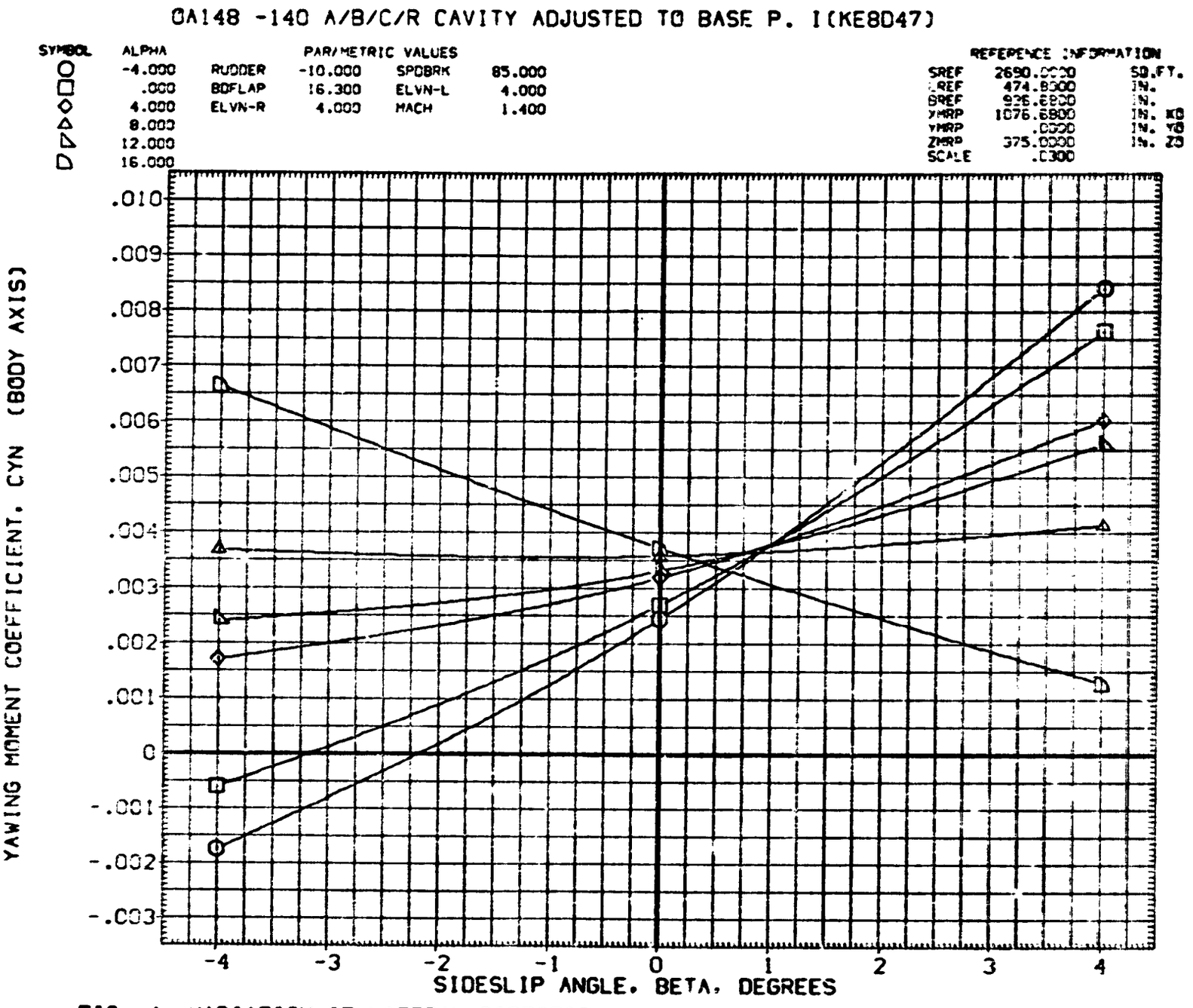


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

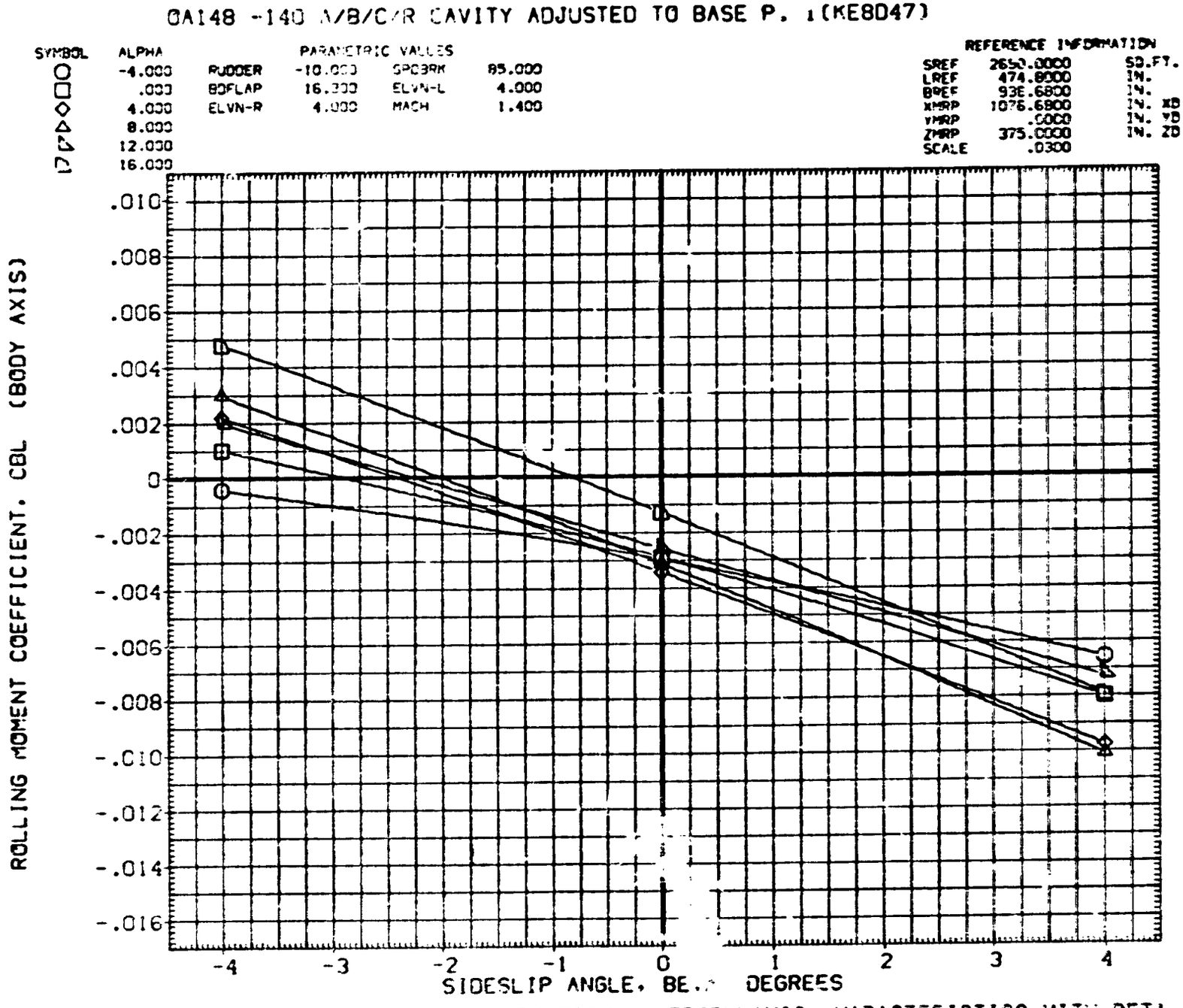


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

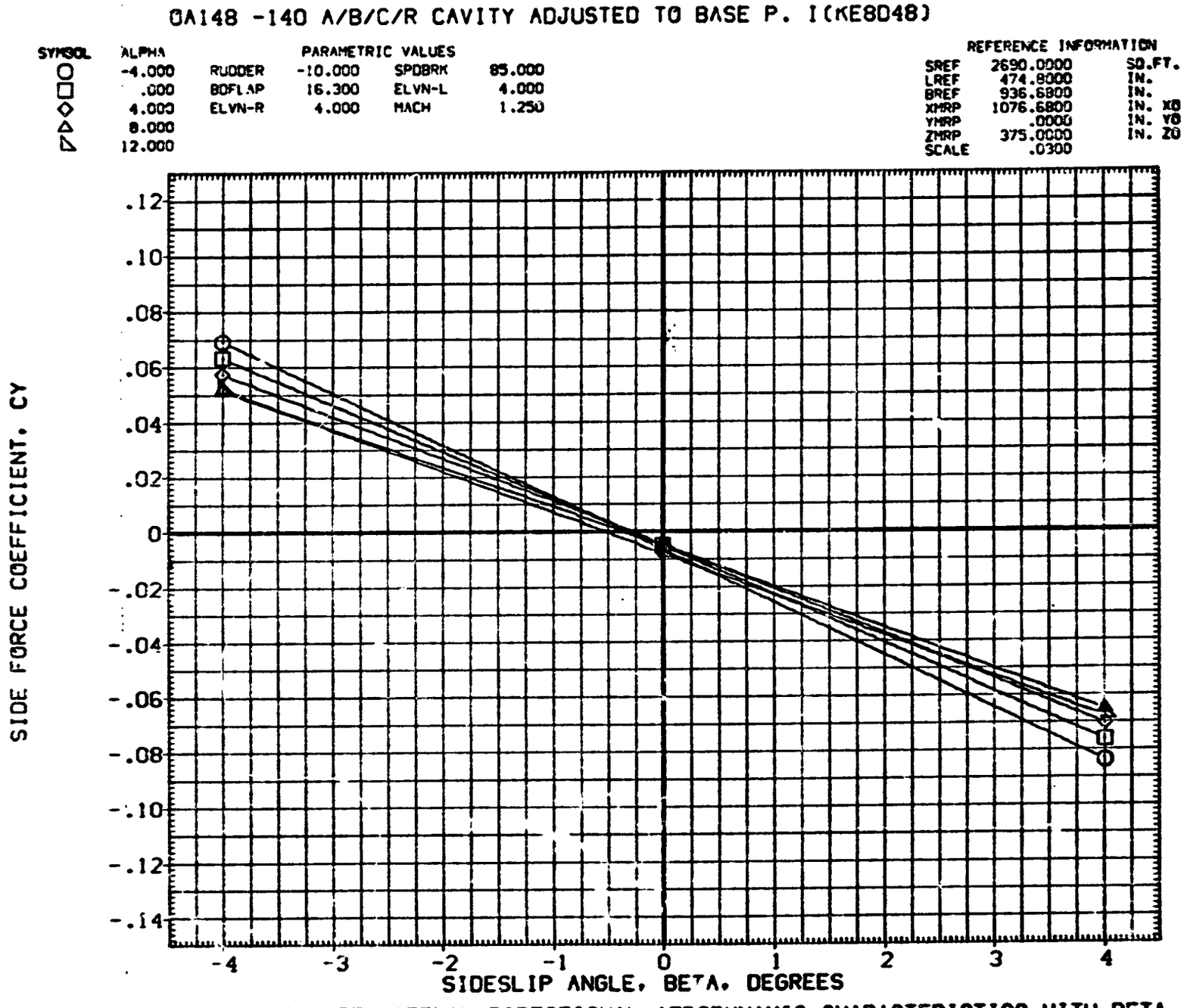


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

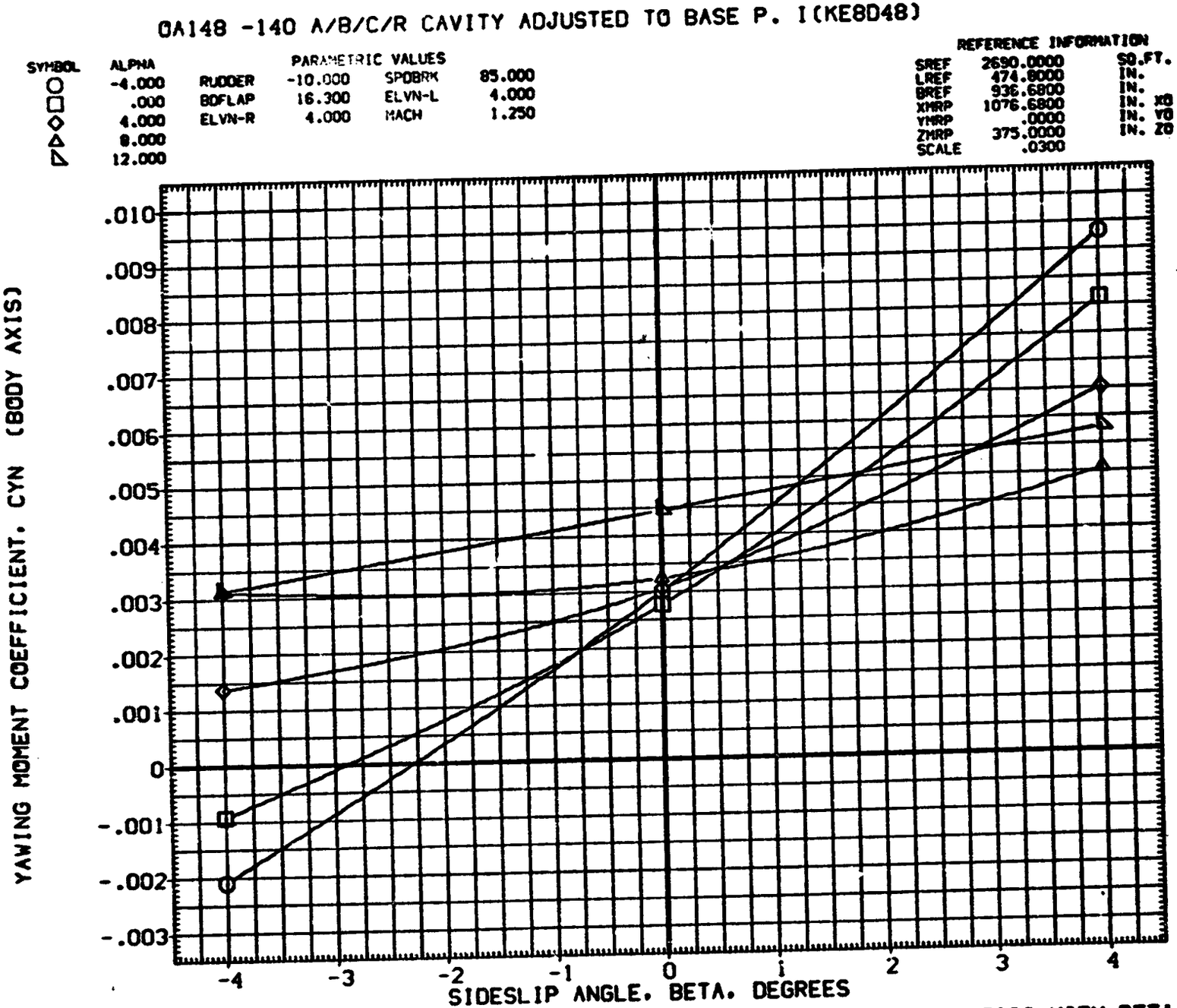


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

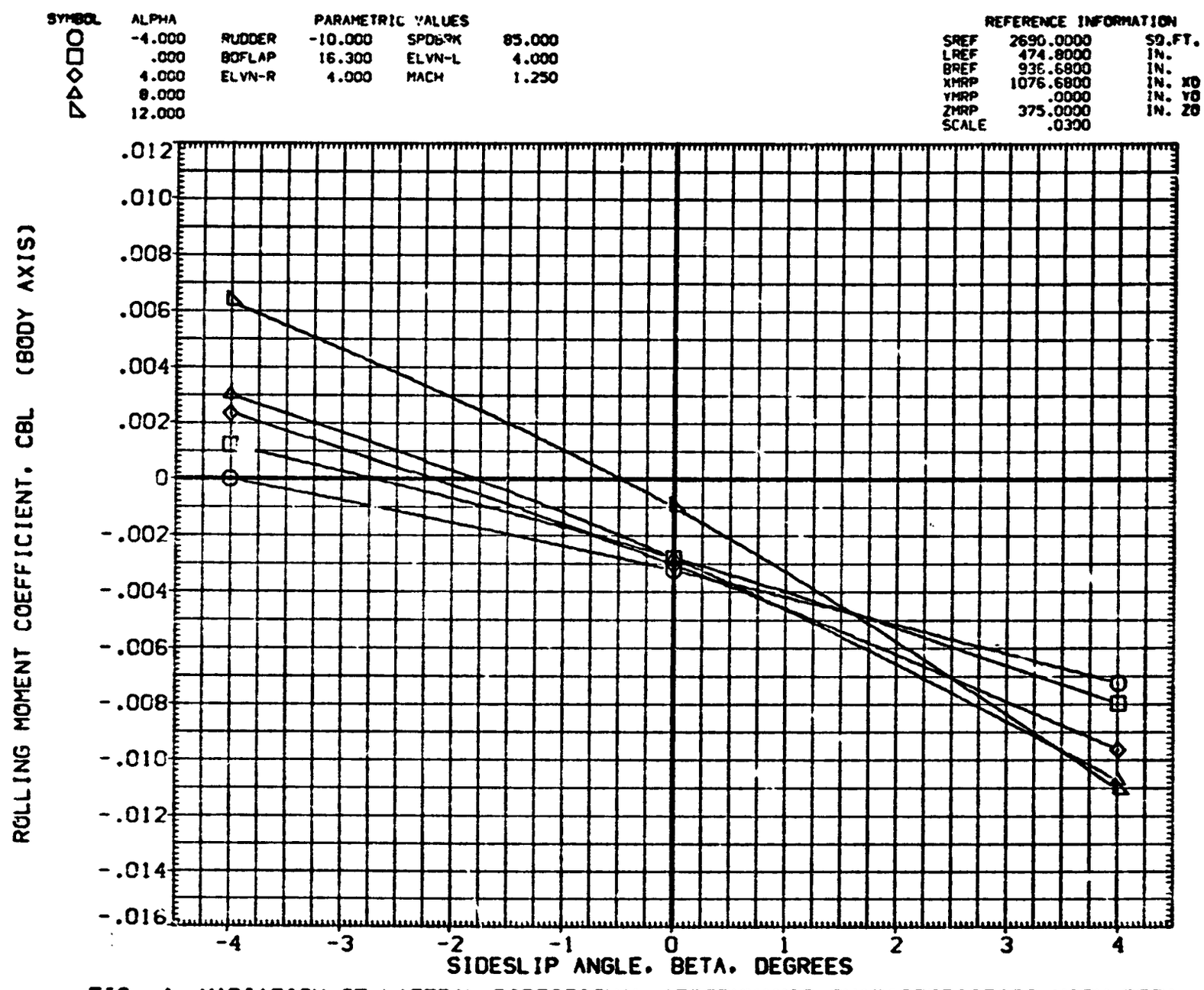


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

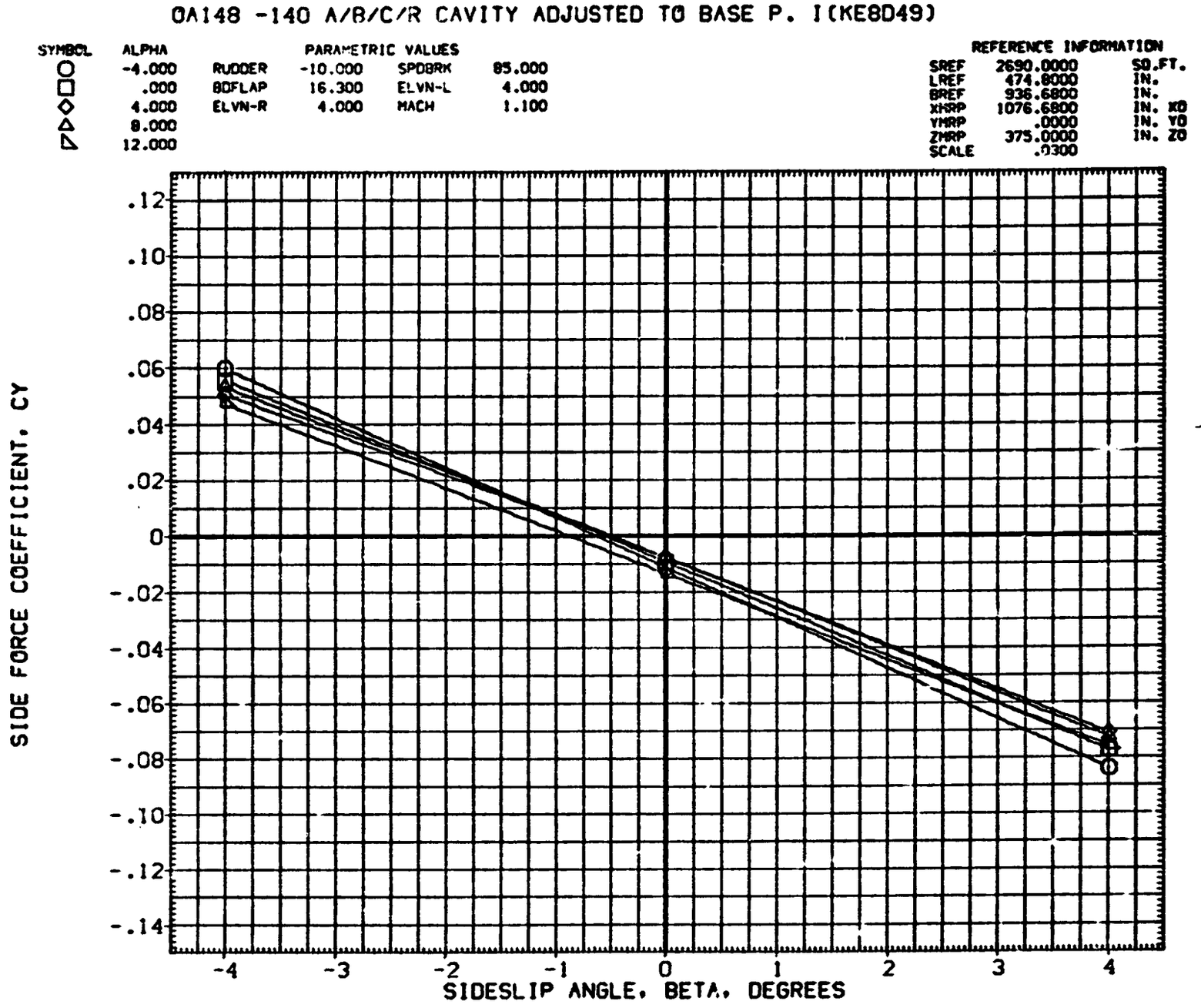


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

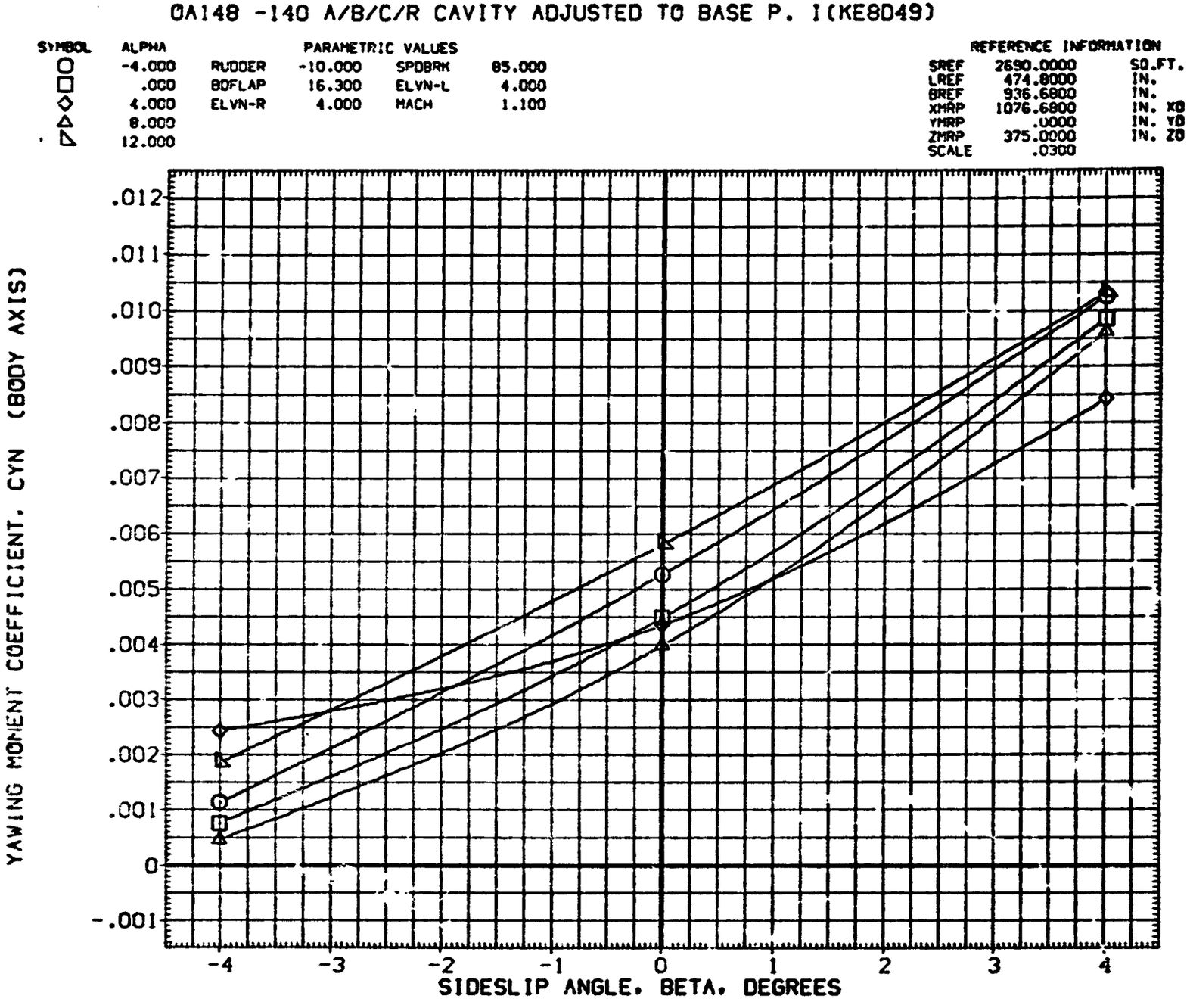


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

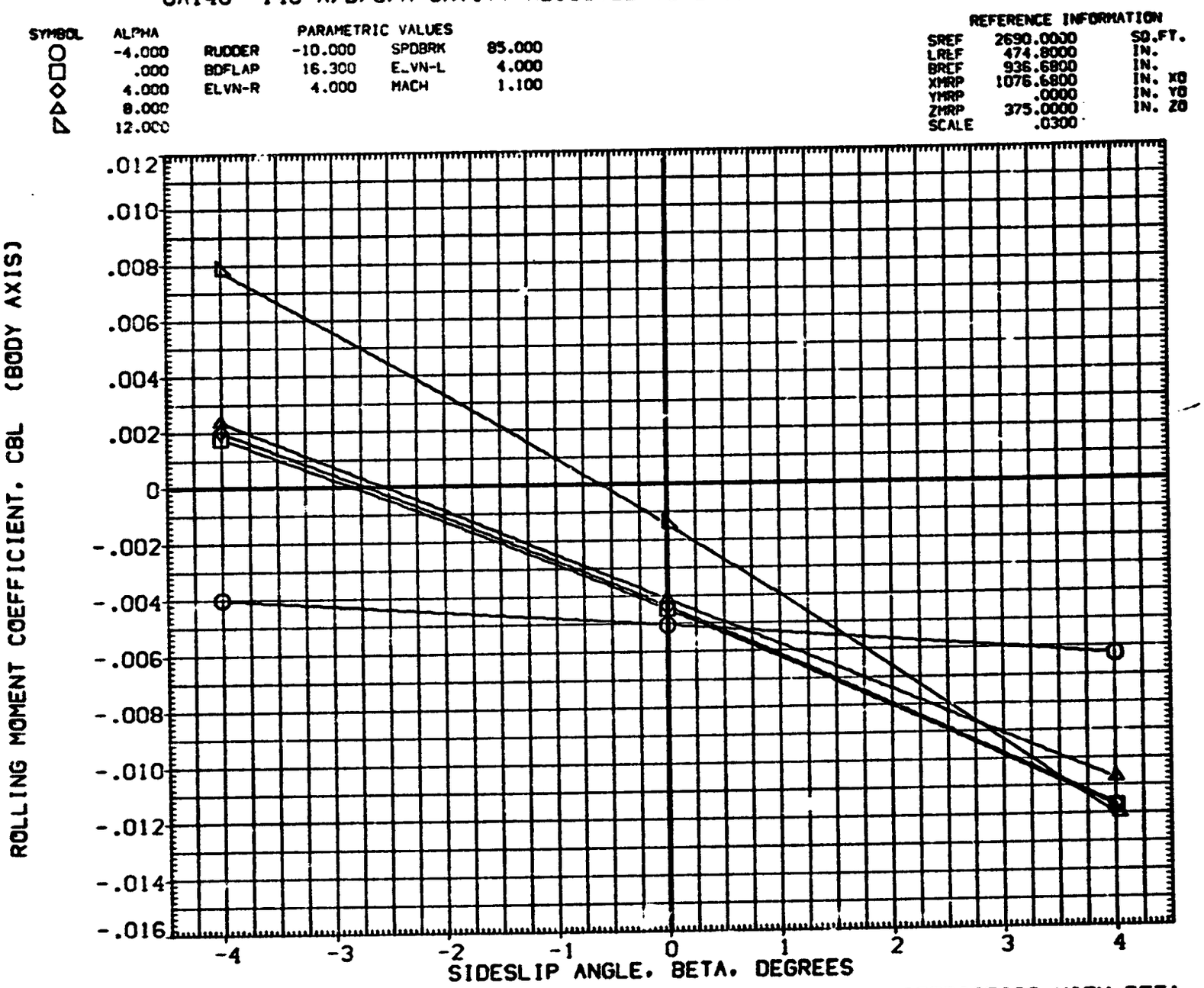


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

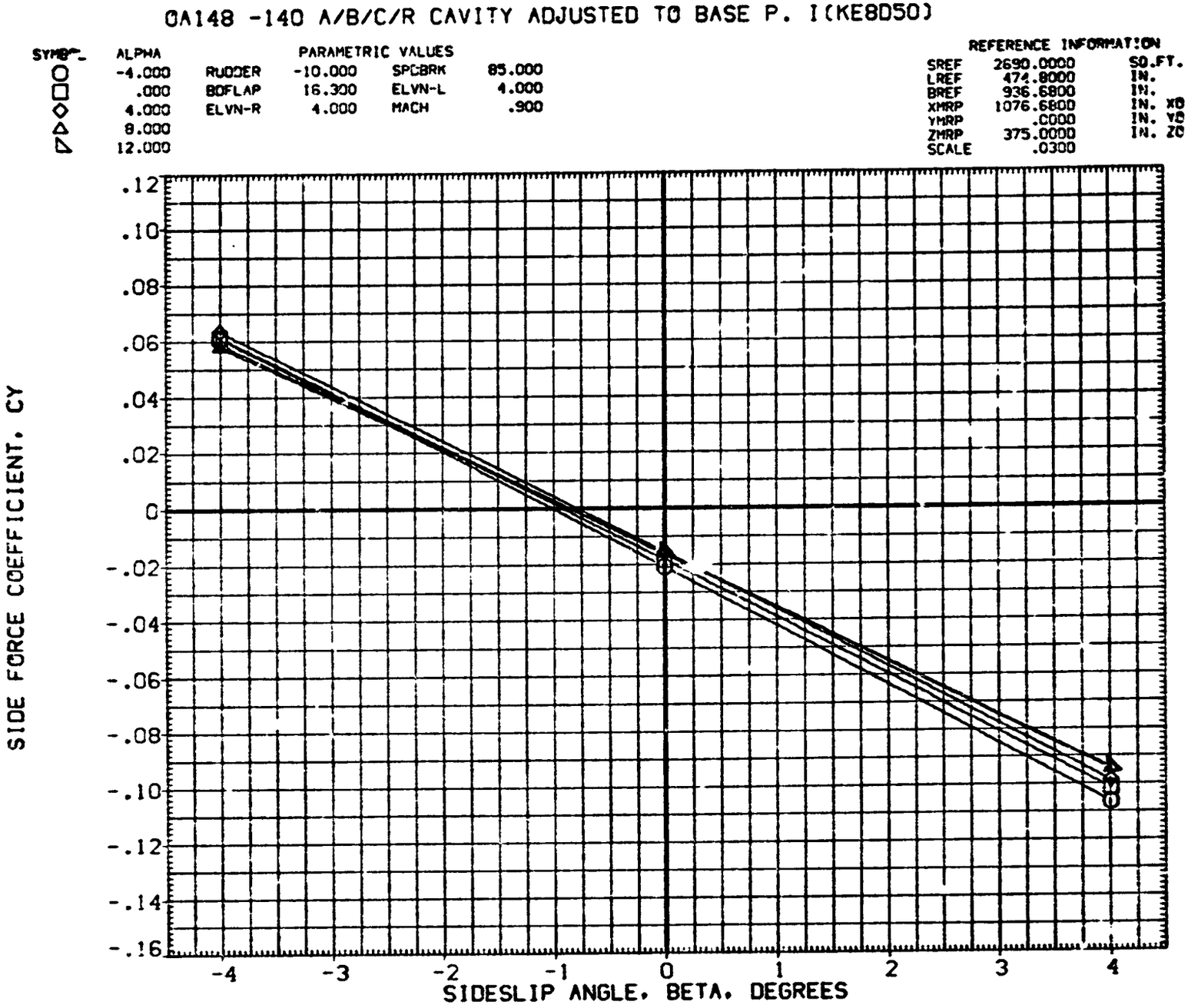


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

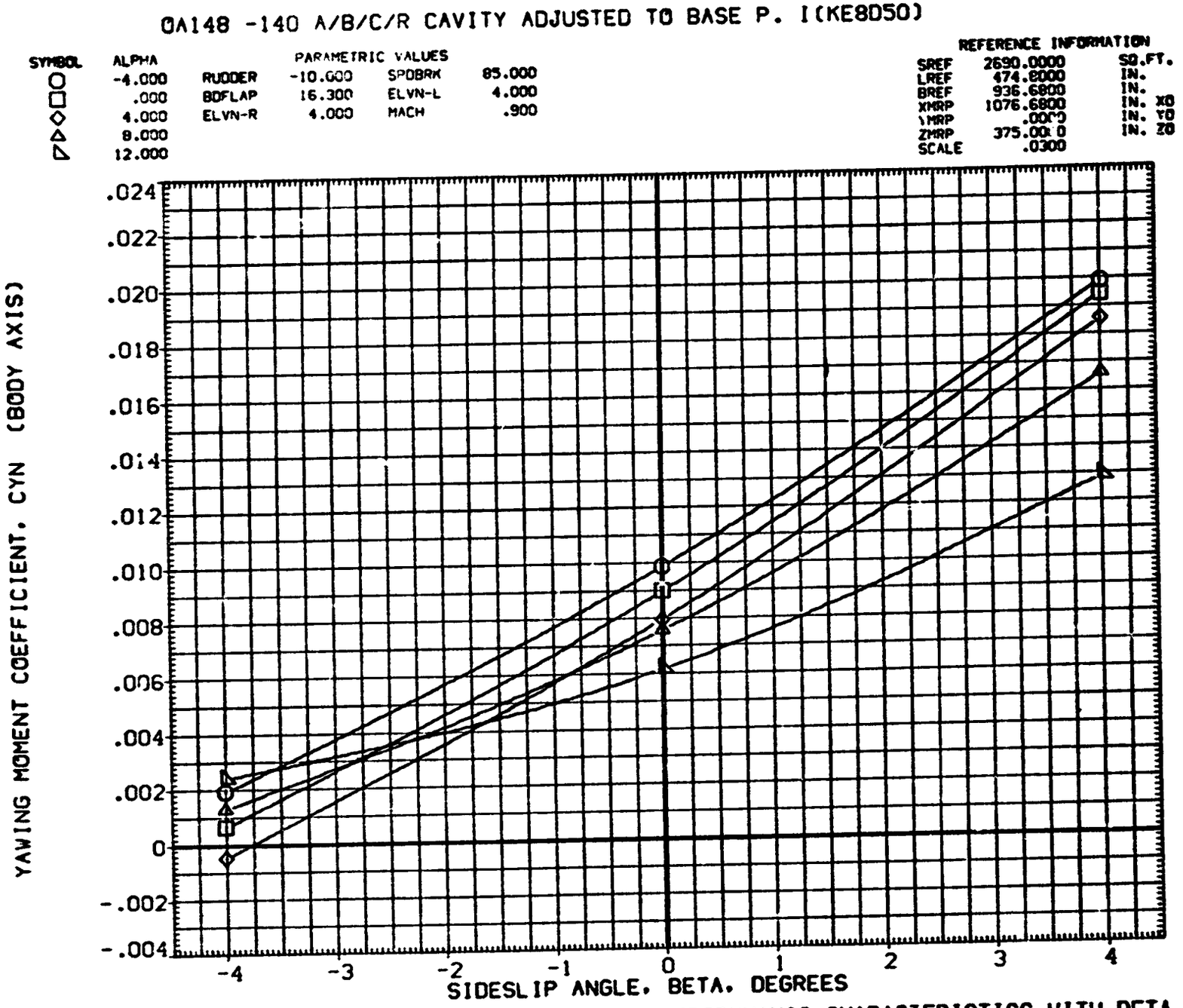


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

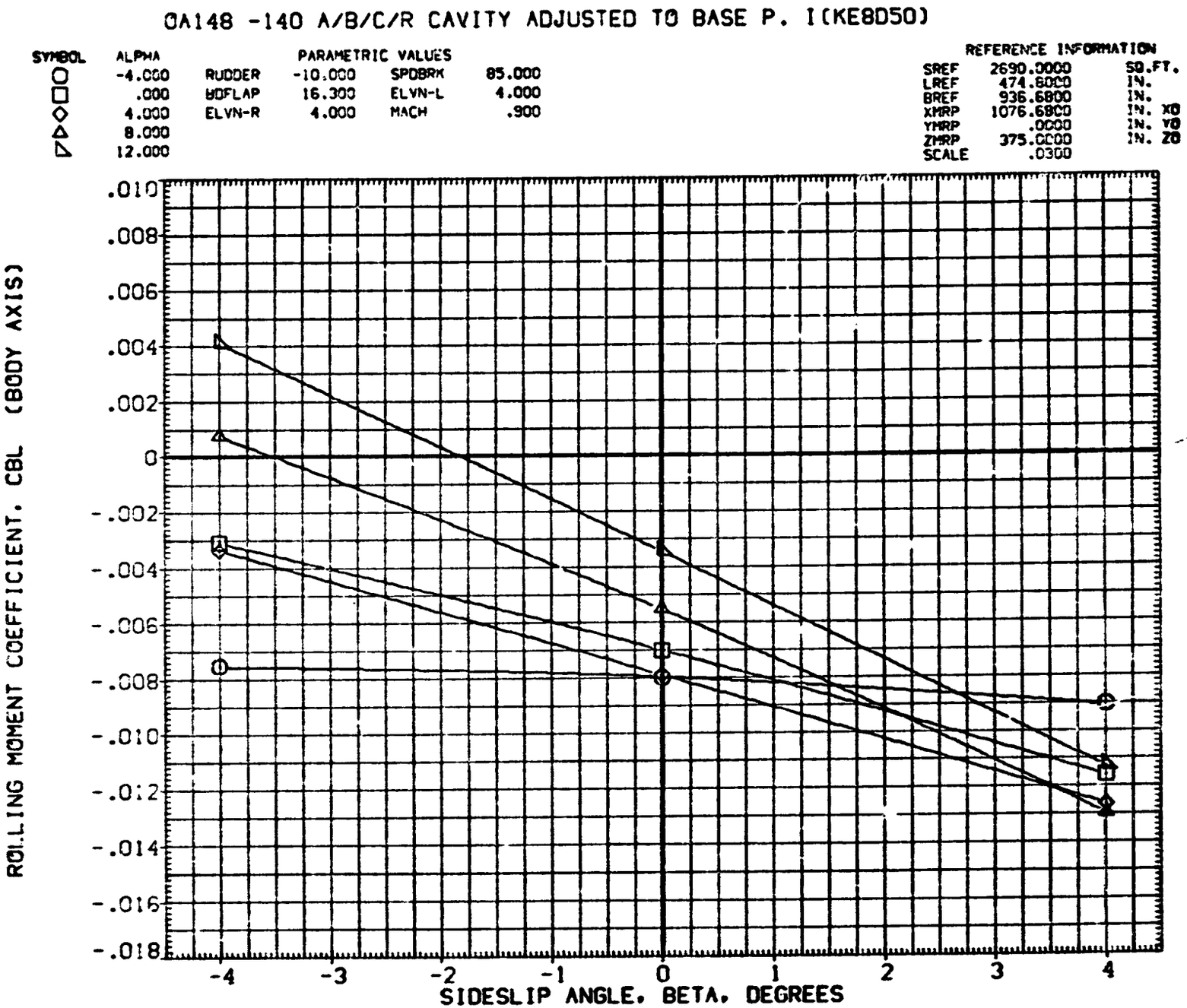


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

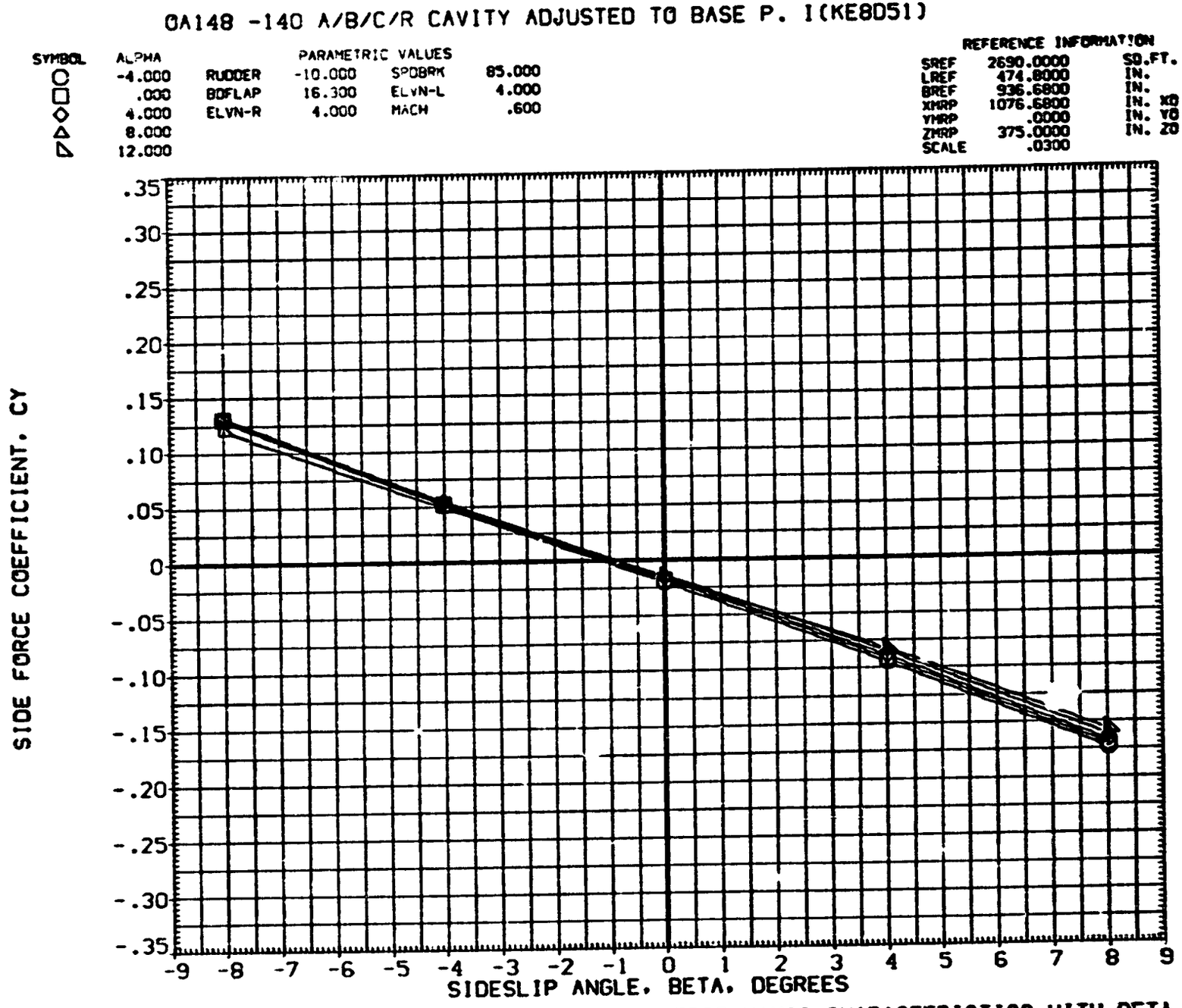


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.600
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

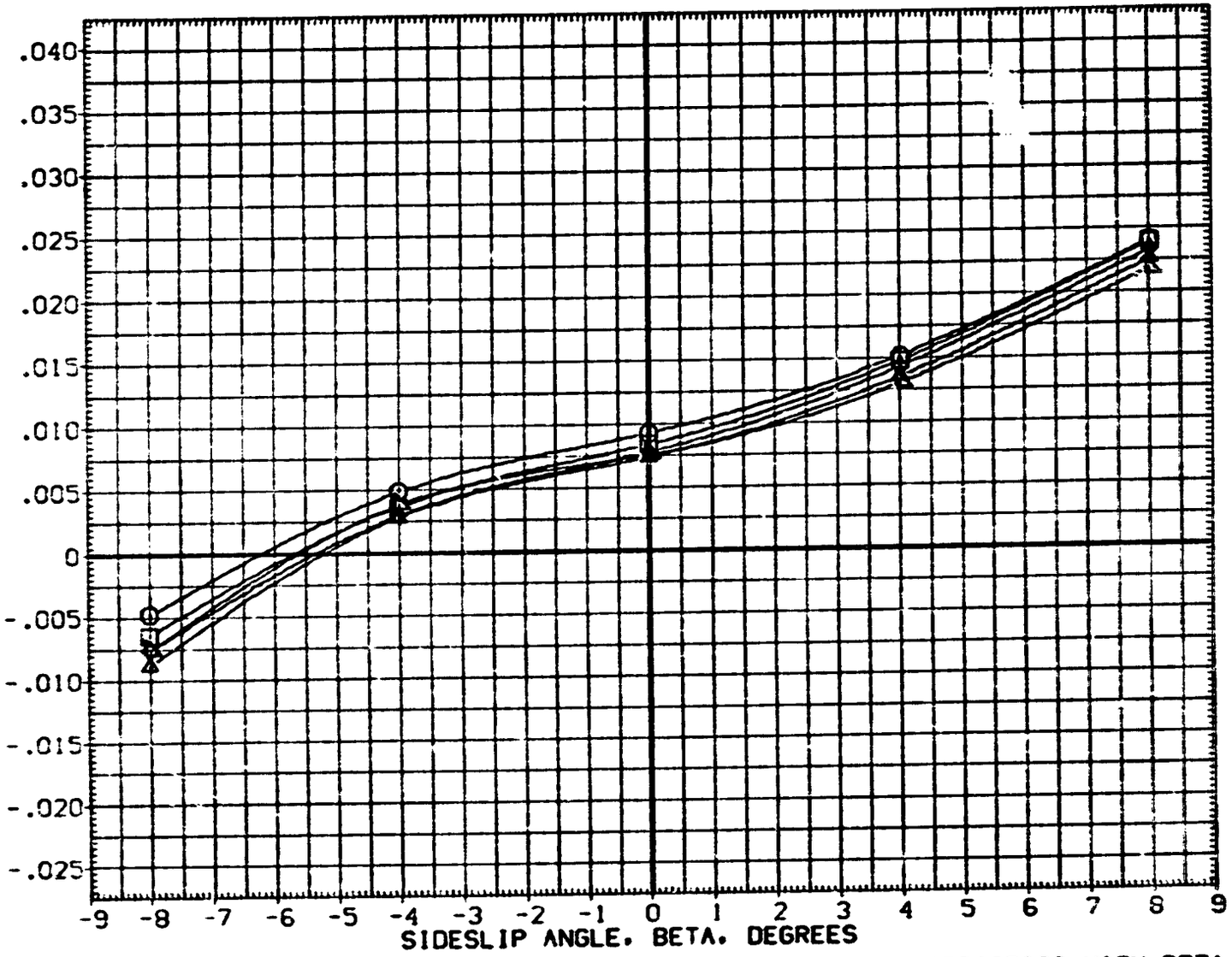


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

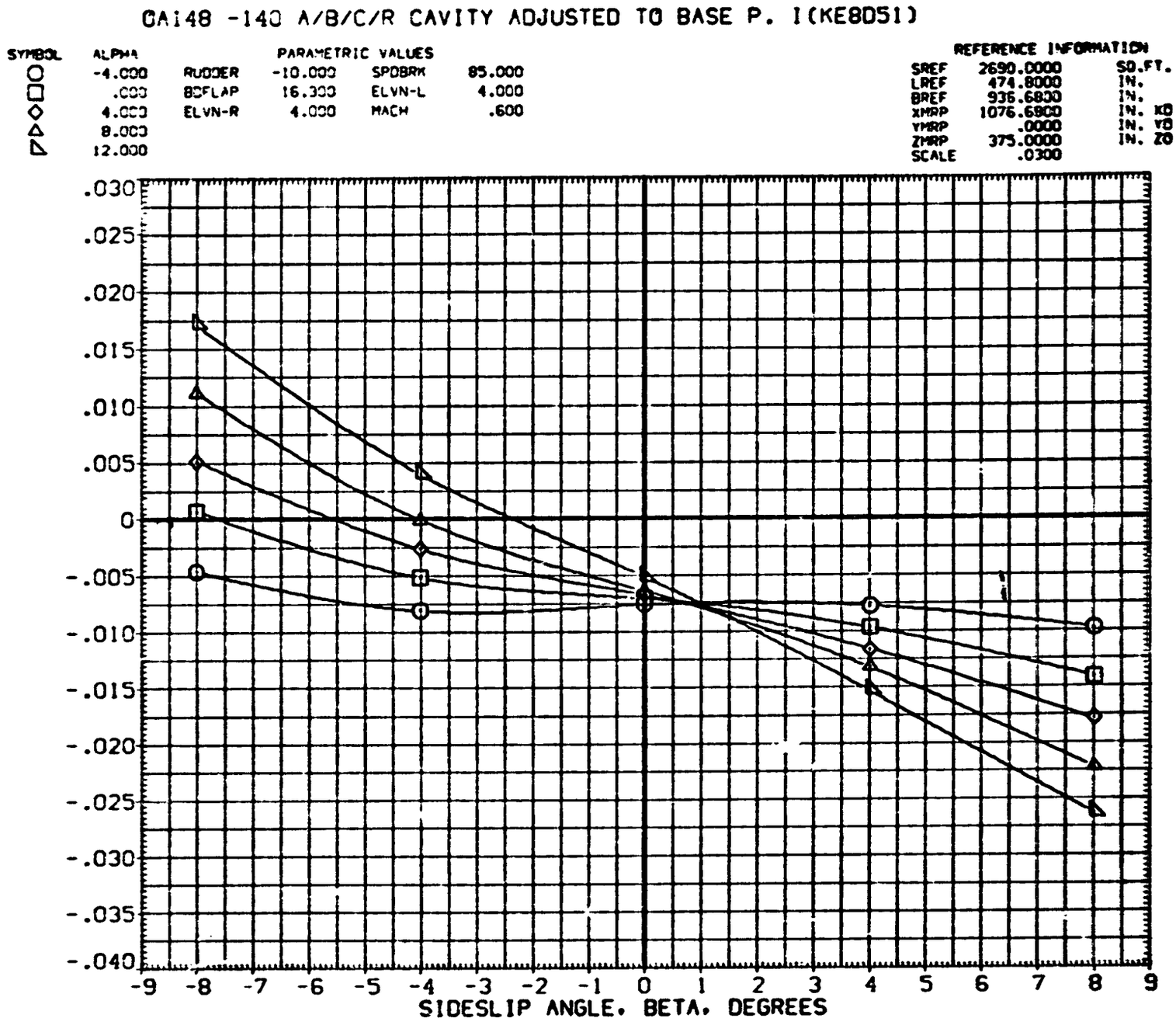


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

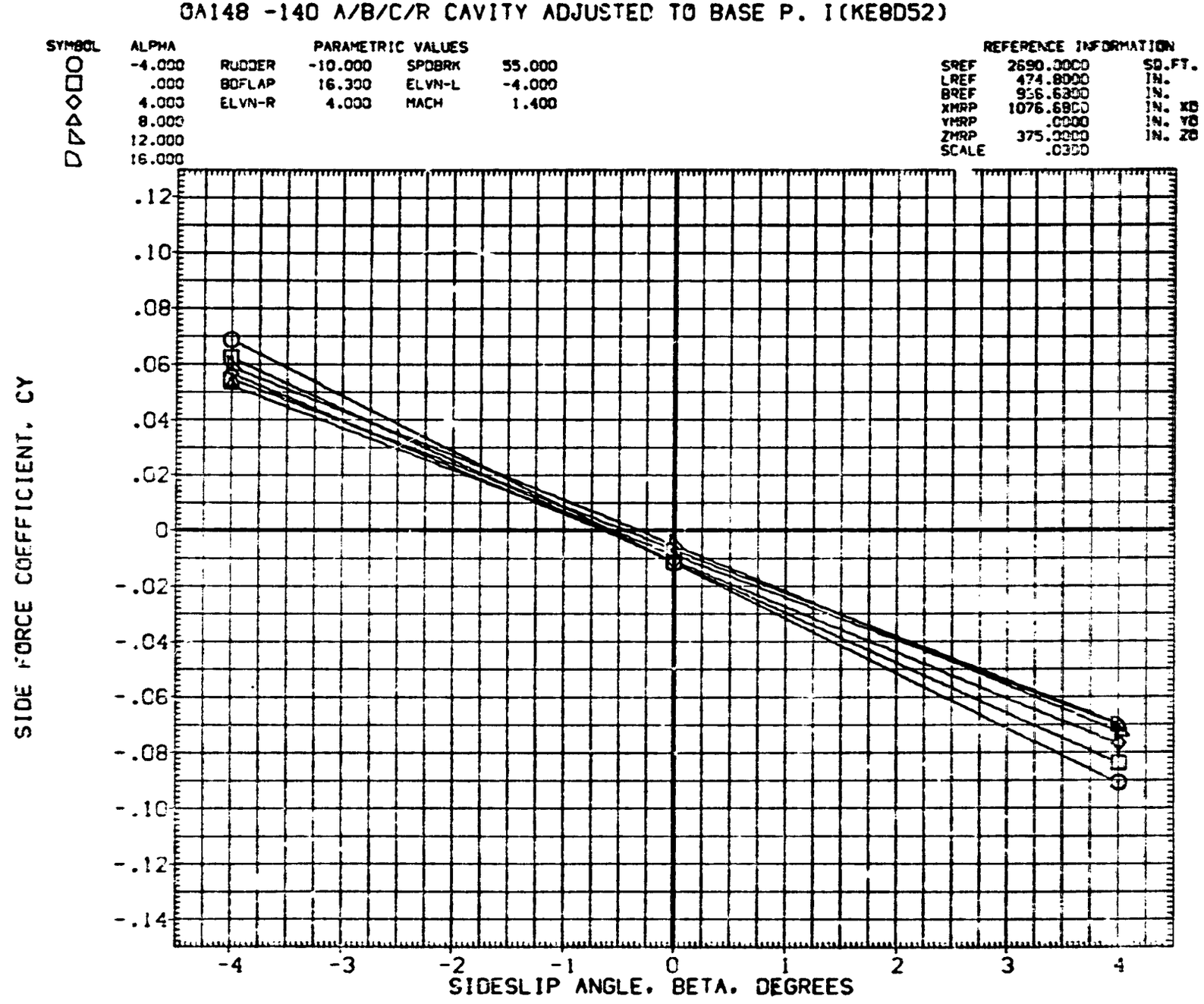


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

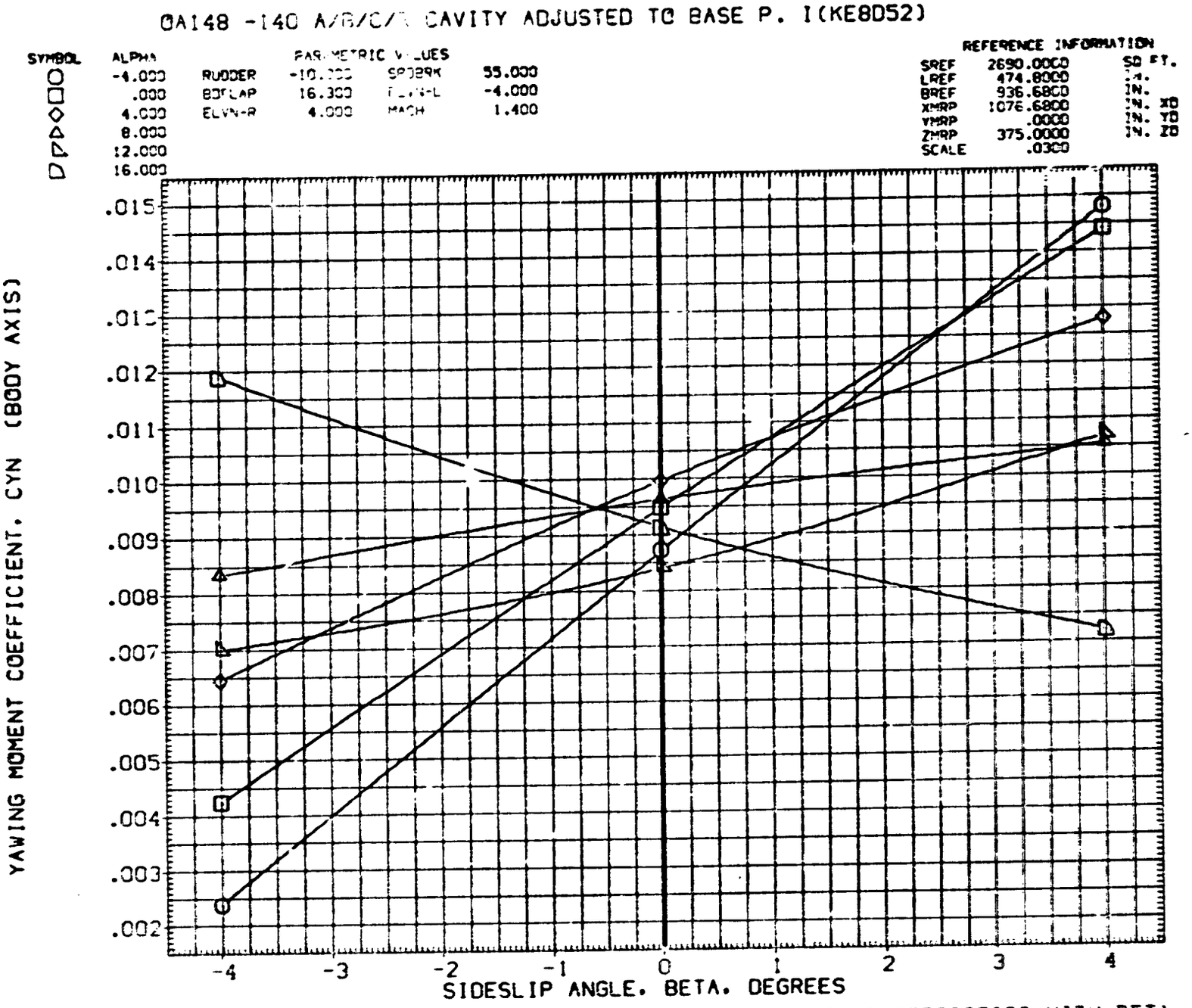


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

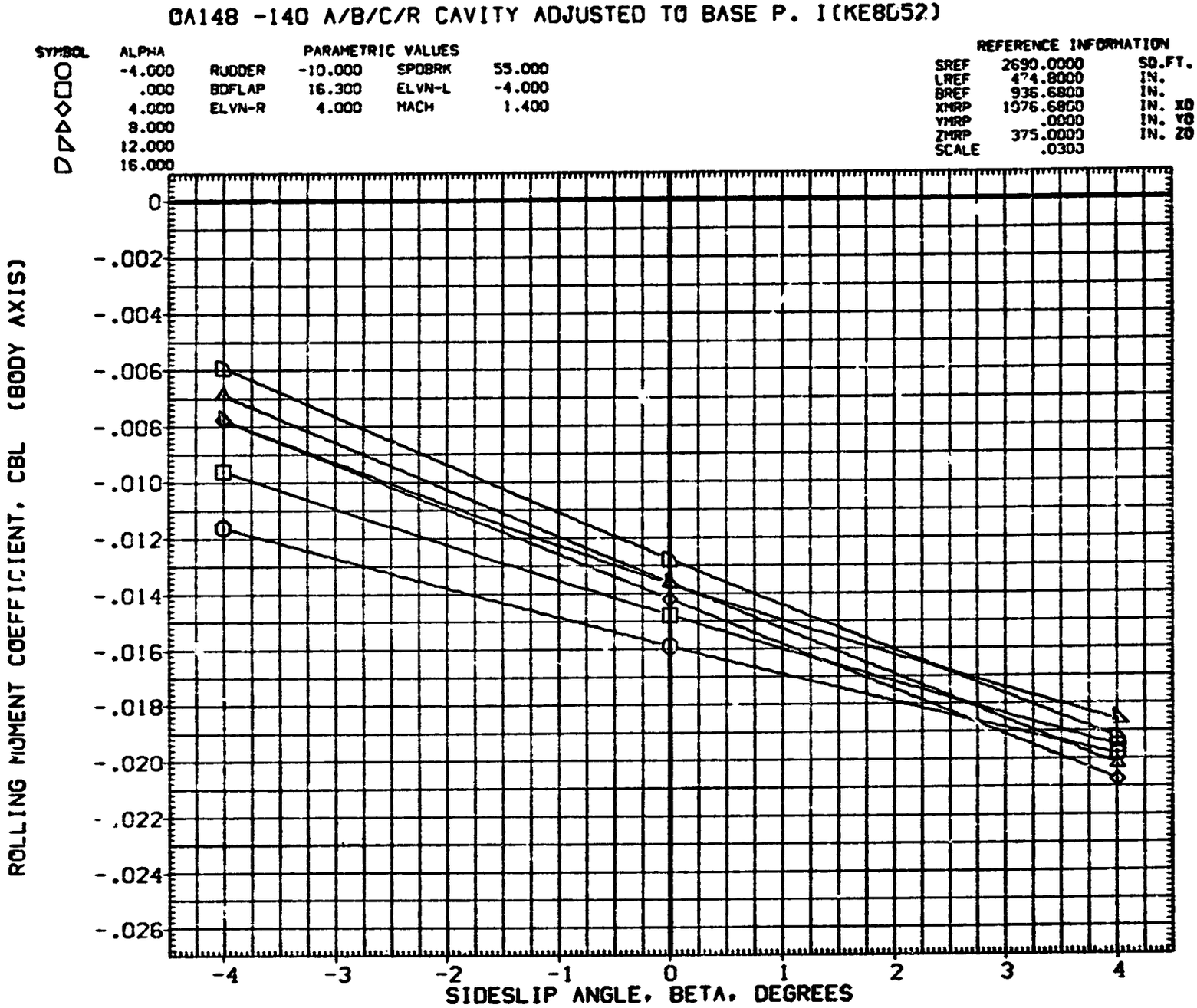


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

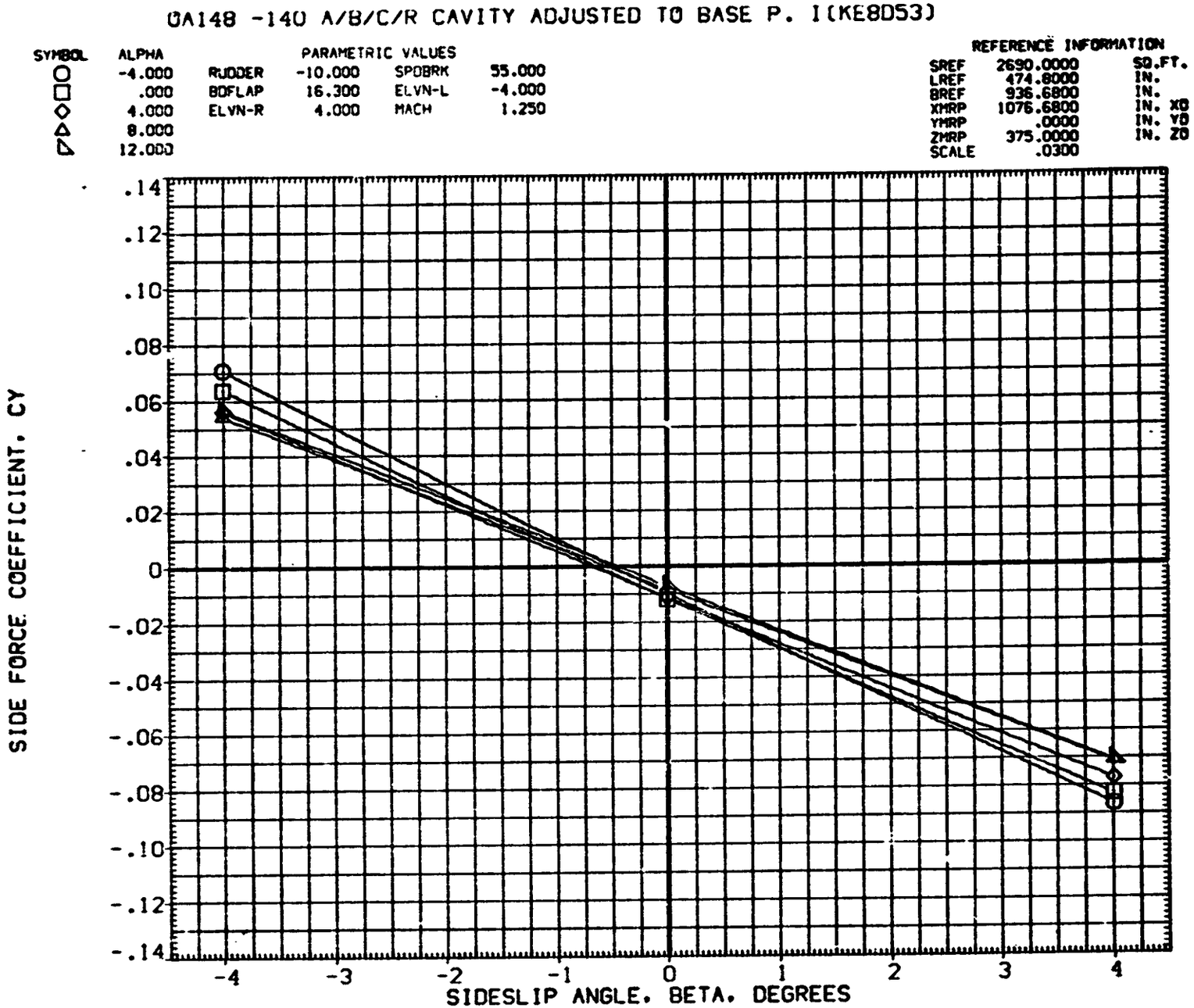


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

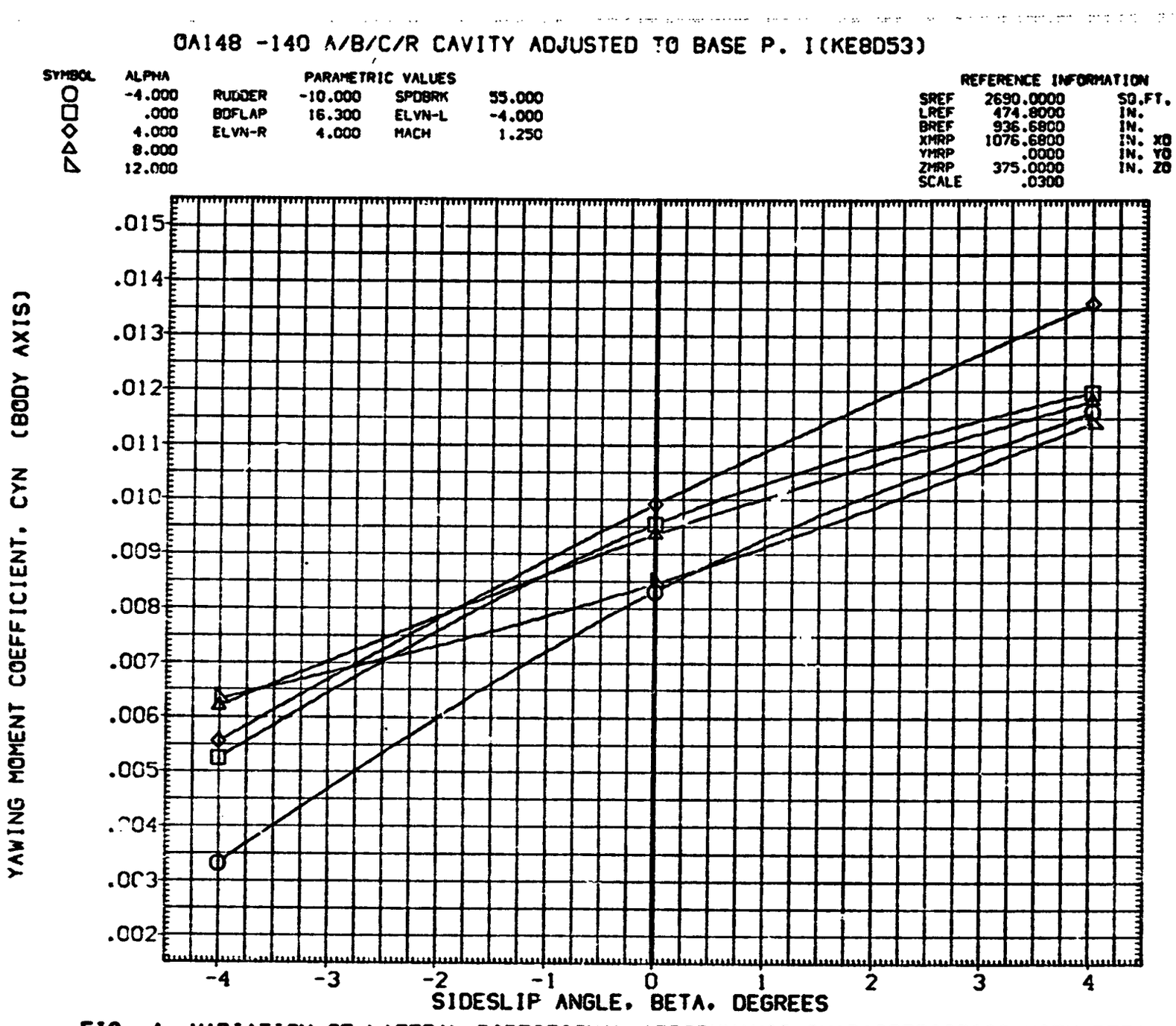


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

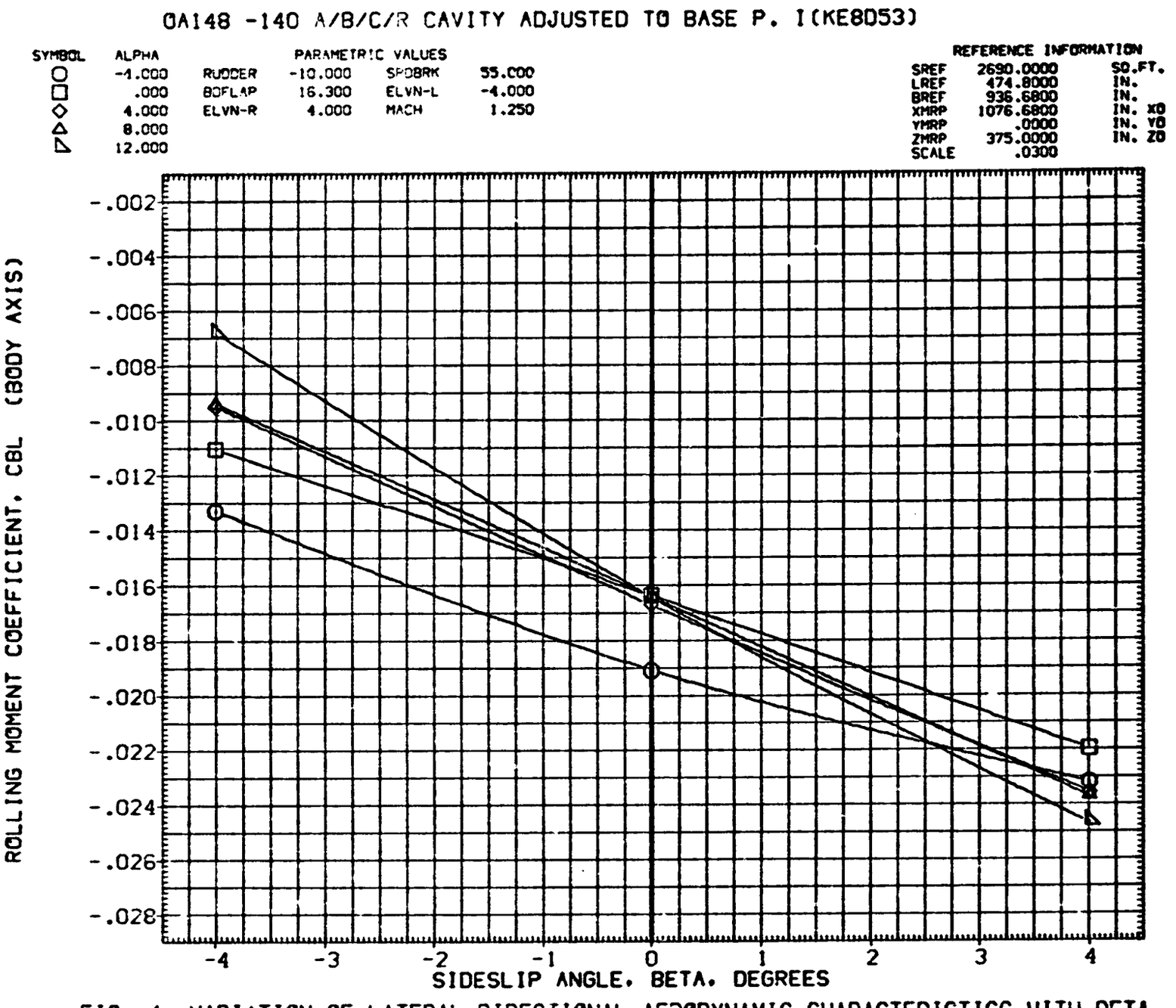


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D54)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.100
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

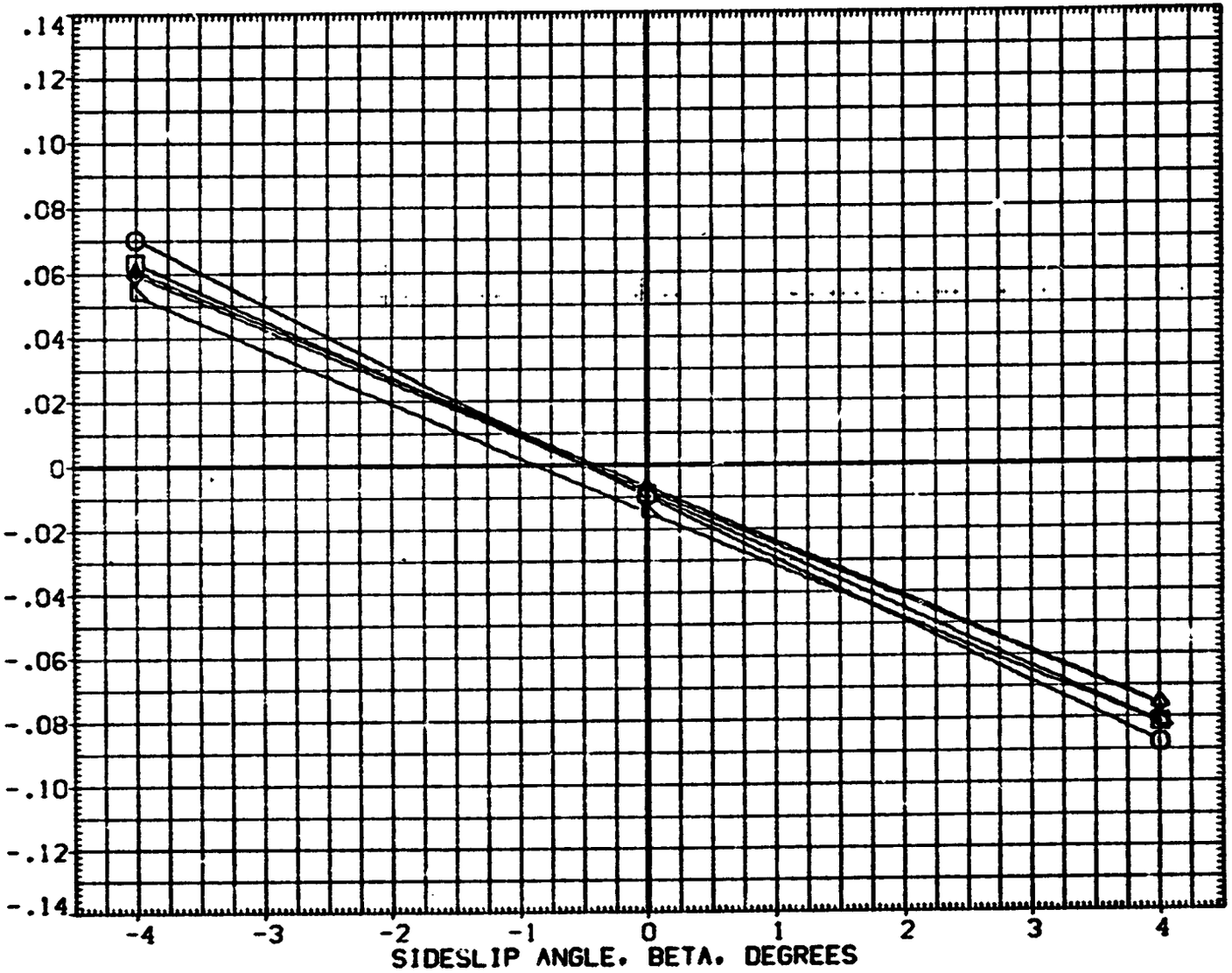


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

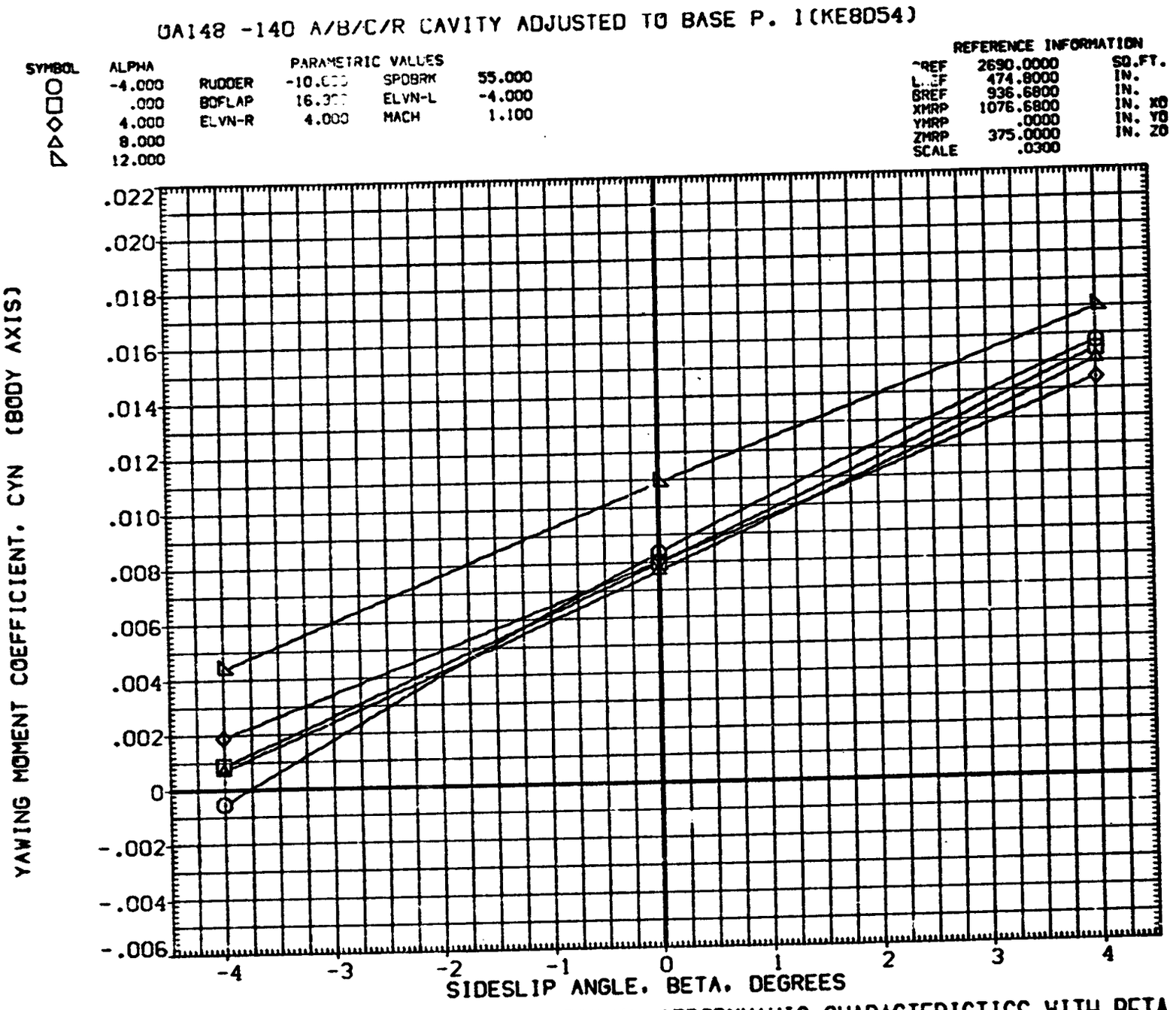


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

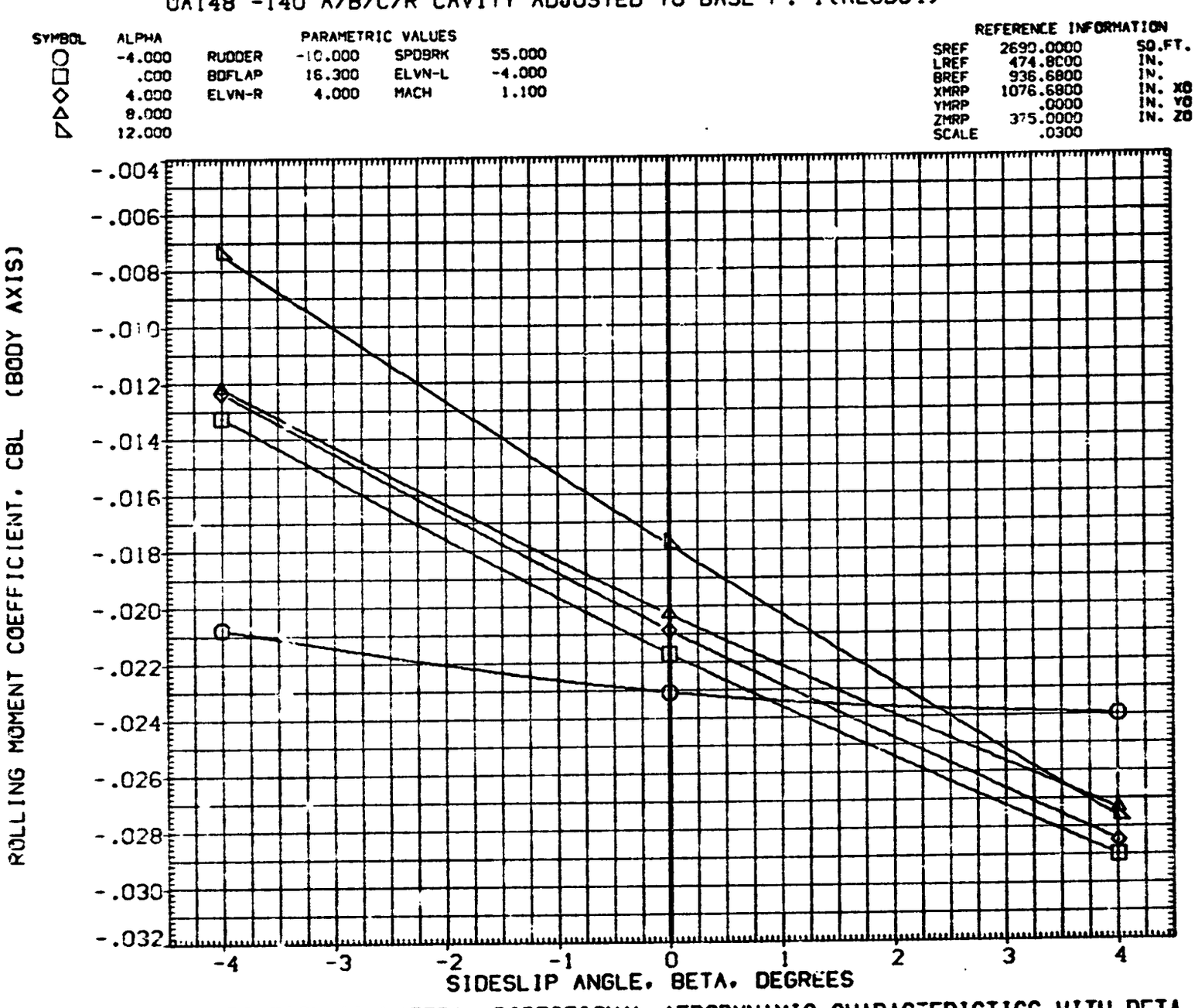


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

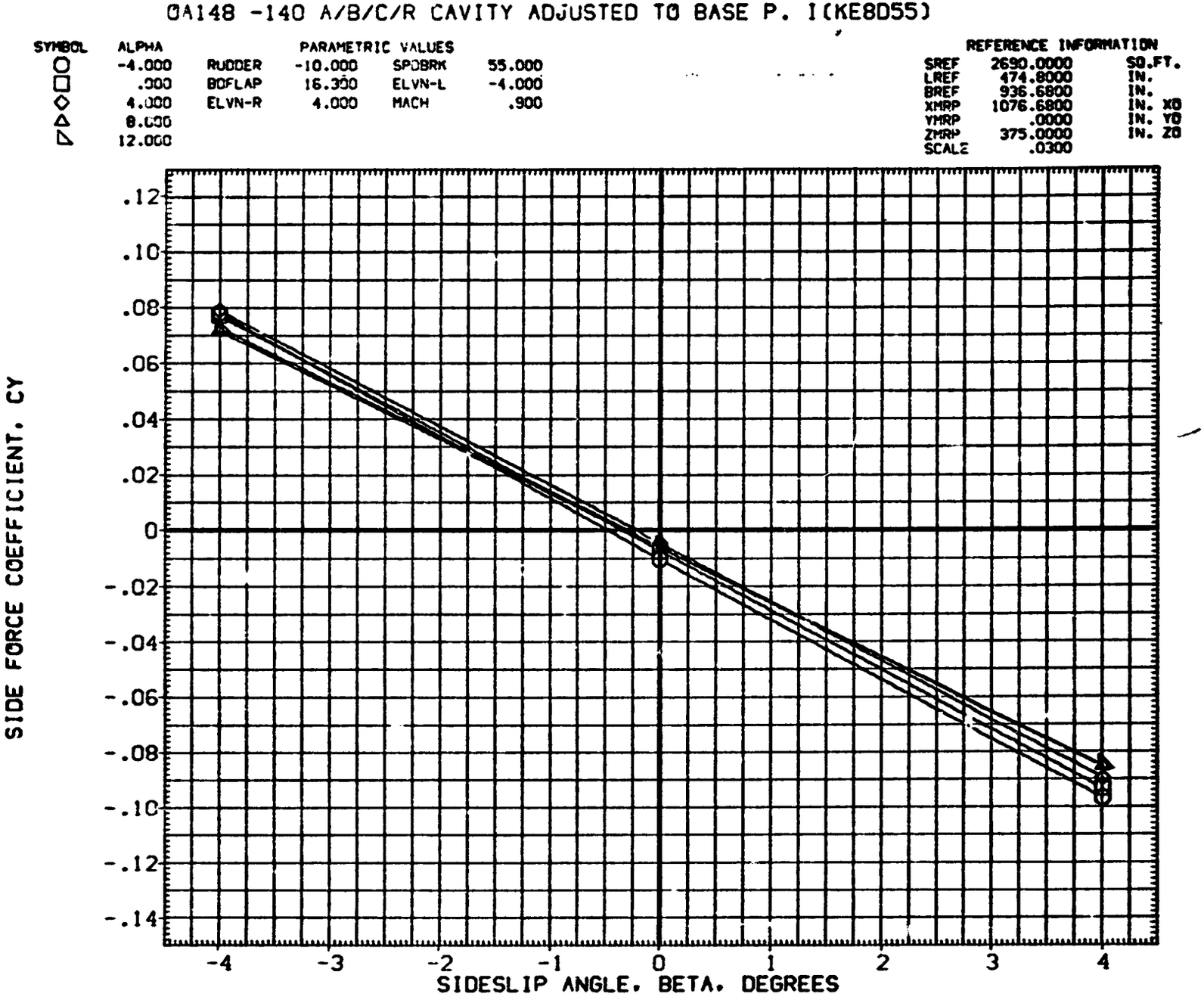


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

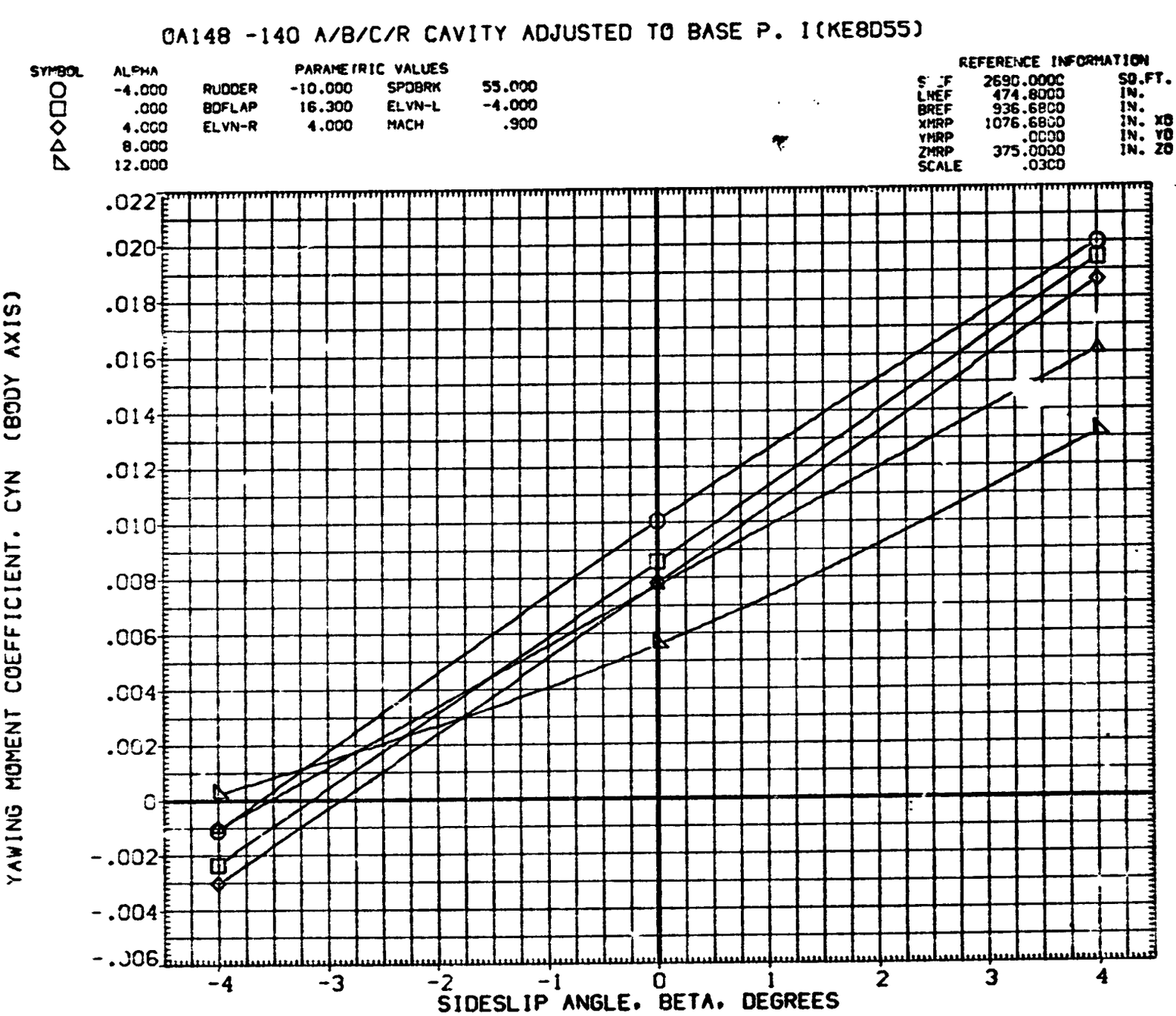


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

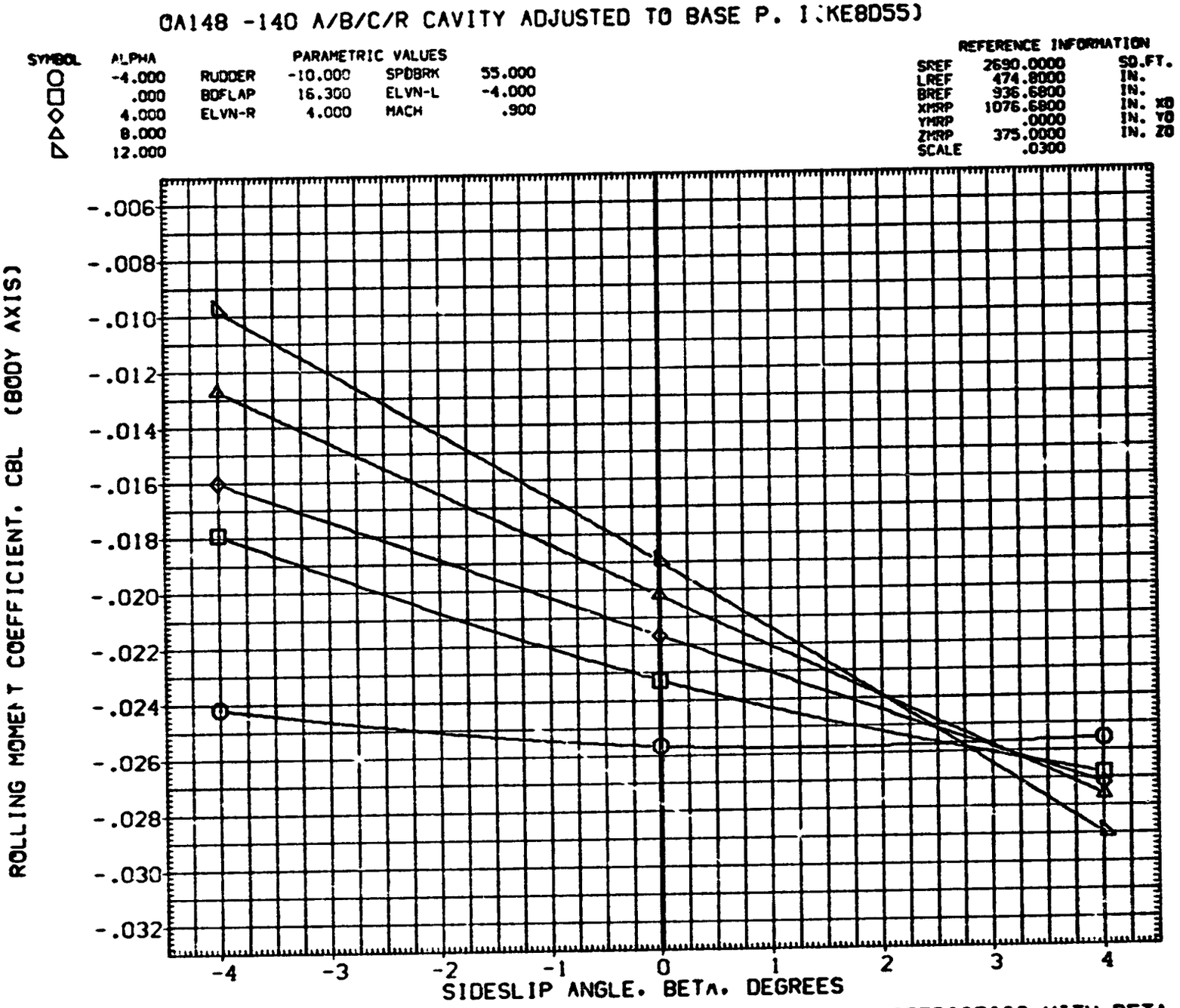


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	.600
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6000	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

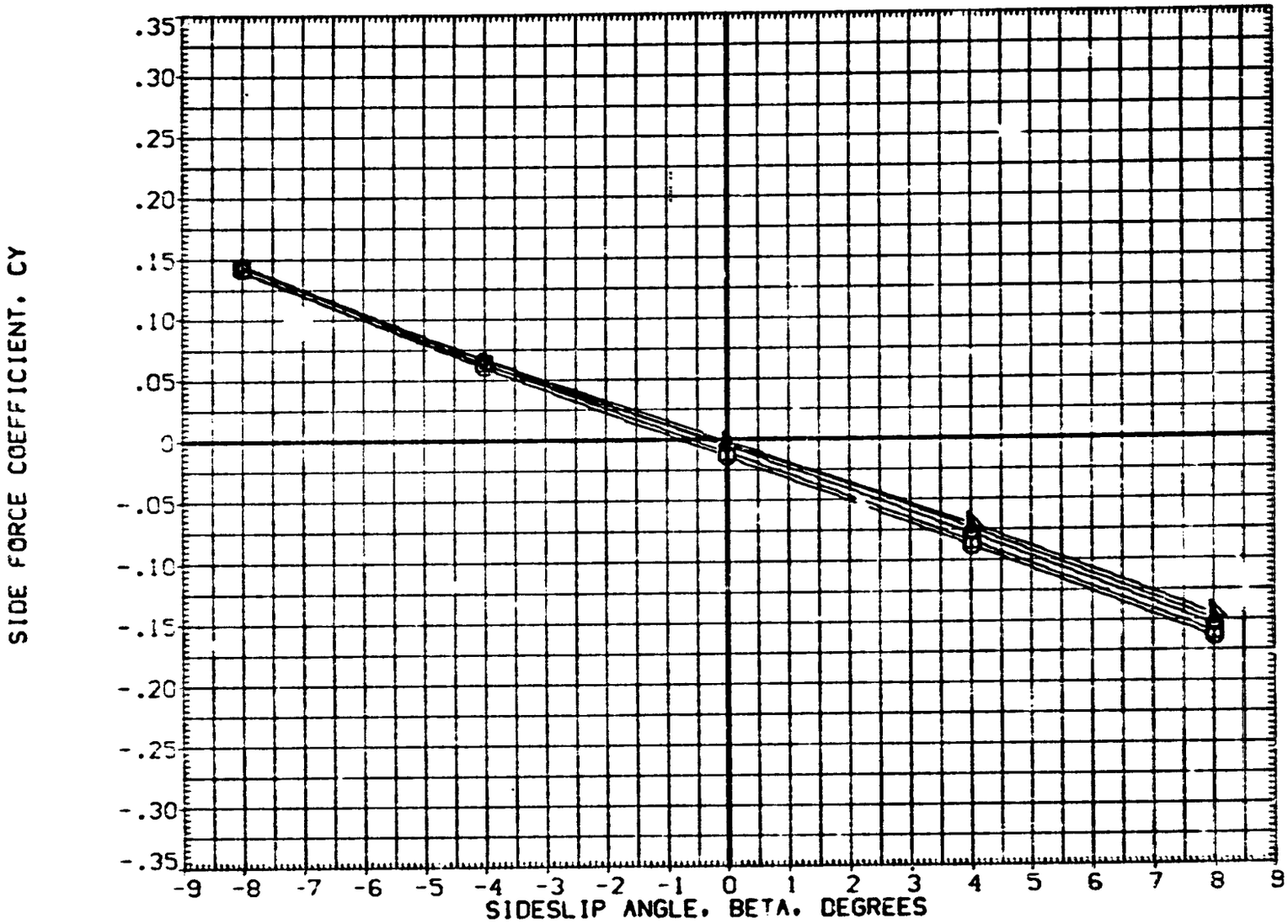


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

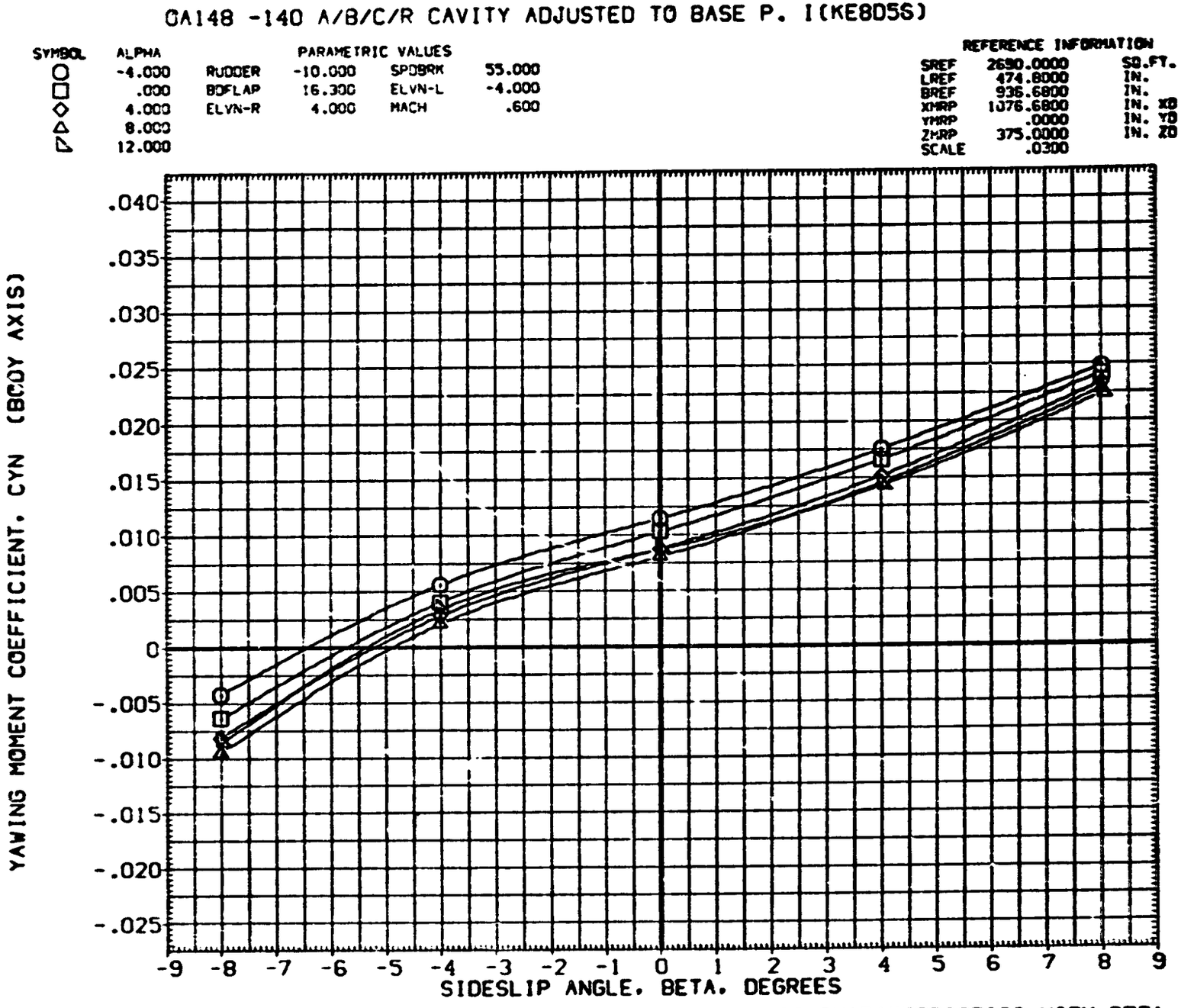


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

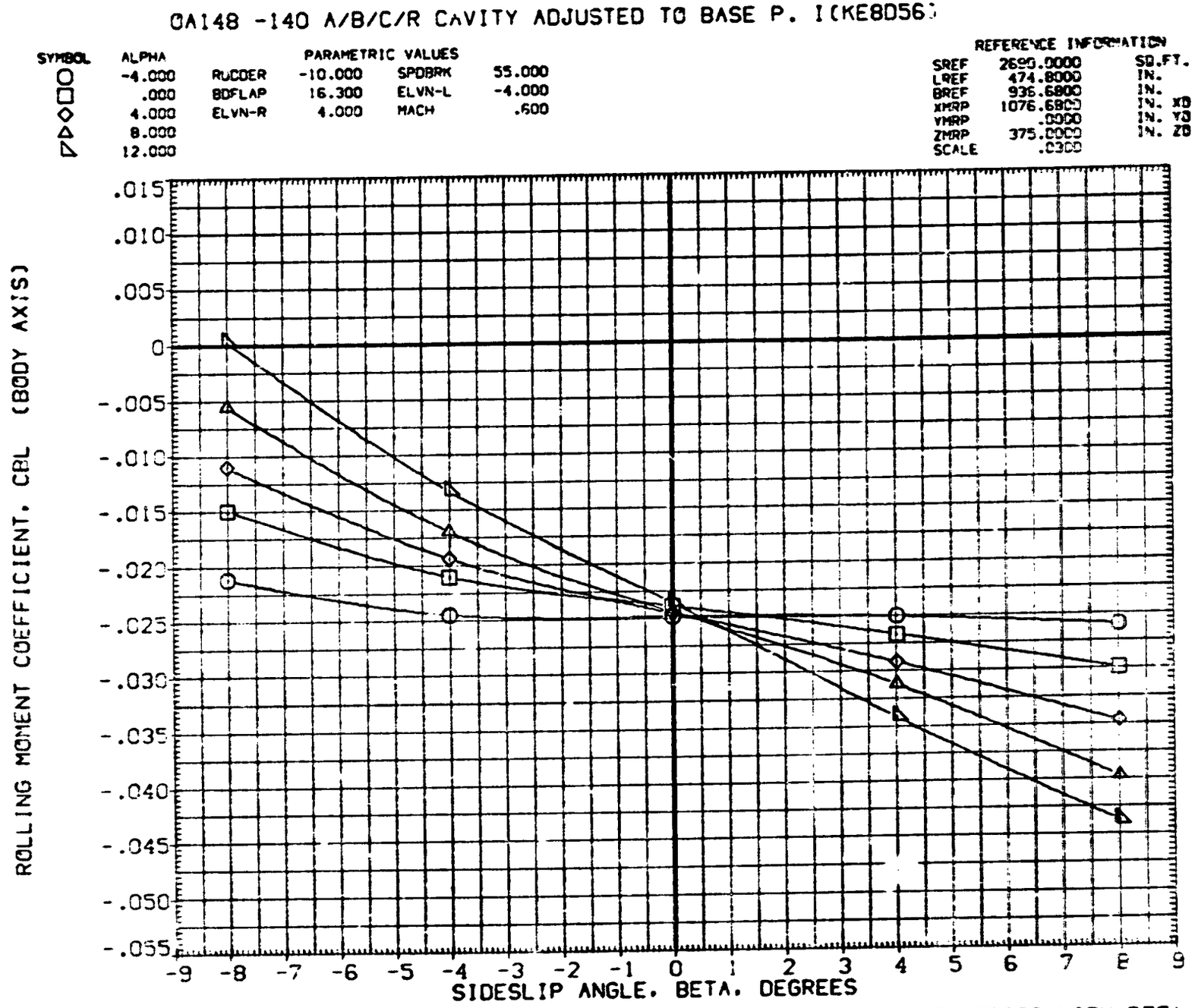


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

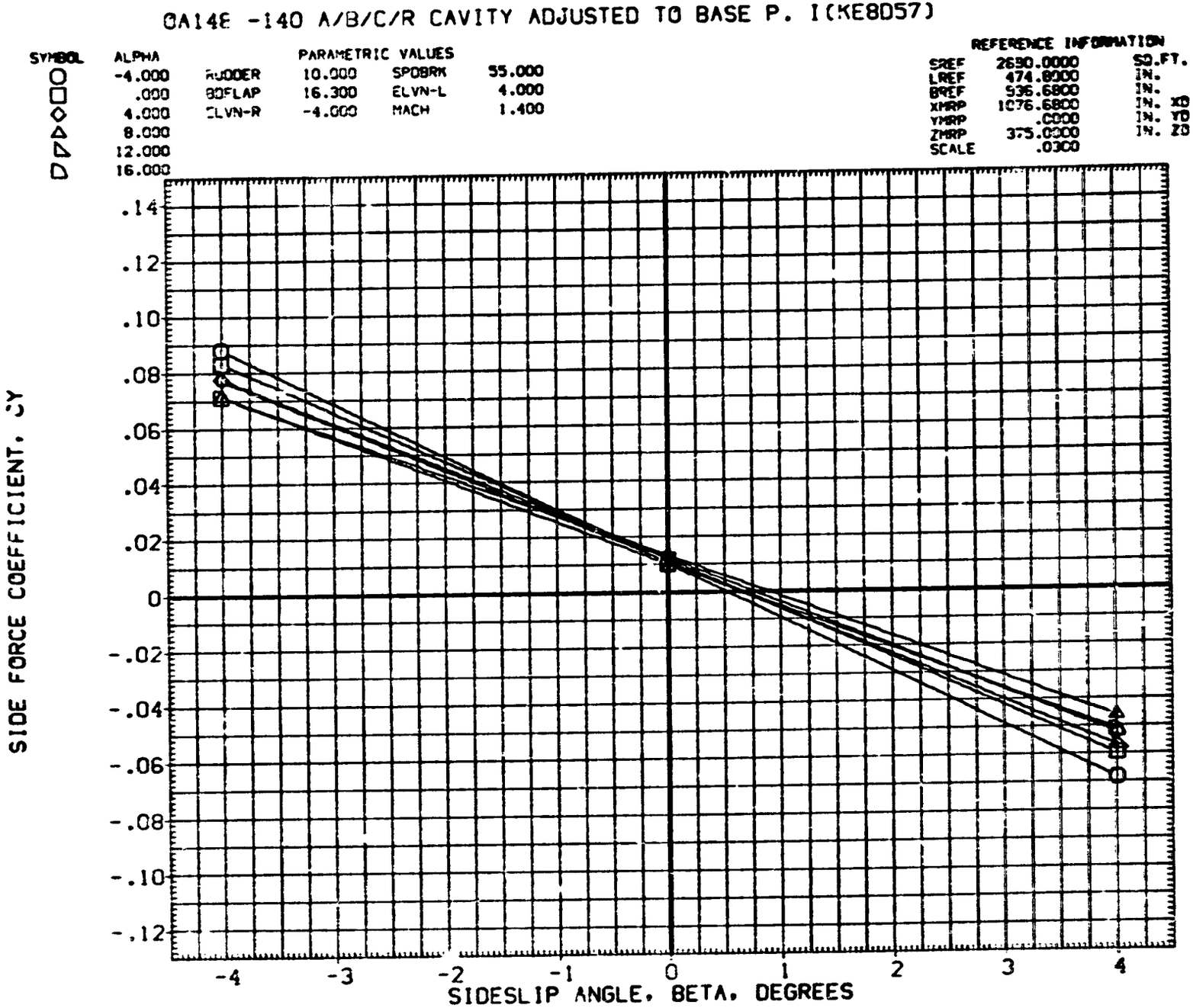


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

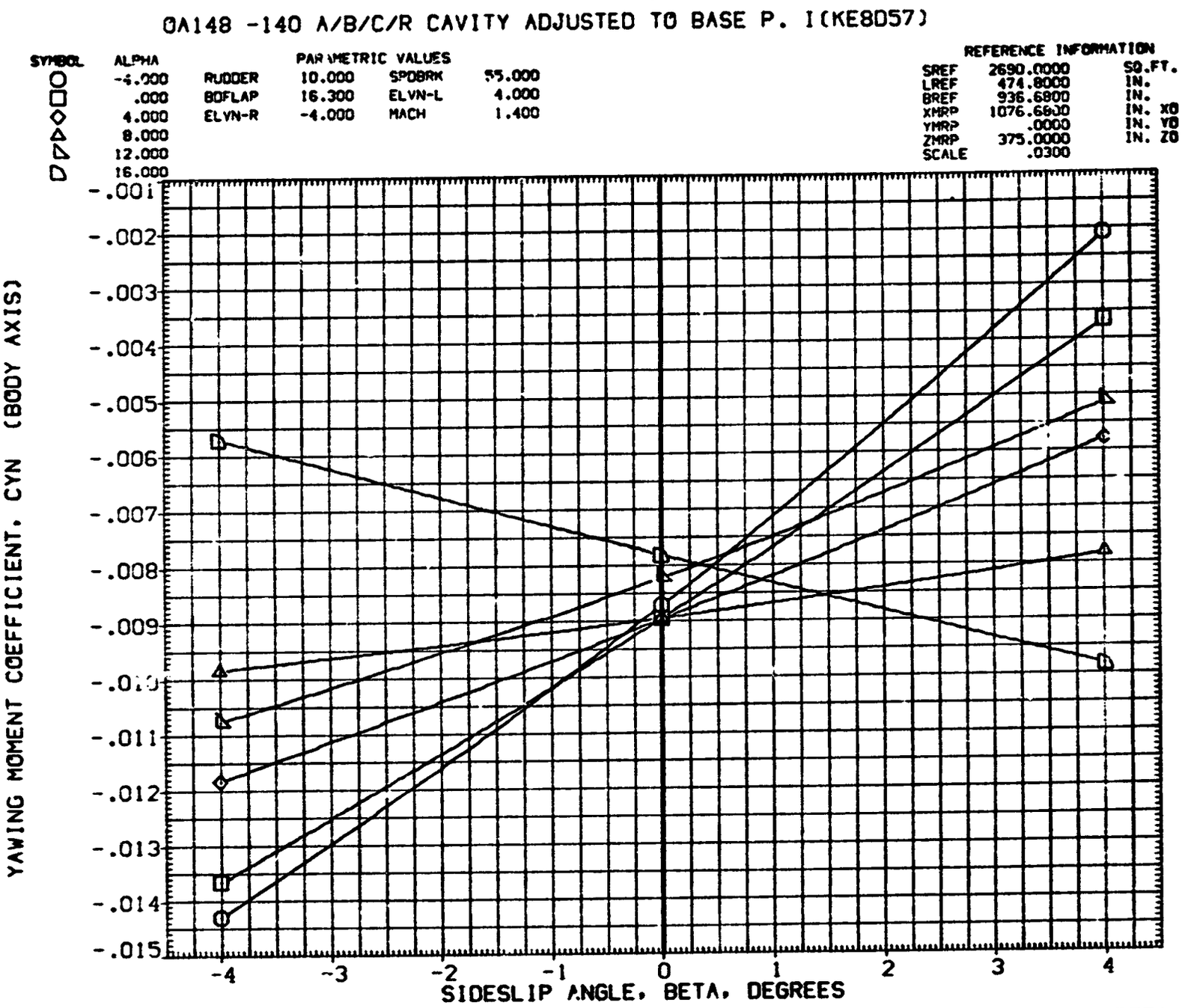


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

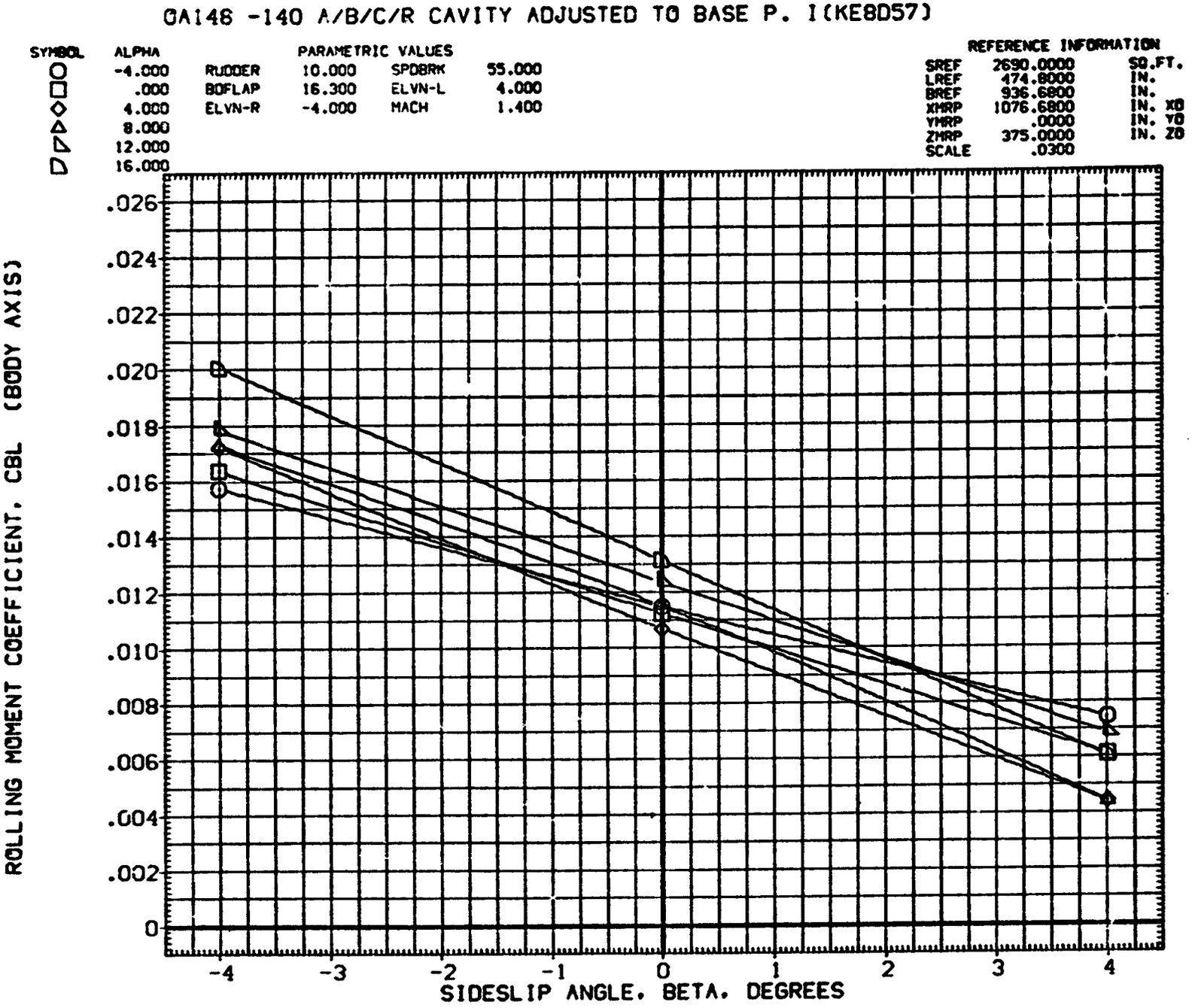


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D58)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.250
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

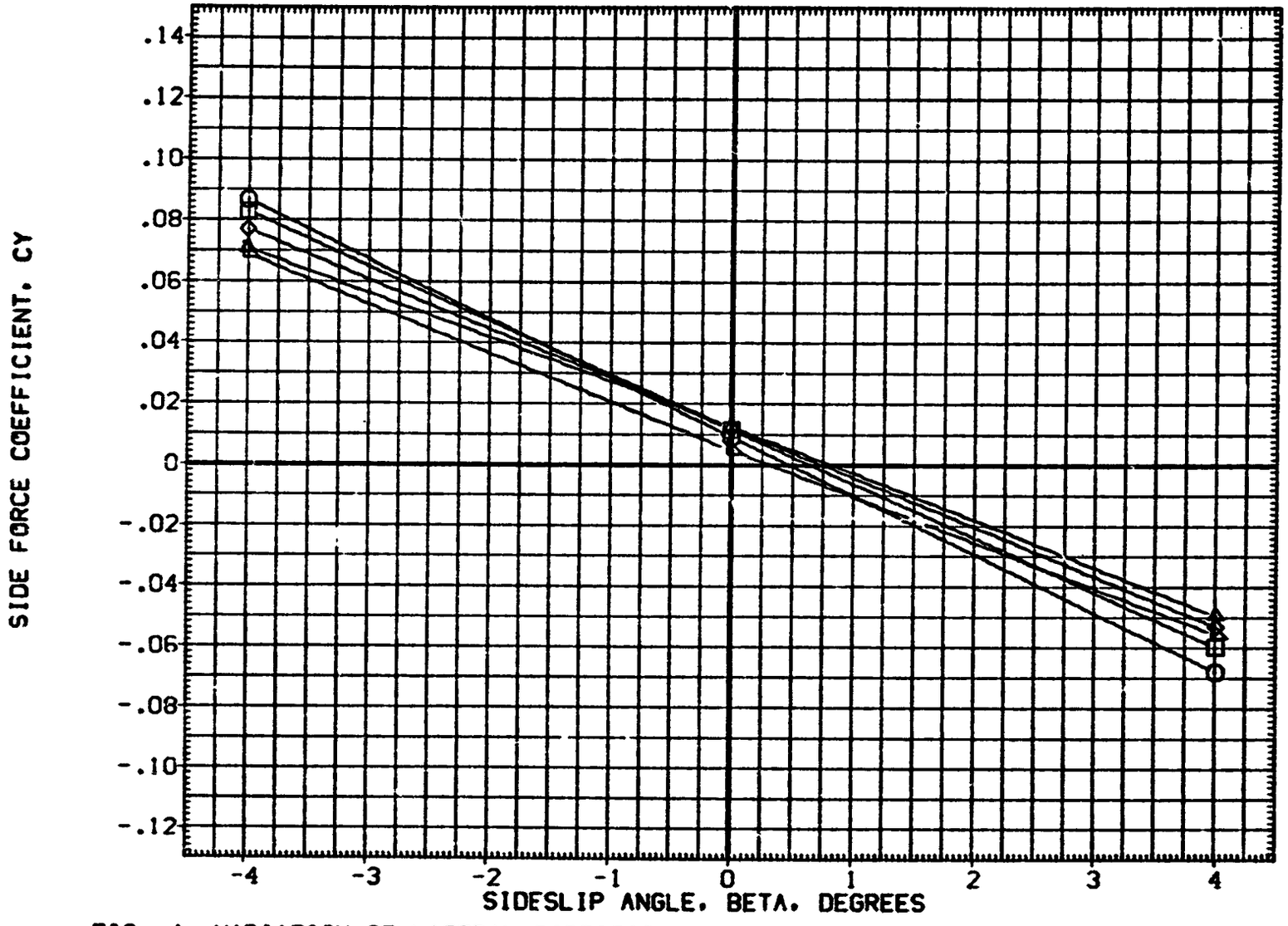


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

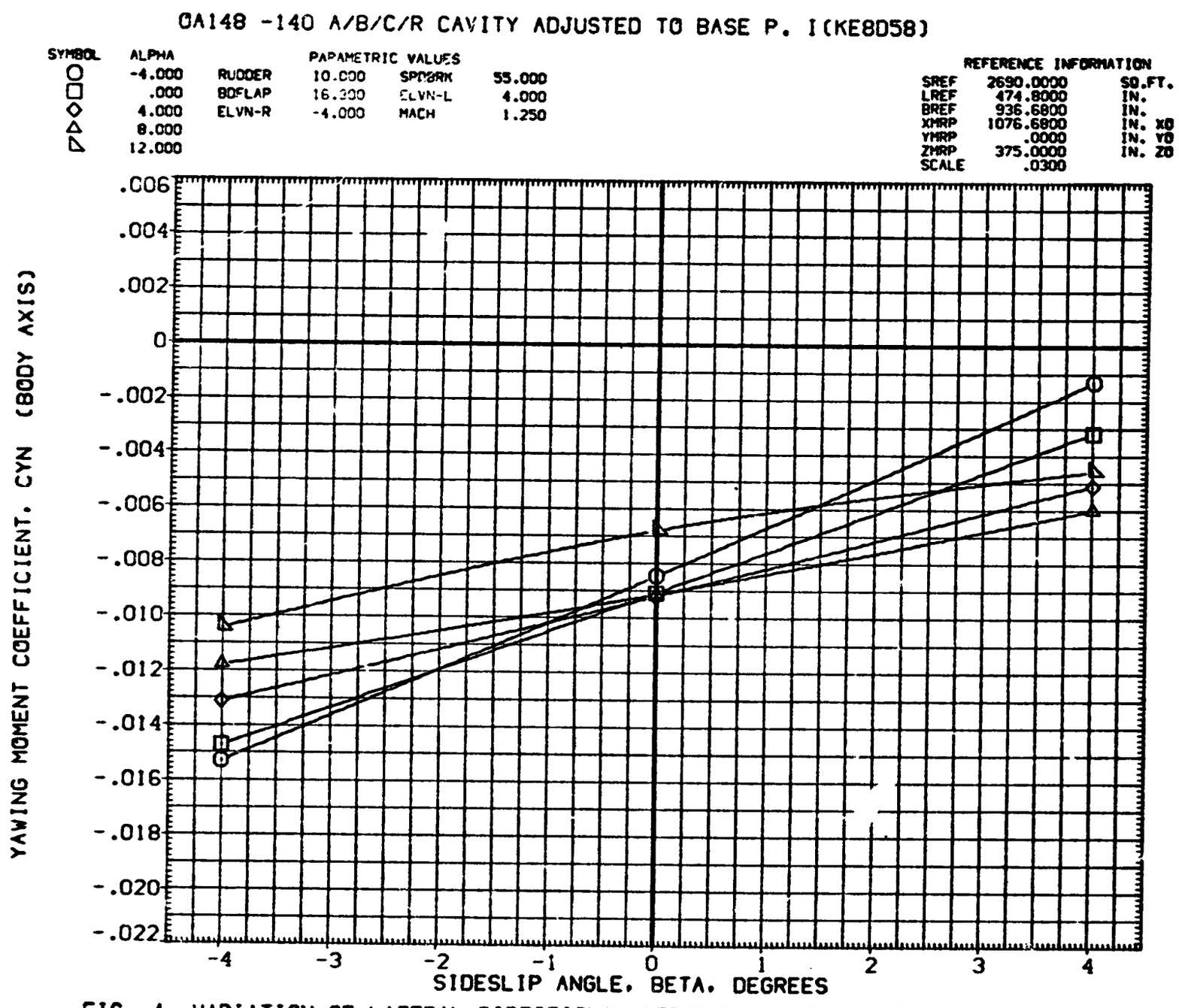


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

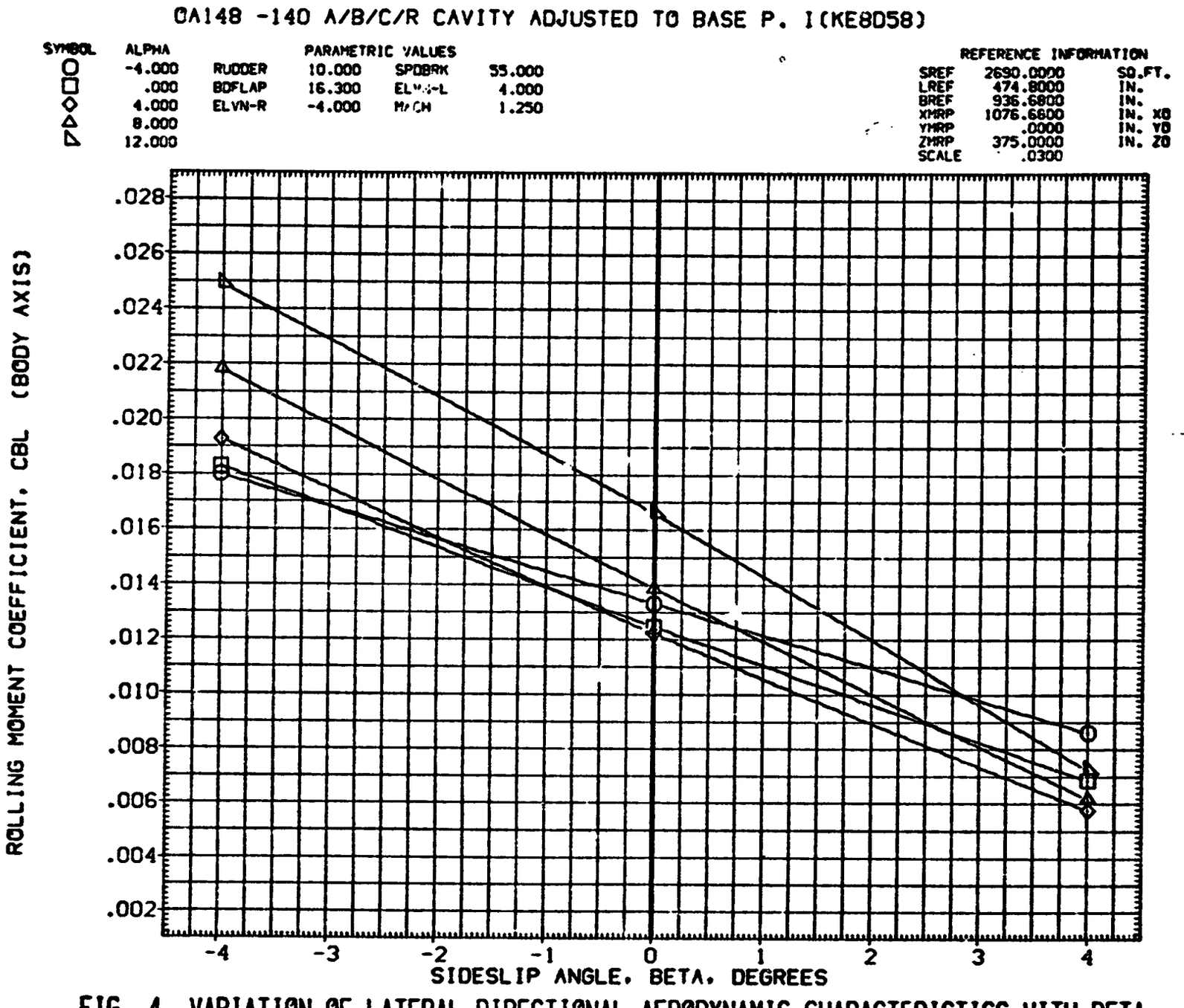


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

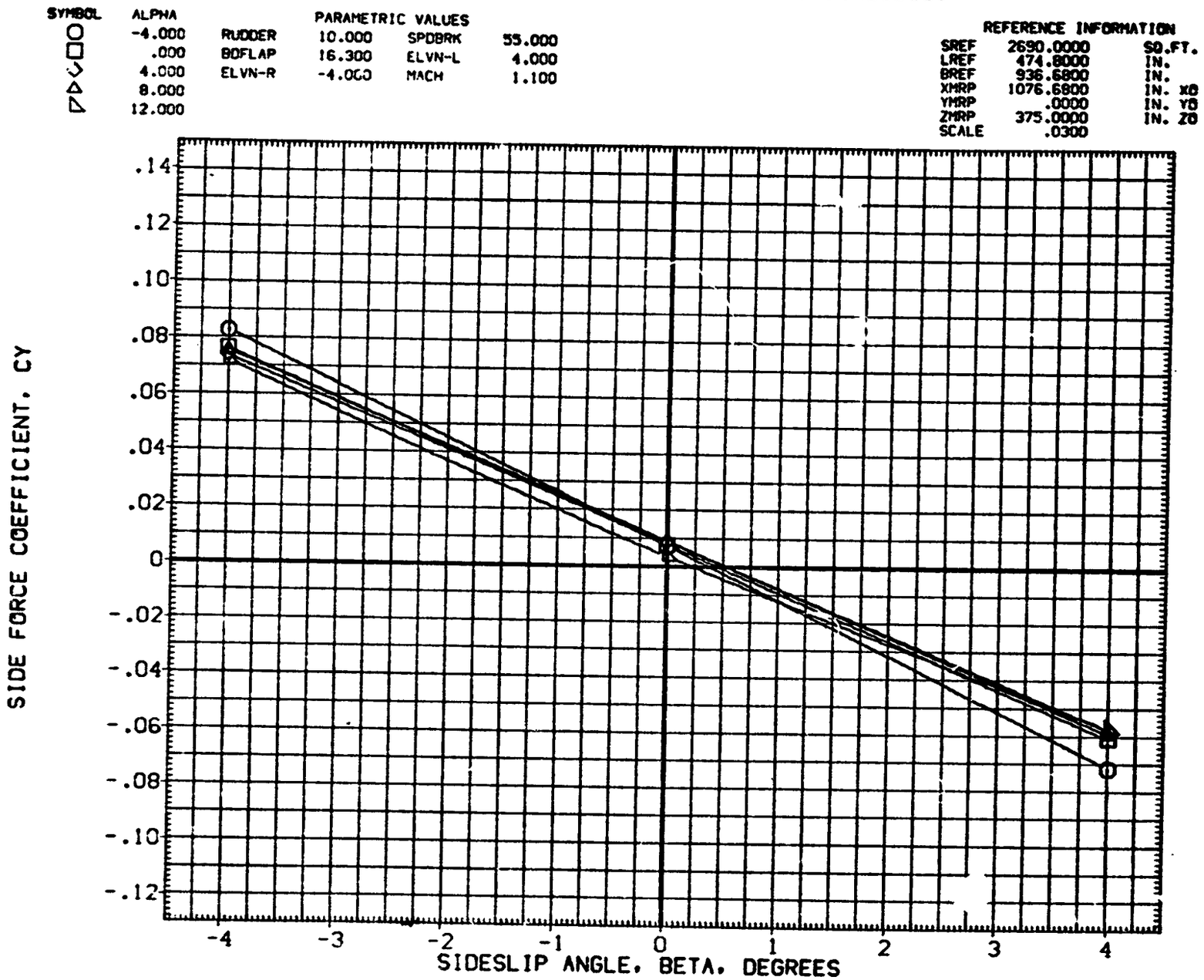


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

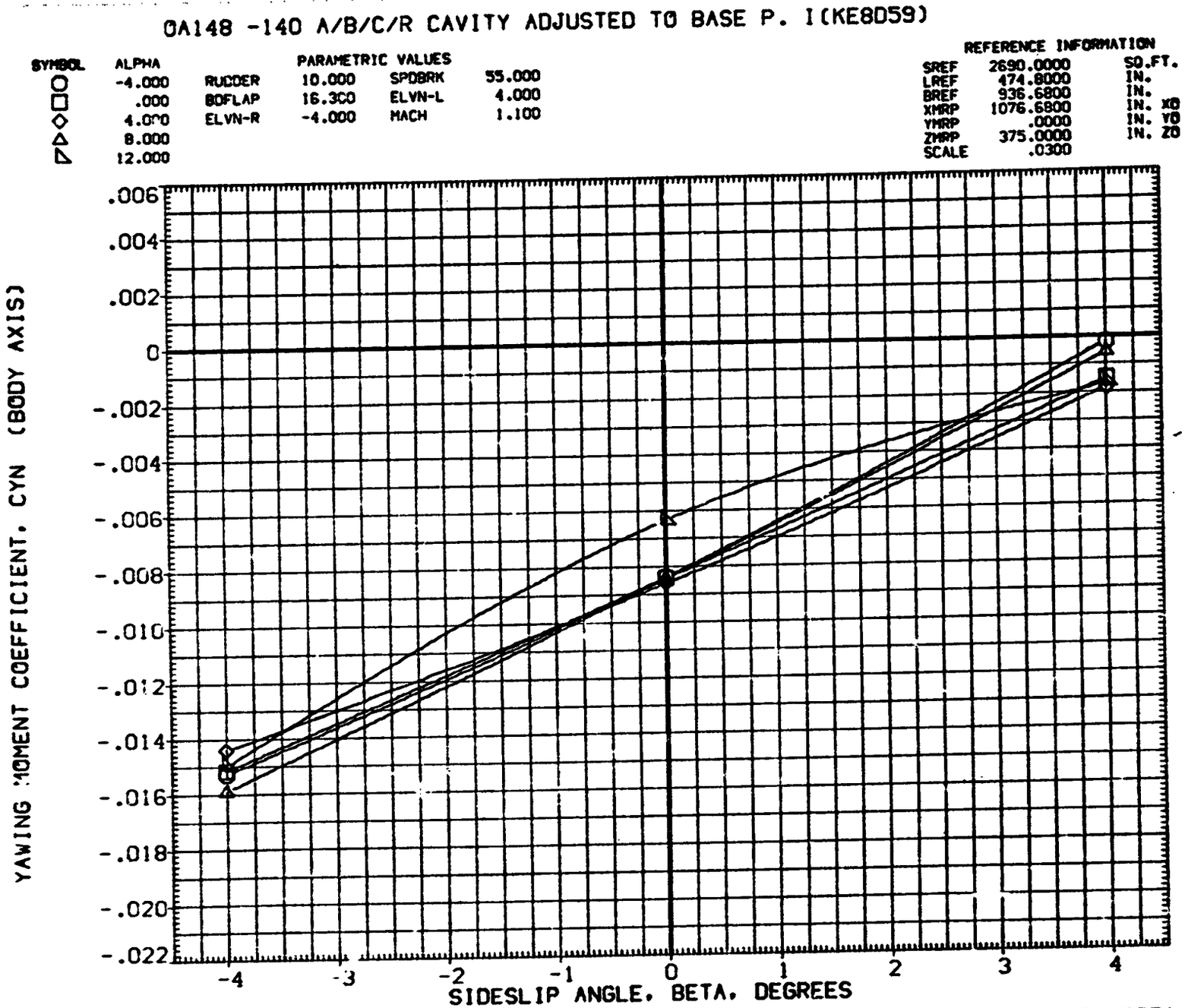


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL

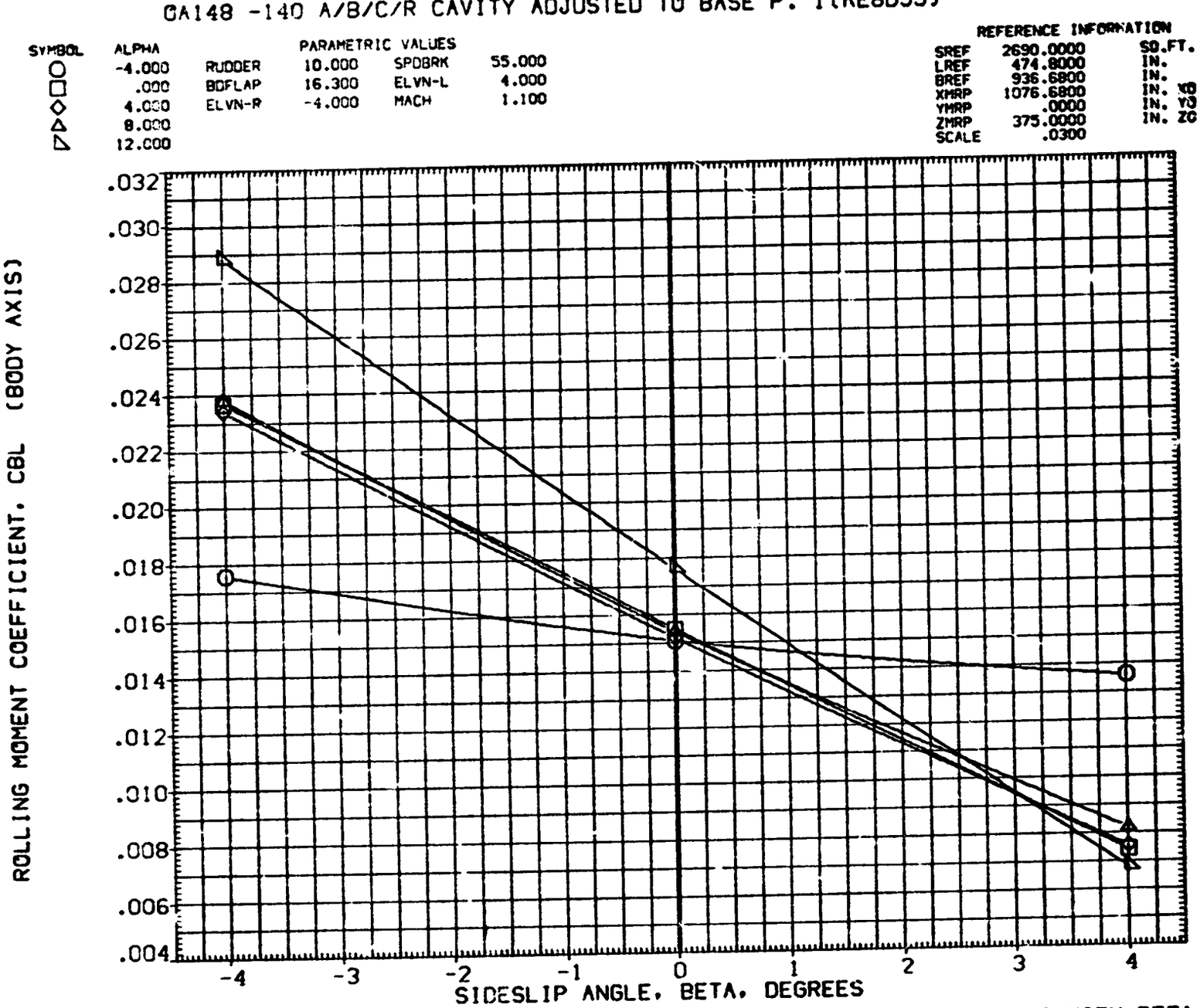


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	.900
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2650.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	



FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

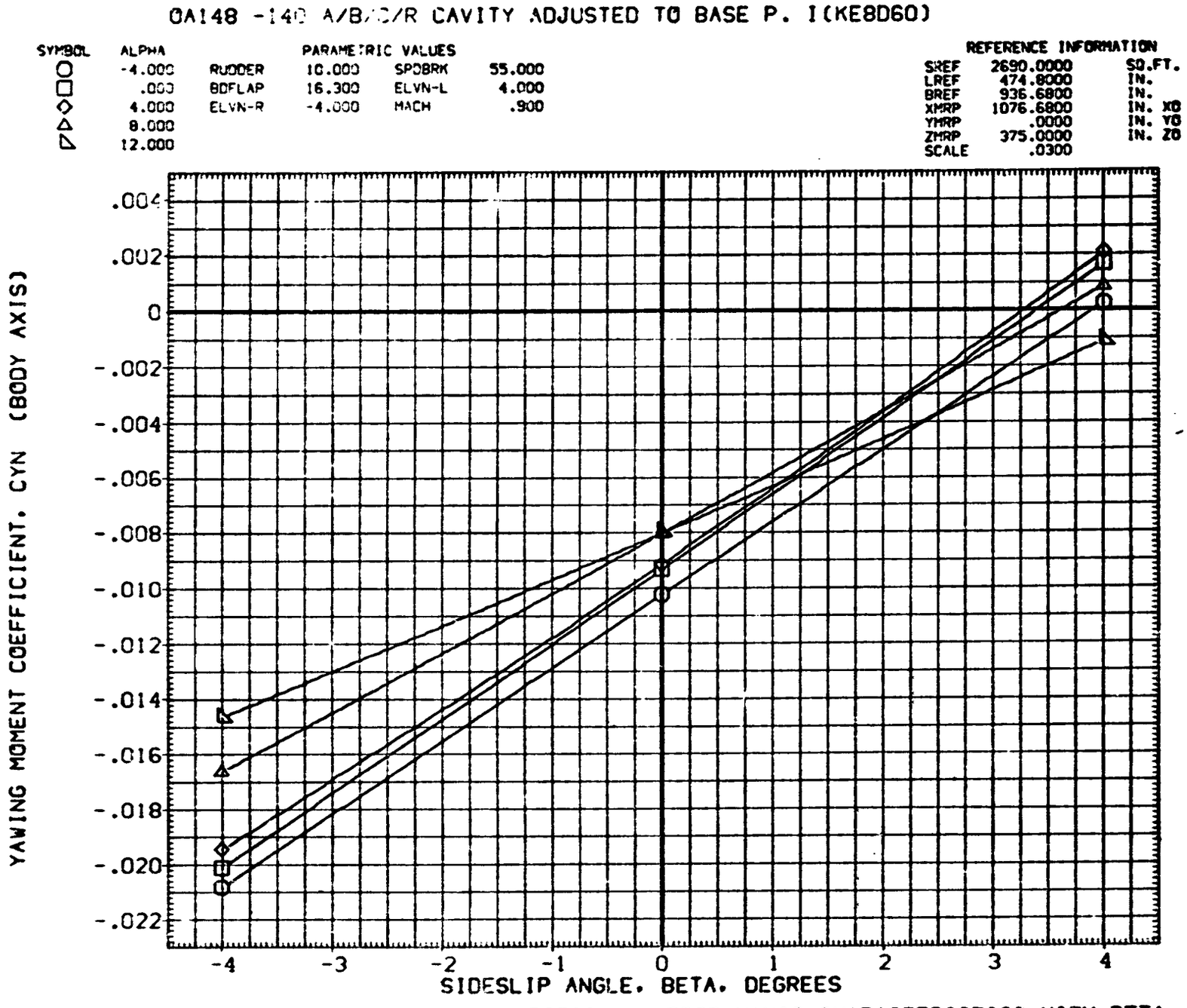


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D60)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	.900
△	8.000				
◺	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

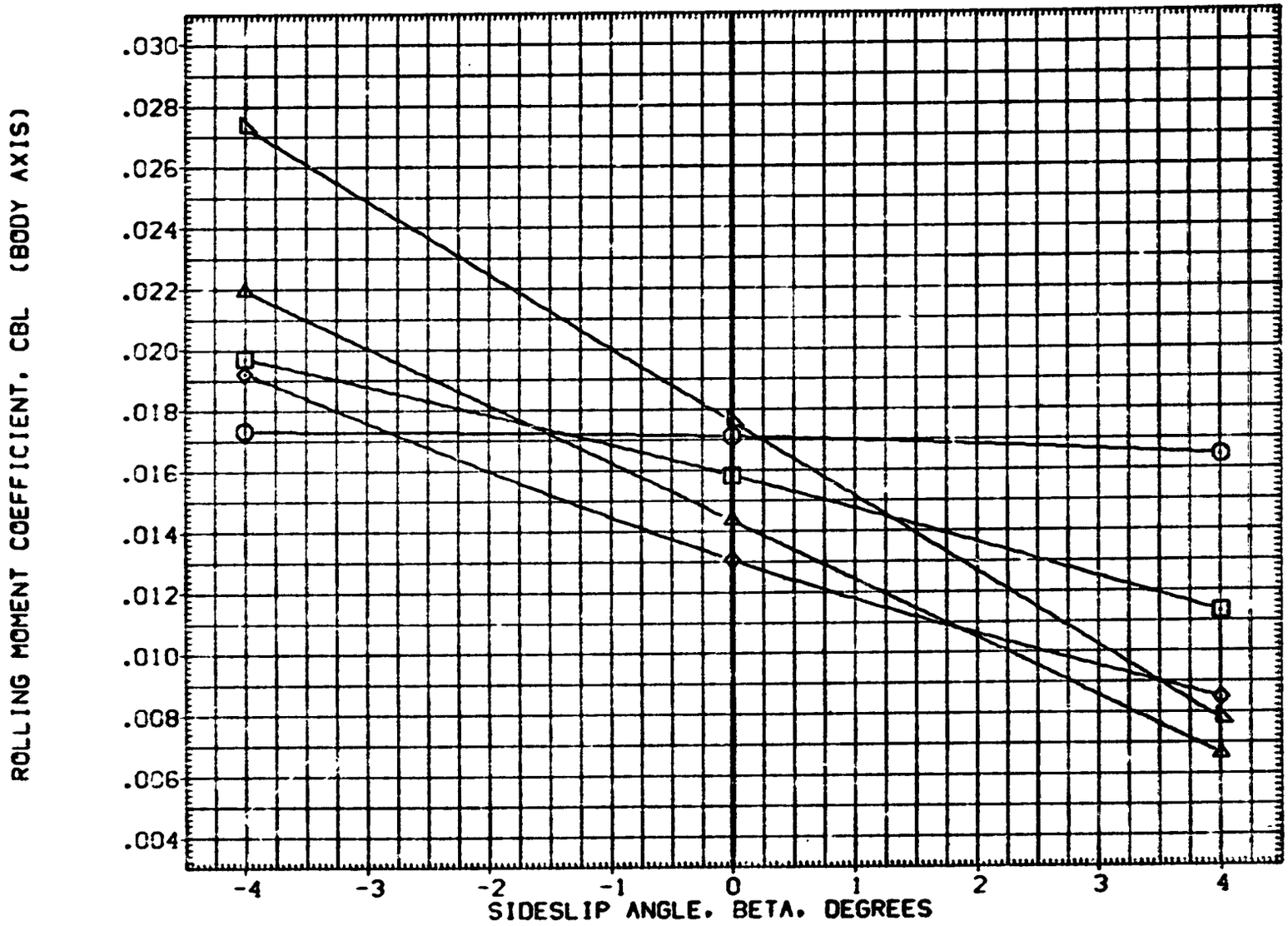


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

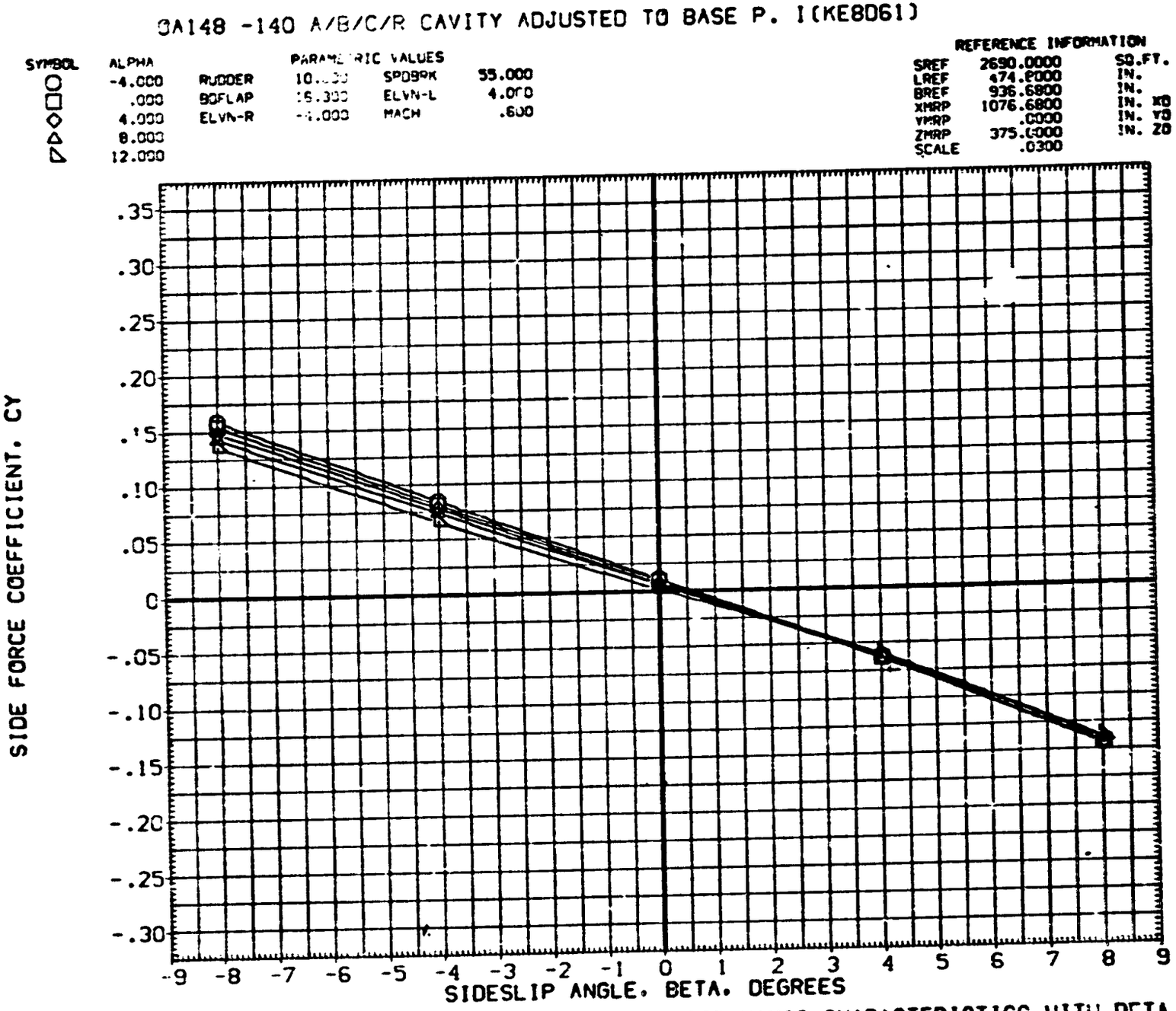


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

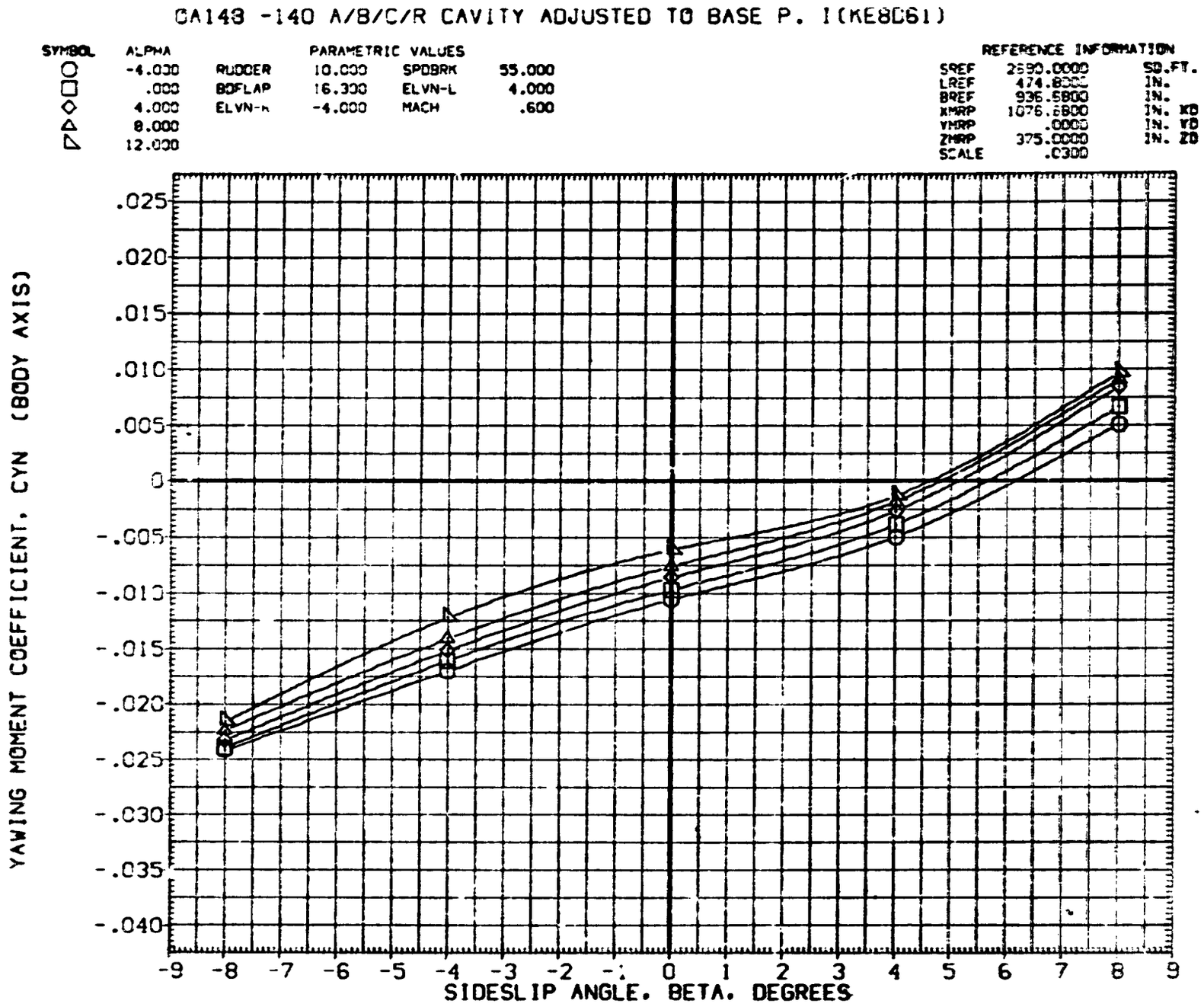


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

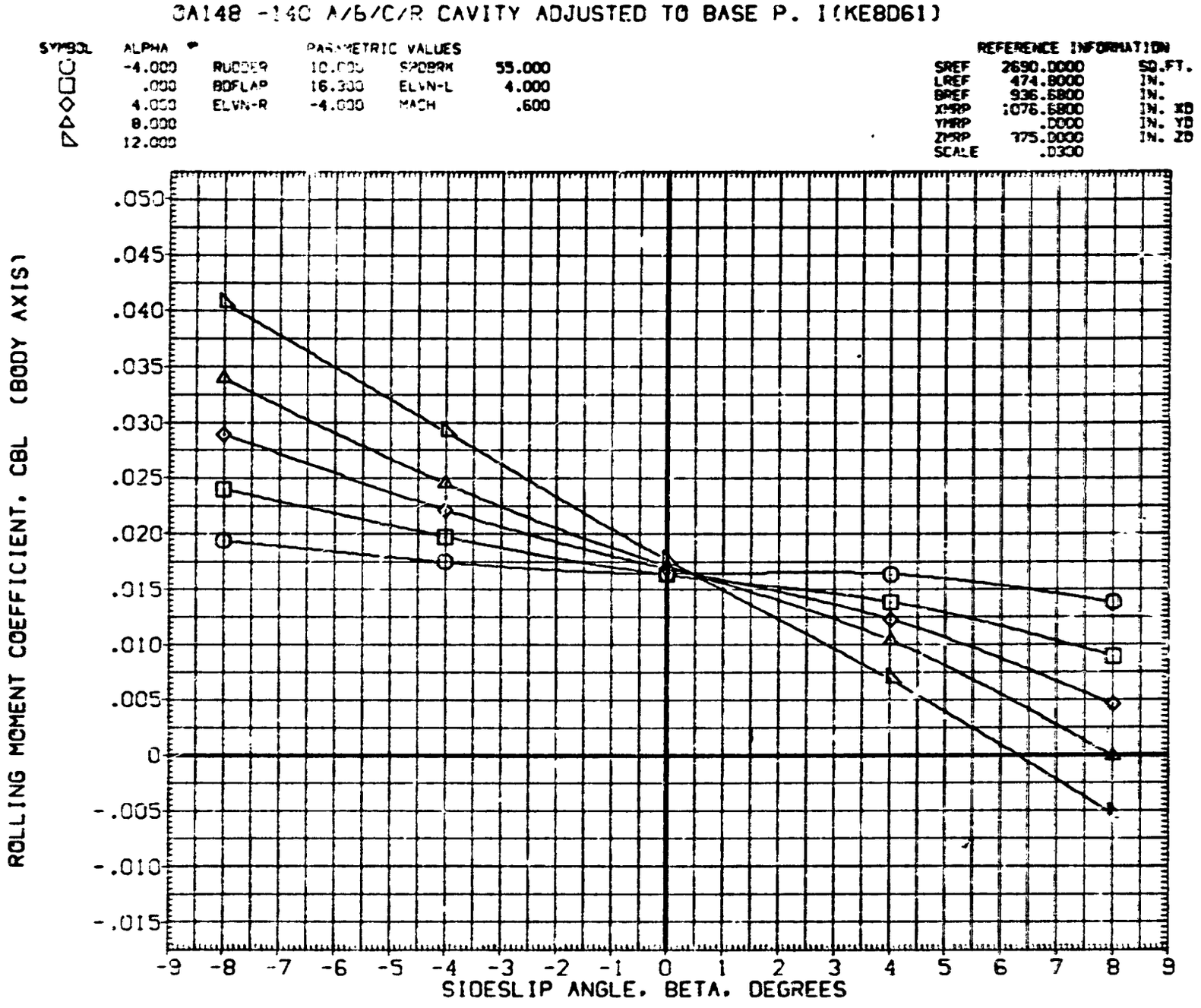


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

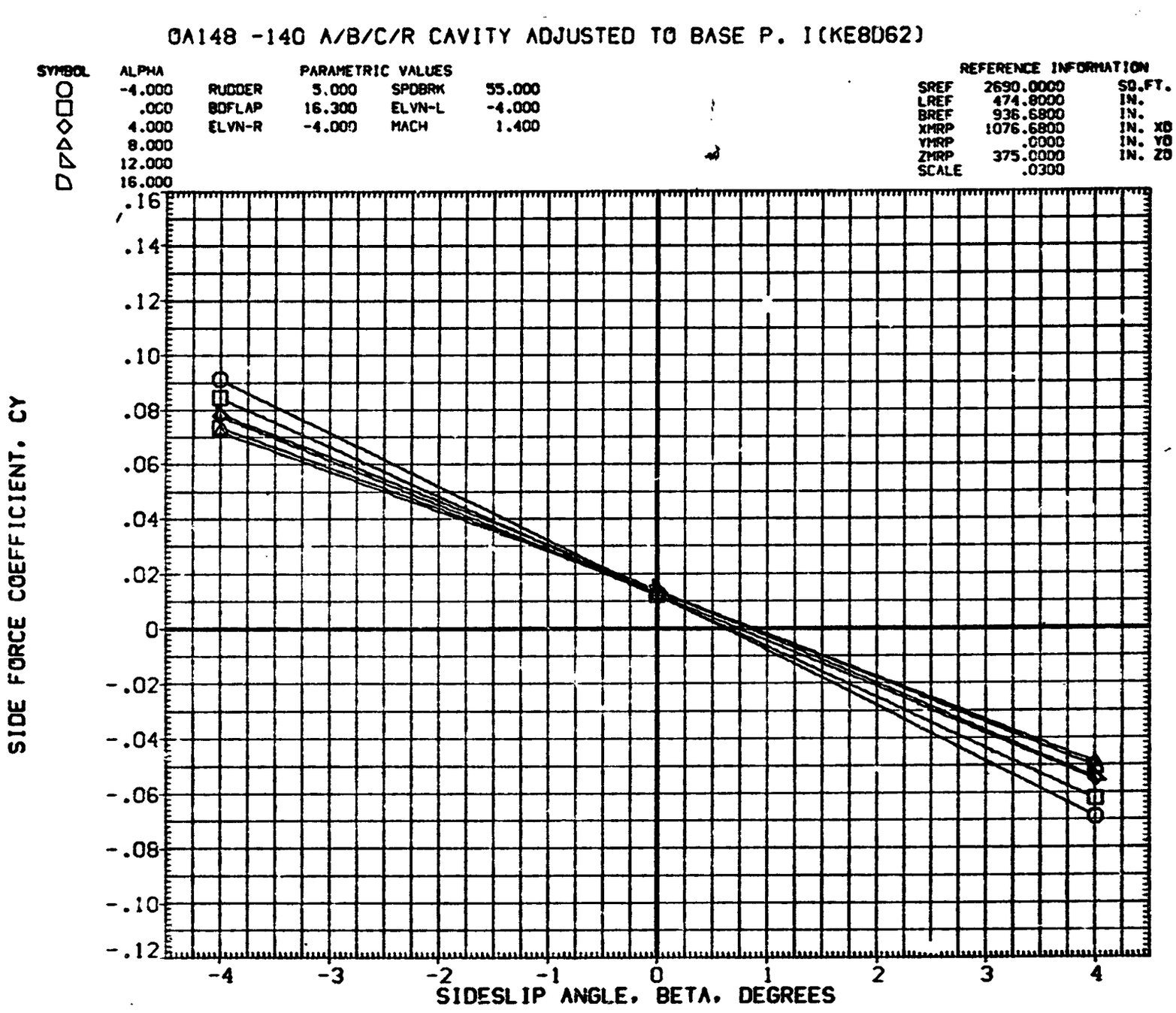


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

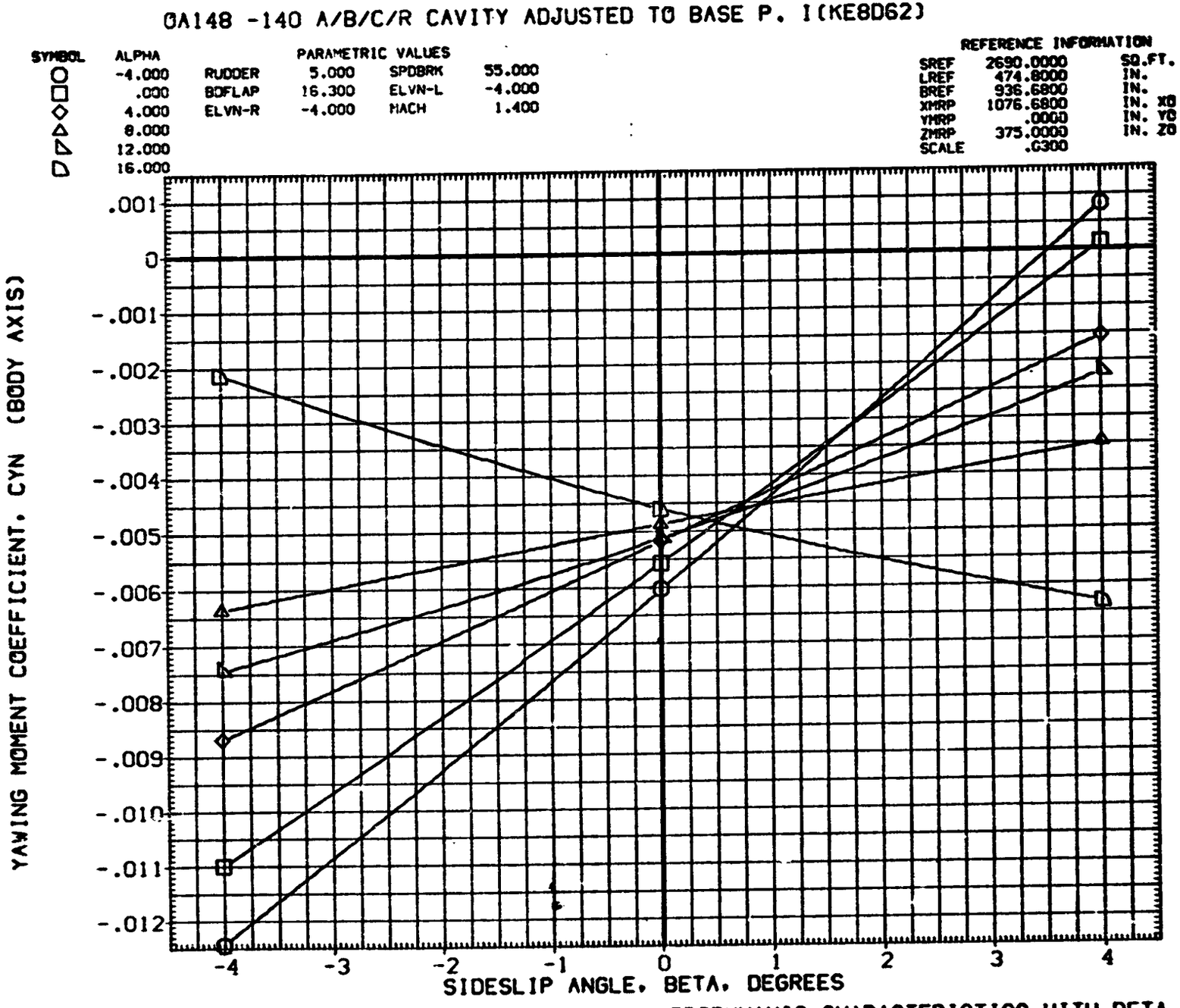


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

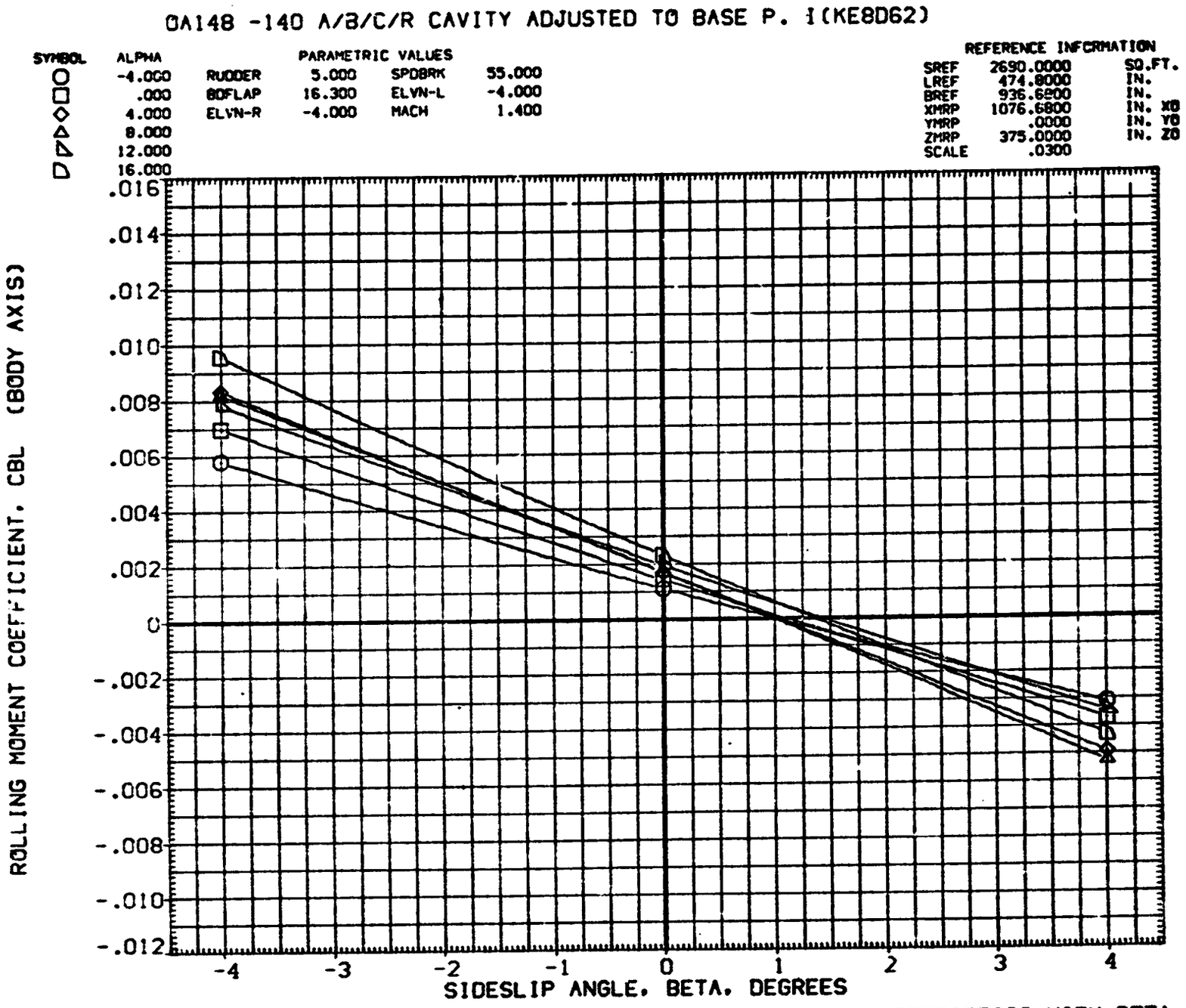


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

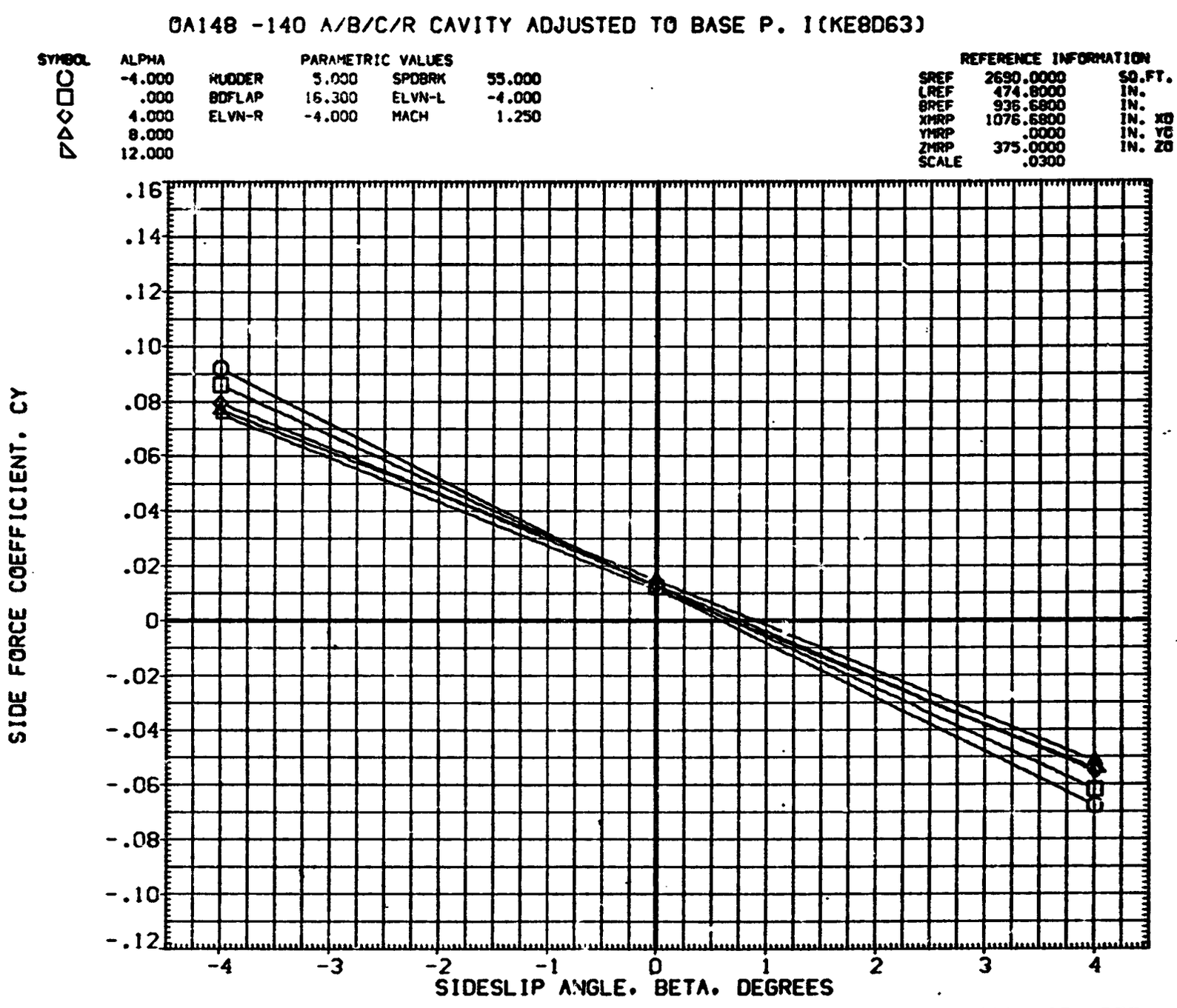


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

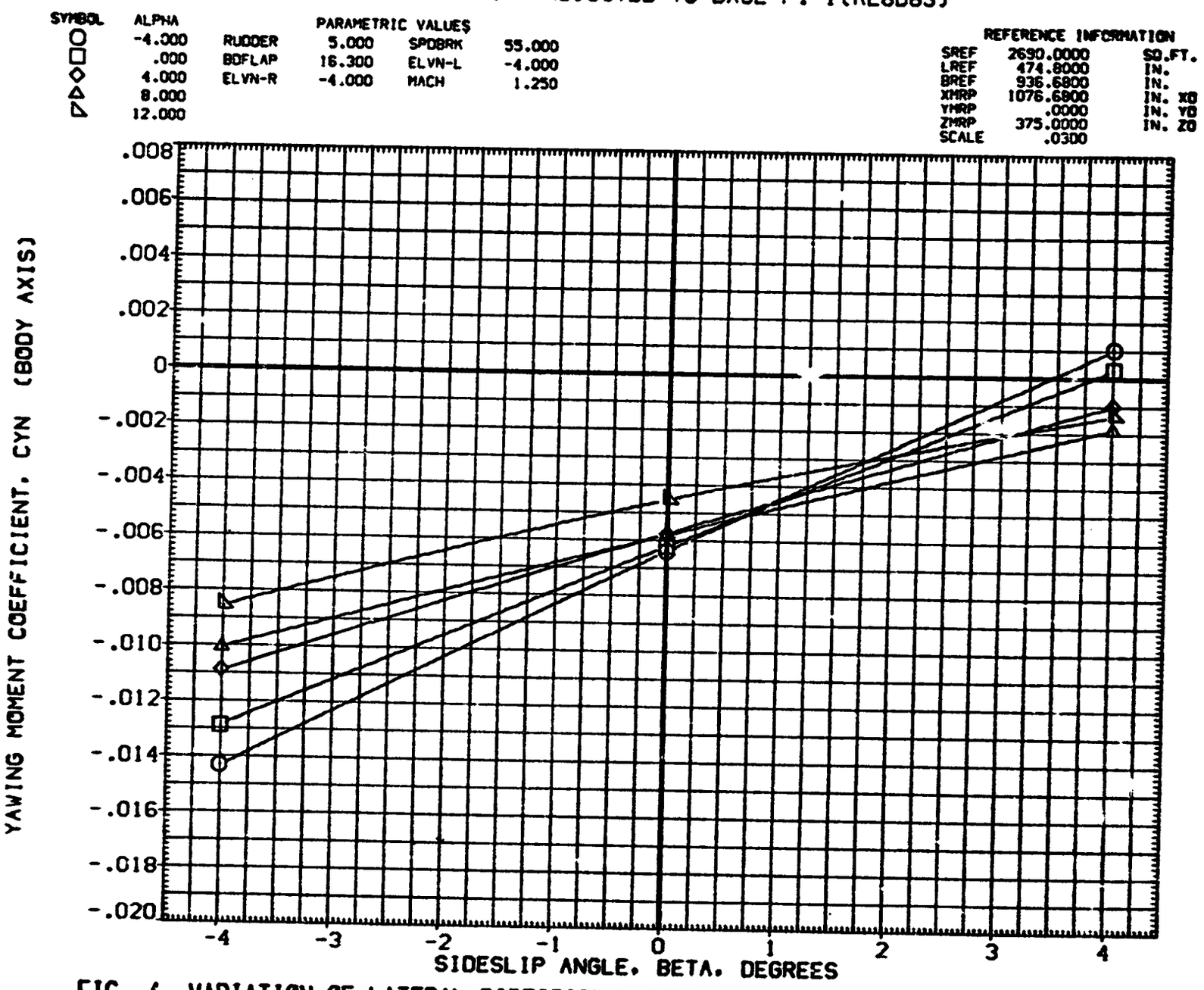


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

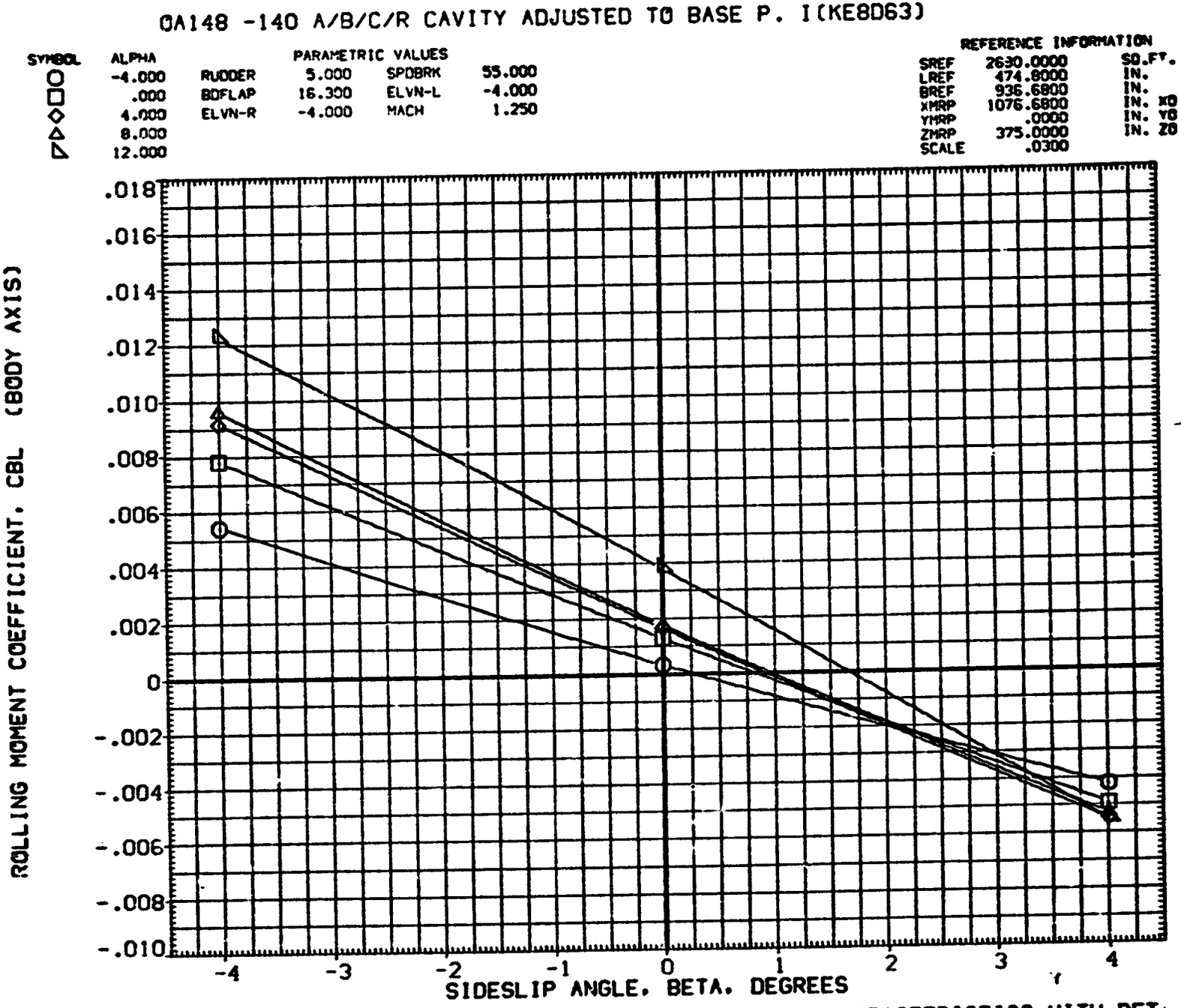


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

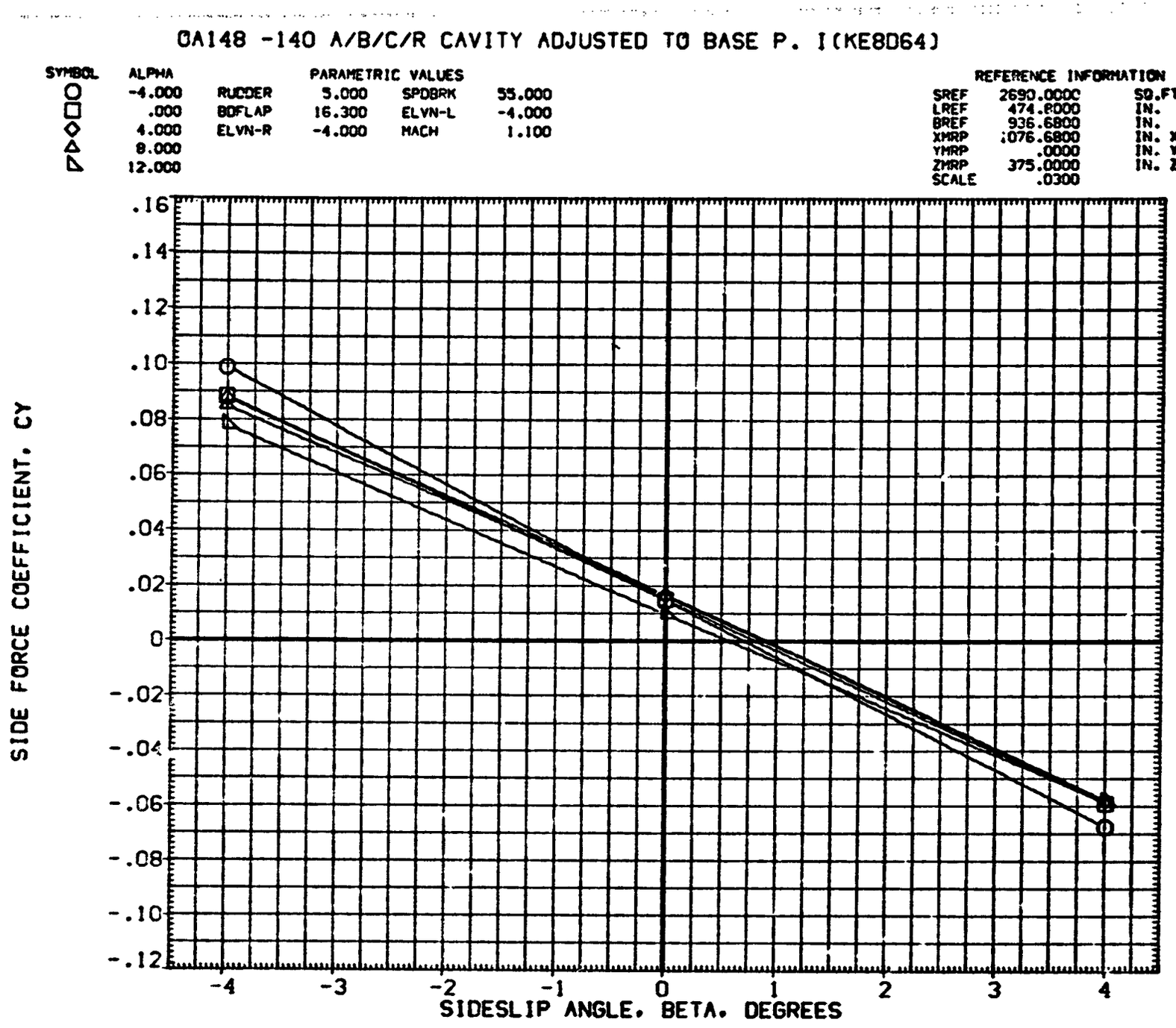


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

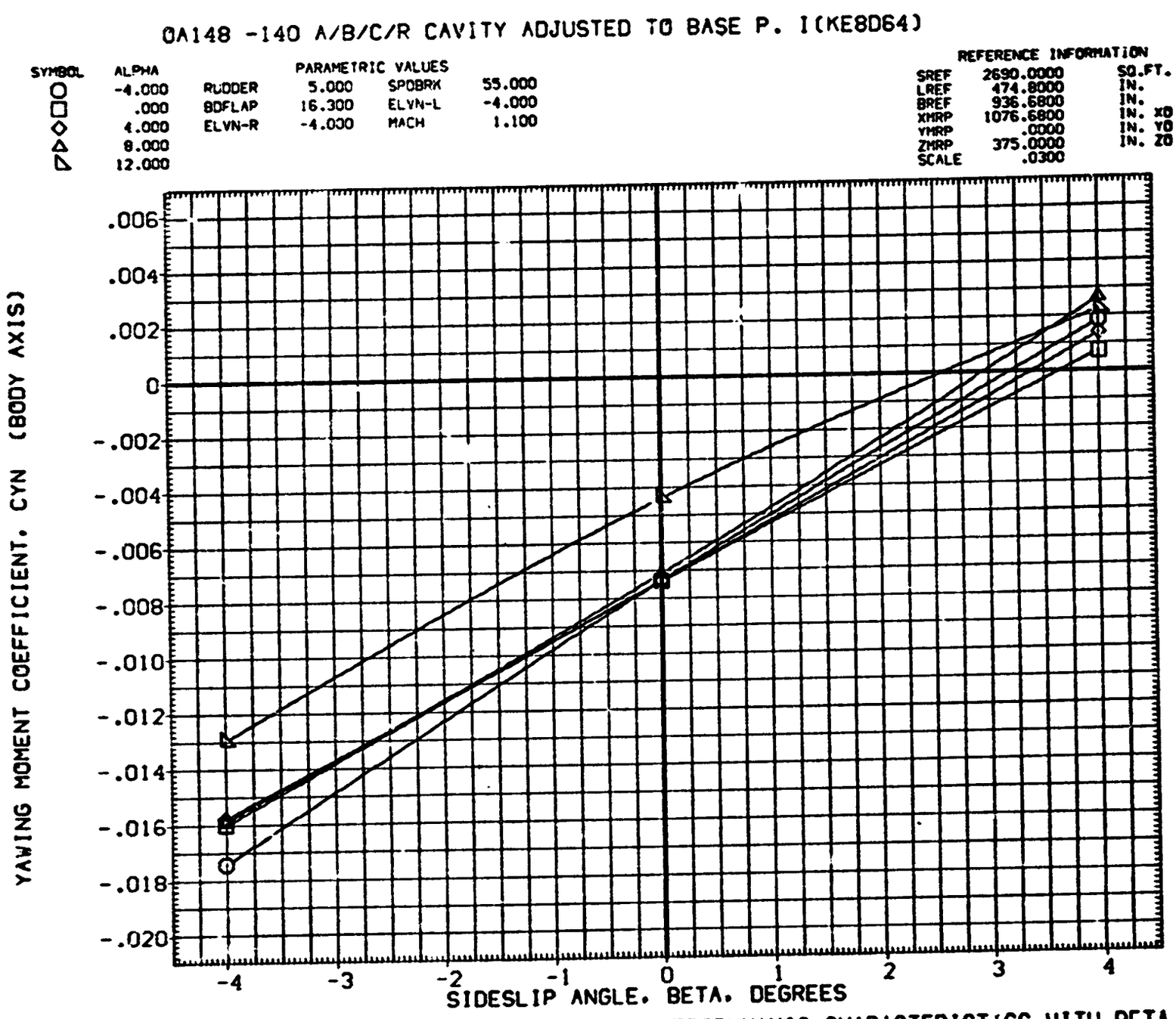


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

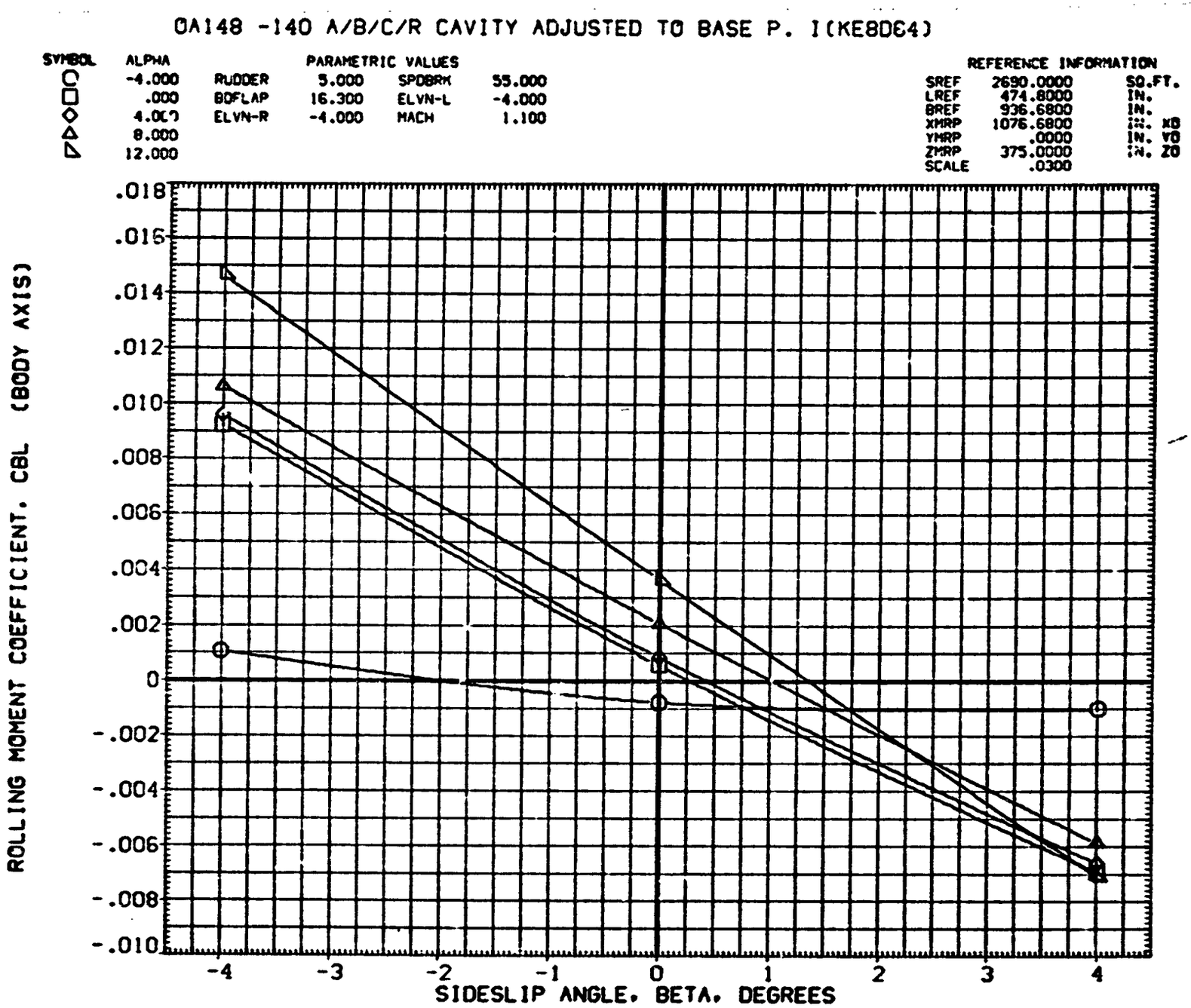


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

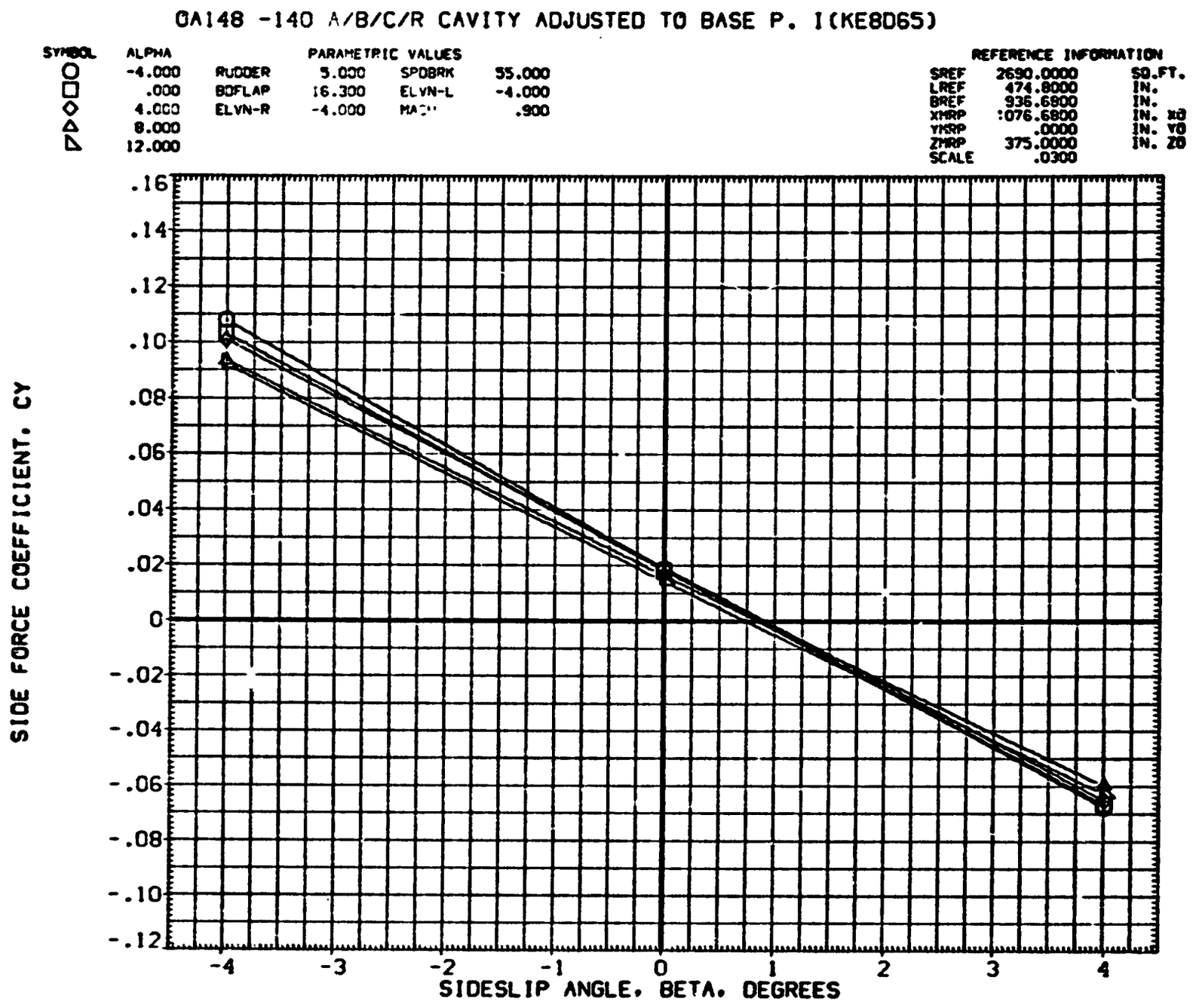


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

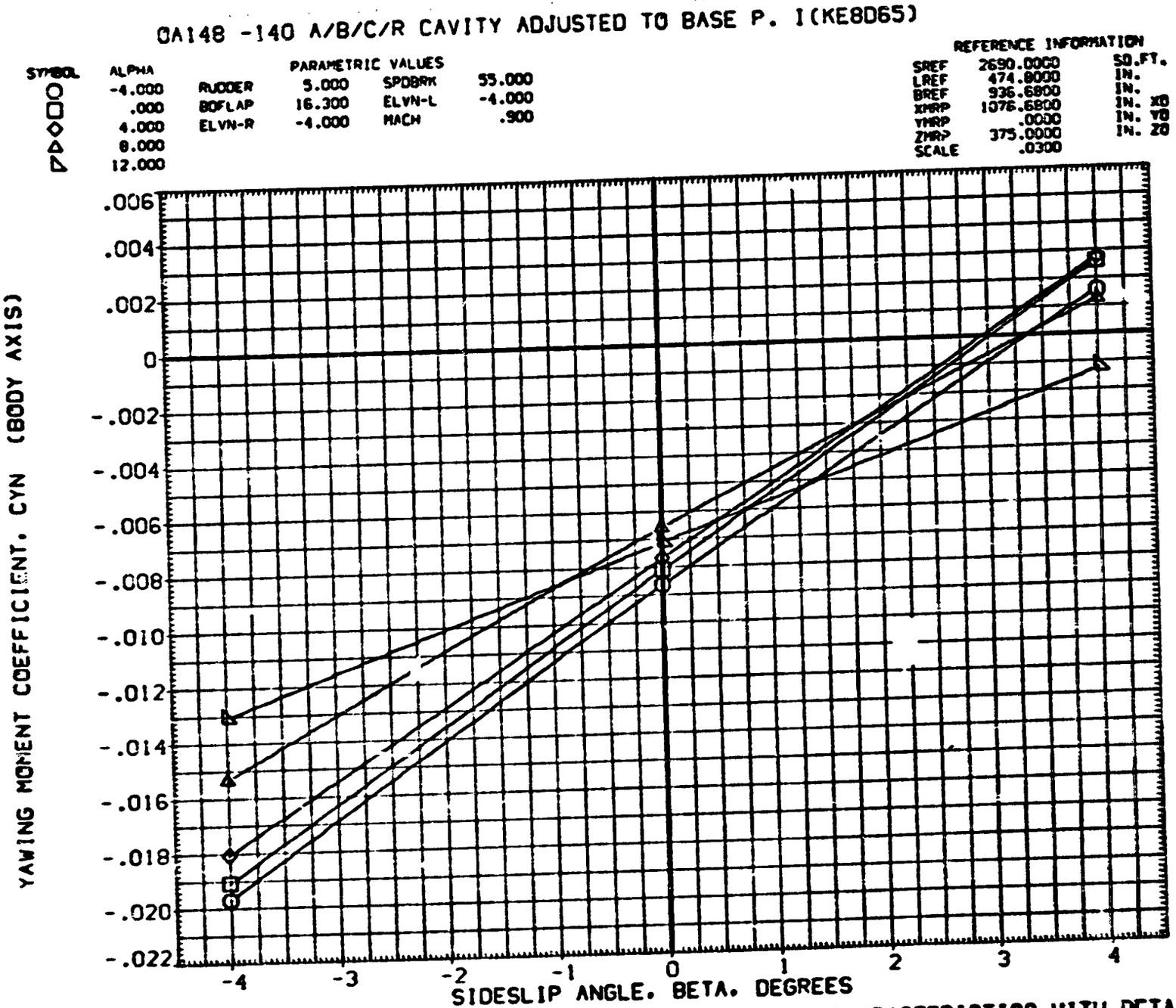


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

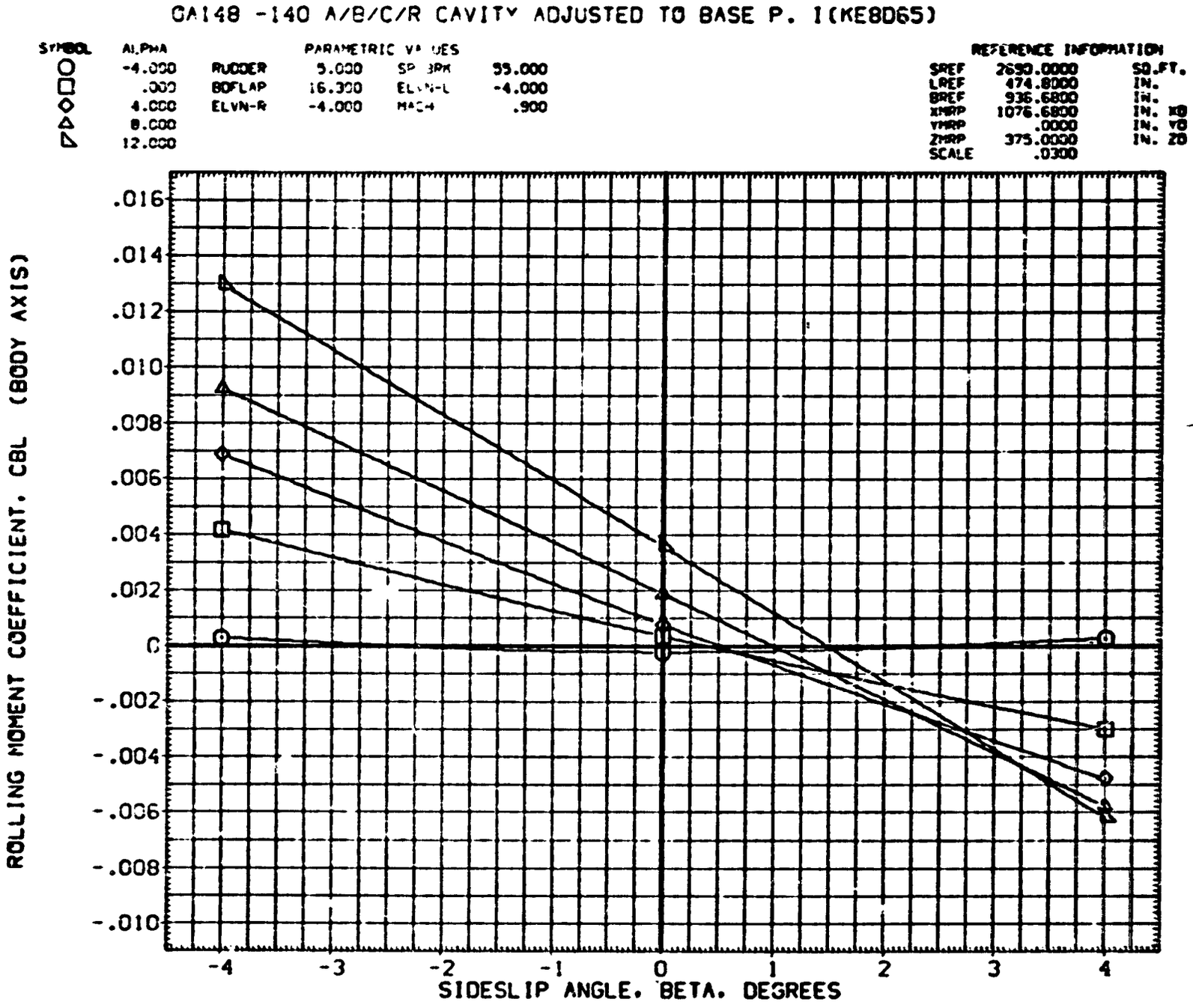


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

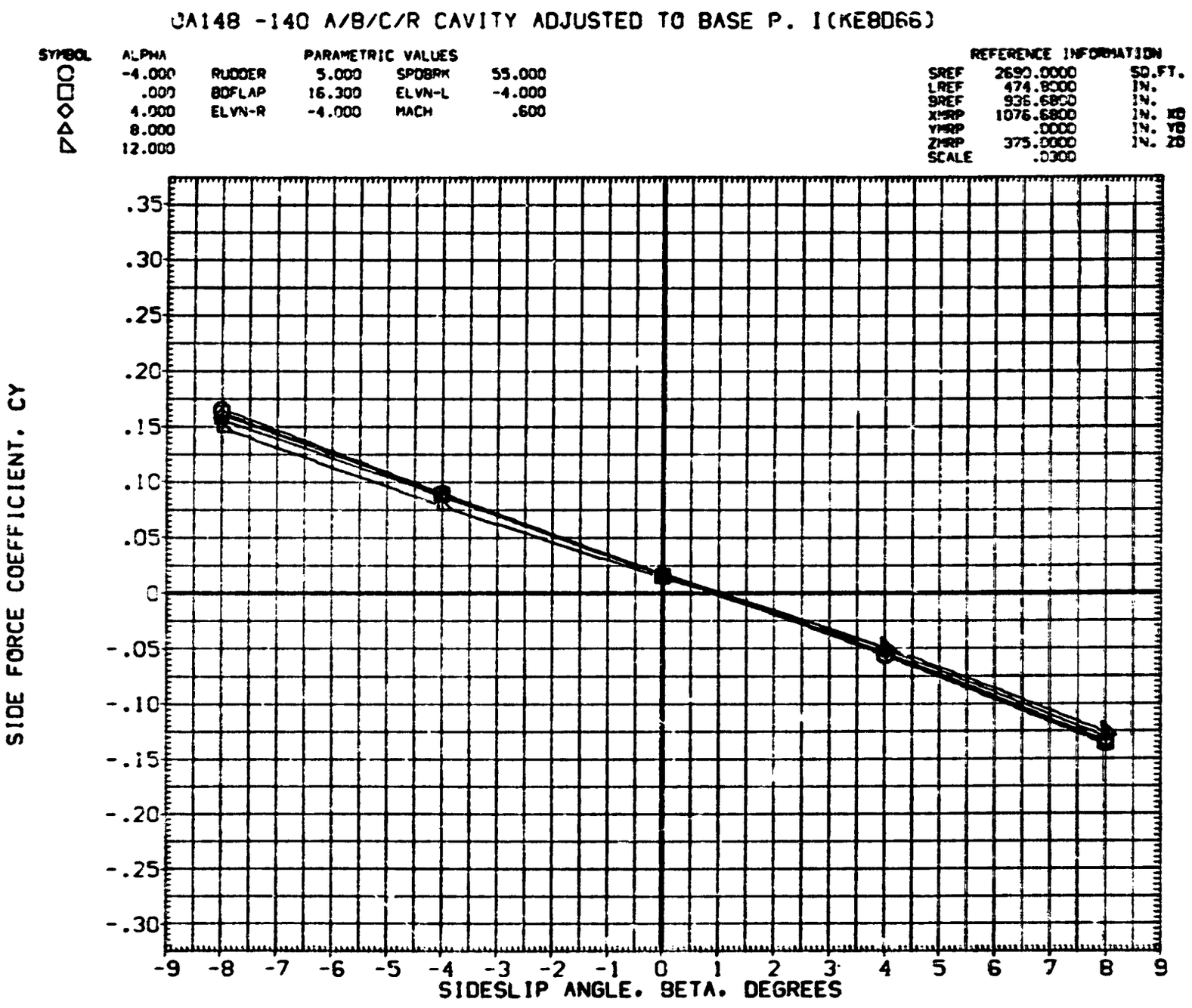


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

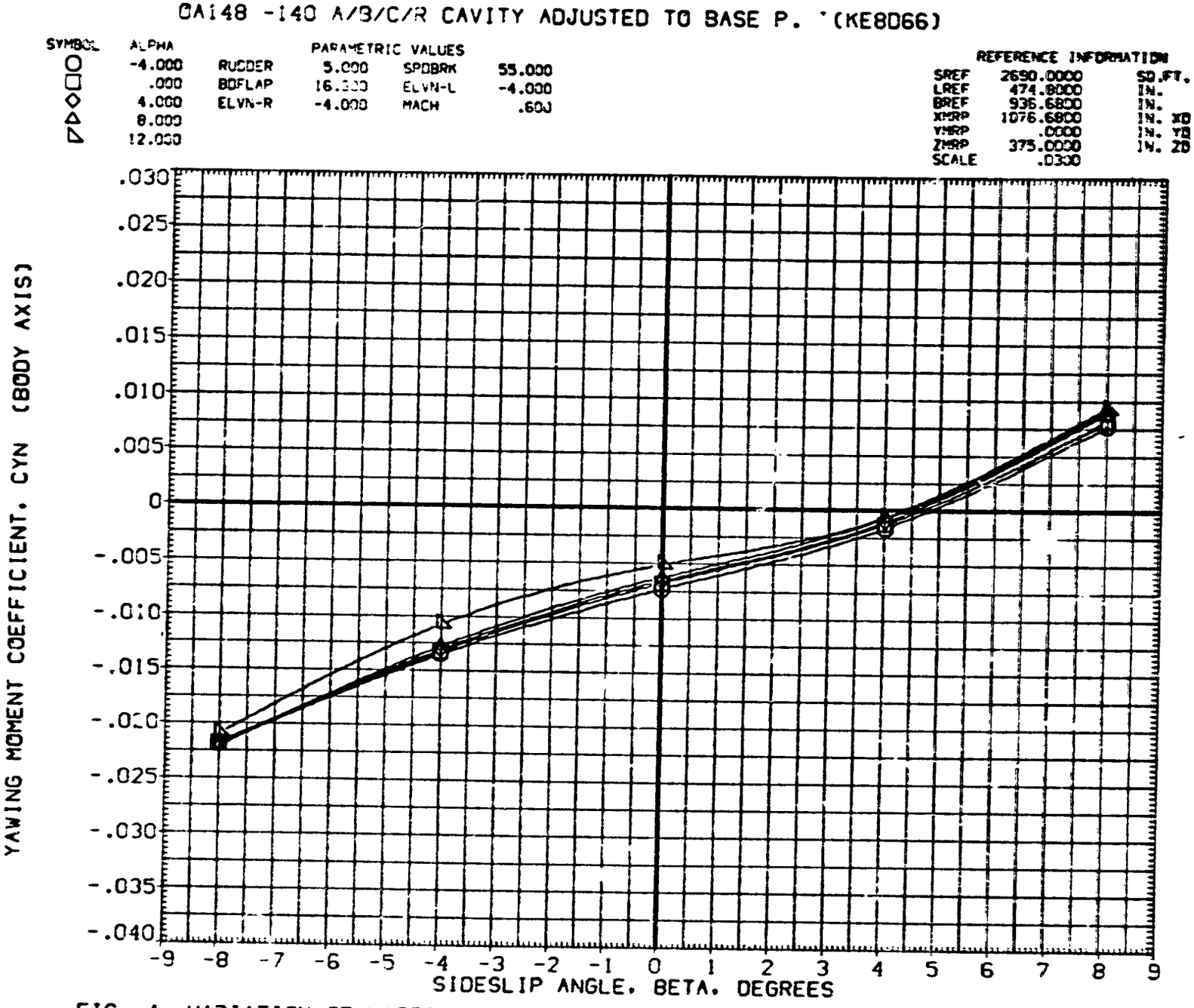


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

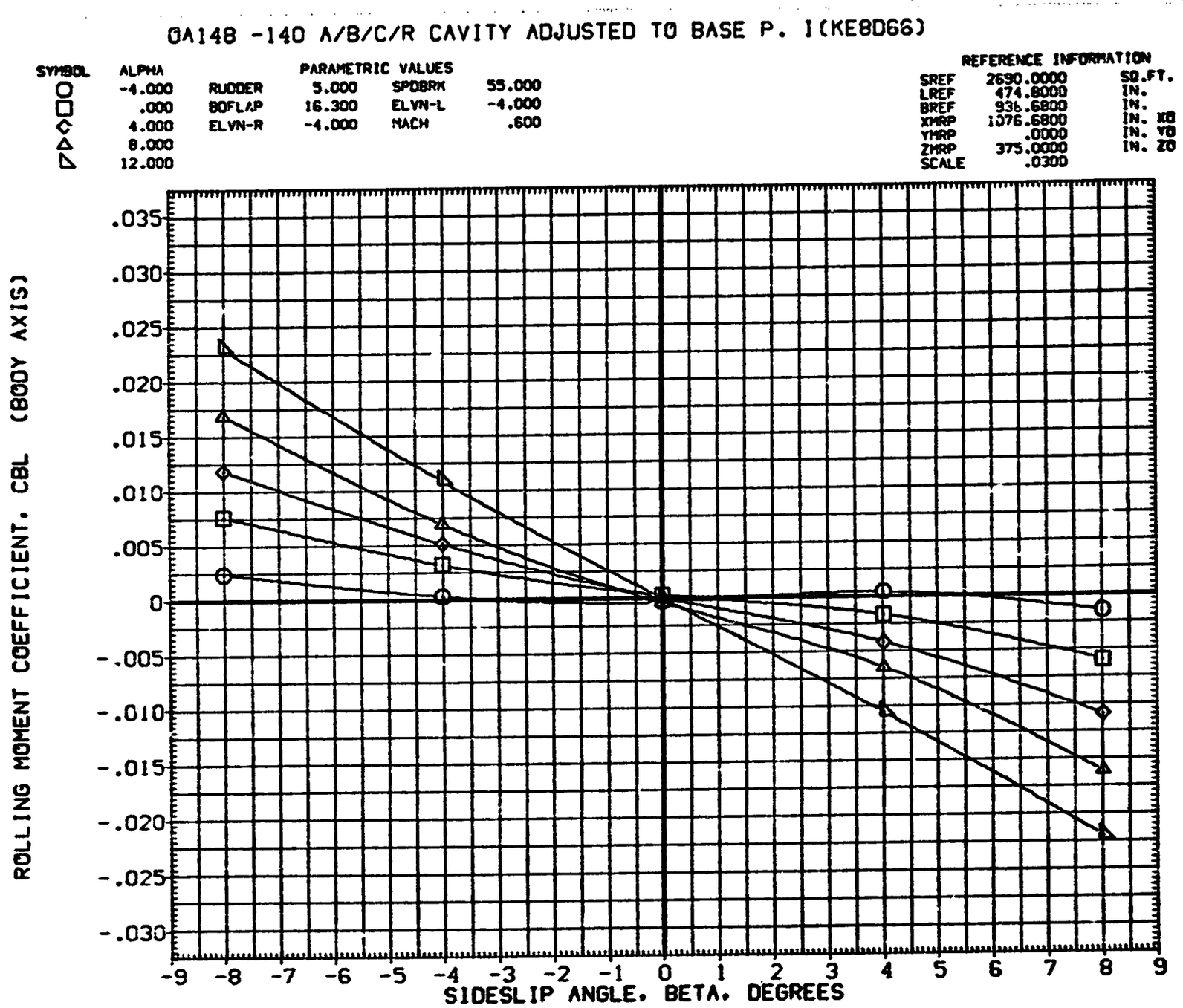


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

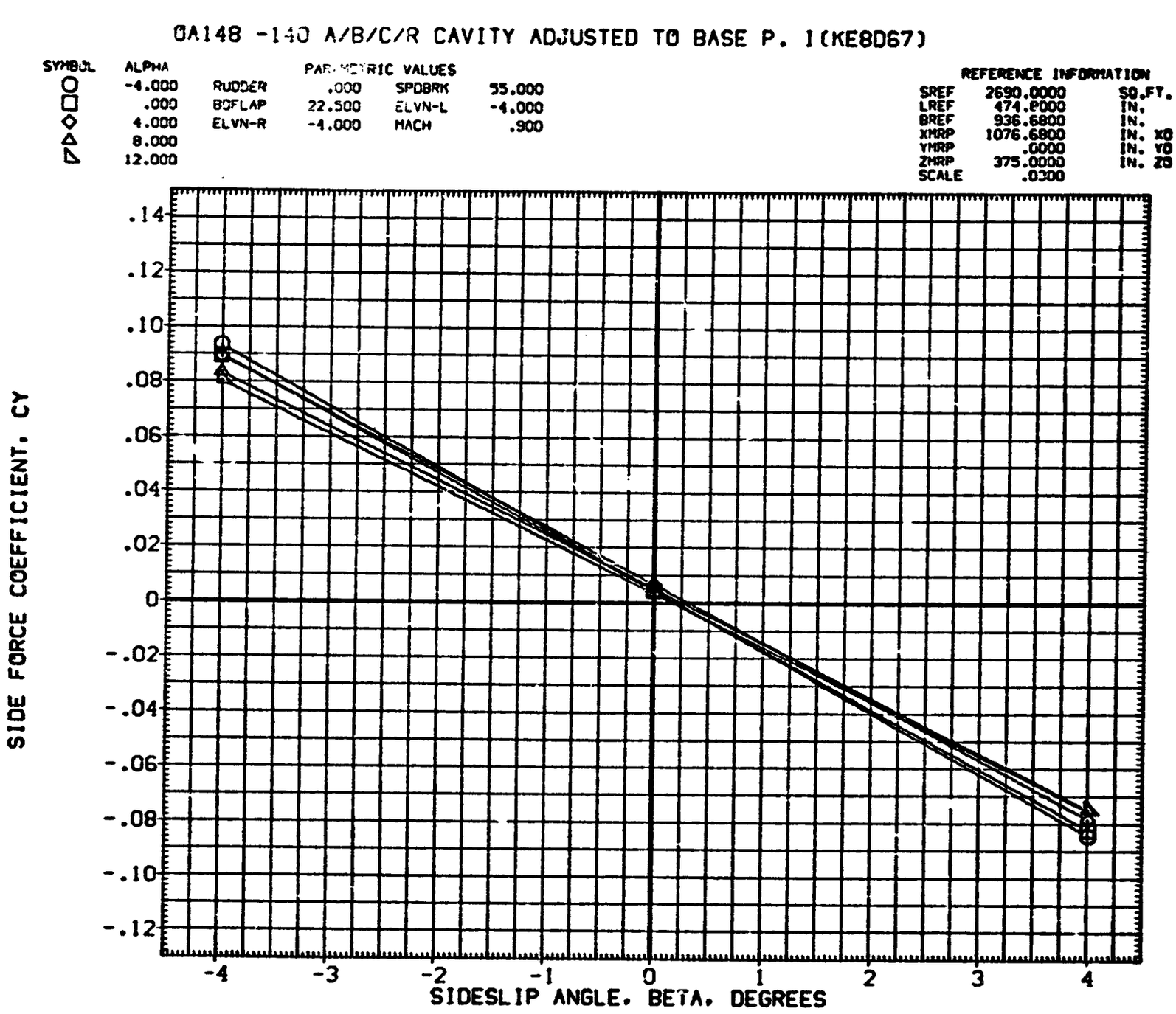


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

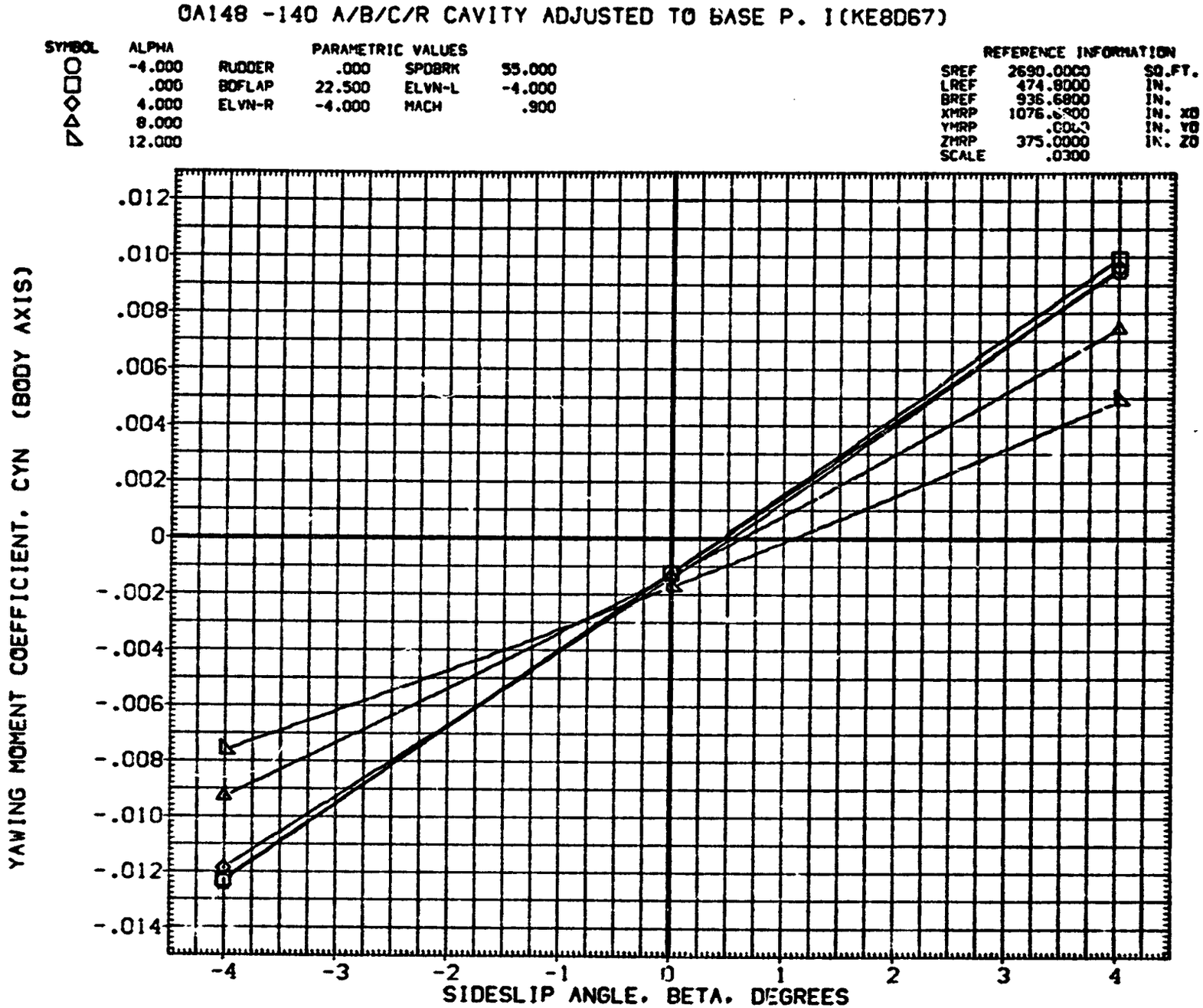


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D67)

SYMBOL	ALPHA
○	-4.000
□	.000
◇	4.000
△	8.000
▽	12.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	22.500	ELVN-L	-4.000
ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

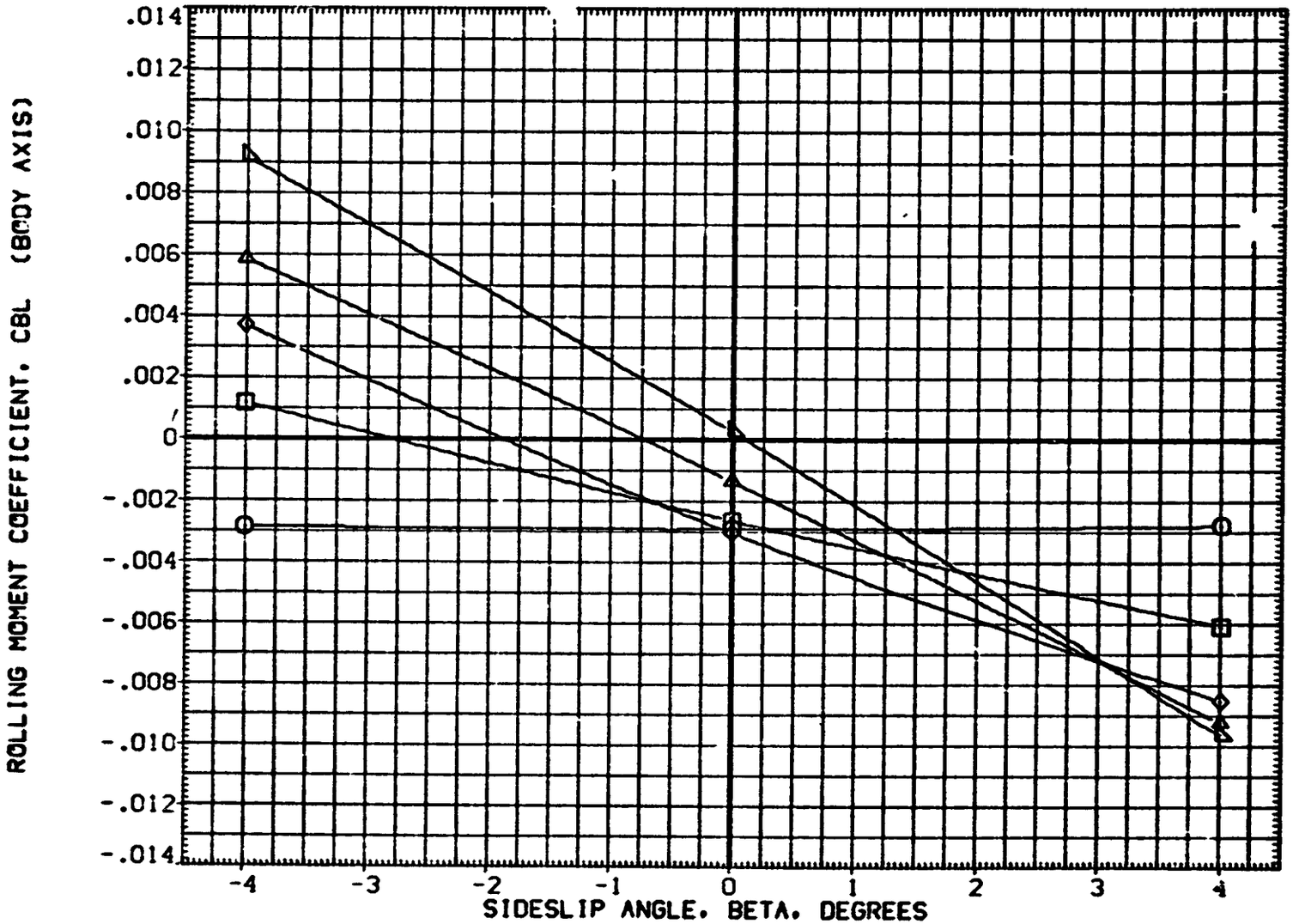


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

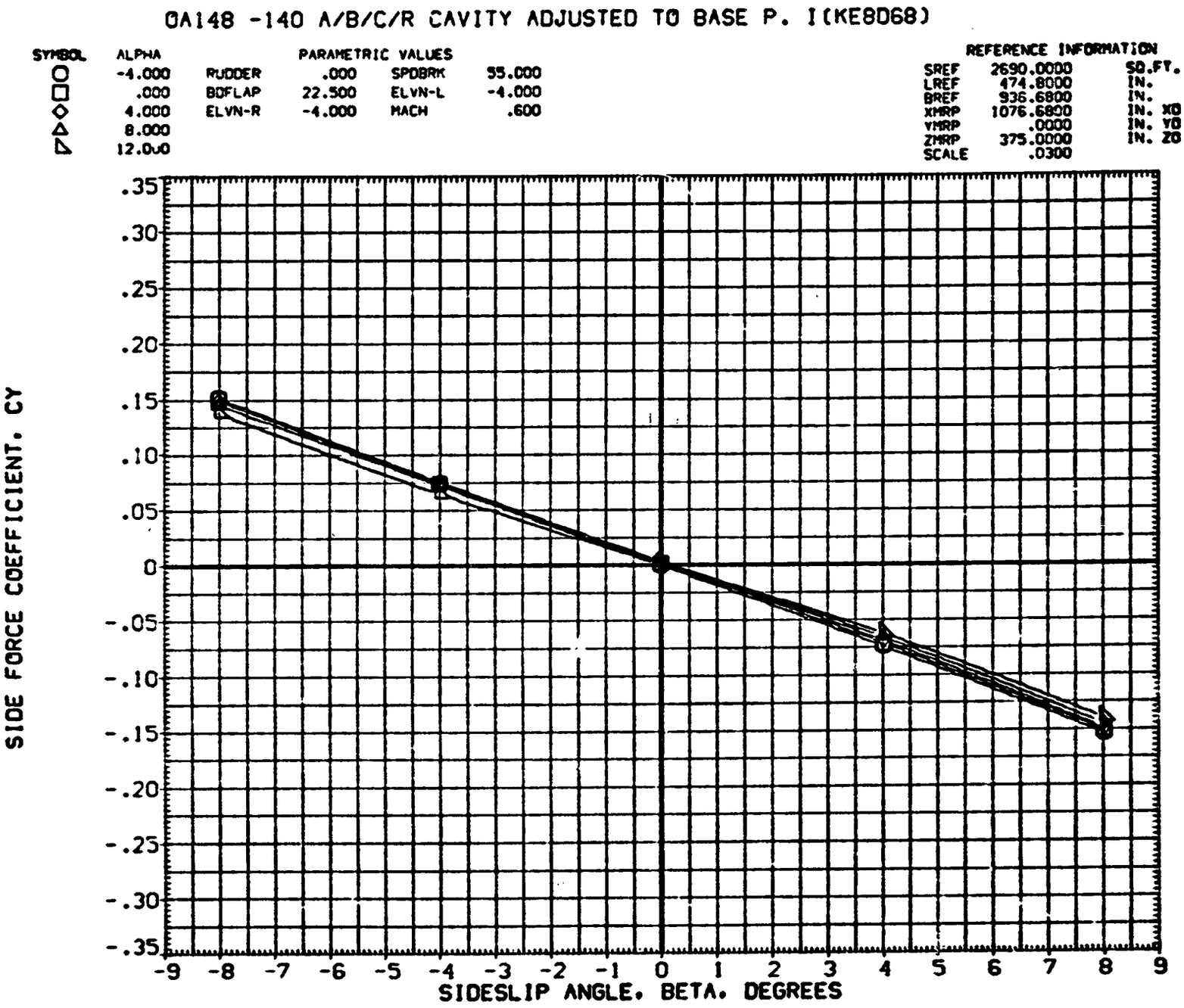


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

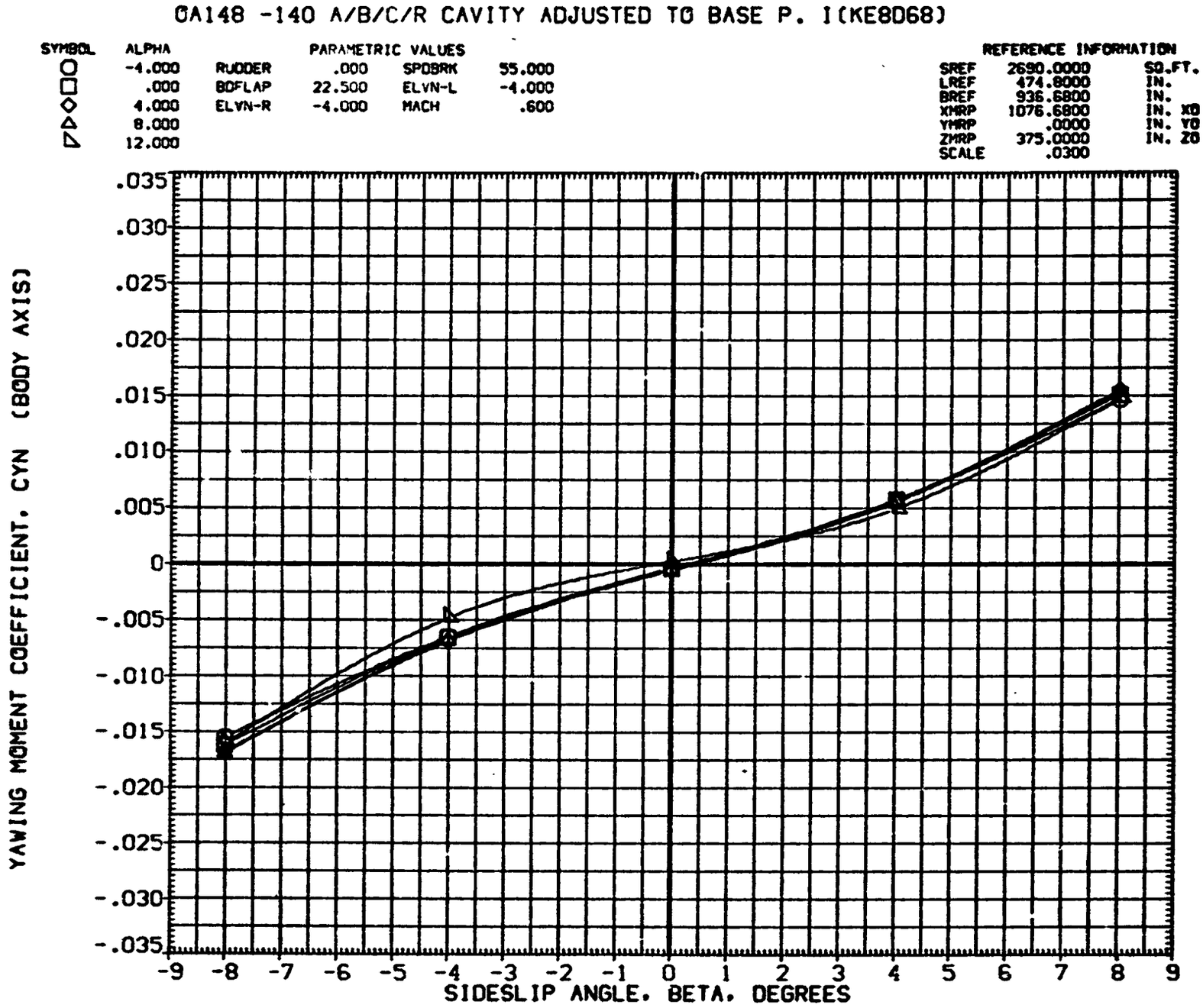


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

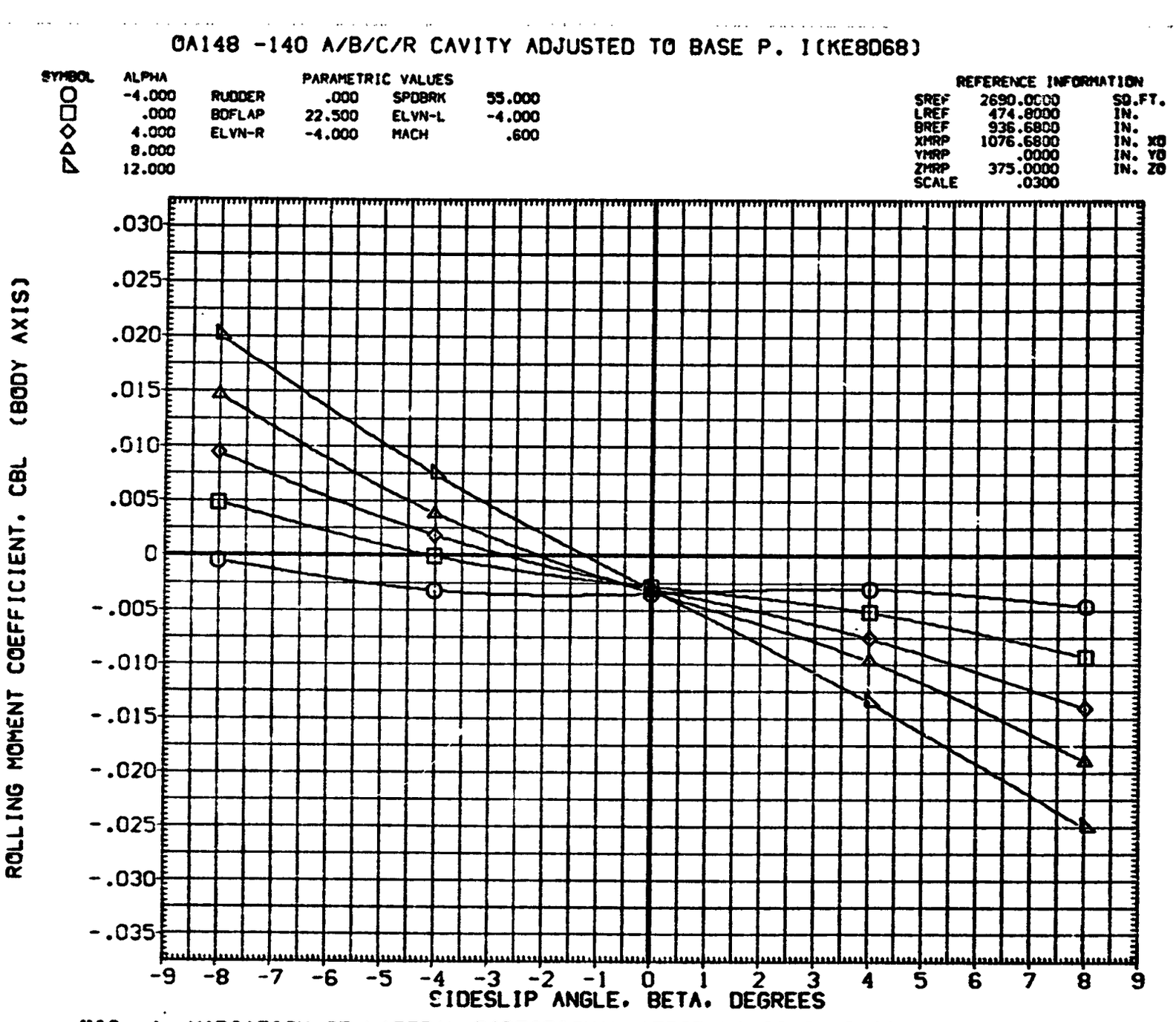


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D69)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BOFLAP	22.500	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

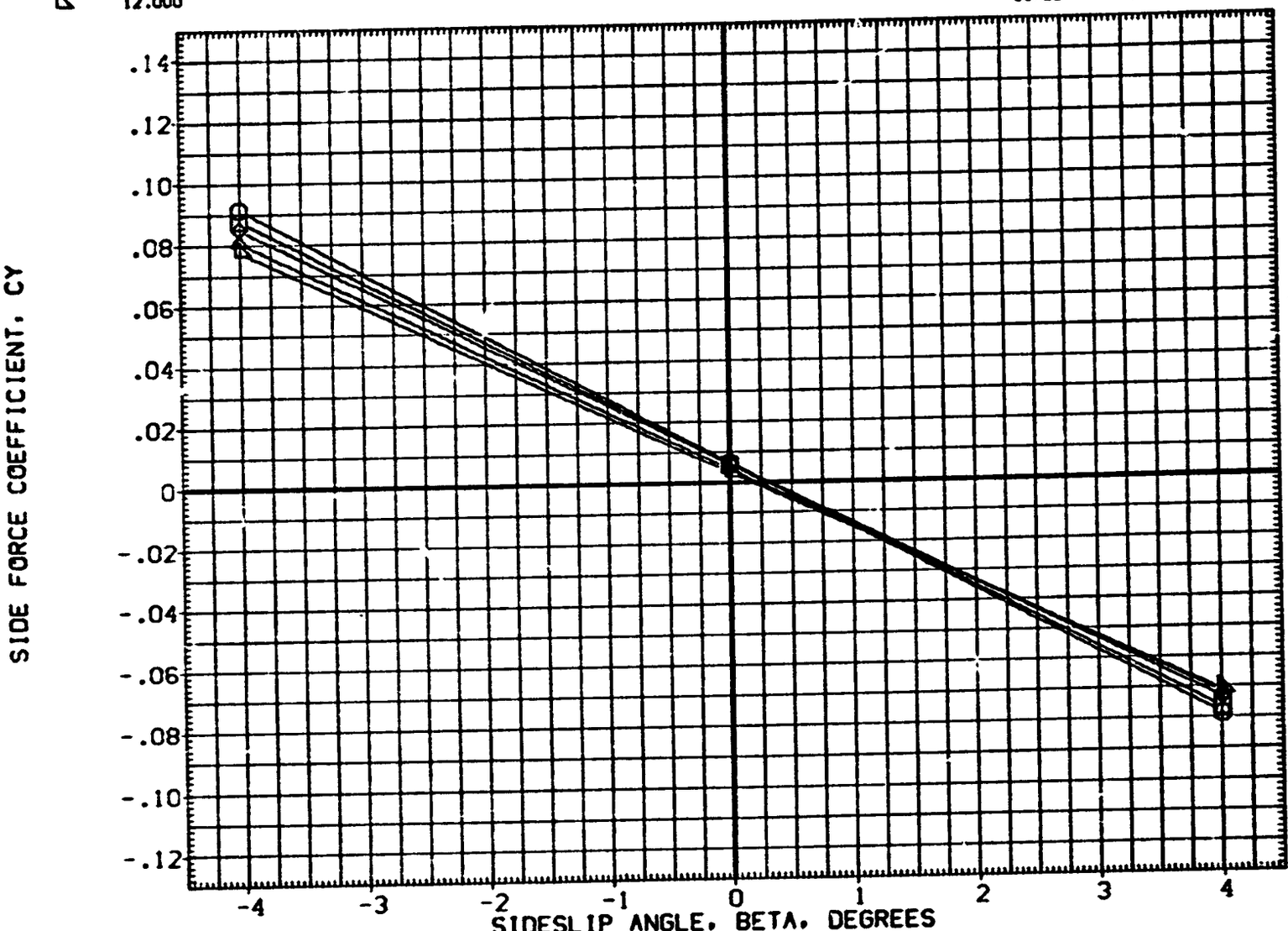


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. (KE8D69)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

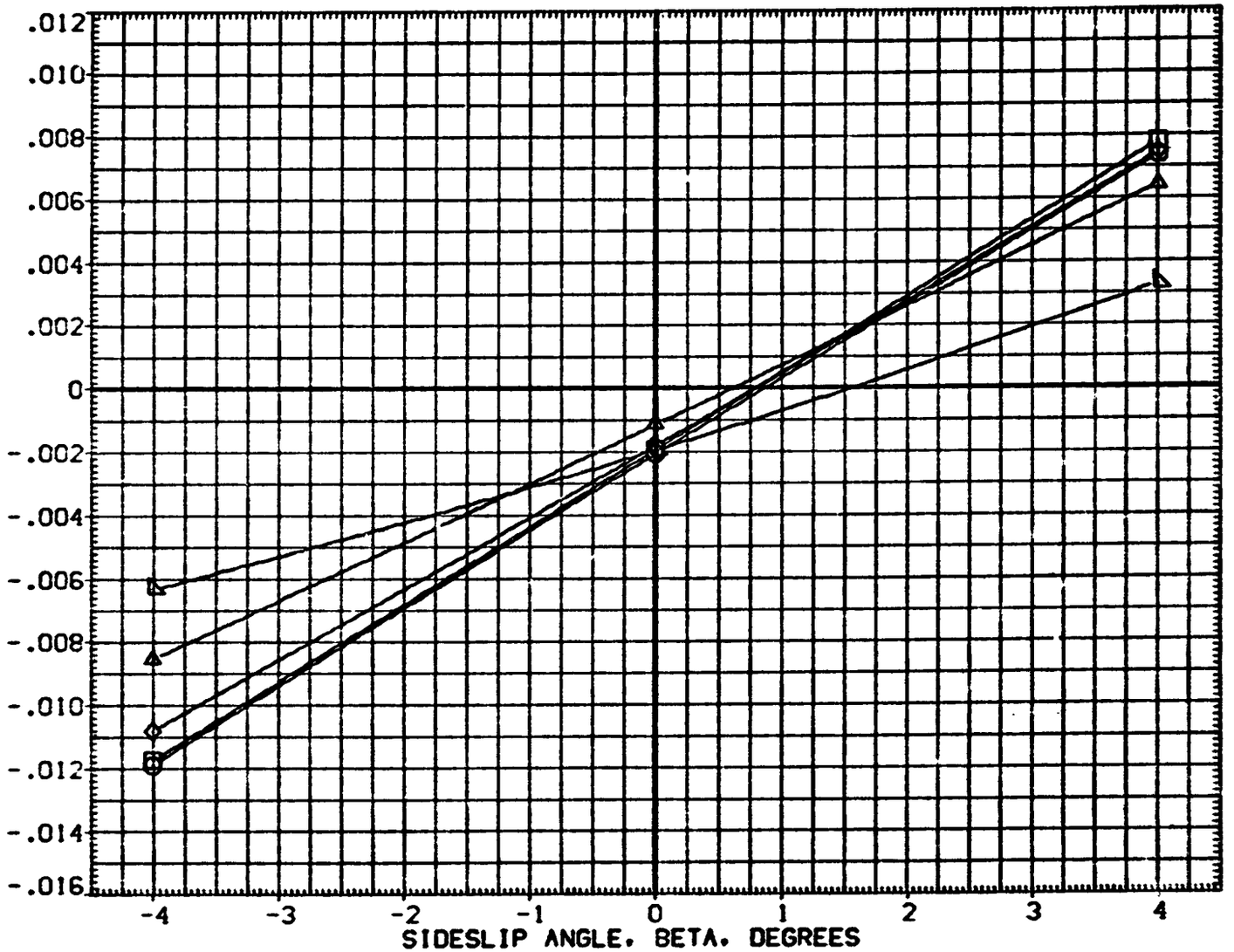


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

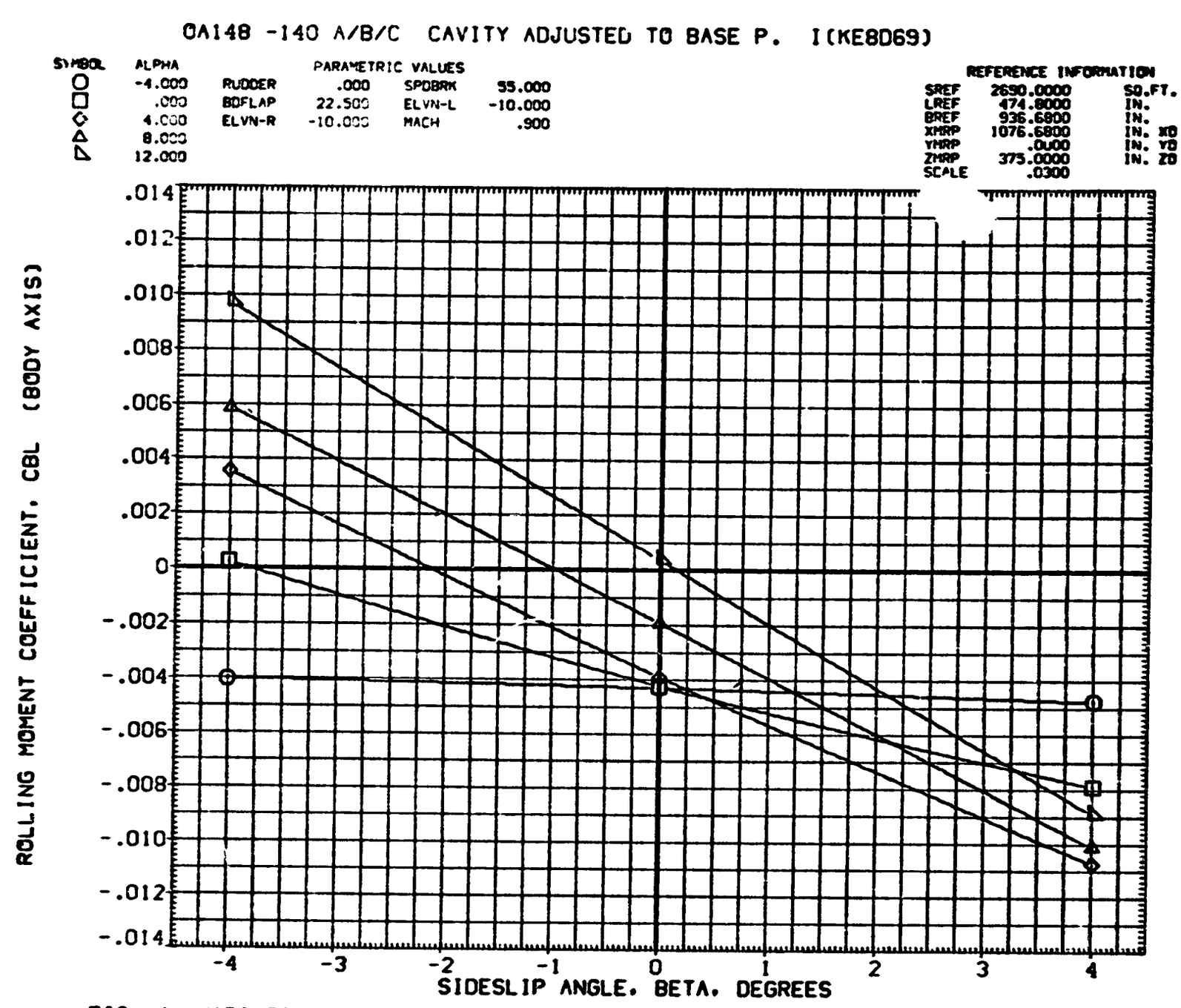


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

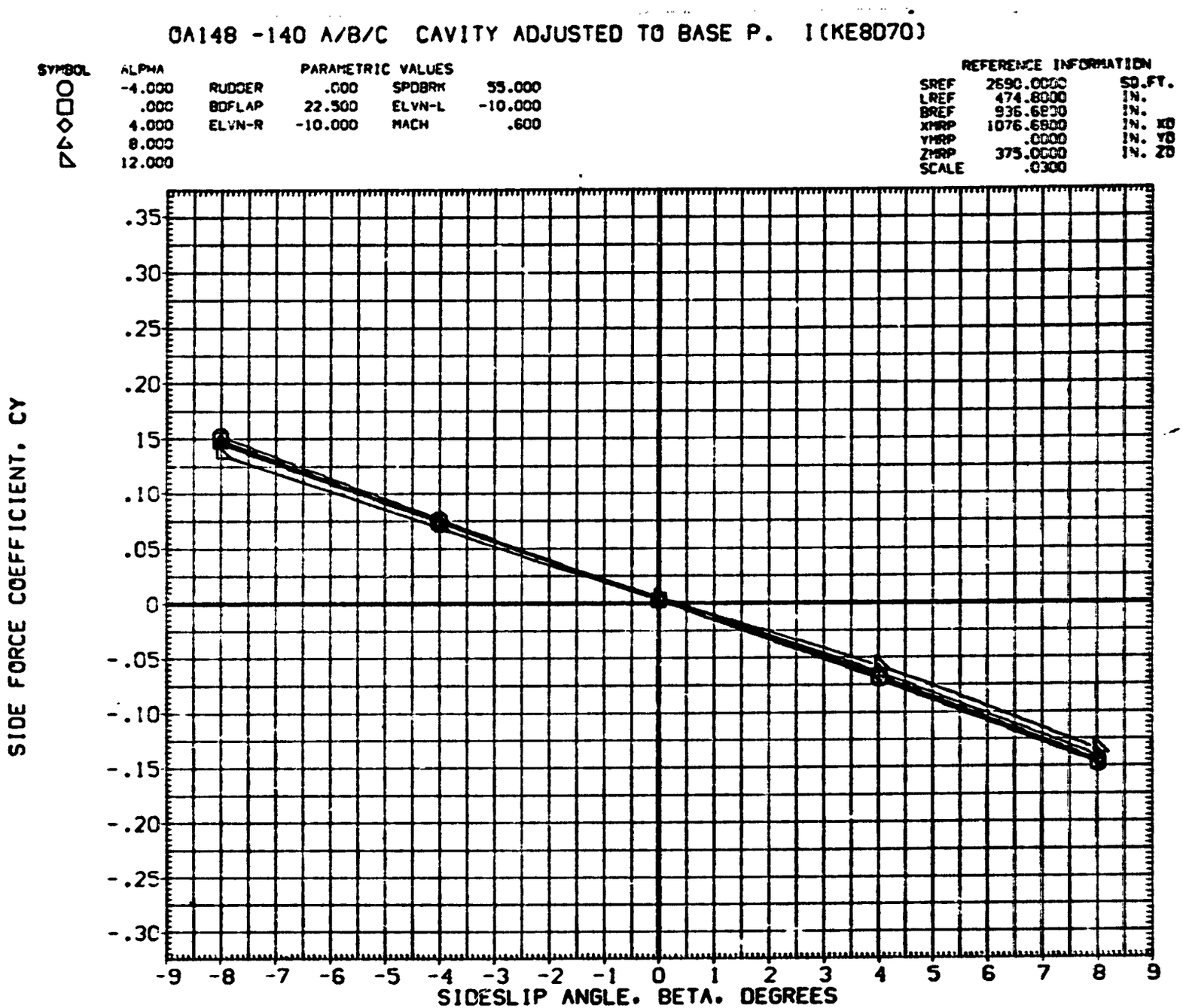


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

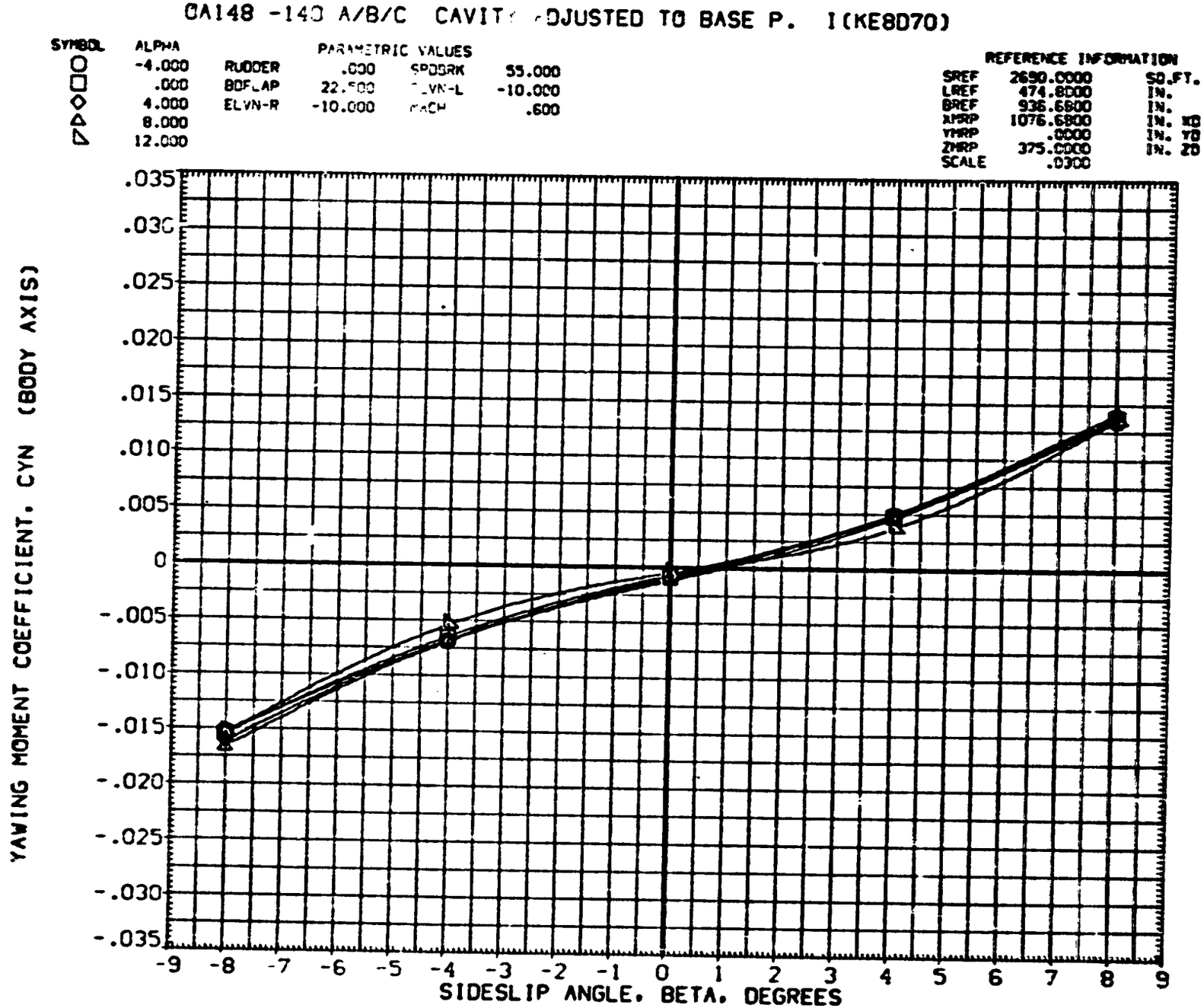


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

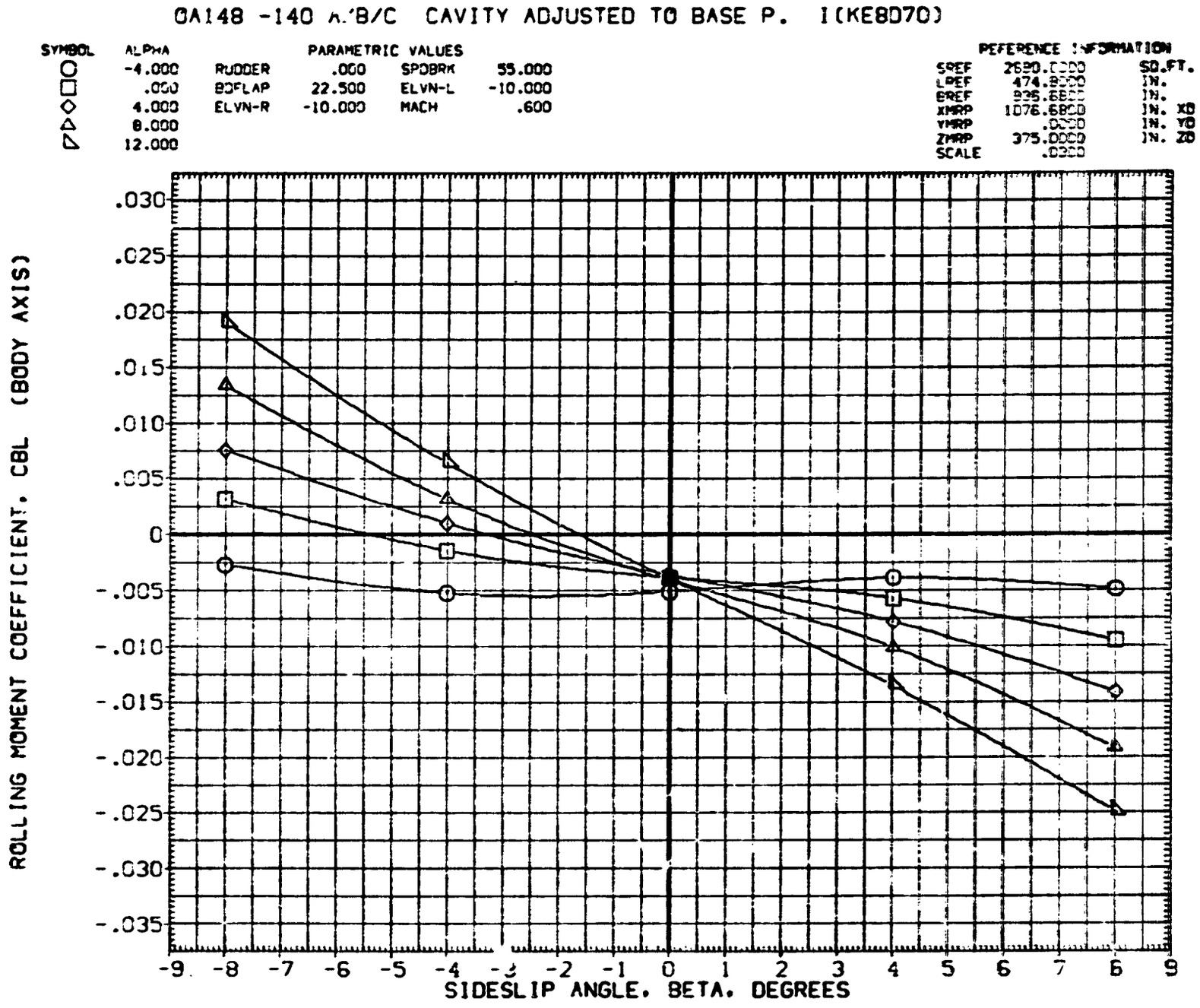


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

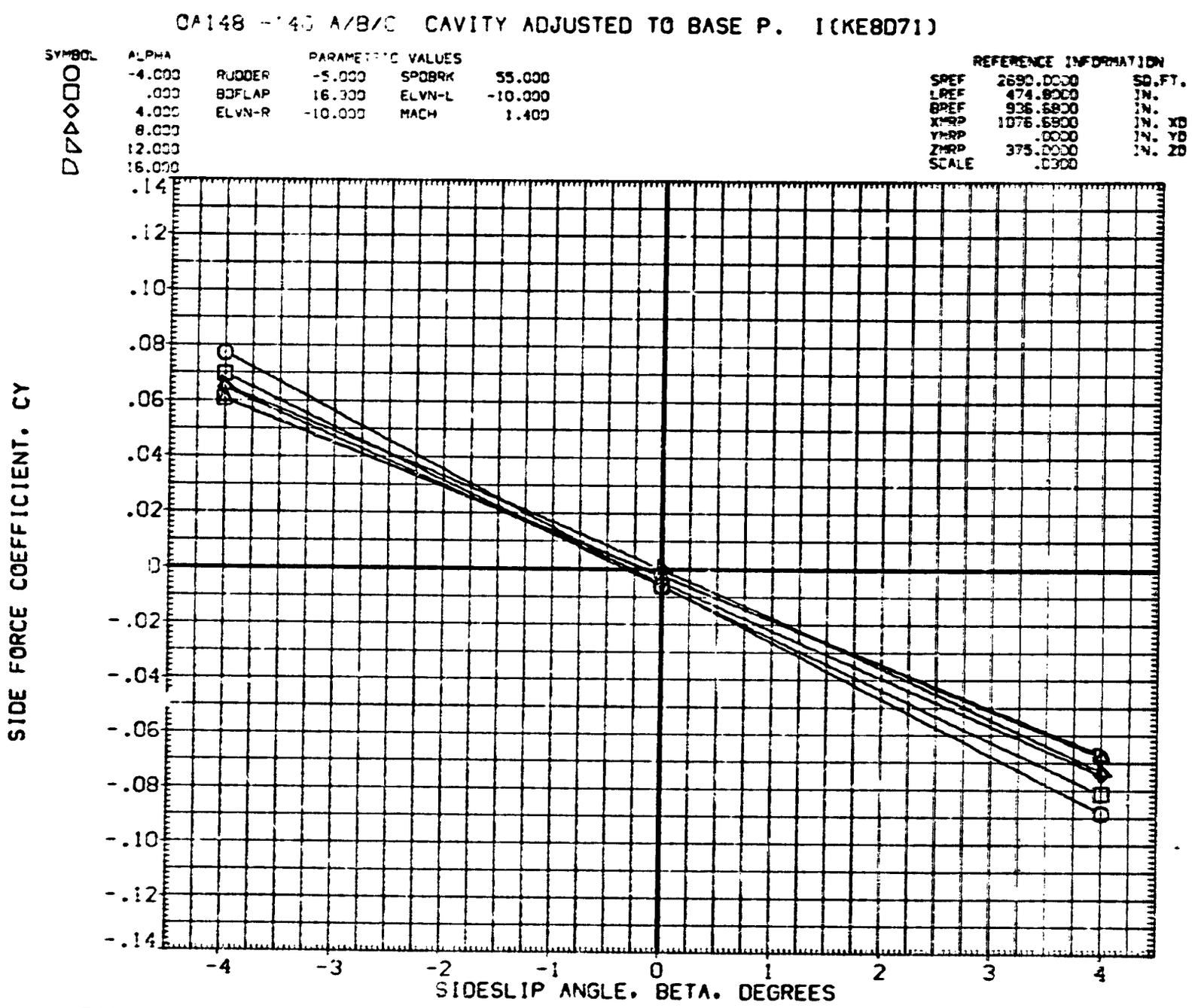


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

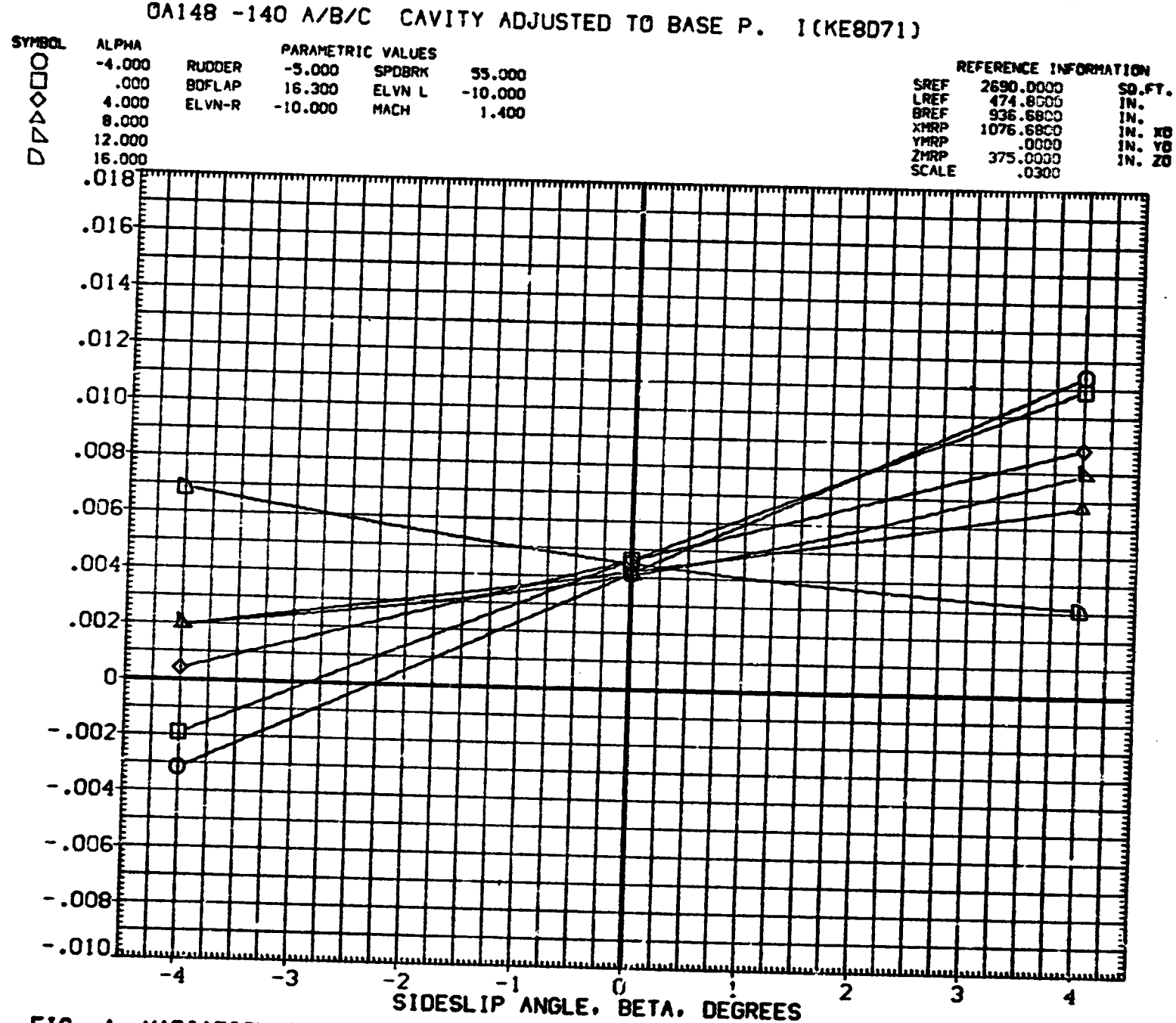


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

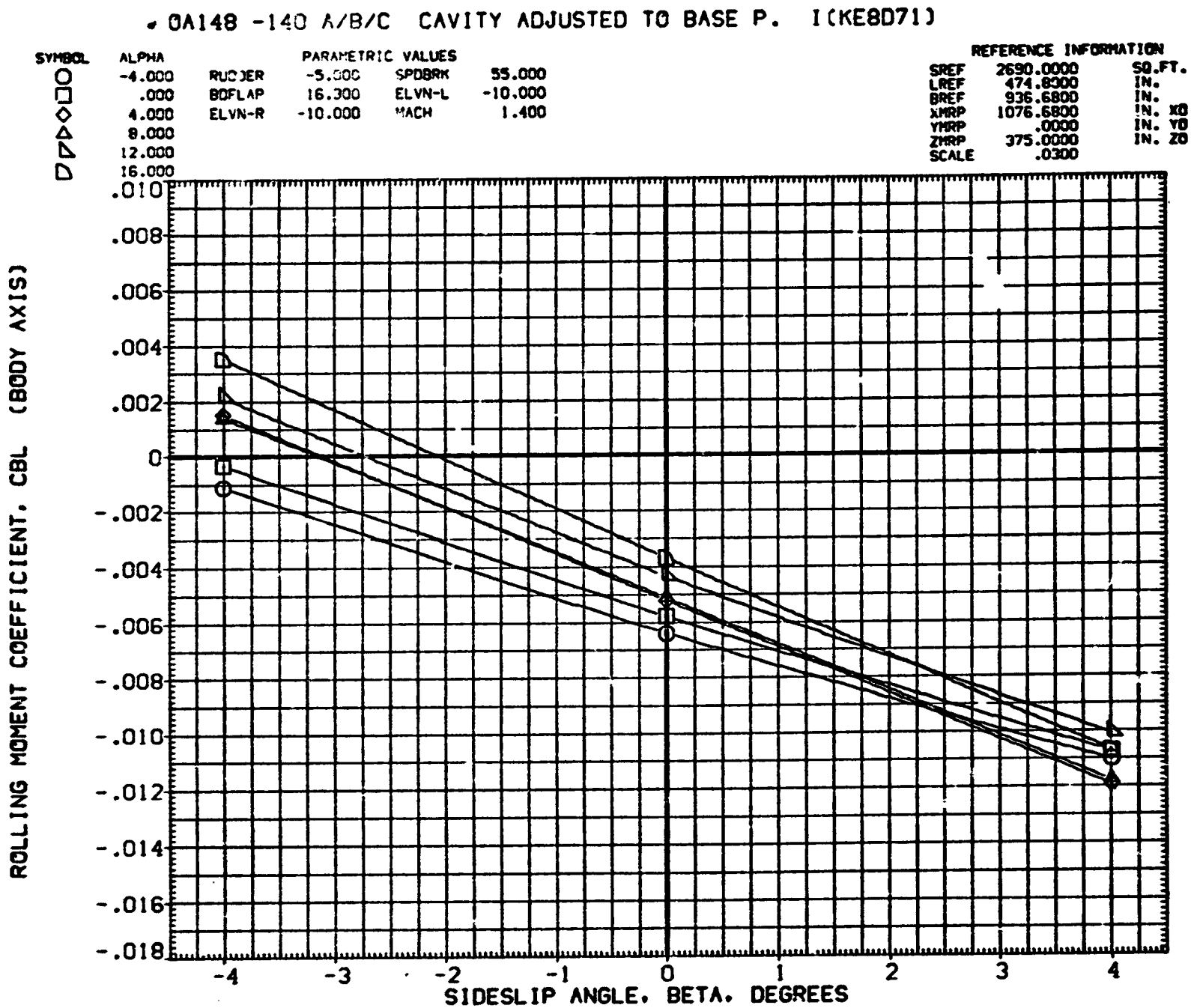


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

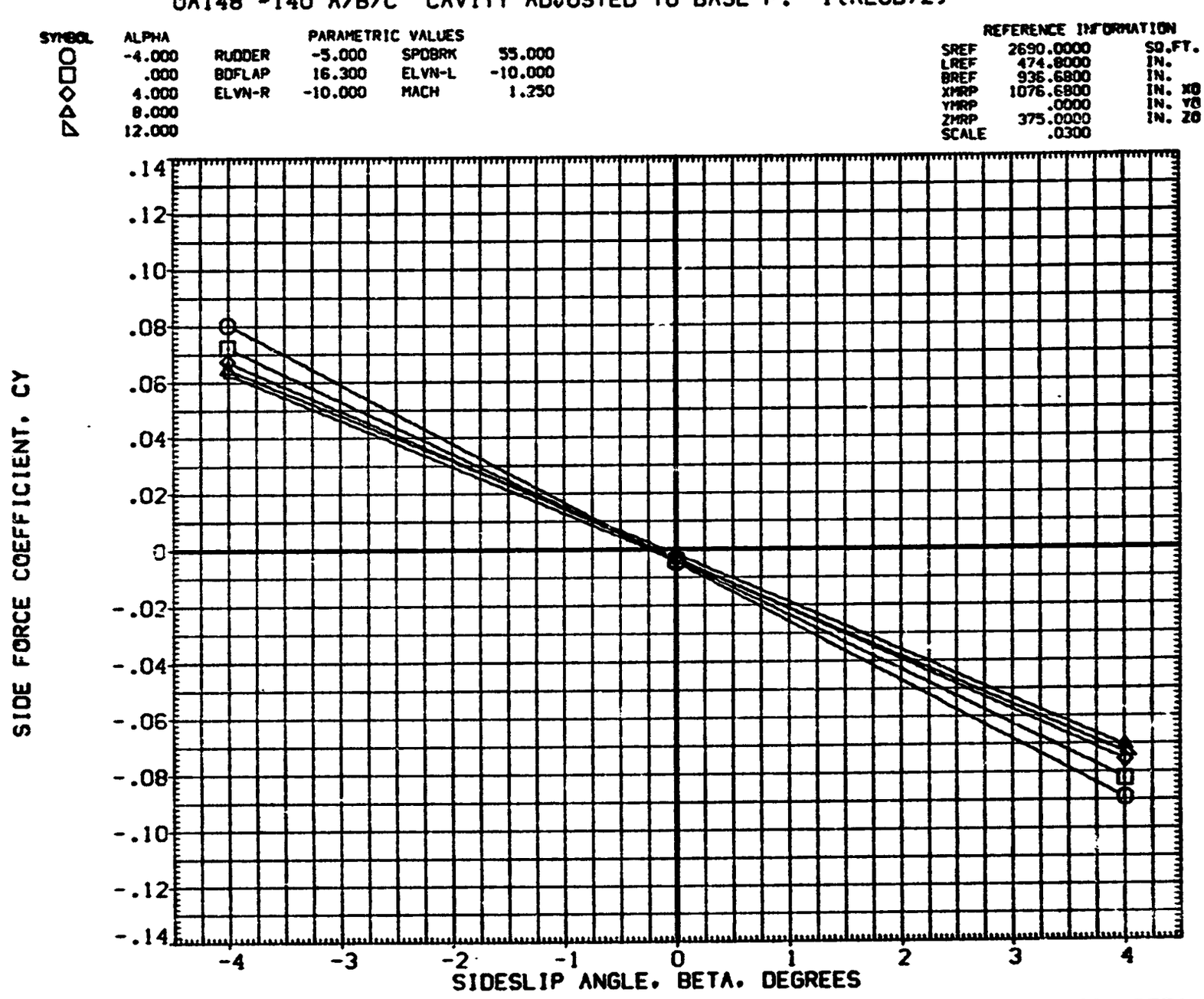


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

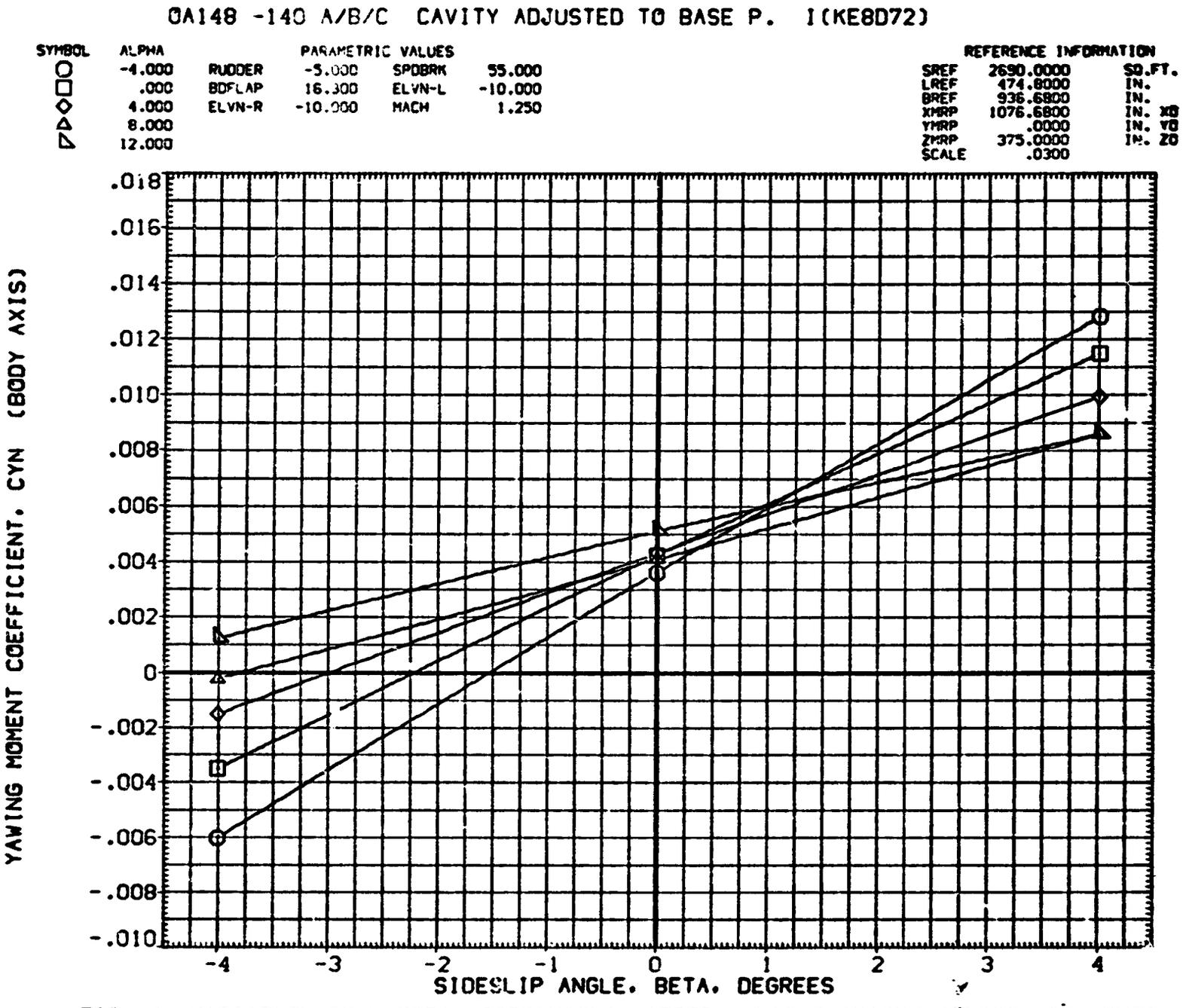


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D72)

SYMBOL	ALPHA
△	-4.000
◇	.000
□	4.000
▷	8.000
○	12.000

PARAMETRIC VALUES

RUDDER	-5.000	SPDBRK	55.000
BOFLAP	16.300	ELVN-L	-10.000
ELVN-R	-10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8300	IN.
BREF	936.6600	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

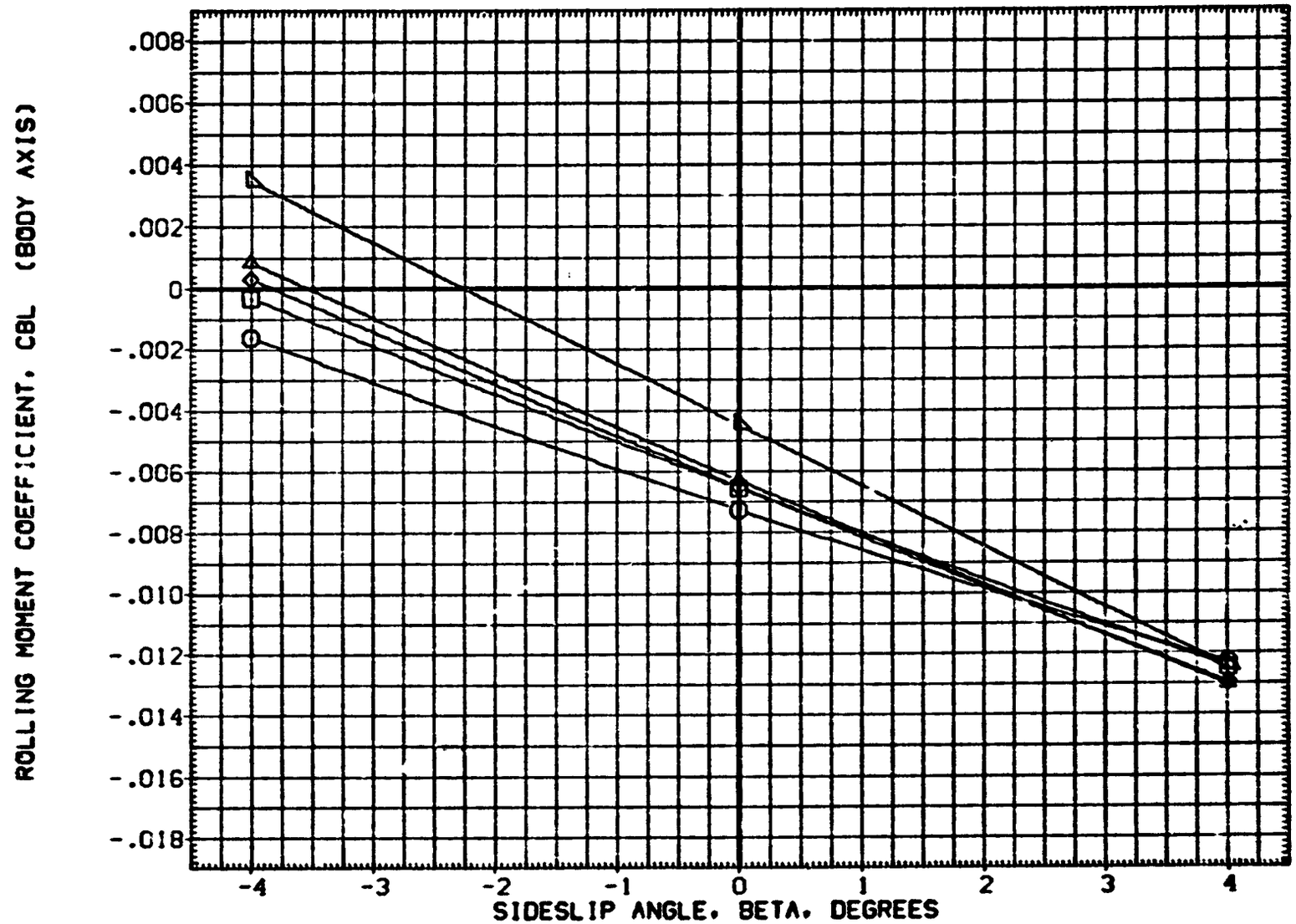


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

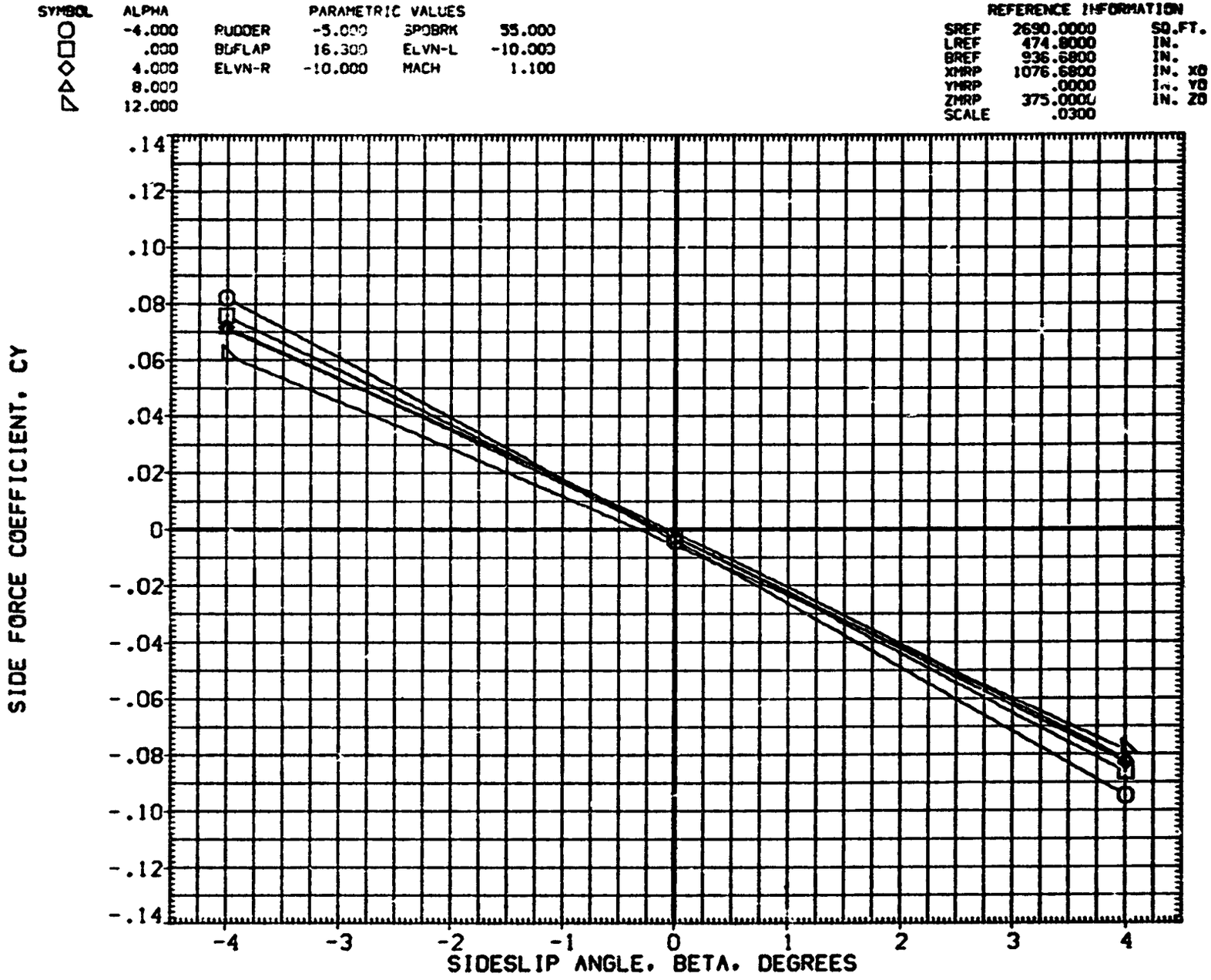


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

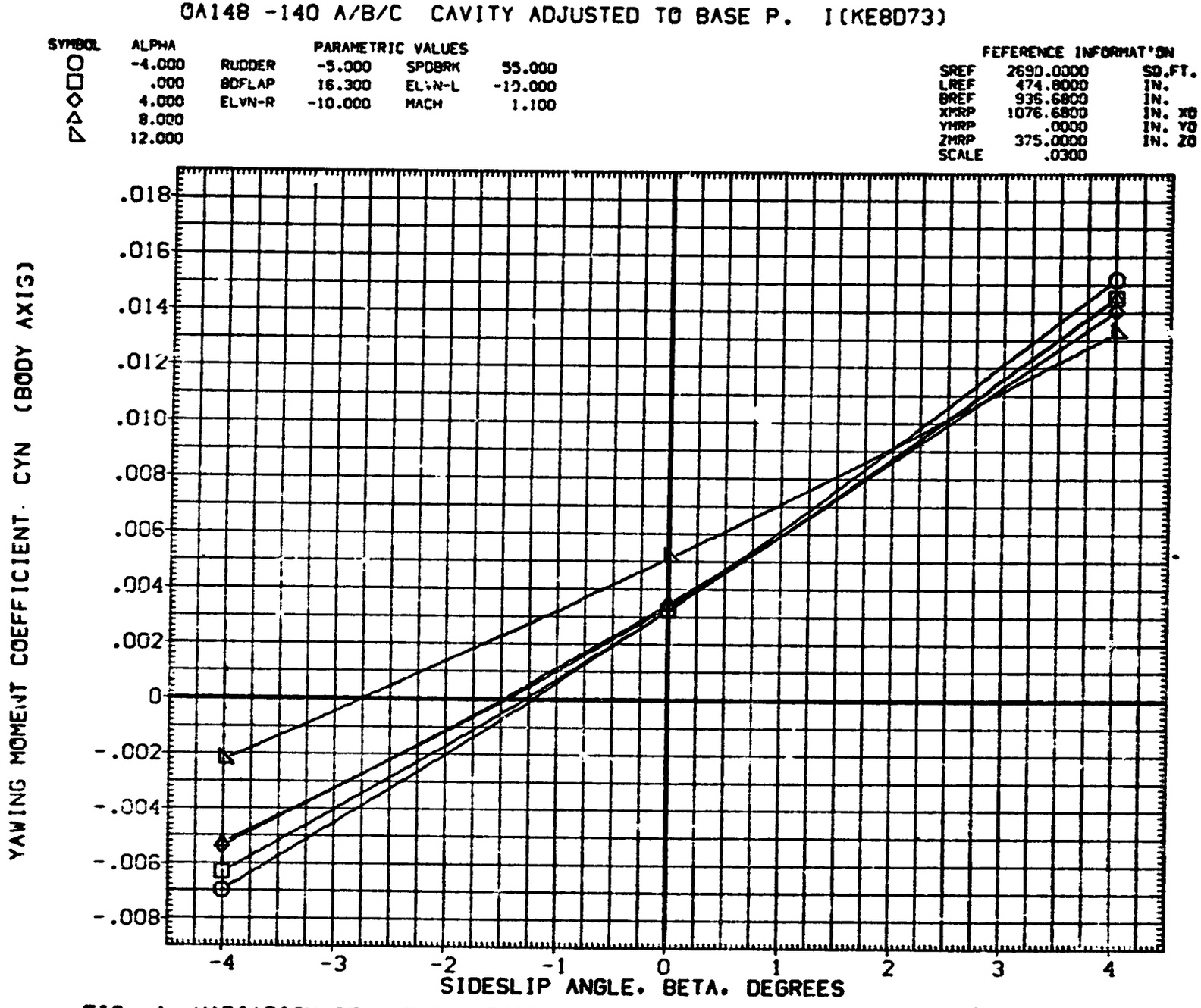


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

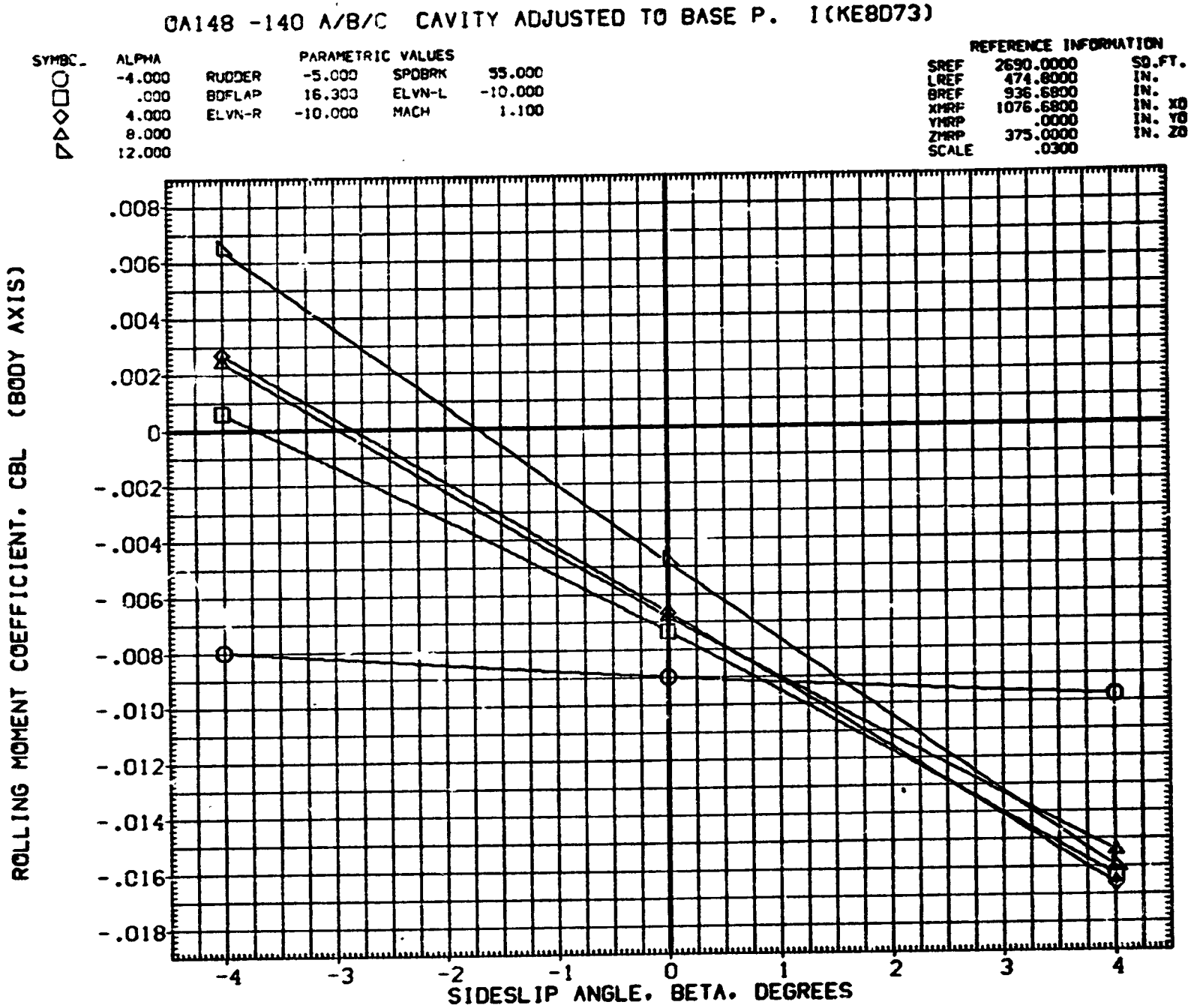


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900
△	8.000				
▽	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XD
YMRP	.0000	IN. YD
ZMRP	375.0000	IN. ZD
SCALE	.0300	

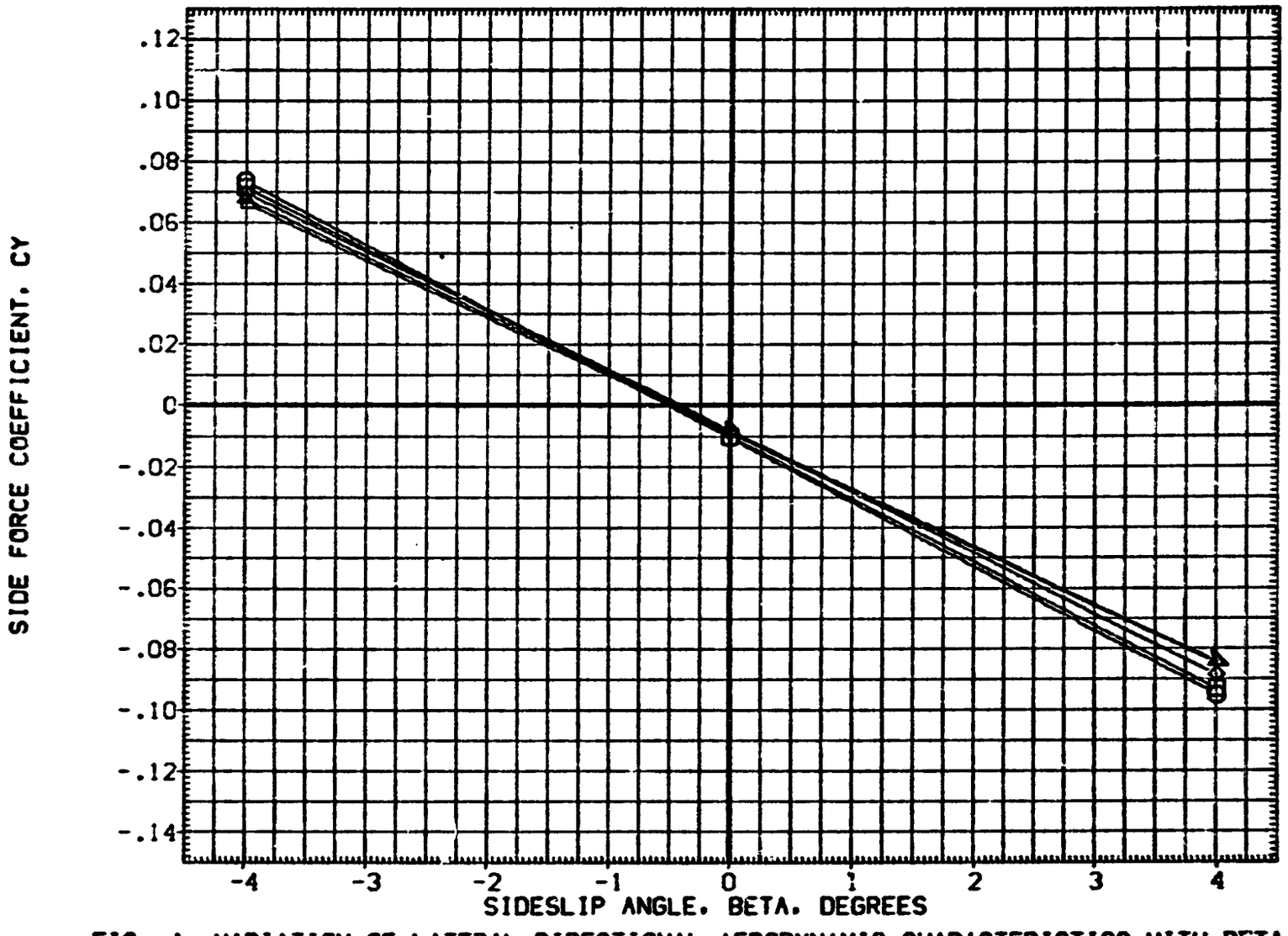


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

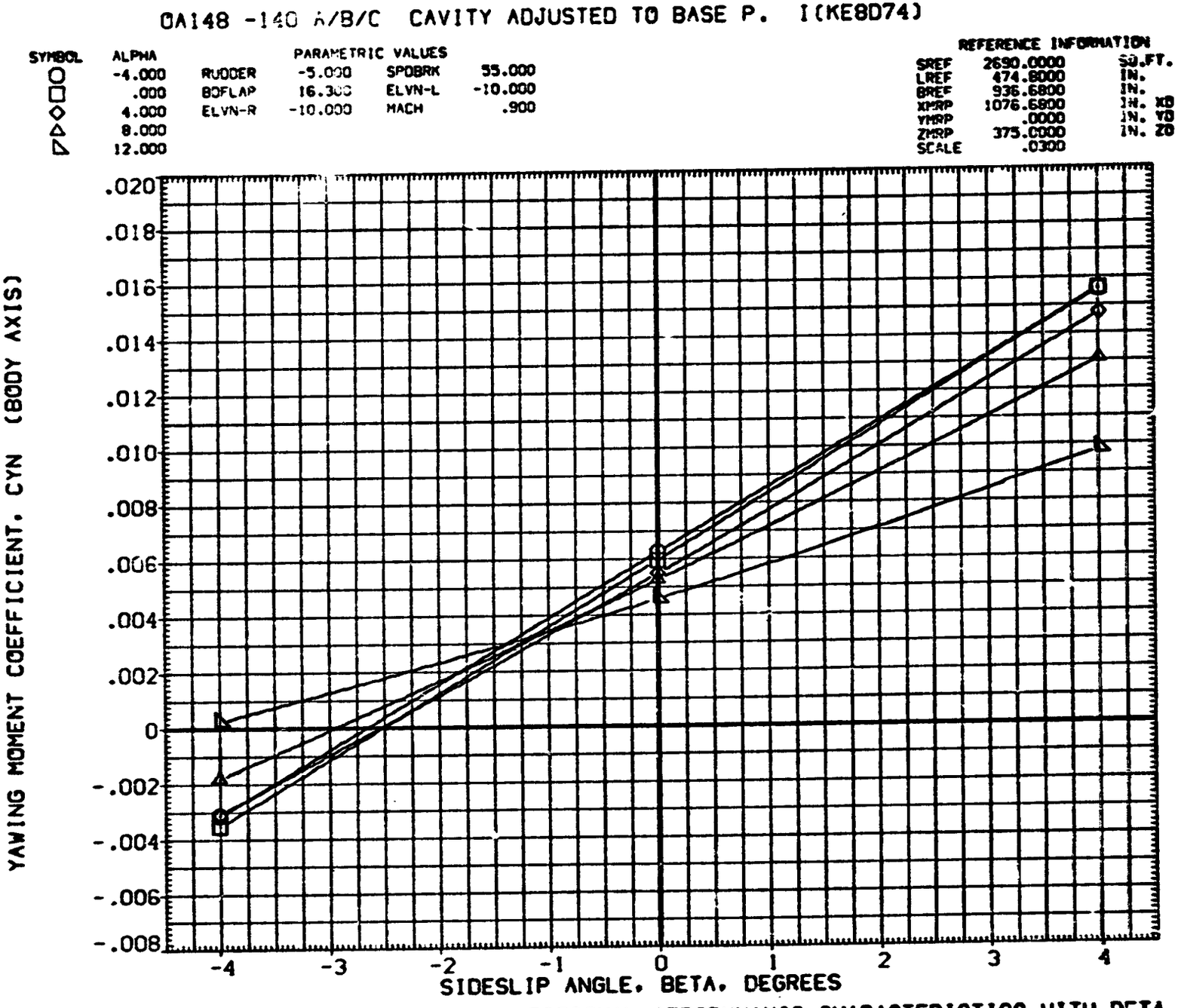


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

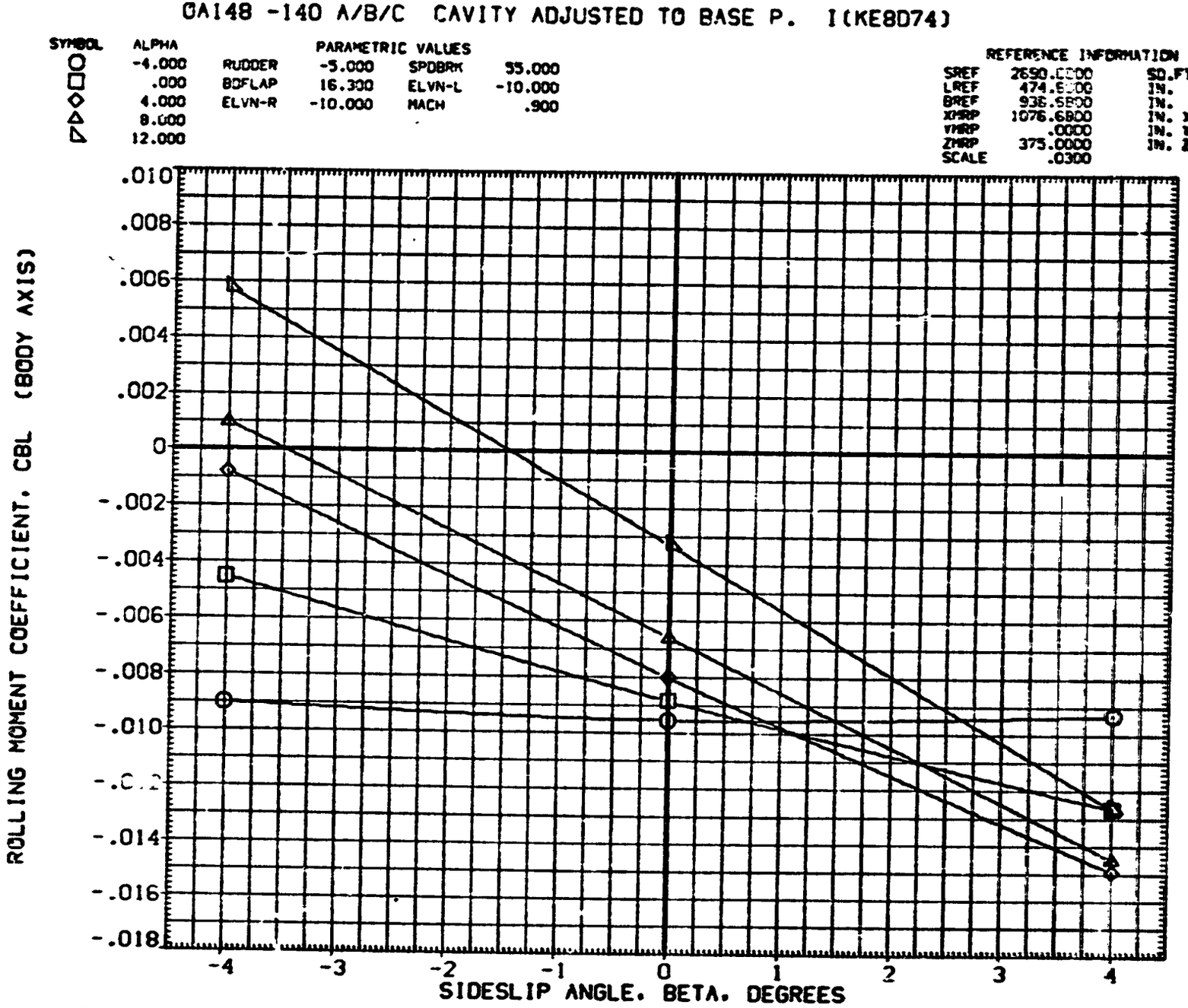


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

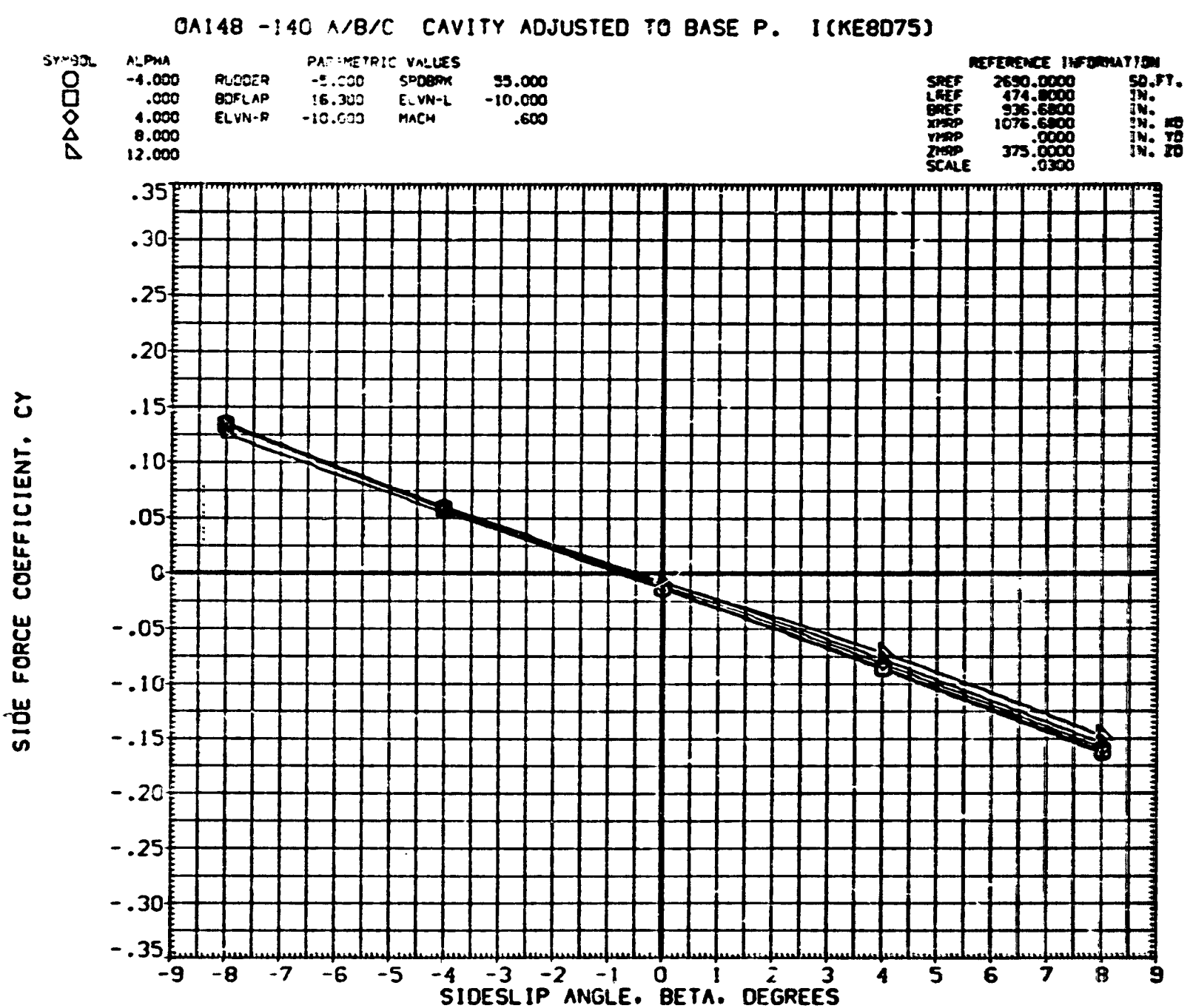


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

CA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE80?5)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BDFLAP	16.000	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.600
△	8.000				
▽	12.000				

REFERENCE INFORMATION

SREF	2800.0000	SQ.FT.
LREF	774.6000	IN.
BREF	996.6800	IN.
XMRP	1078.6600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

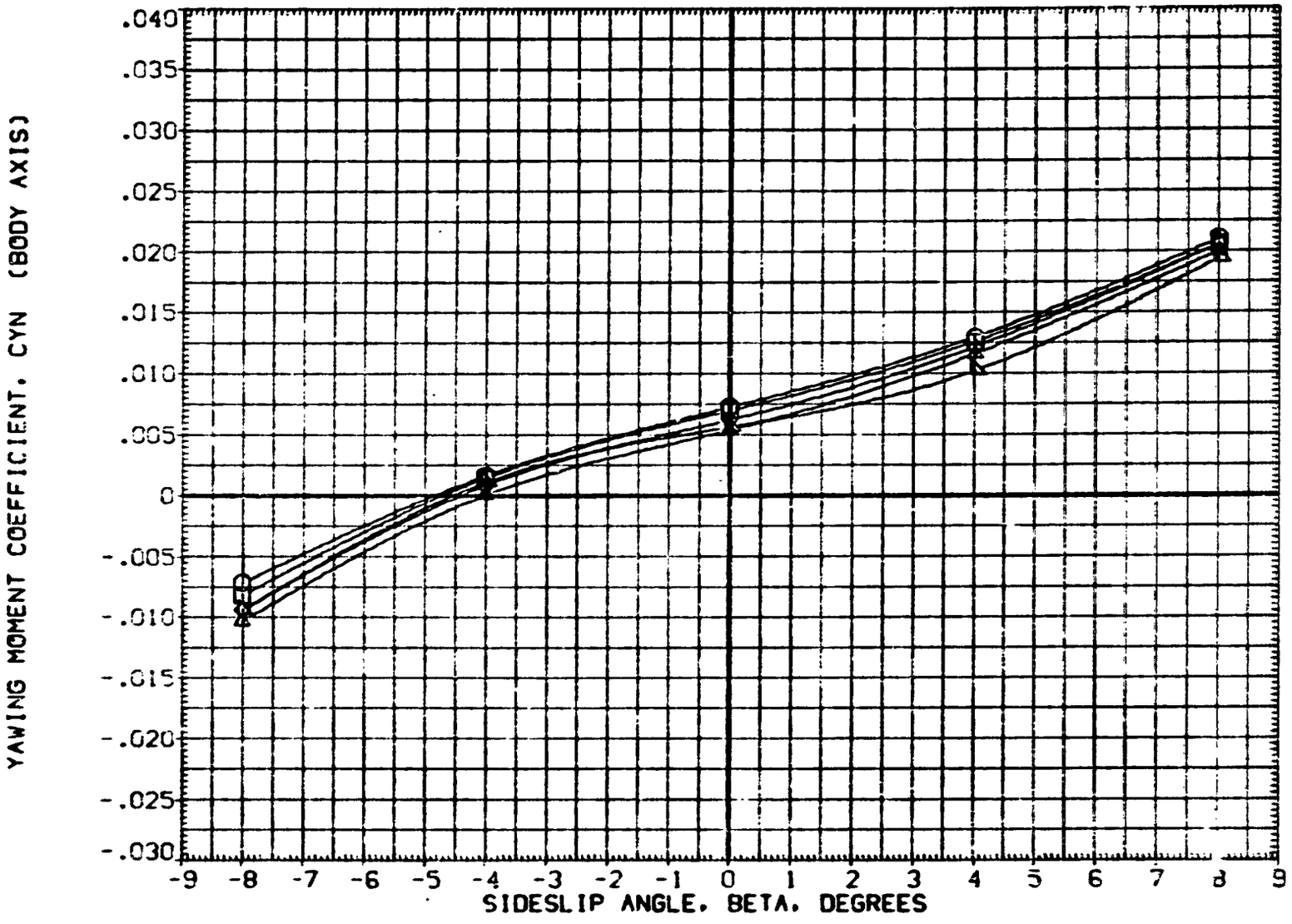


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

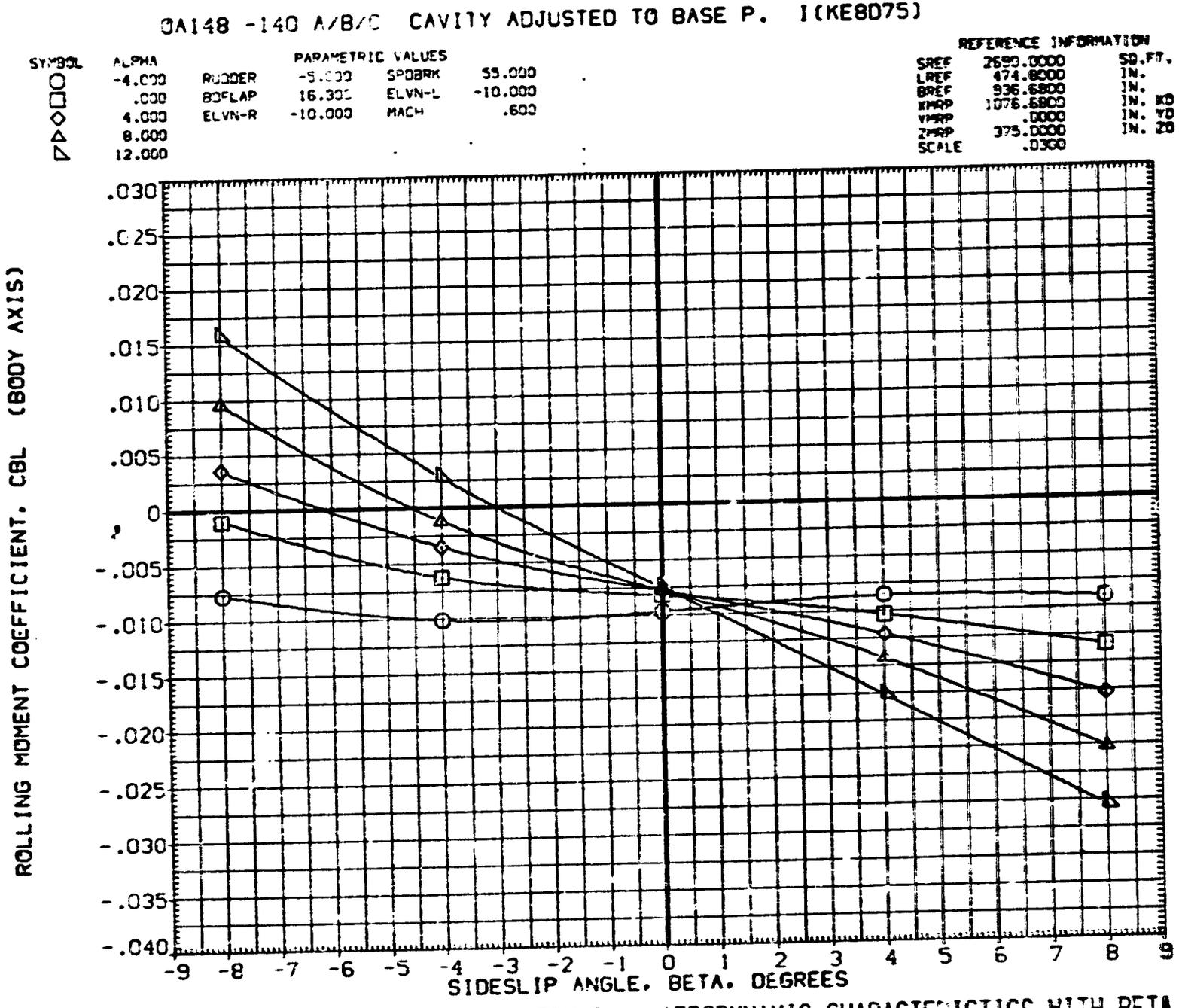


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

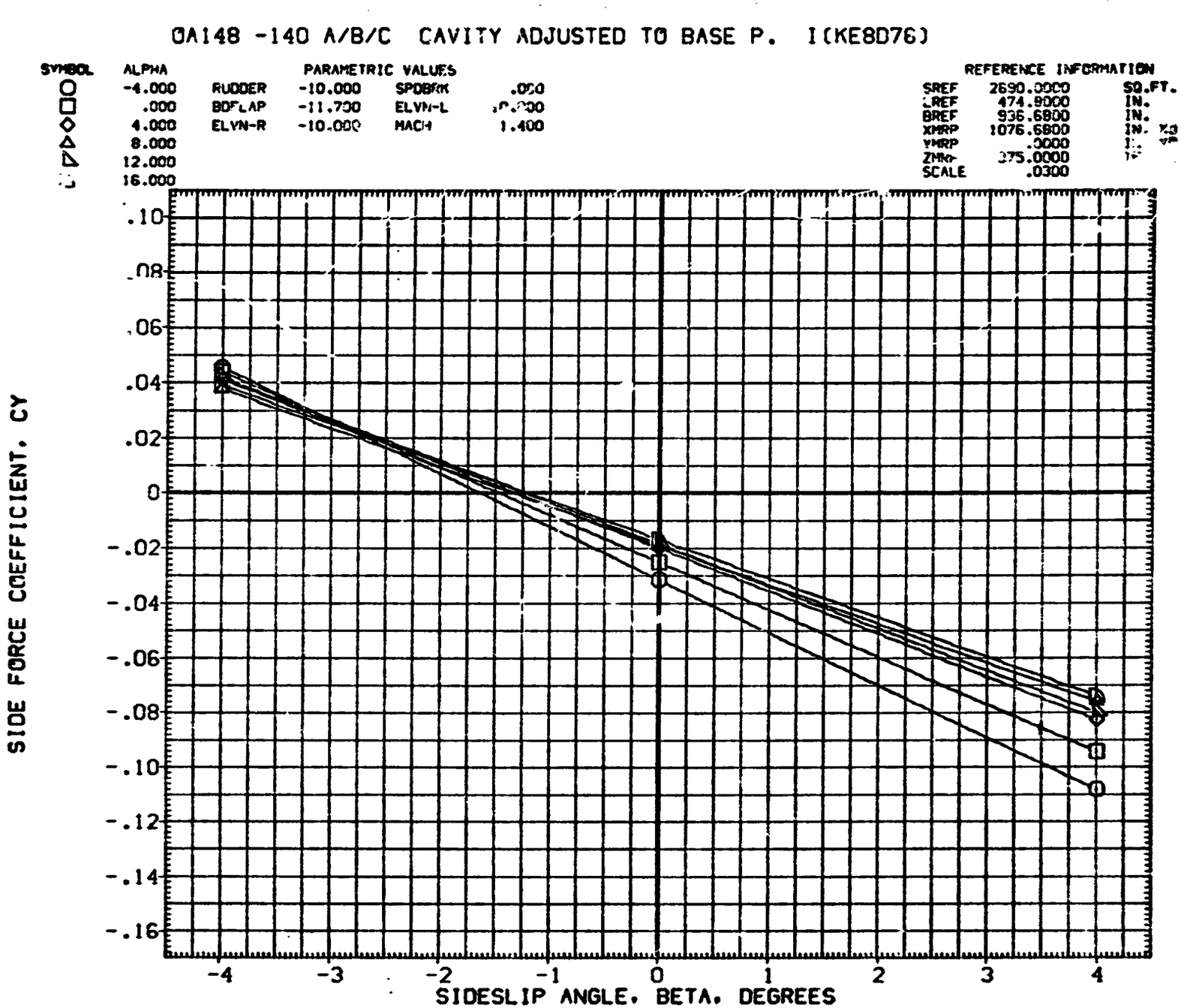


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

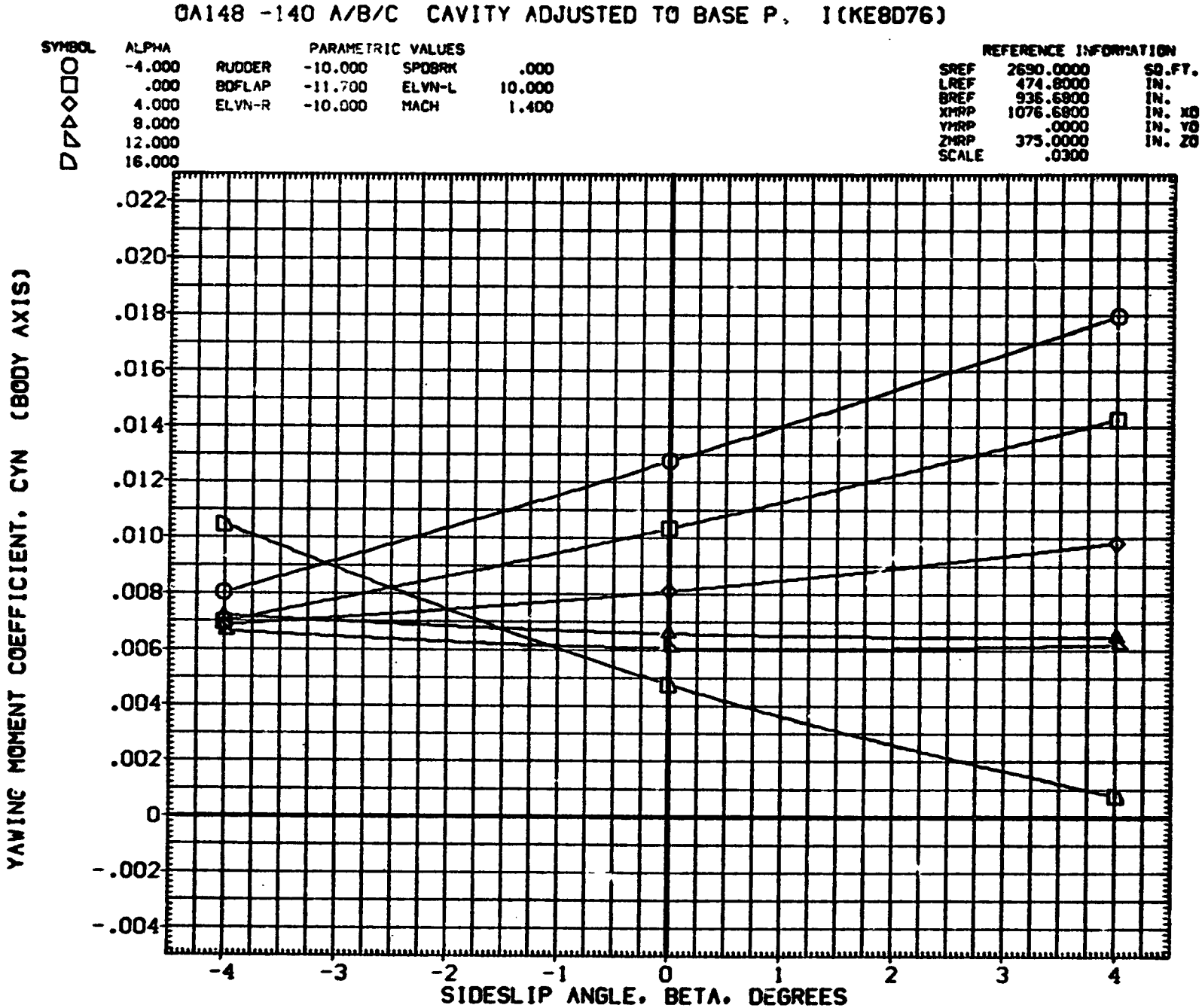


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

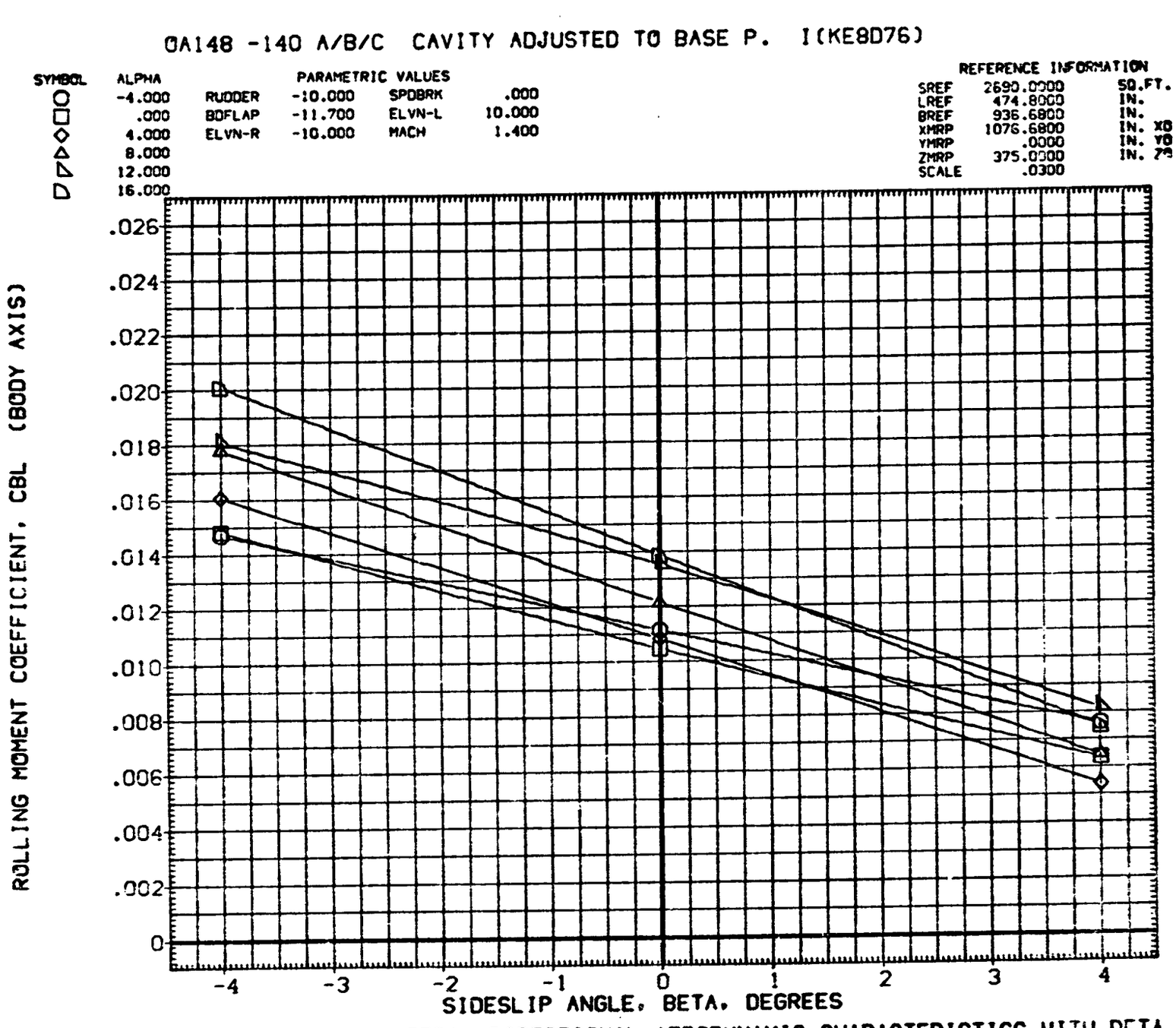


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

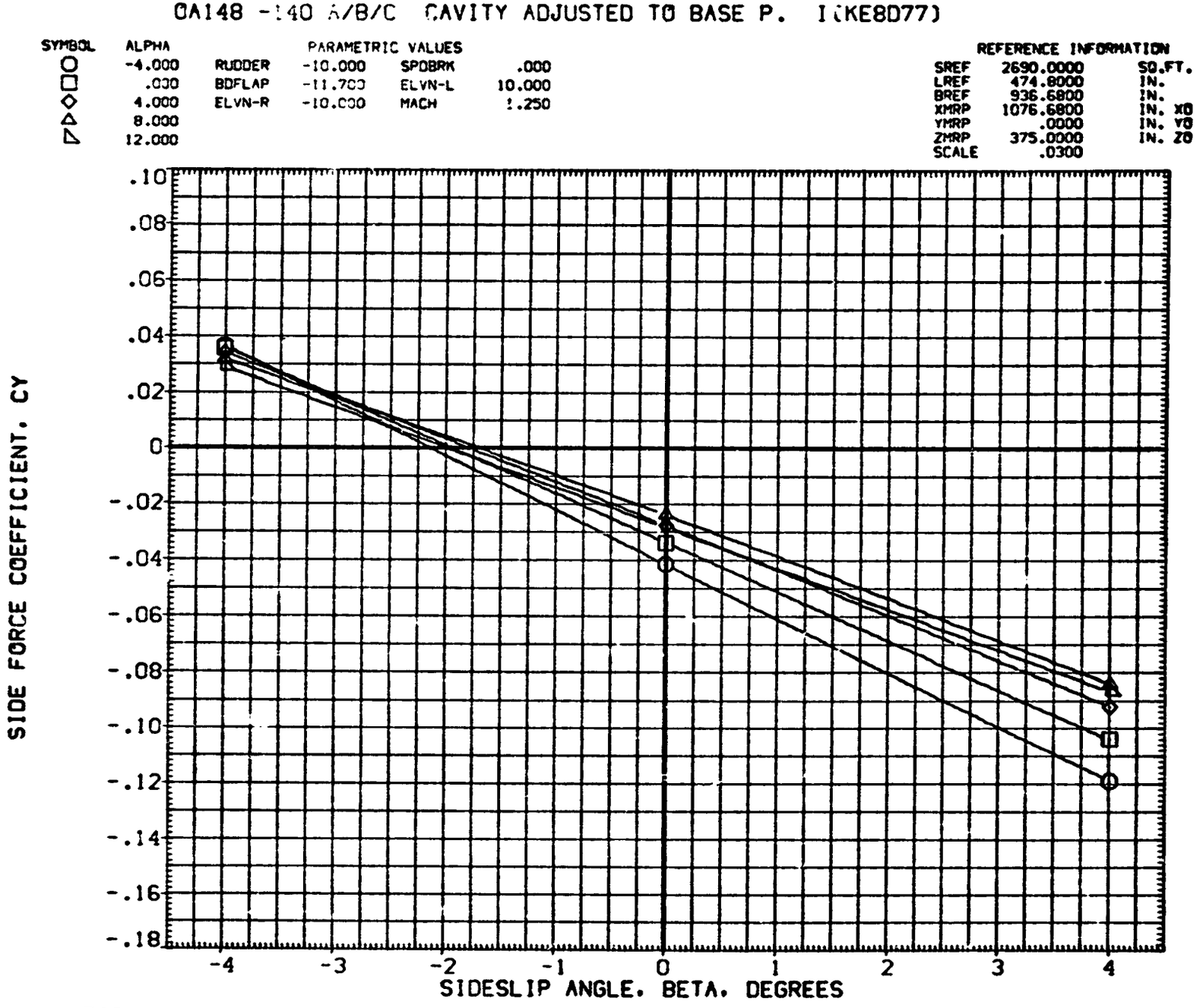


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

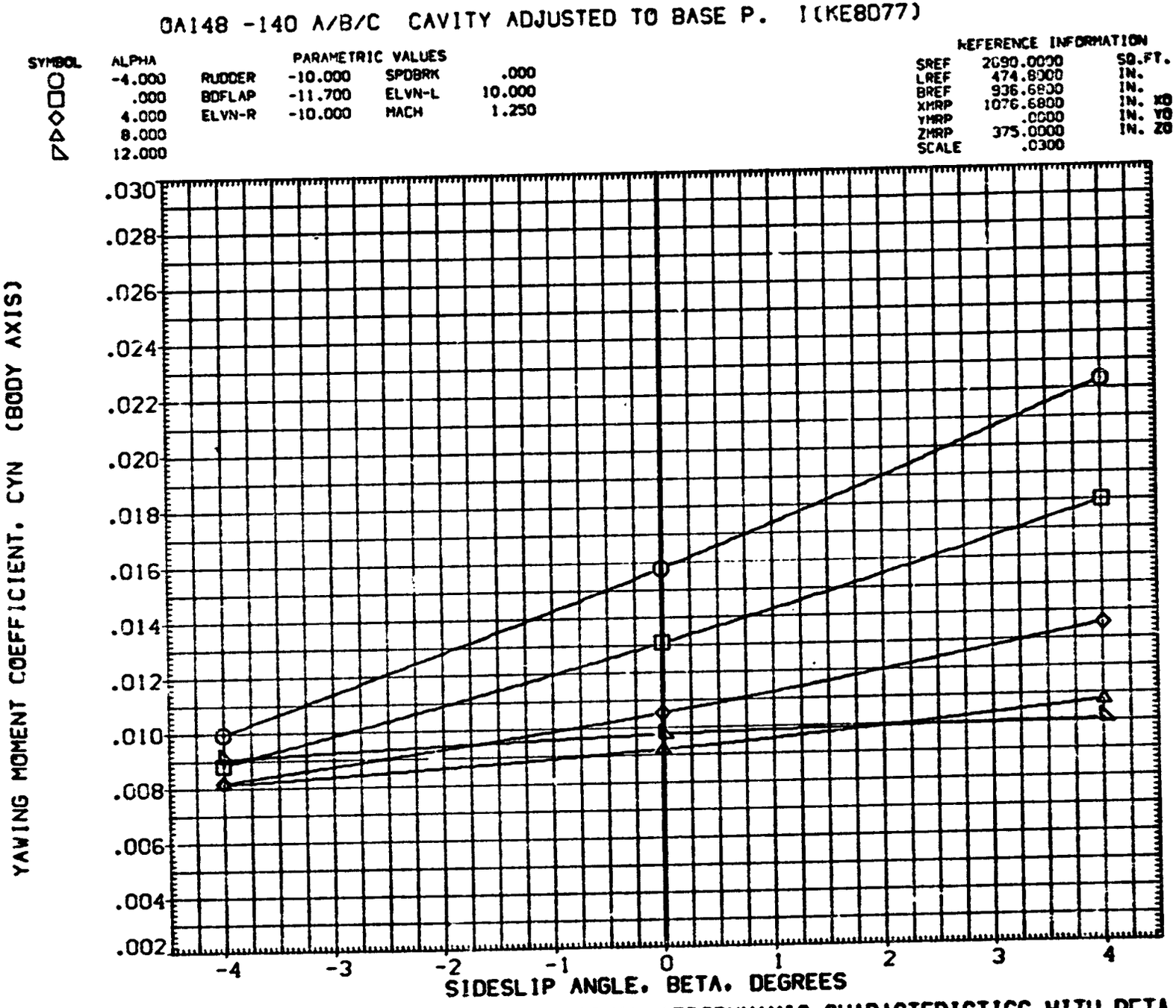


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

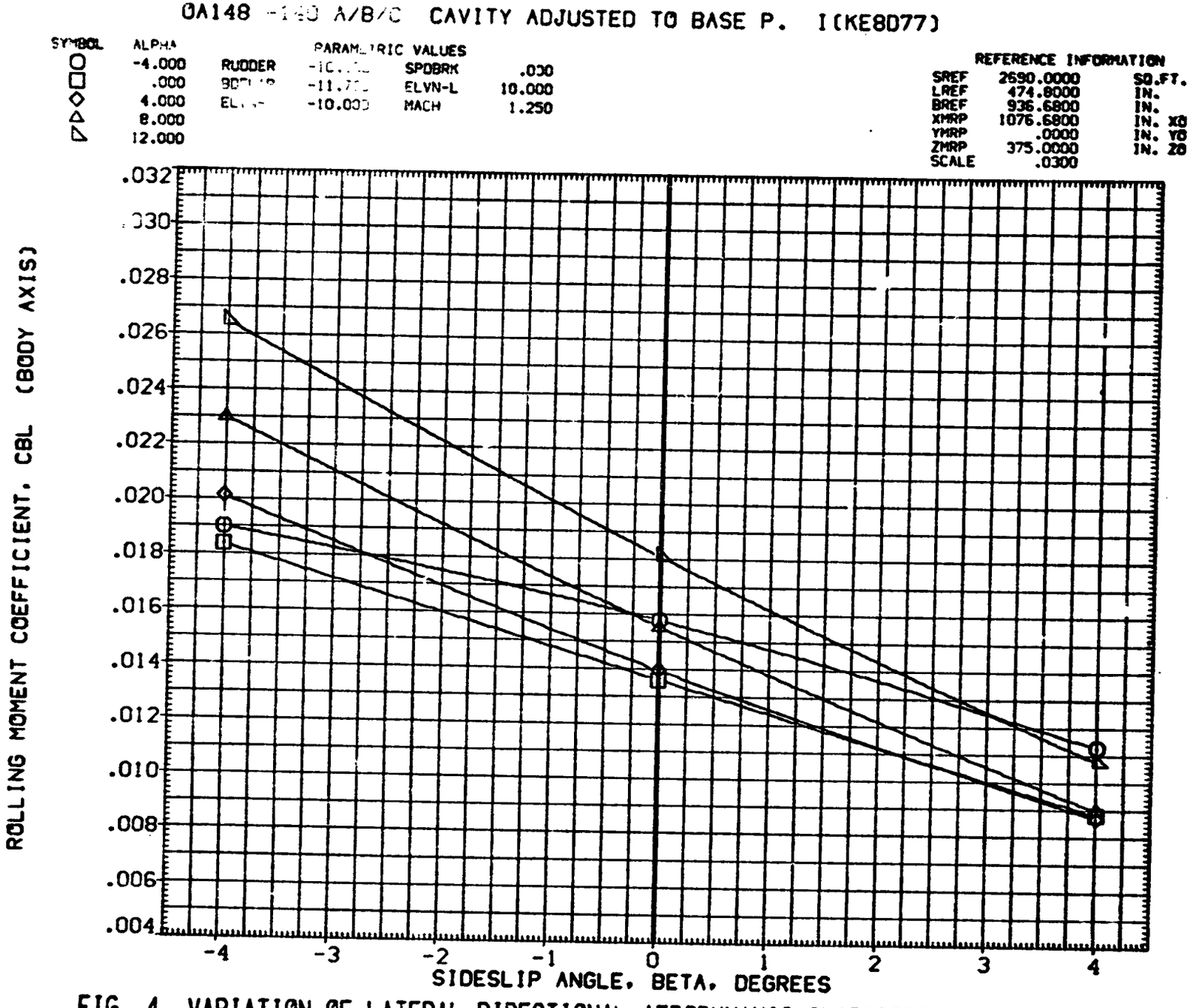


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8078)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.100
△	8.000				
◁	12.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

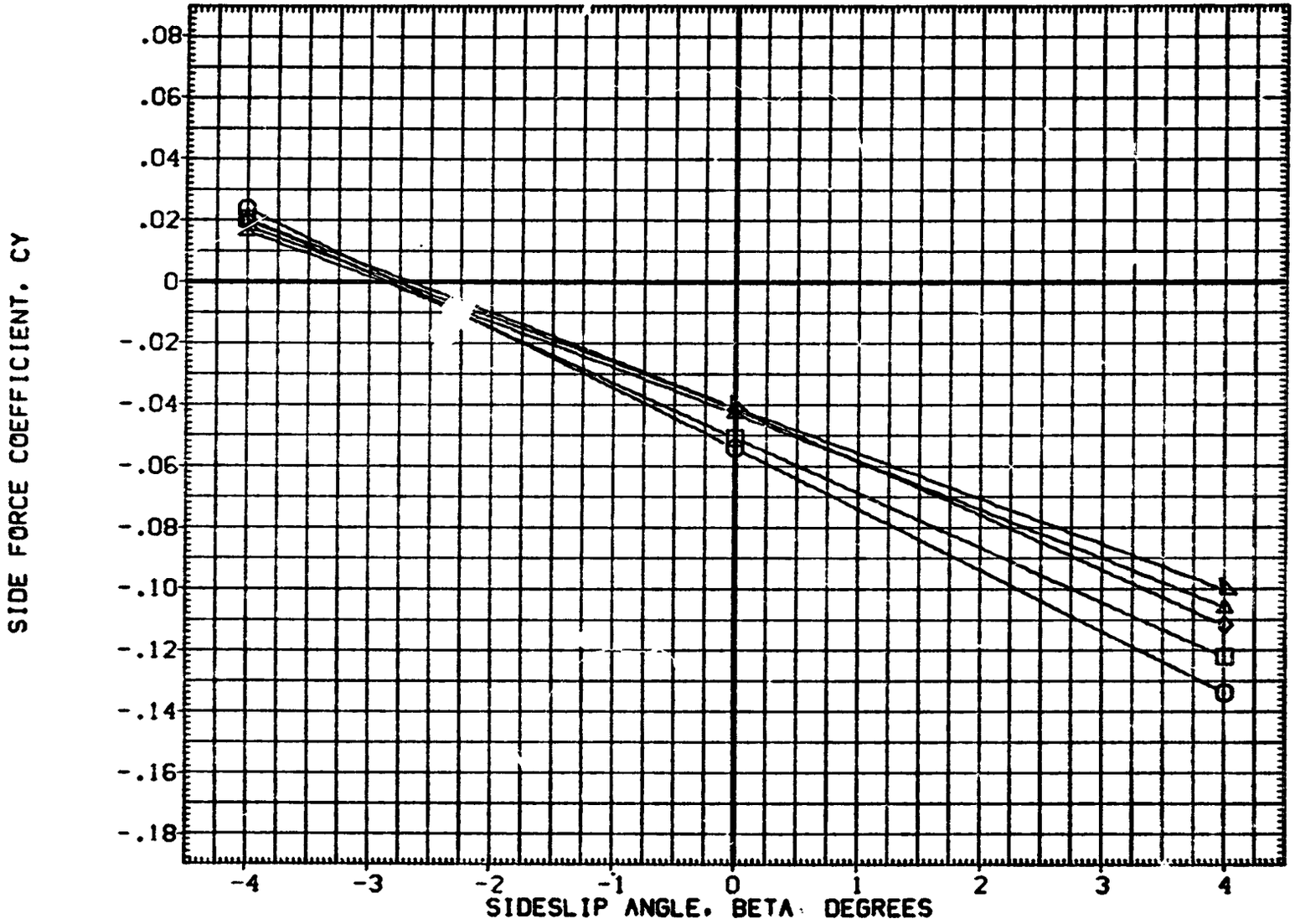


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

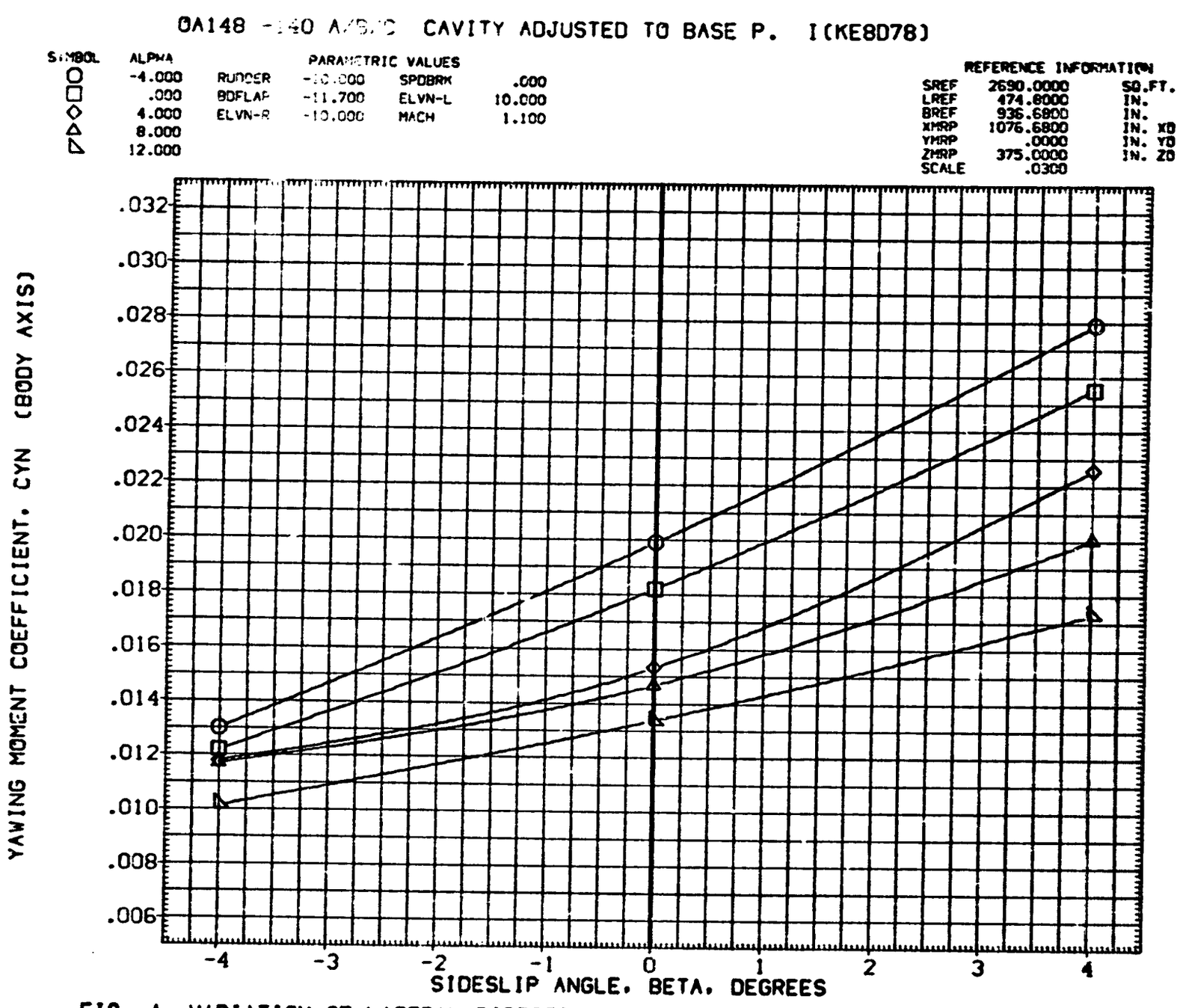


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

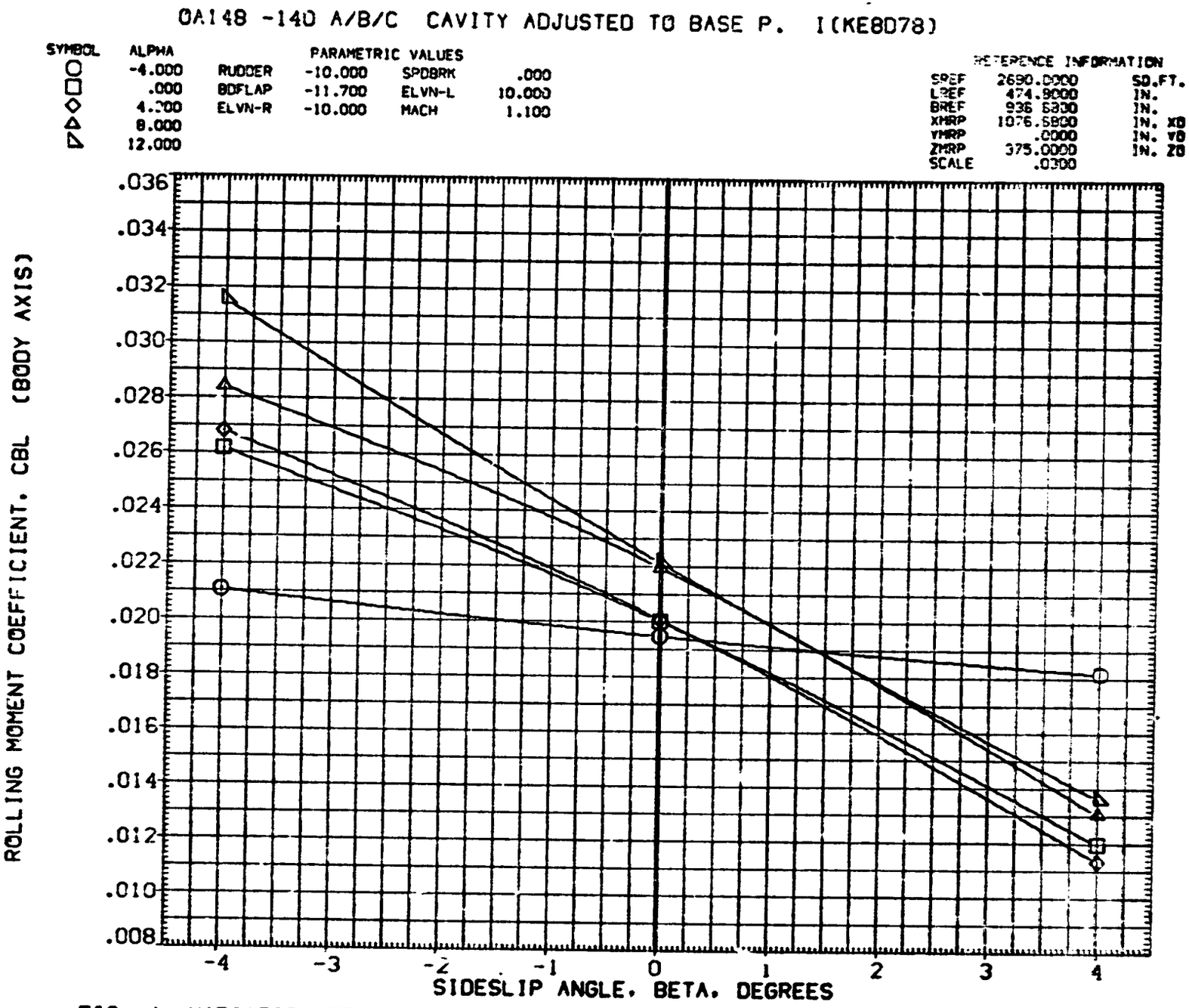


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

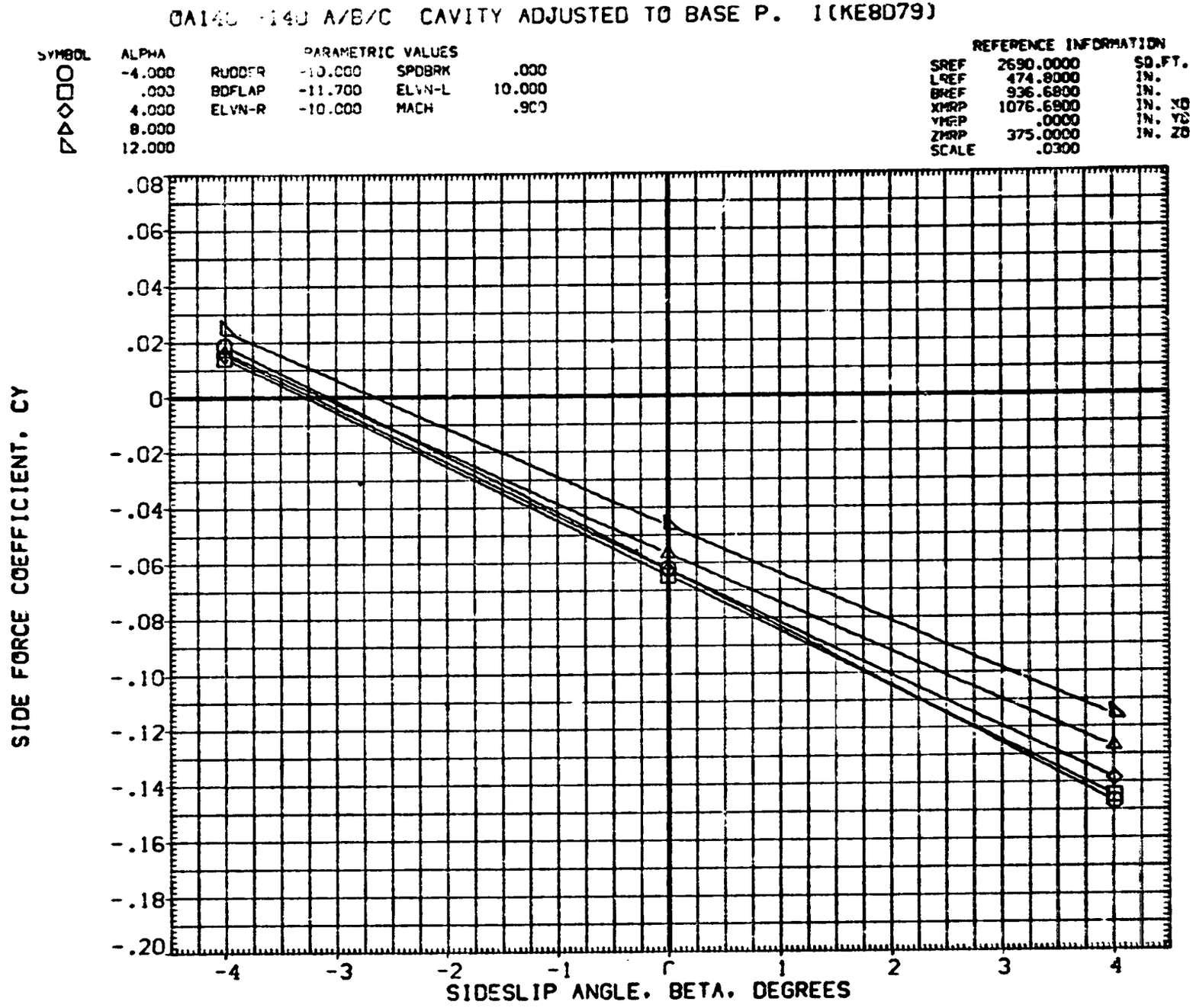


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

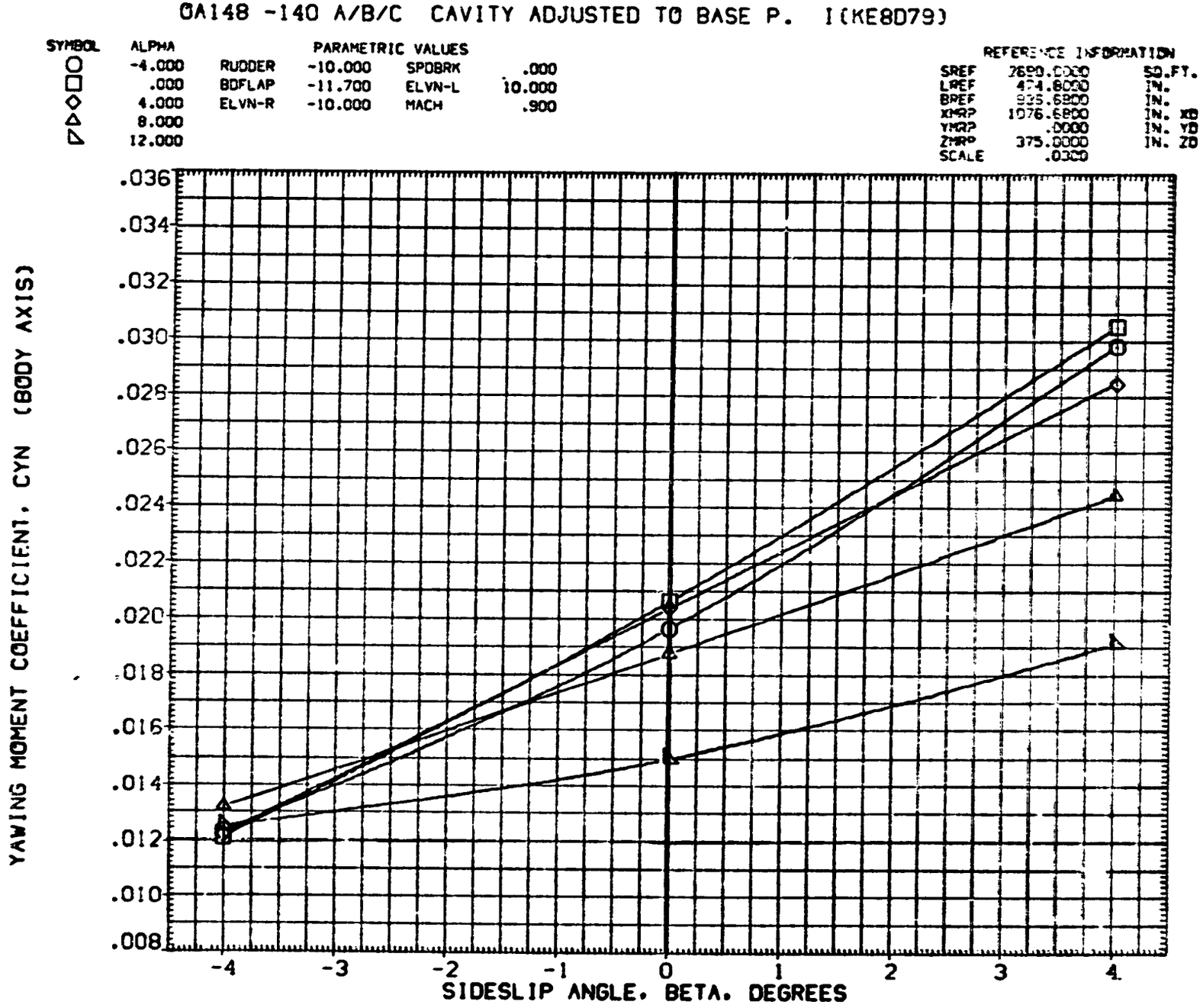


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

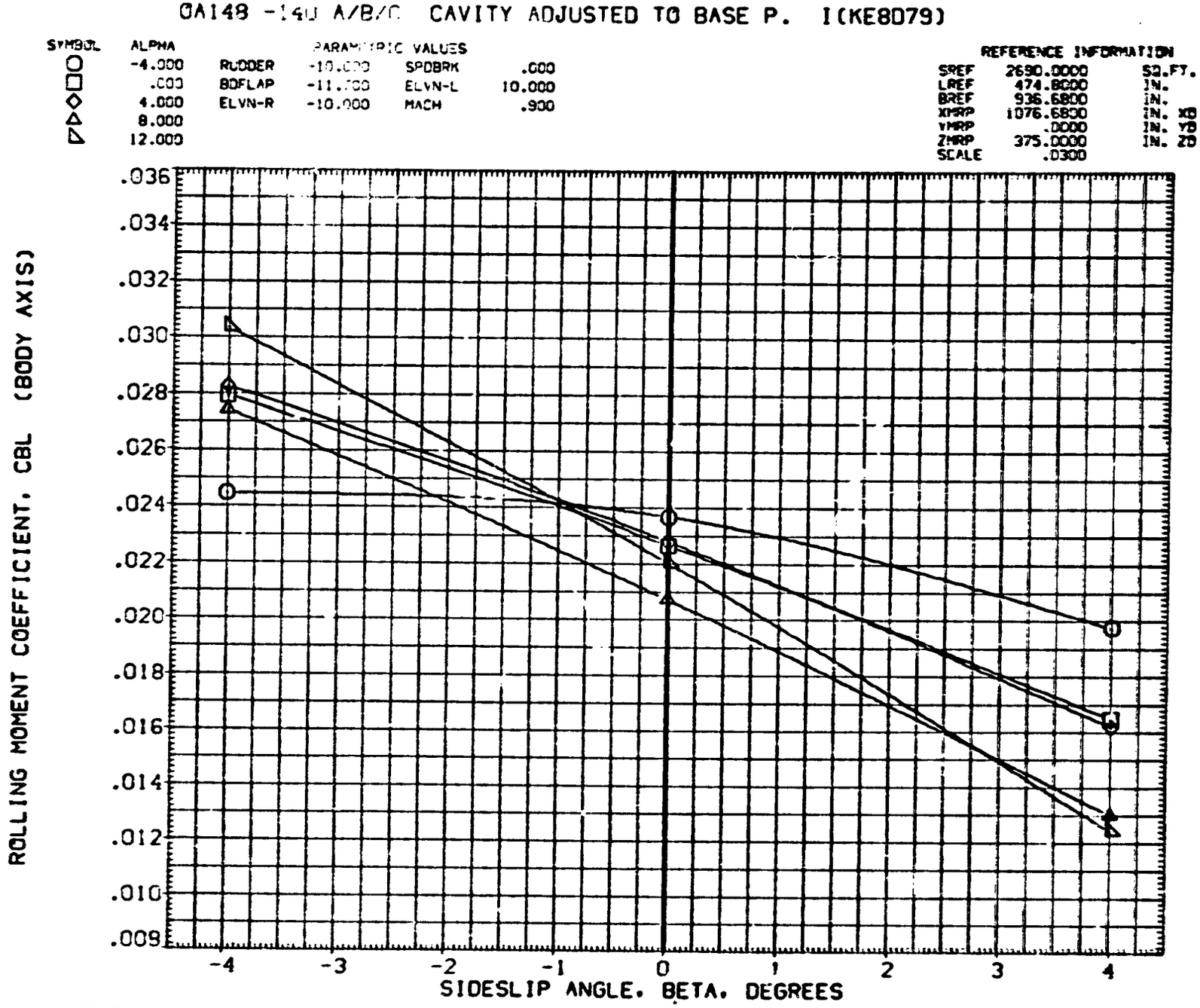


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

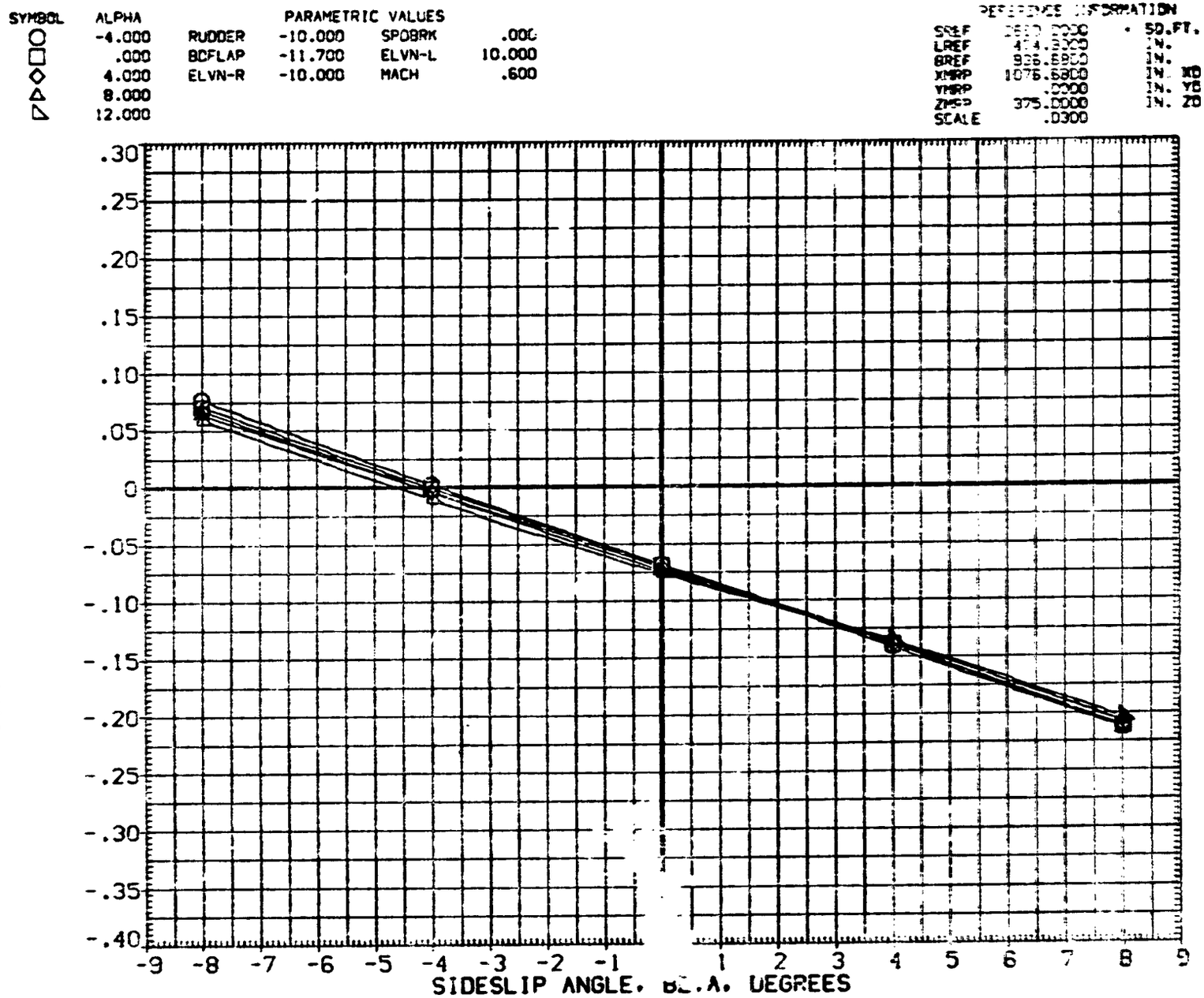


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

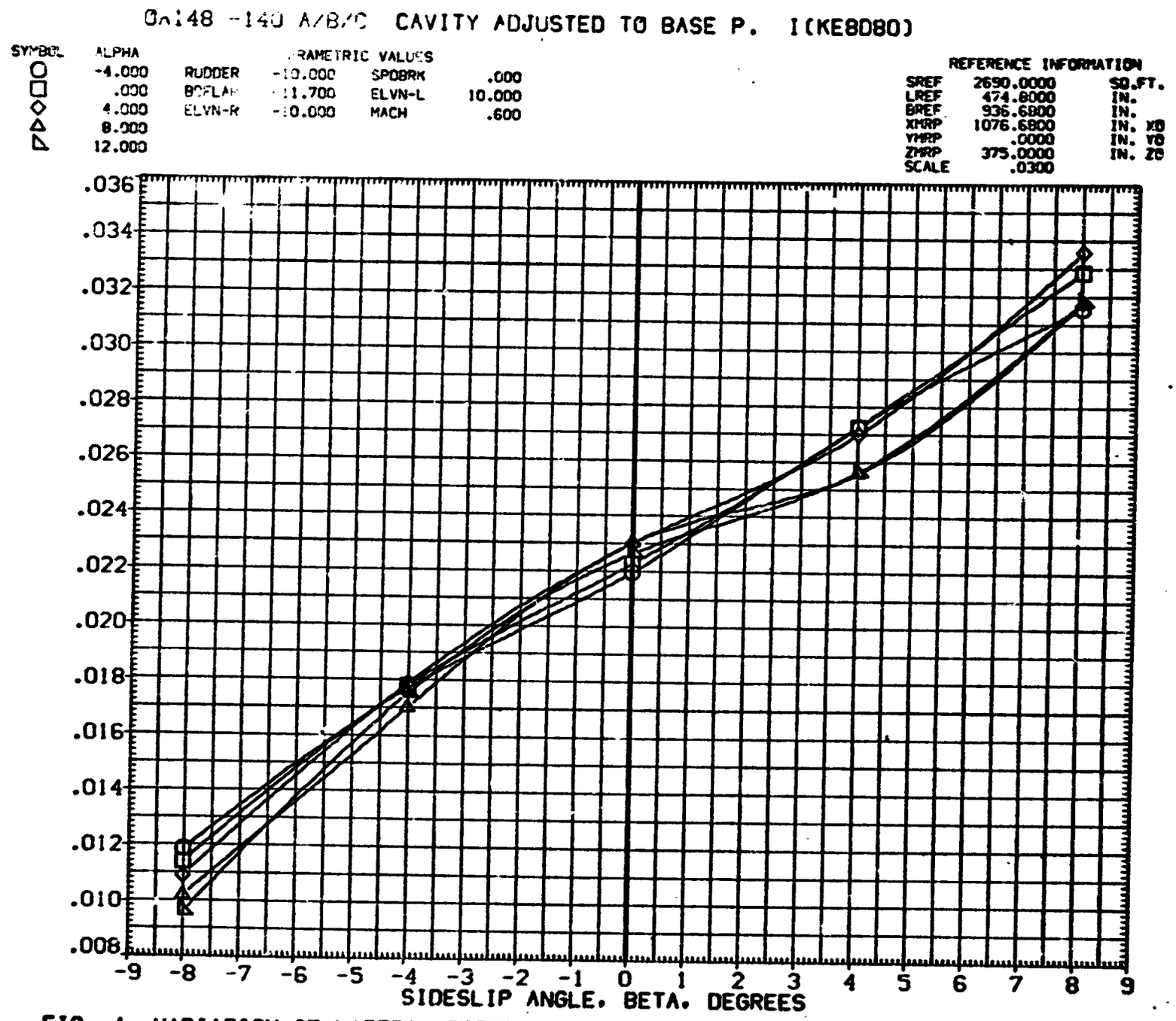


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

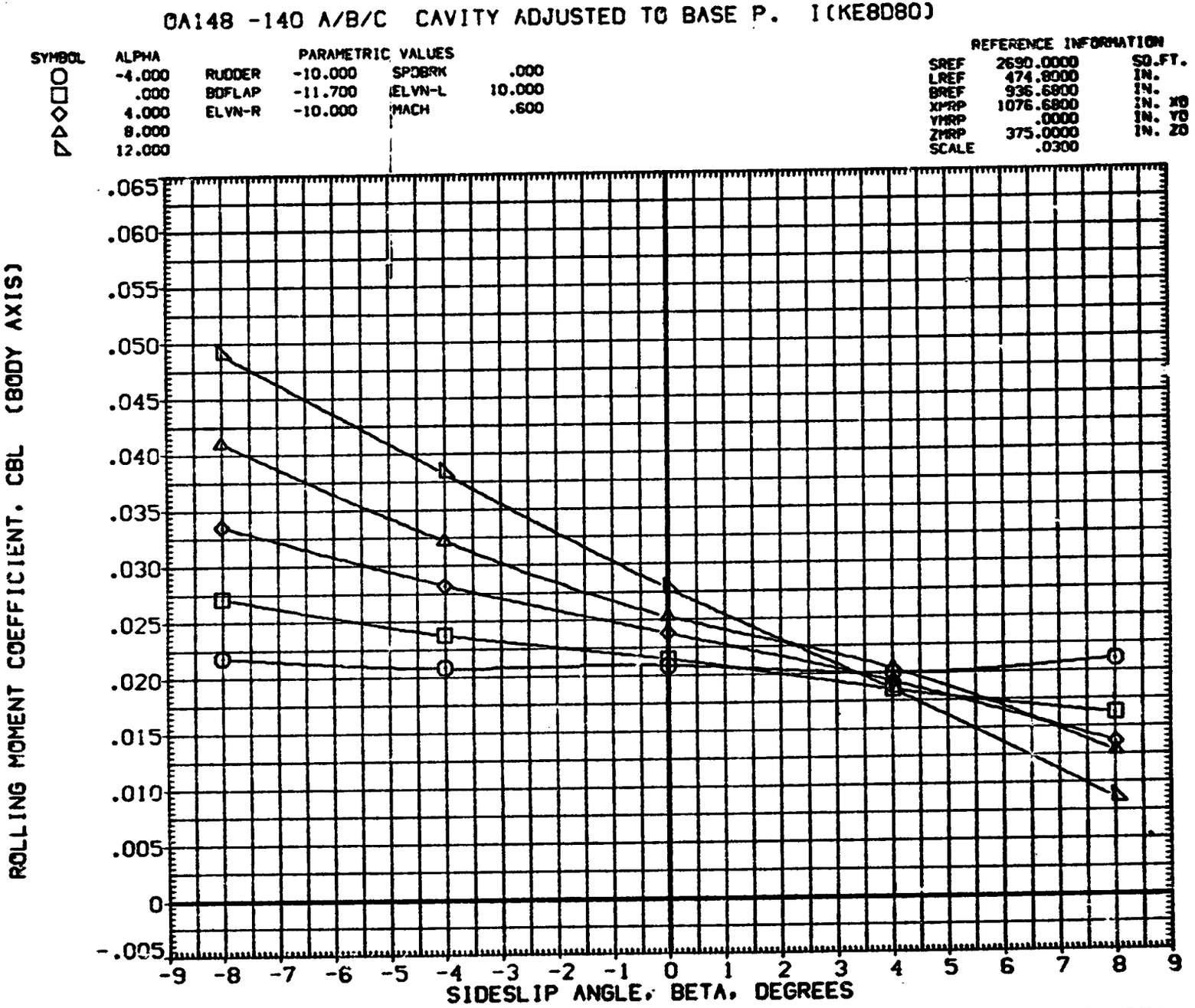


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

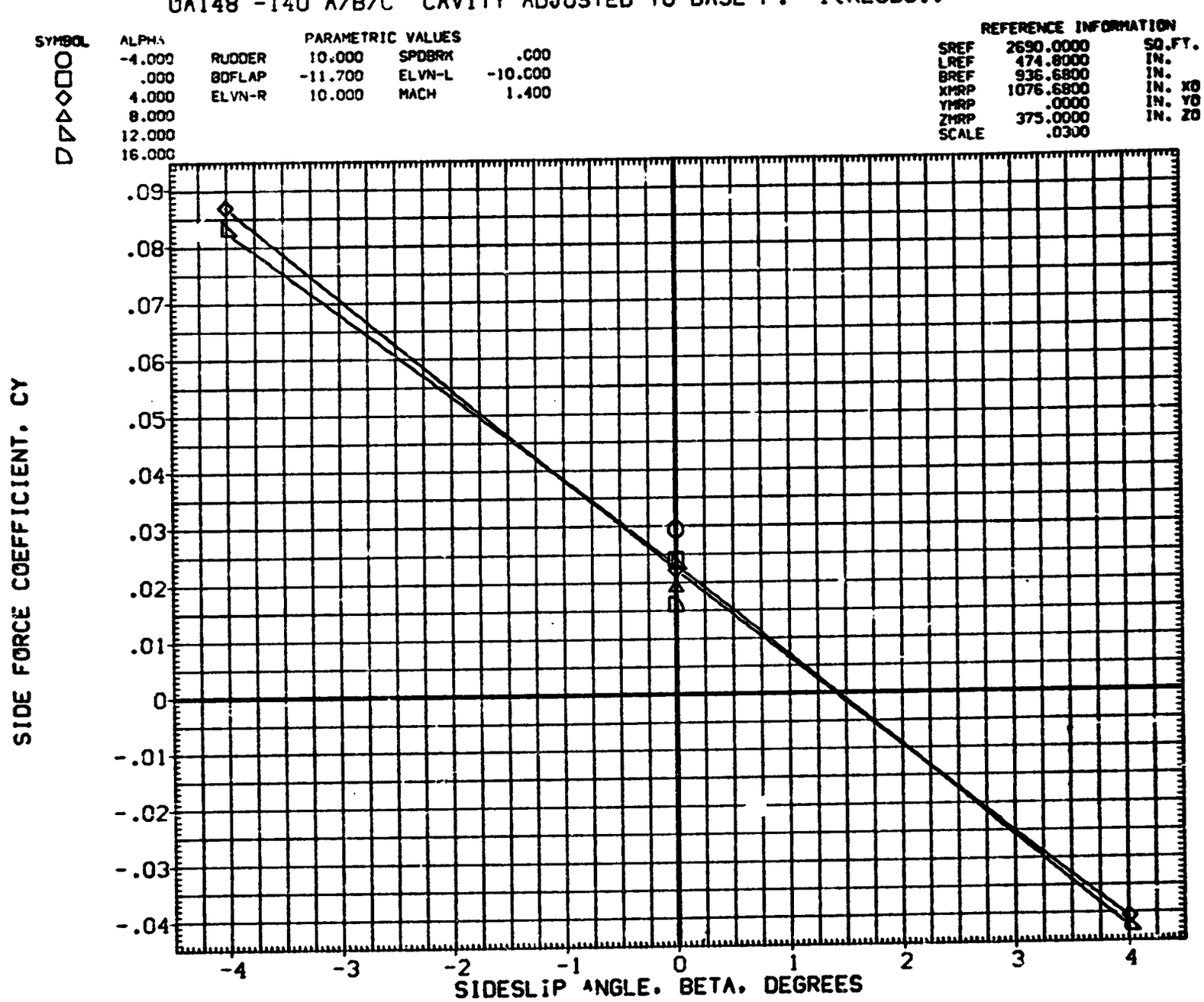


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

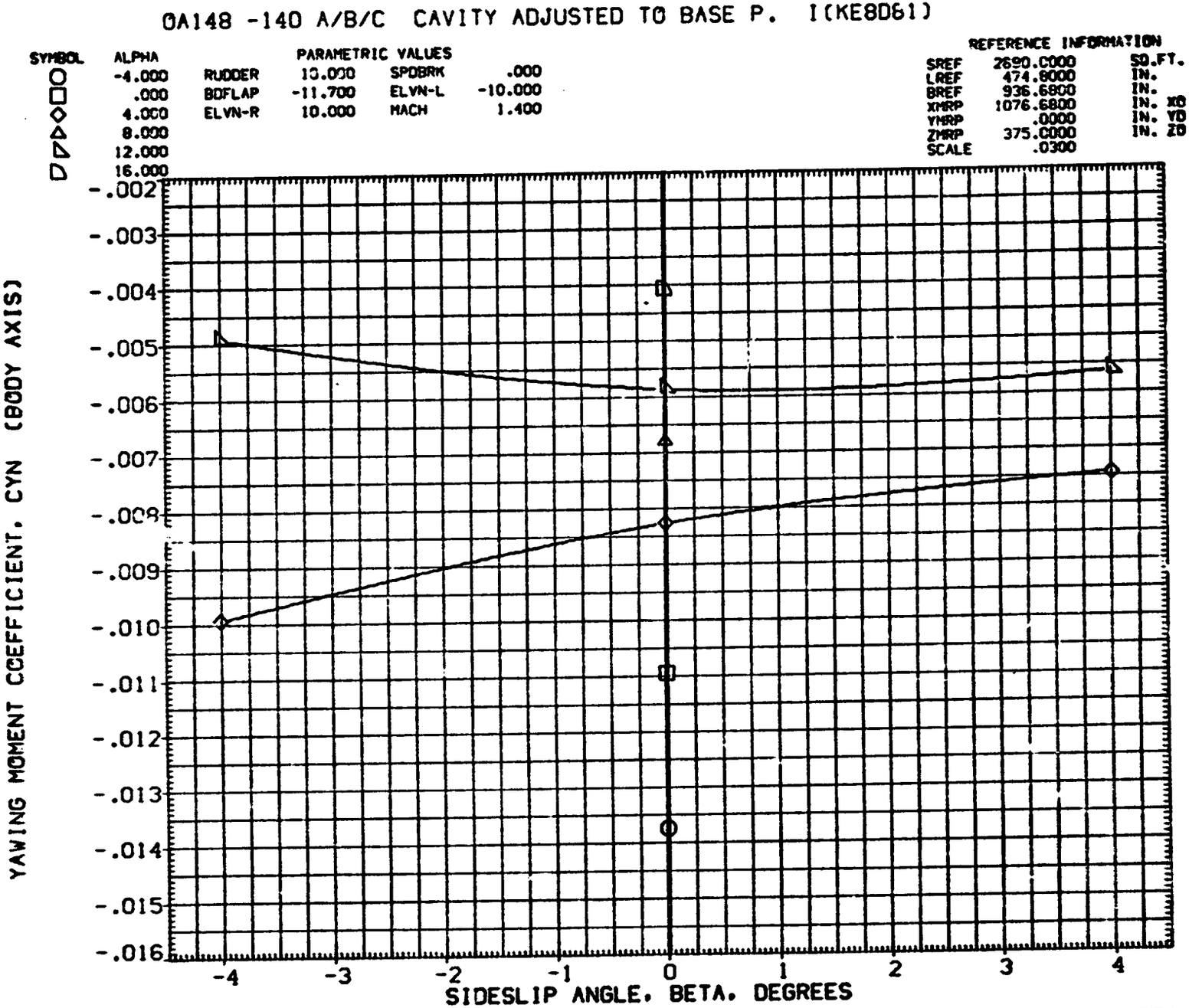


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

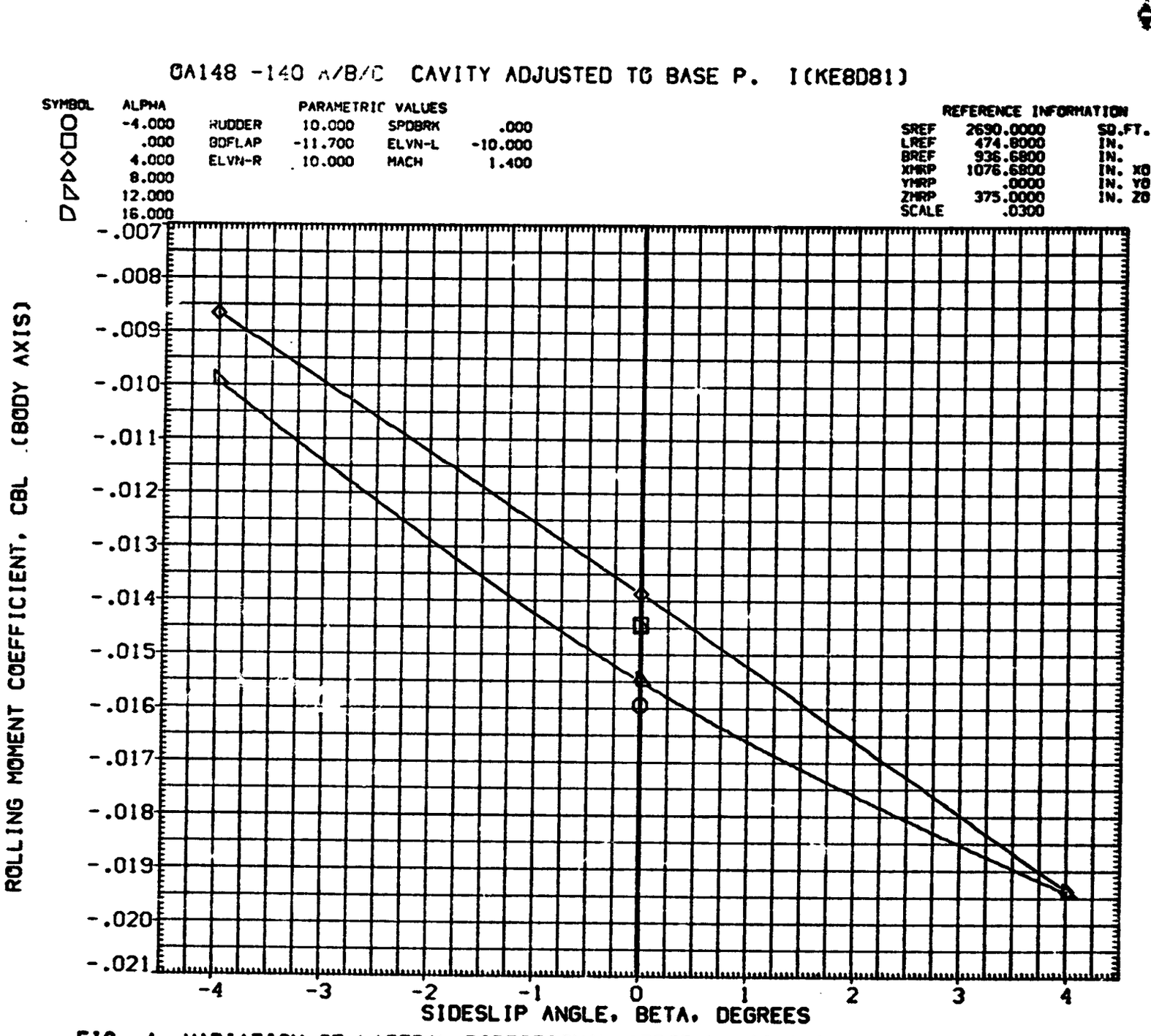


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

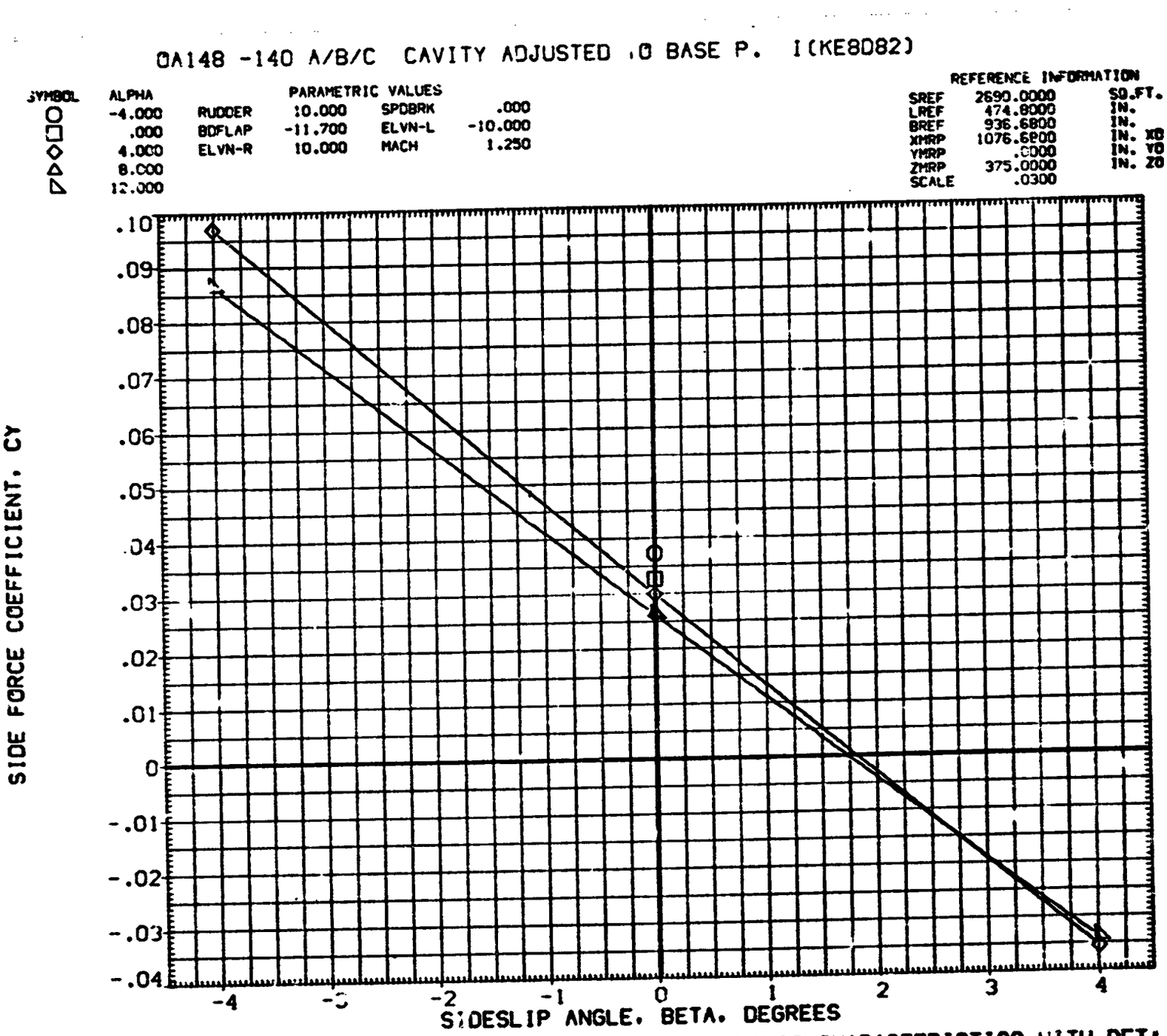


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

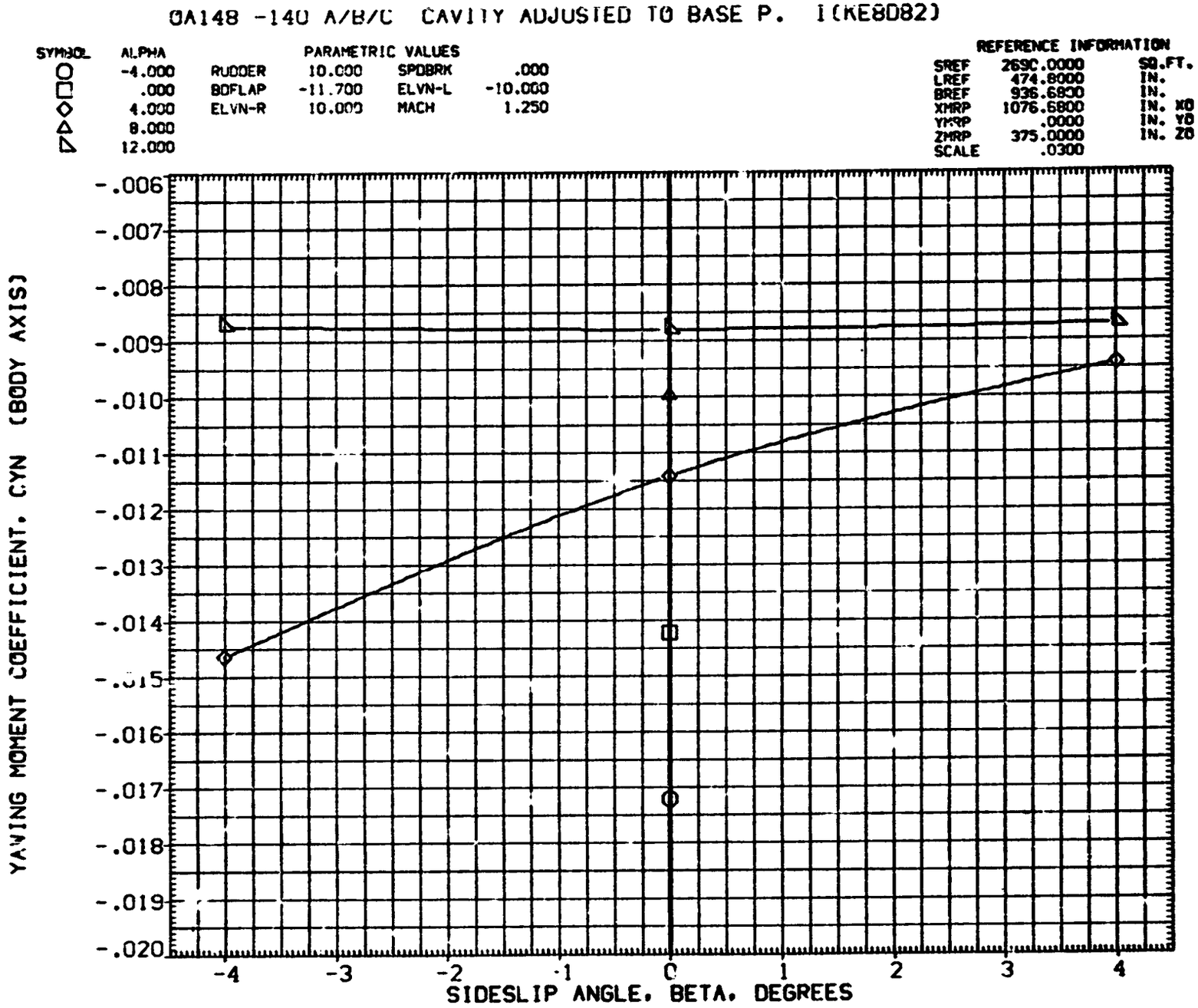


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

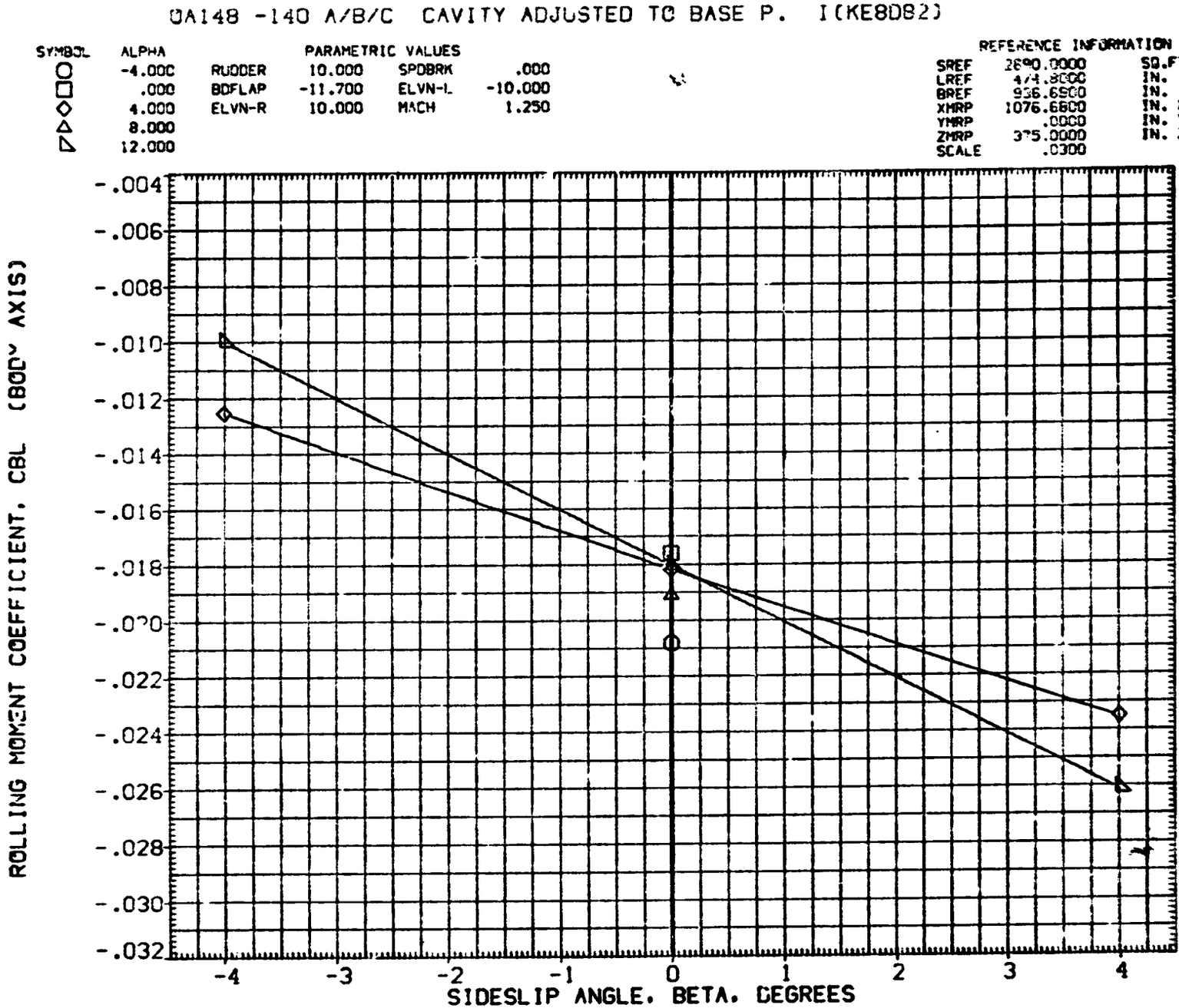


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

REPRODUCIBILITY OF THE
ORIGINAL IS POOR

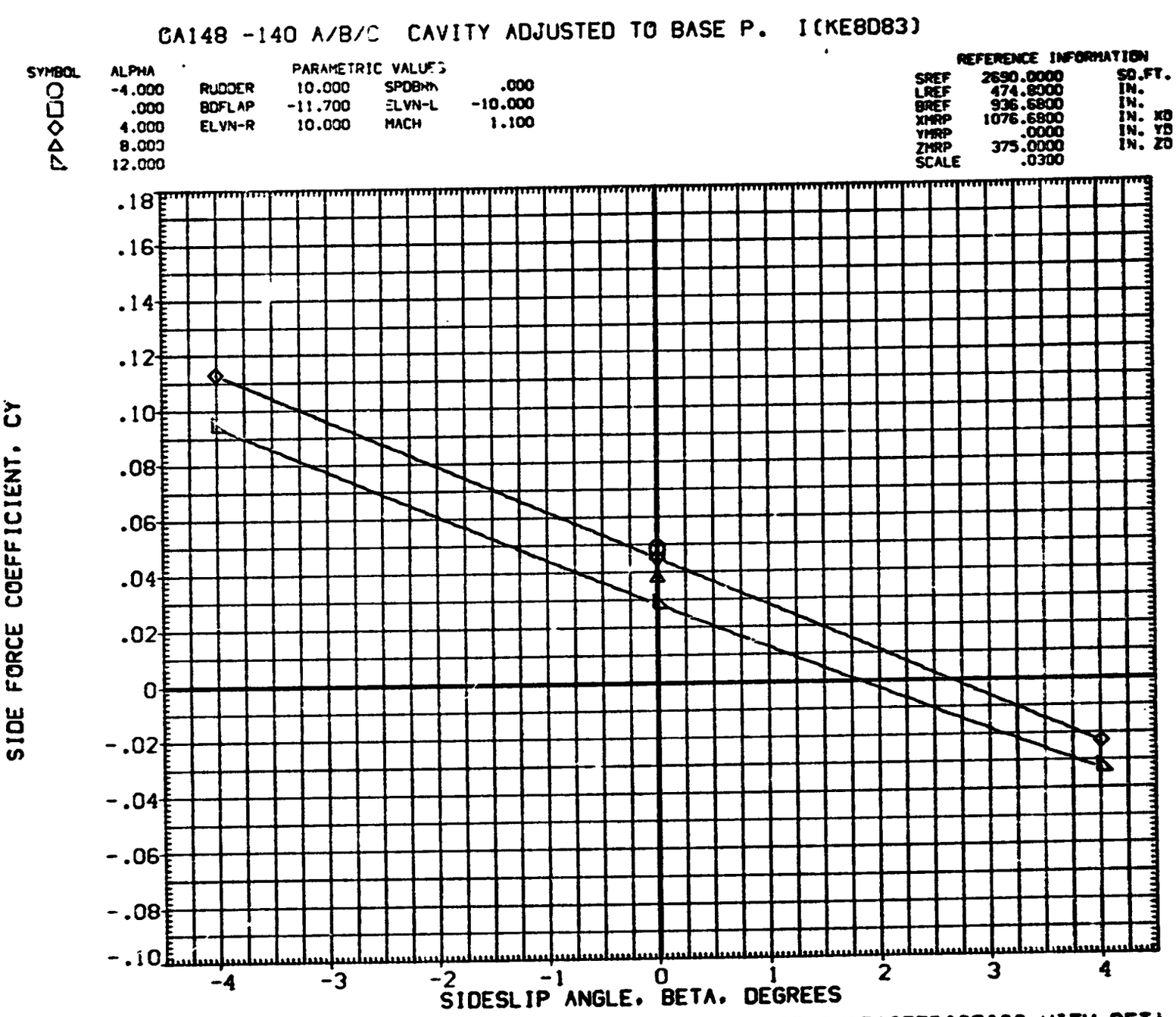


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

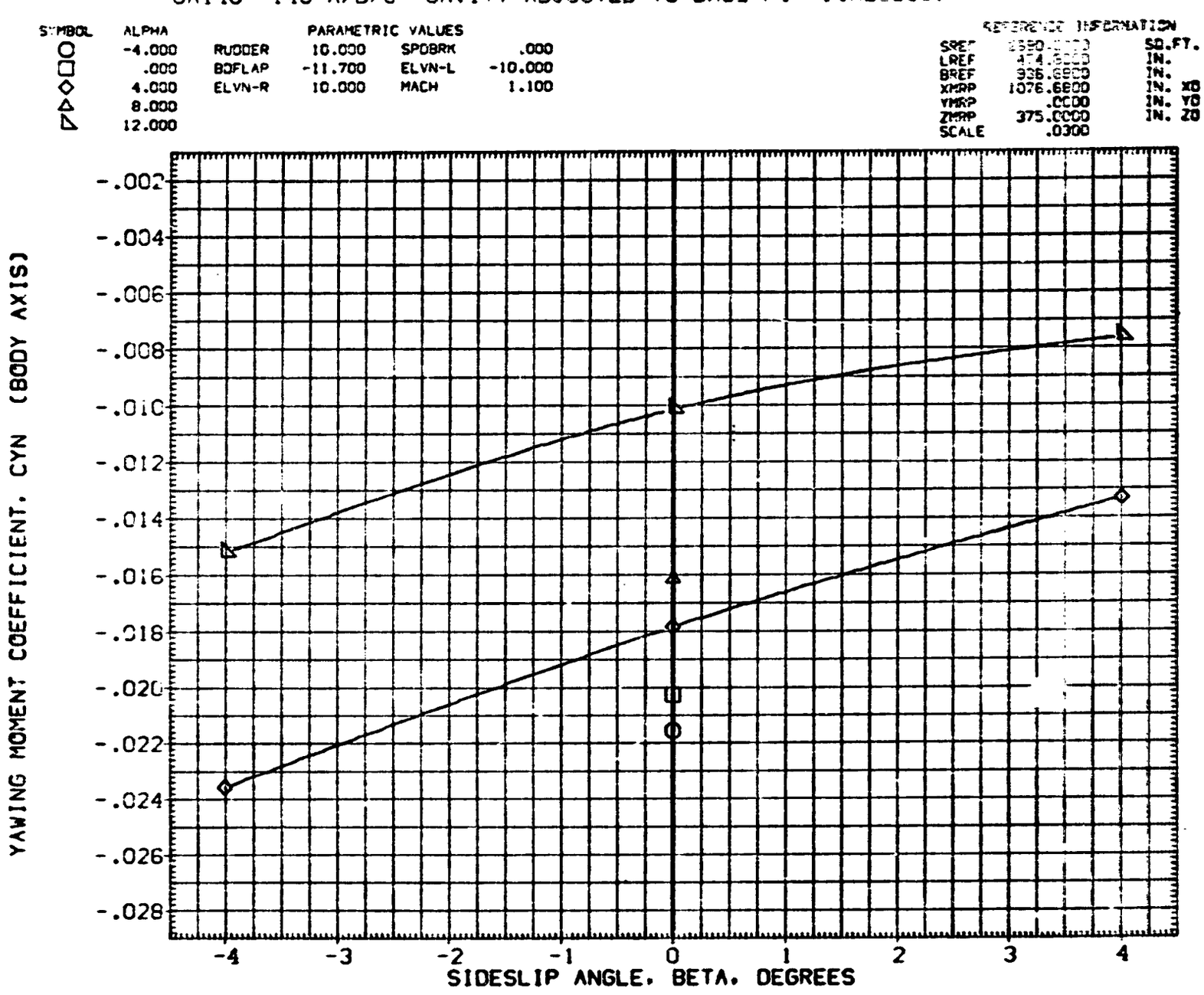


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

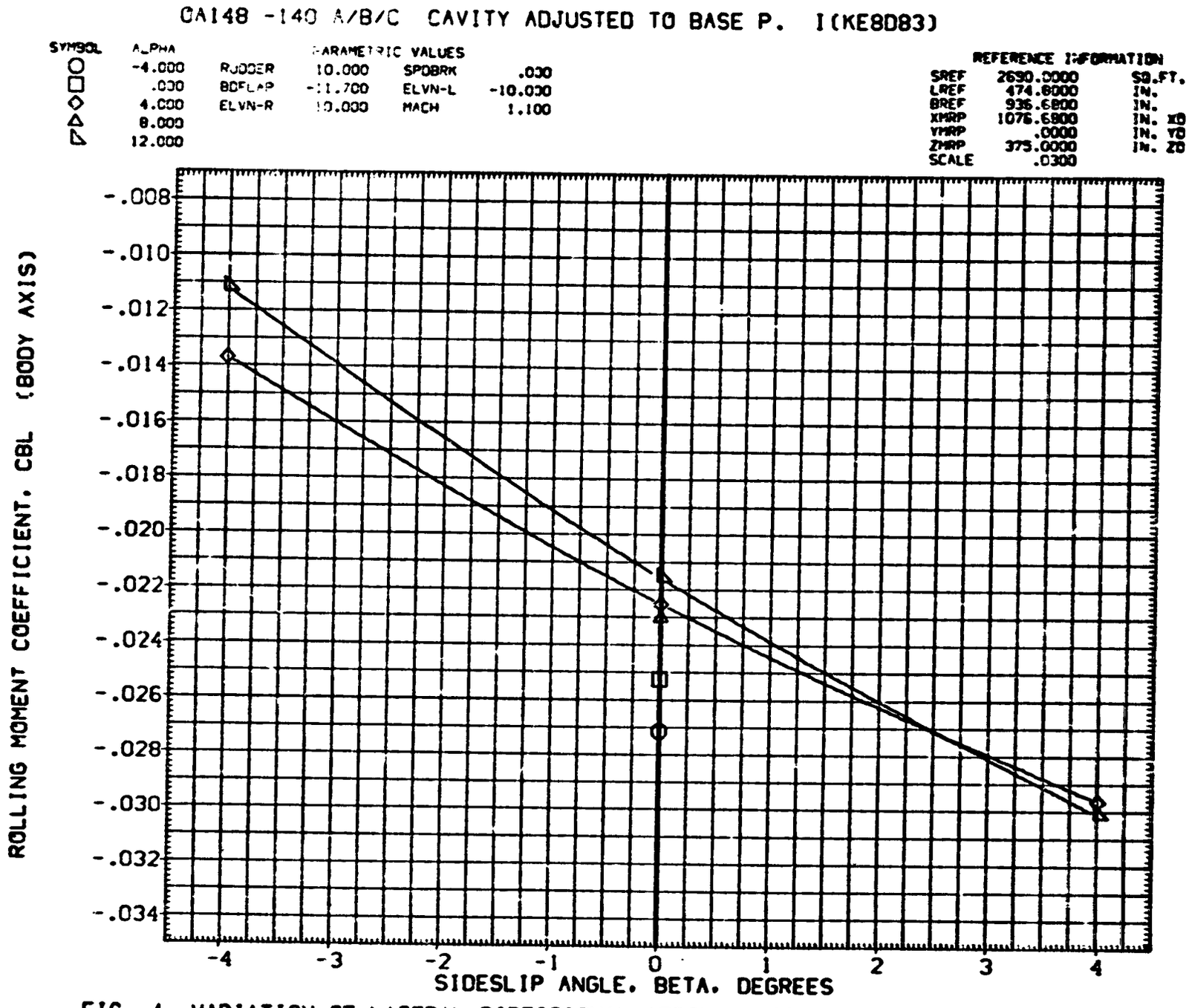


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

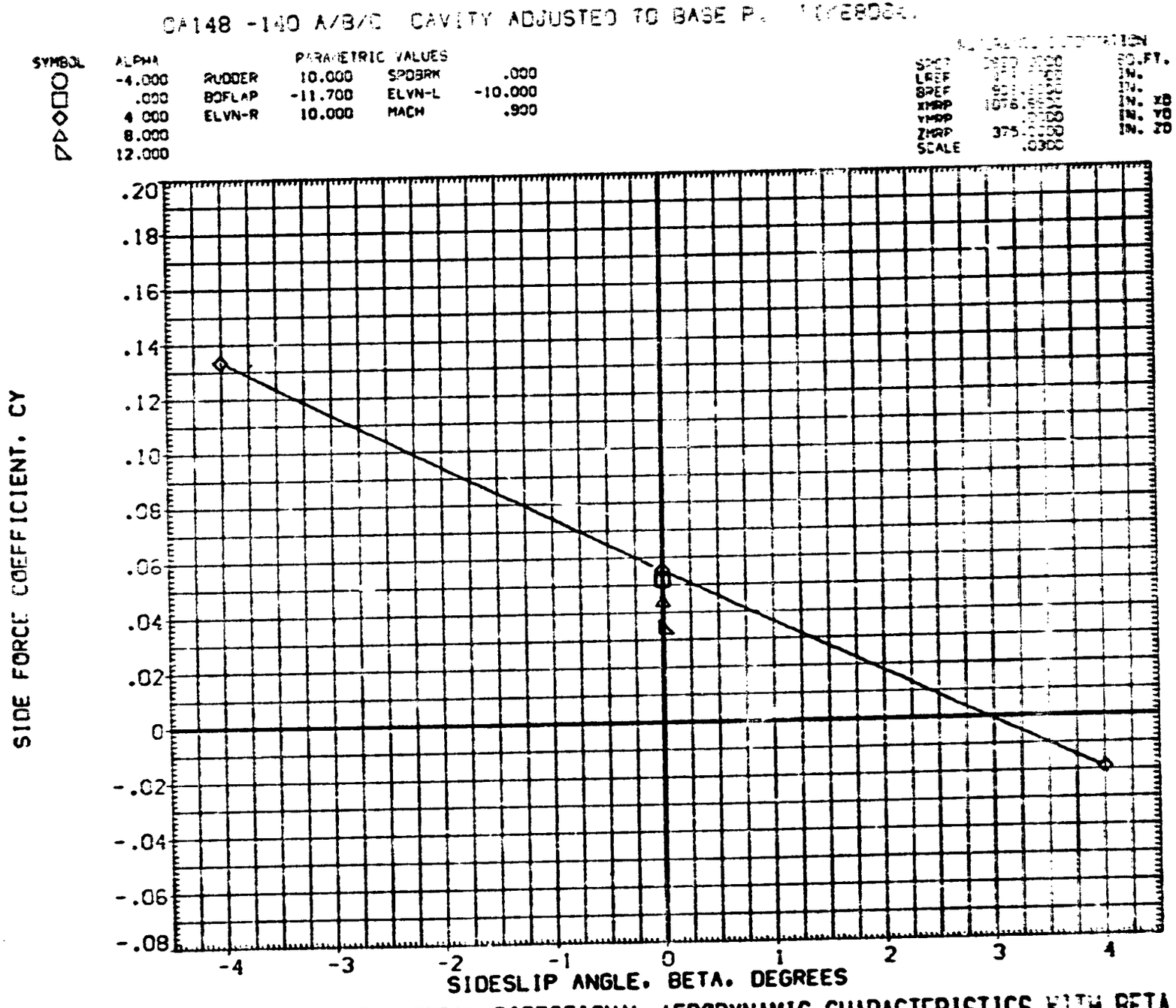


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

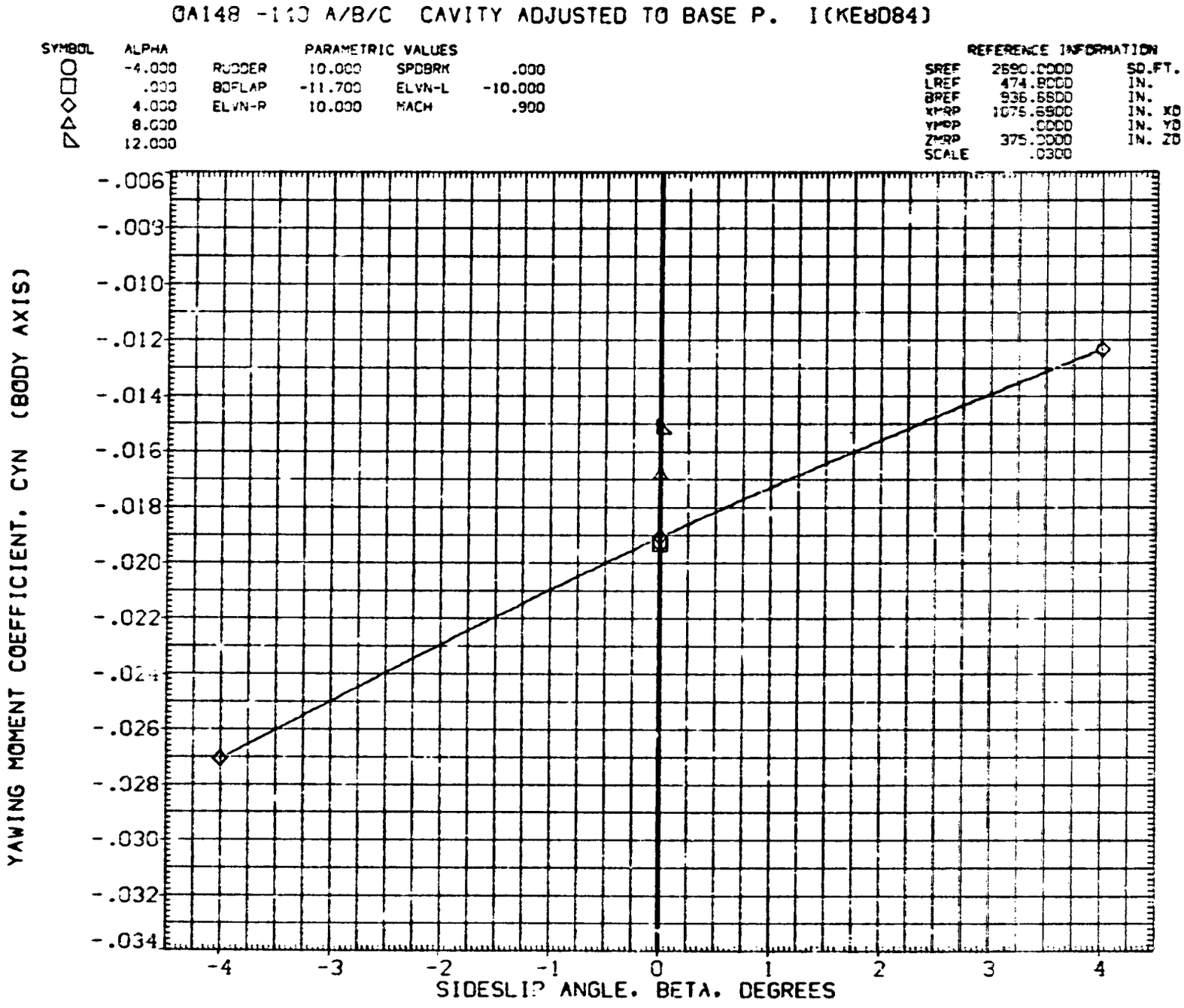


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

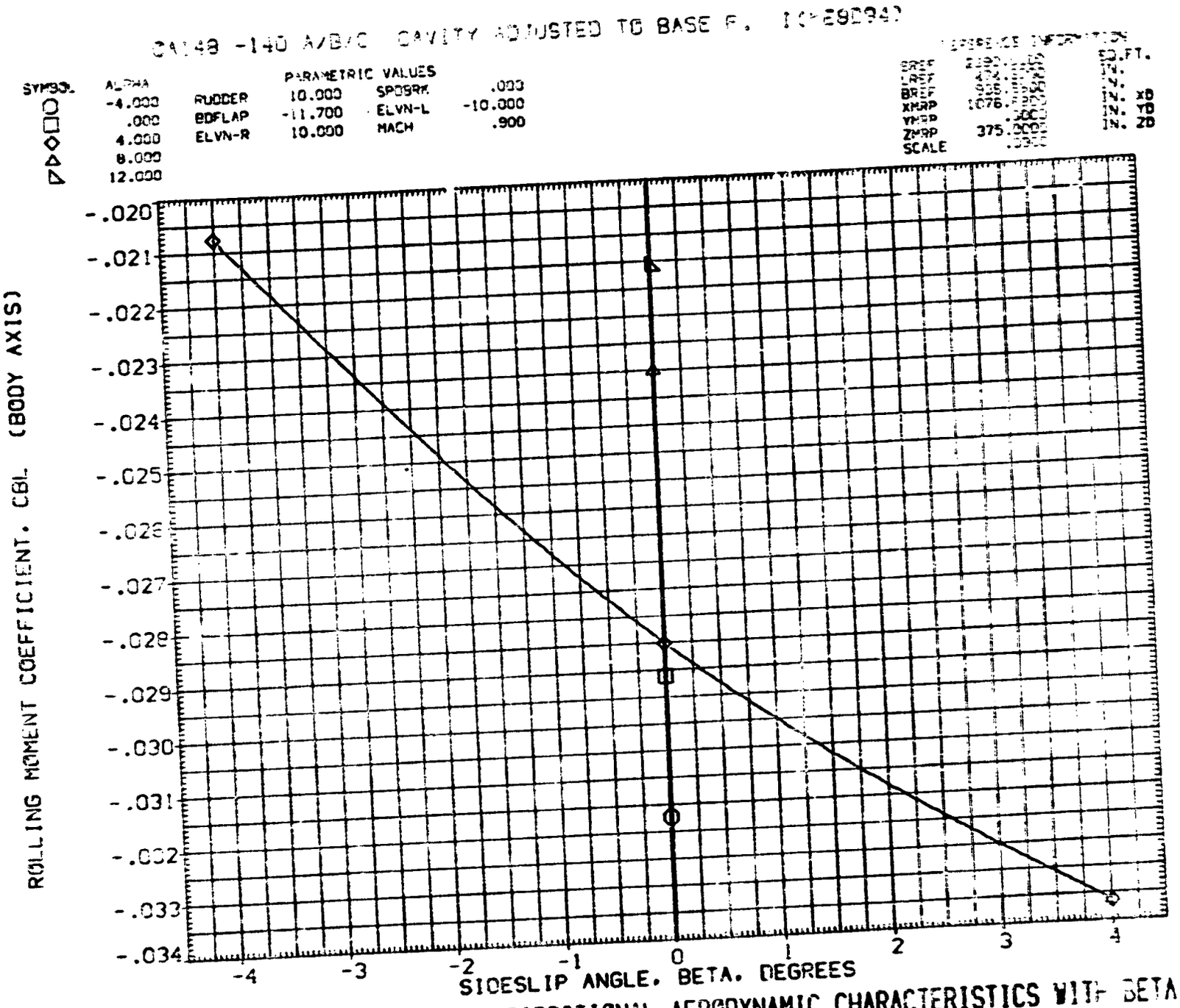


FIG. 4 VARIATION OF LATERAL DIRECTIONAL AERODYNAMIC CHARACTERISTICS WITH BETA

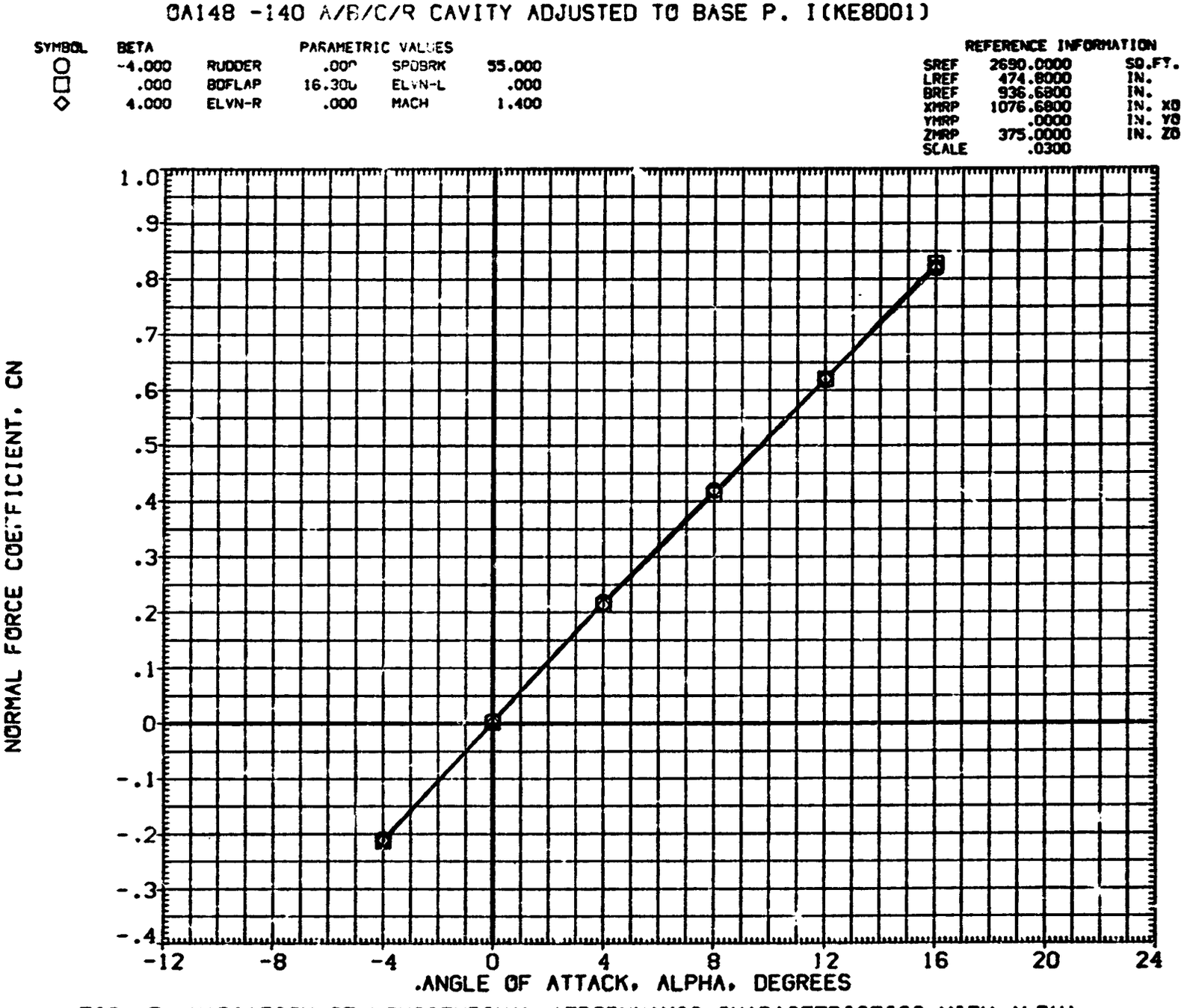


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

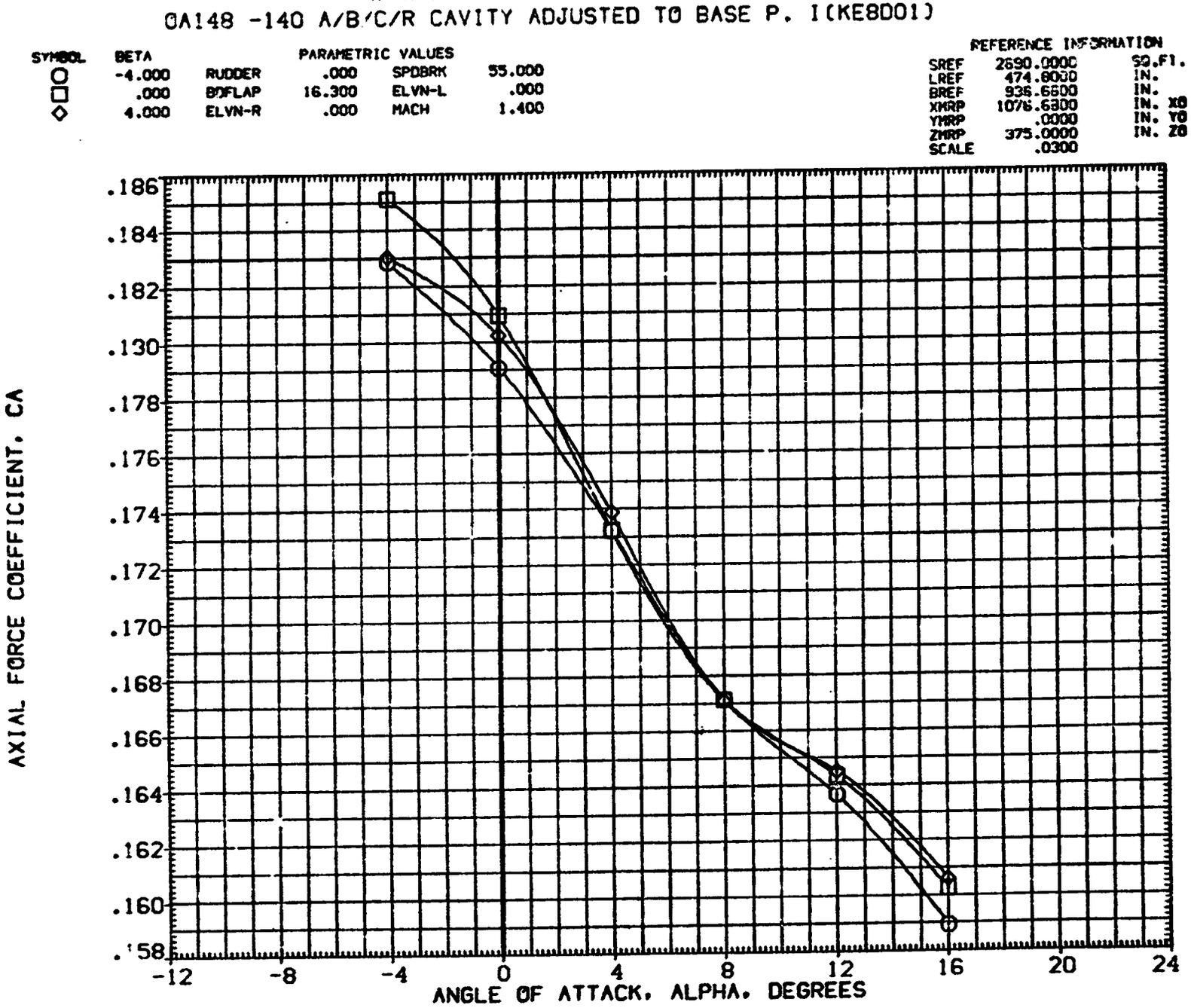


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

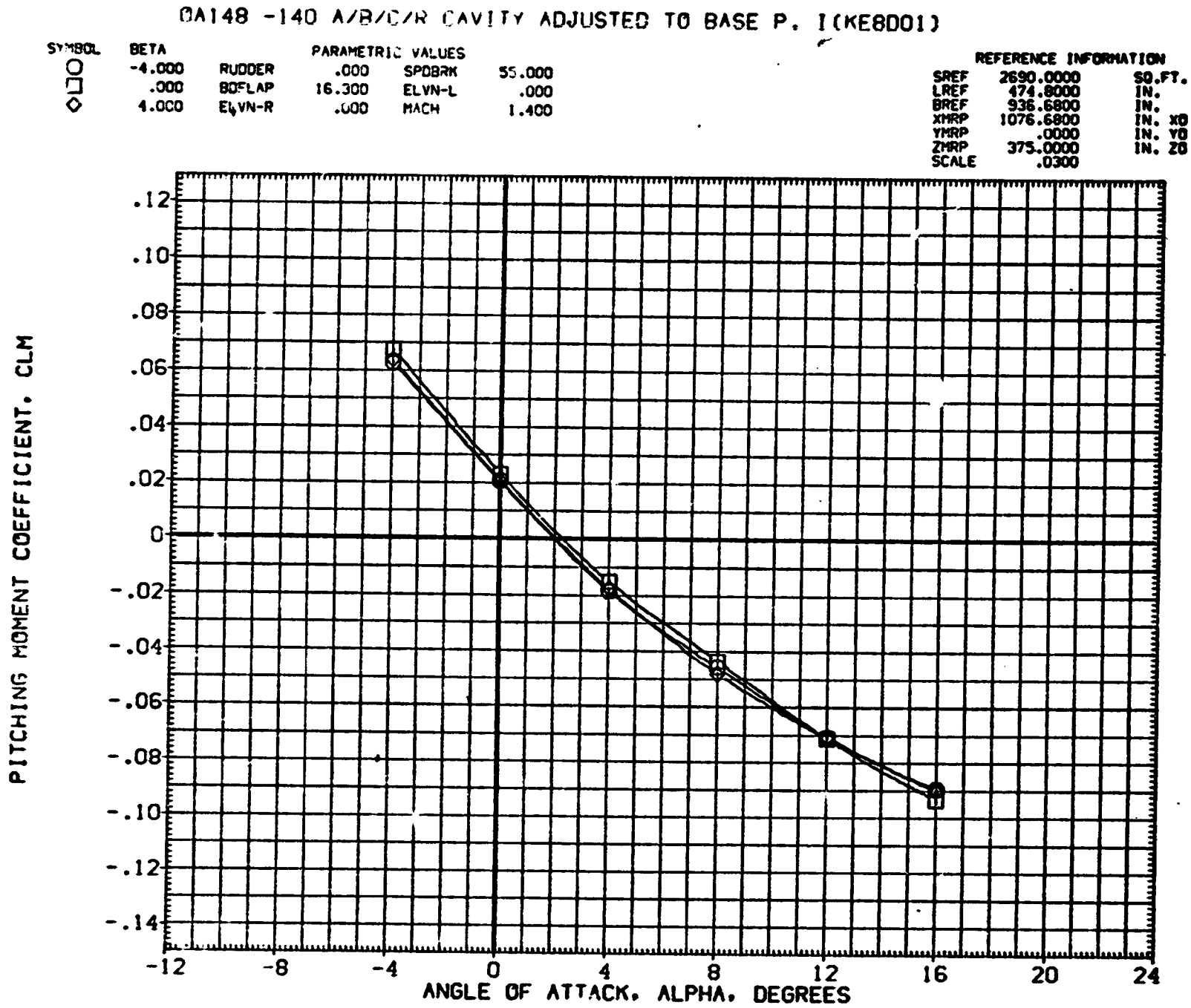


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

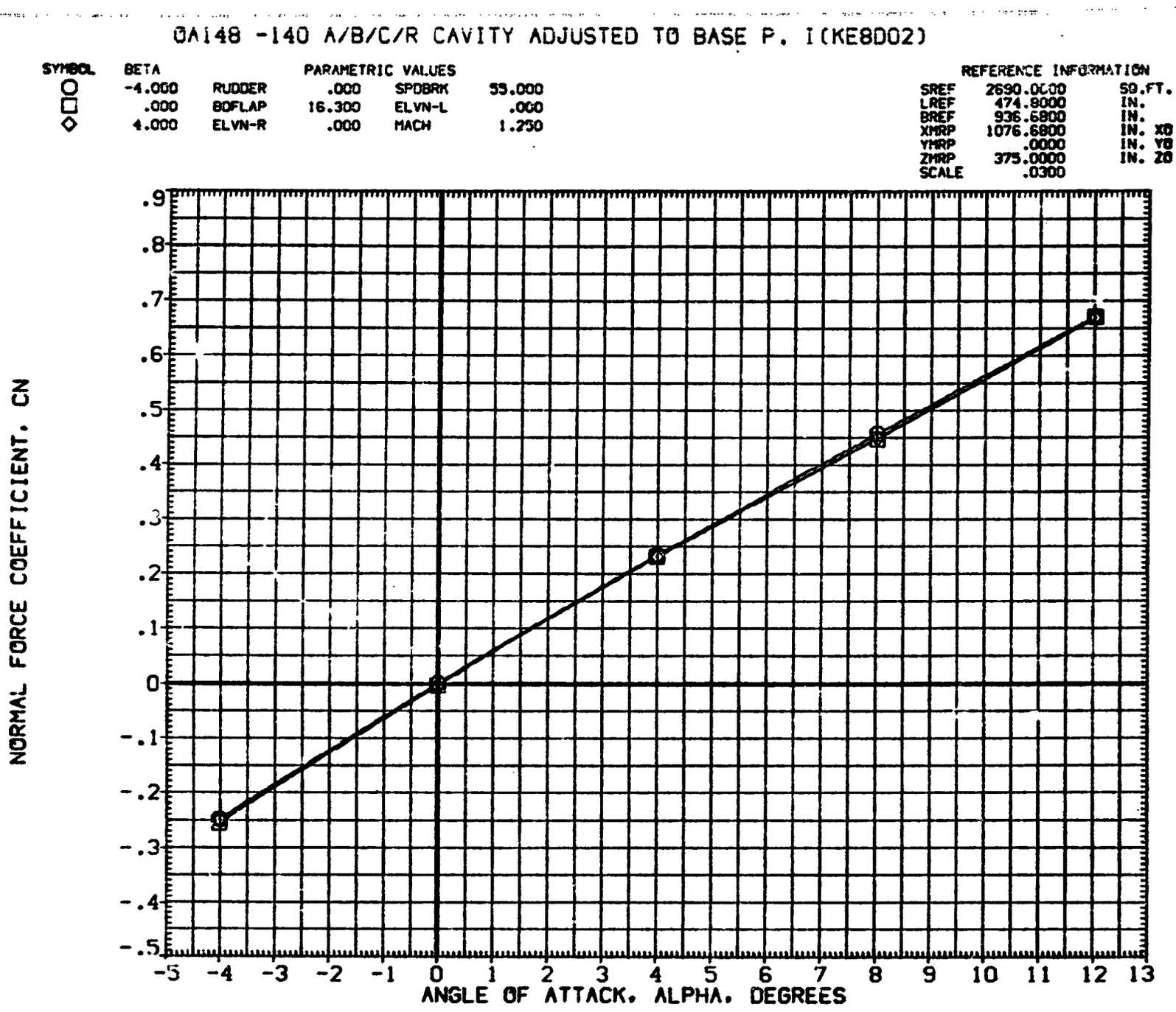


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D02)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

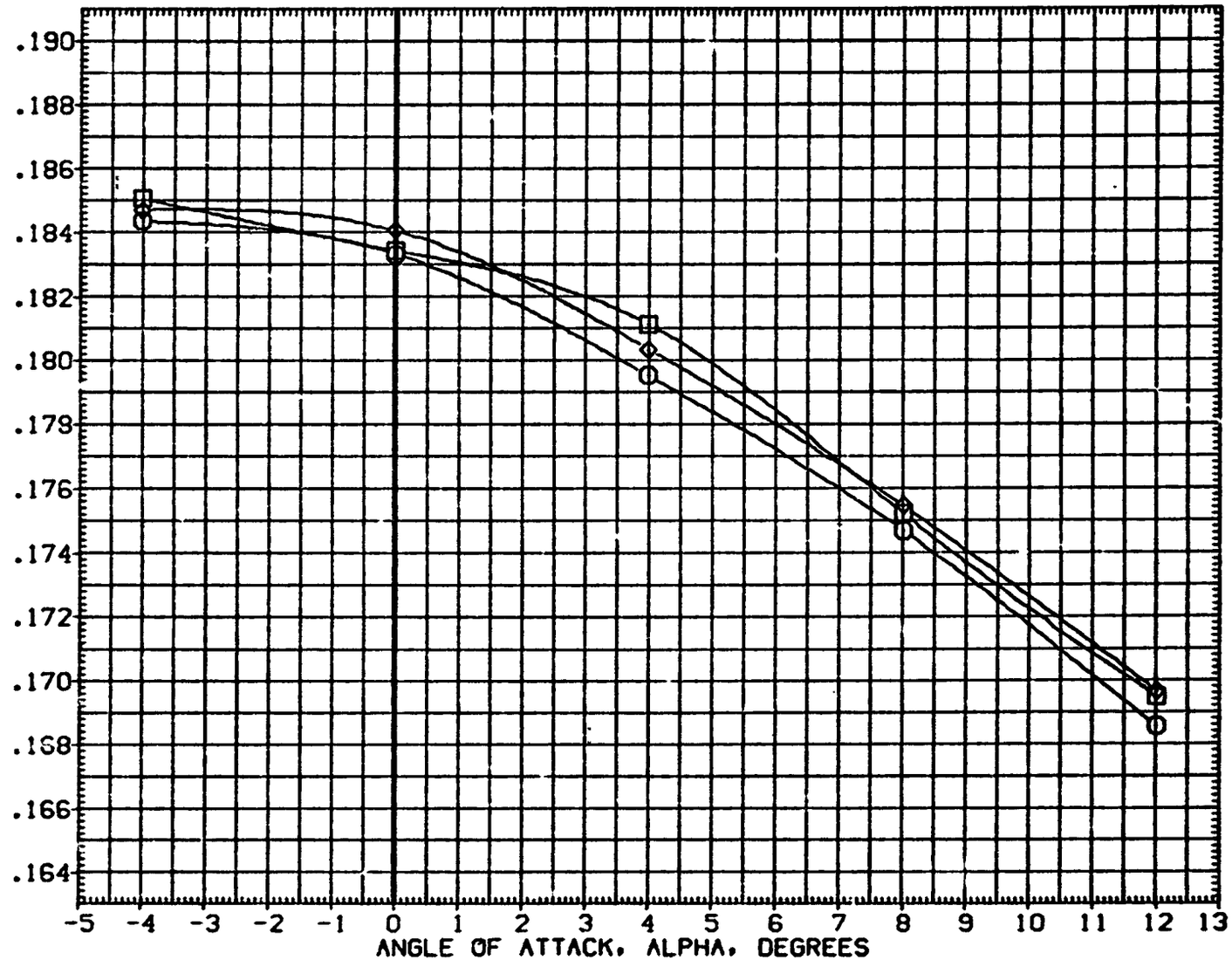


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

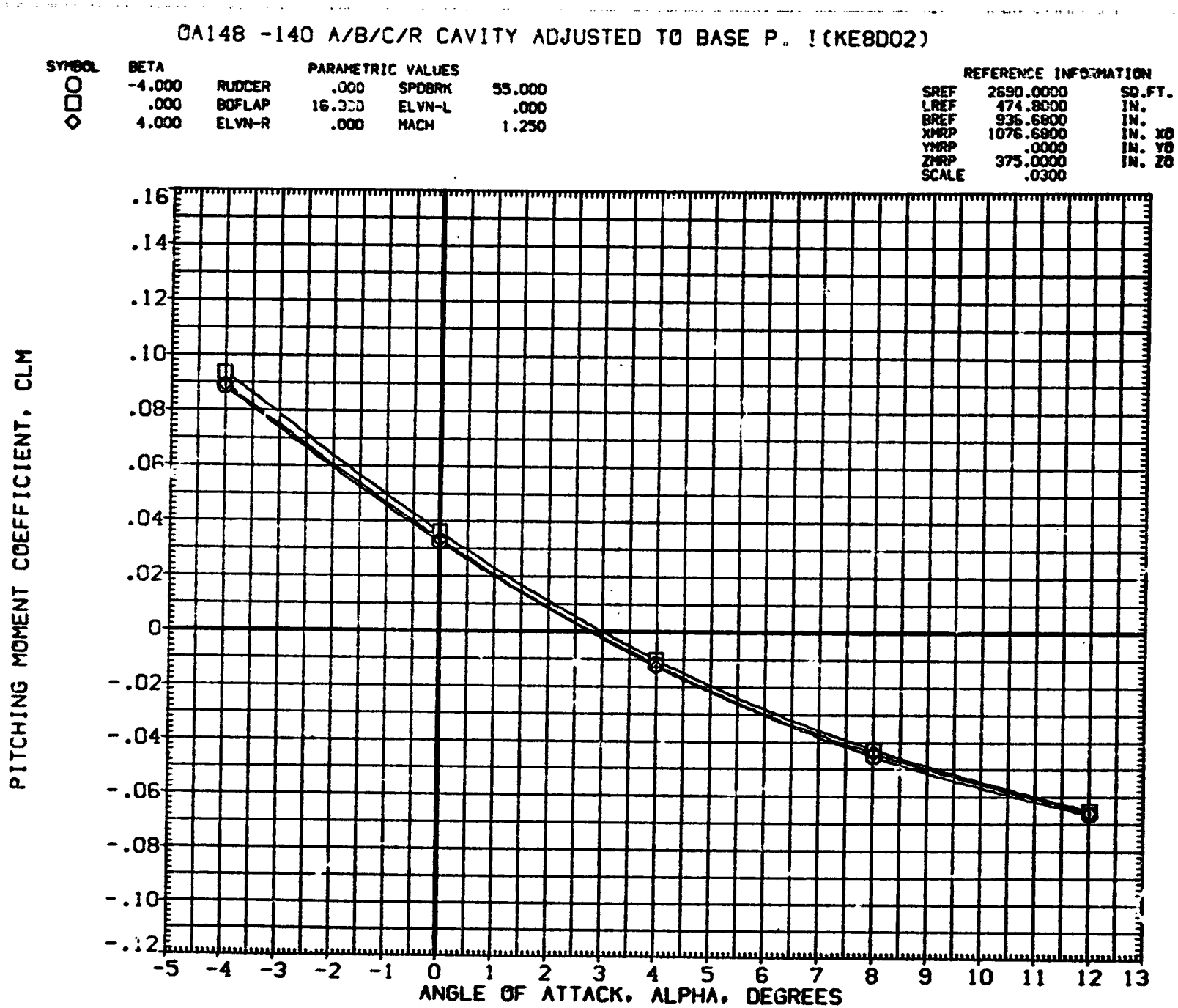


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D03)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ. FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

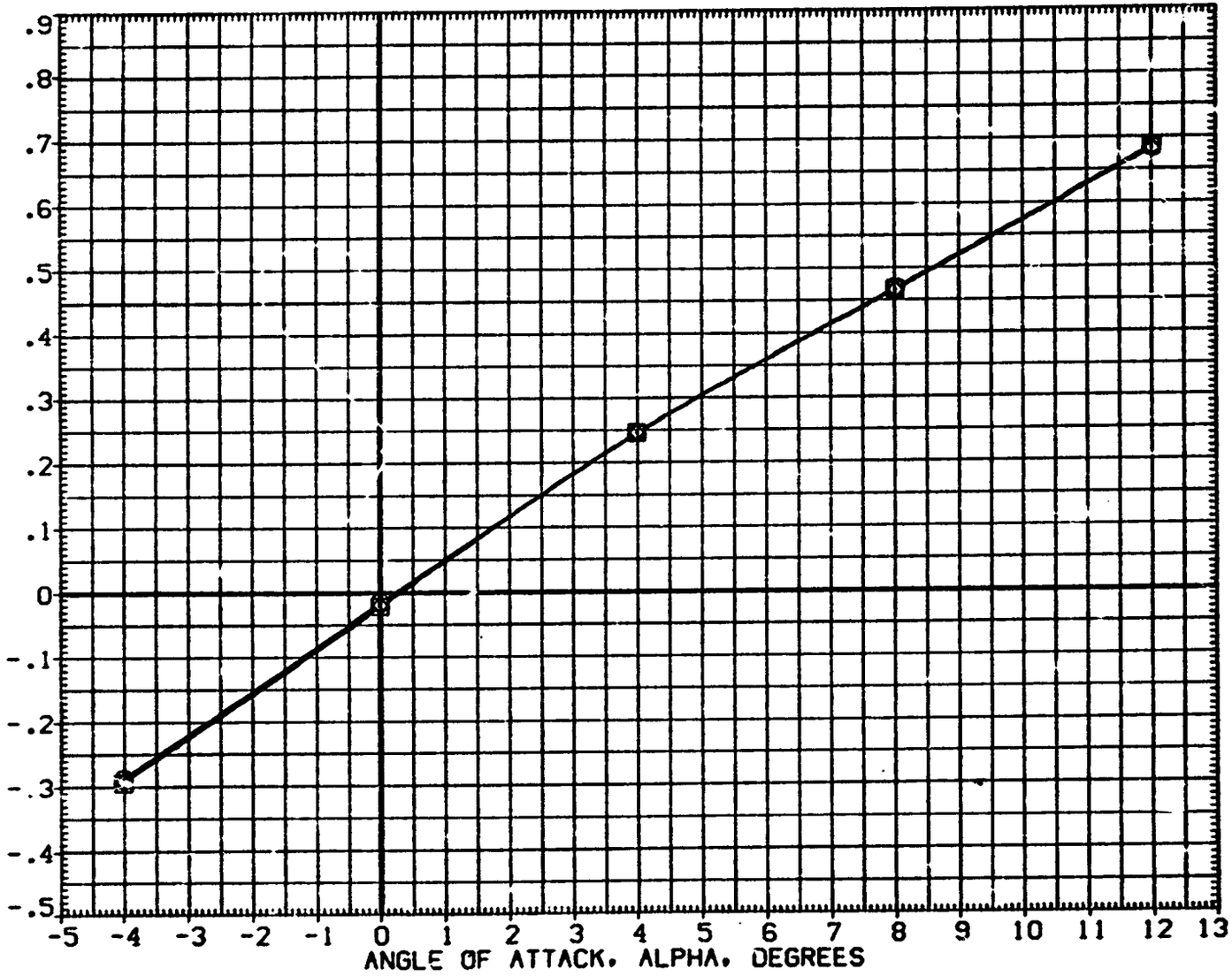


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

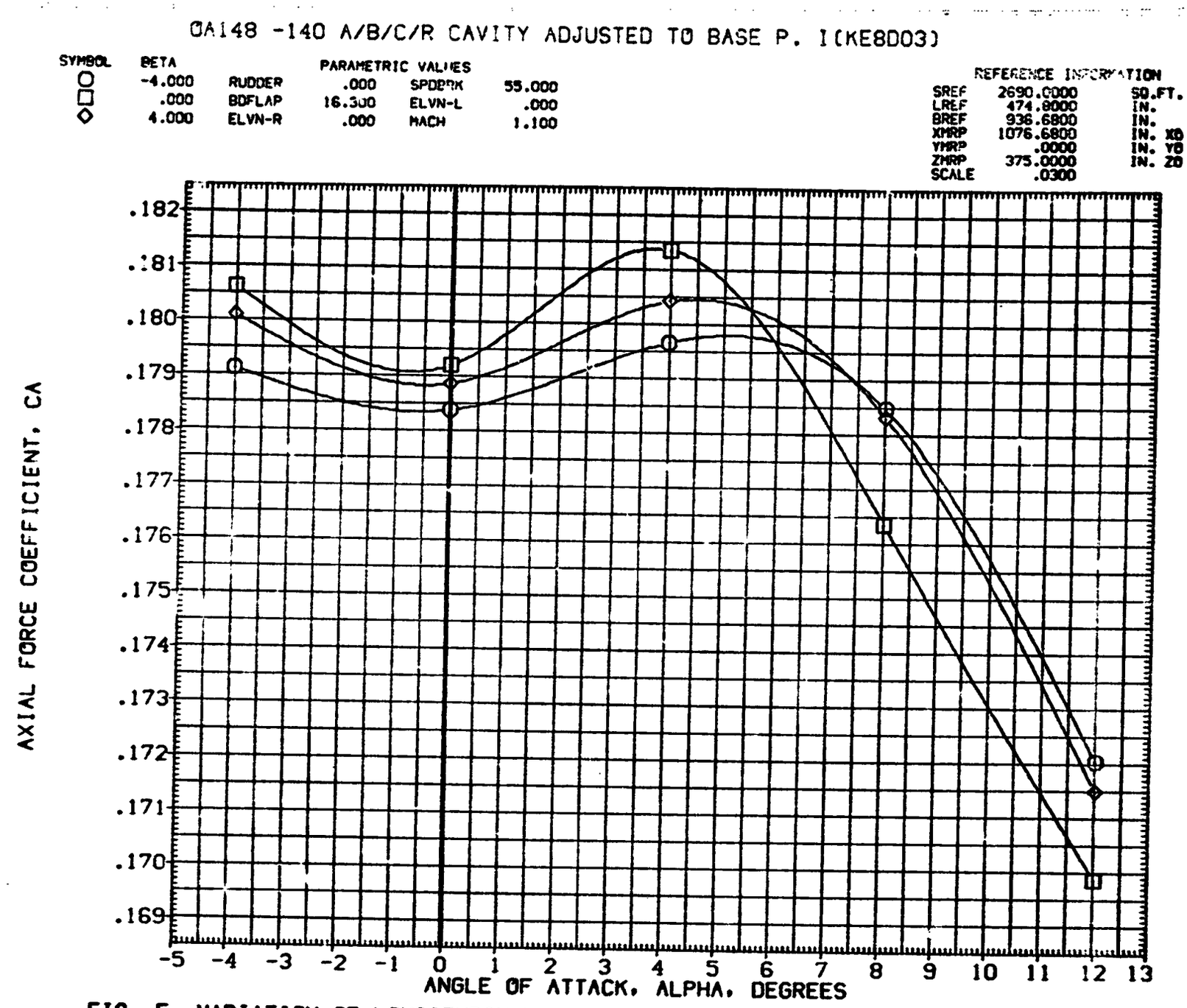


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

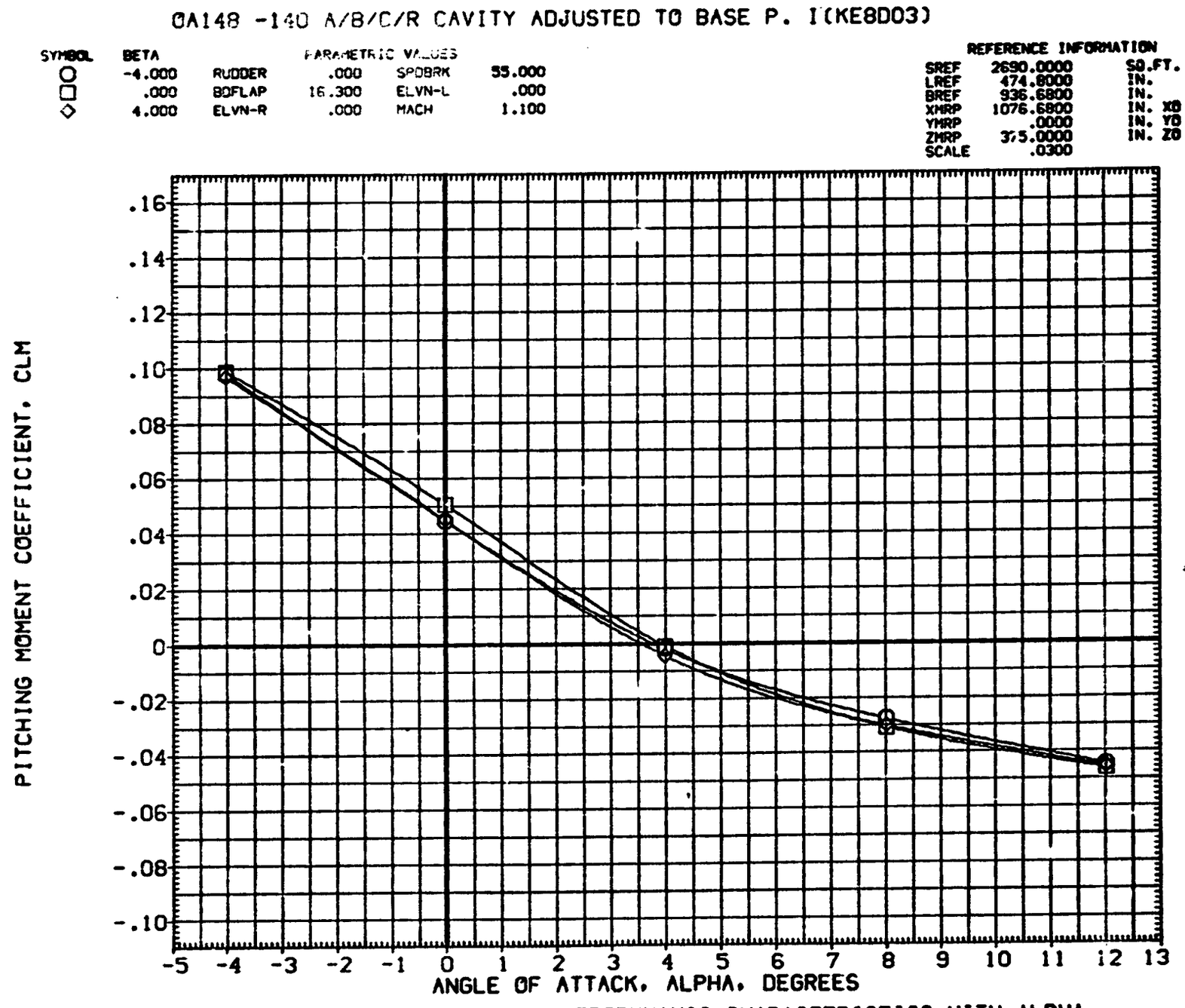


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8004)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.3000	IN.
BREF	936.5900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

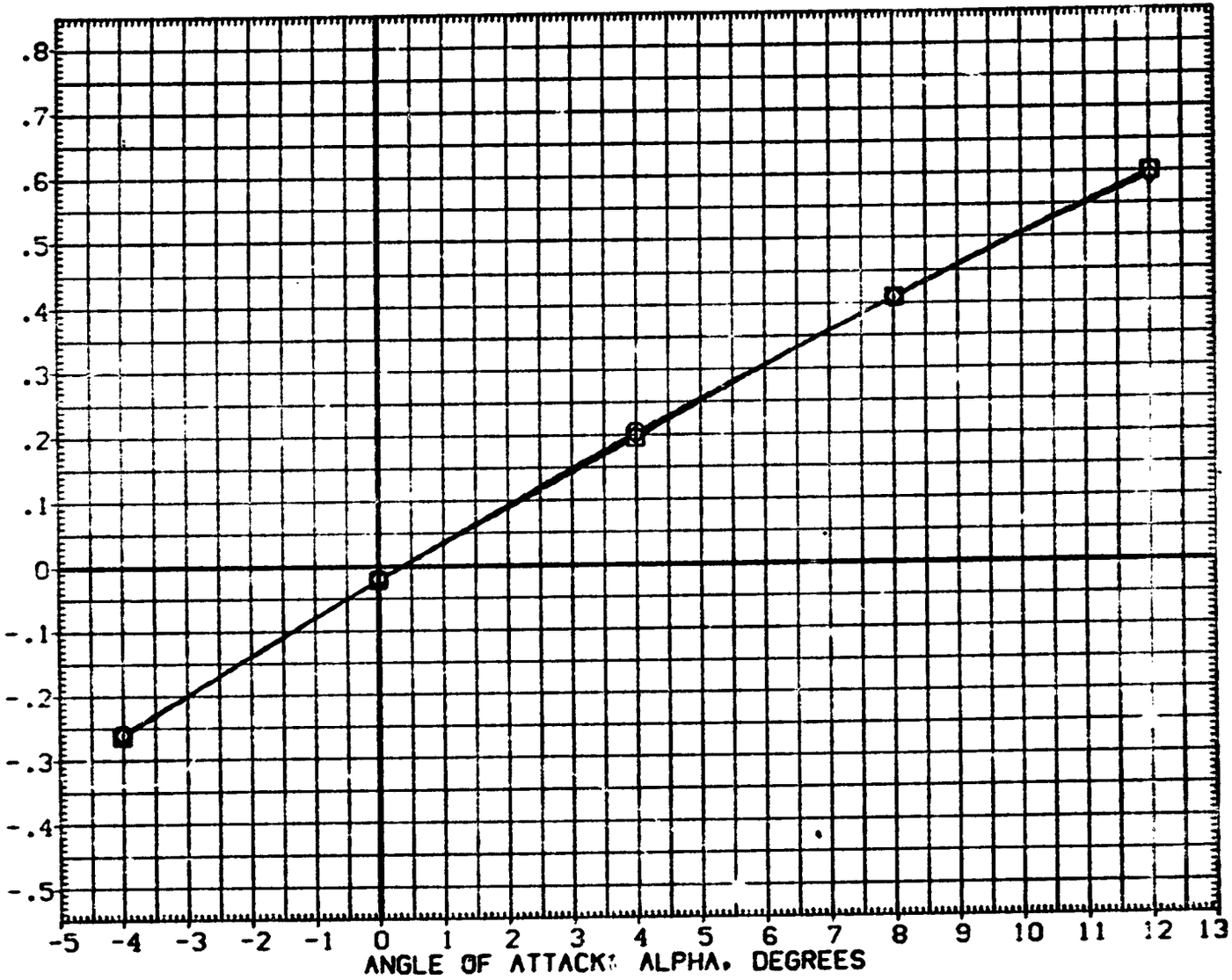


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8004)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

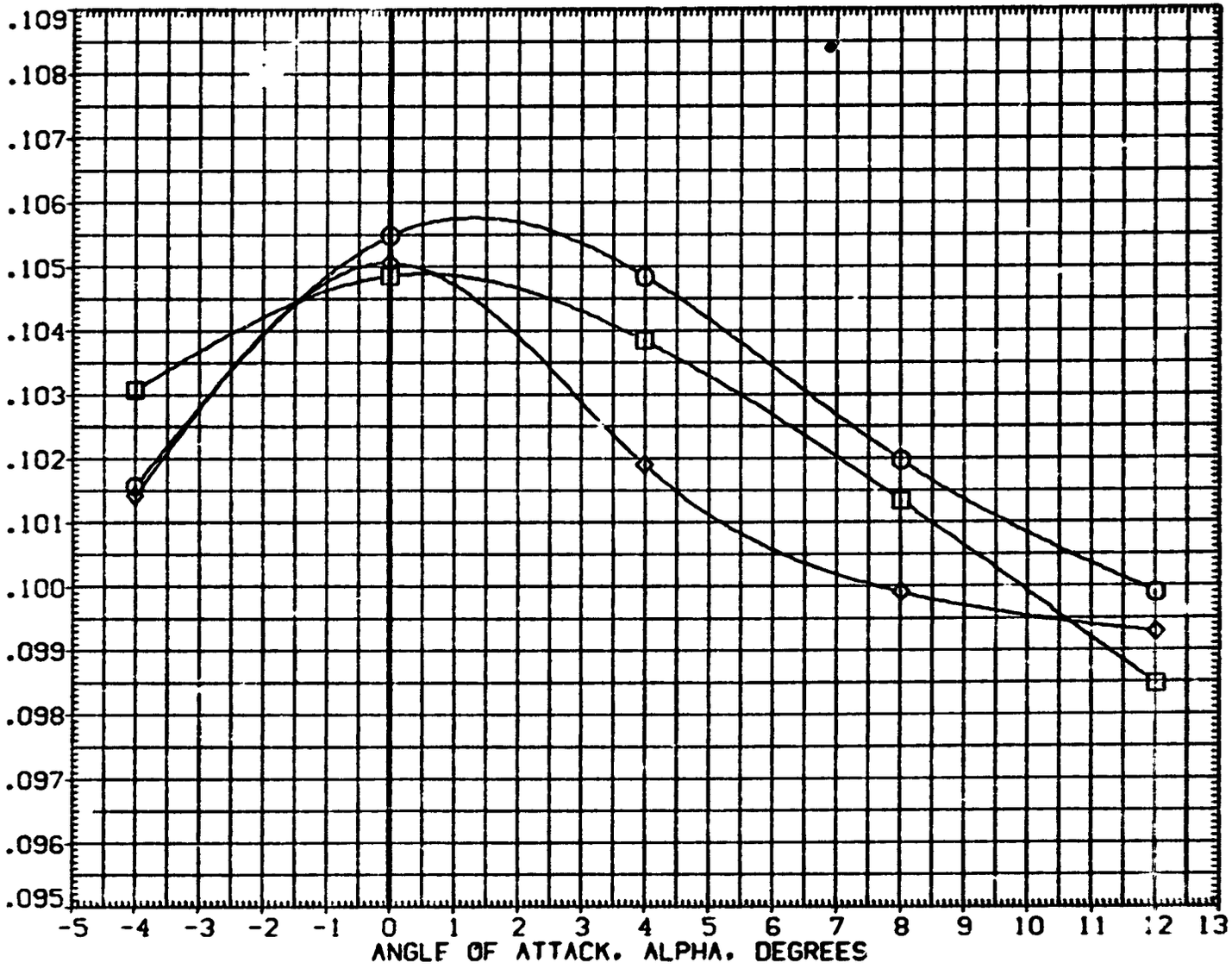


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. (KE8D04)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.9000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

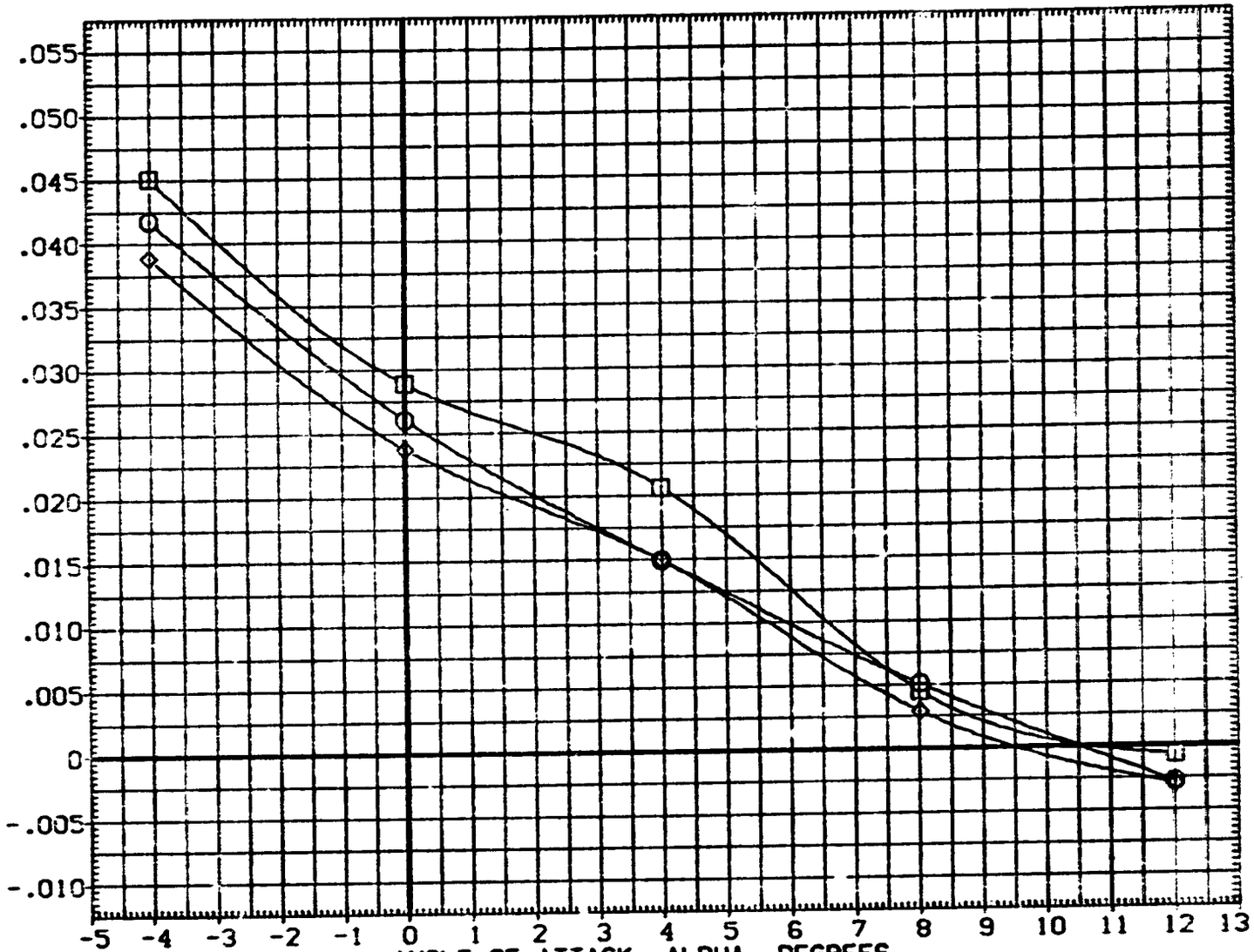


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

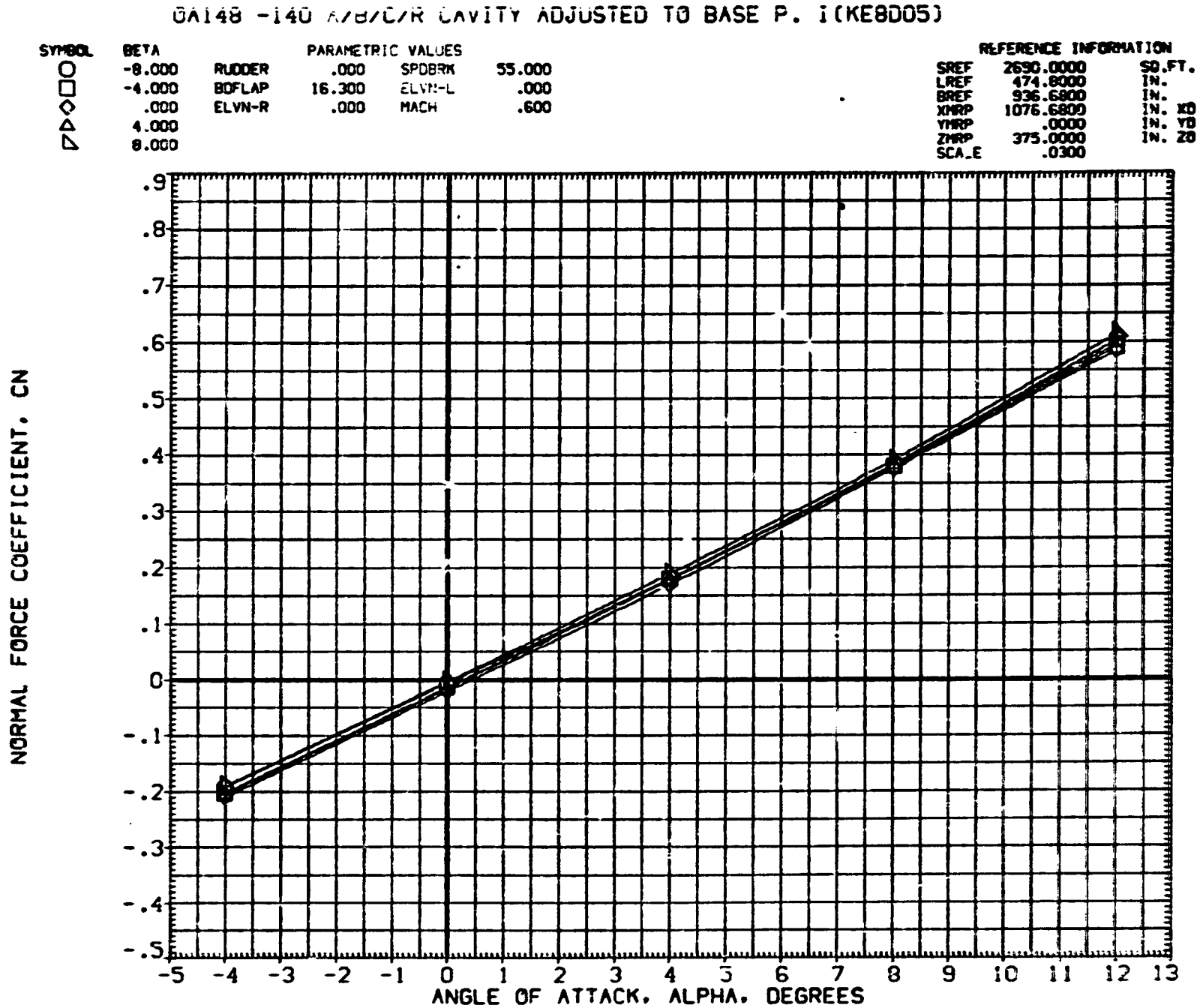


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

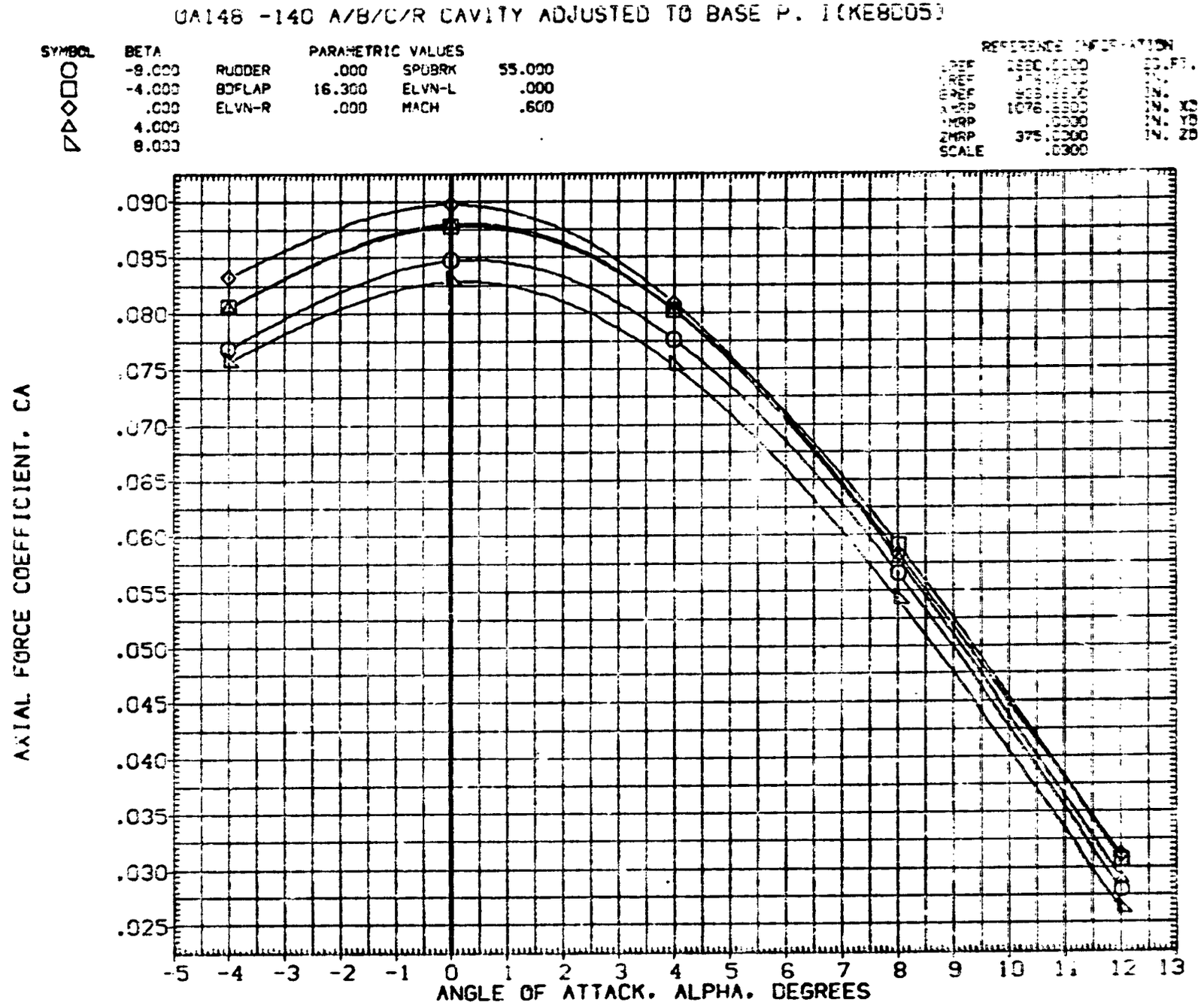


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

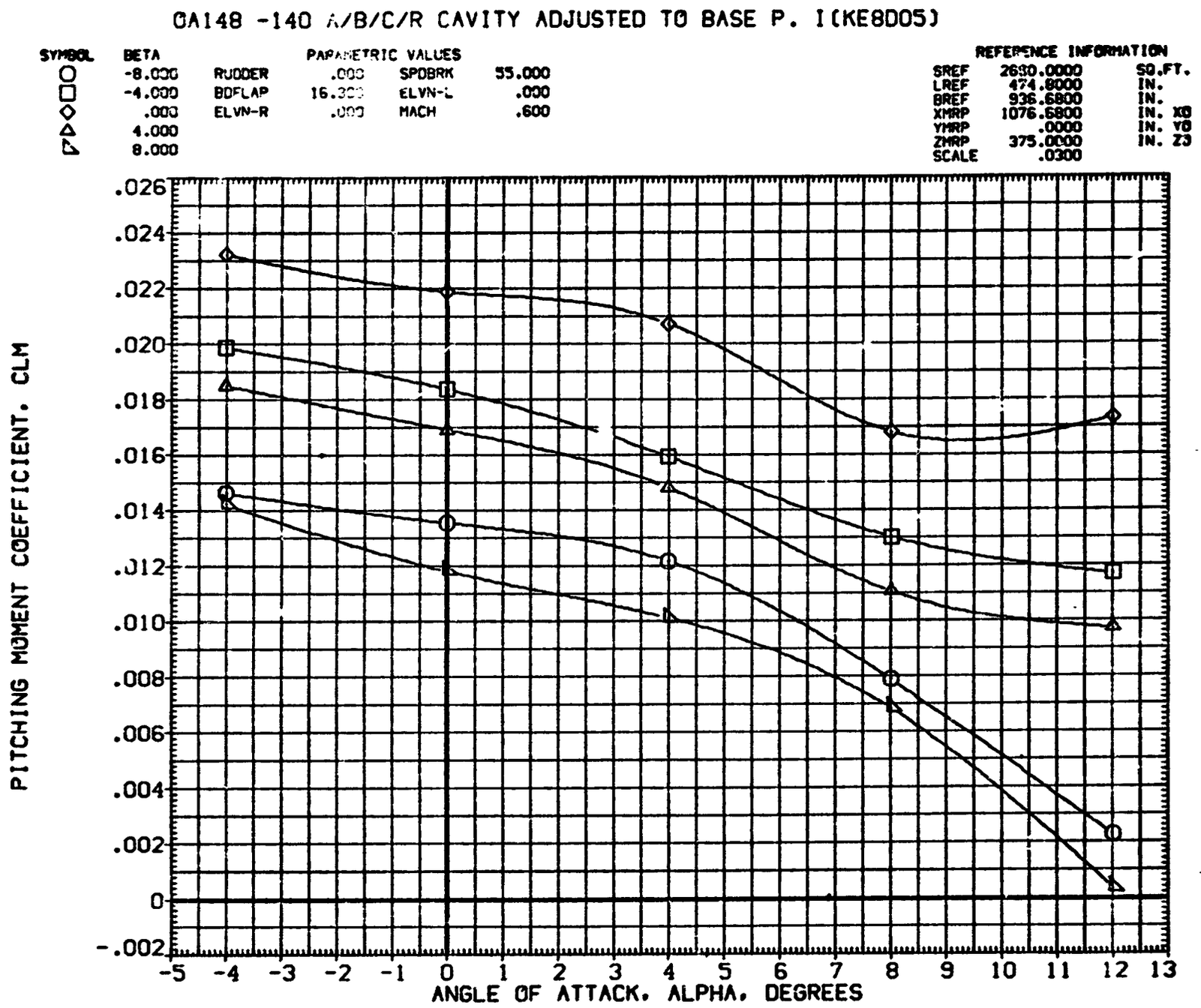


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

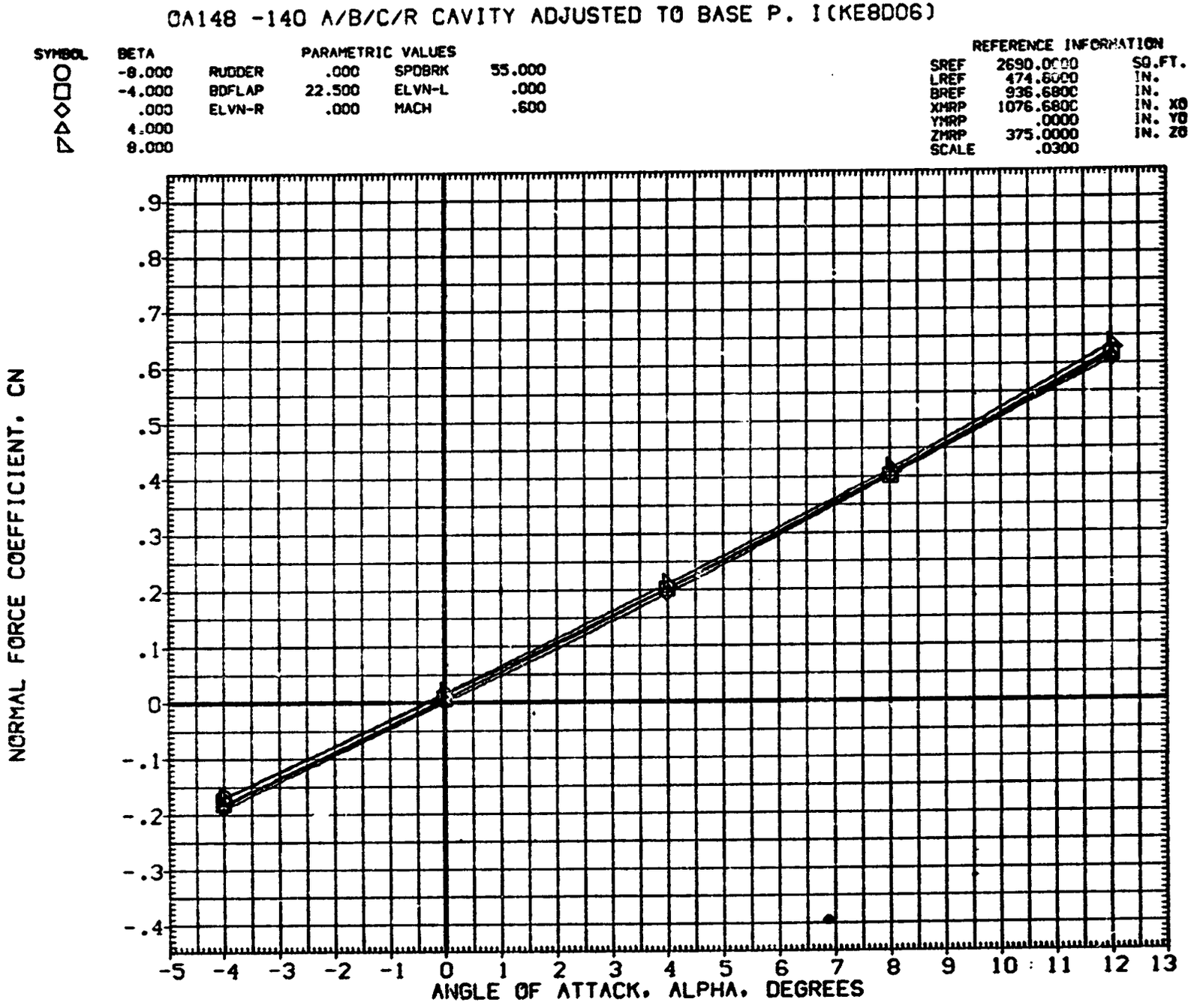


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

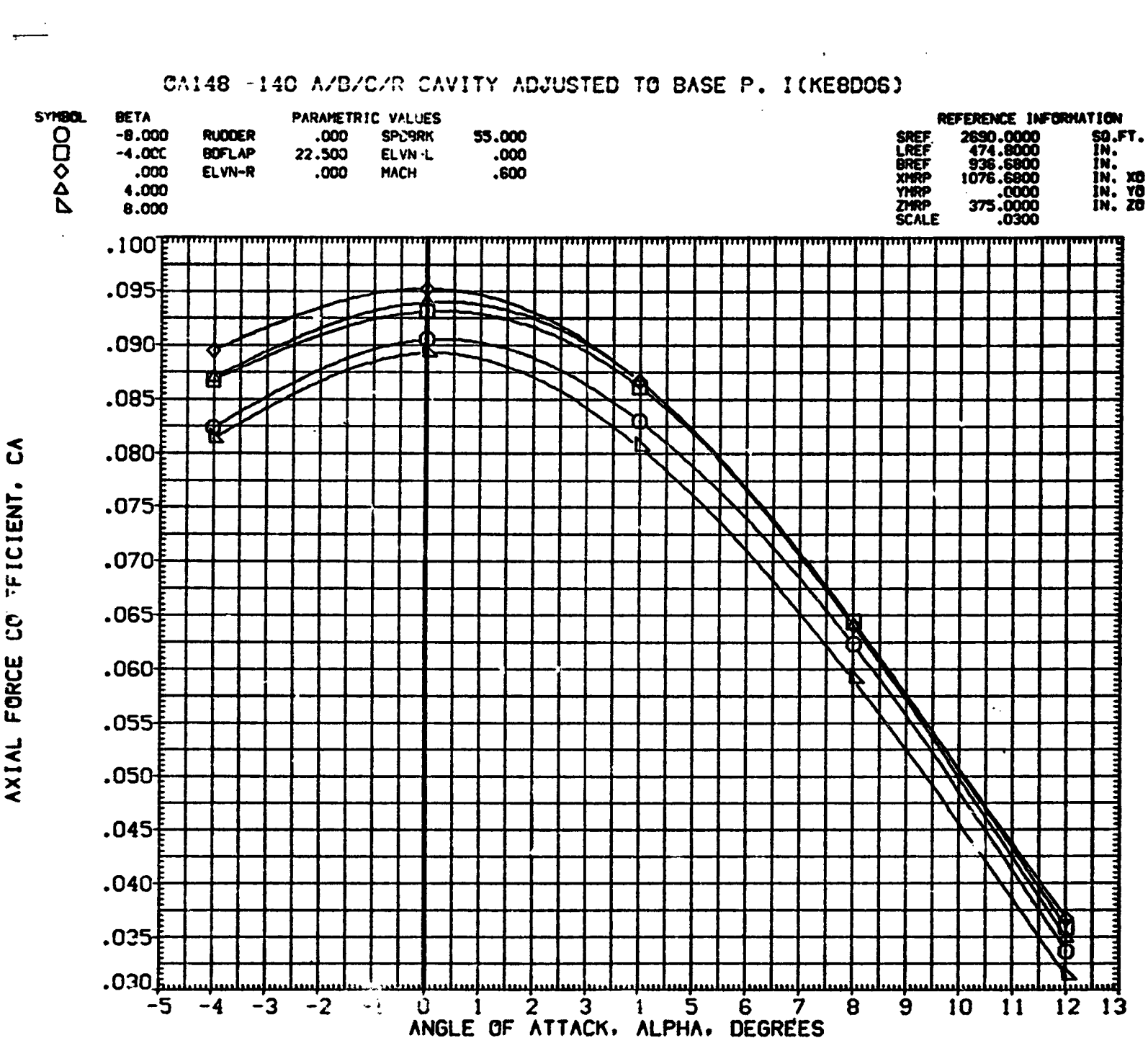


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPOILER	55.000
BOFLAP	22.500	ELVN-L	.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

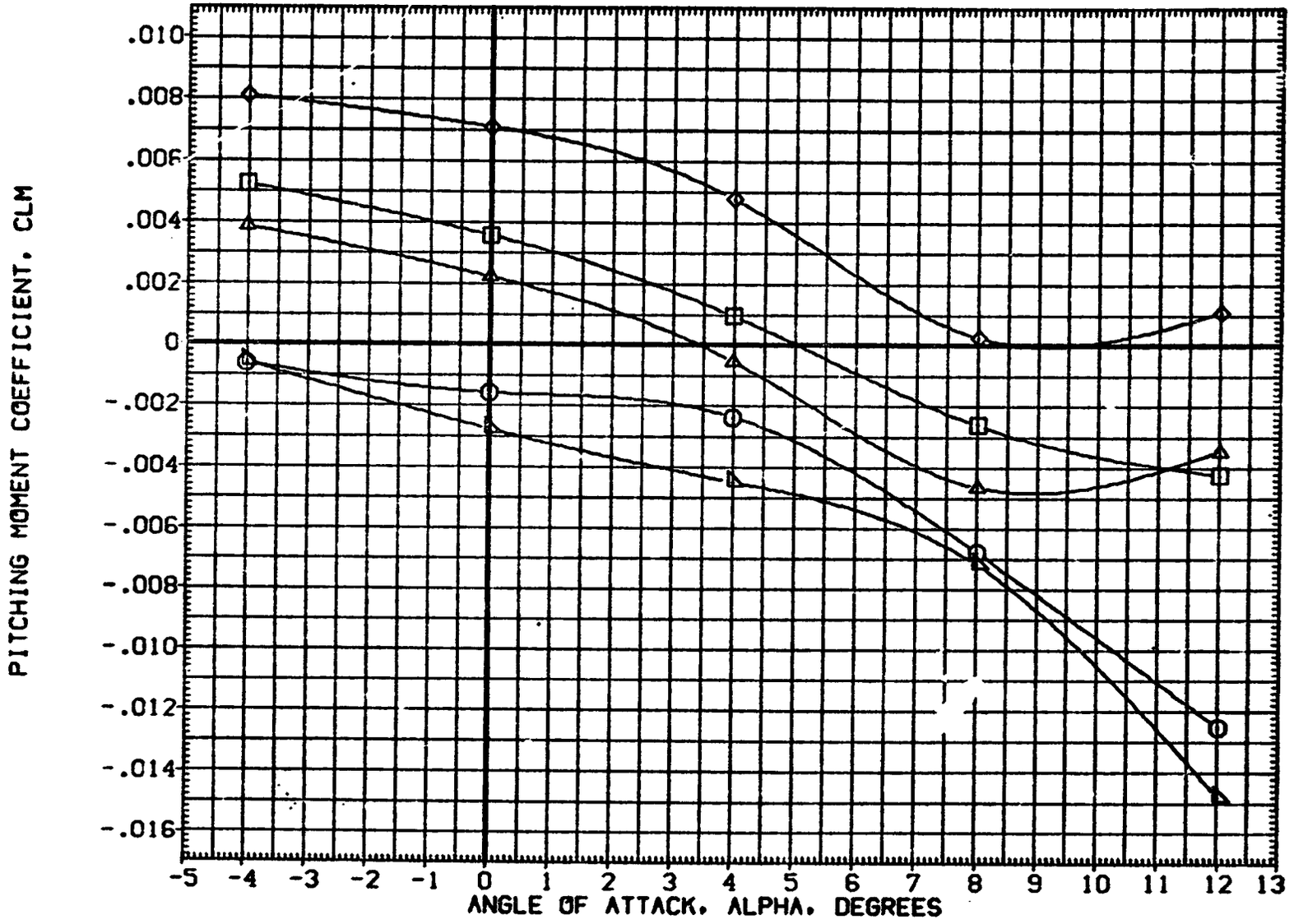


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

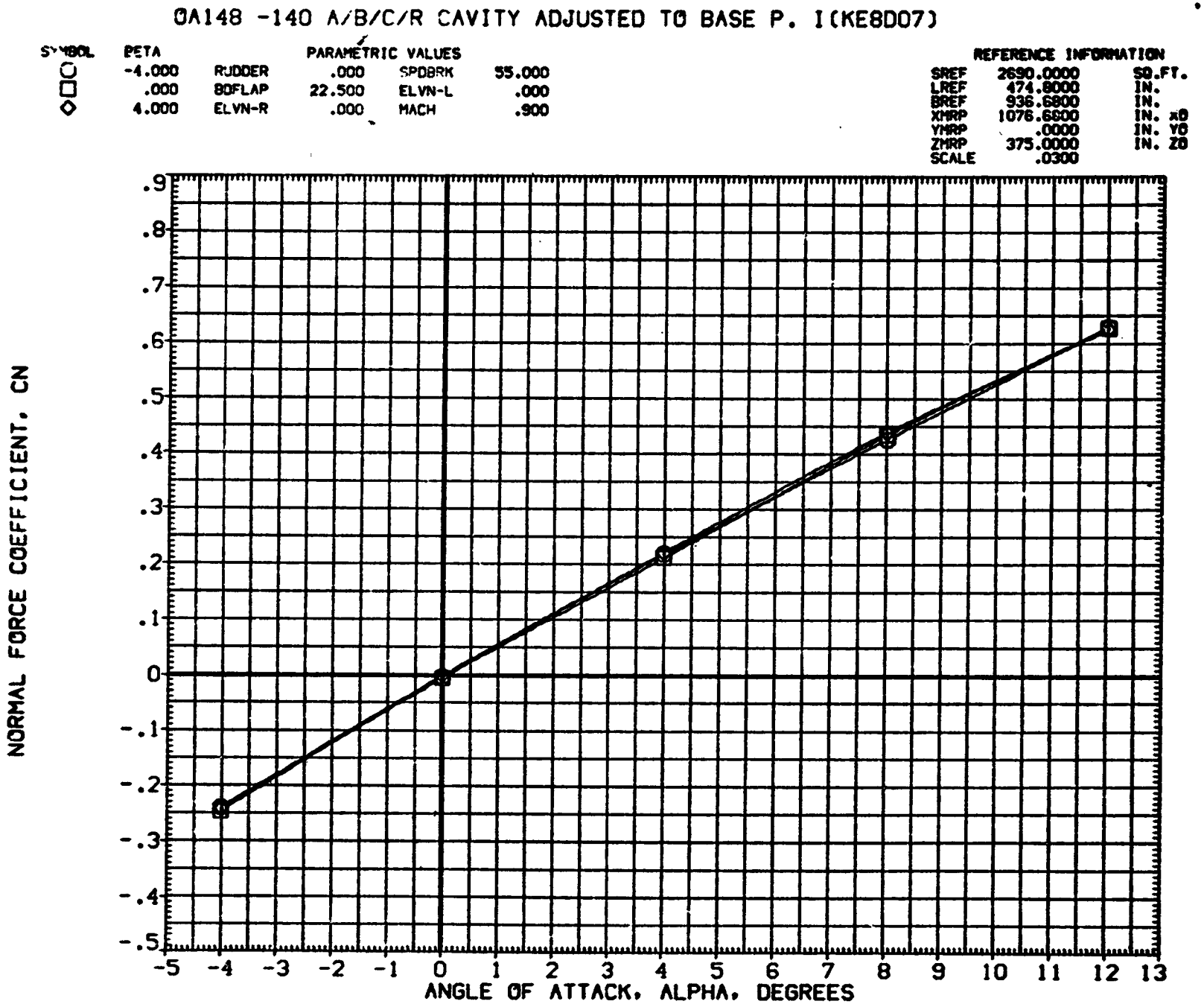


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

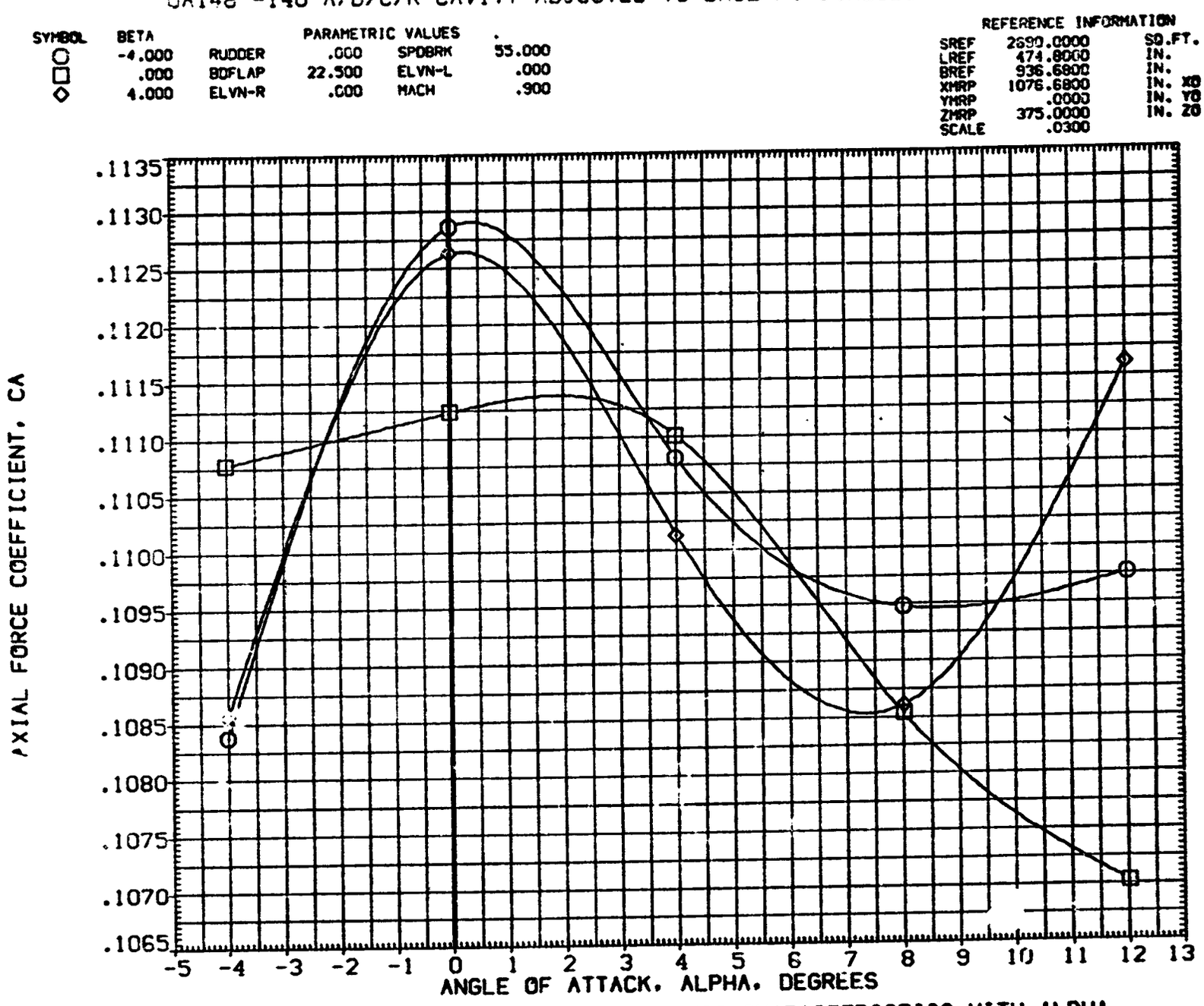


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

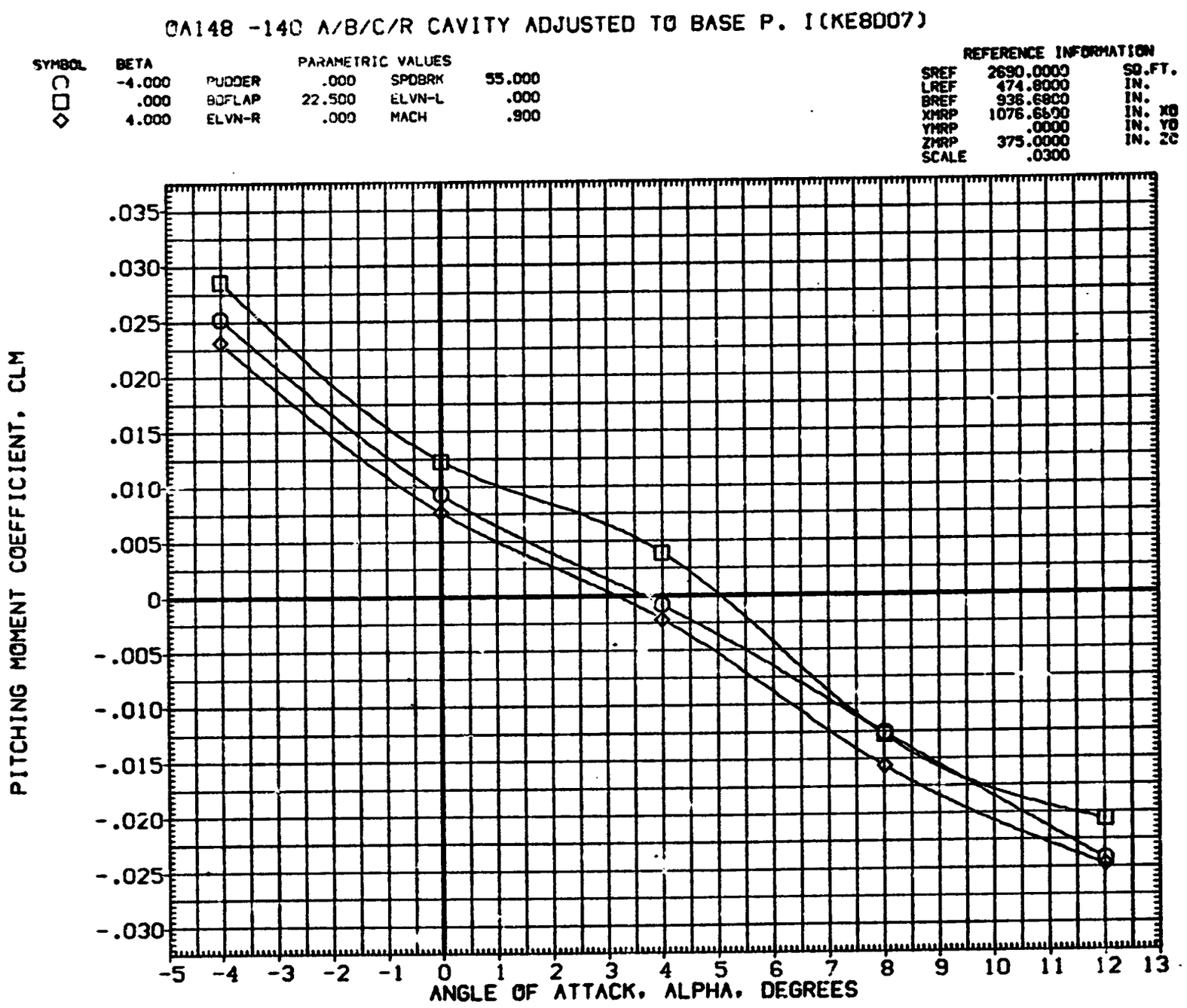


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

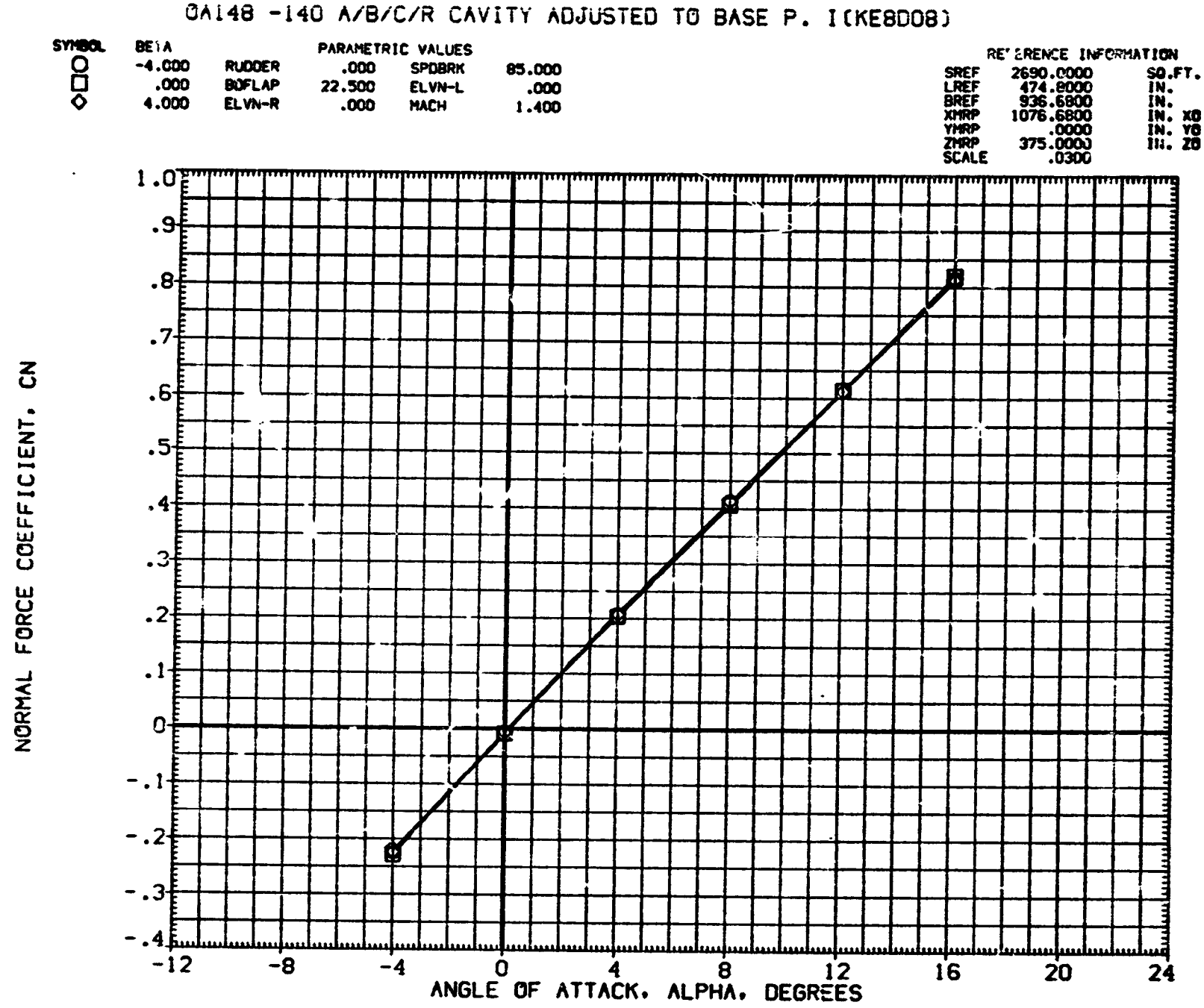


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

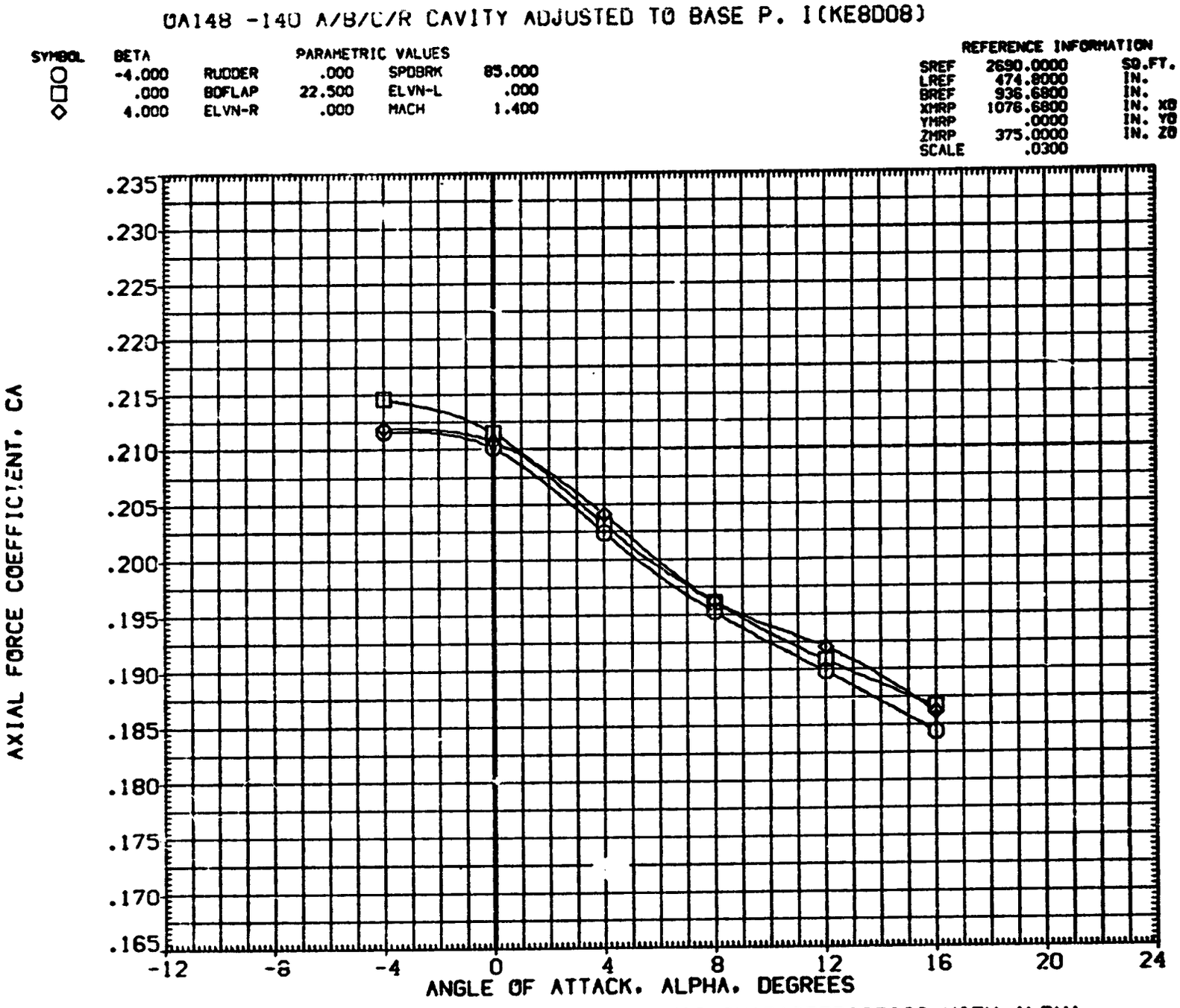


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

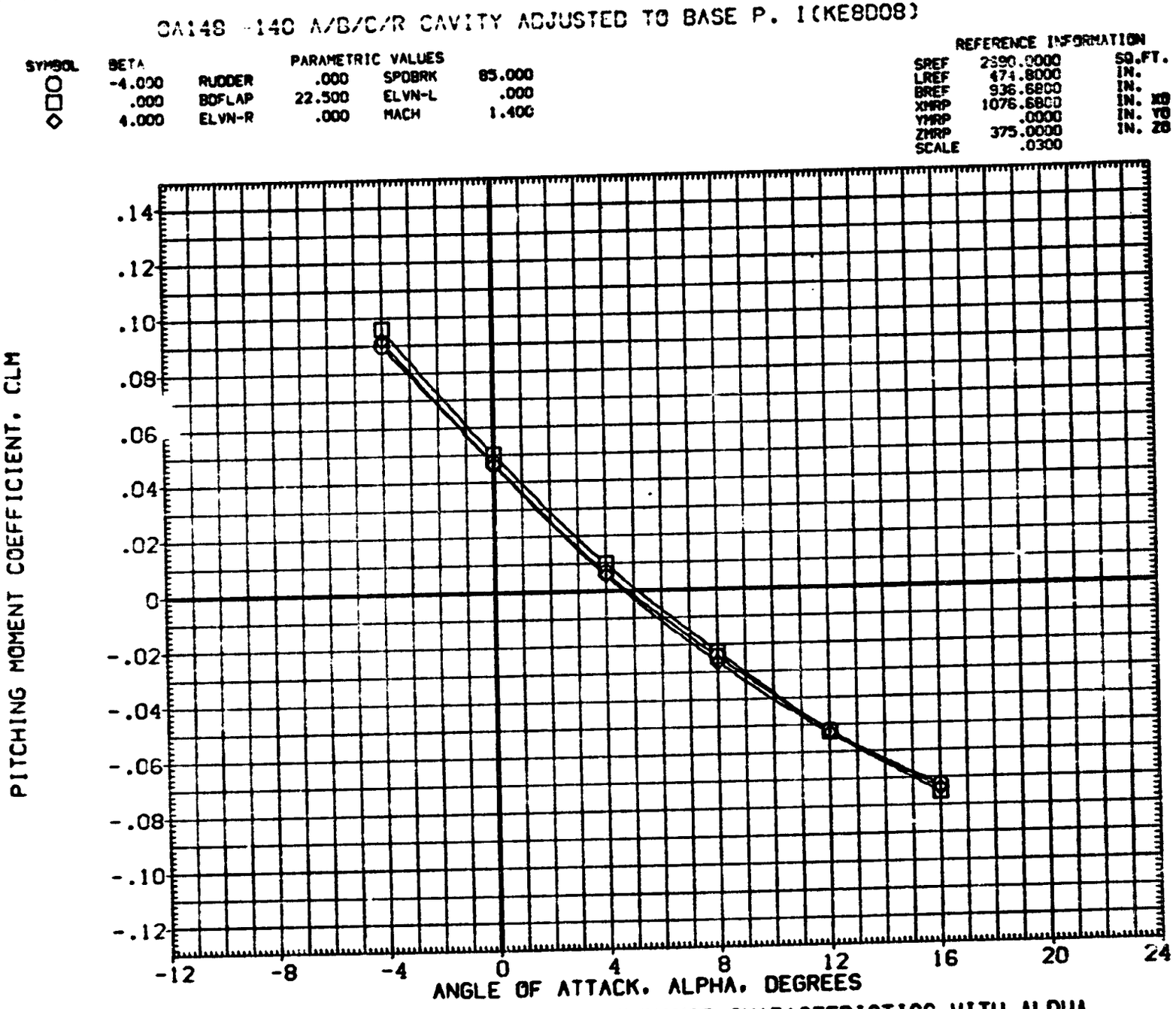


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

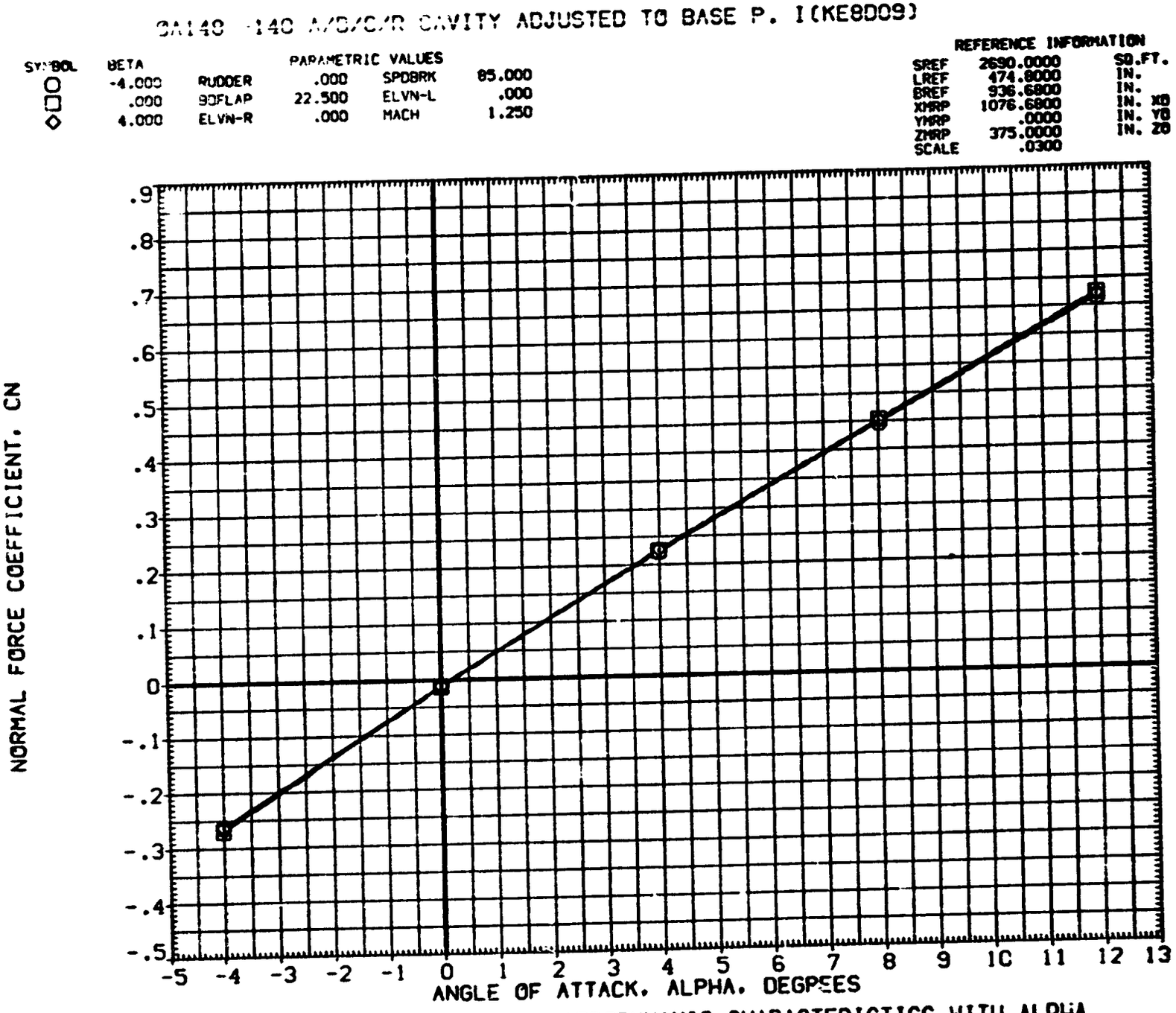


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D09)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	85.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2599.0000	SQ.FT.
LREF	474.9000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

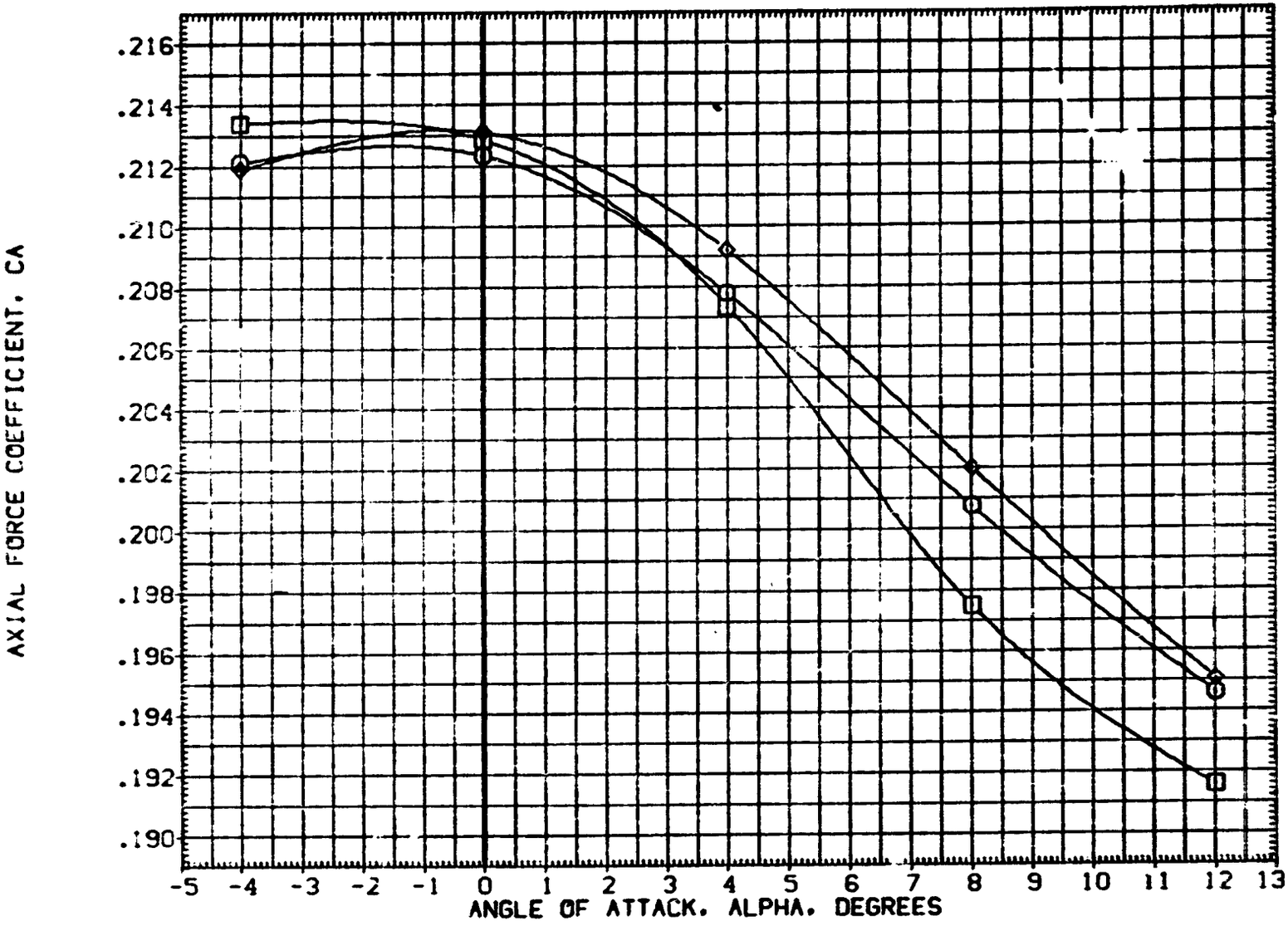


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

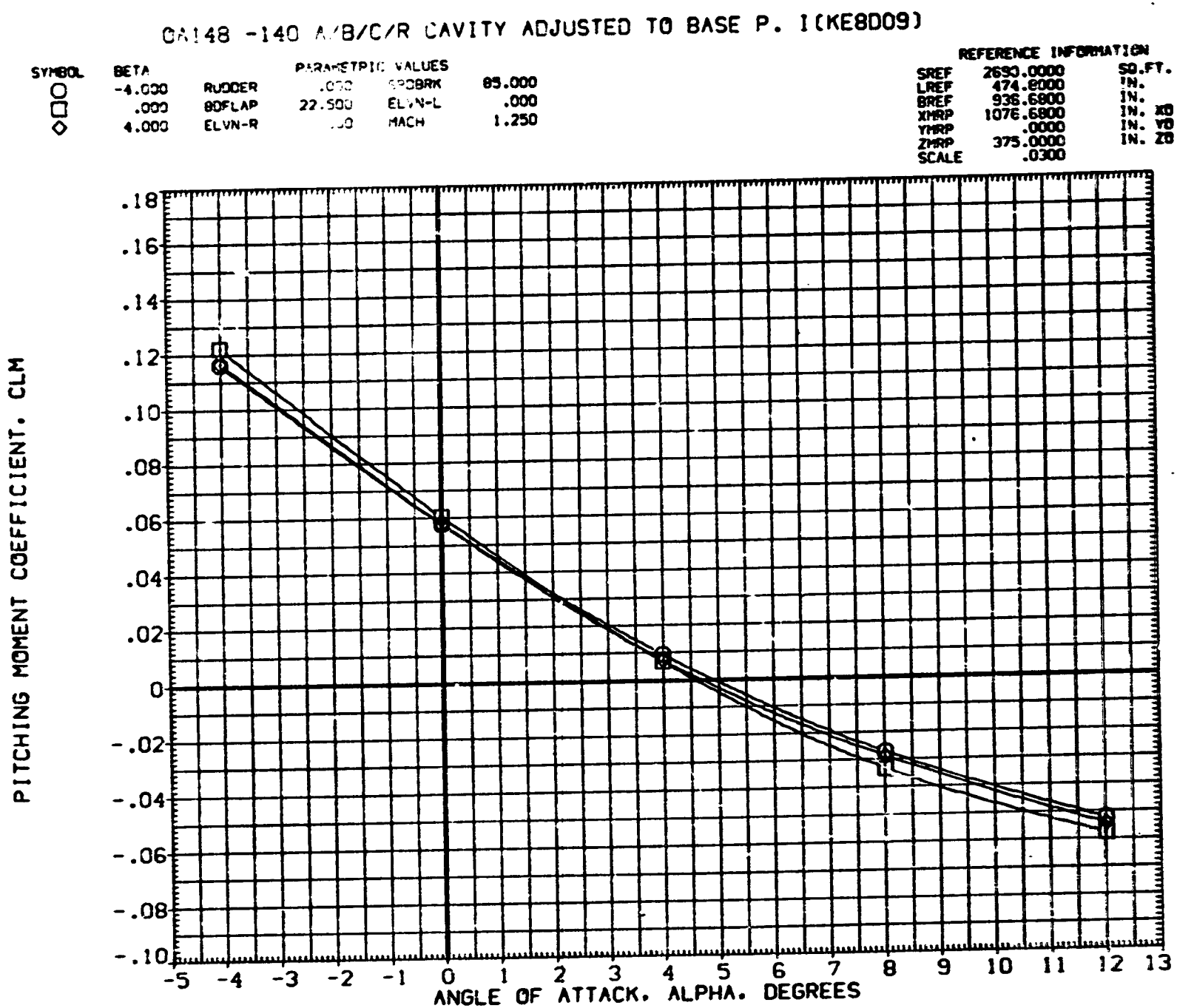


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

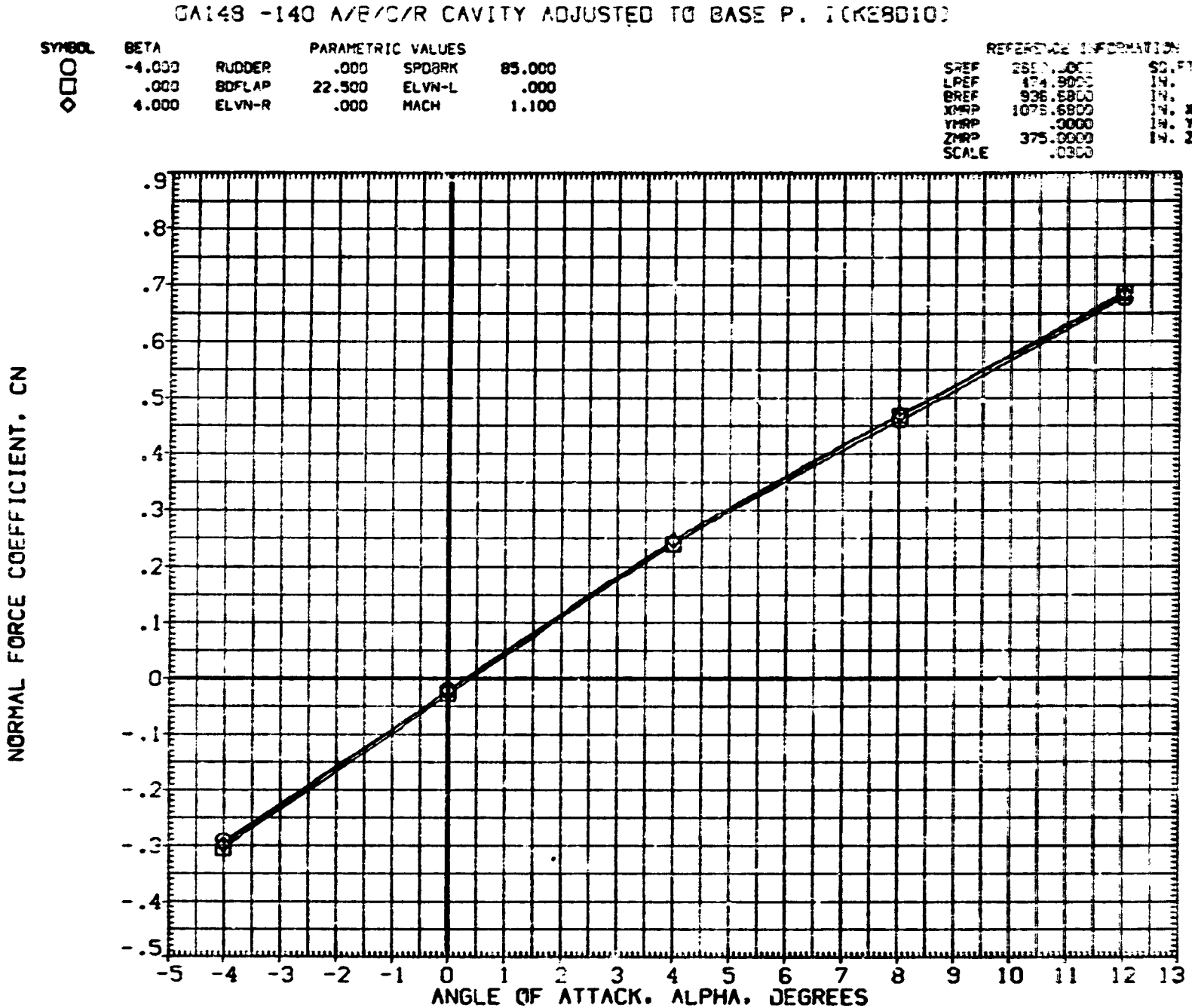


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

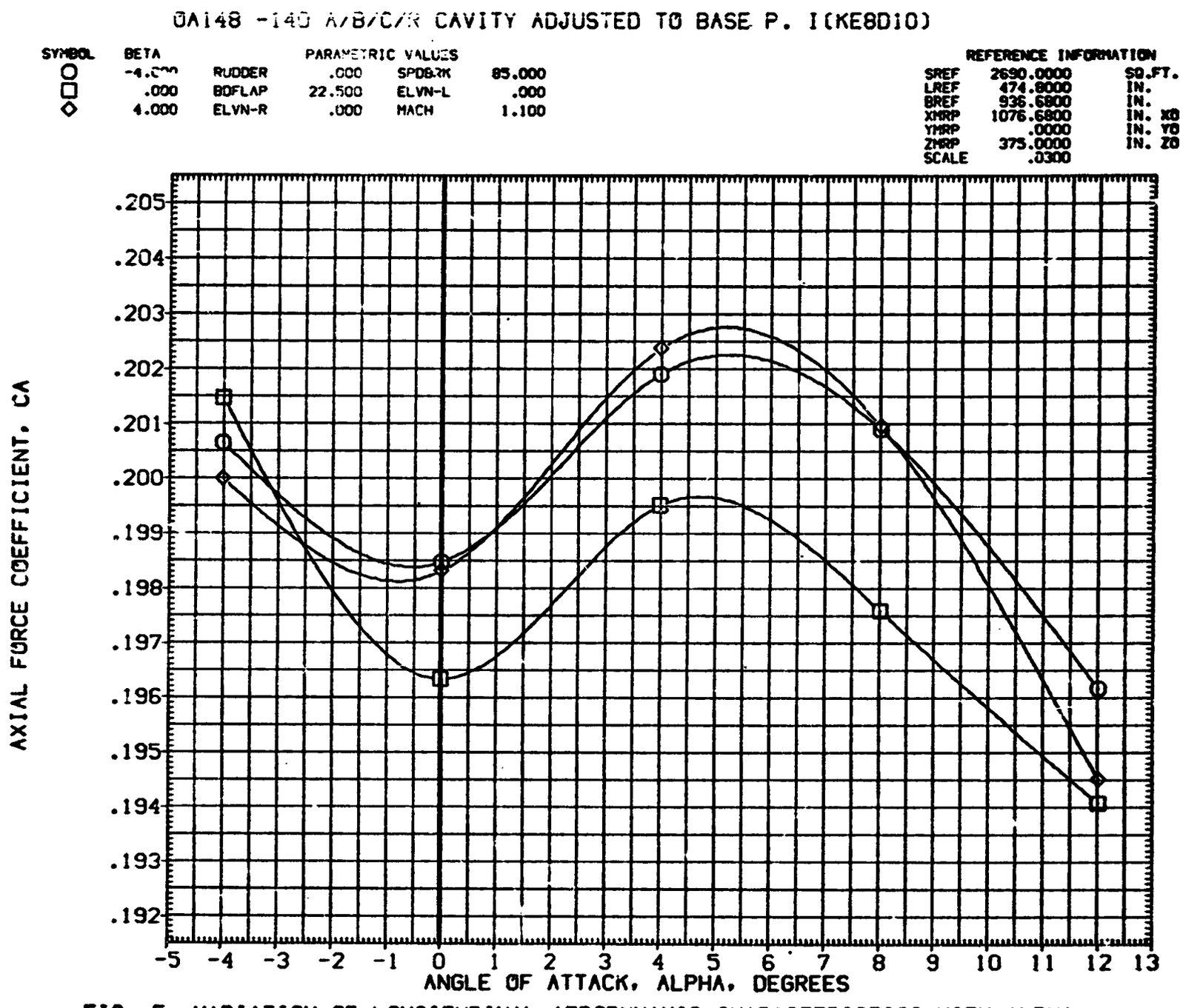


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

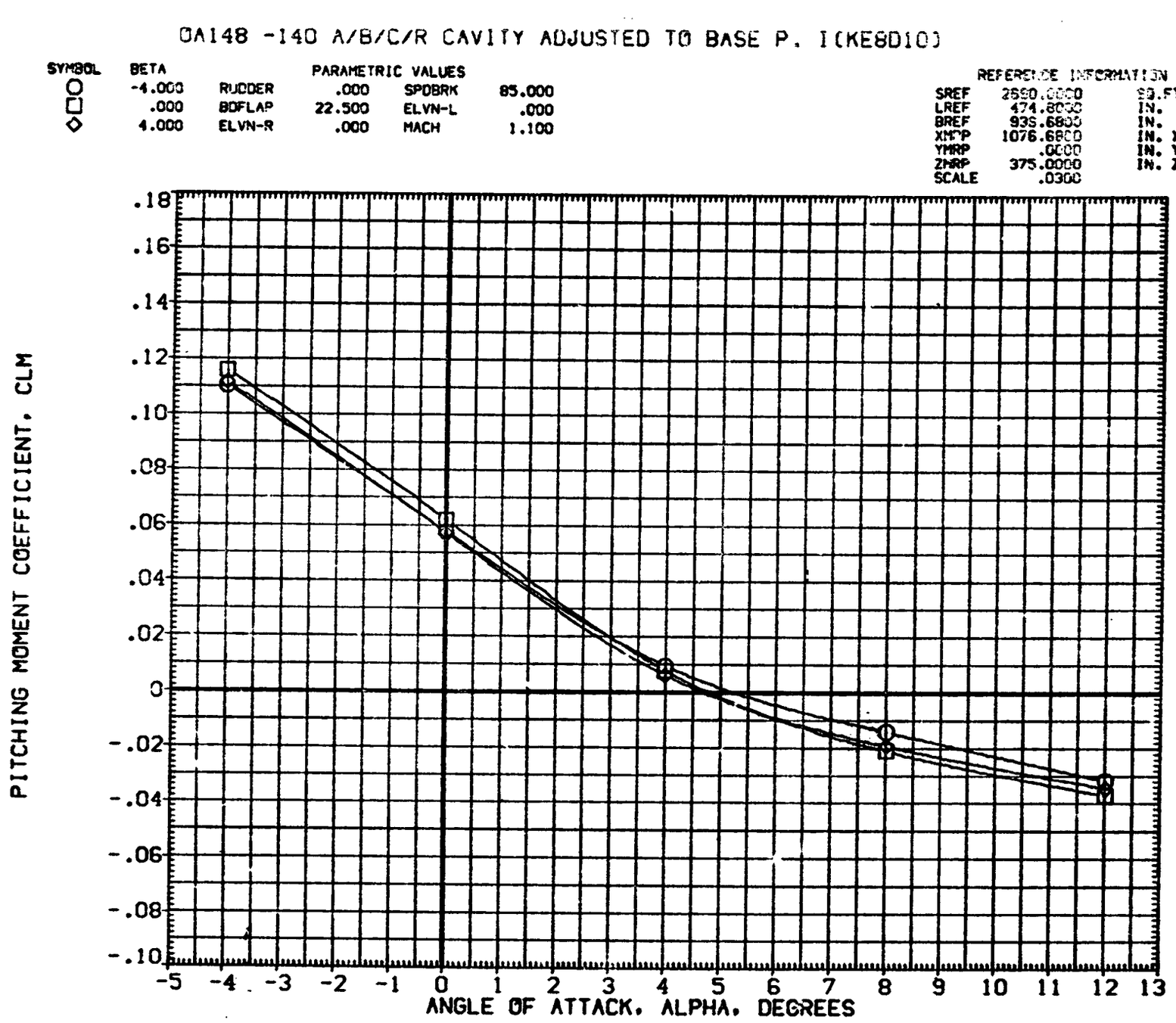


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

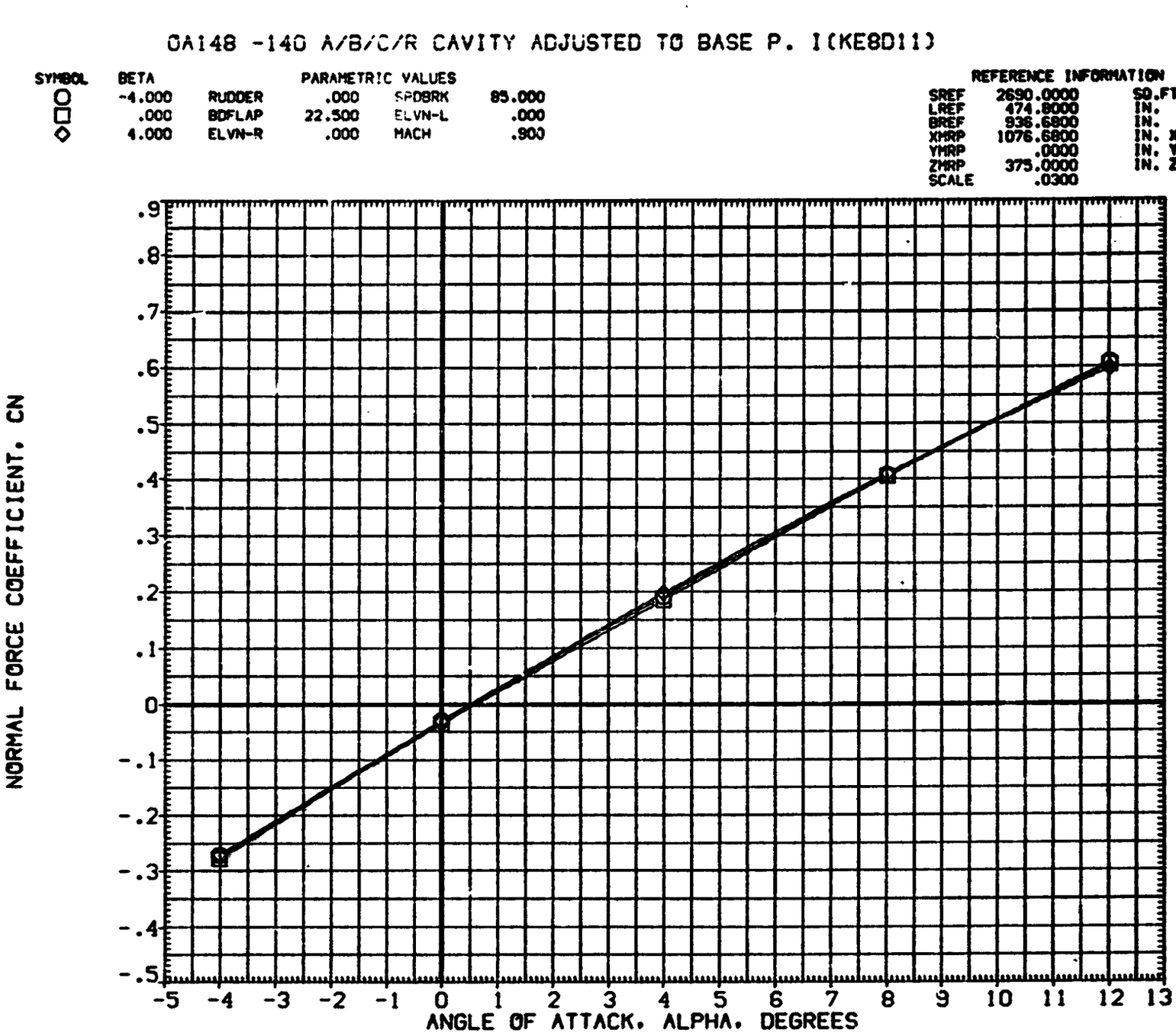


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

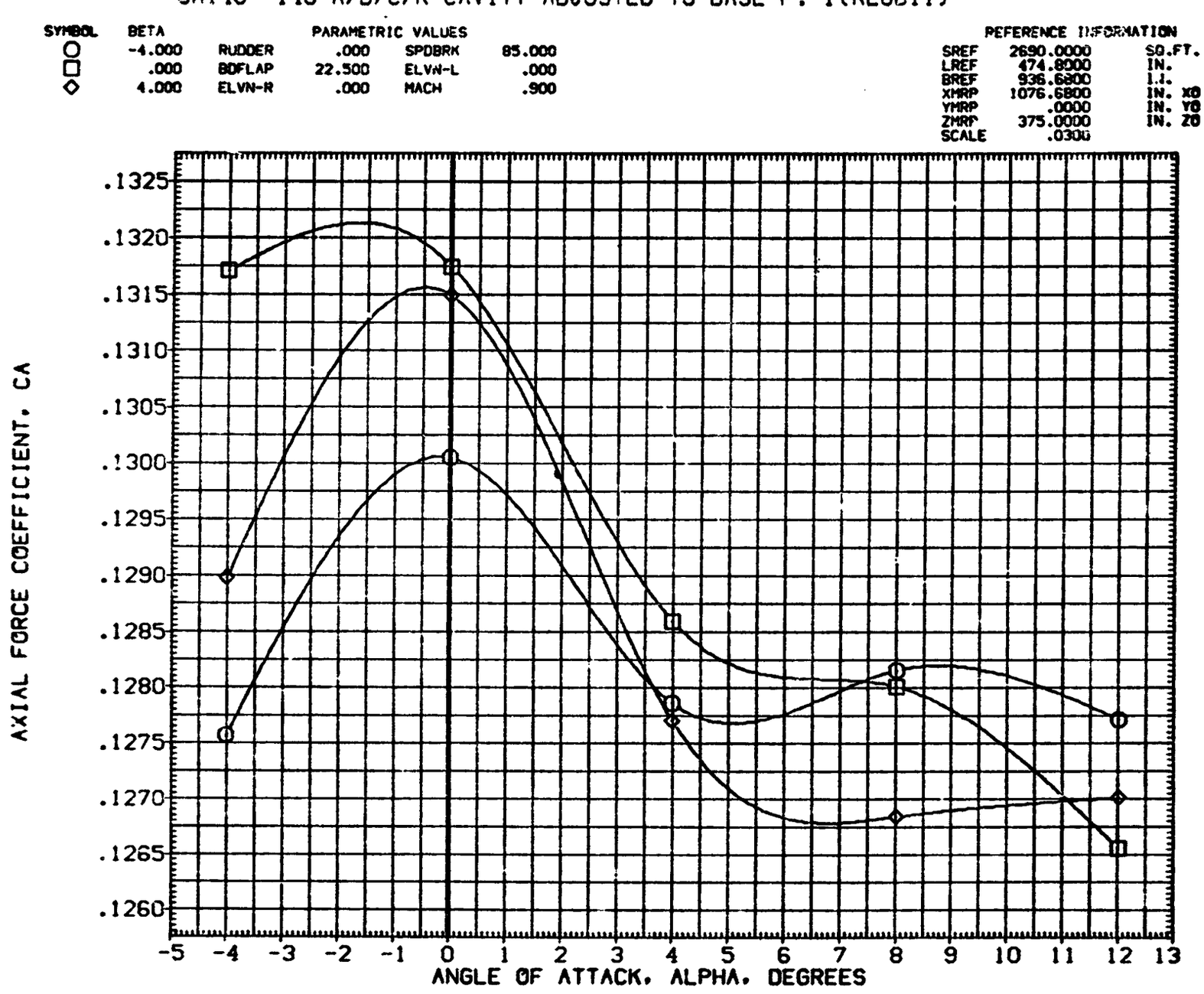


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D11)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	85.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

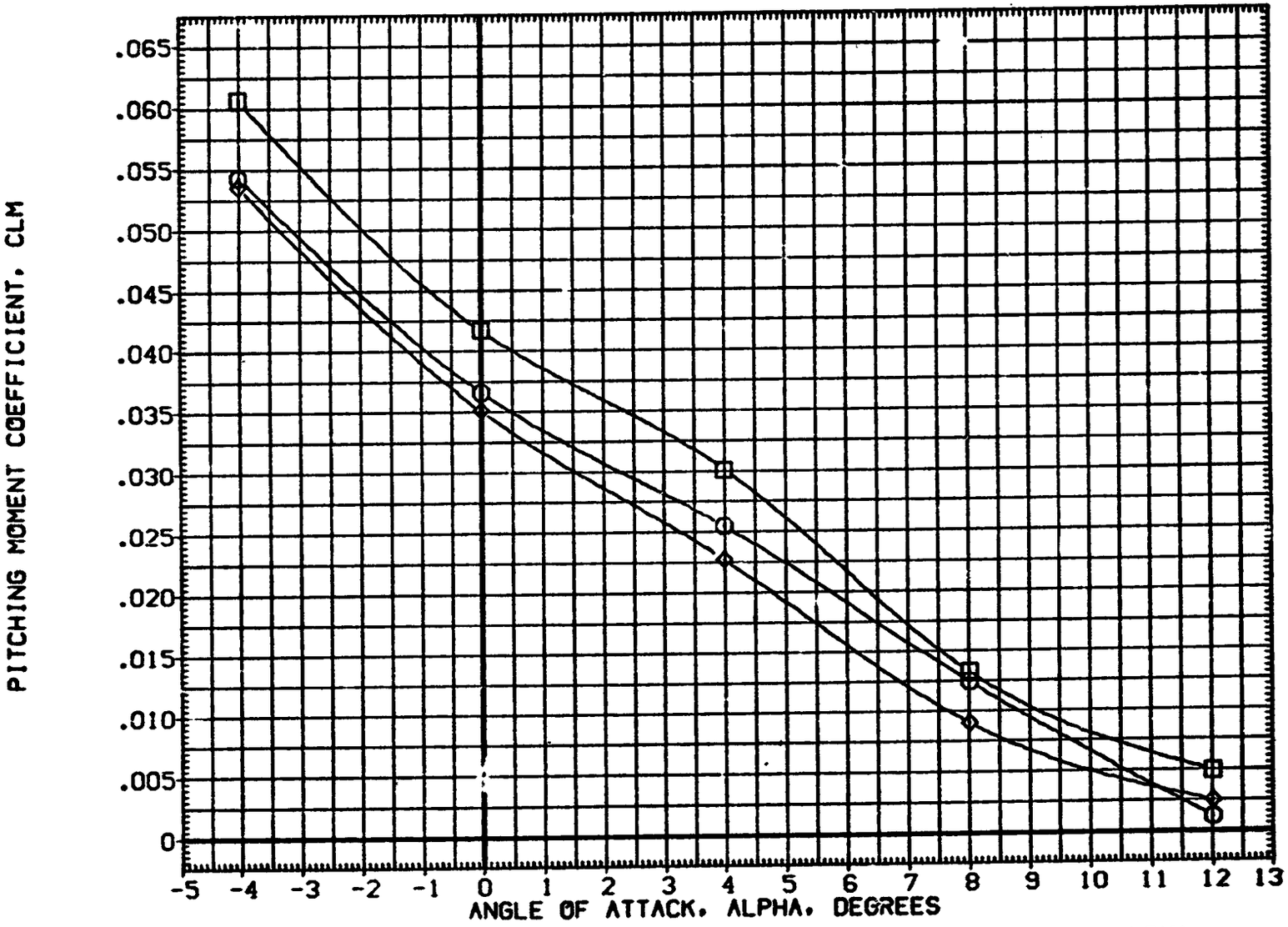


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

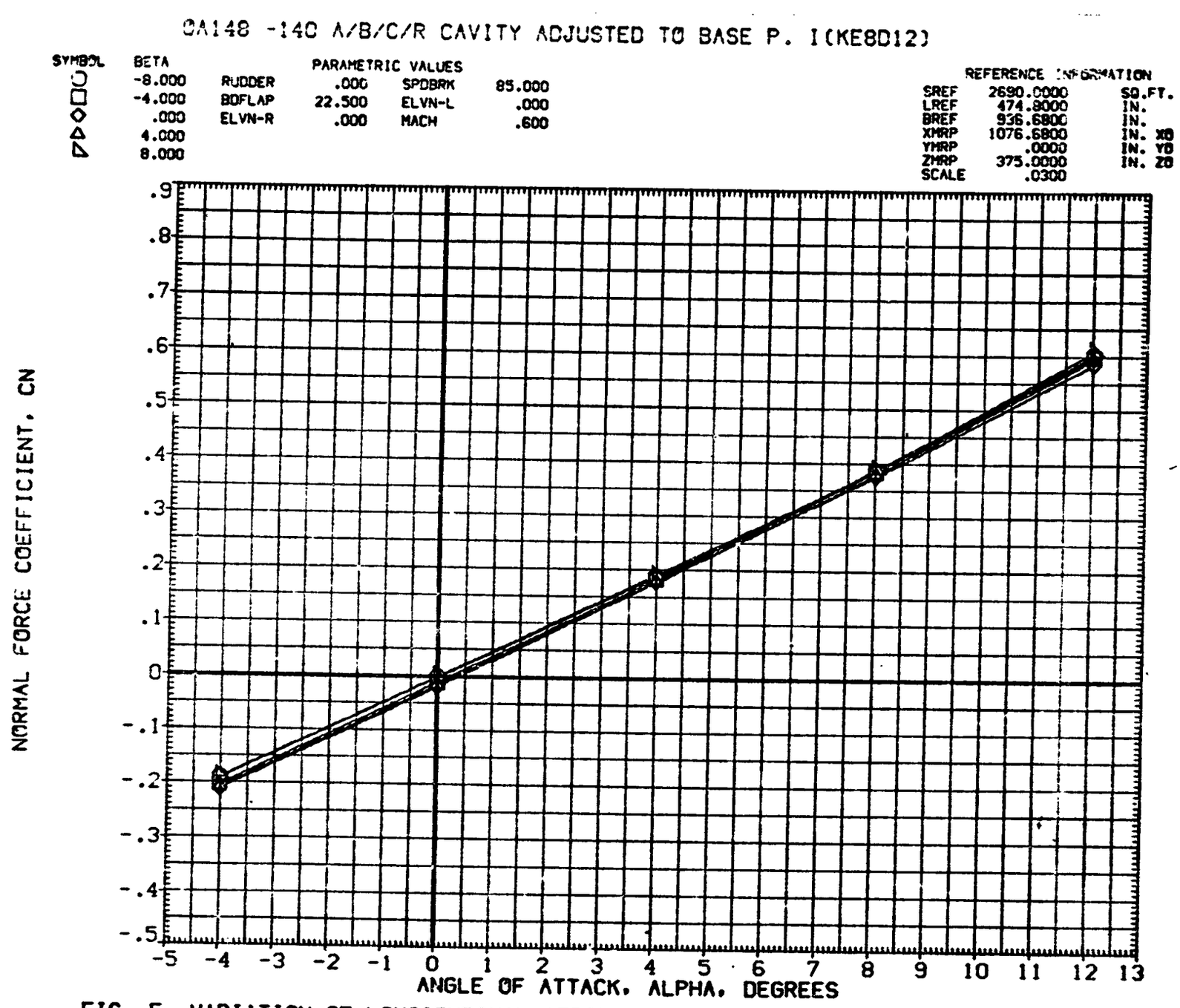


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

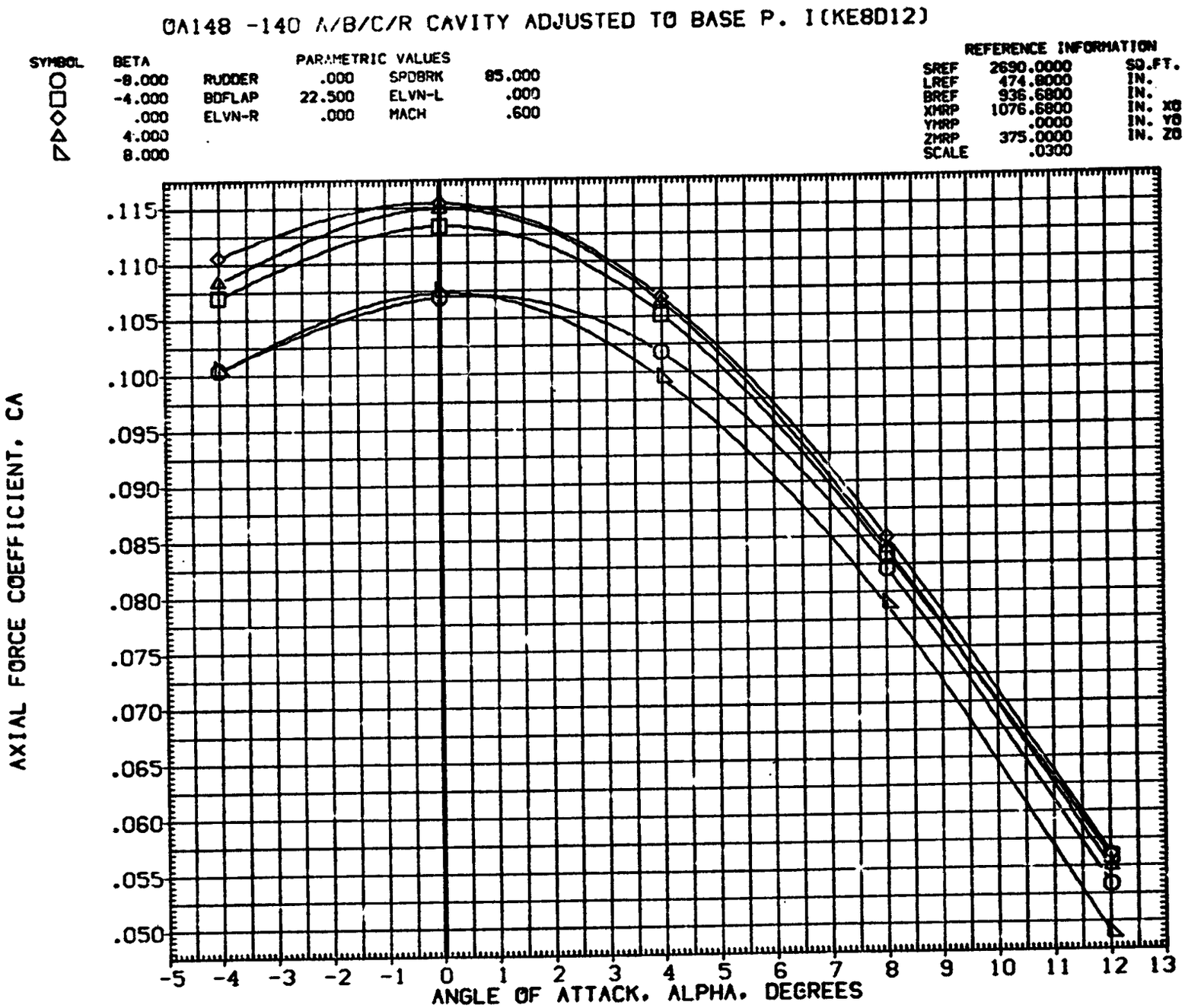


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

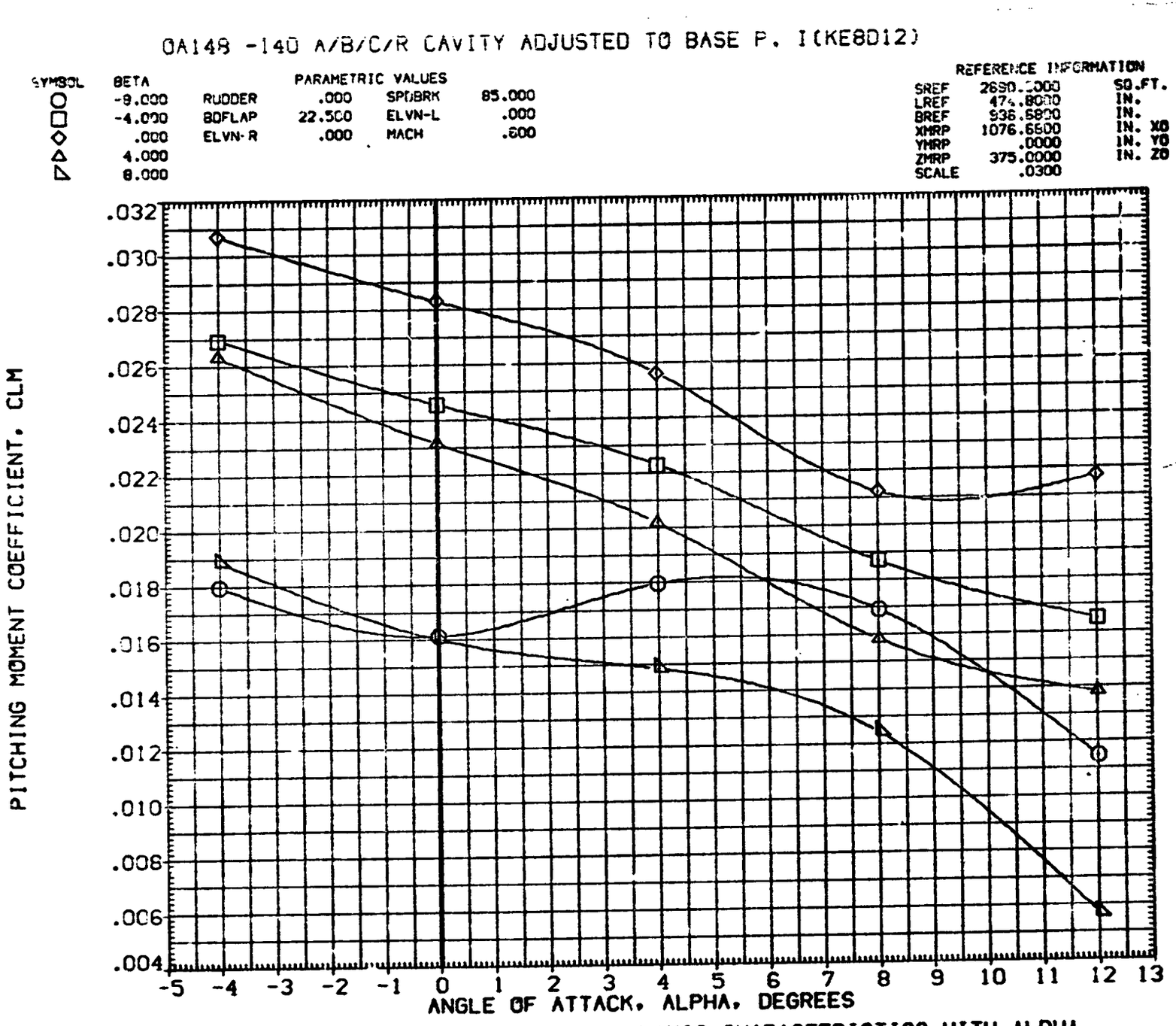


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

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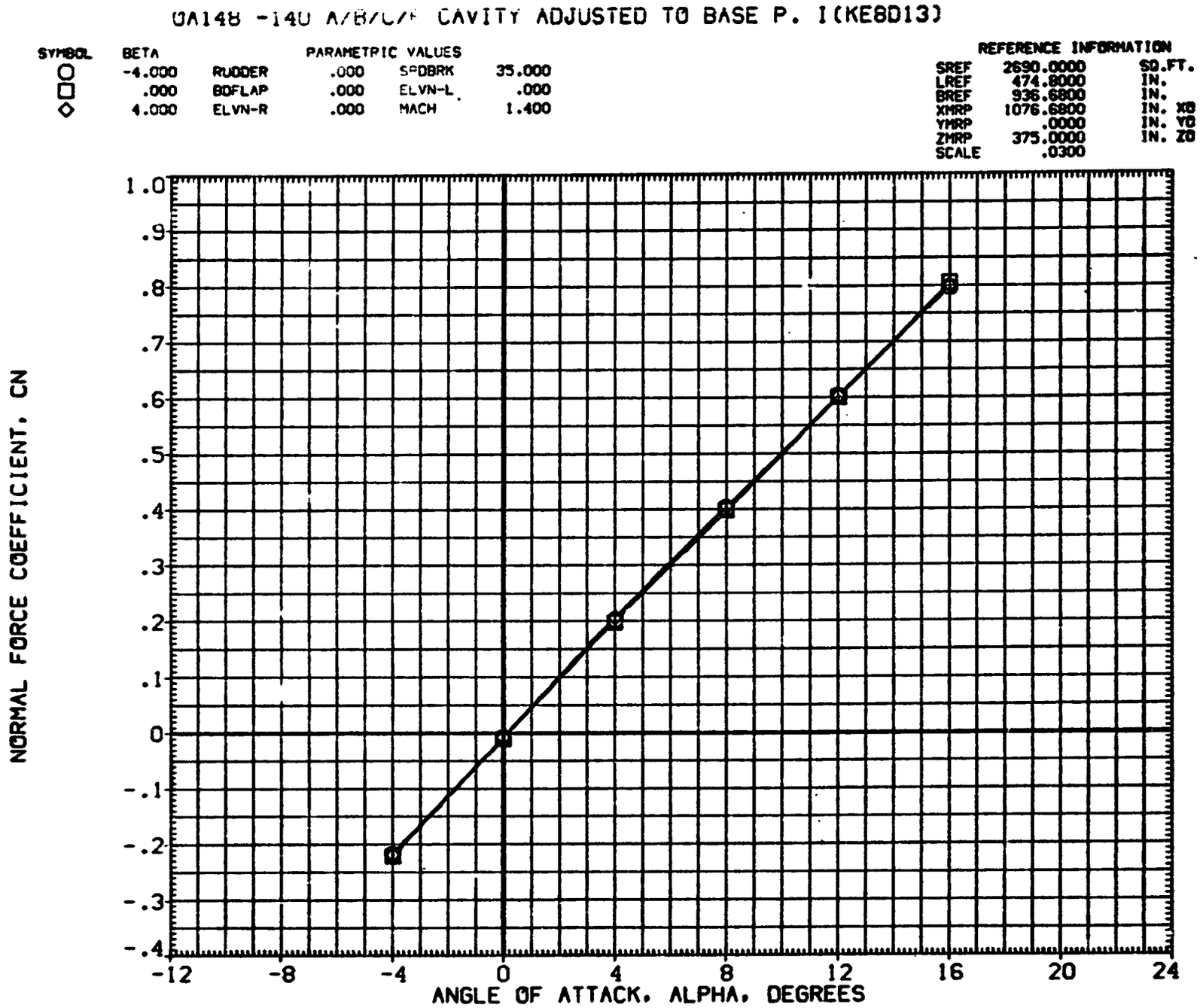


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D13)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

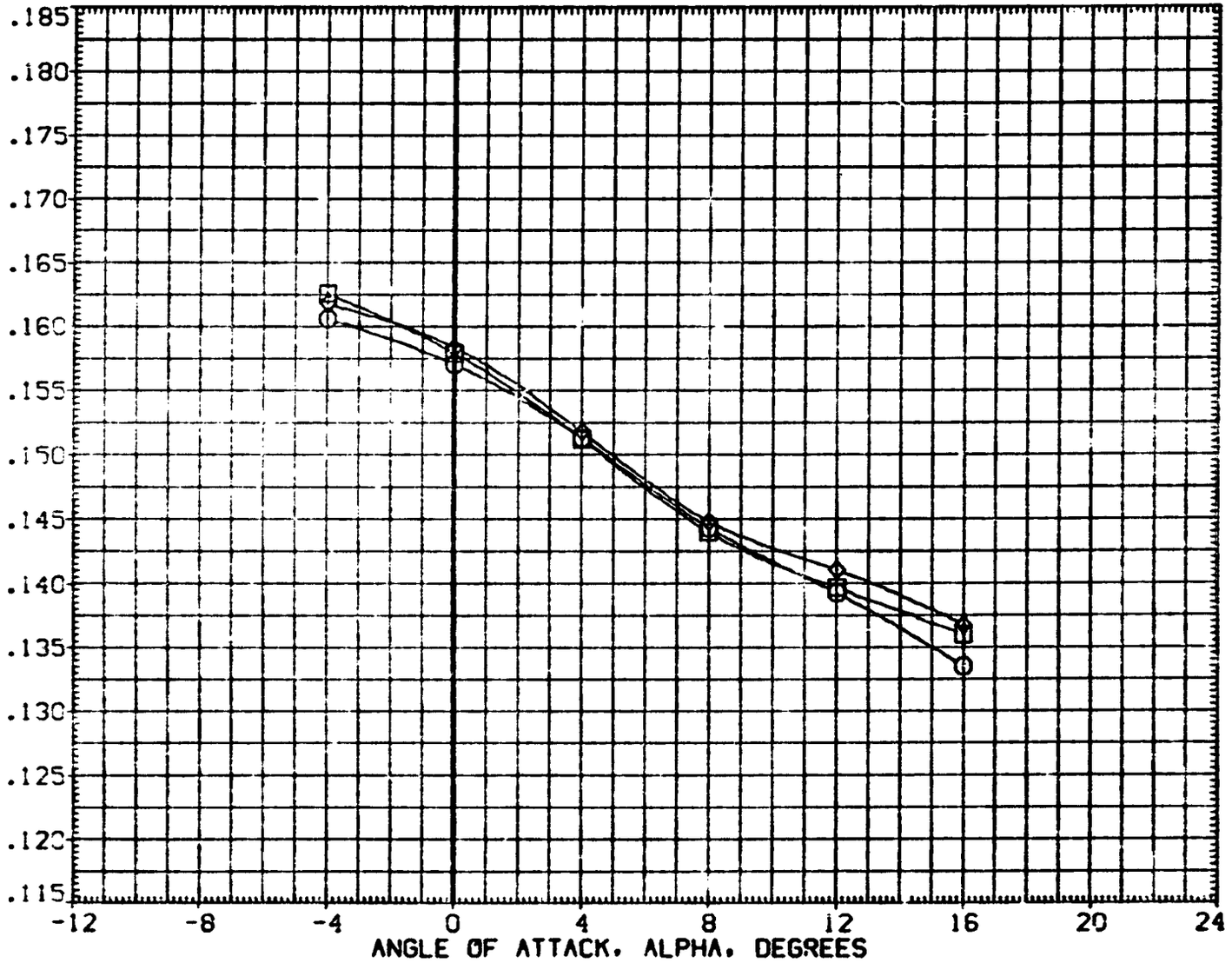


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

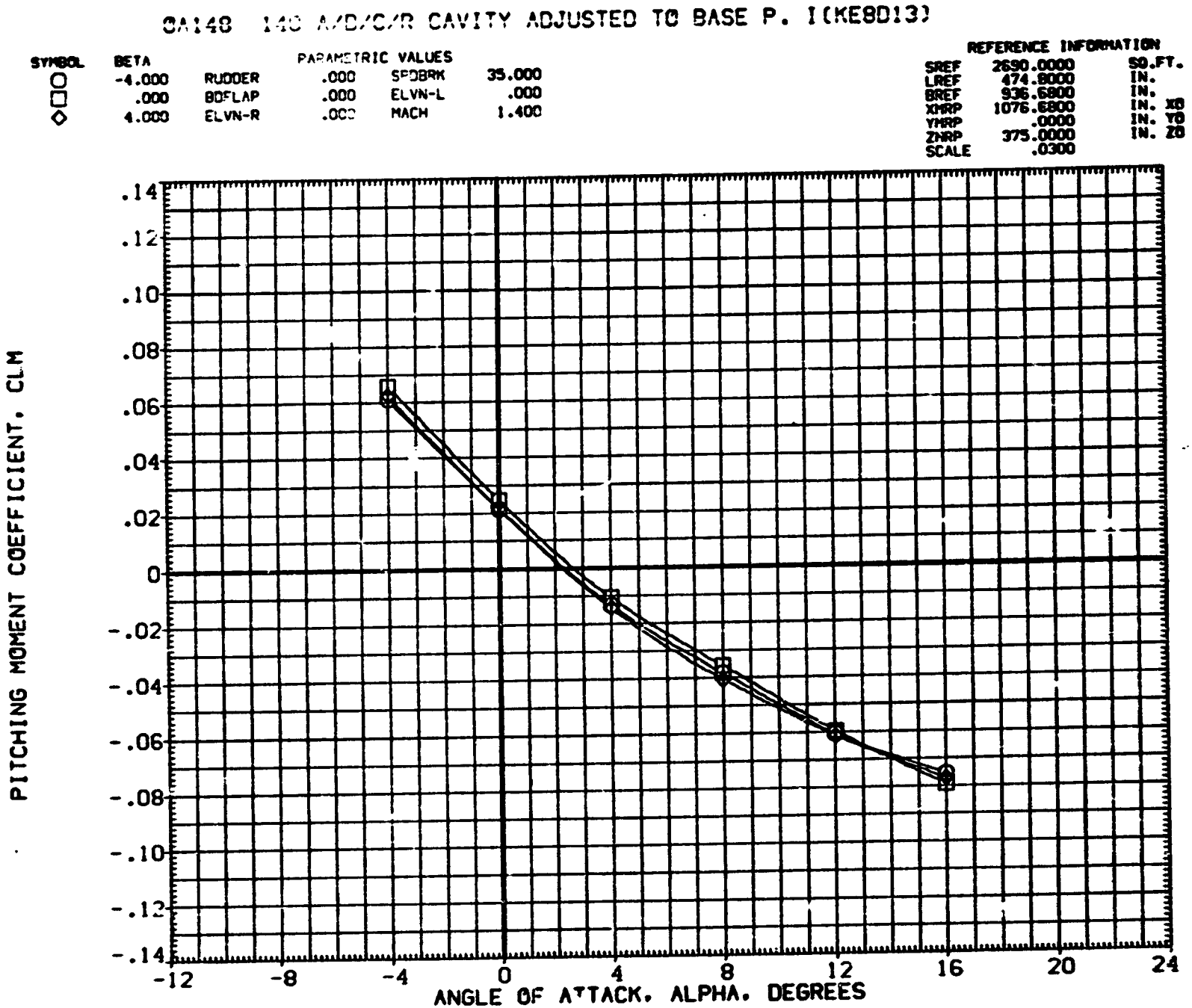


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2630.0000	SQ.FT.
LREF	474.3000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0360	

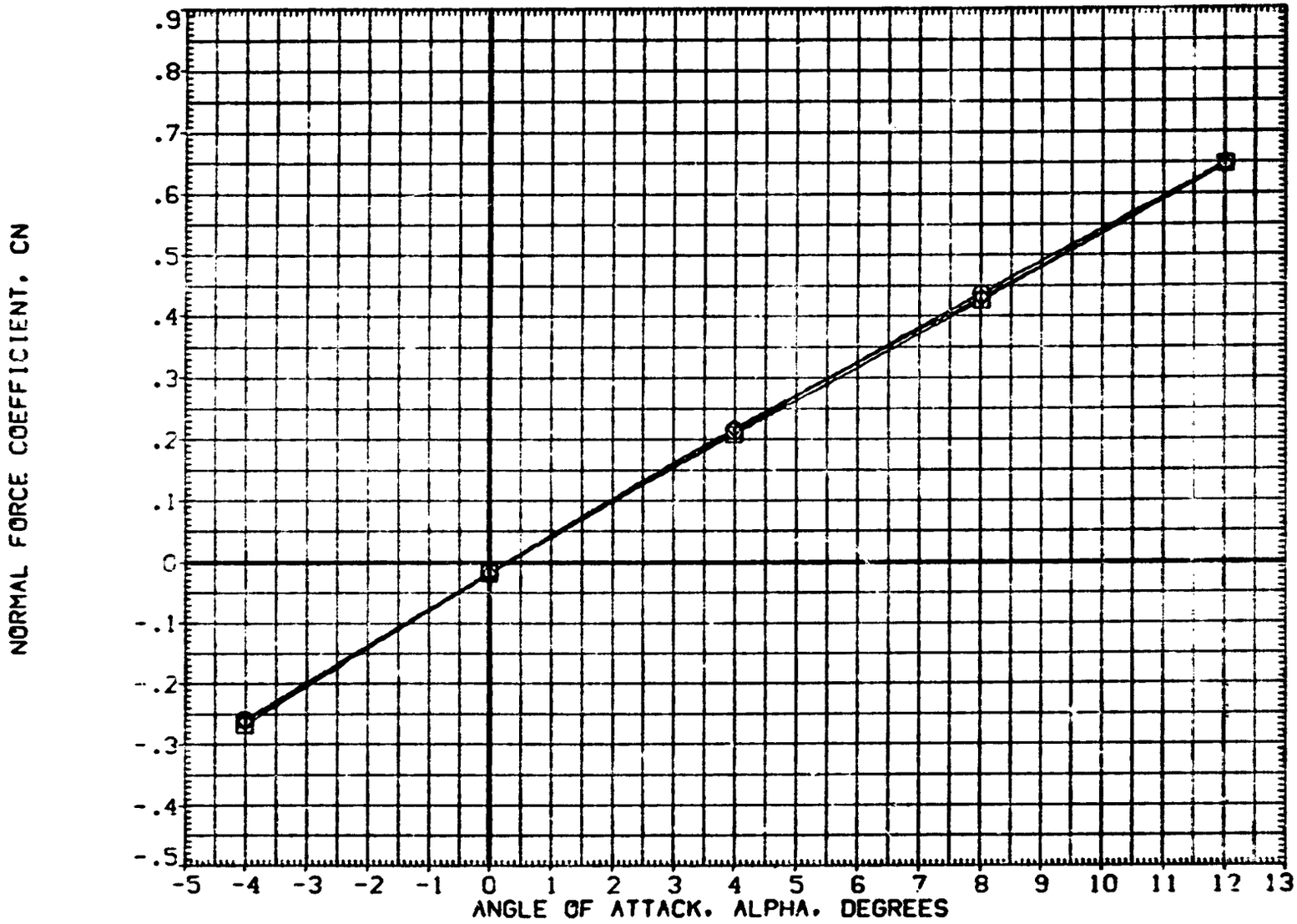


FIG. 5 VARIATIC OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D14)

SYMBOL	BETA	PARAMETRIC VALUES			
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

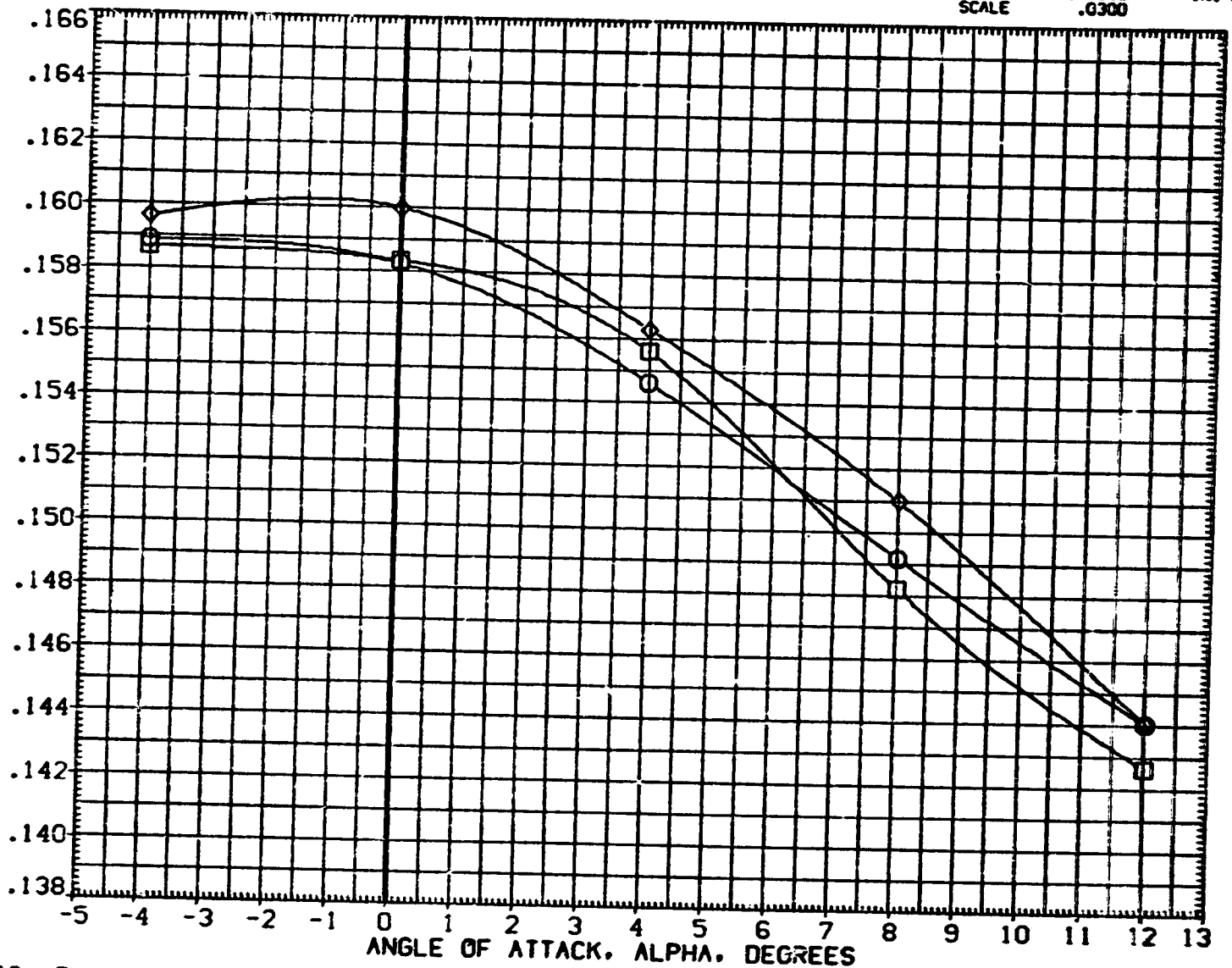


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

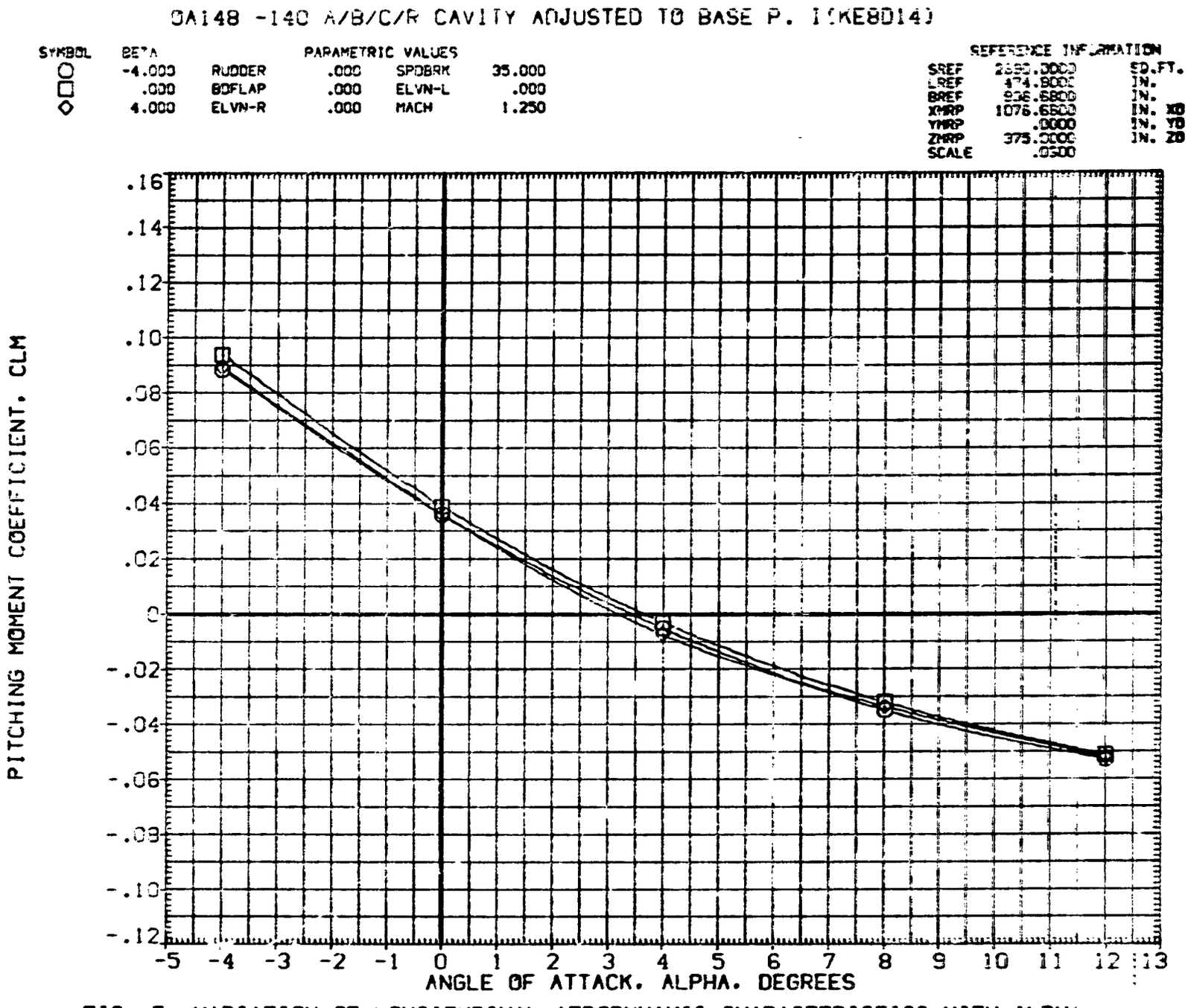


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

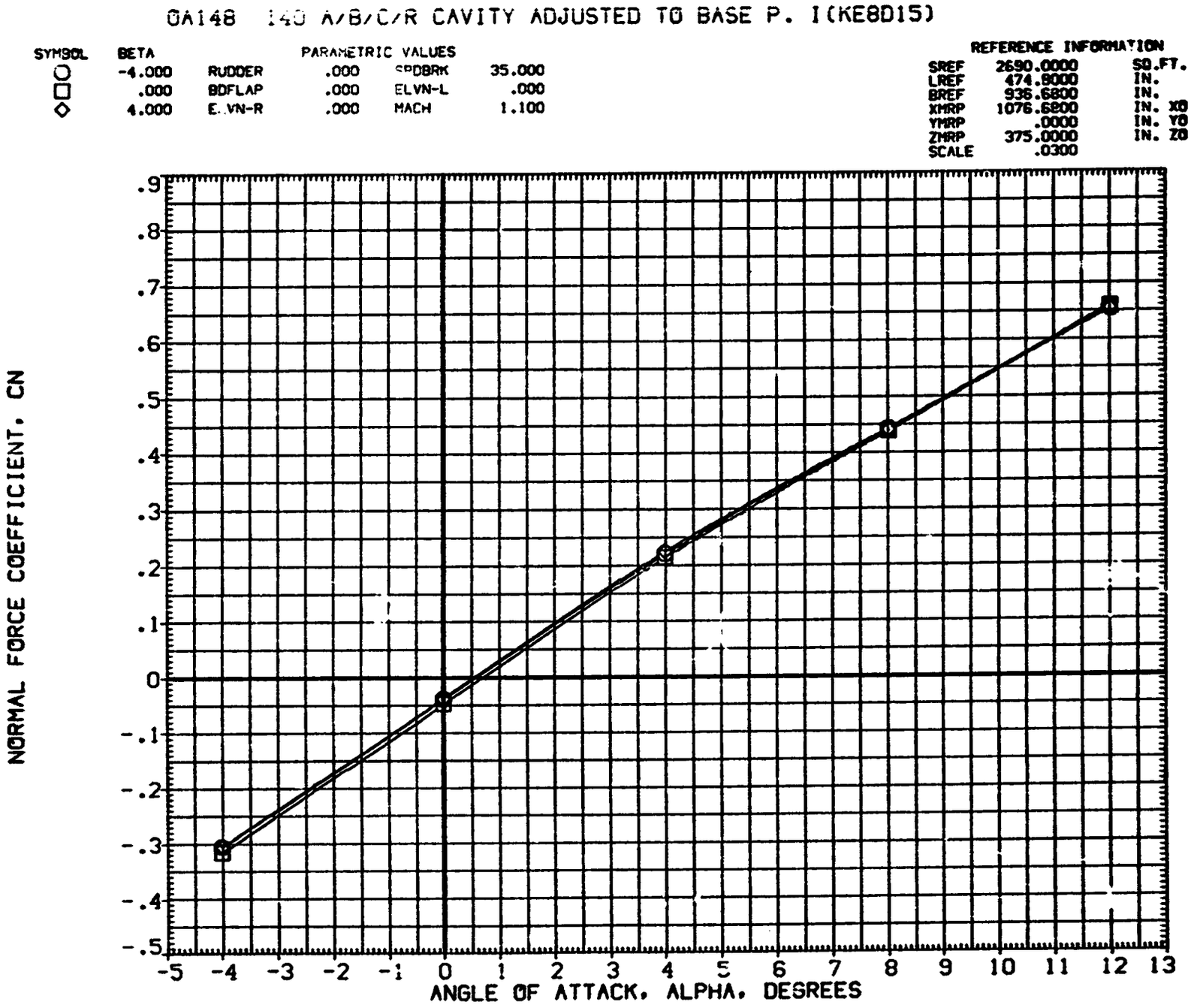


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

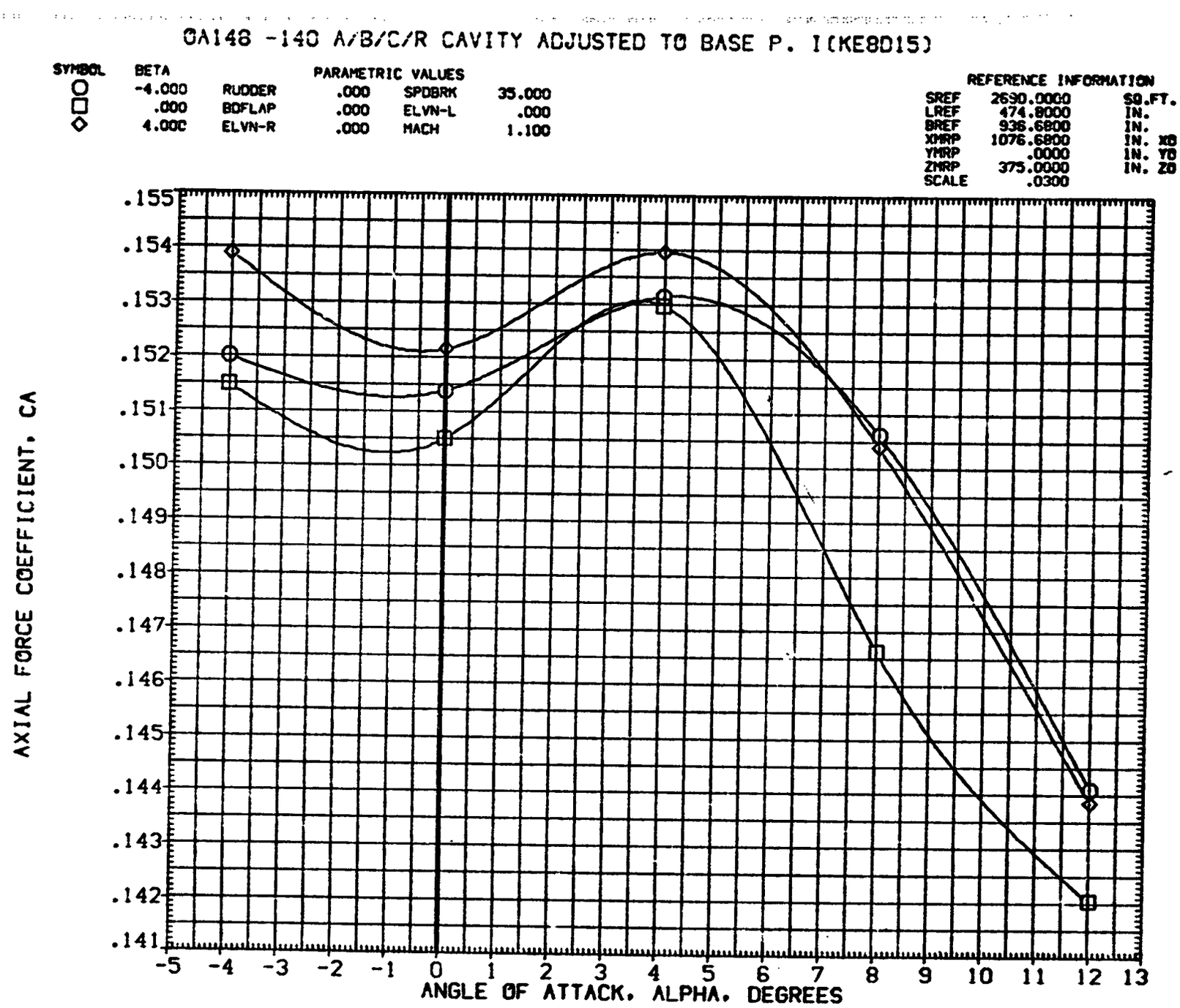


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

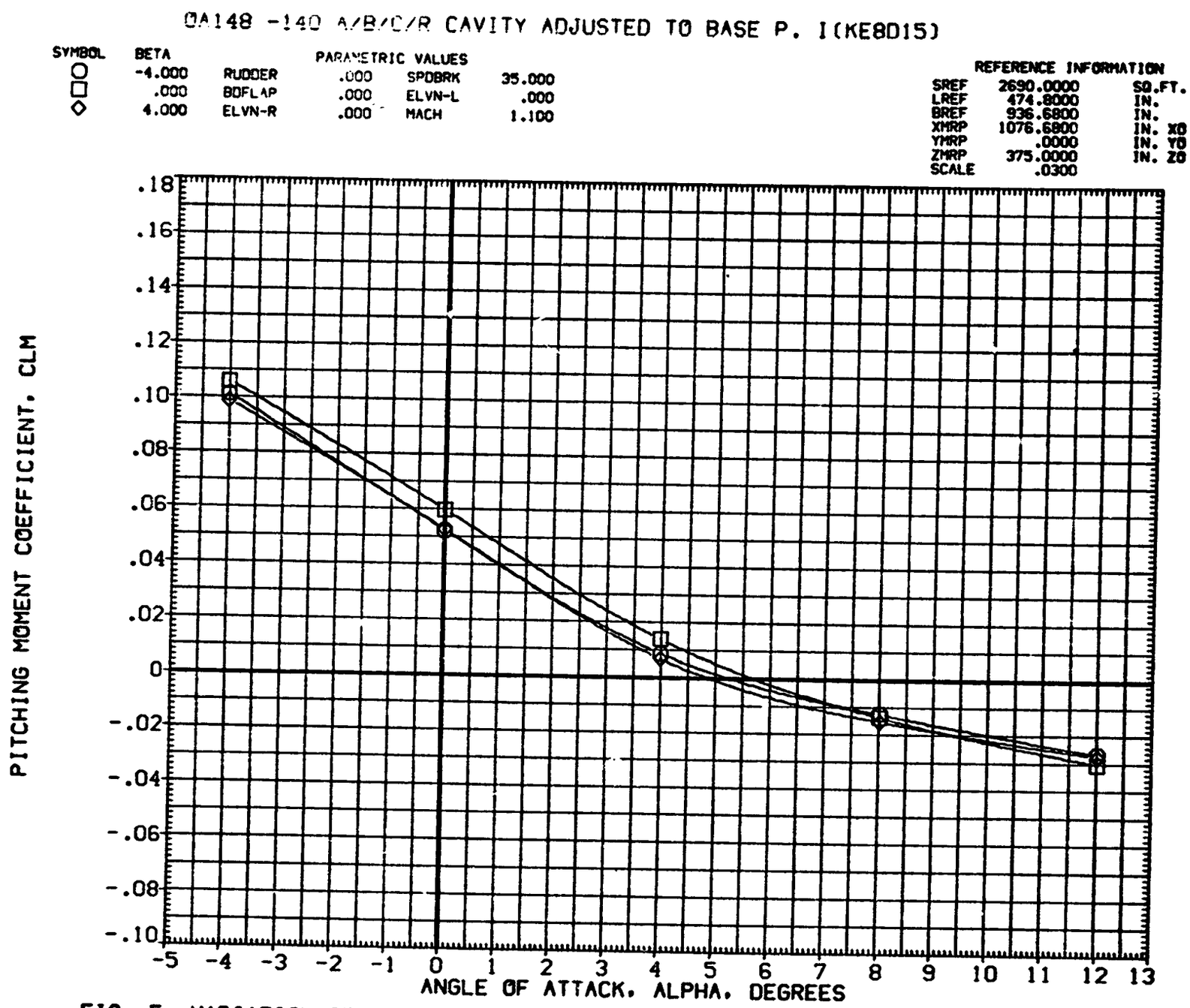


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

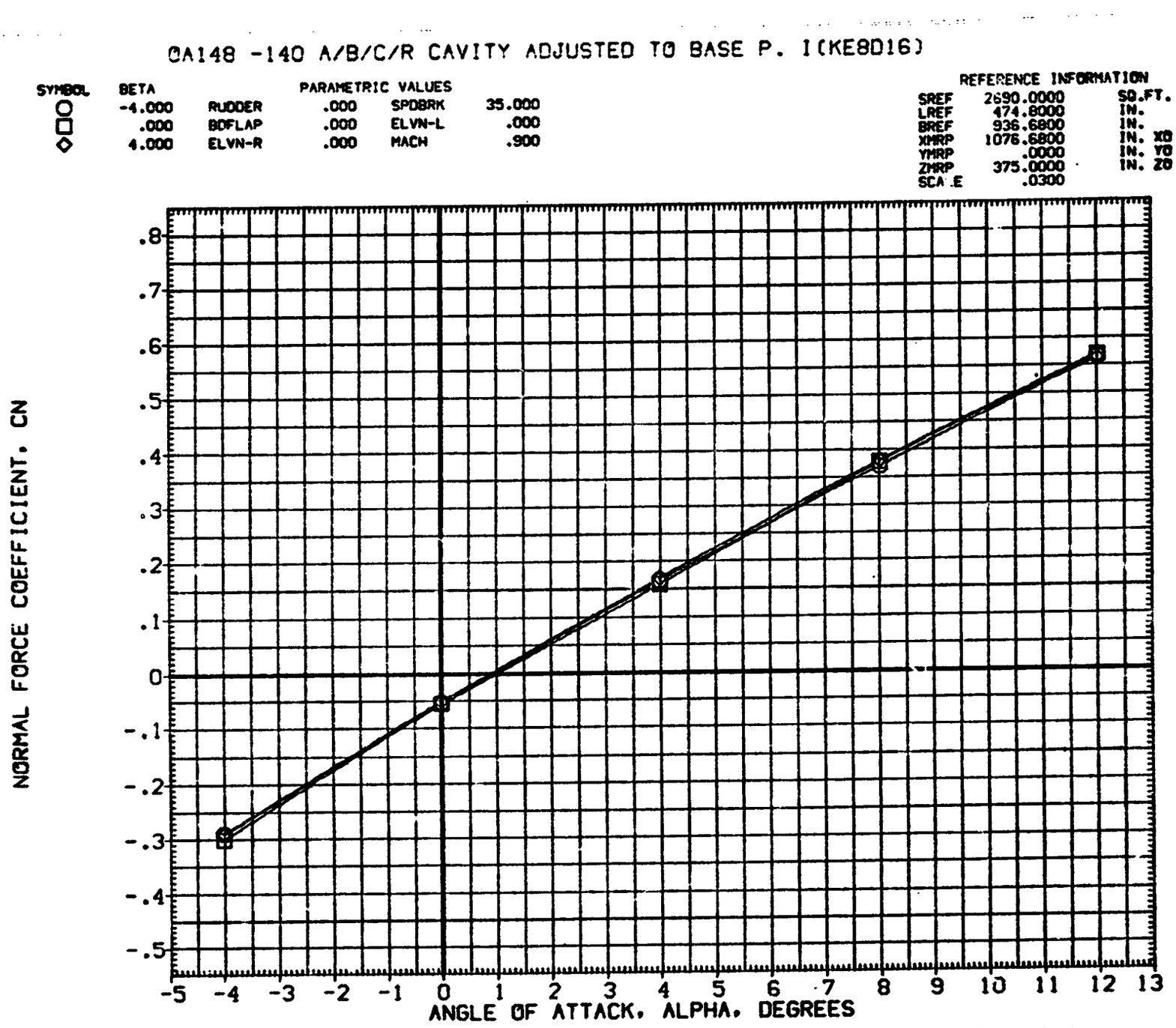


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA.48 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D16)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

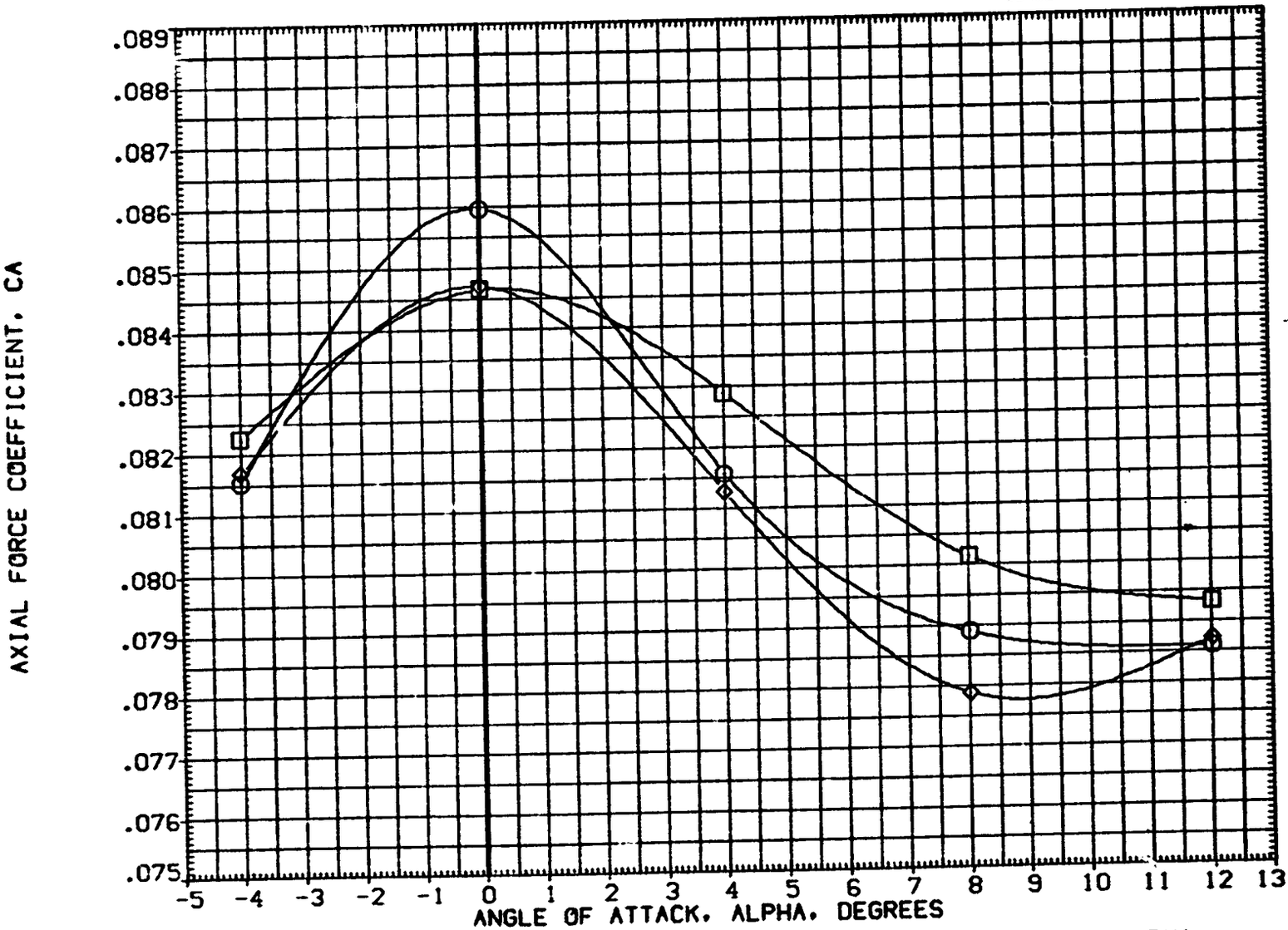


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

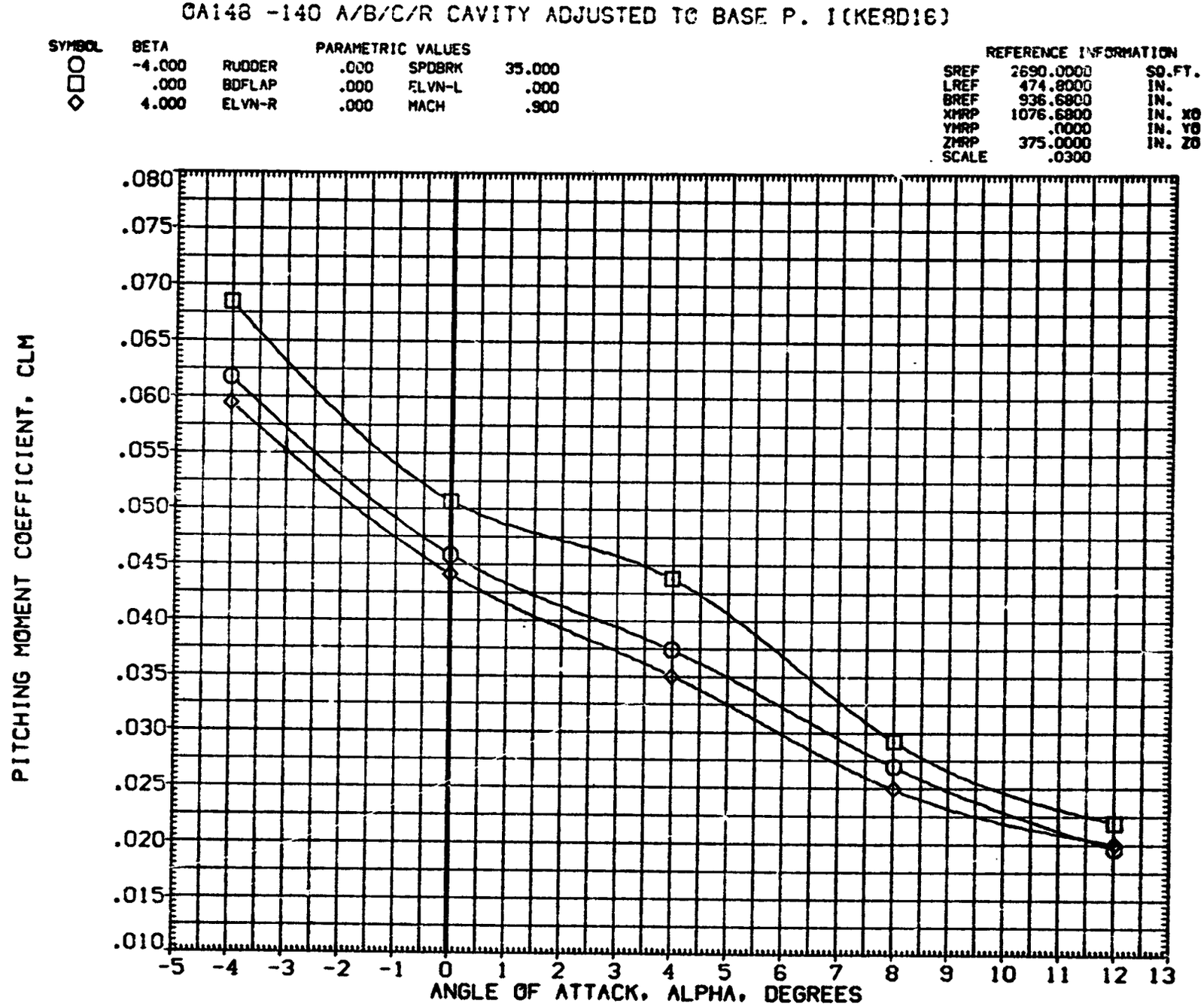


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D17)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	.000	SPDBRK	35.000
□	-4.000	BDFLAP	.000	ELVN-L	.000
◇	.000	ELVN-R	.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

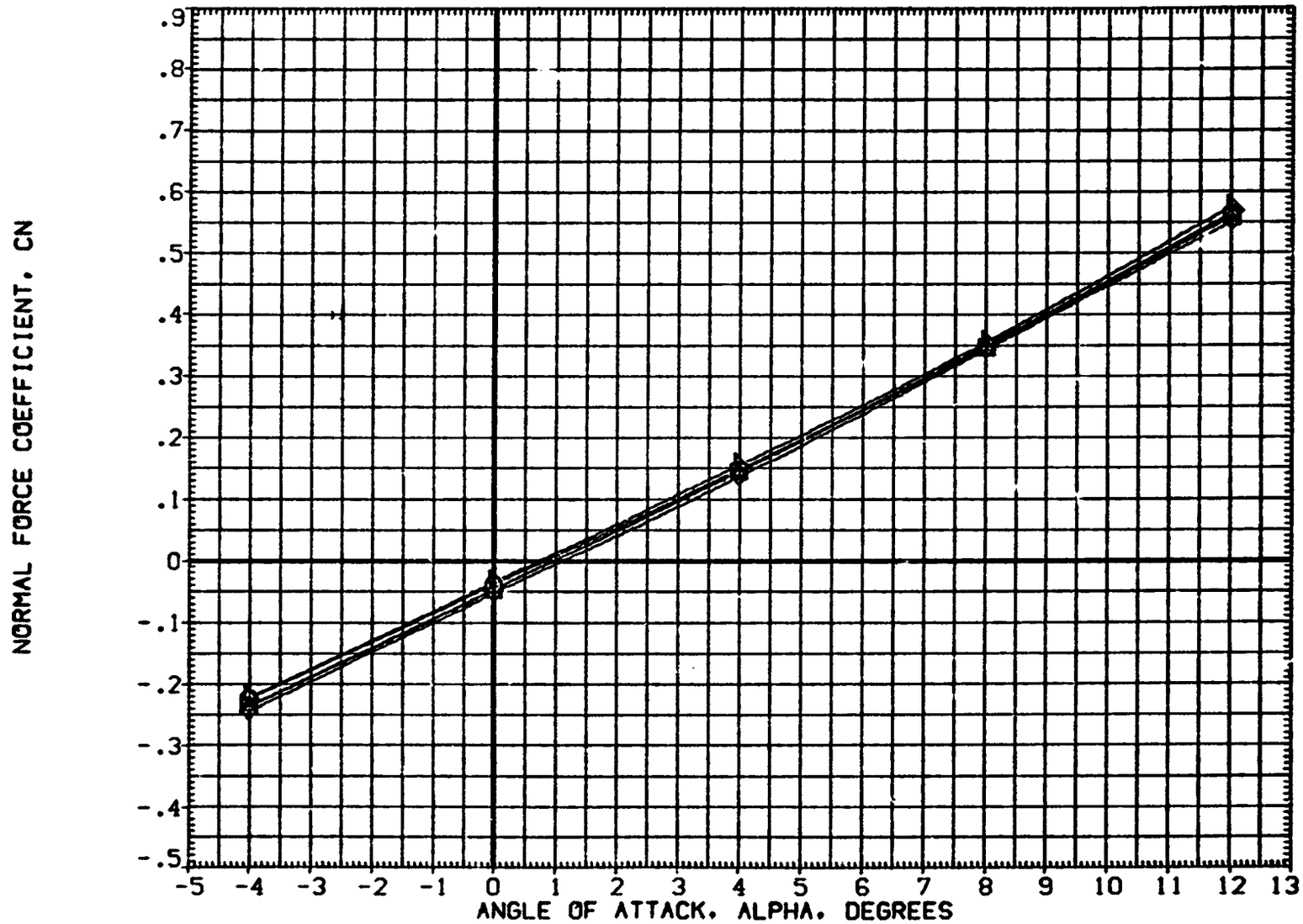


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

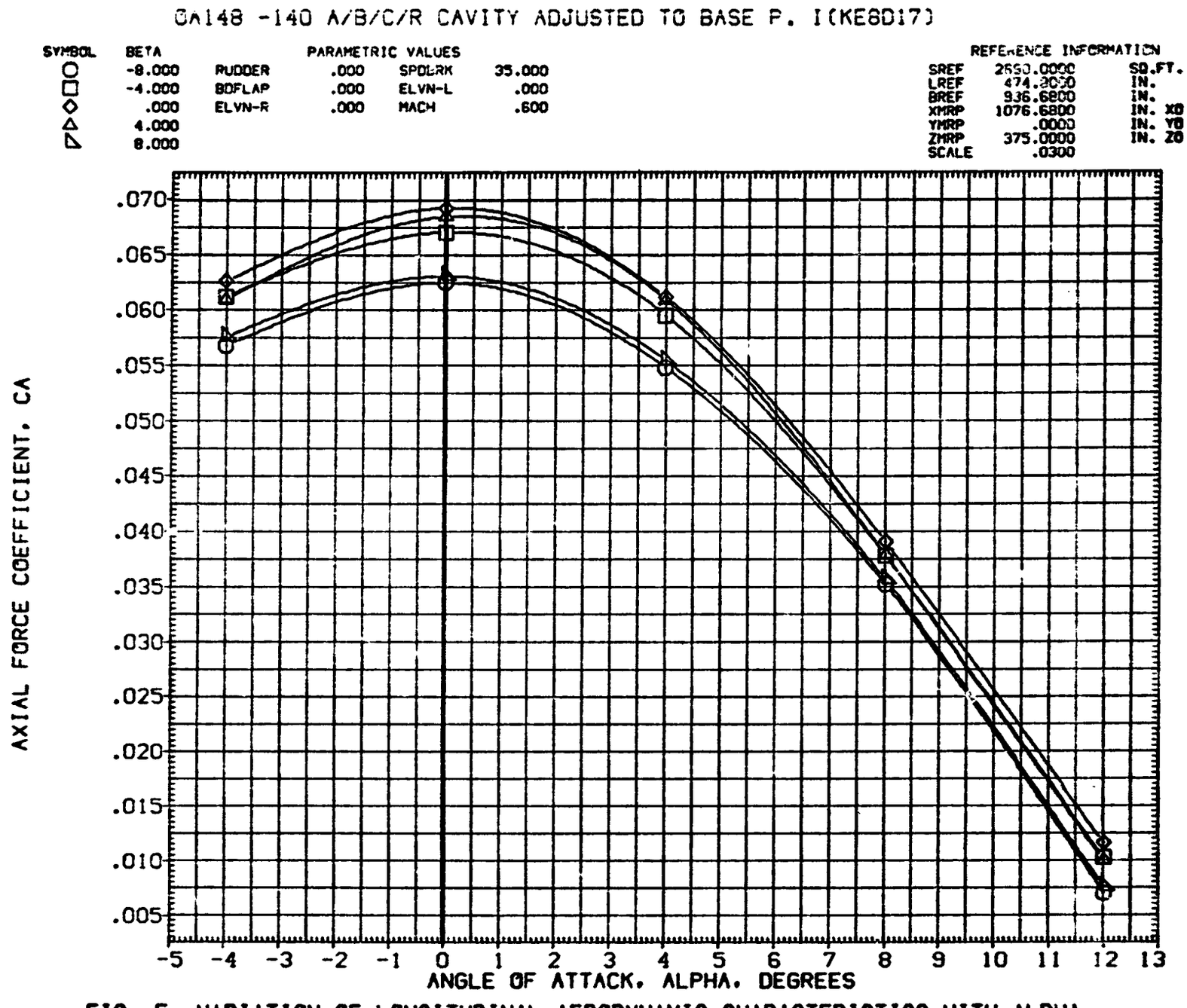


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

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ORIGINAL PAGE IS POOR

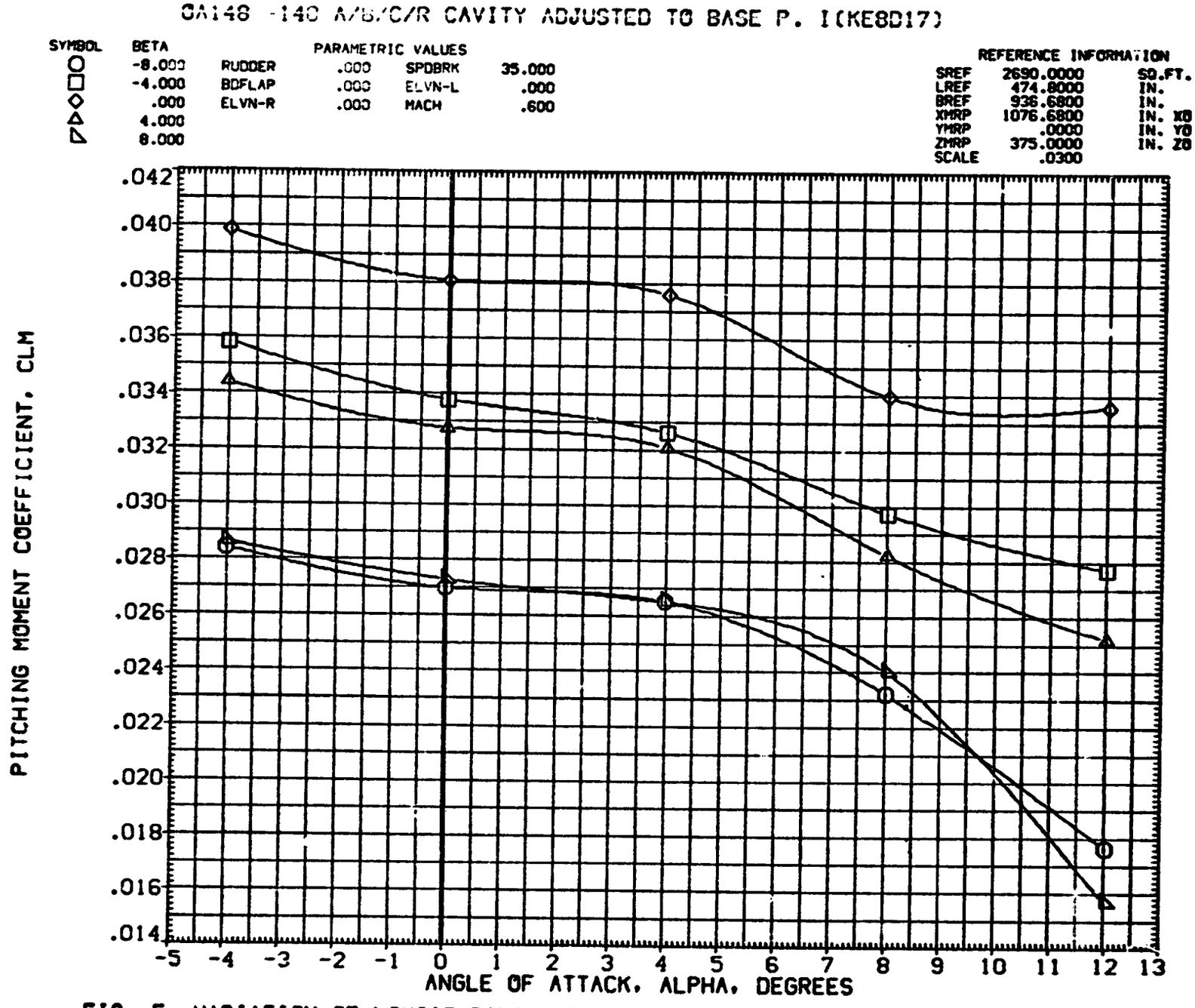


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

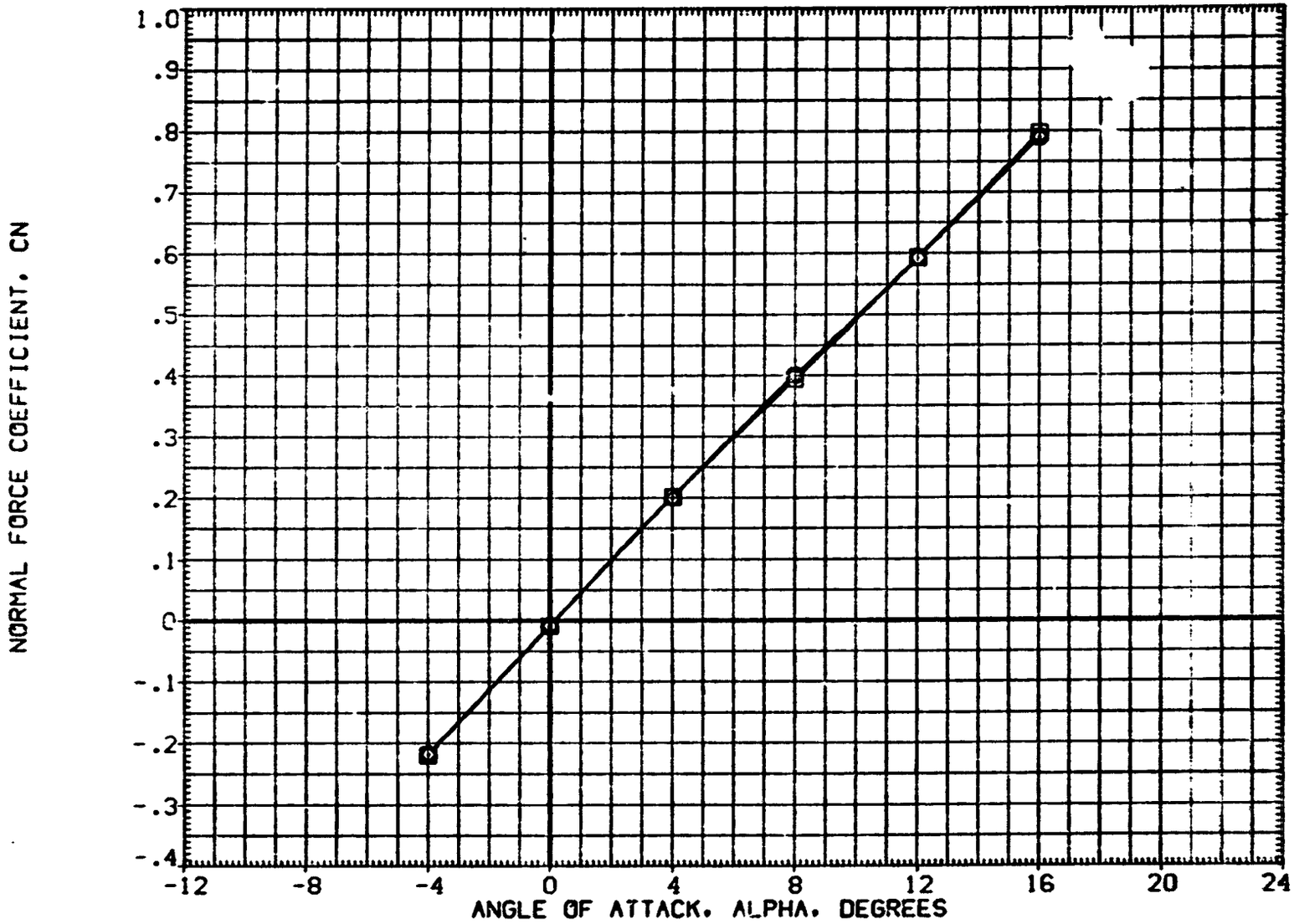


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

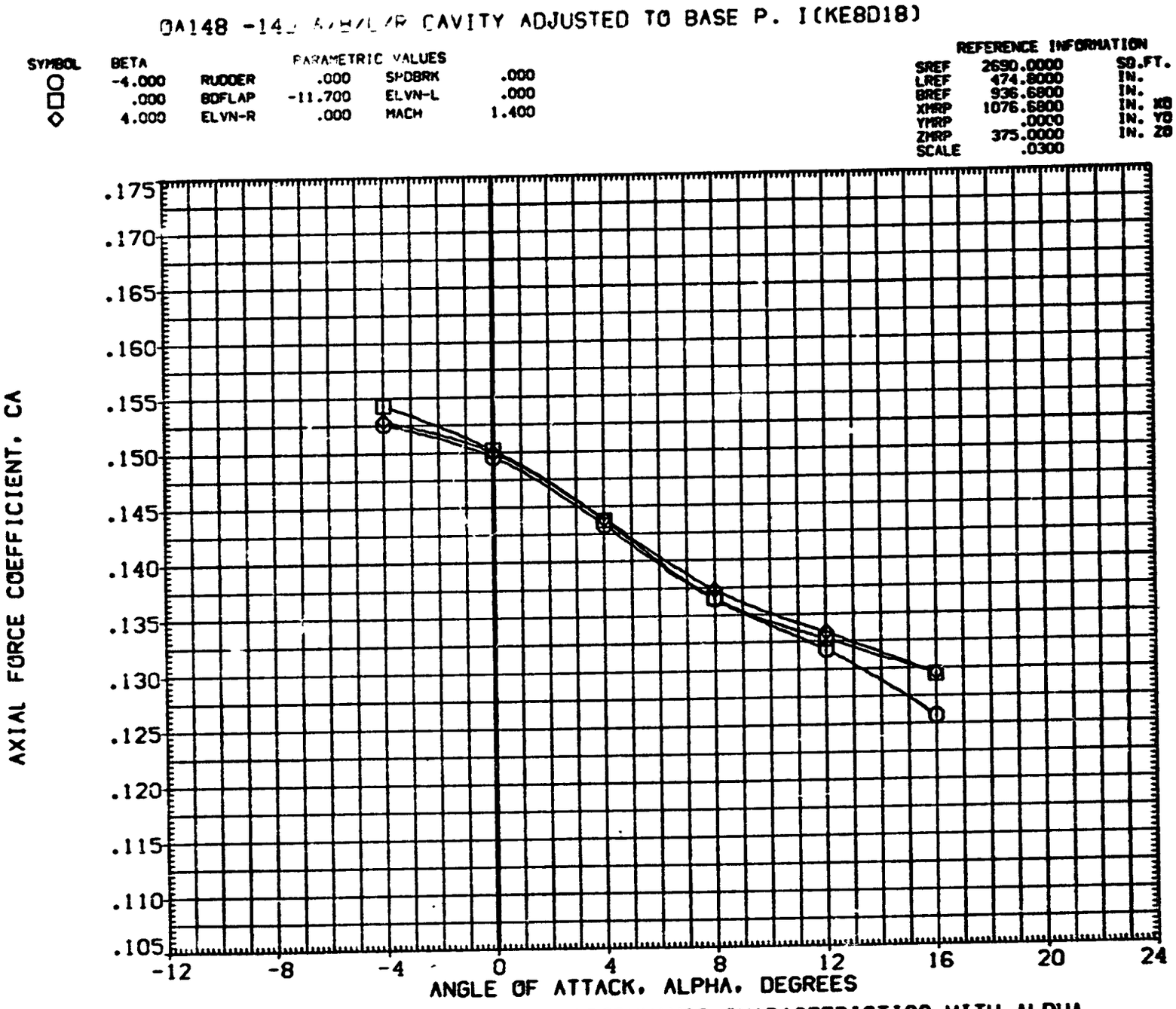


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

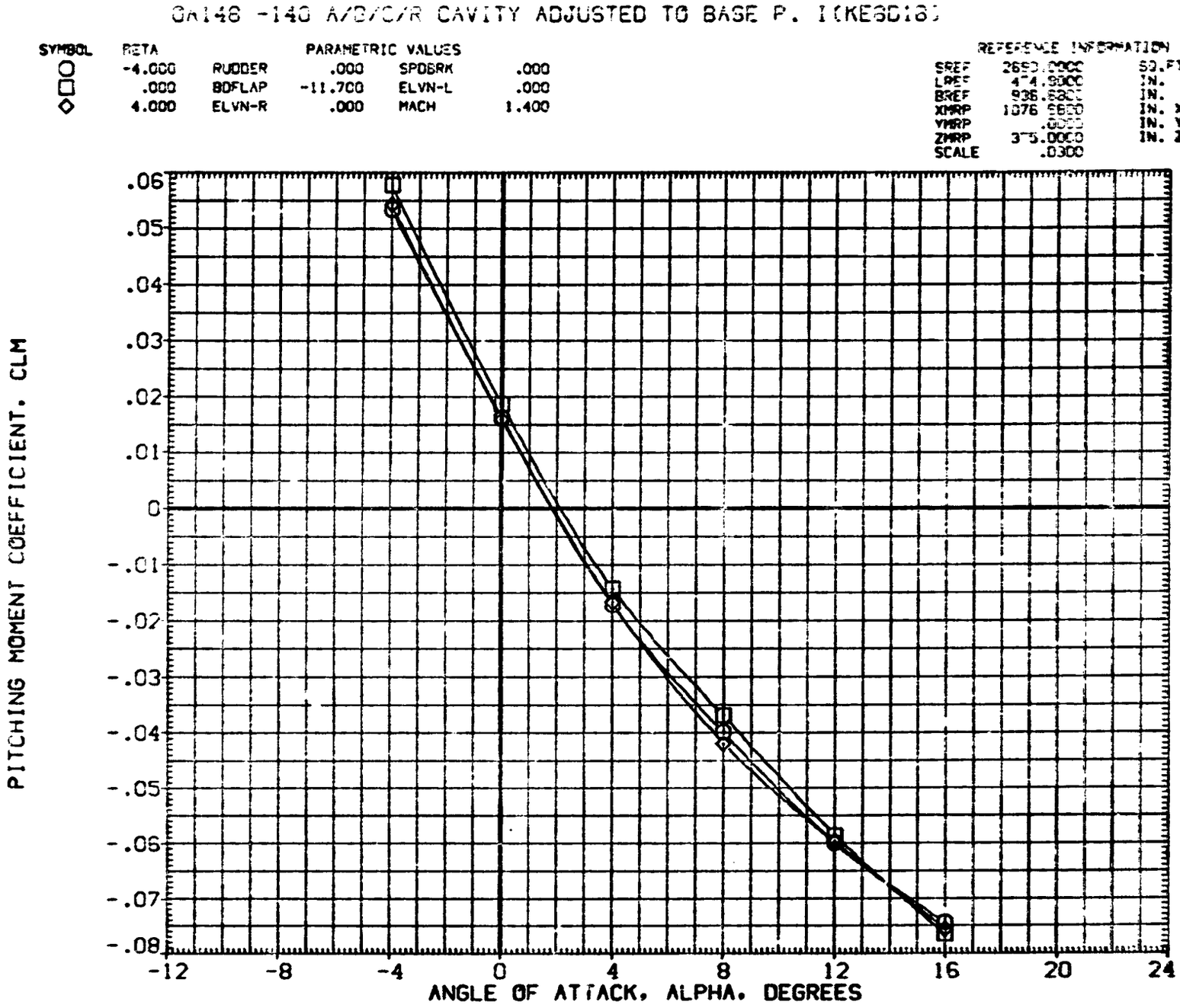


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D19)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

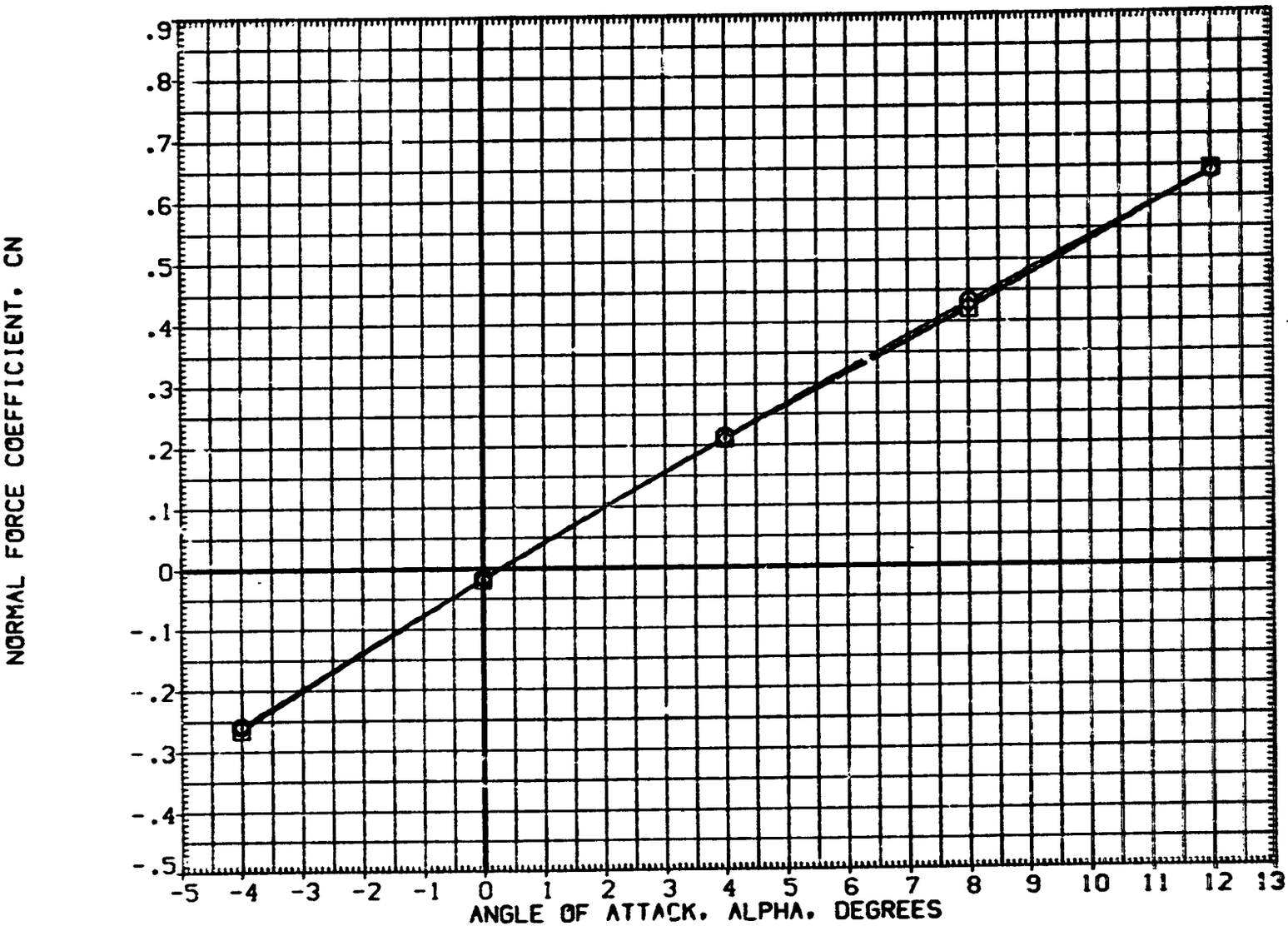


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. (RESDIS)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOIRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2910.0000	SQ.FT.
LREF	[illegible]	IN.
BREF	960.0000	IN.
XMRP	1078.2300	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

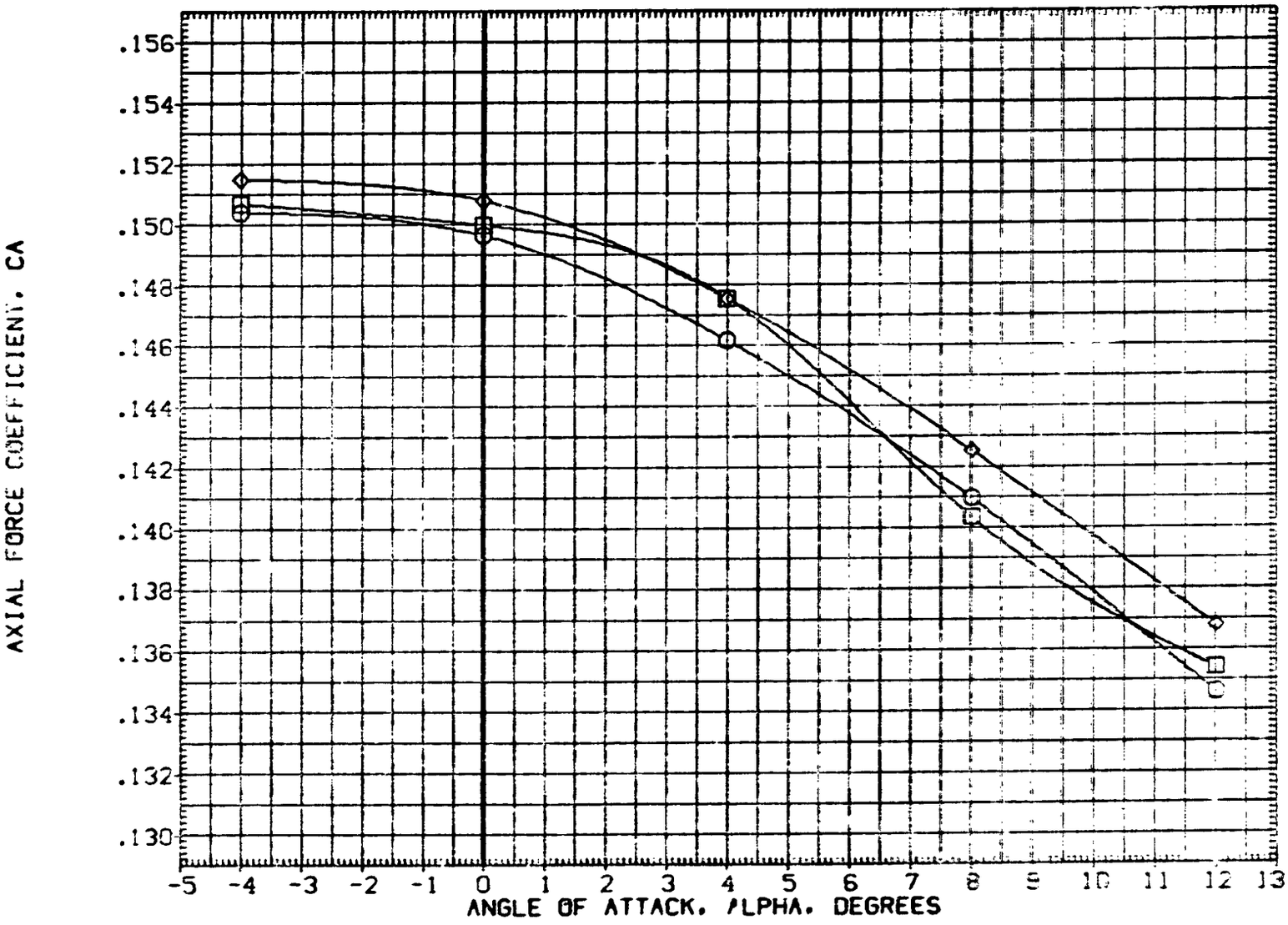


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

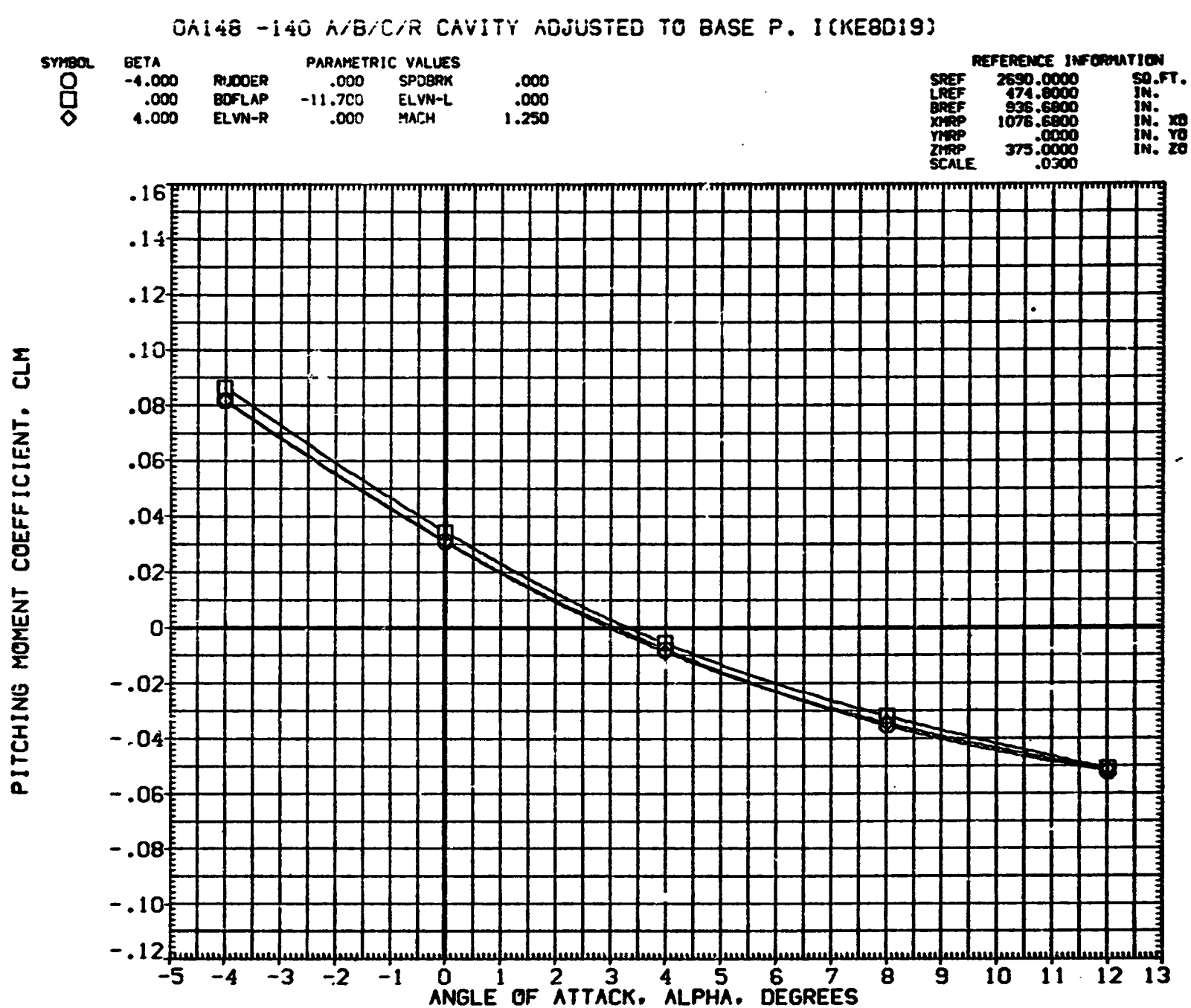


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2890.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6900	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

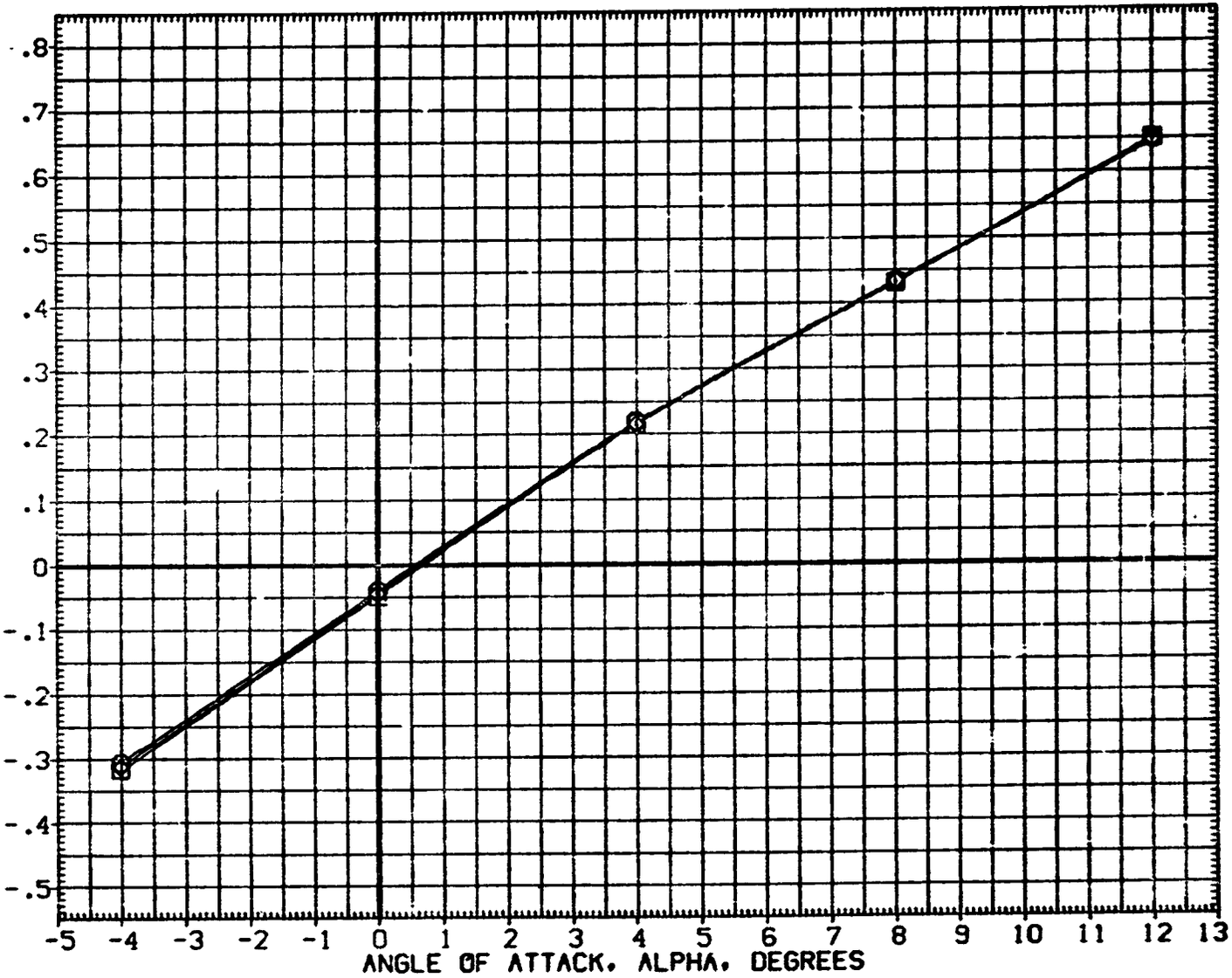


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

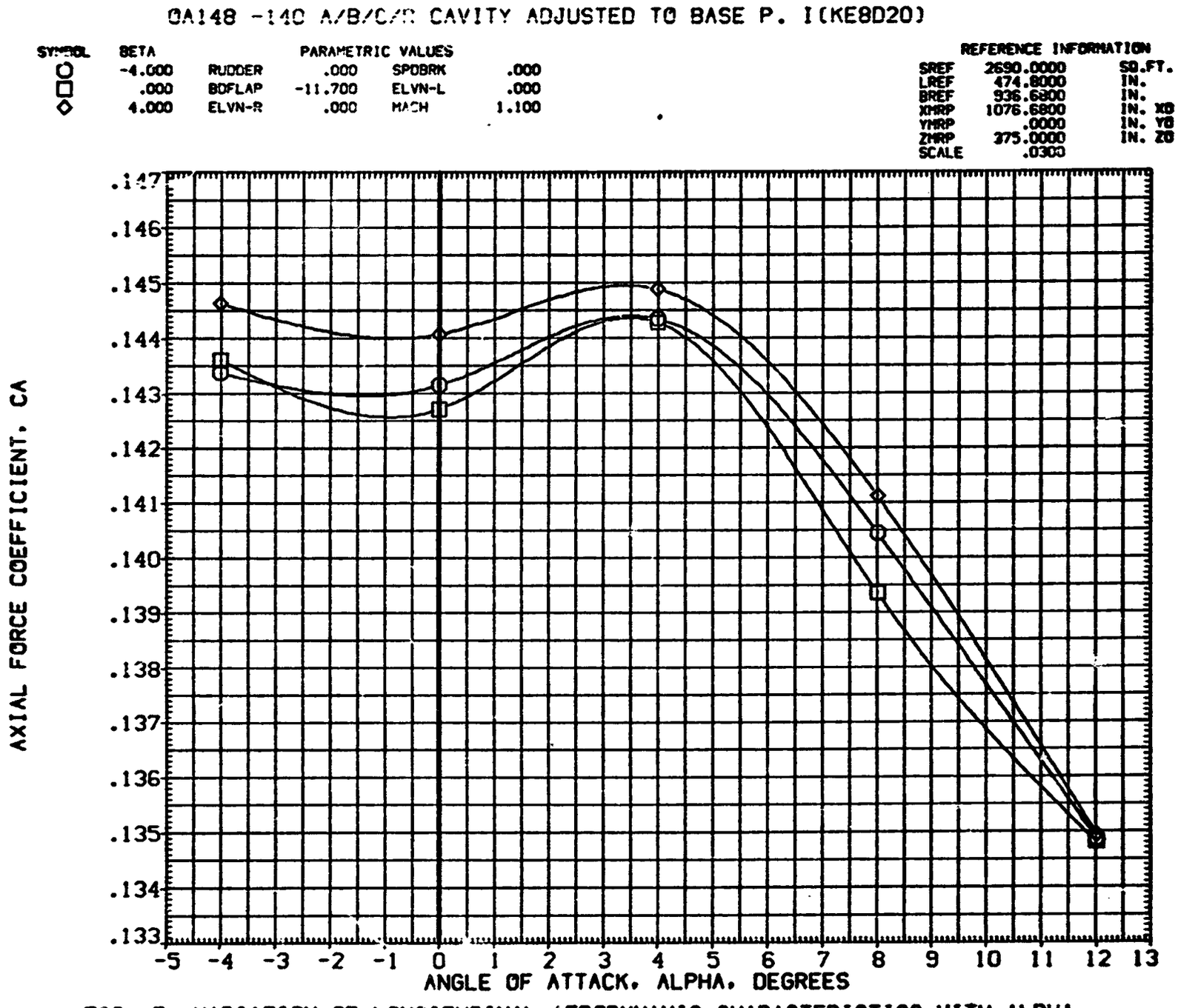


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D20)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

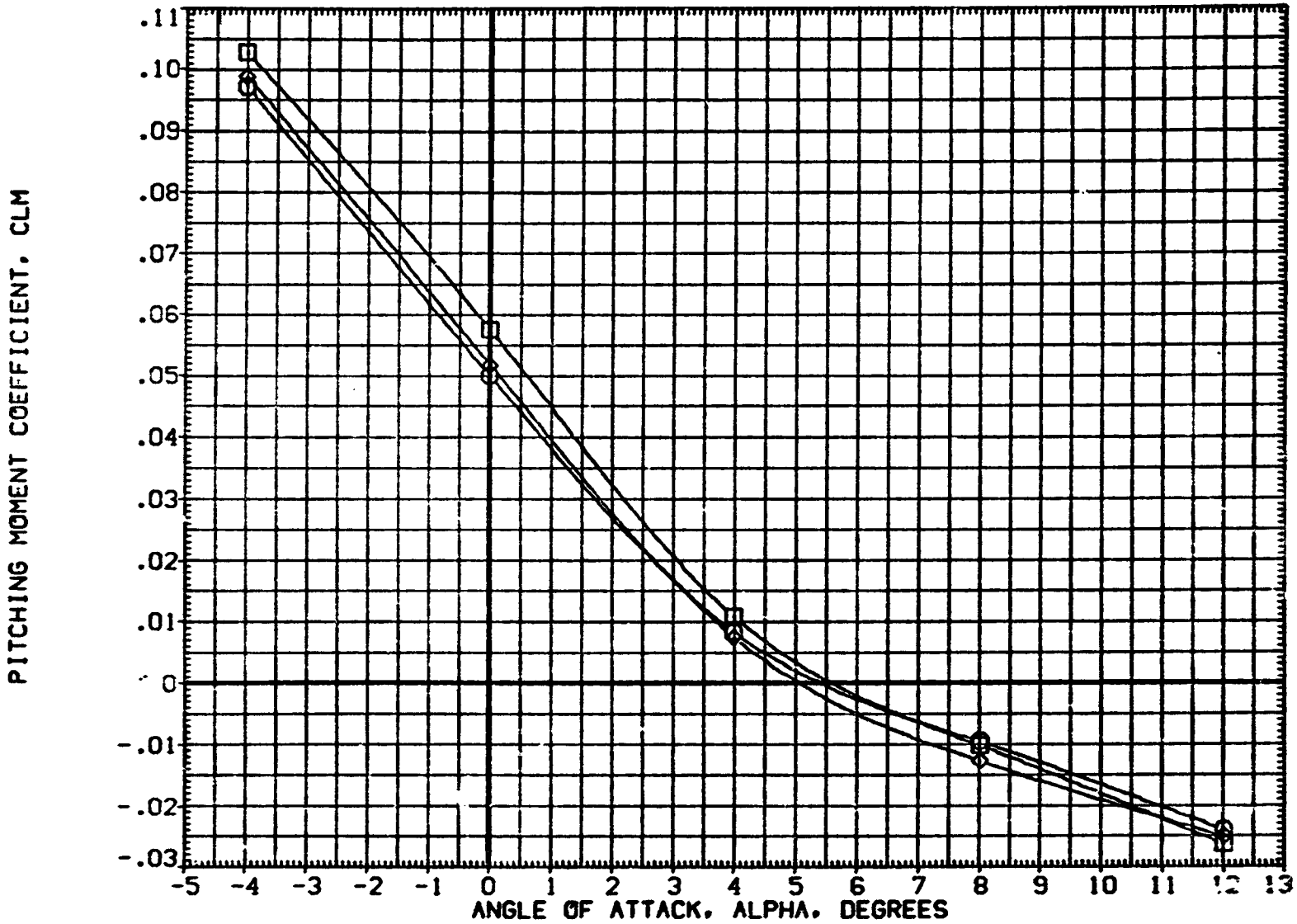


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

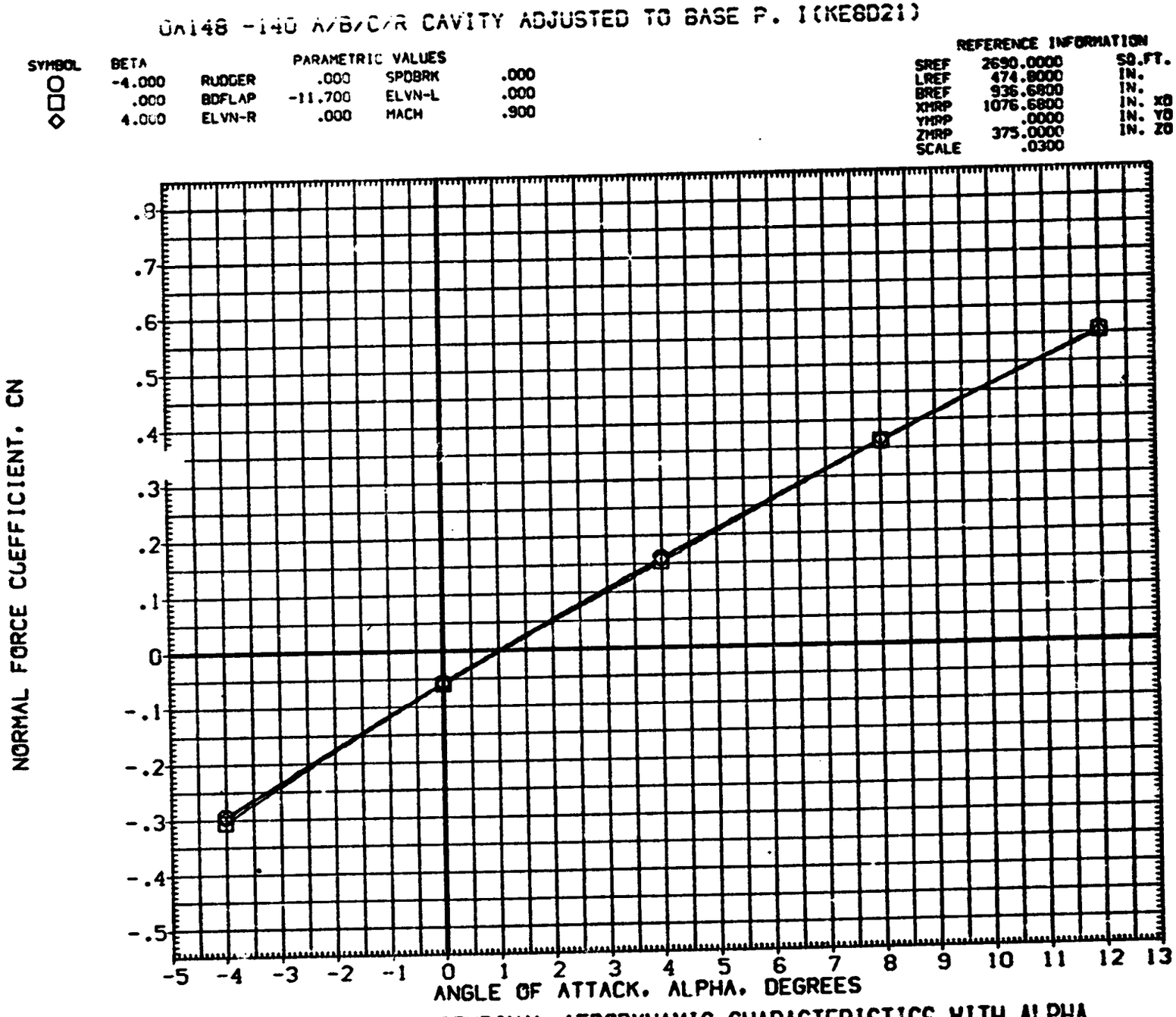


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTER'STICS WITH ALPHA

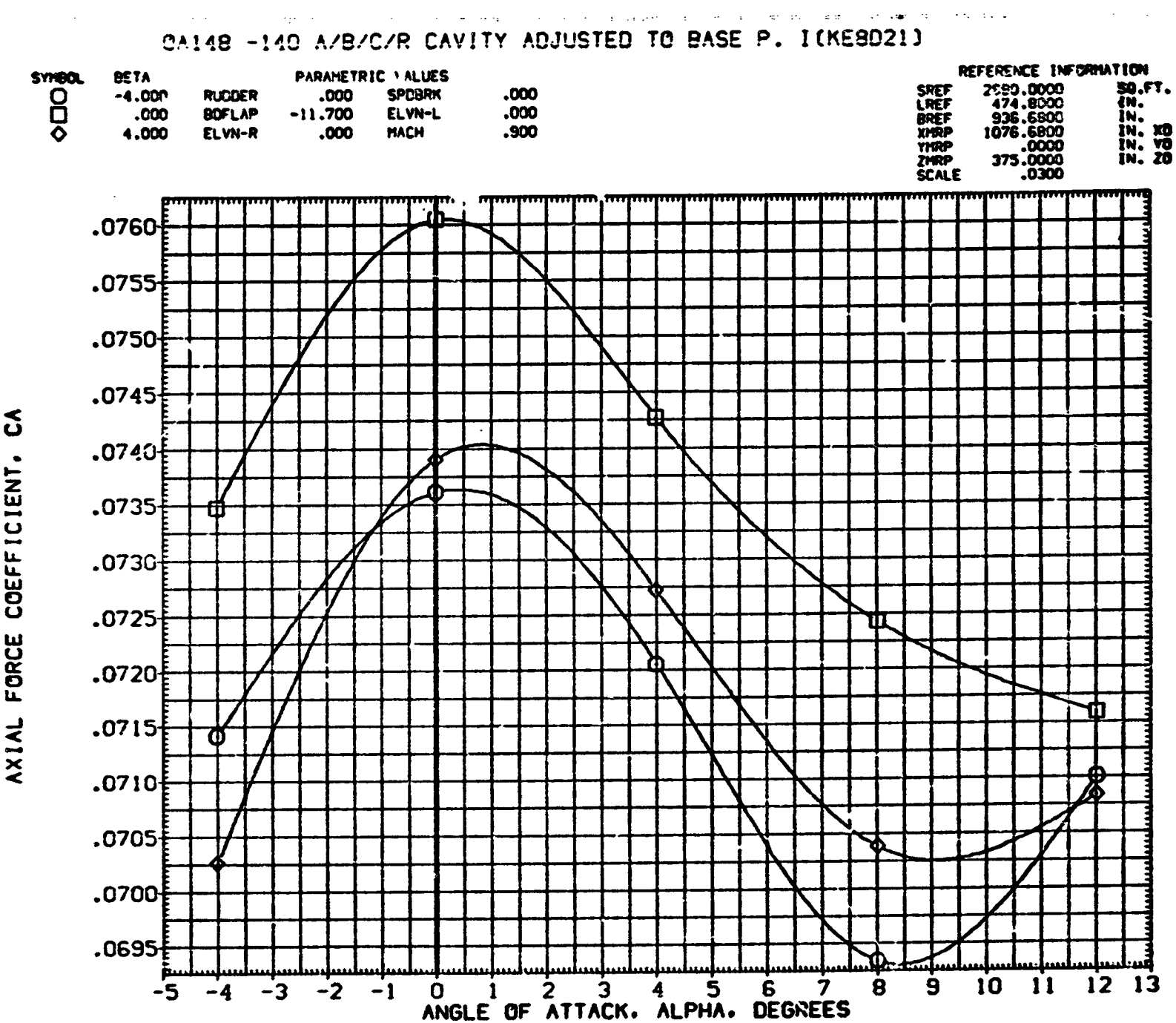


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D21)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	GDFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

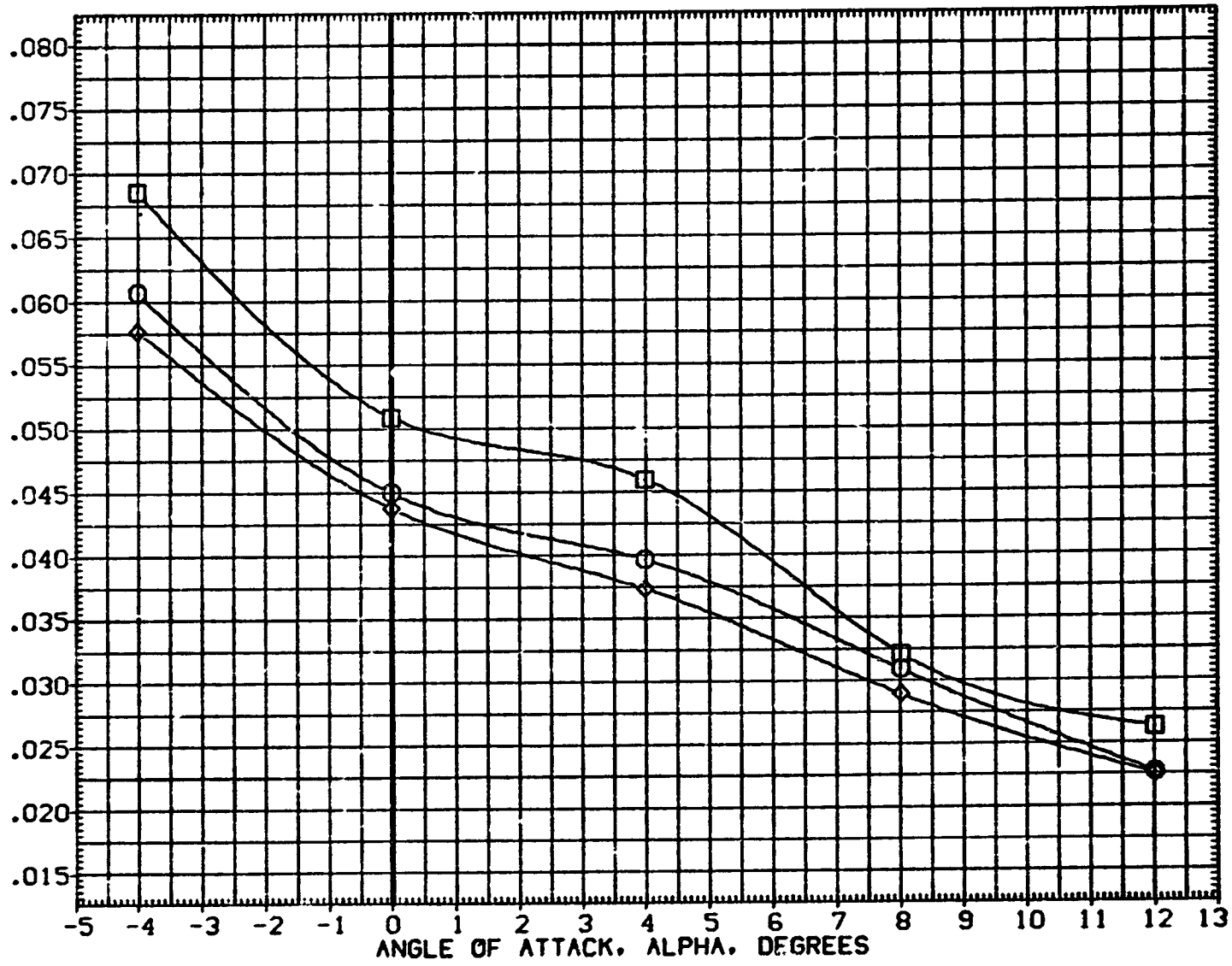


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

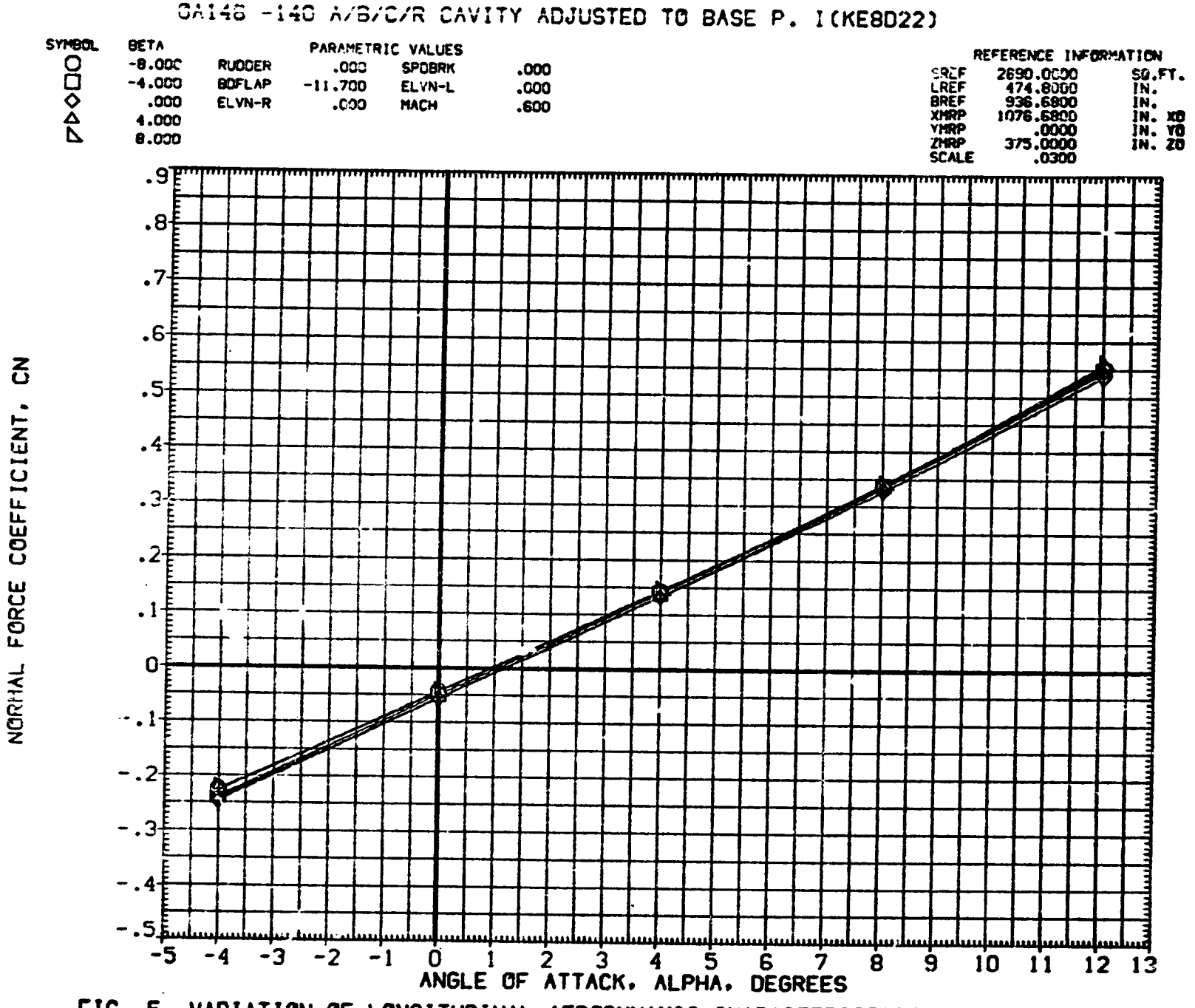


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

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CA140 140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D22)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	.000
BDFLAP	-11.700	ELVN-L	.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

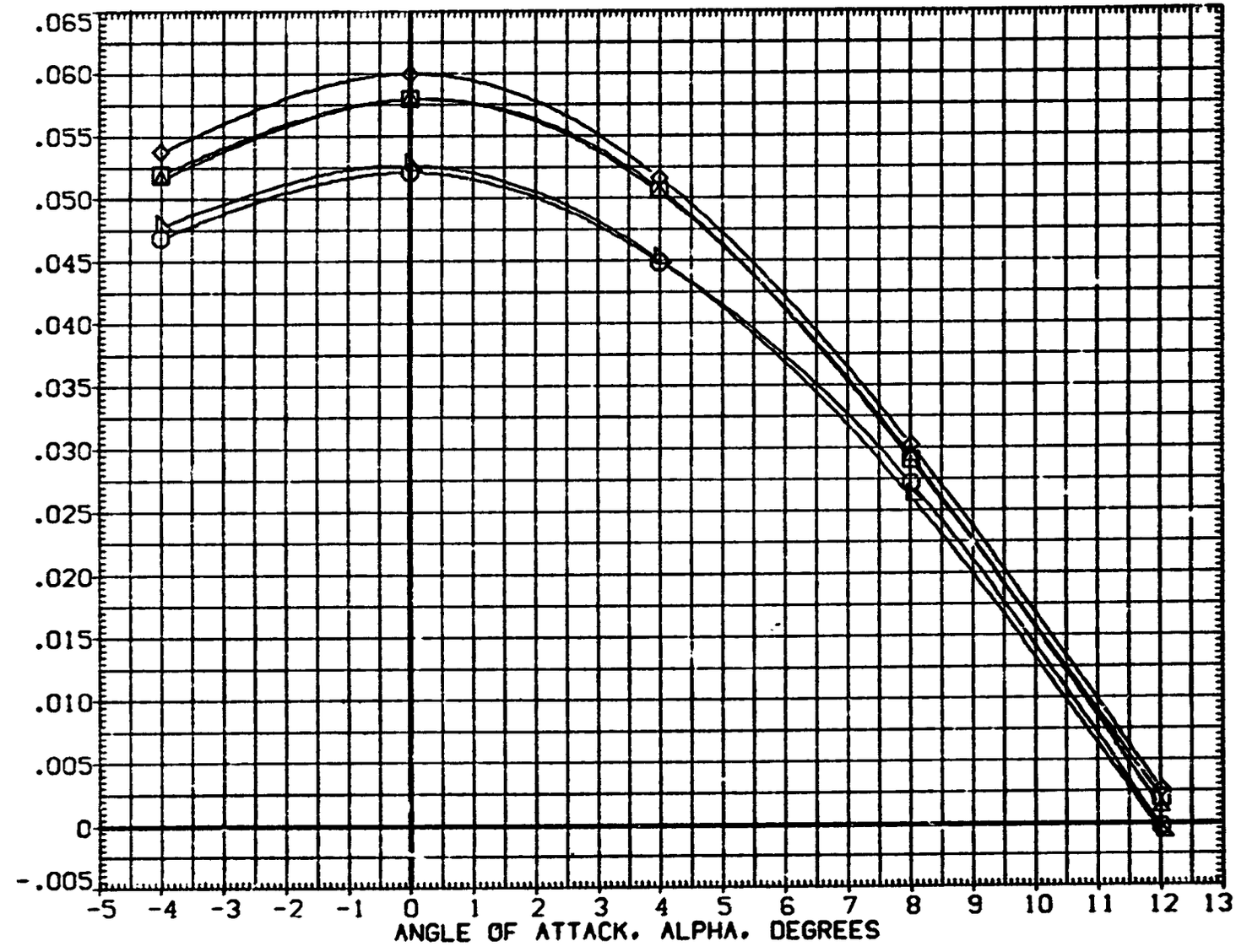


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE F. (KE8D22)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	.000	SPDBRK	.000
□	-4.000	BDFLAP	-11.700	ELVN-L	.000
◇	.000	ELVN-R	.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

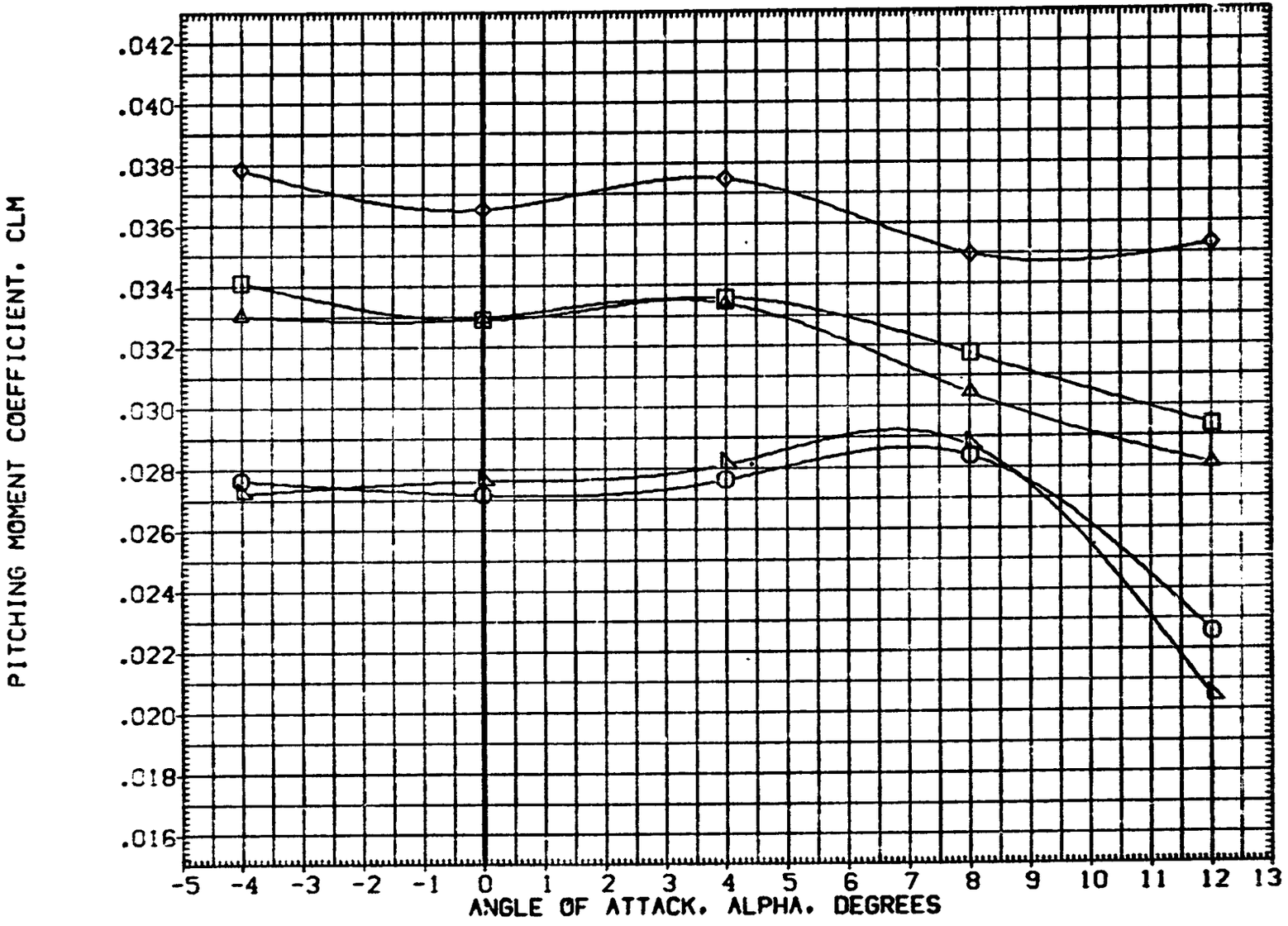


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

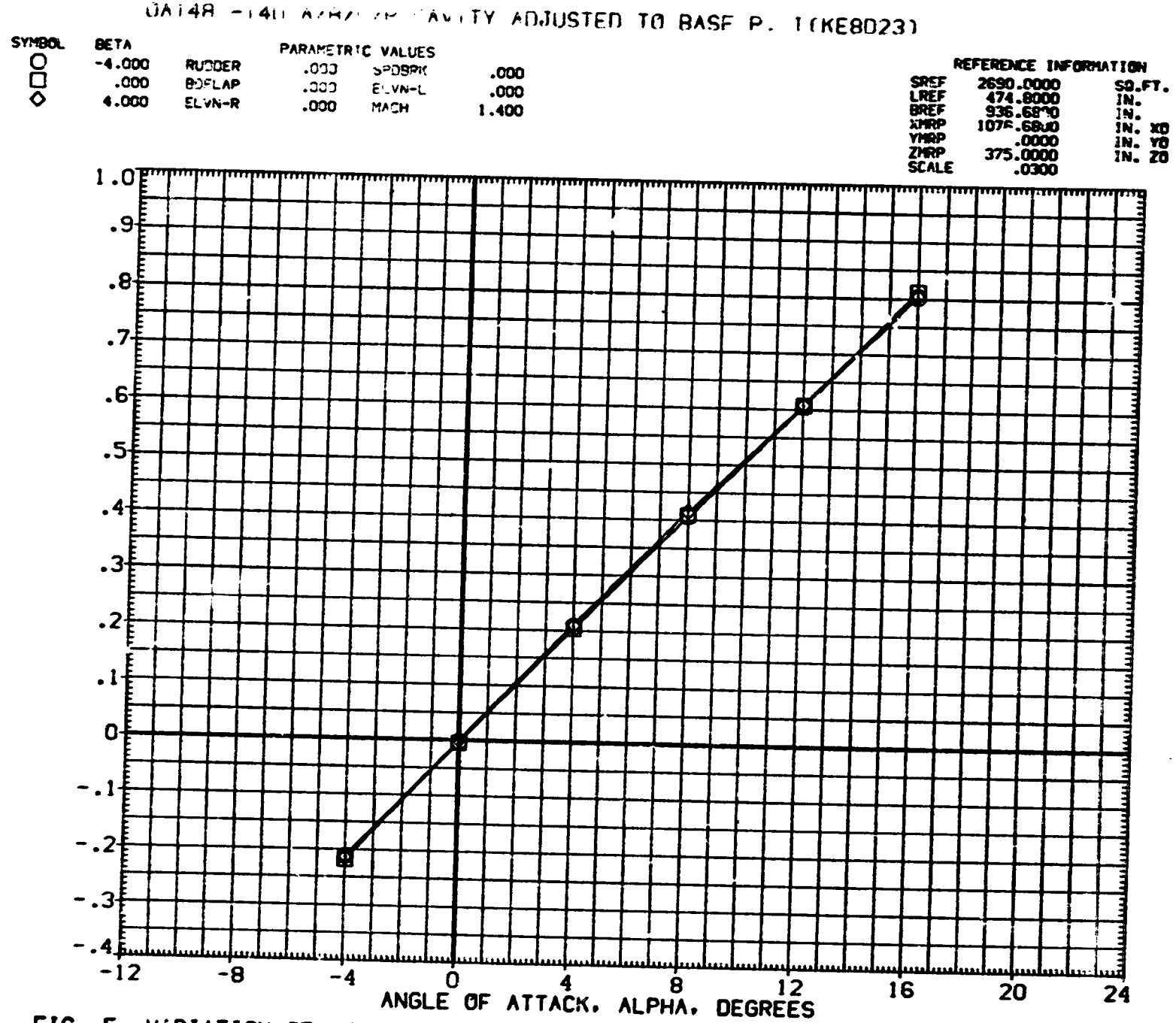


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

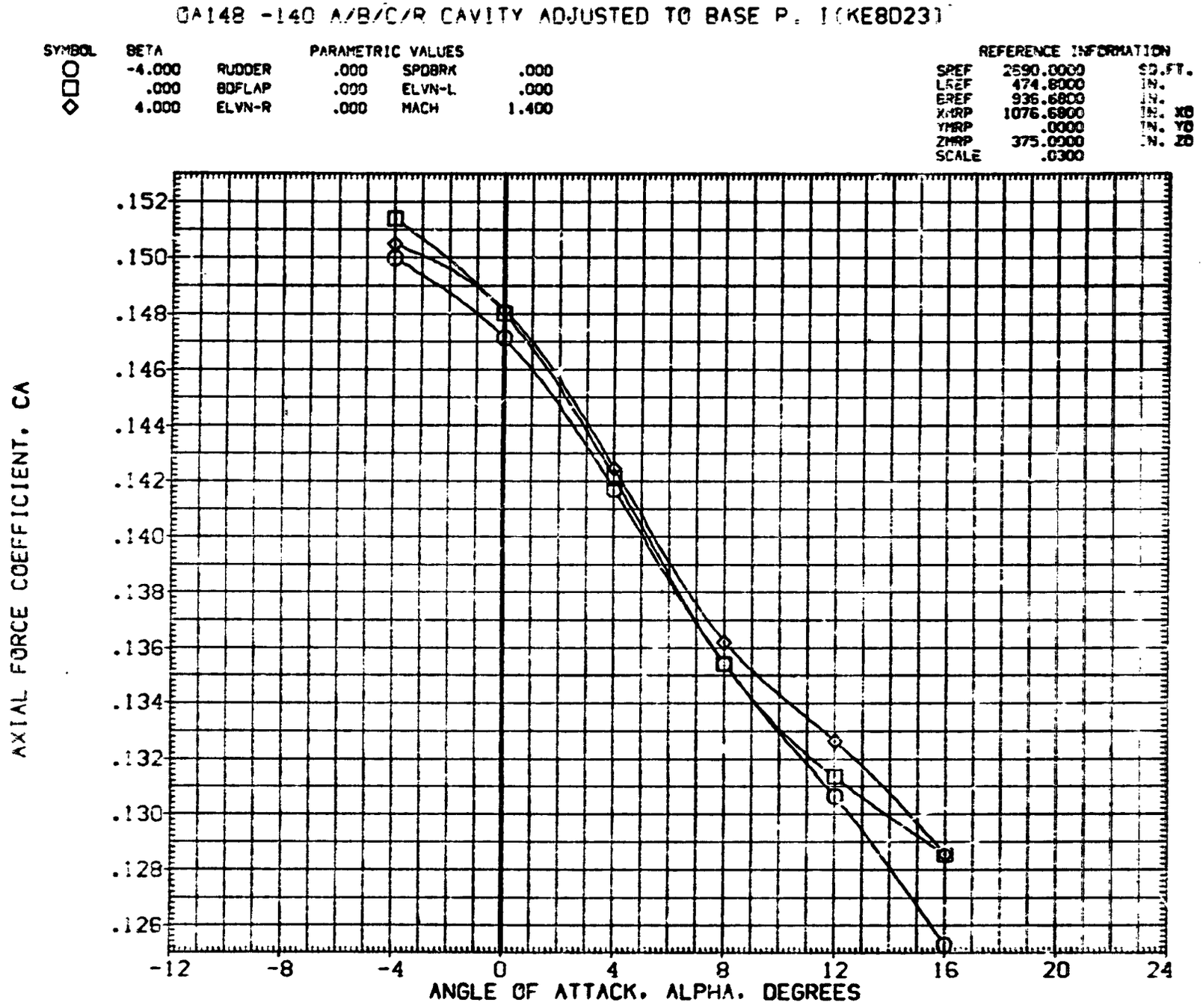


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8023)

SYMBOL	BETA		PARAMETRIC VALUES		
○□	-4.000	RUDDER	.000	SPOILR	.000
◇	.000	BDFLAP	.000	ELVN-L	.000
	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

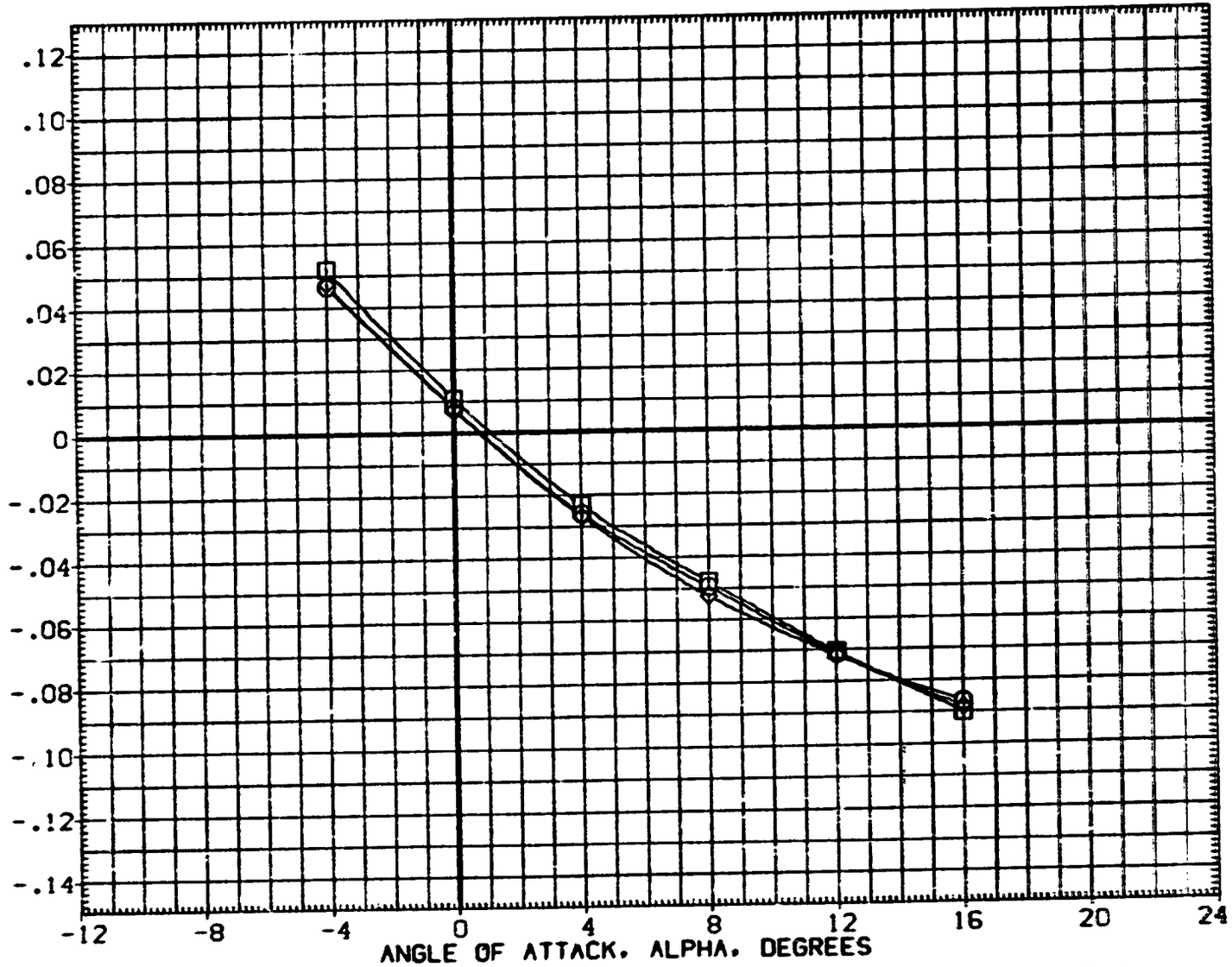


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

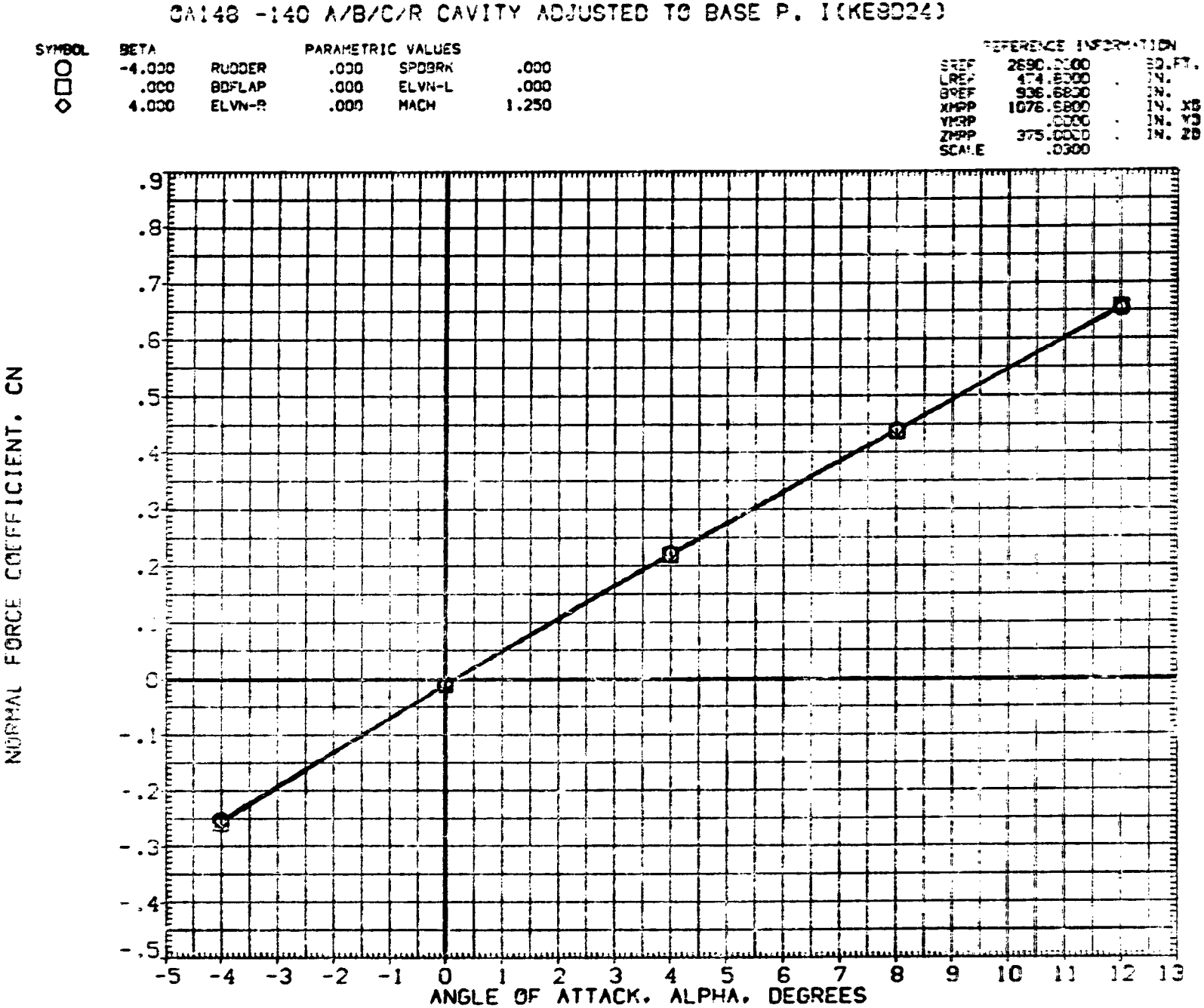


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KESD24)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BOFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ FT.
LREF	474.4000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

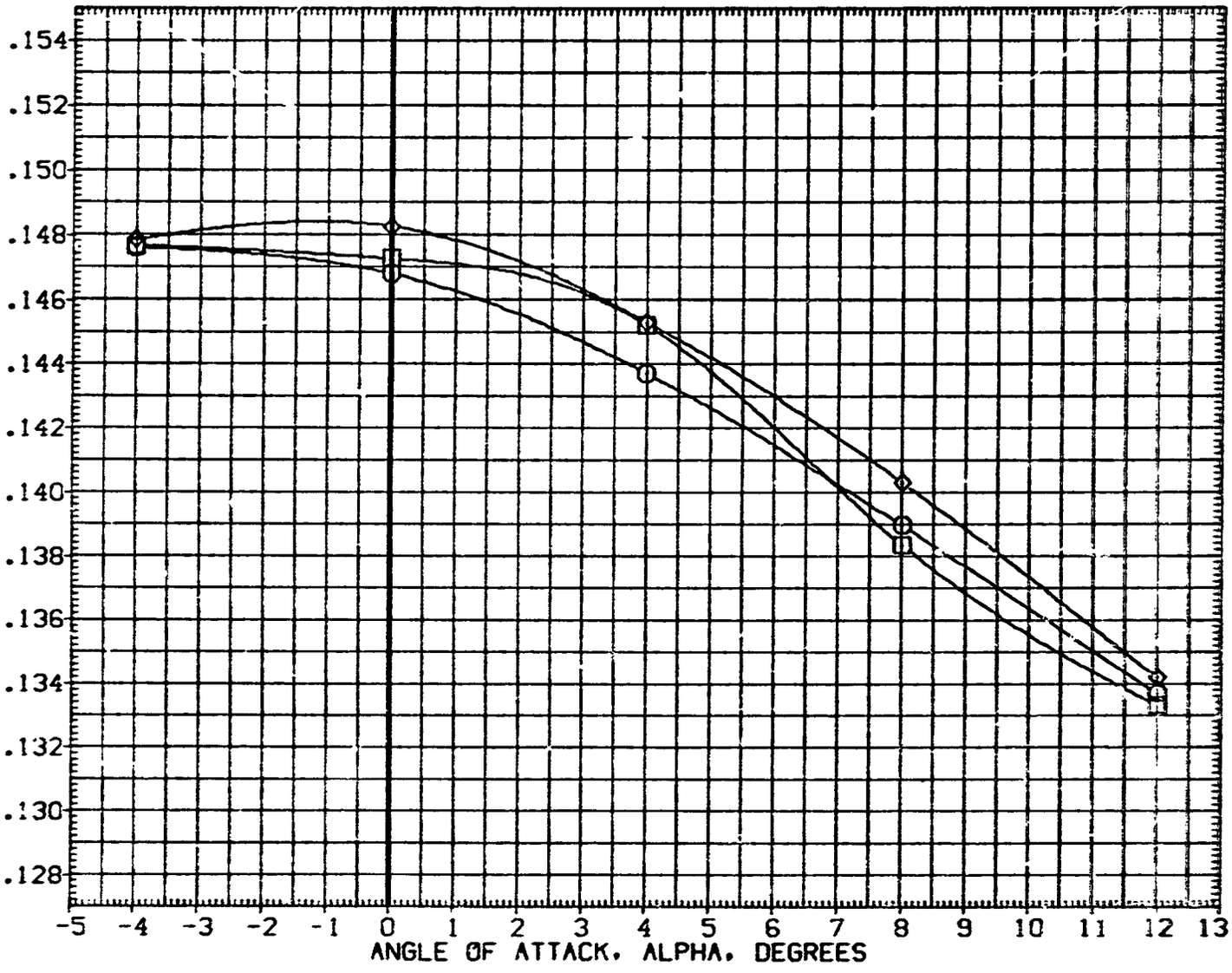


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2890.0000	SQ.FT.
LREF	474.2000	IN.
BREF	936.6800	IN.
XMRP	1076.2800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

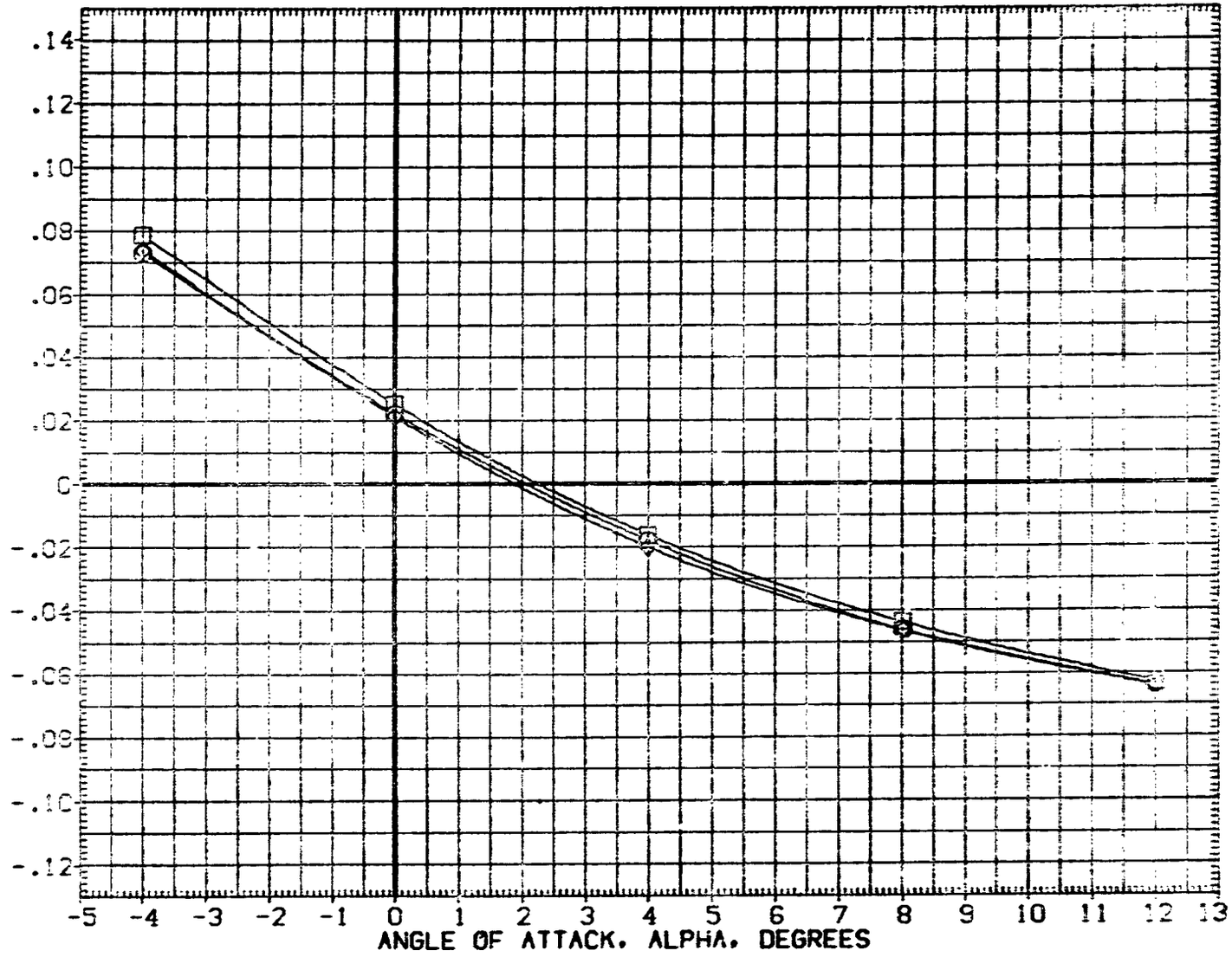


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8025)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BOFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

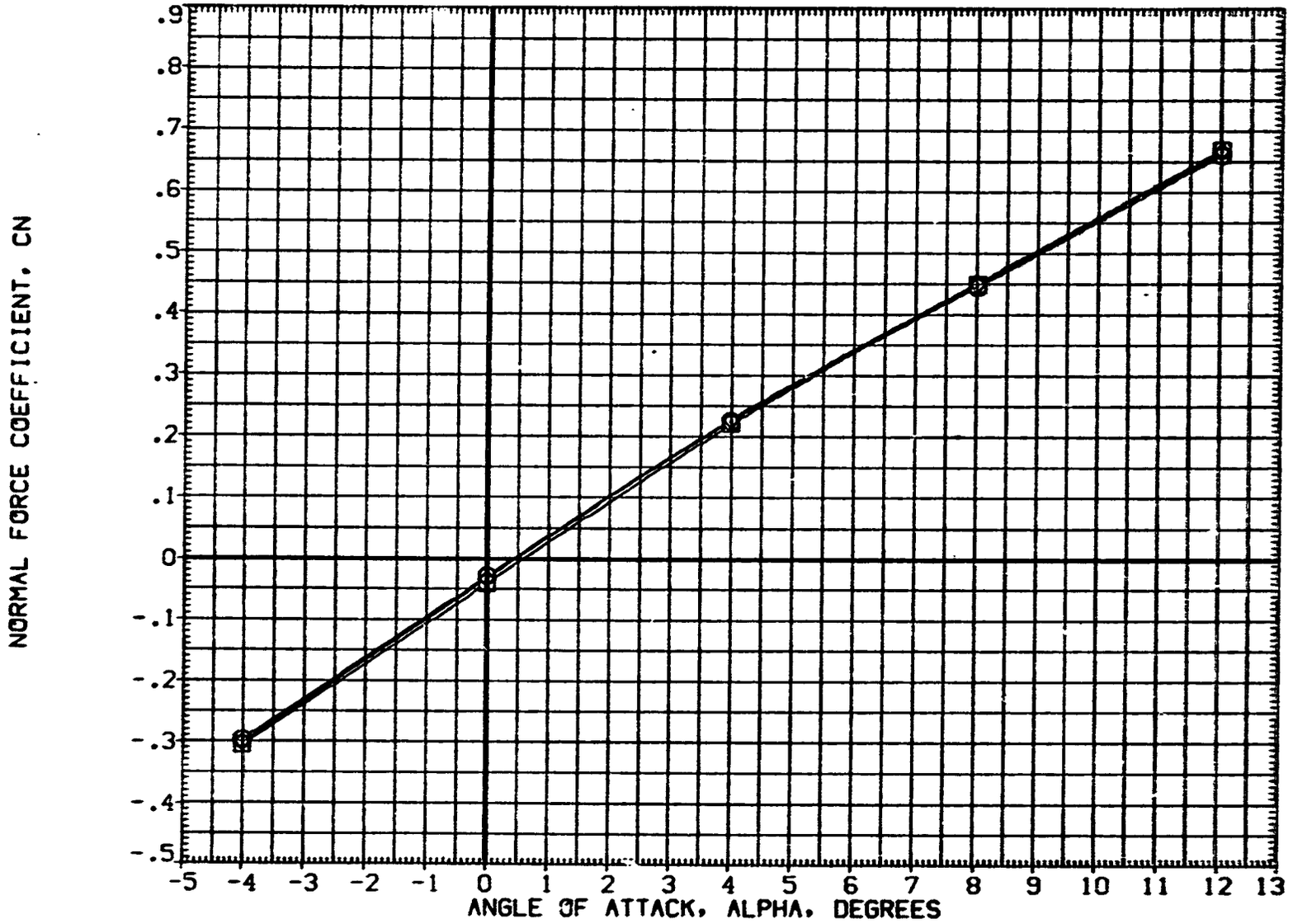


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

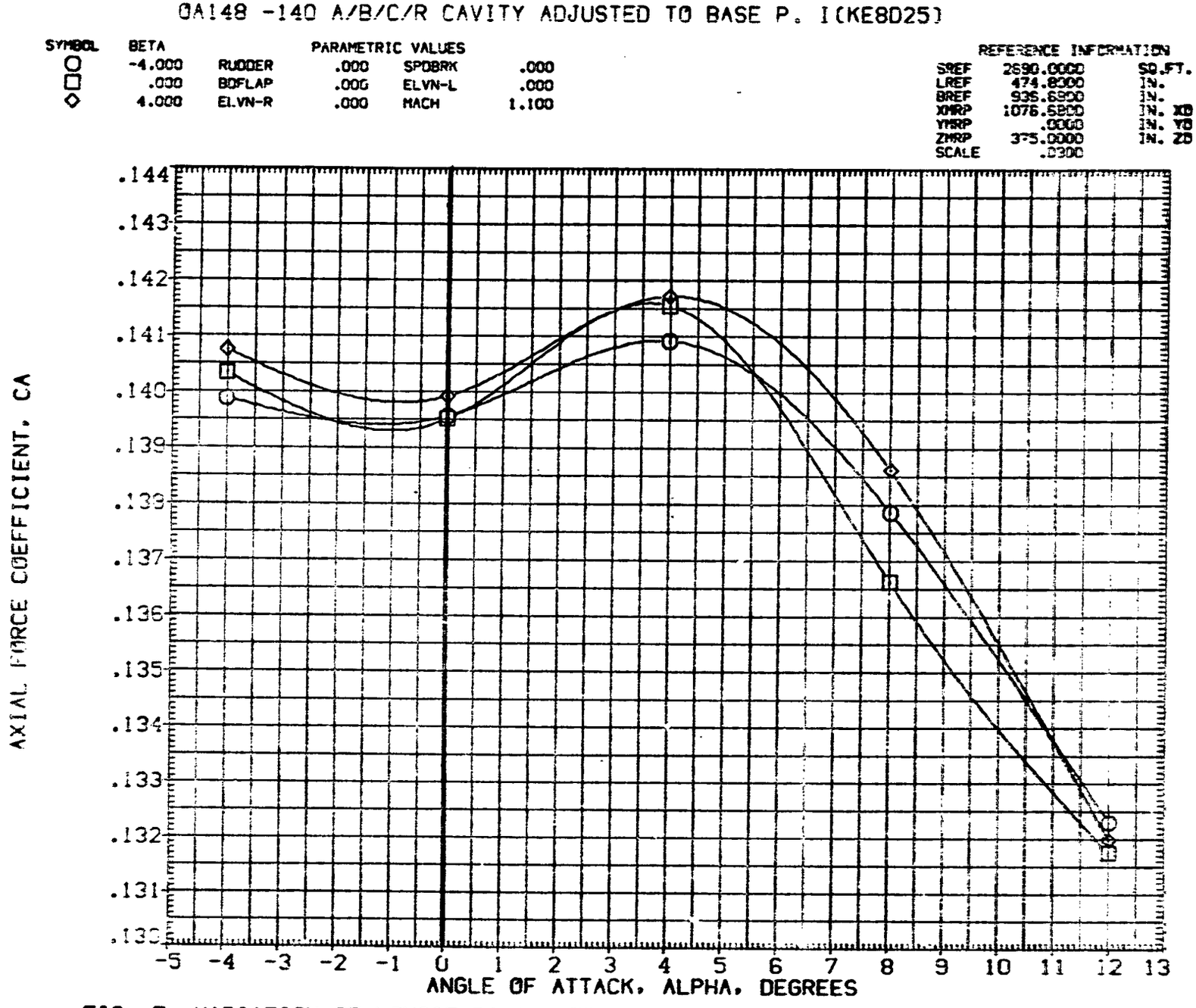


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

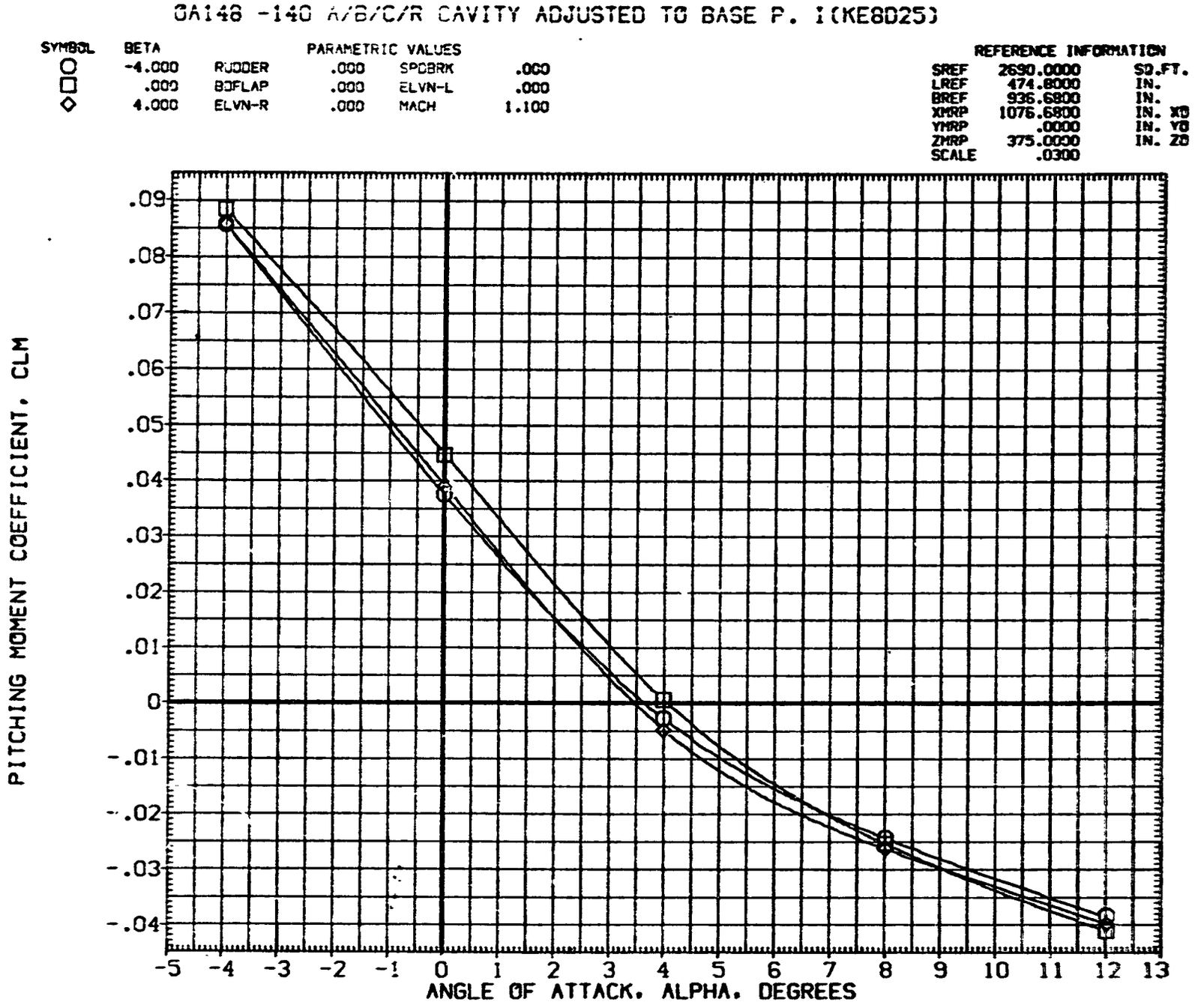


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

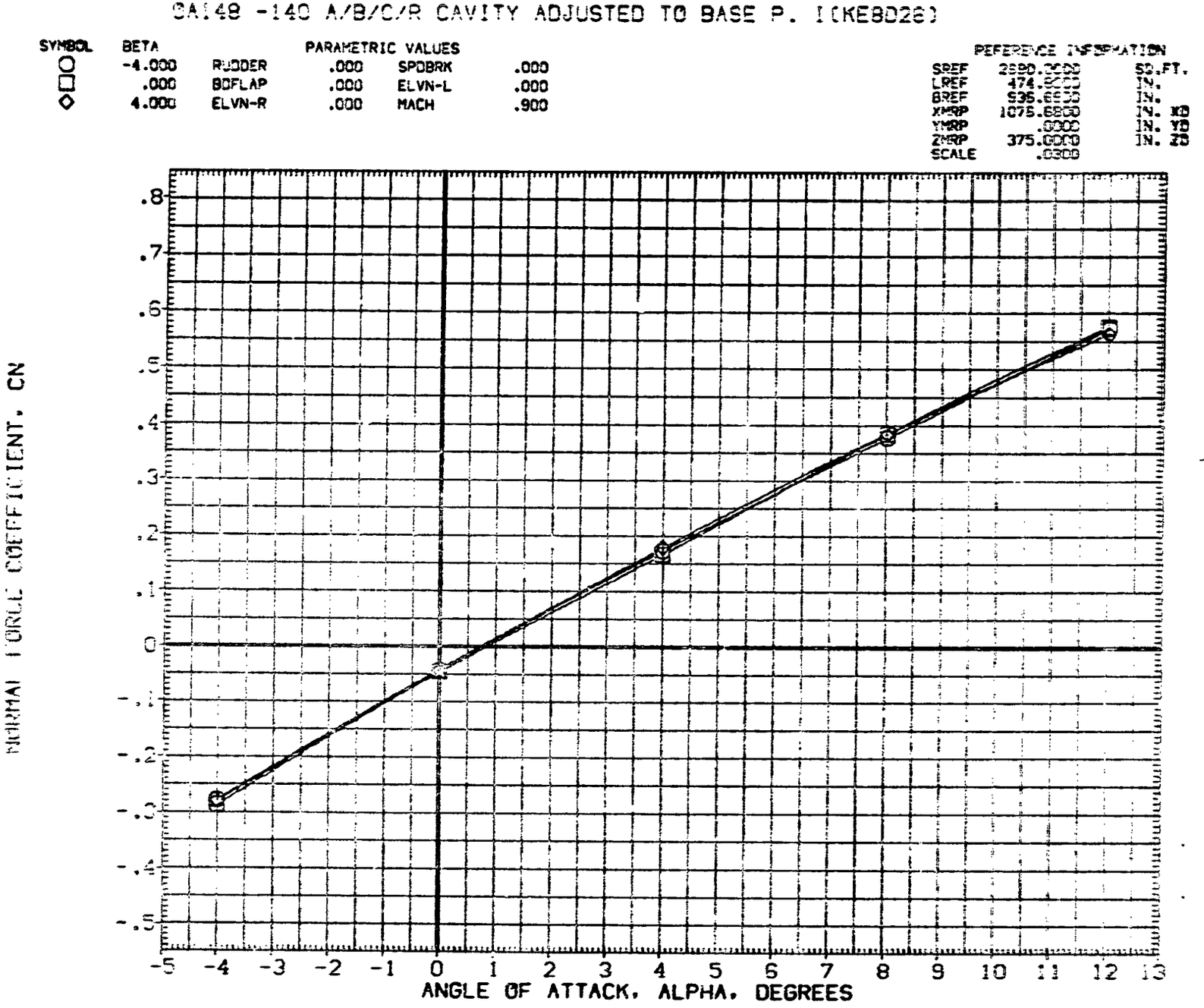


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

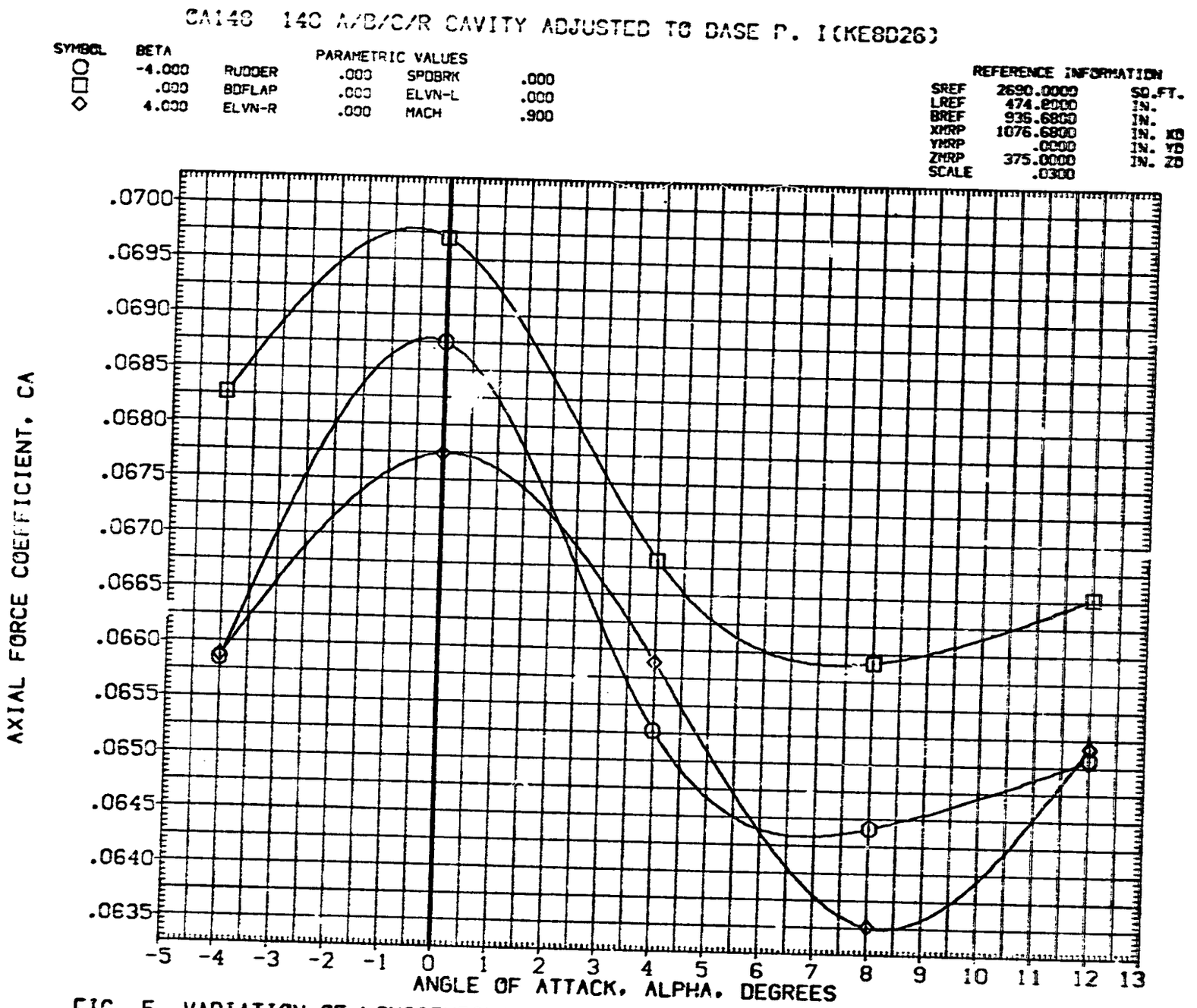


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

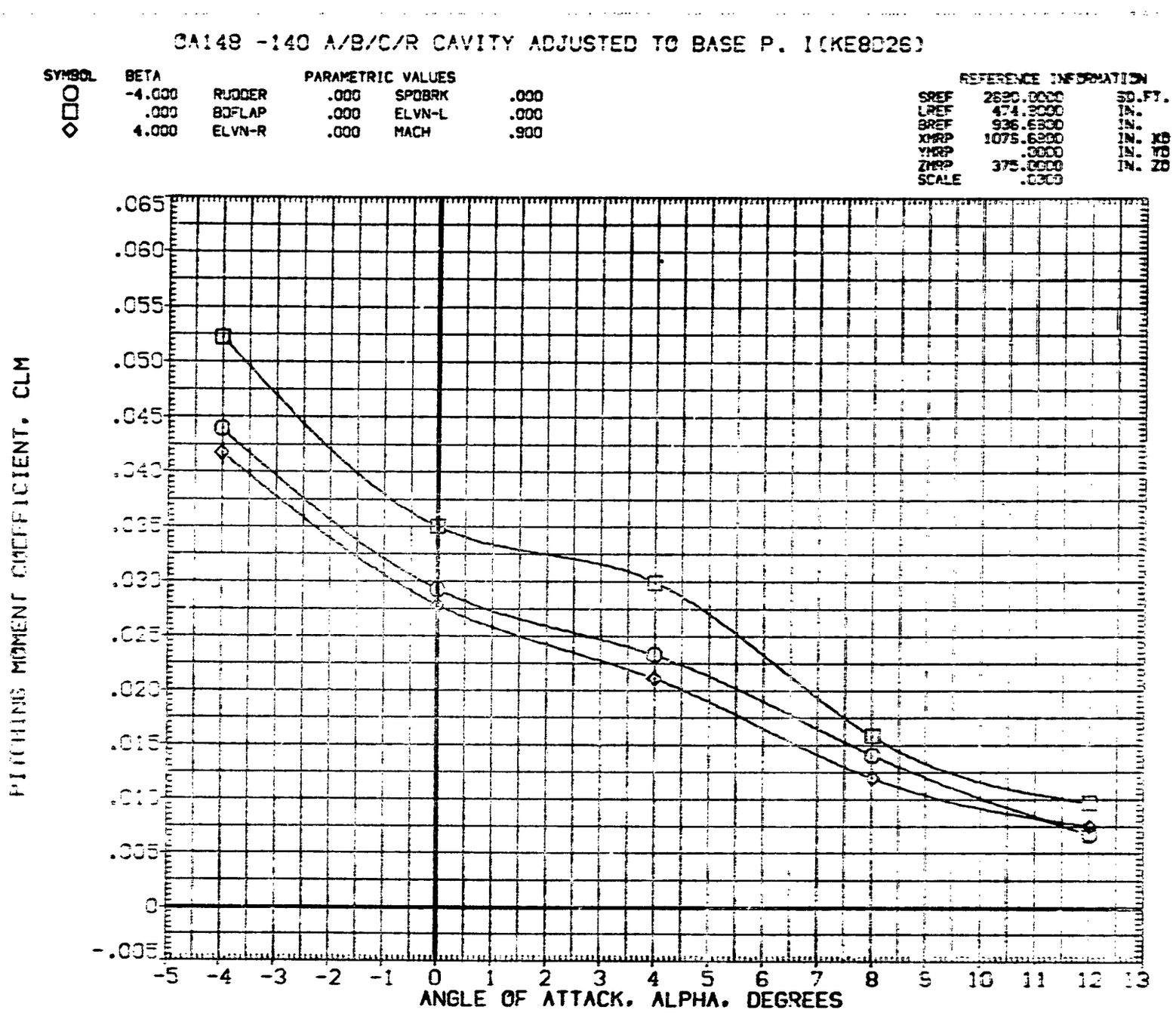


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

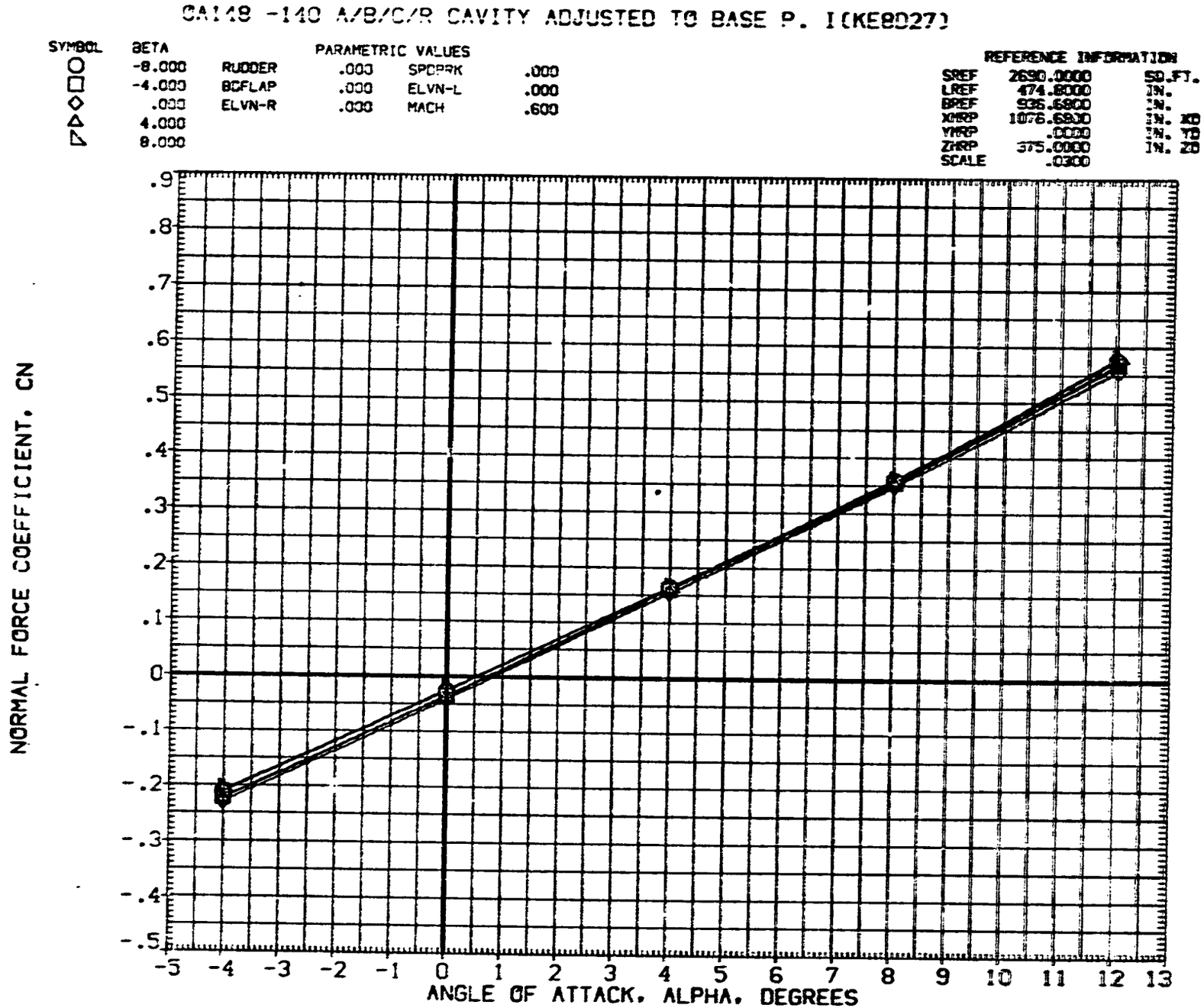


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

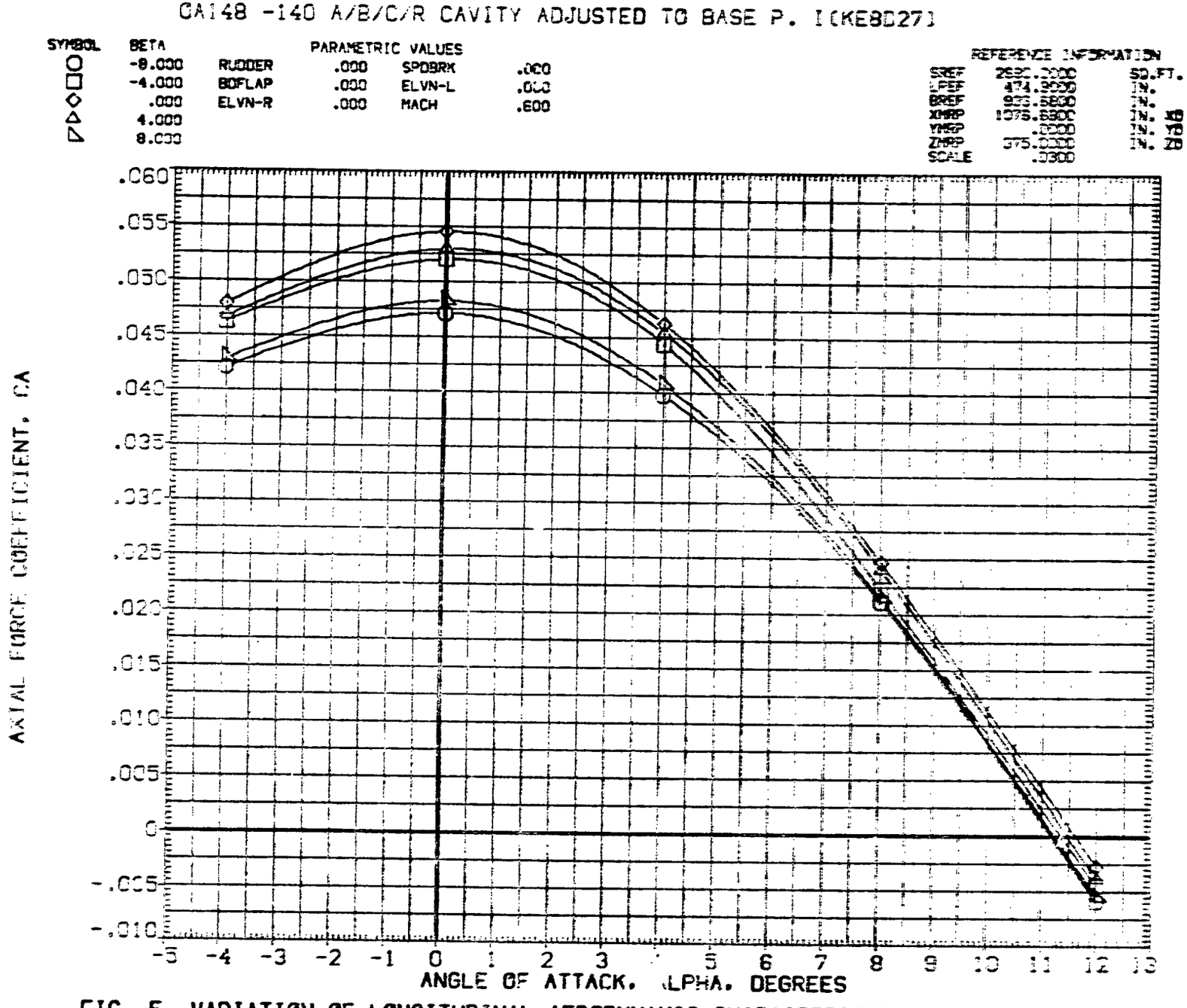


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

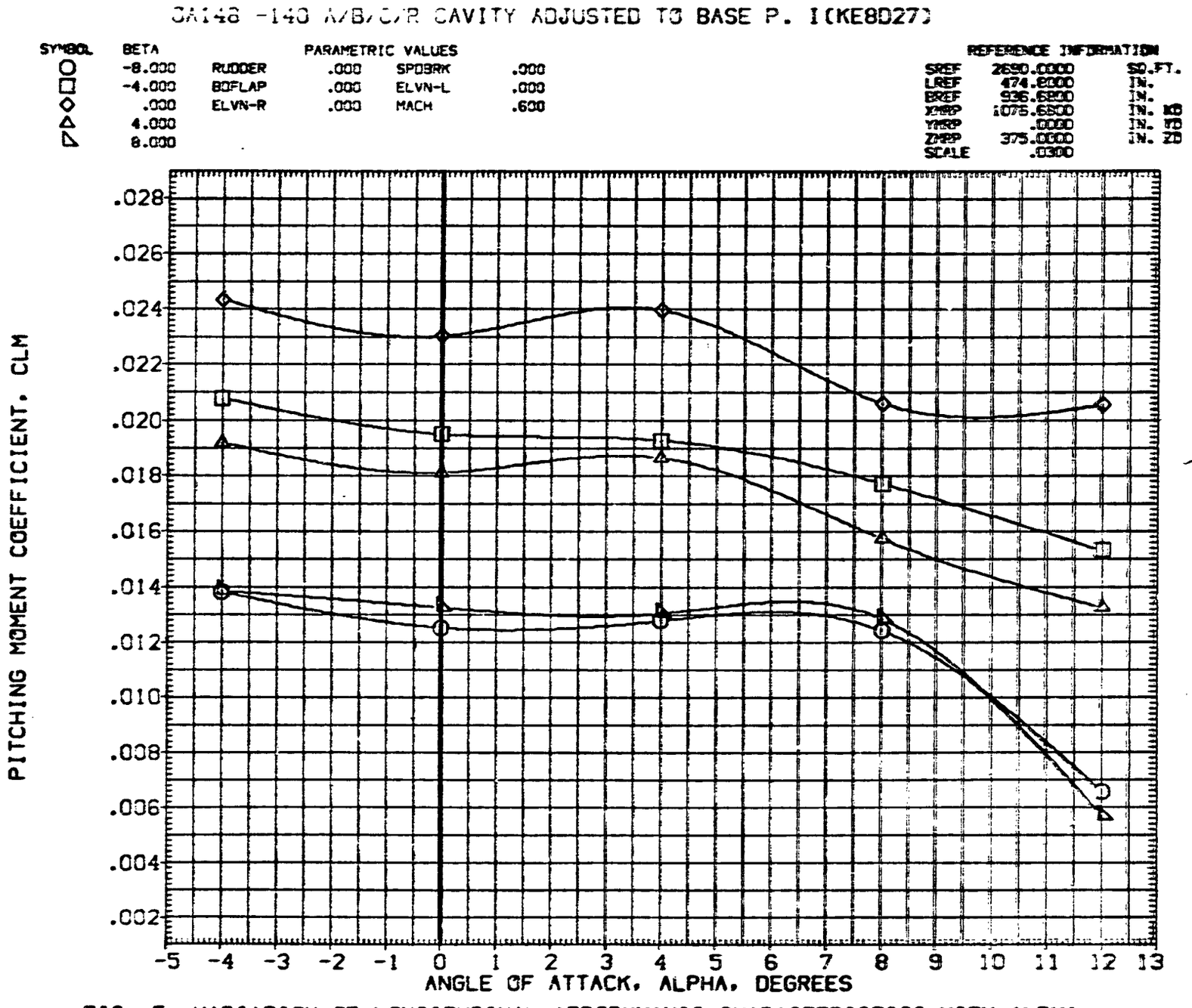


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

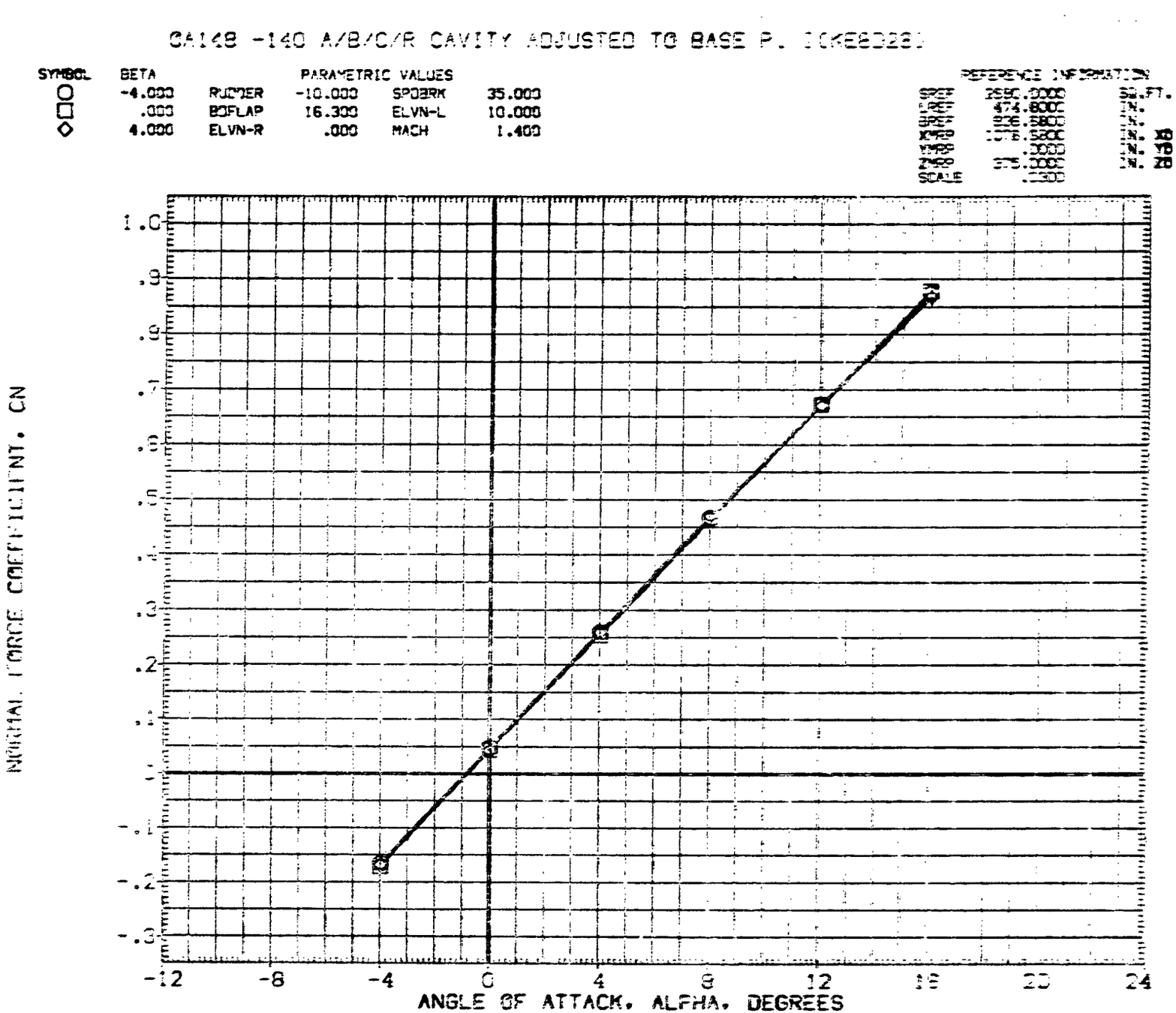


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

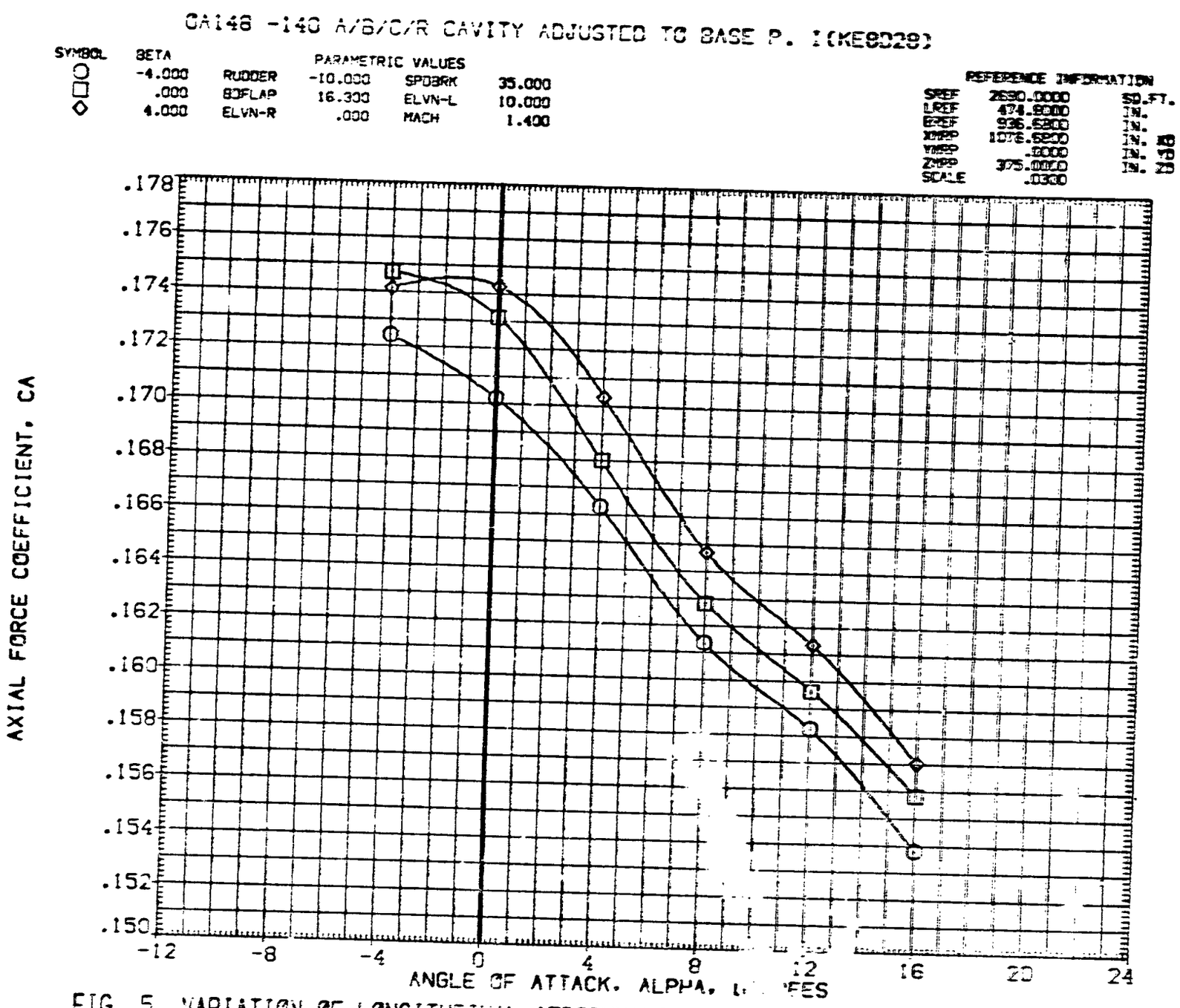


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

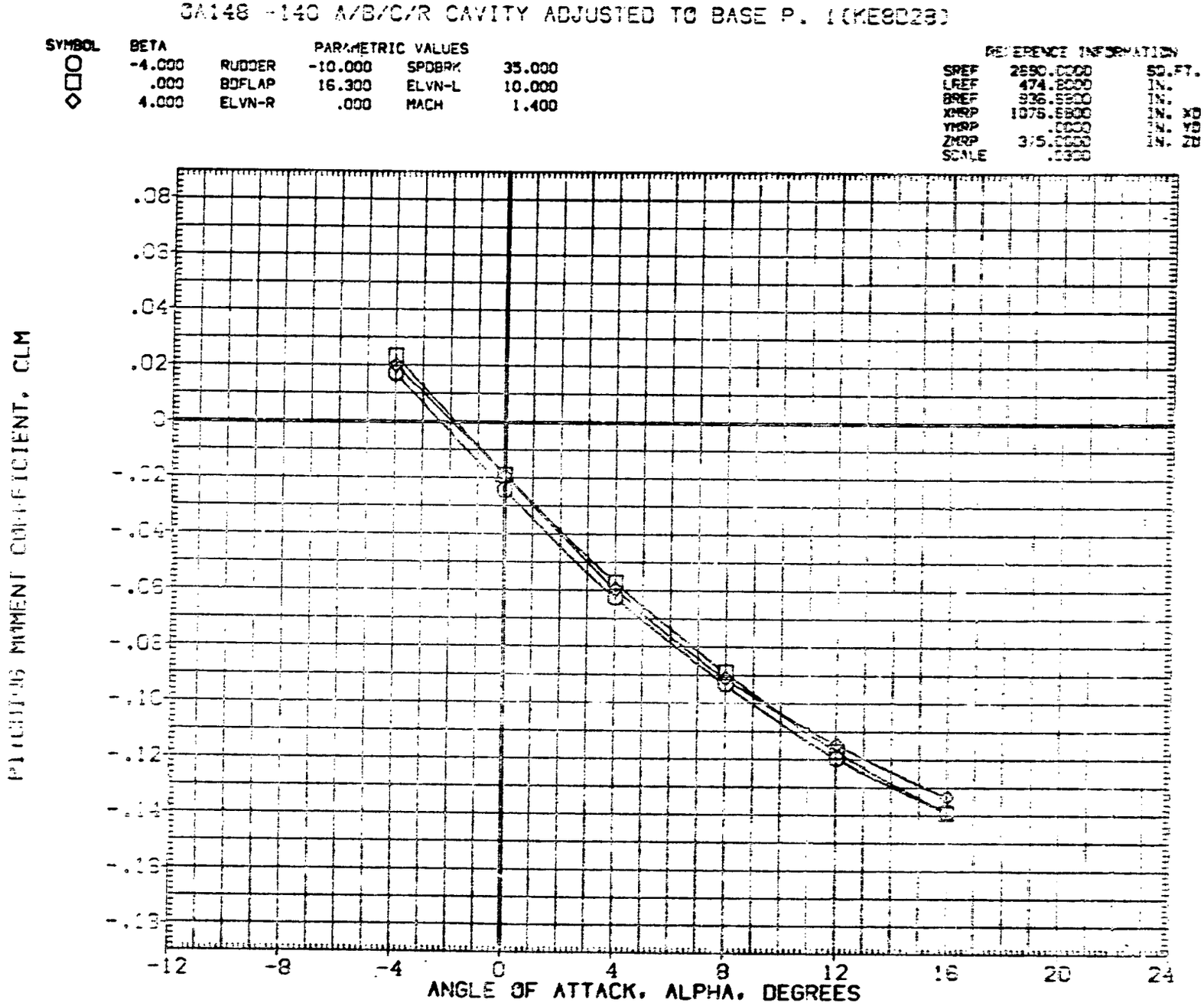


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D29)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

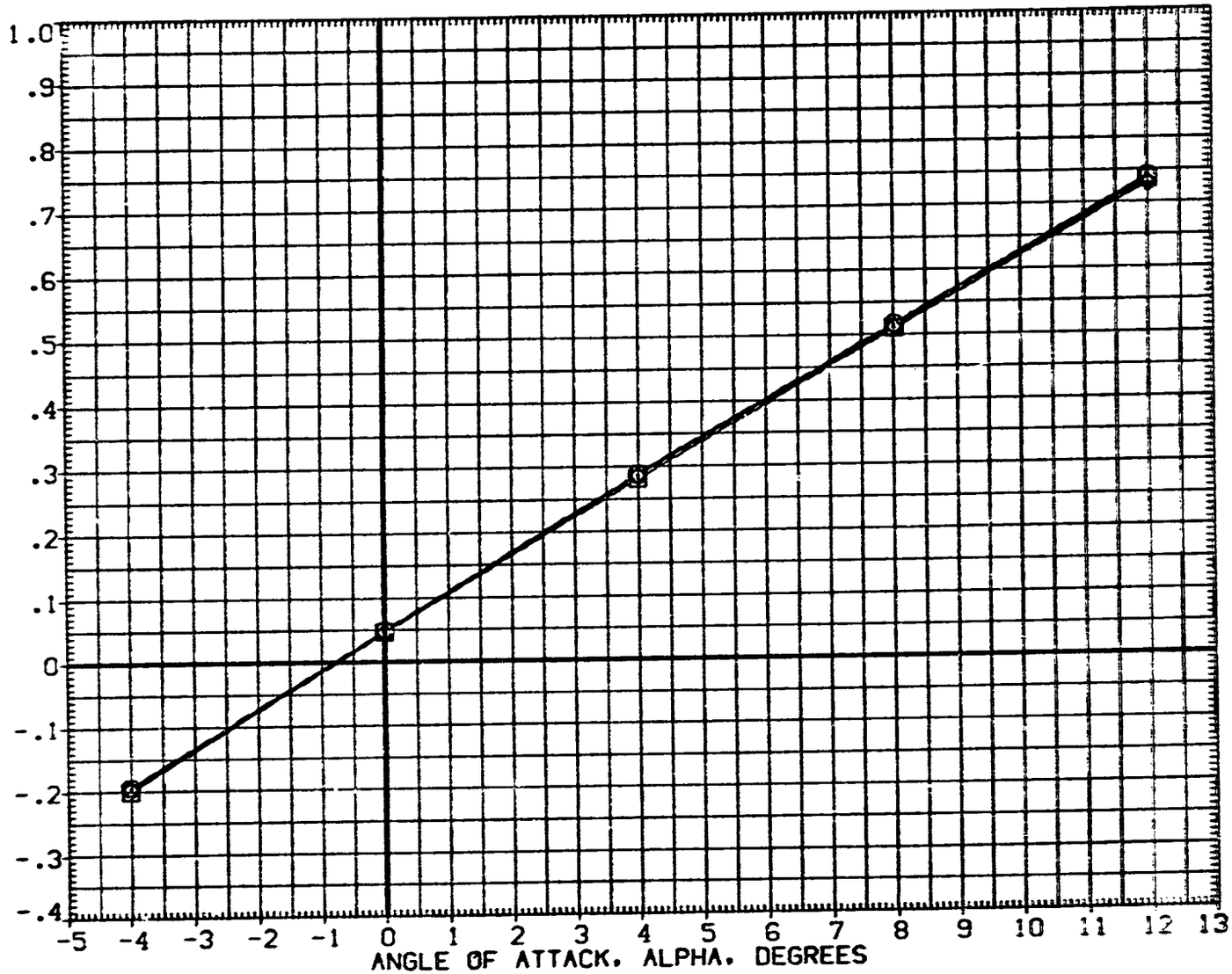


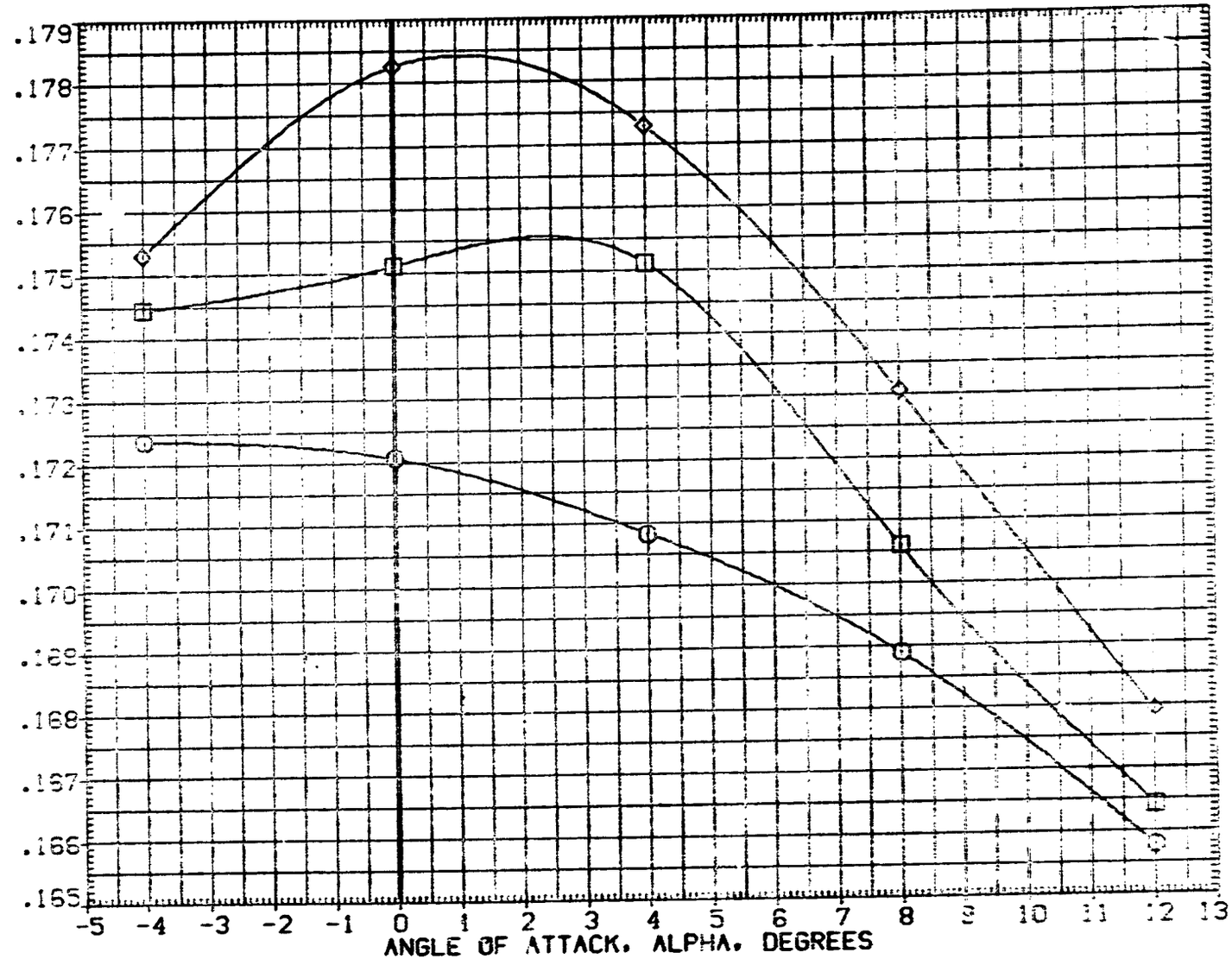
FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. (KE8D29)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.0000	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	305.0000	IN. ZB
SCALE	.0300	



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FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. 1(KE8029)

SYMBOL	EETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

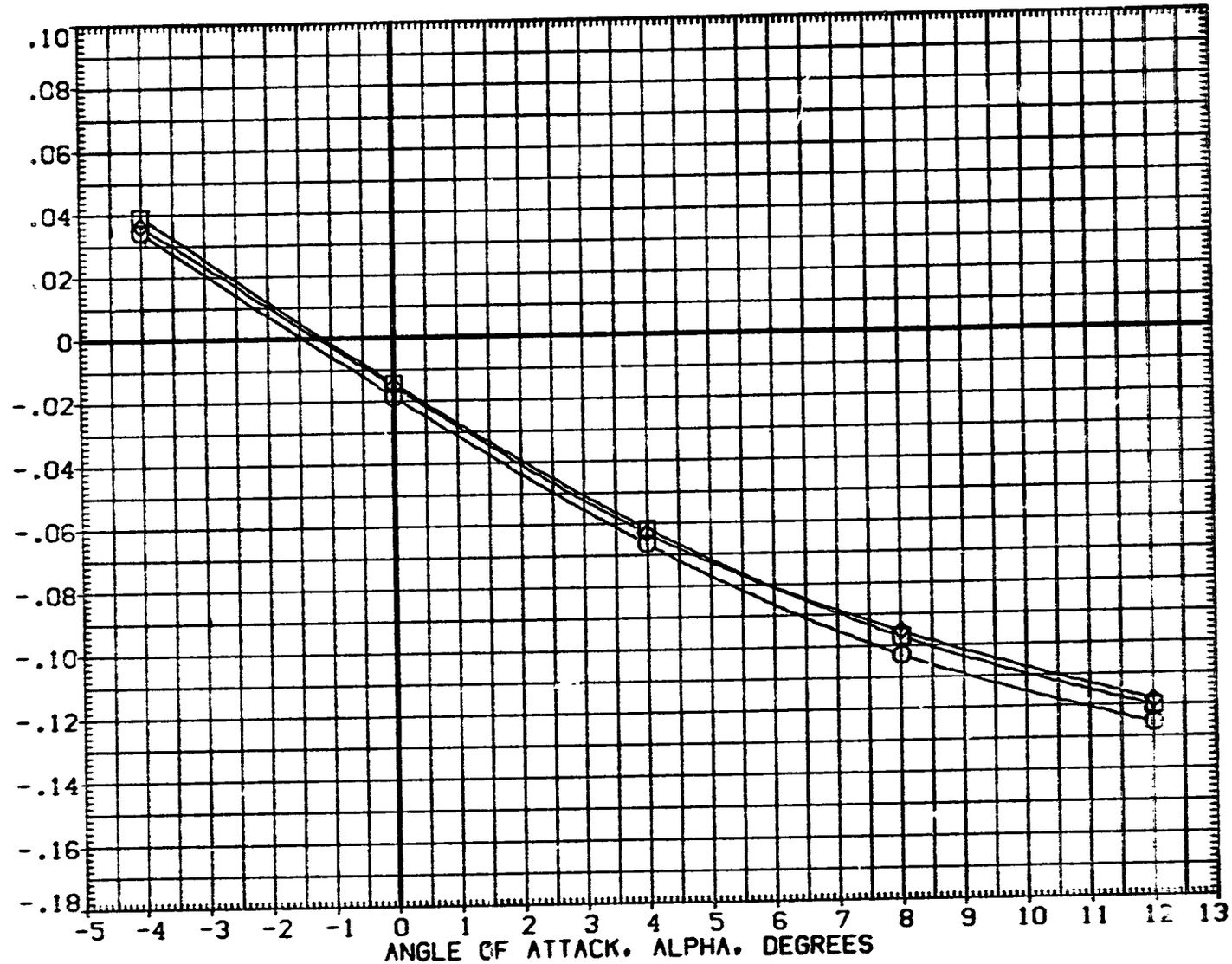


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

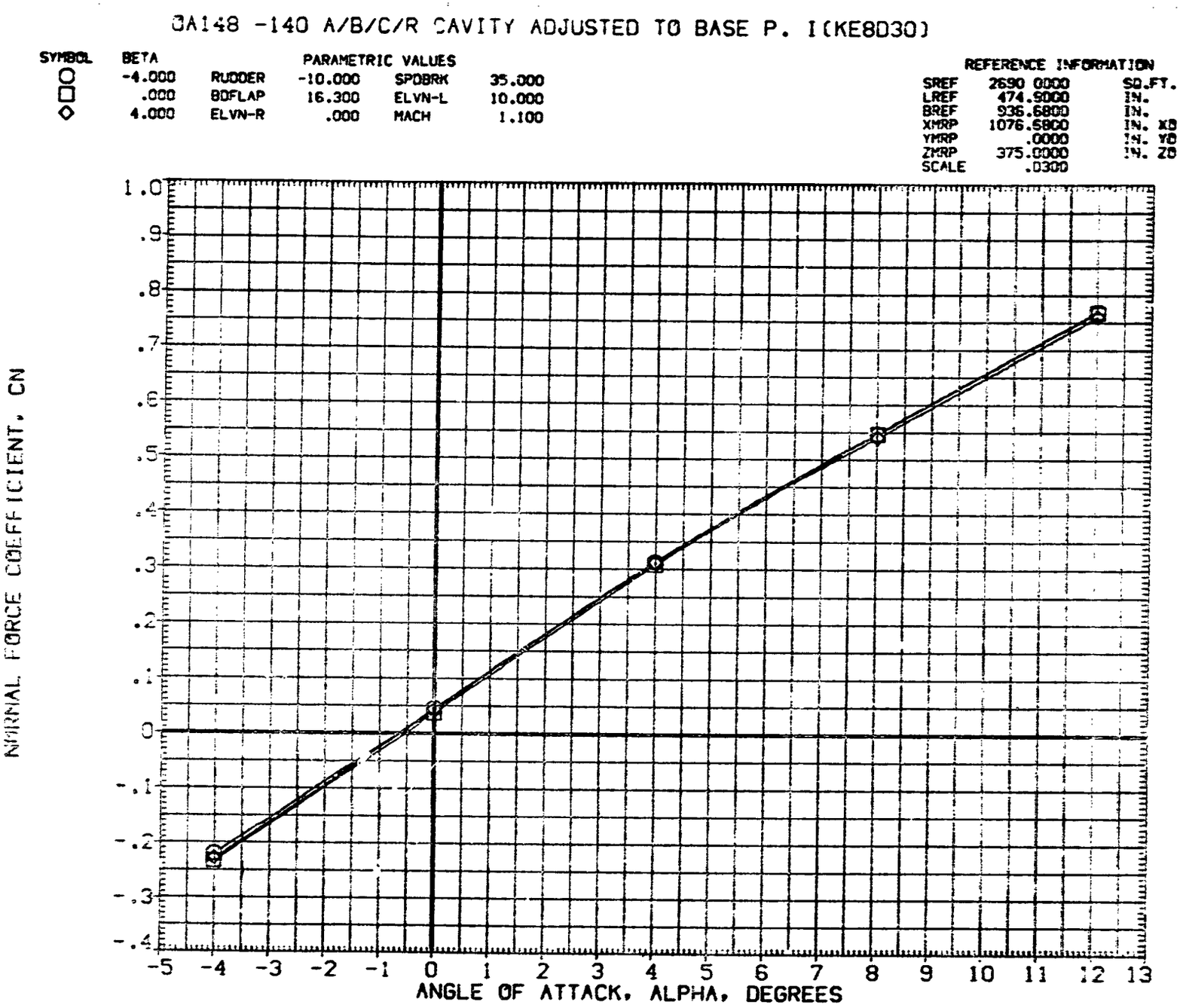


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

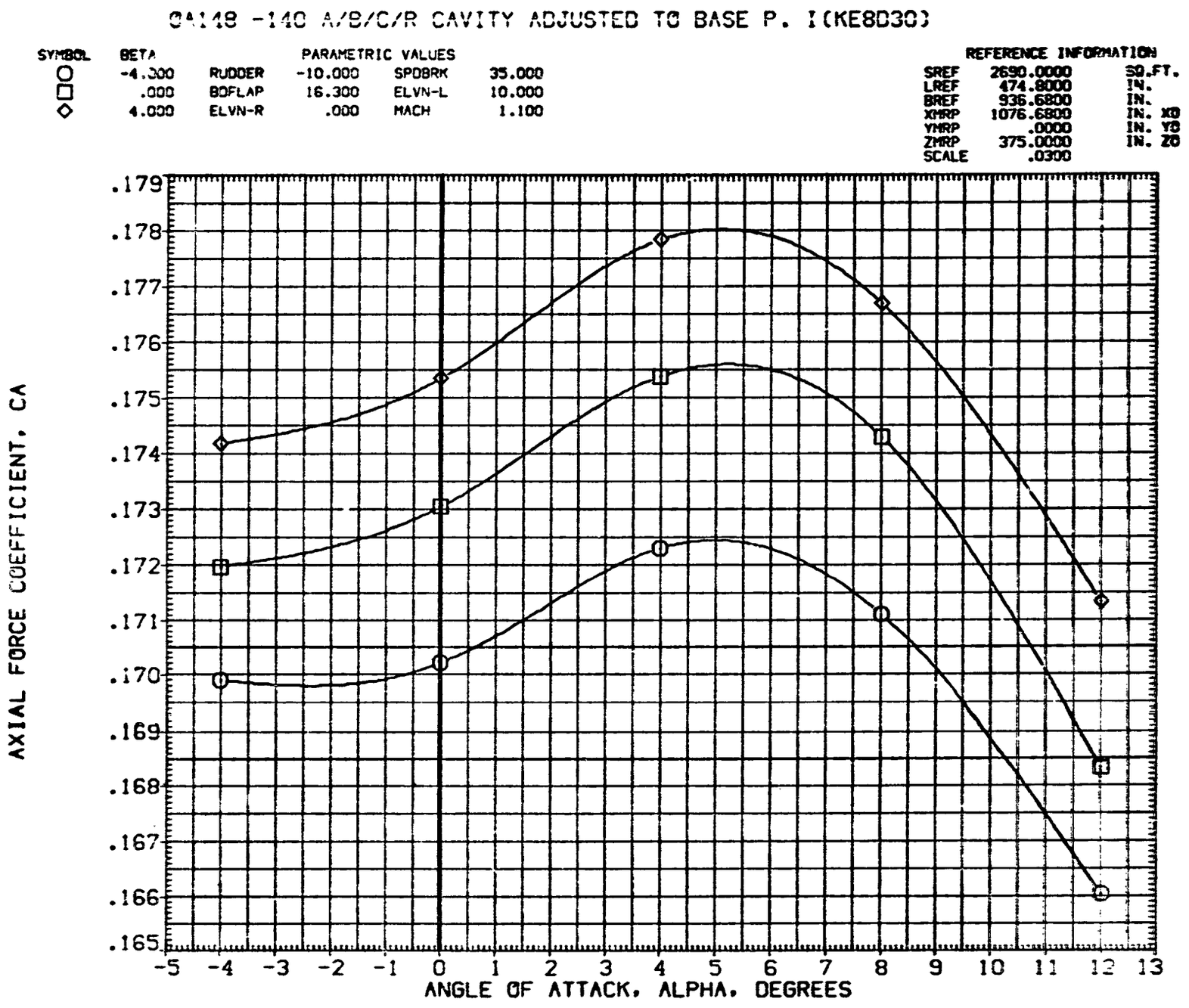


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

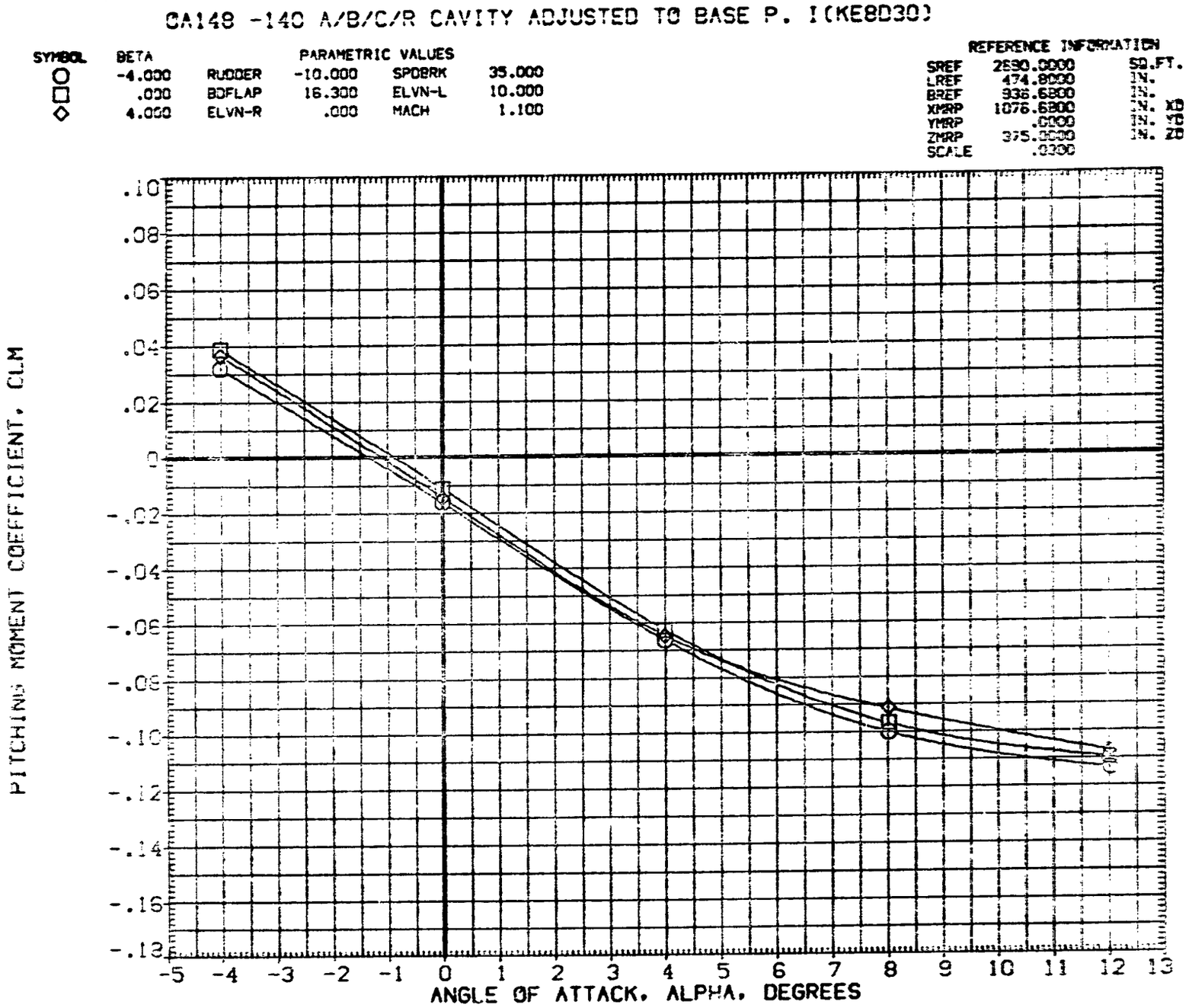


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

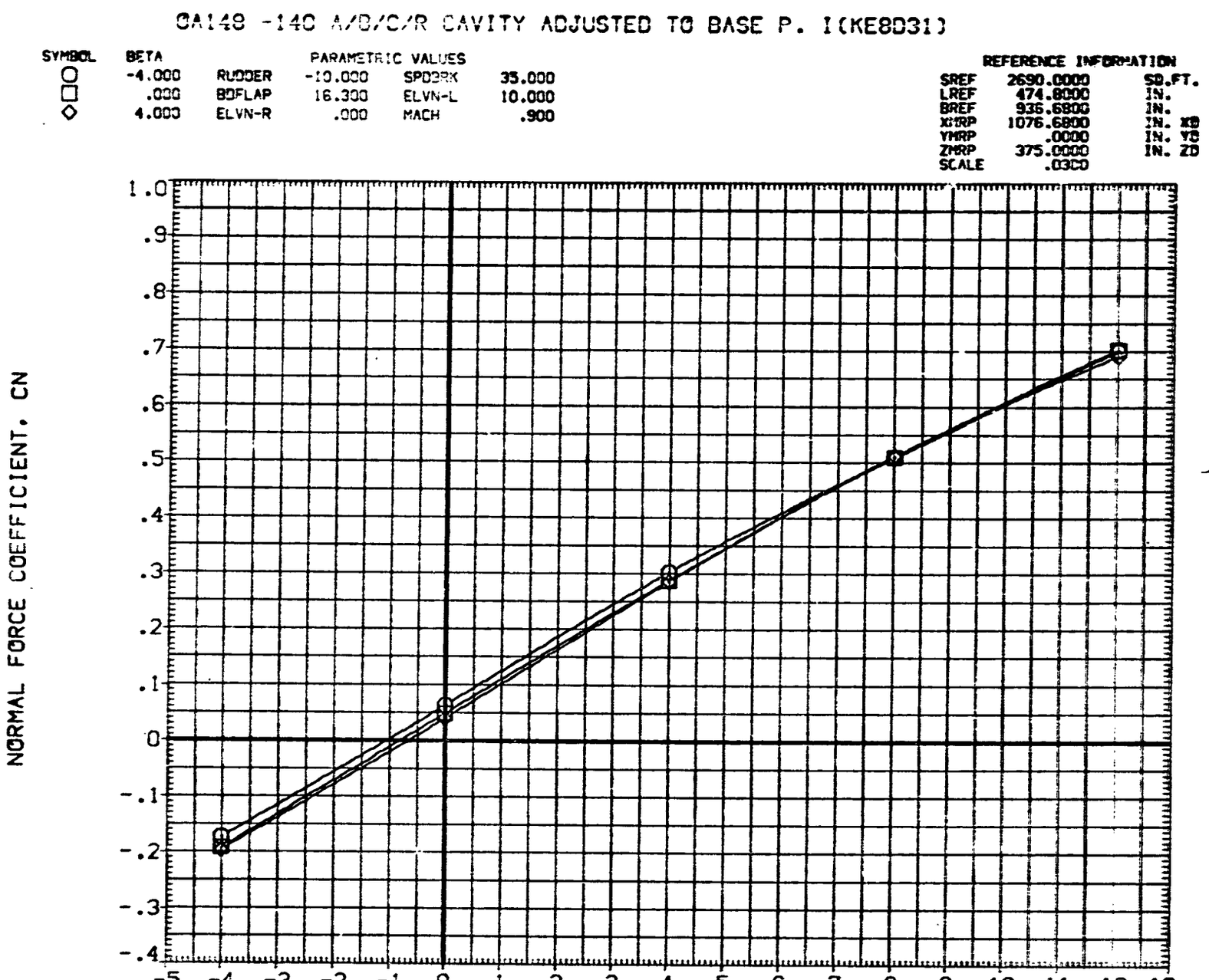


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

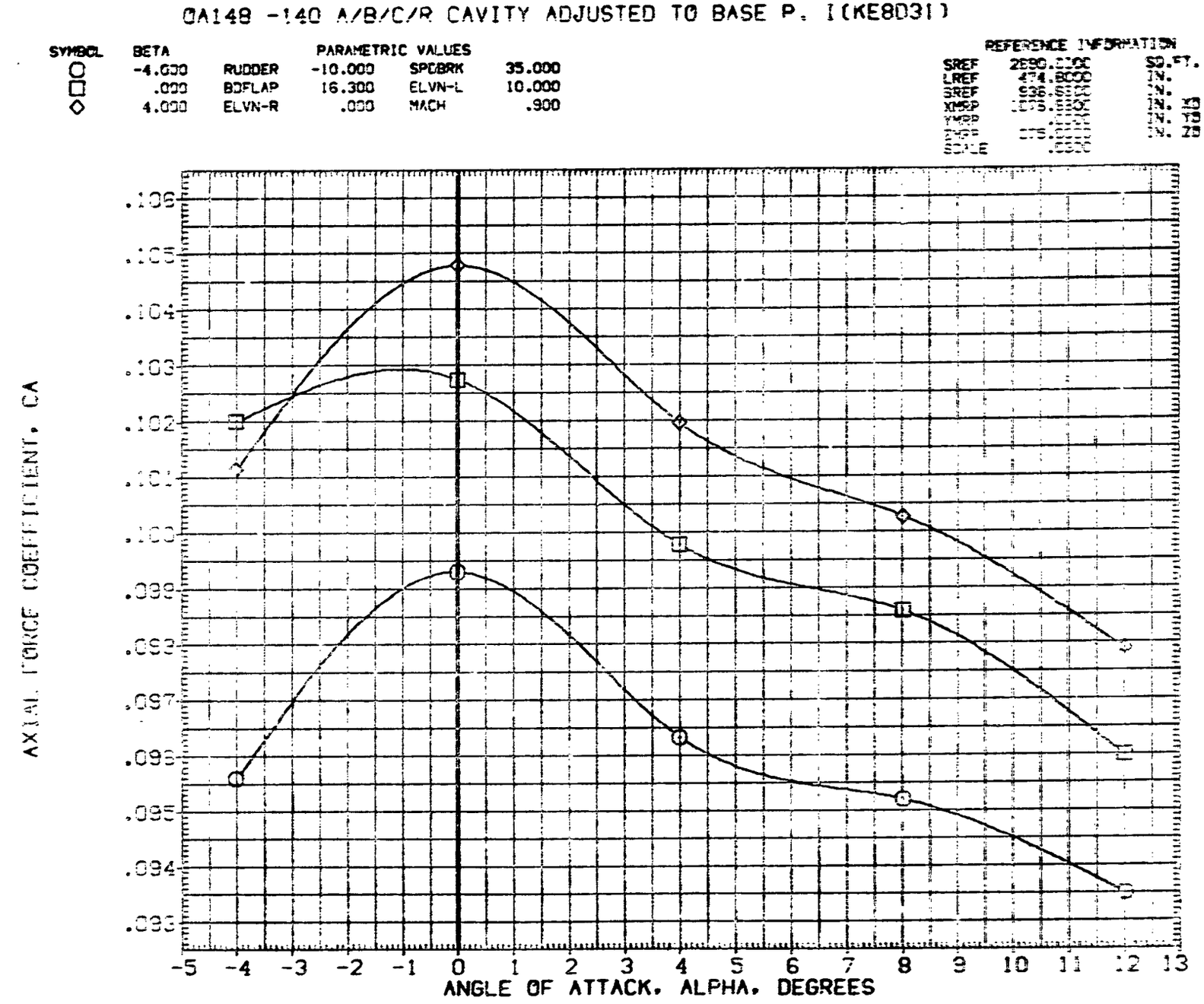


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

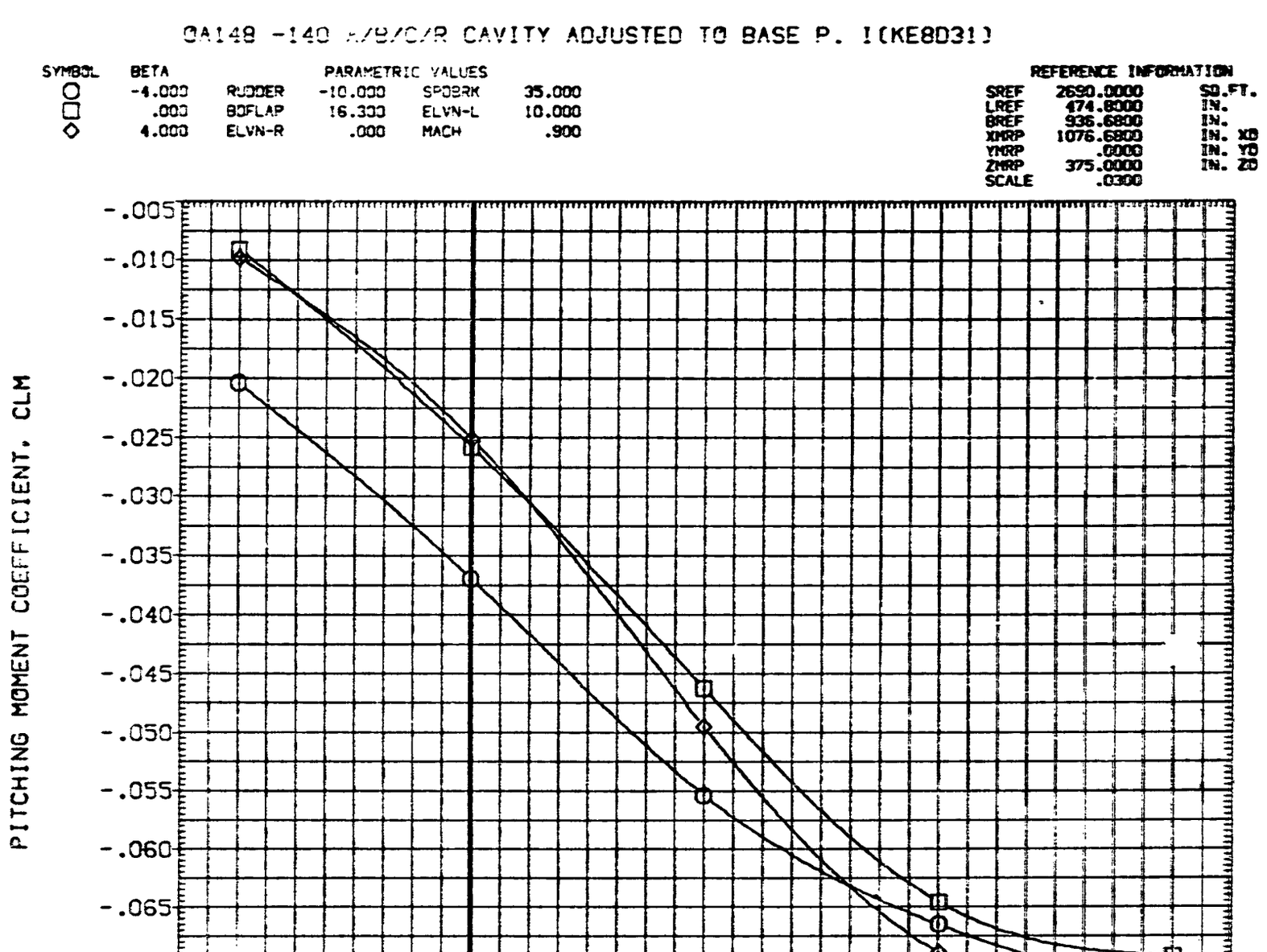


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

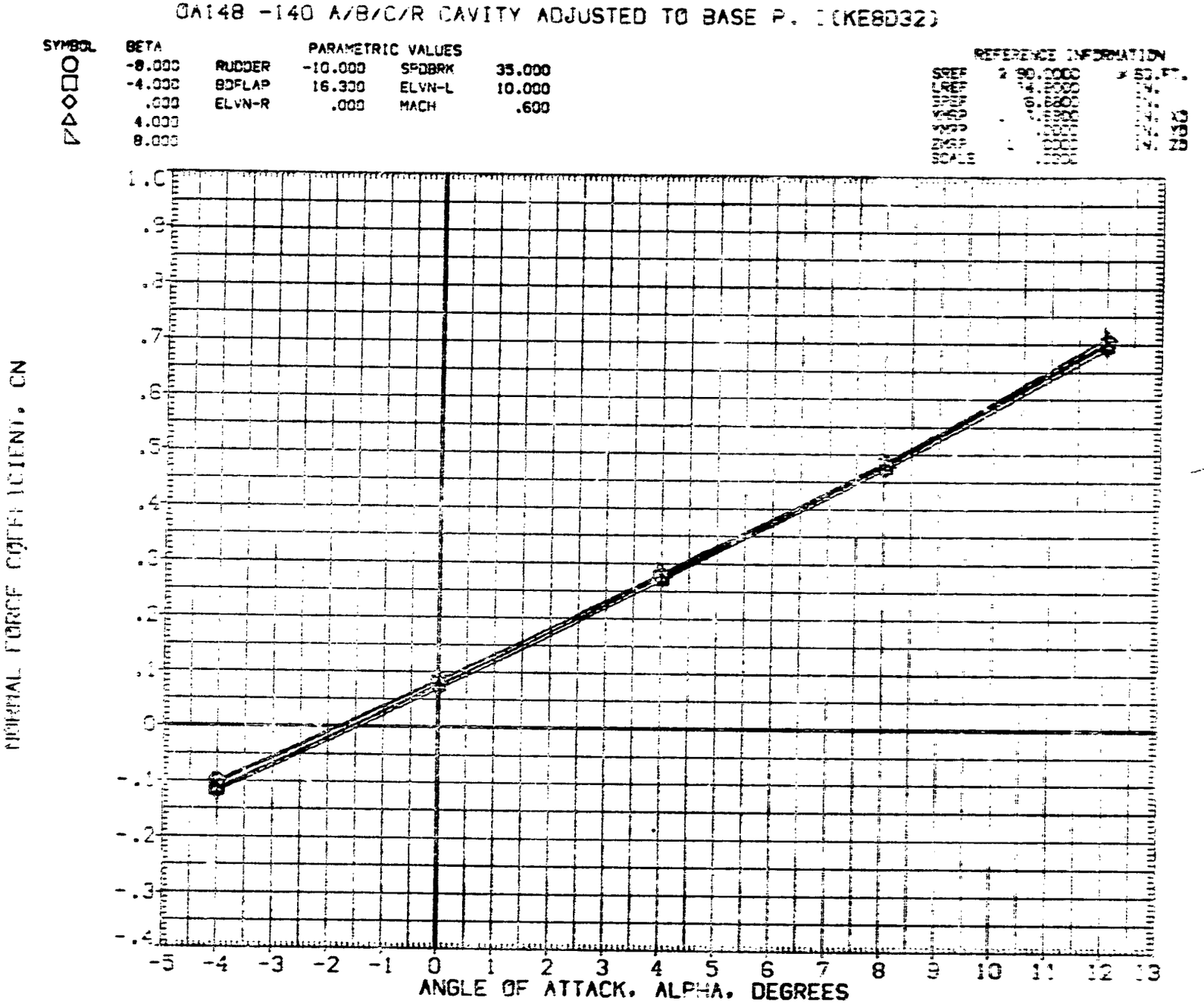


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

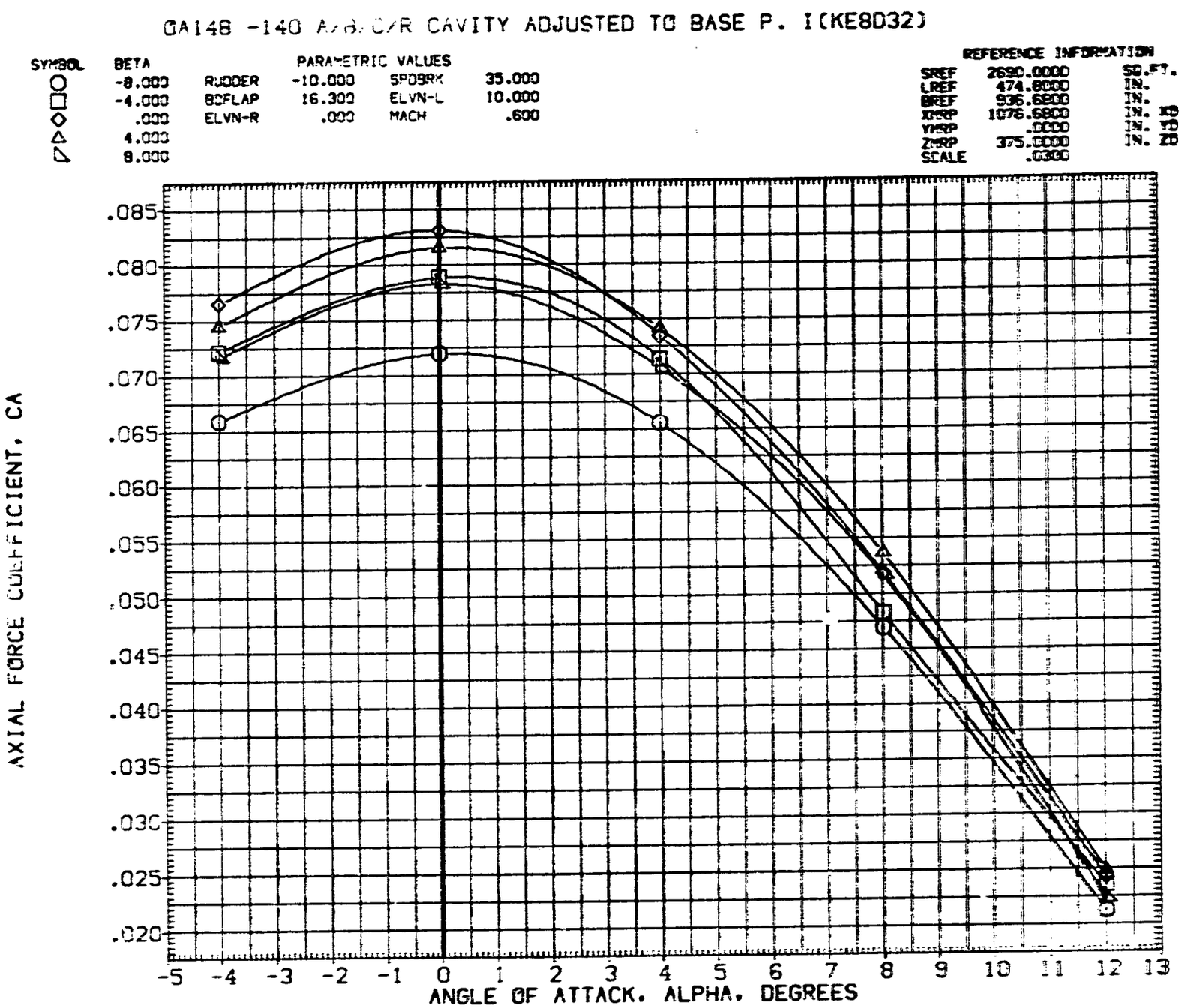


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

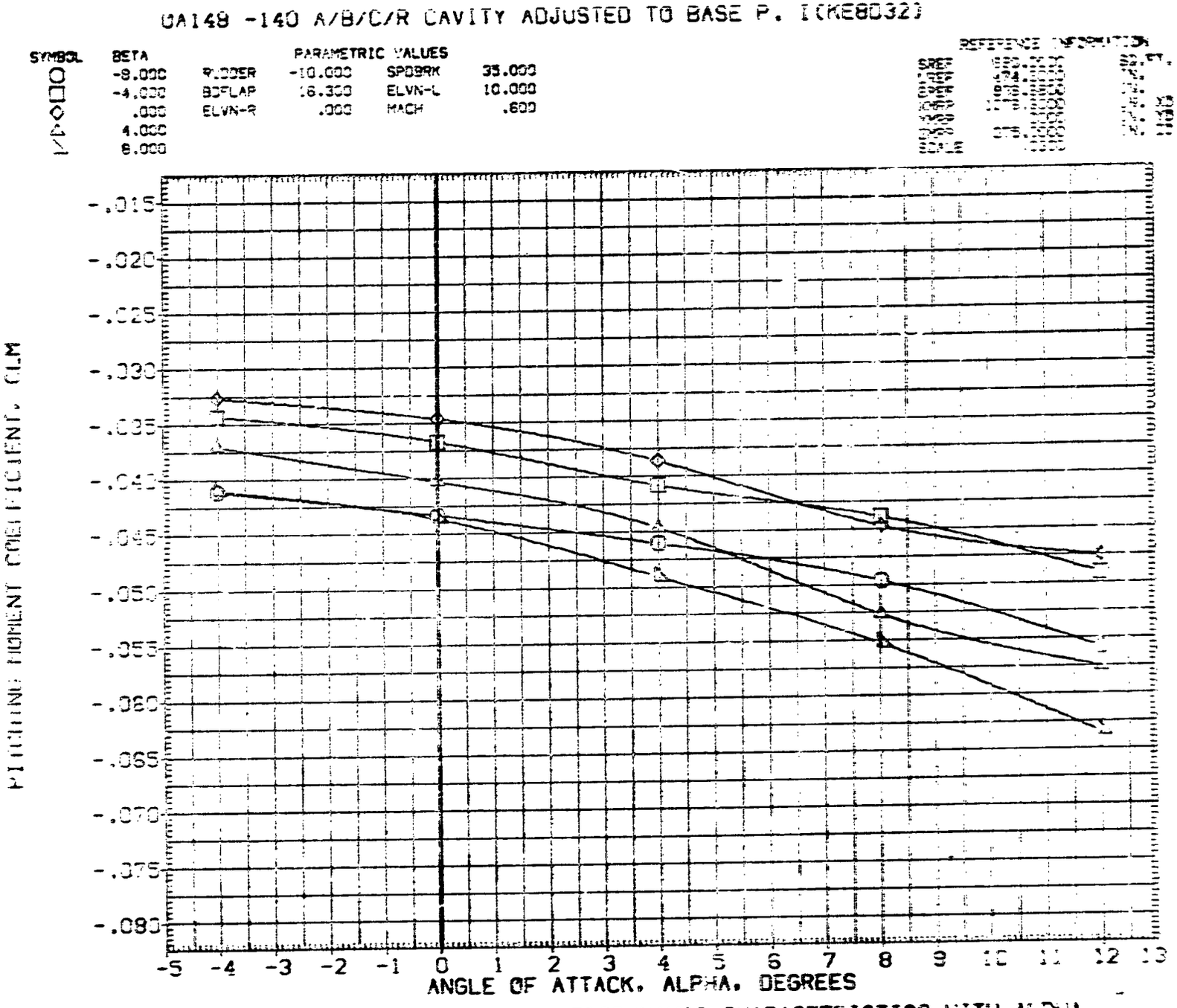


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	906.6800	IN.
XMRP	1076.5300	IN.
YMRP	.0000	IN.
ZMRP	375.0000	IN.
SCALE	.0300	

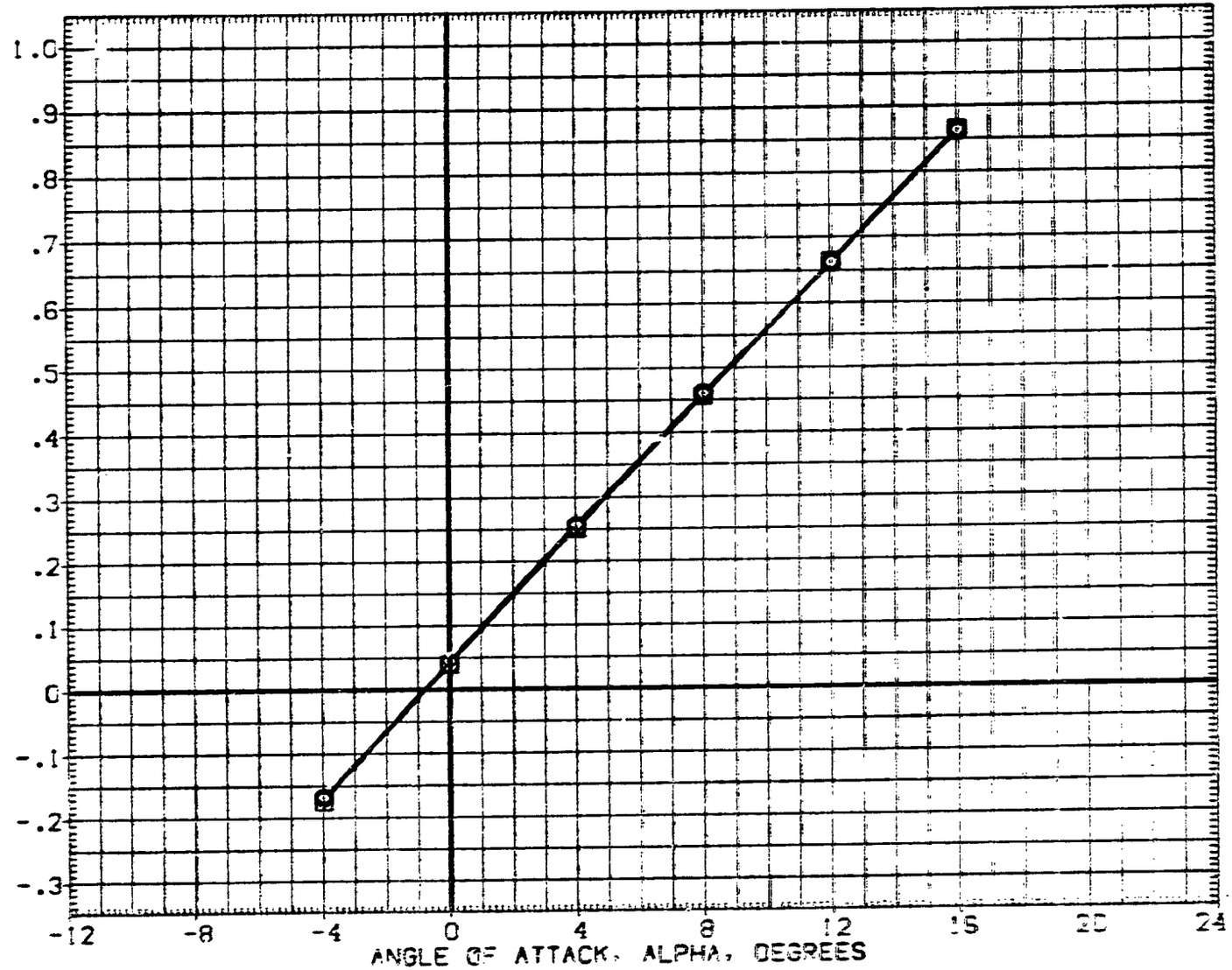


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D33)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2610.0000	SQ.FT.
LREF	474.9000	IN.
BREF	900.0000	IN.
XMRP	1075.0000	IN. XB
YMRP	.0000	IN. YB
ZMRP	305.0000	IN. ZB
SCALE	1.0000	

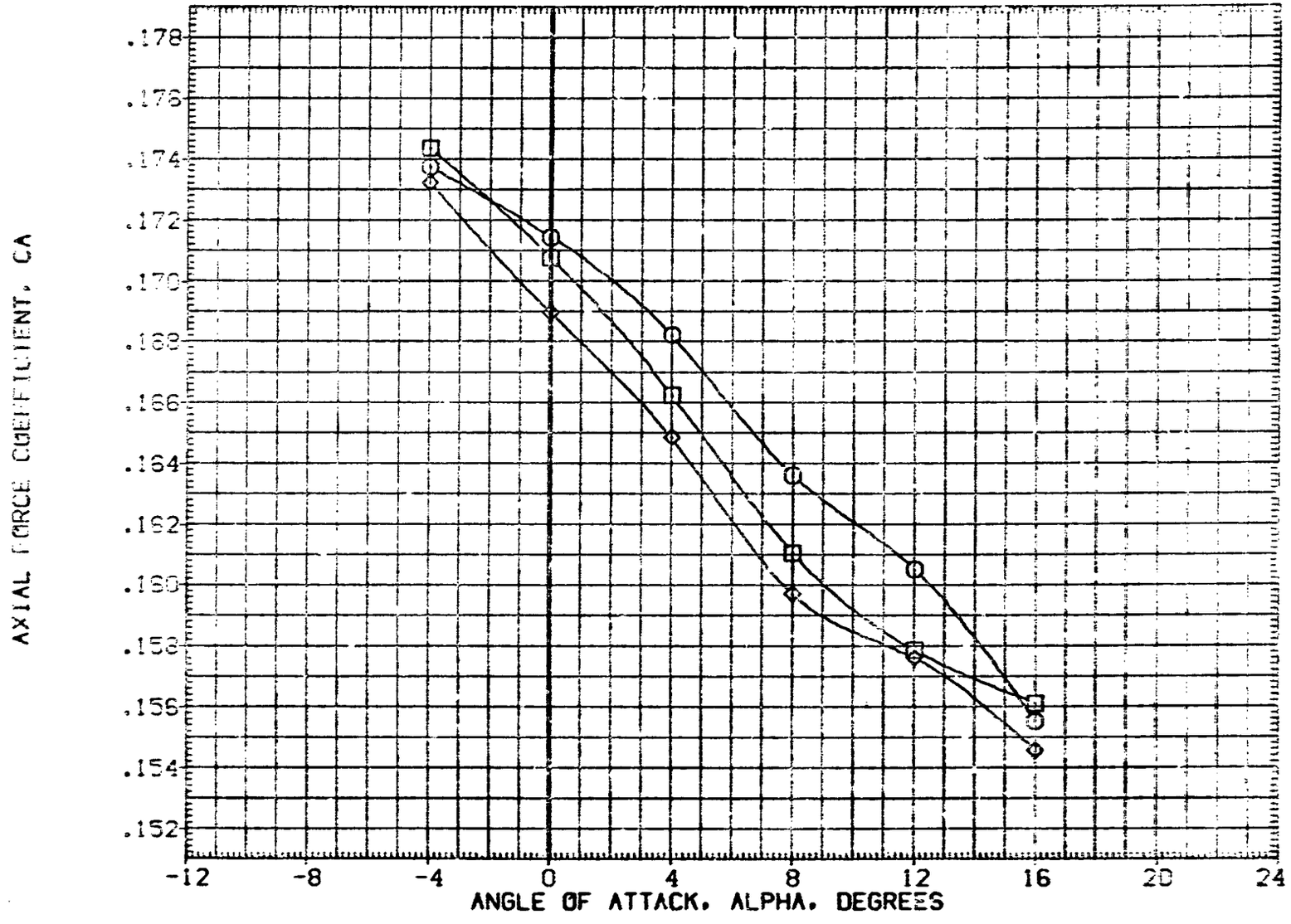


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

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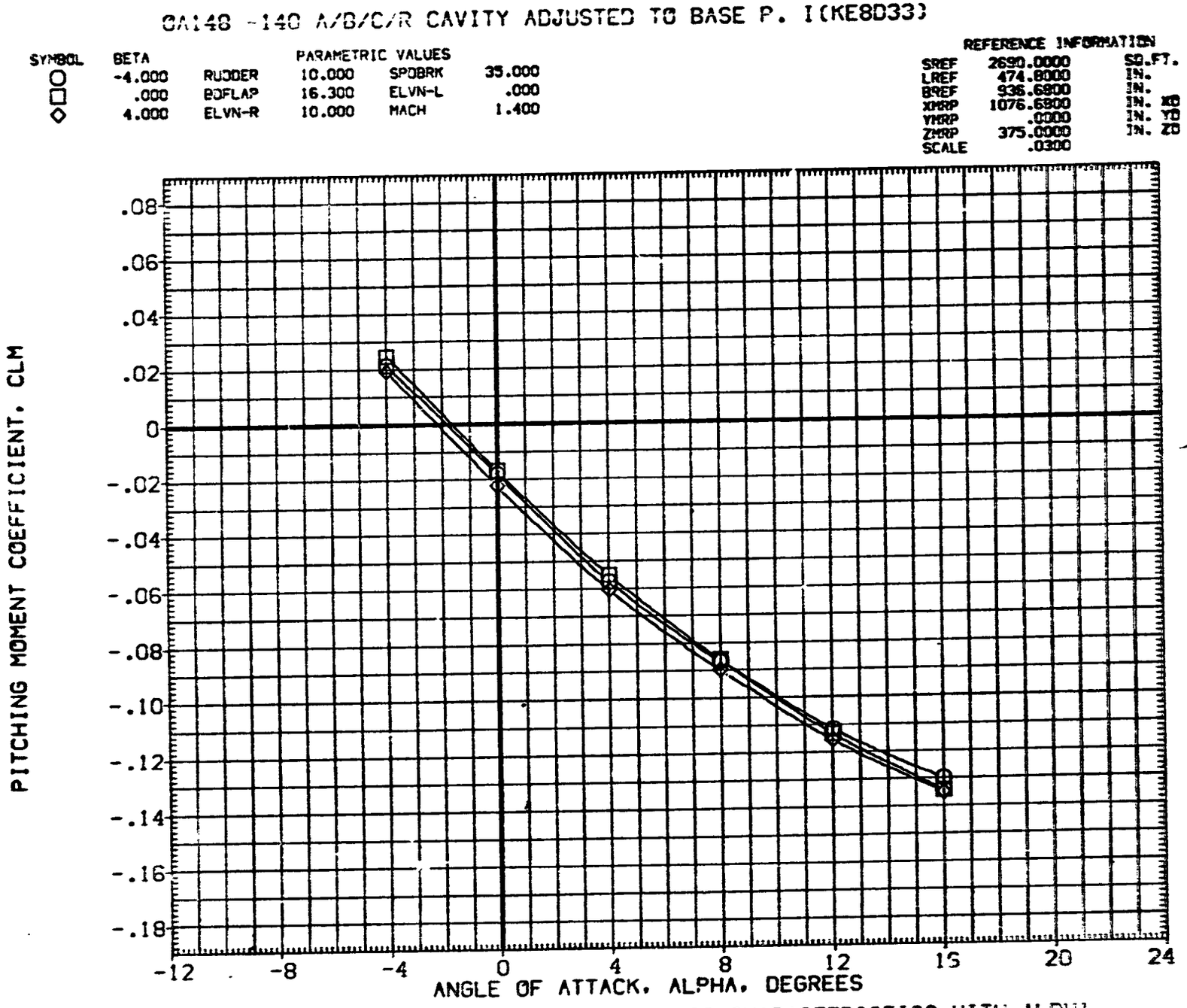


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D34)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.3000	IN. ZB
SCALE	.0300	

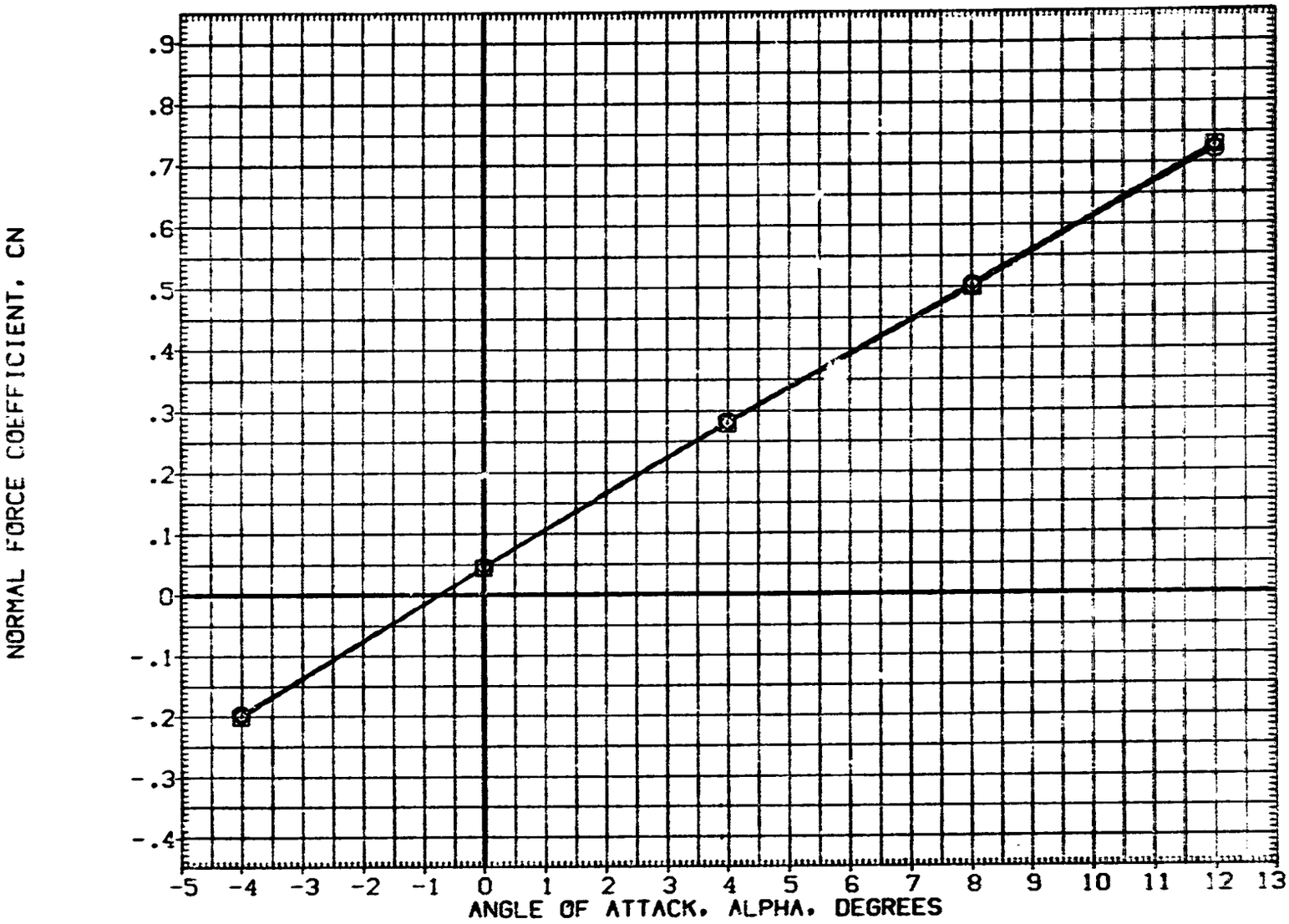


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

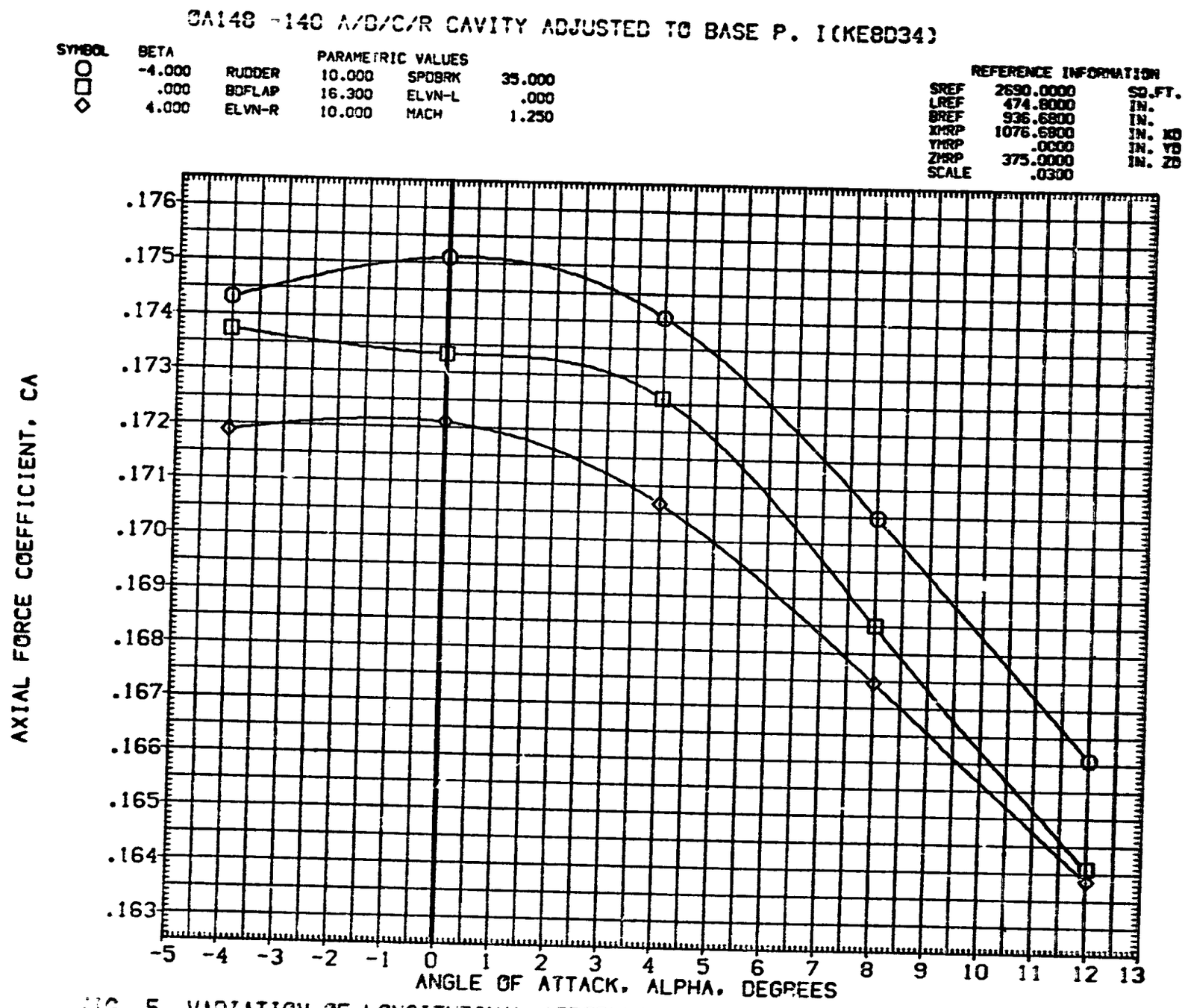


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D34)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2590.0000	SQ.FT.
LREF	474.2000	IN.
BREF	936.6800	IN.
XMRP	1075.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

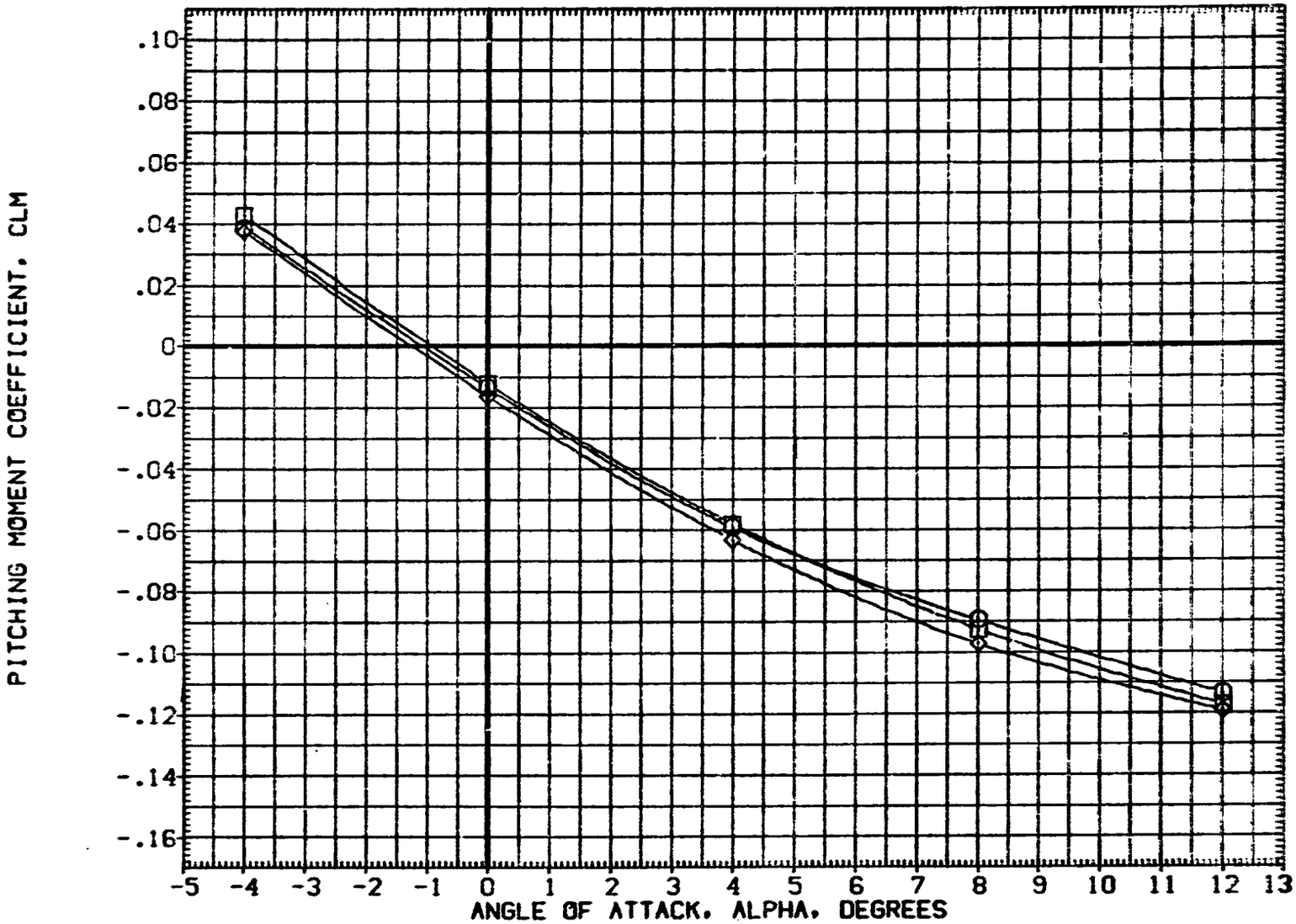


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

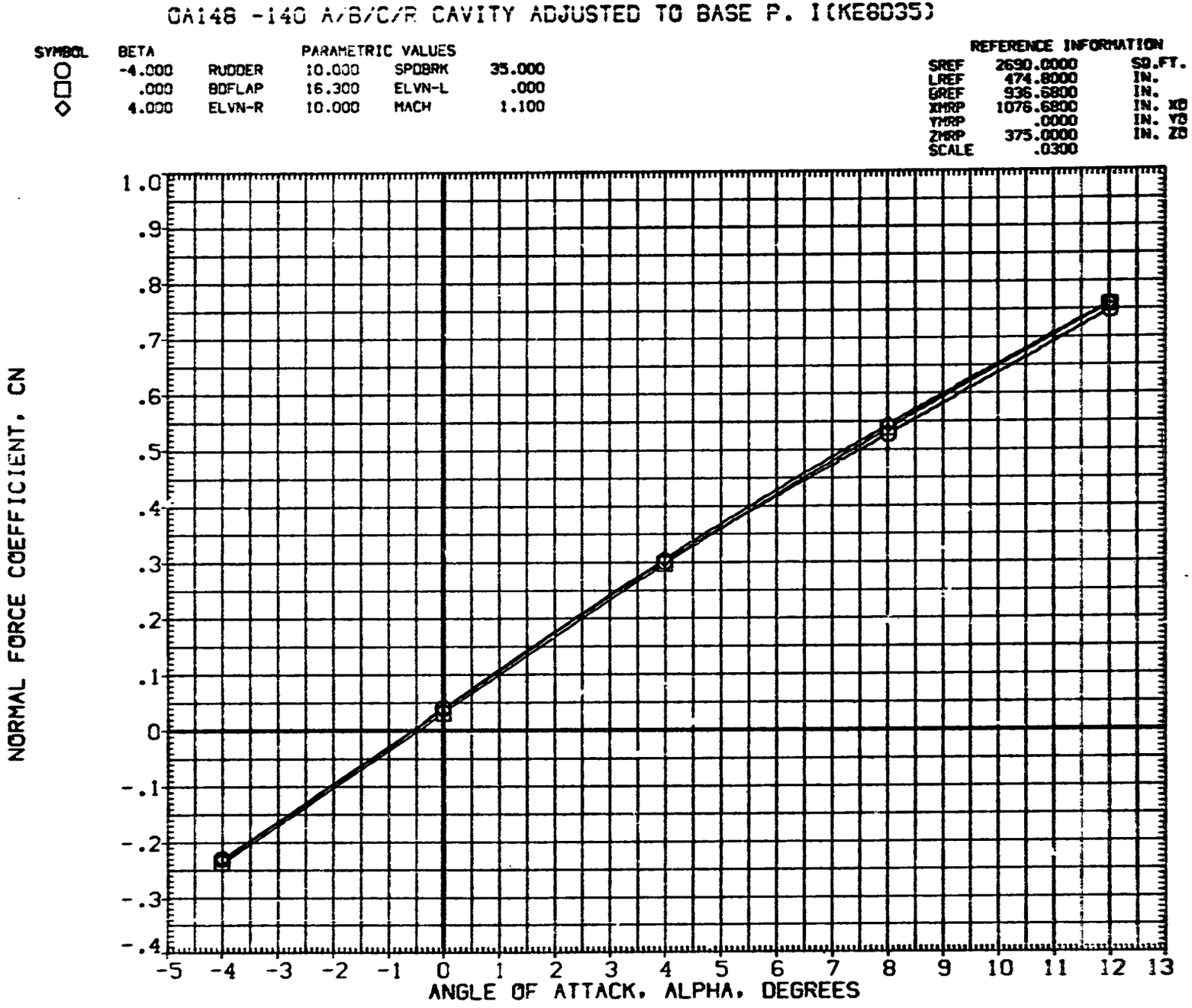


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

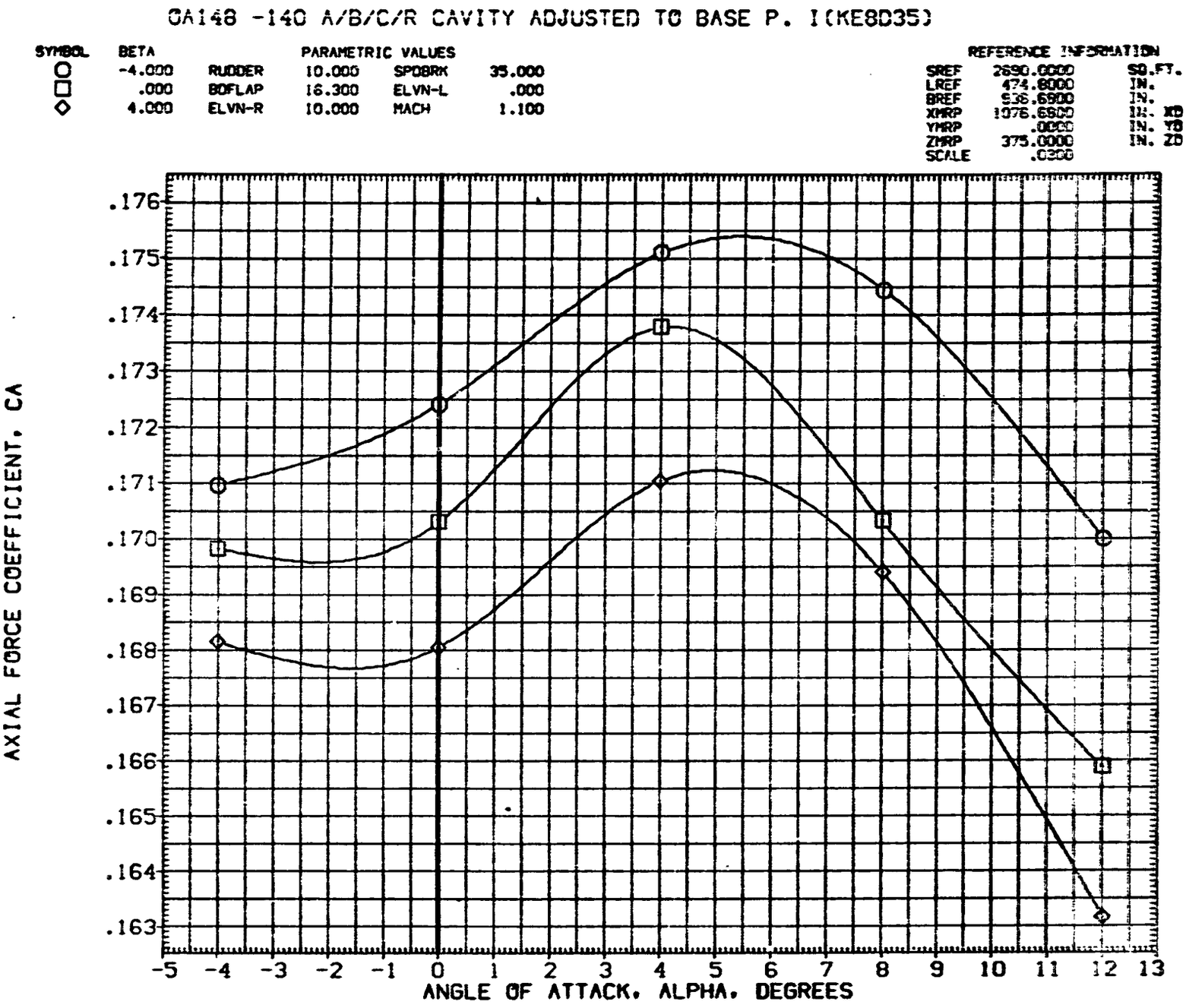


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

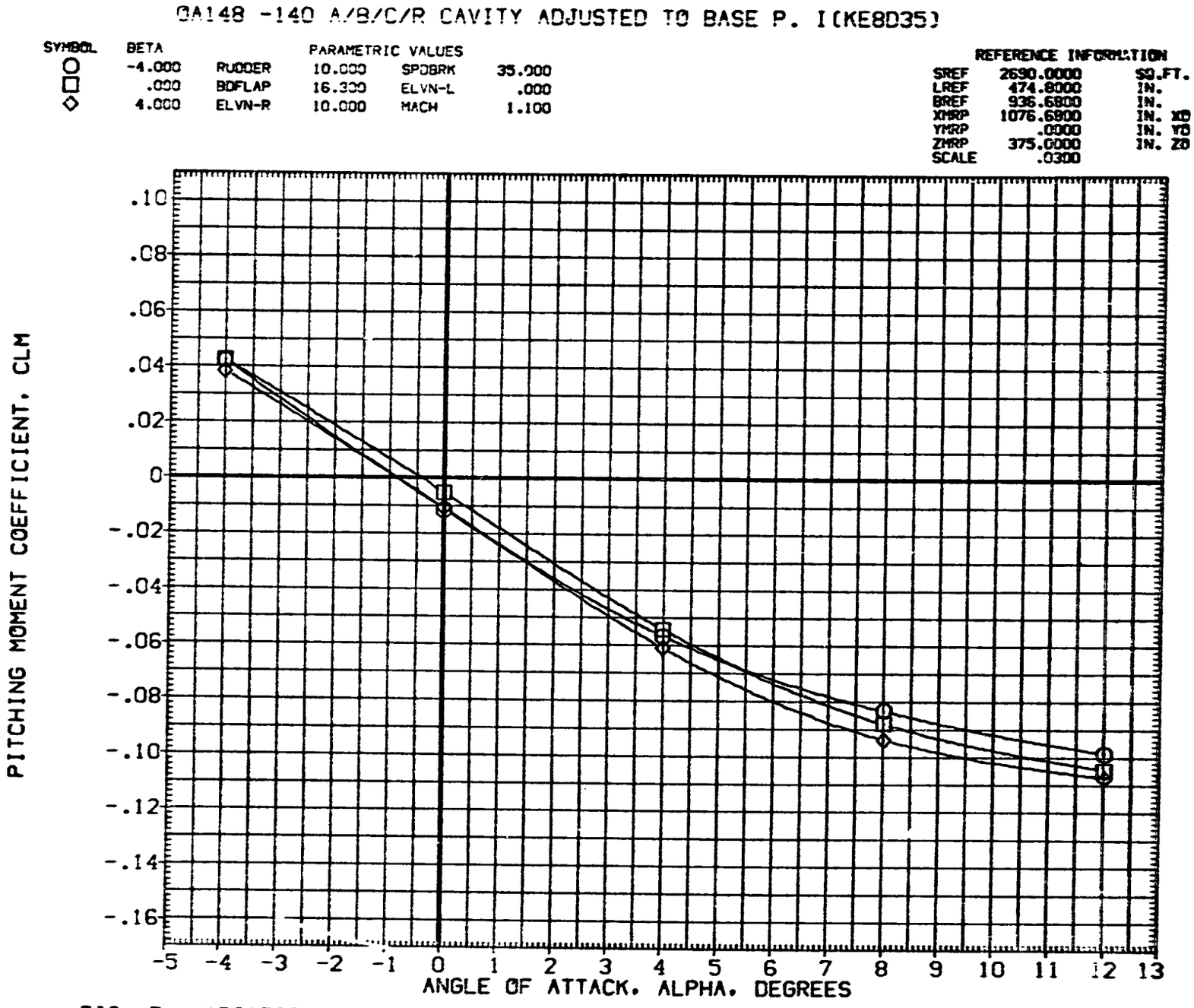


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

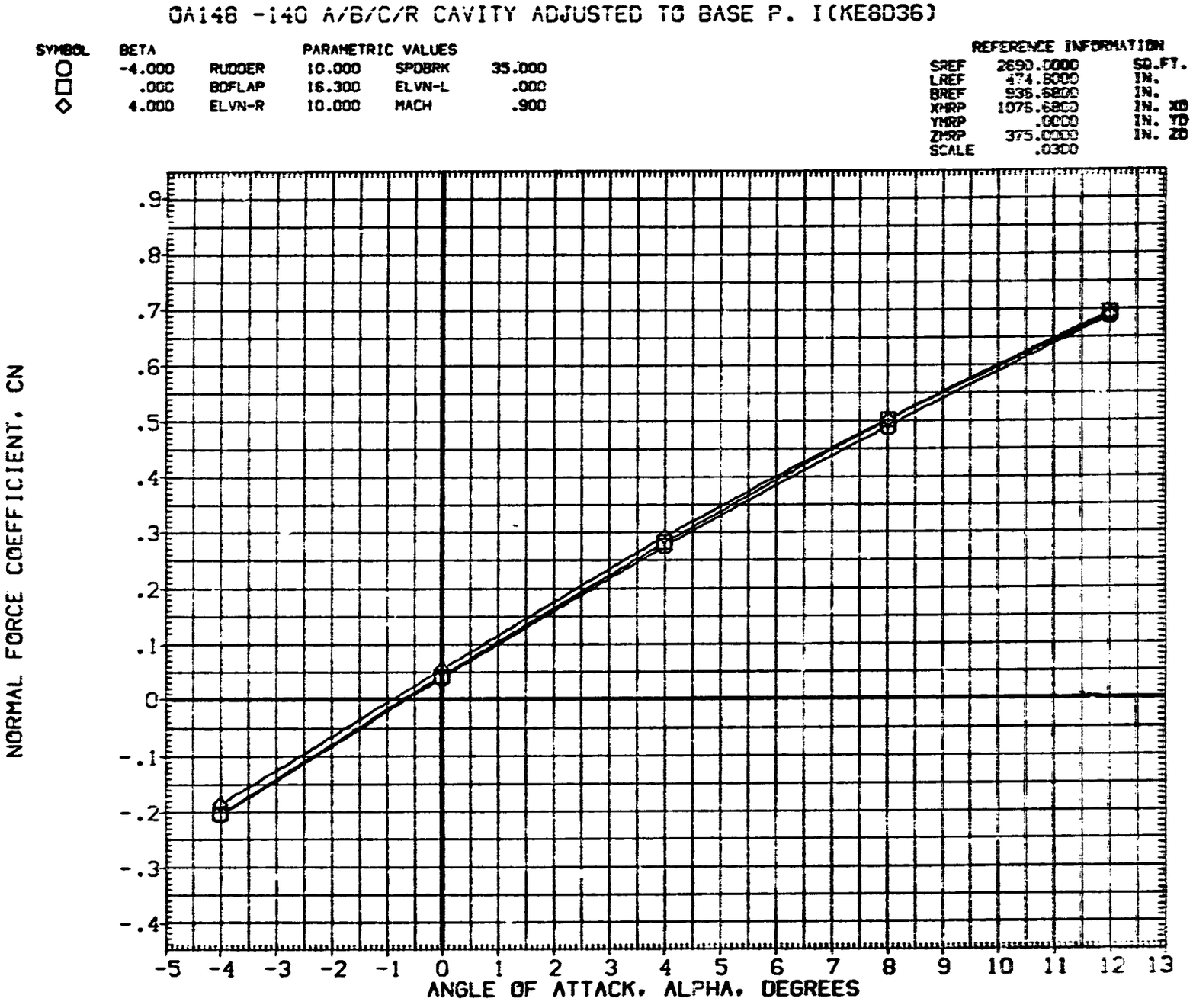


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D36)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	325.0000	IN. ZB
SCALE	.0300	

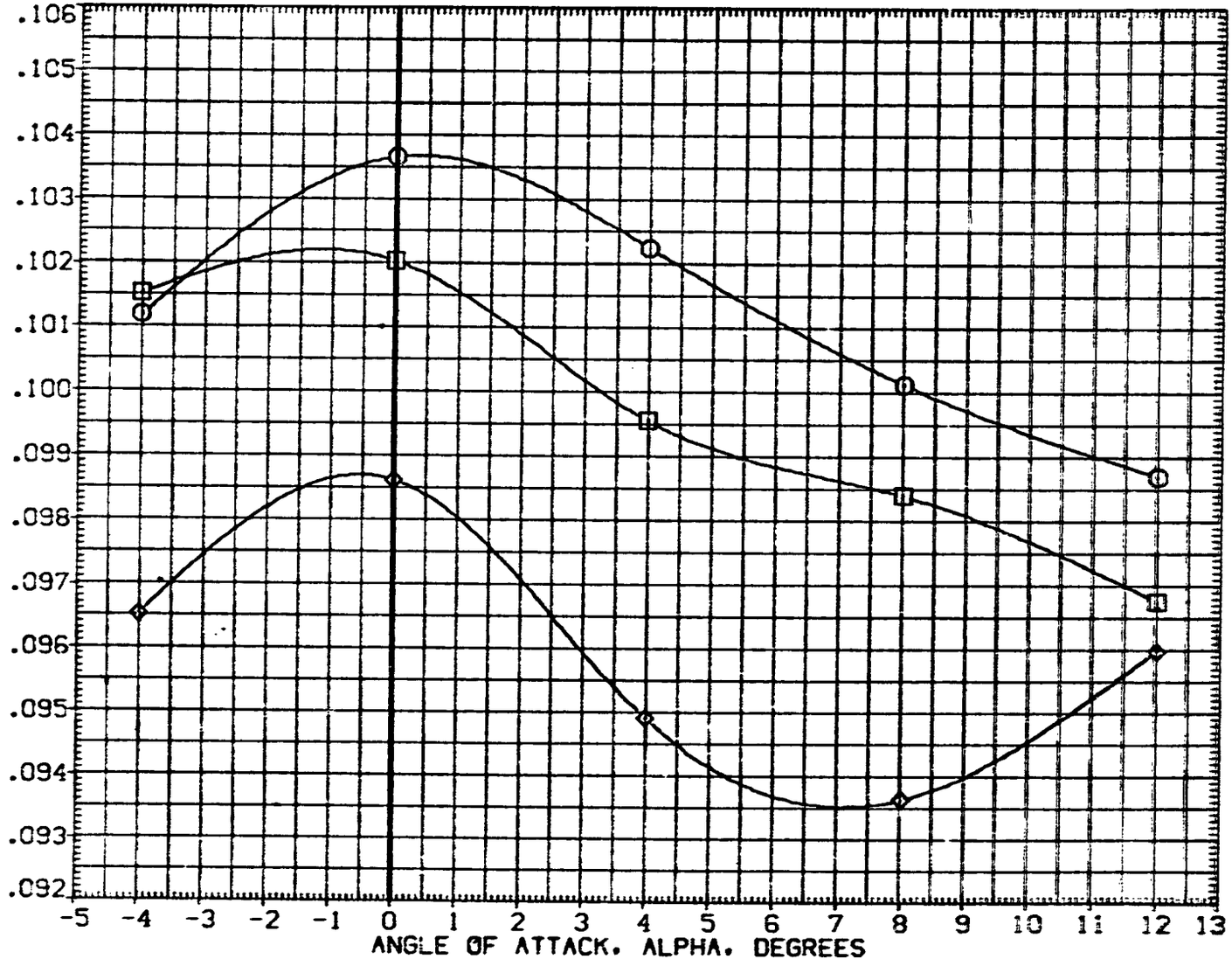


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

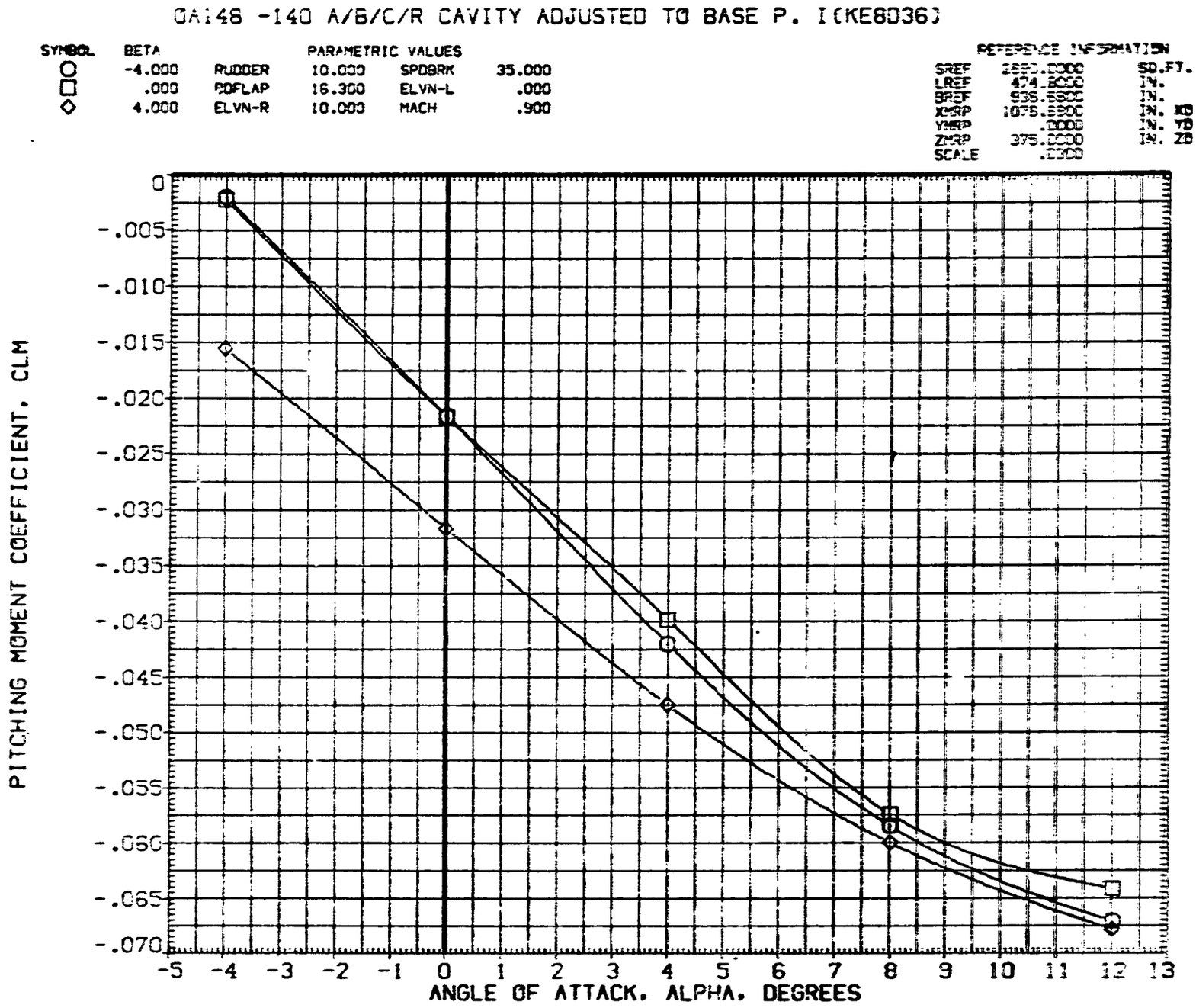


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

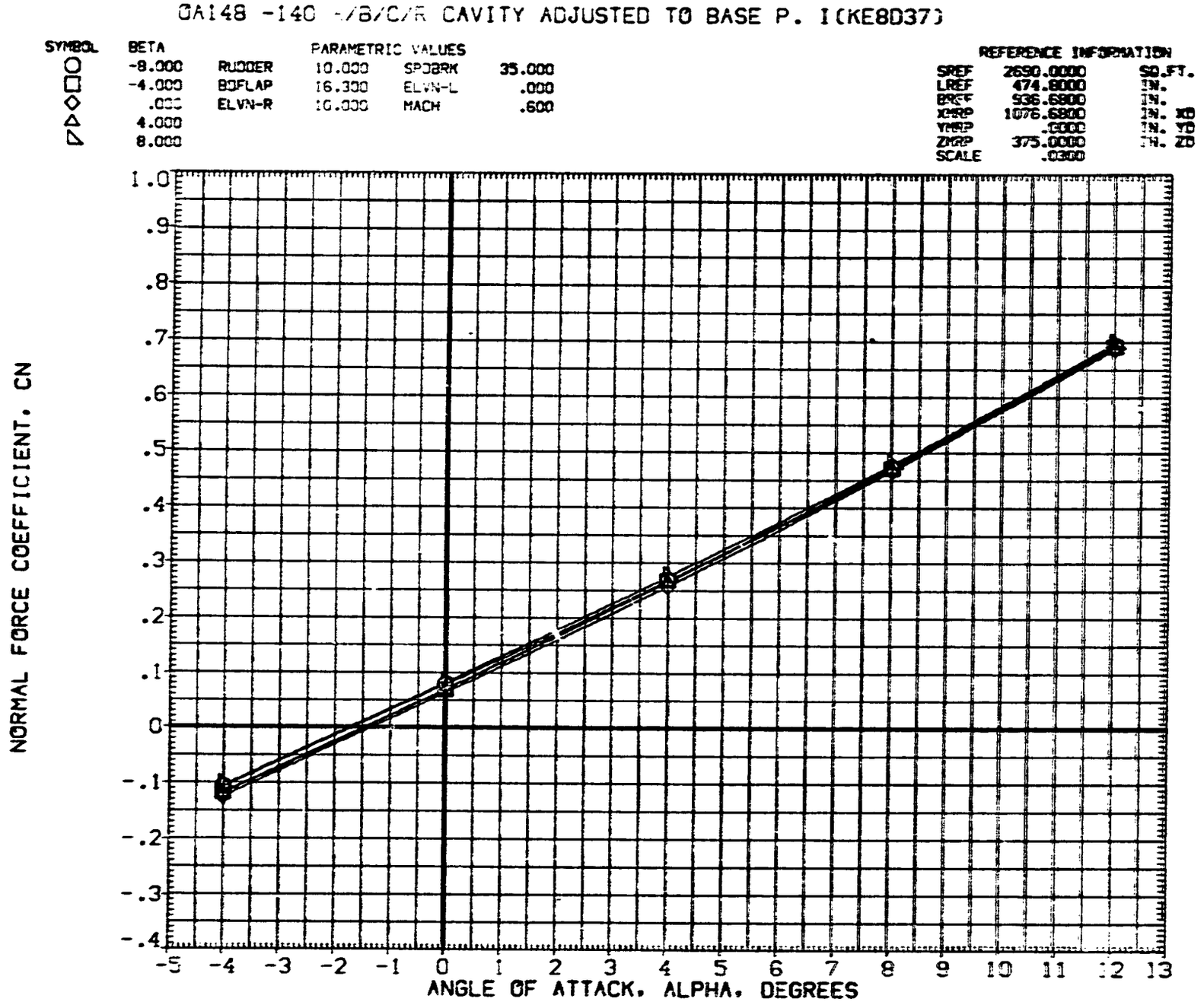


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

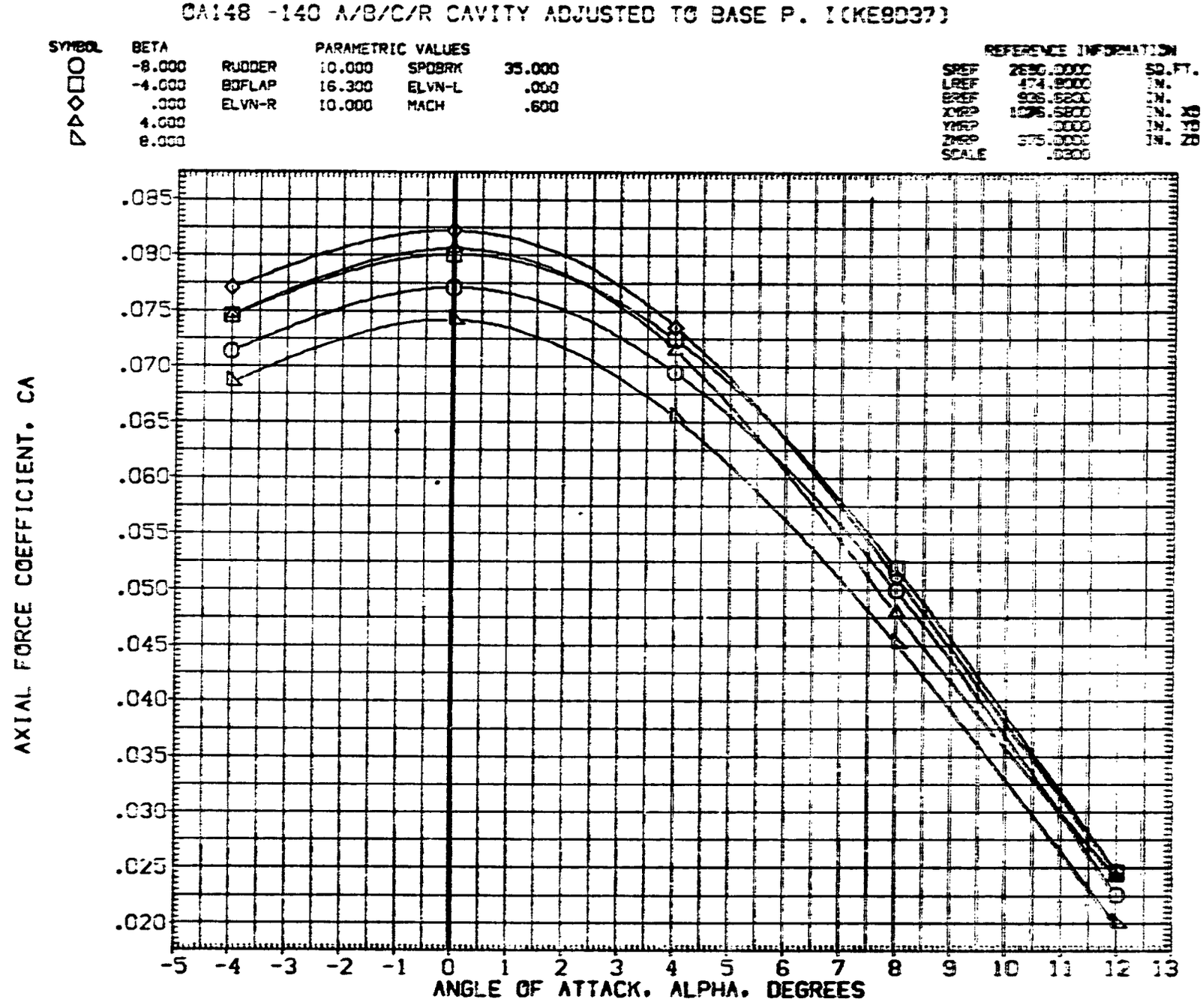


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

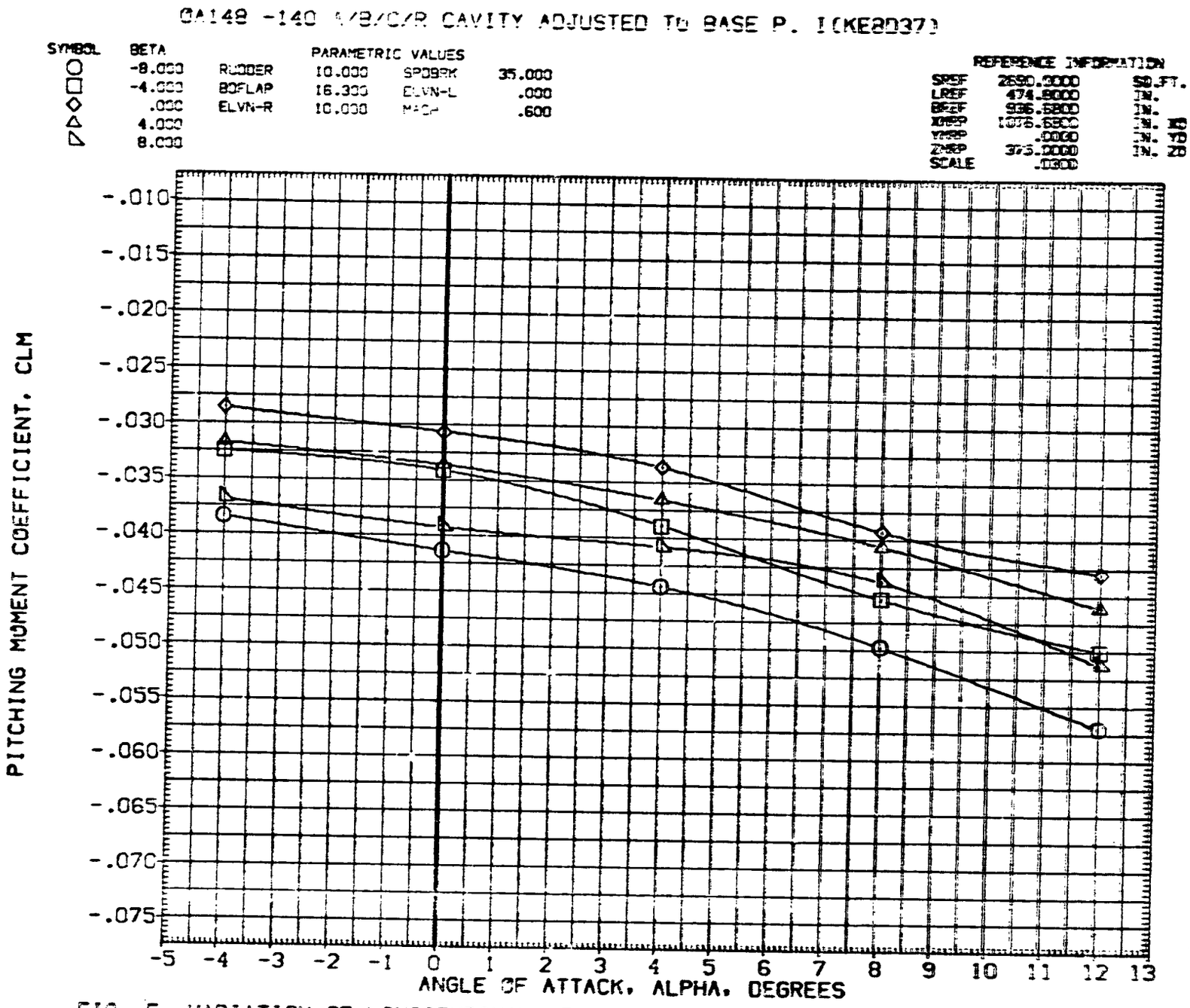


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

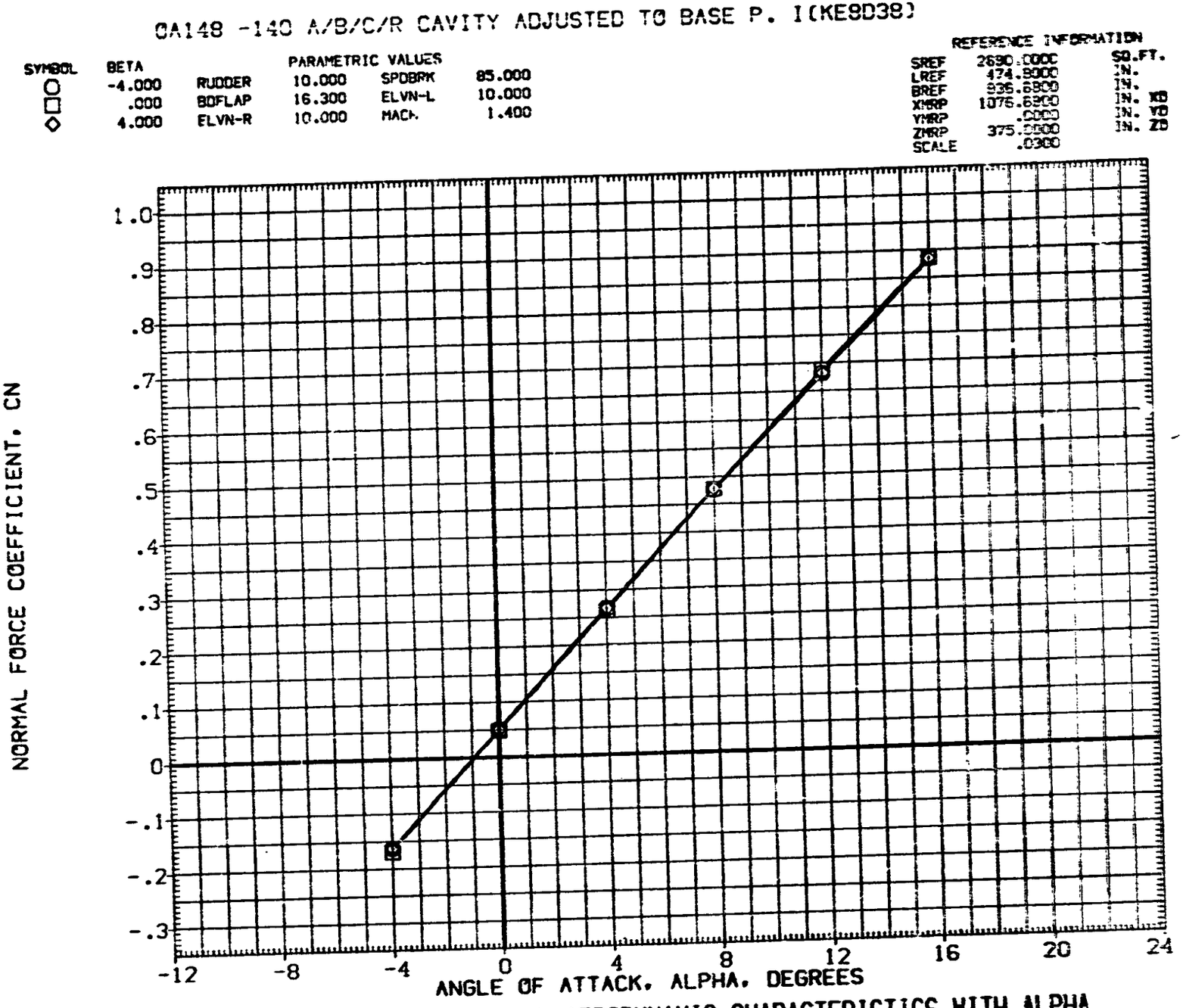


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8038)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

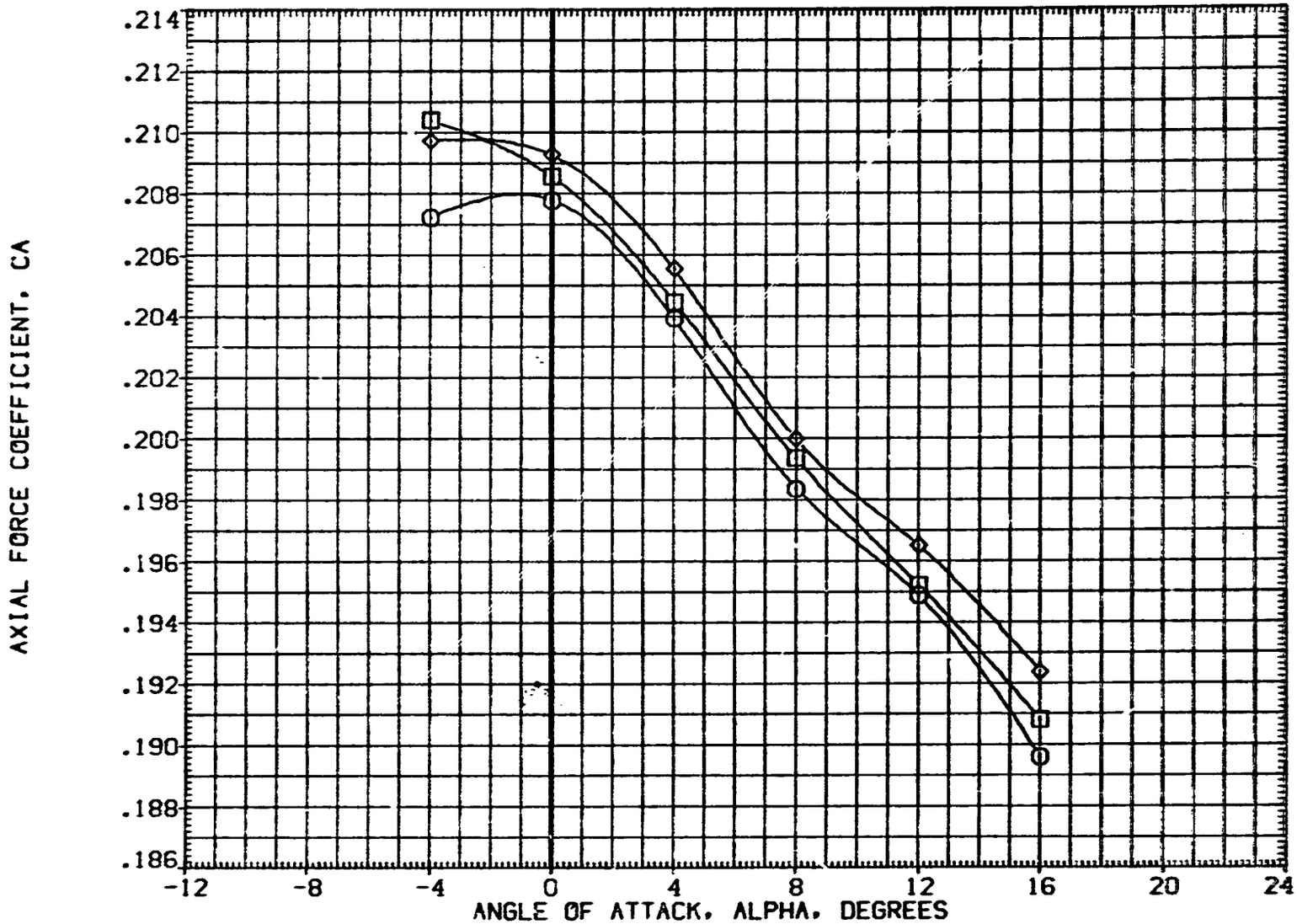


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D38)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0300	IN. ZO
SCALE	.0300	

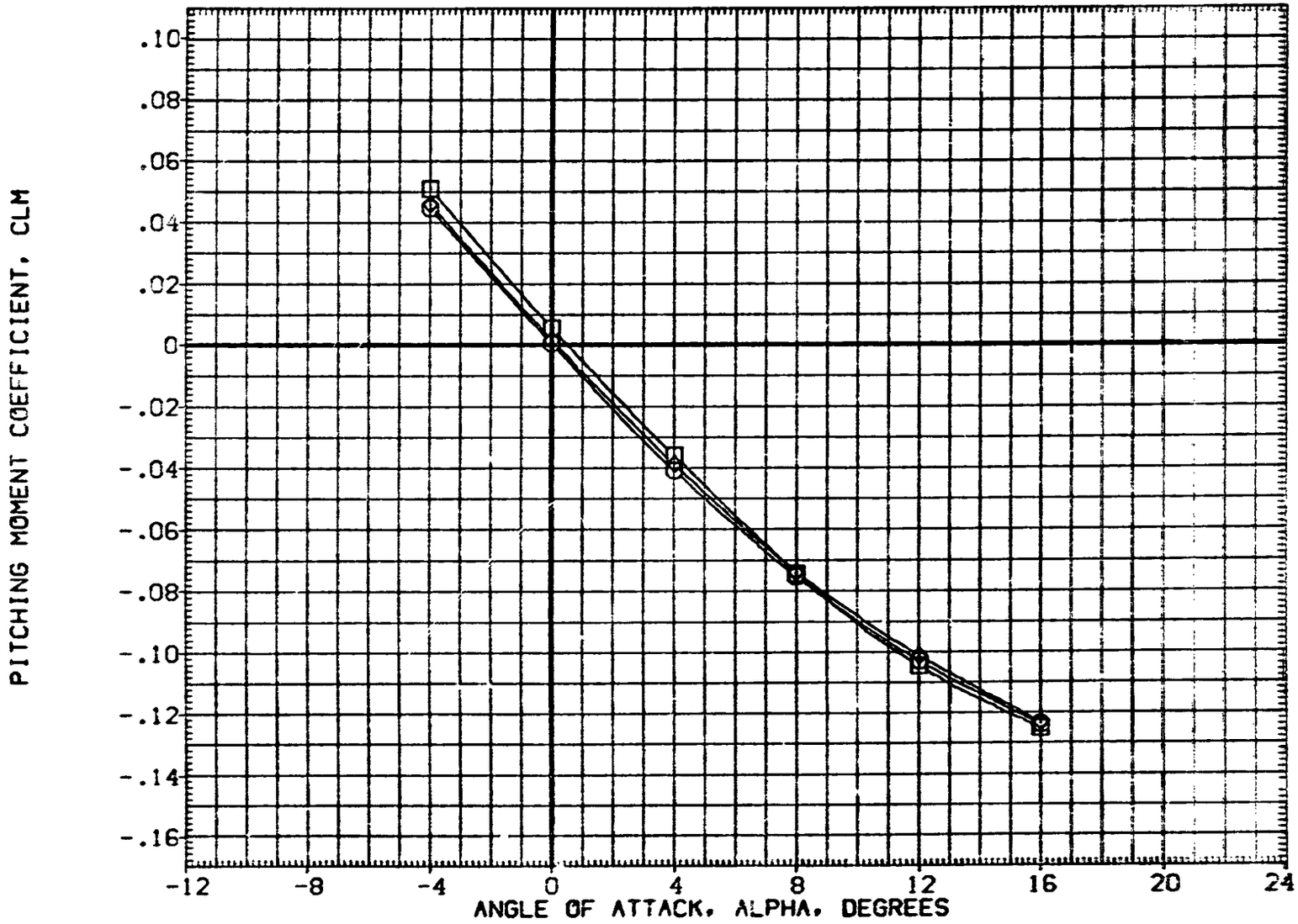


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

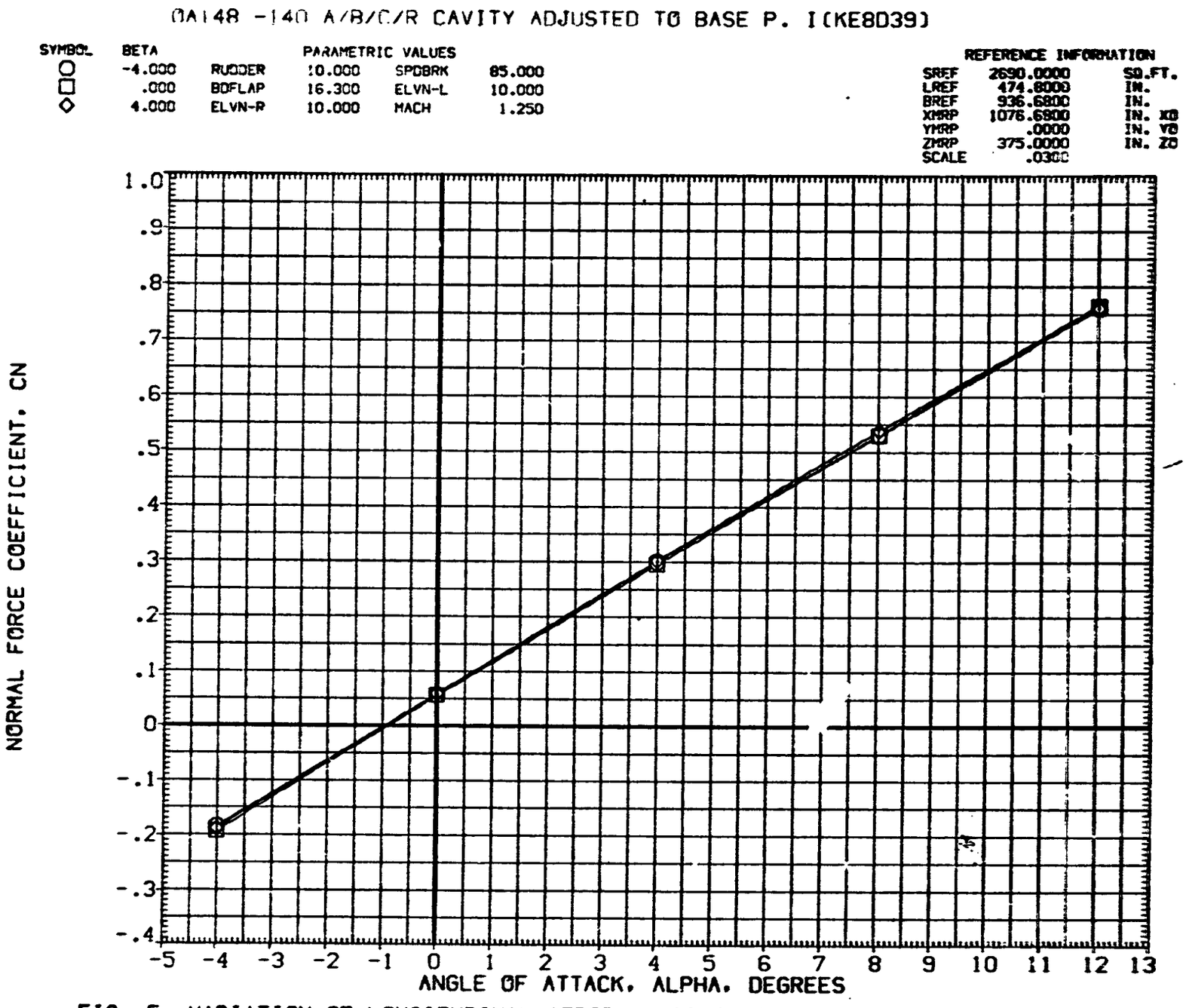


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

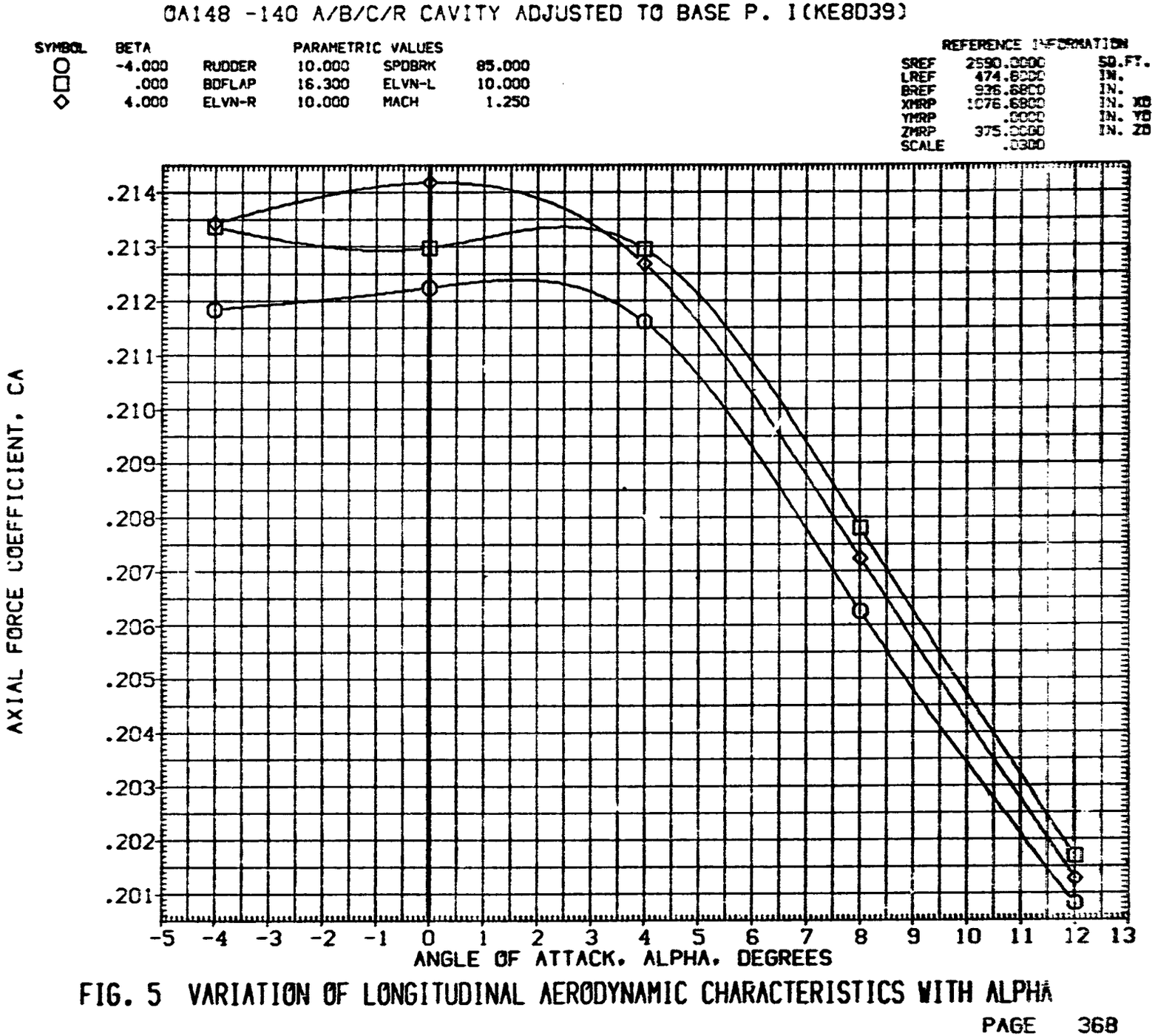


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

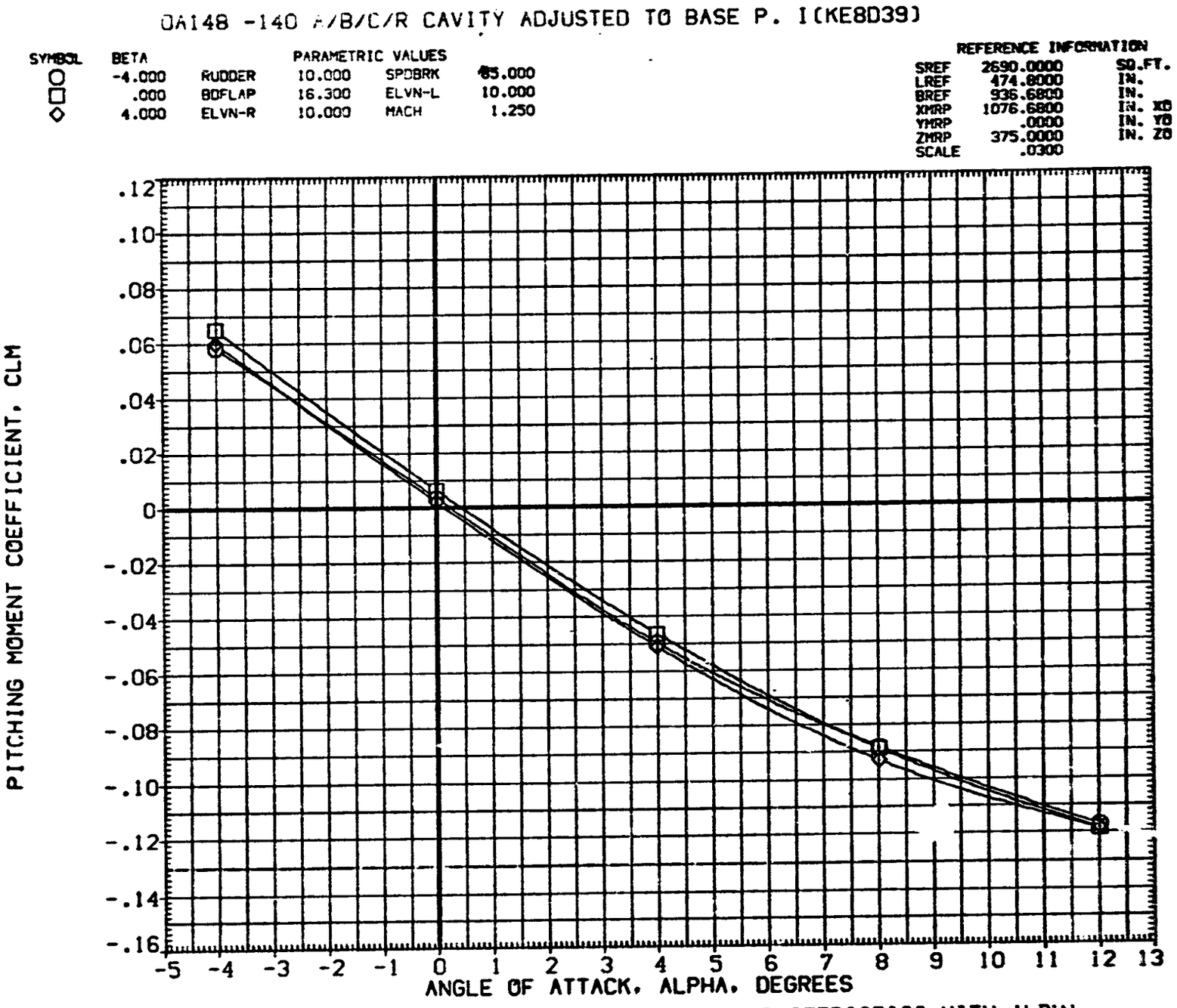


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

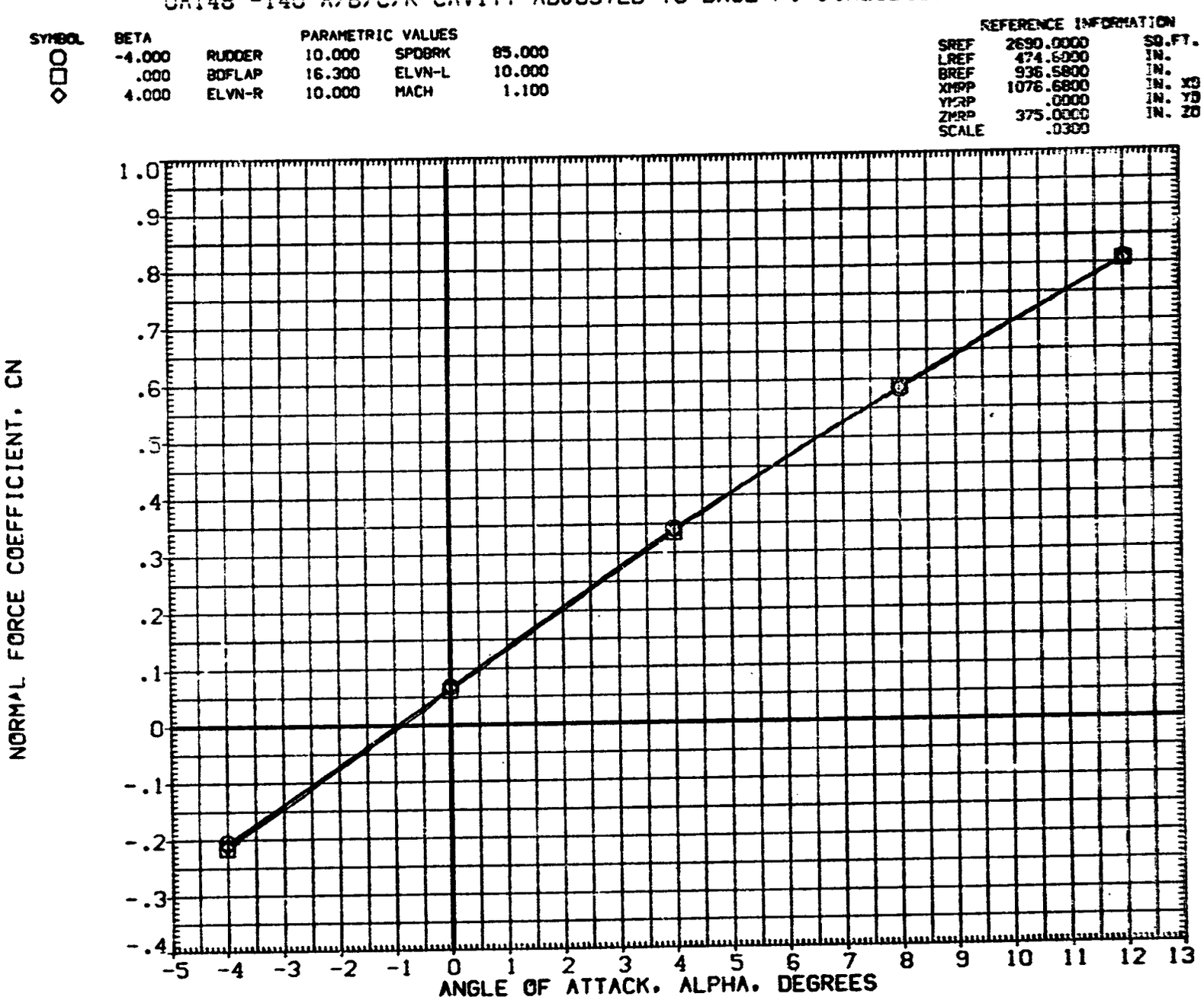


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

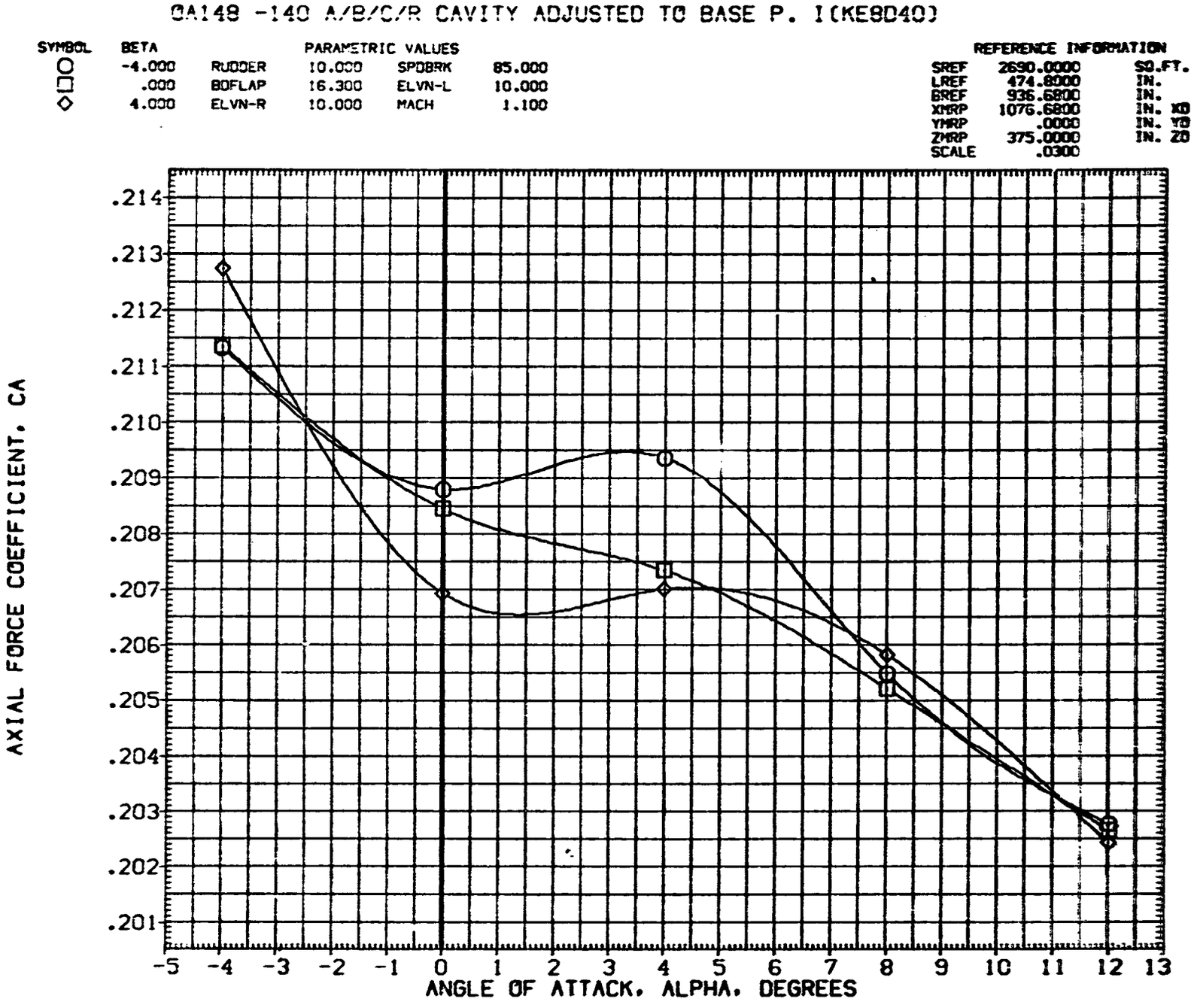


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

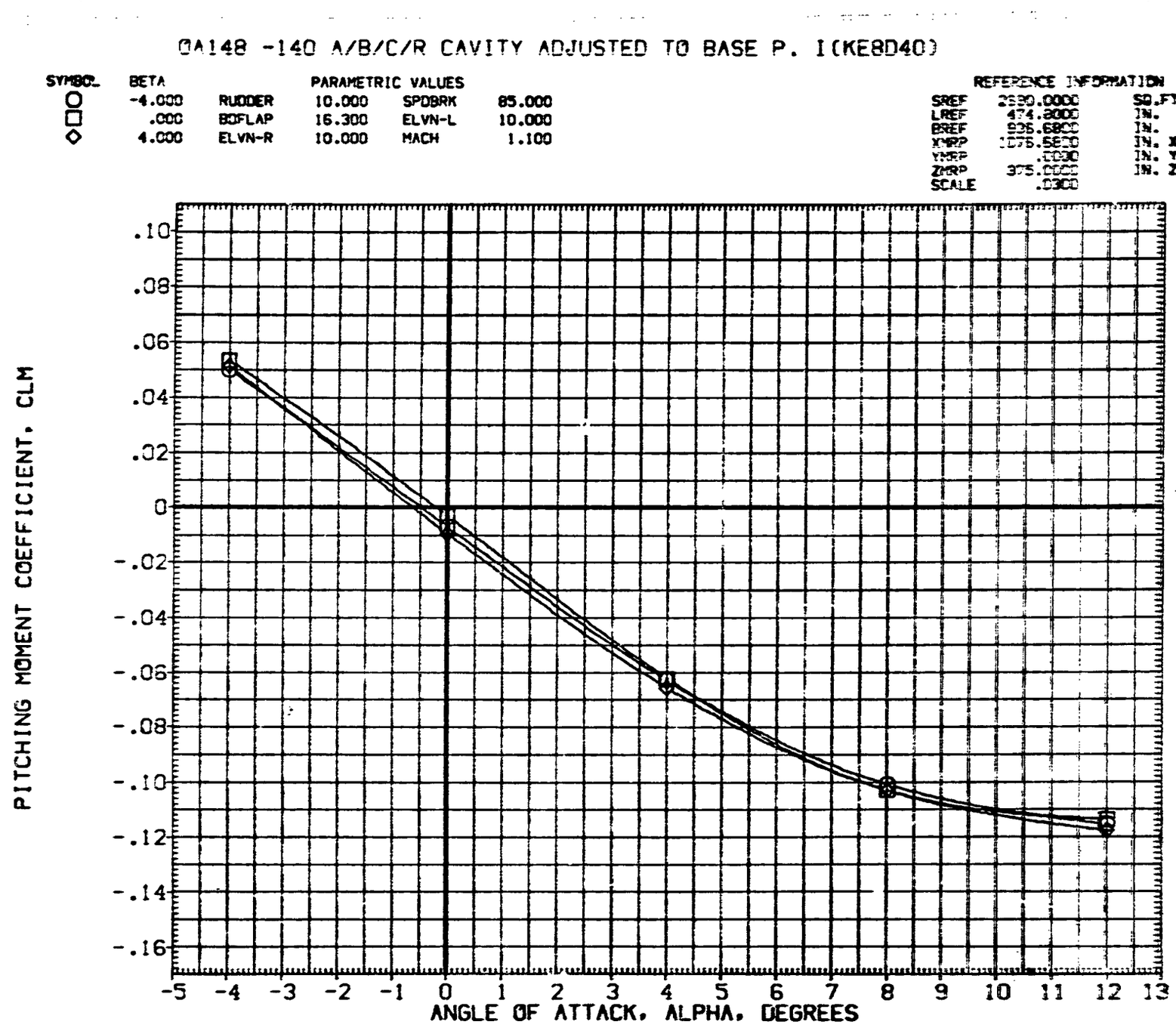


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D41)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN.
YMRP	.0000	IN.
ZMRP	375.0000	IN.
SCALE	.0300	

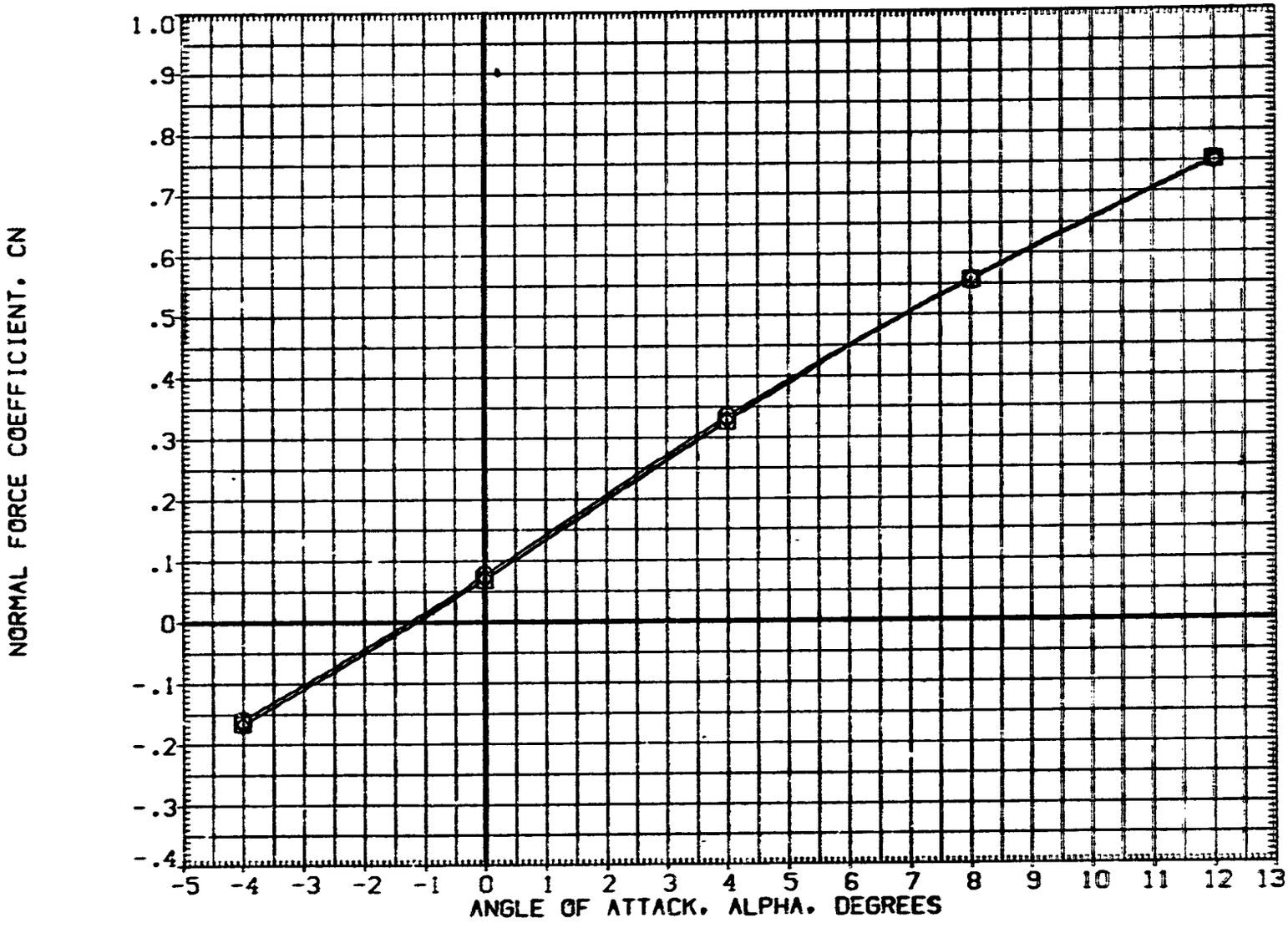


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

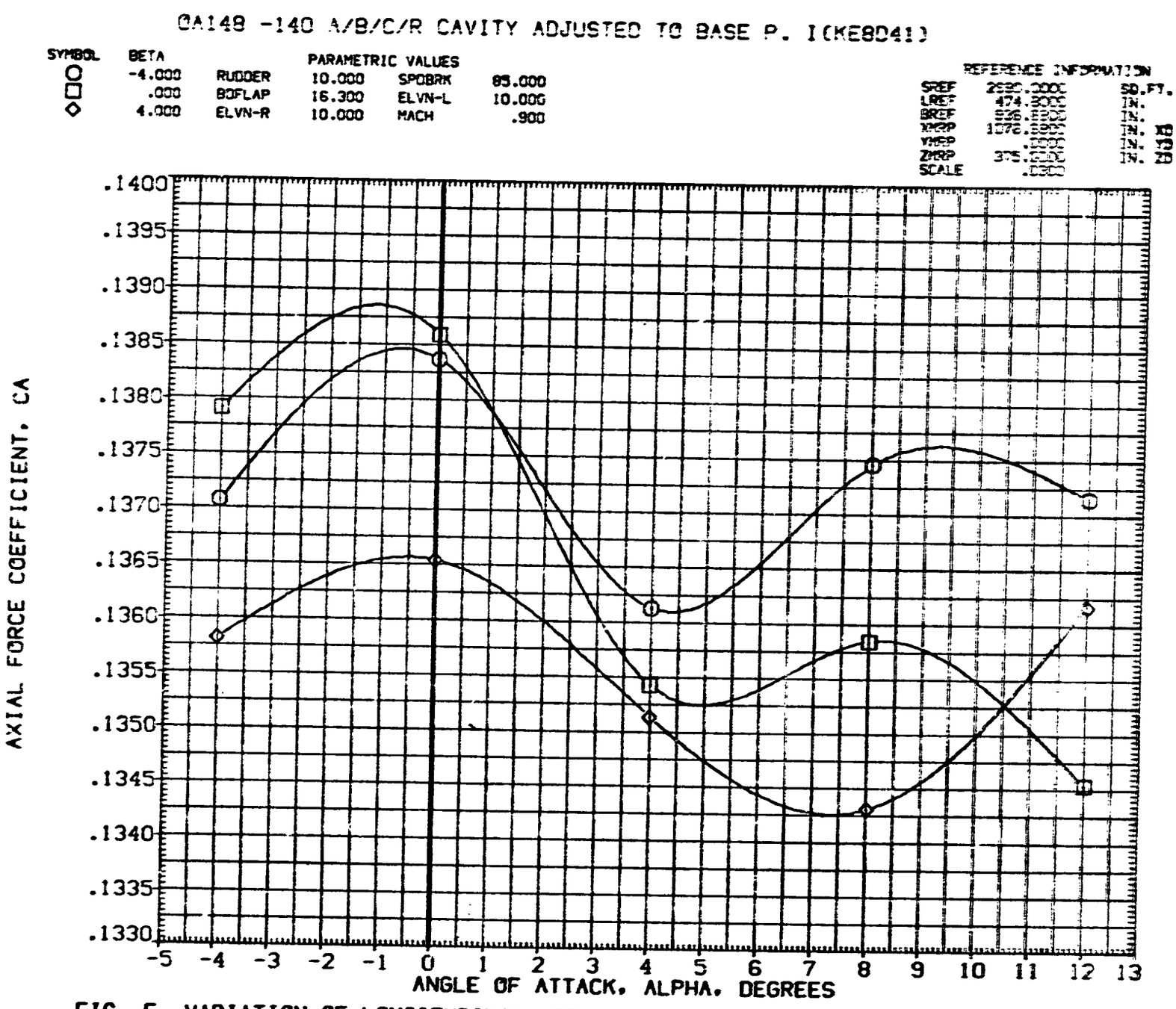


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

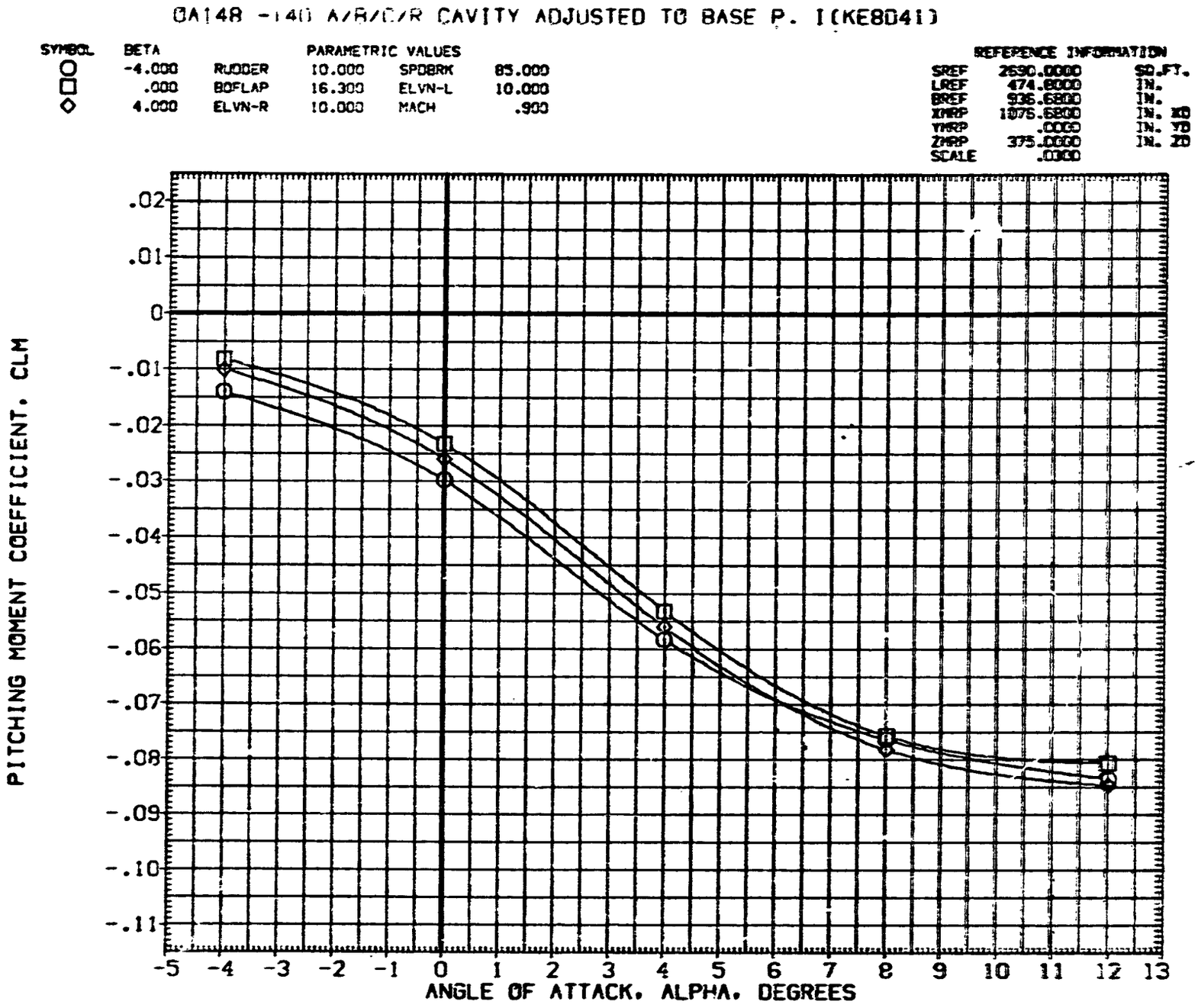


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

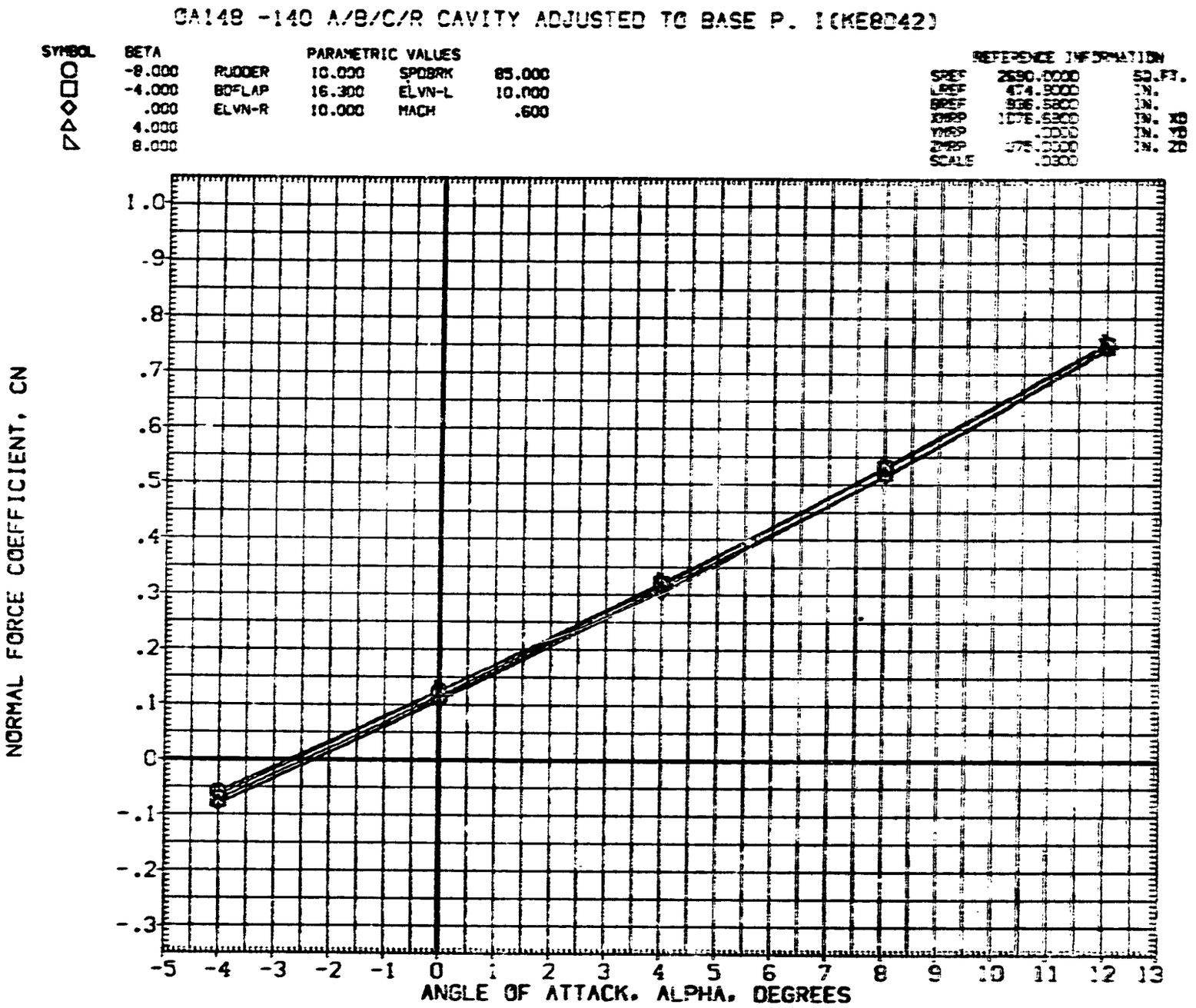


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

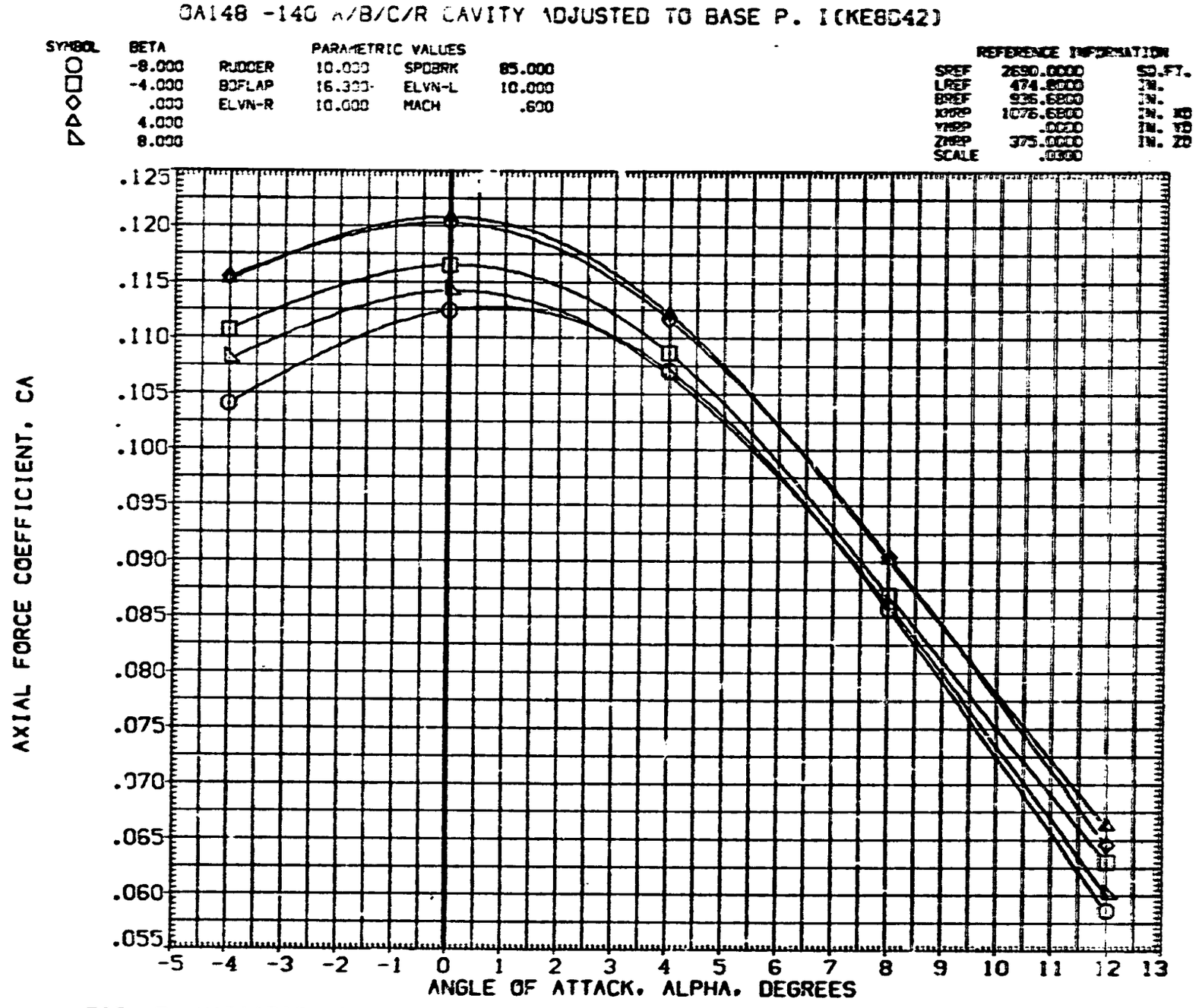


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8042)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	10.000	SPDBRK	85.000
□	-4.000	BOFLAP	16.300	ELVN-L	10.000
◇	.000	ELVN-R	10.000	MACH	.600
△	4.000				
◁	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

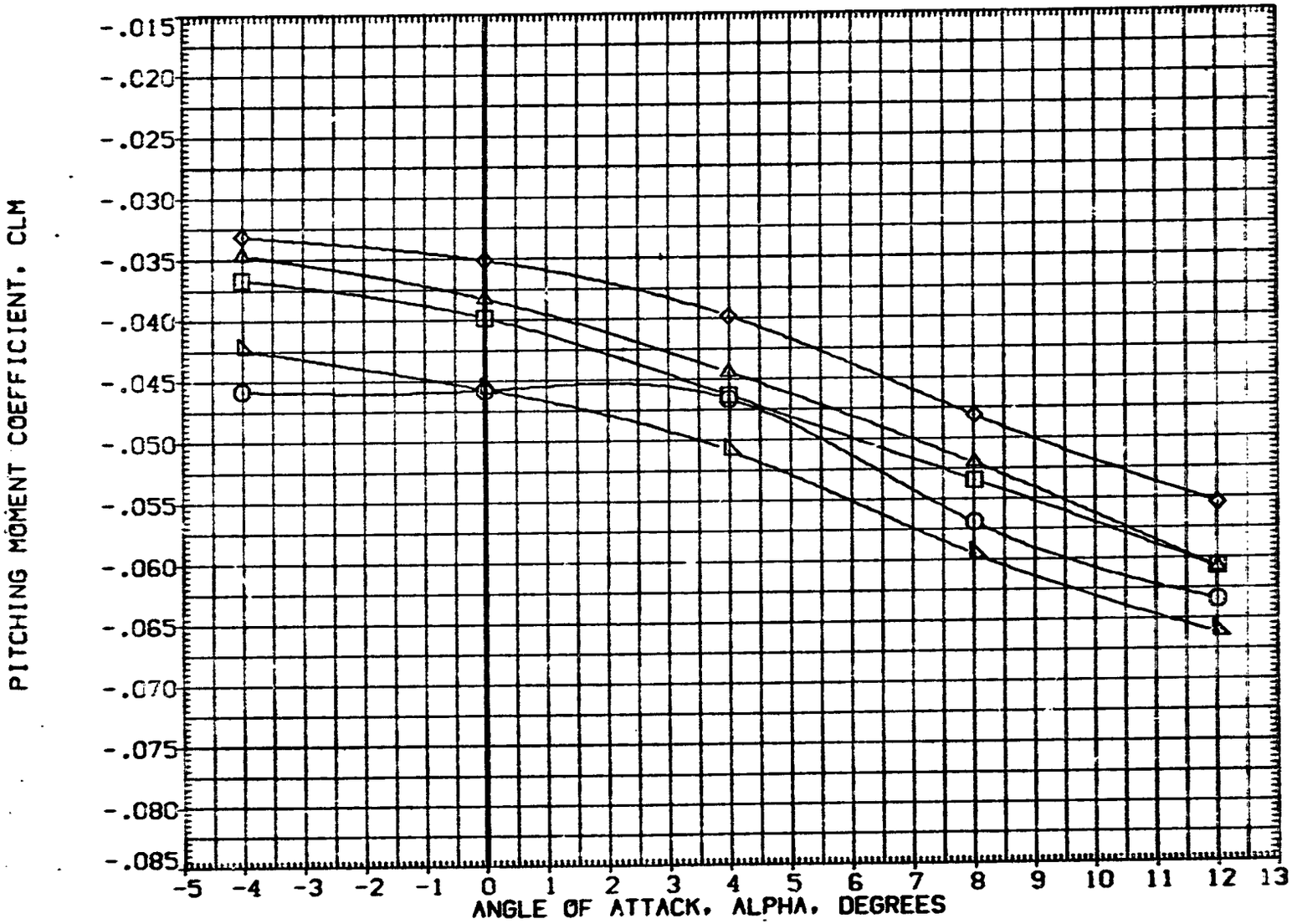


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

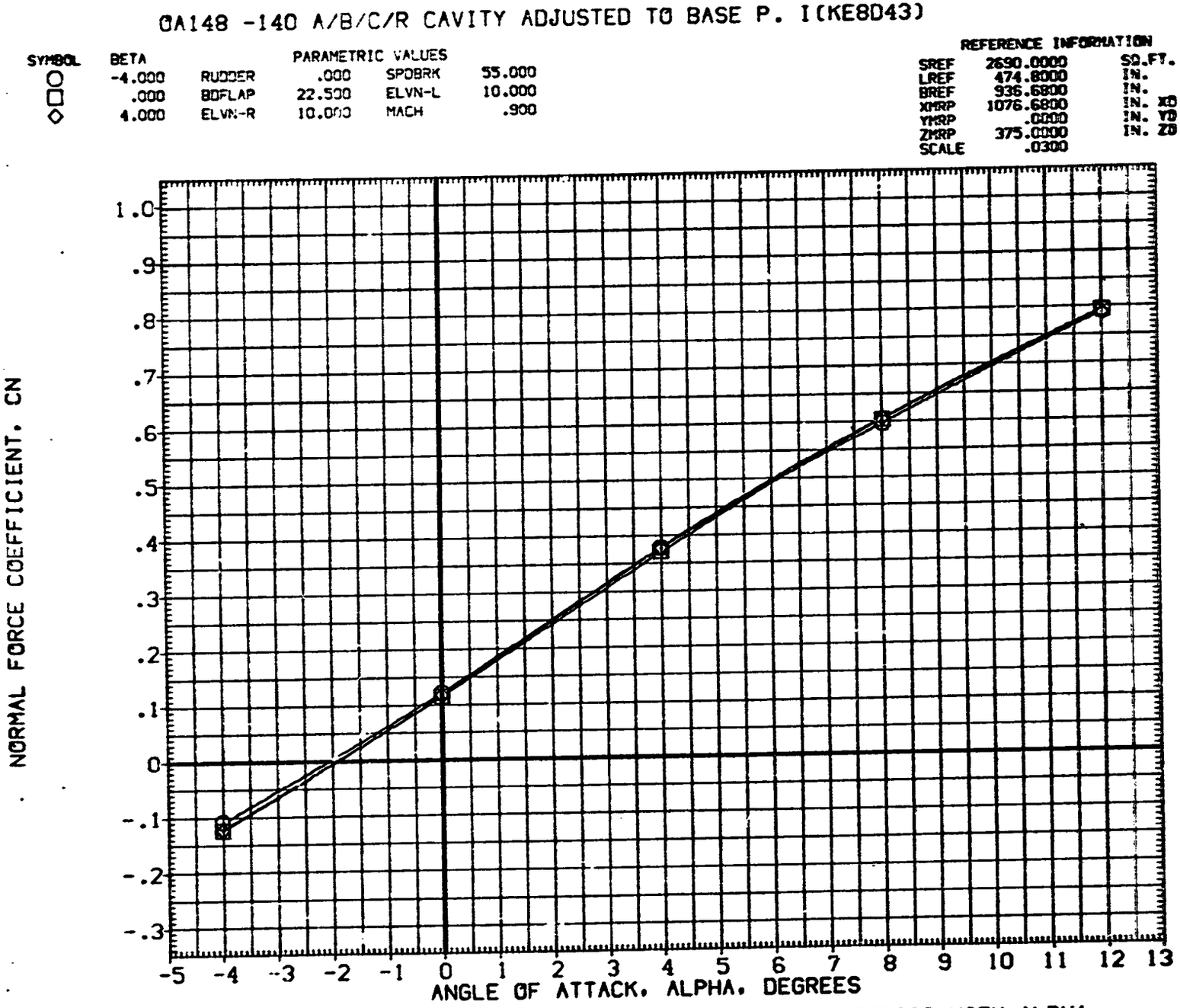


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

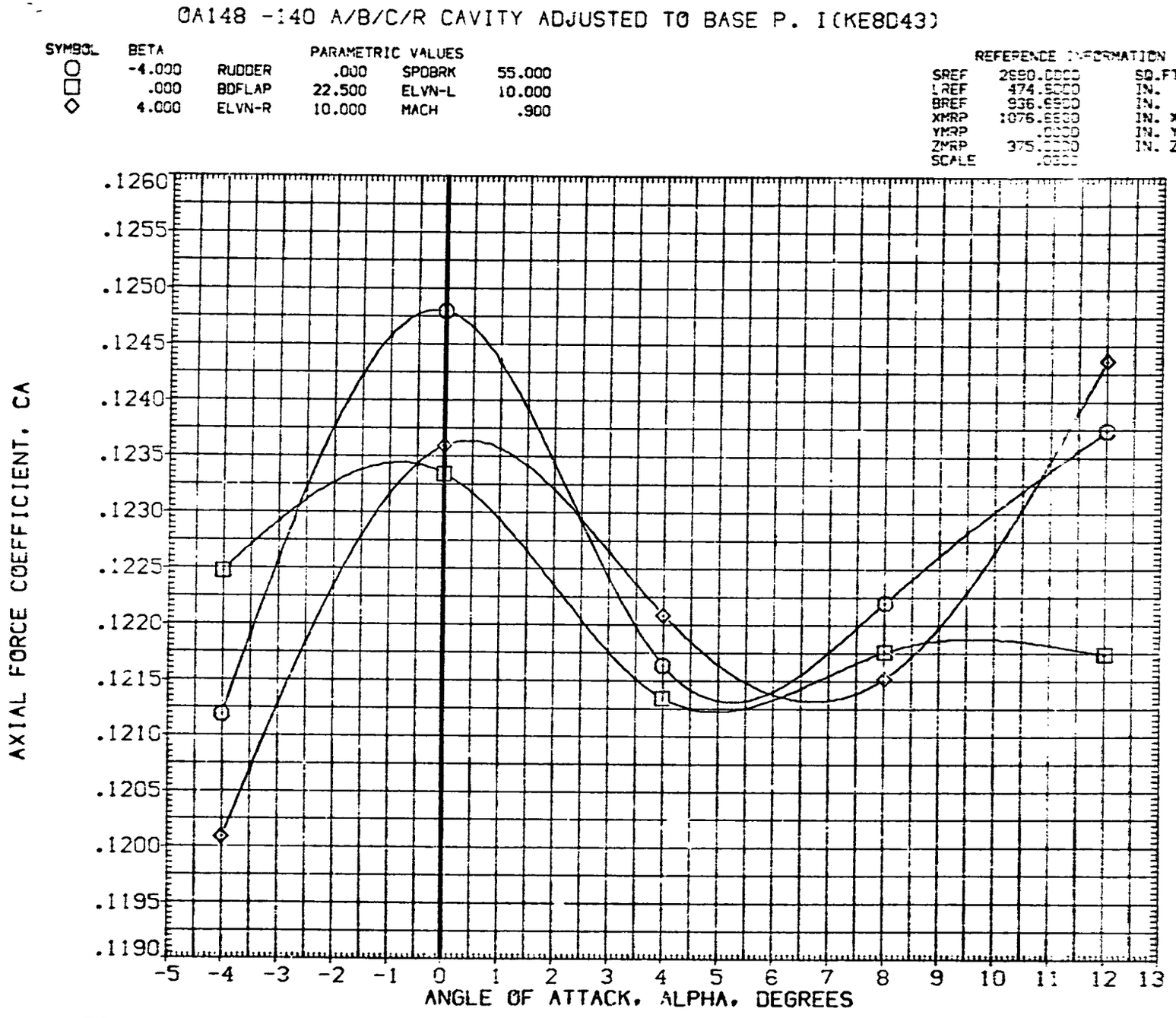


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D43)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

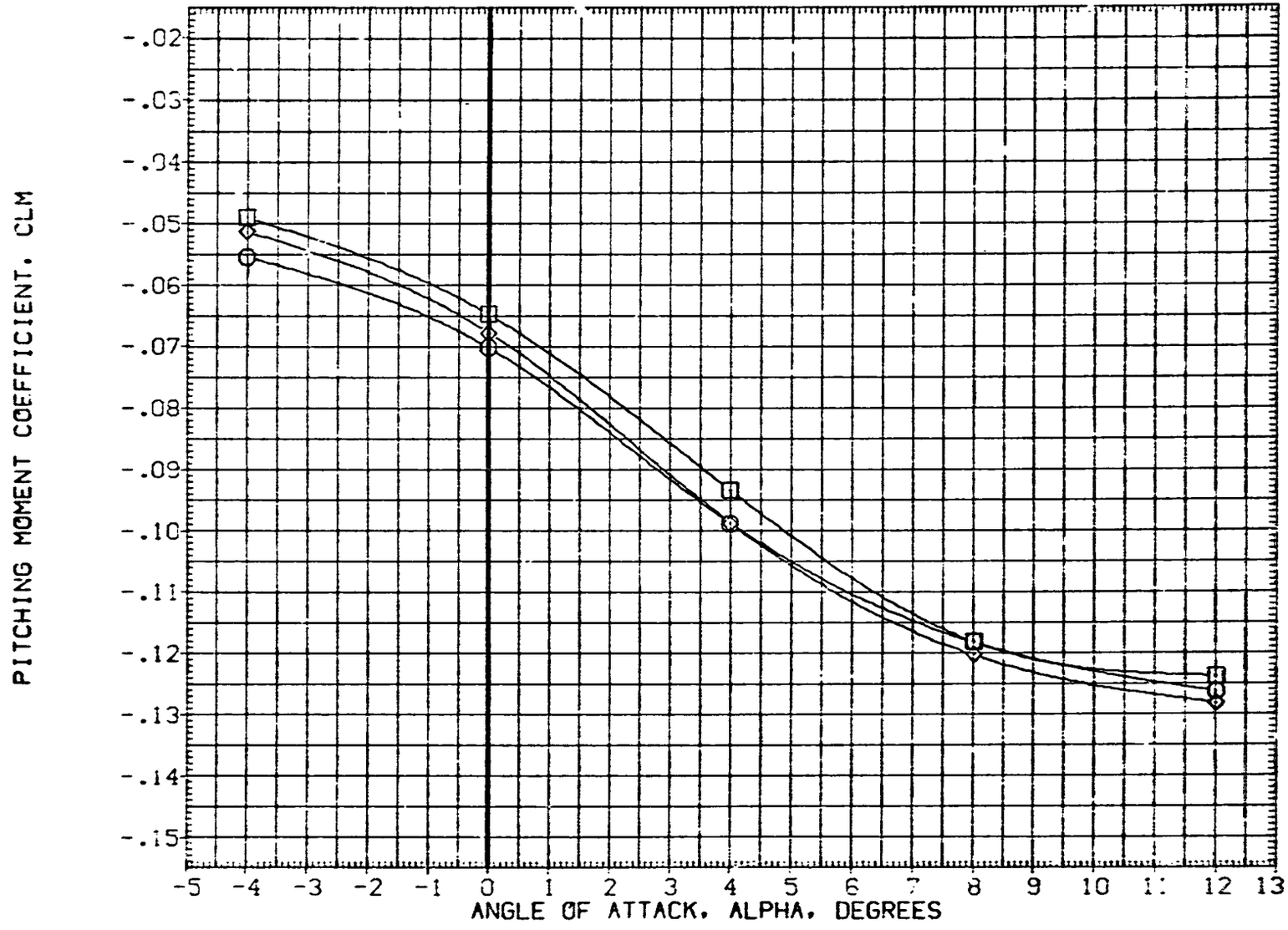


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D44)

SYMBOL	BETA		PARAMETRIC VALUES		
	-8.000	RUDDER	.000	SPDBRK	55.000
	-4.000	BDFLAP	22.500	ELVN-L	10.000
	.000	ELVN-R	10.000	MACH	.600
	4.000				
	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	996.6800	IN.
XMRP	1076.6900	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

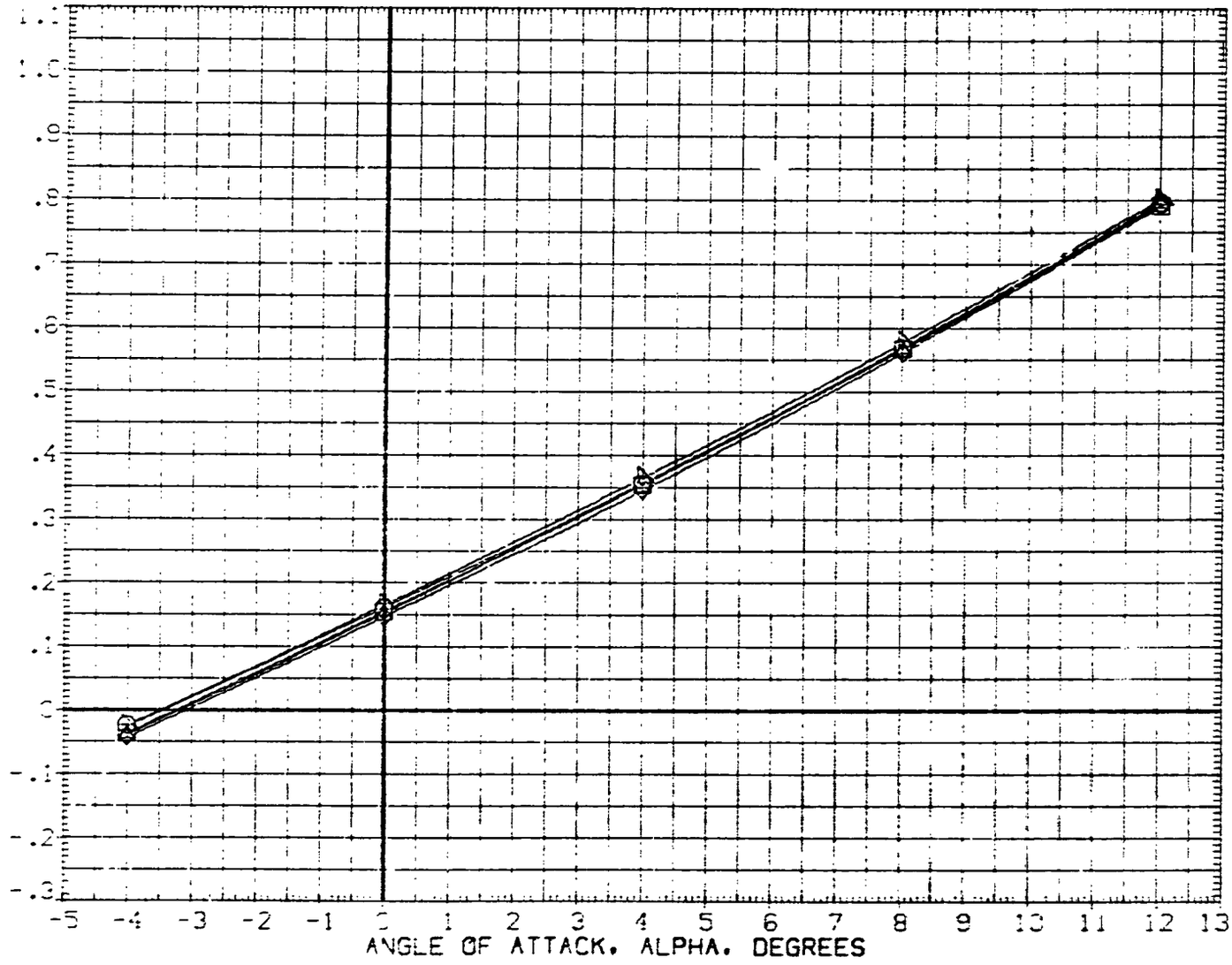


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -143 W/B C R CAVITY ADJUSTED TO BASE P. 10/E80440

SYMBOL	BETA		PARAMETRIC VALUES		
○	8.000	RUDDER	.000	SPDBRK	55.000
□	-4.000	BDFLAP	22.000	ELVN-L	10.000
◇	.000	ELVN-R	10.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	806.8800	IN.
XMRP	1076.8000	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

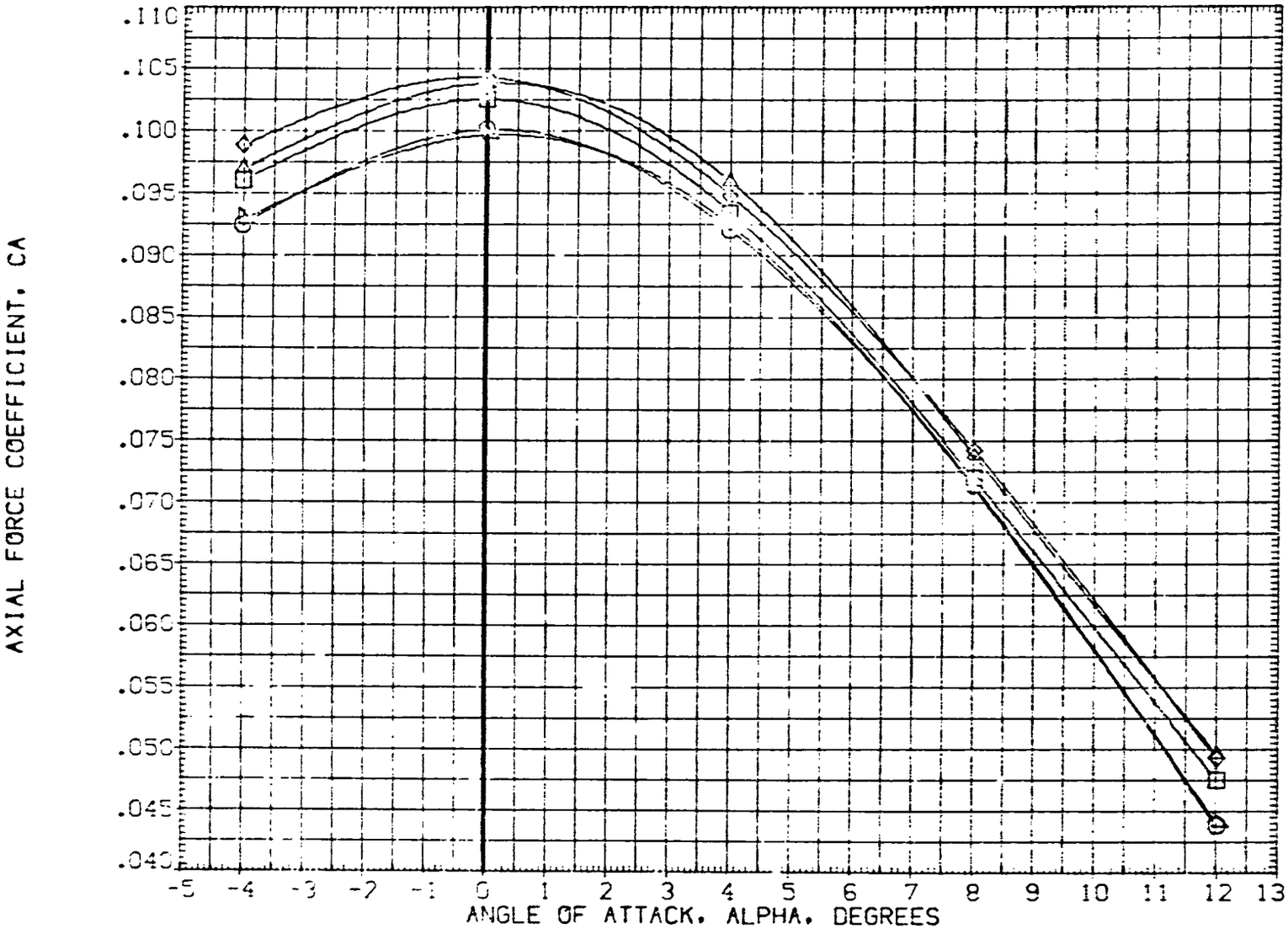


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

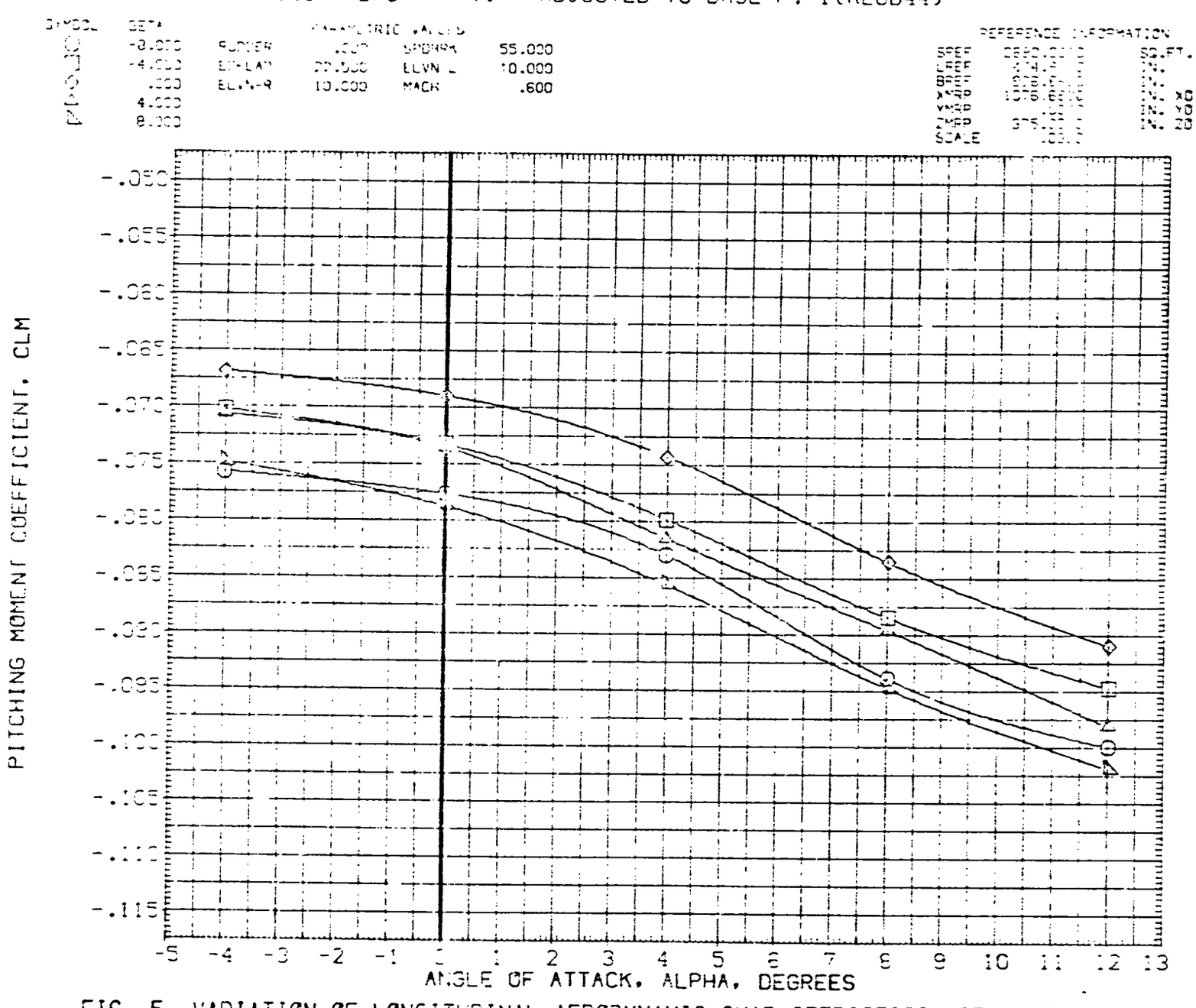


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

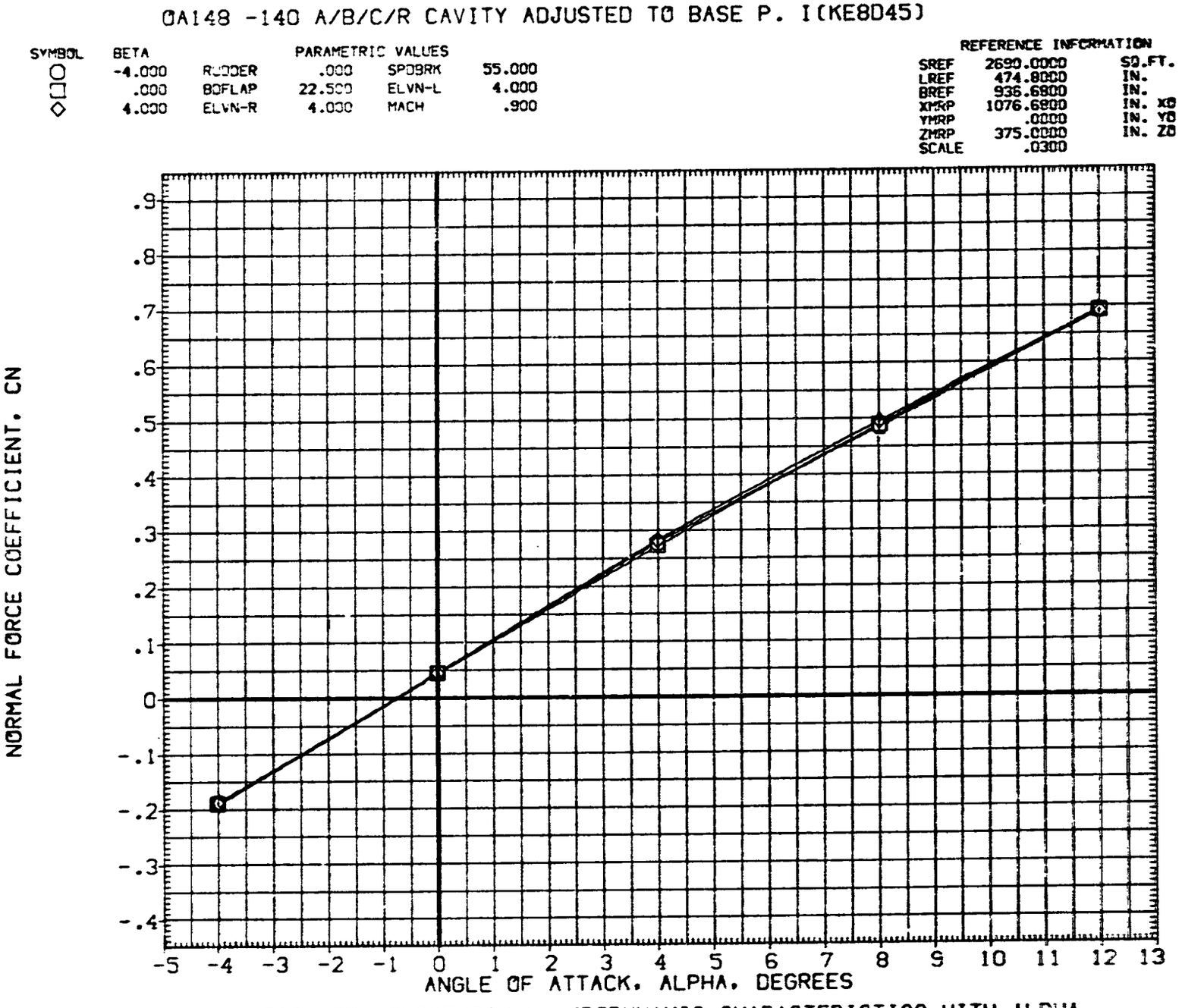


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

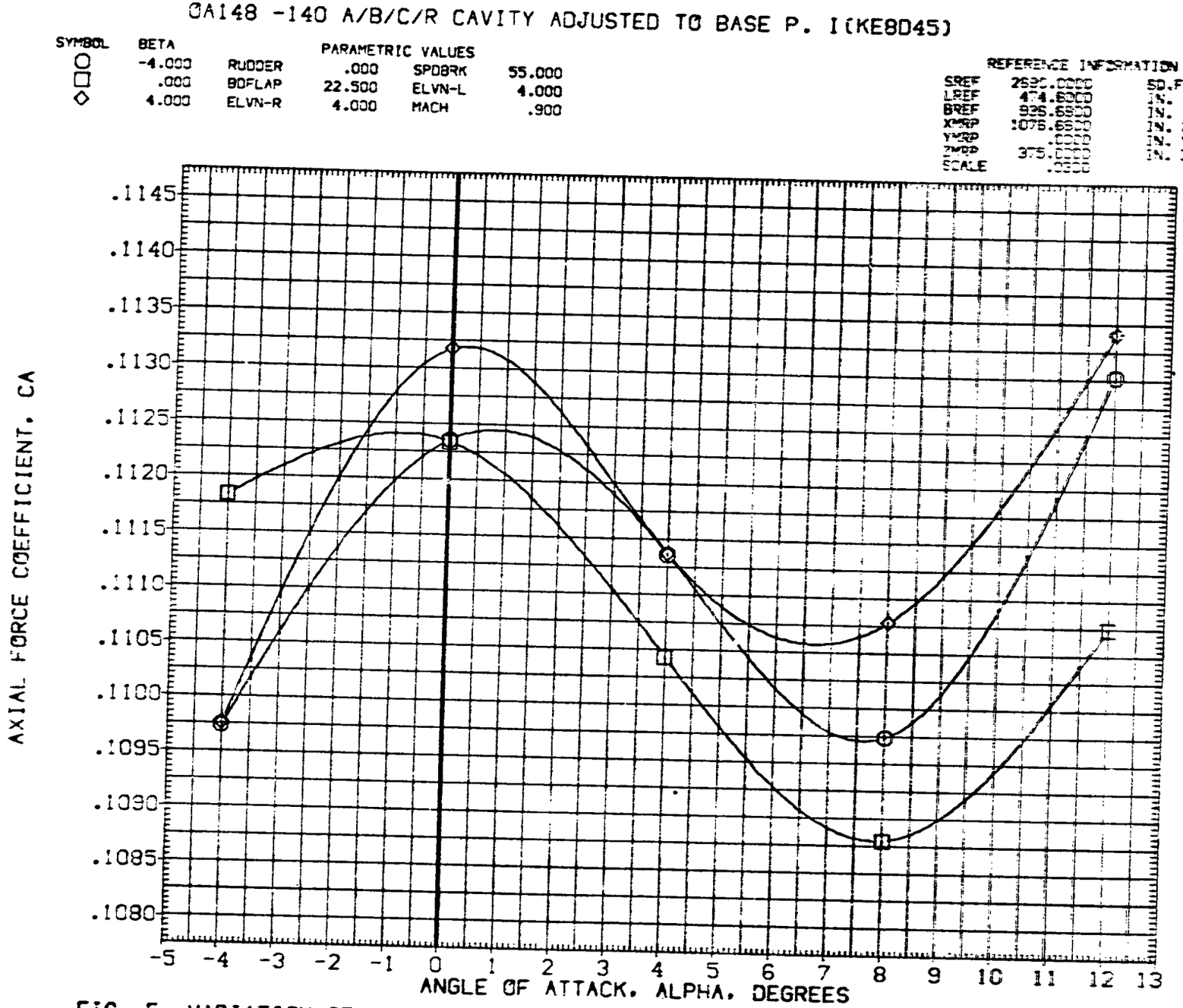


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

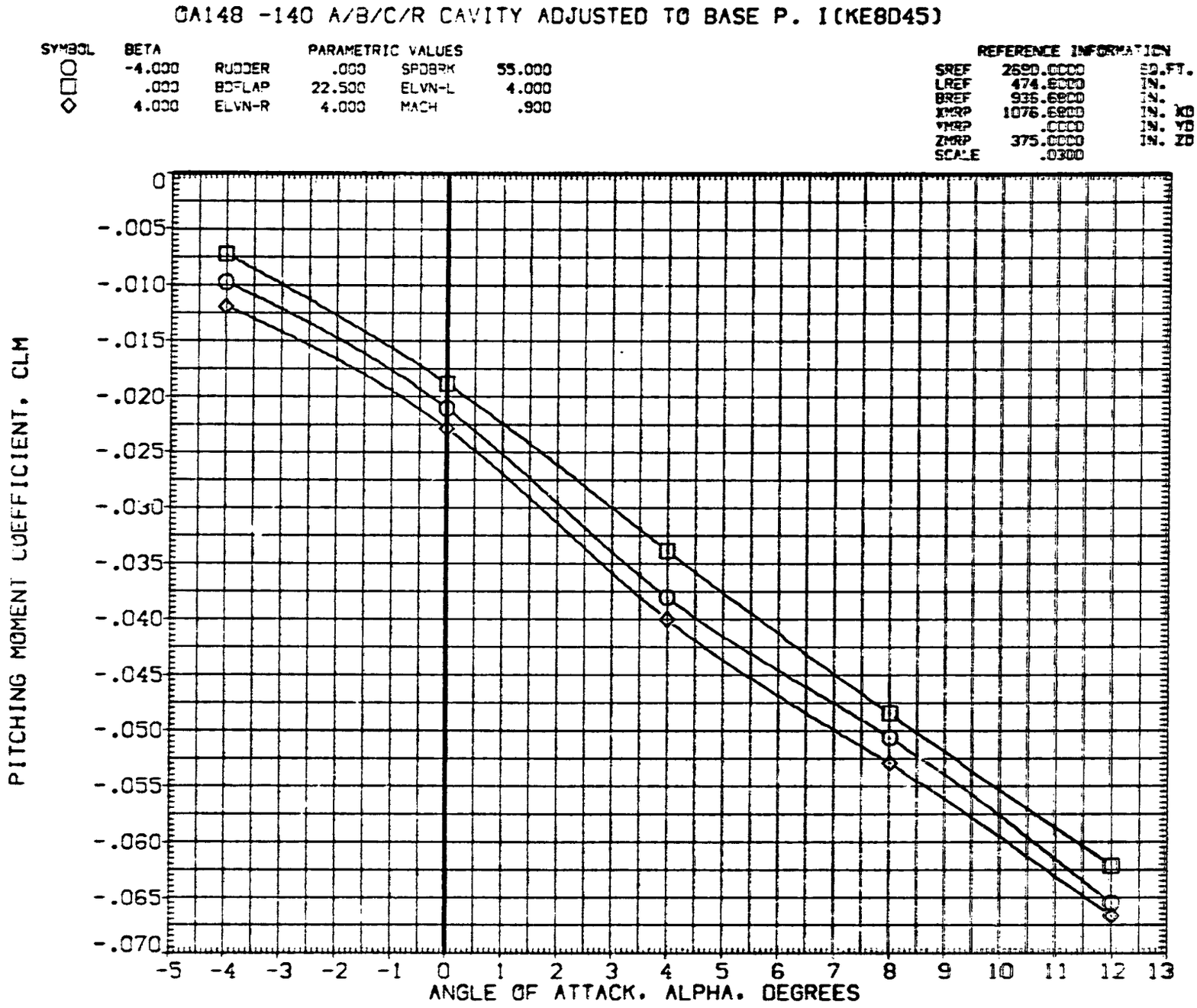


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

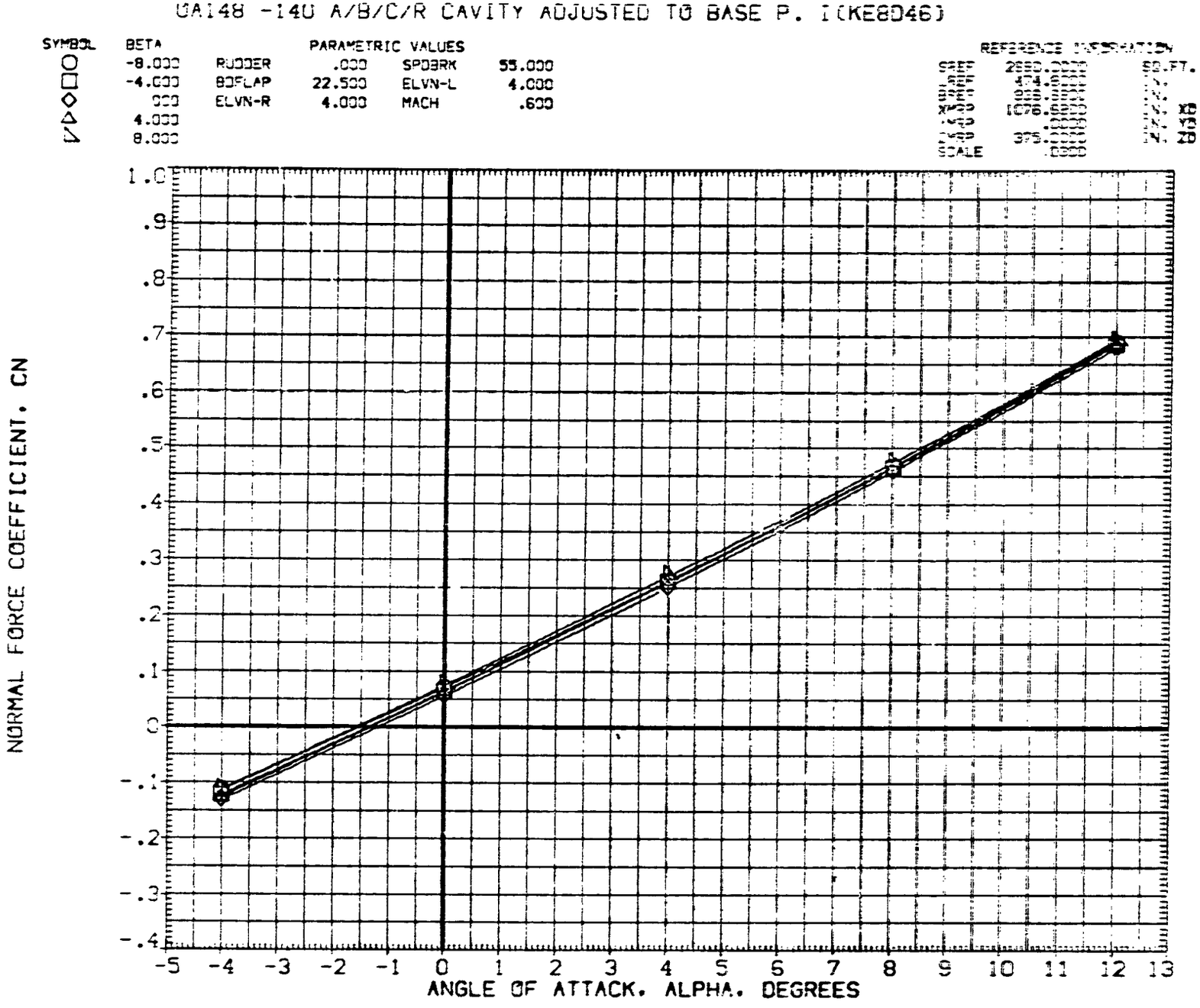


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8046)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	.000	SPOBRK	55.000
□	-4.000	BDFLAP	22.500	ELVN-L	4.000
◇	.000	ELVN-R	4.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

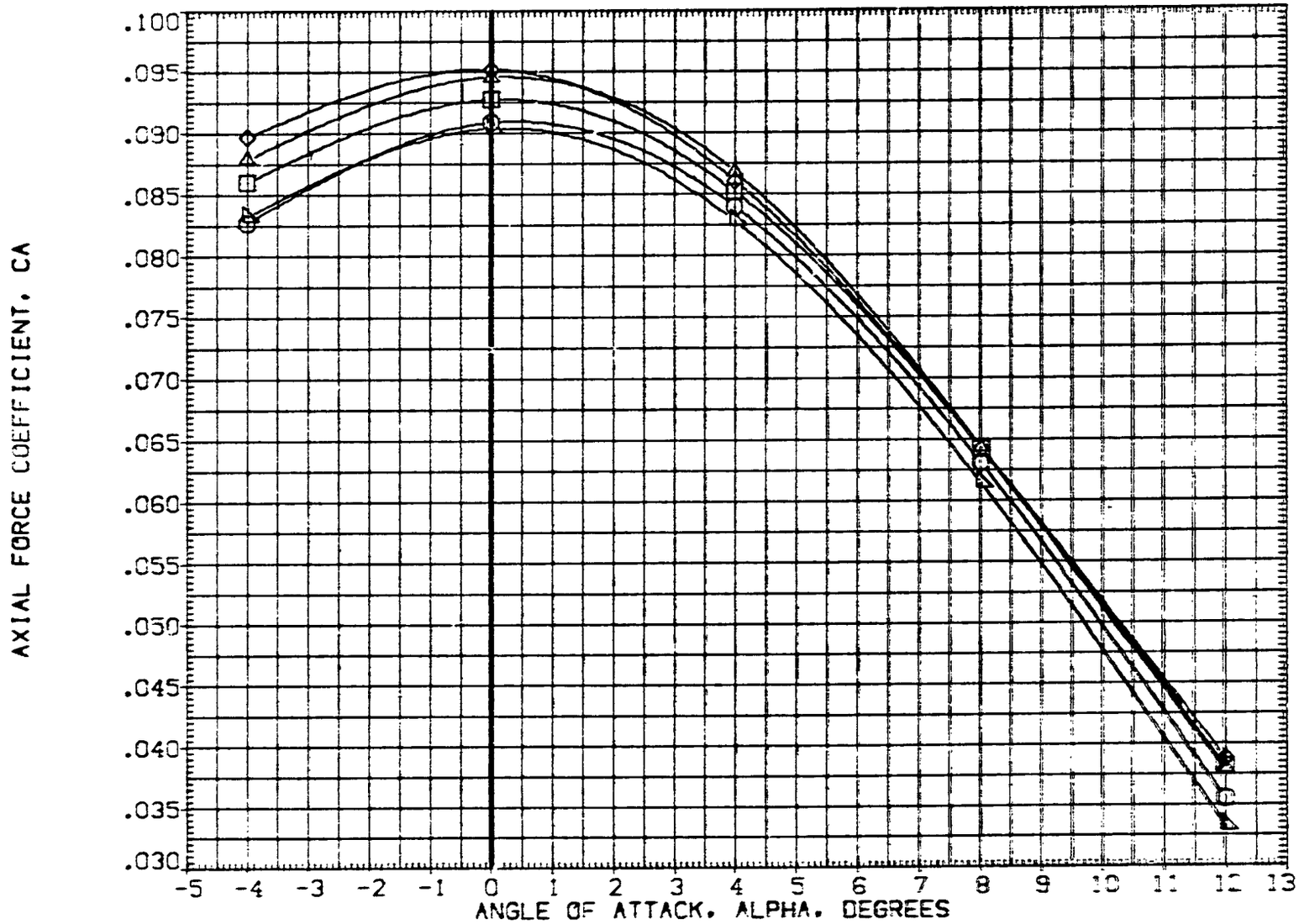


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

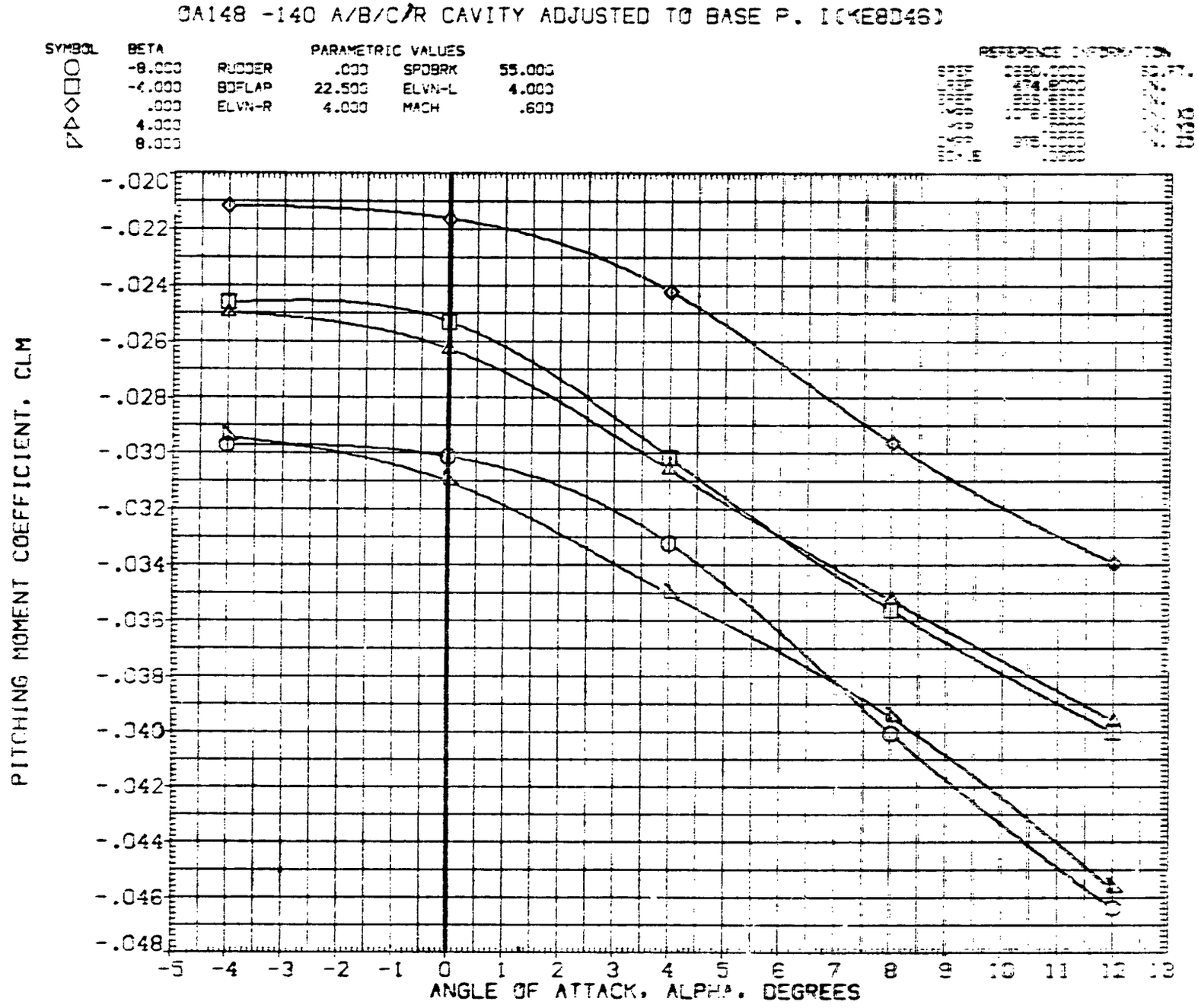


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

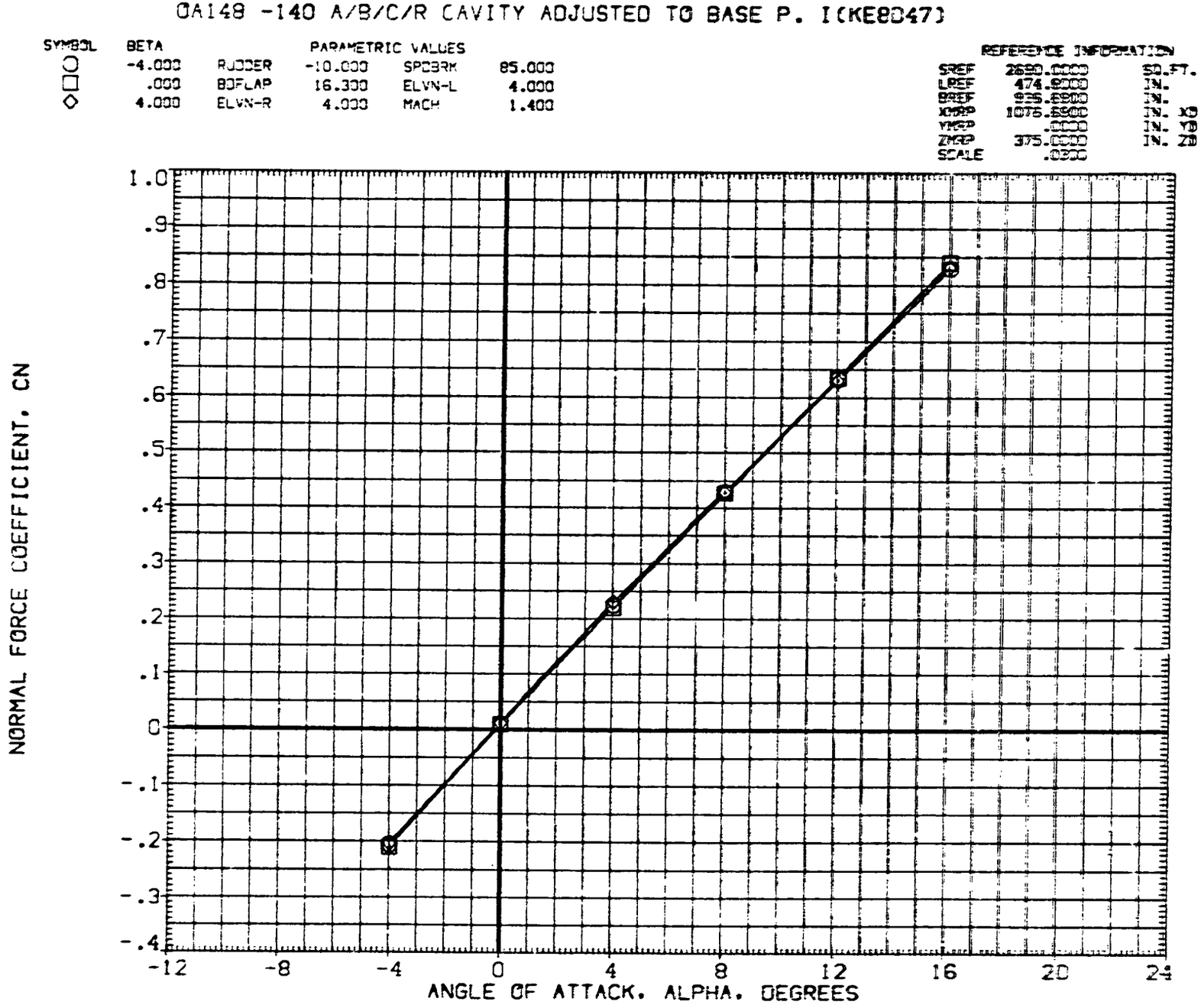


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D47)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	FT.
BREF	935.6800	FT.
XMRP	1076.6800	FT. XB
YMRP	.0000	FT. YB
ZMRP	375.0000	FT. ZB
SCALE	.0300	

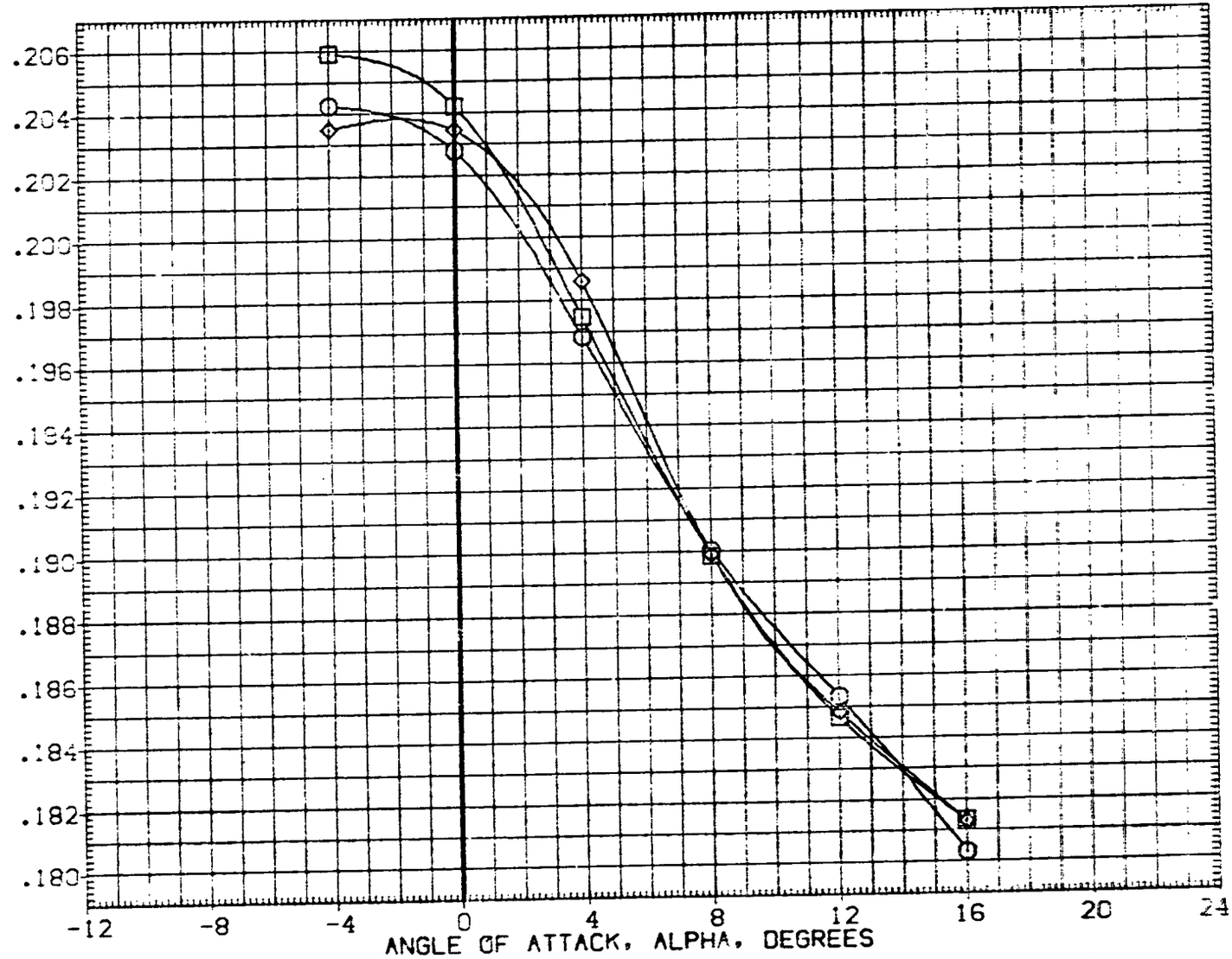


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

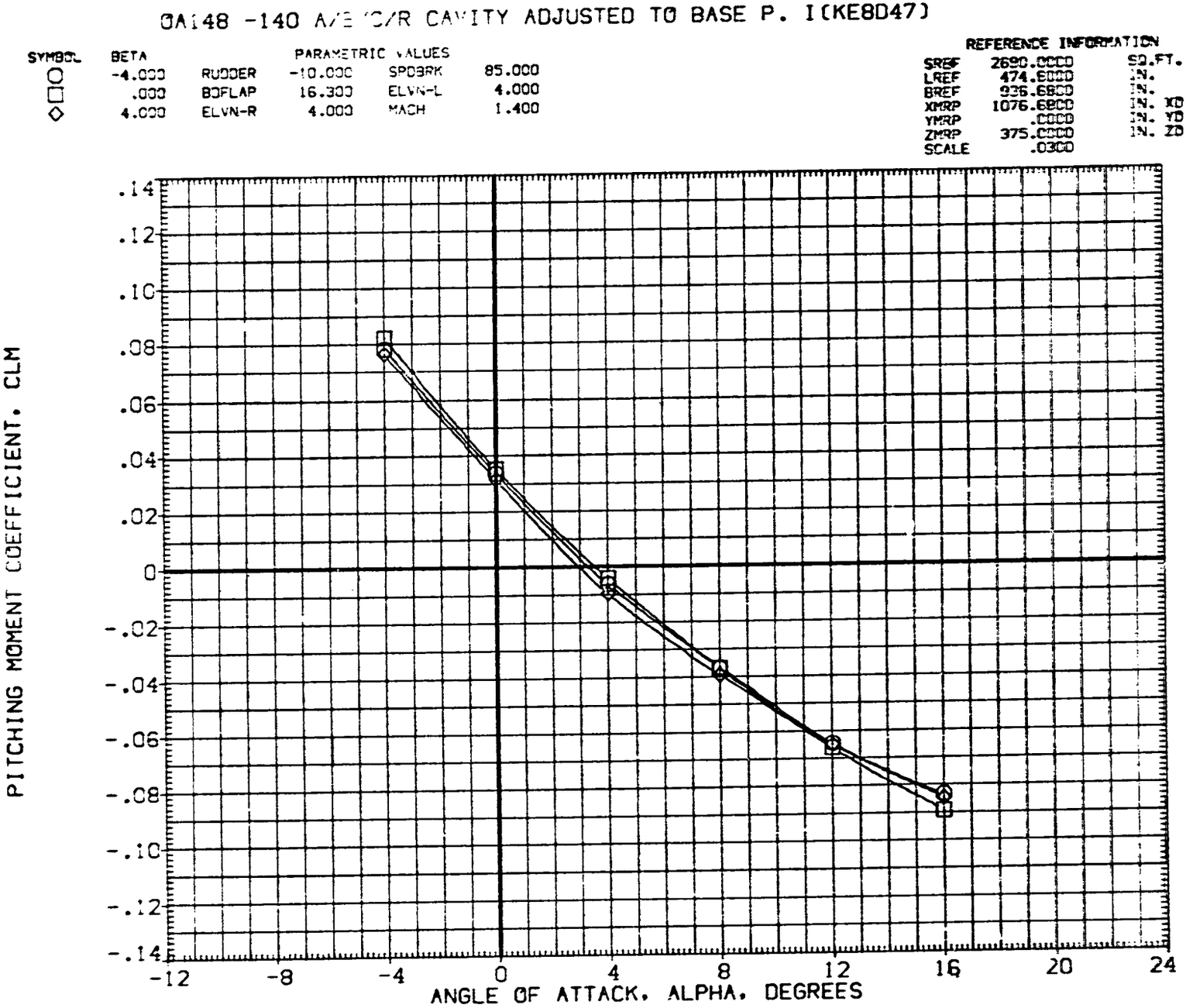


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

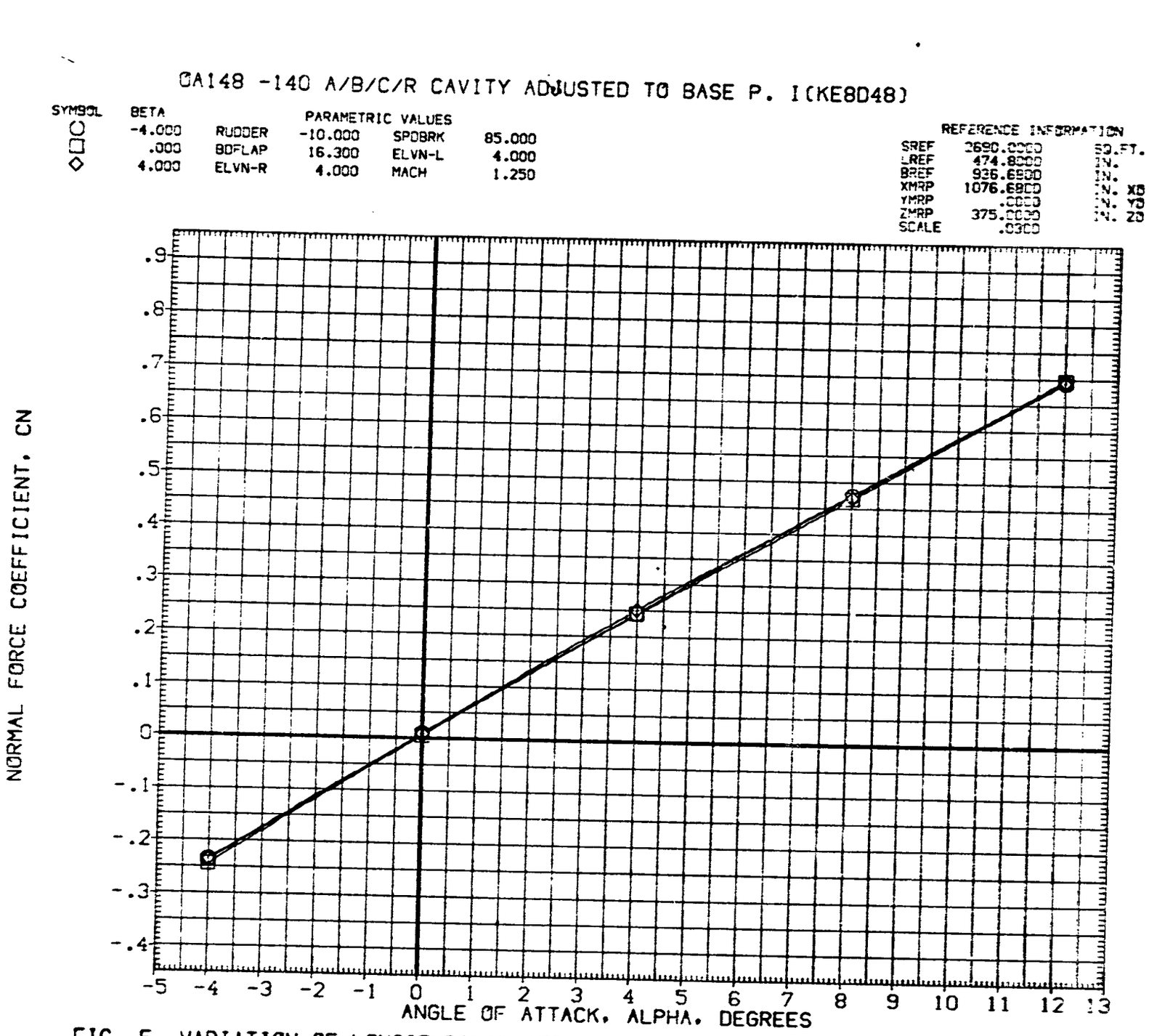


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D48)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

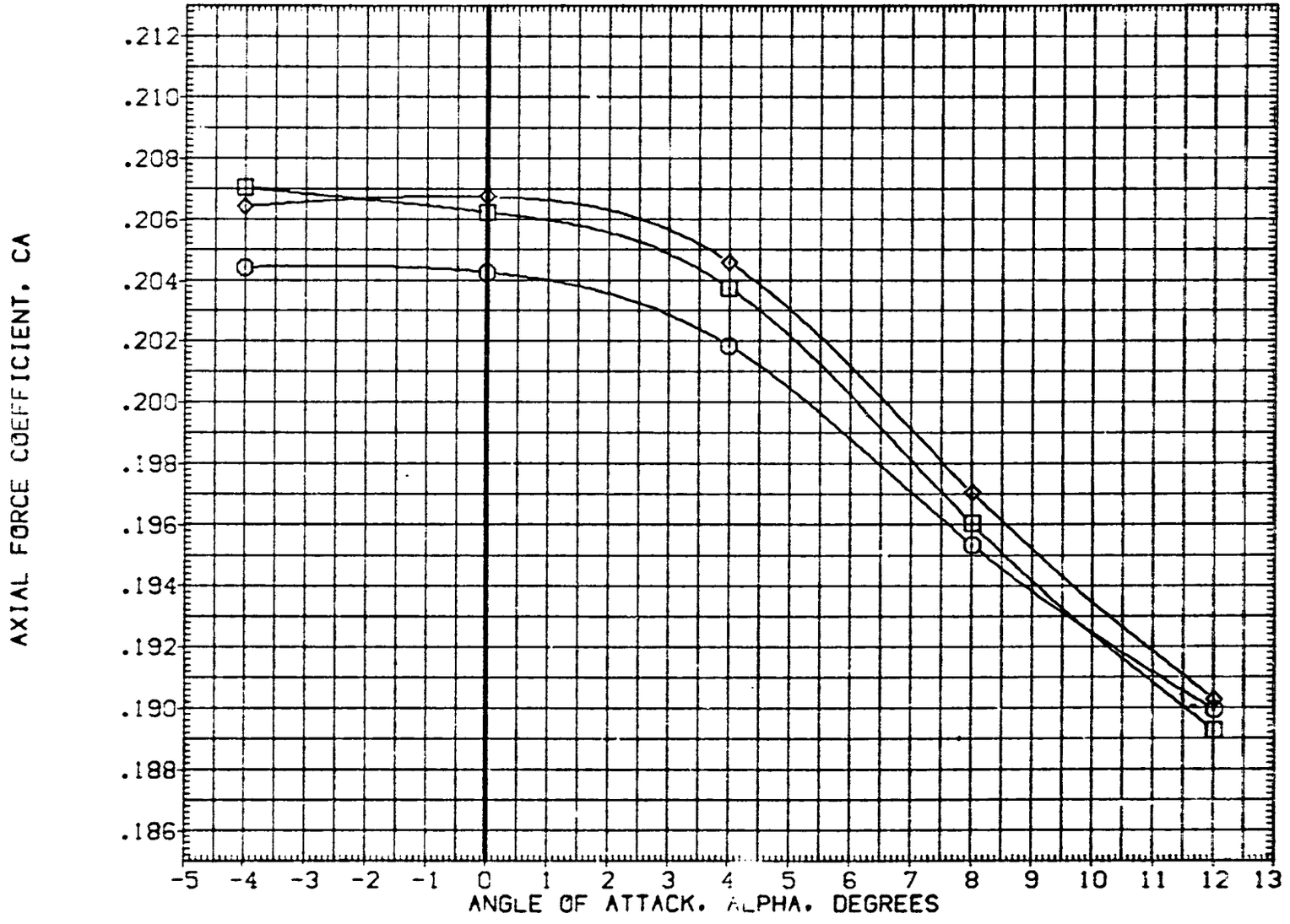


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D48)

SYMBOL	BETA		PARAMETRIC VALUES		
○□	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

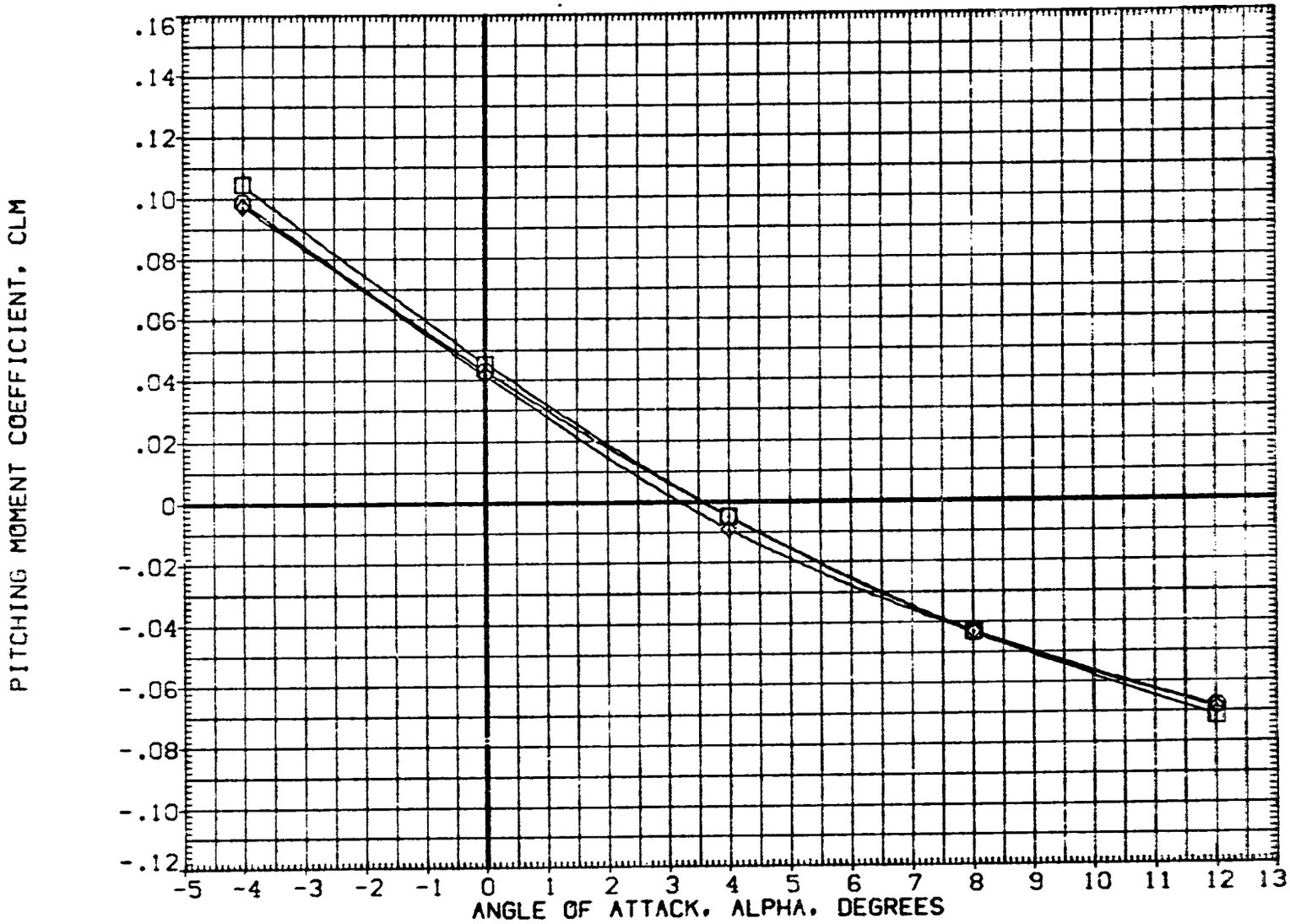


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

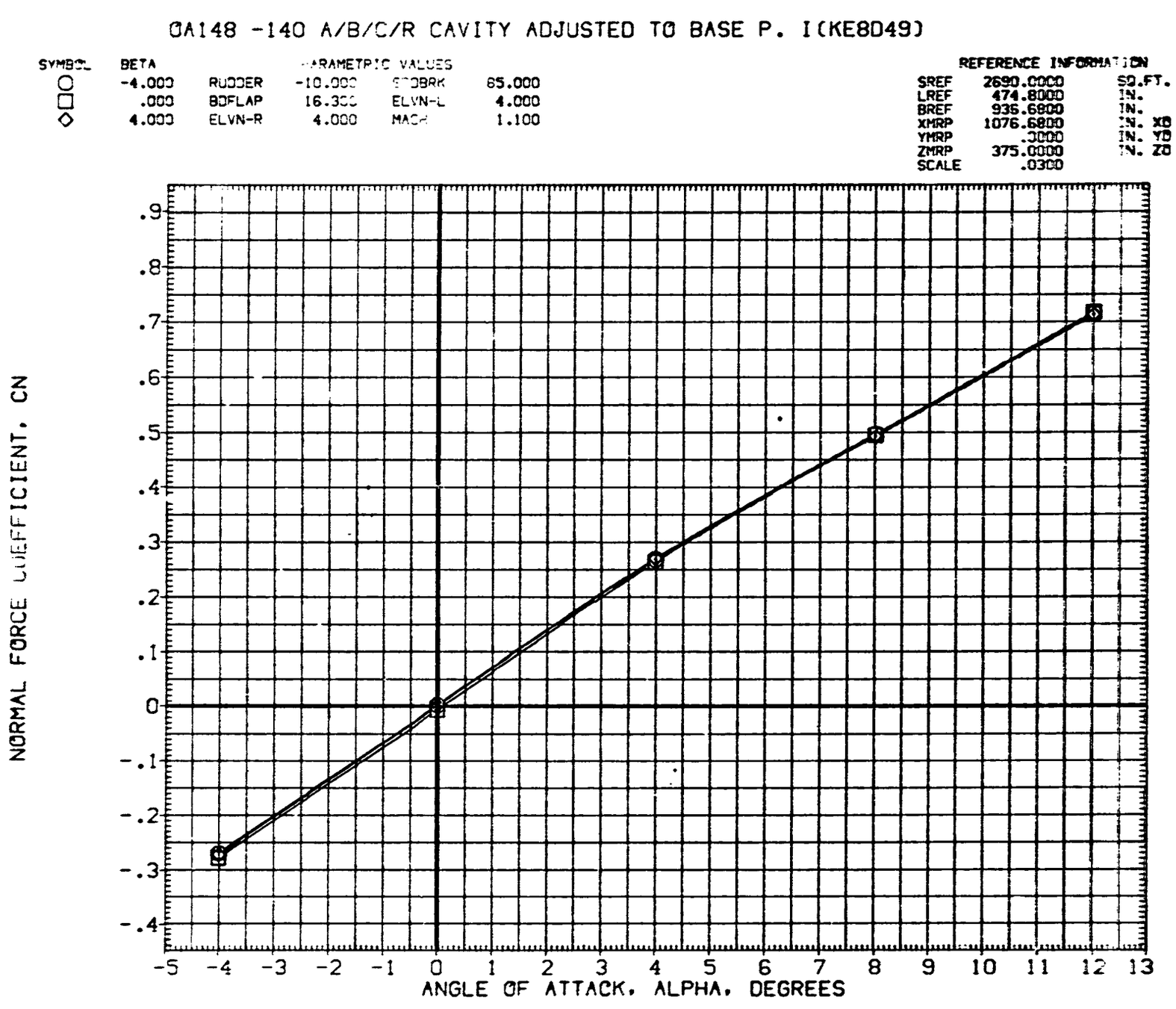


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

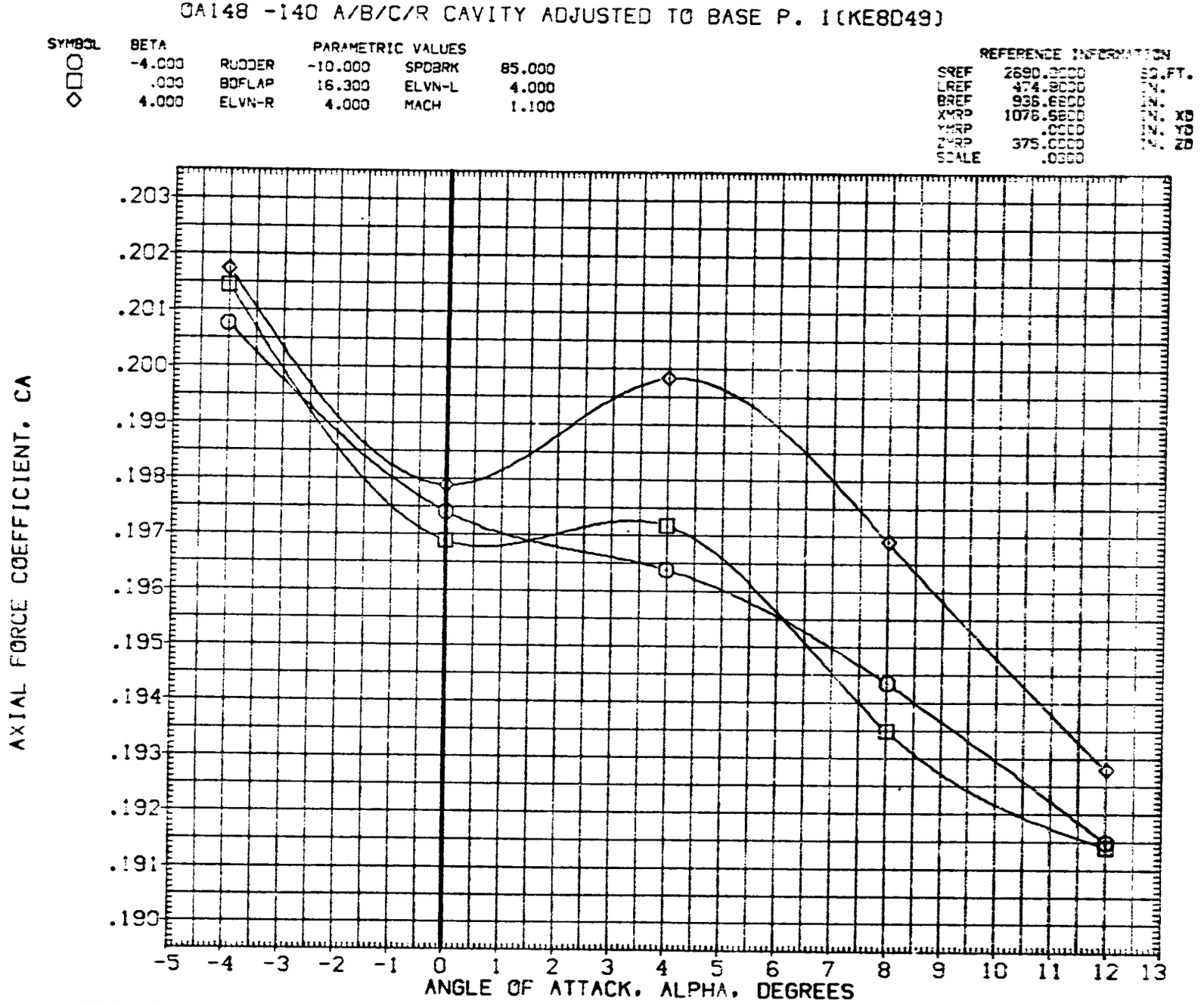


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

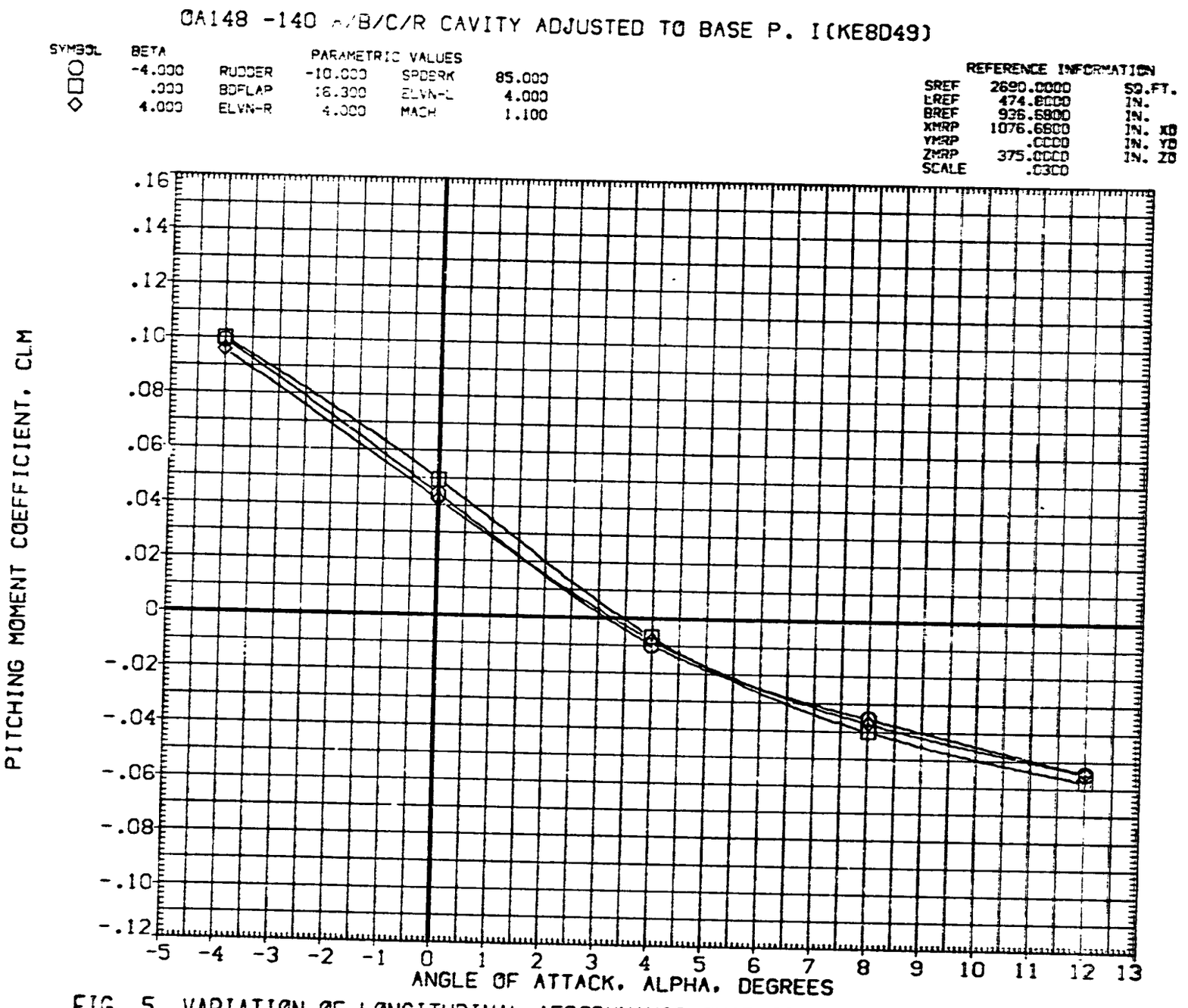


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION		
SREF	2590.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6800	IN.
XMRP	1076.9800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0800	

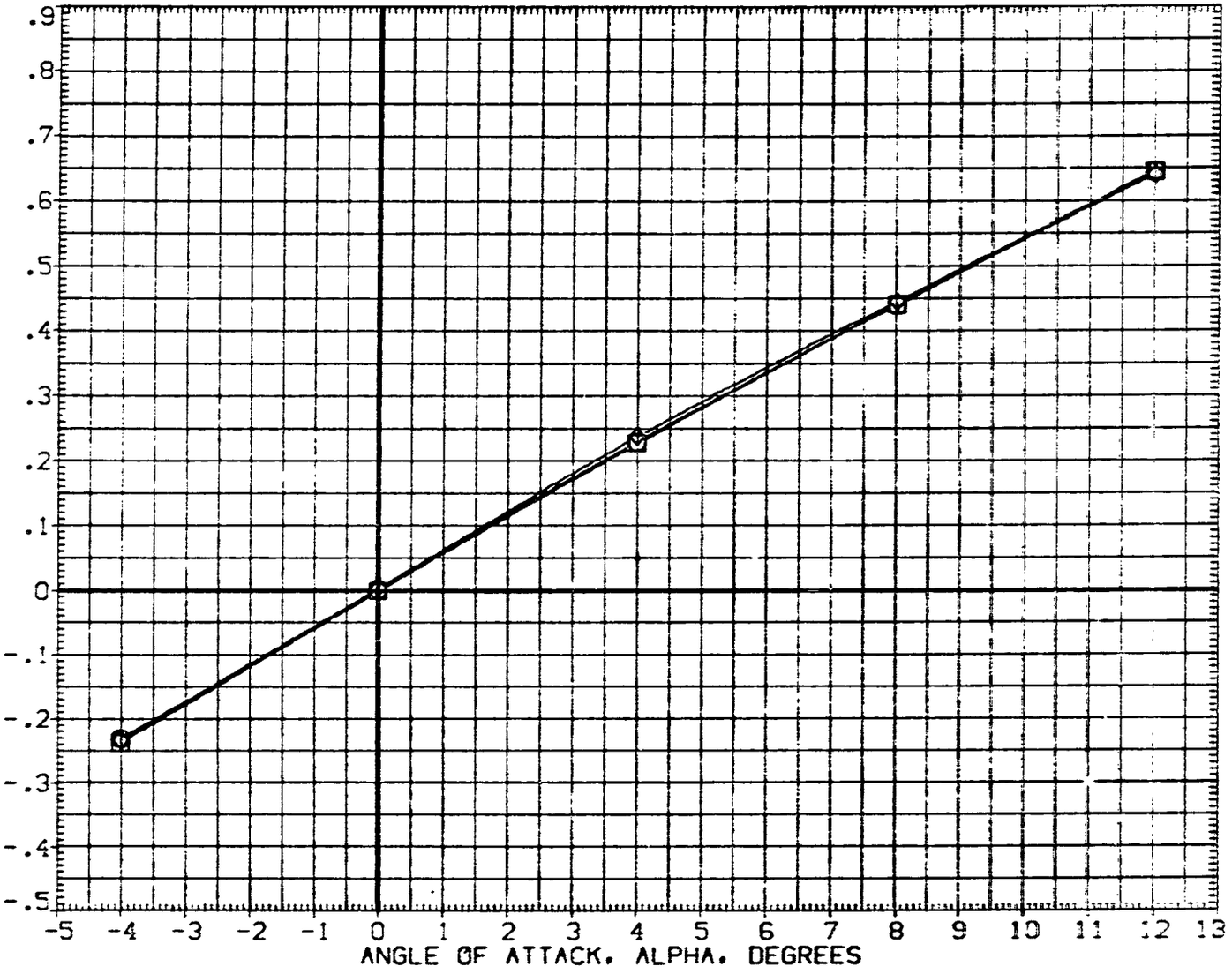


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 /B/C/R AVITY ADJUSTED TO BASE P. I(KE8050)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XB
YMR	.0000	IN. YB
ZMRP	.0000	IN. ZB
SCALE	.0500	

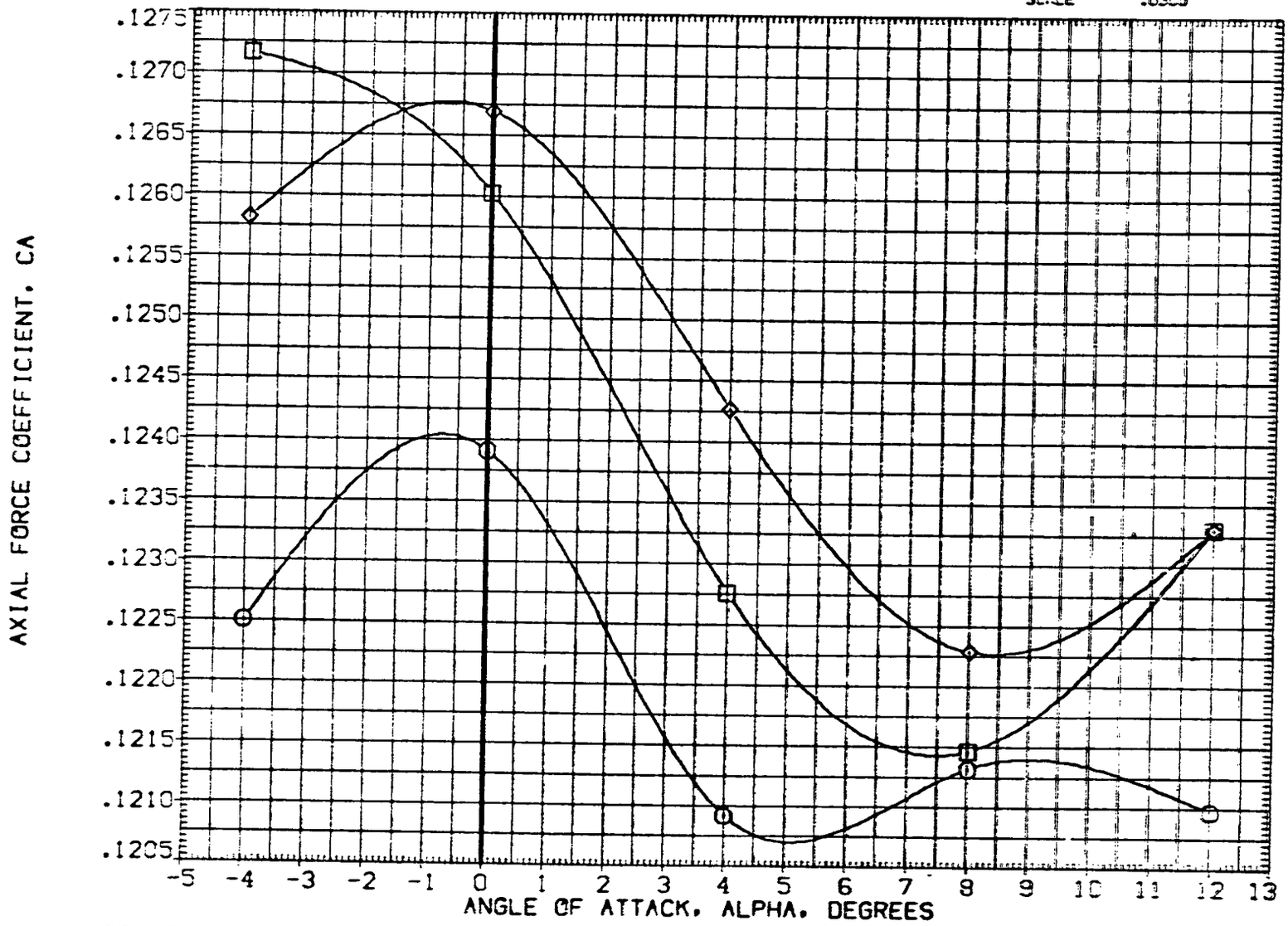


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

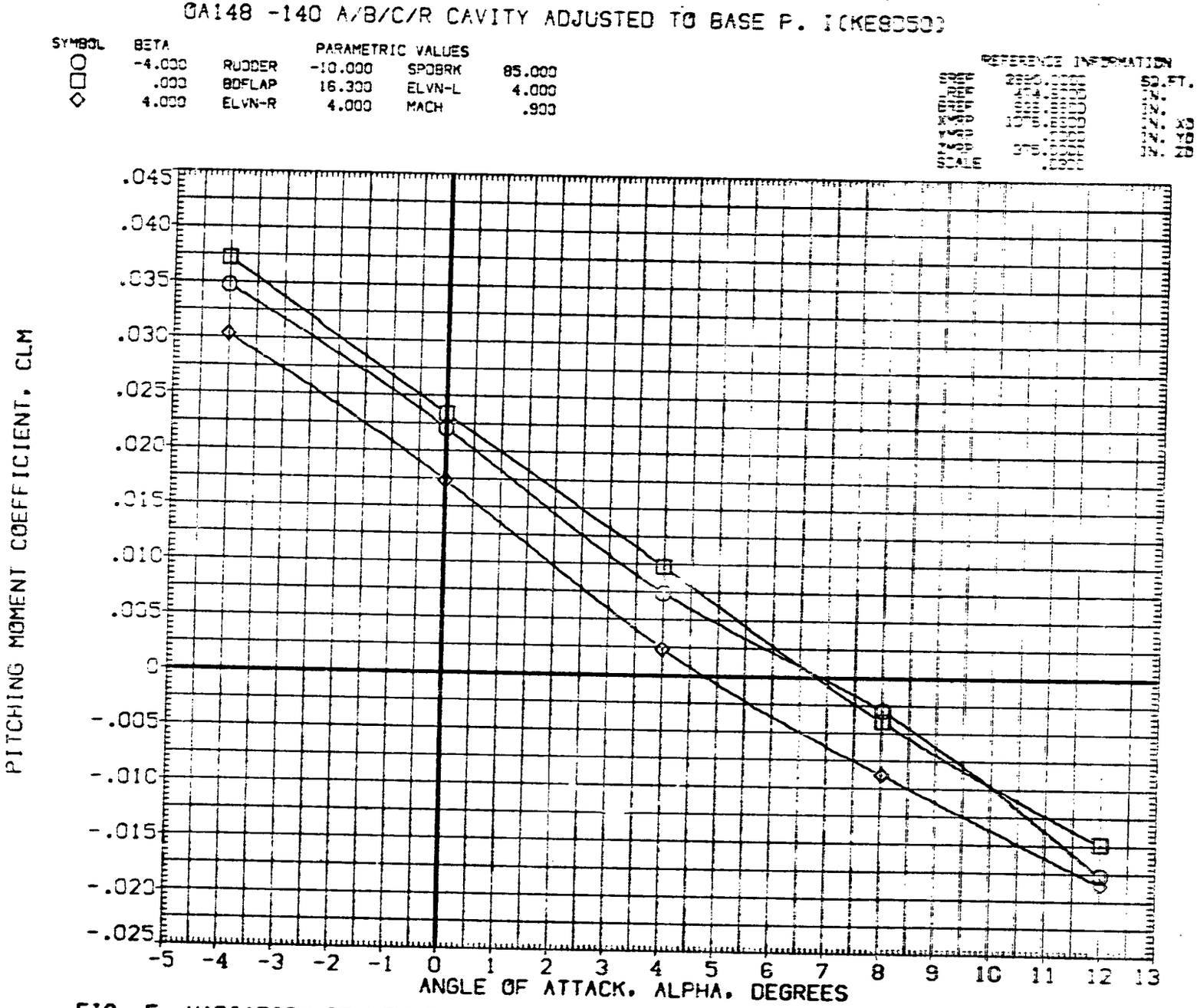


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8051)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	-10.000	SPOIRK	85.000
□	-4.000	BDFLAP	16.300	ELVN-L	4.000
◇	.000	ELVN-R	4.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

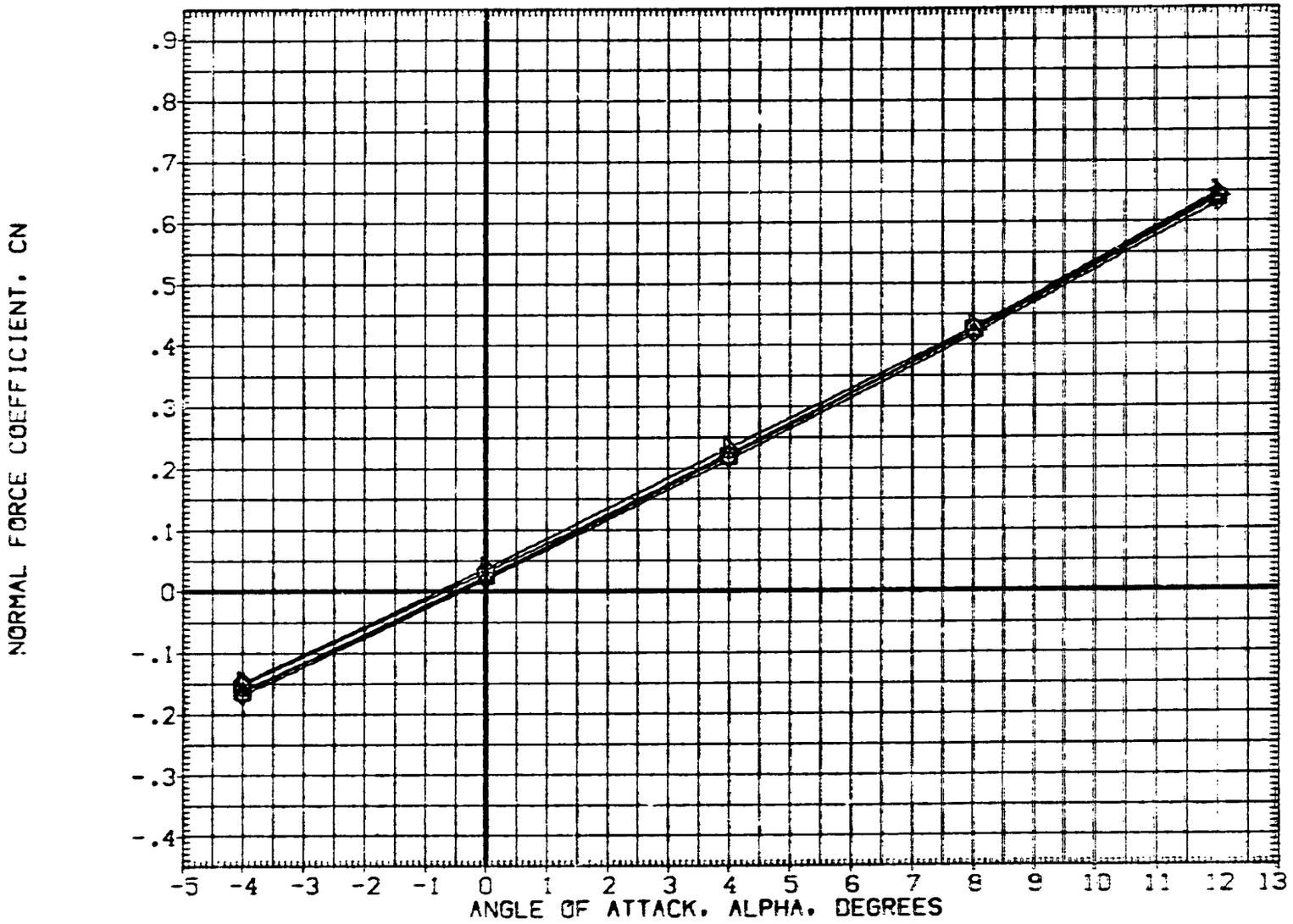


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

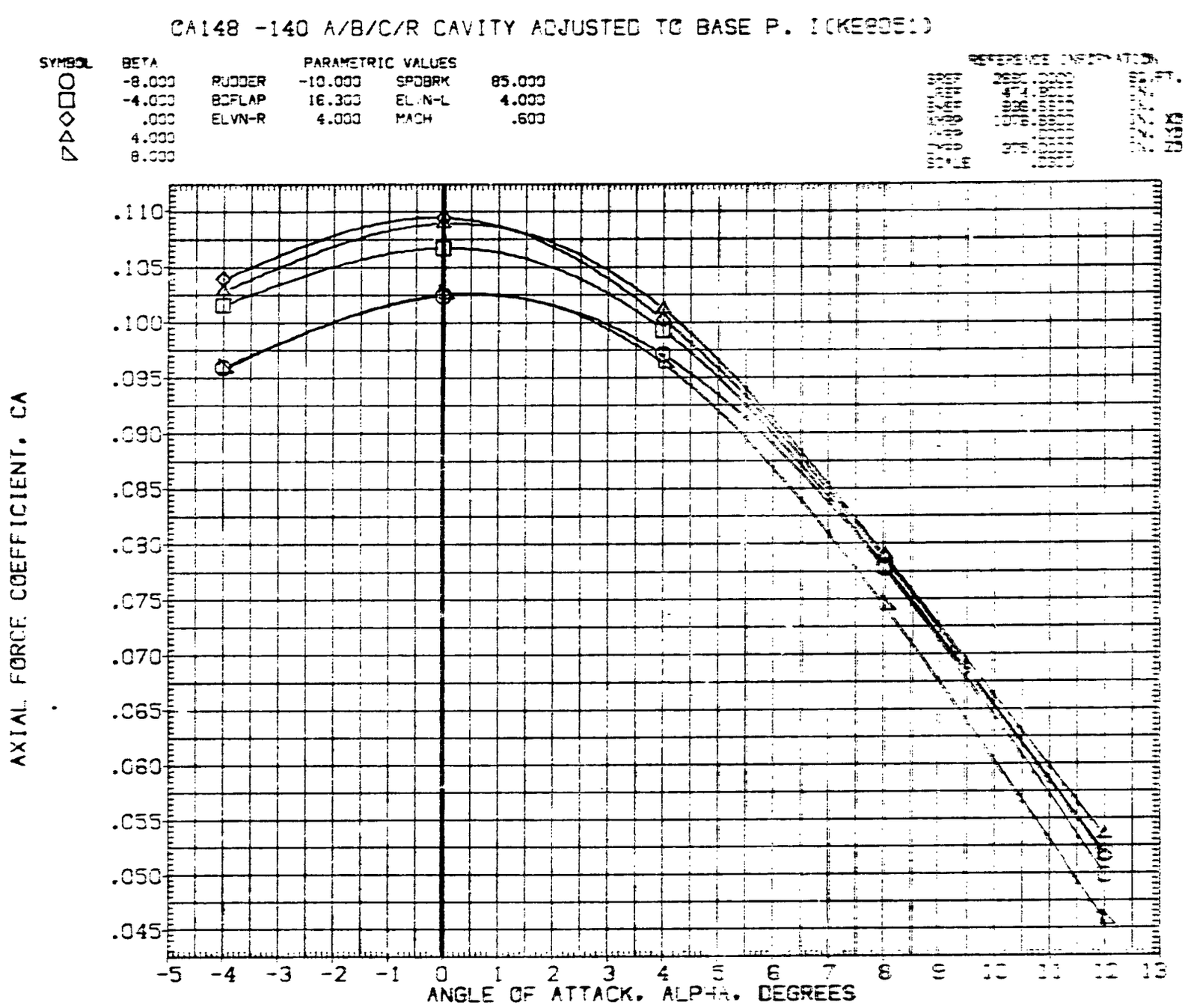


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

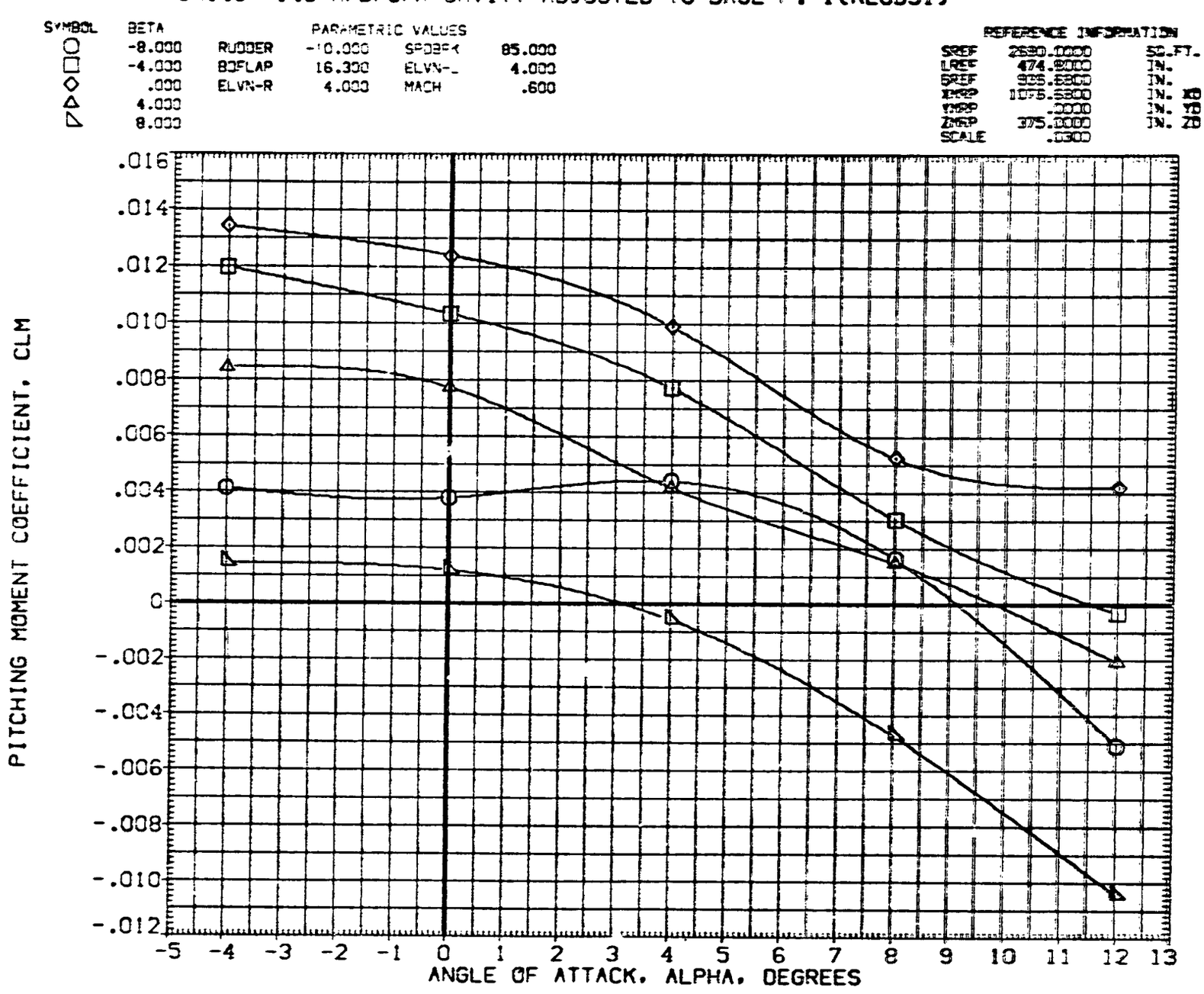


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

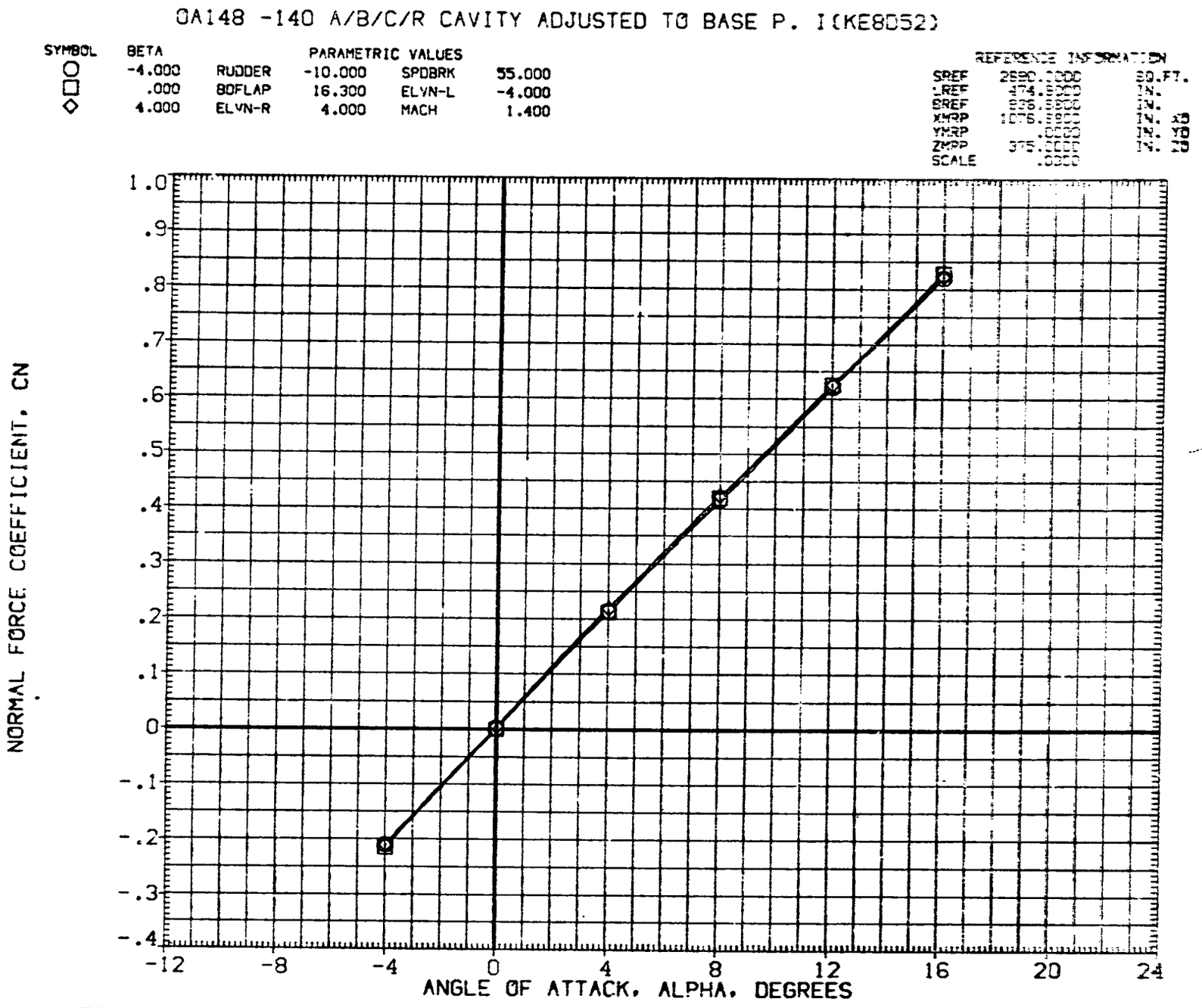


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

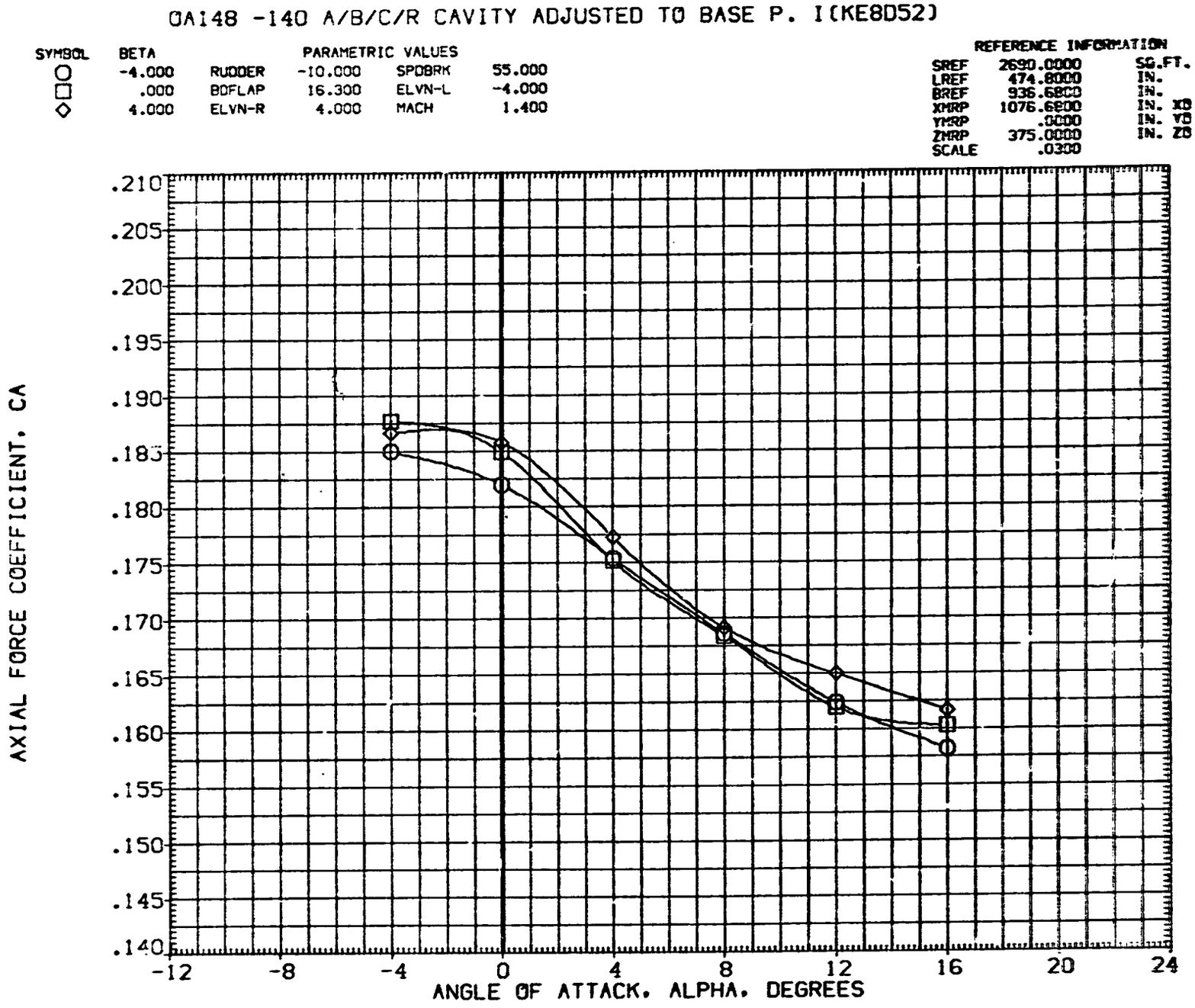


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

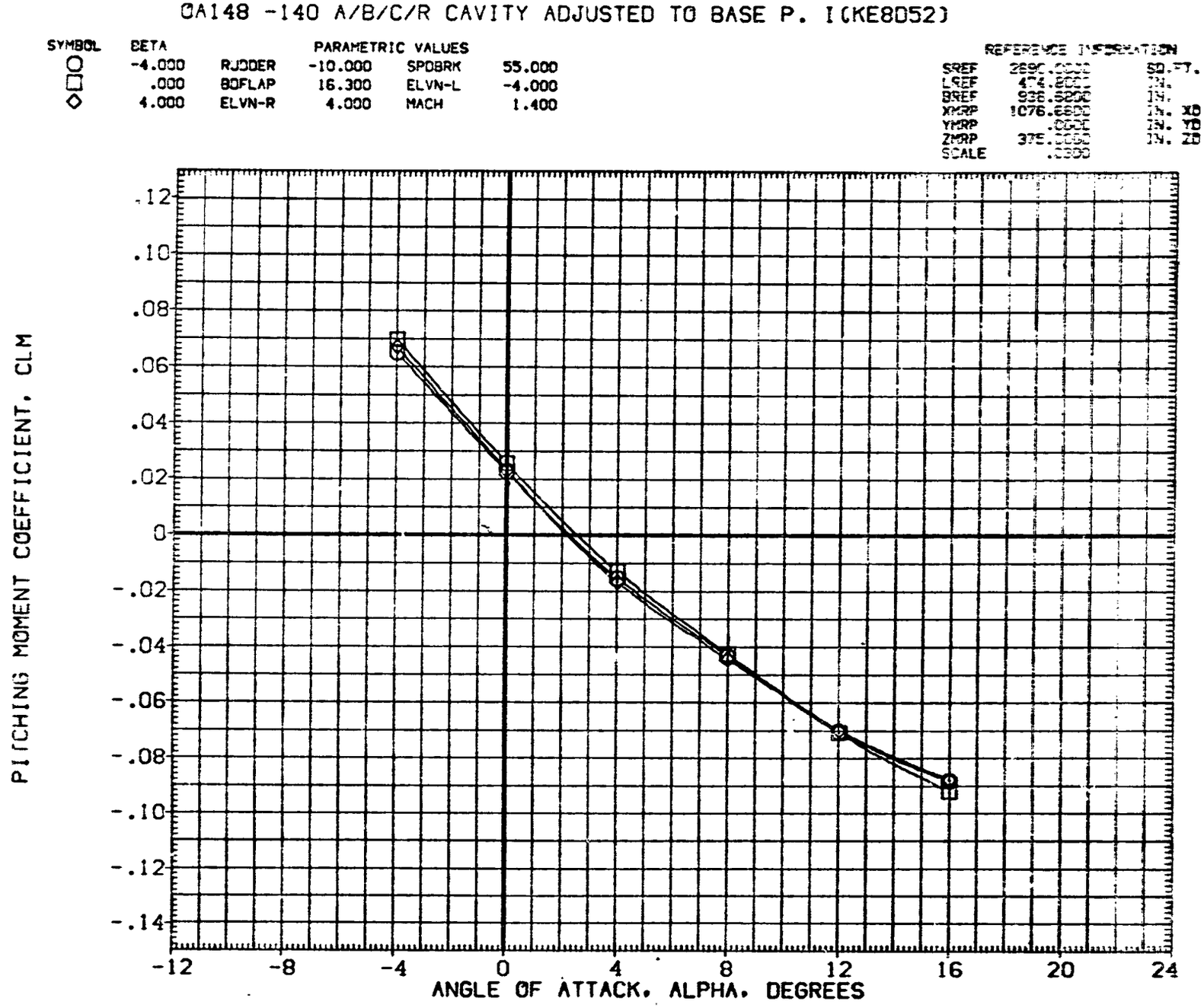


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

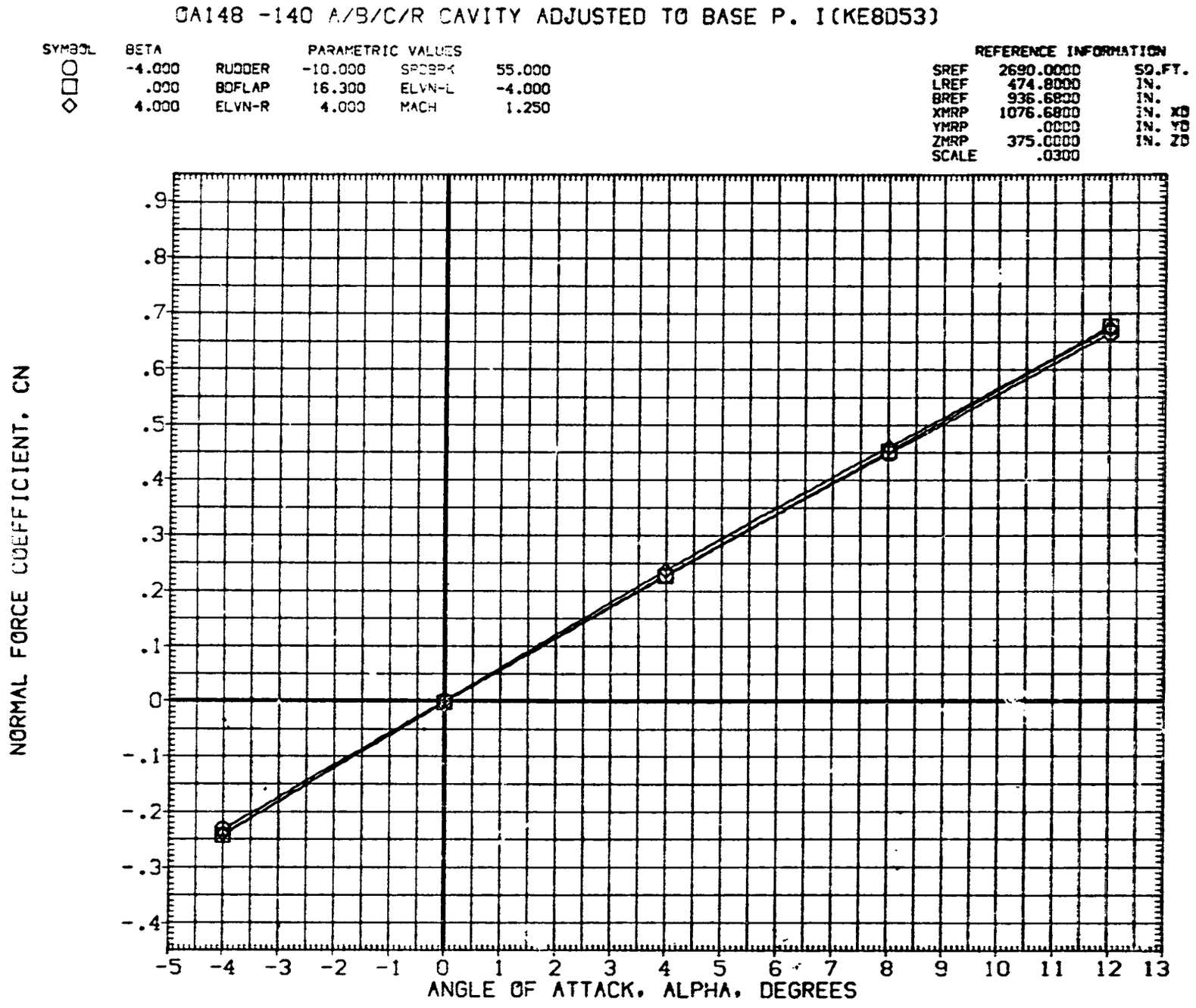


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

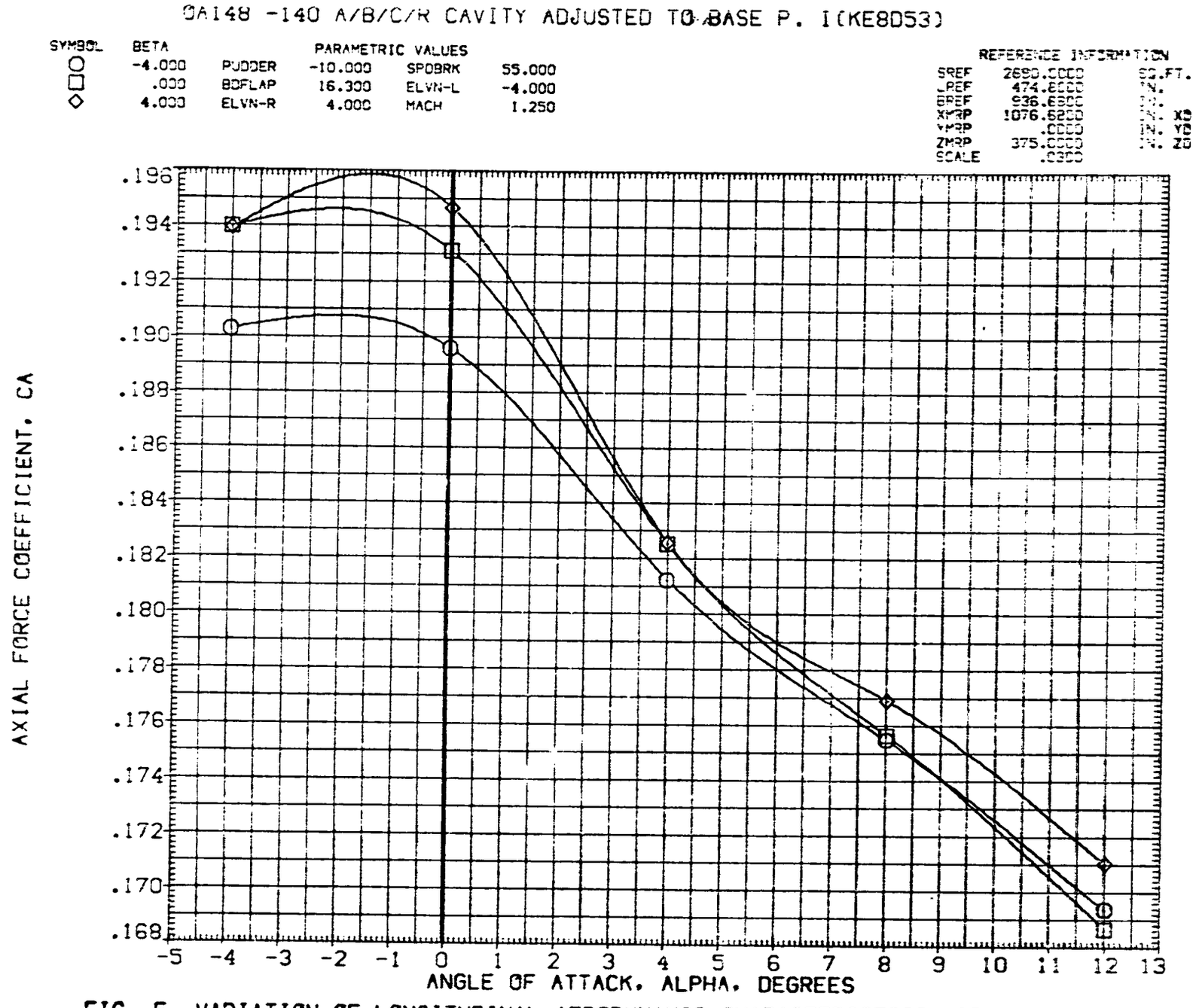


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

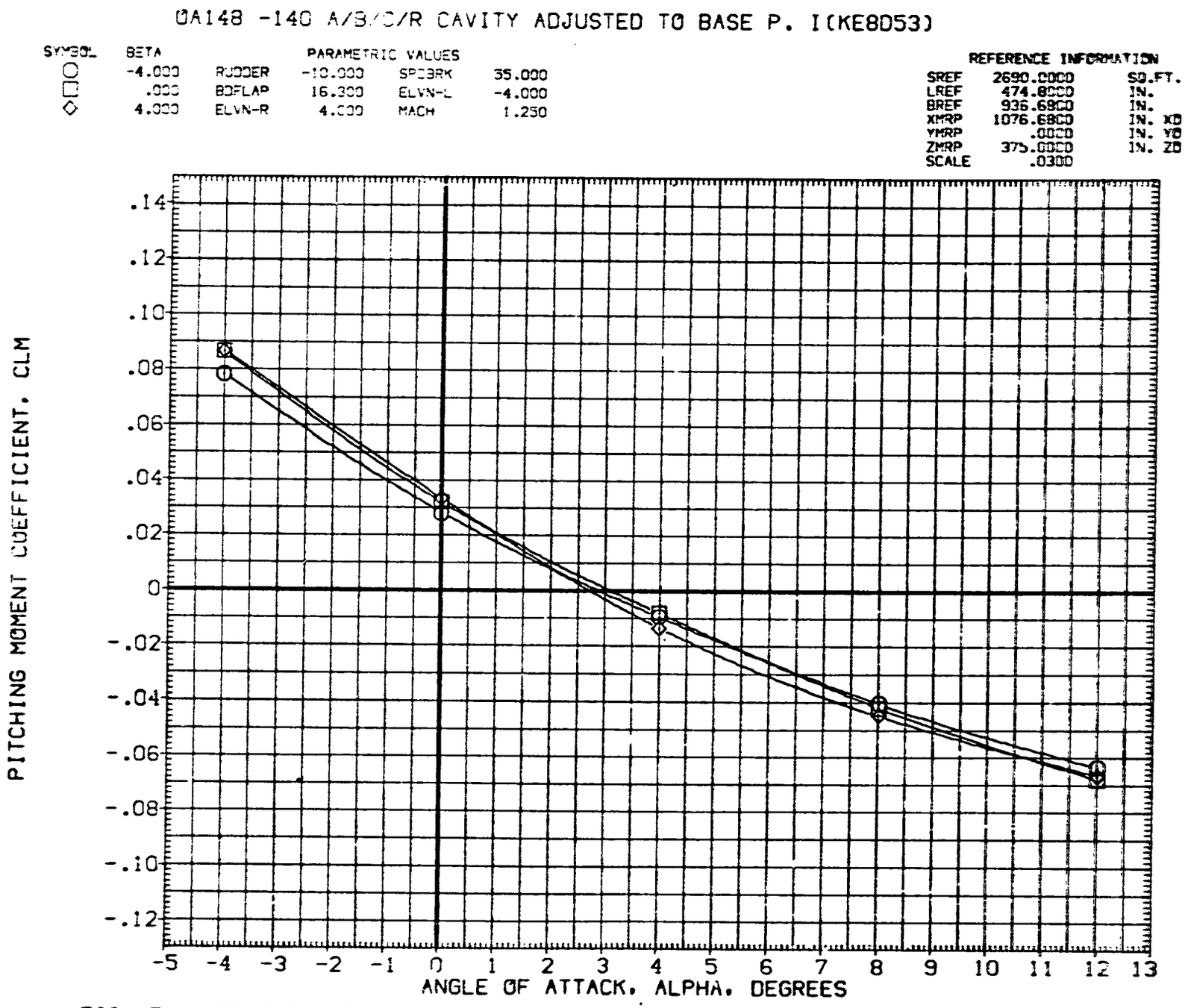


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

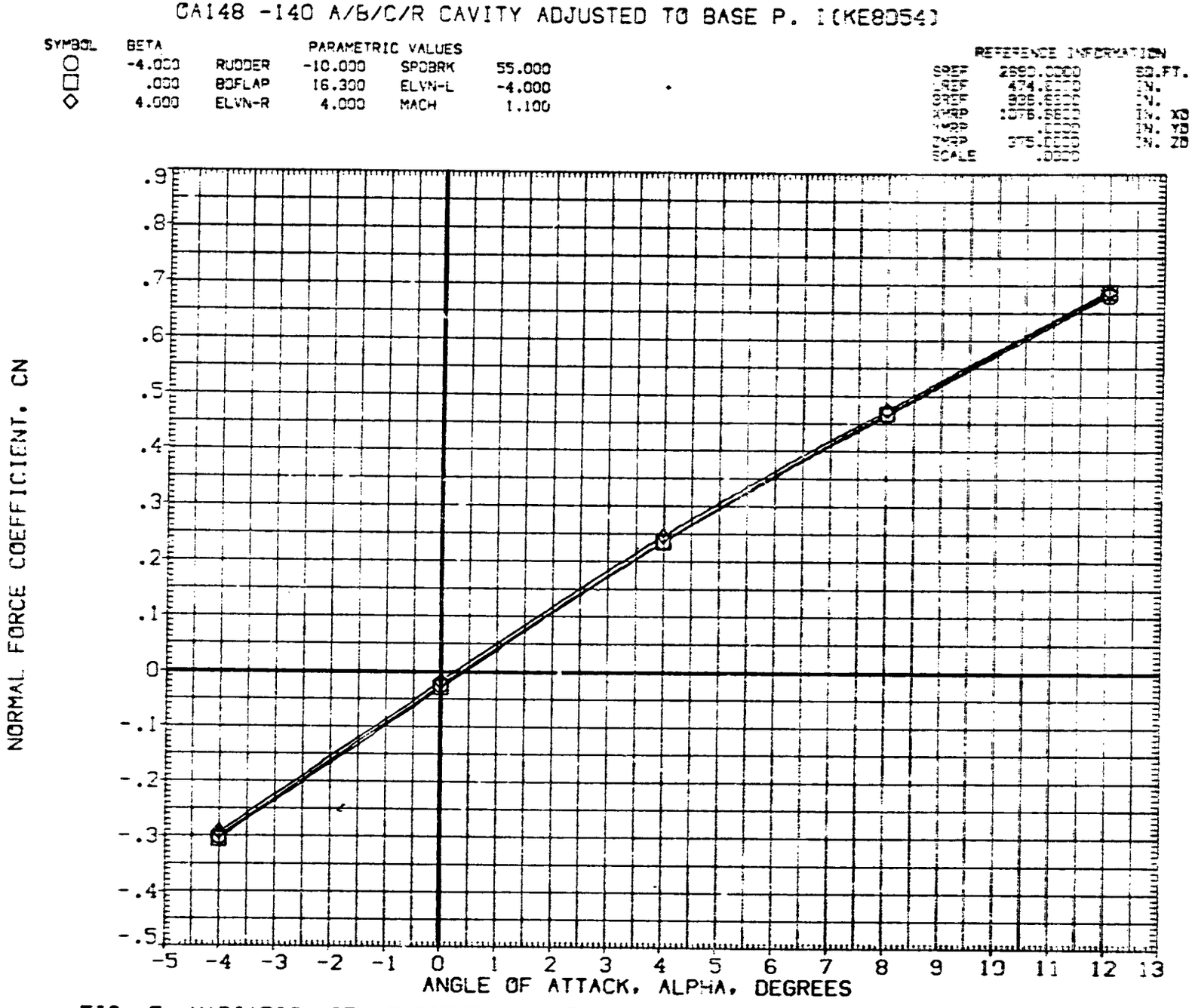


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AVITY ADJUSTED TO BASE P. I(KE8D54)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0303	

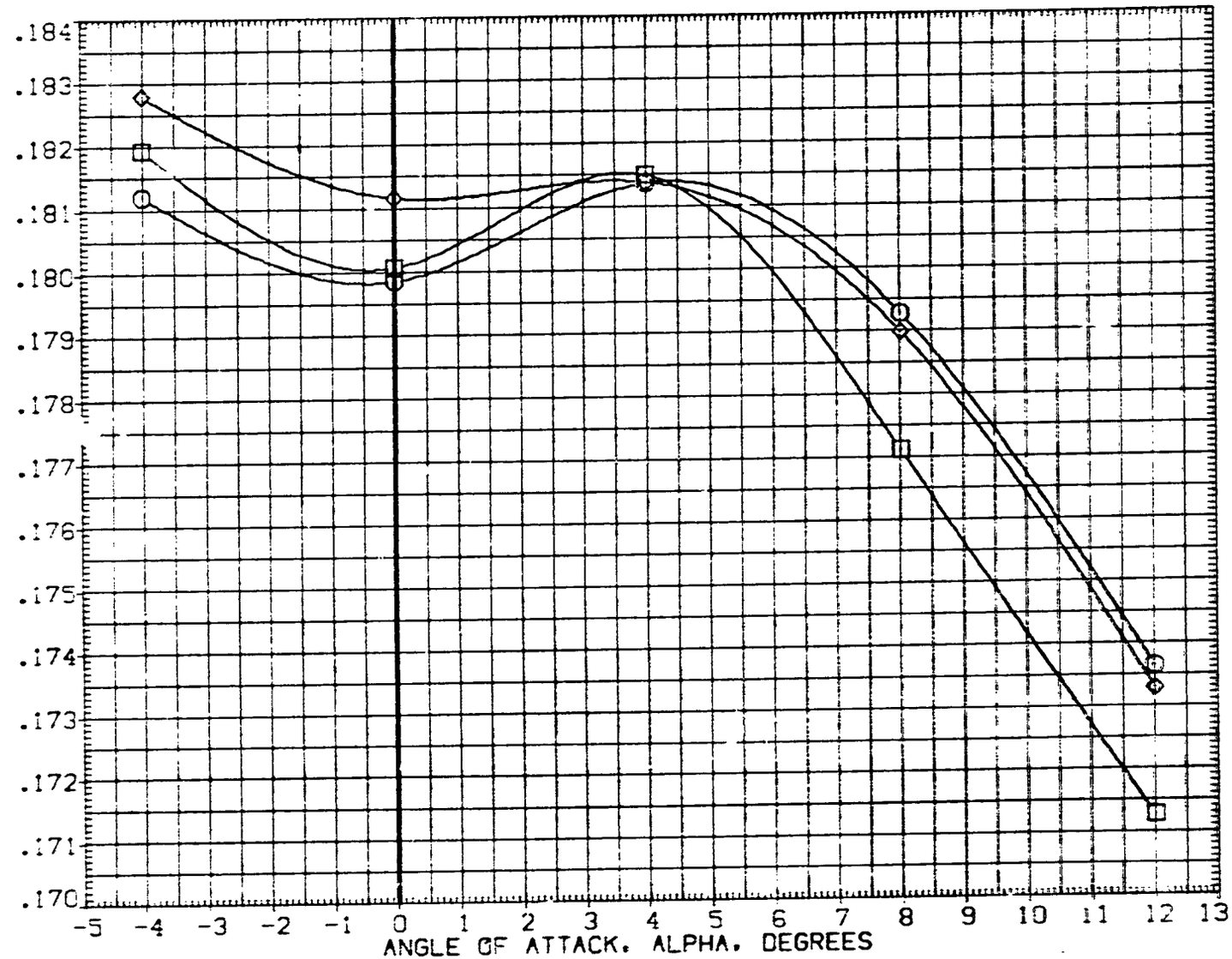


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D54)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0900	

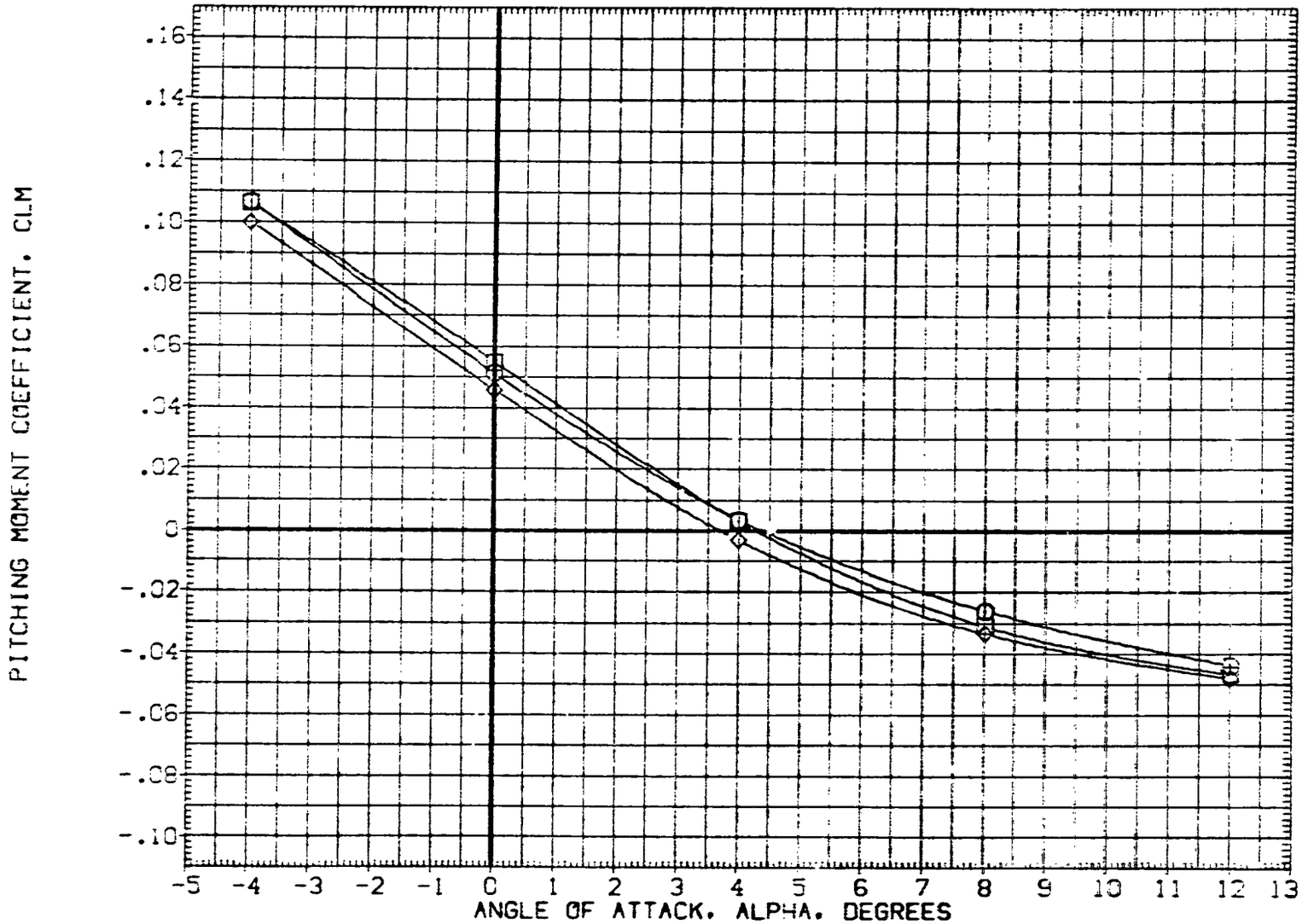


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

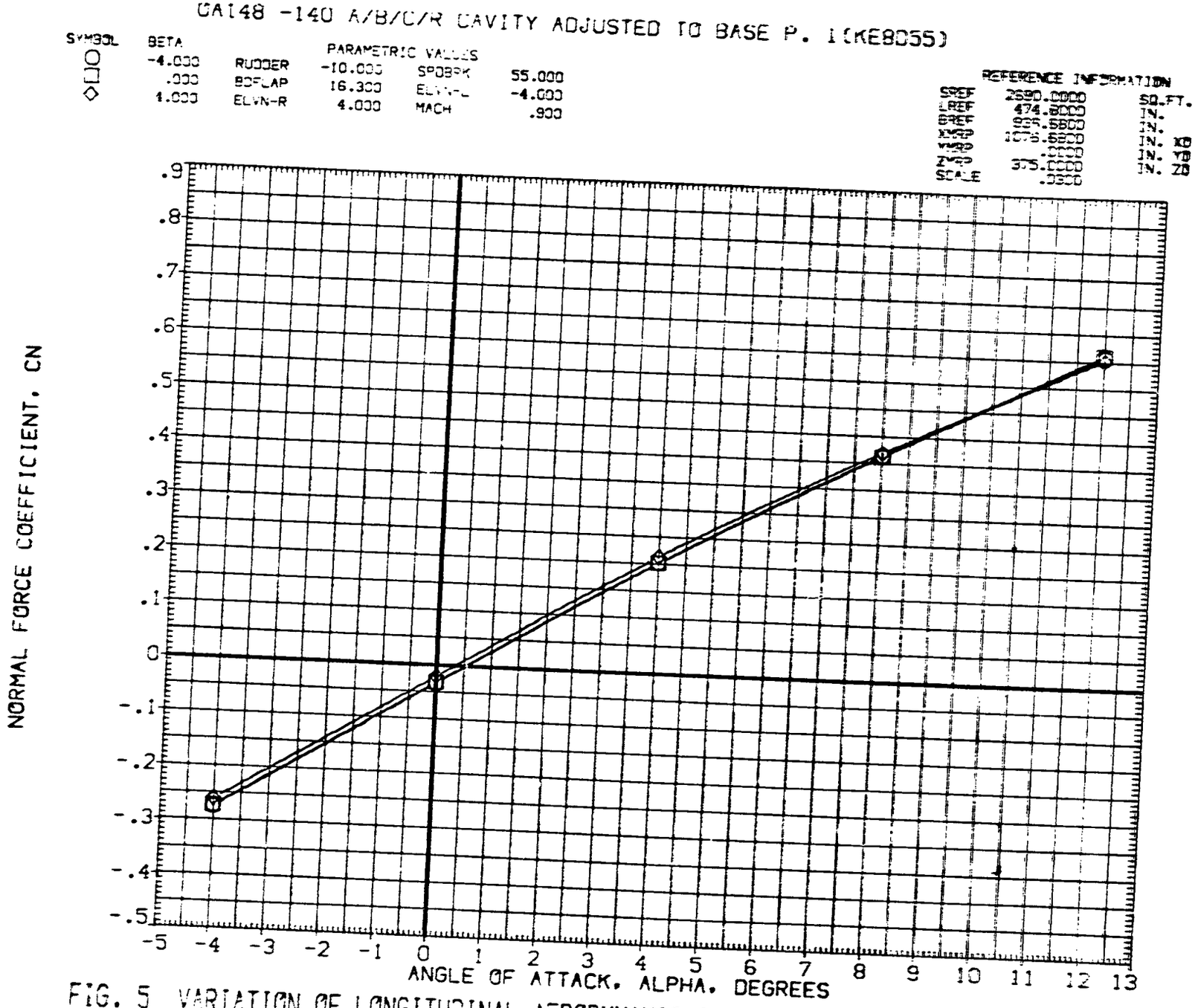


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8055)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION

SREF	2890.0000	SQ.FT.
LREF	474.8000	IN.
BREF	926.2800	IN.
XMRP	1076.6600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0000	



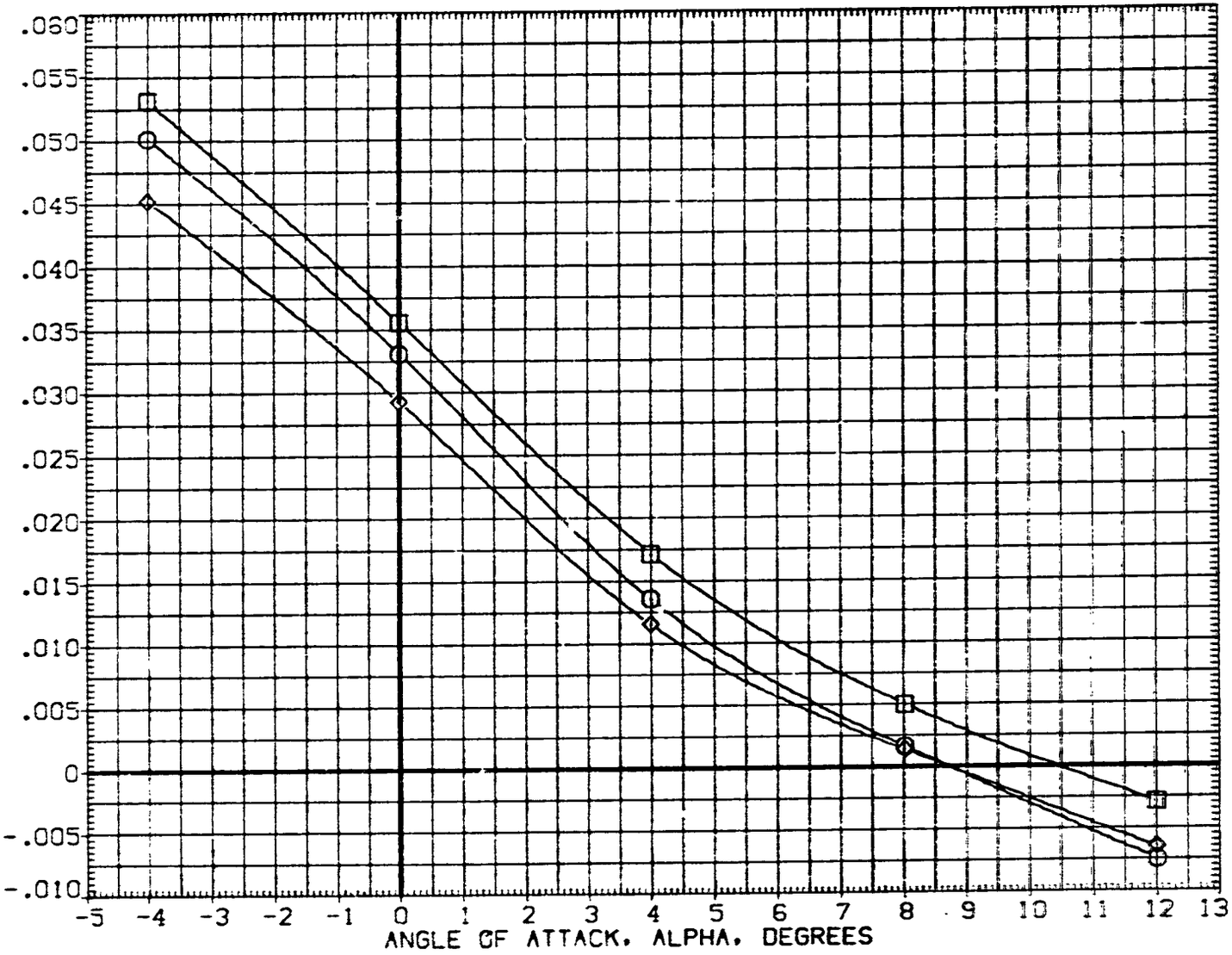
FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA:48 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8055)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6600	IN.
XMRP	1076.6600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	



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FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8056)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	-10.000	SPOBRK	55.000
□	-4.000	BDFLAP	16.300	ELVN-L	-4.000
◇	.000	ELVN-R	4.000	MACH	.600
4	4.000				
△	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
BREF	174.8000	IN.
CREF	936.8000	IN.
XMRP	1076.5600	IN. XB
YMRP	.0000	IN.
ZMRP	375.0000	IN. ZB
SCALE	.0500	

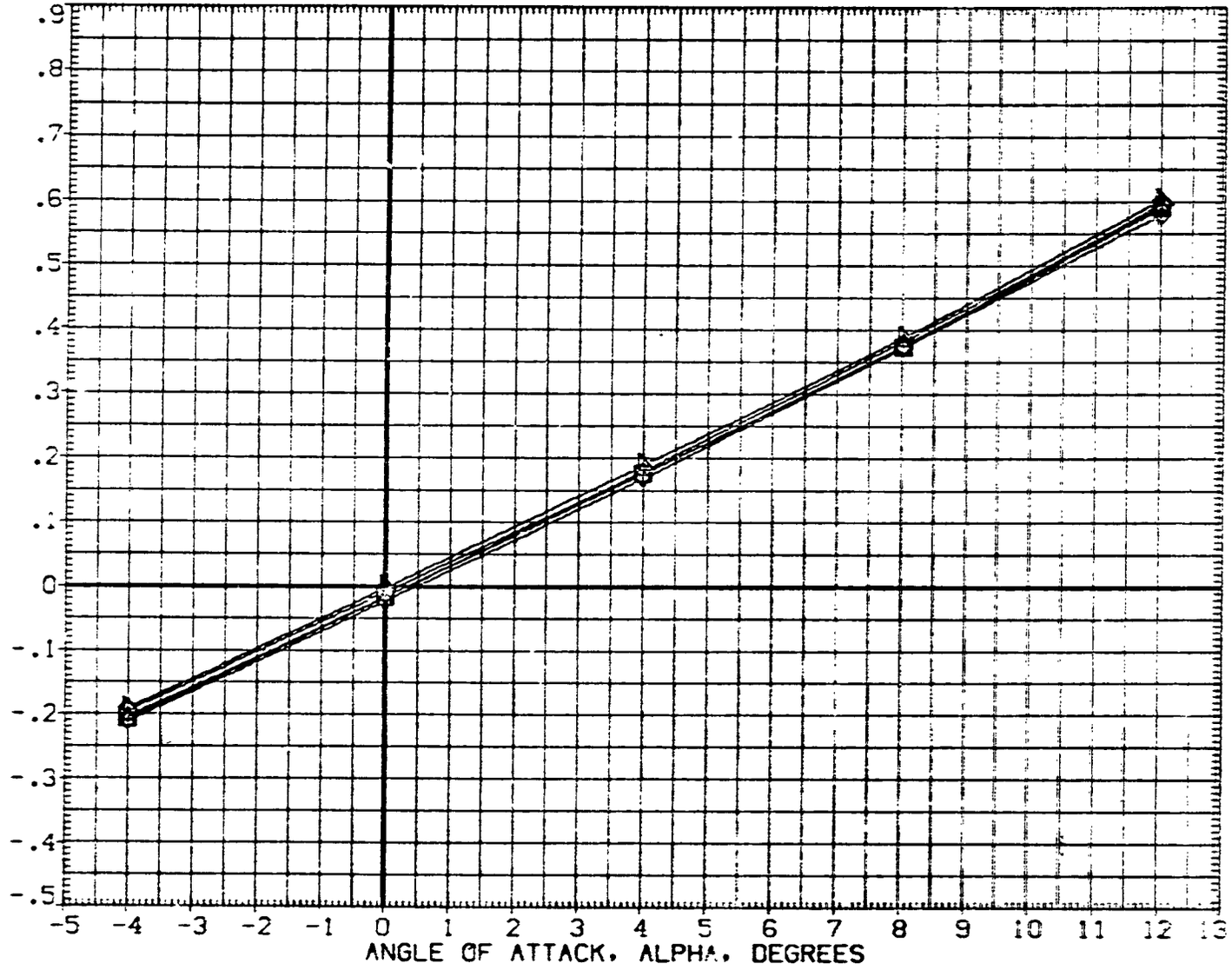


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8056)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	-10.000	SPDBRK	55.000
□	-4.000	BDFLAP	16.300	ELVN-L	-4.000
◇	.000	ELVN-R	4.000	MACH	.600
△	4.000				
▽	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

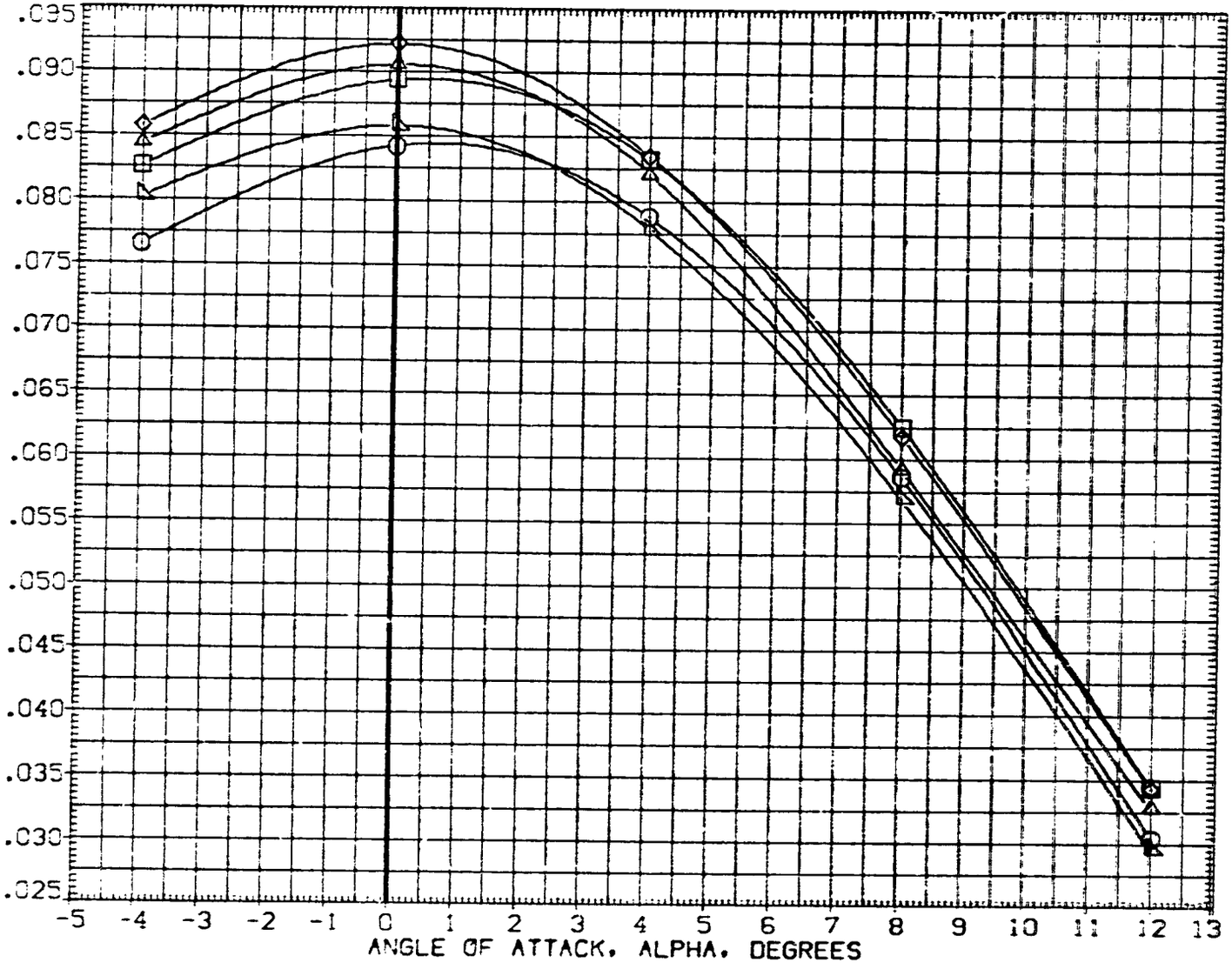


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

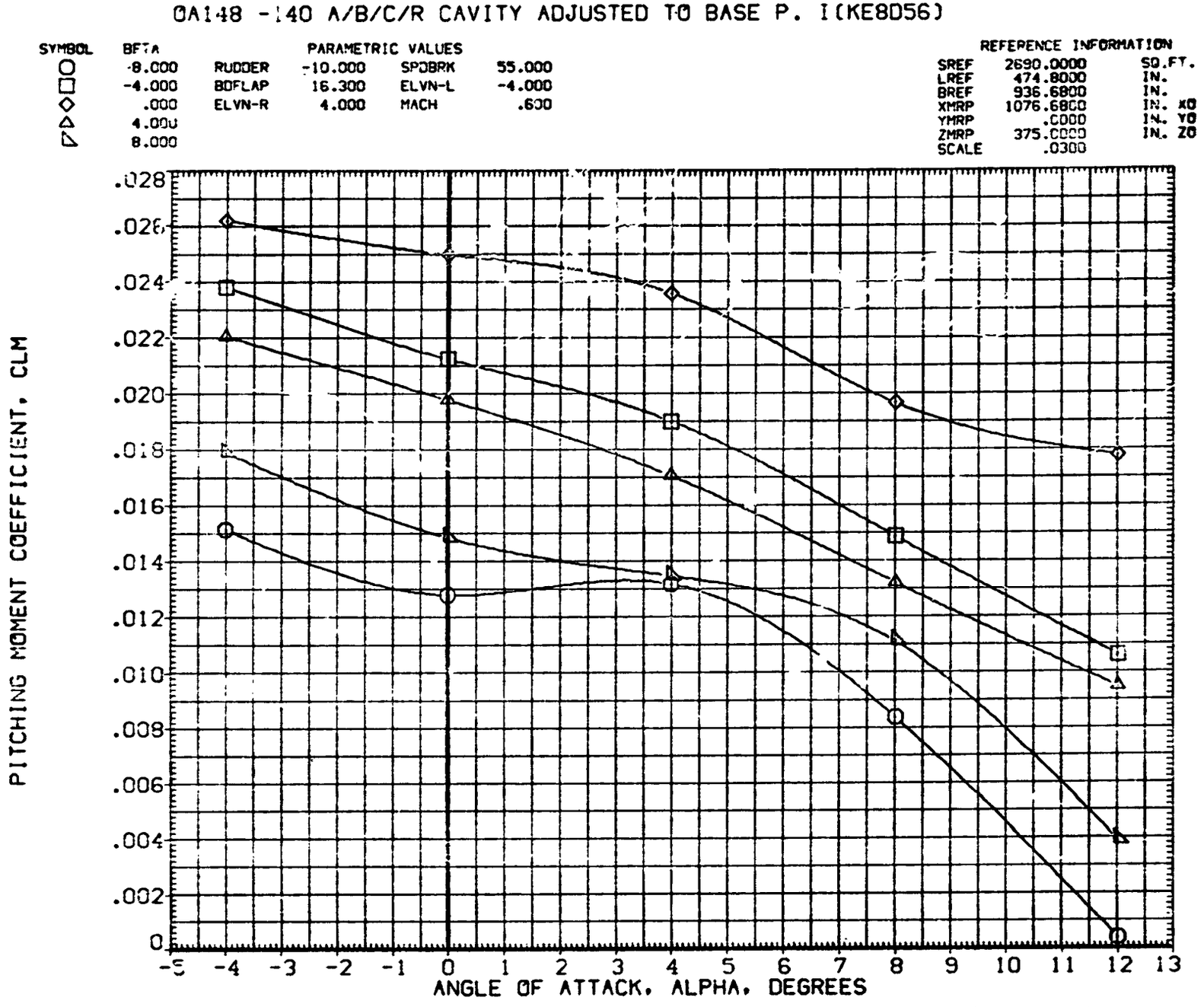


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

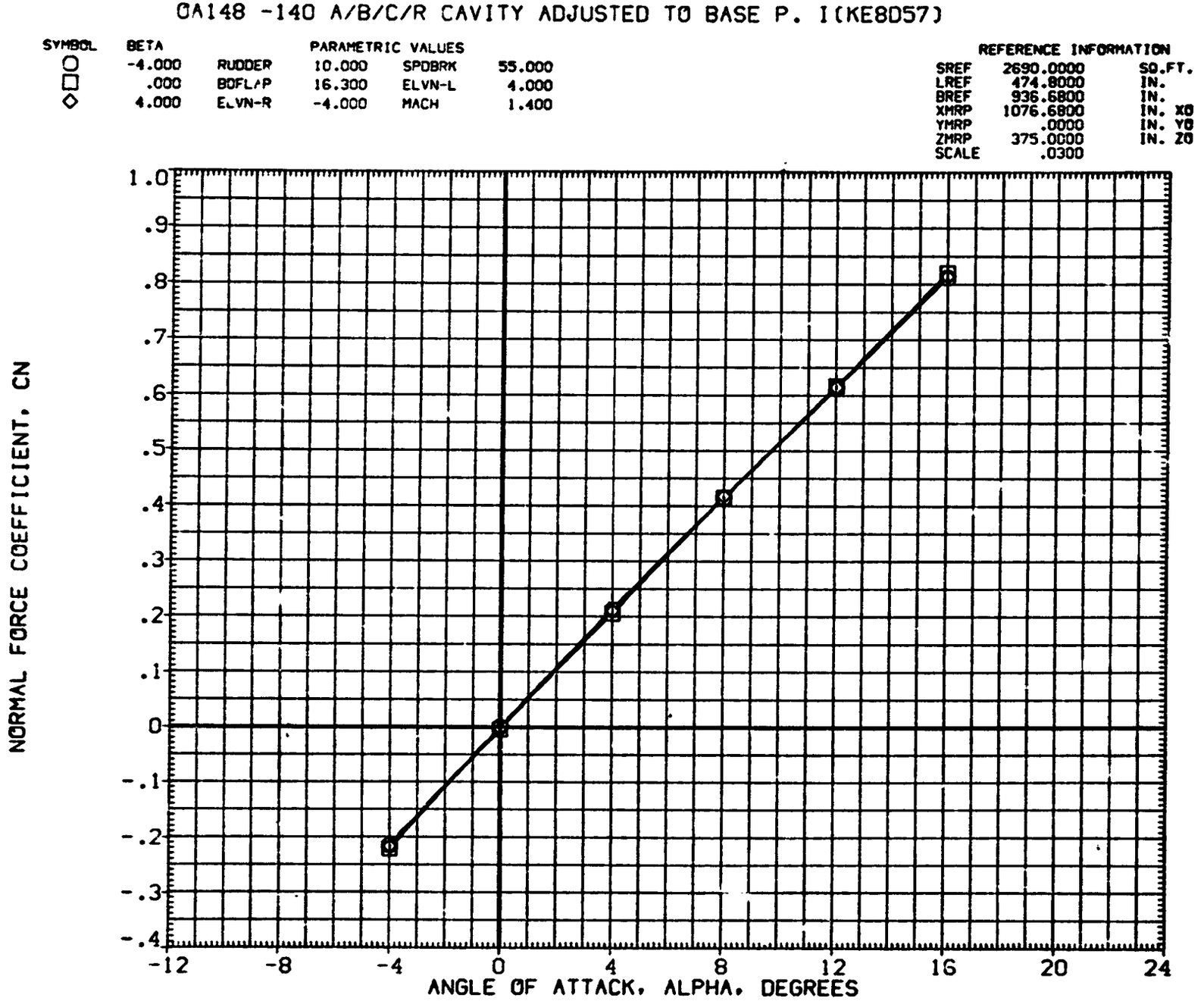


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D57)

SYMBOL	ETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XG
YMRP	.0000	IN. YG
ZMRP	375.0000	IN. ZG
SCALE	.0300	

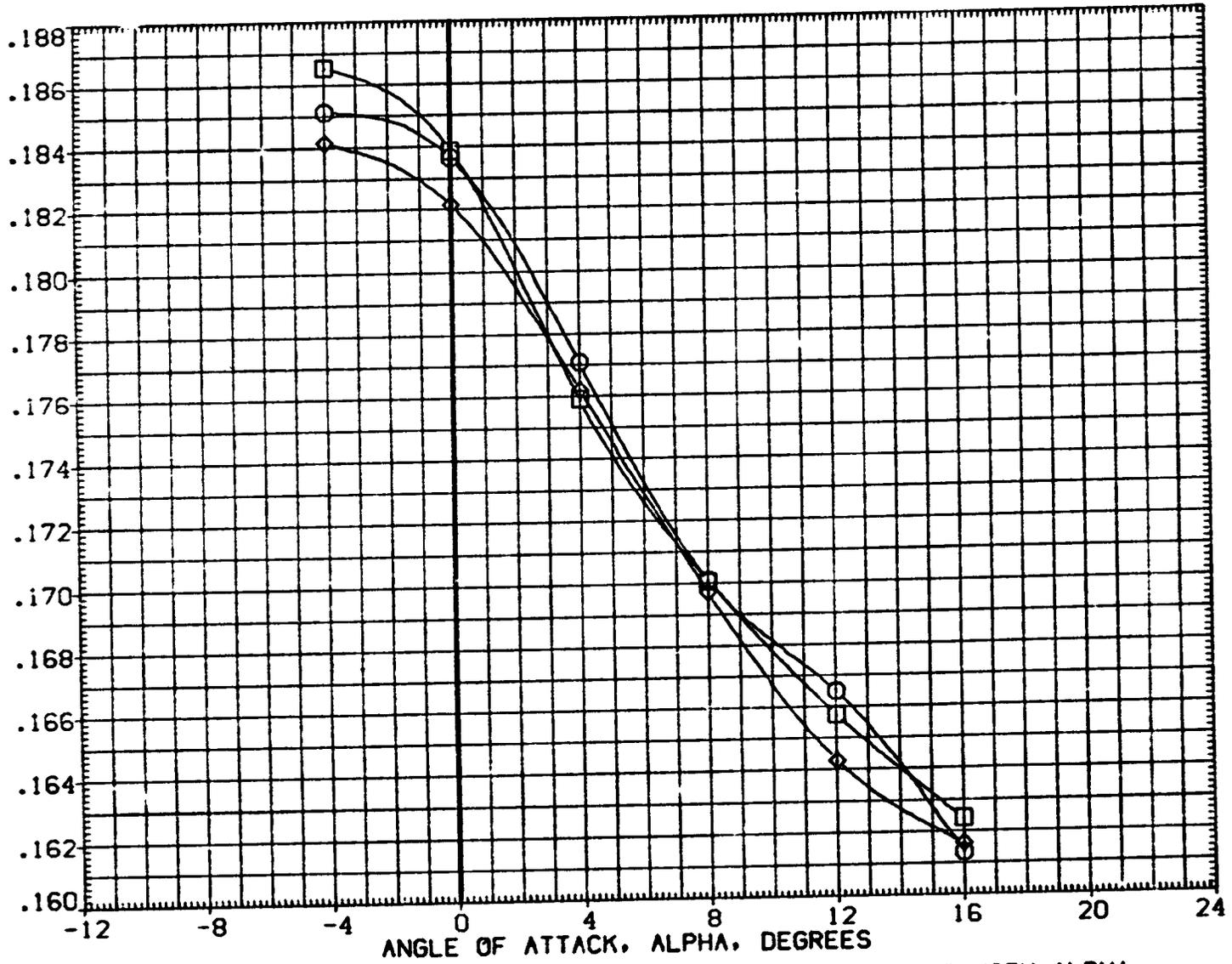


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

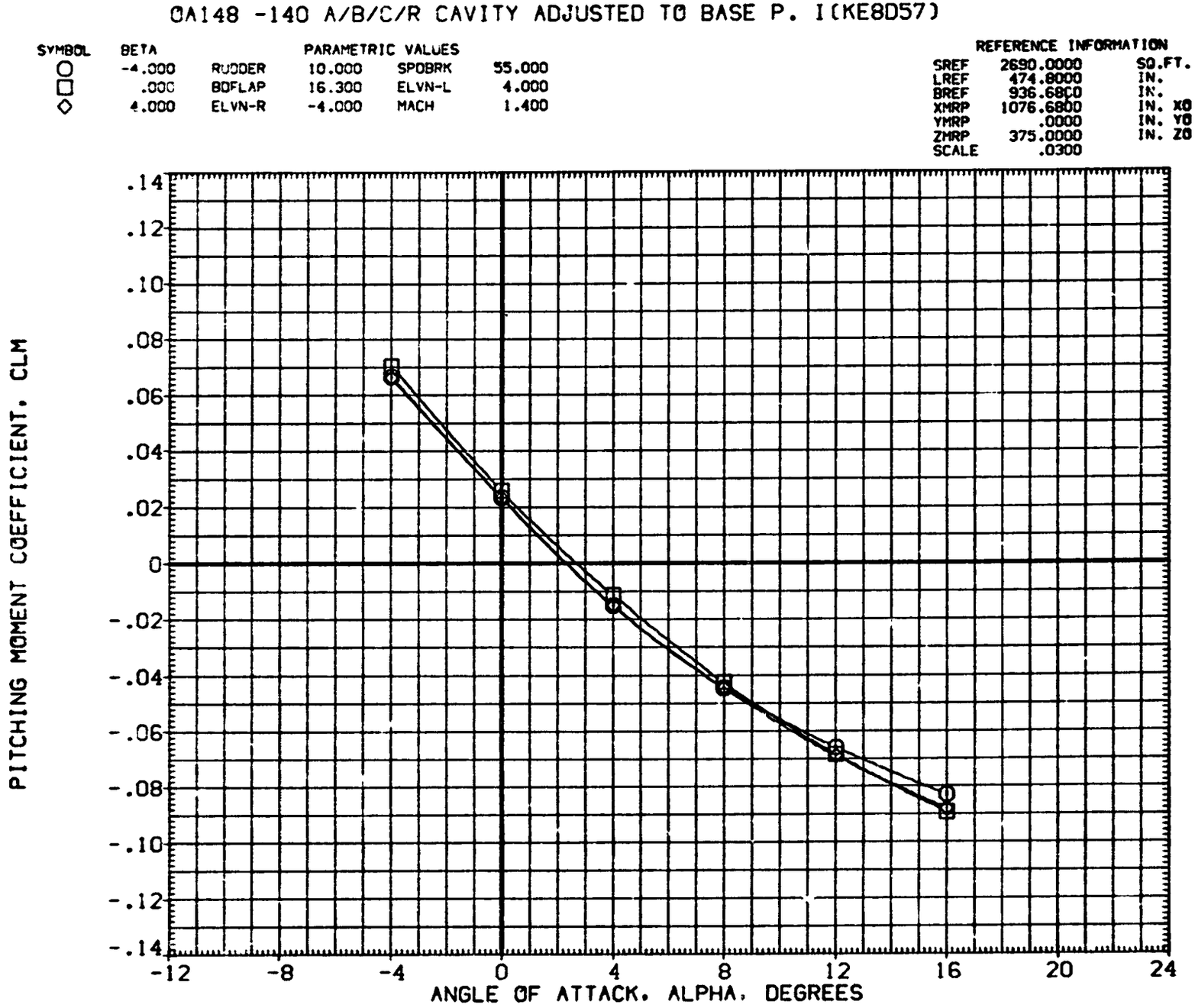


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D58)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

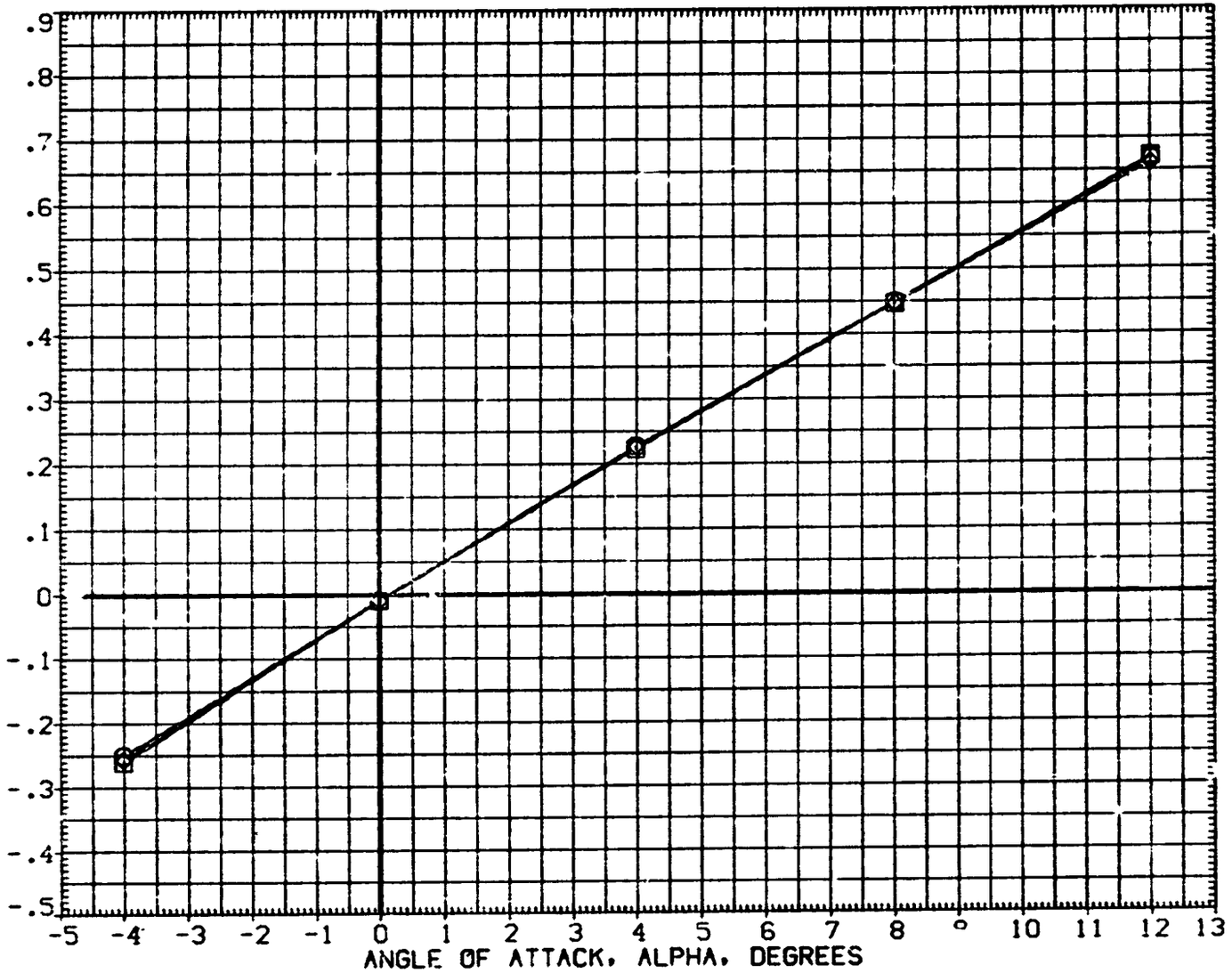


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

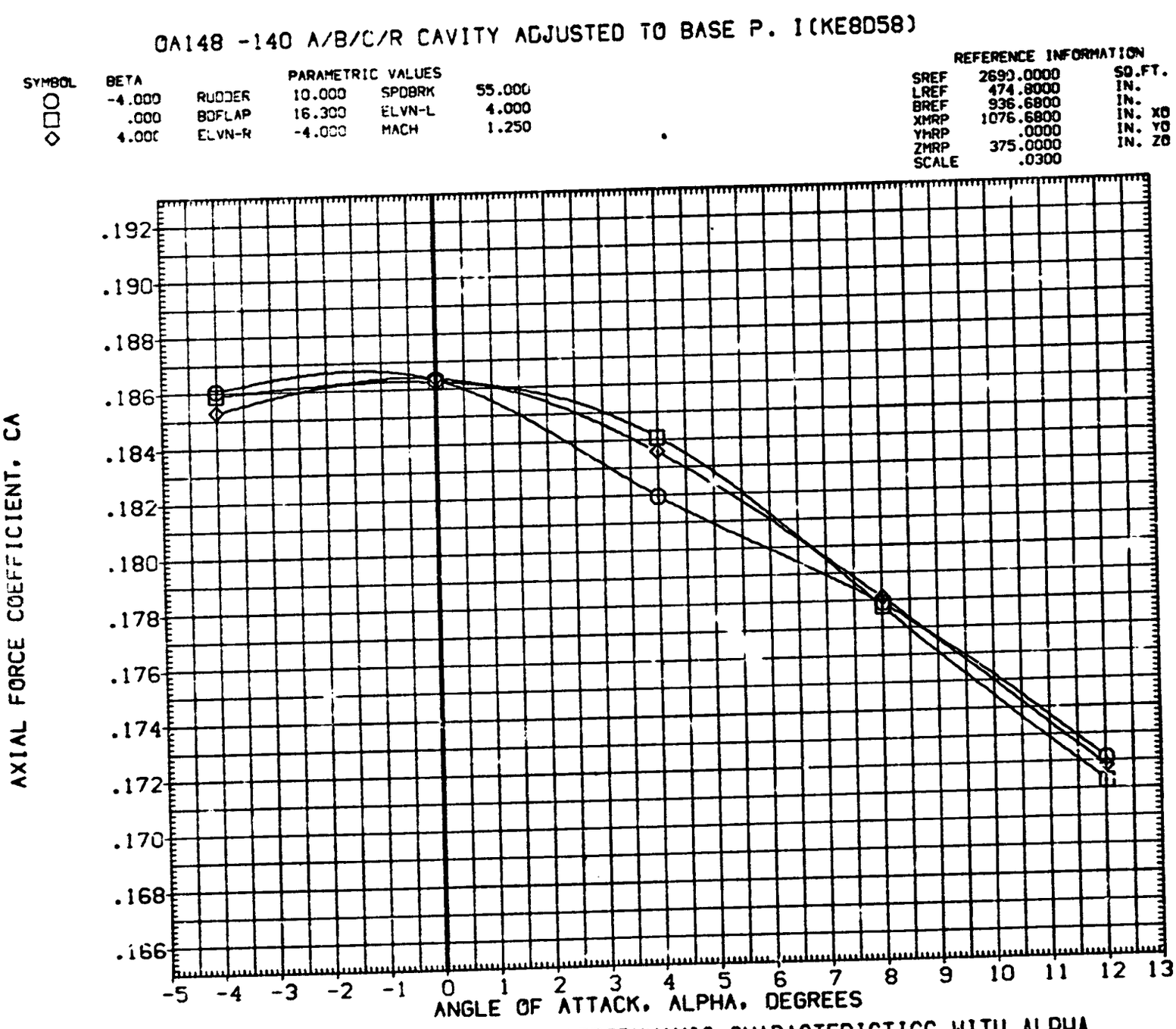


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

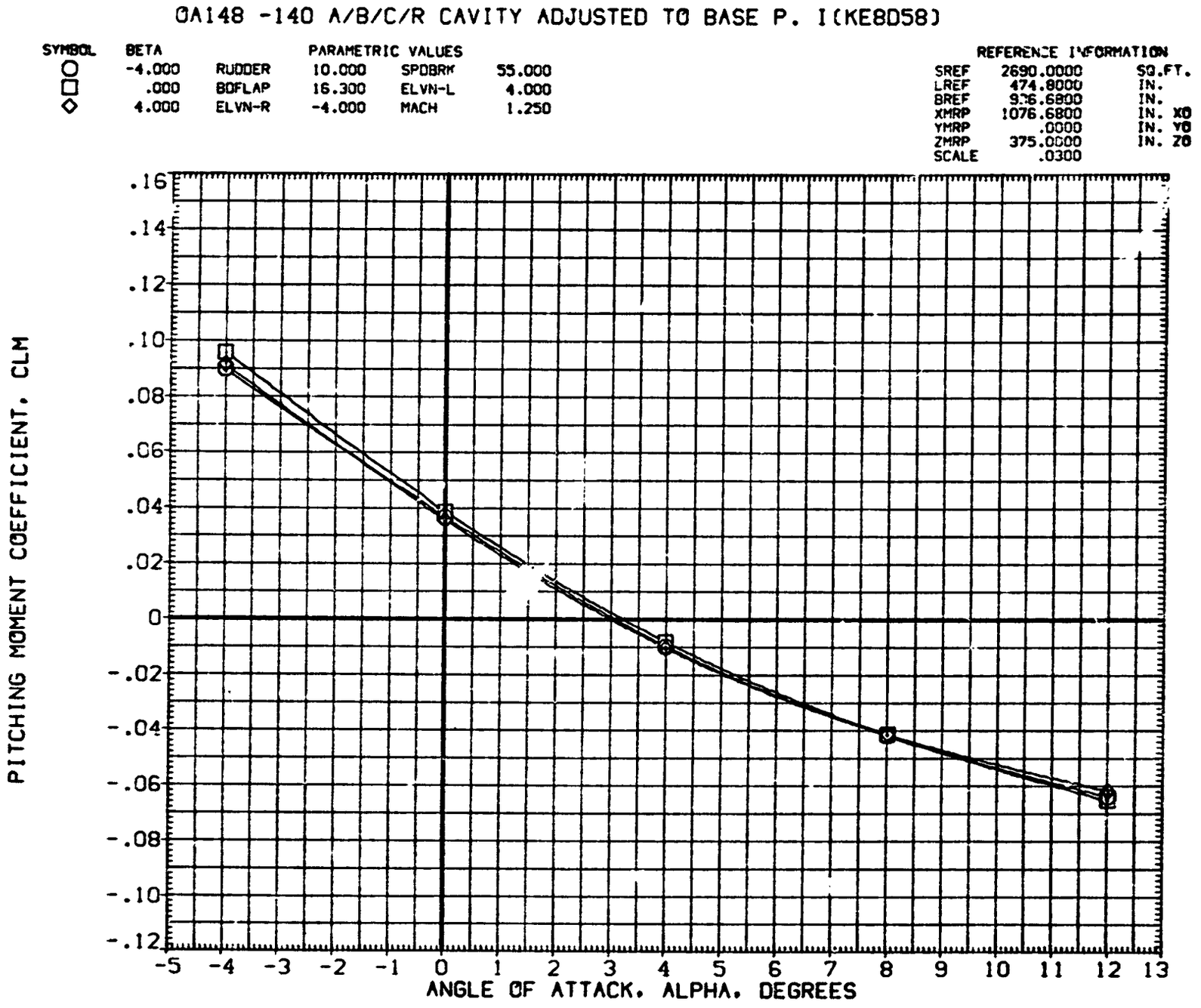


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

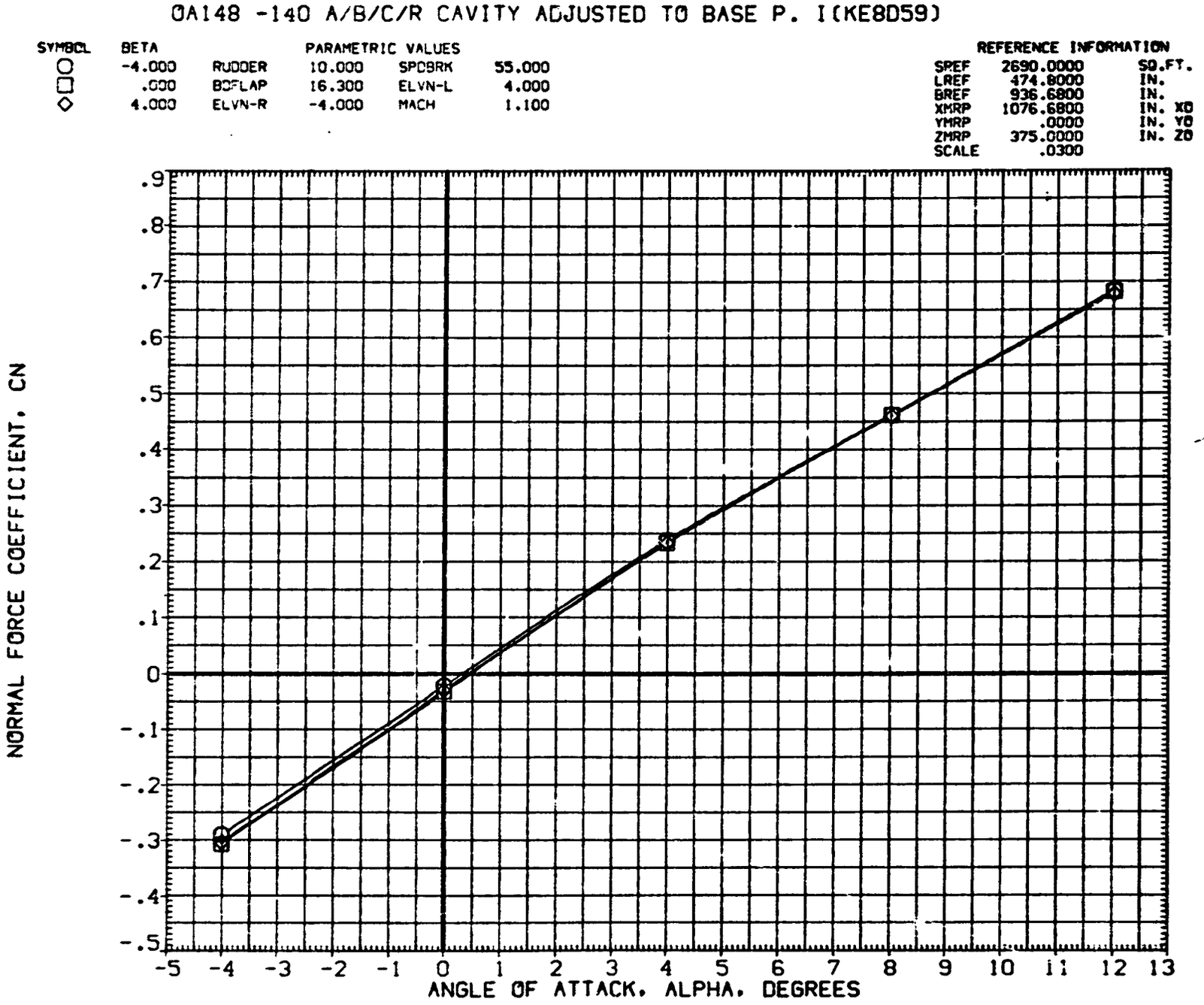


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D5S)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6900	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

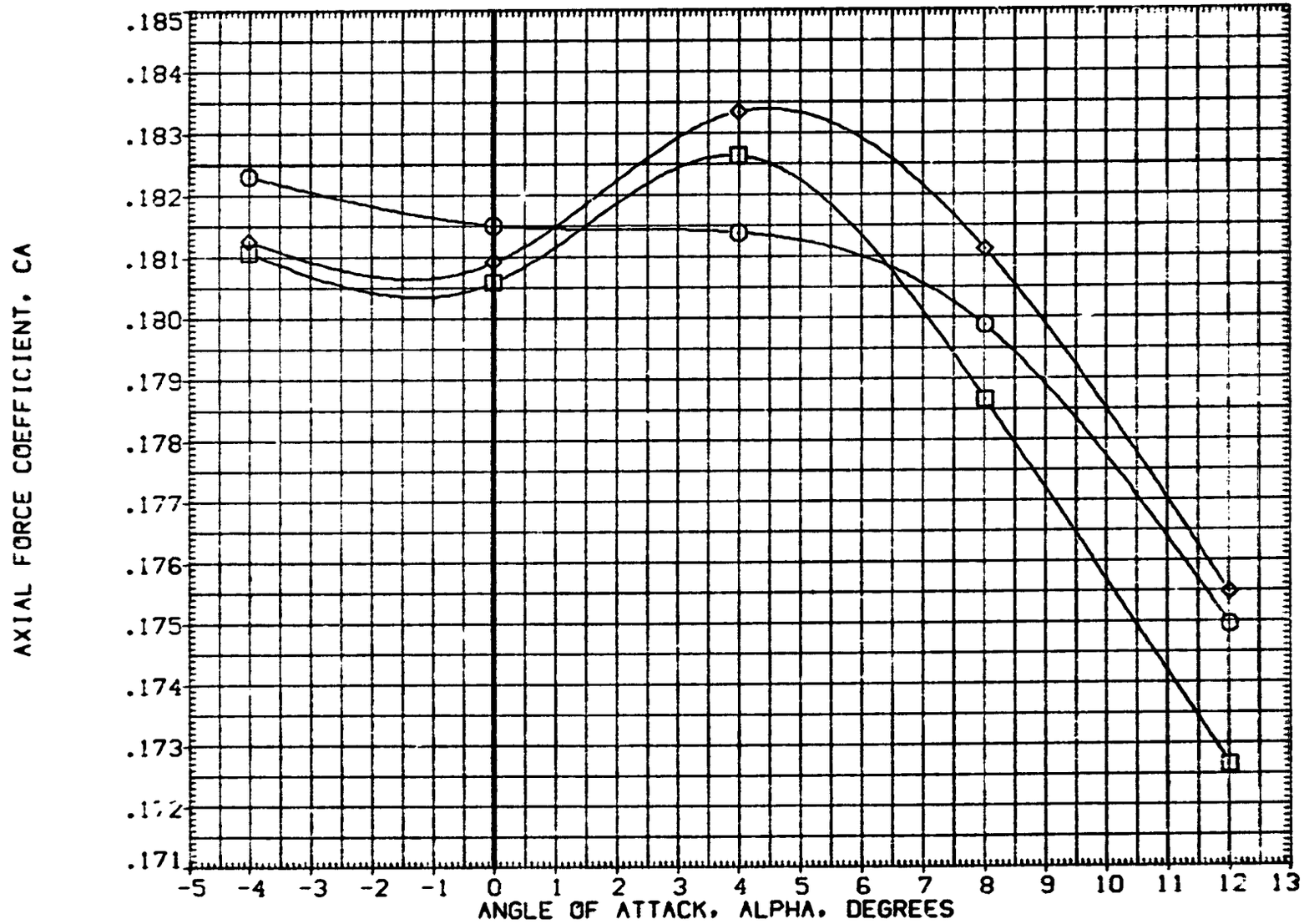


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

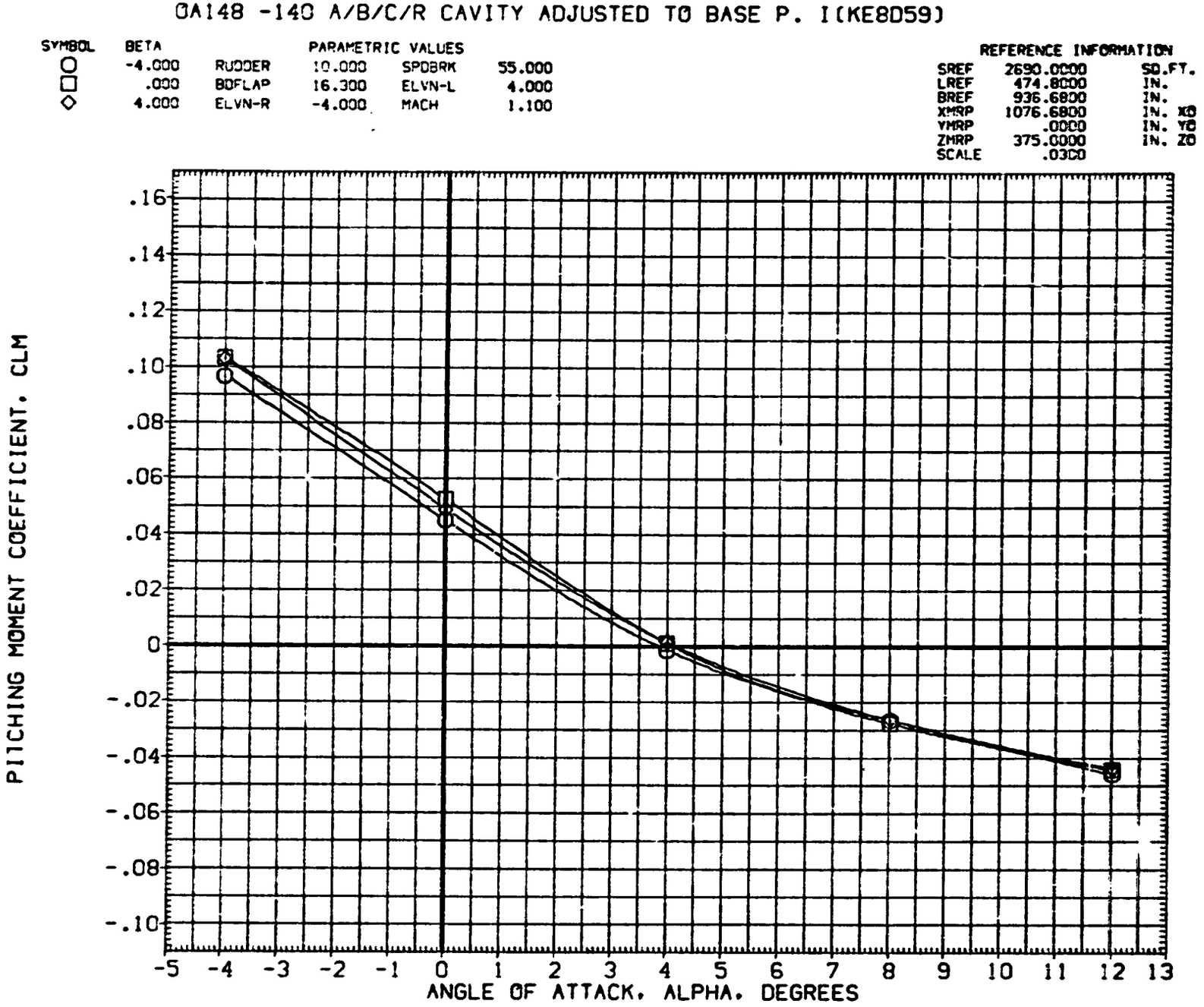


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

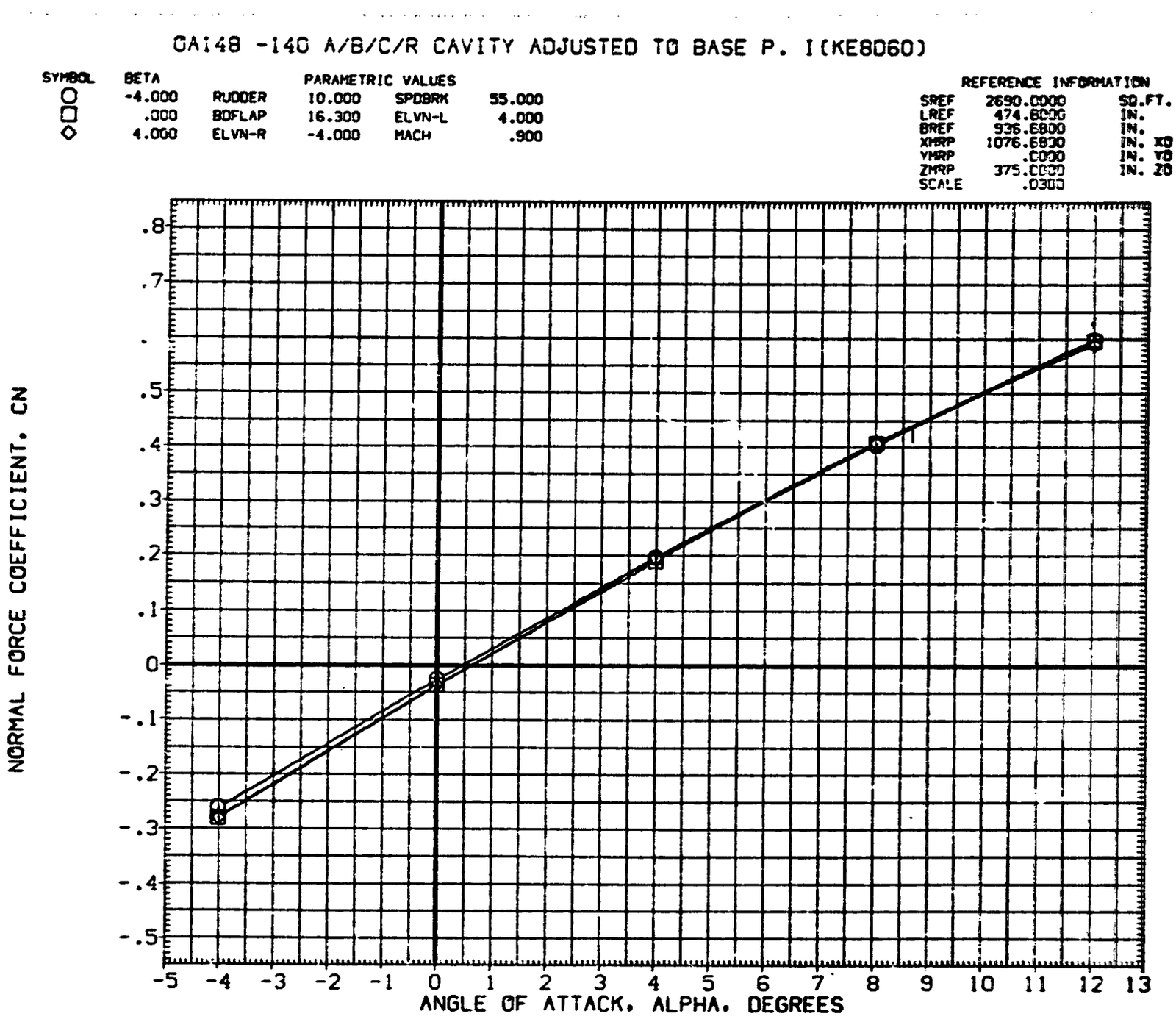


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE3D60)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

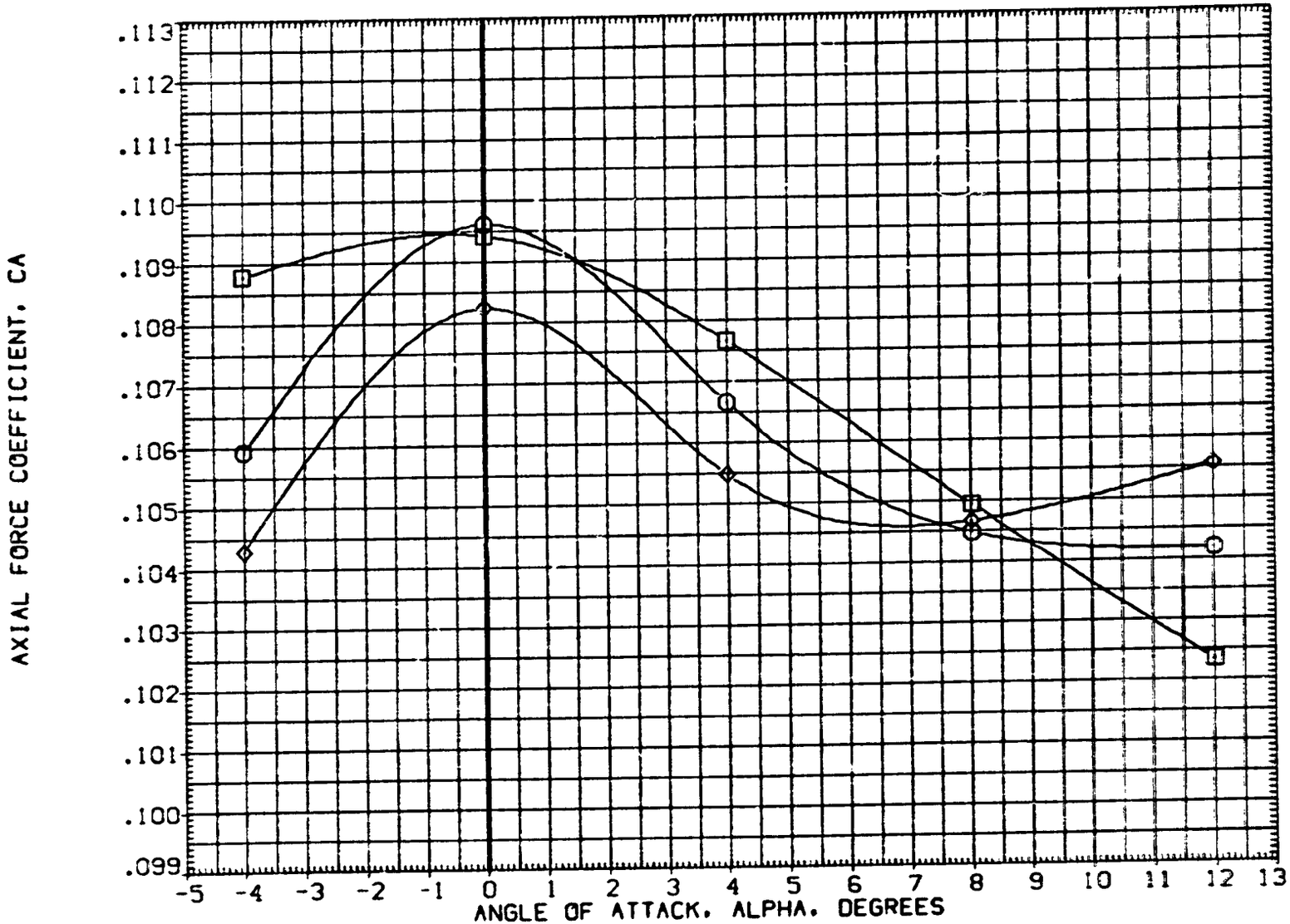


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8060)

SYMBOL	BETA		PARAMETR.. VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2830.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

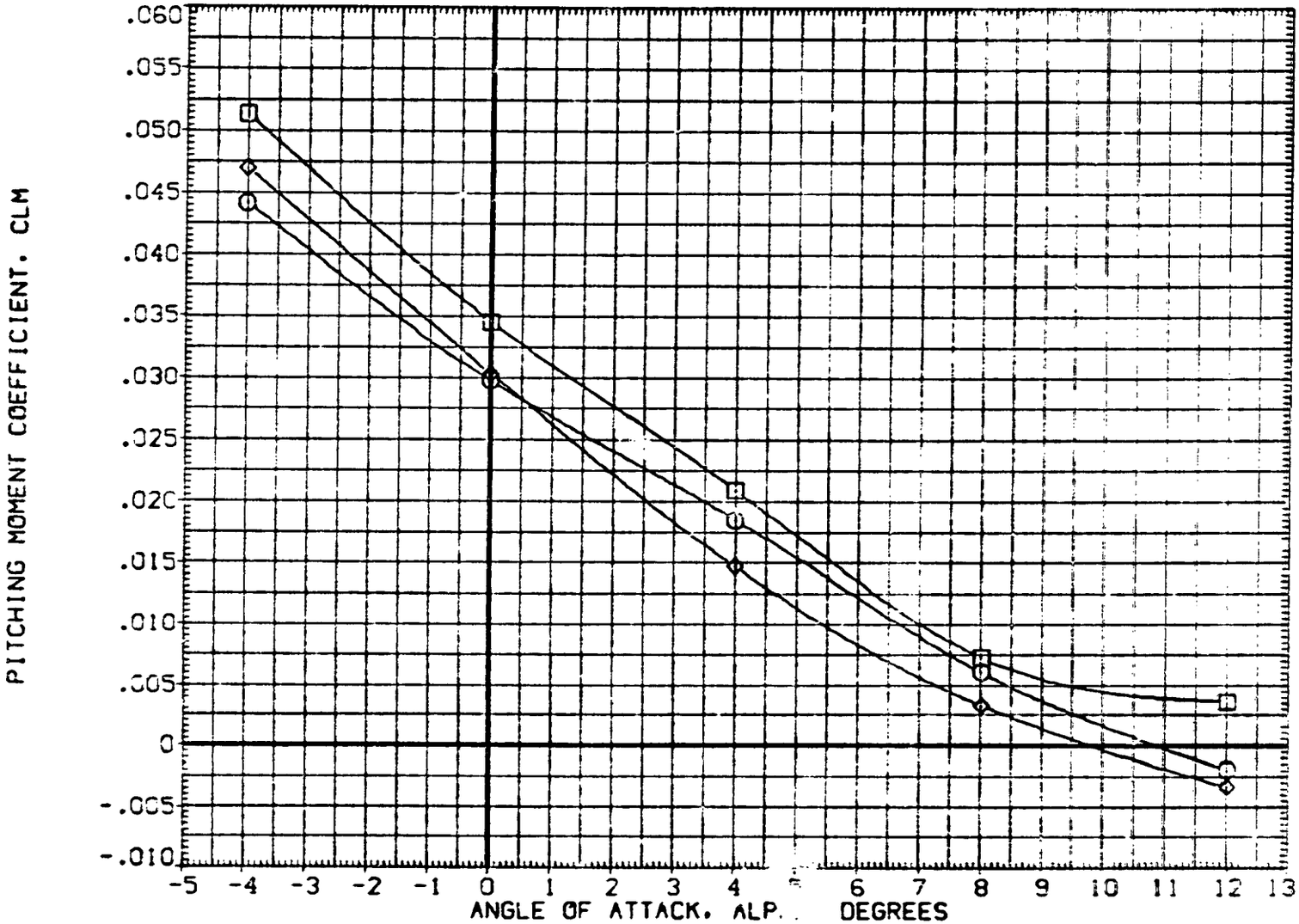


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

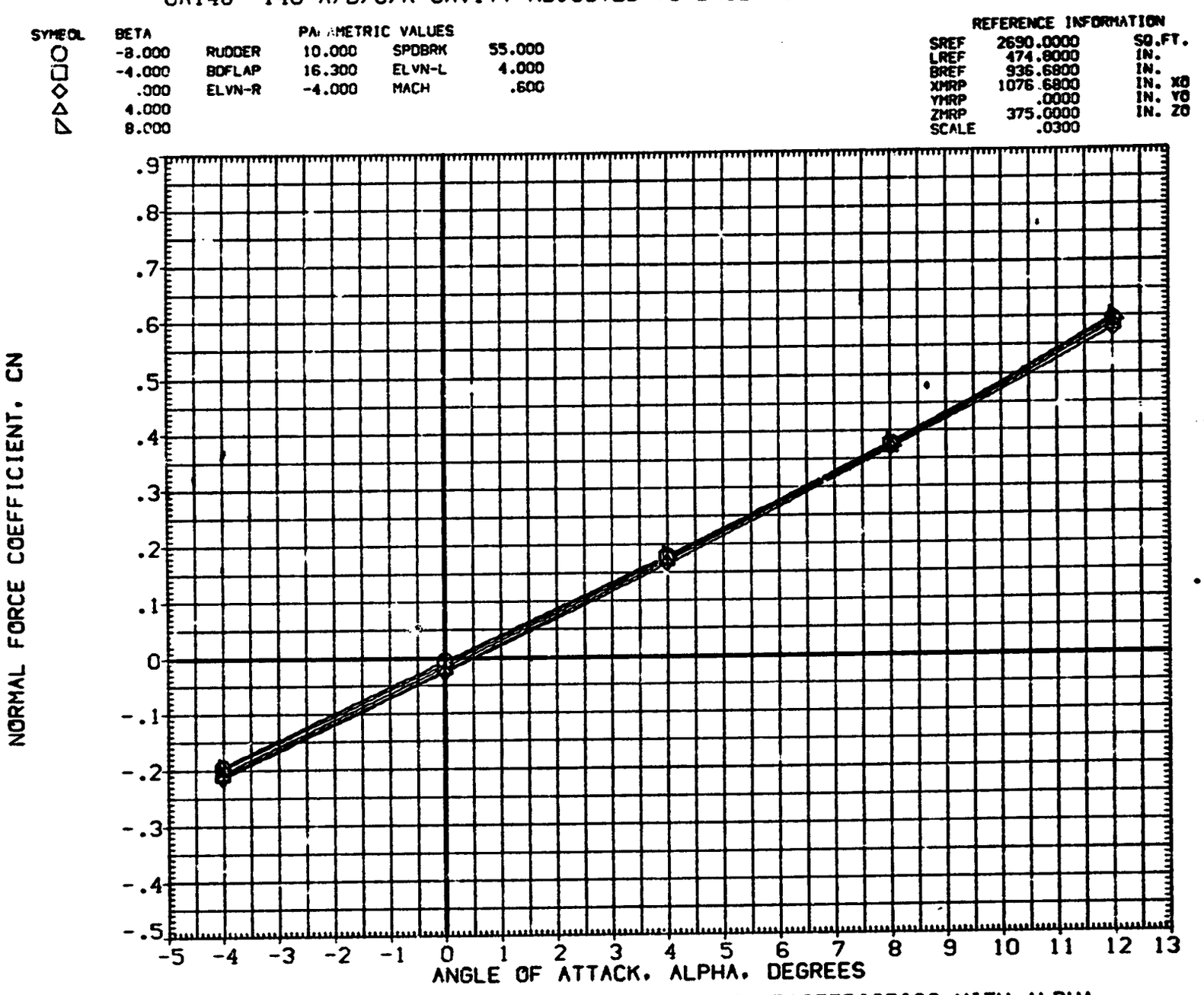


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

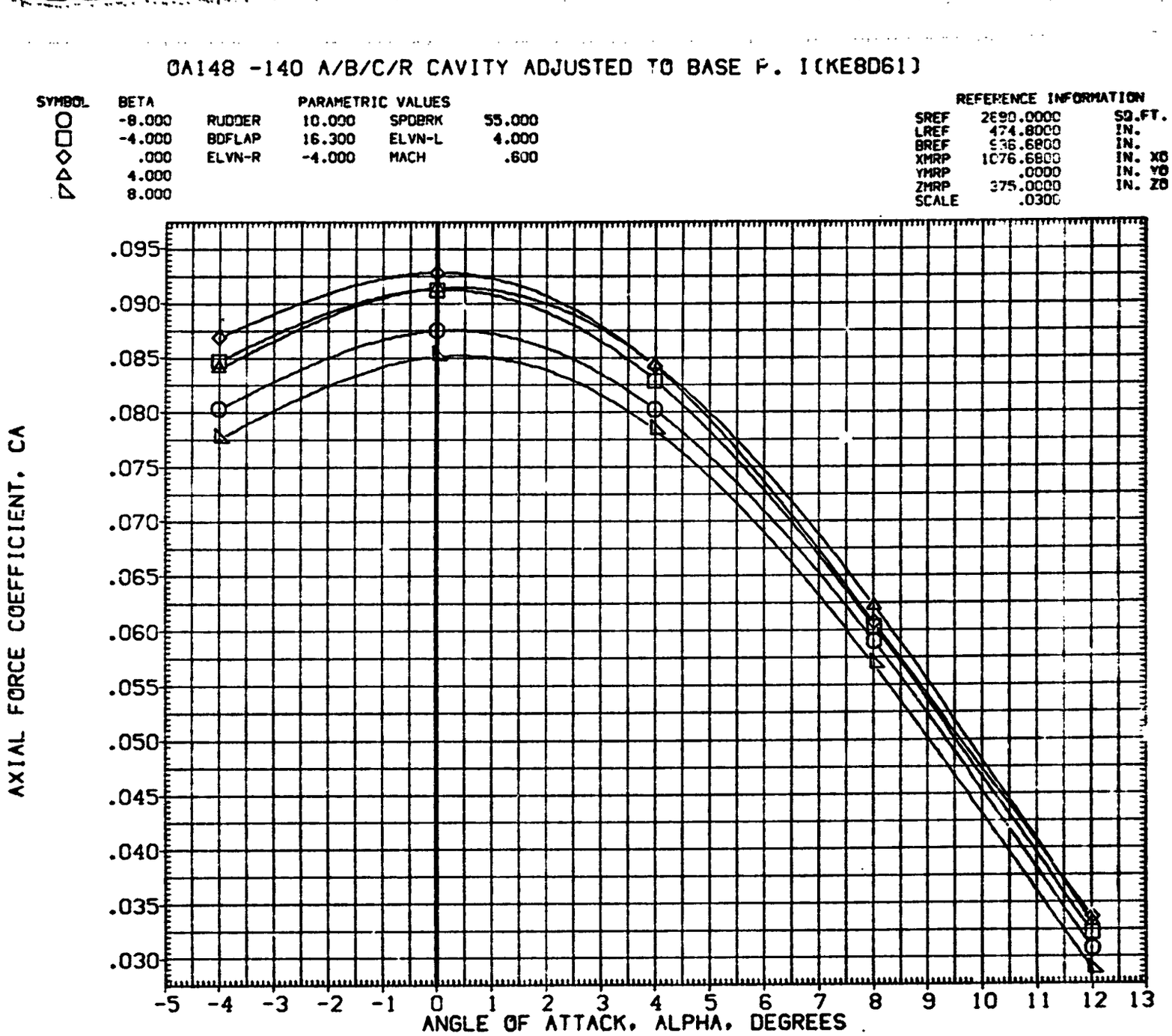


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

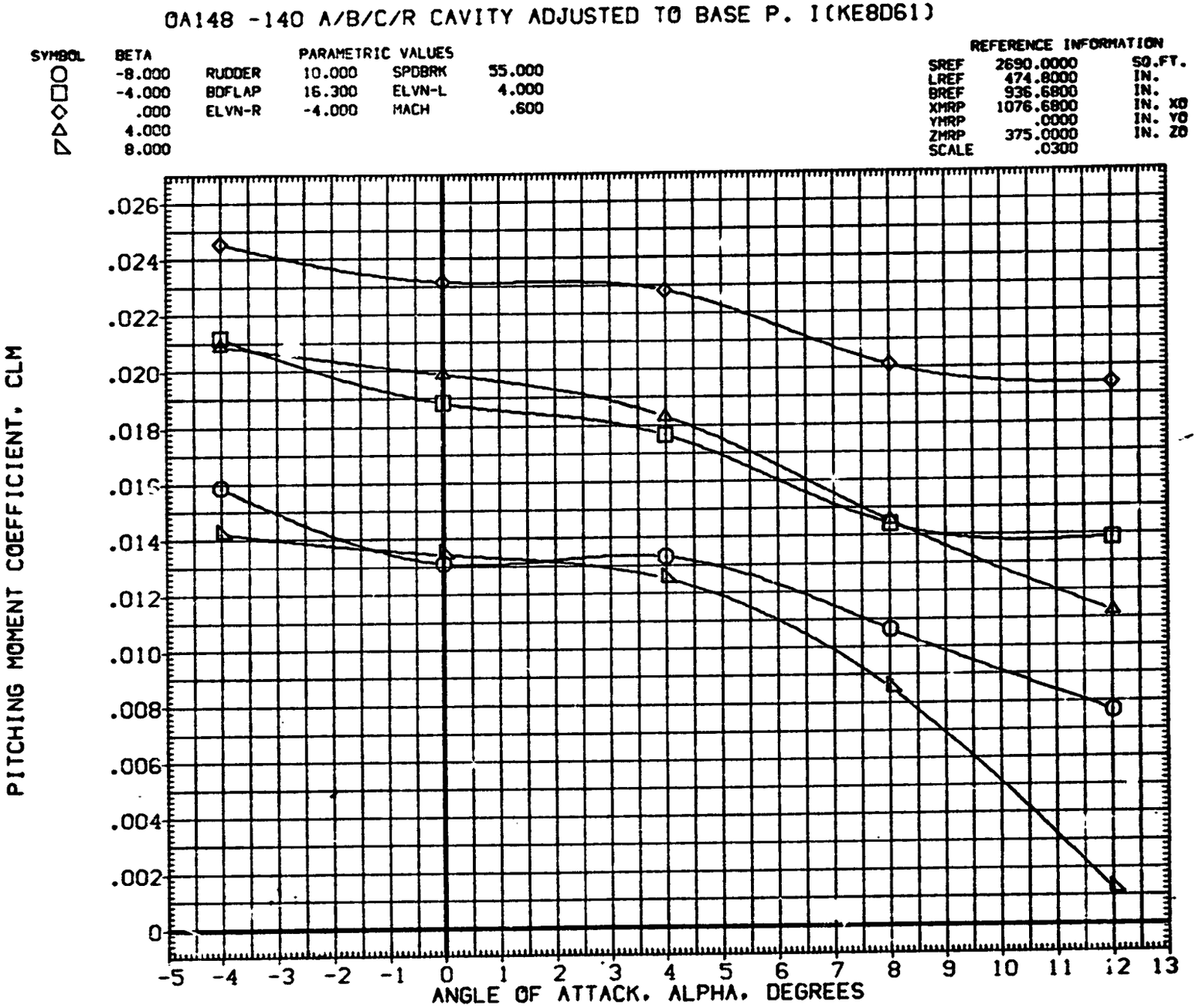


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D62)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

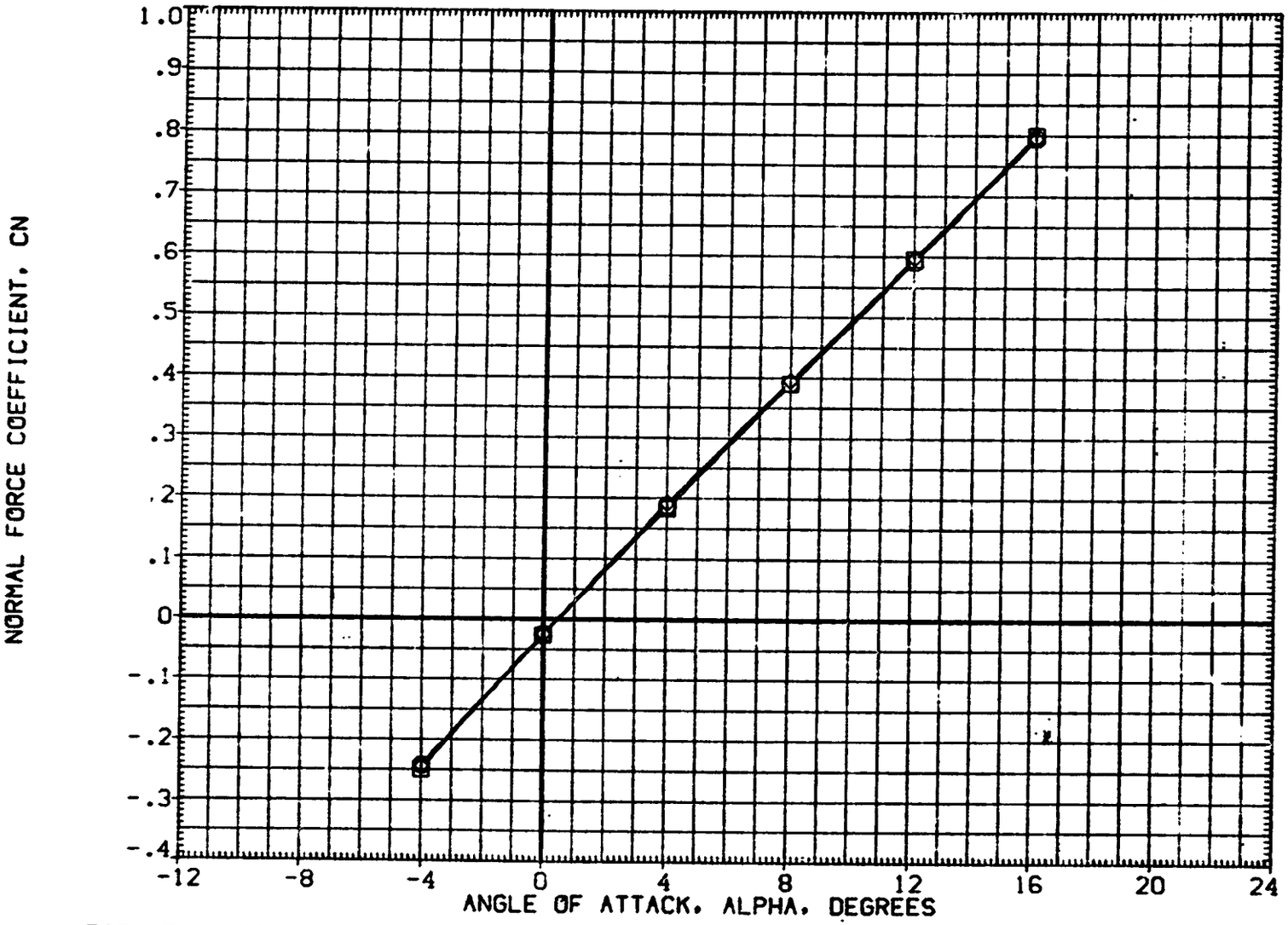


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

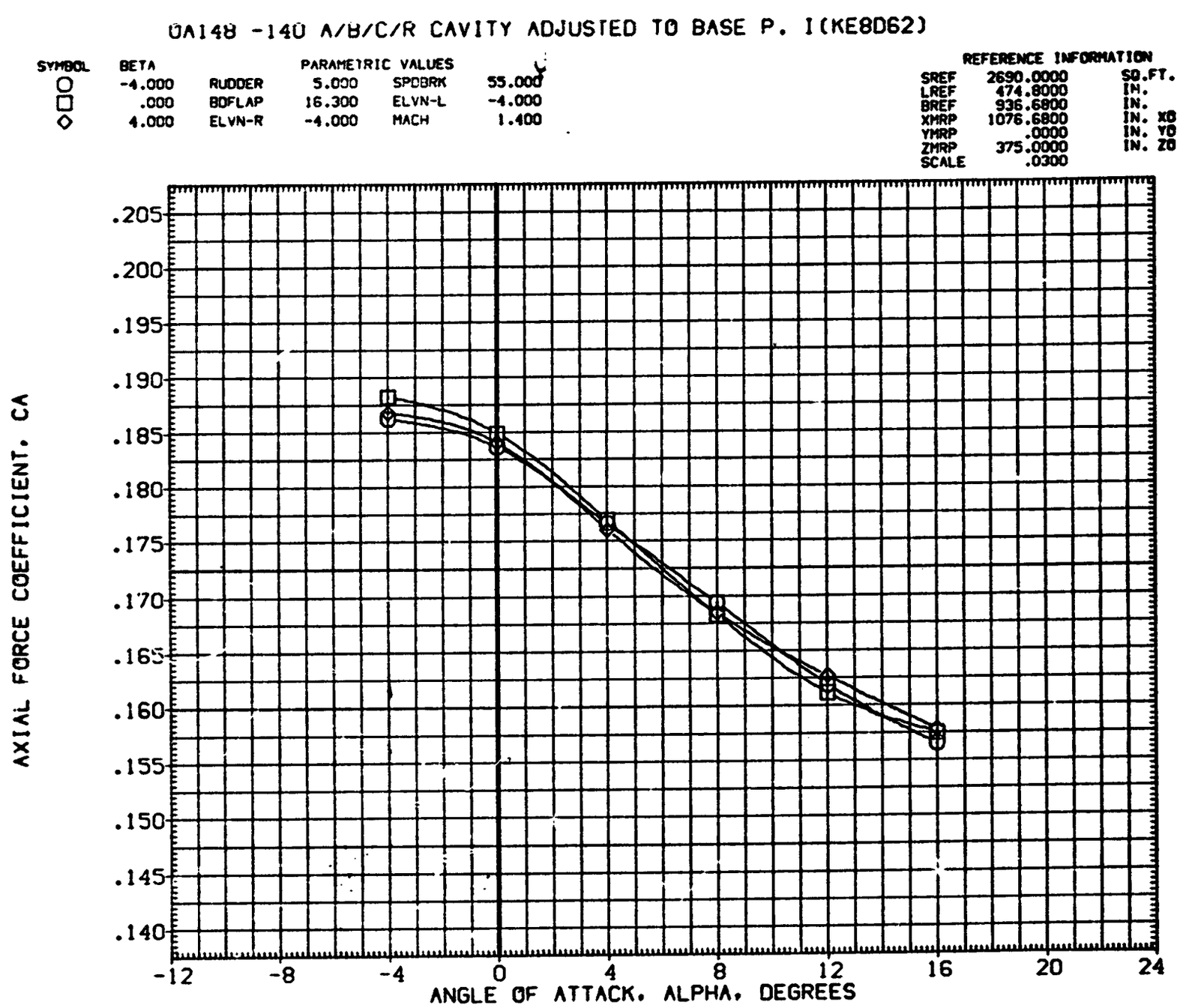


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D62)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFI \P	16.300	ELVN-L	-4.000
◇	4.000	EL -R	-4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

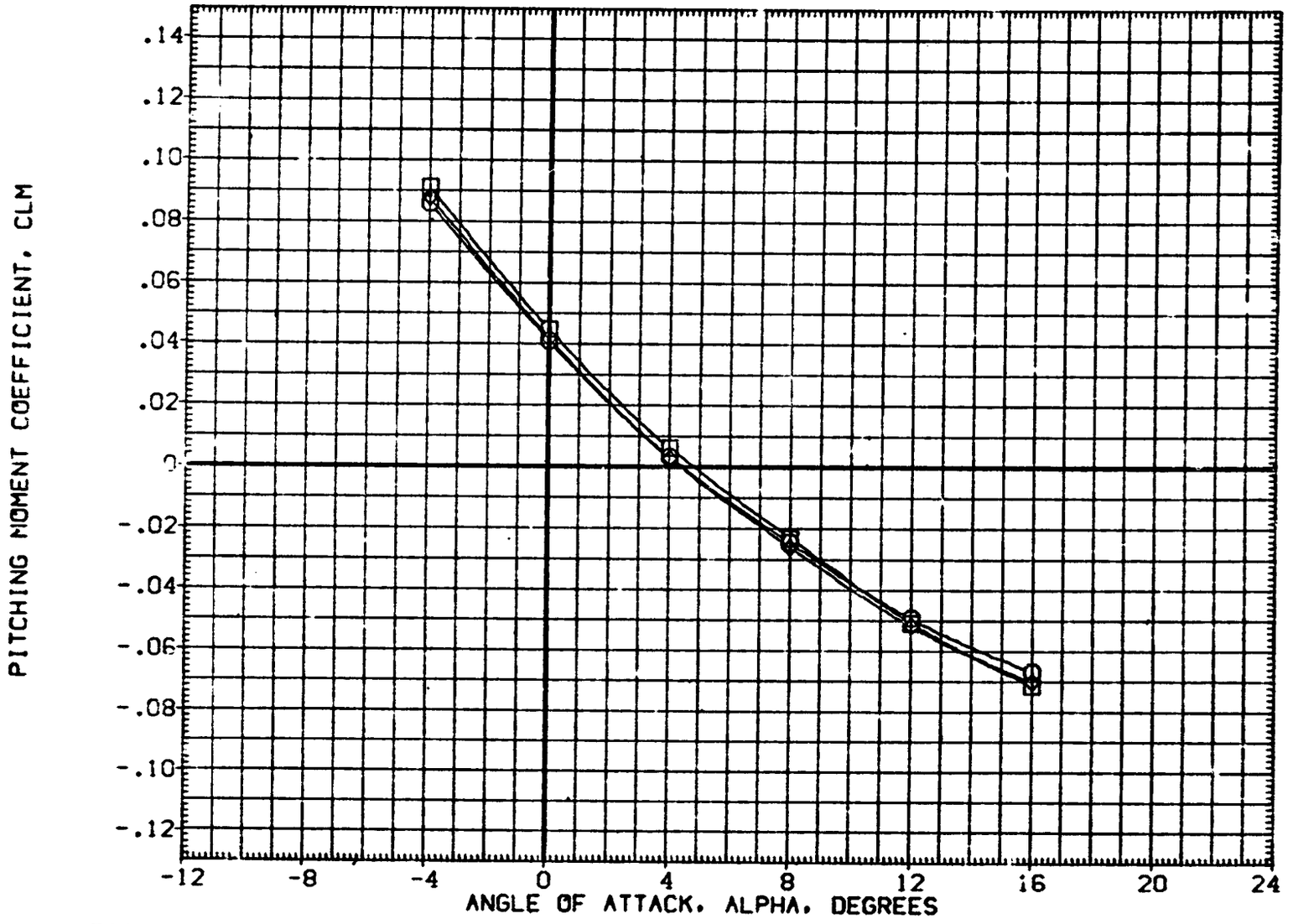


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

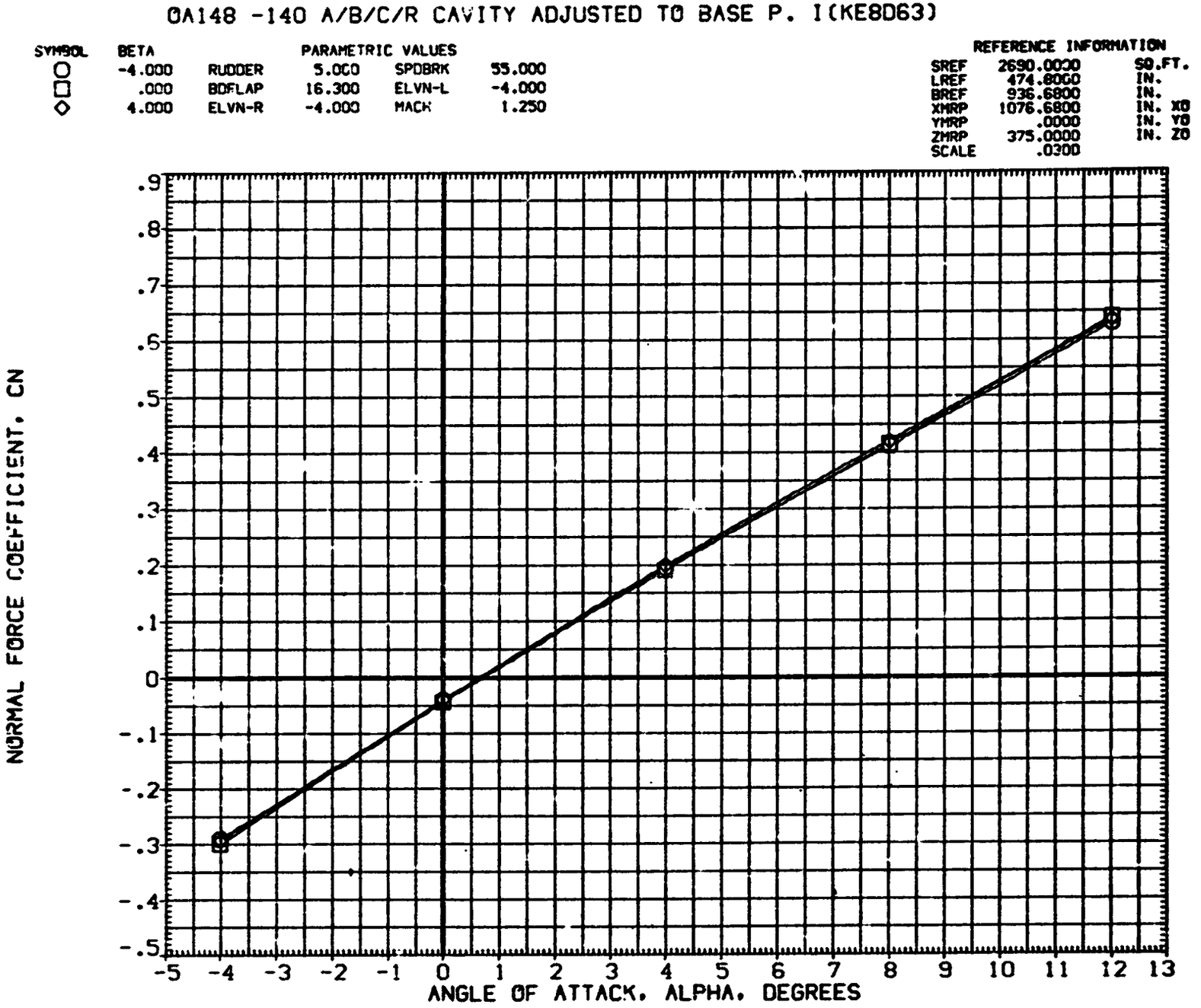


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

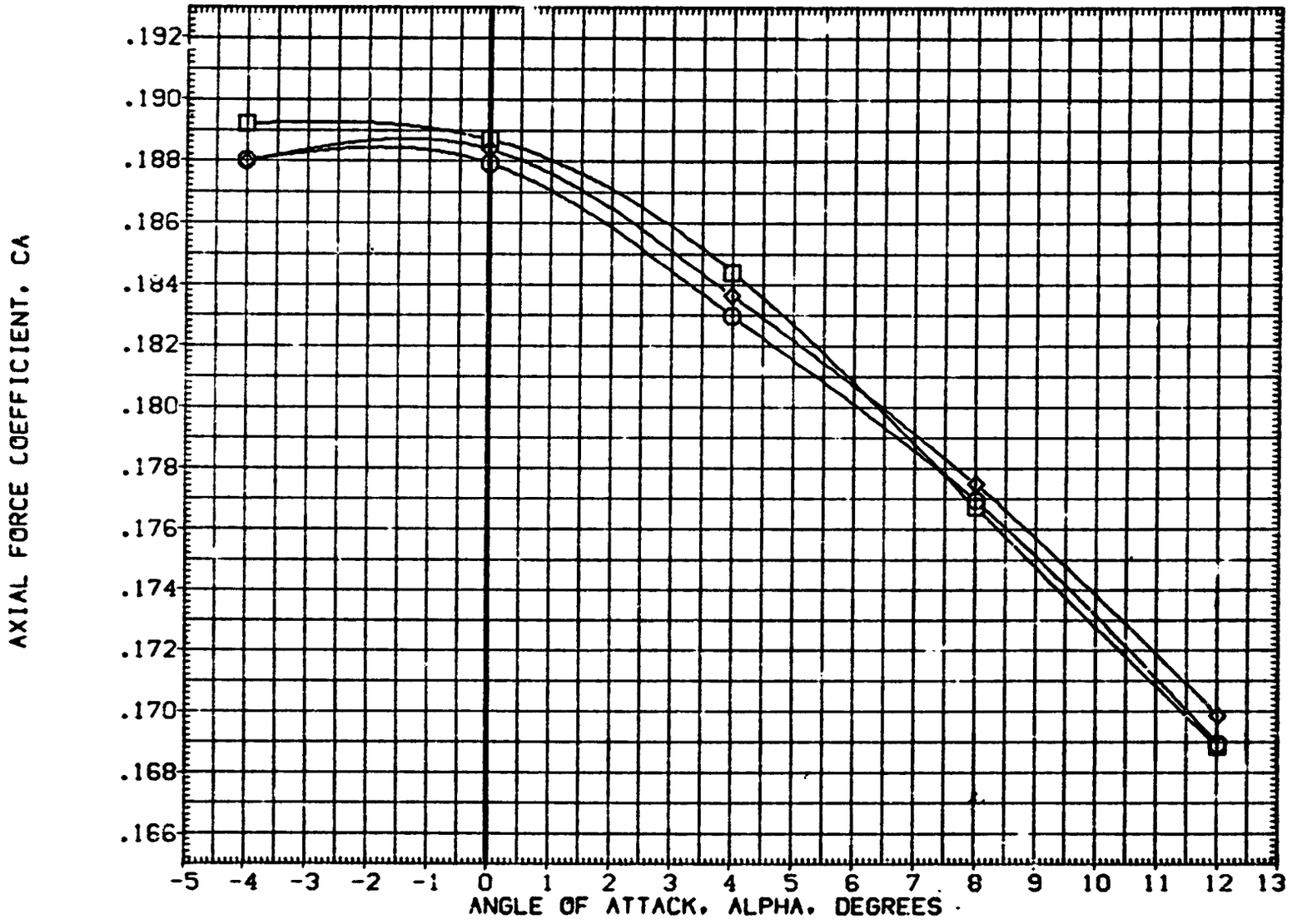


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

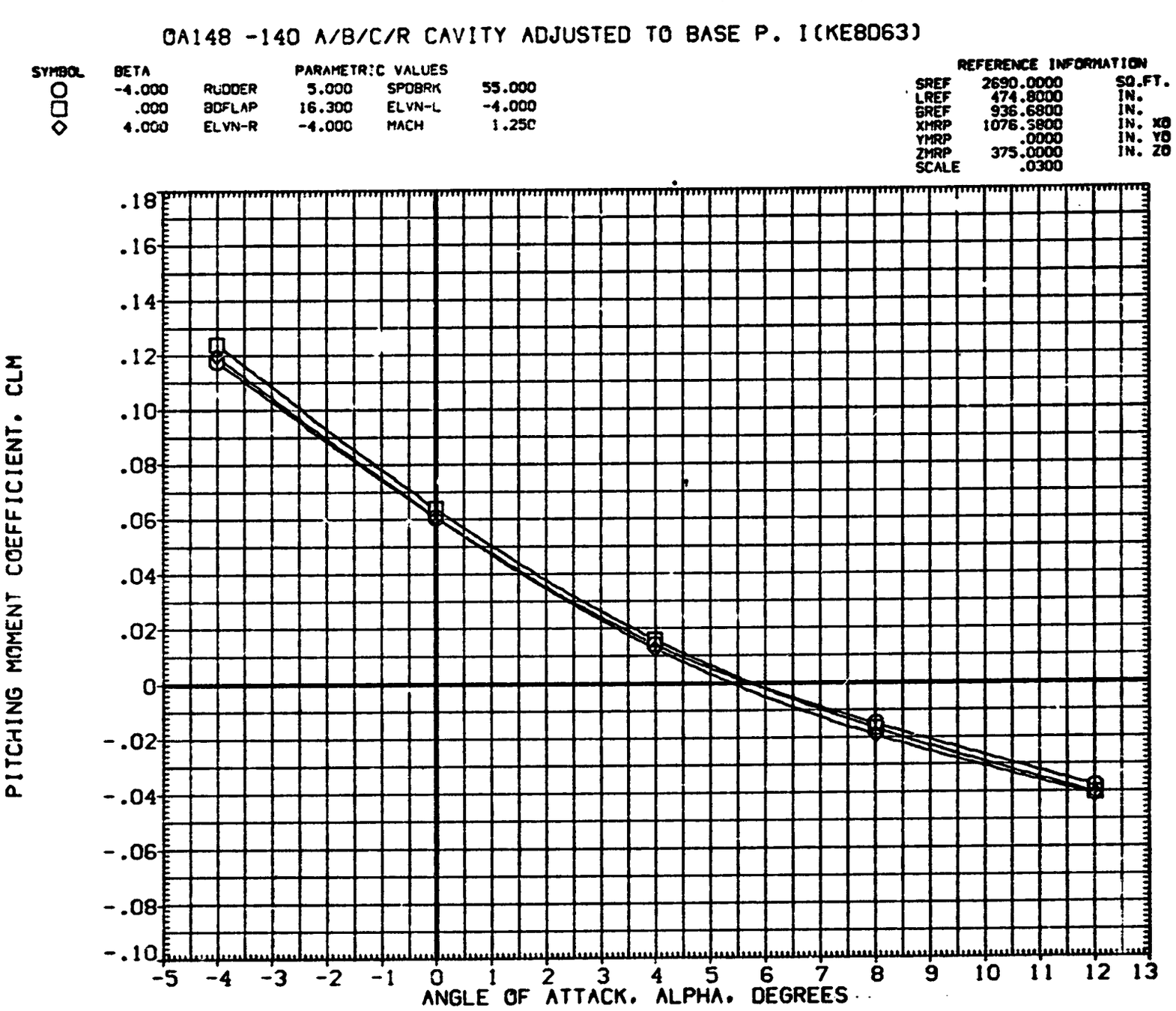


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

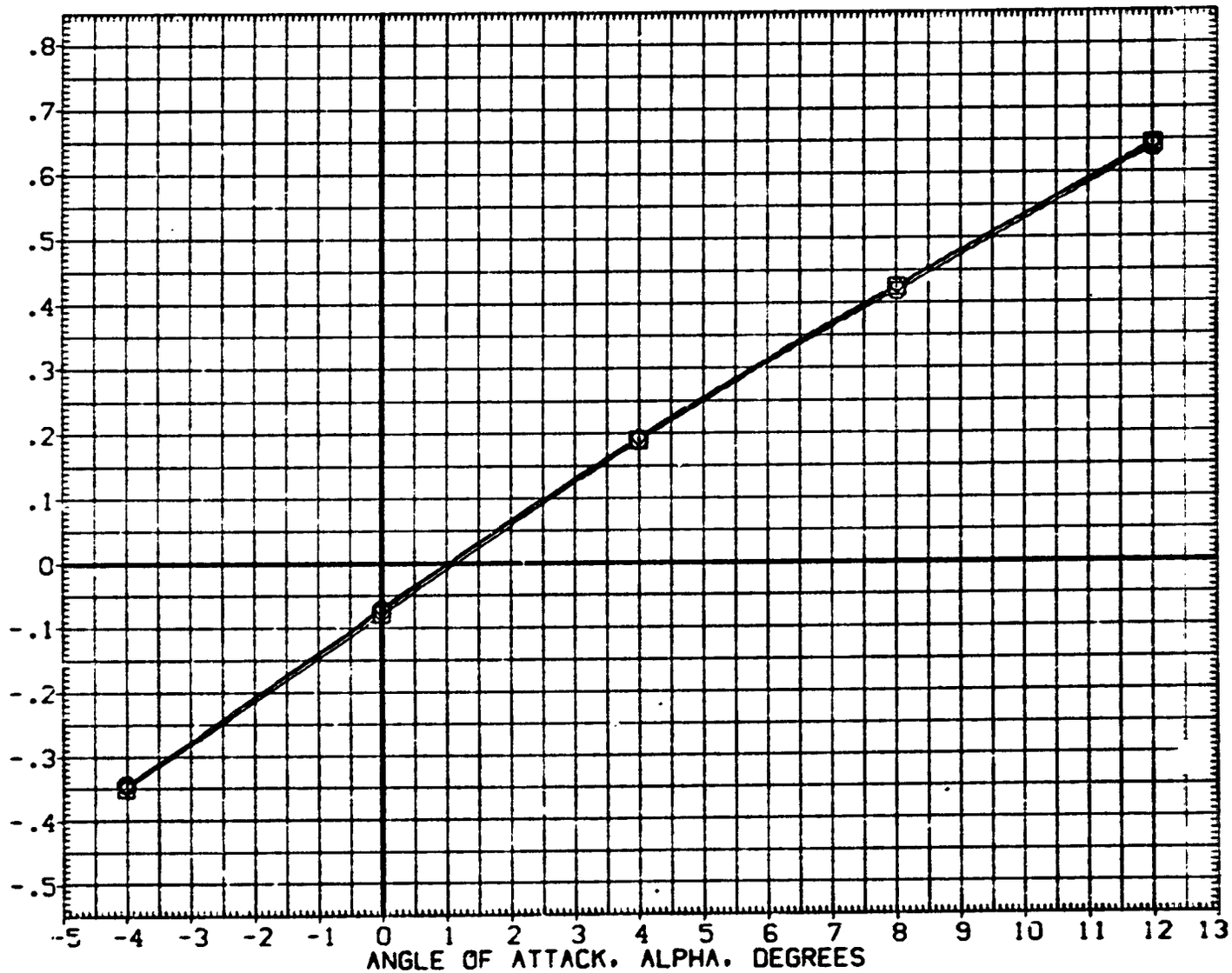


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D64)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6200	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

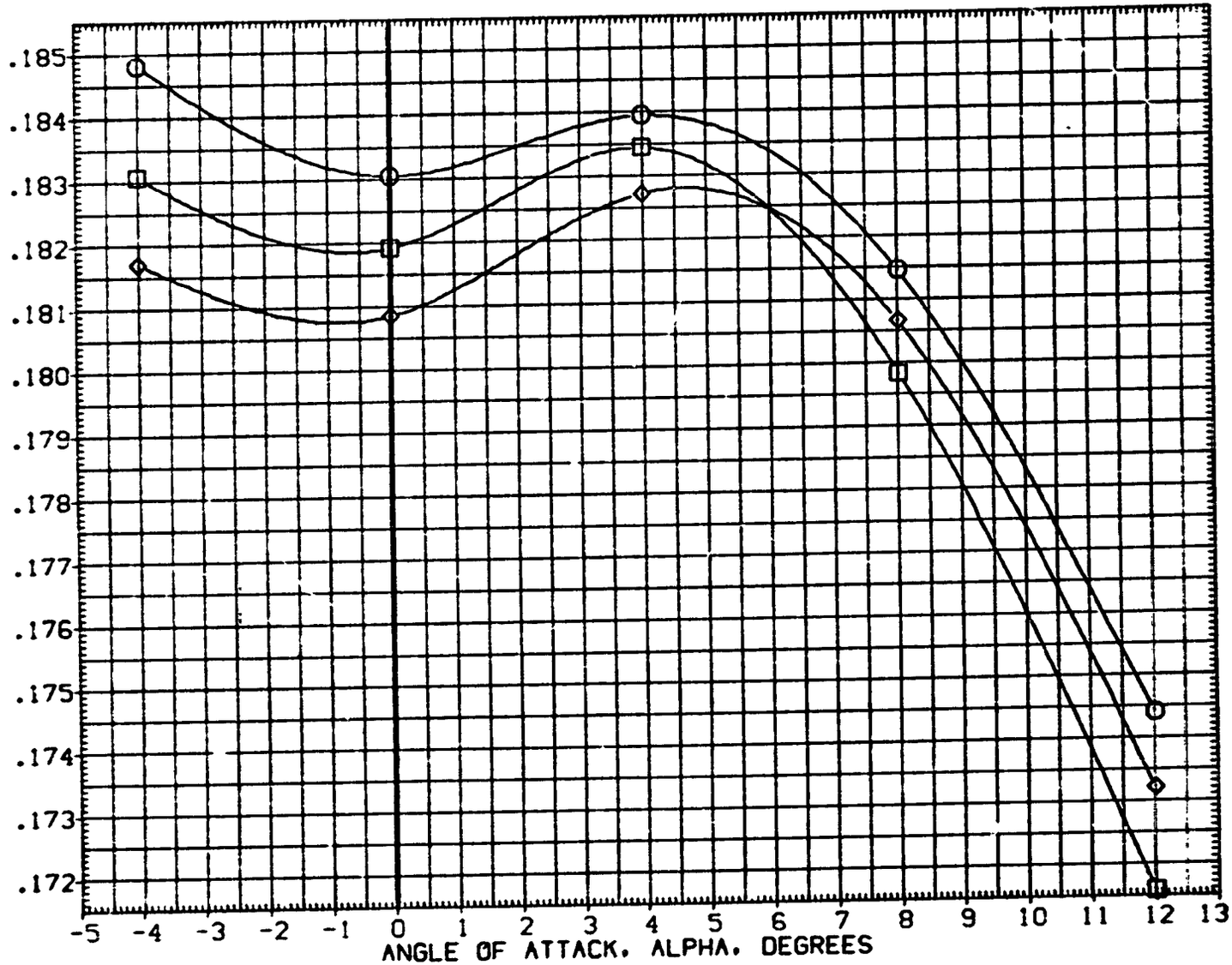


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

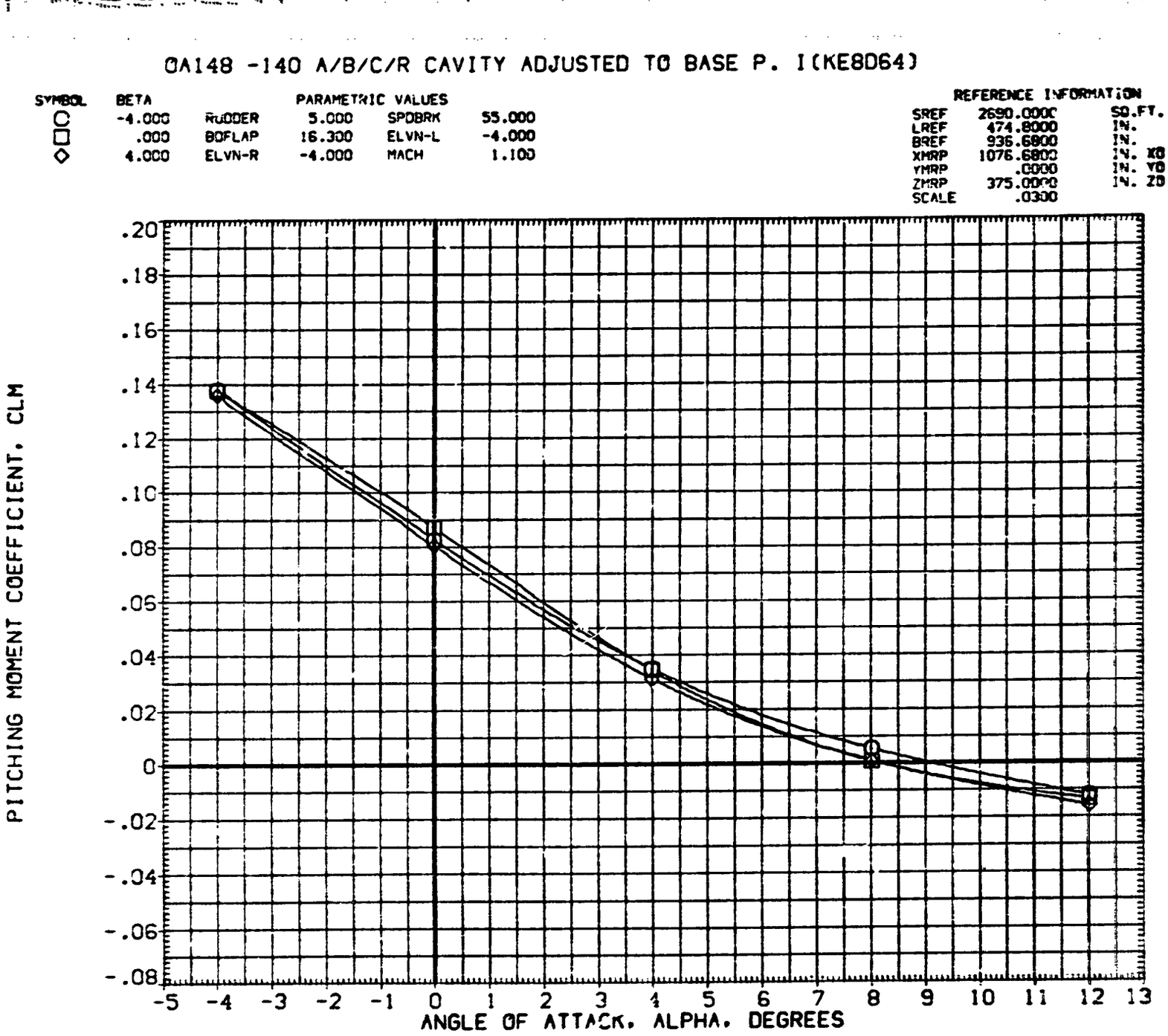


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

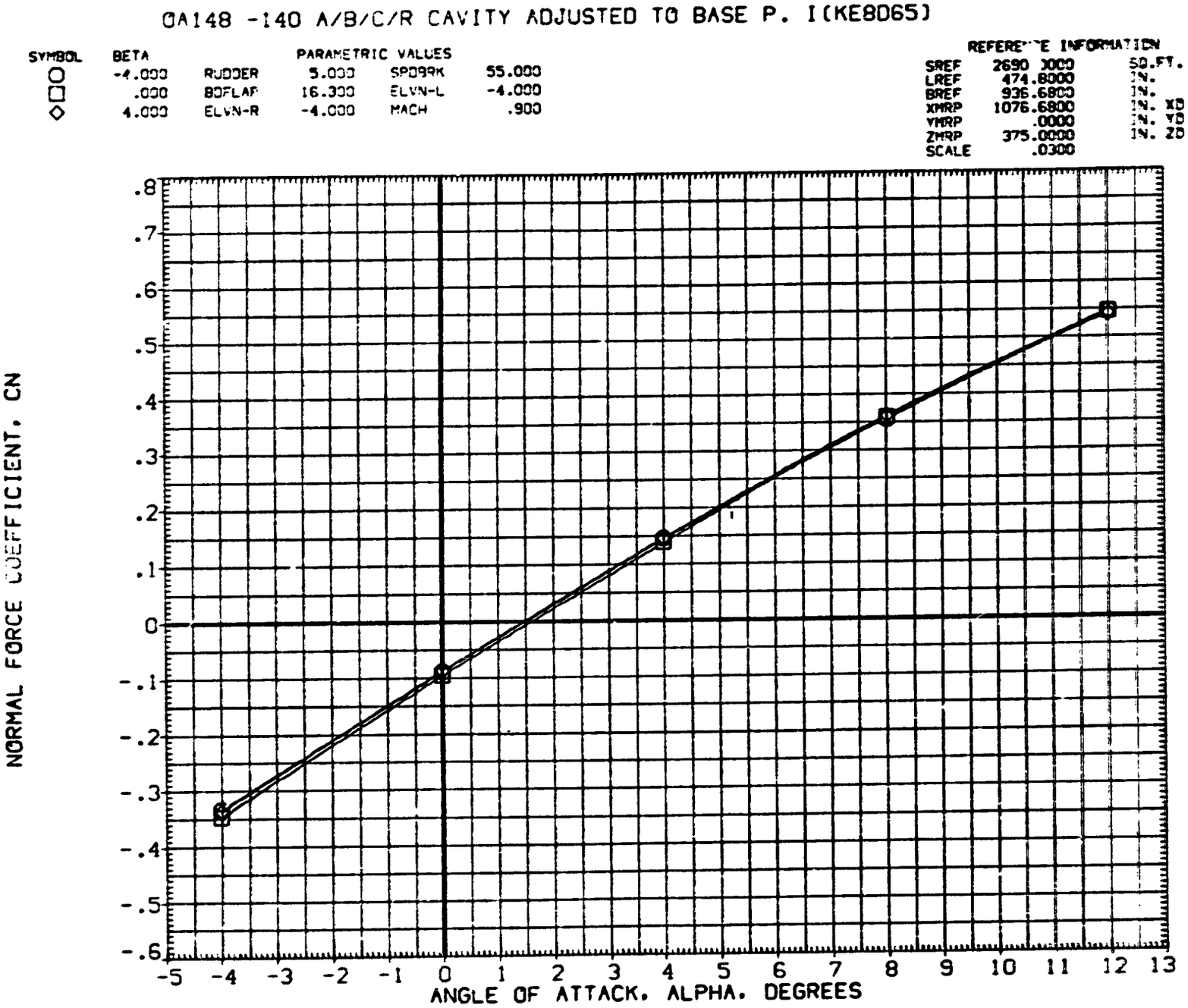


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

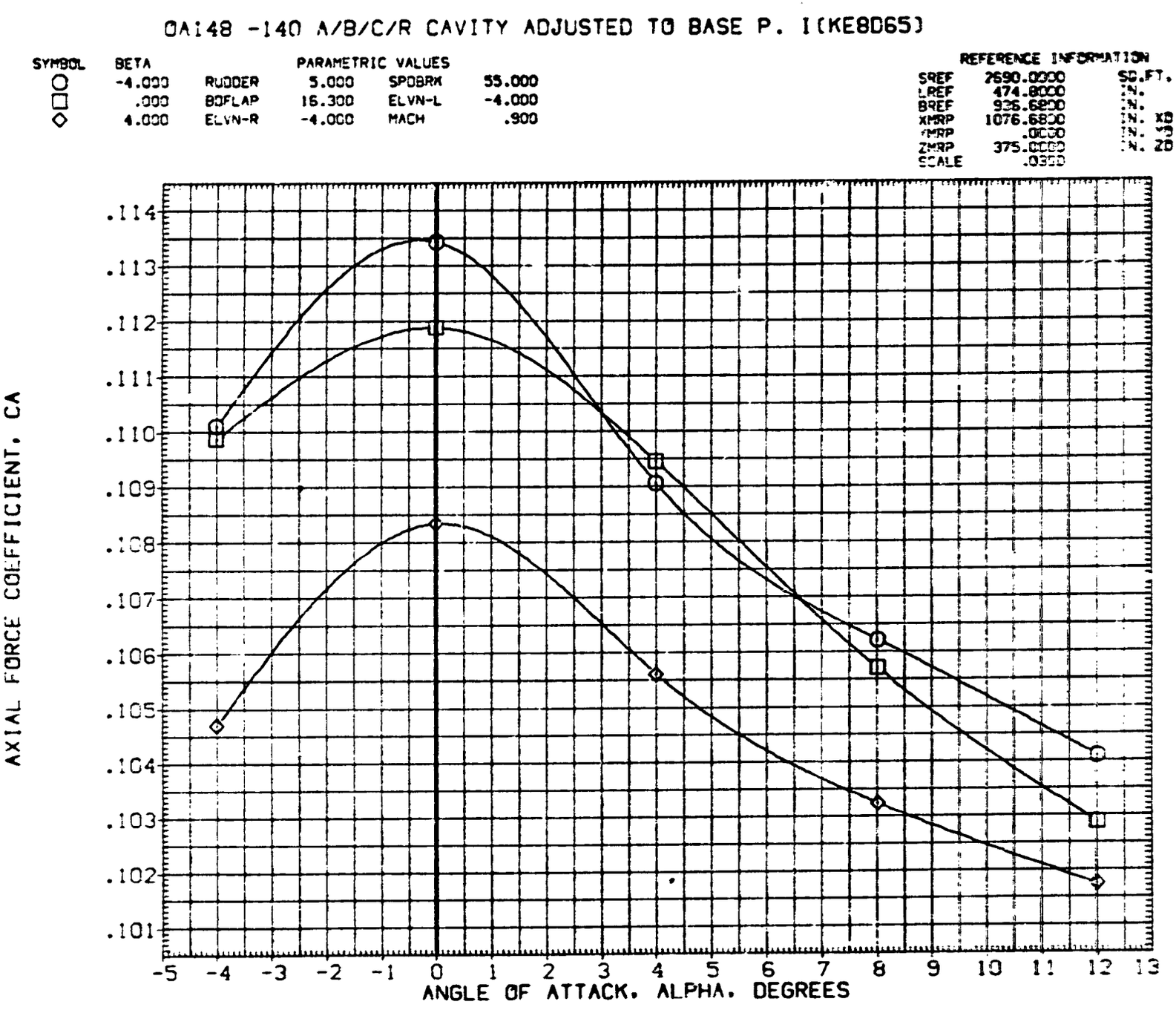


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D65)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPOBRK	55.000
□	.000	BOFLAP	15.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

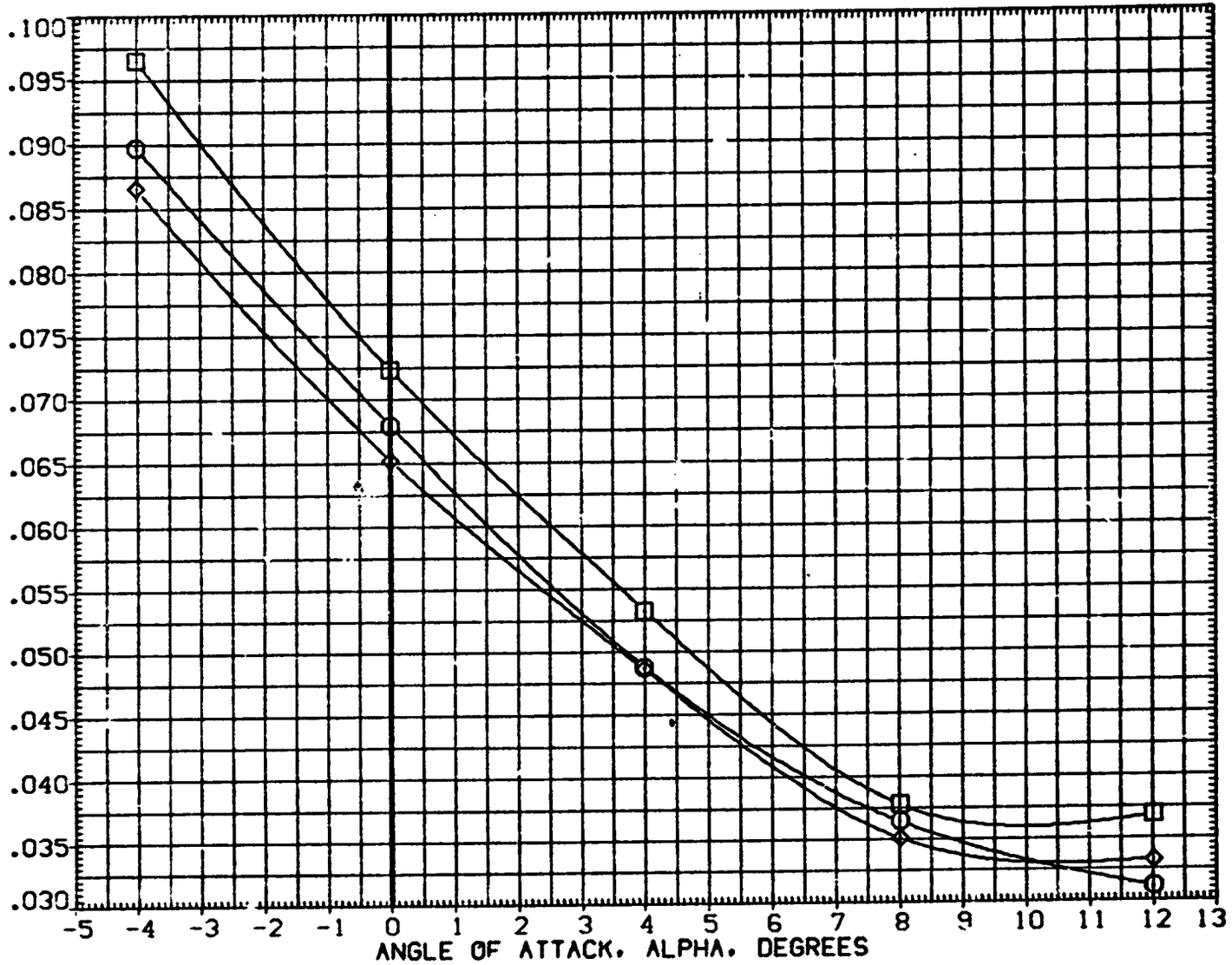


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D66)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	5.000	SPDBRK	55.000
□	-4.000	BDFLAP	16.300	ELVN-L	-4.000
◇	.000	ELVN-R	-4.000	MACH	.600
△	4.000				
▷	8.000				

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

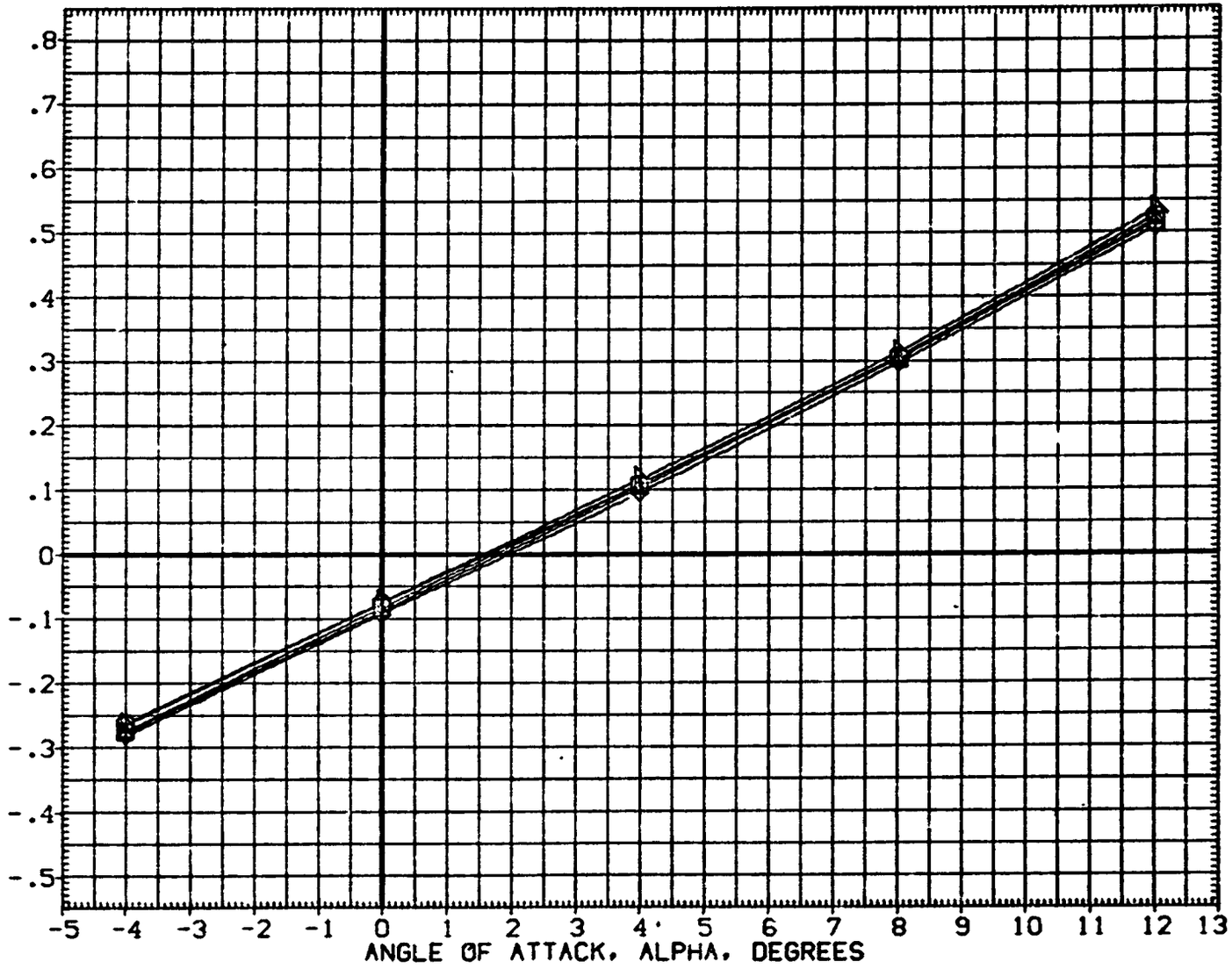


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

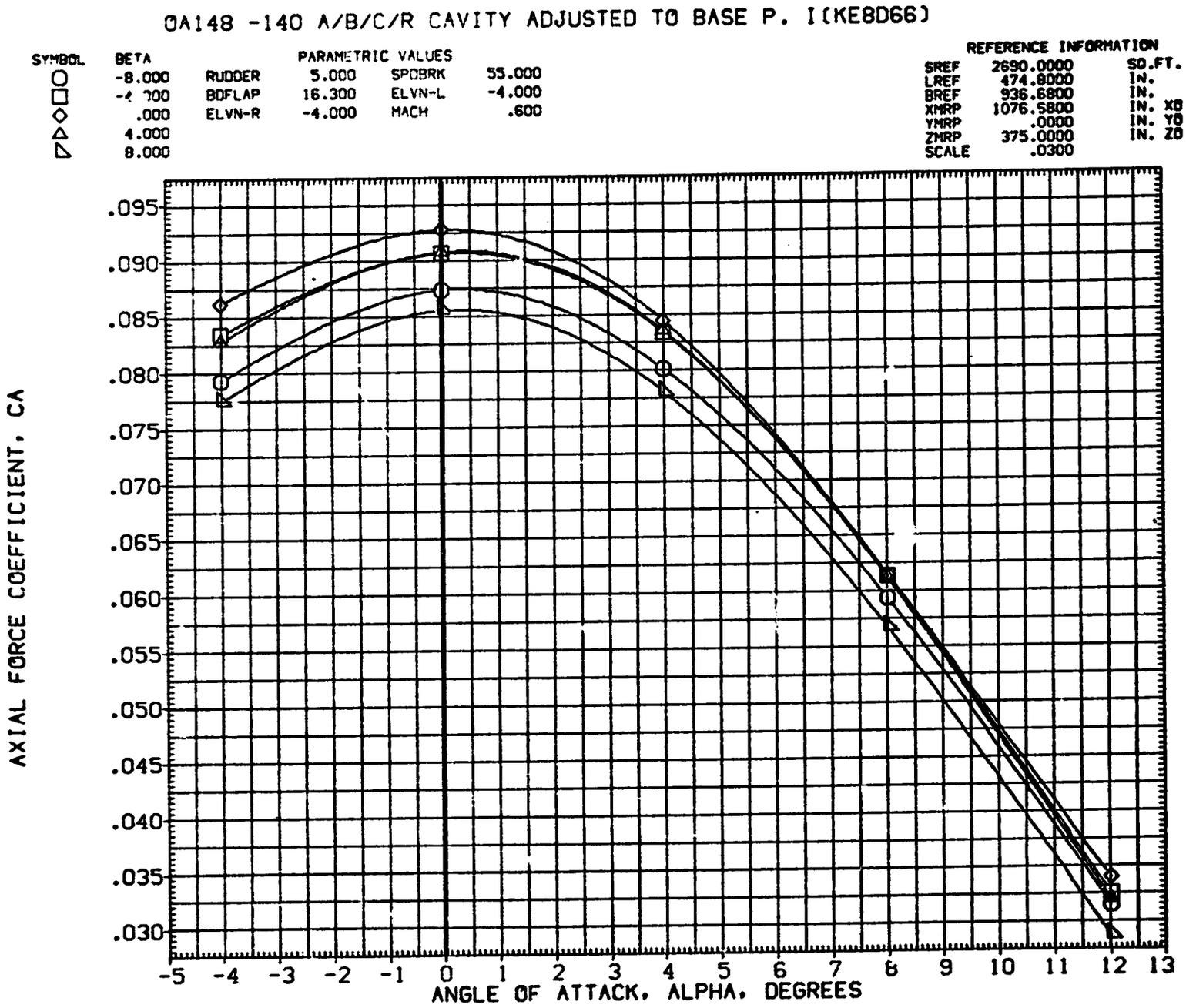


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

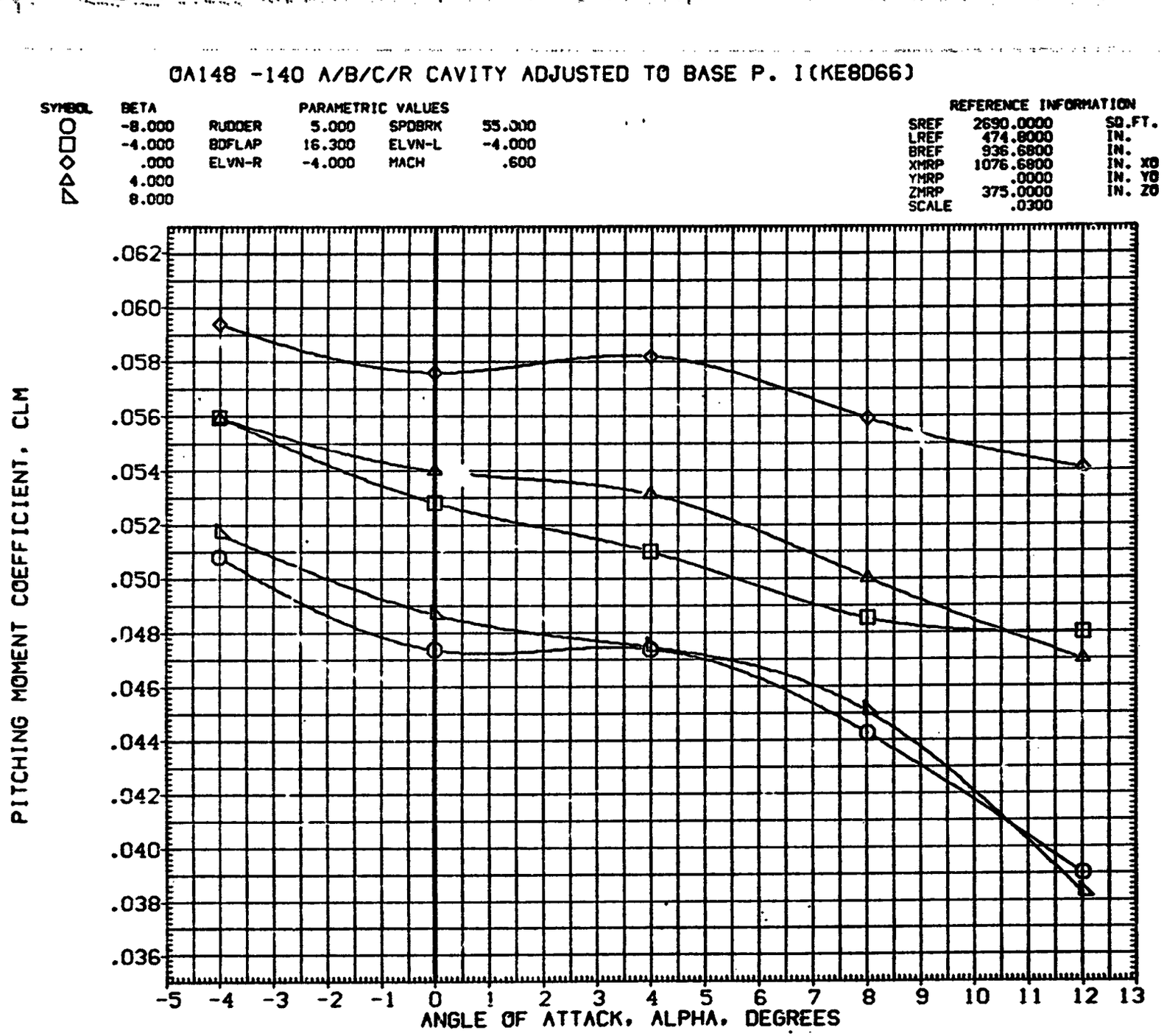


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

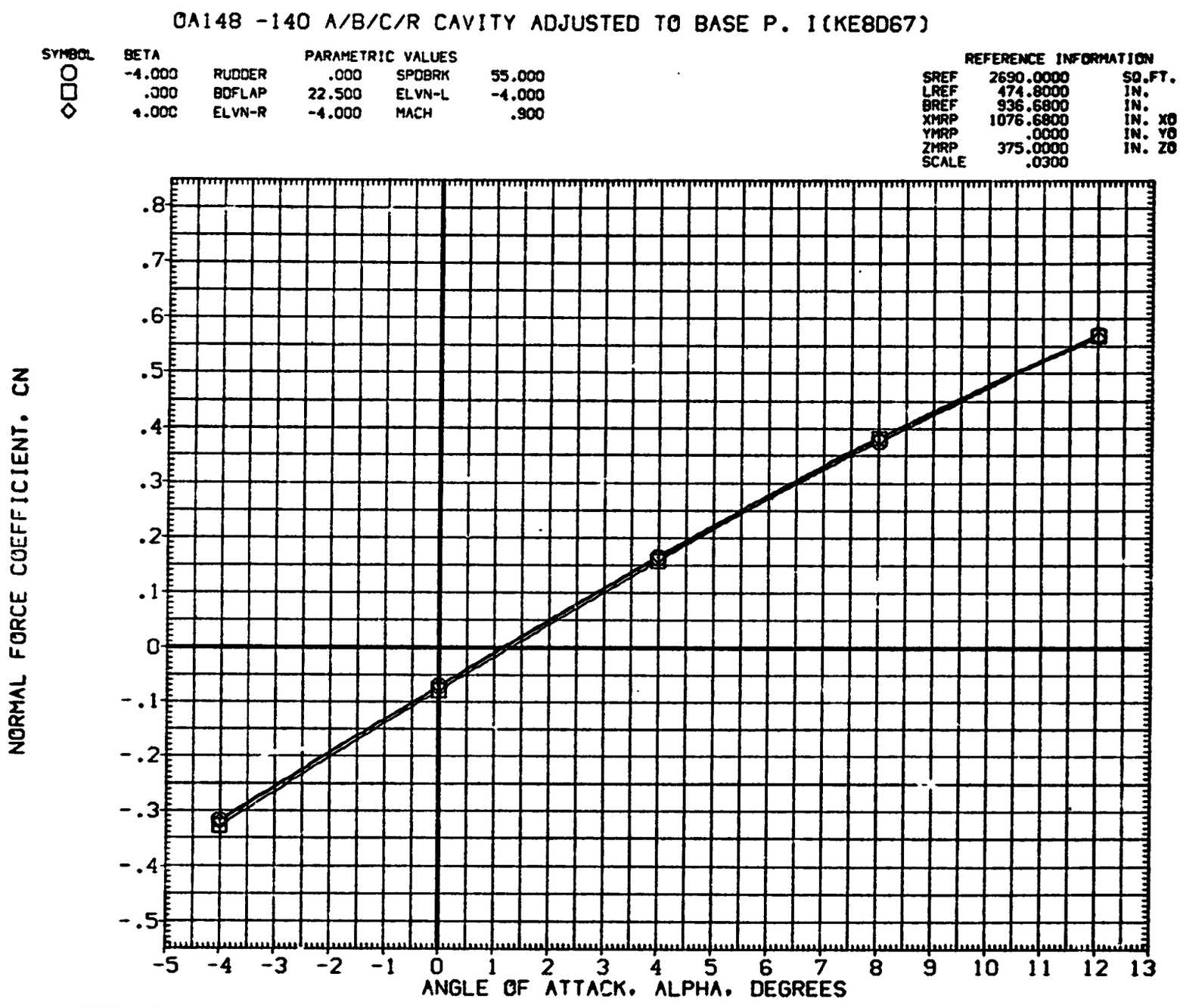


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

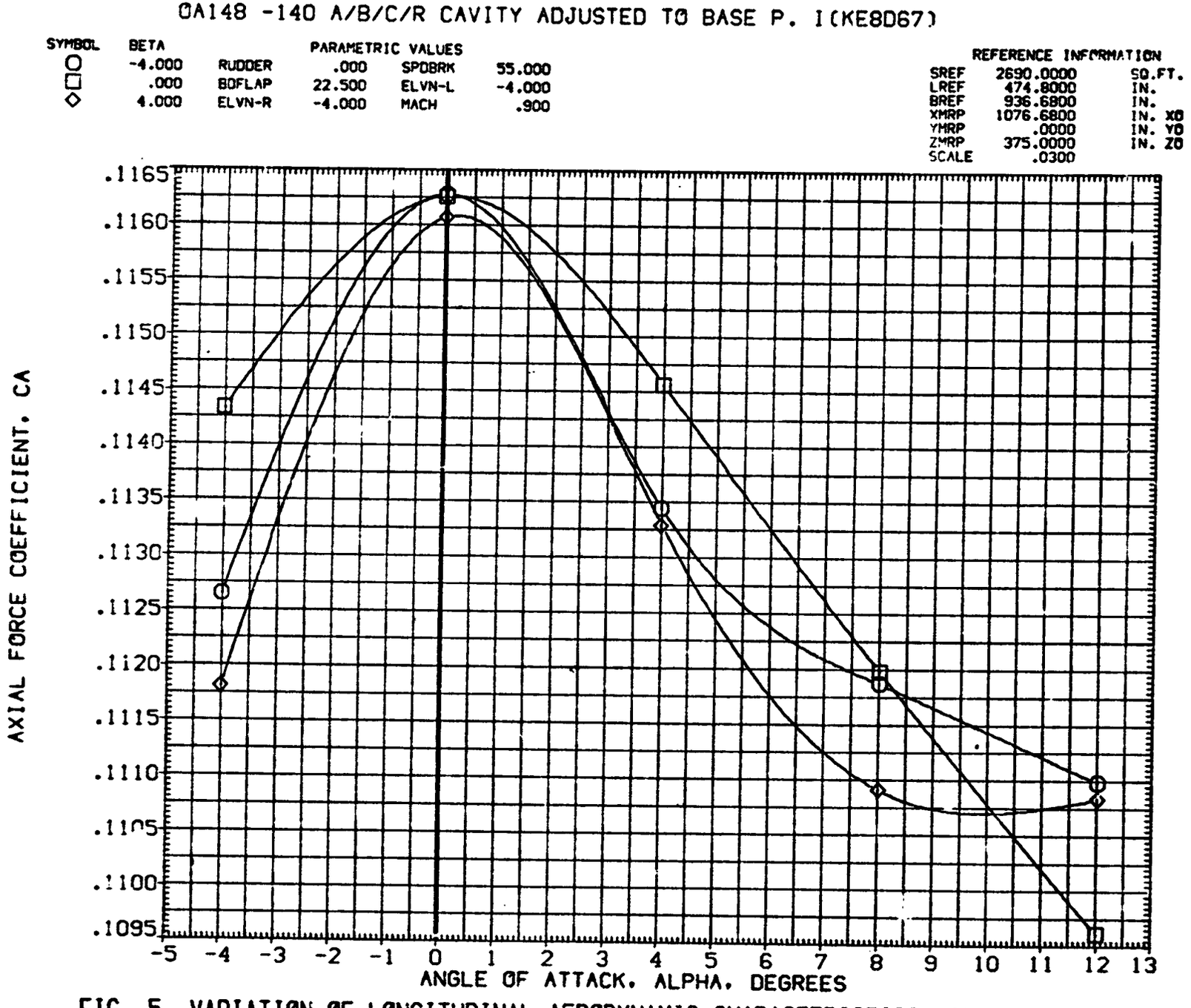


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D67)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BOFLAP	22.500	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

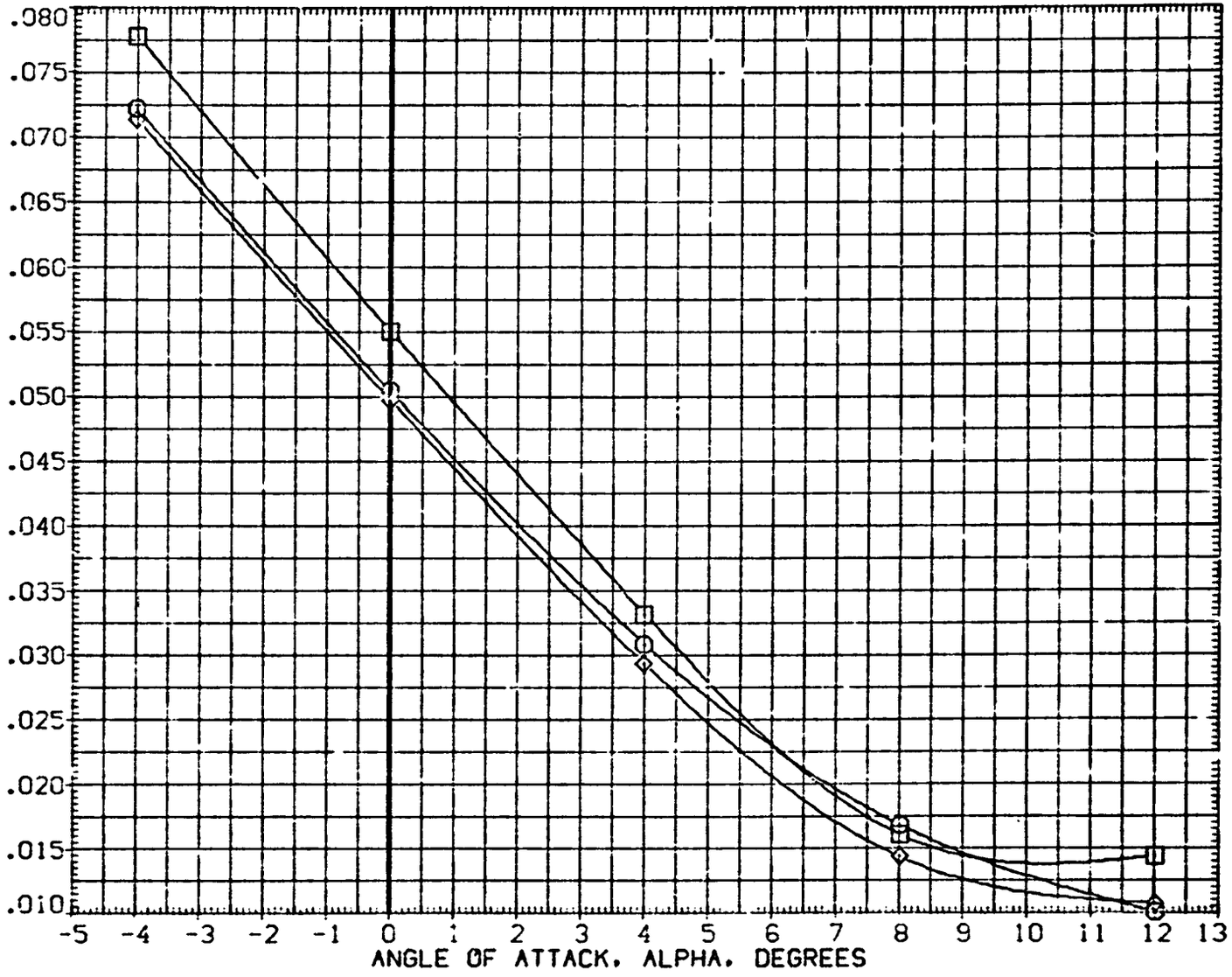


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D68)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	.000	SPDBRK	55.000
□	-4.000	BDFLAP	22.500	ELVN-L	-4.000
◇	.000	ELVN-R	-4.000	MACH	.600
△	4.000				
▱	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

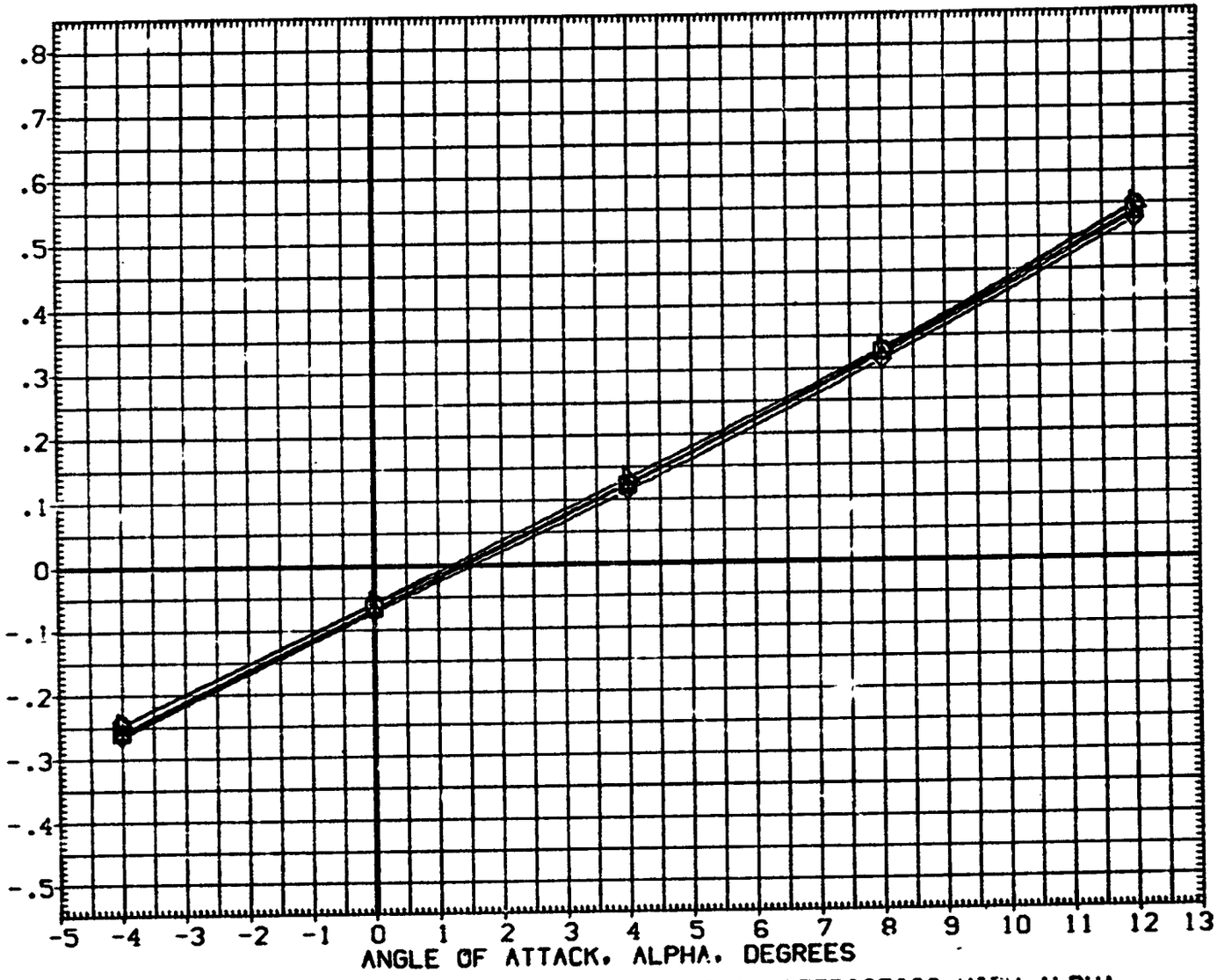


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R CAVITY ADJUSTED TO BASE P. I(KE8D68)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	22.500	ELVN-L	-4.000
ELVN-R	-4.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

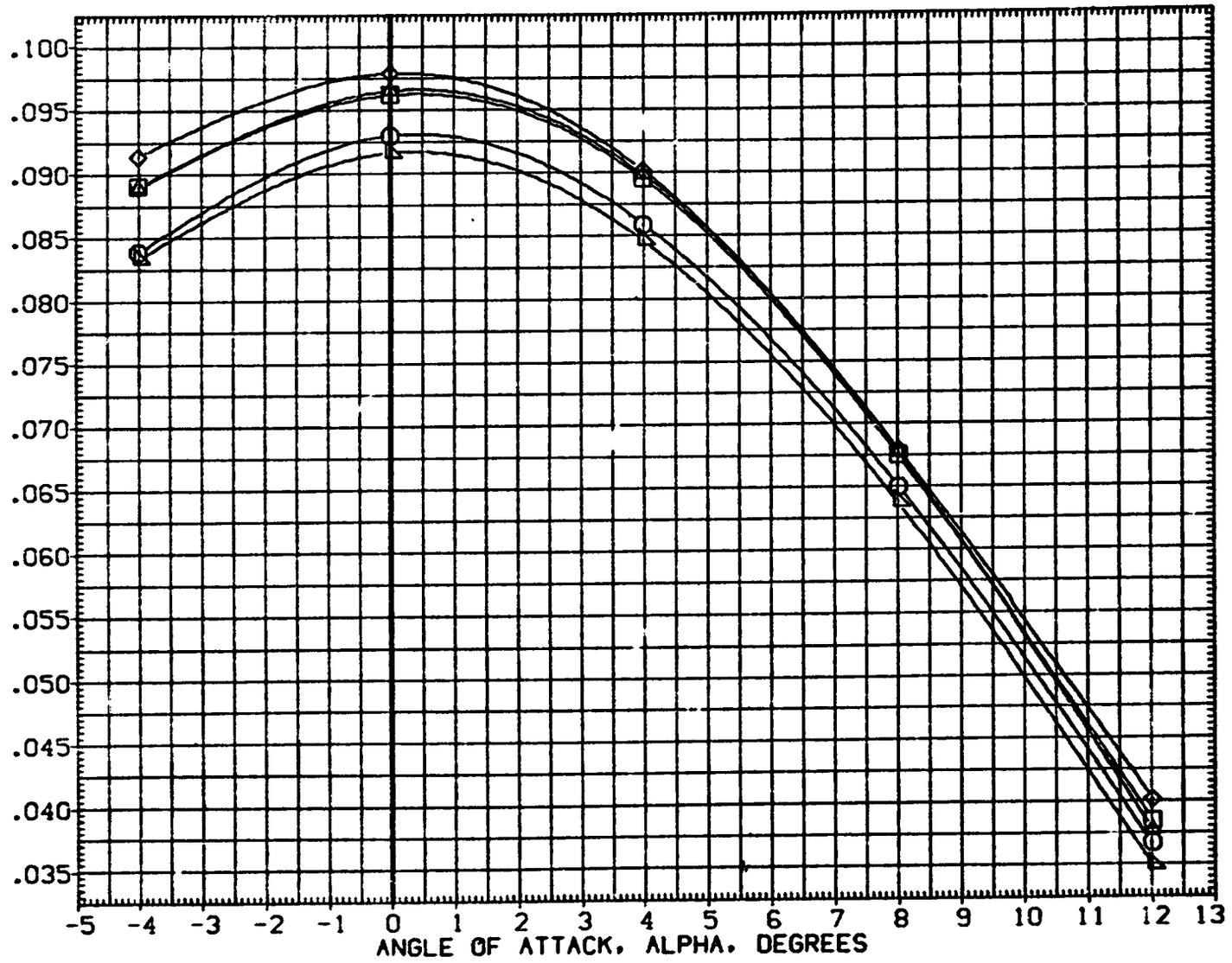


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

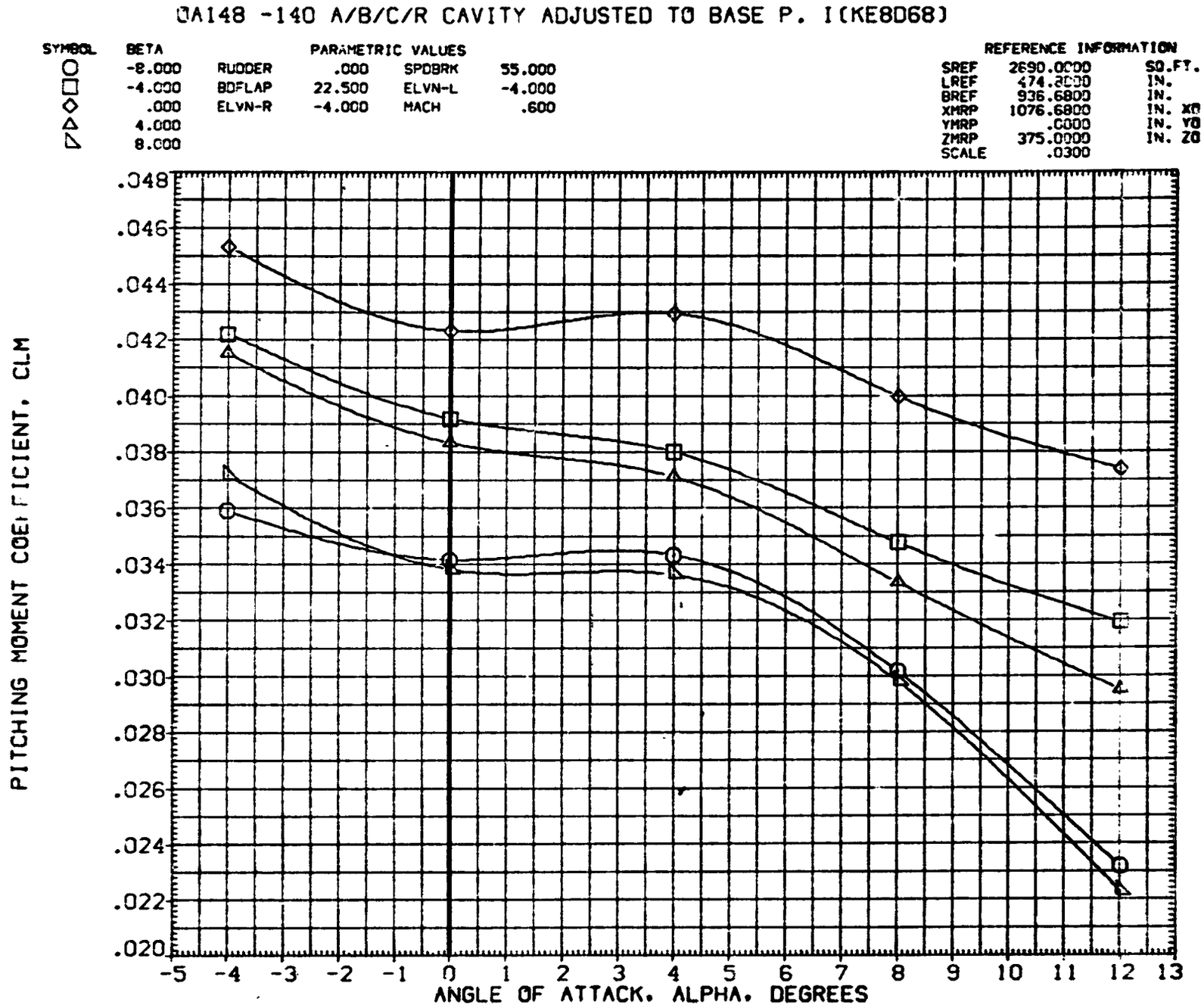


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

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ORIGINAL PAGE IS POOR

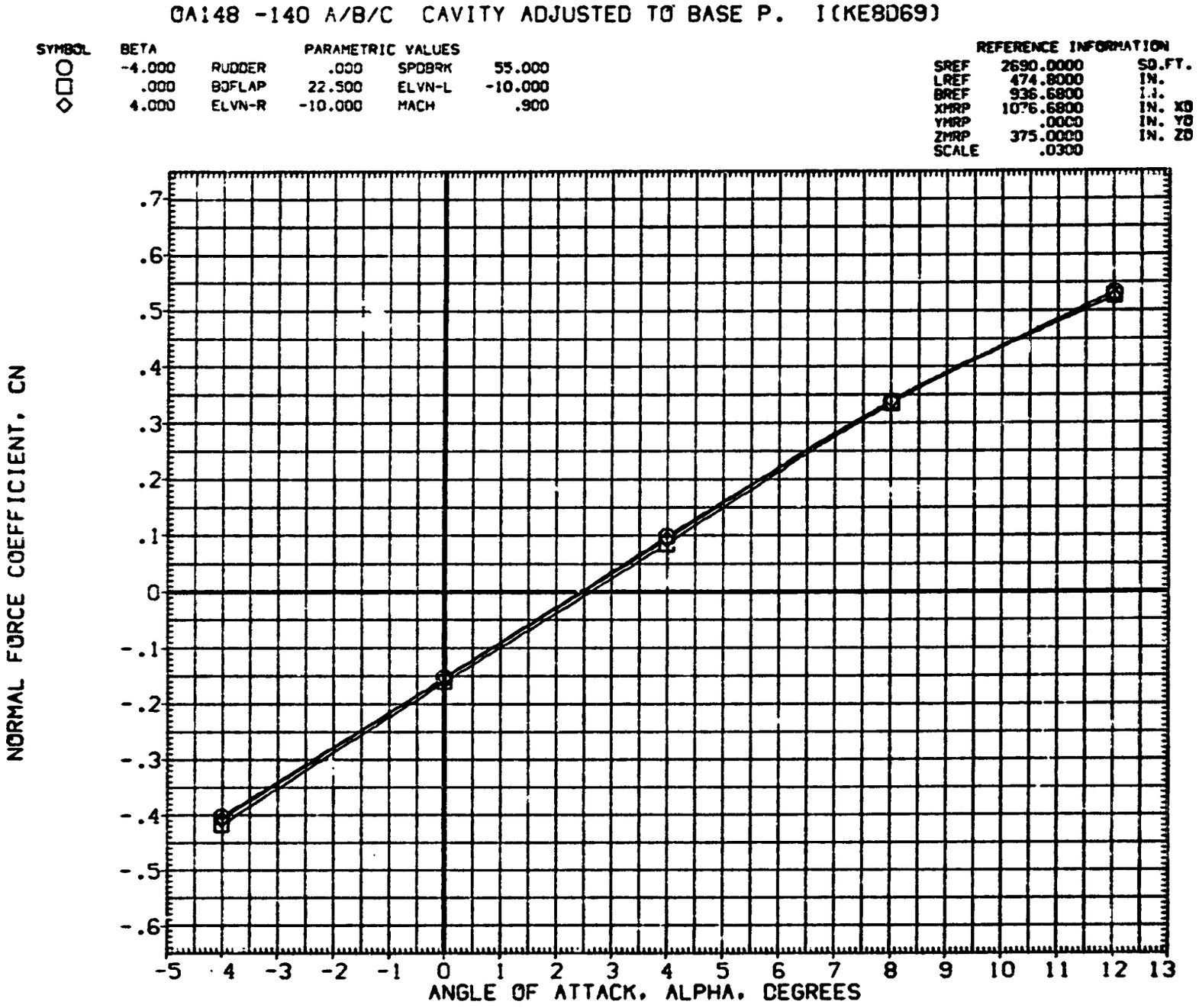


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

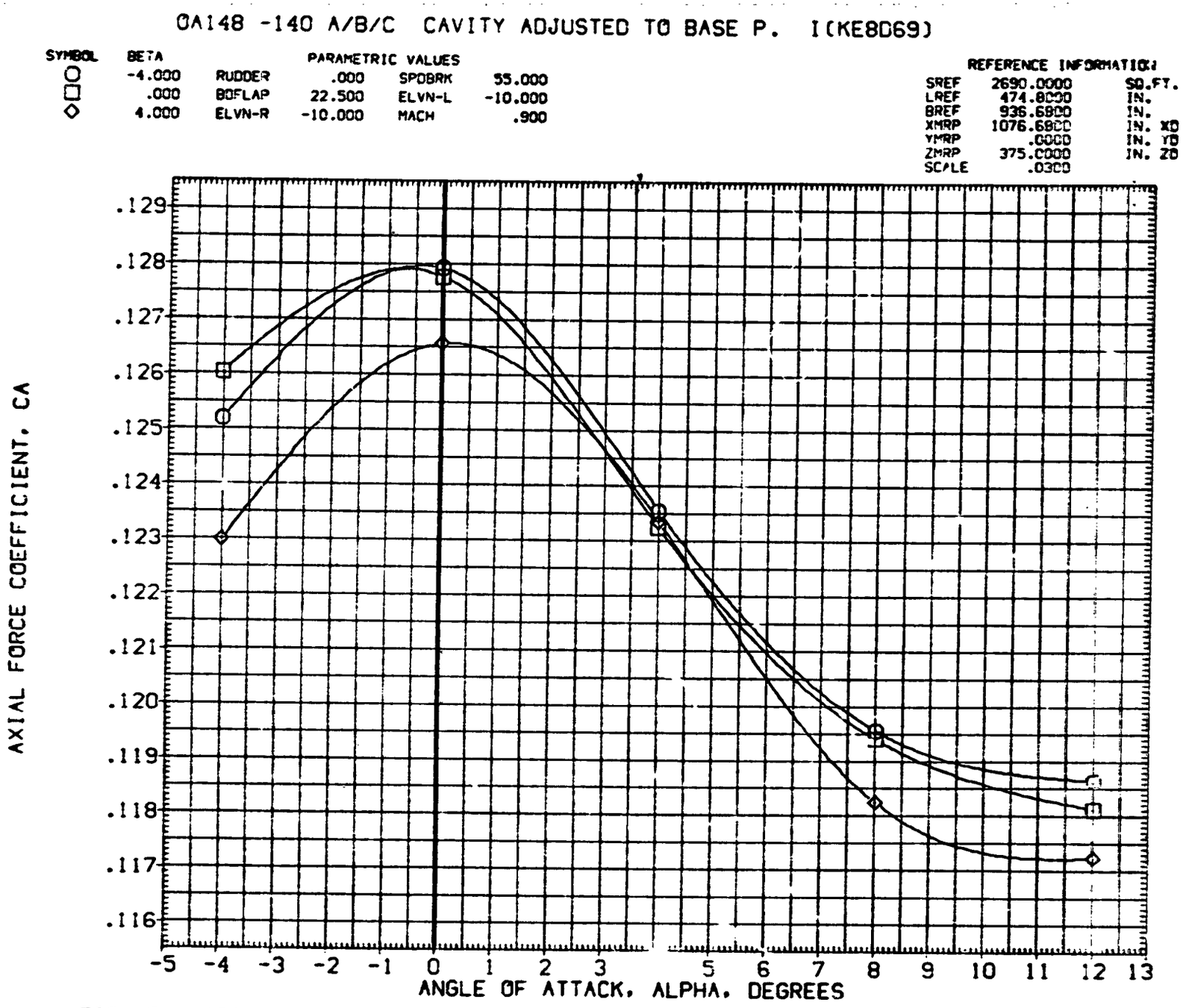


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8069)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

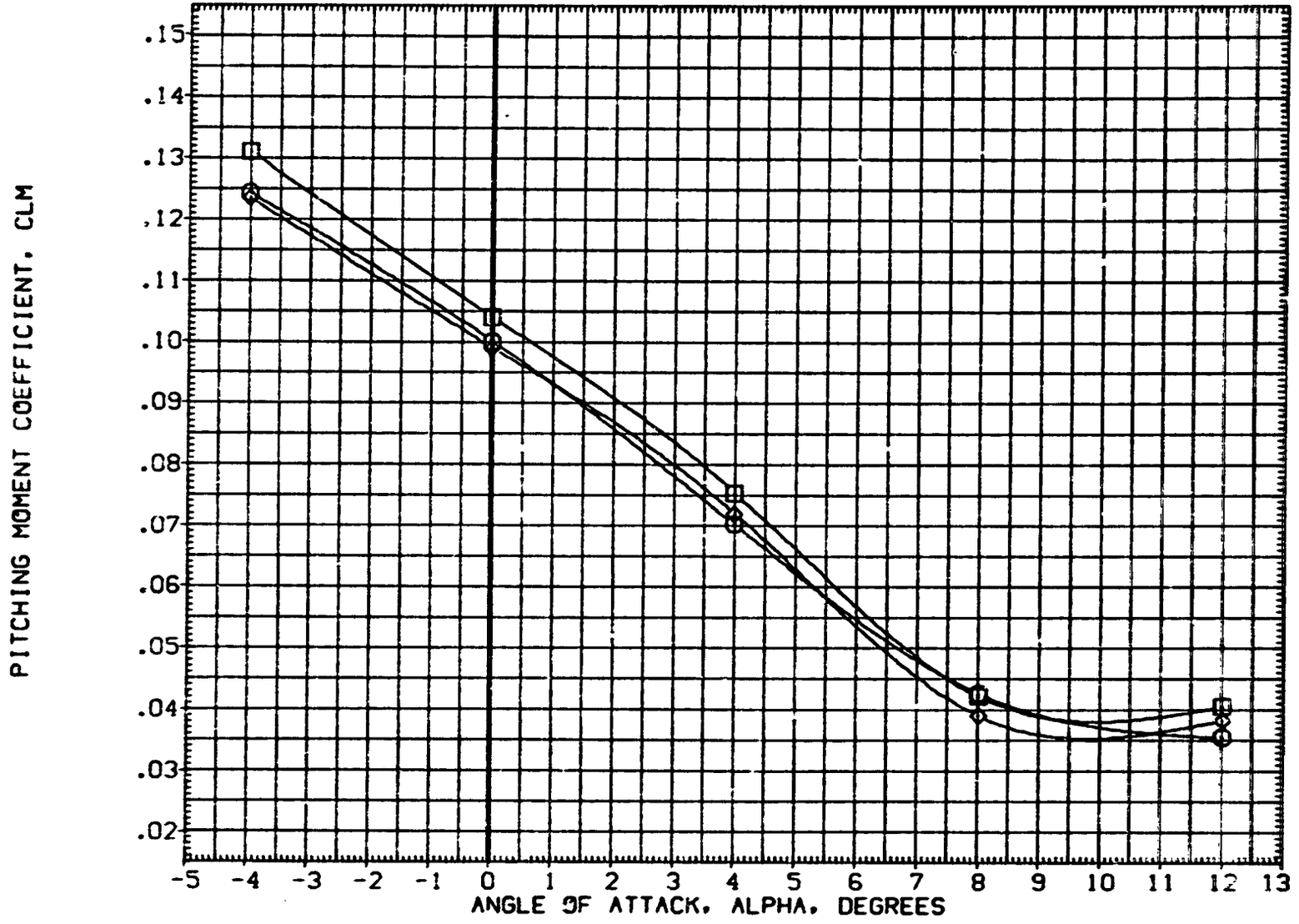


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8070)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPOBRK	55.000
BDFLAP	22.500	ELVN-L	-10.000
ELVN-R	-10.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0300	SQ.FT.
LREF	474.6000	IN.
BREF	936.6600	IN.
XMRP	1073.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

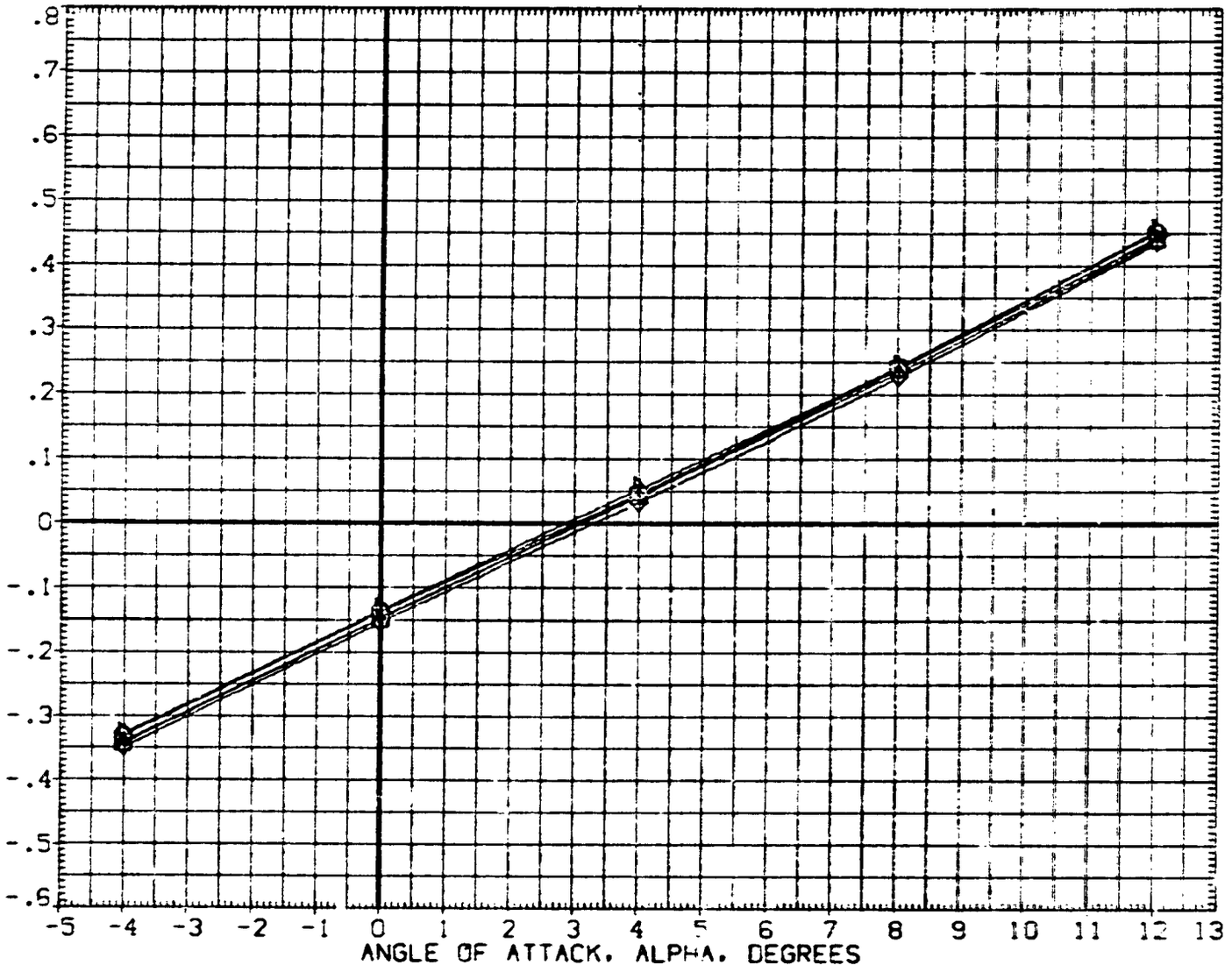


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

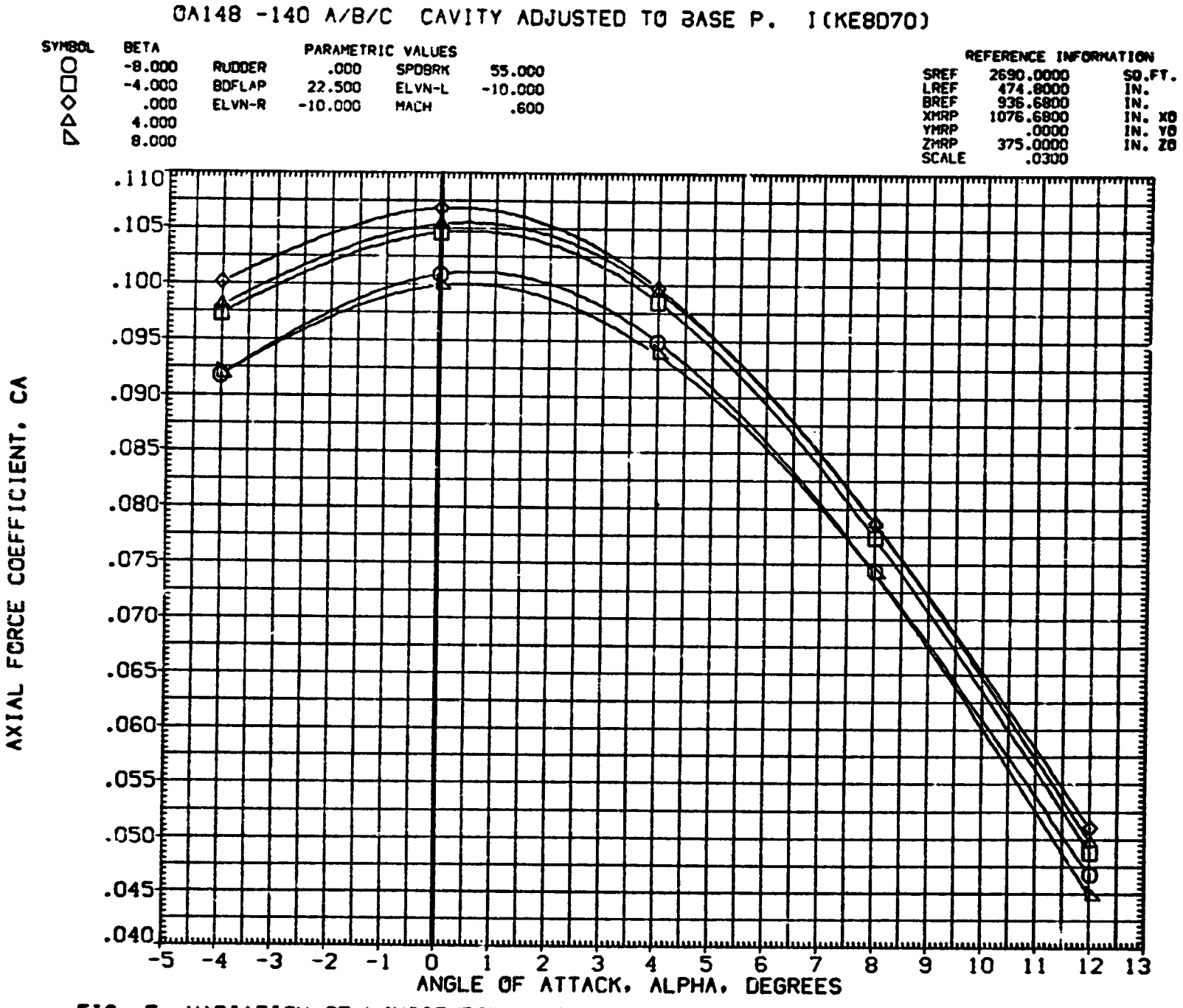


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D70)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▱	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000	
BDFLAP	22.500	ELVN-L	-10.000	
ELVN-R	-10.000	MACH	.600	

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1075.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

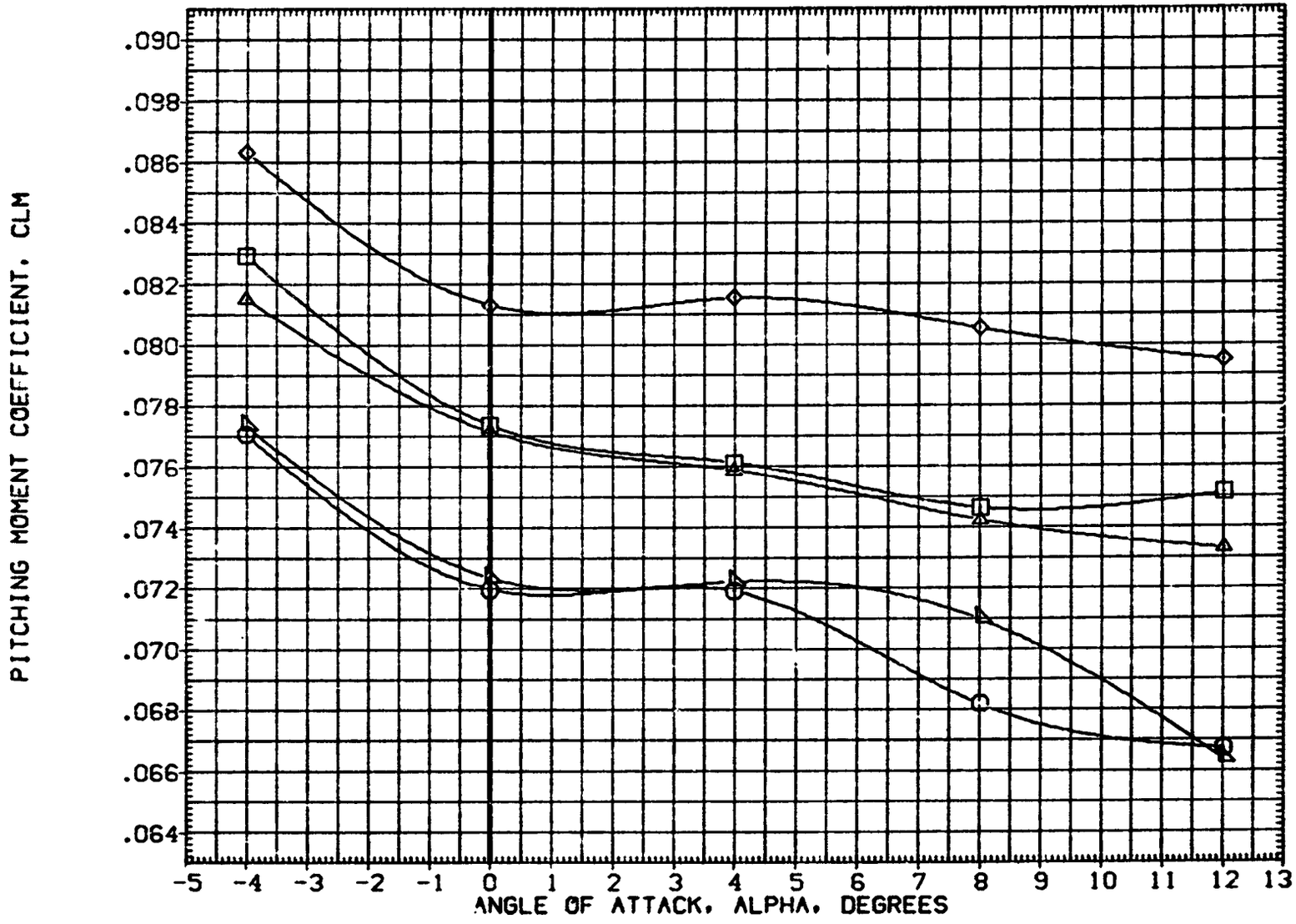


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D71)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

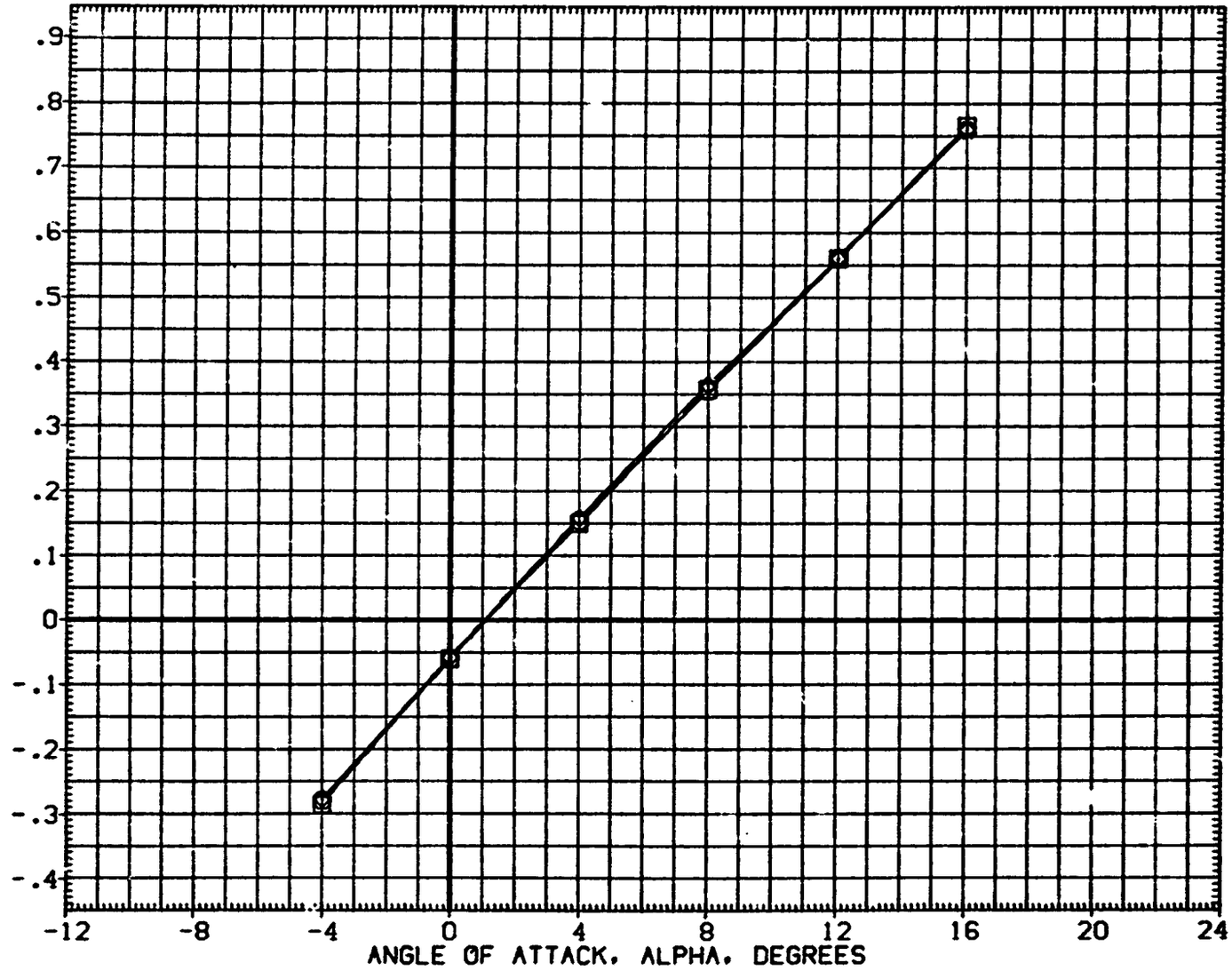


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

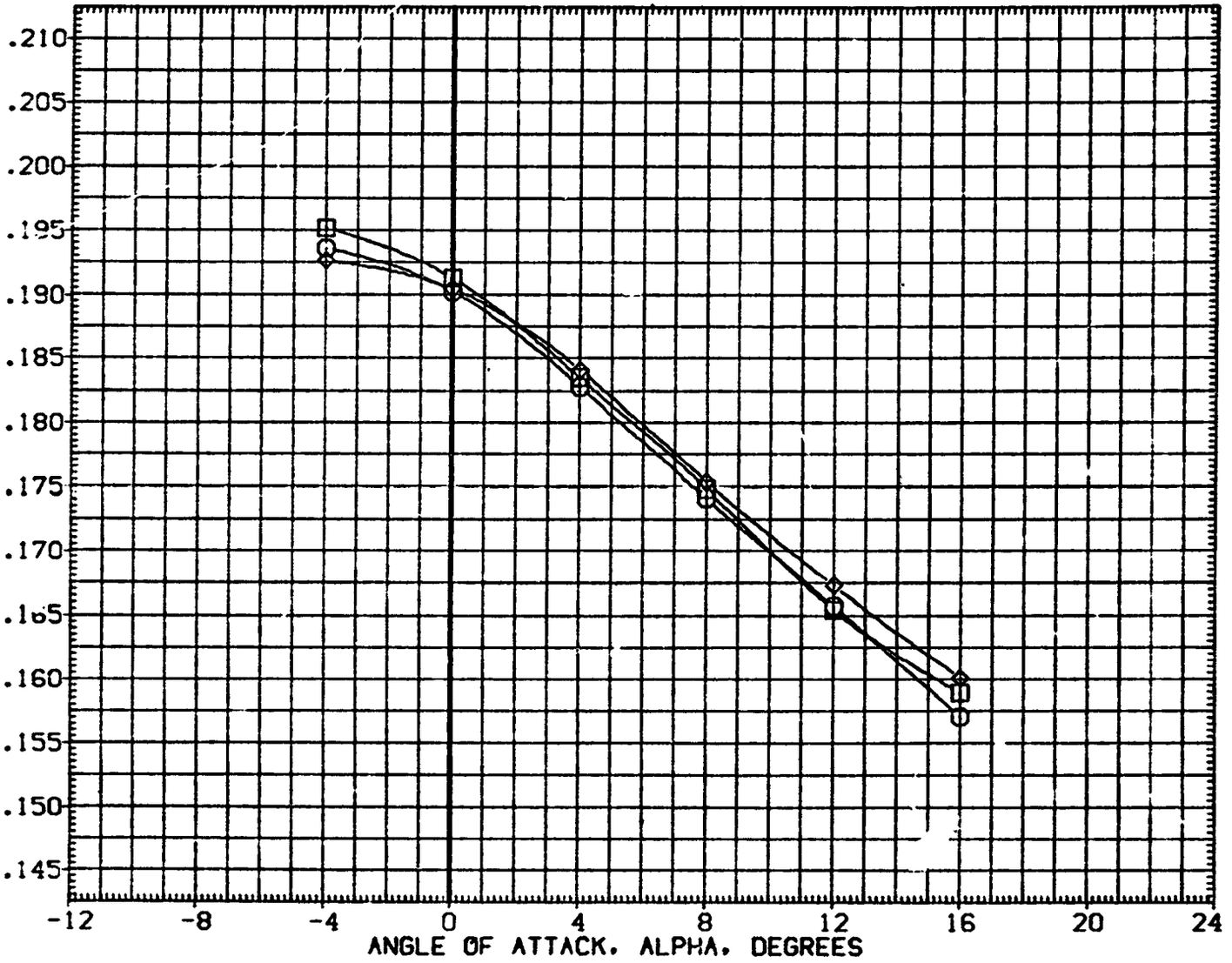


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

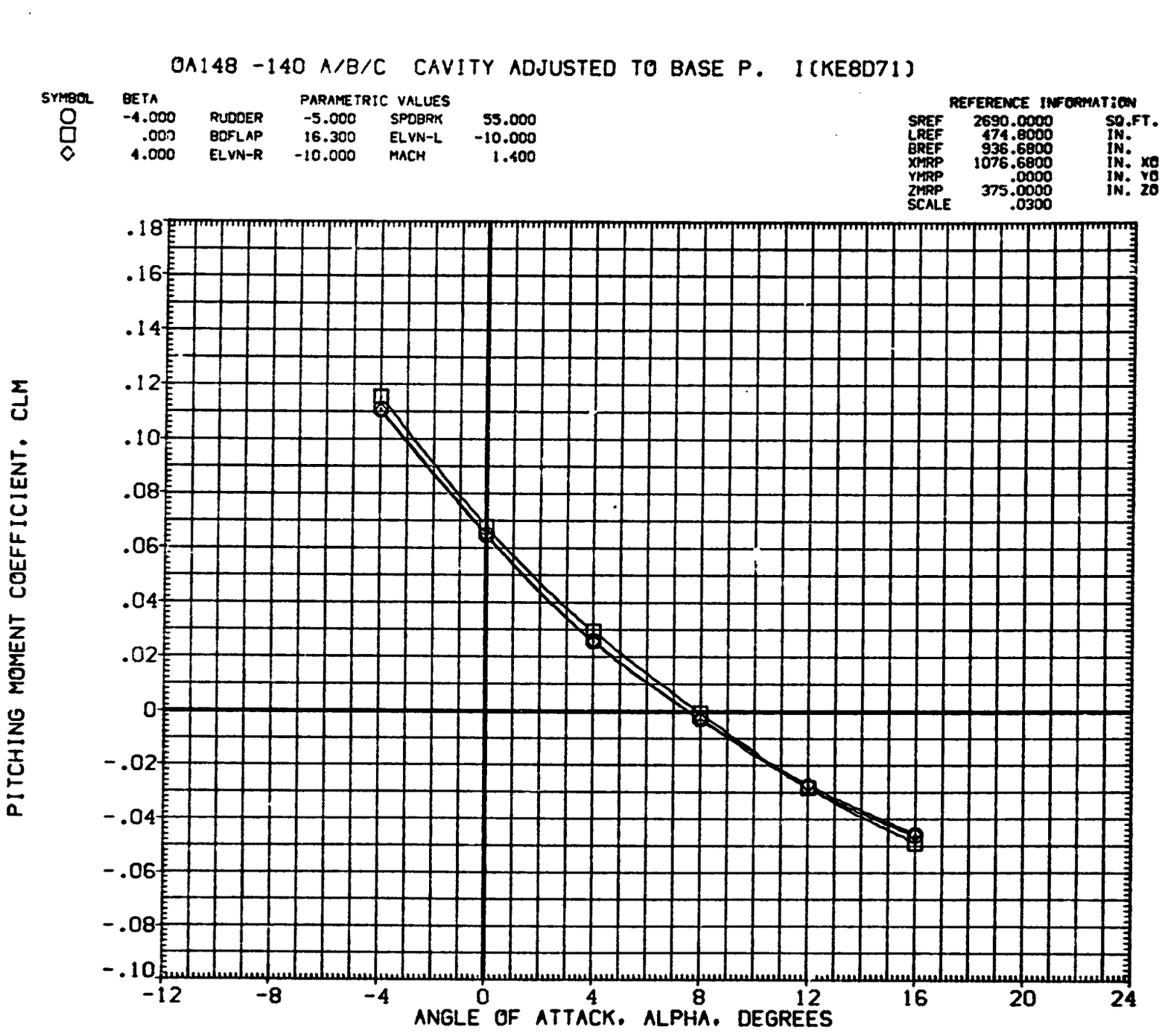


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D72)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

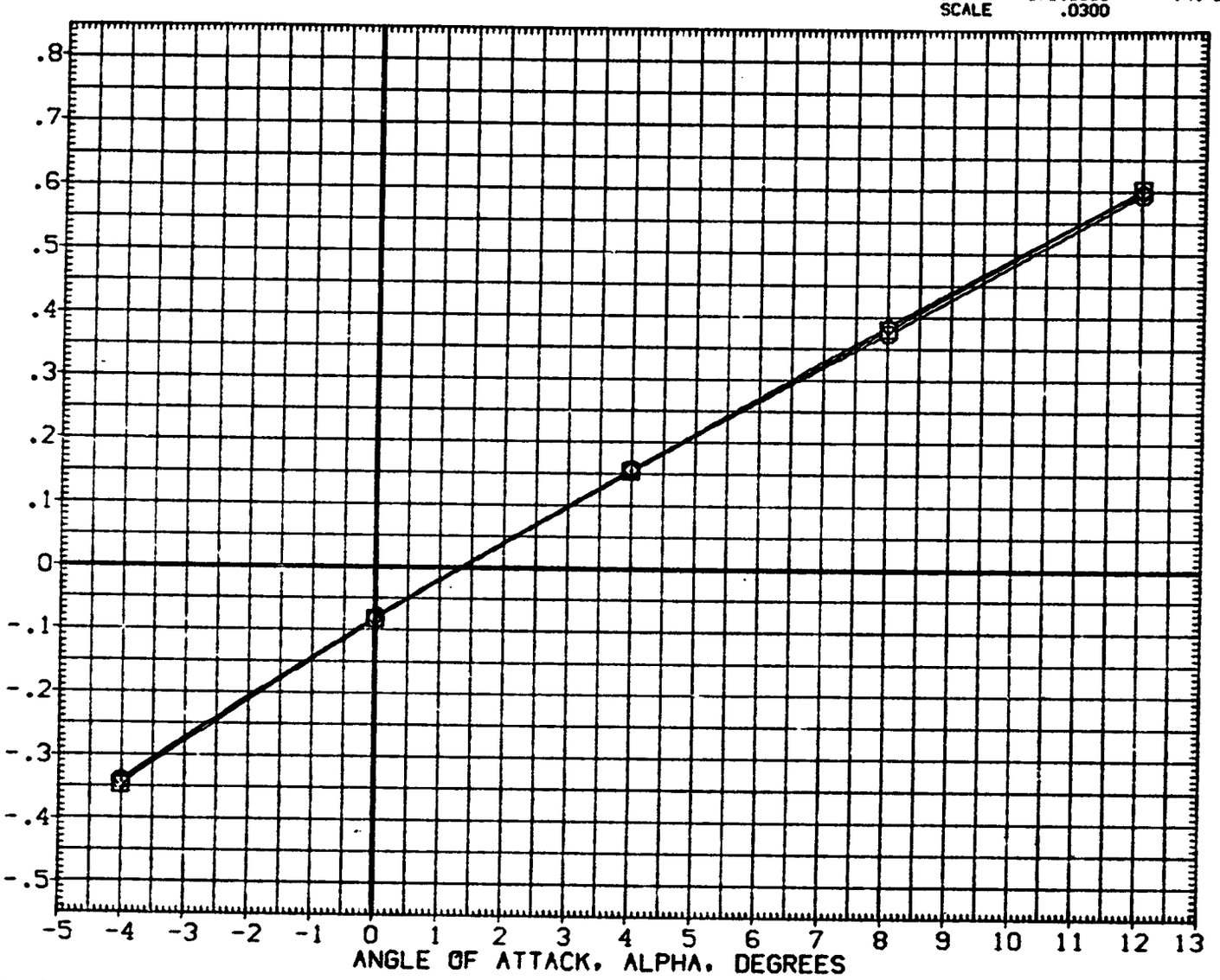


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D72)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

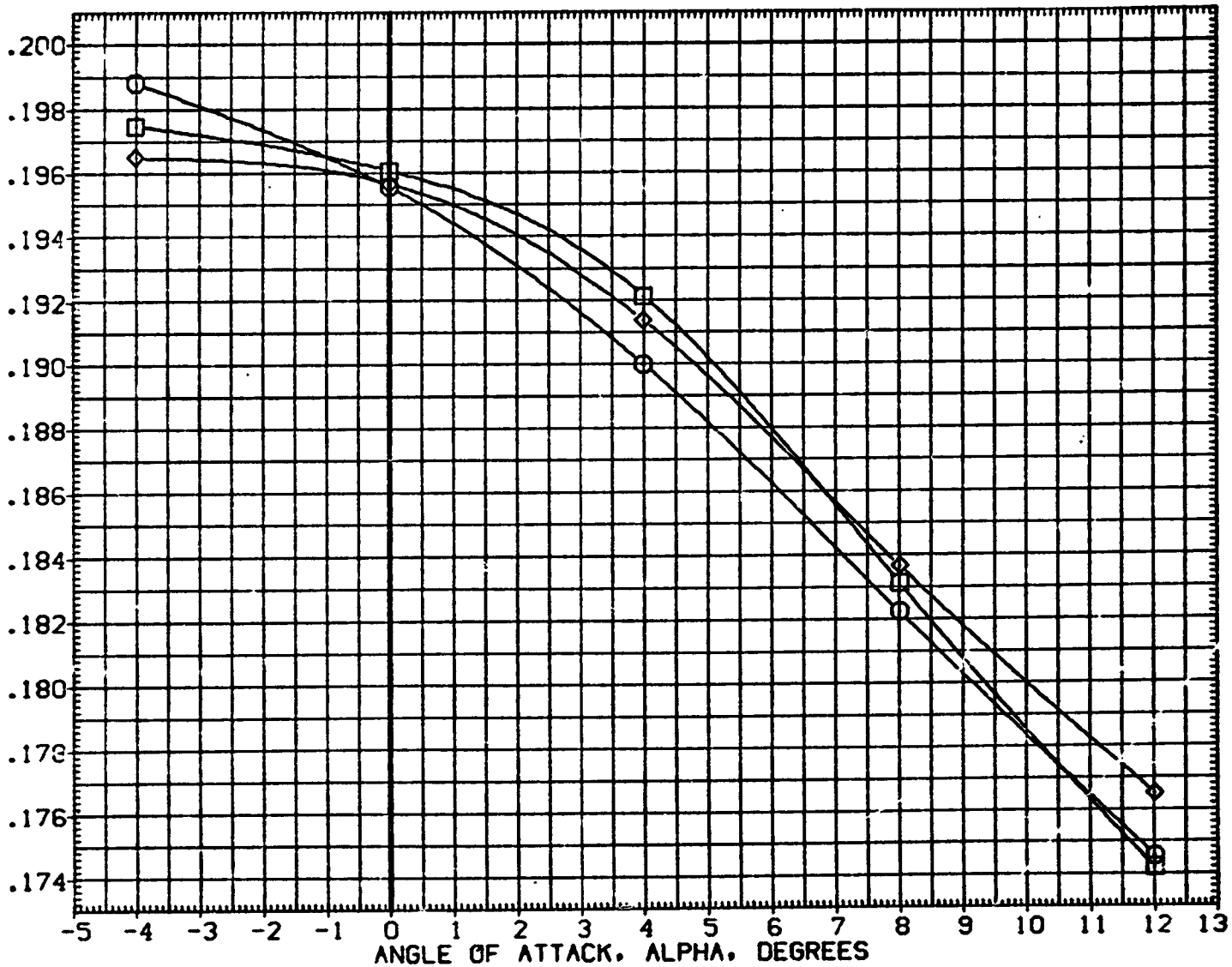


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

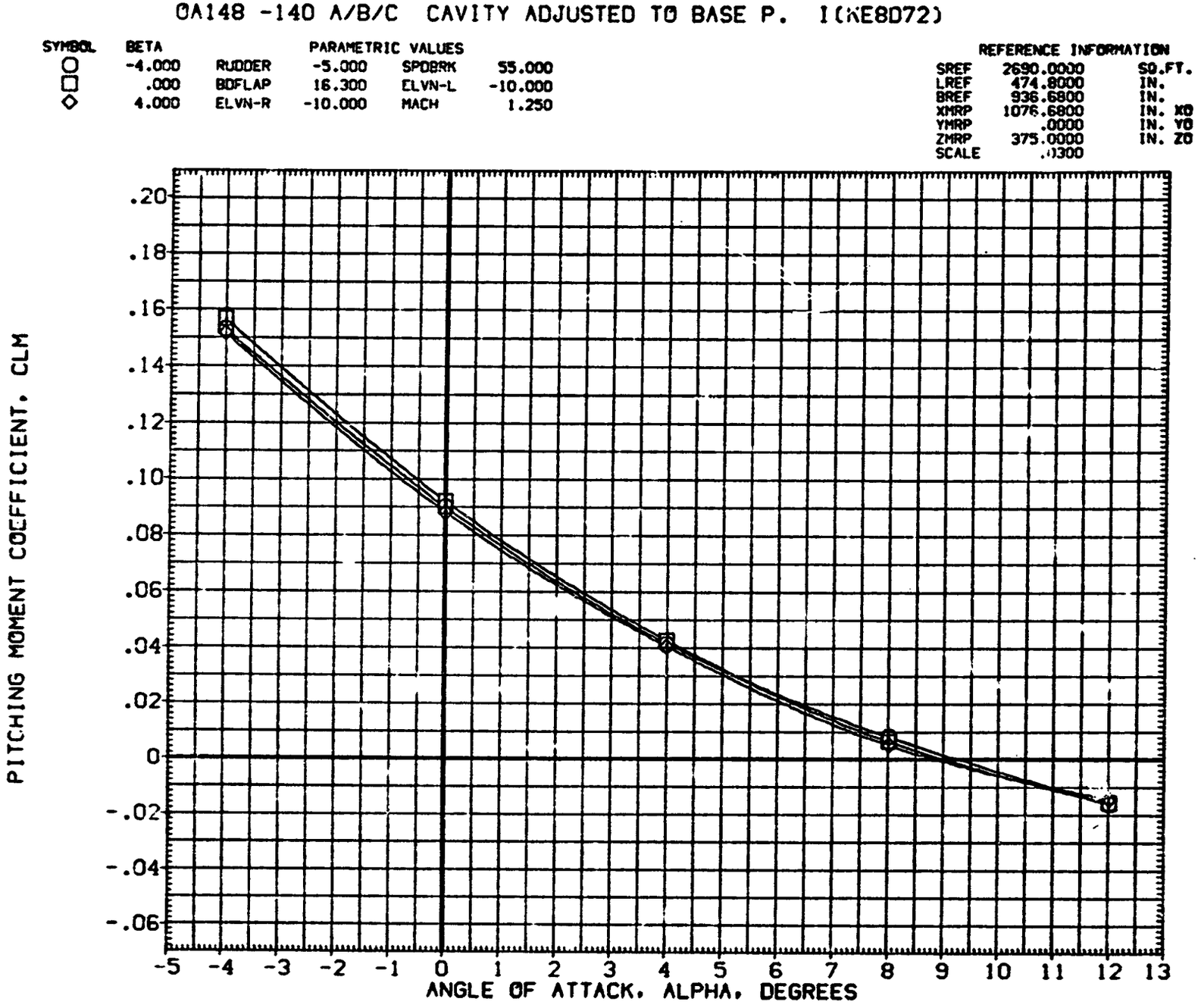


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

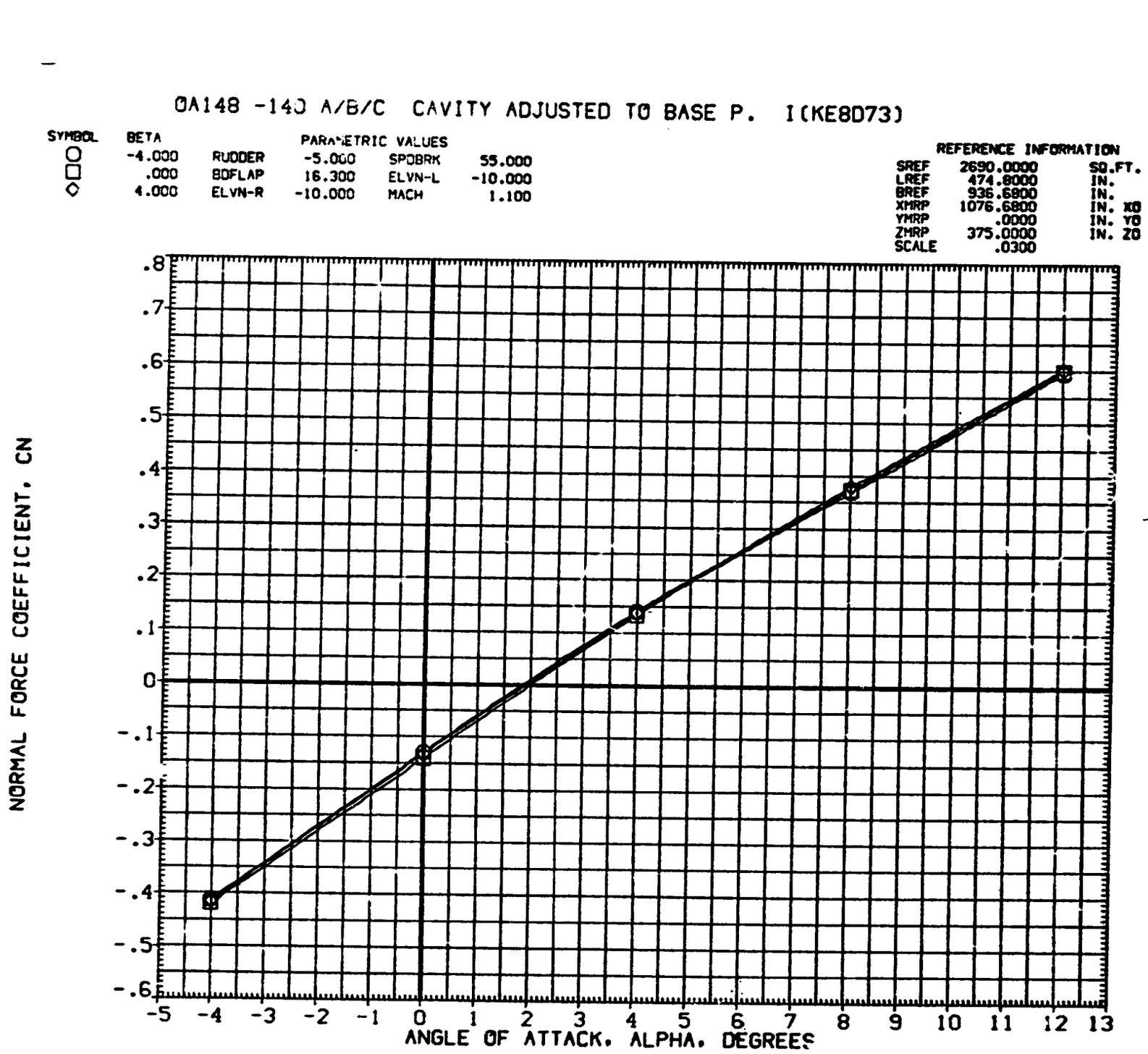


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D73)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPDBRK	55.000
□	.000	BCFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

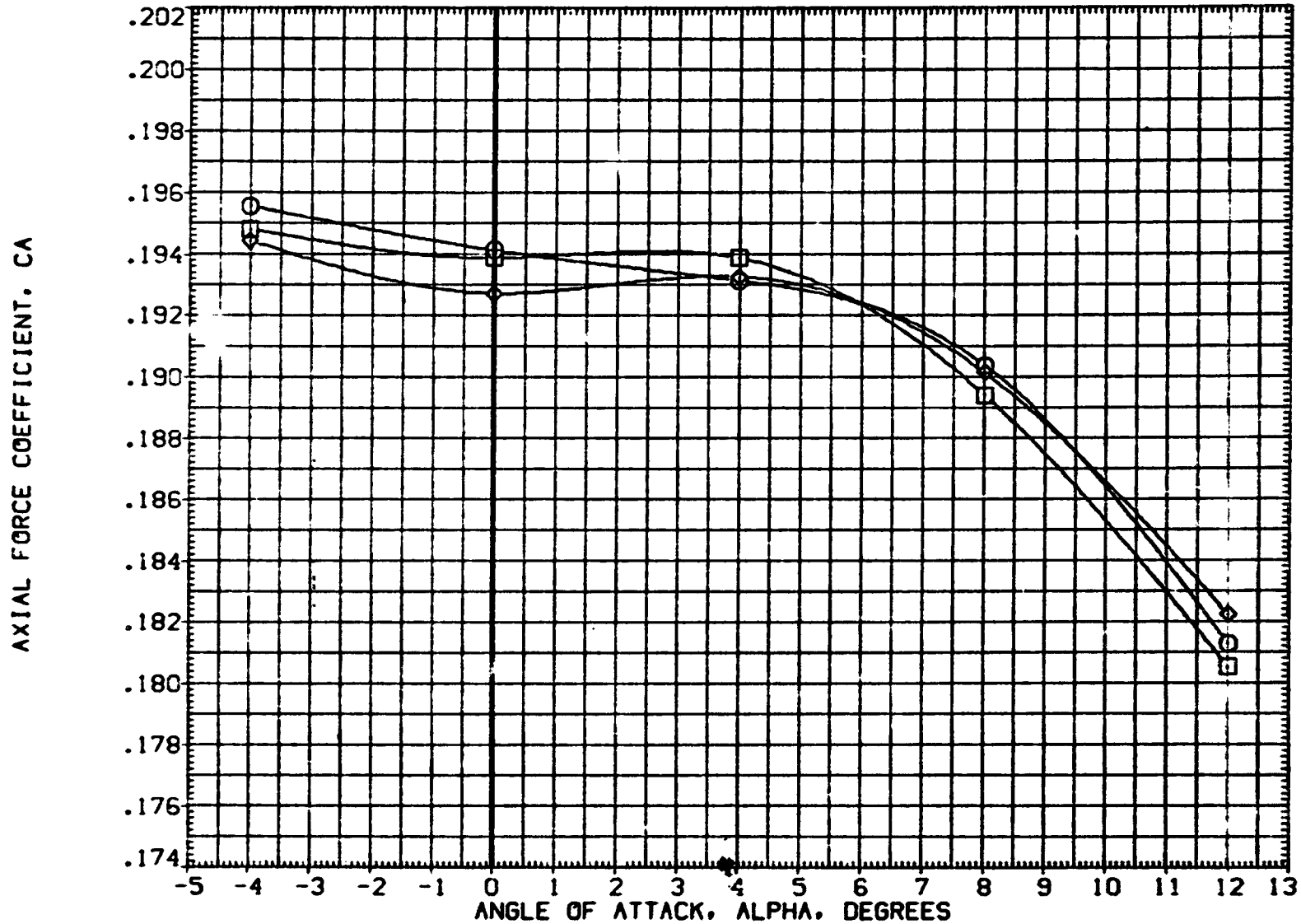


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

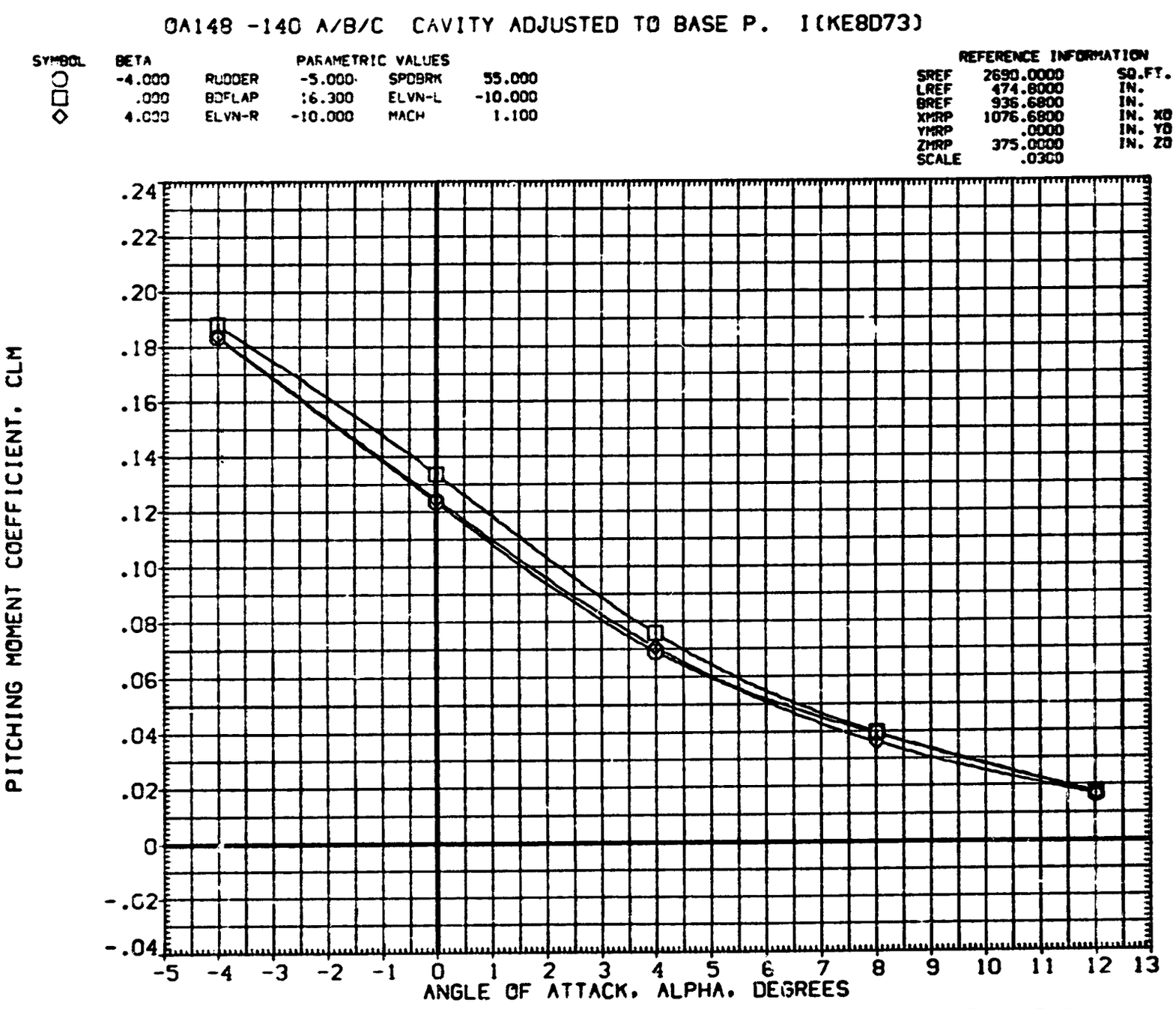


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. 1(KE8D74)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

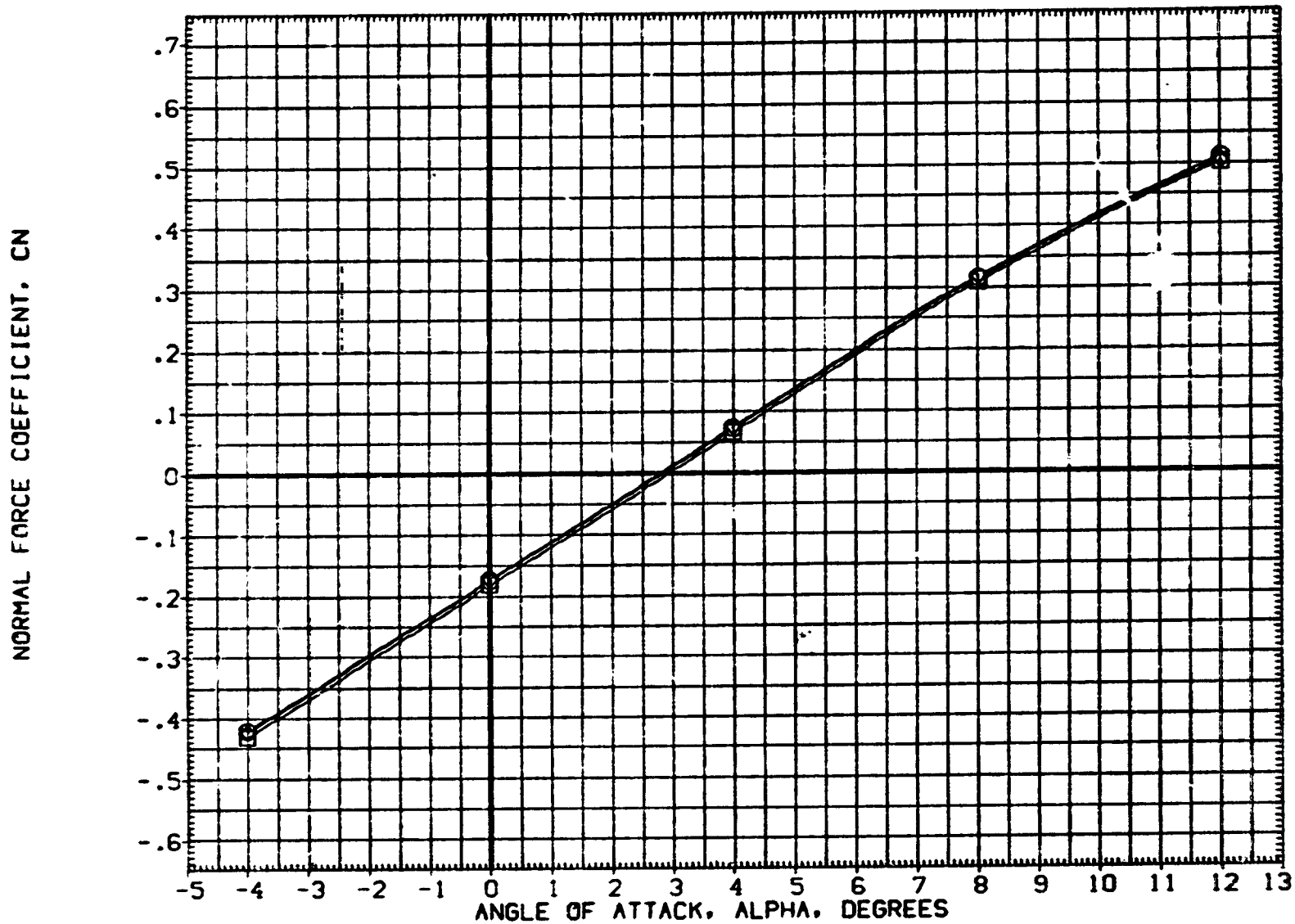


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D74)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

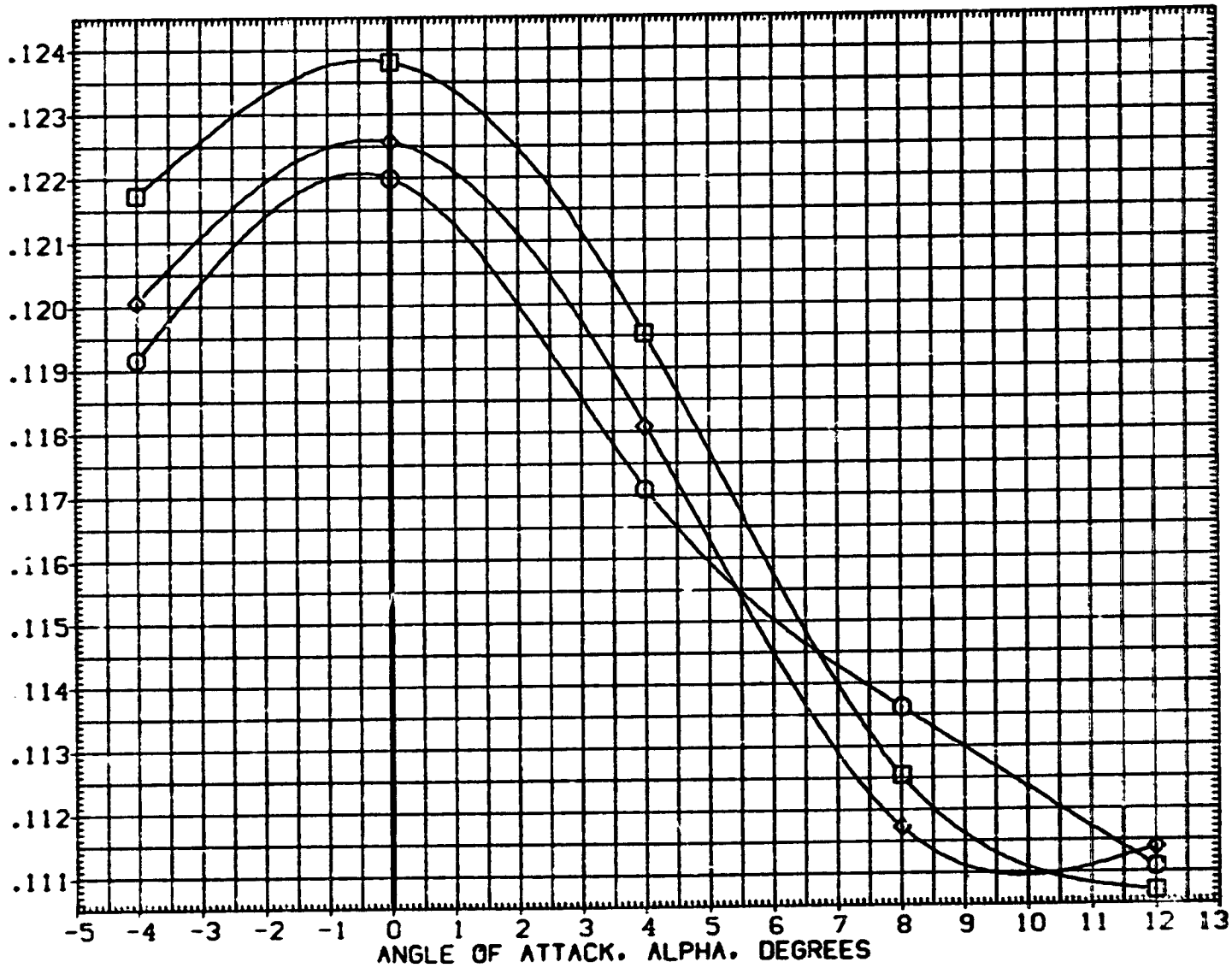


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.5800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

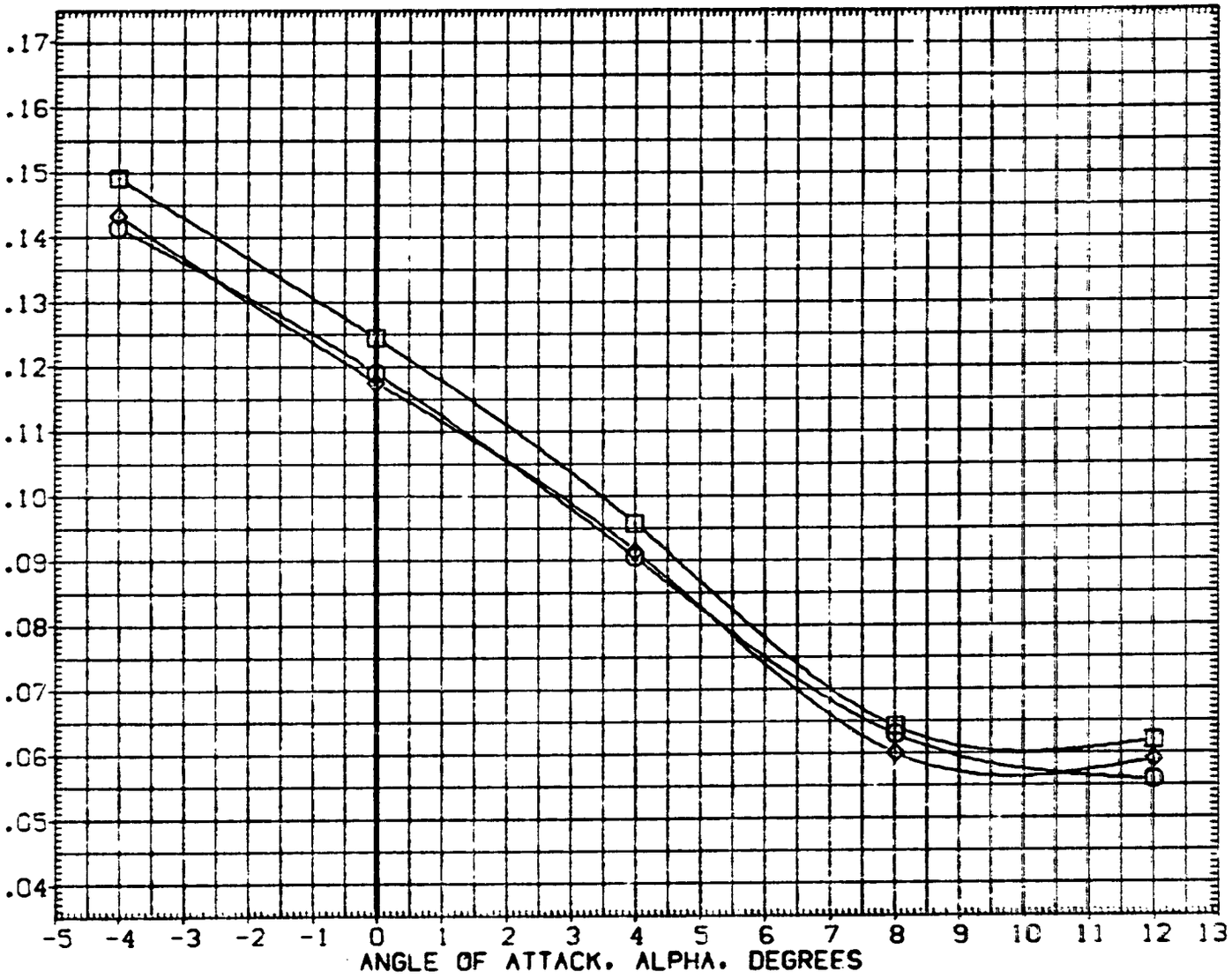


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

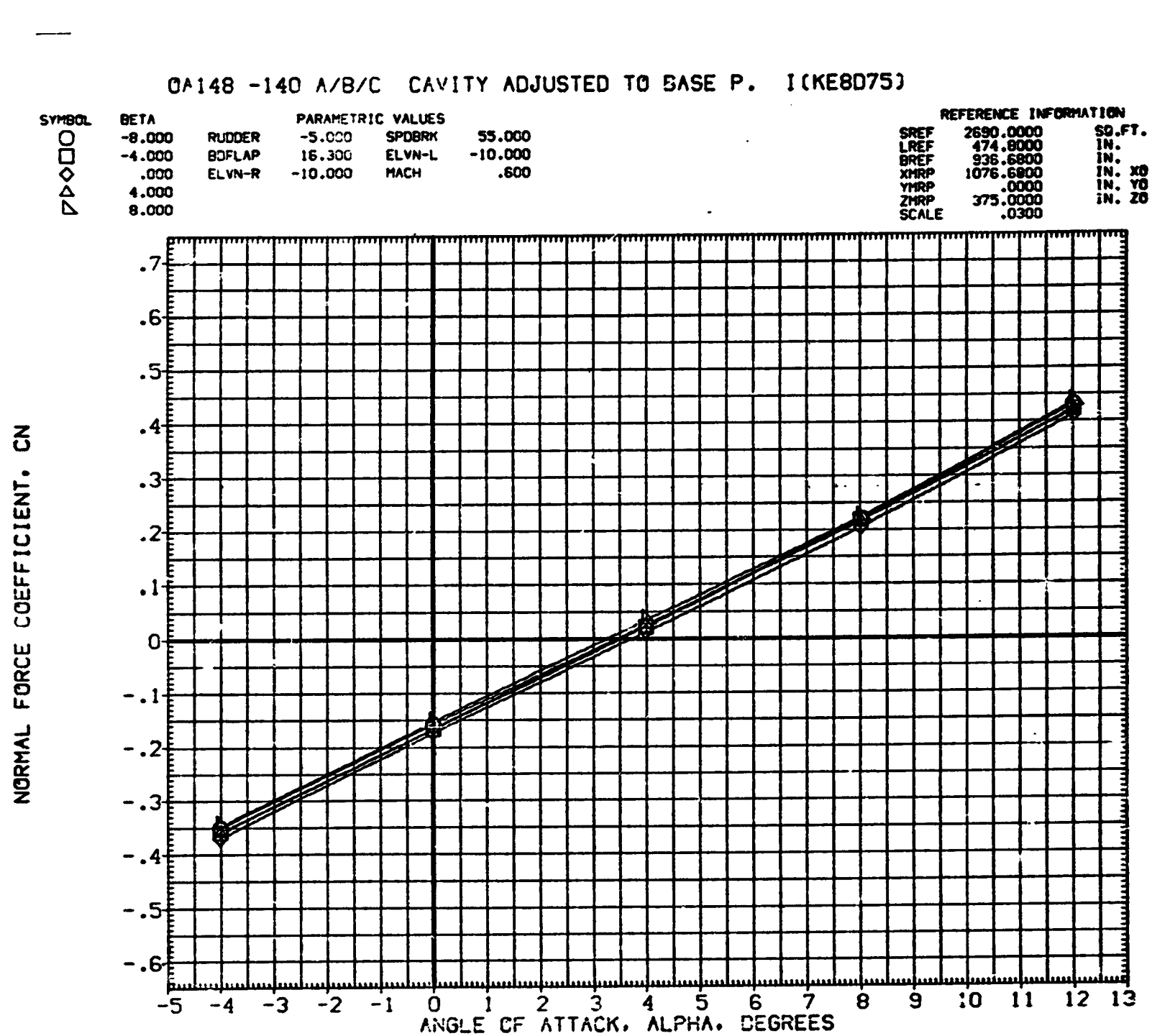


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8075)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▷	8.000

PARAMETRIC VALUES

RUDDER	-5.000	SPDBRK	55.000
BDFLAP	16.300	ELVN-L	-10.000
ELVN-R	-10.000	MACH	.600

REFERENCE INFORMATION

SREF	2650.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

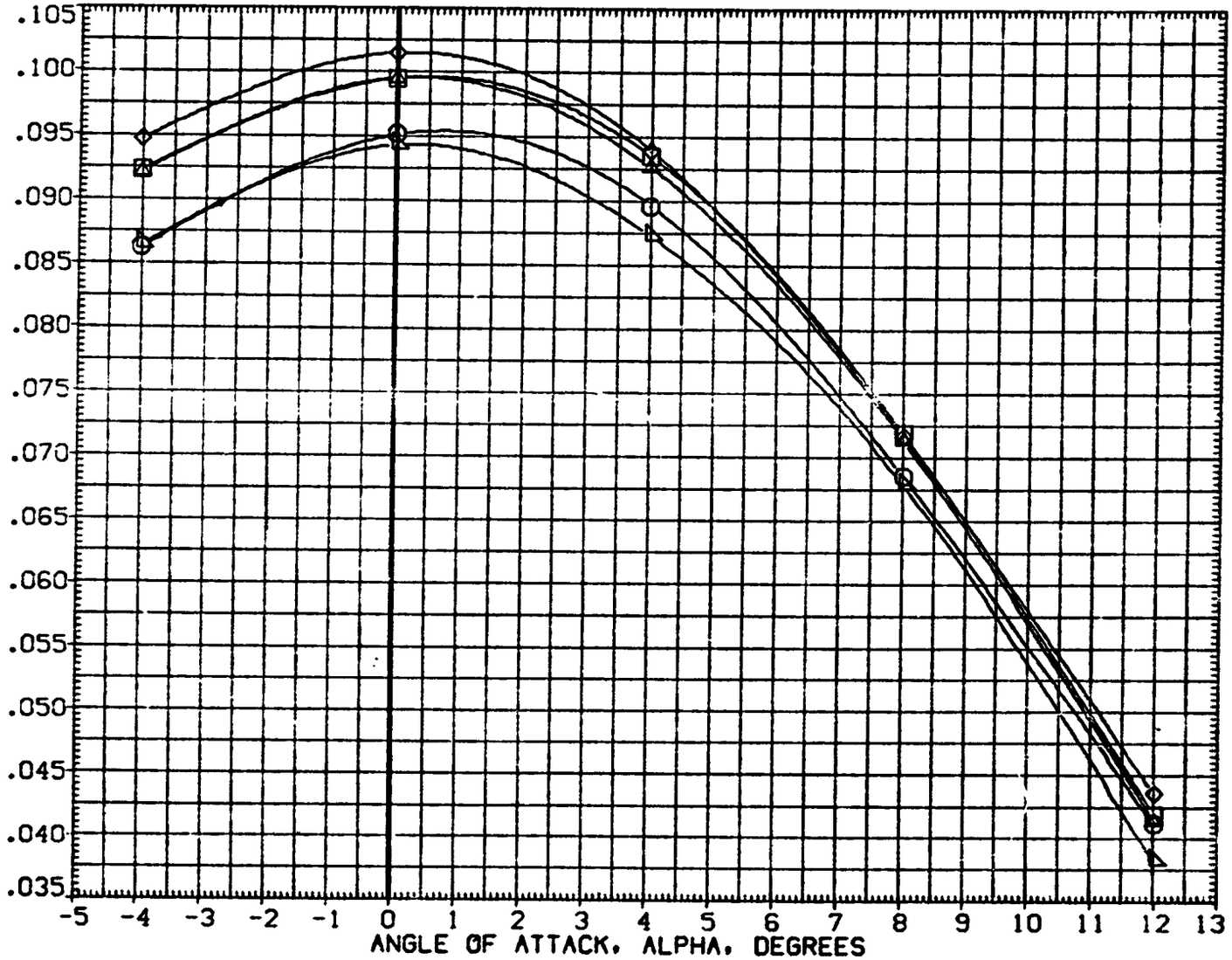


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

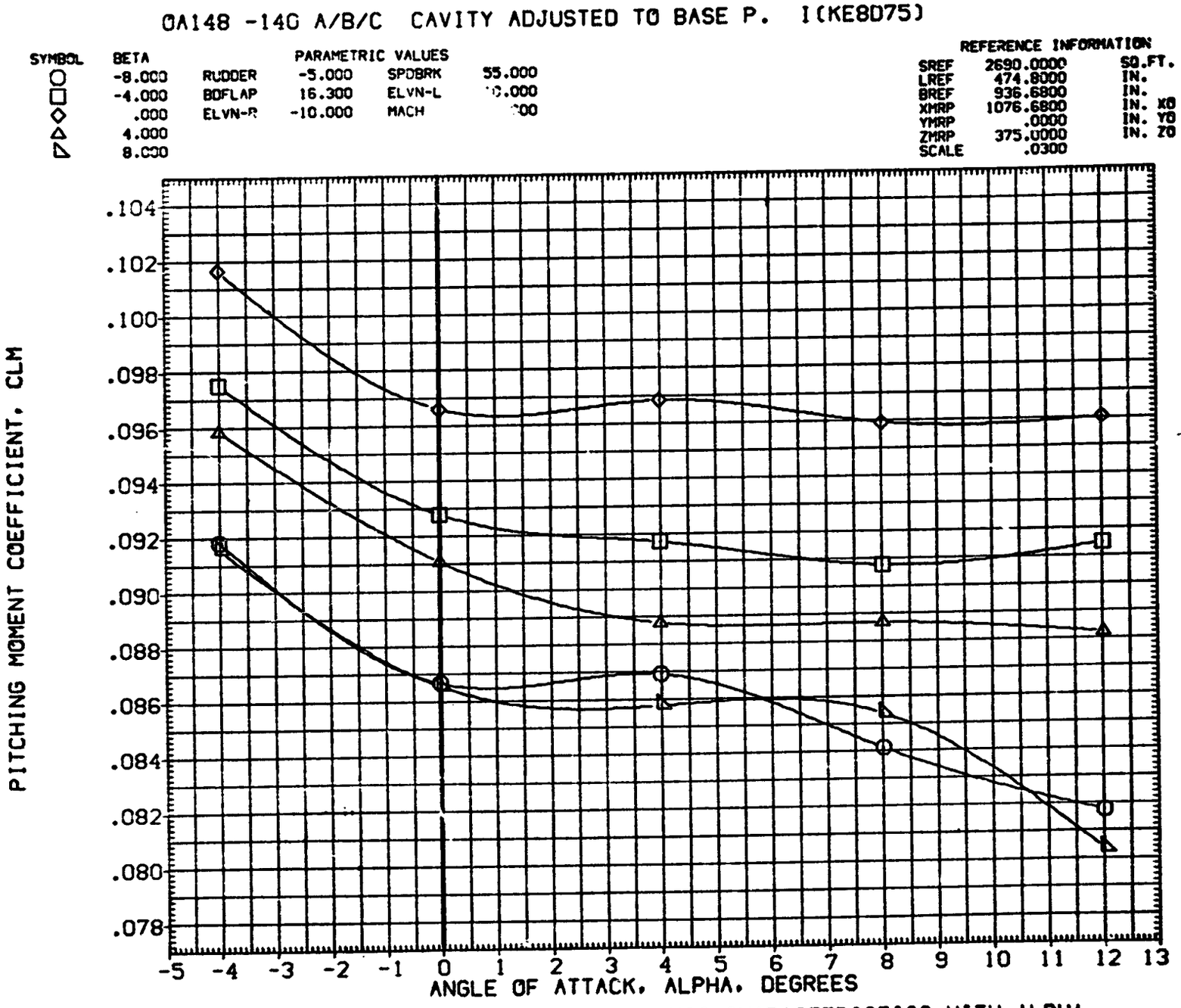


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D76)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

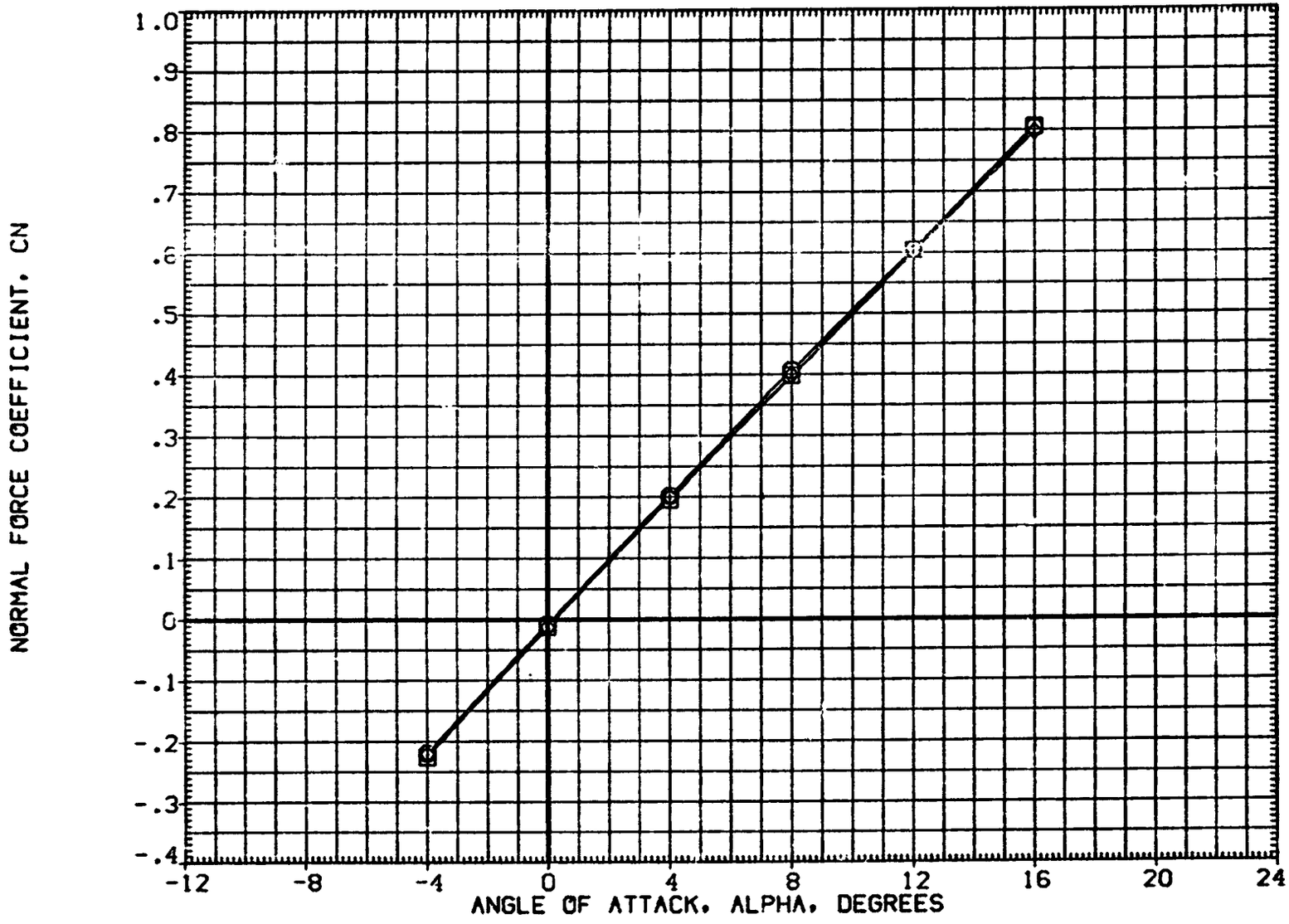


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D76)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPCBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

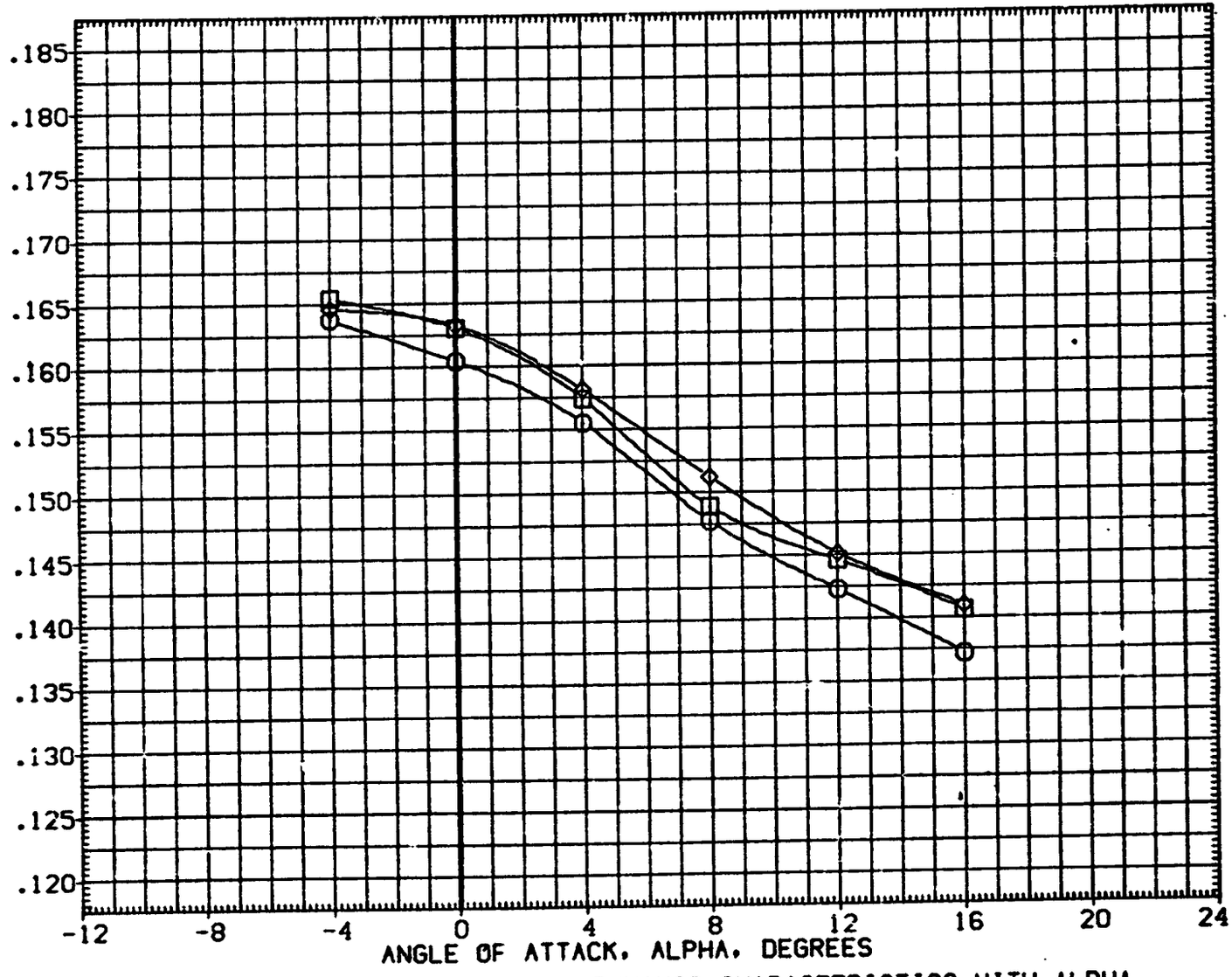


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

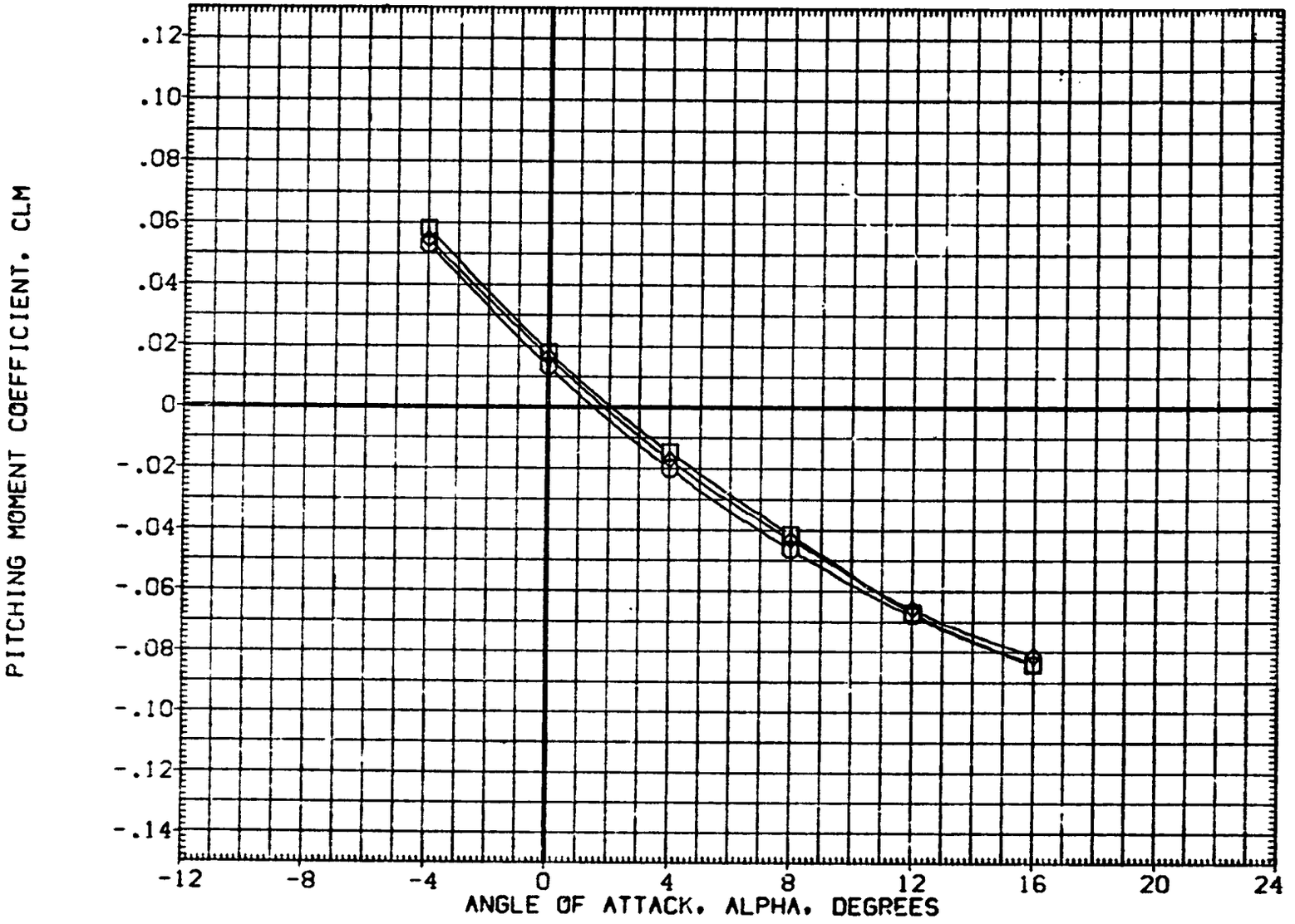


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

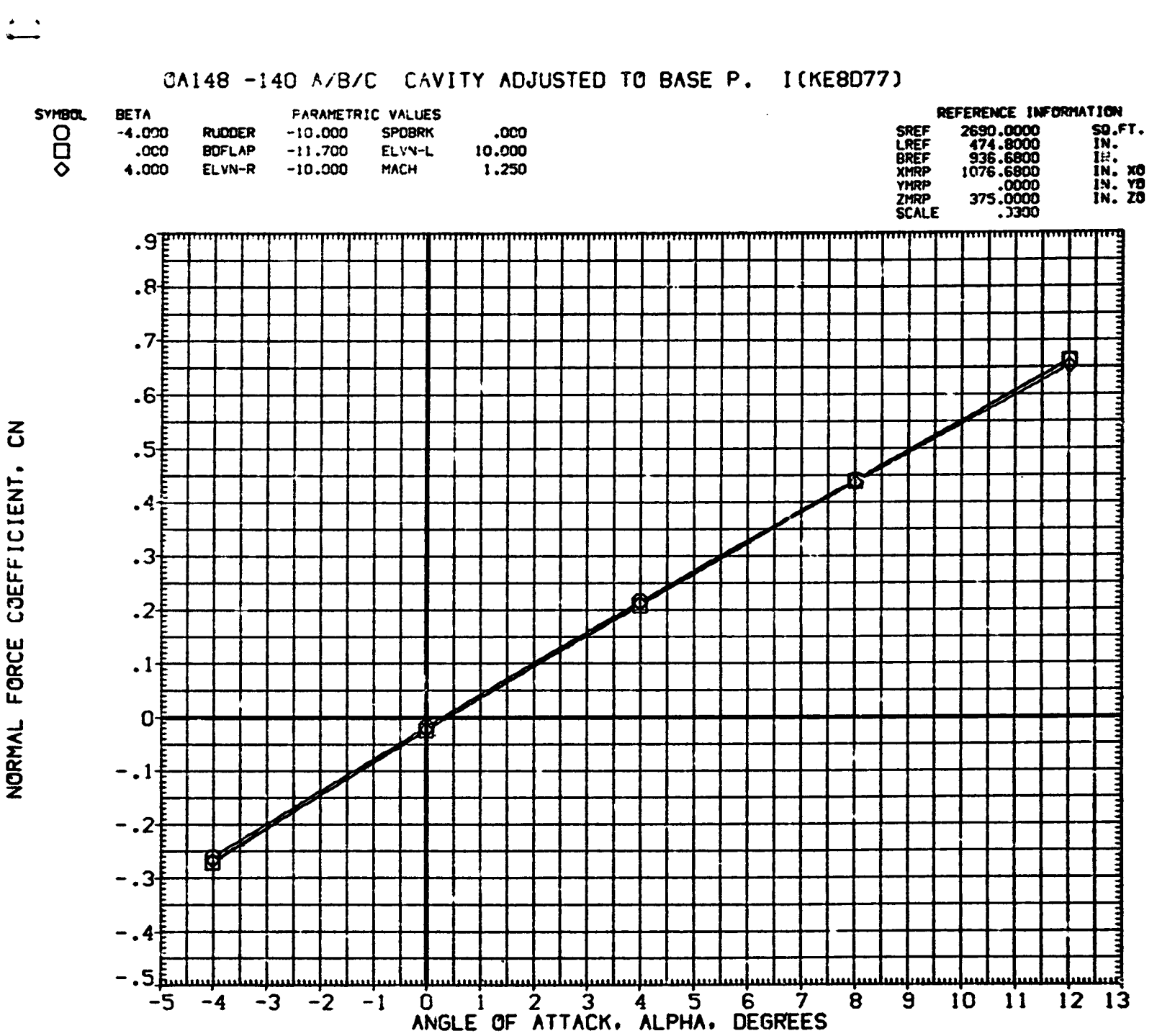


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D77)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

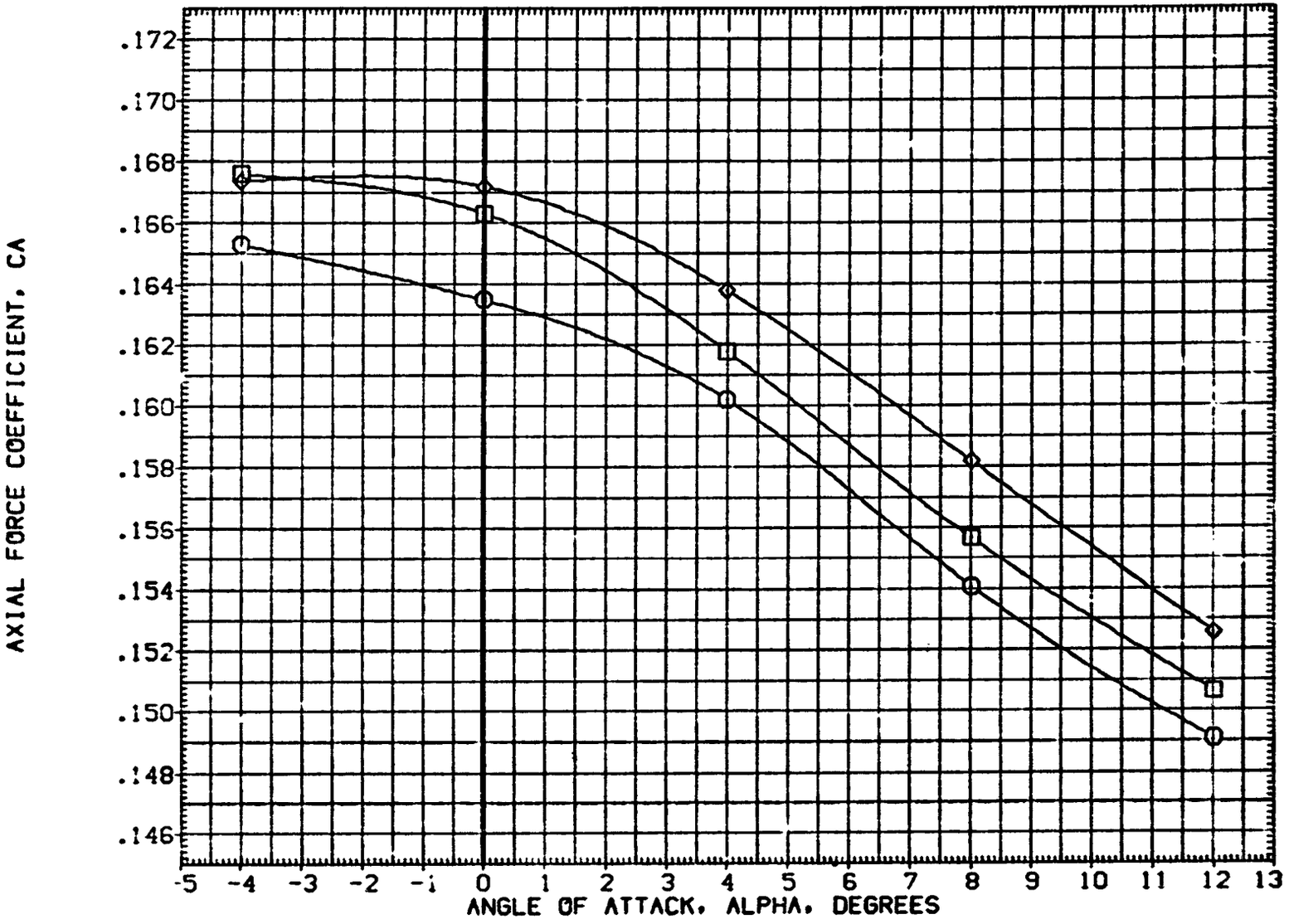


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D77)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

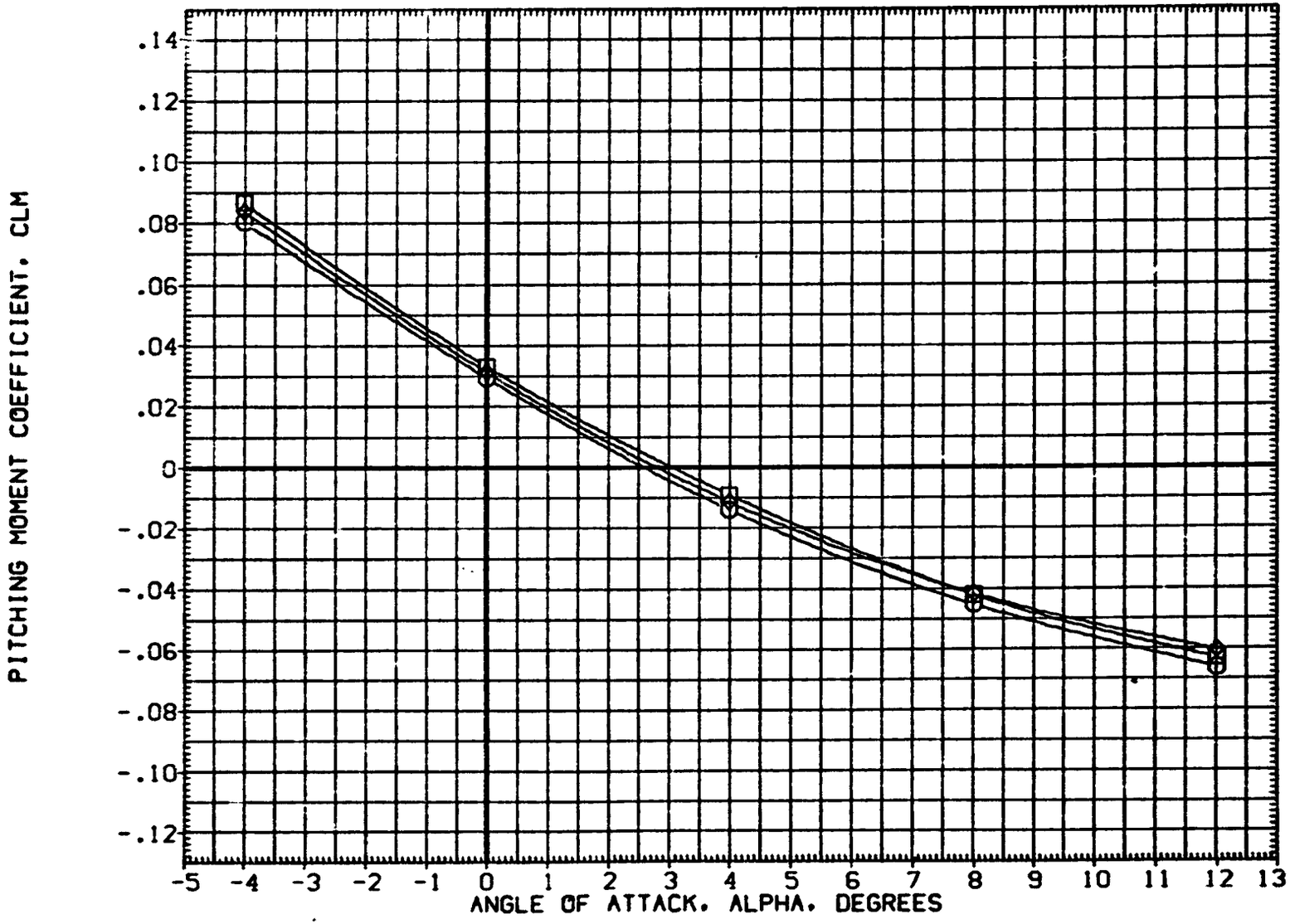


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D78)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

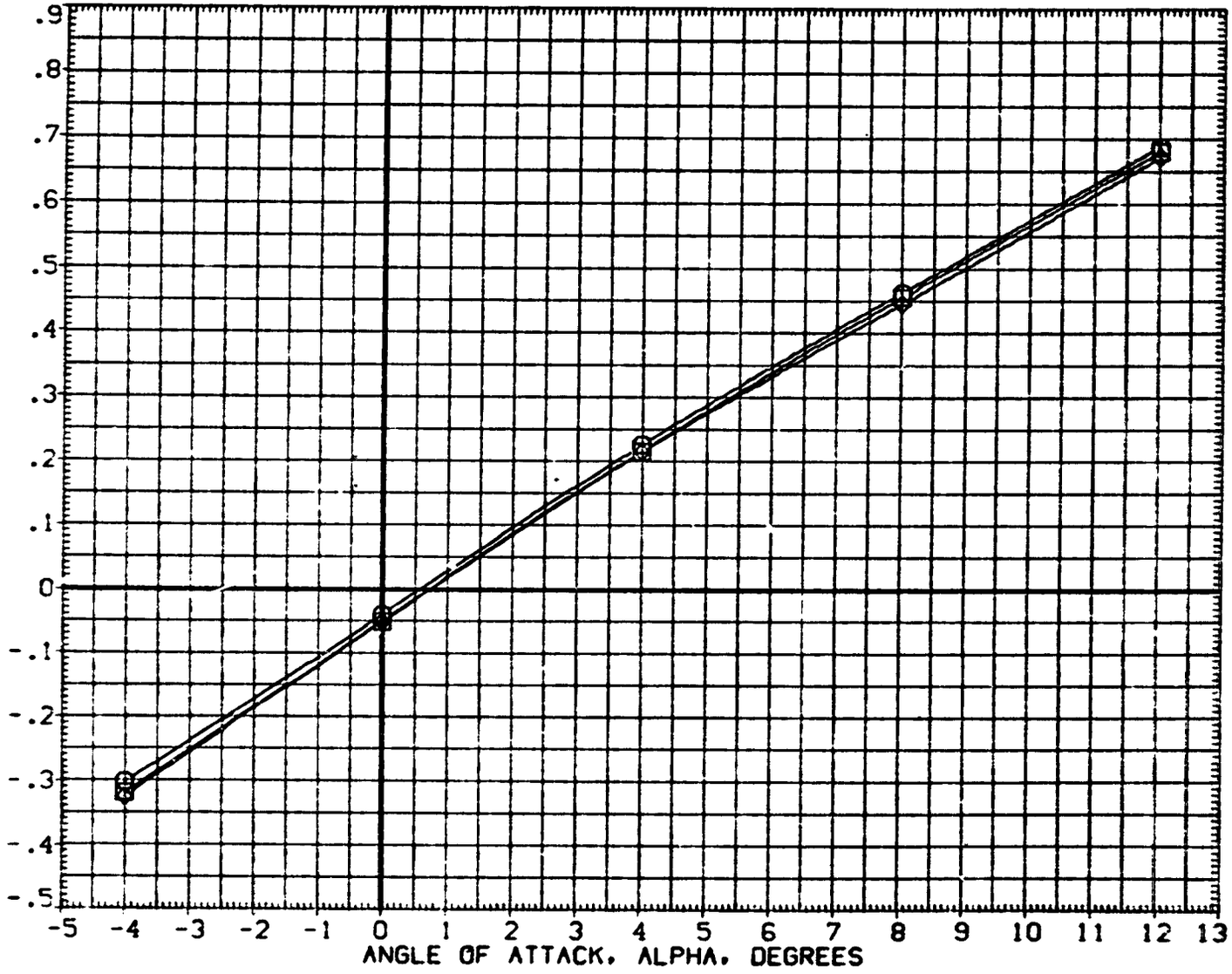


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D78)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

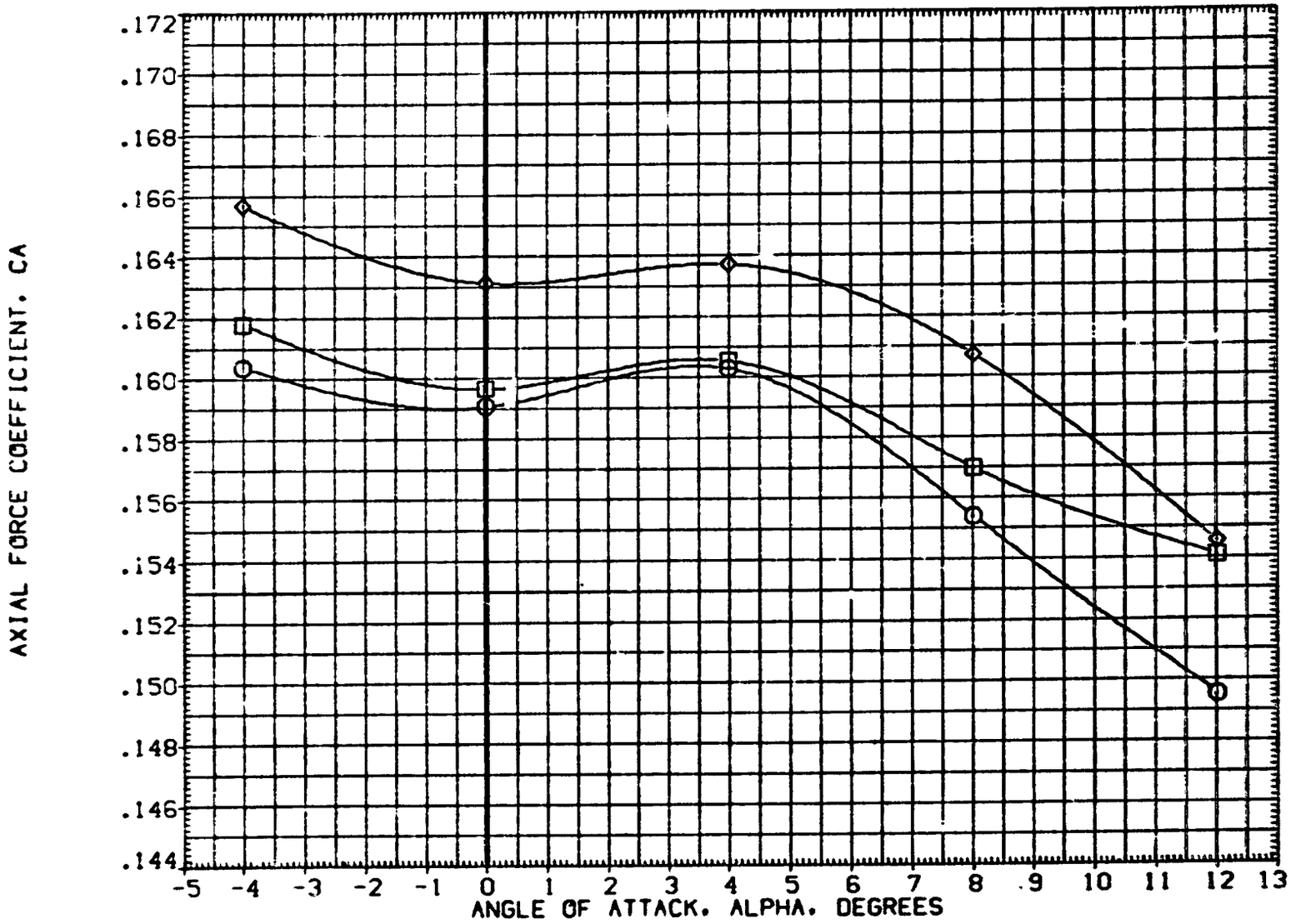


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

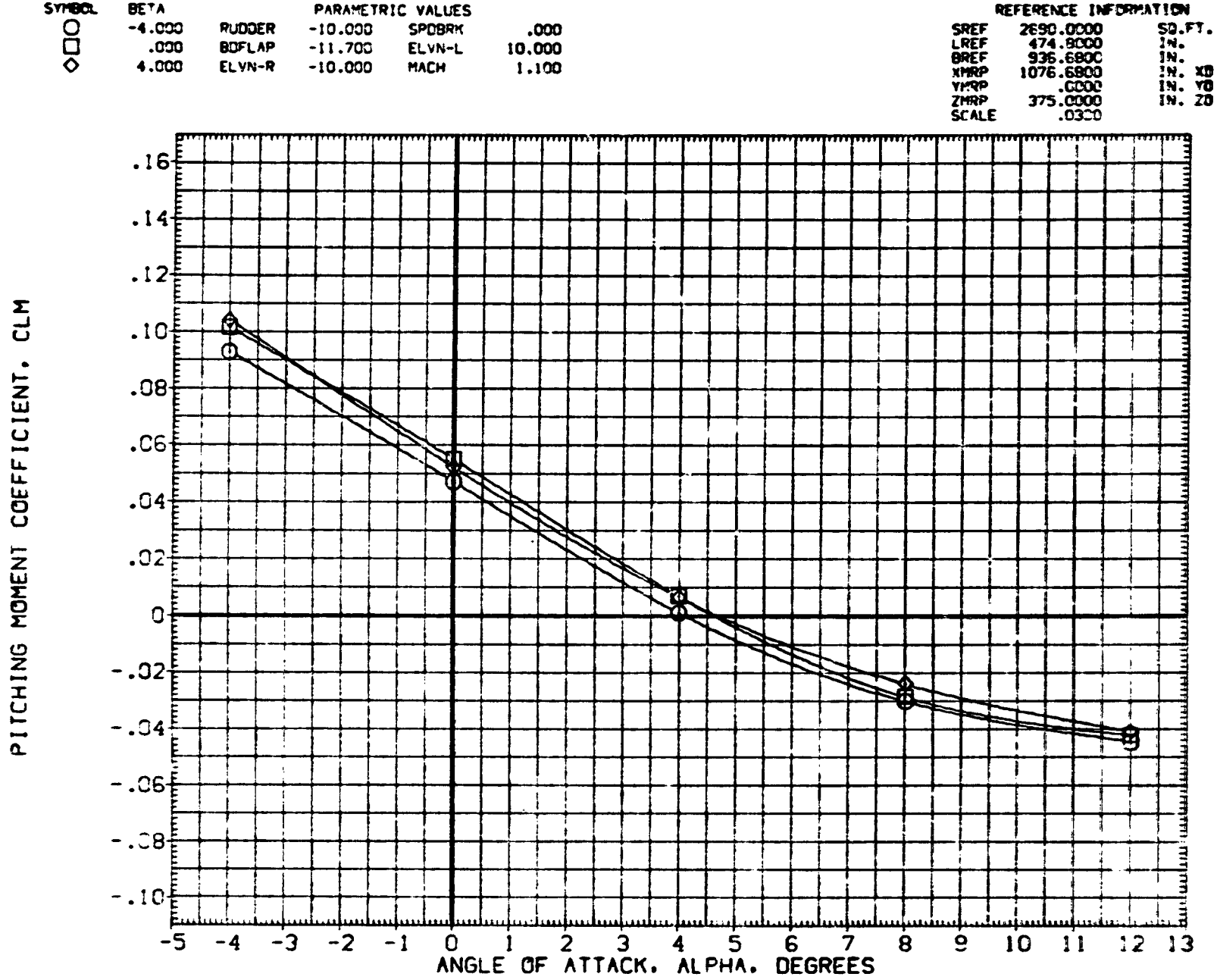


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

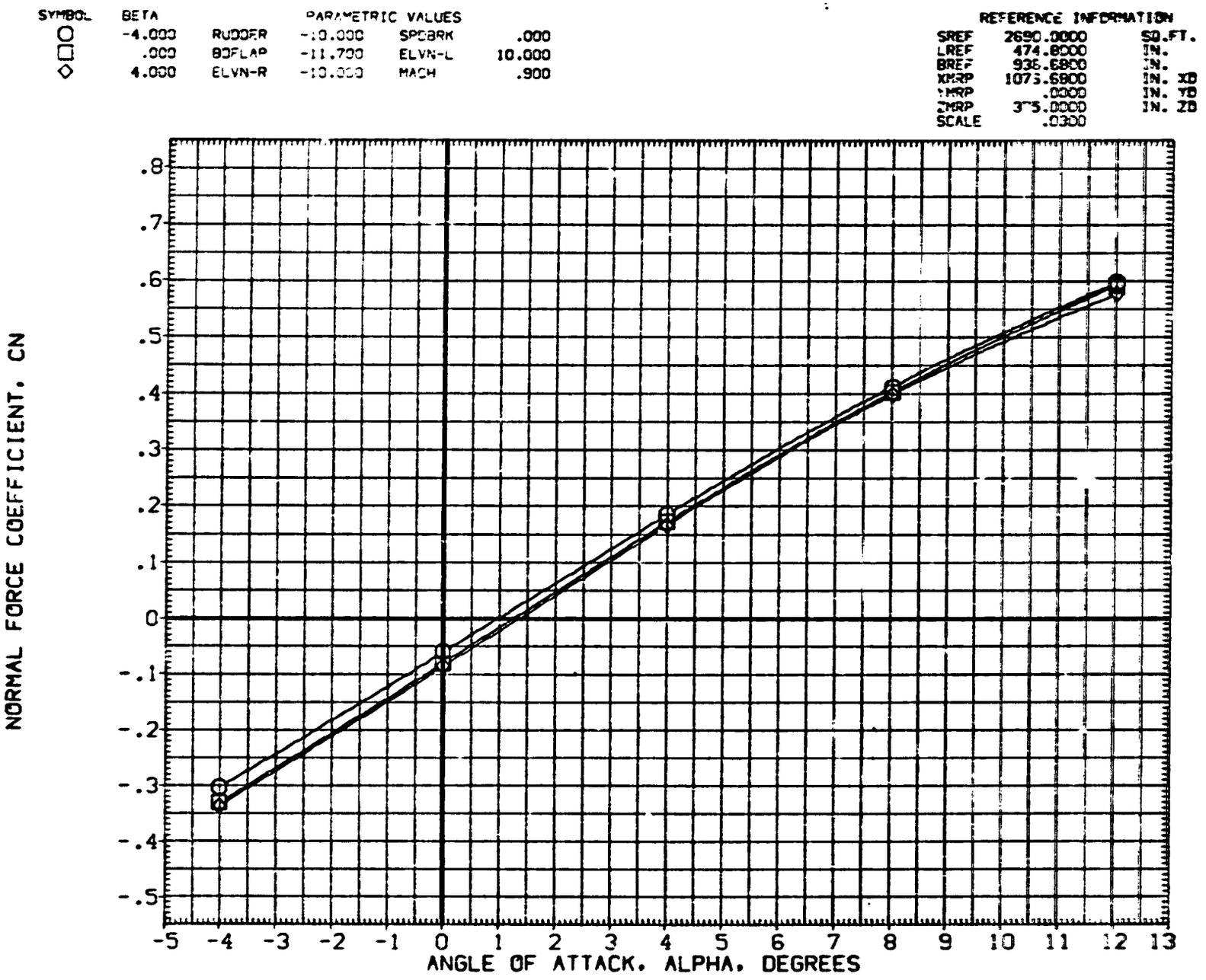


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

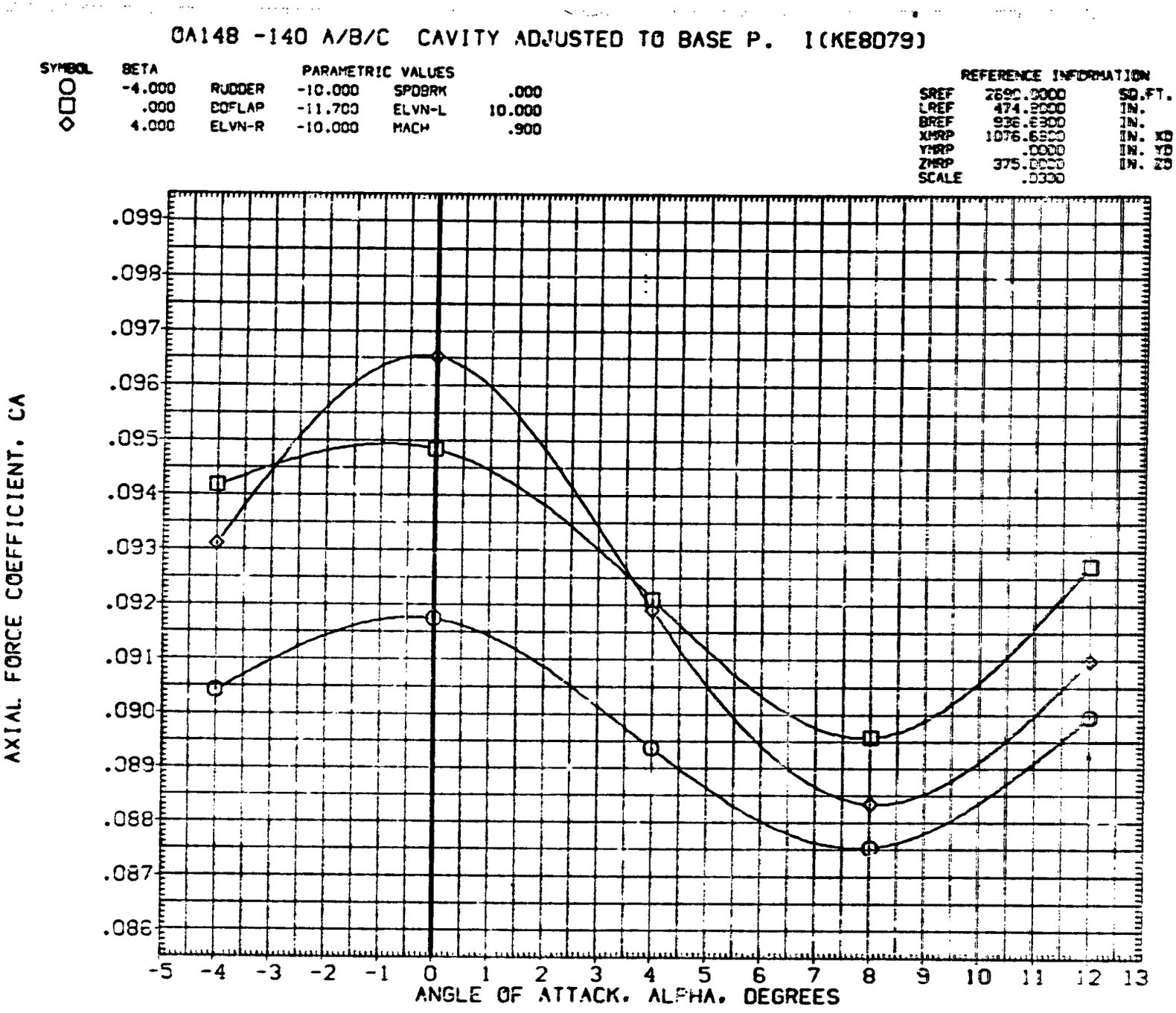


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

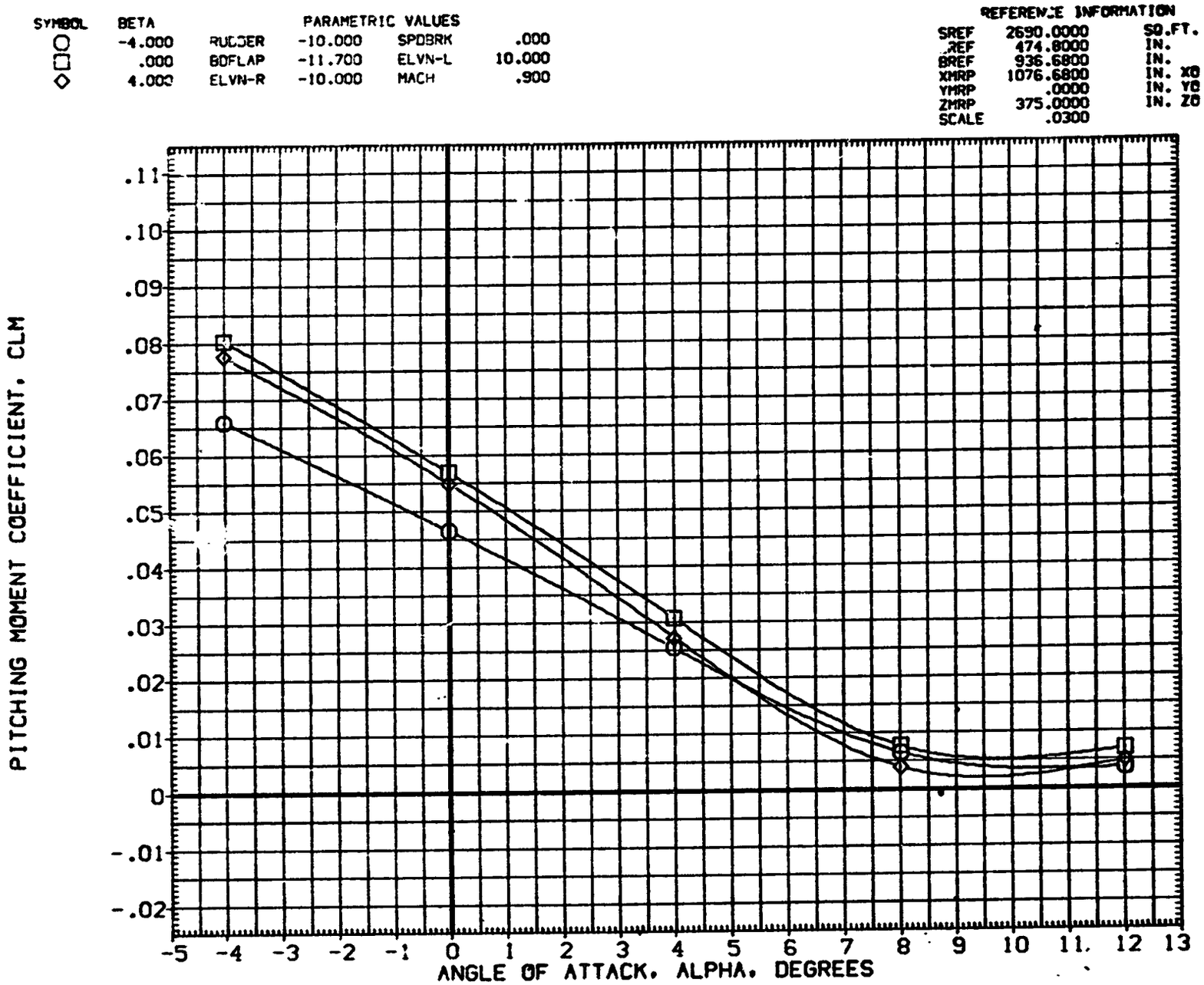


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

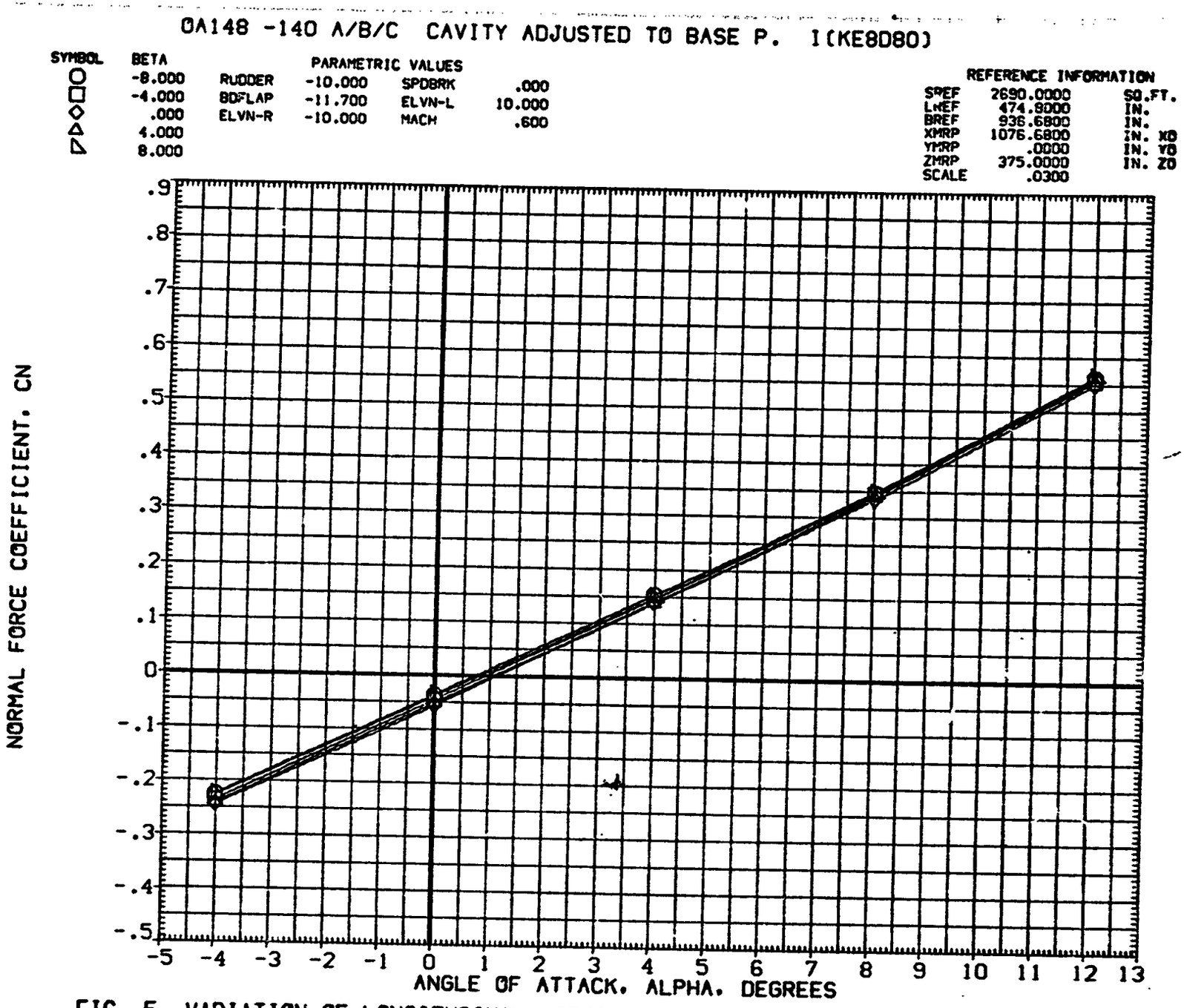


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

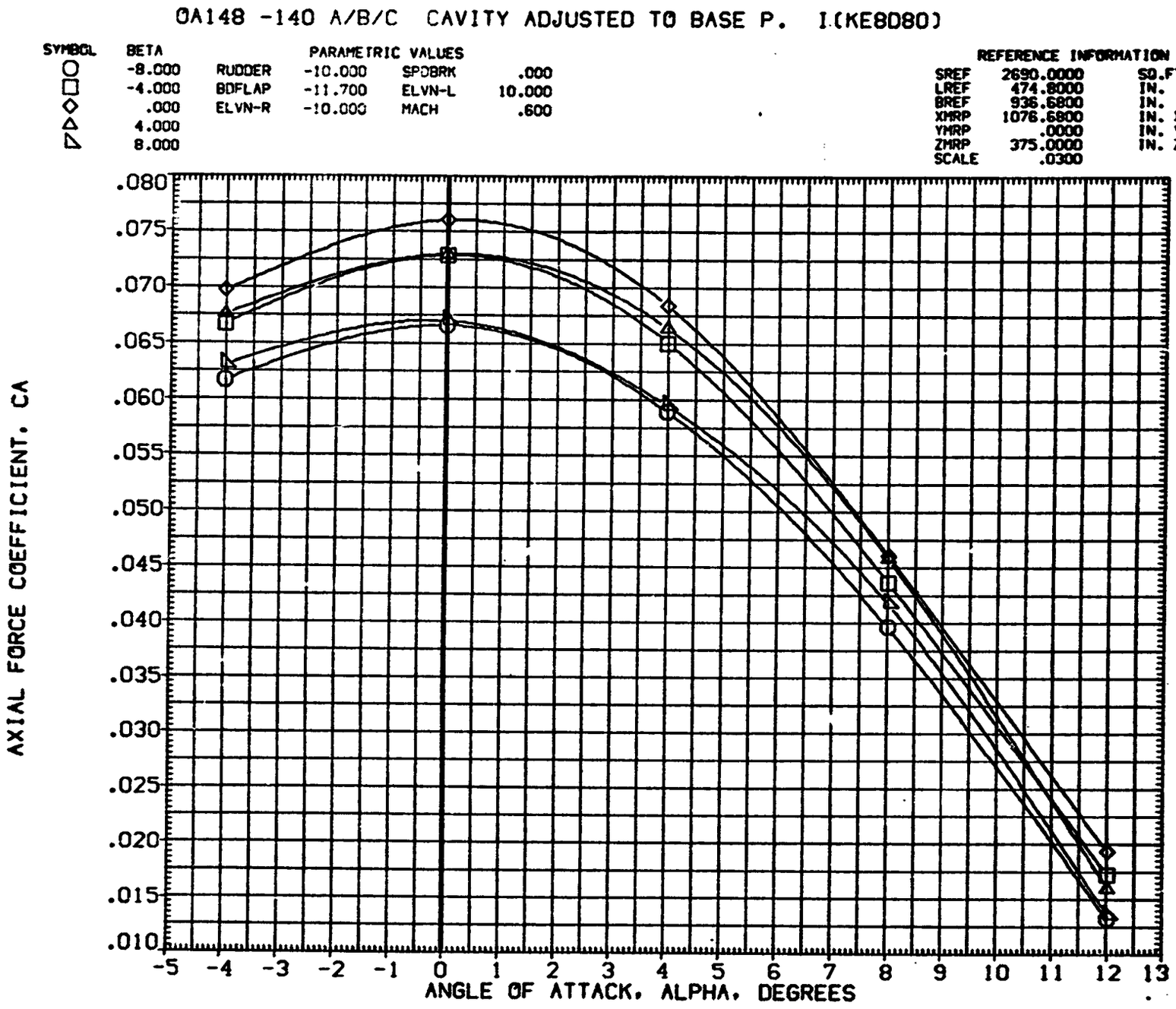


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
◁	8.000

PARAMETRIC VALUES

RUDDER	-10.000	SPDBRK	.000
BOFLAP	-11.700	ELVN-L	10.000
ELVN-R	-10.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

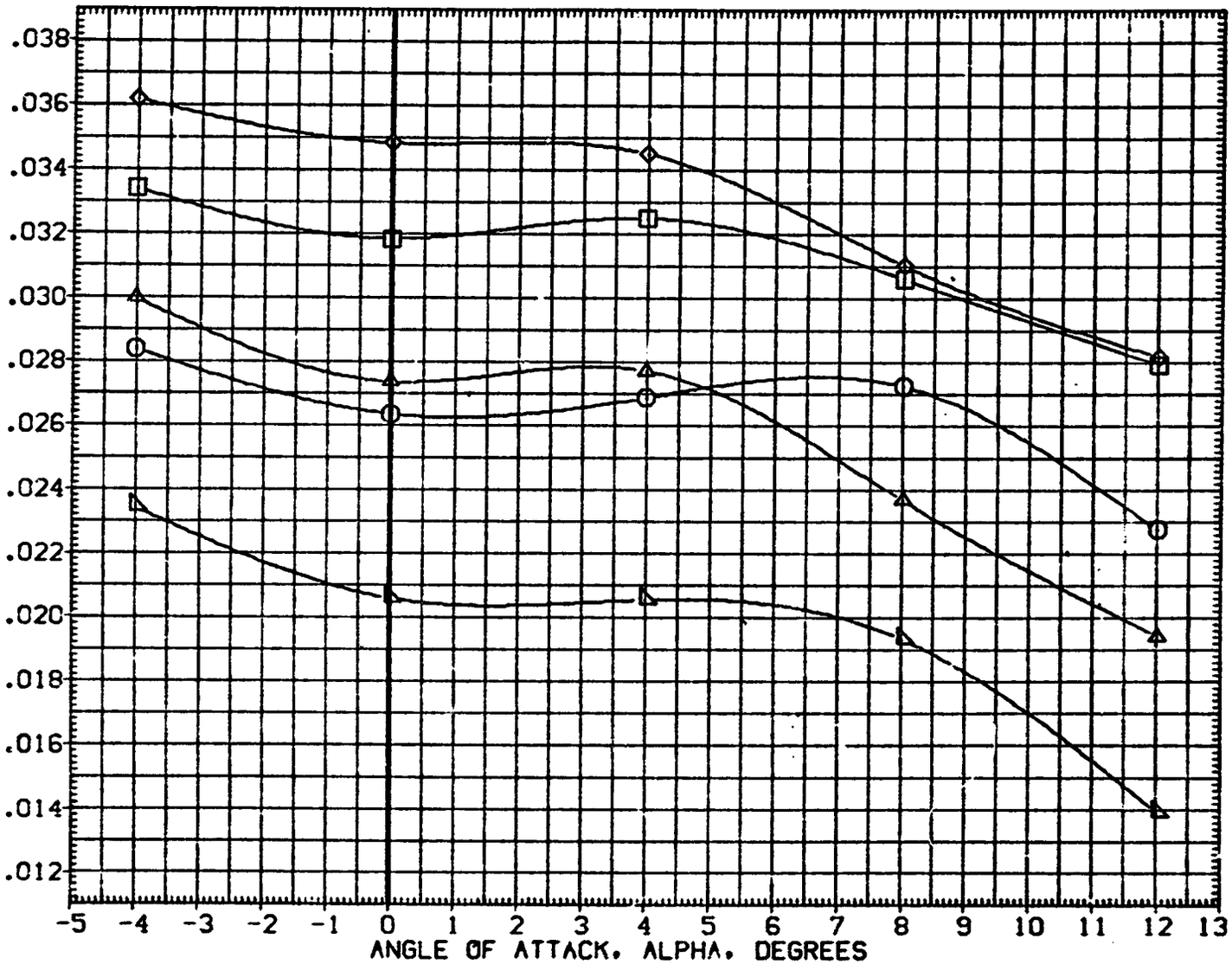


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

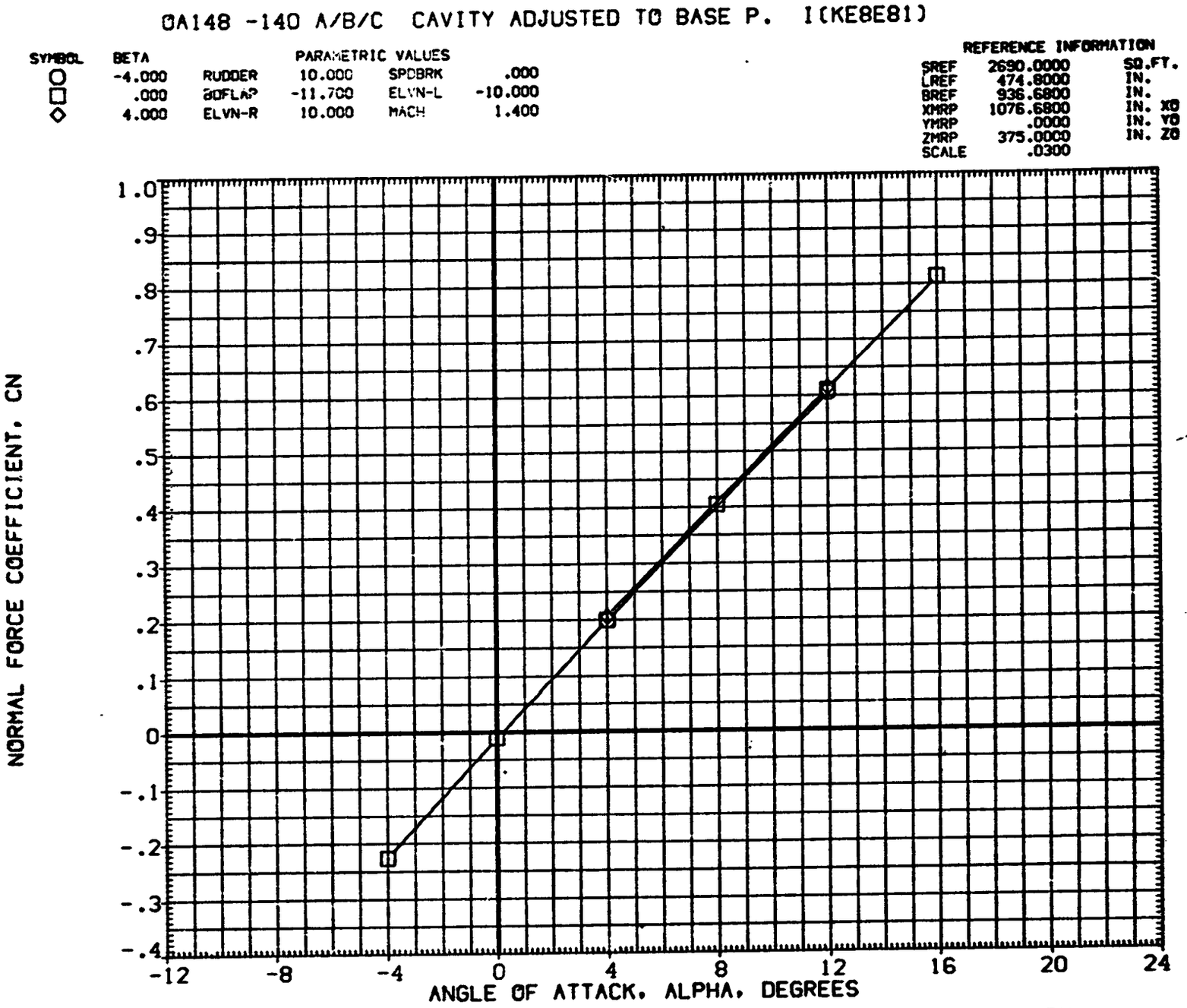


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

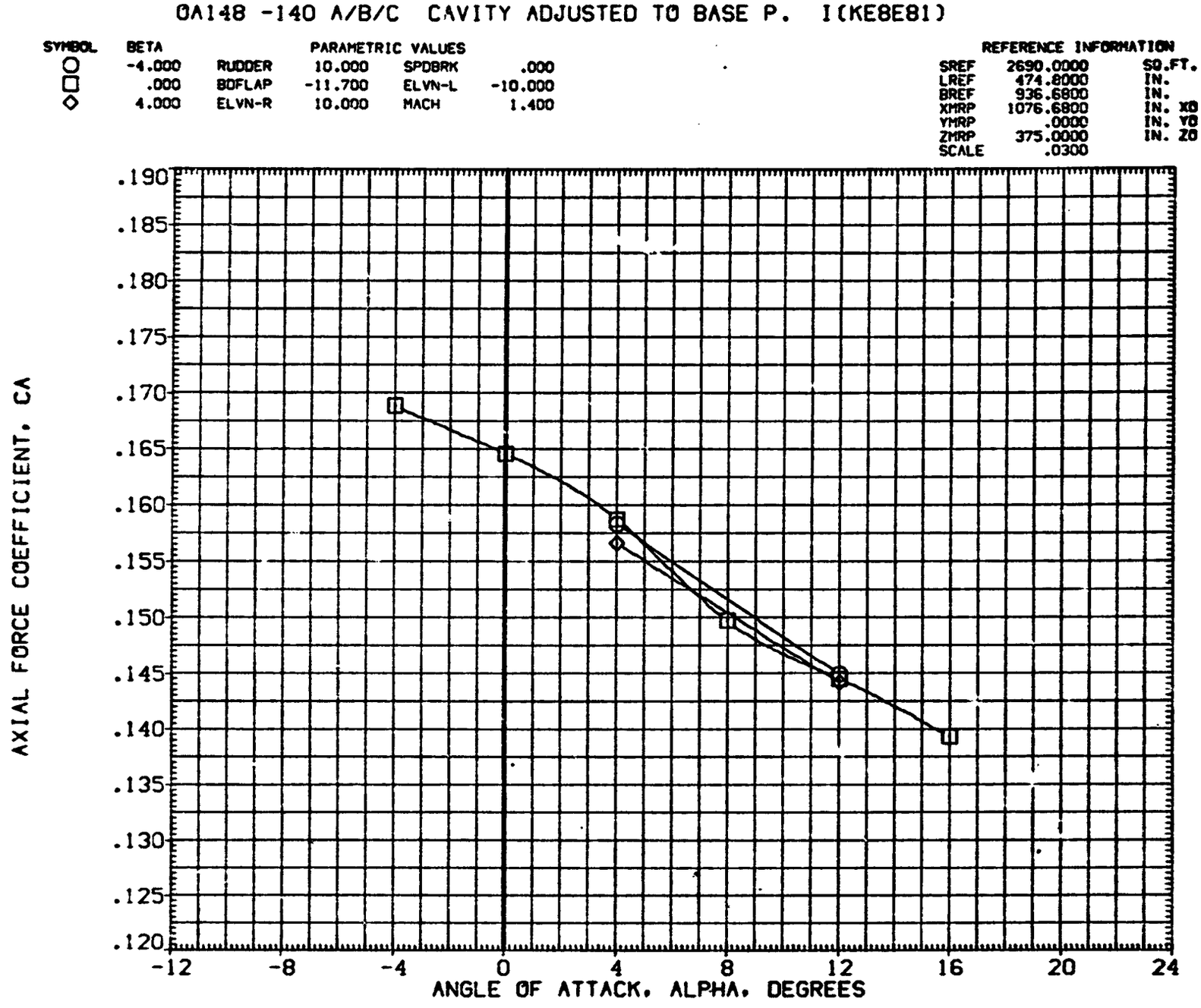


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

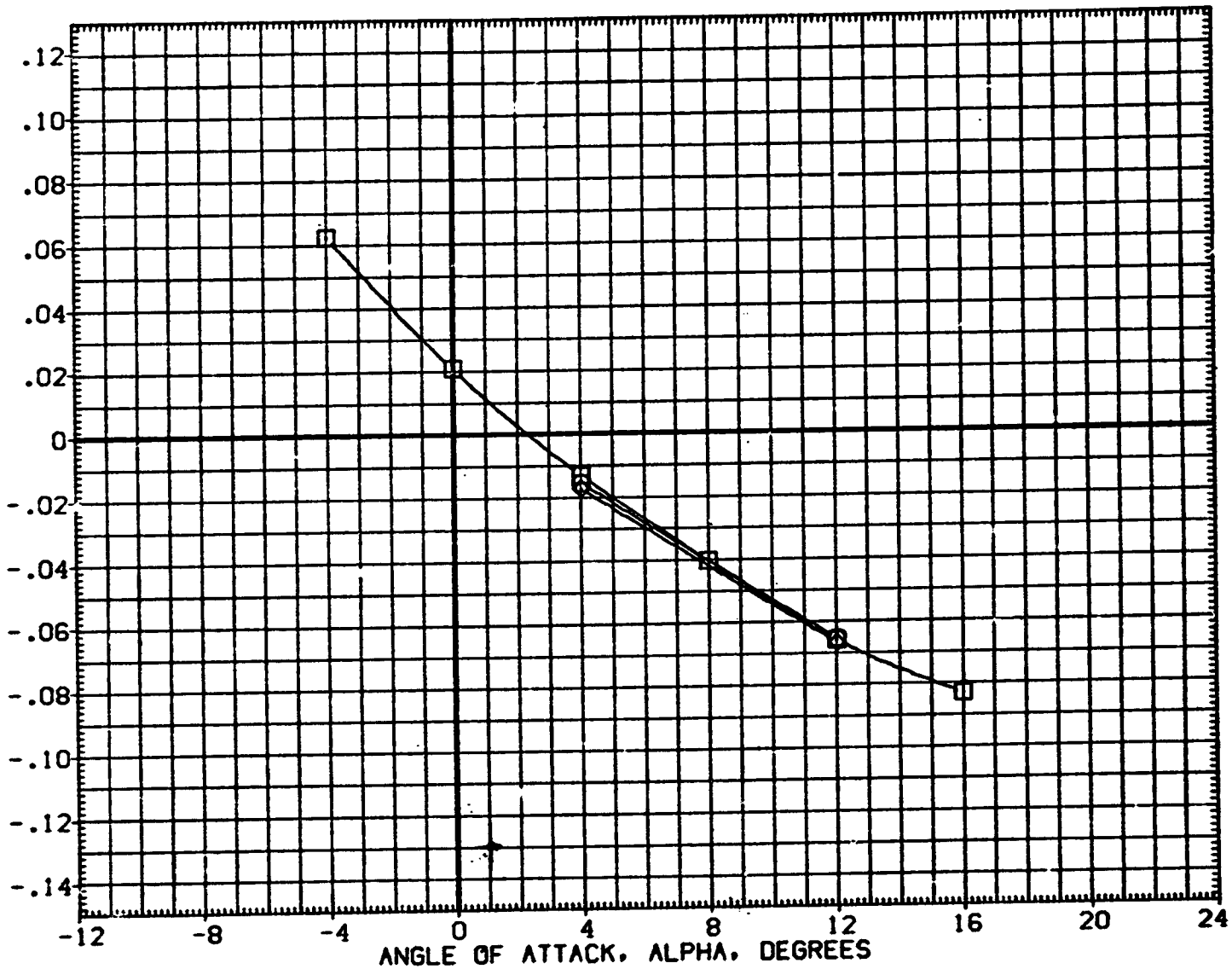


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

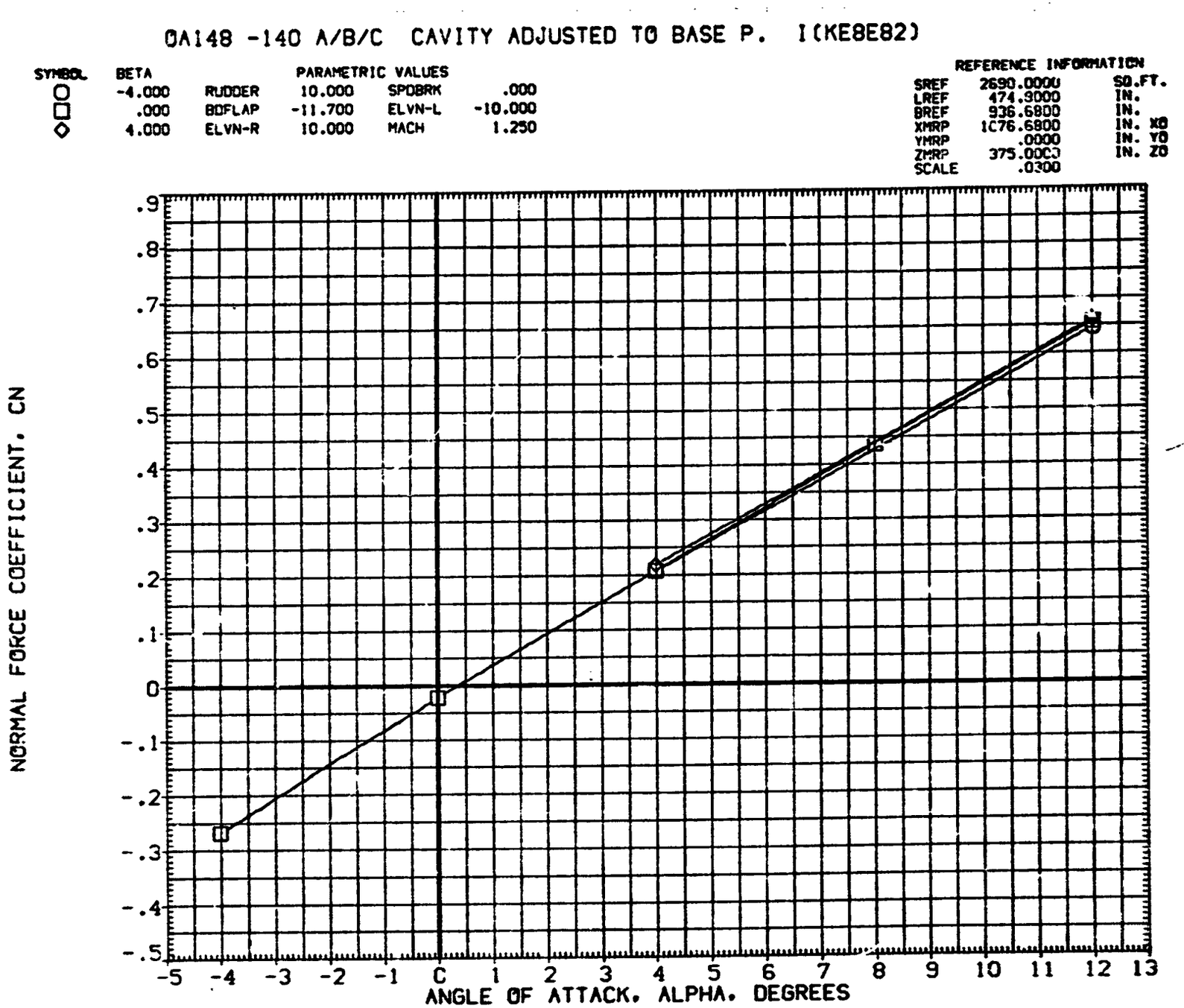


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

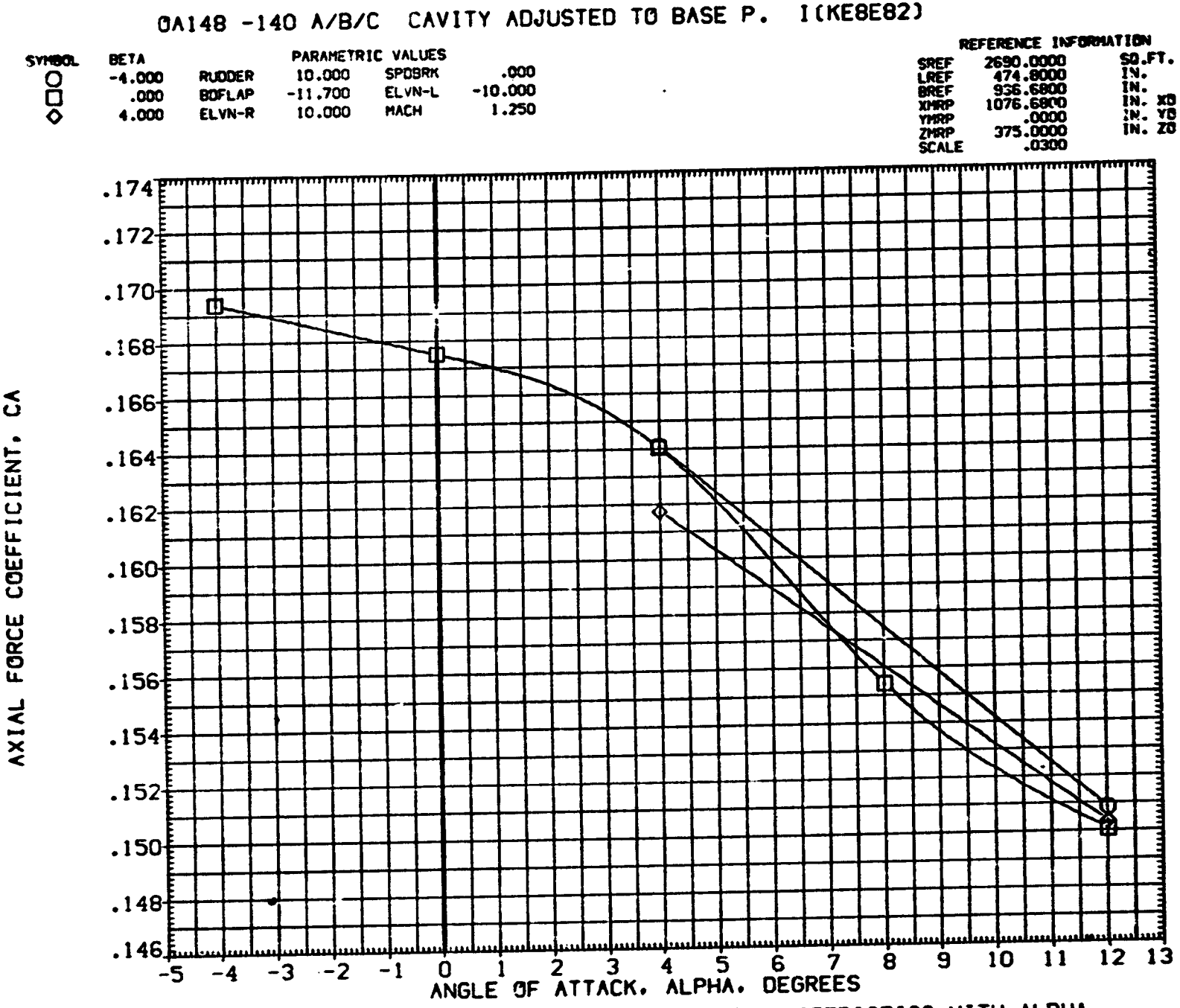


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

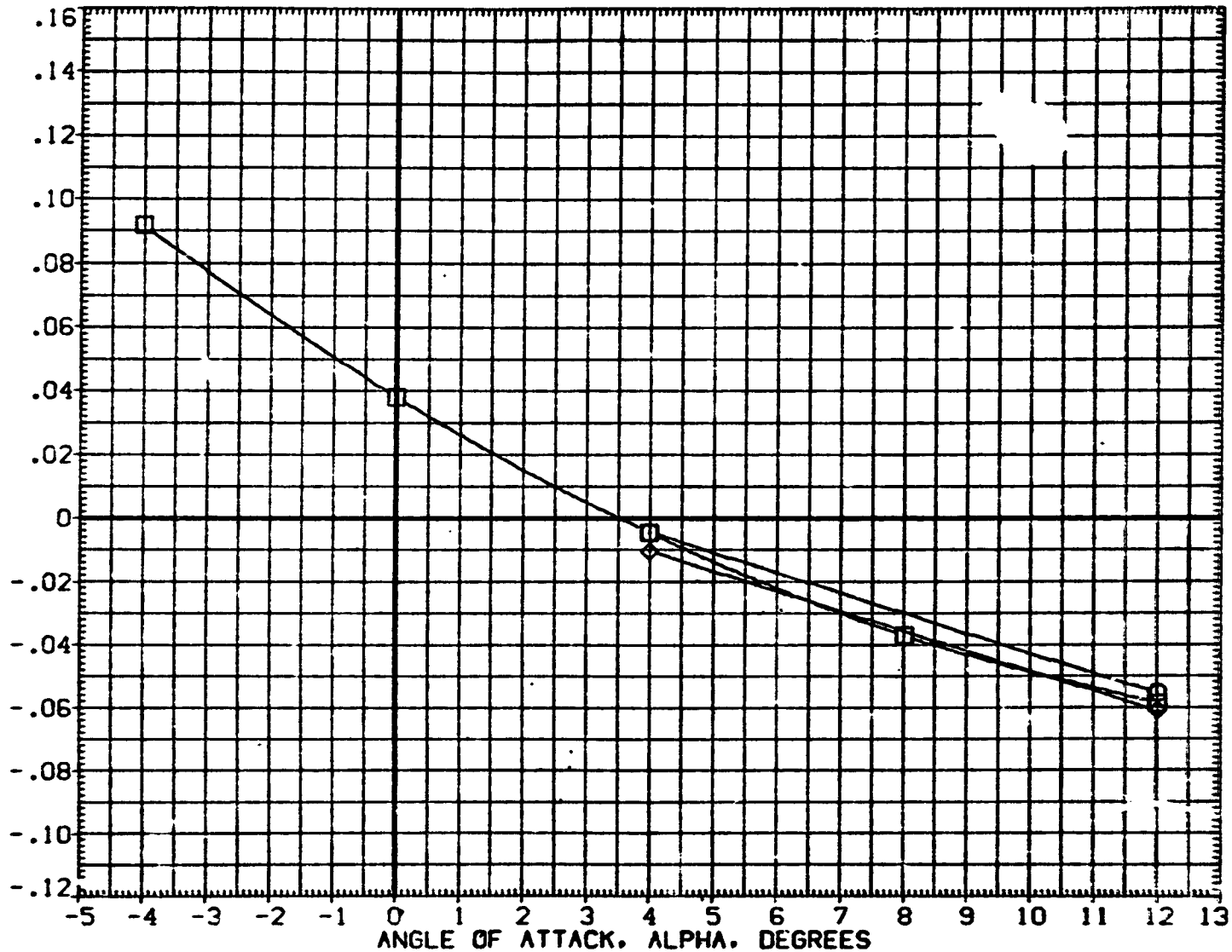


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

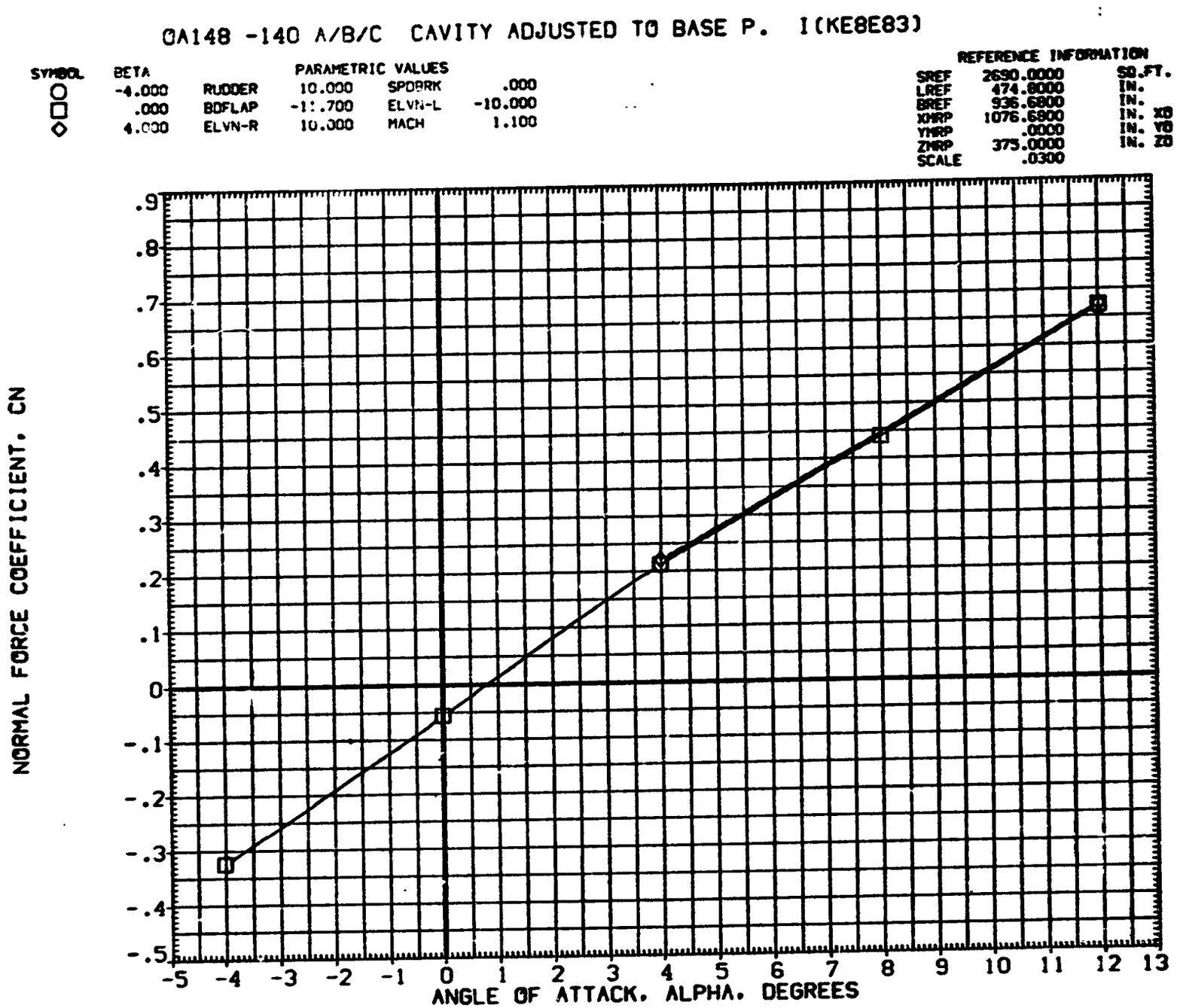


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8E83)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

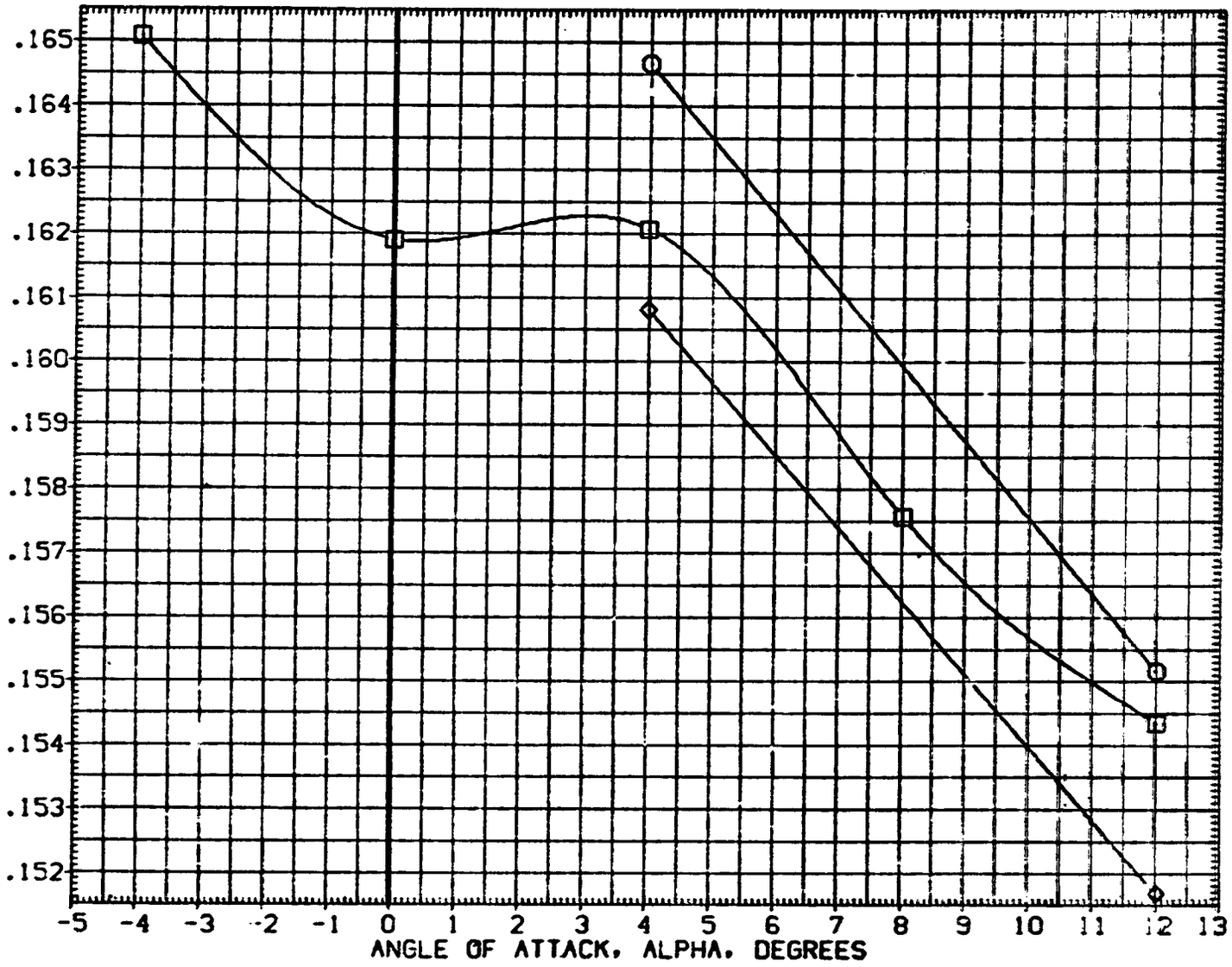


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

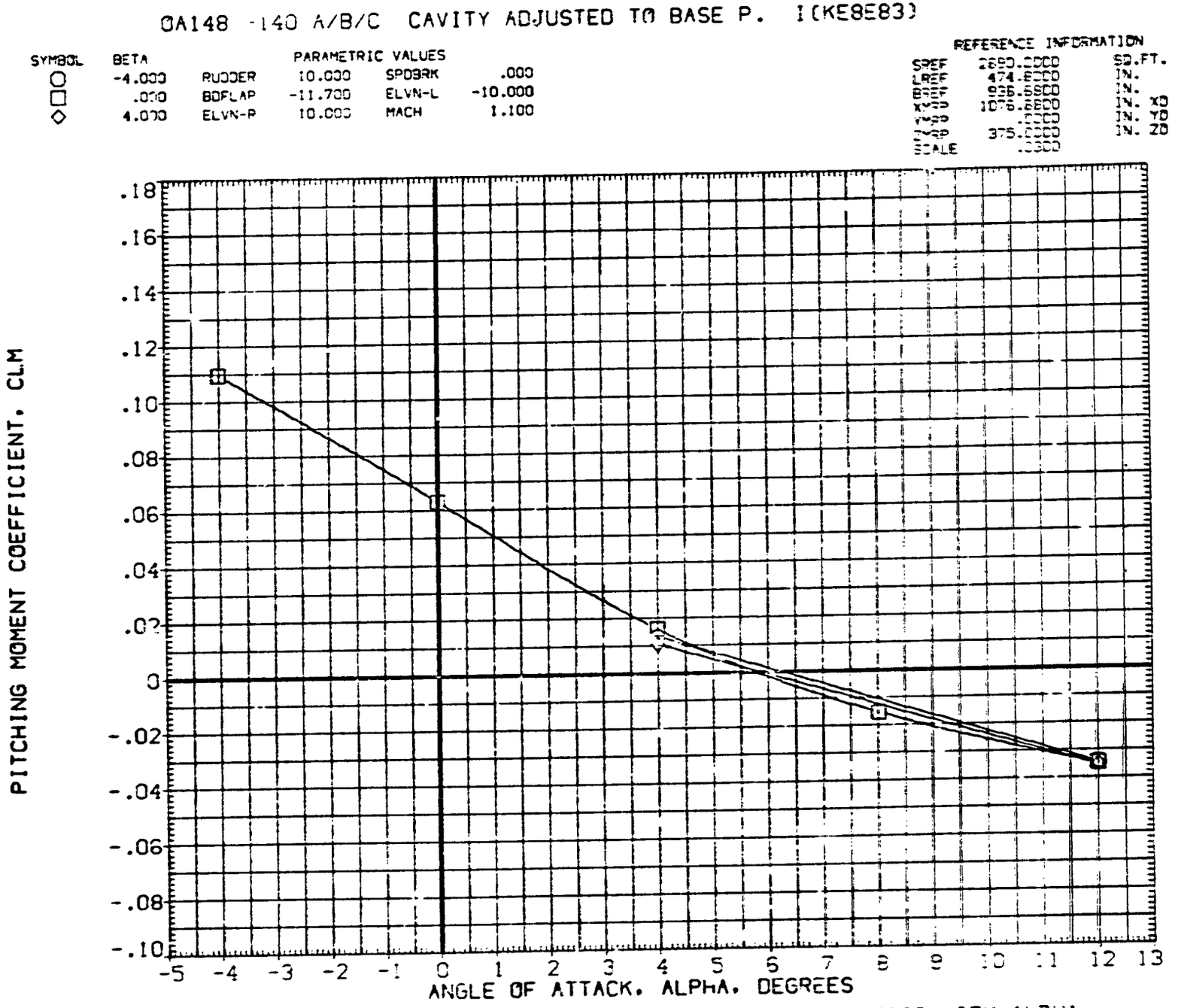


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

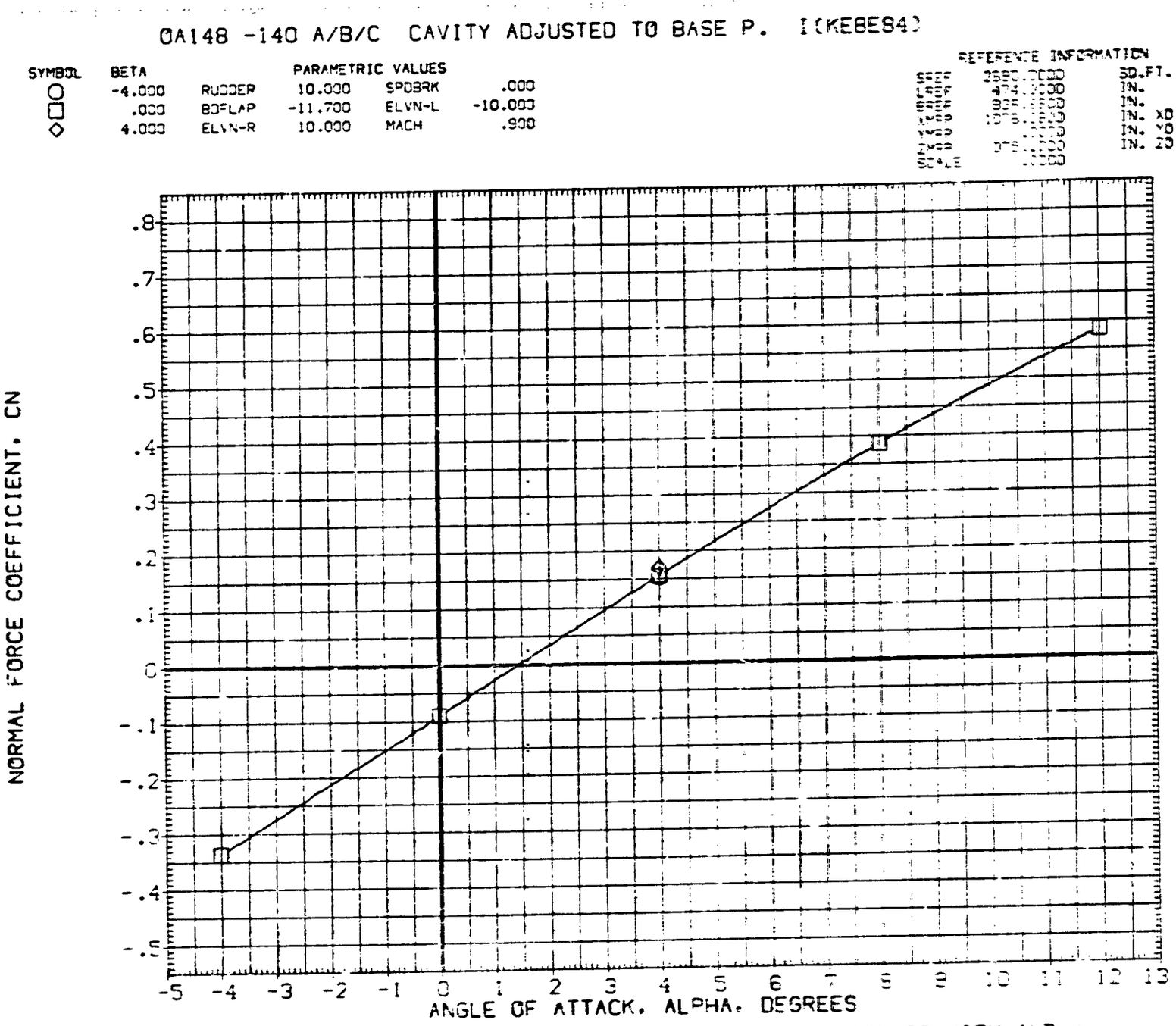


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8E84)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN
BREF	936.6600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	



FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

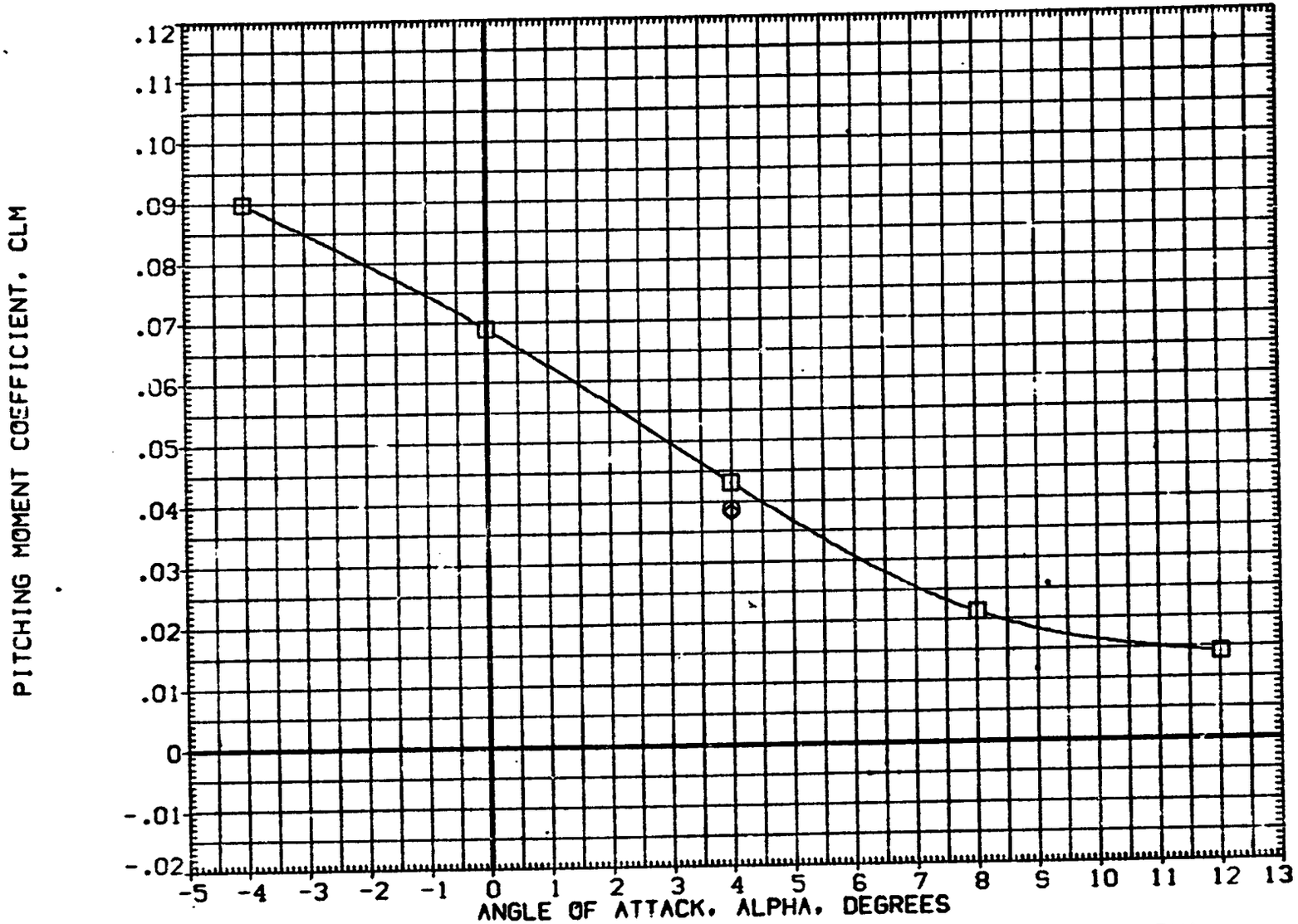


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D85)

SYMBOL	BETA		PARAMETRIC VALUES		
O	.000	RUDDER	10.000	SPDBRK	.000
		BDFLAP	-11.700	ELVN-L	-10.000
		ELVN-R	10.000	MACH	.600

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.2800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

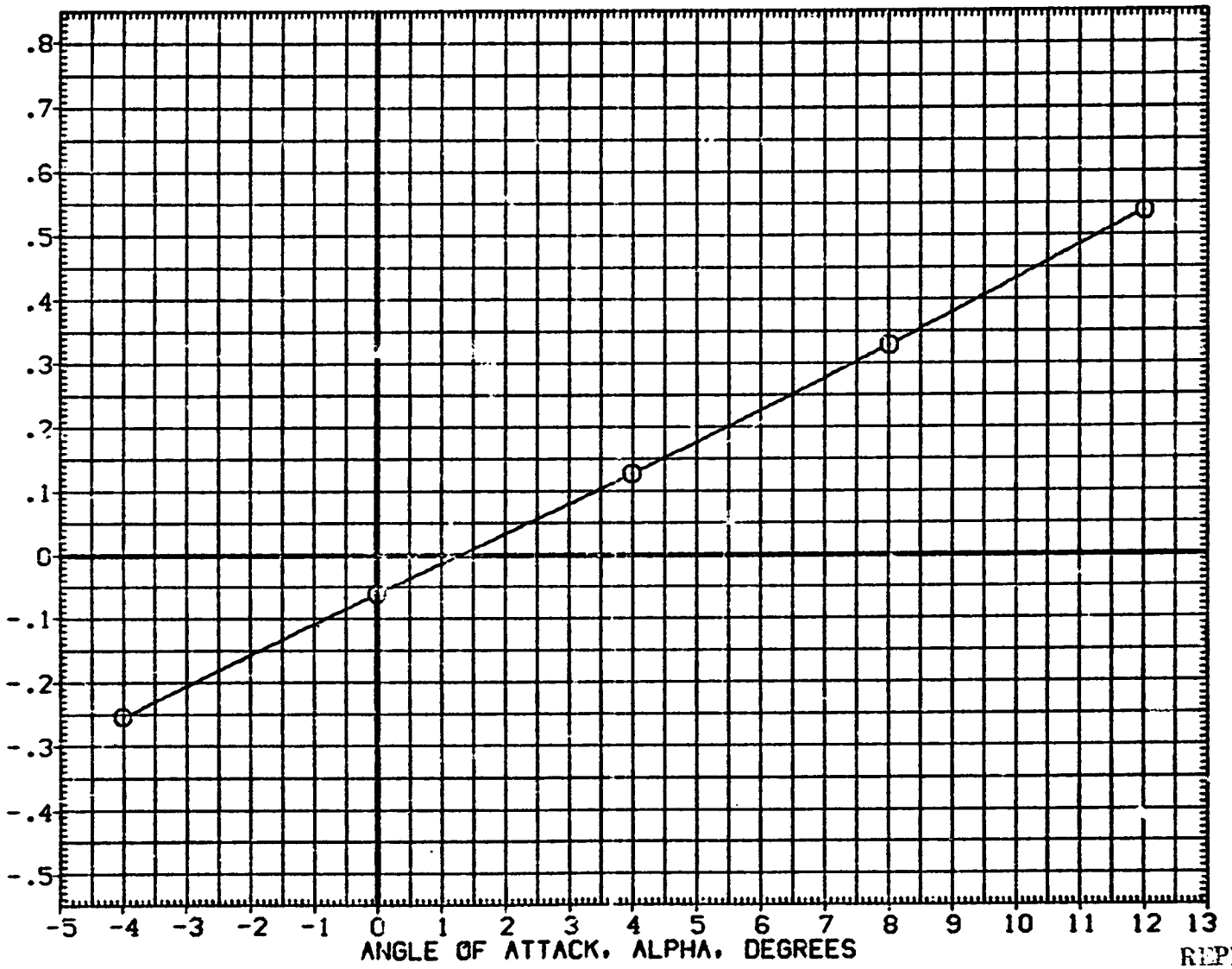


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

0A148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D85)

SYMBOL	BETA		PARAMETRIC VALUES		
O	.000	RUDDER	10.000	SPDBRK	.000
		BDFLAP	-11.700	ELVN-L	-10.000
		ELVN-R	10.000	MACH	.600

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

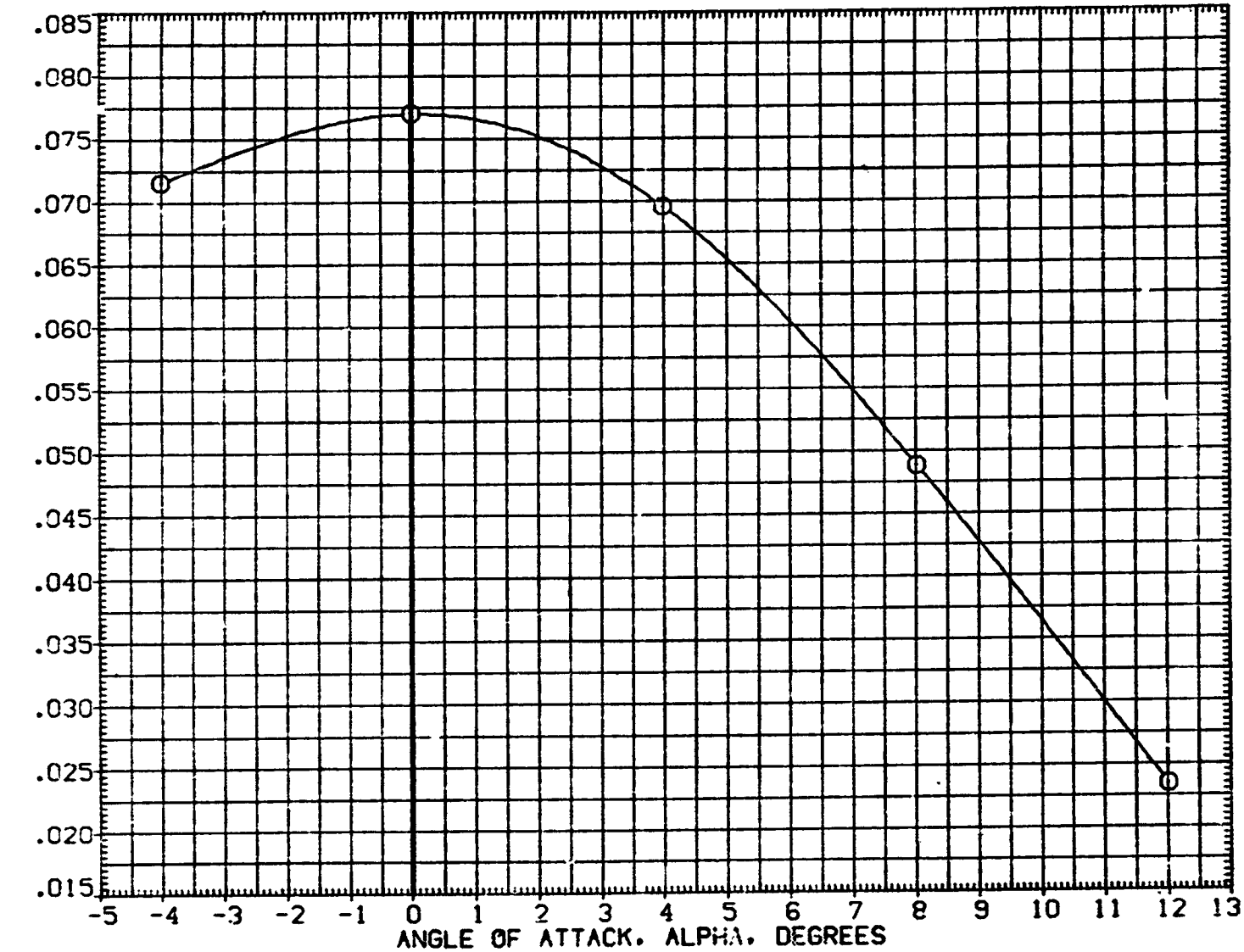


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C CAVITY ADJUSTED TO BASE P. I(KE8D85)

SYMBOL	BETA		PARAMETRIC VALUES		
○	.000	RUDDER	10.000	SPDBRK	.000
		BDFLAP	-11.700	ELVN-L	-10.000
		ELVN-R	10.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0300	IN. ZO
SCALE	.0300	

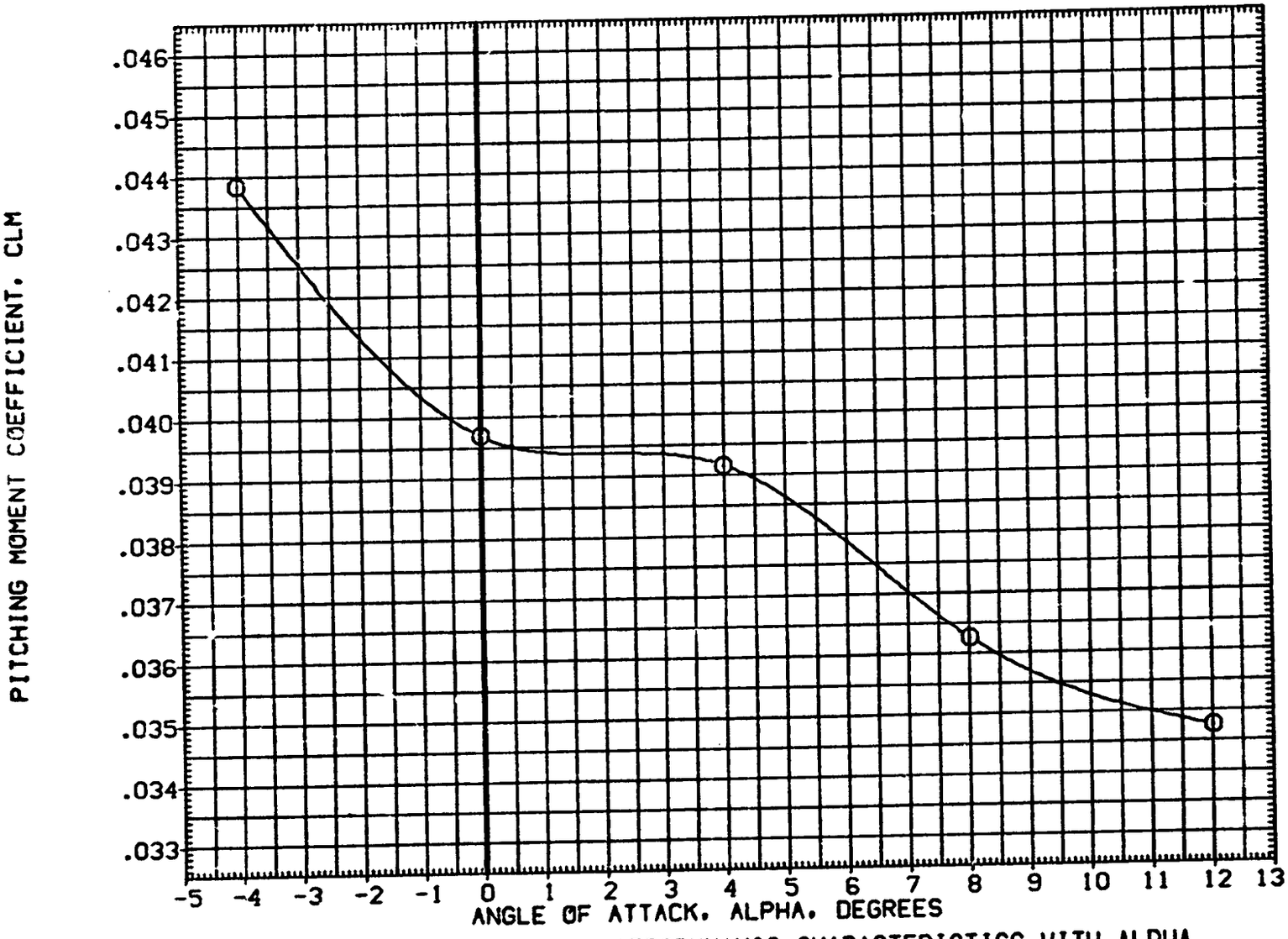


FIG. 5 VARIATION OF LONGITUDINAL AERODYNAMIC CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

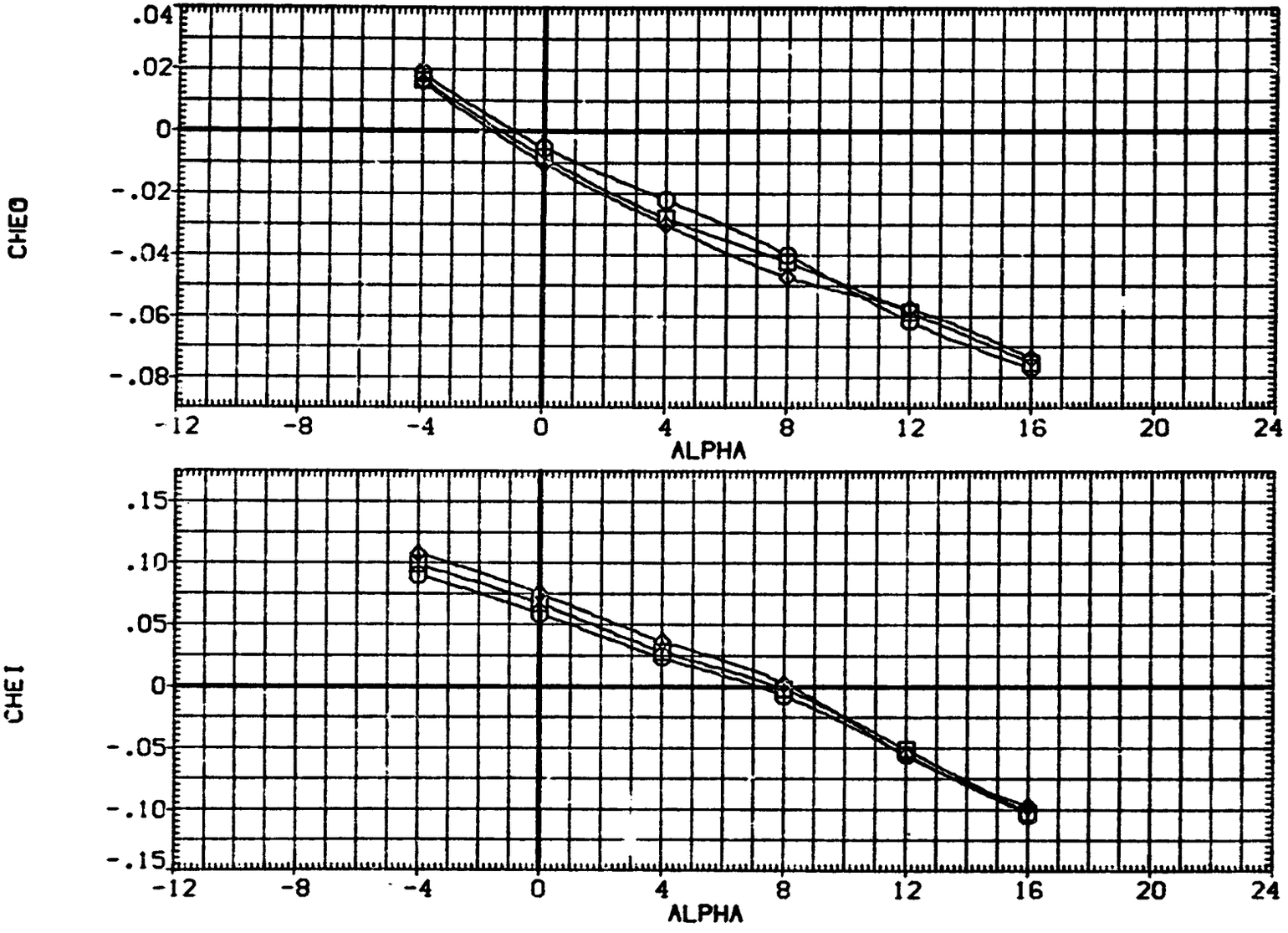


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

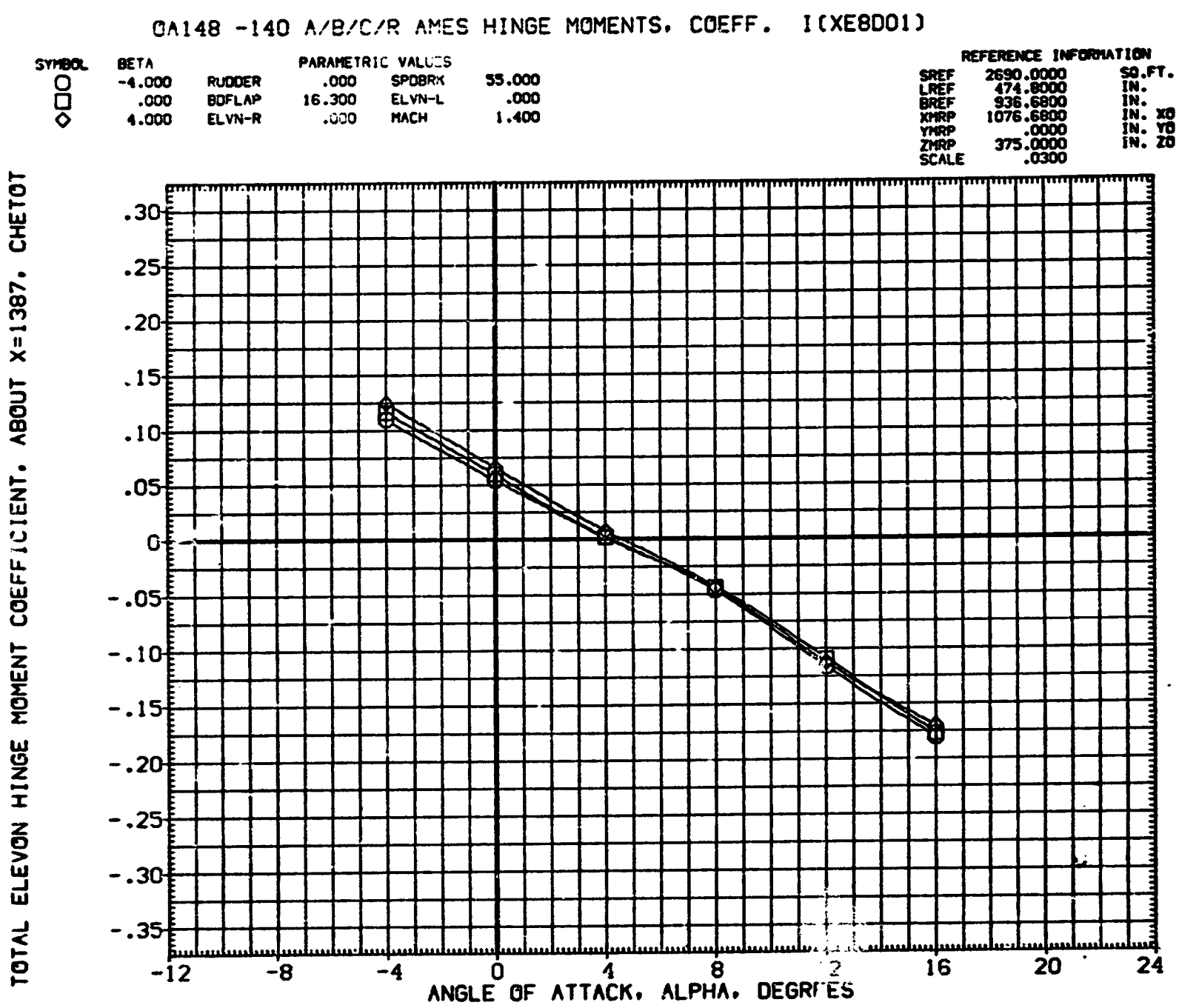


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

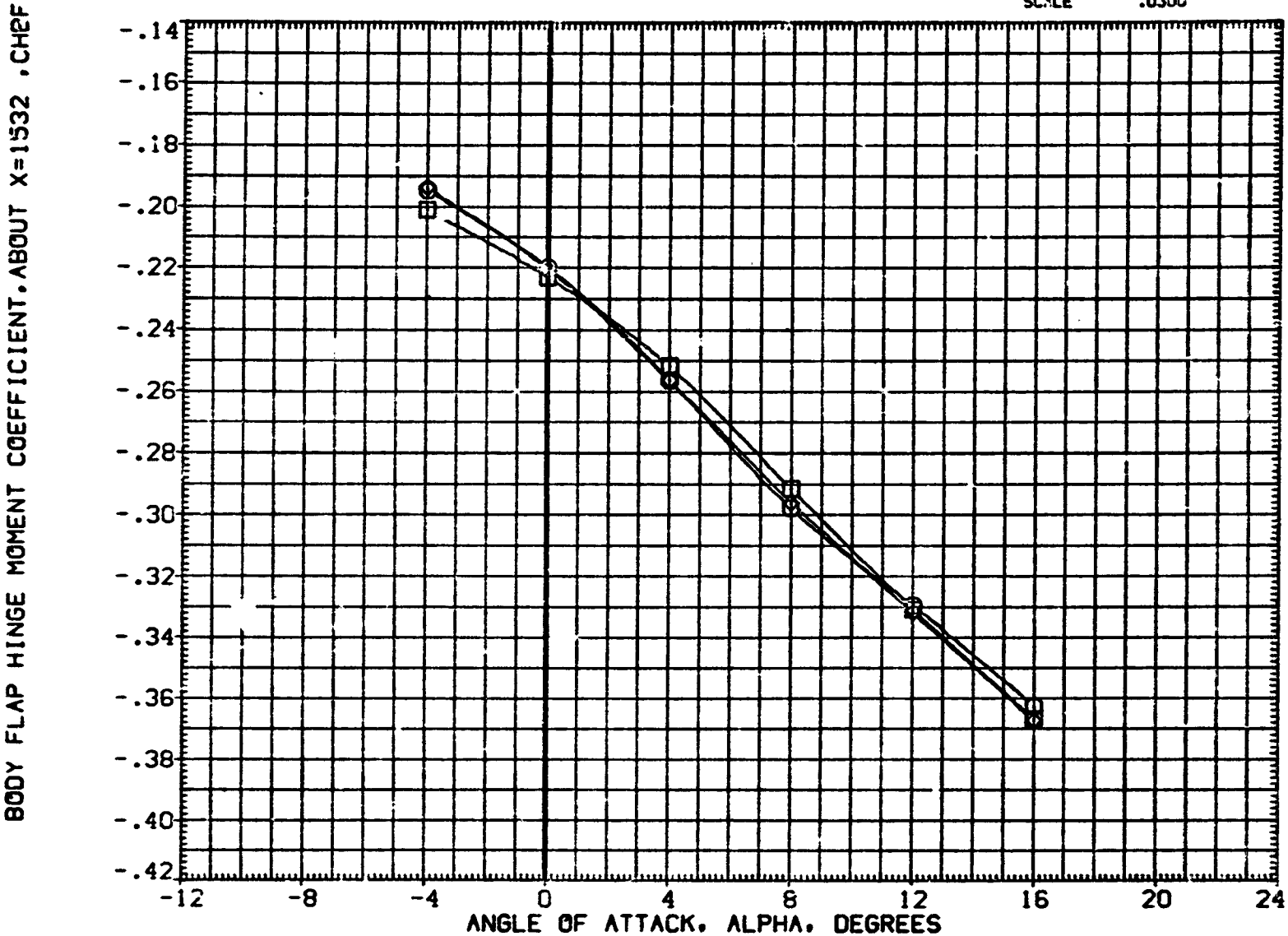


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

0A148 -140 A/F C/R AMES HINGE MOMENTS, COEFF. I(XE8D02)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

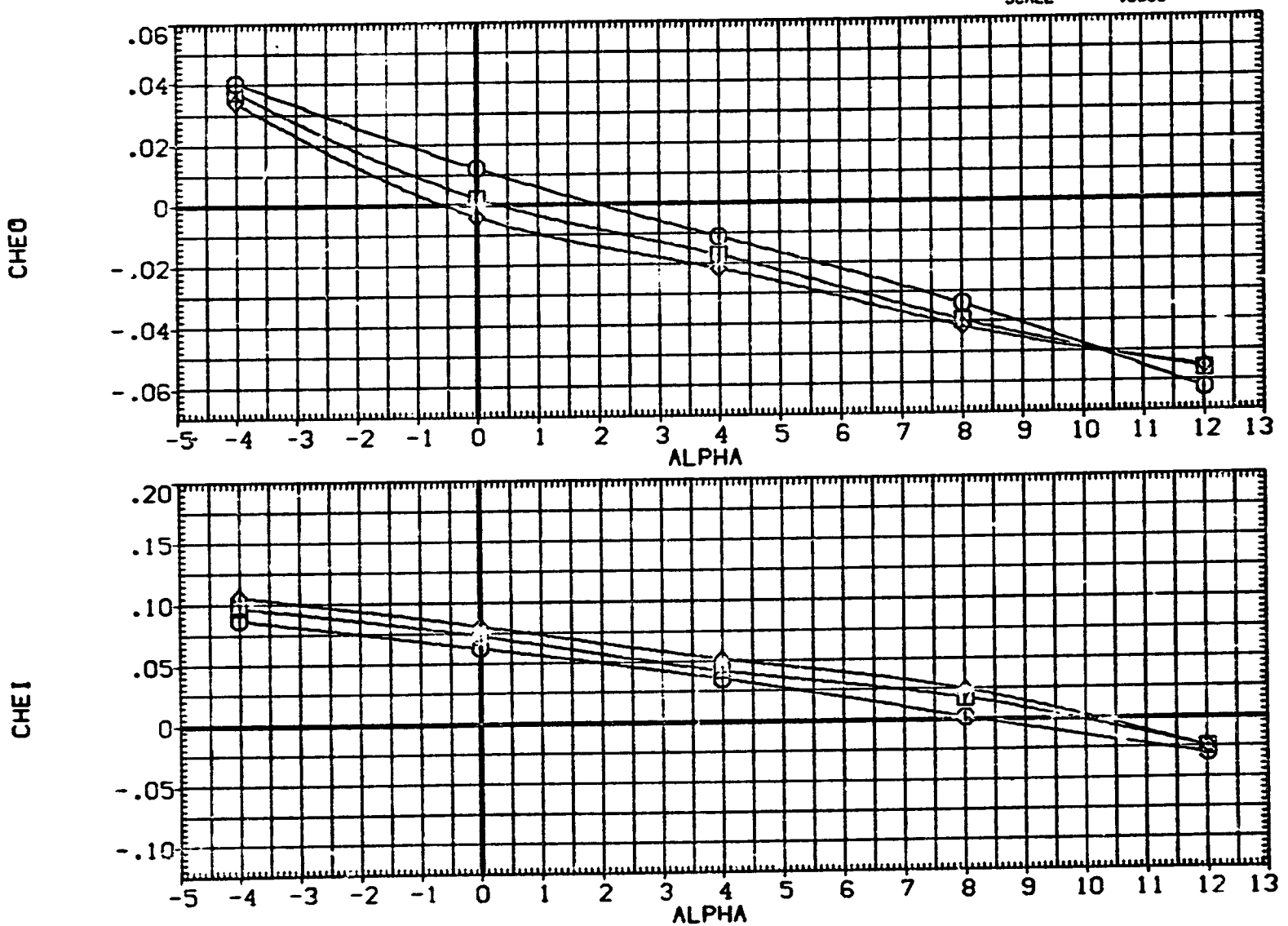


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

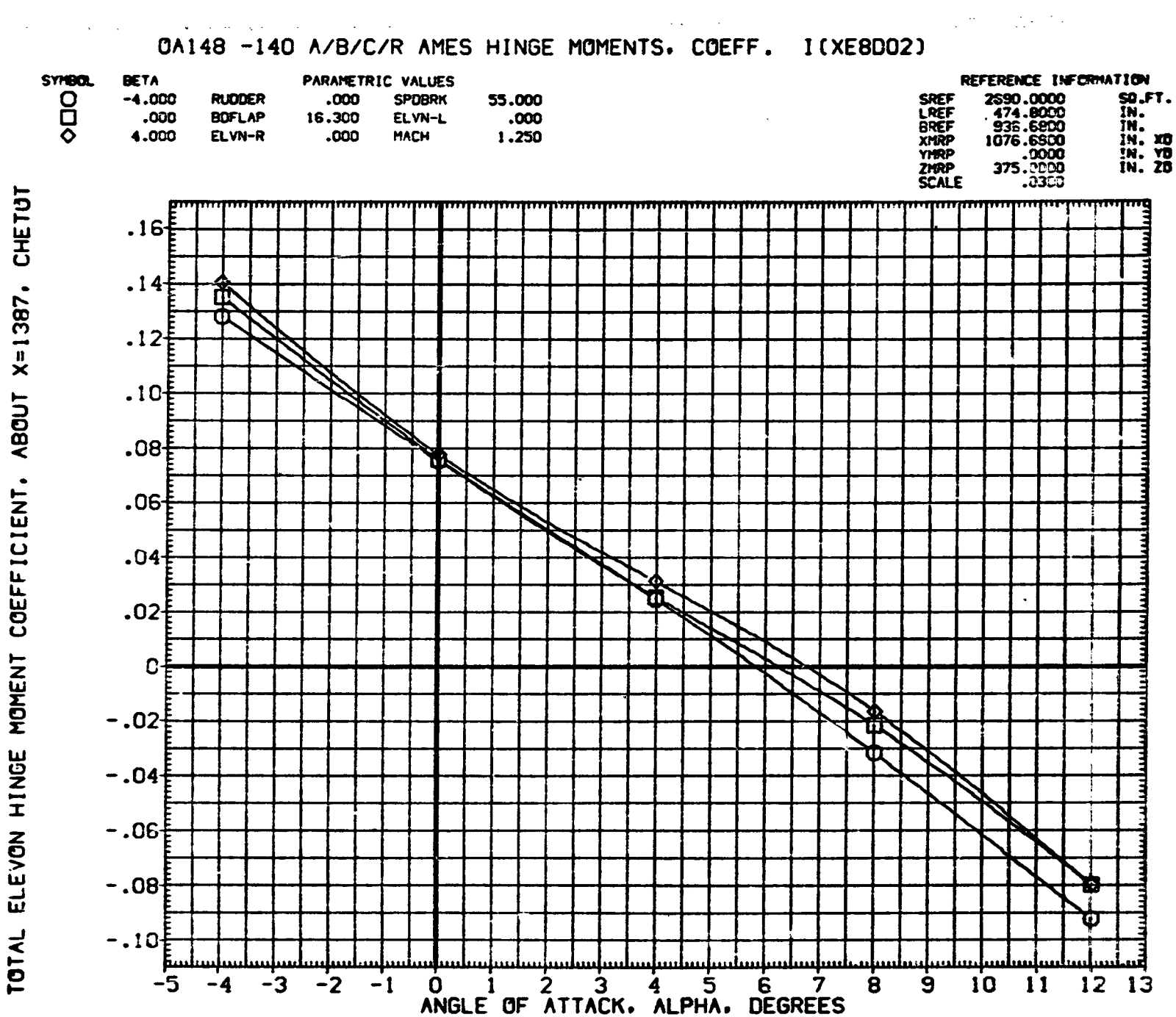


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

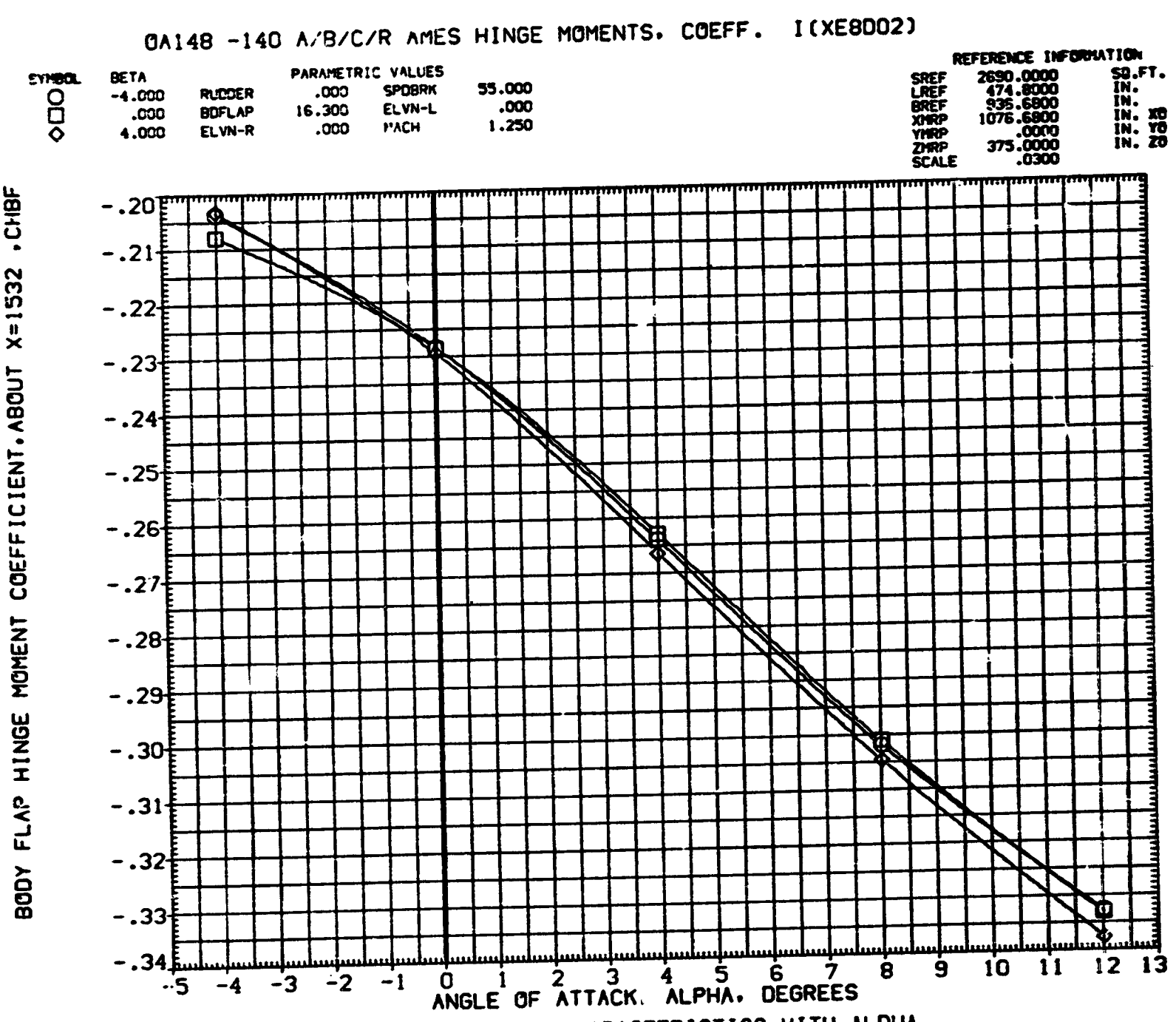


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8003)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6000	IN.
XMRP	1076.6000	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

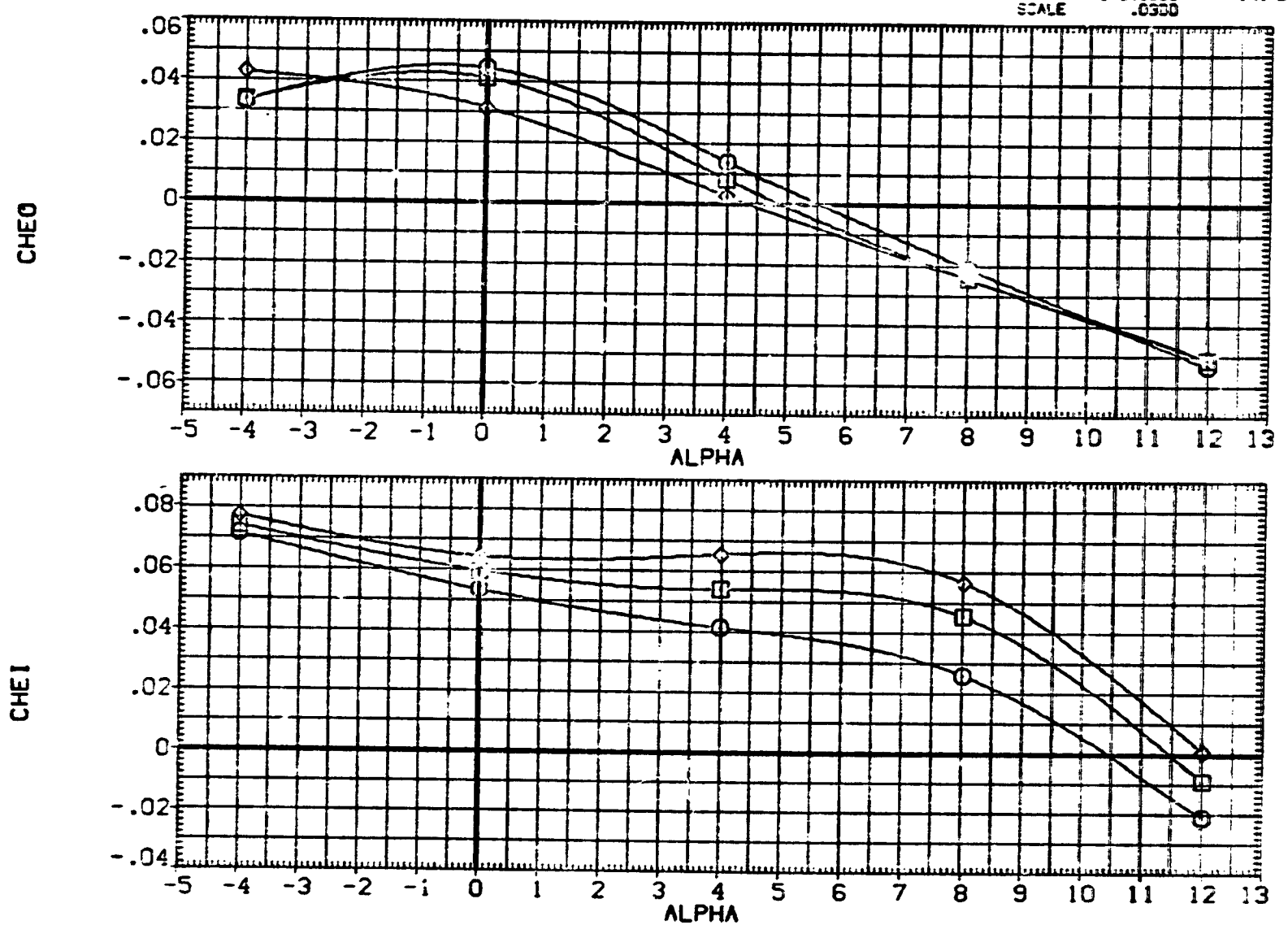


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

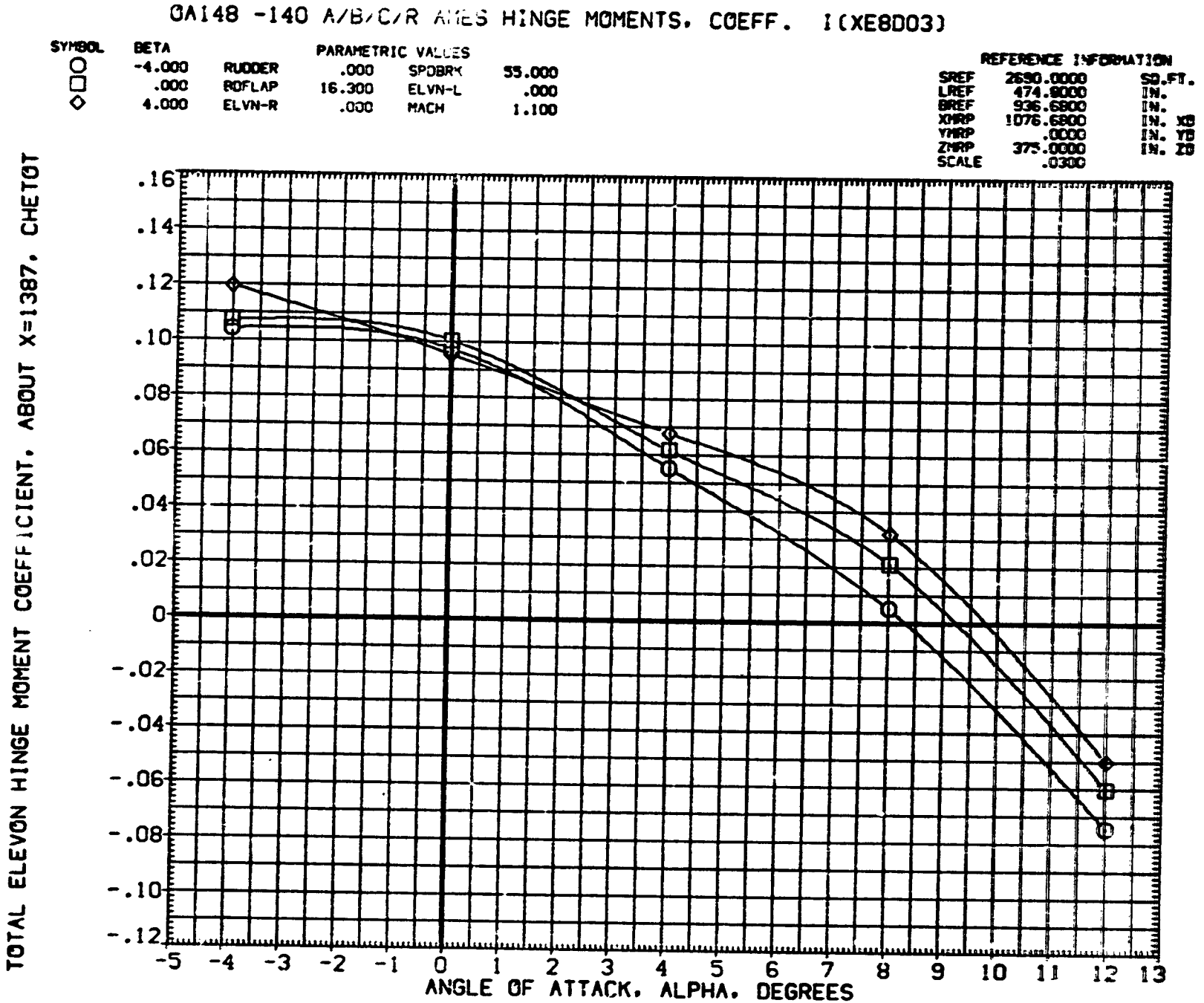


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8200	IN.
BREF	936.5200	IN.
XMRP	1076.6550	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

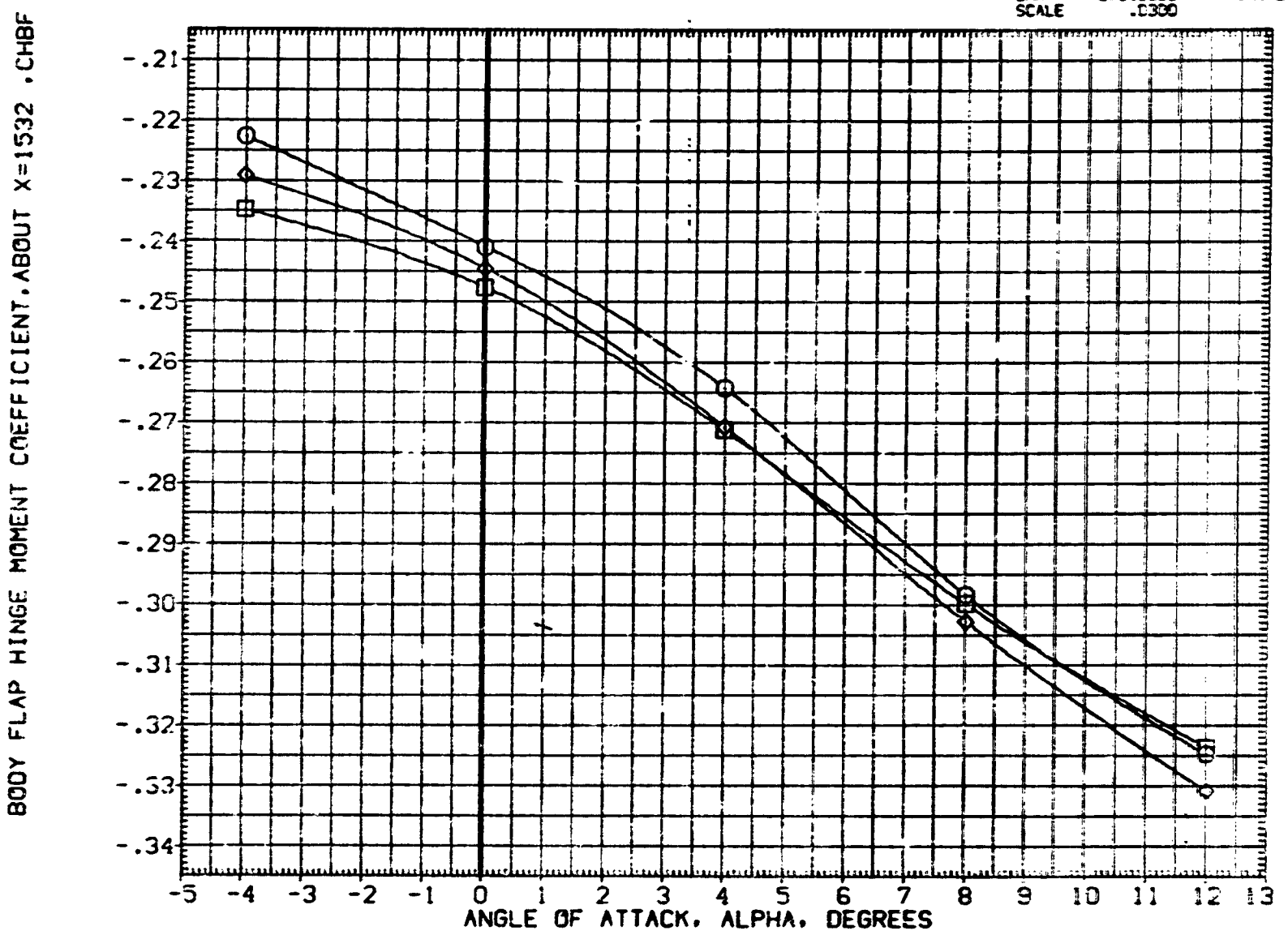


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

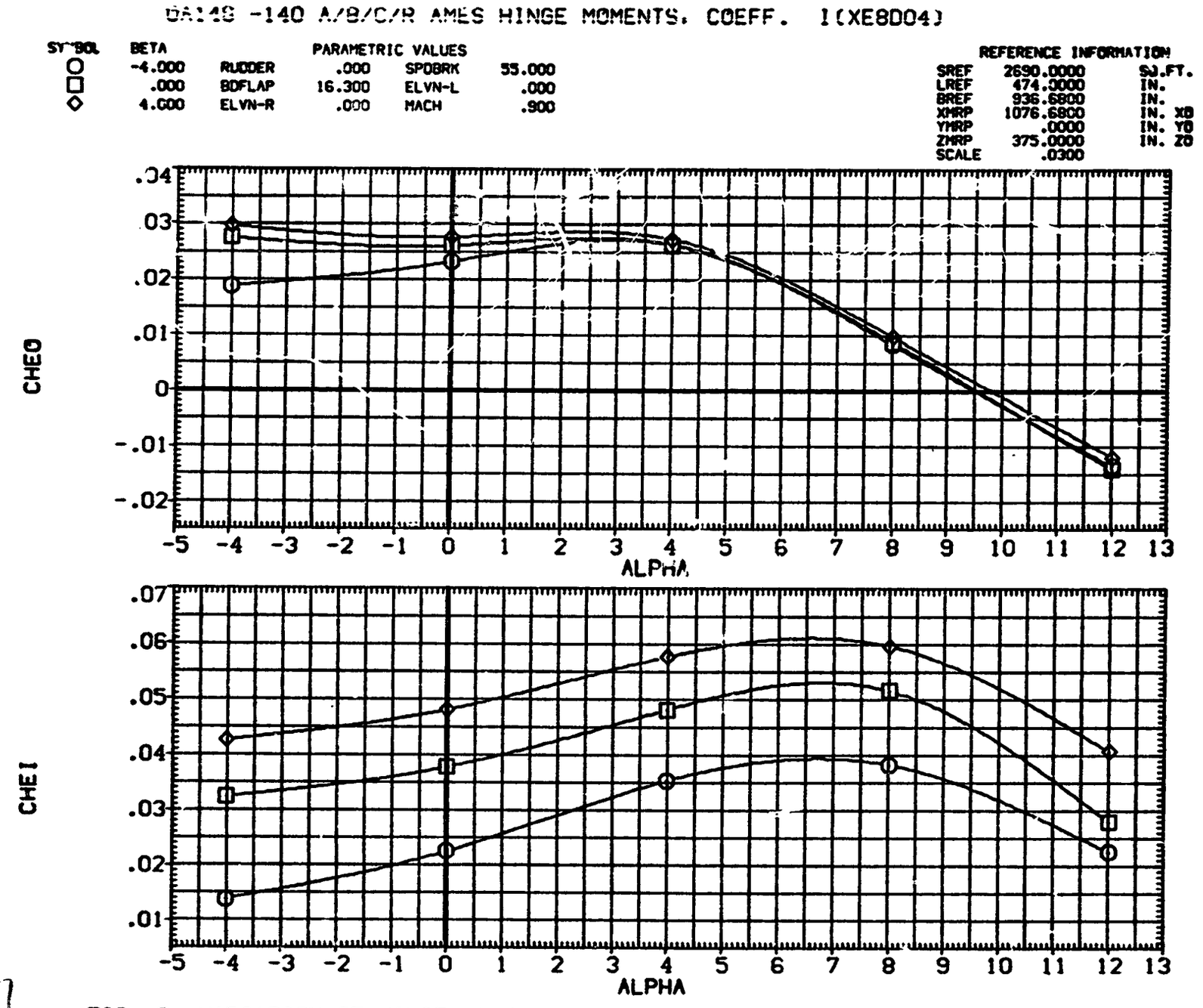


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

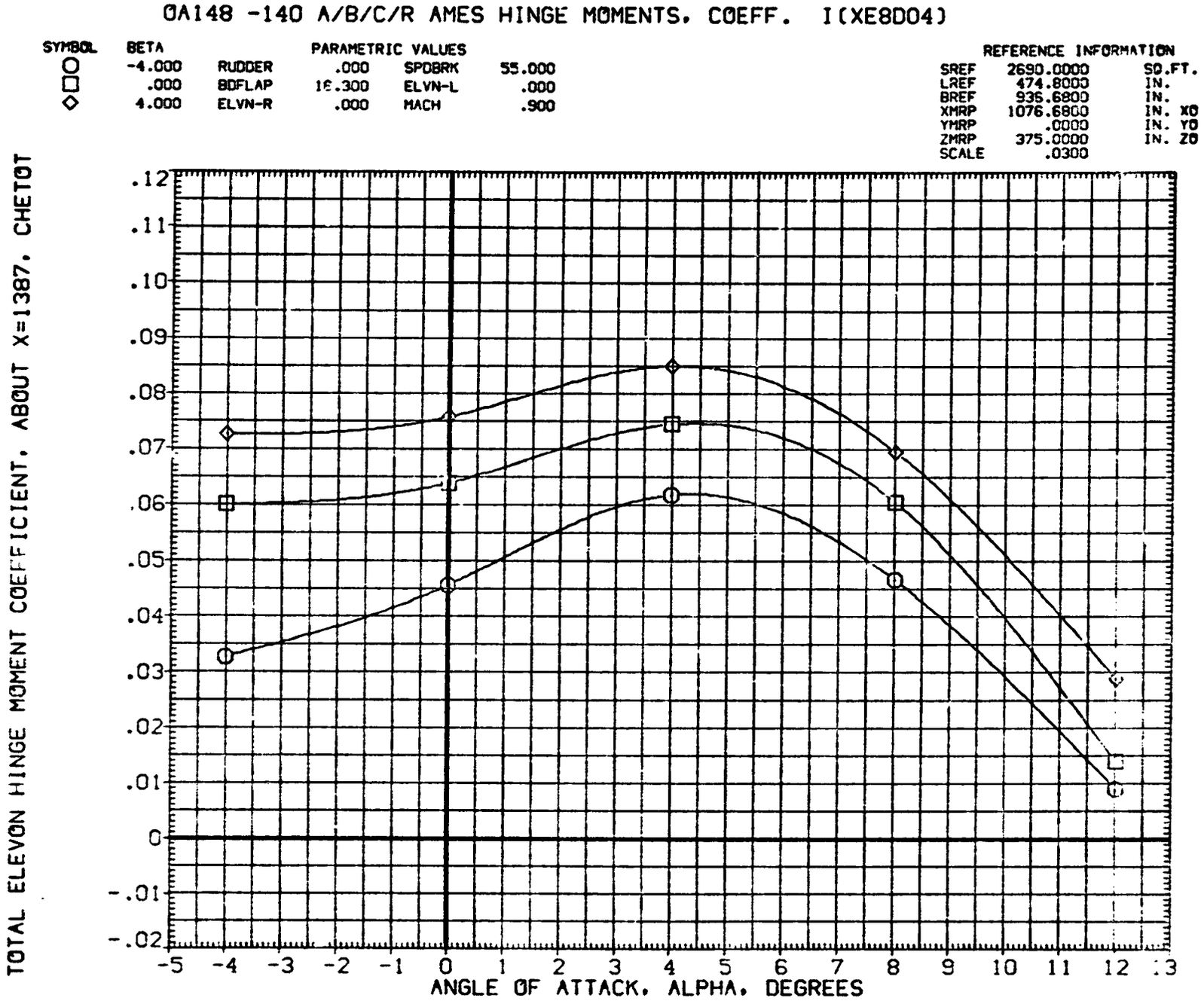


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

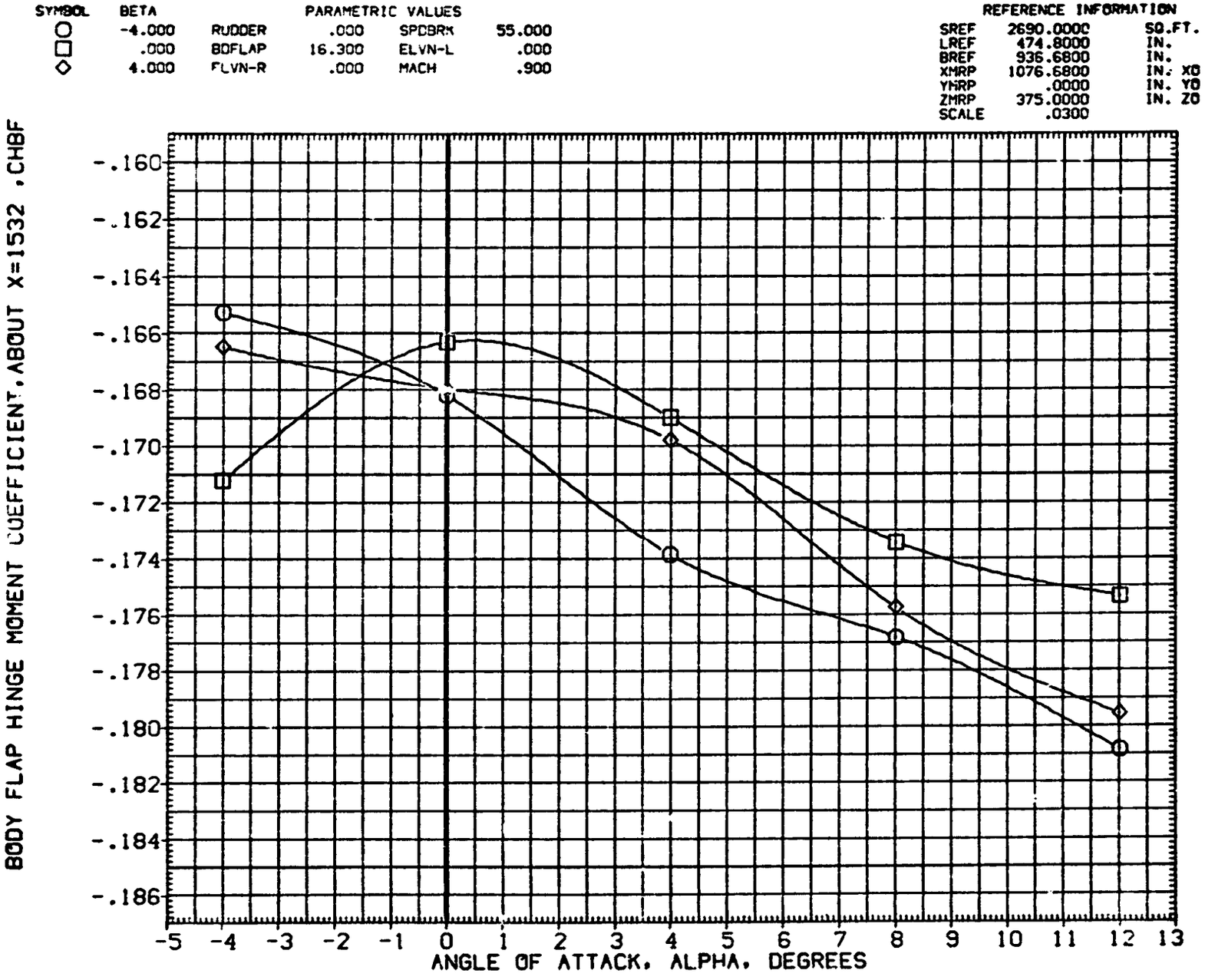


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

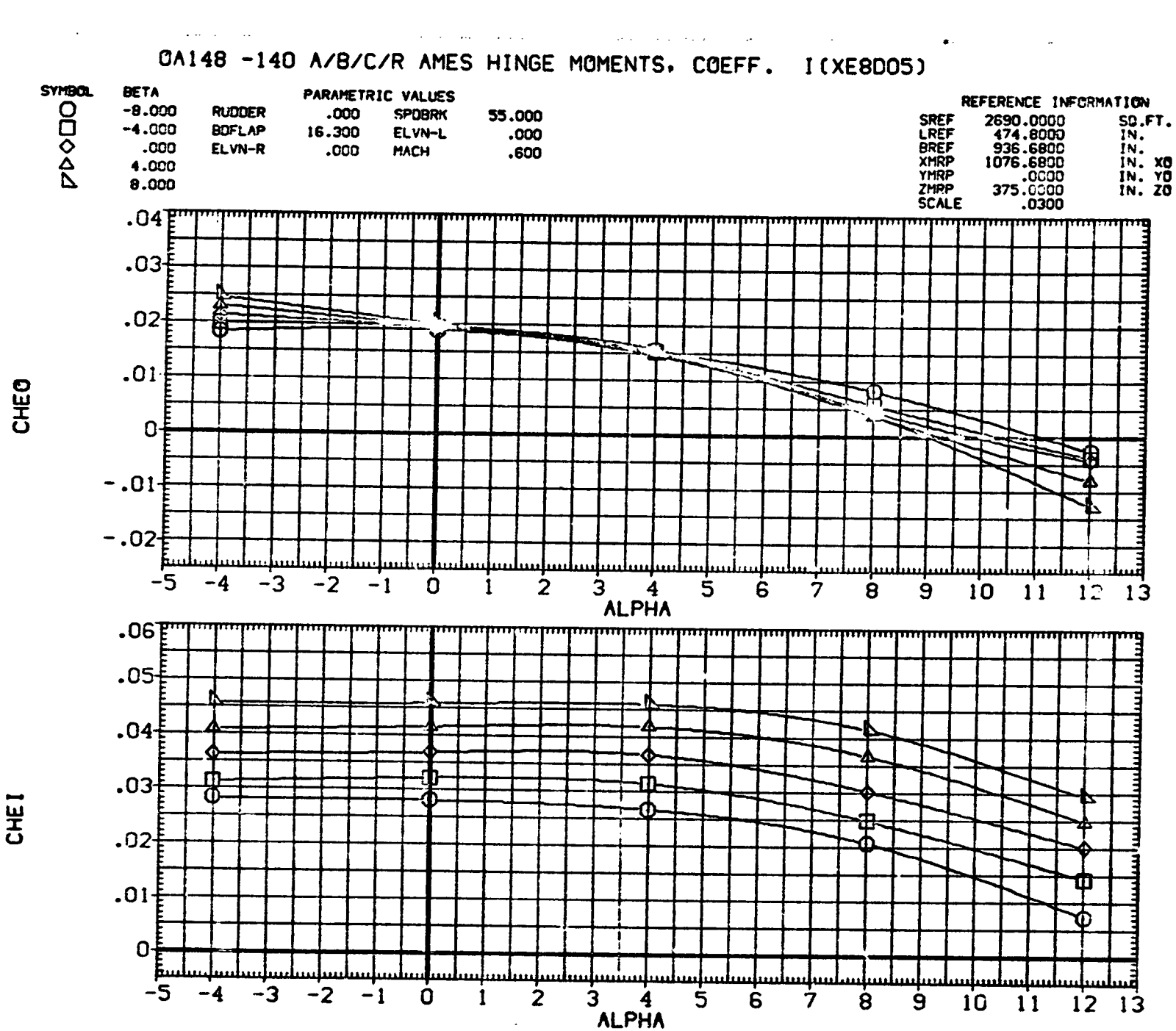


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

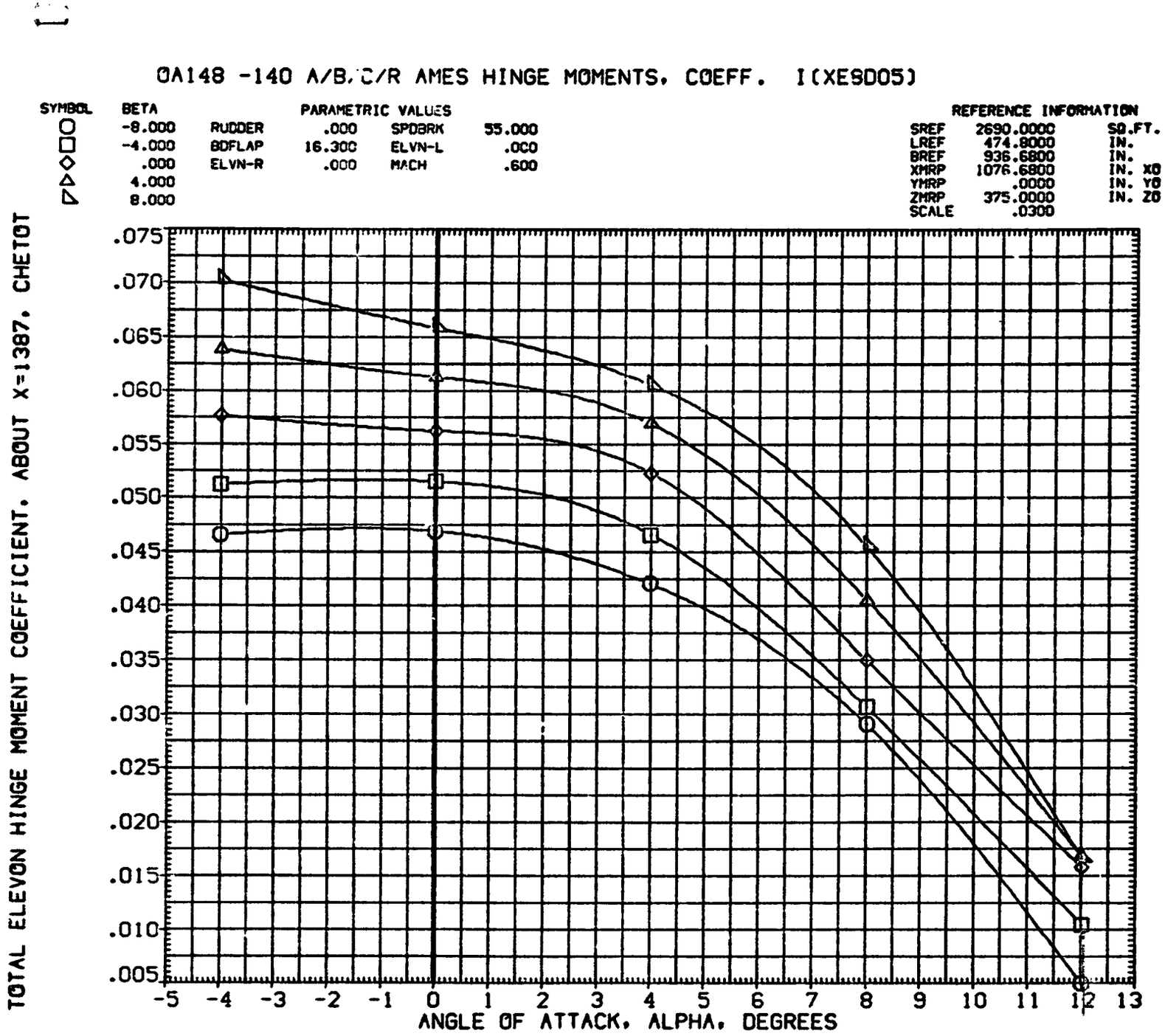


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

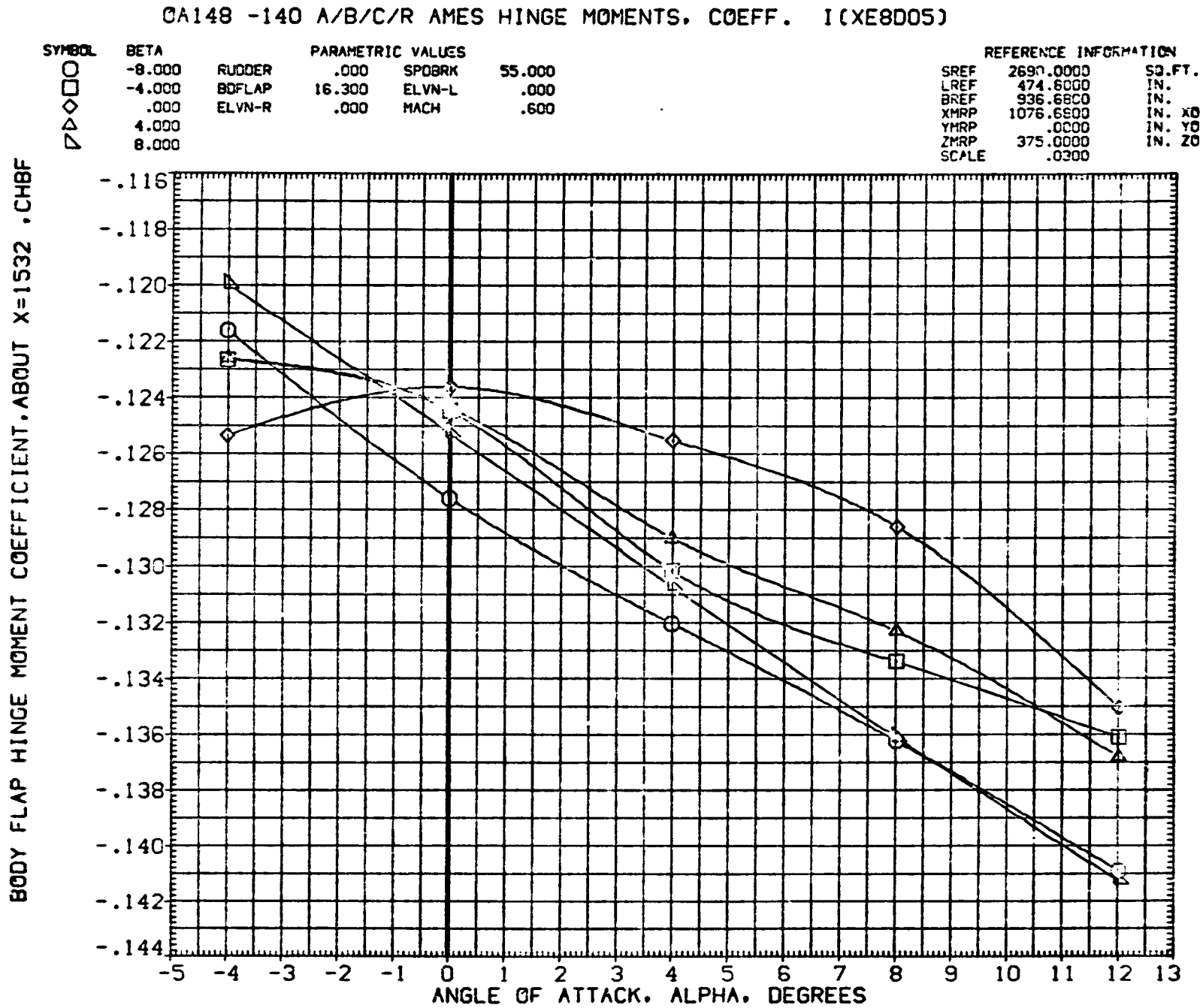


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

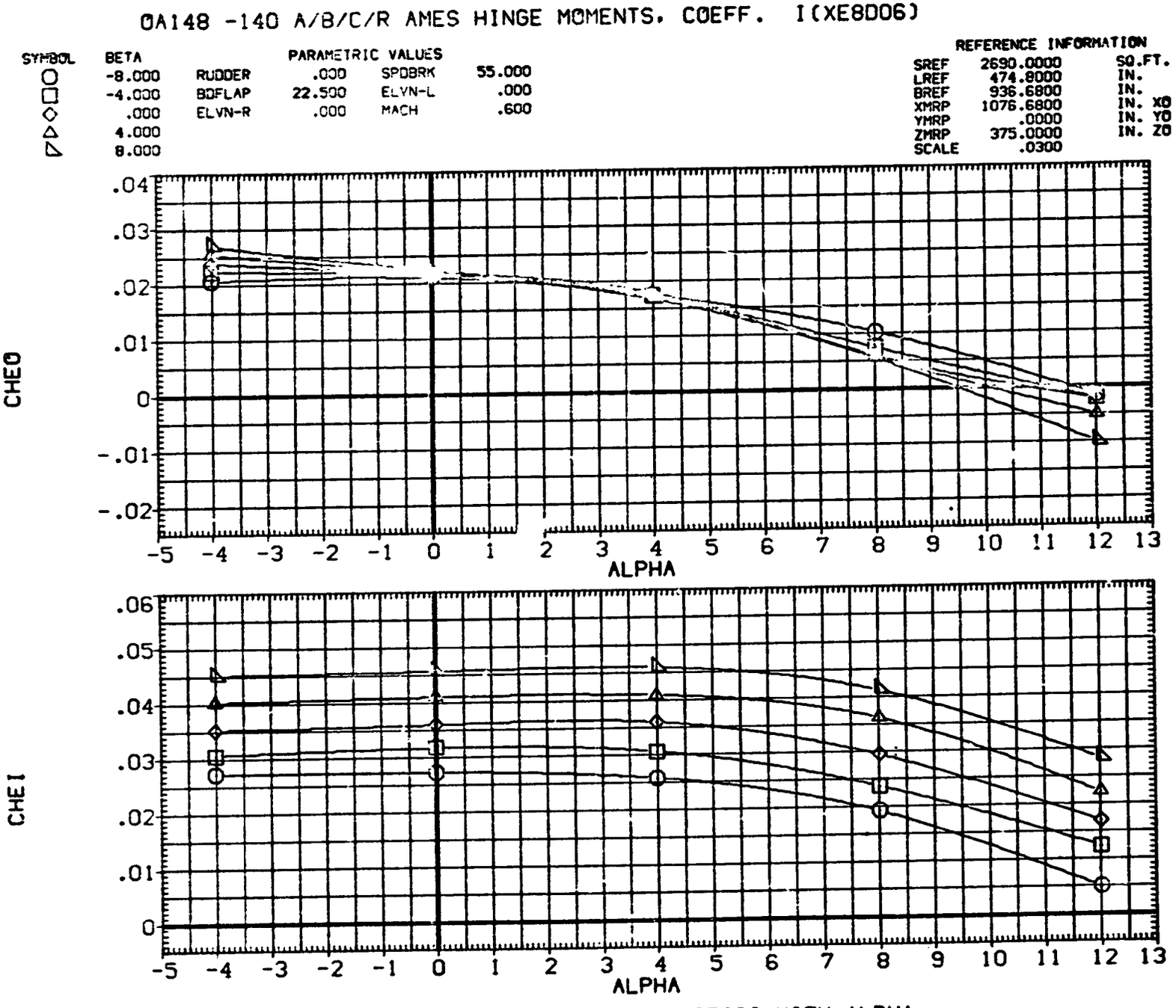


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

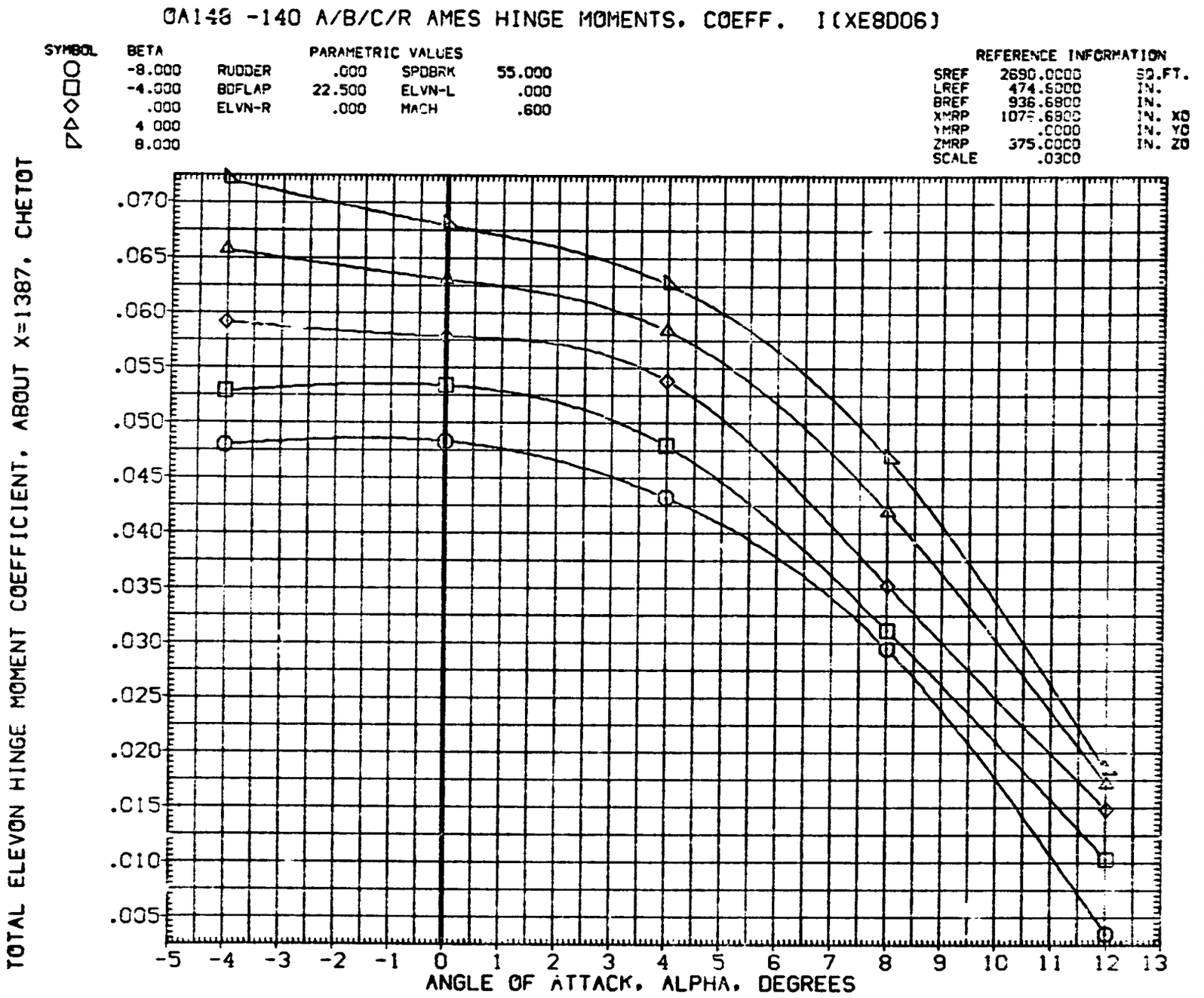


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

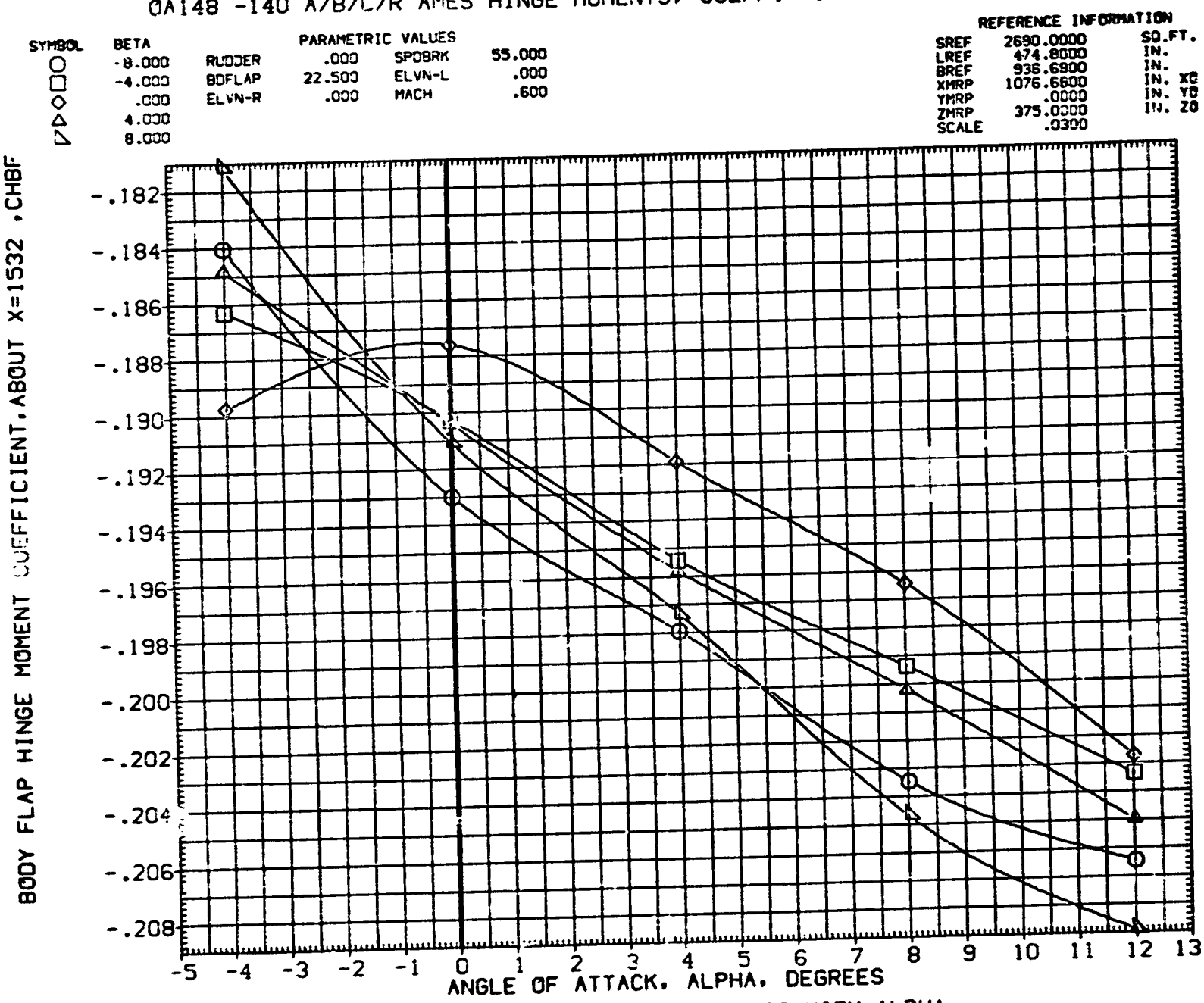


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.0000	IN.
XMRP	1076.6600	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

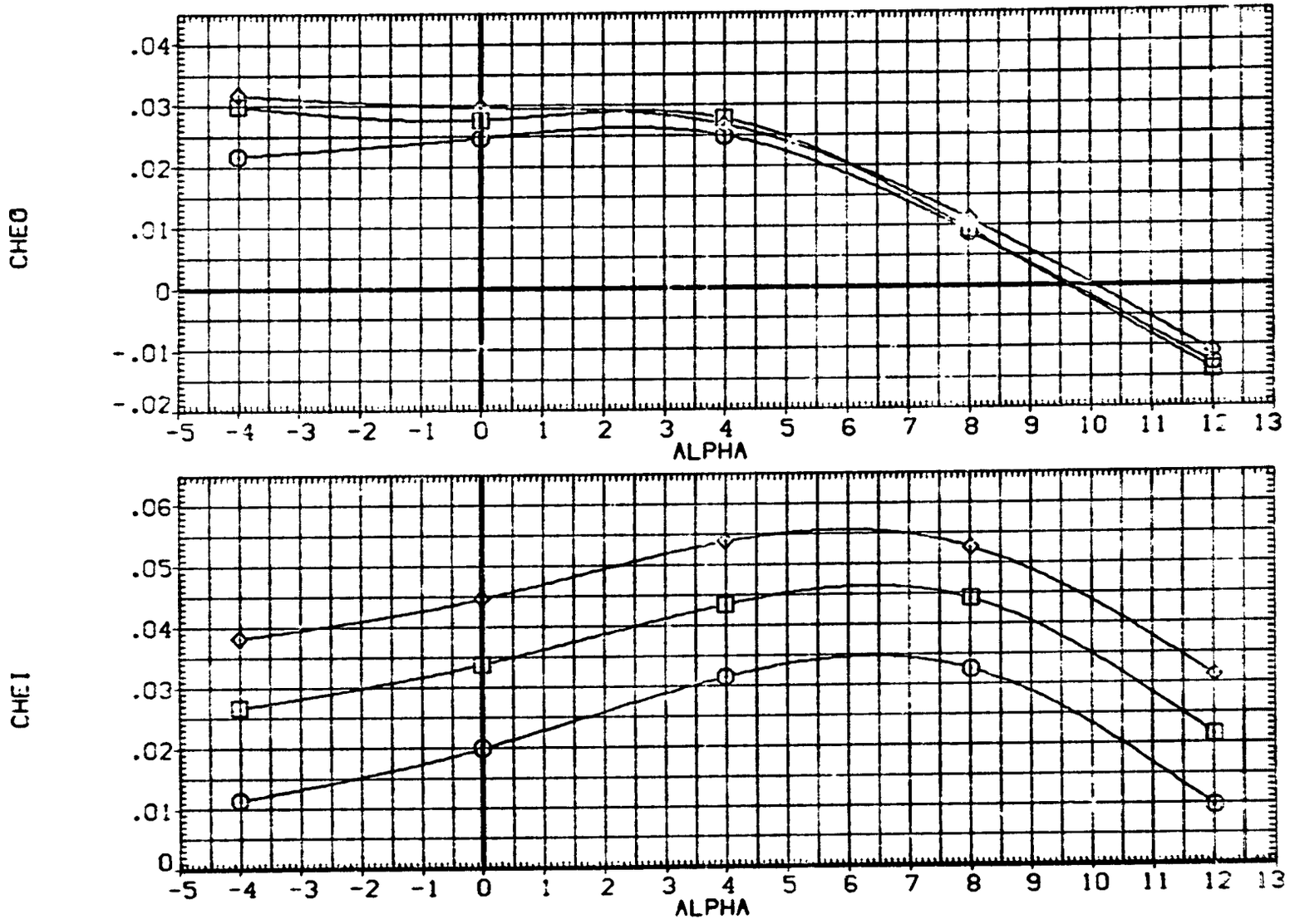


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

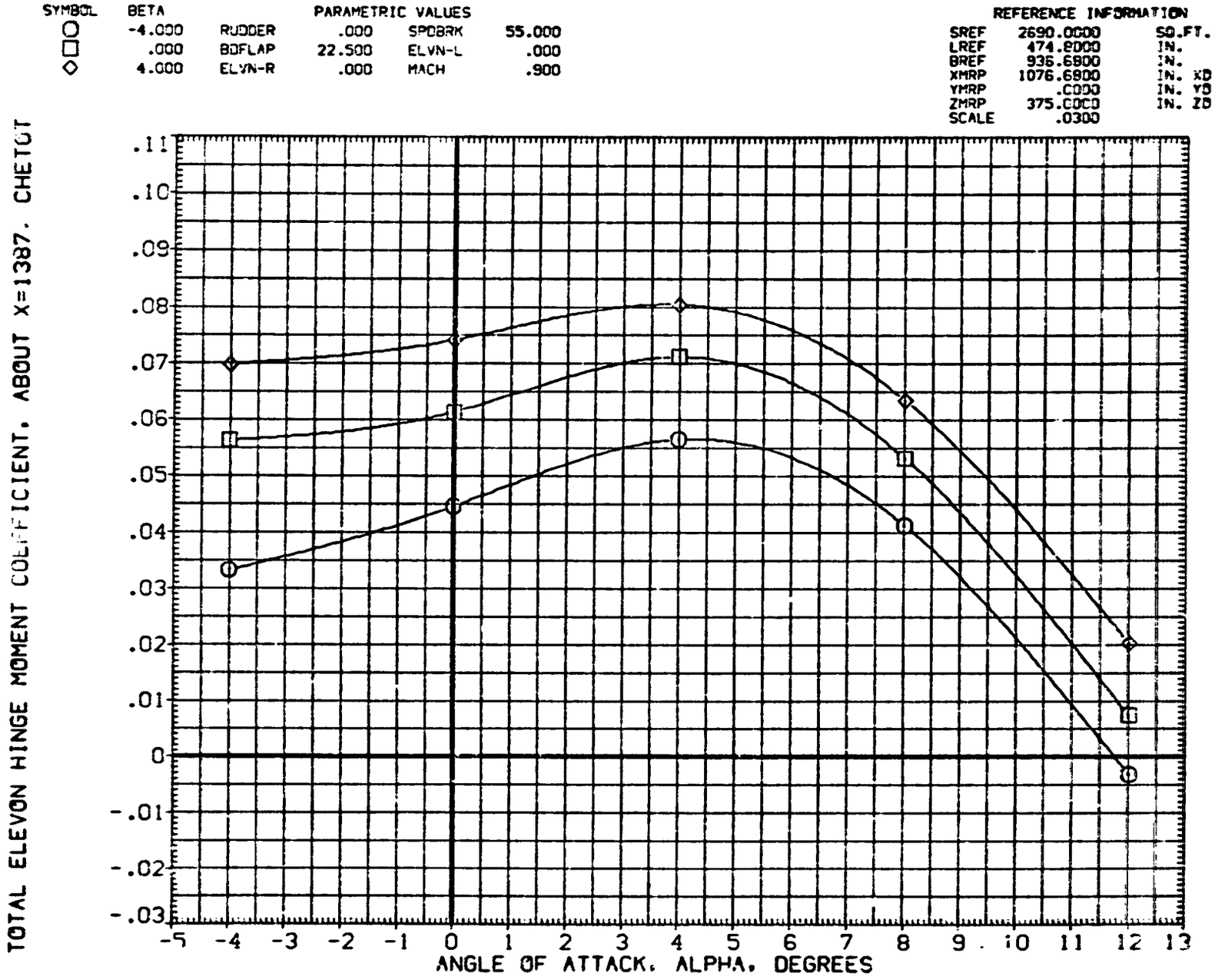


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6000	IN.
XMRP	1076.6000	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	1.0000	

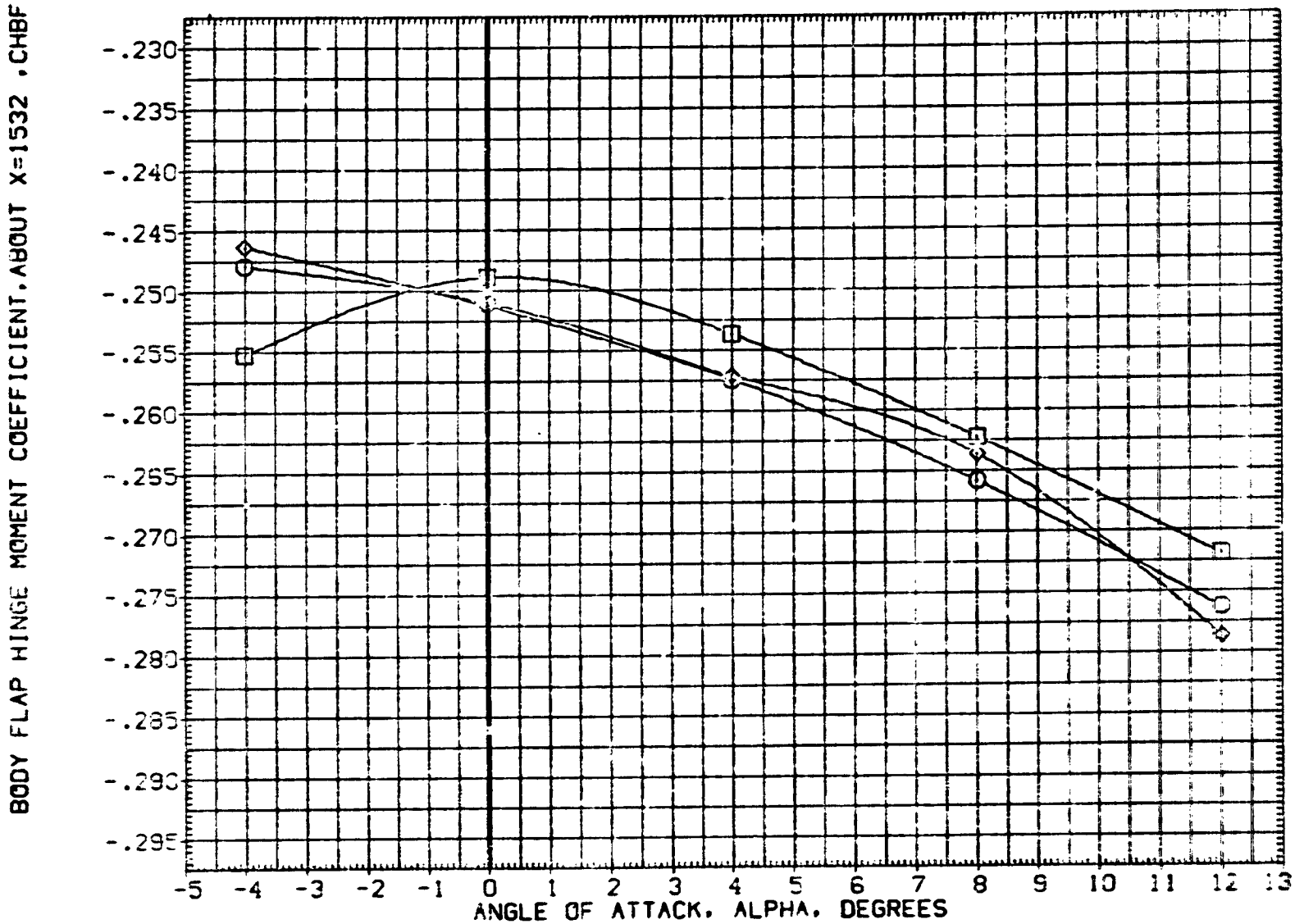


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

DA148 -140 A/B/C/R -MES HINGE MOMENTS. COEFF. I(XE8D08)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	85.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

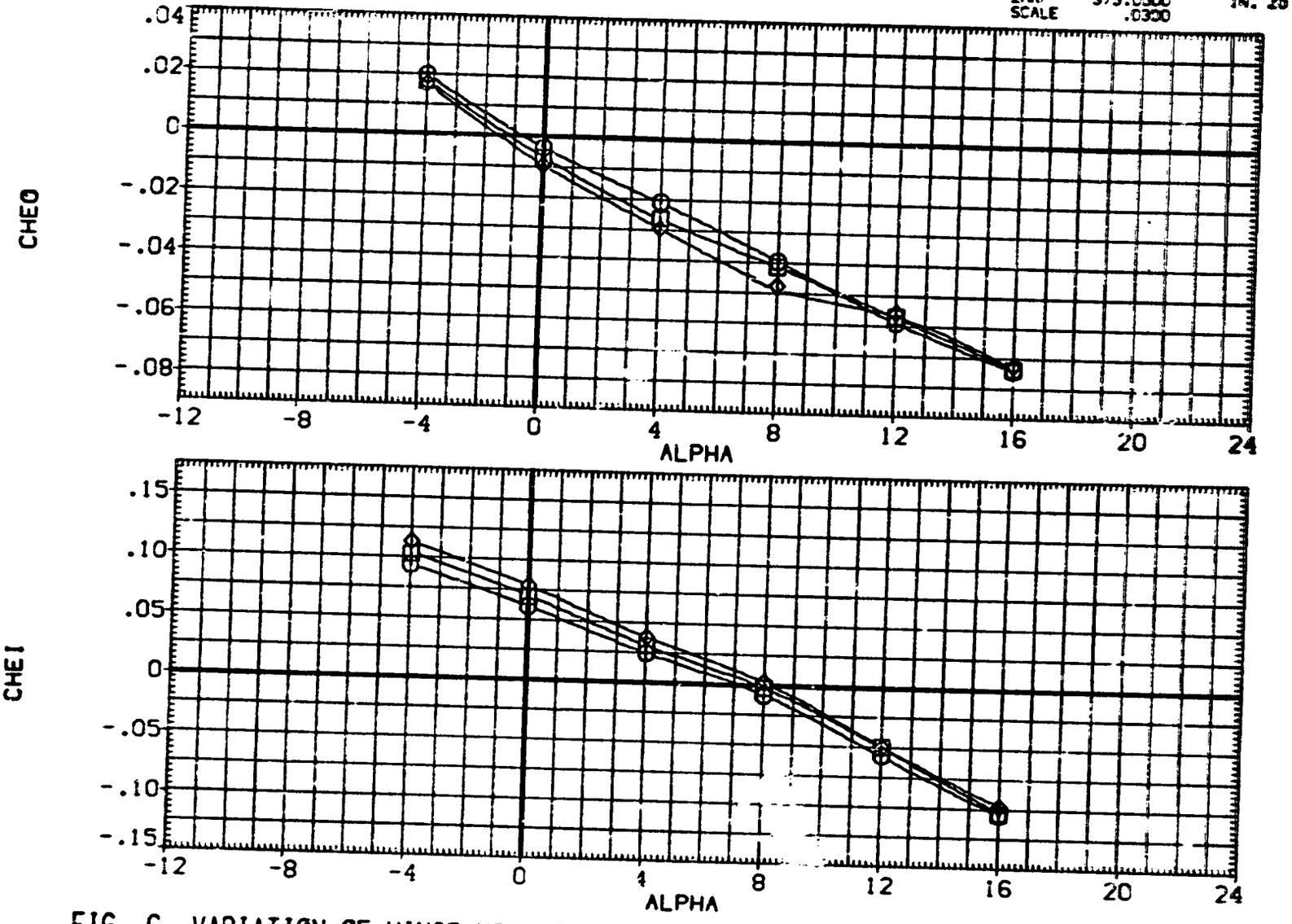


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS - TH ALPHA

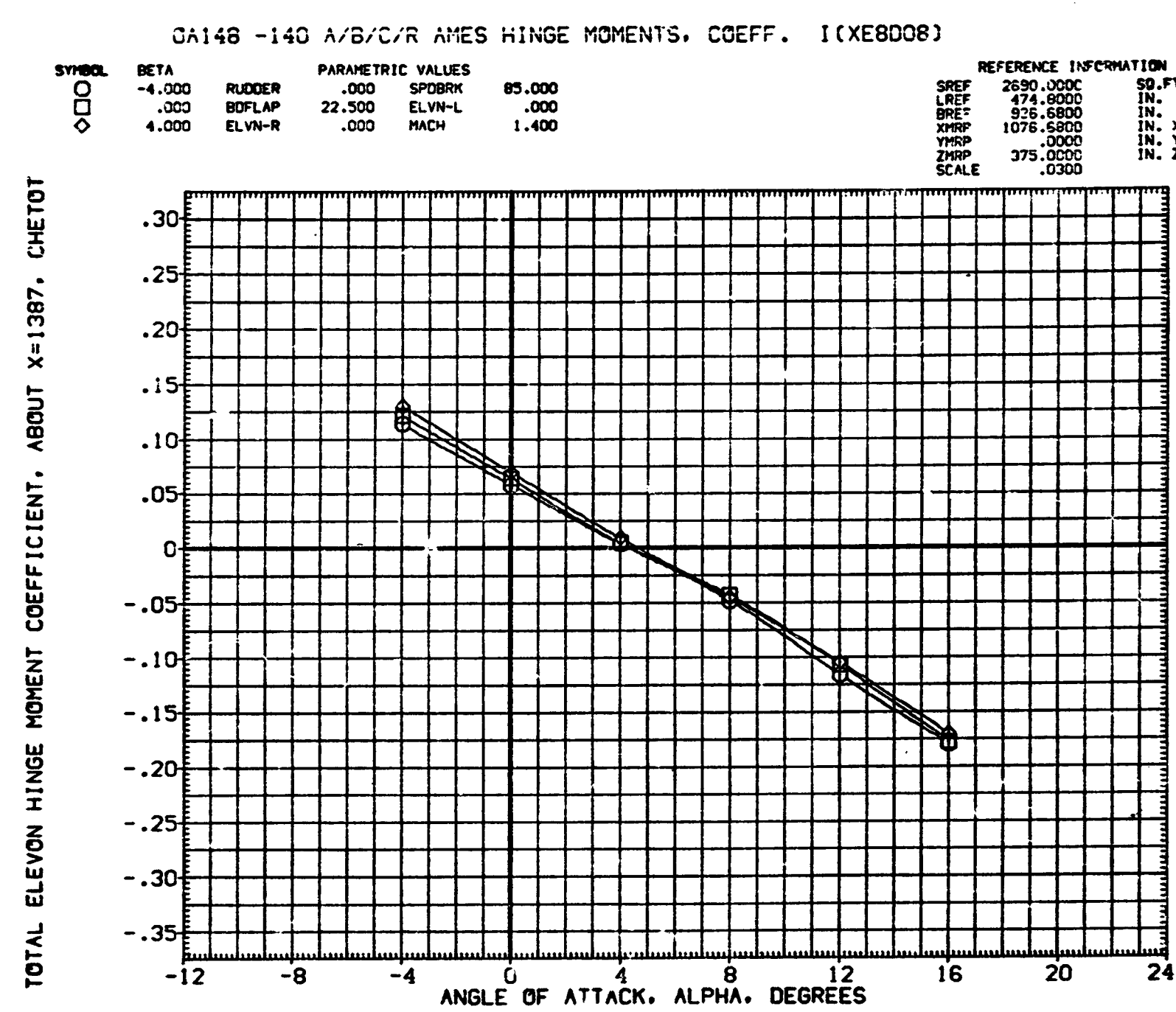


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

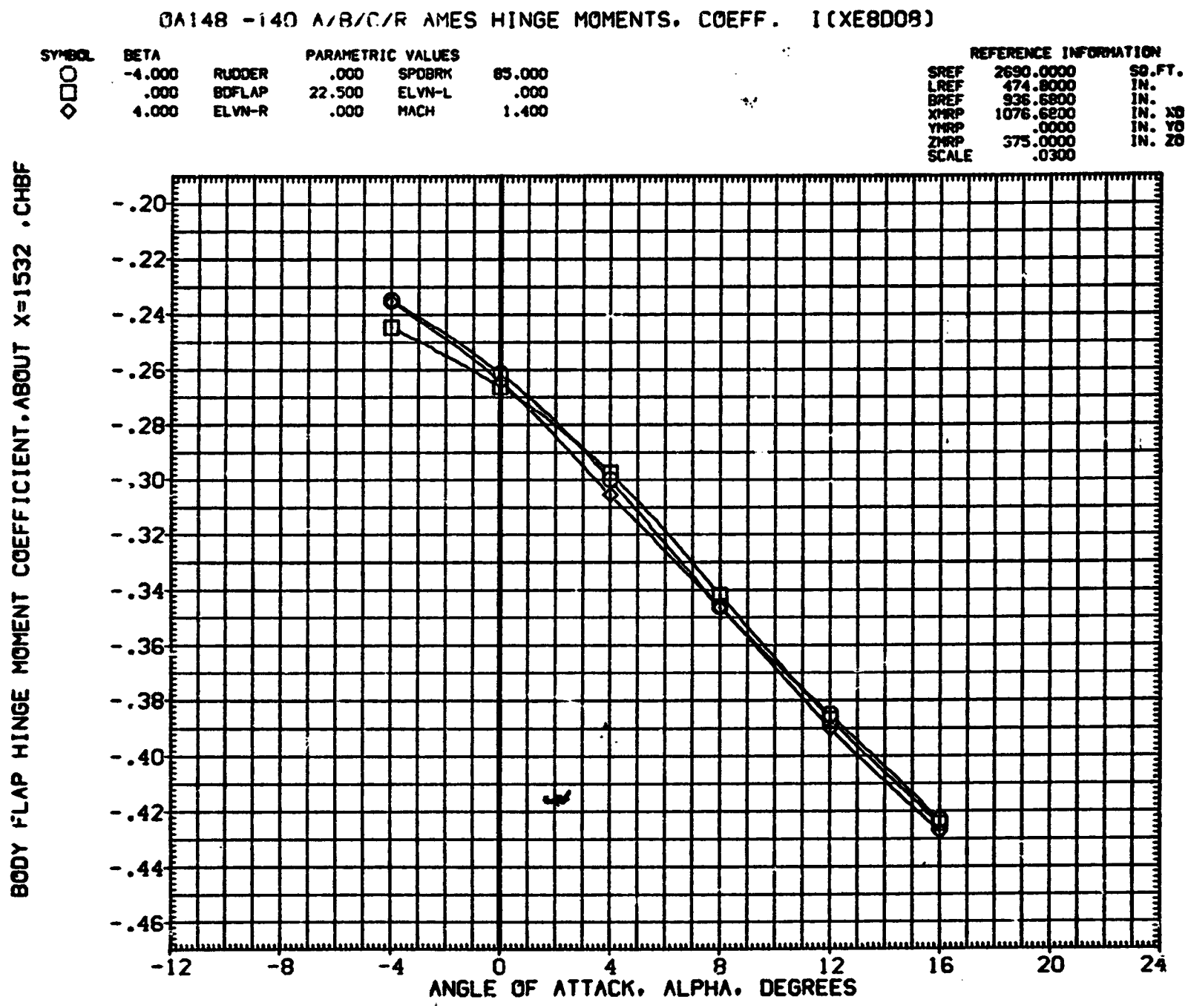


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

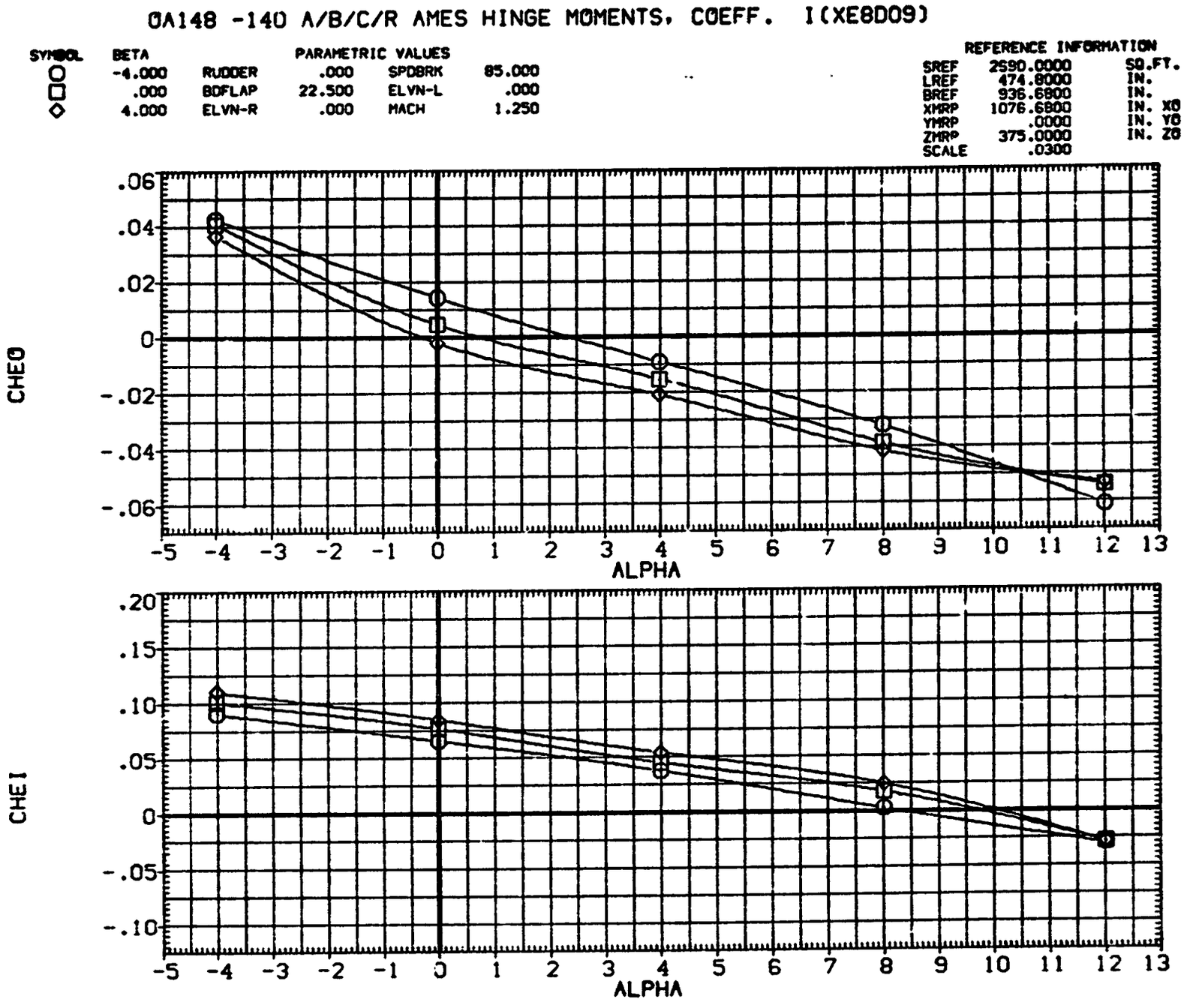


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

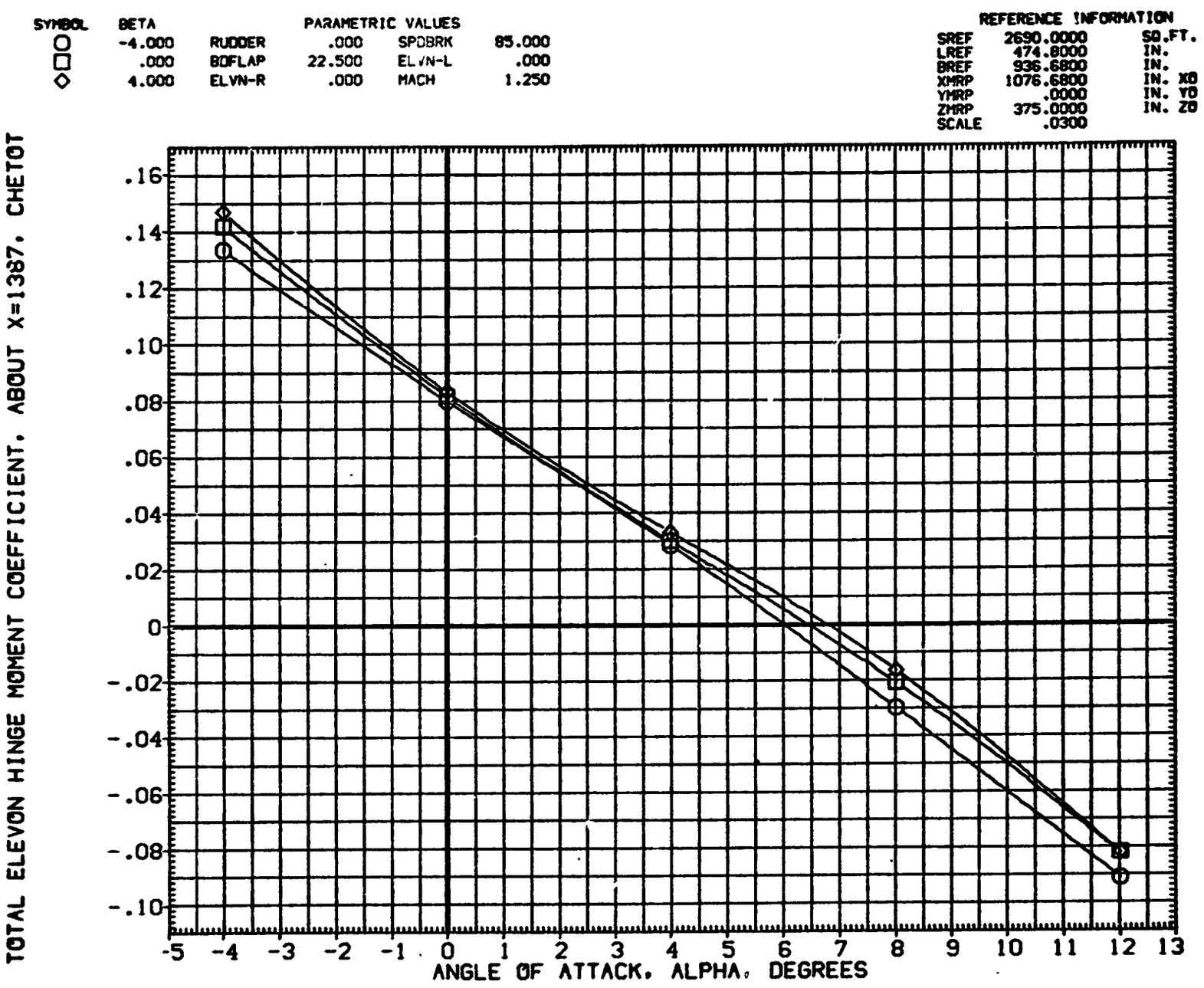


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

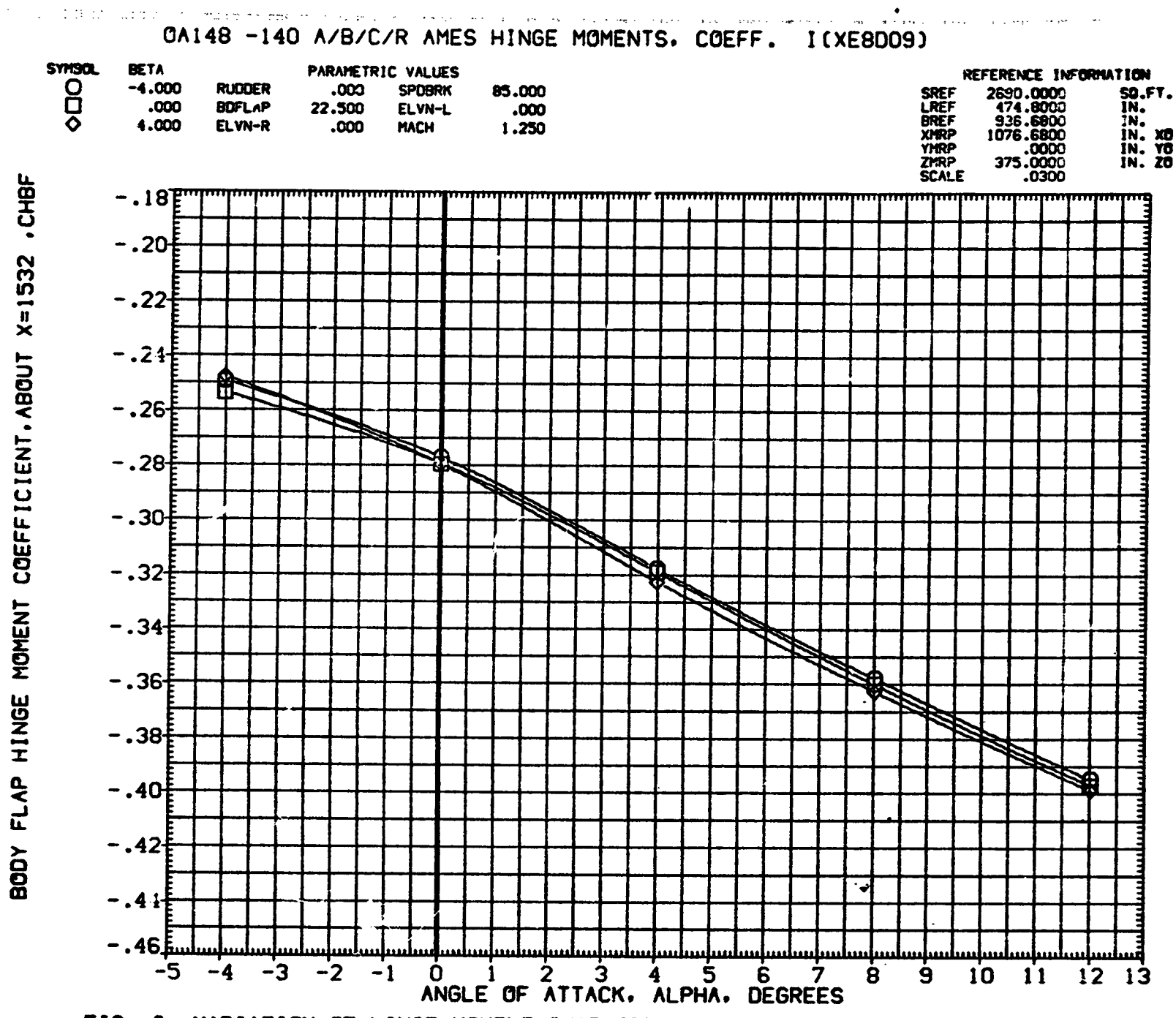


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D10)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	85.000
□	.000	BDFLAP	22.500	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

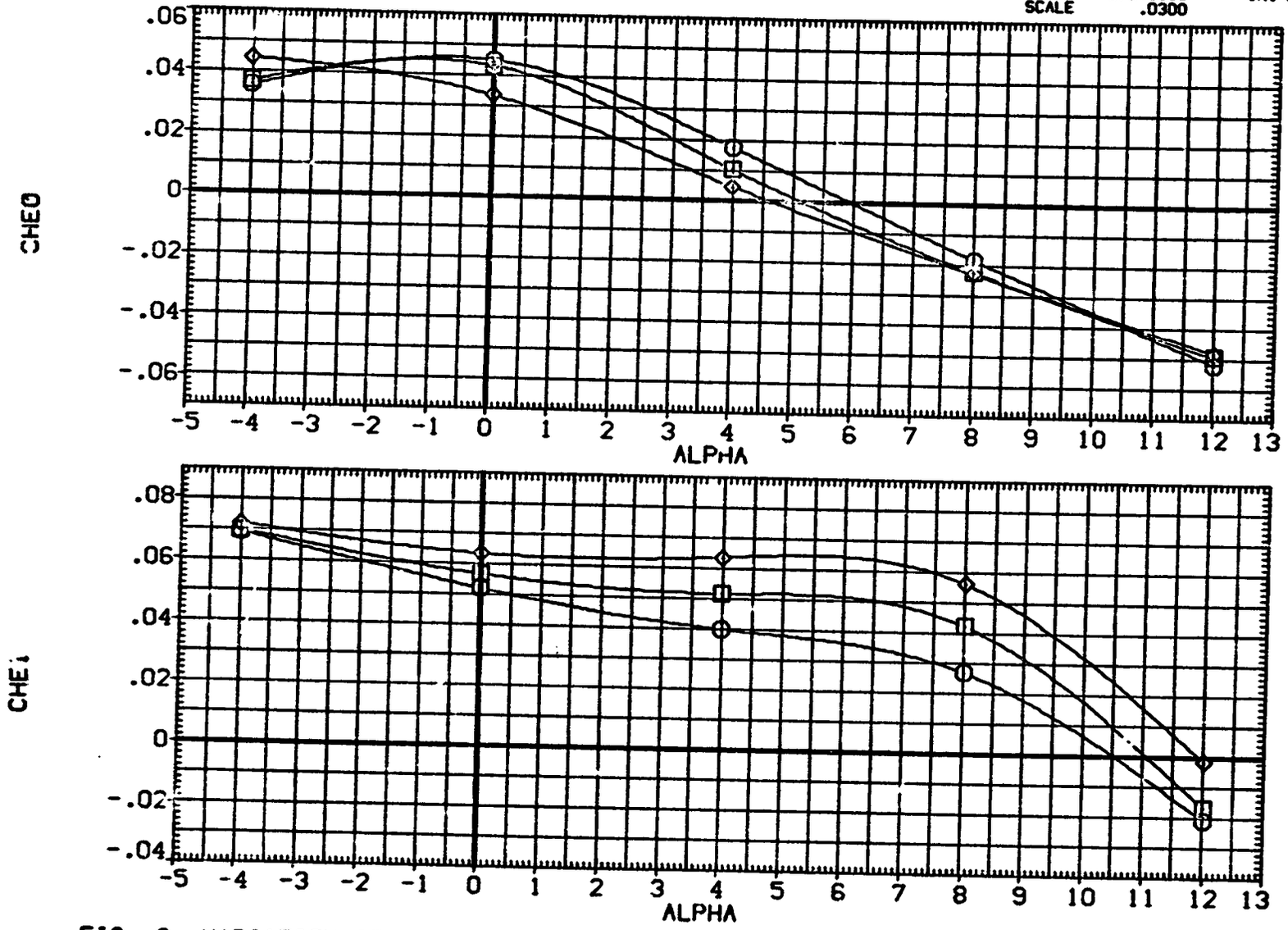


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

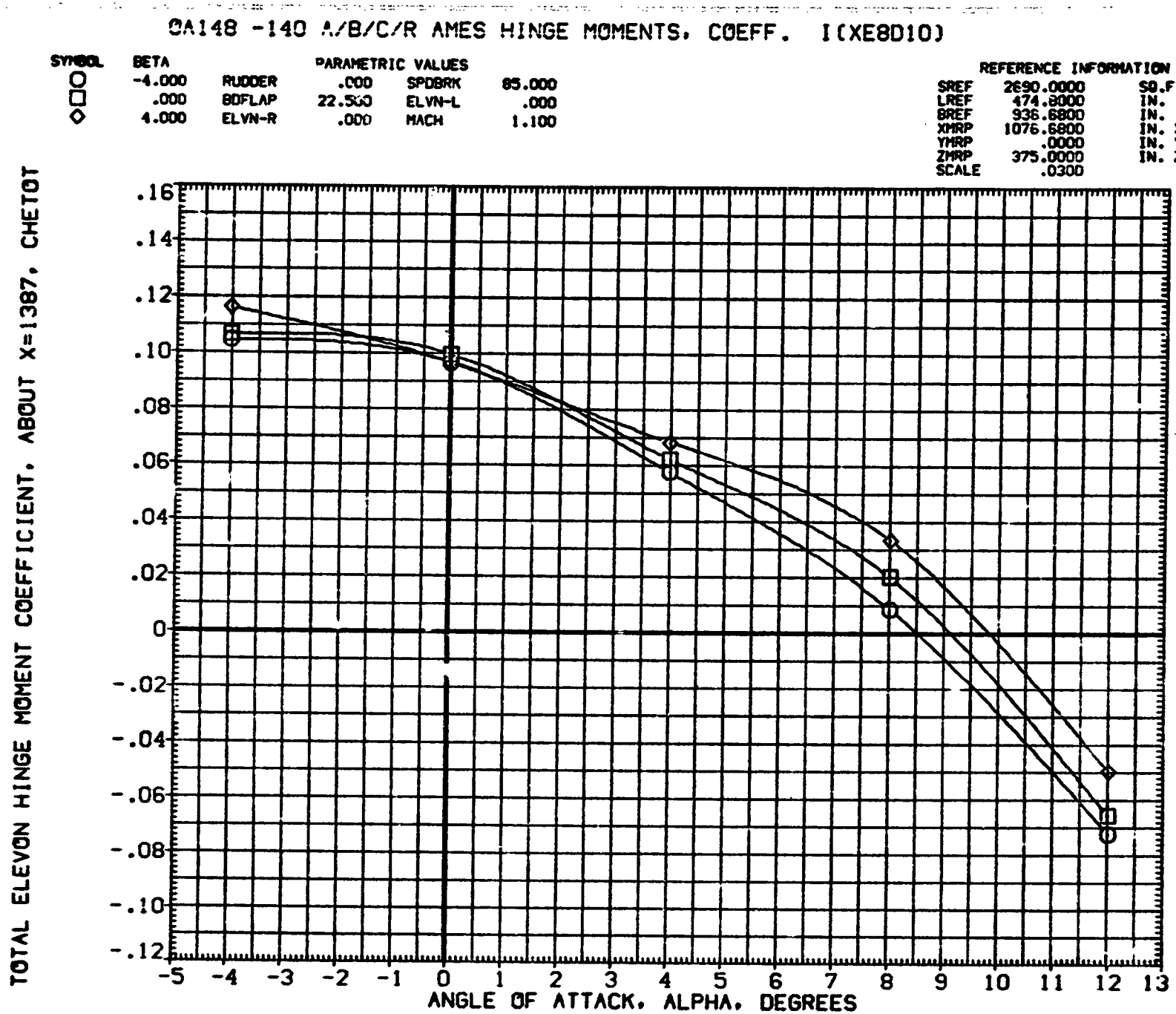


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

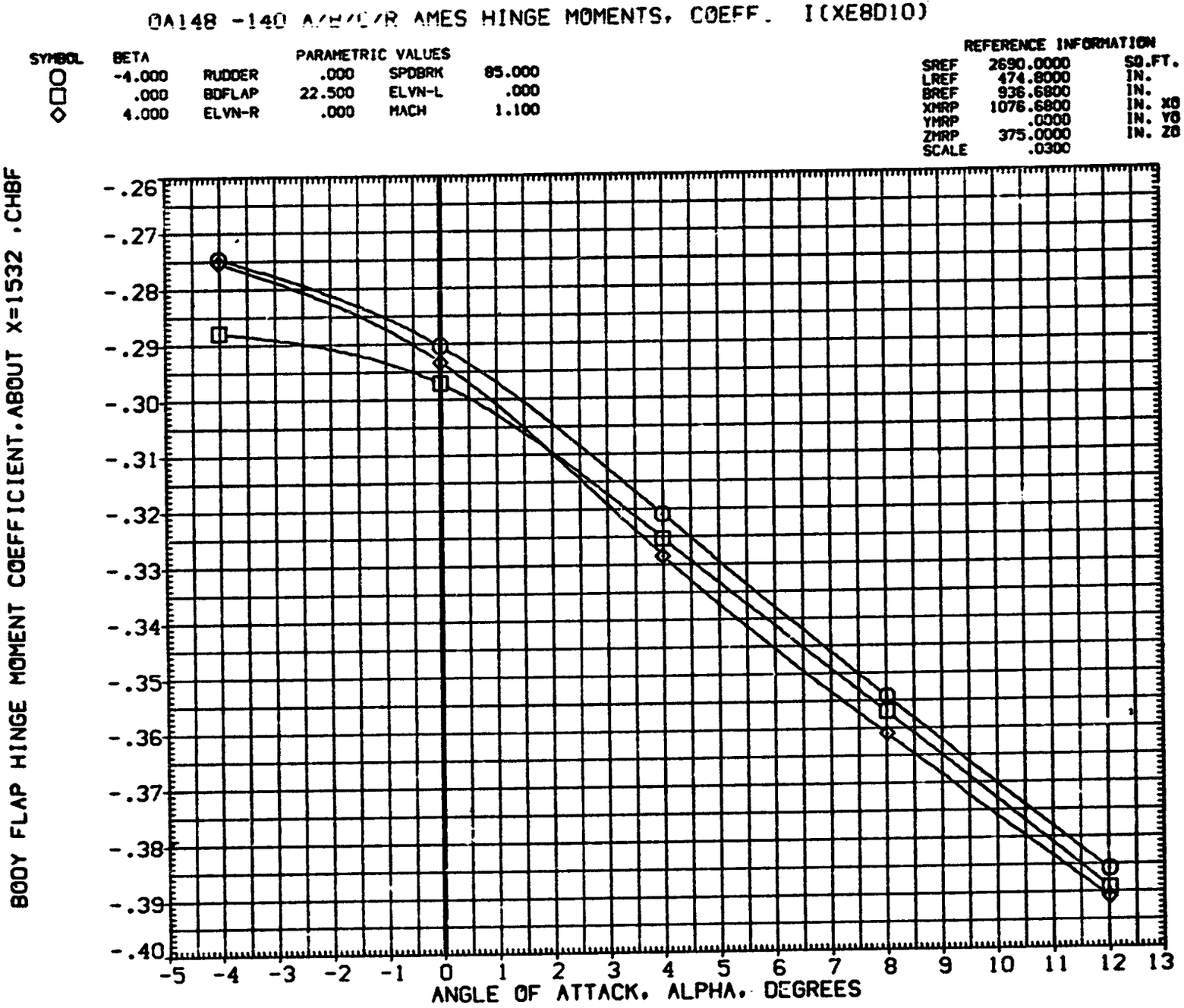


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

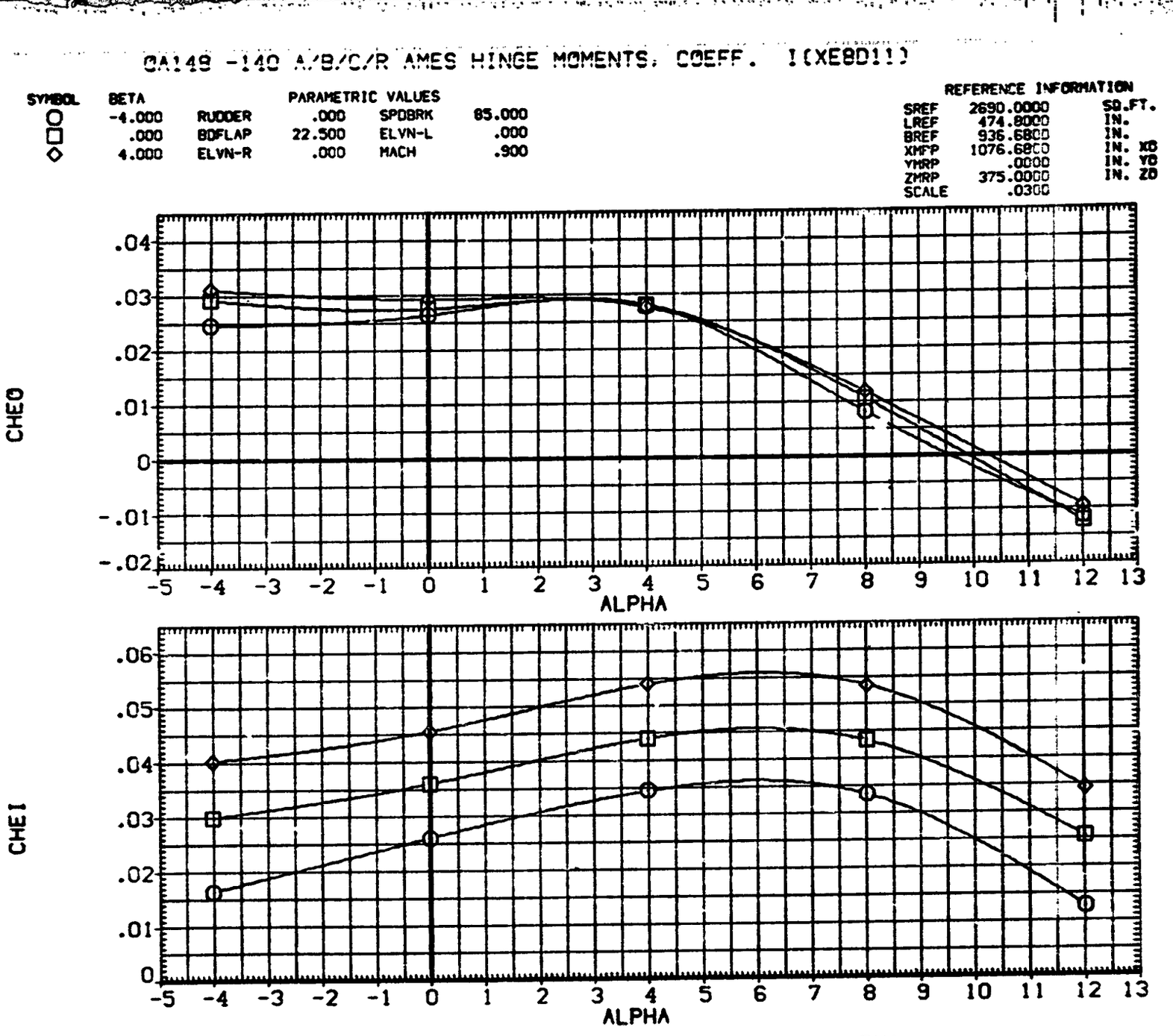


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

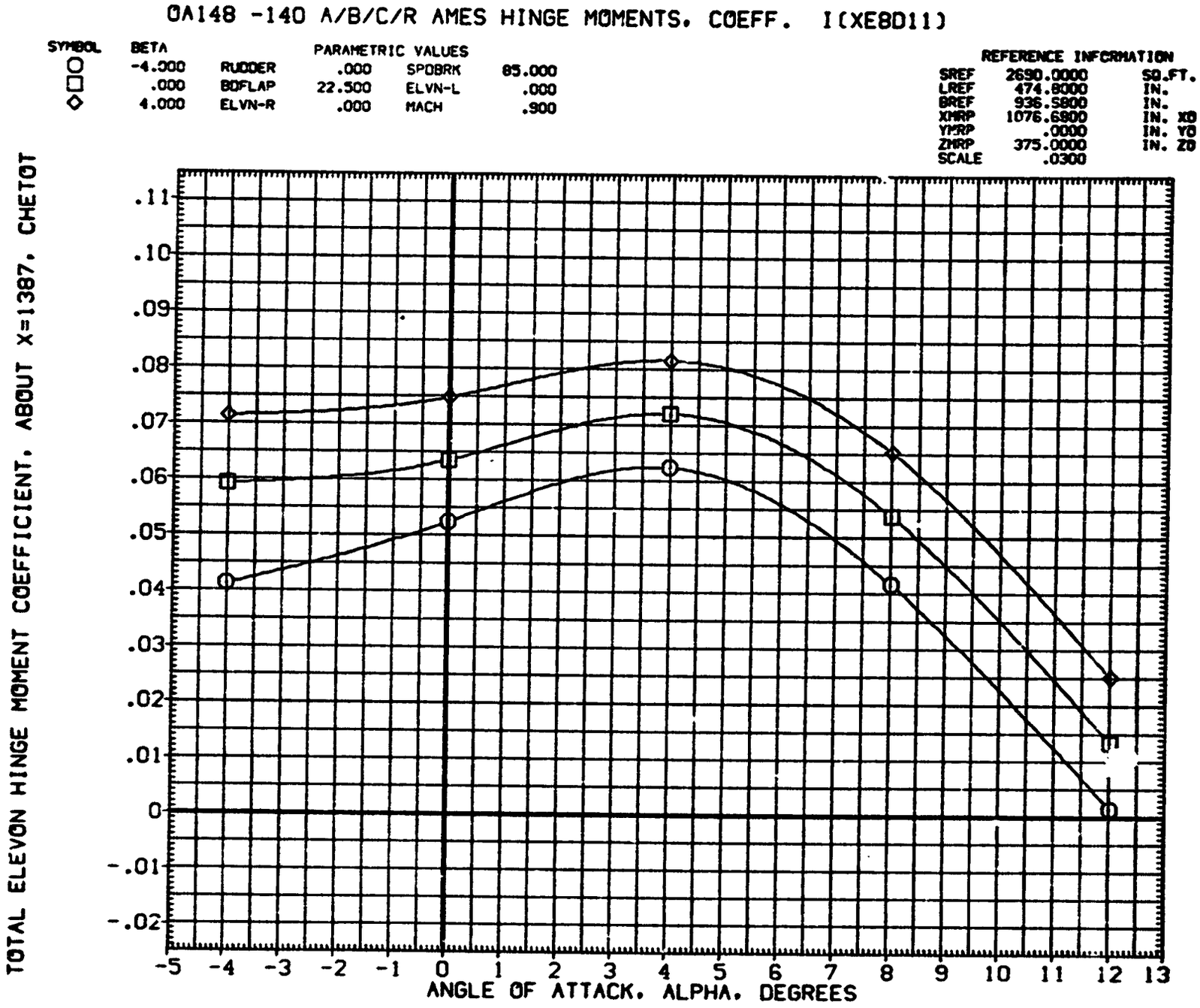


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

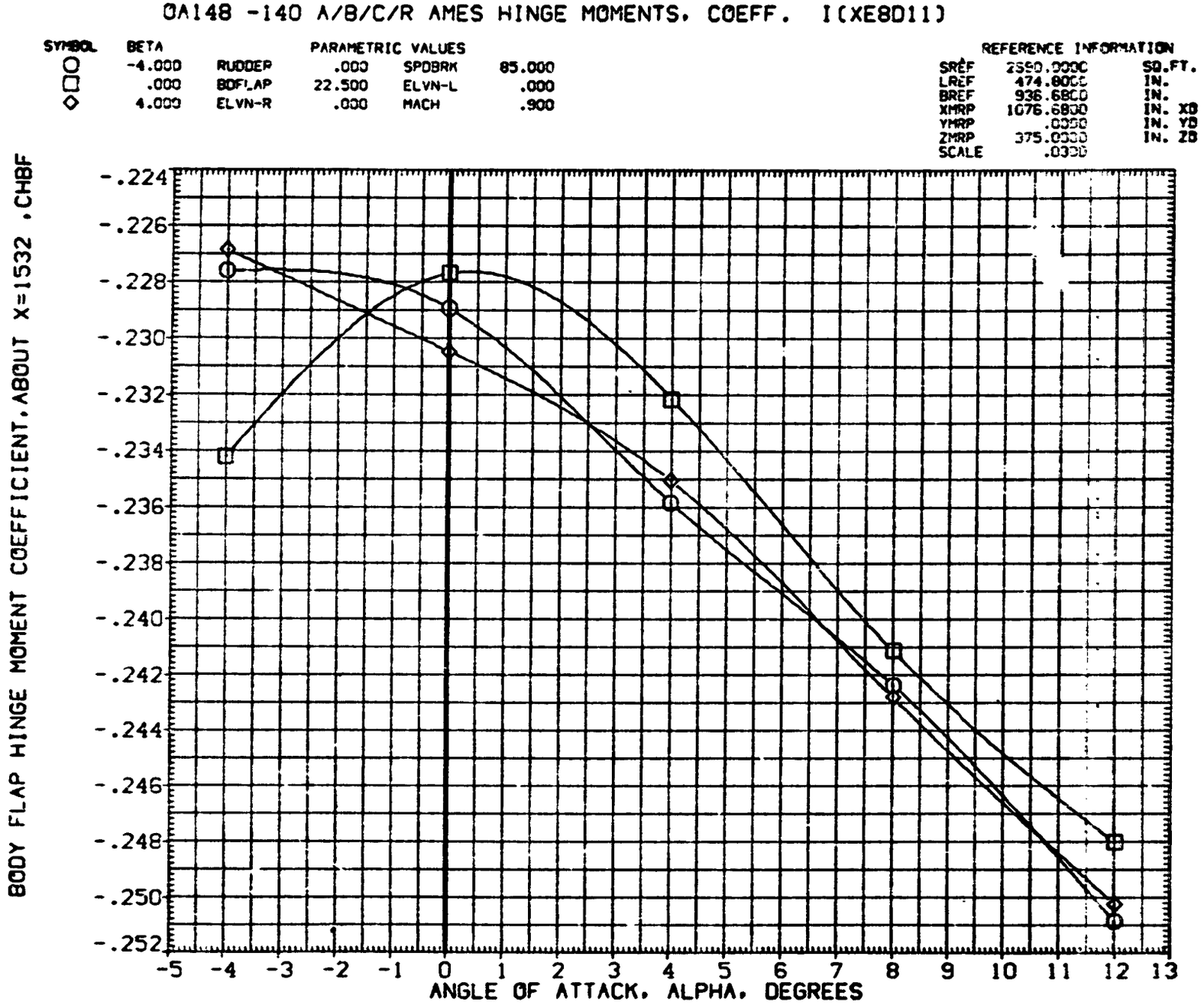


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

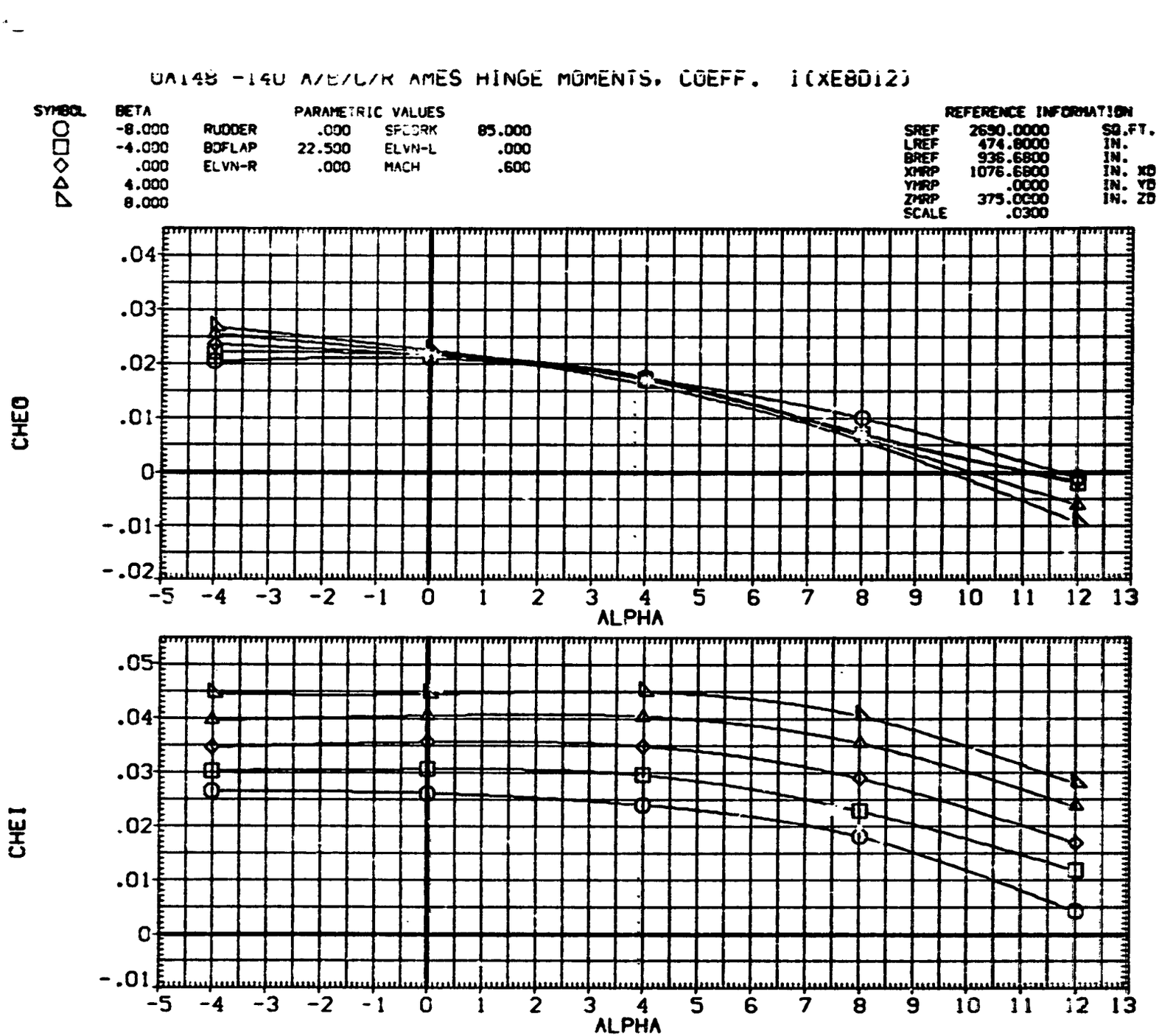


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

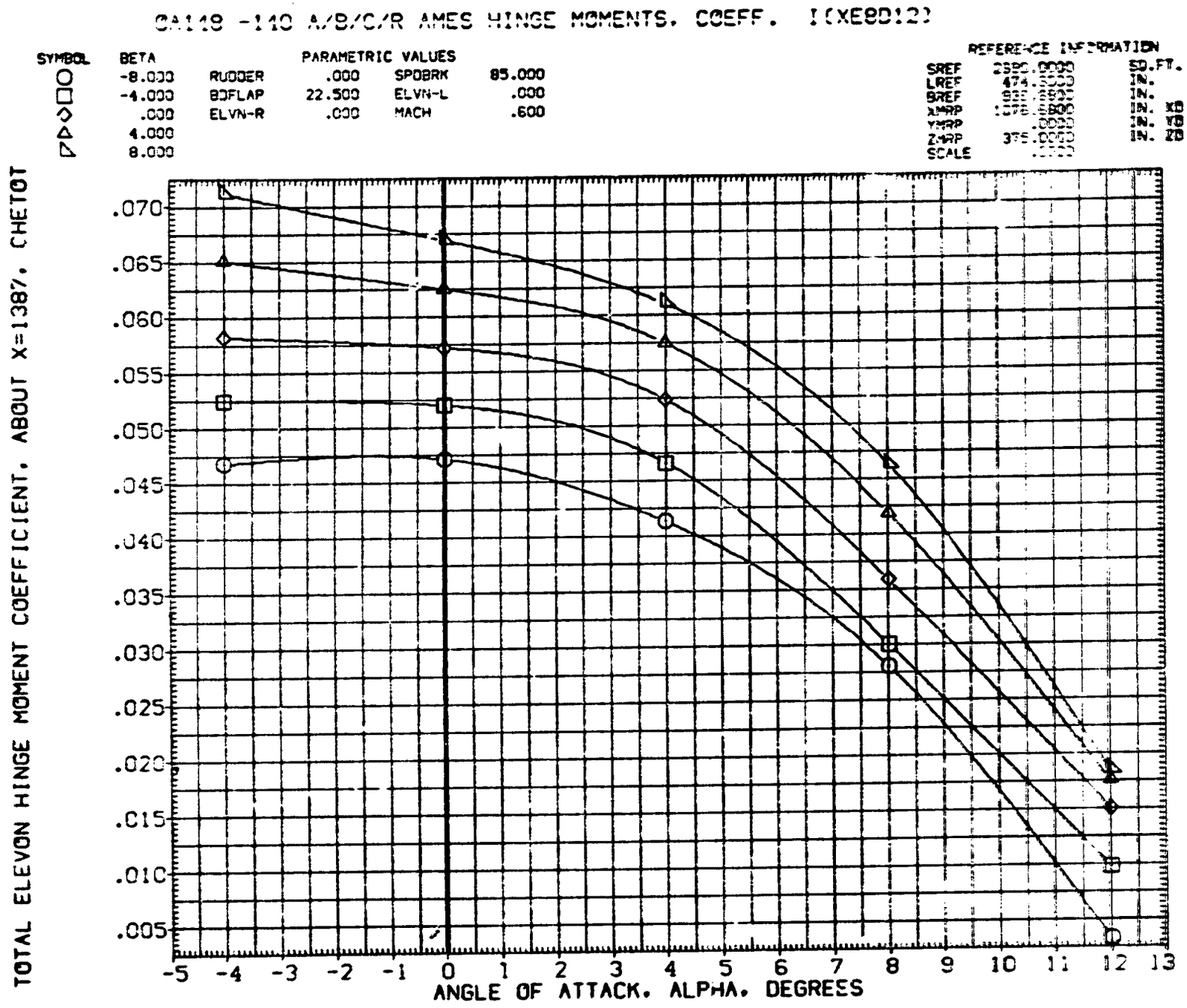


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

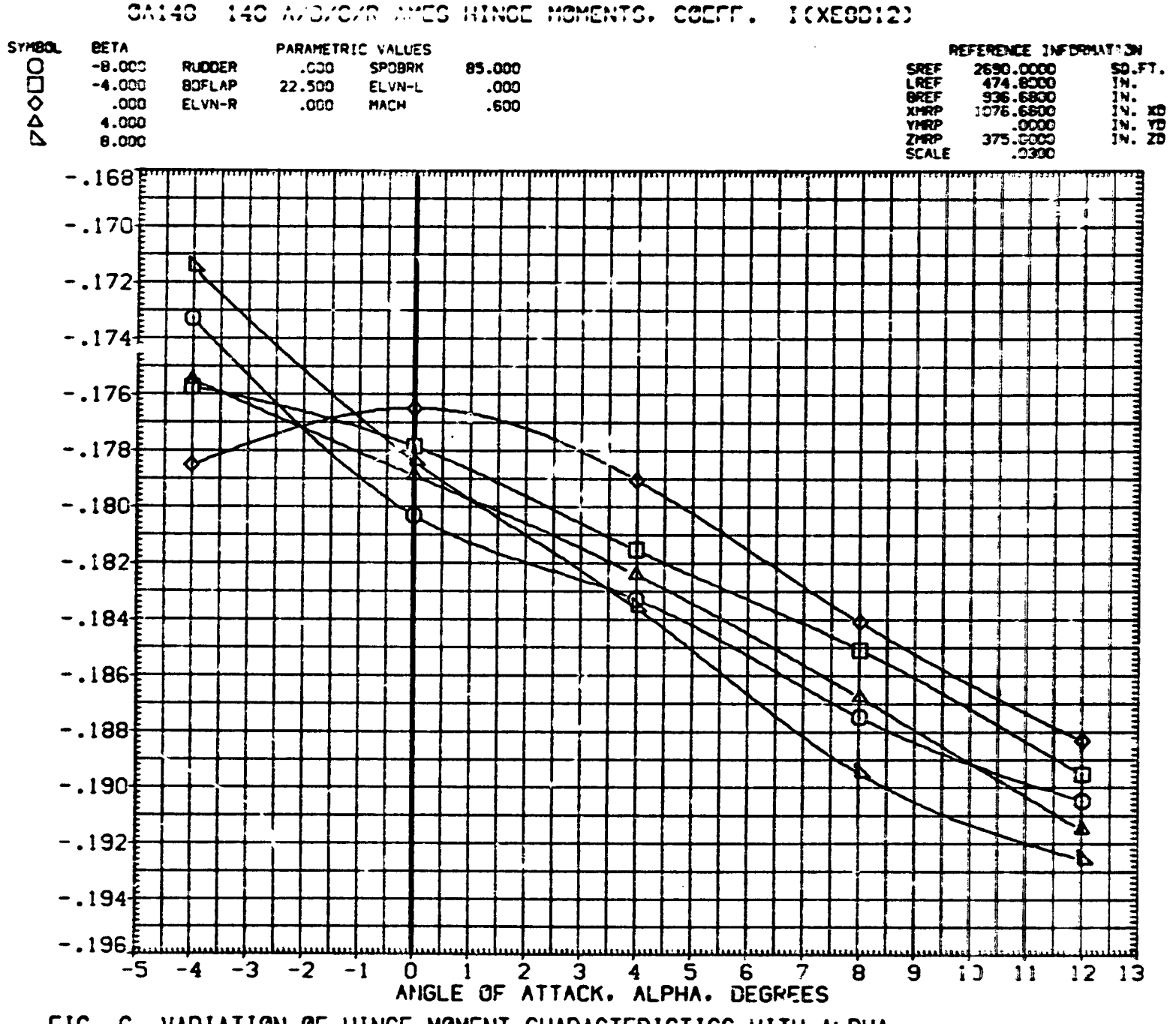


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8D13)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	35.000
□	.000	BOFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

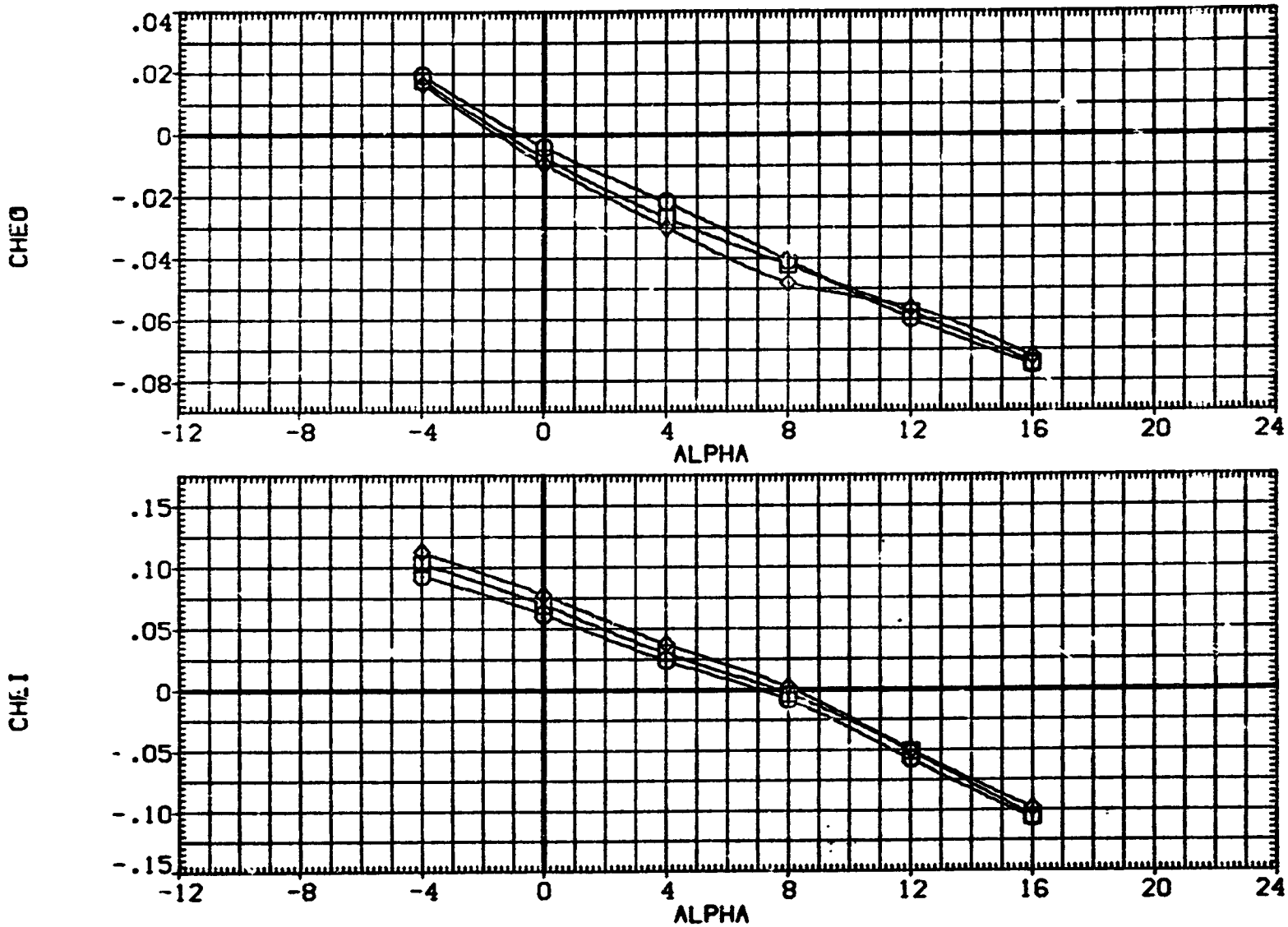


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

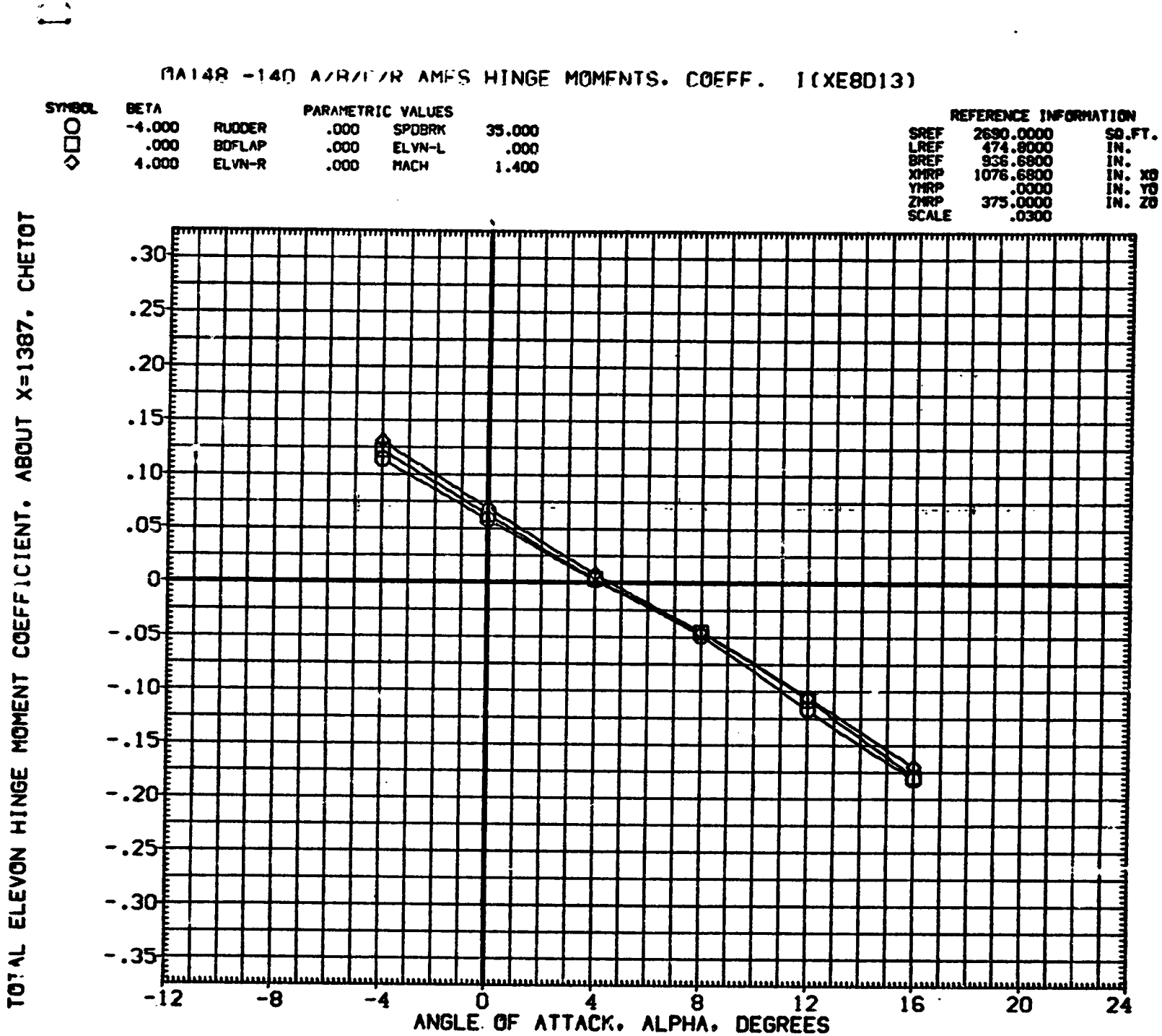


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

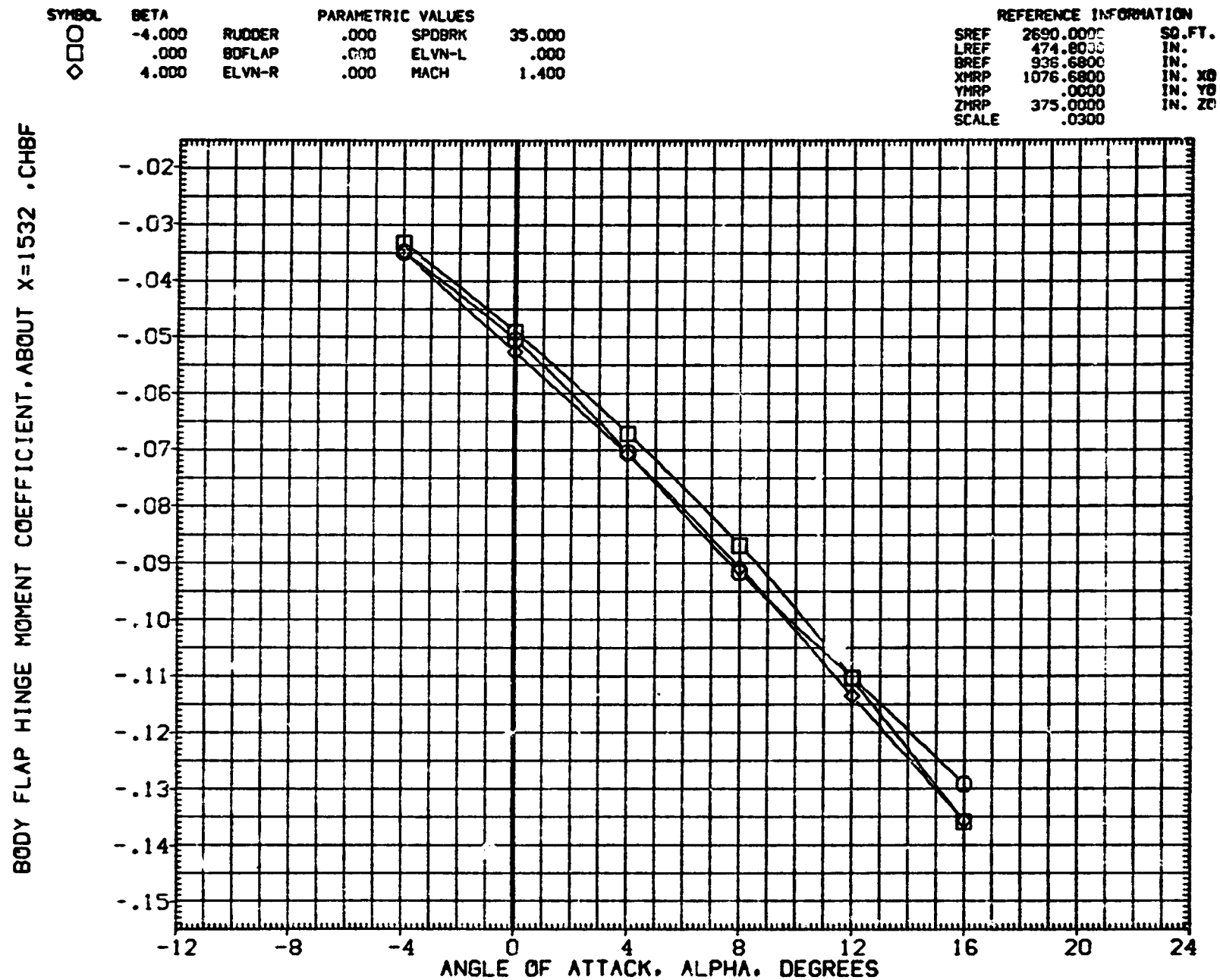


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

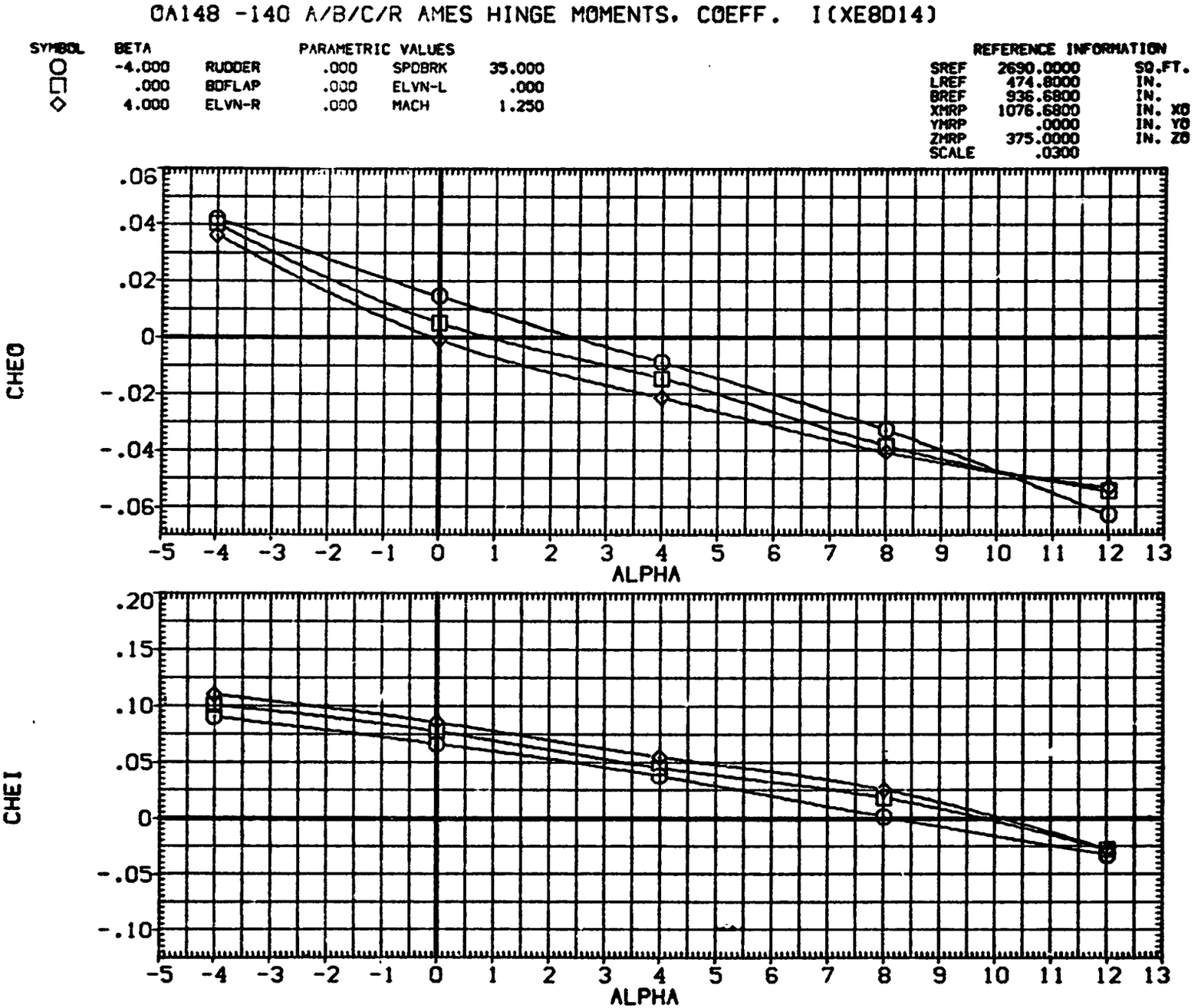


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

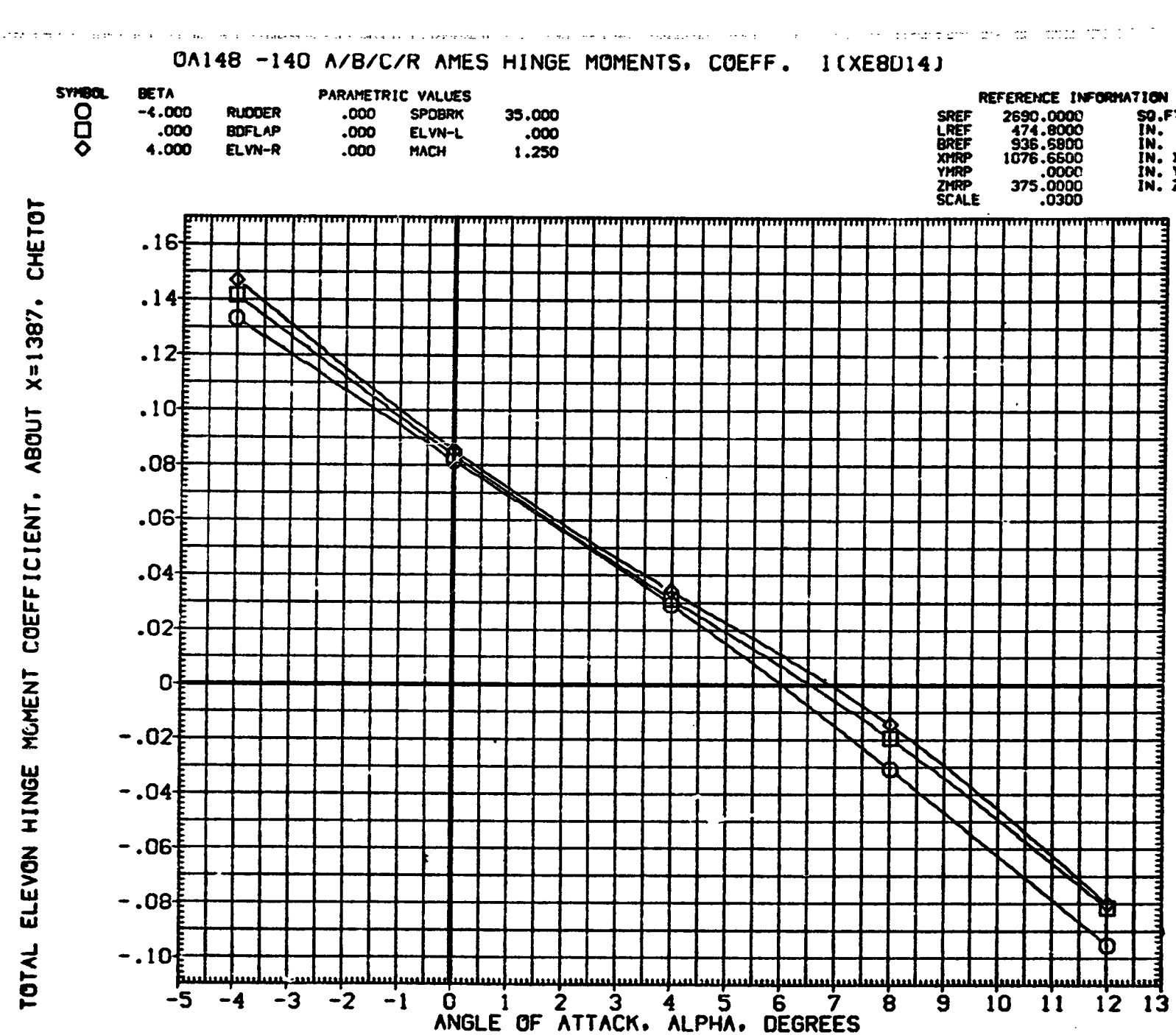


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

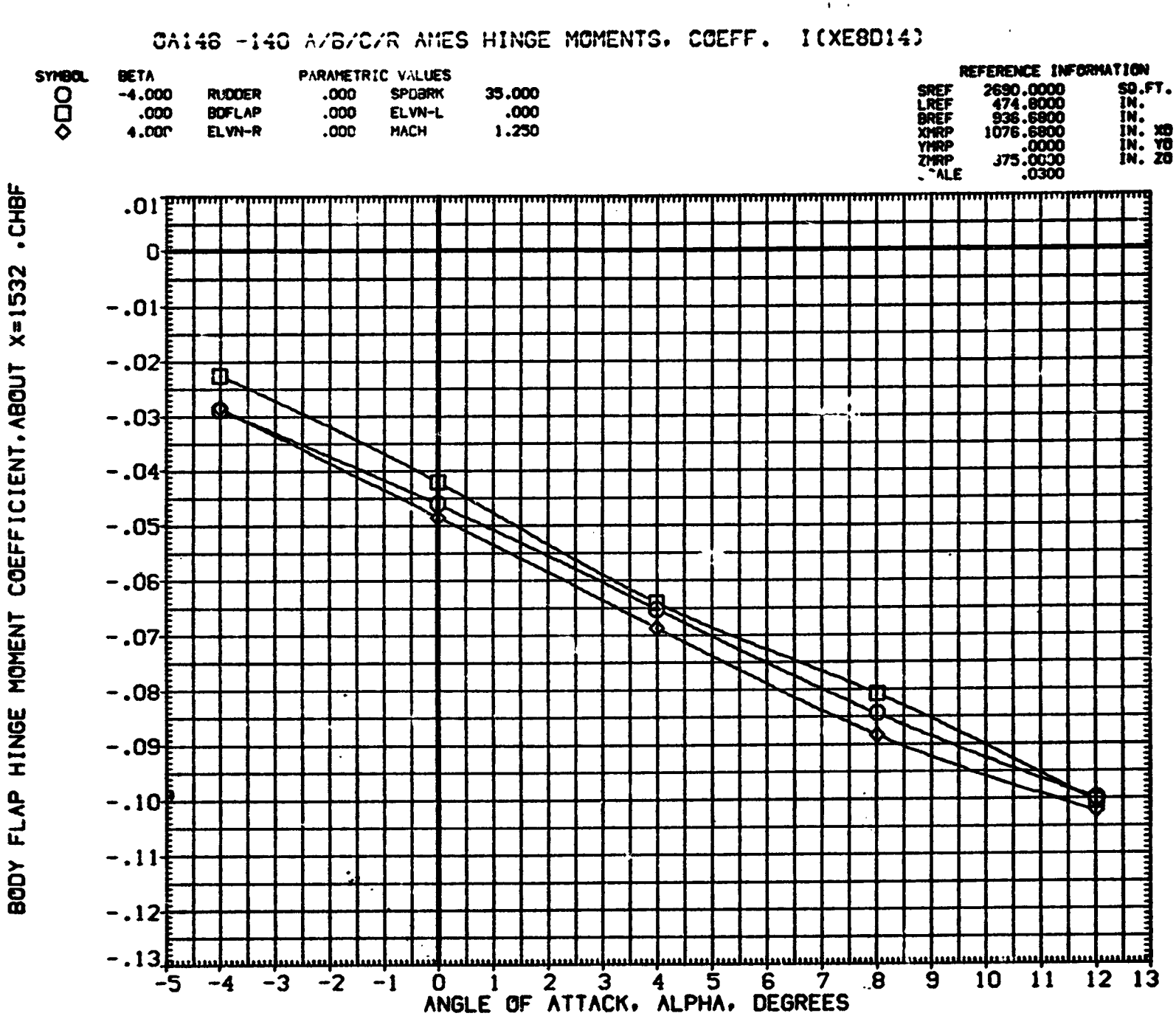


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

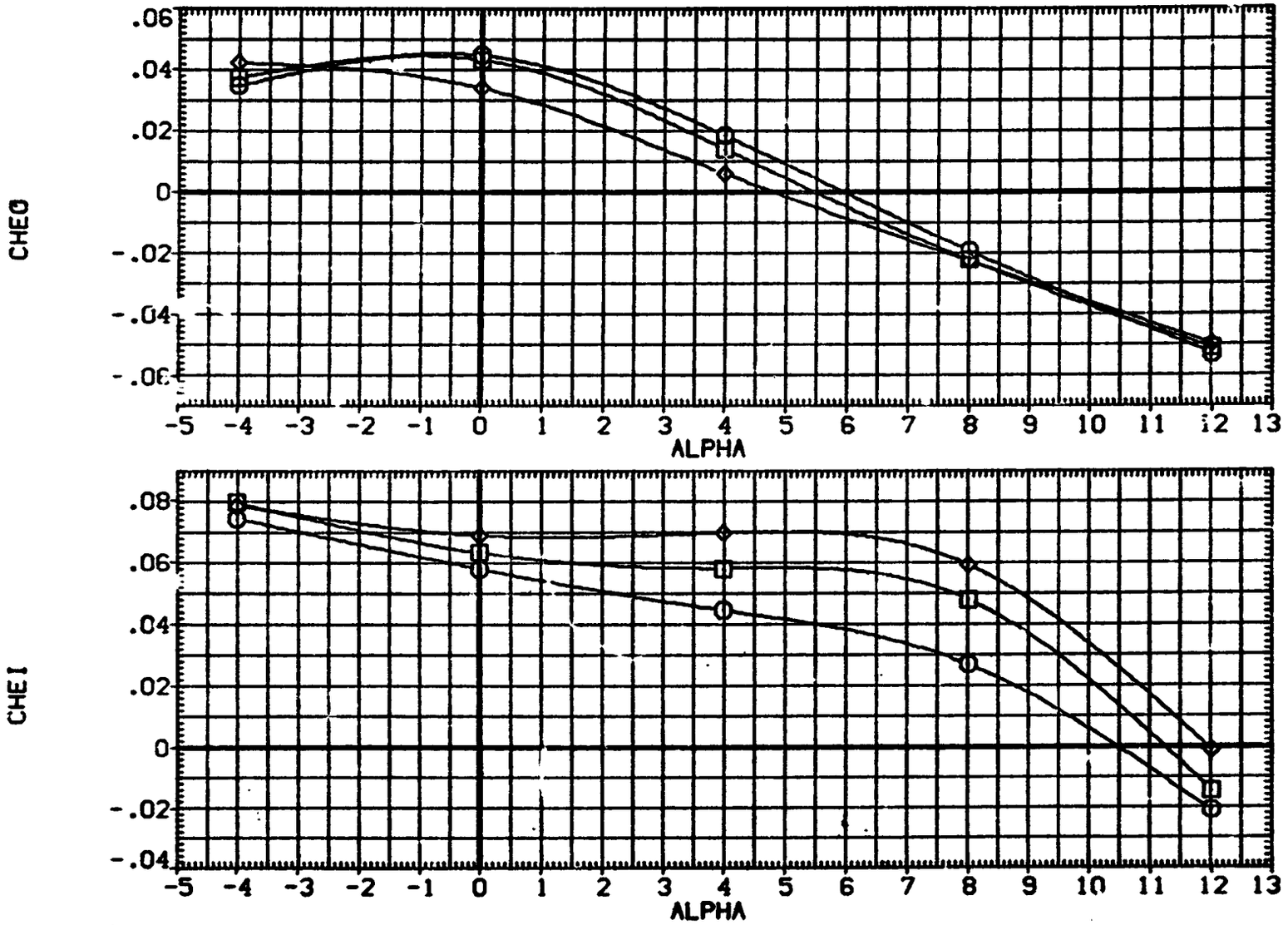


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

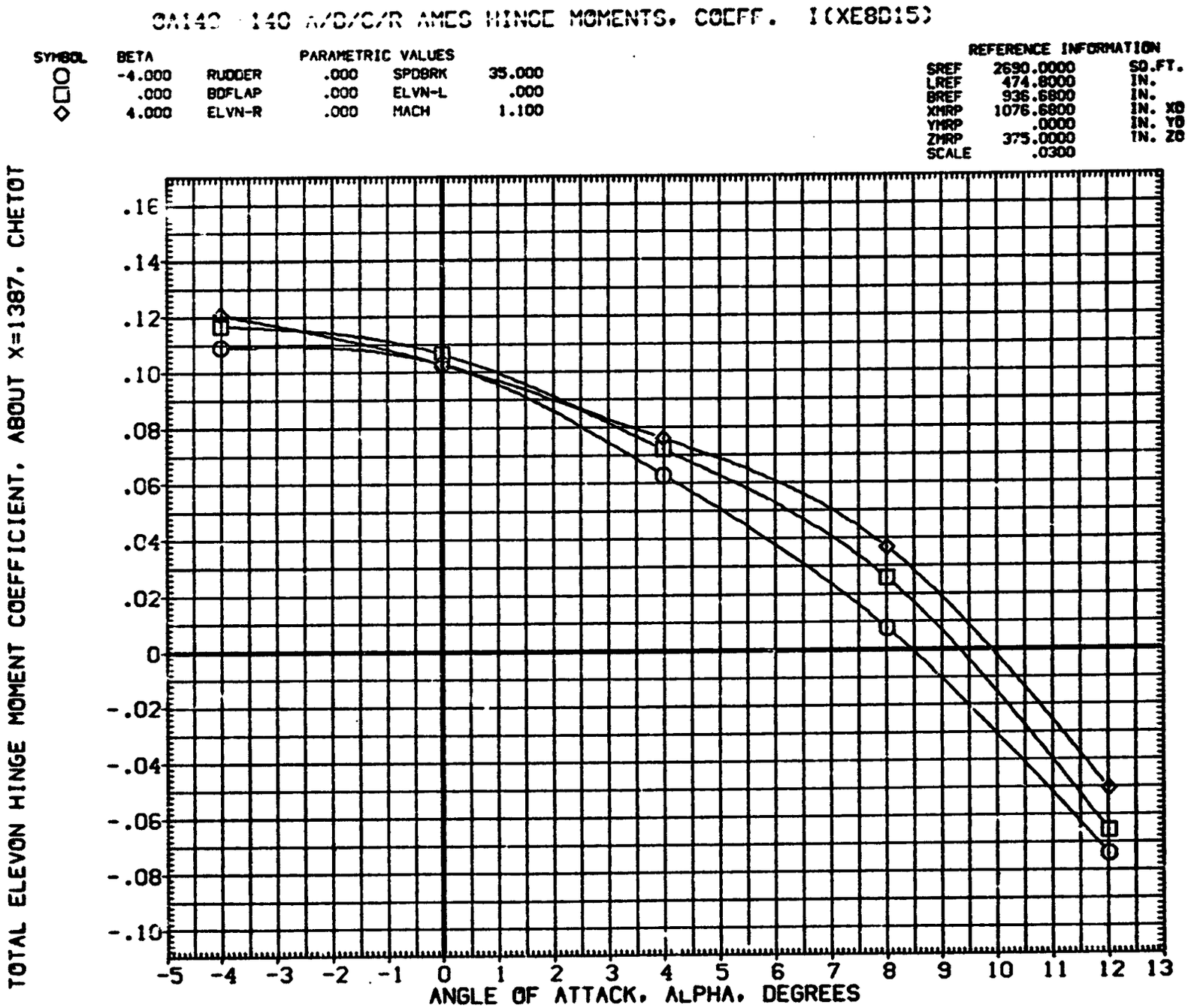


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	35.000
□	.000	BDFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

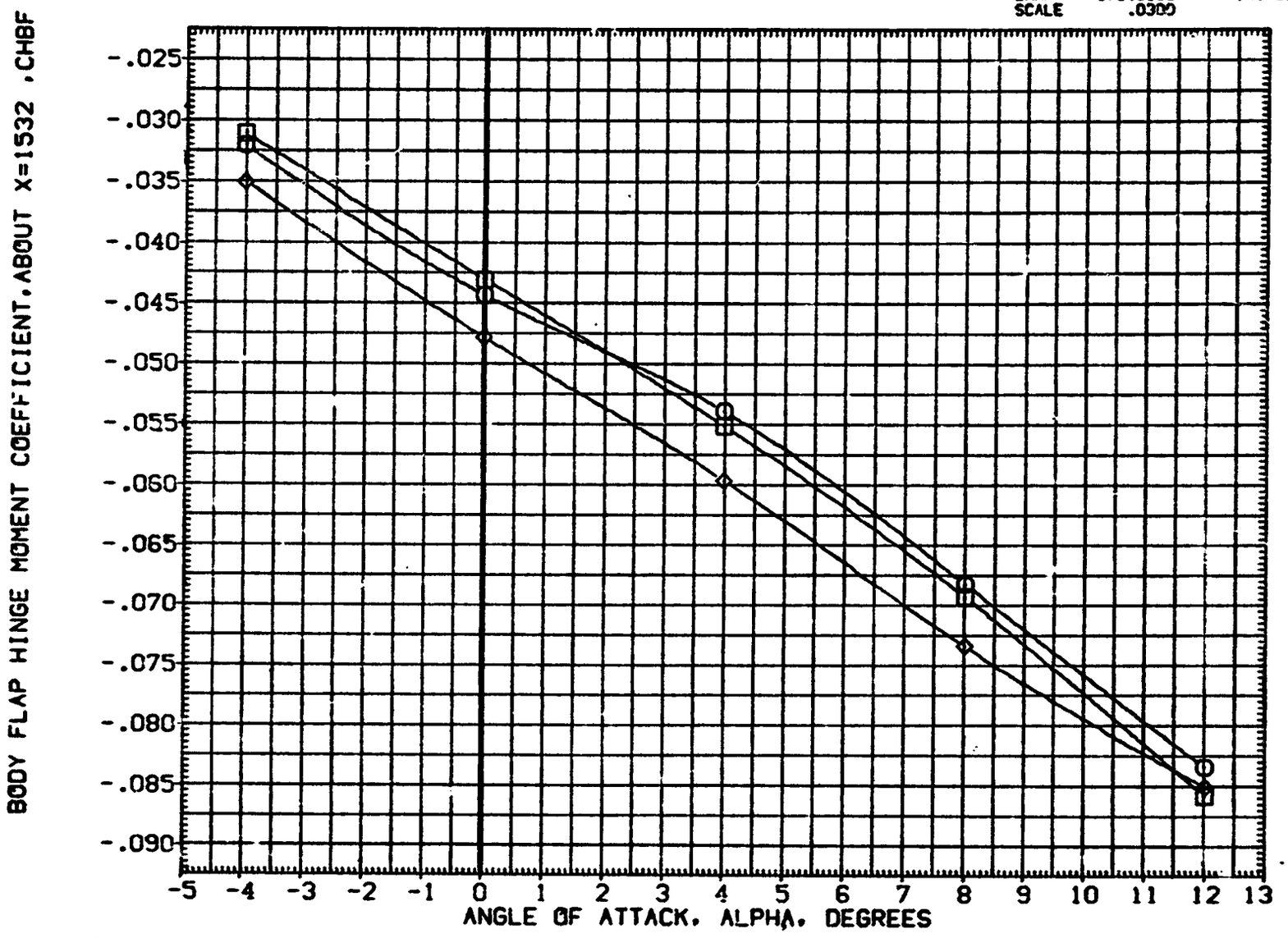


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D16)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	35.000
□	.000	BOFLAP	.000	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

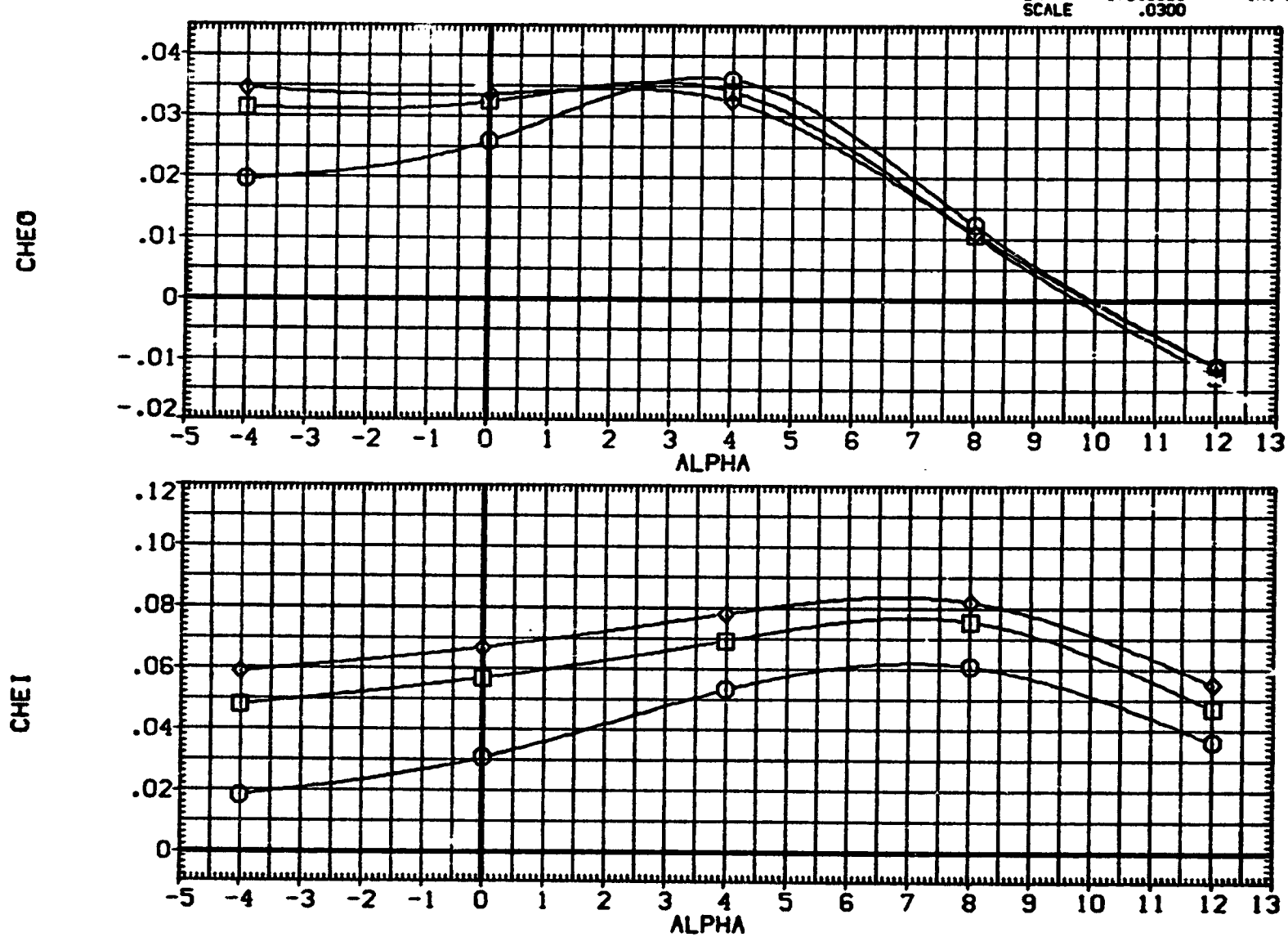


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

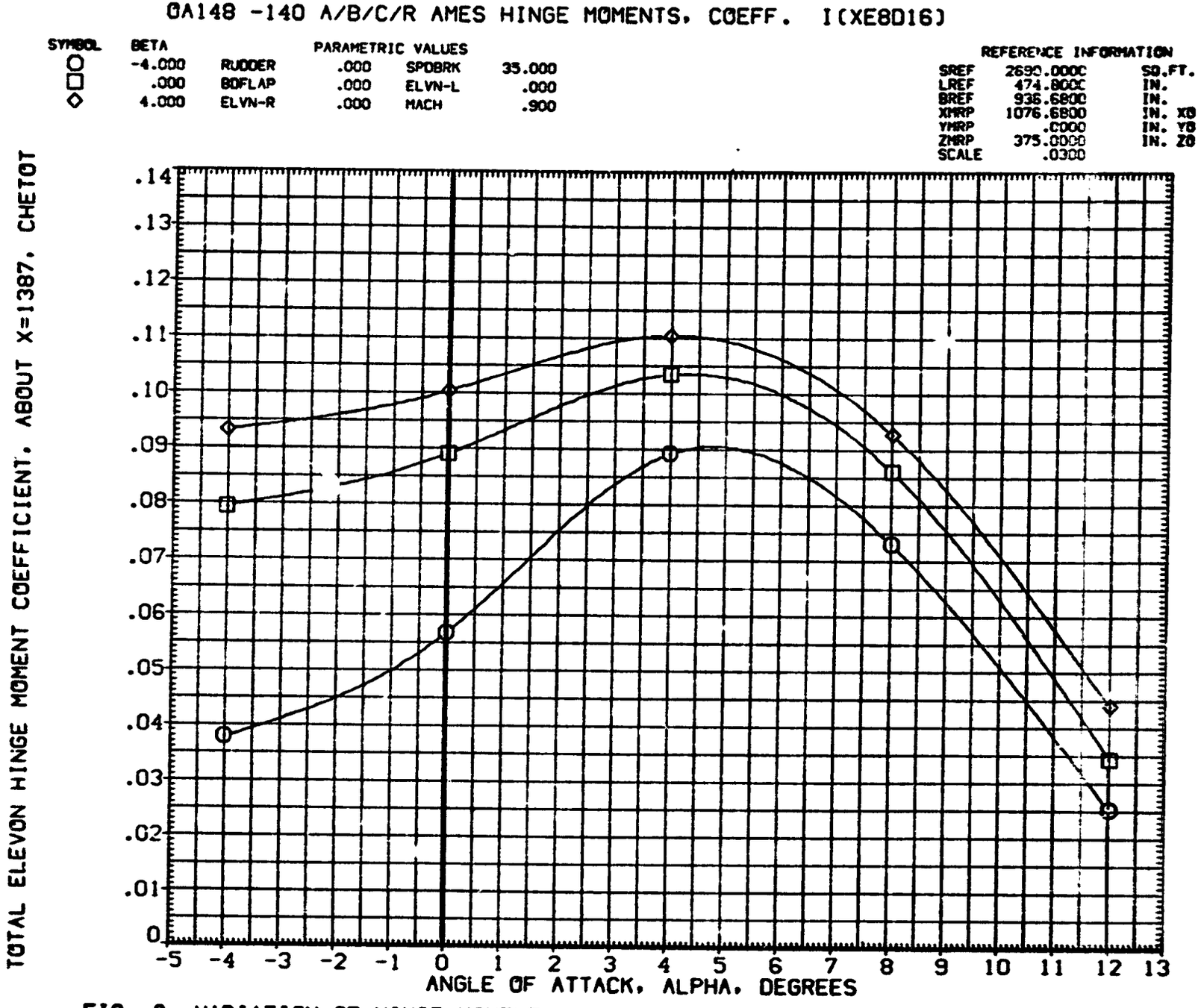


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

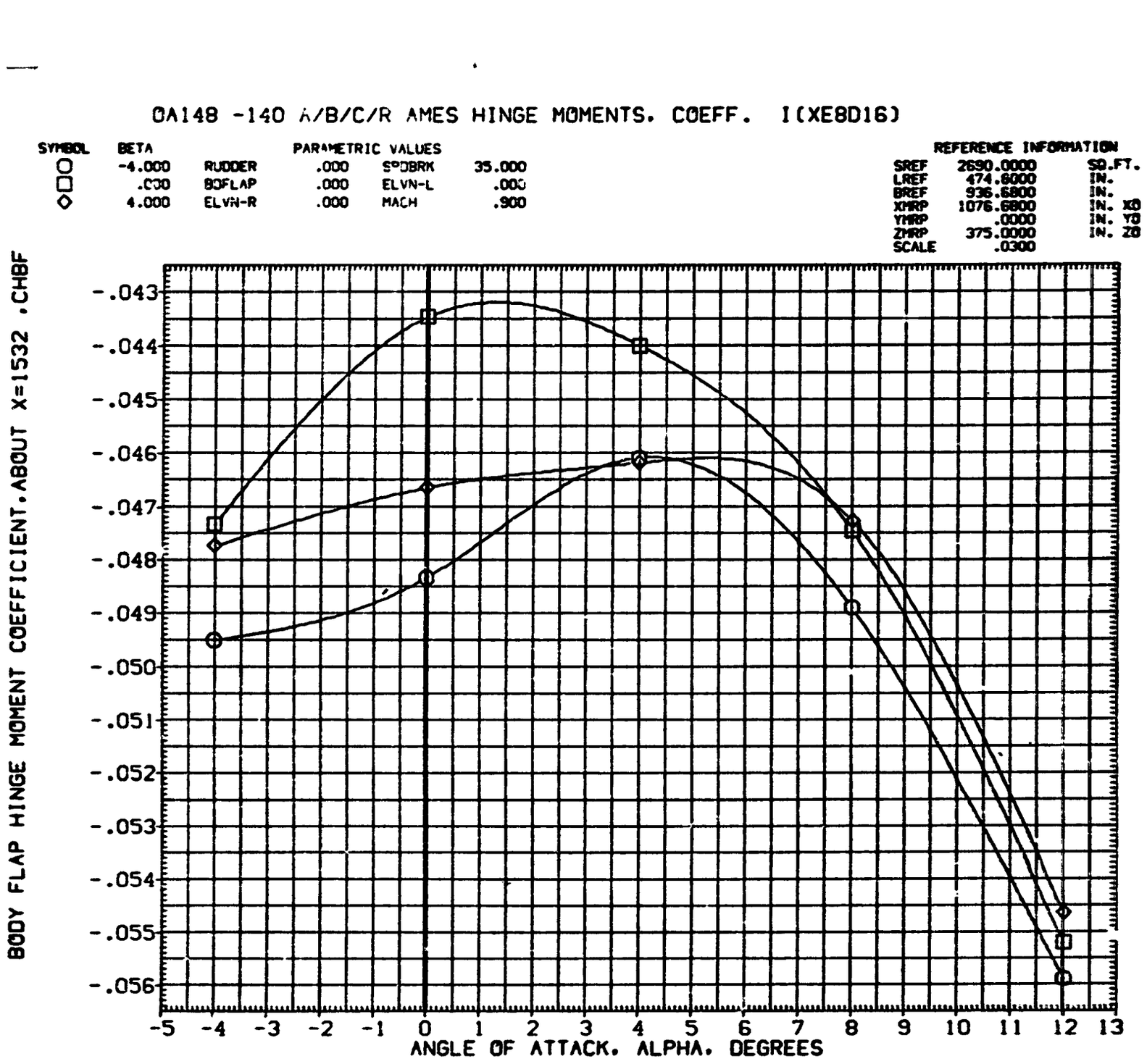


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

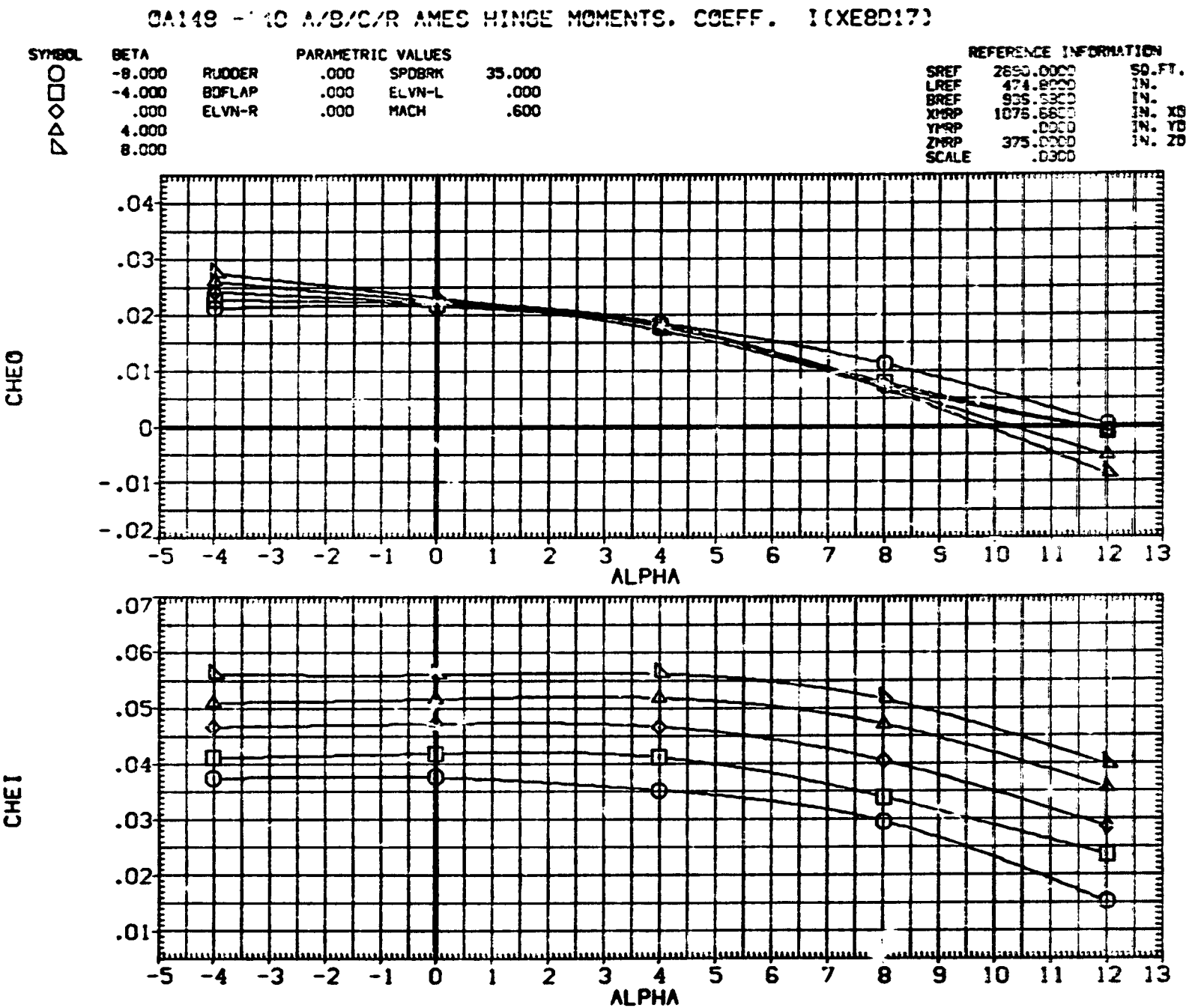


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

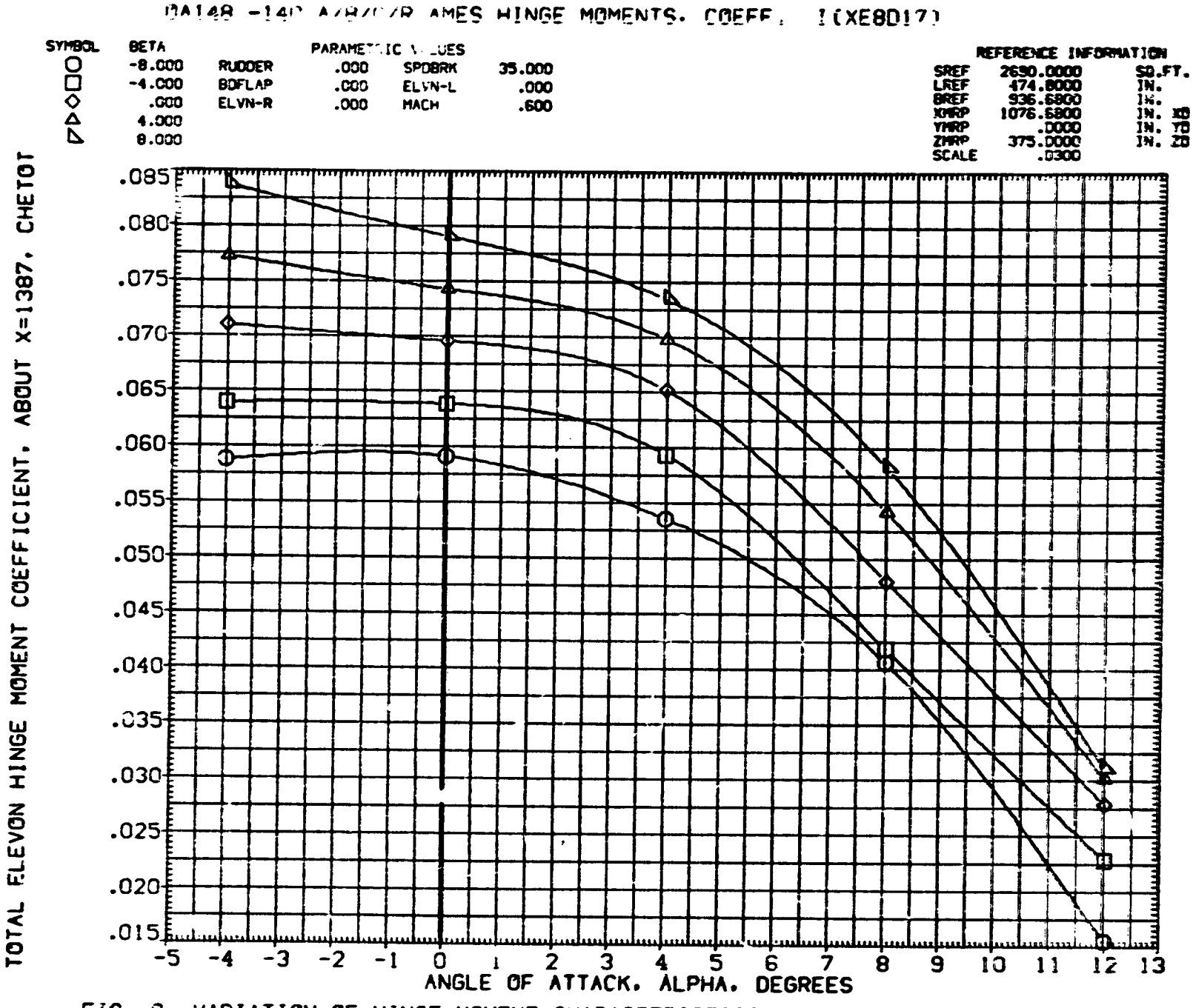


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

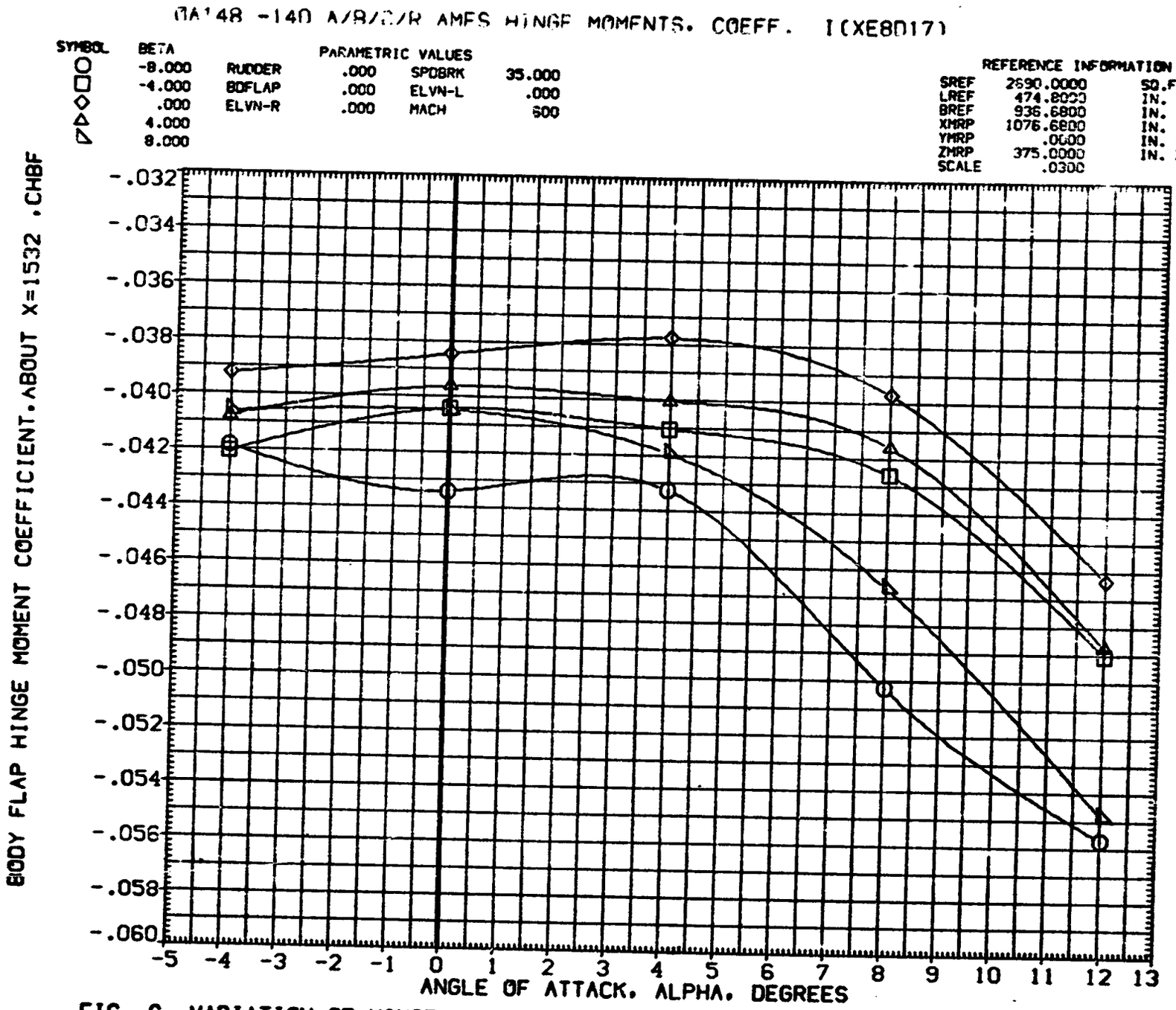


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

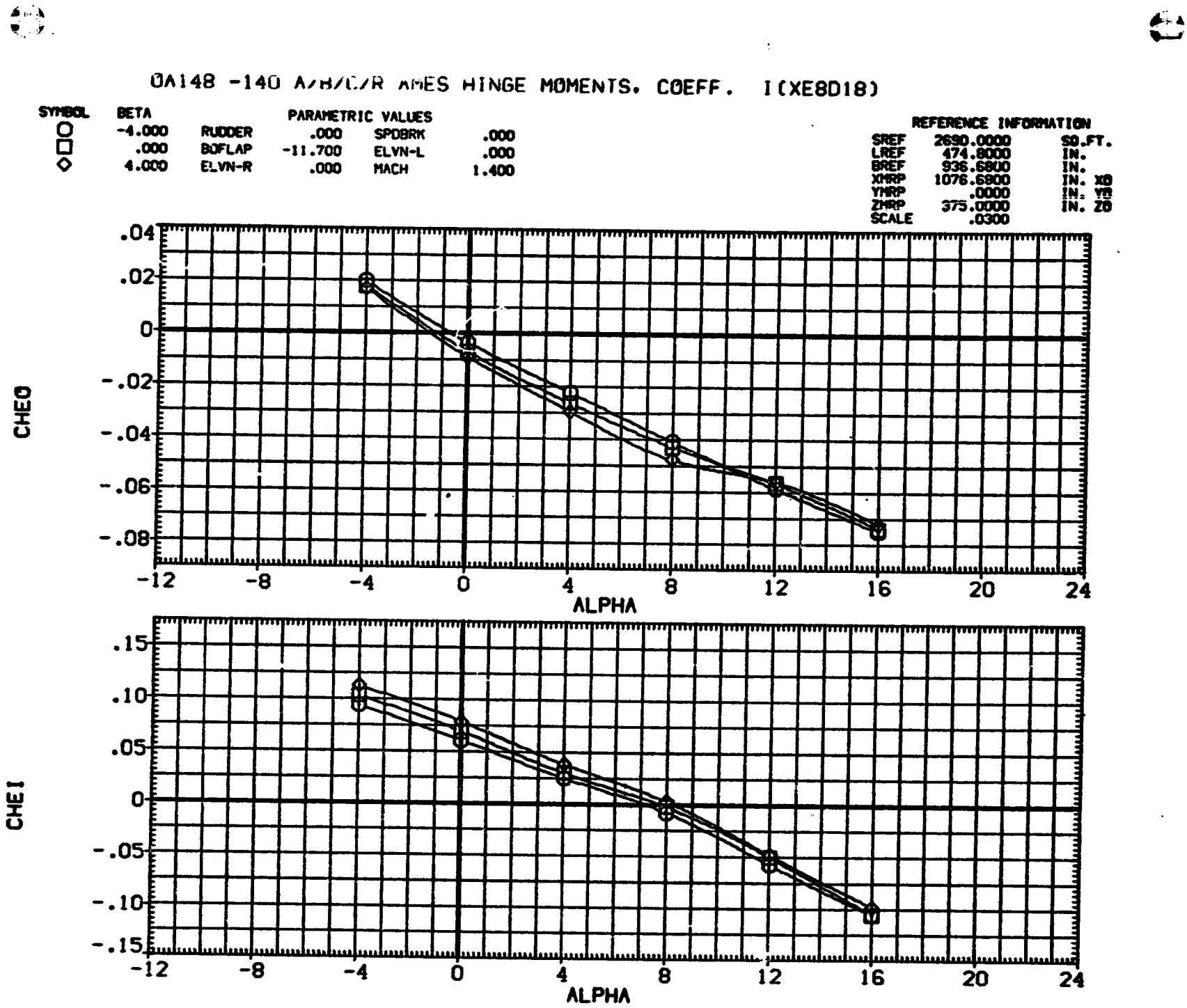


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

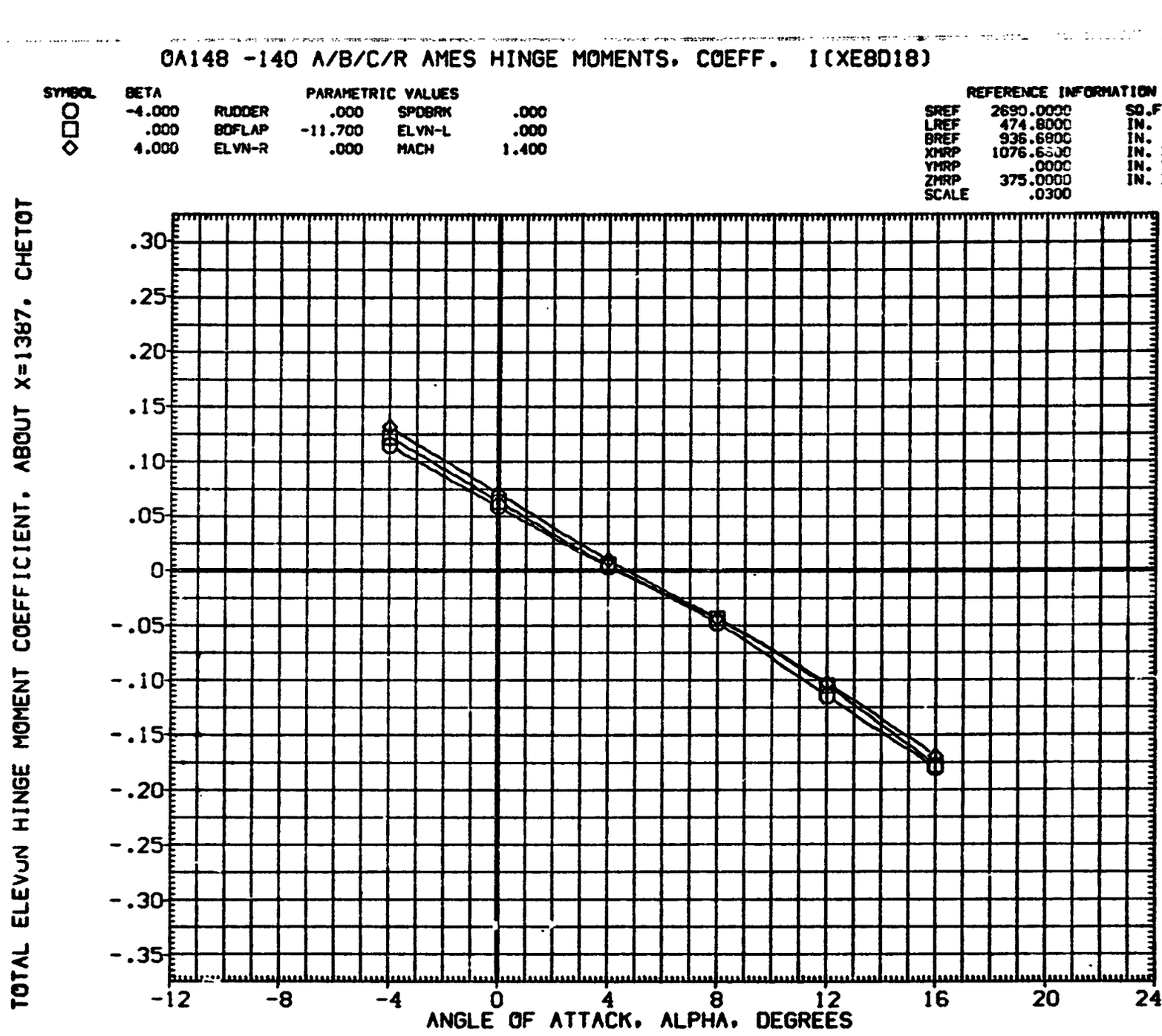


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8D18)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

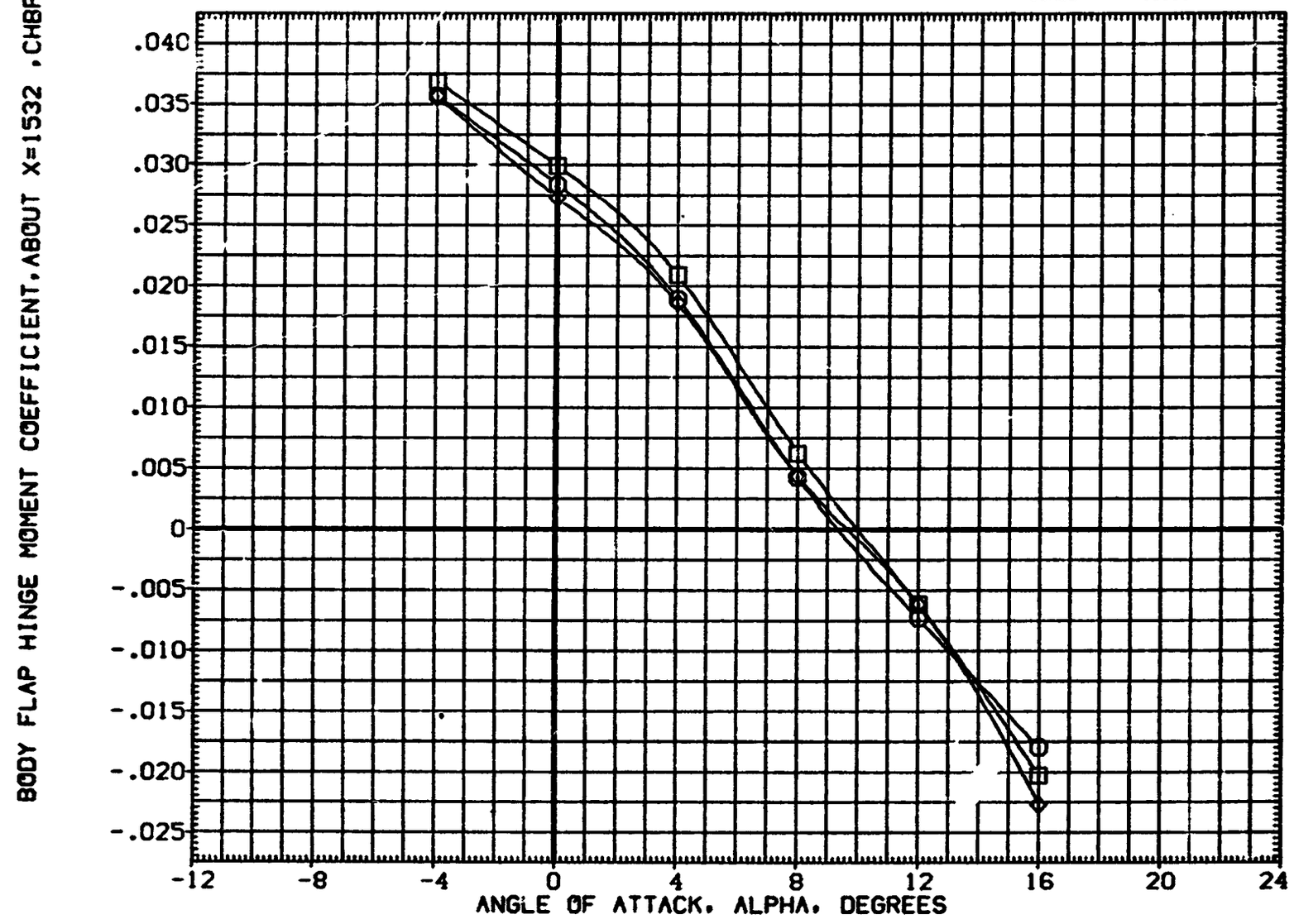


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

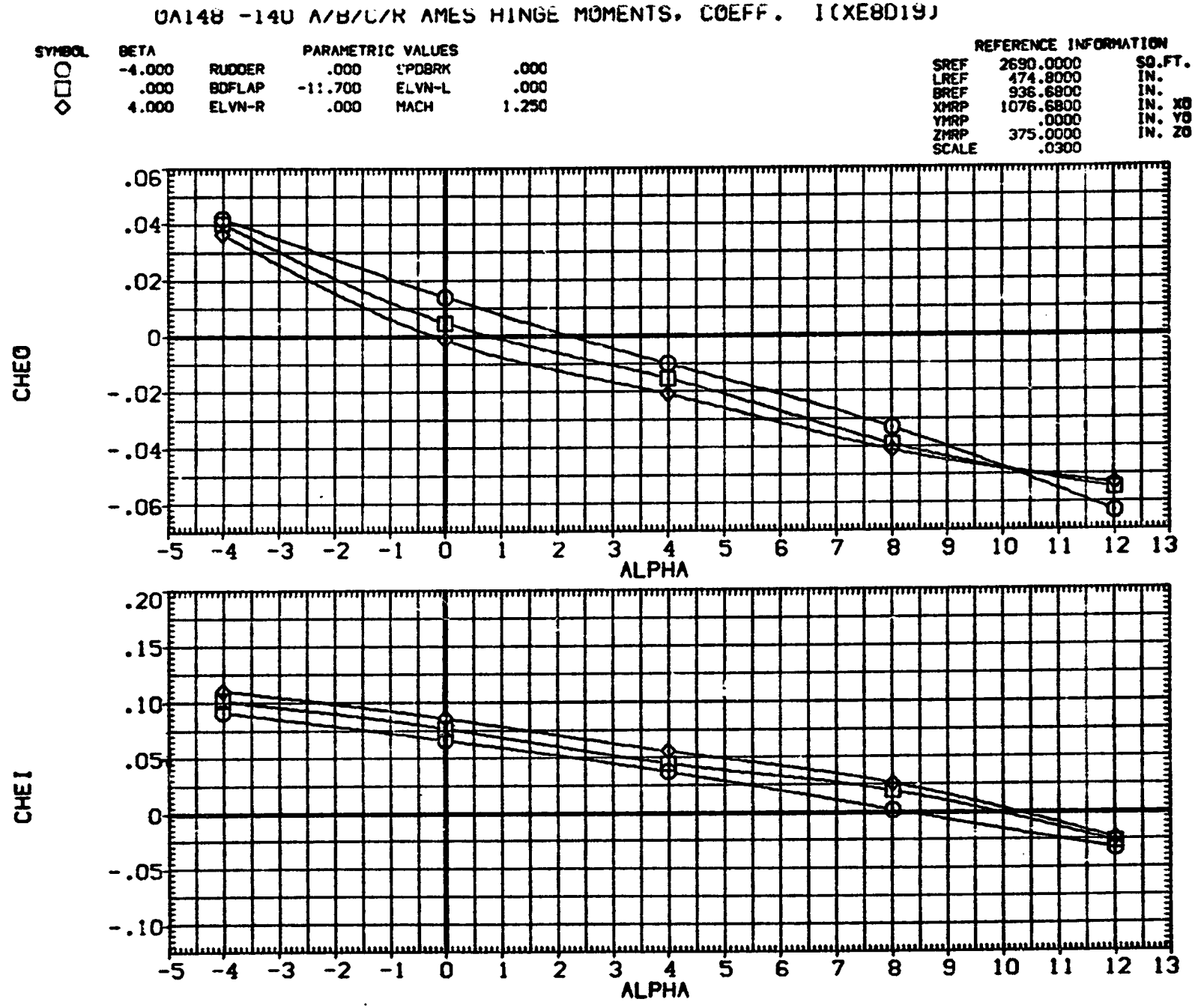


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

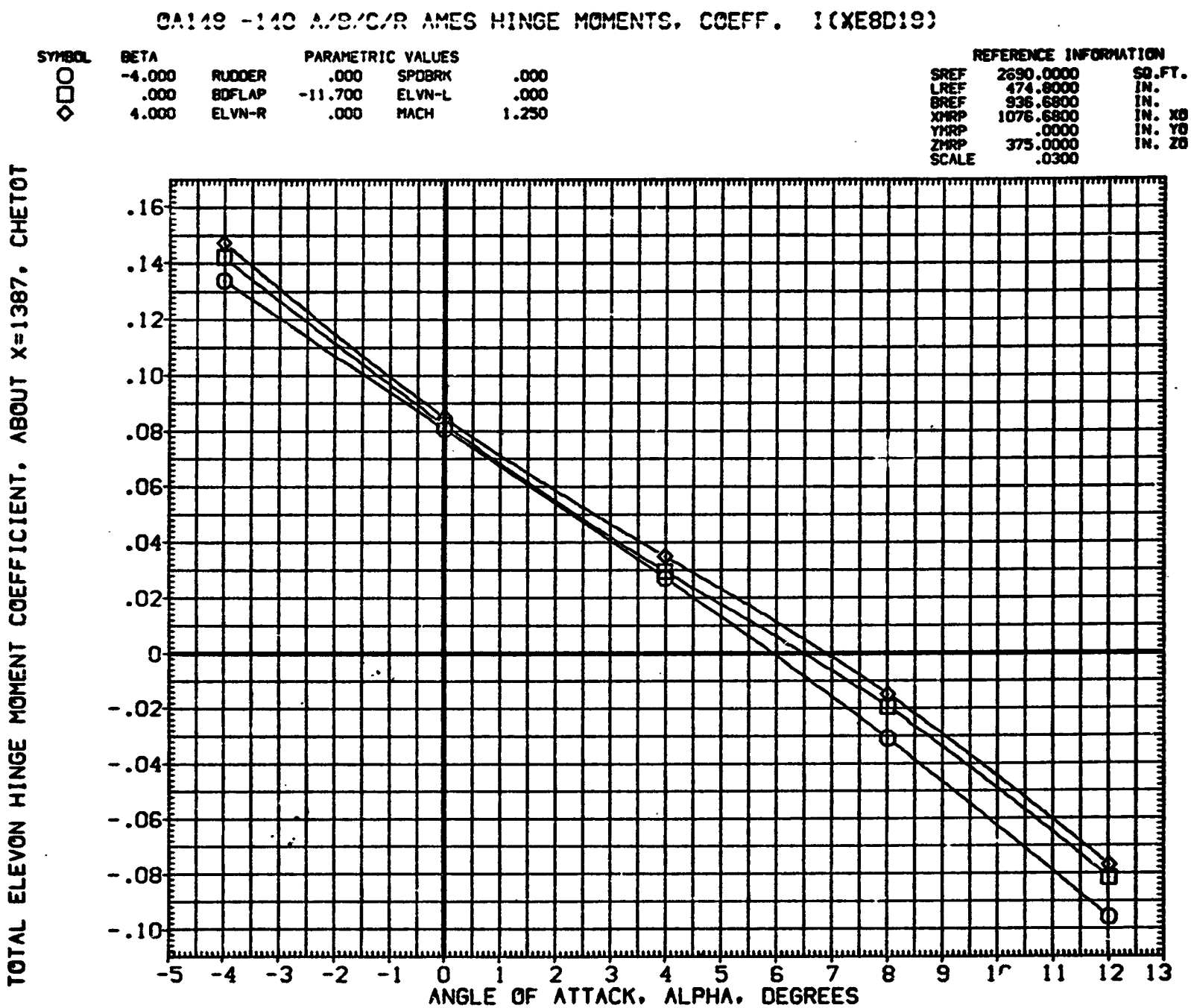


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

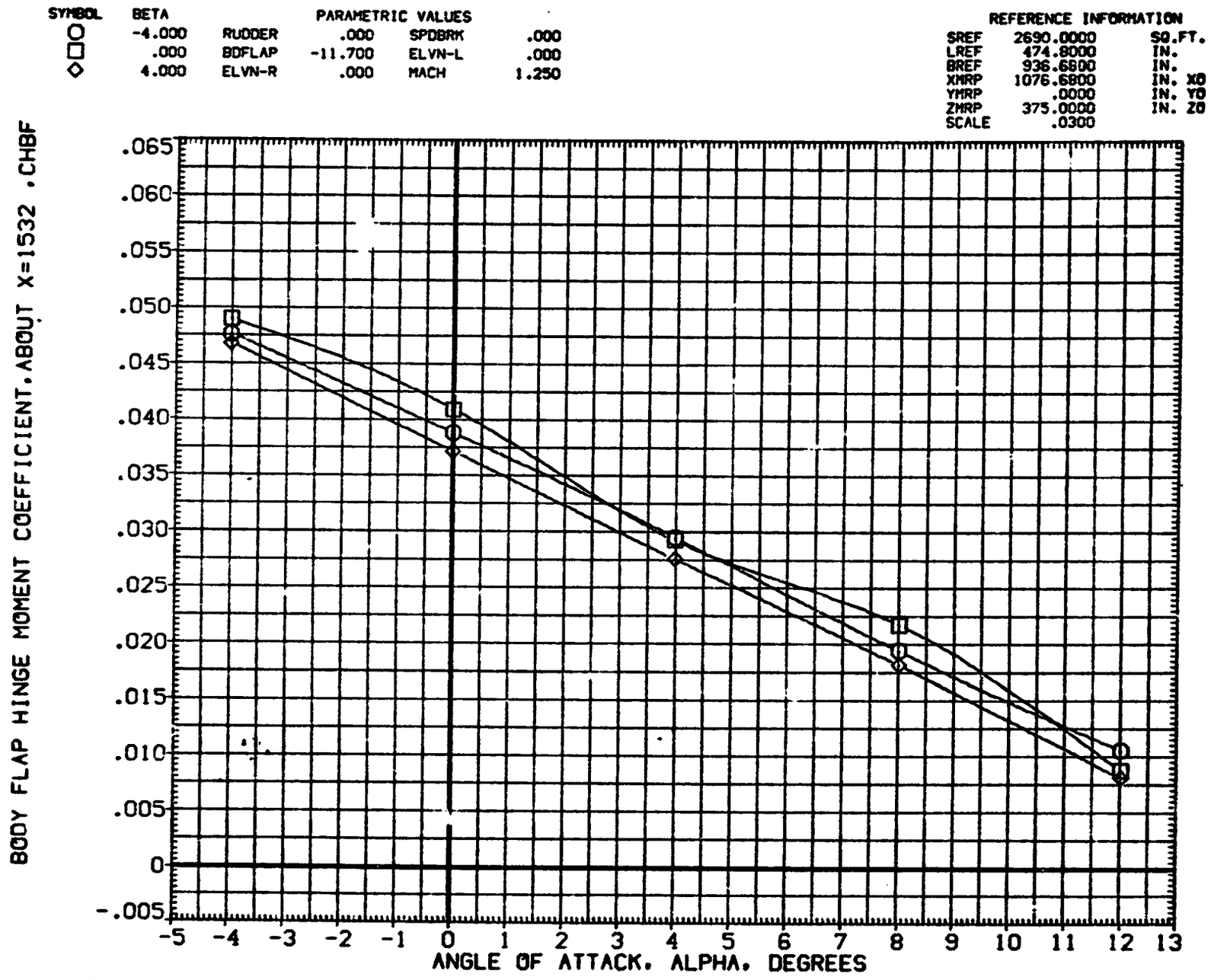


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

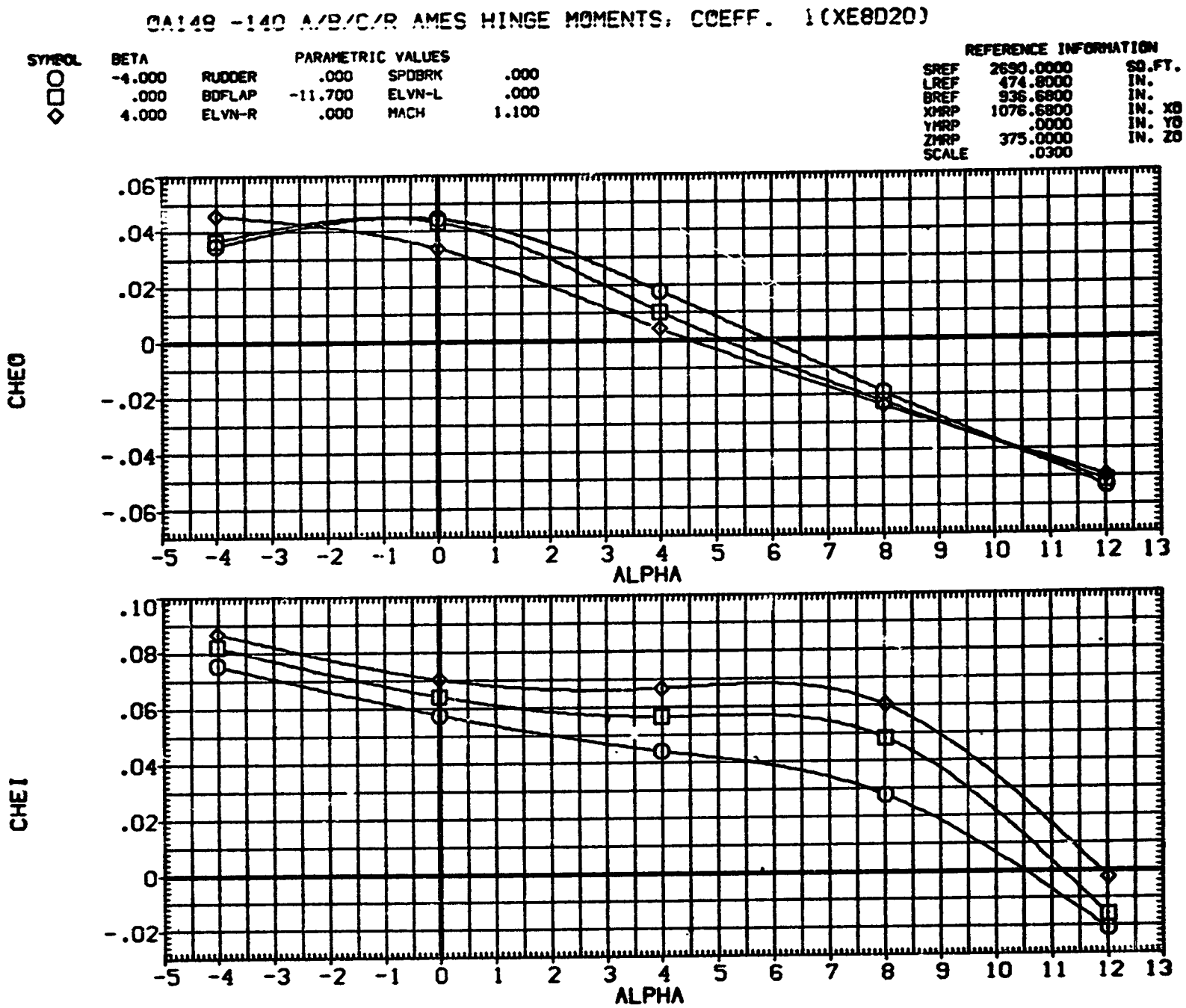


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

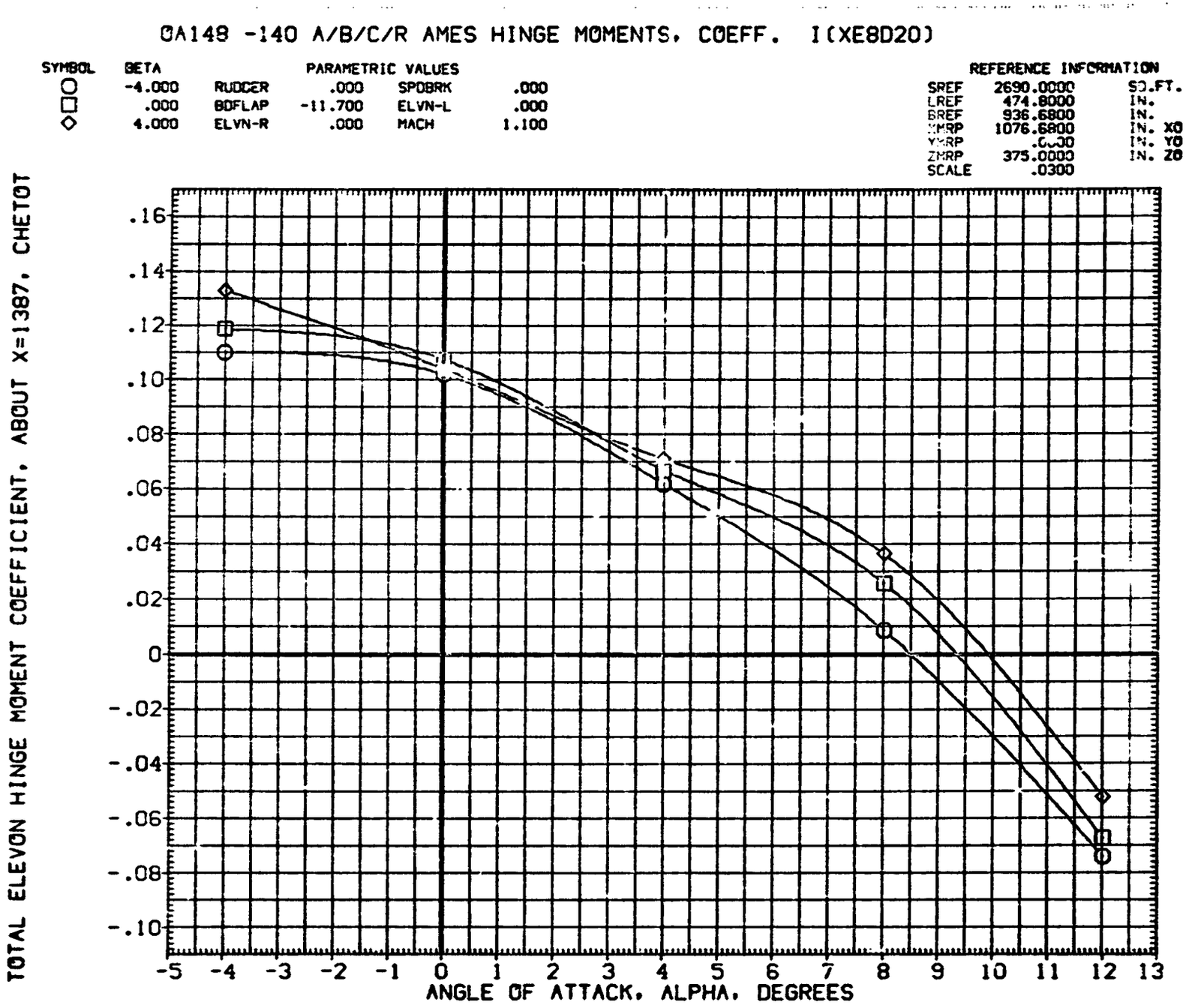


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

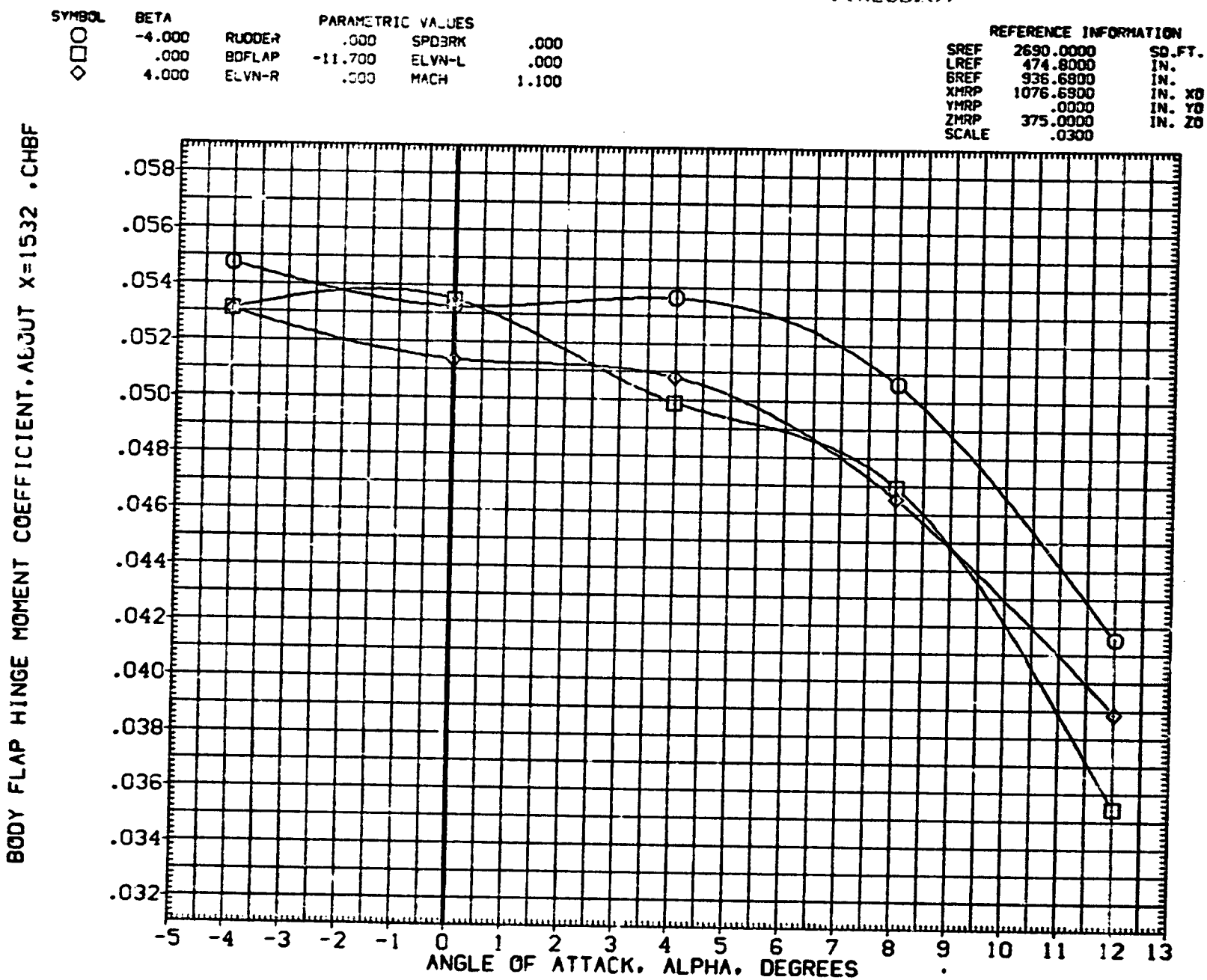


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D21)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XD
YMRP	.0000	IN. YD
ZMRP	375.0000	IN. ZD
SCALE	.0300	

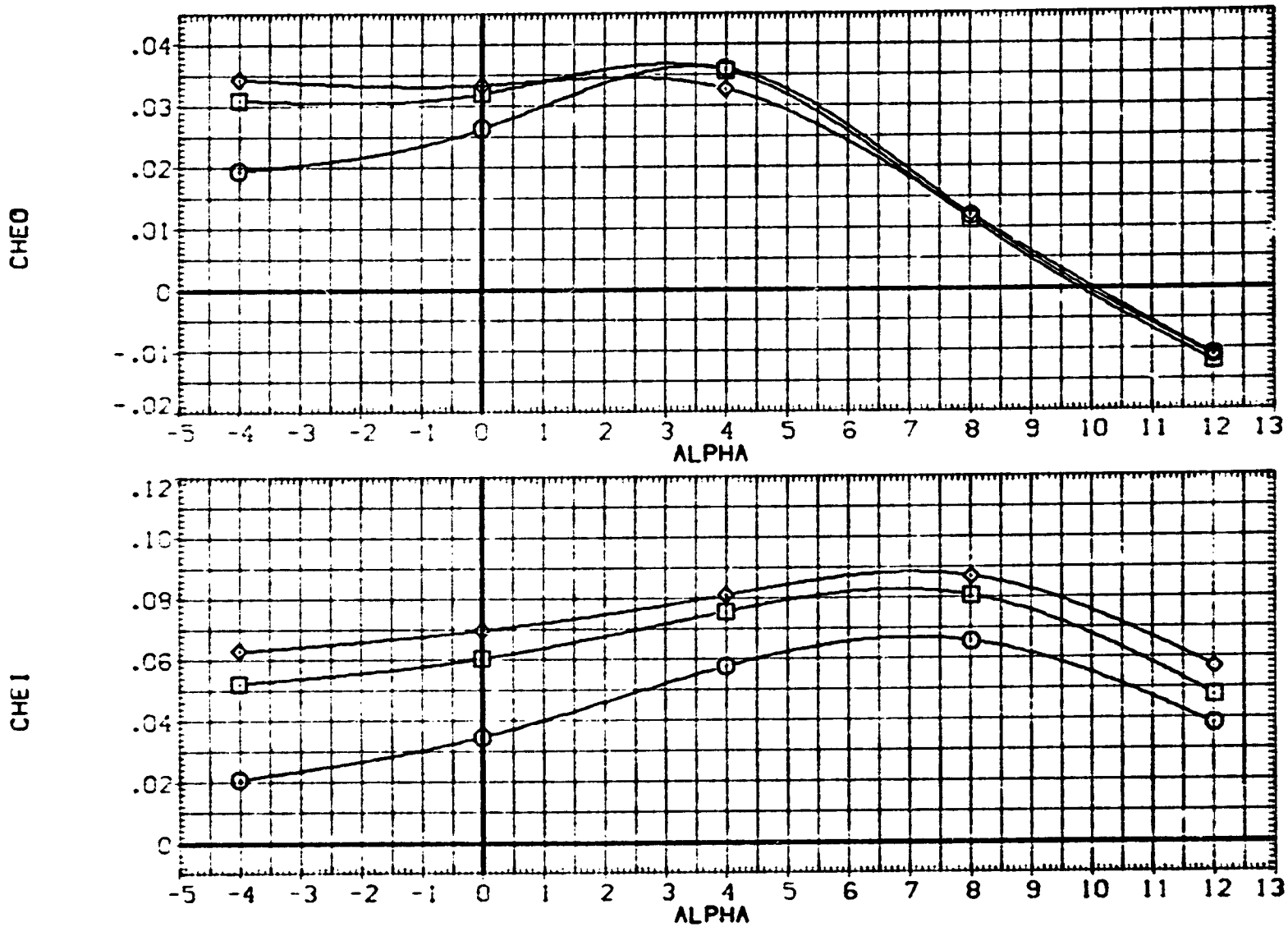


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

UA146 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8021)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPEBRK	.000
□	.000	BOFLAP	-11.700	EL.N-L	.000
◇	4.000	EL.N-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

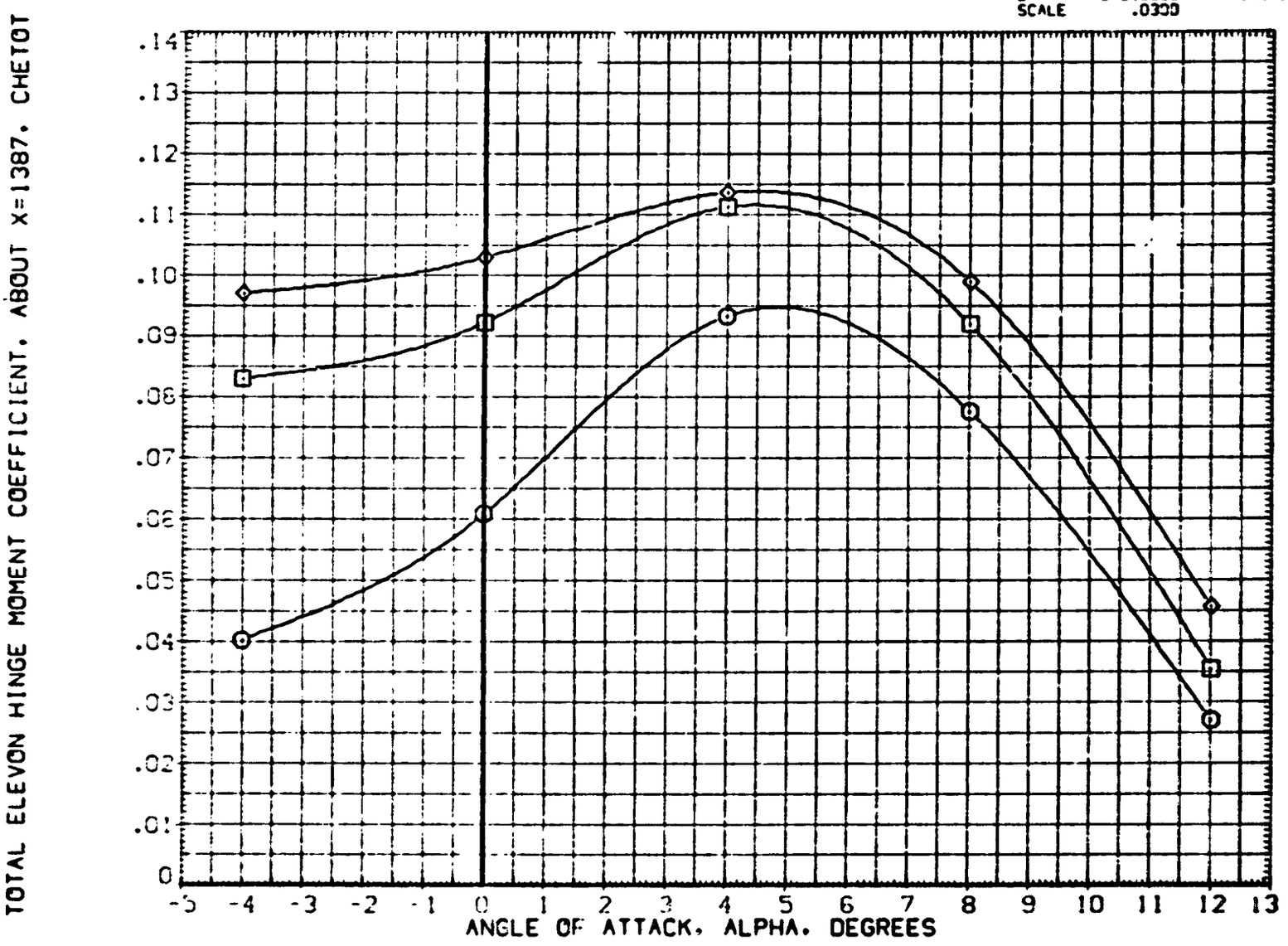


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

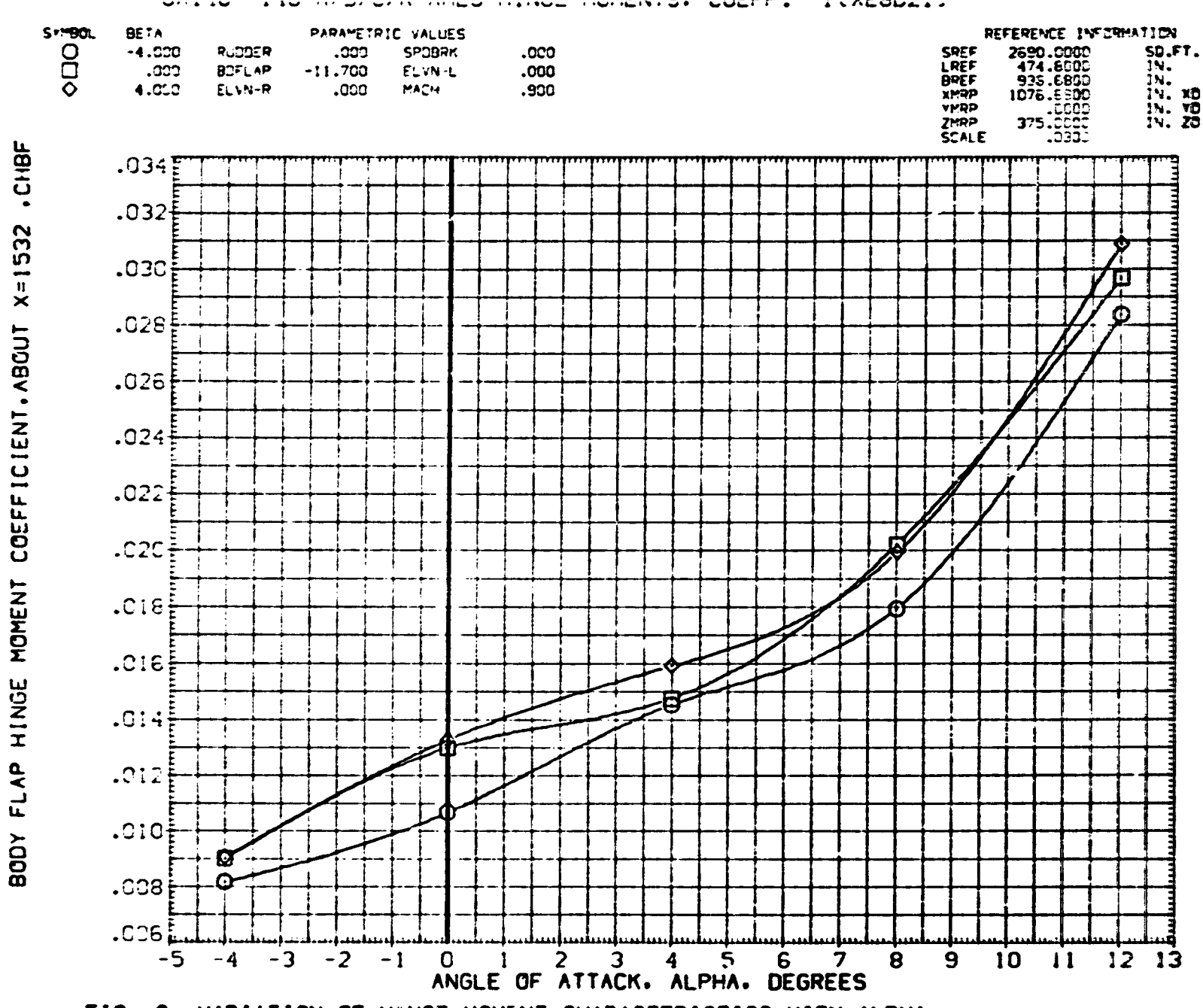


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

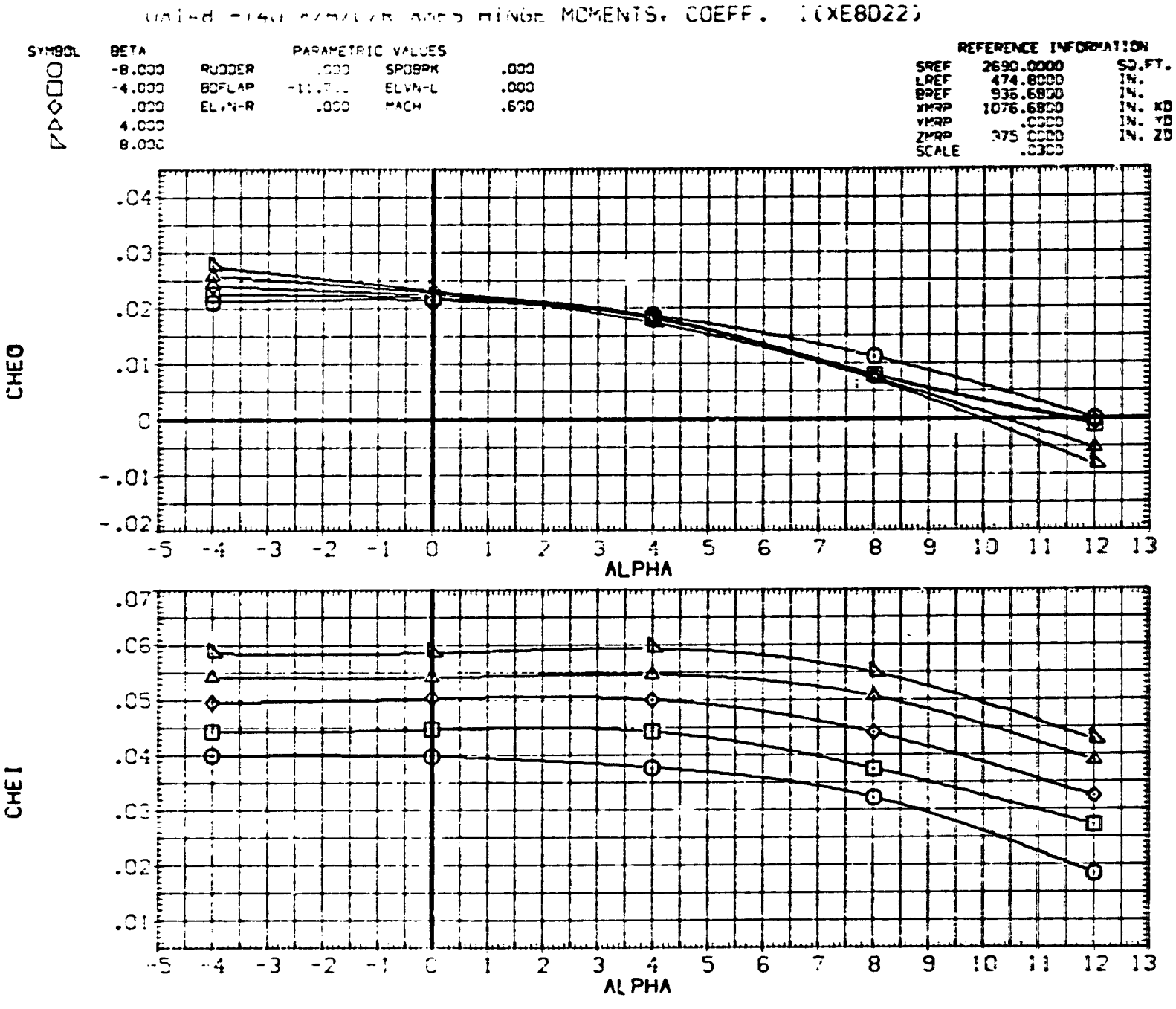


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	.000
BDFLAP	-11.700	ELVN-L	.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

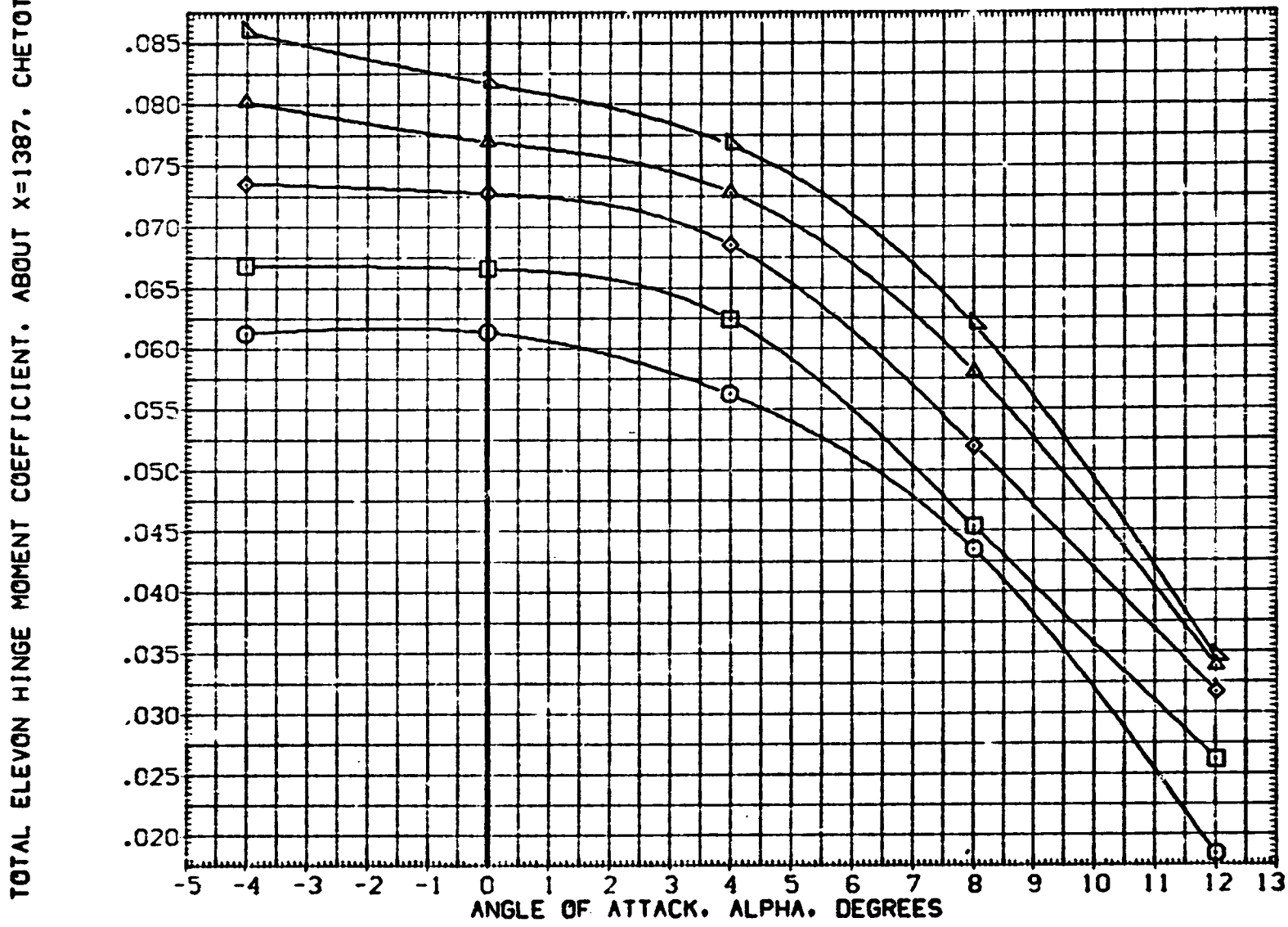


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

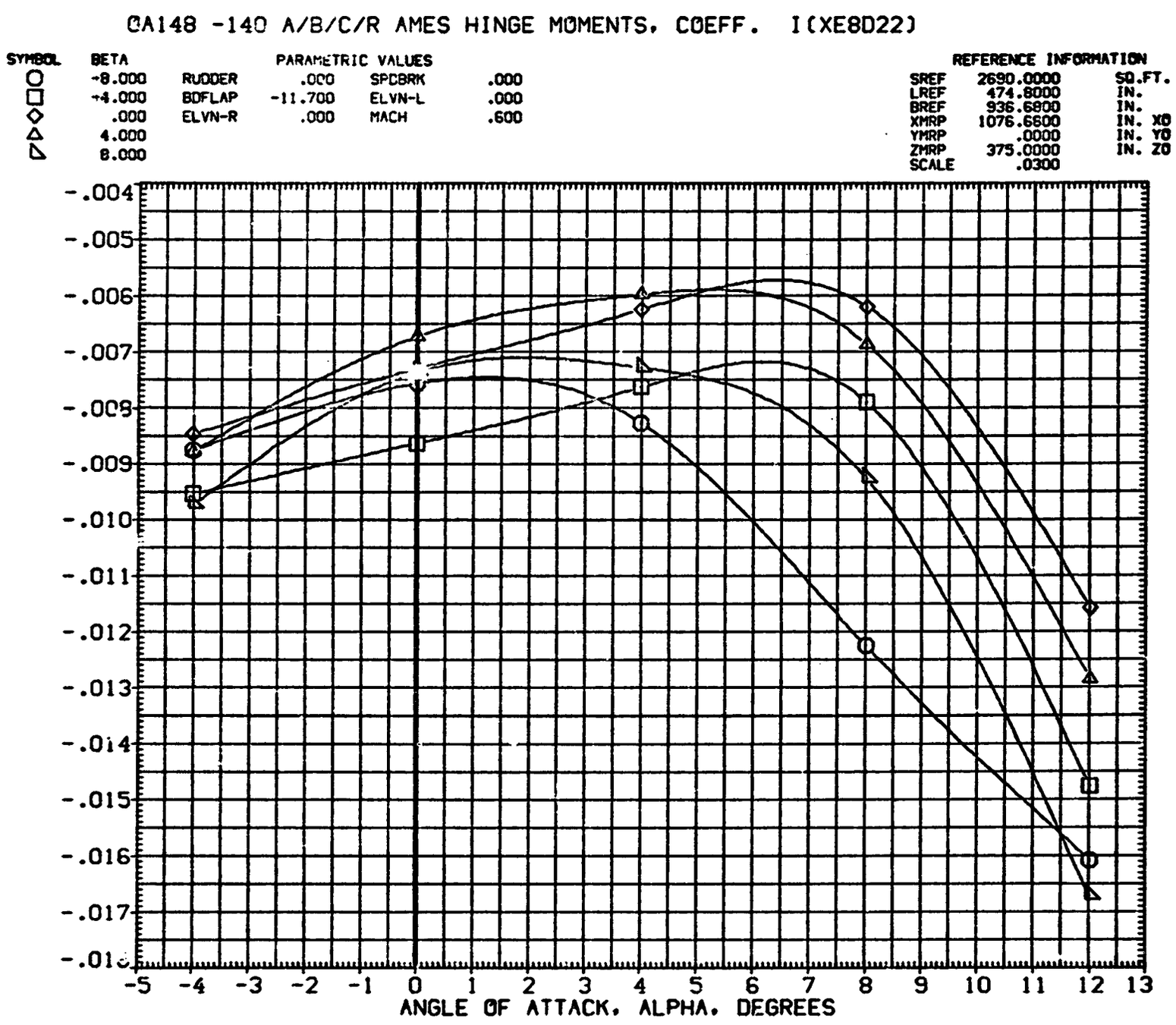


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

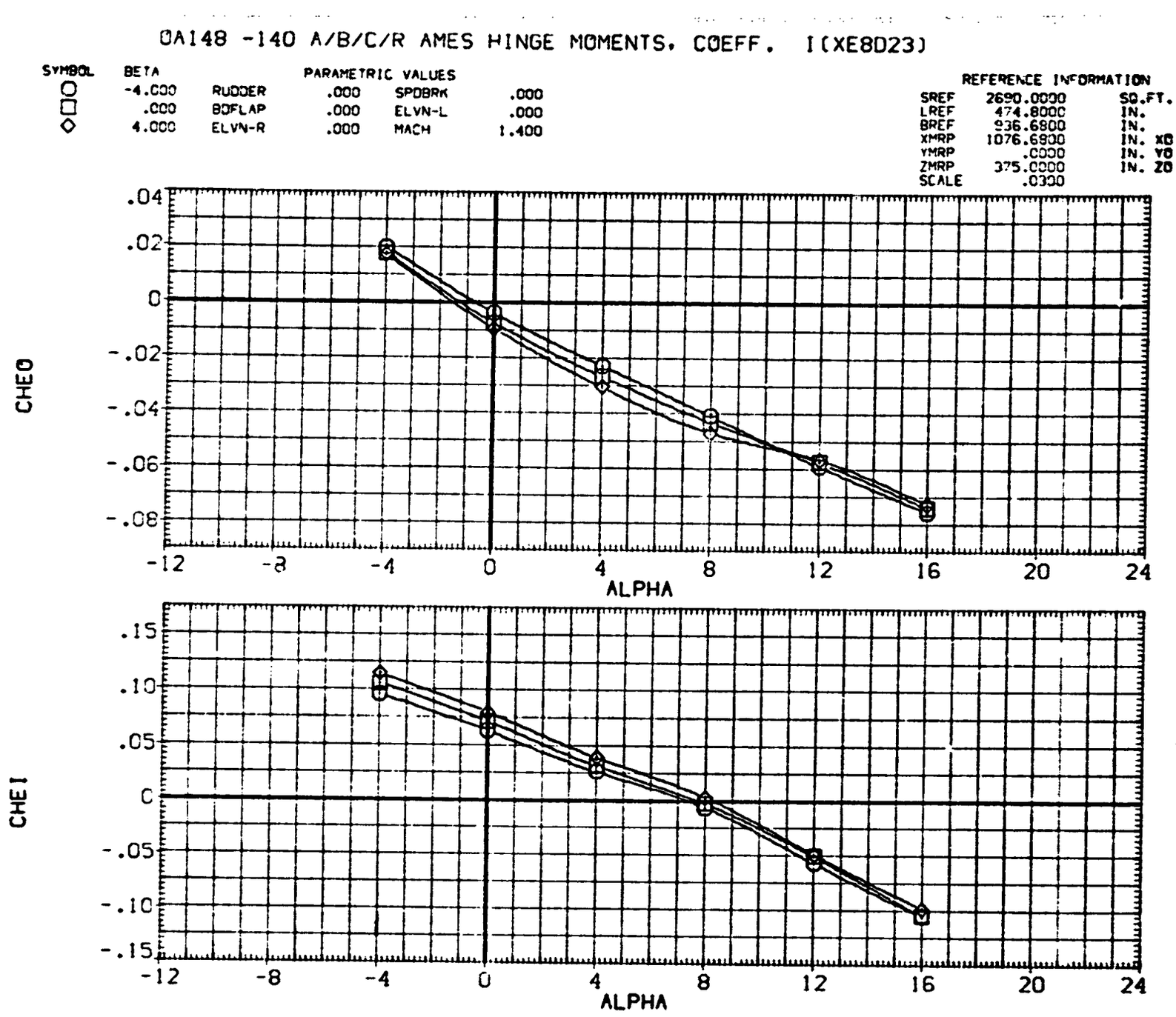


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

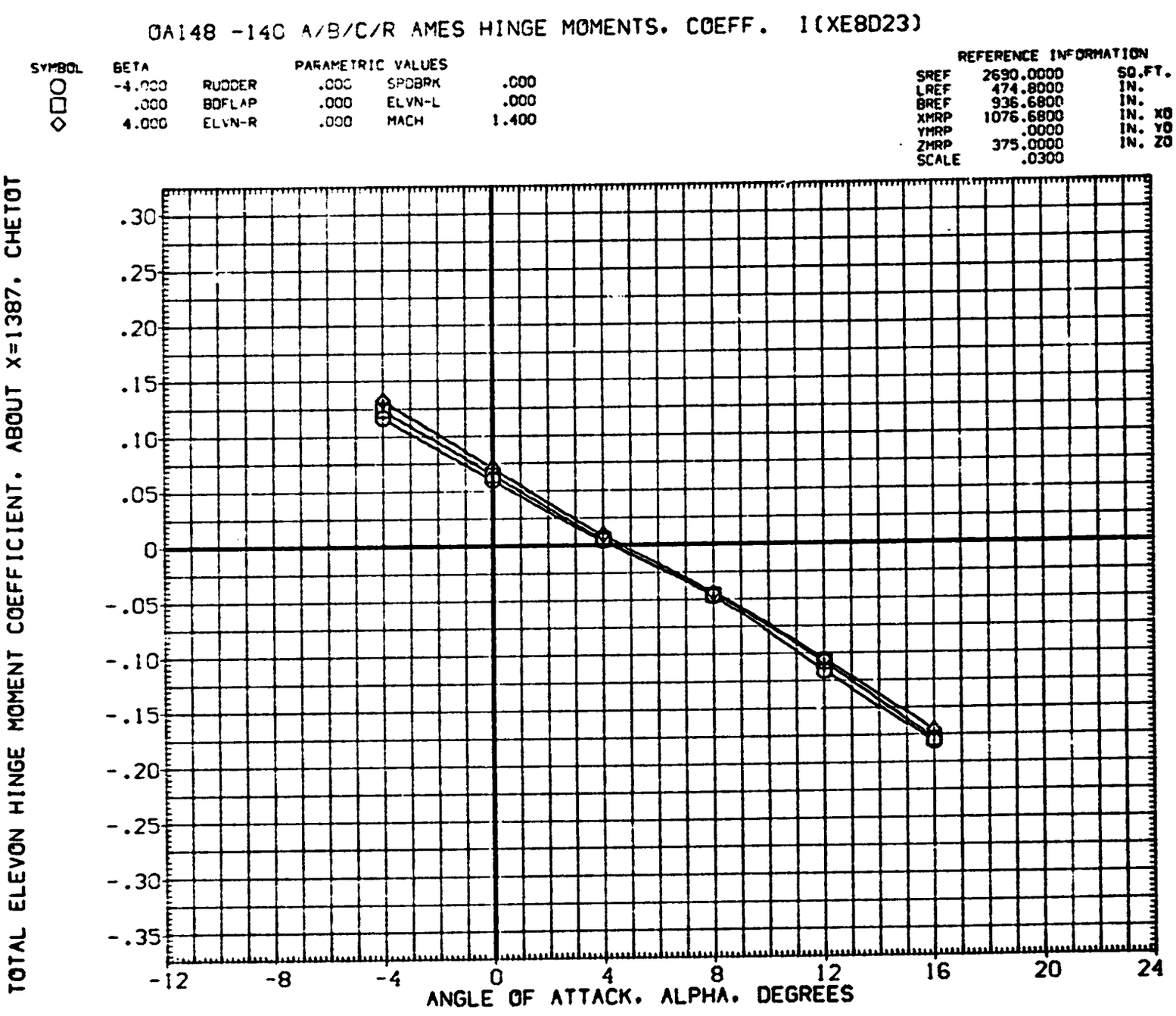


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

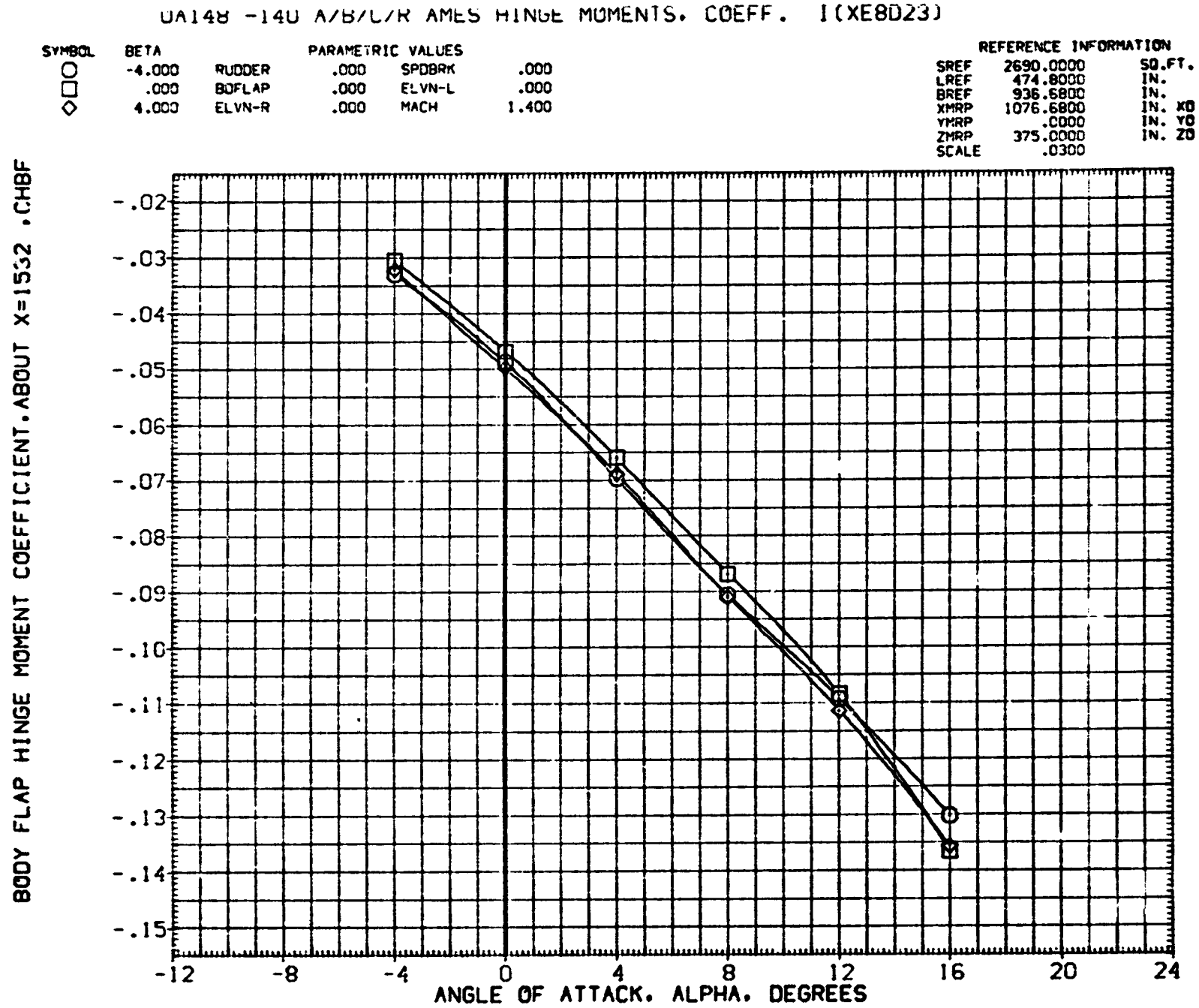


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

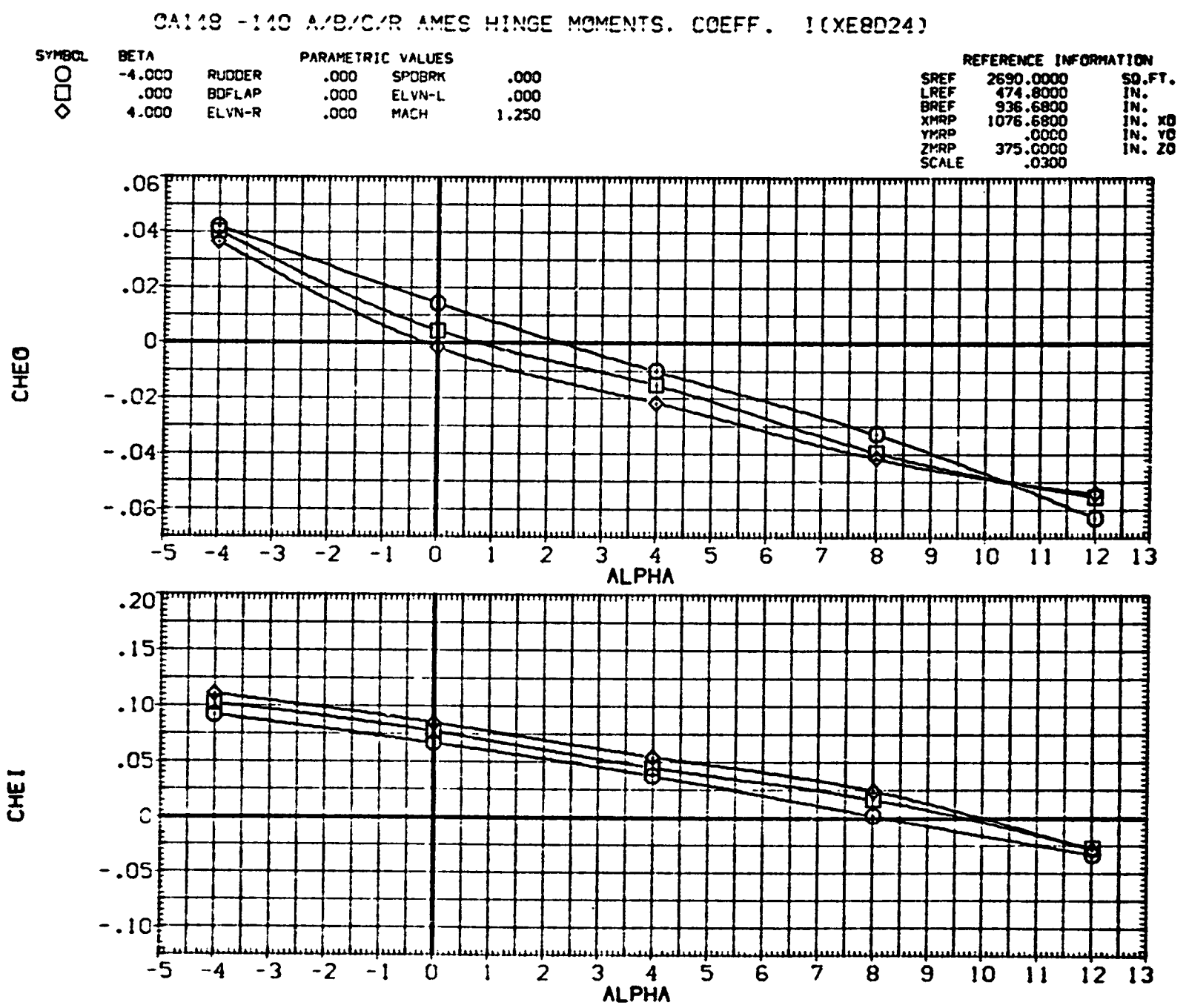


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

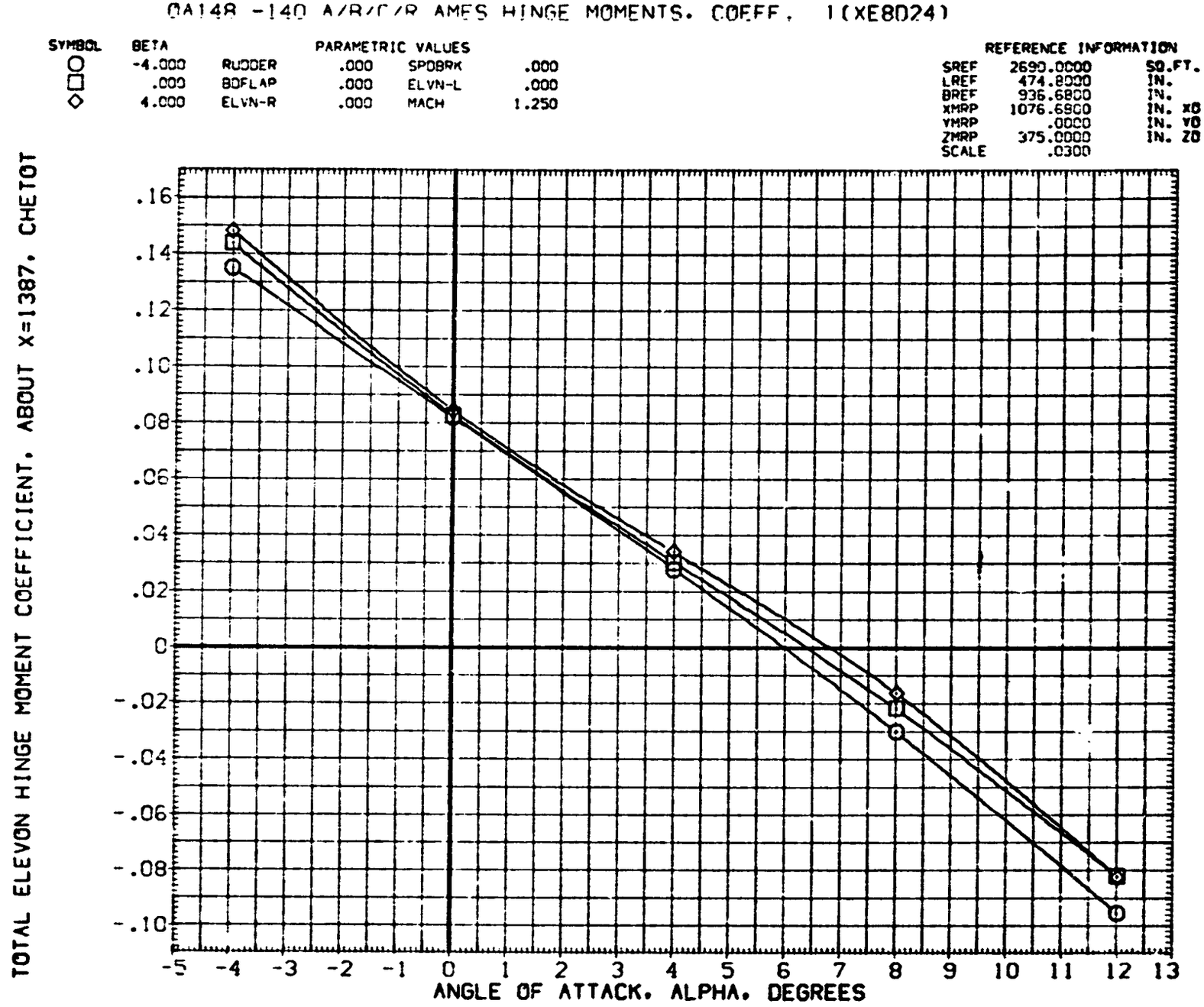


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

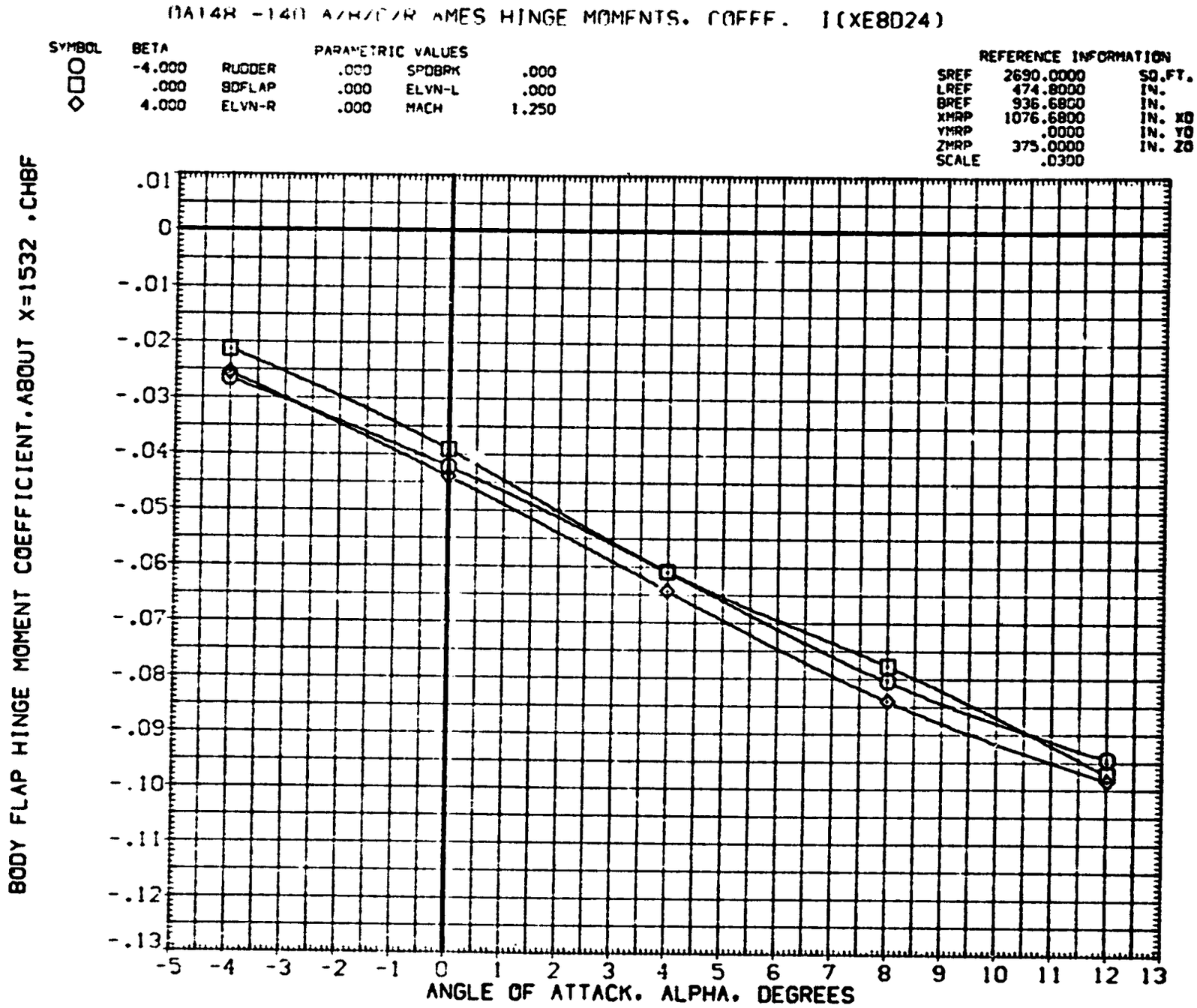


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

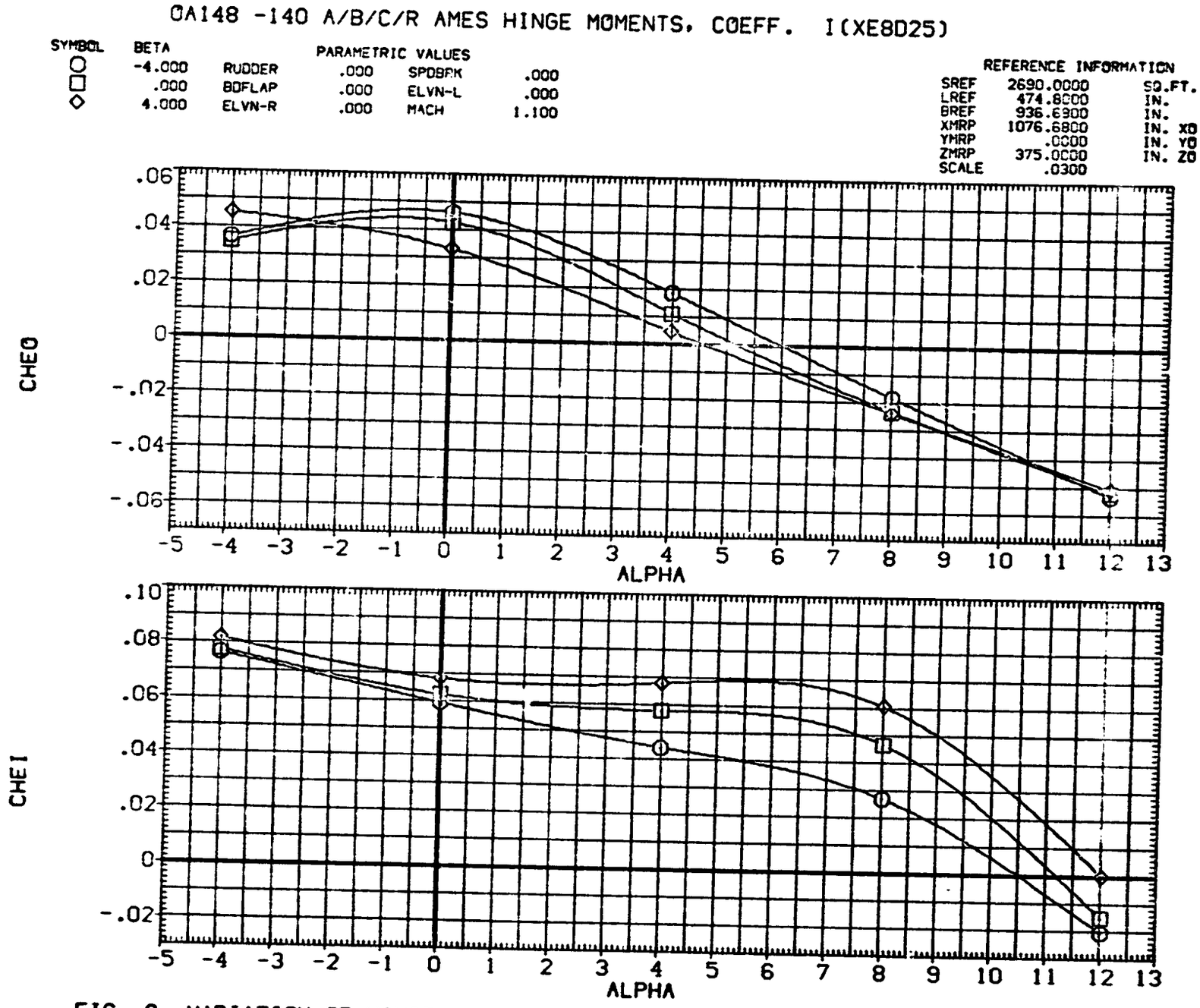


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

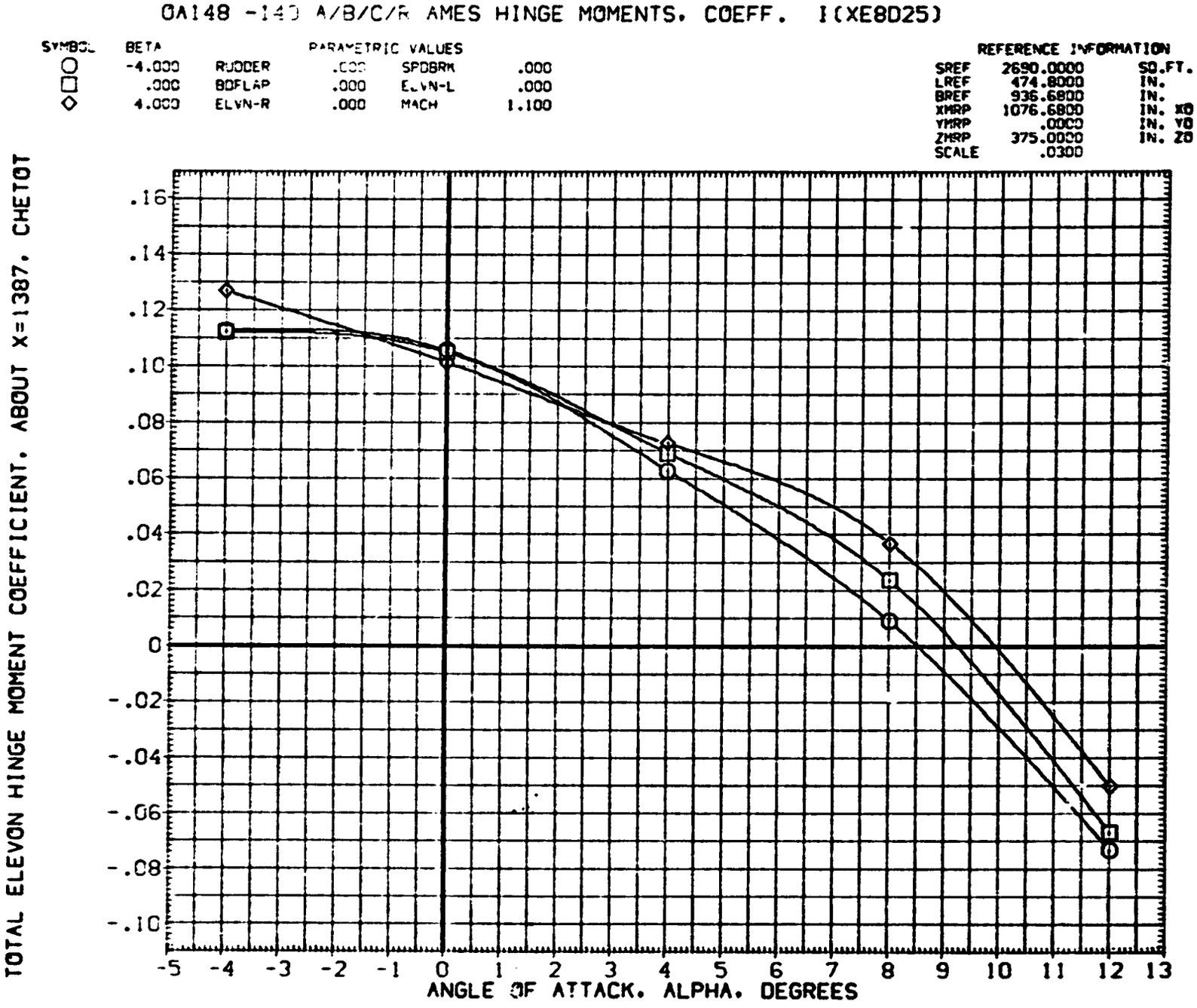


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

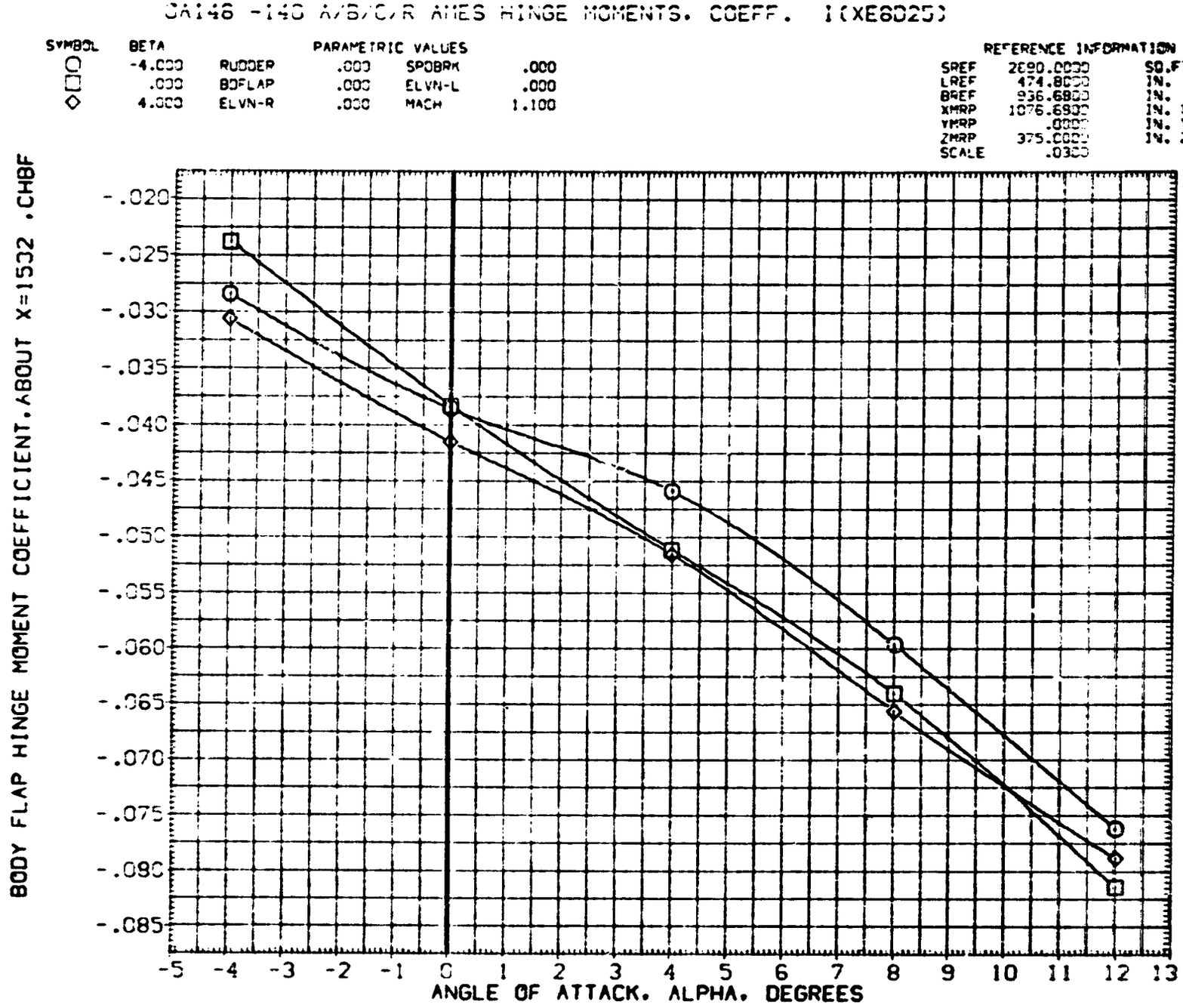


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

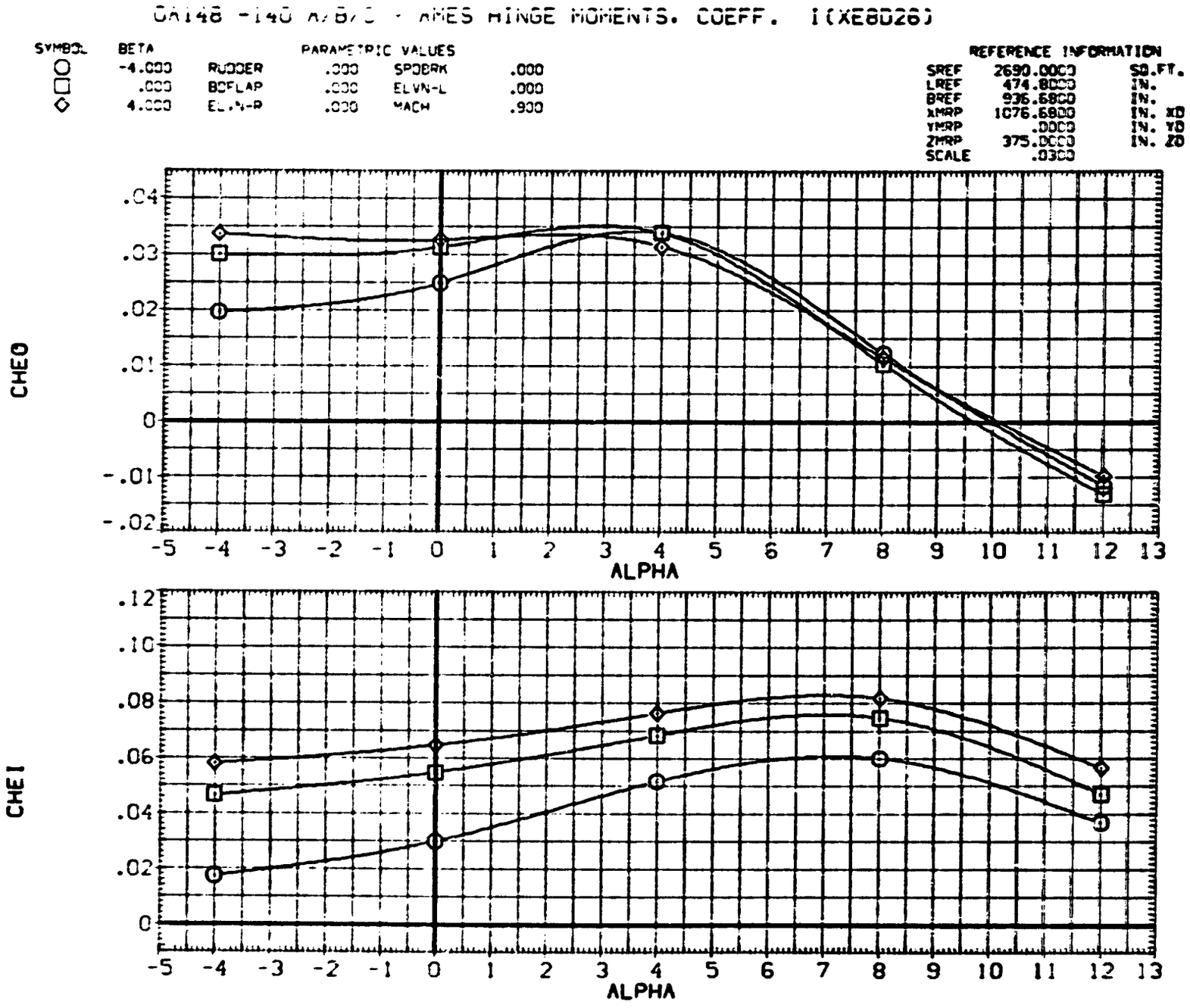


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

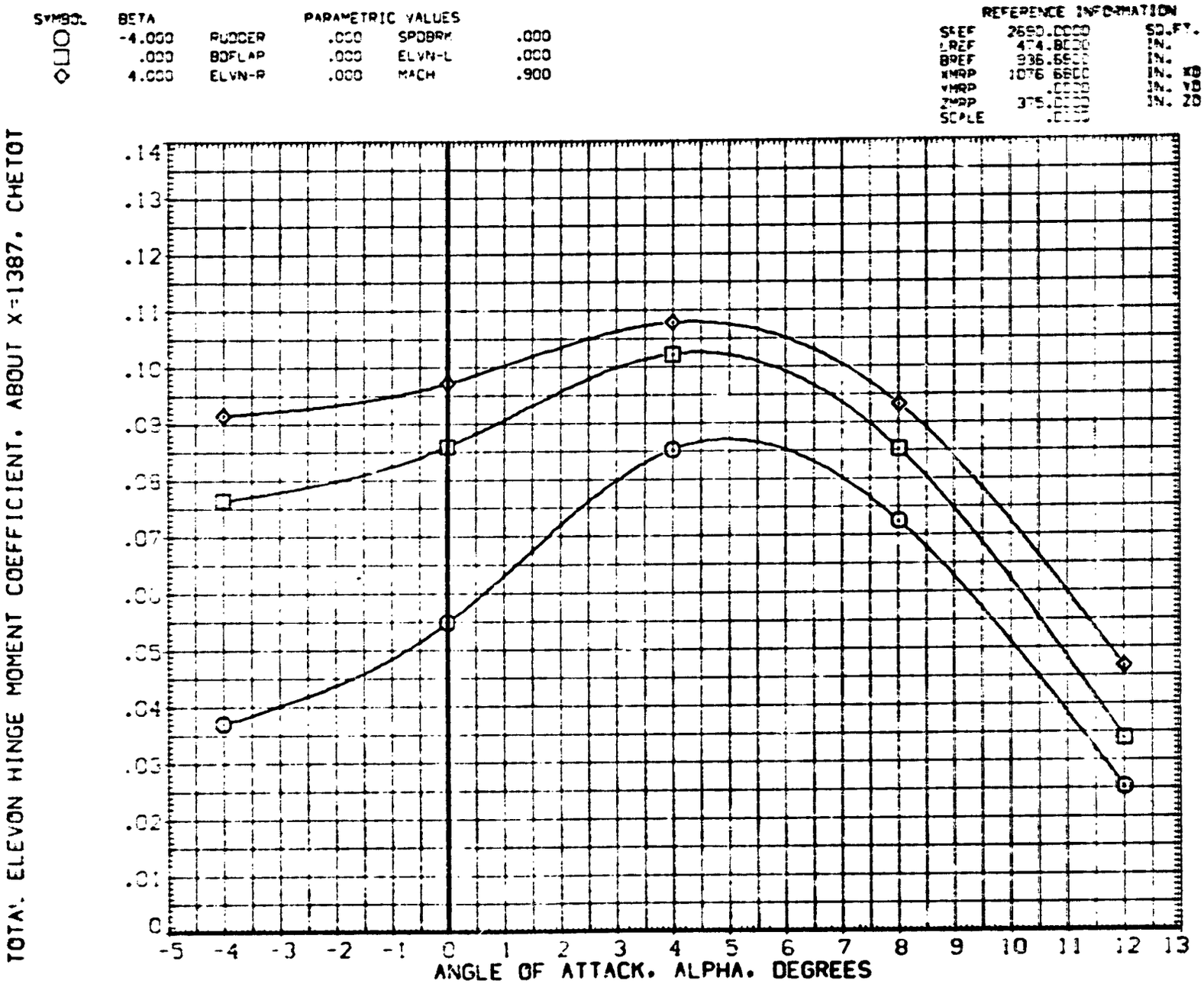


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA



FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
◁	8.000

PARAMETRIC VALUES

RUDDER	.000	SPOBRK	.000
BOFLAP	.000	ELVN-L	.000
ELVN-R	.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6900	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

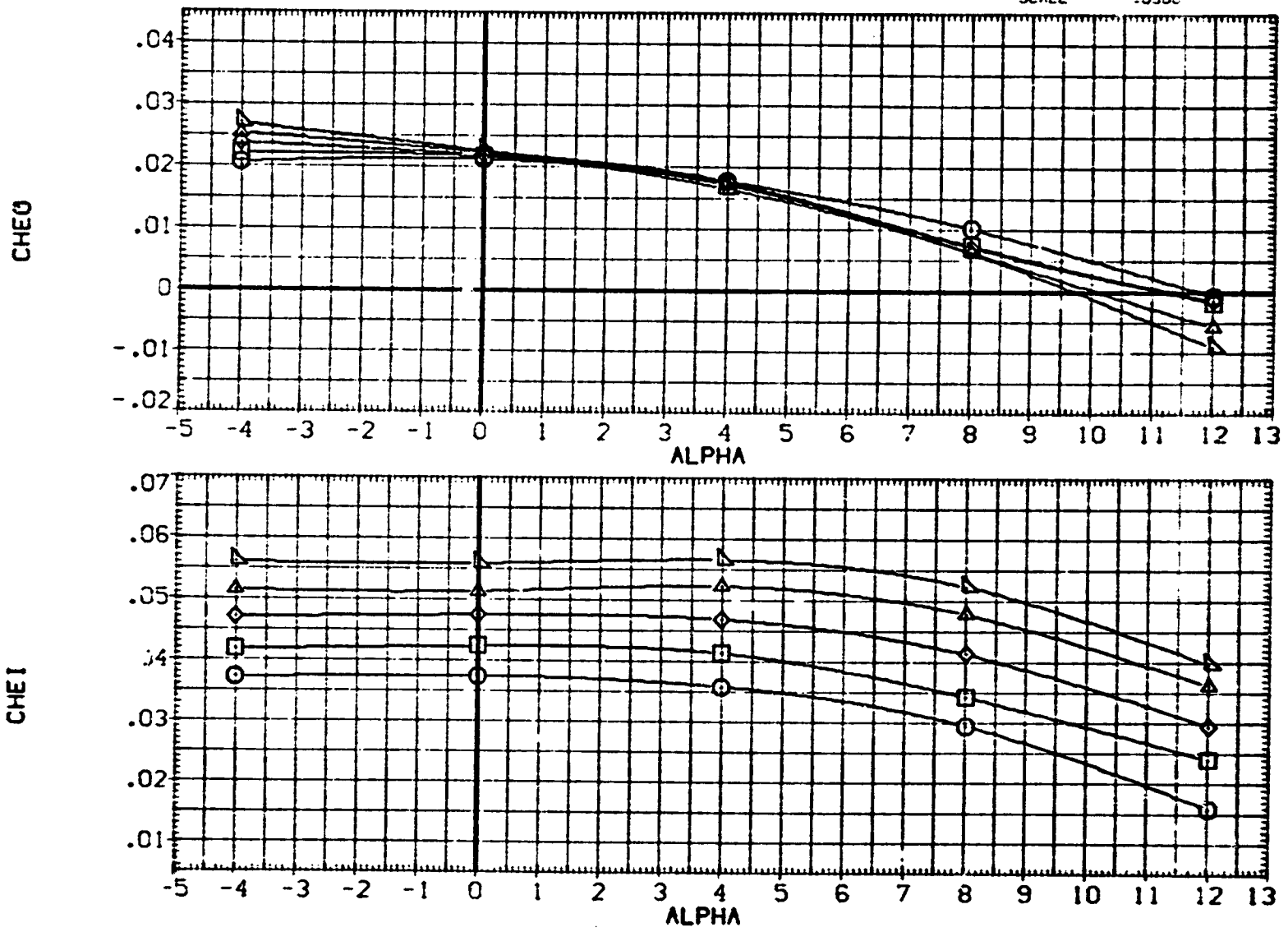


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

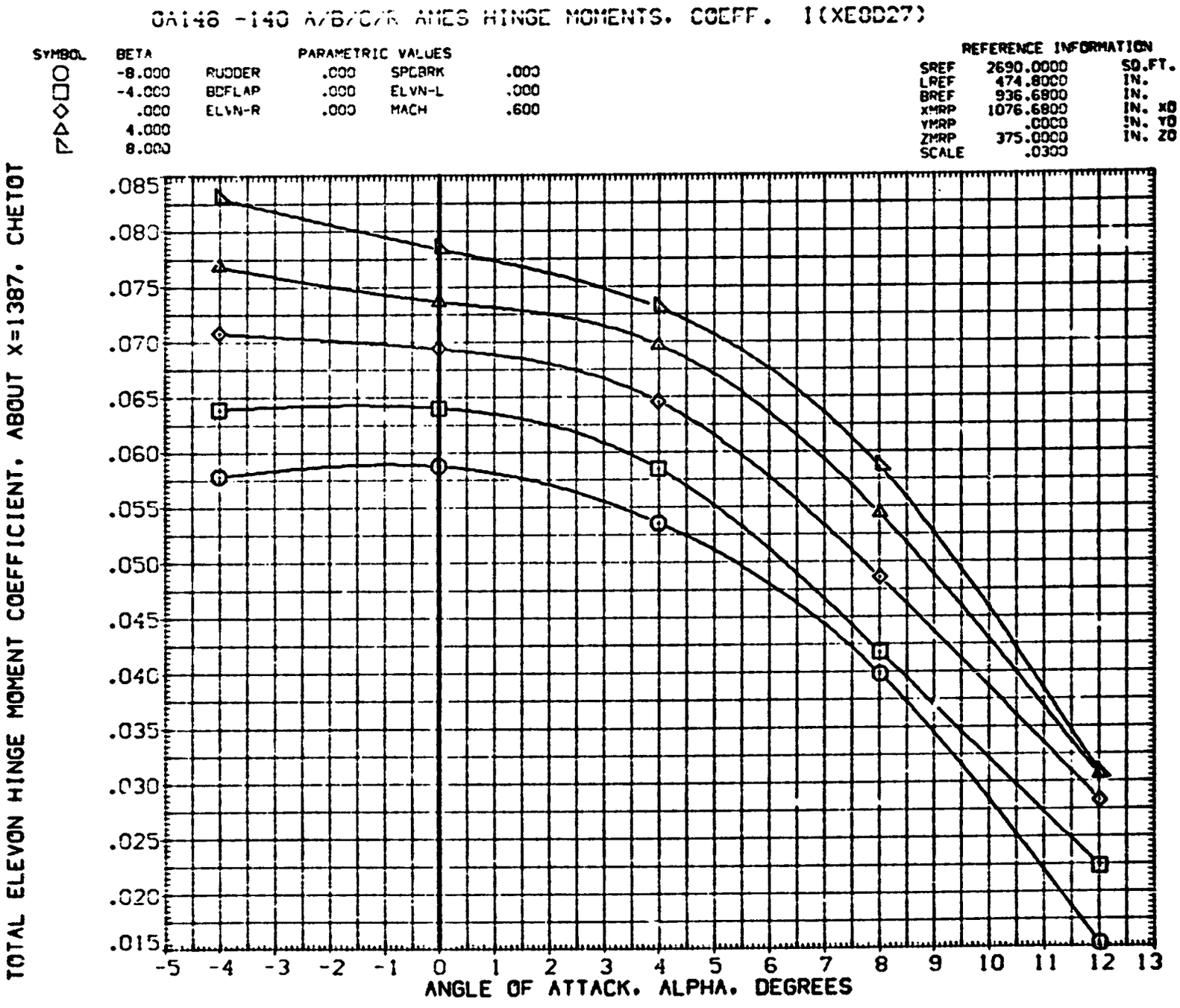


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

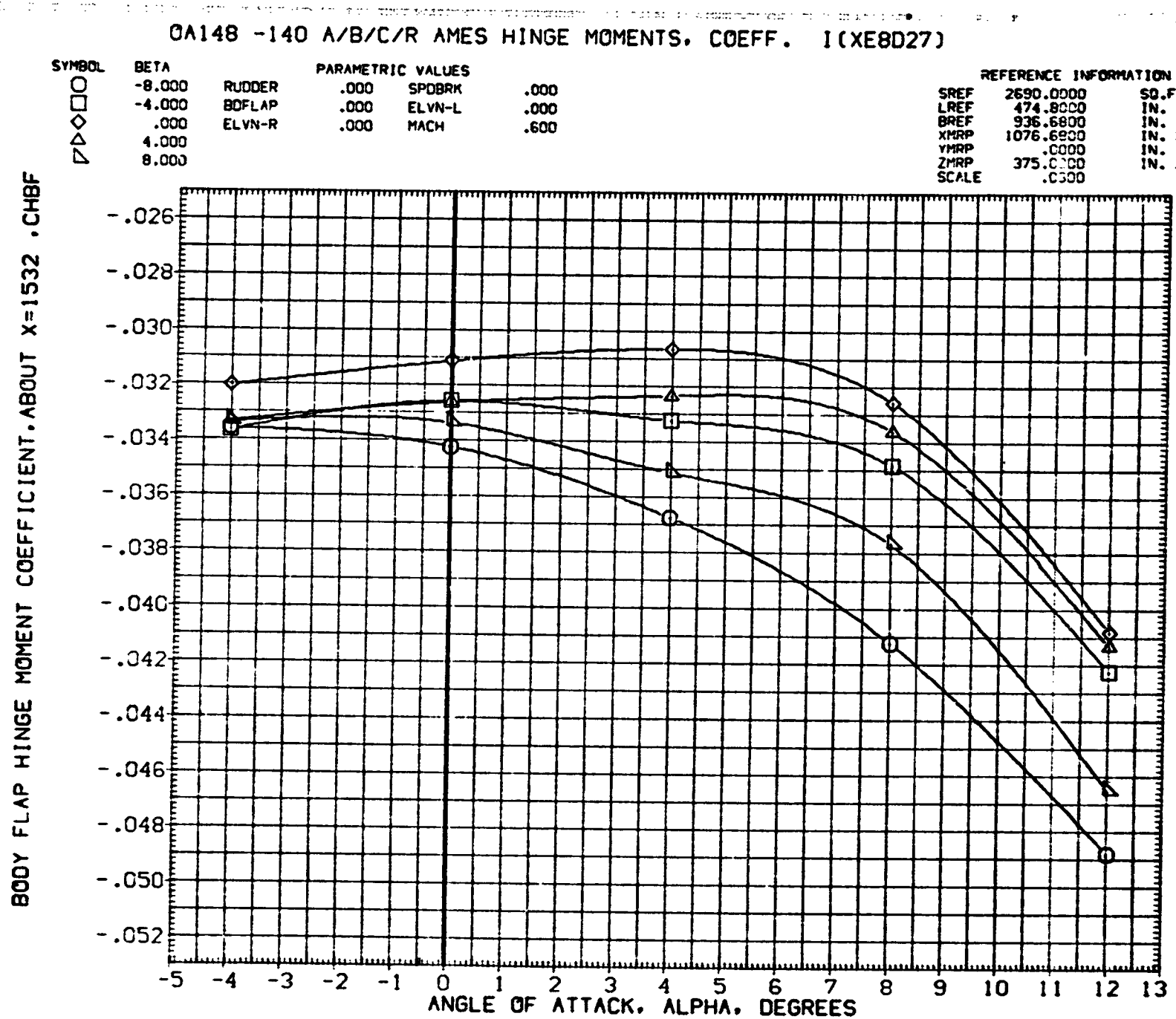


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

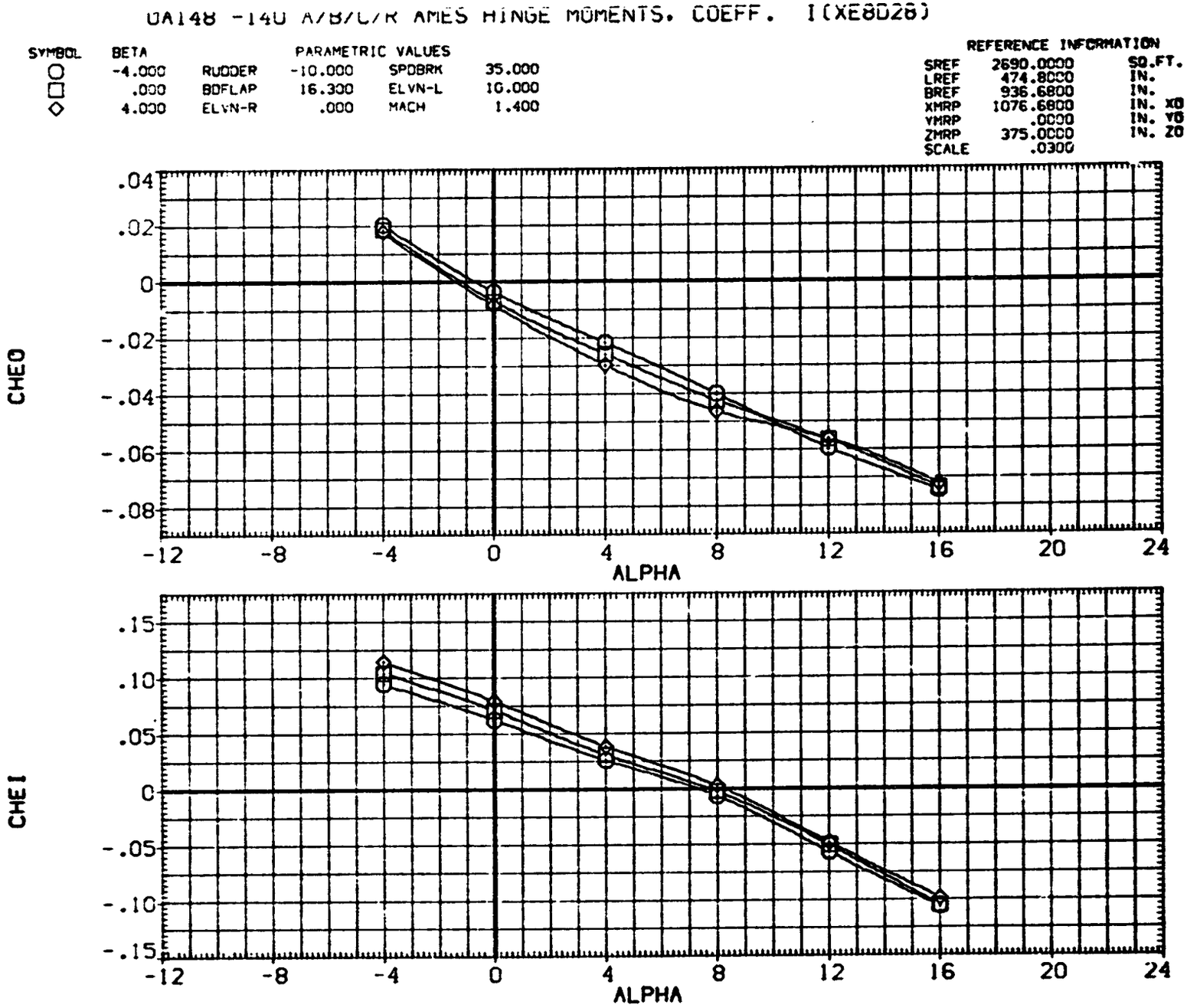


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

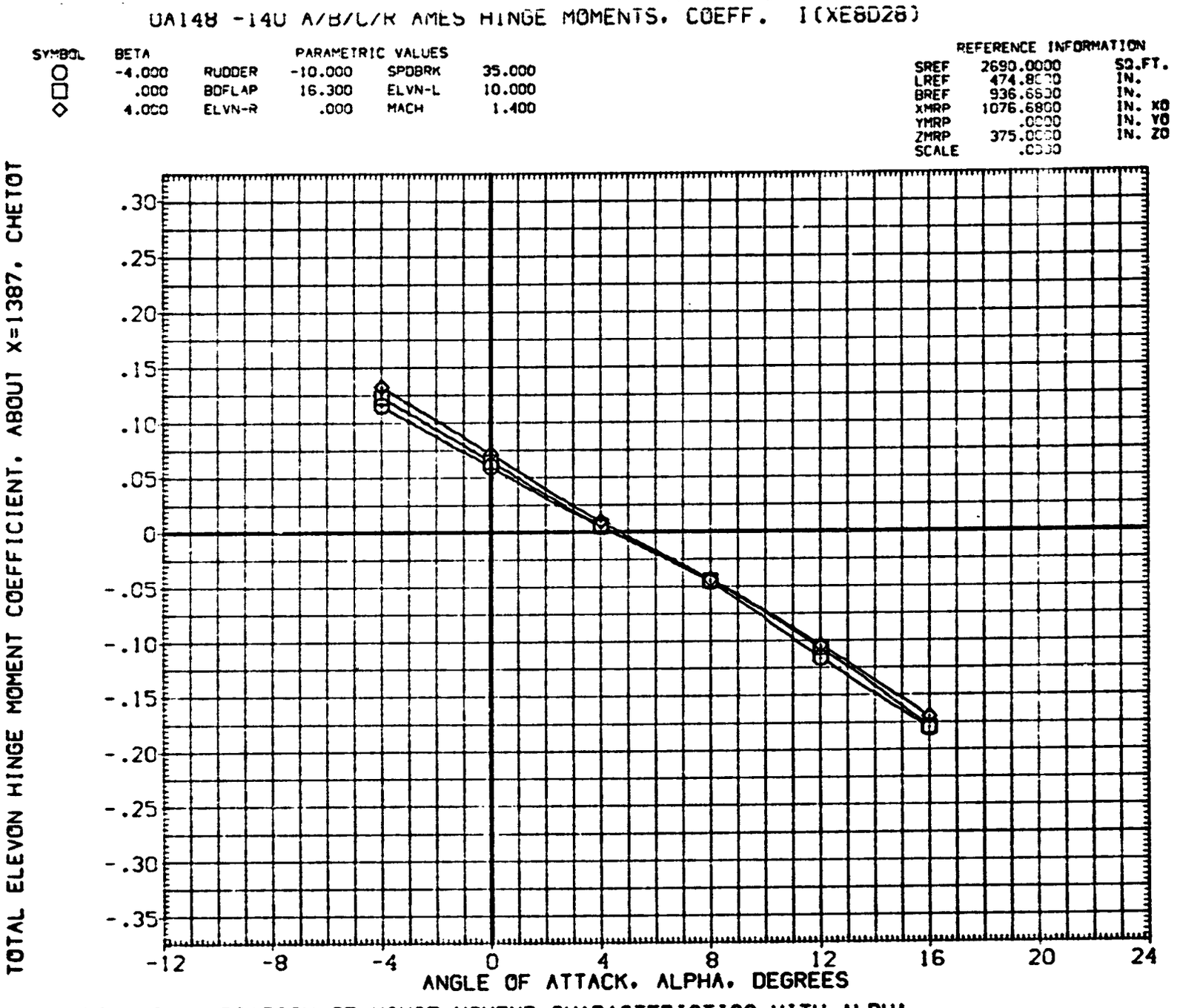


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

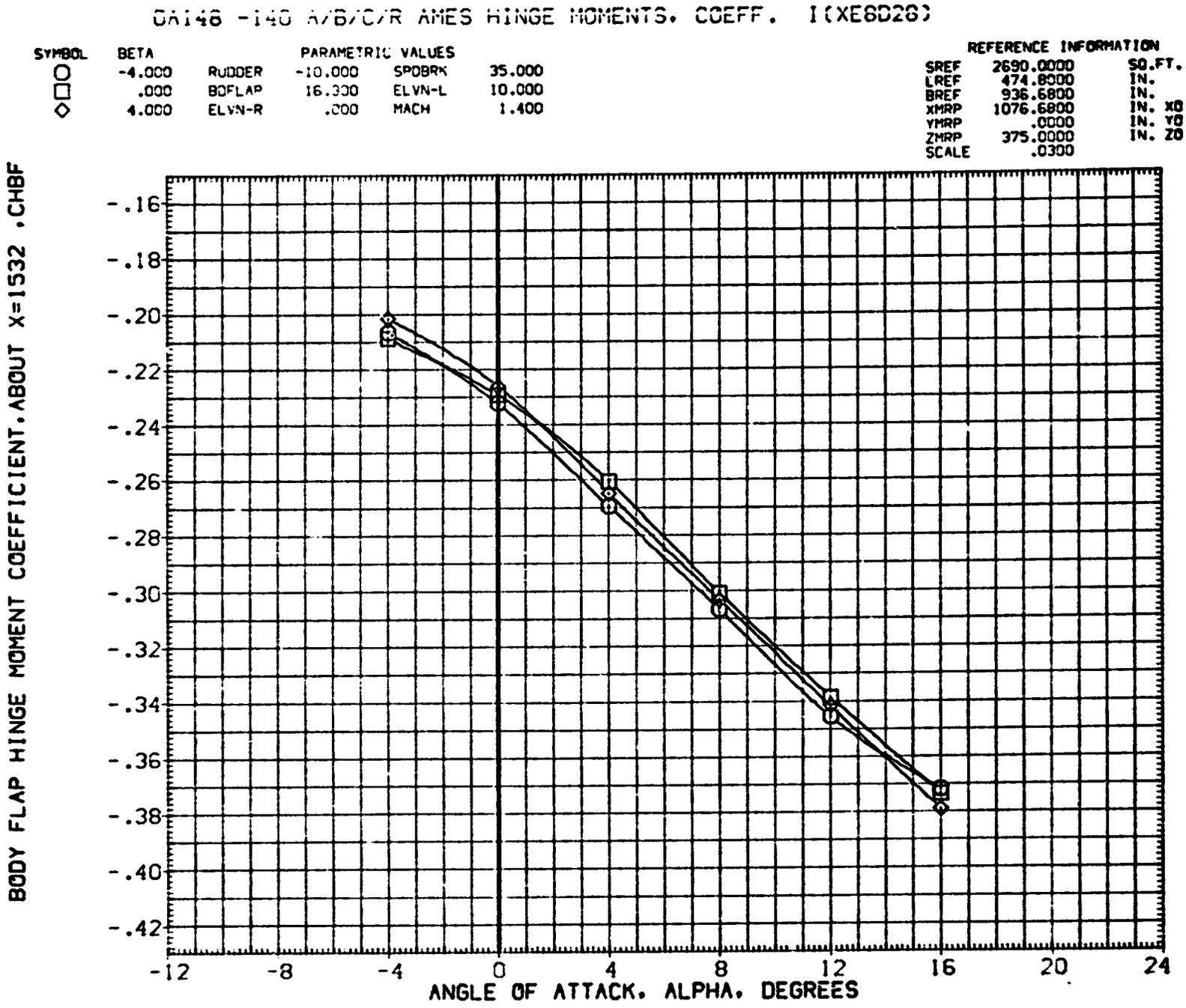


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

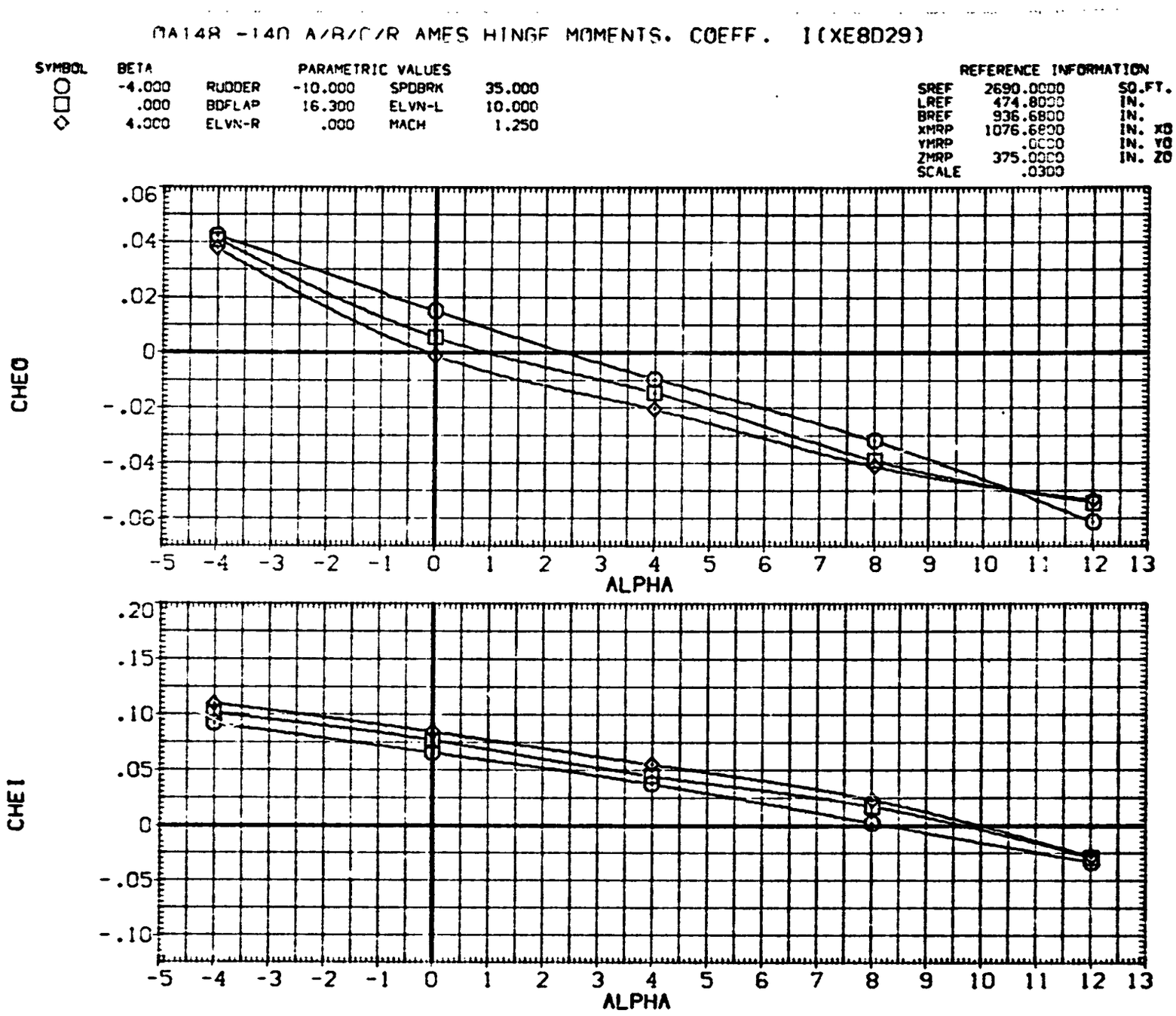


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

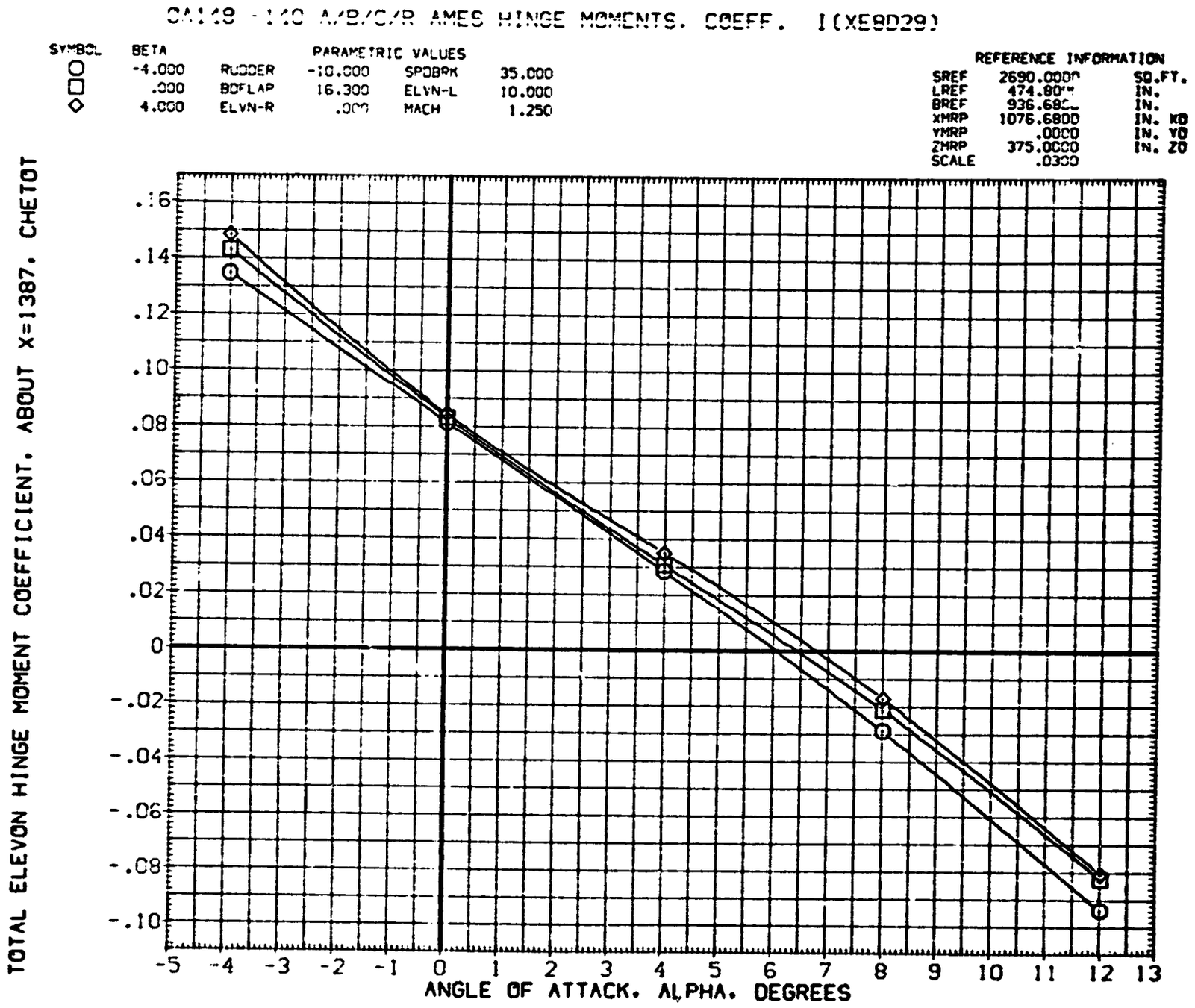


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

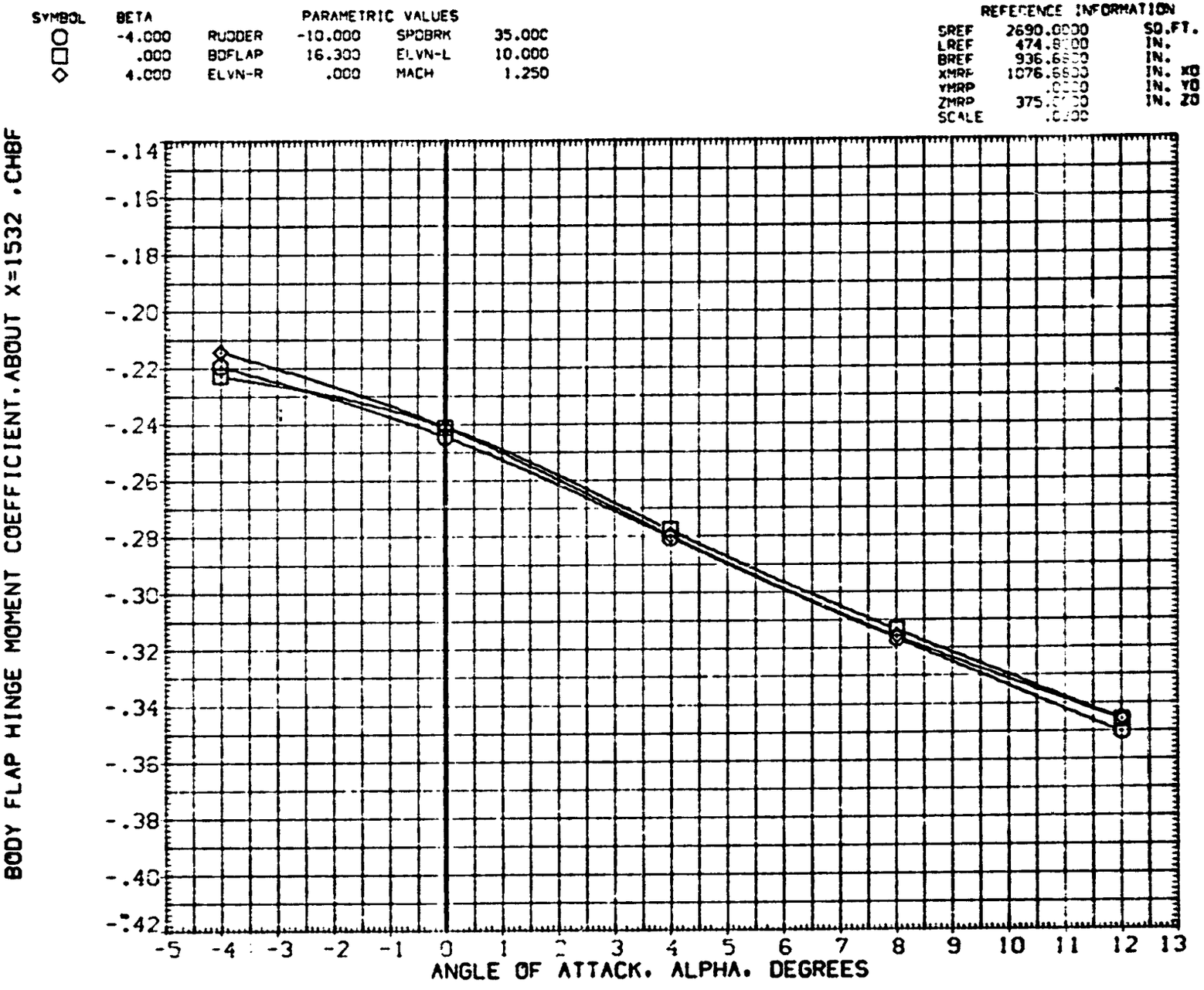


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

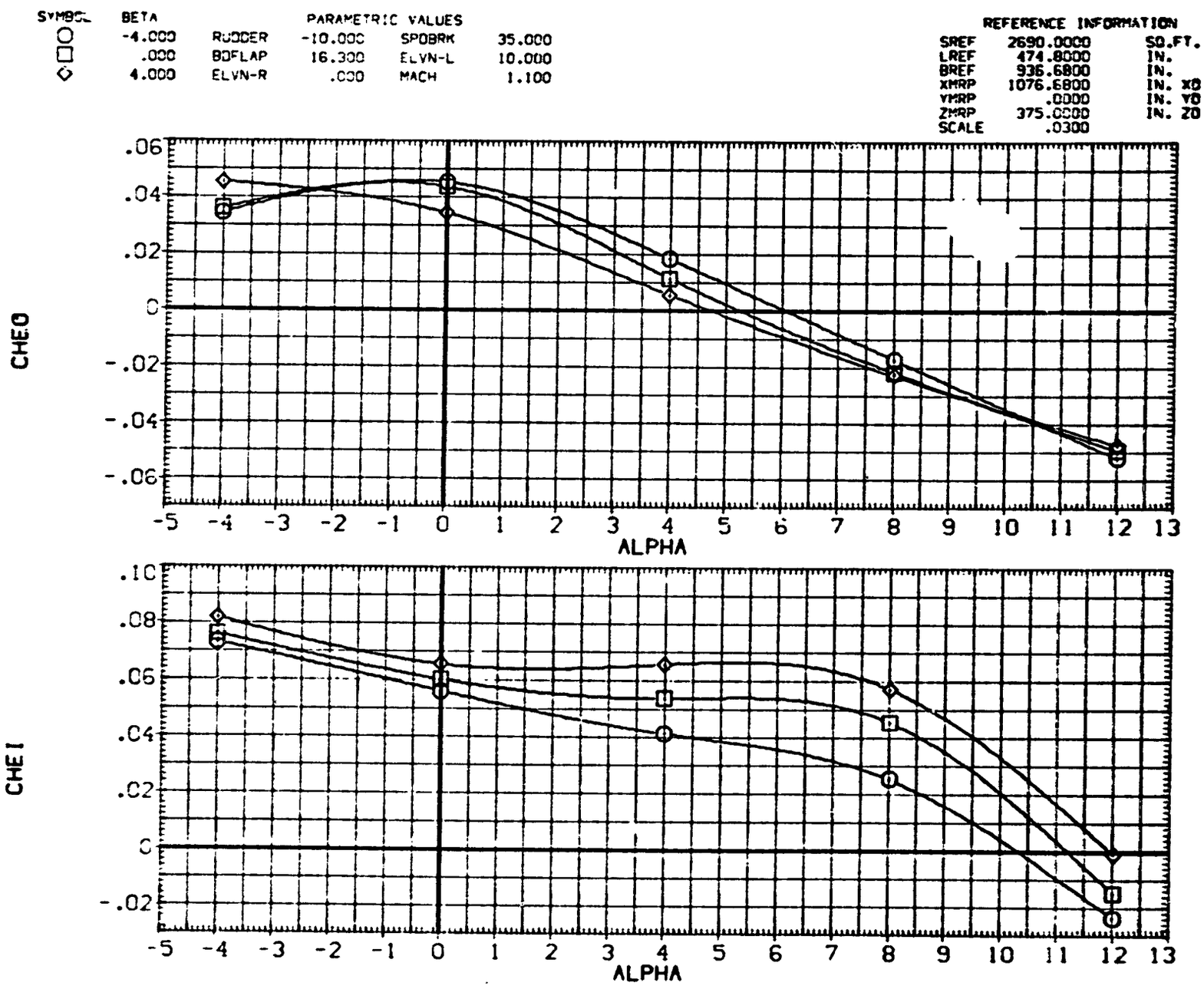


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

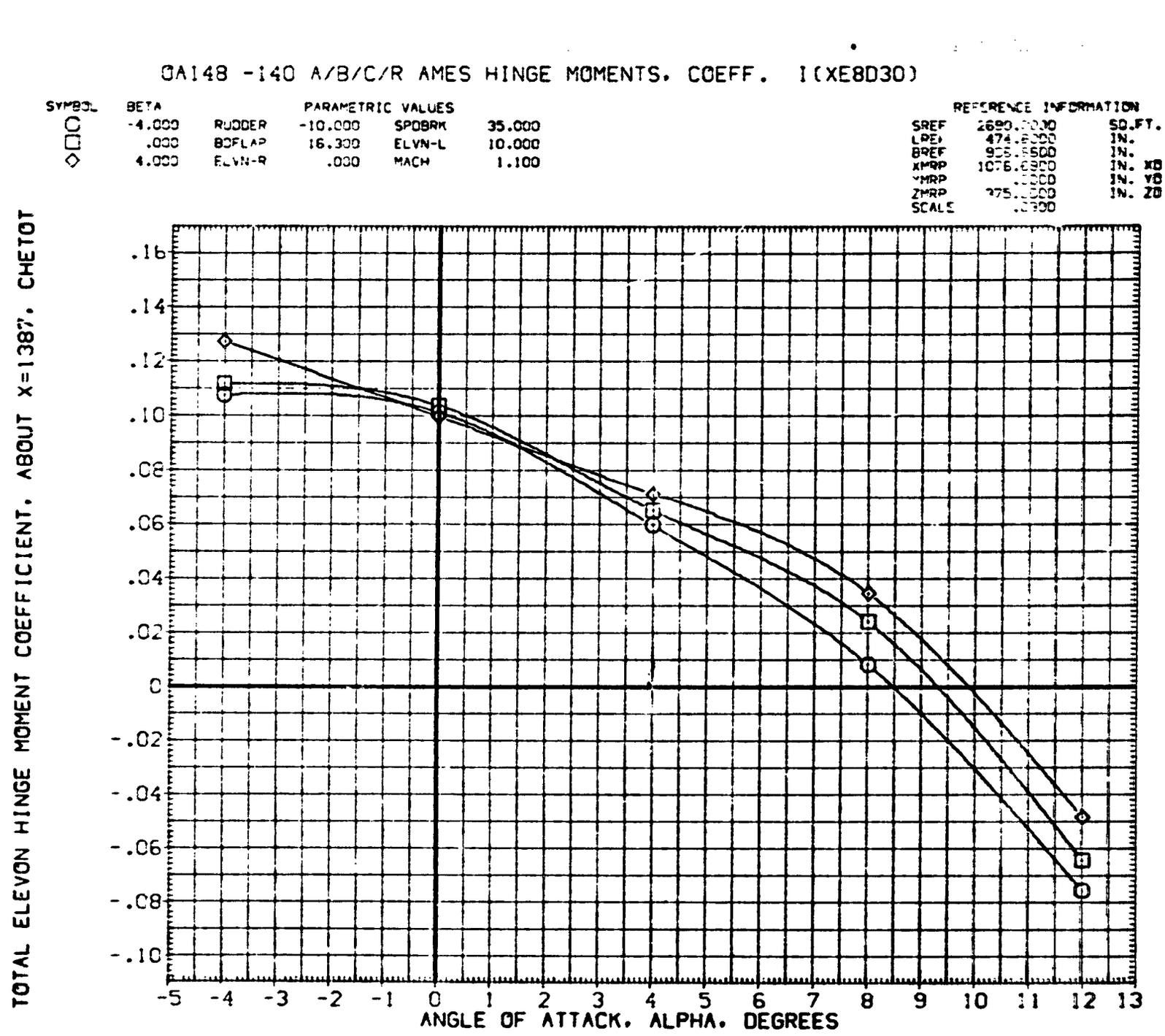


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

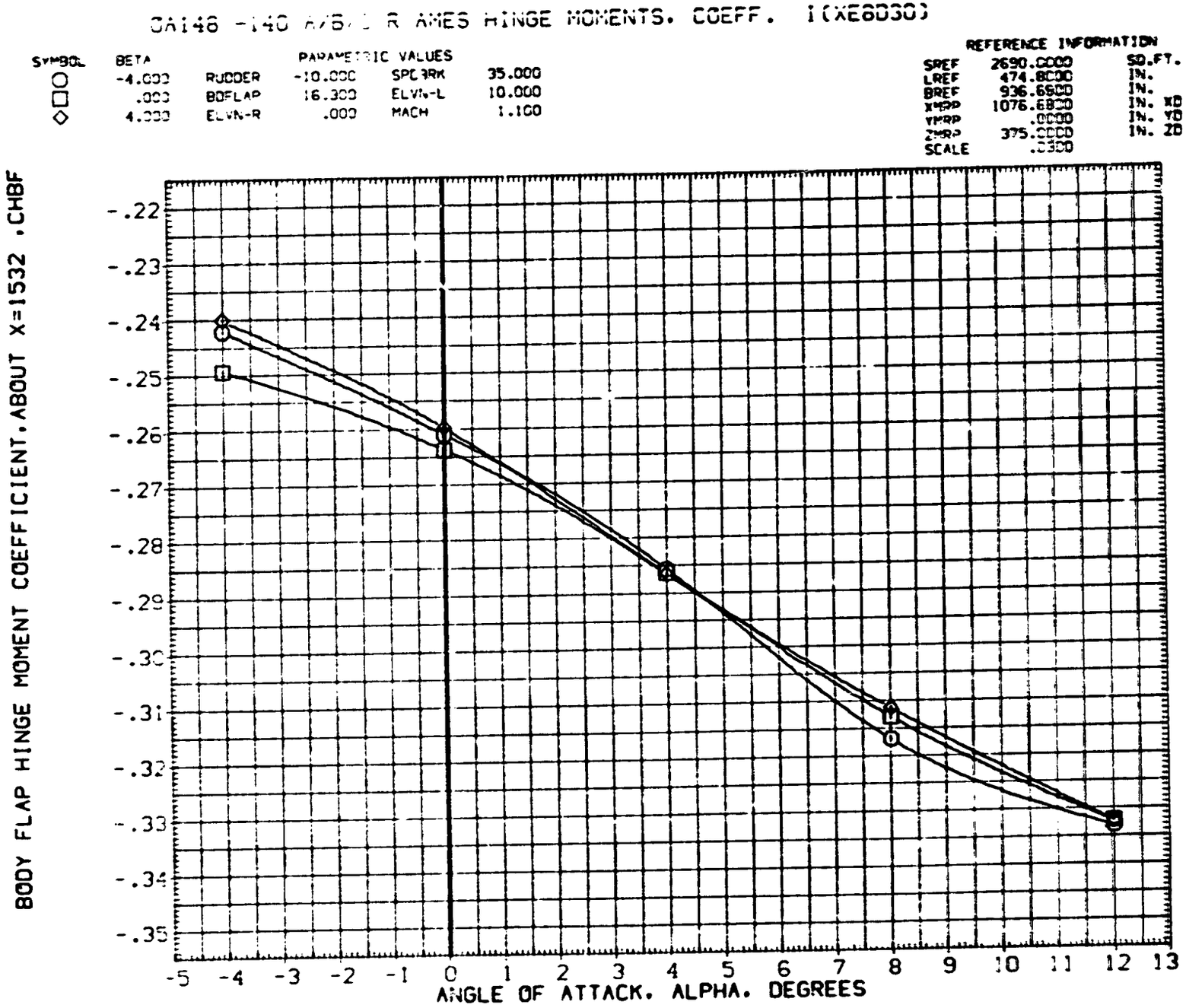


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
◇□○	-4.000	RUDDER	-13.000	SPOBRK	35.000 4
	.000	BOFLAP	16.000	ELVN-L	10.000
	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	1550.0000	SQ.FT.
LREF	471.0000	IN.
BREF	351.0000	IN.
XMRP	1076.0000	IN. XB
YMRP	.0000	IN. YB
ZMRP	378.0000	IN. ZB
SCALE	1.000	

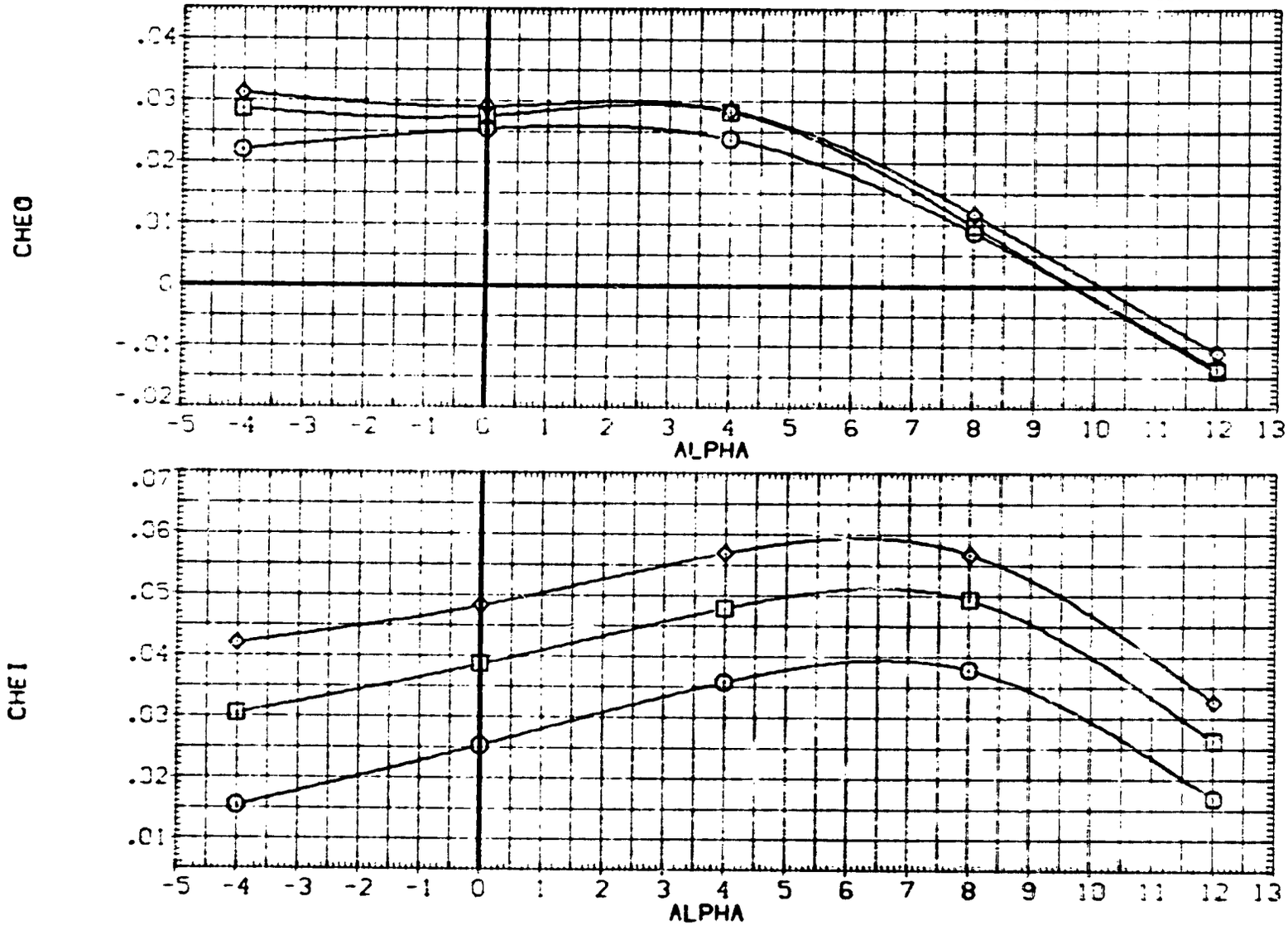


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

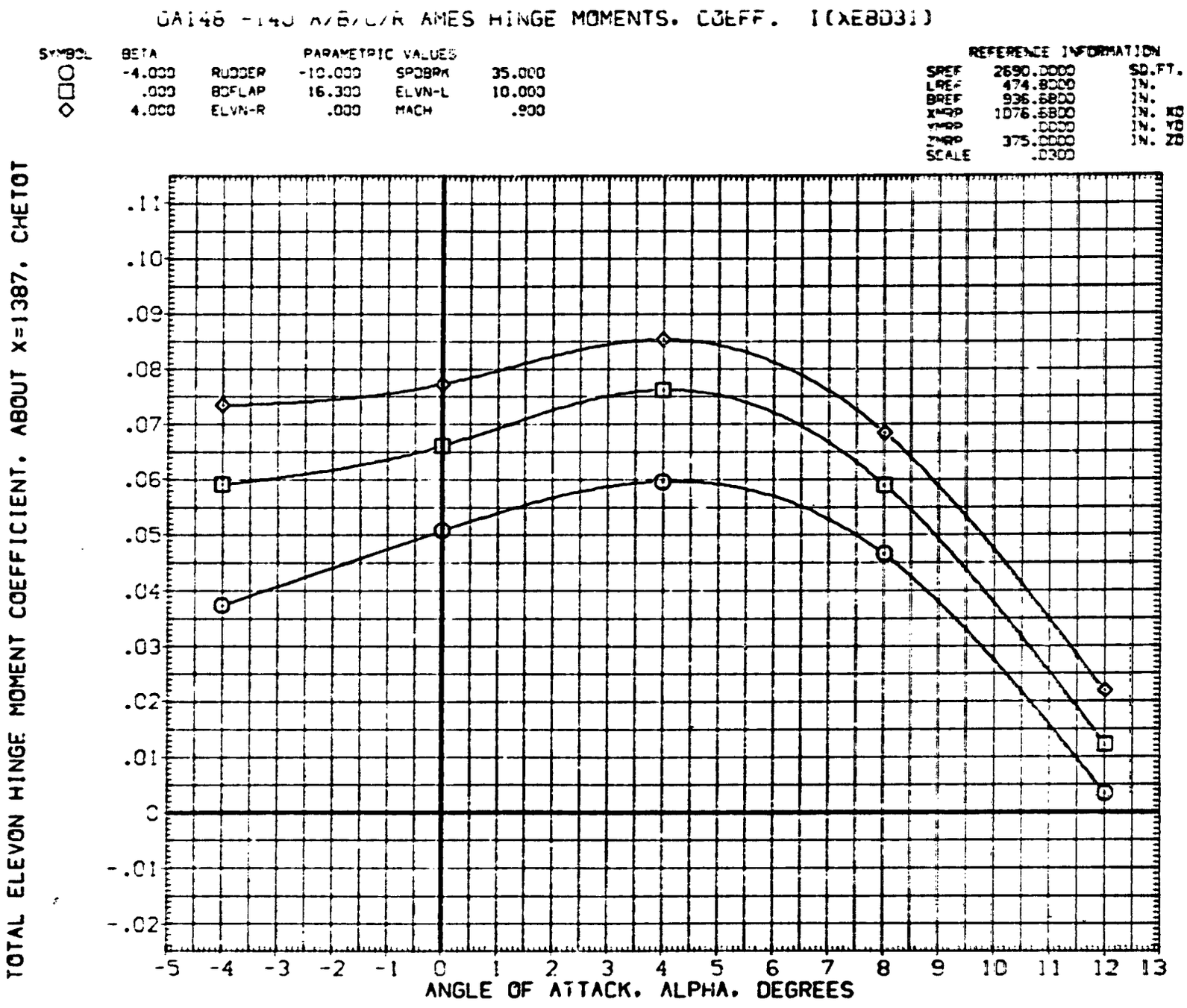


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6400	IN. XO
YMRP	.0000	IN. YO
ZMR	375.0000	IN. ZO
SCALE	.0300	

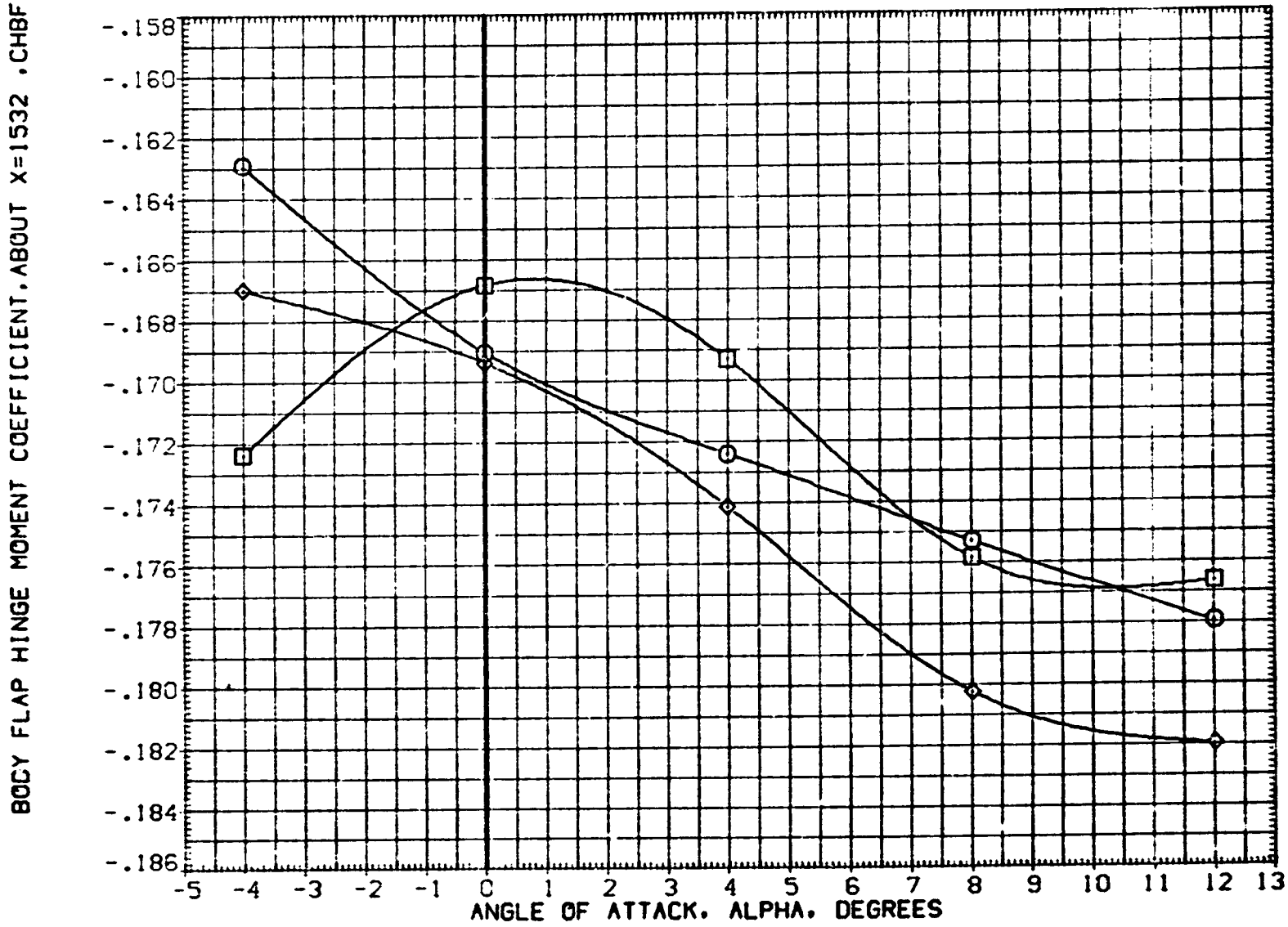


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

DA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D32)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-8.000	RUDDER	-10.000	SPDBRK	35.000
□	-4.000	BOFLAP	16.300	ELVN-L	10.000
◇	.000	ELVN-R	.000	MACH	.600
△	4.000				
◺	8.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

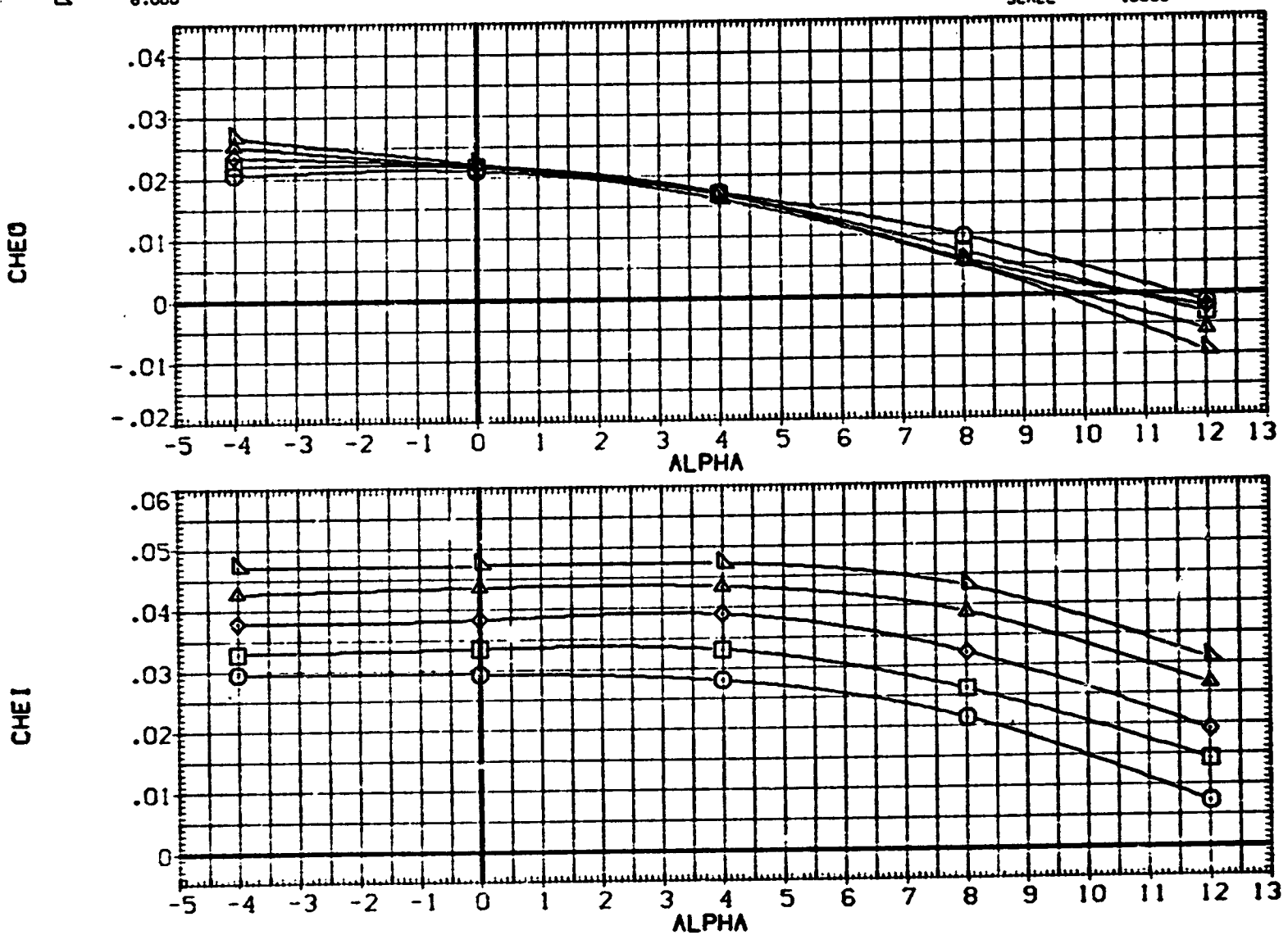


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

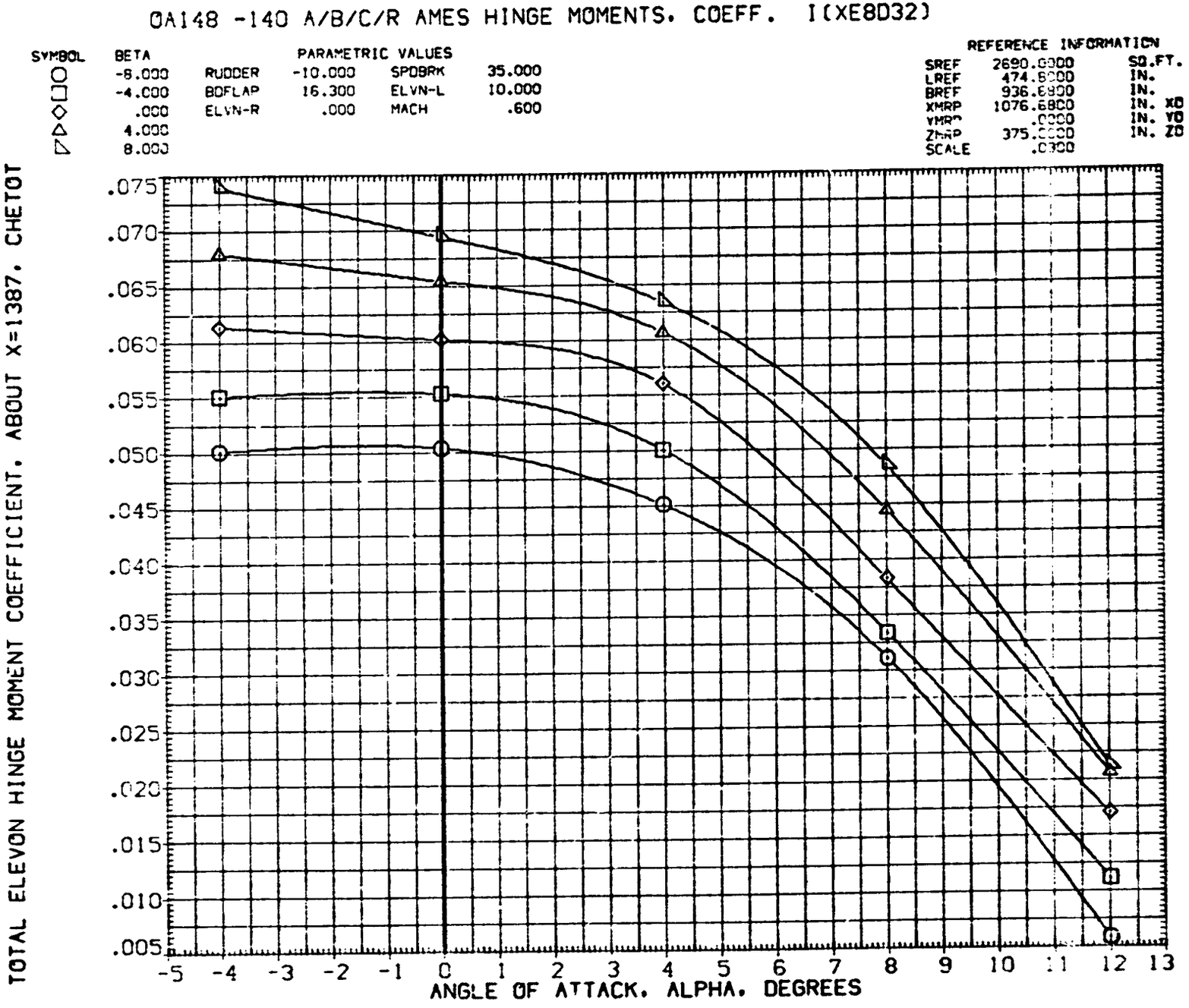


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

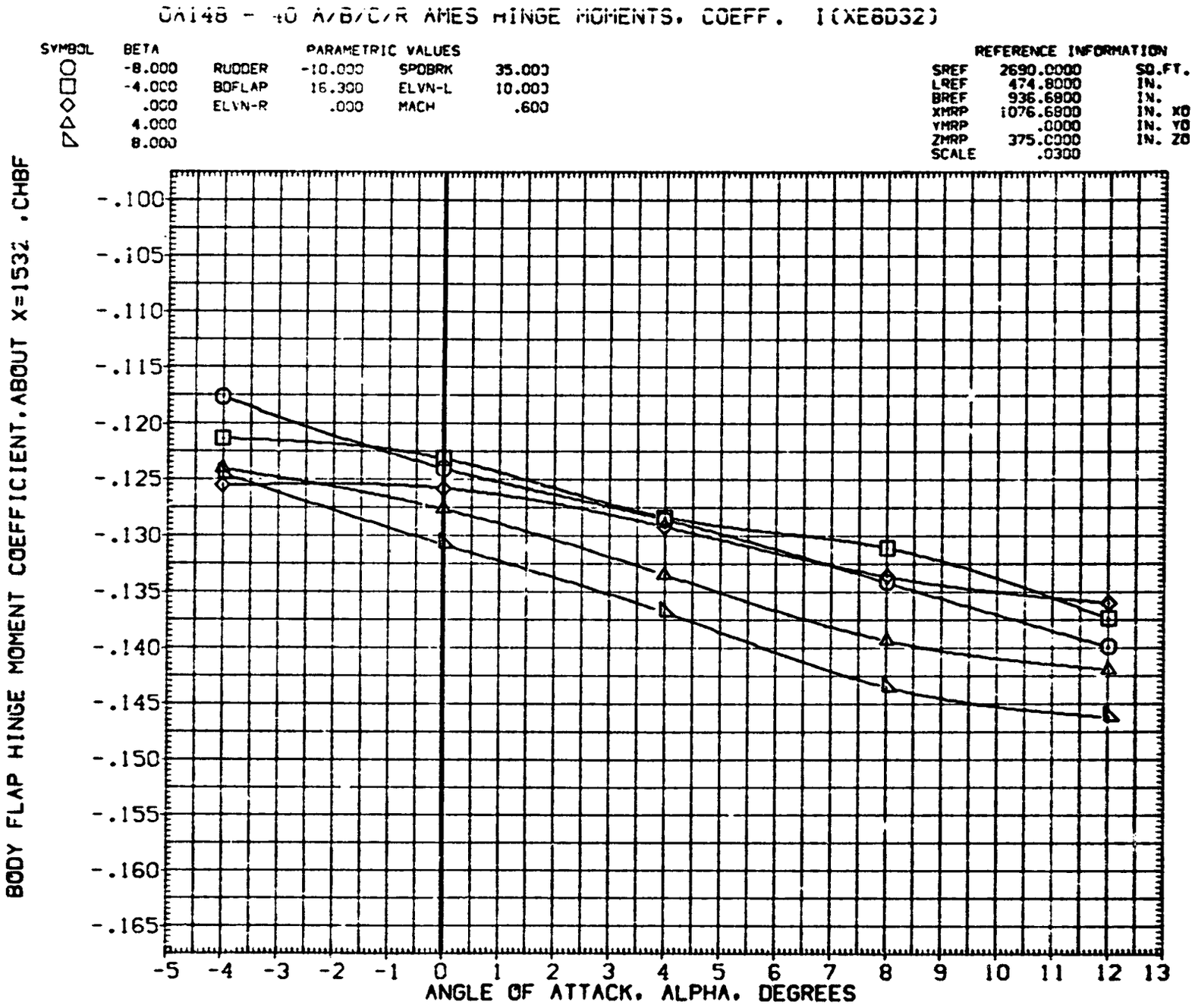


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	10.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

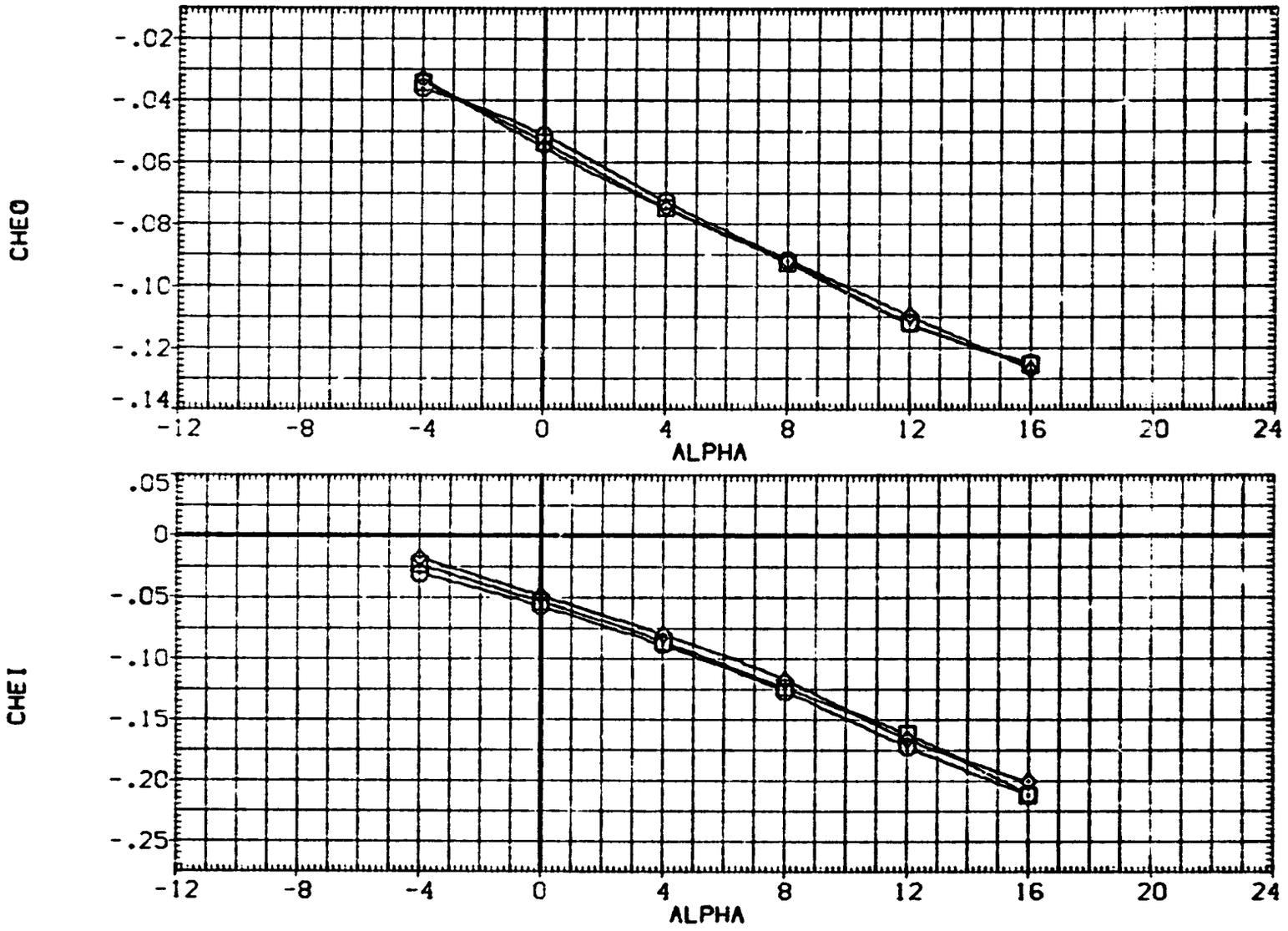


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

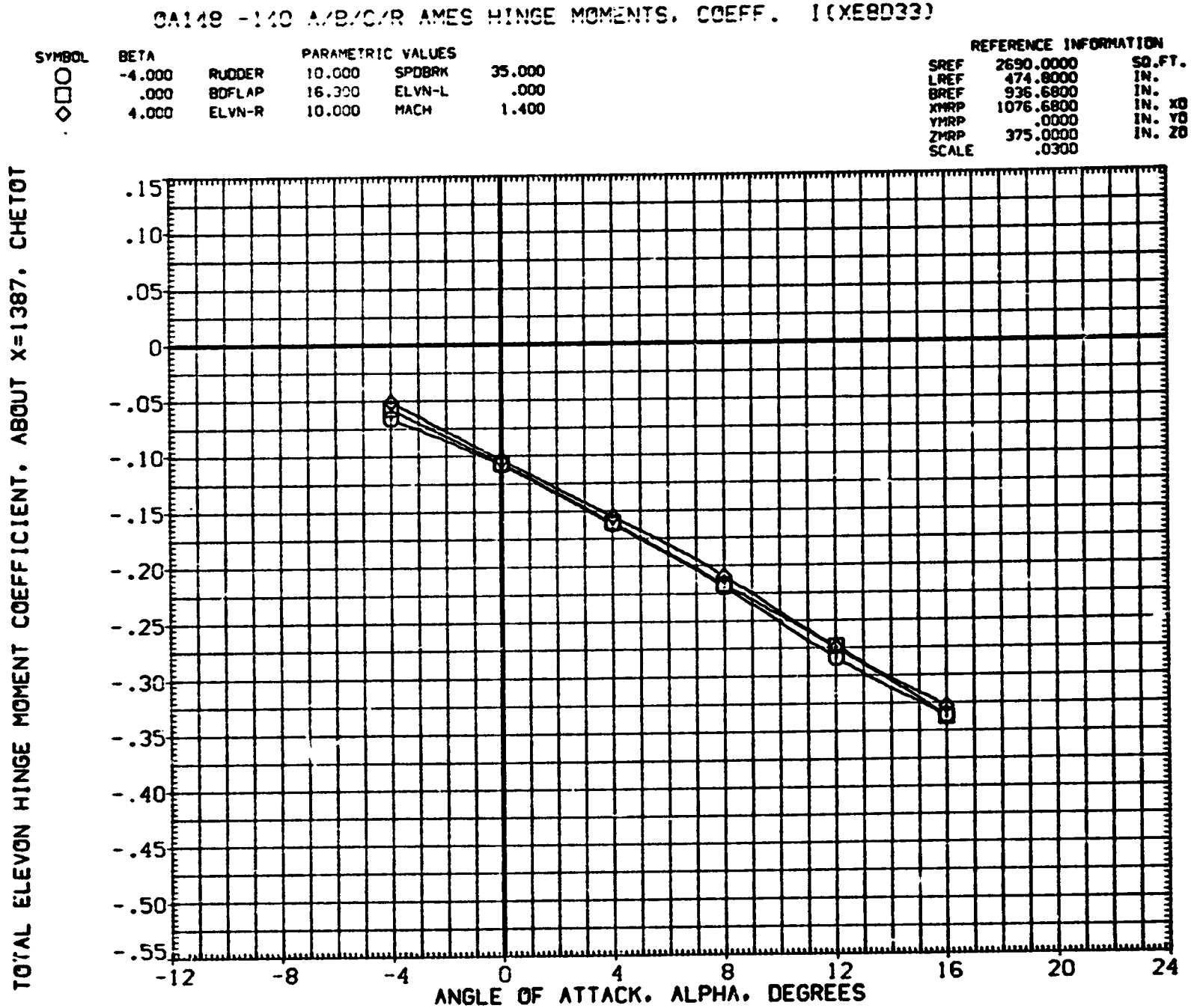


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D33)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

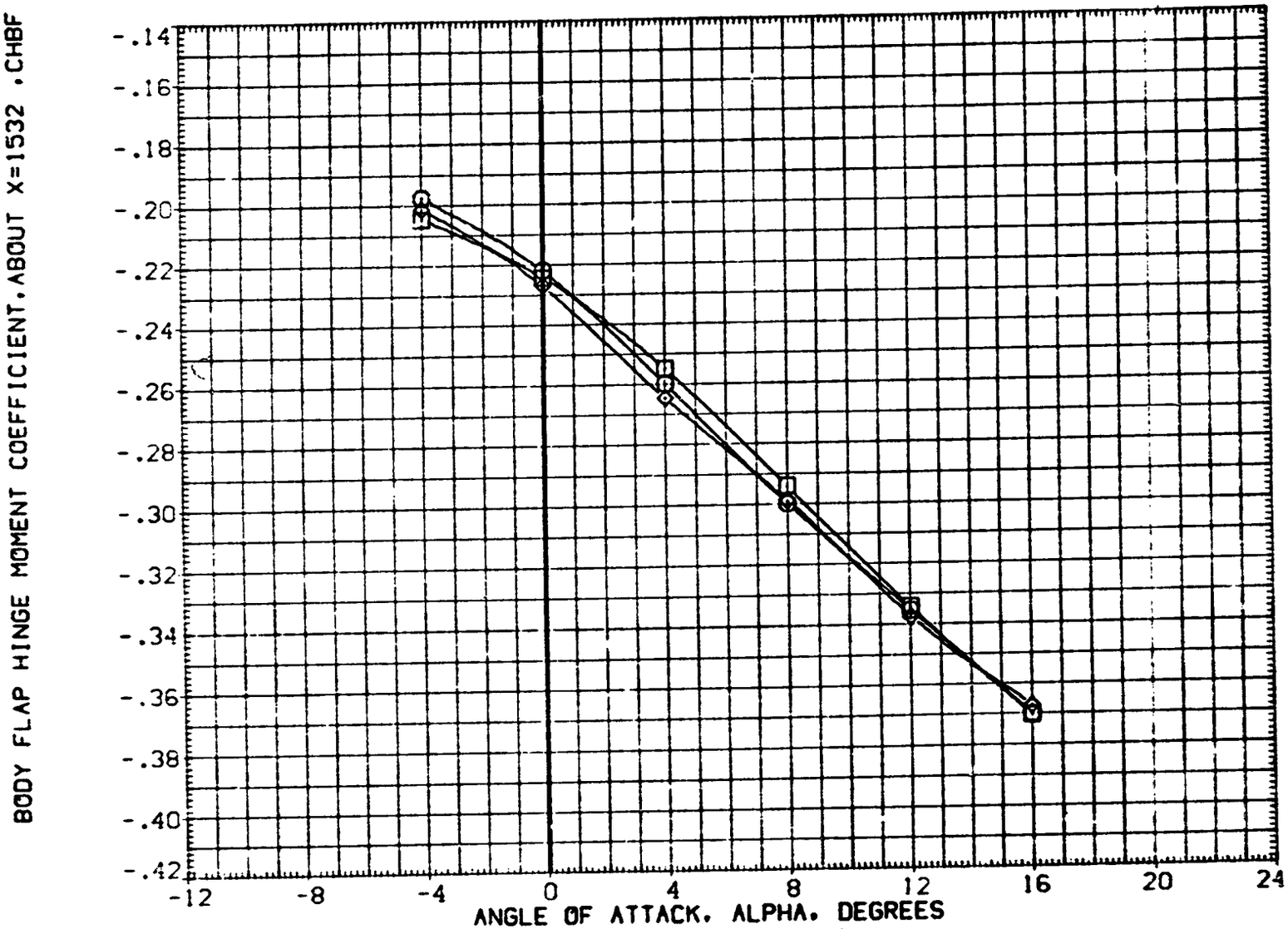


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

DATA8 -140 A/B/E/R AMES HINGE MOMENTS. COEFF. I(XE8034)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BOFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

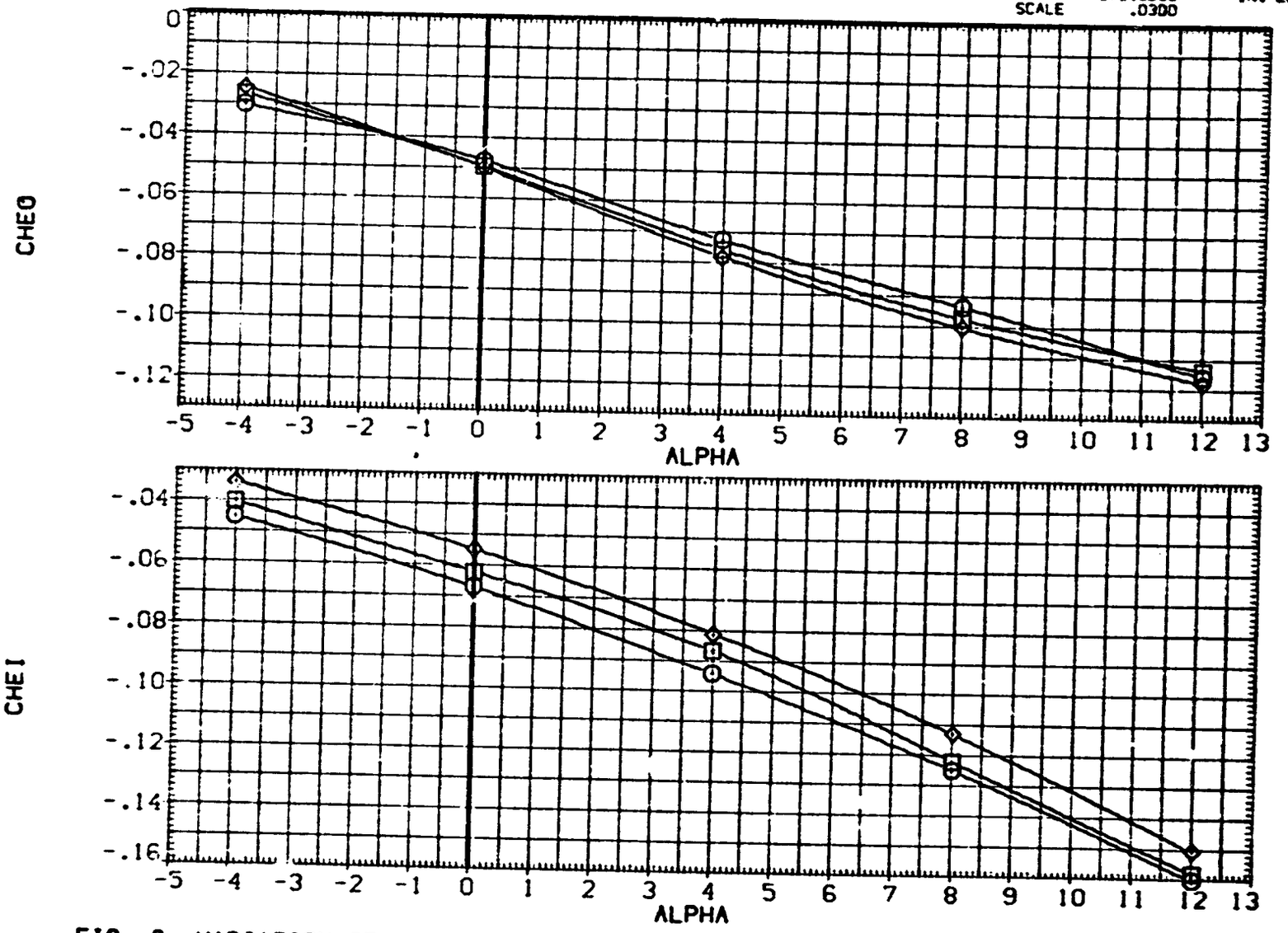


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

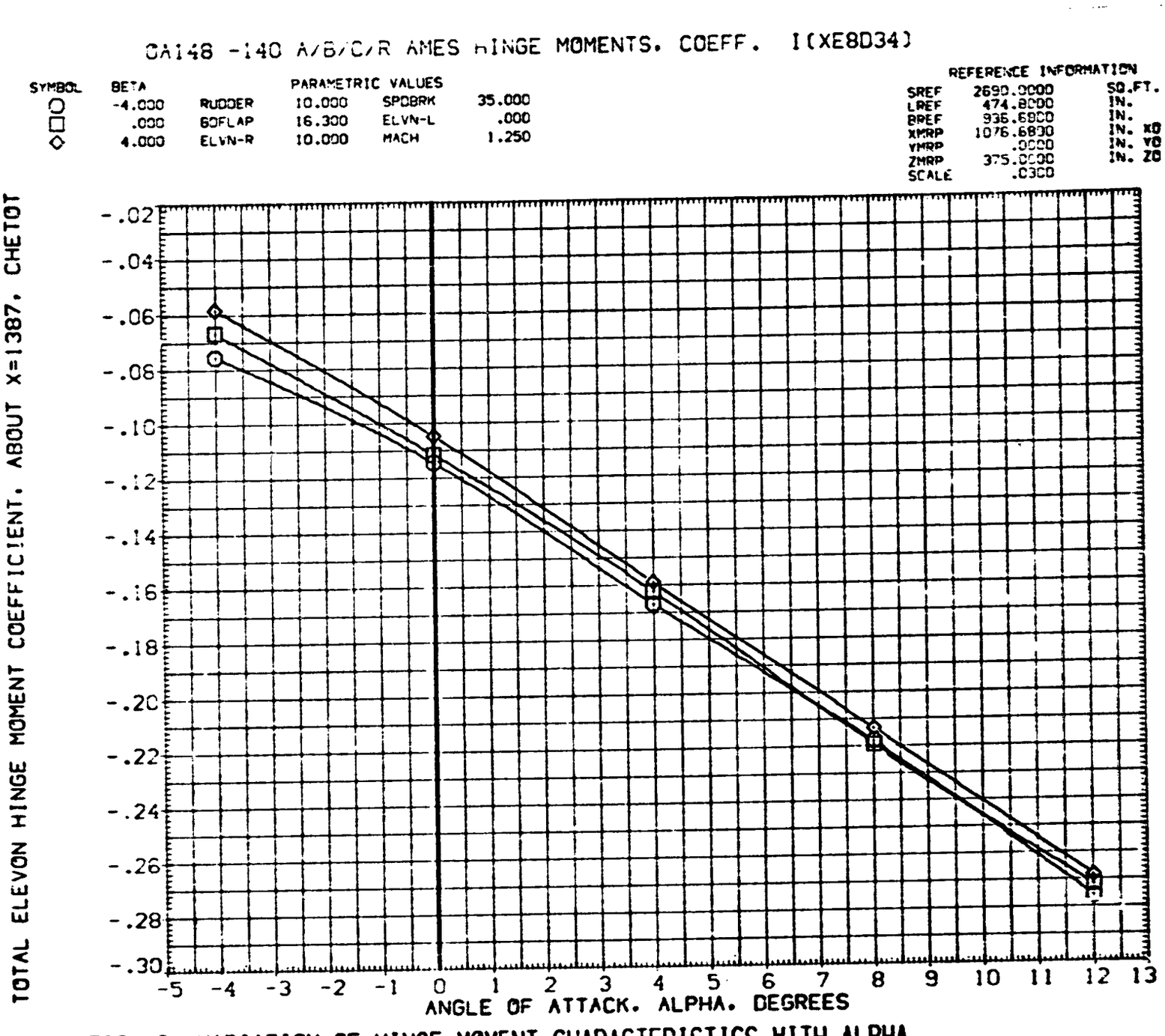


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

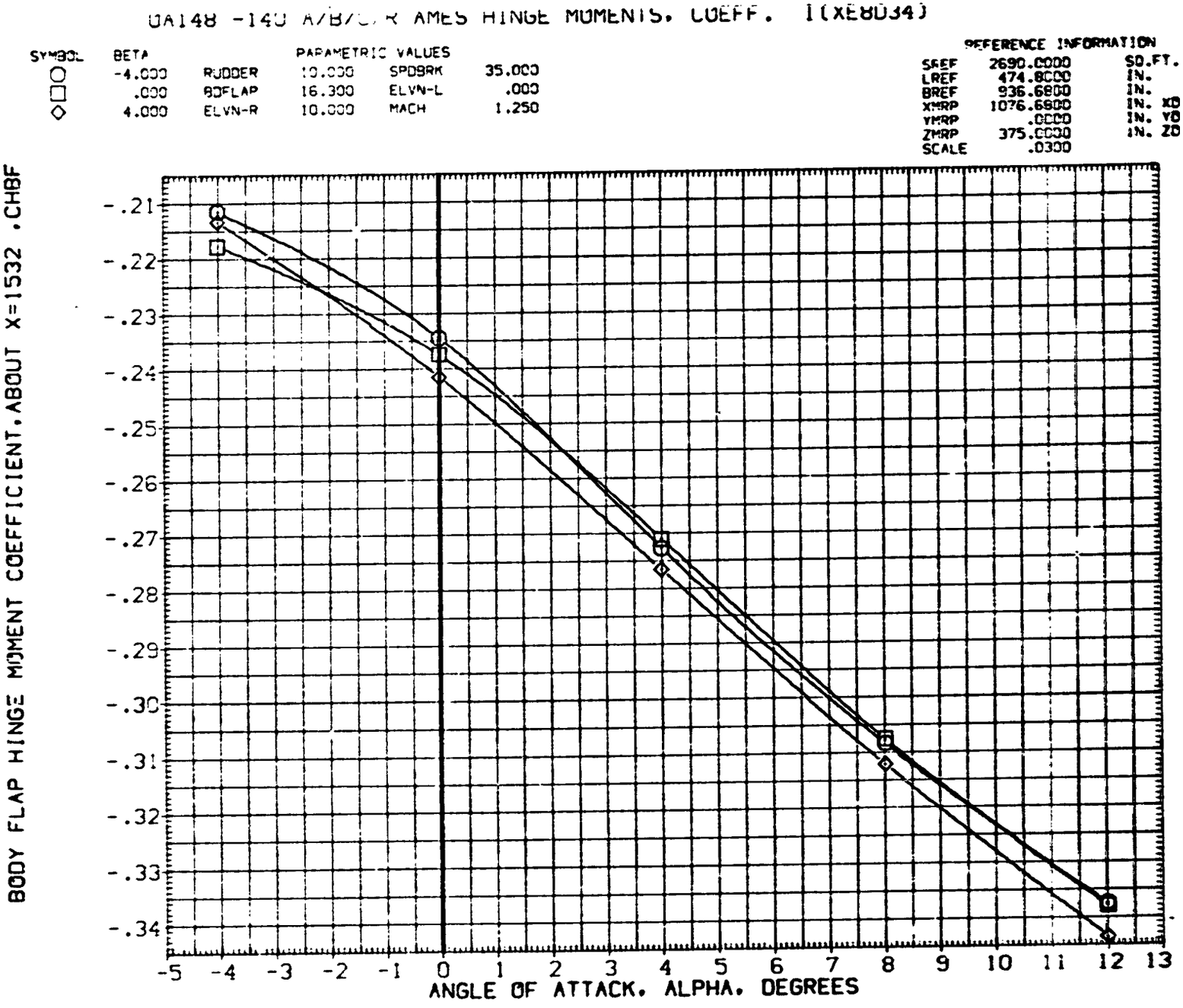


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

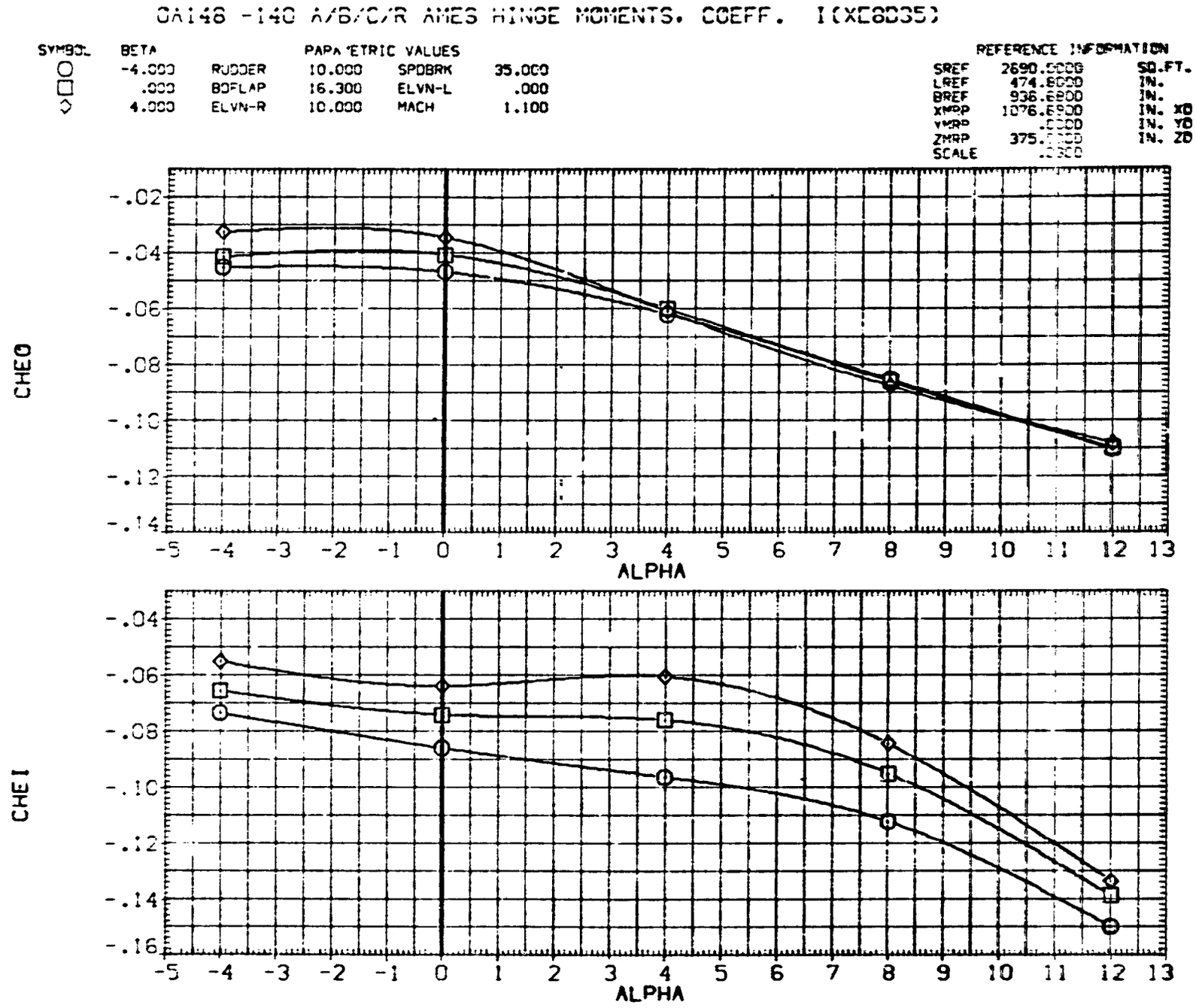


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

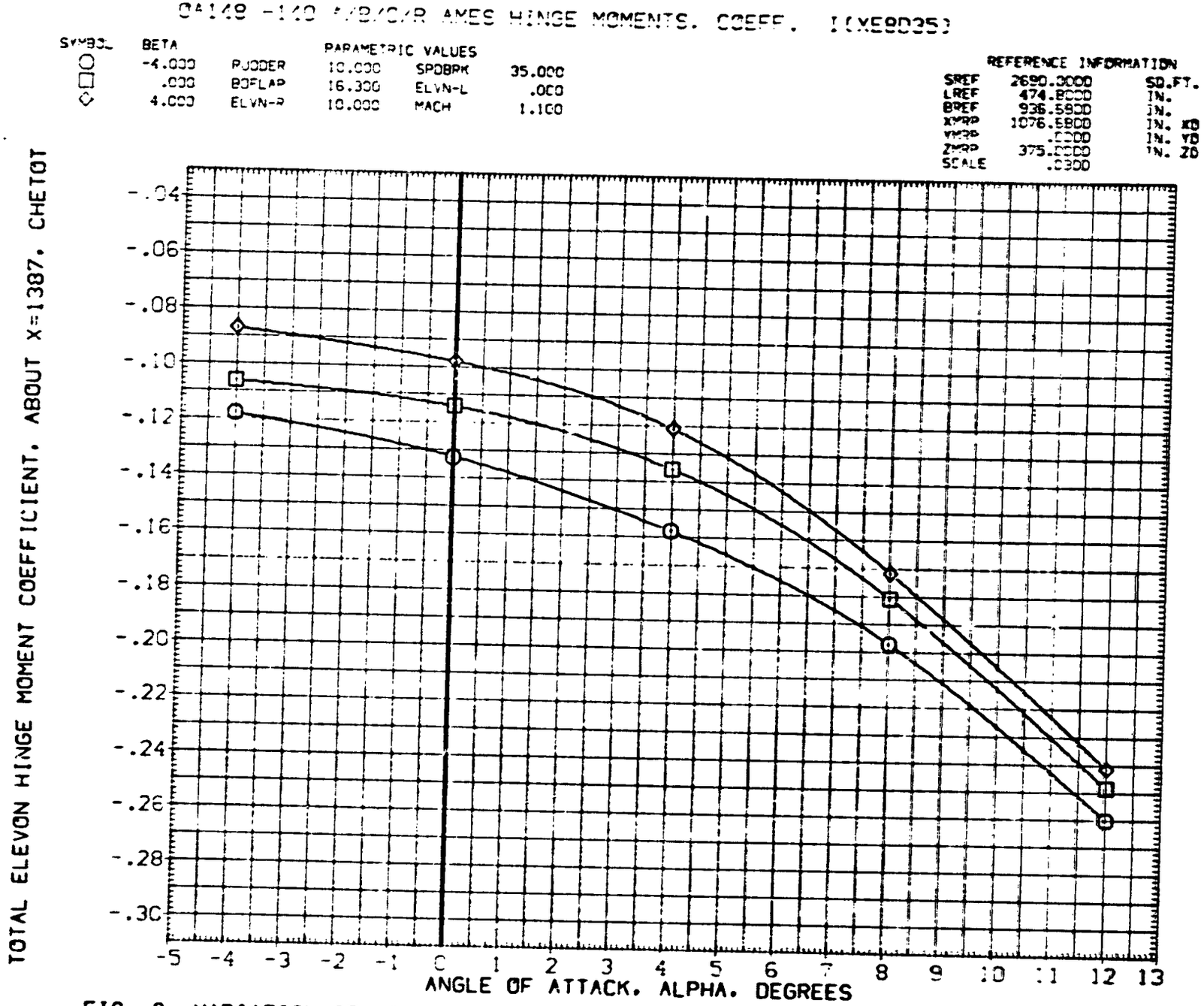


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8035)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	810.0000	IN.
XMRP	1015.0000	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	1.0000	



FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

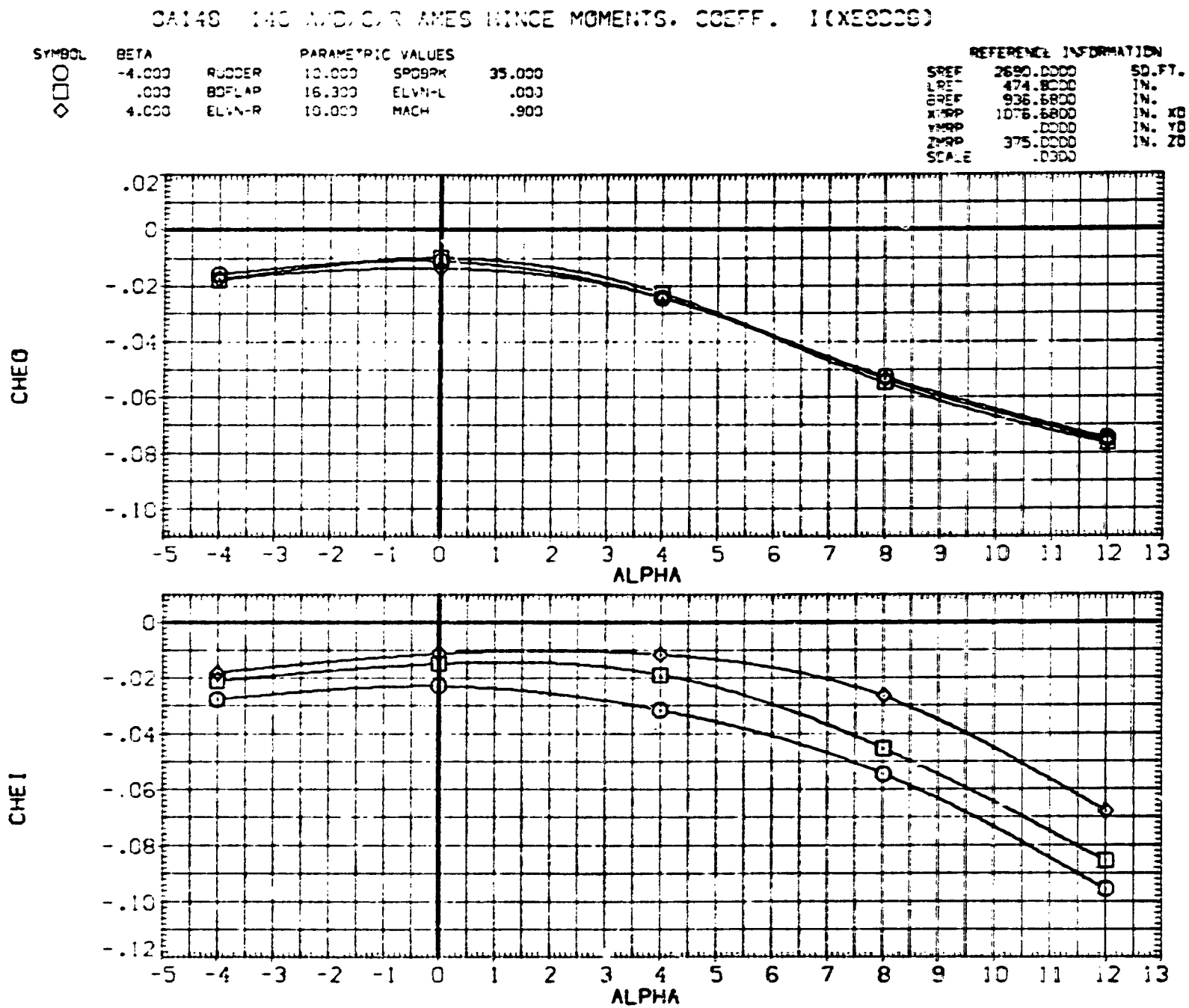


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE3036)

SYMBOL	CETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	35.000
□	.000	BDFLAP	16.300	ELVN-L	.000
◇	4.000	ELVN-R	10.000	MACH	.570

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

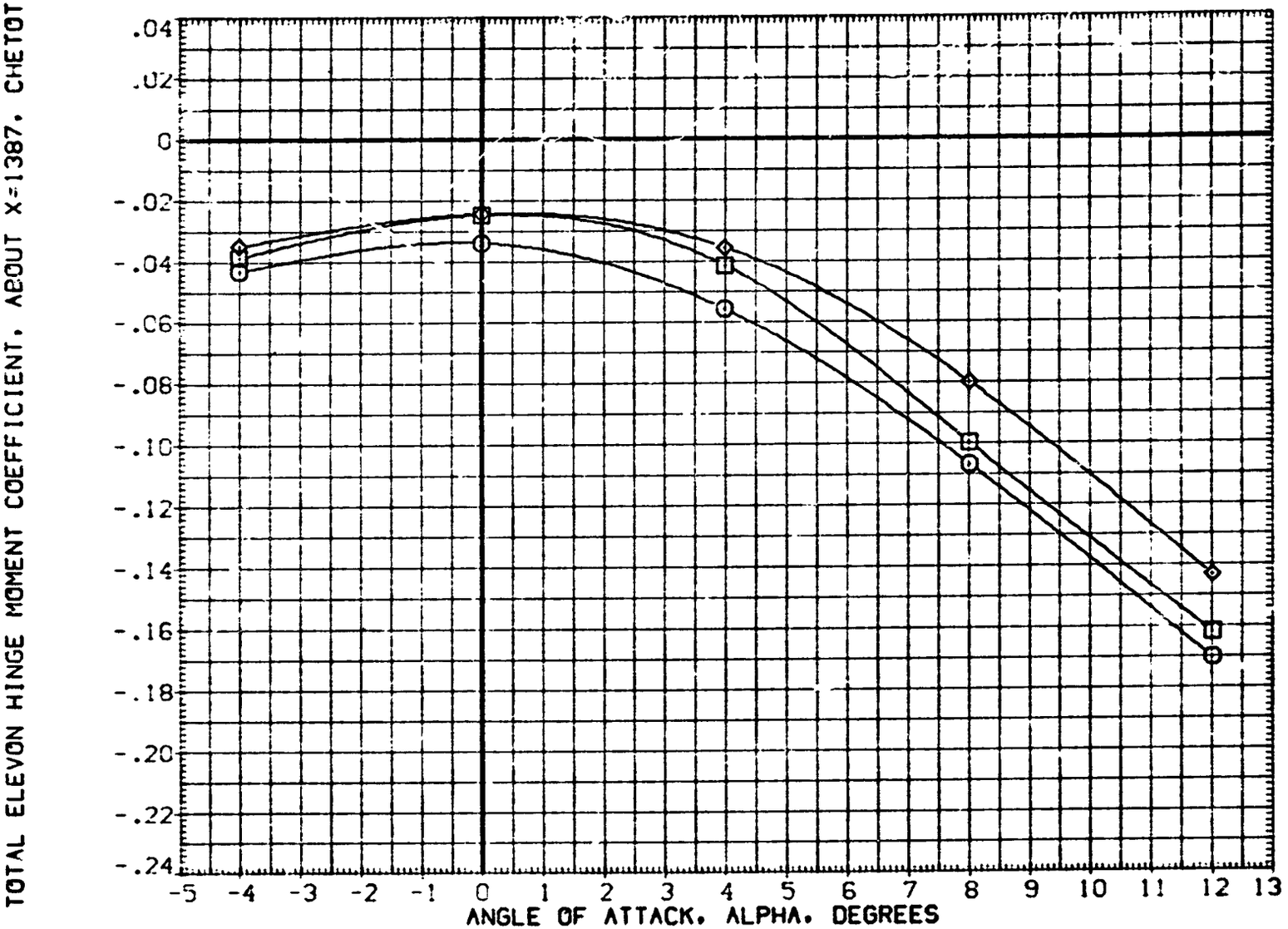


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

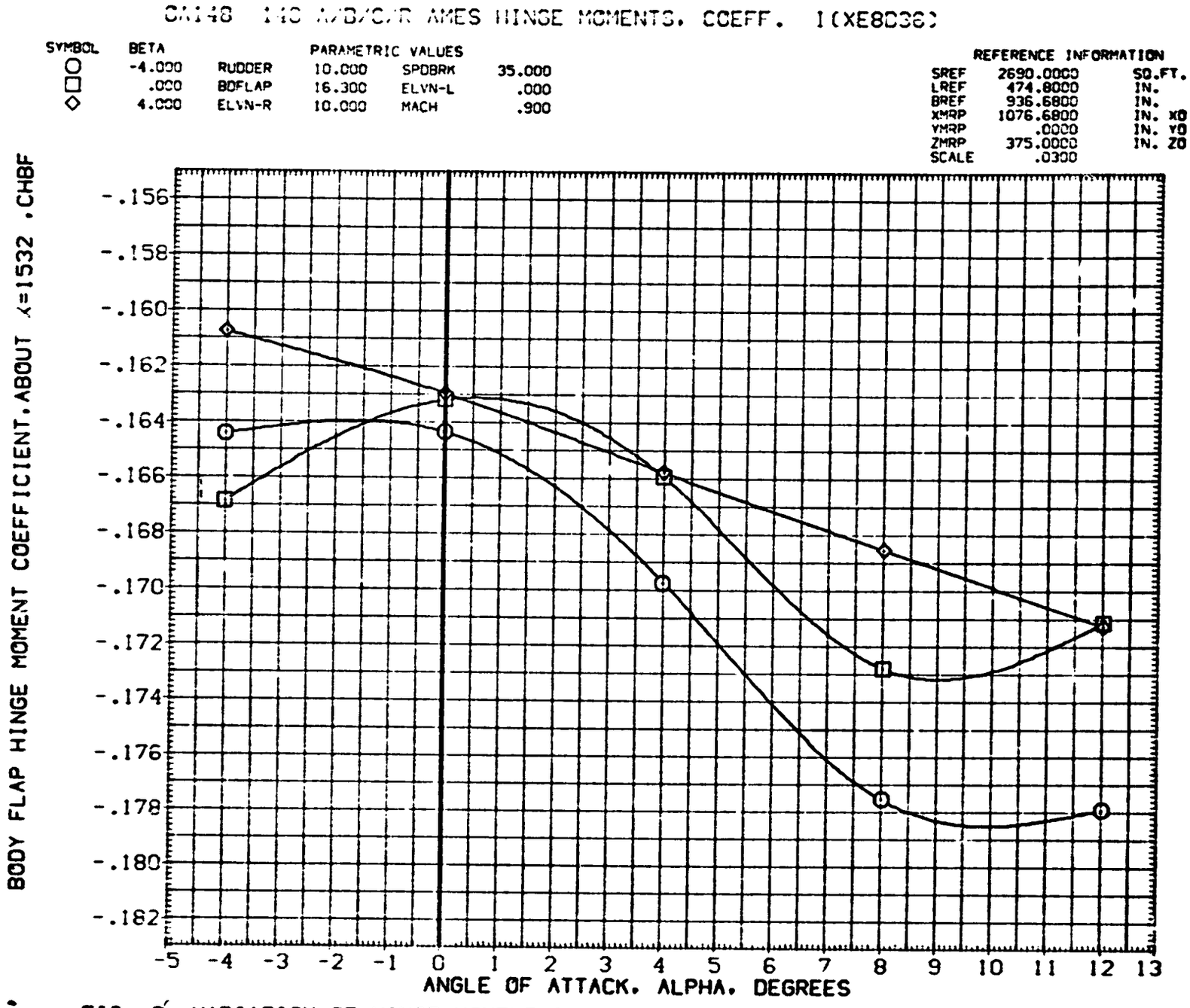


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

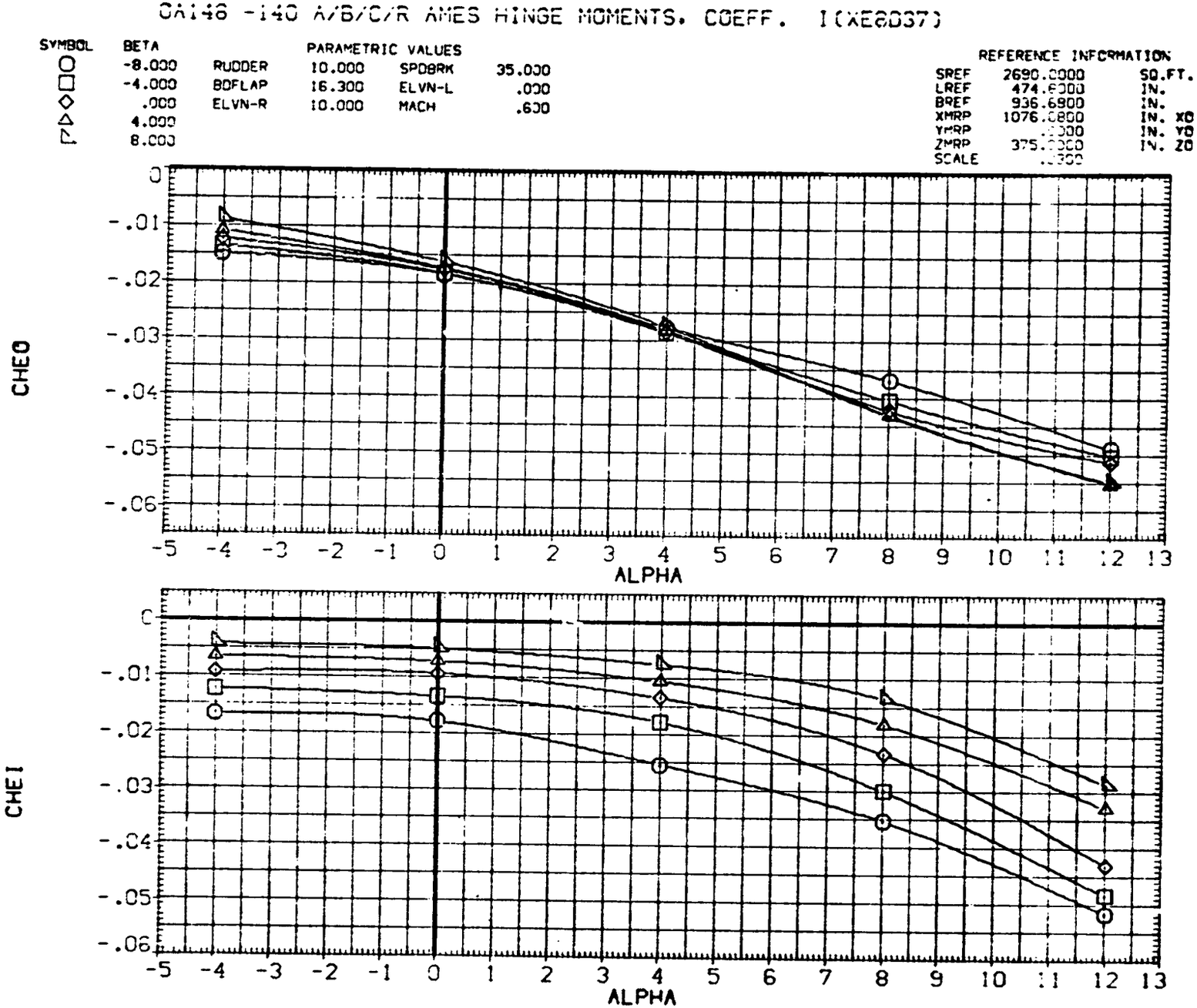


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

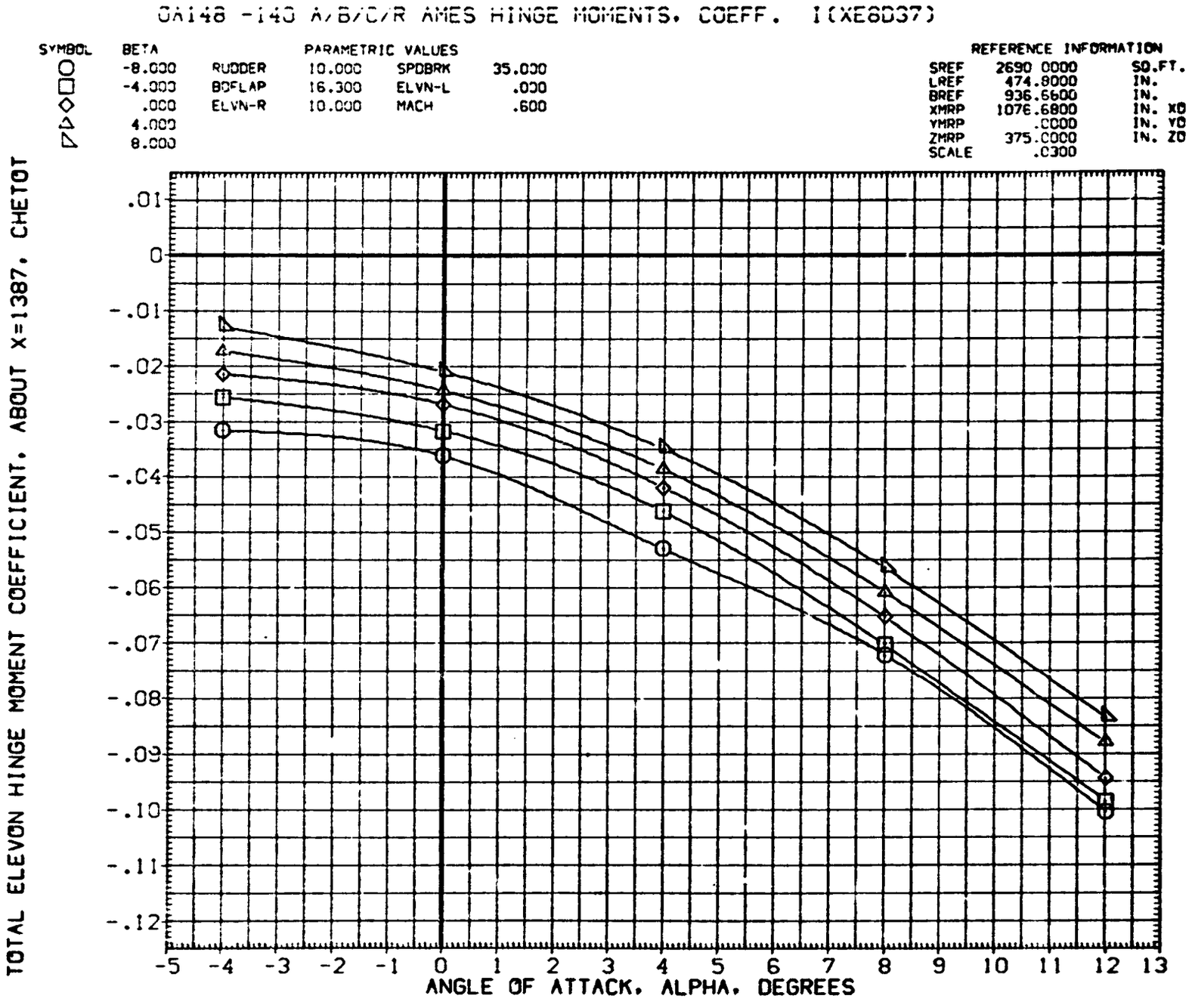


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

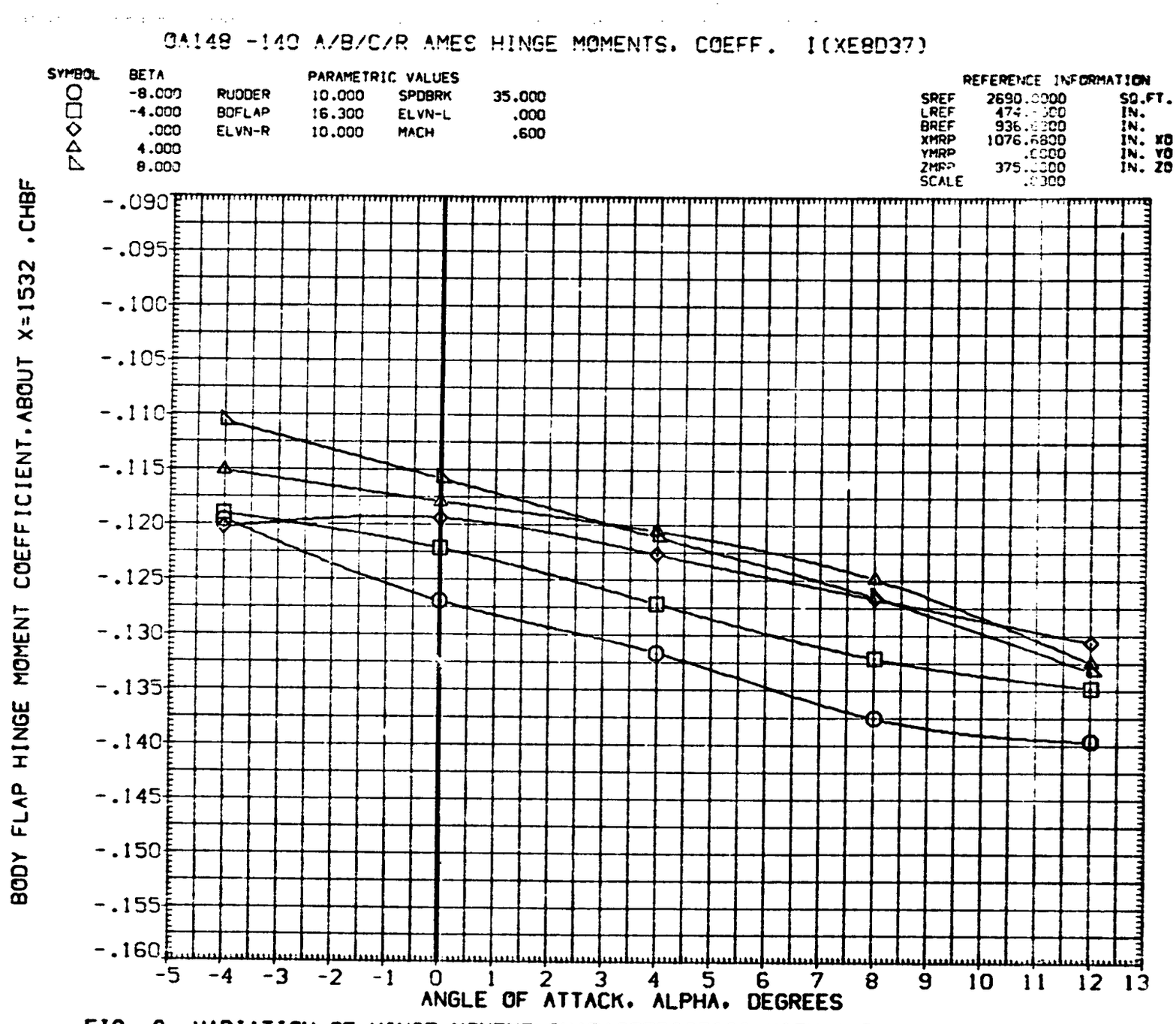


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

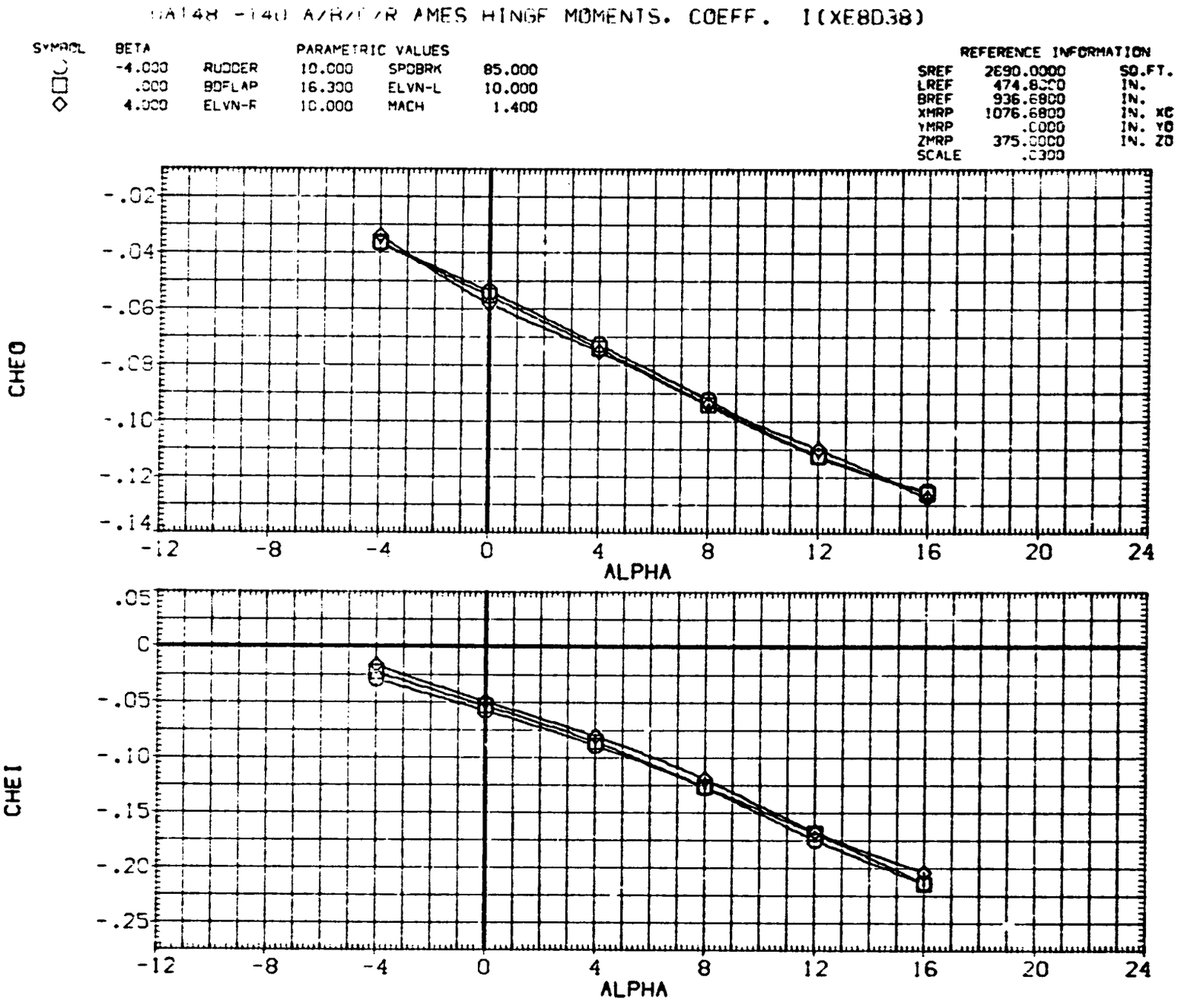


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

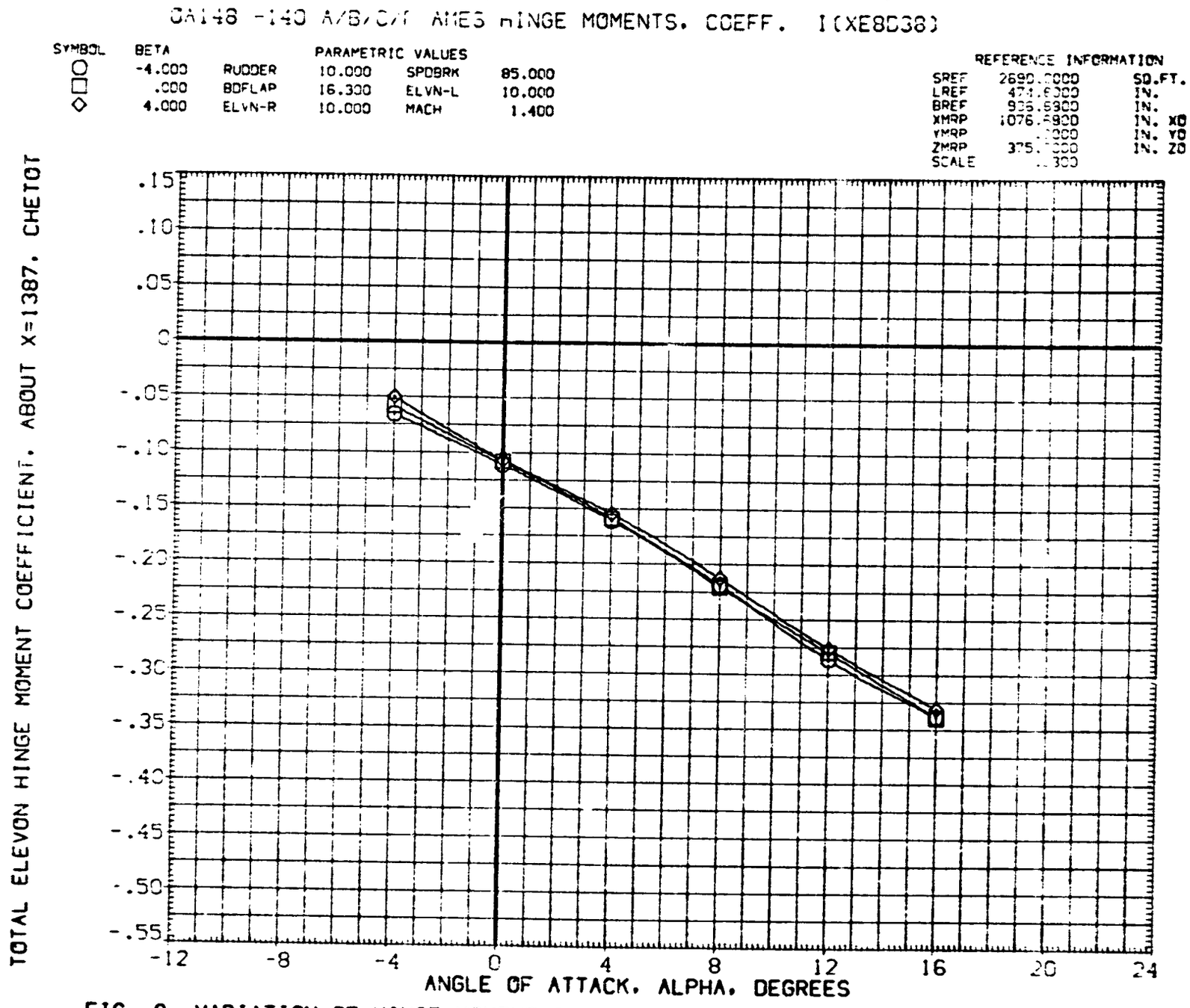


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

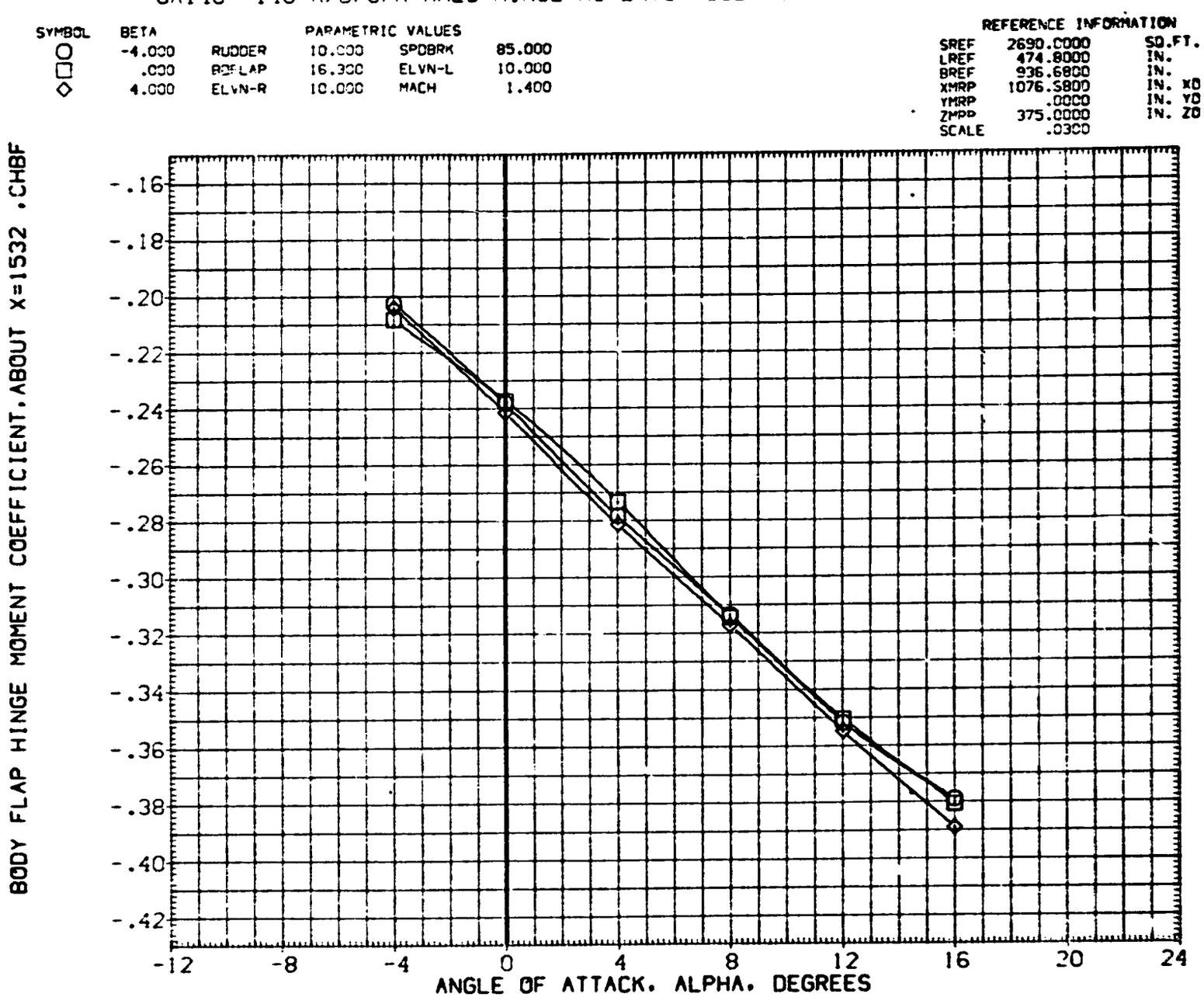


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

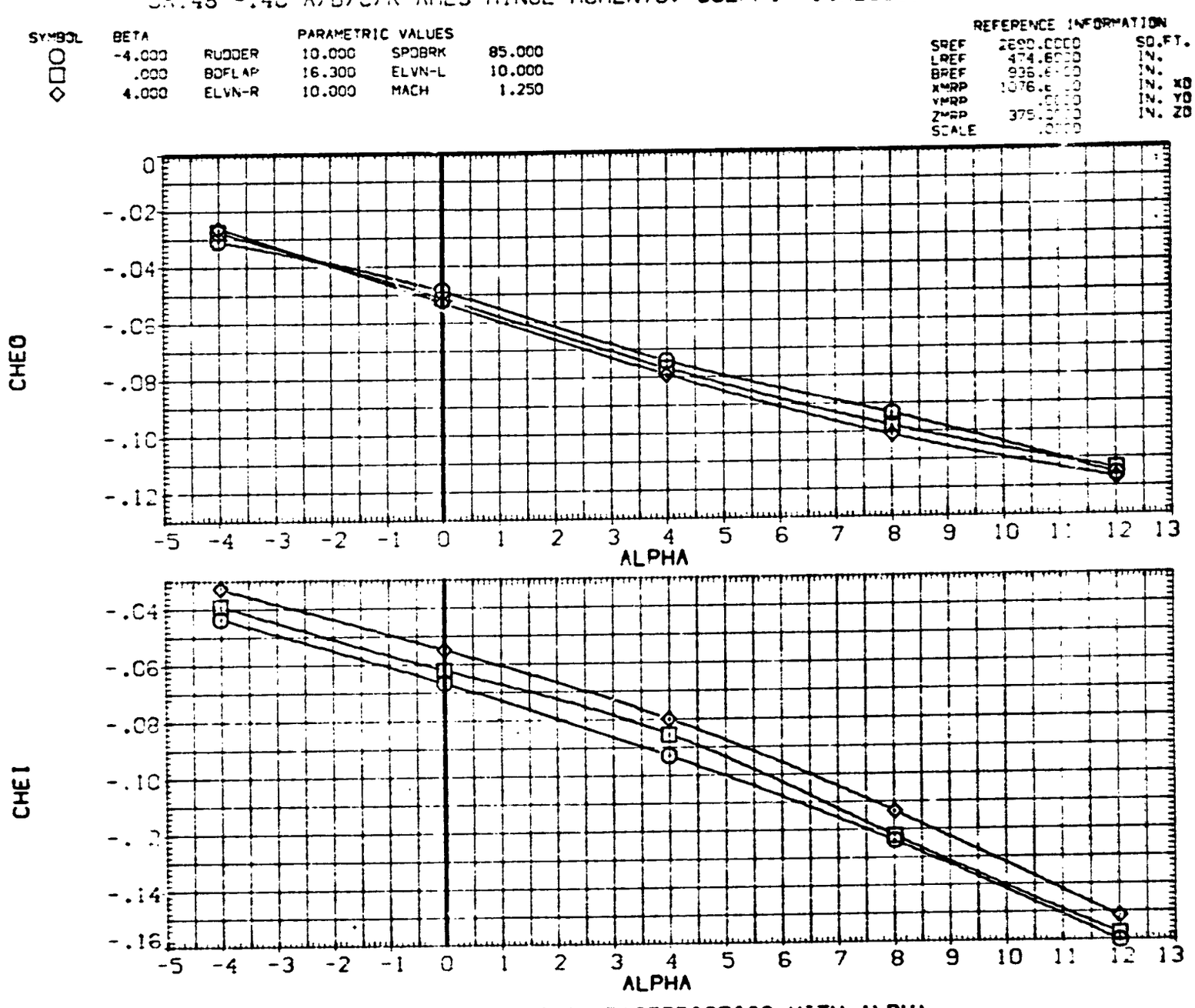


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

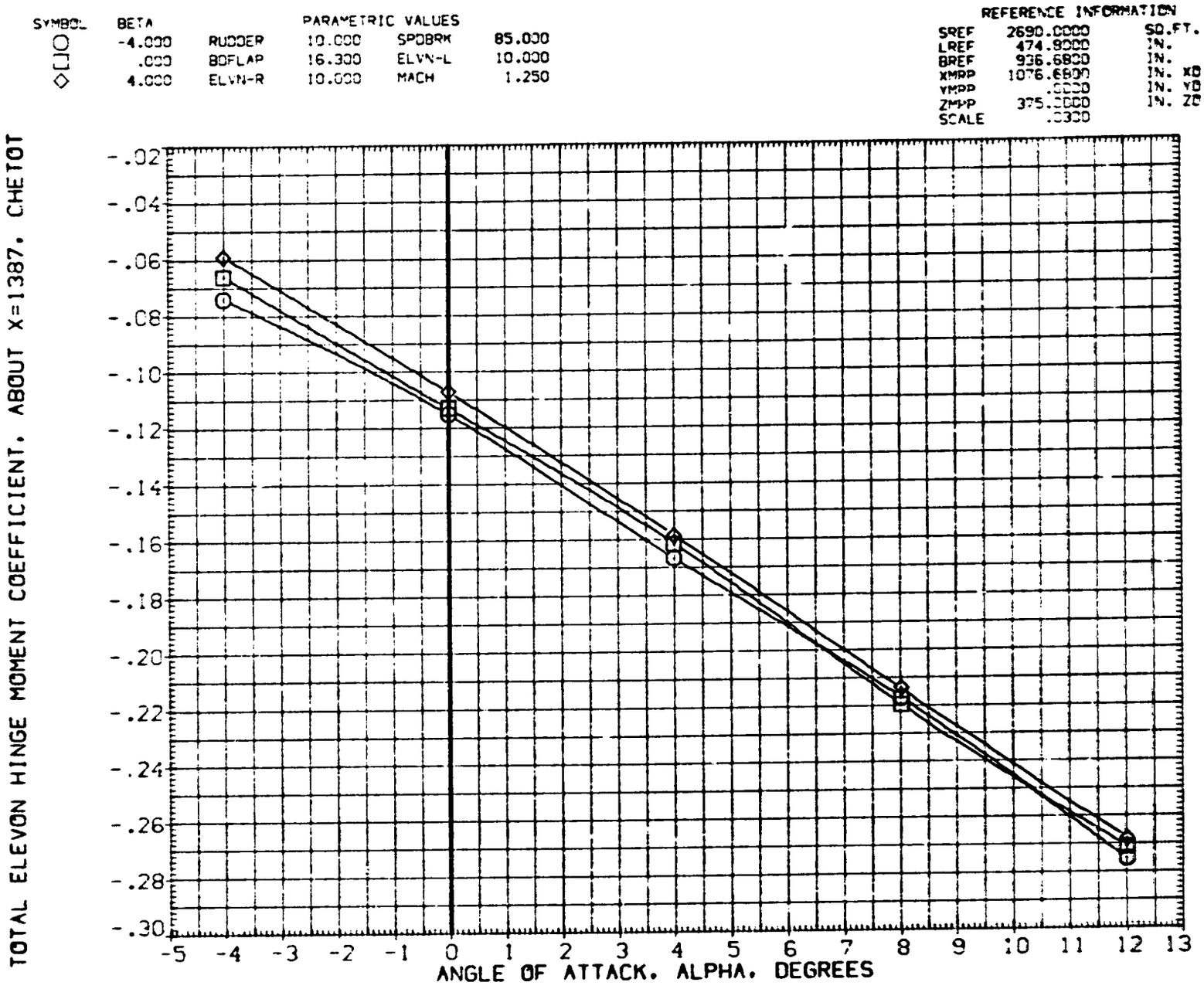


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.1000	IN.
BREF	905.8000	IN.
XMRP	1076.8000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	315.0000	IN. Z0
SCALE	1.0000	

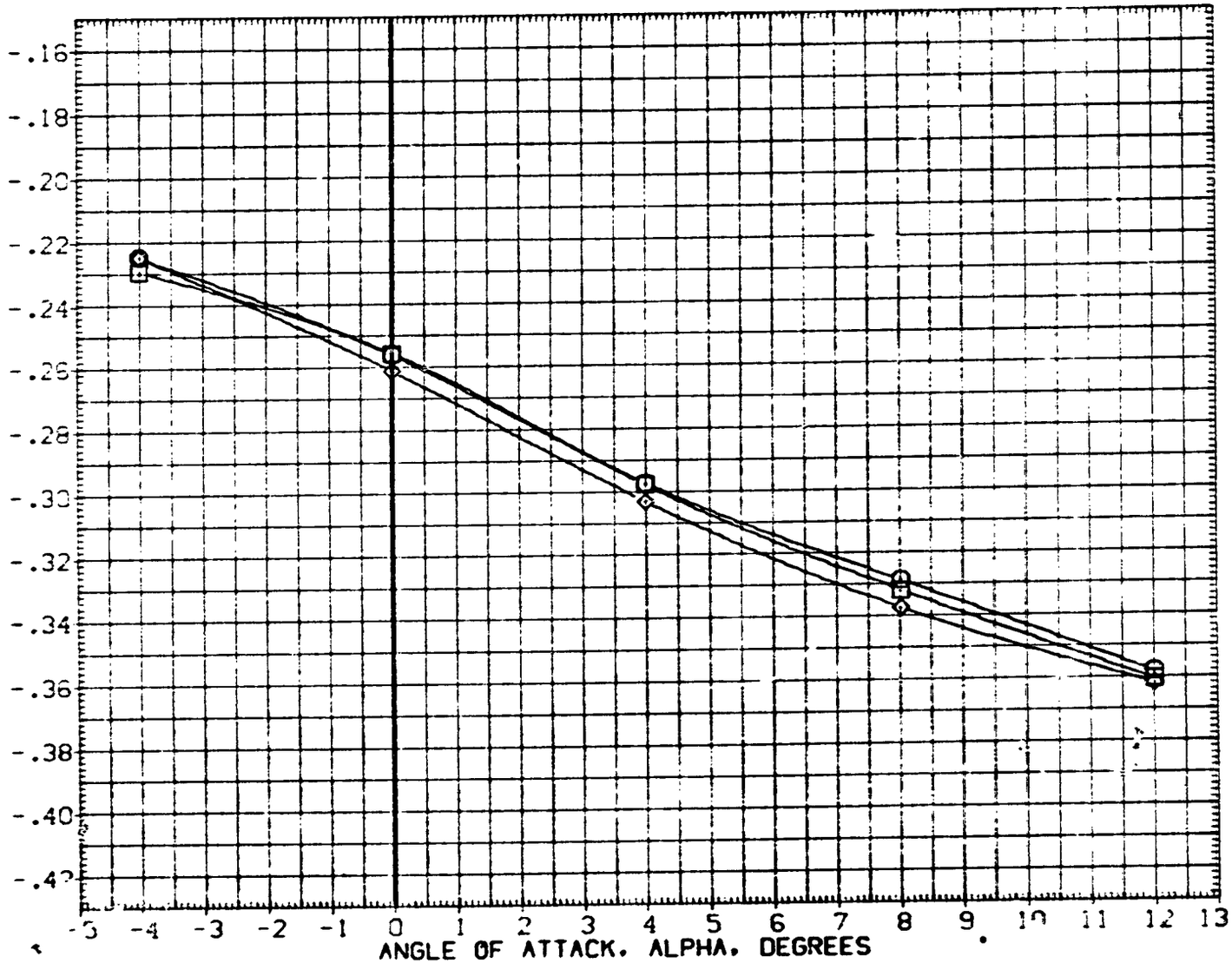


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

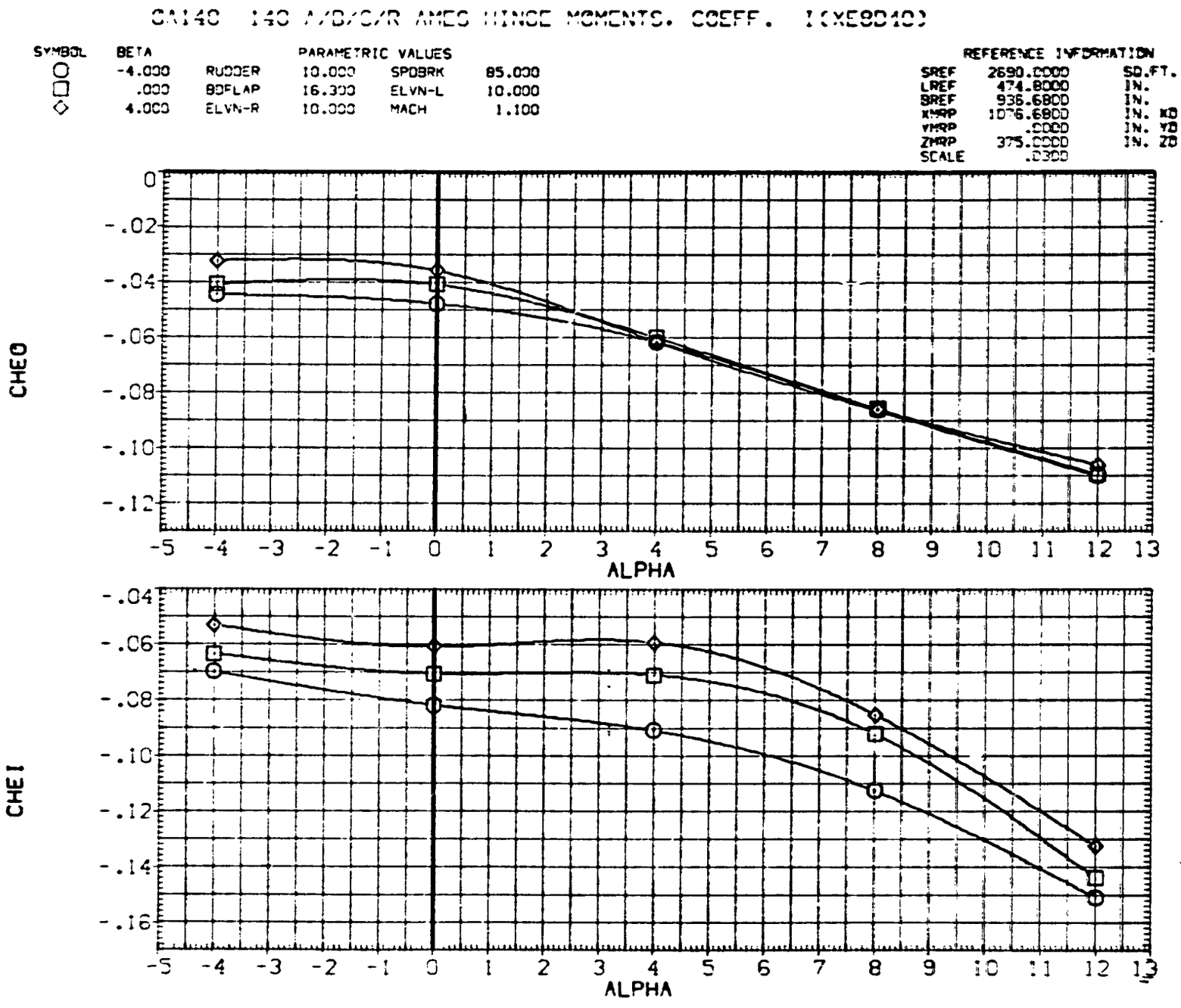


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

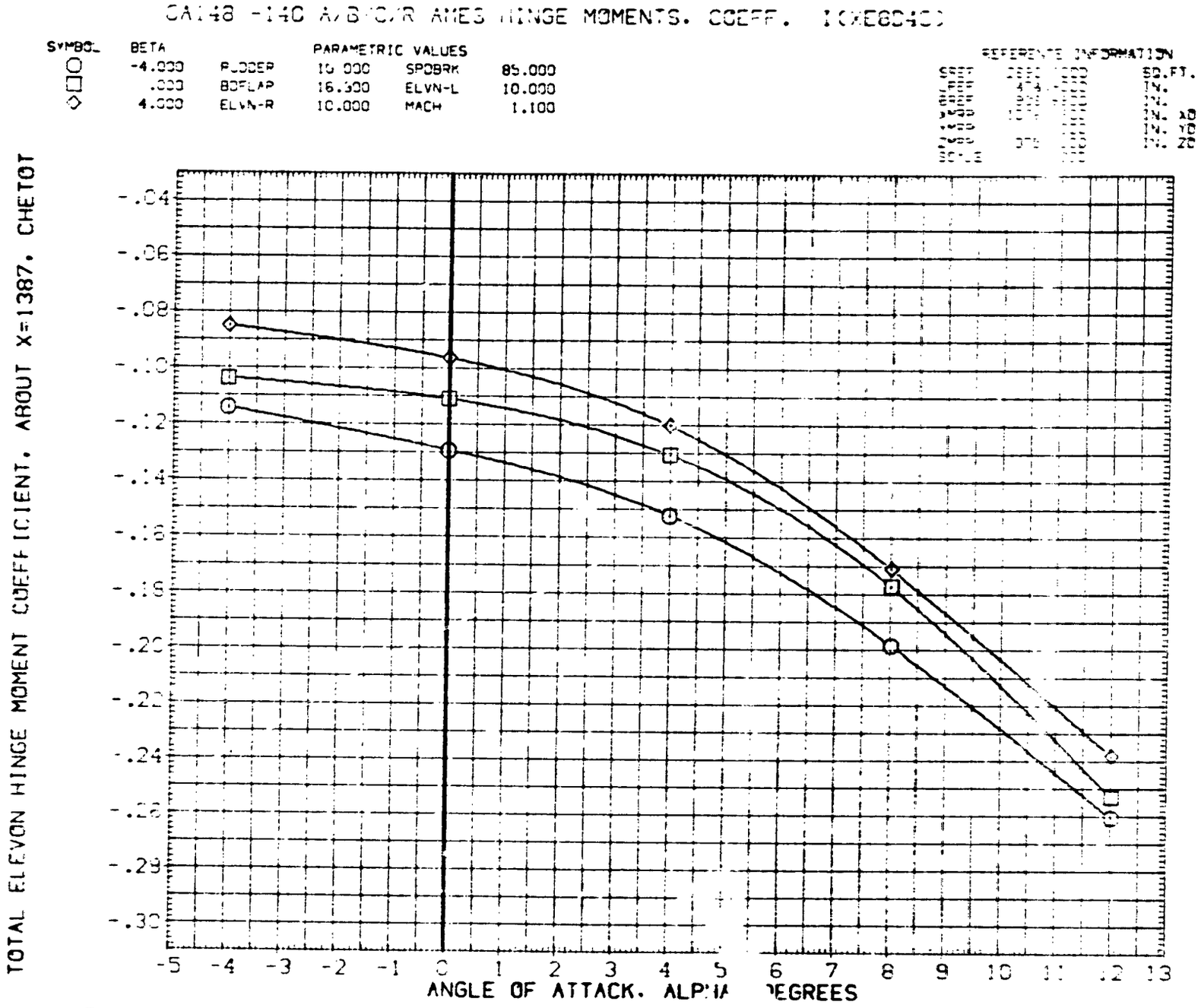


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTI.. WITH ALPHA

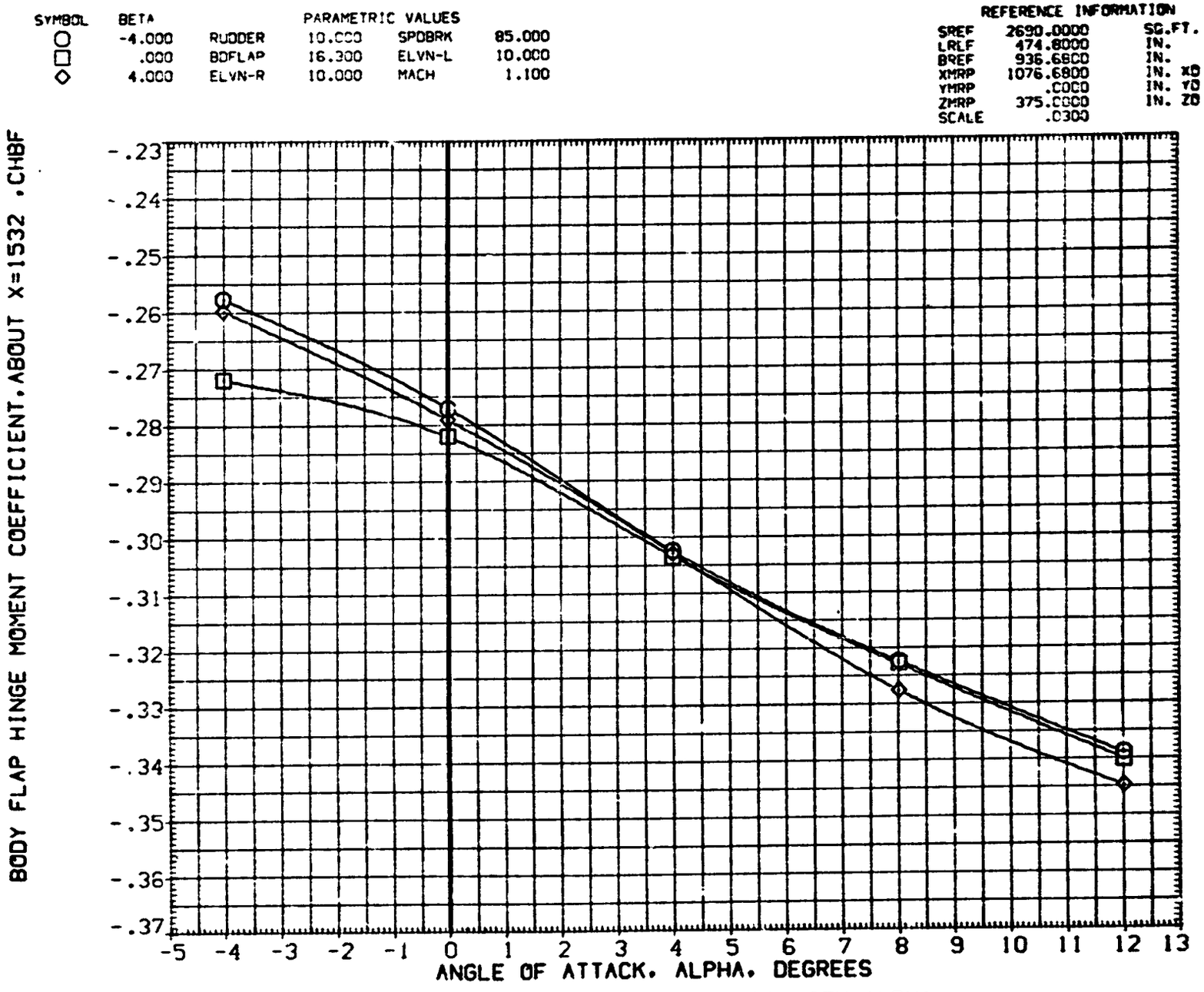


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D41)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.9000	IN.
BREF	936.6600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

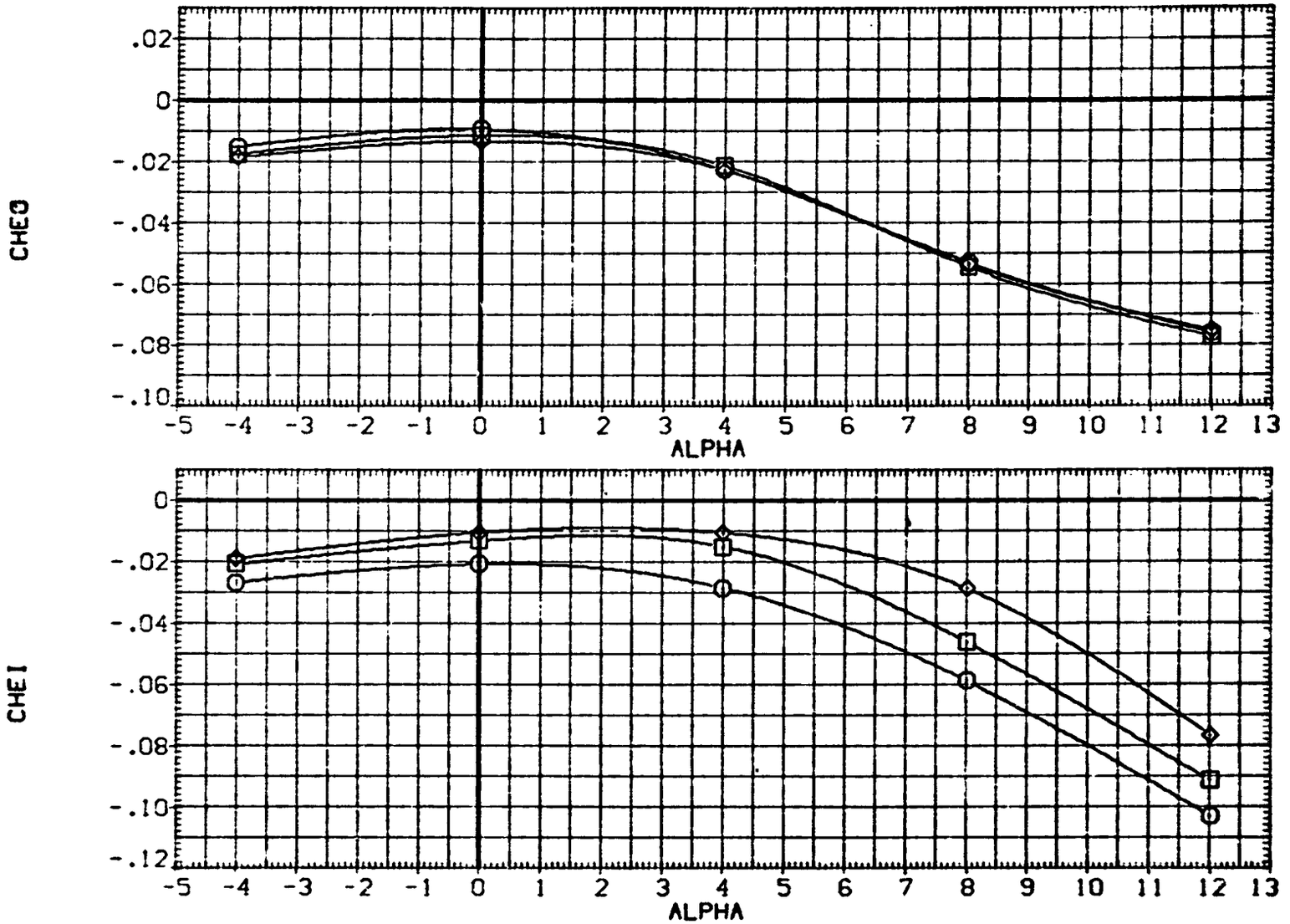


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

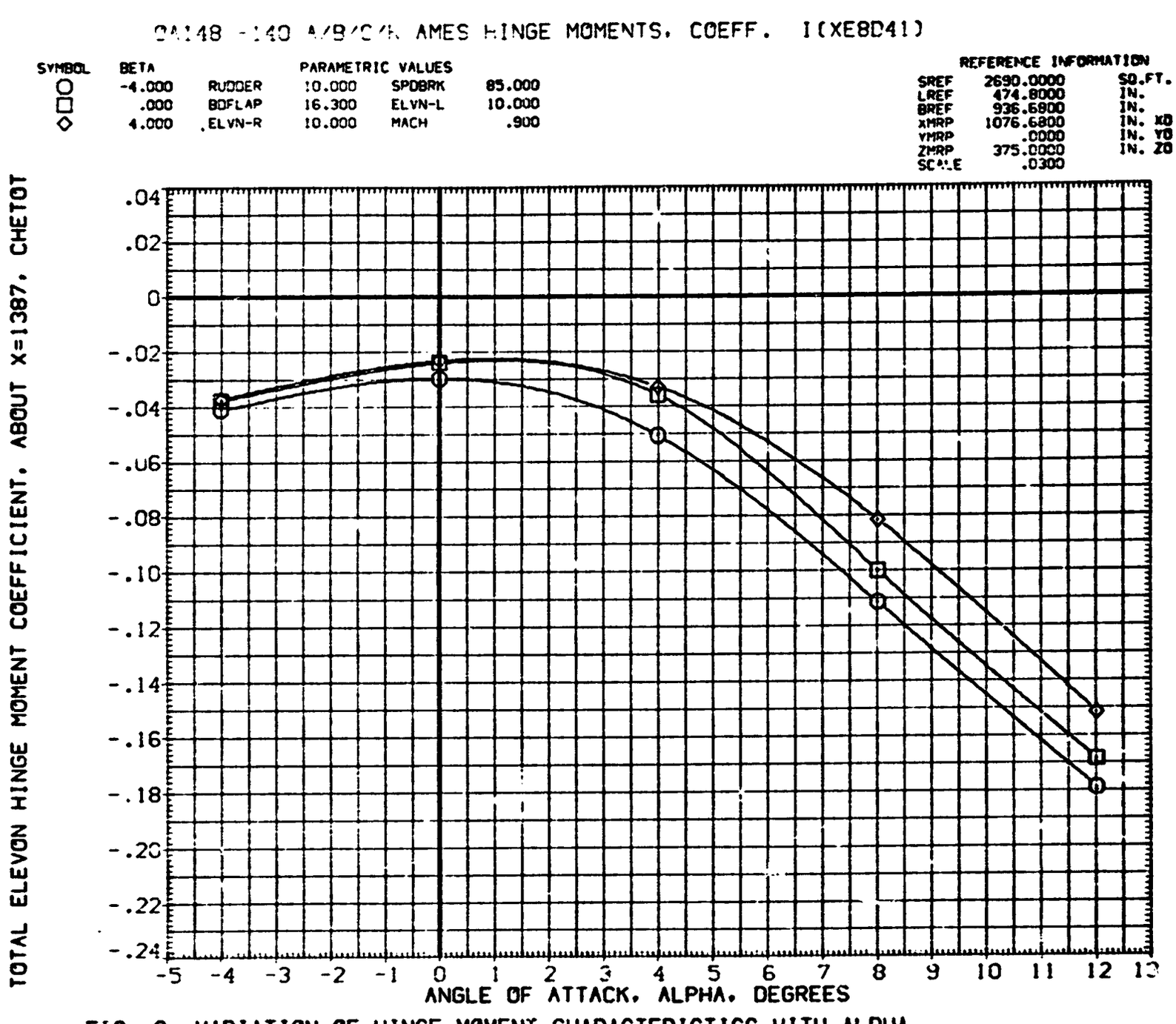


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

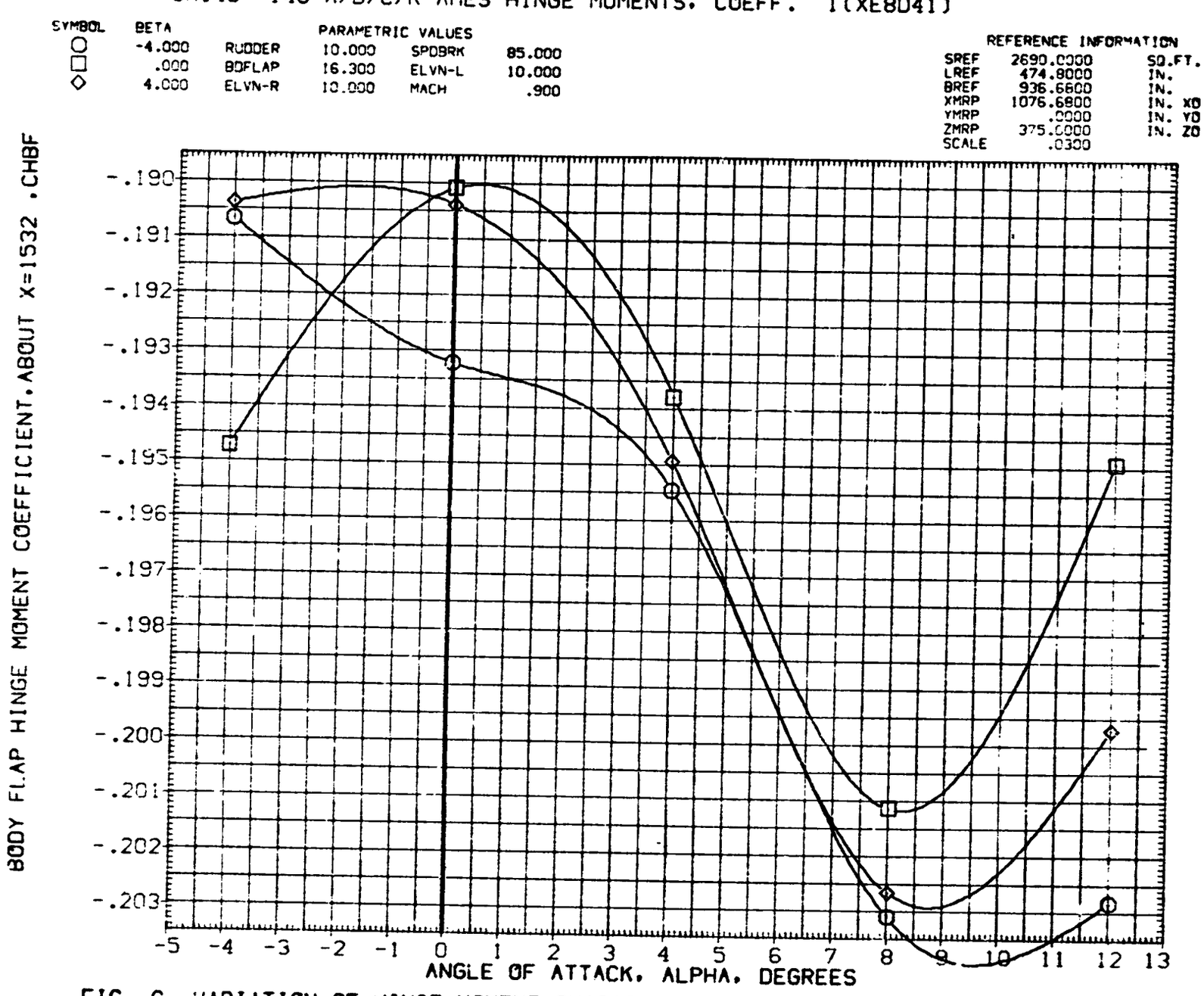


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

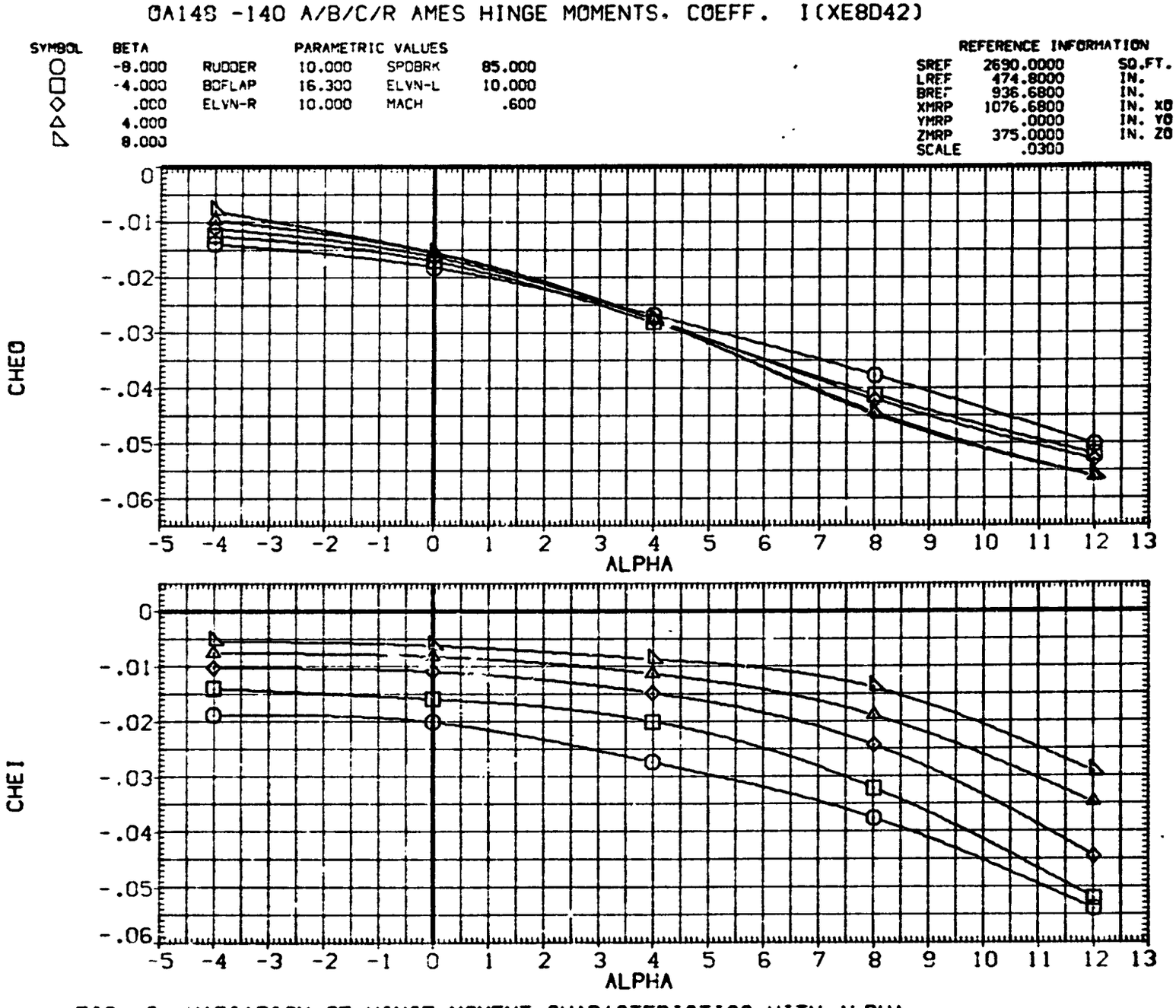


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

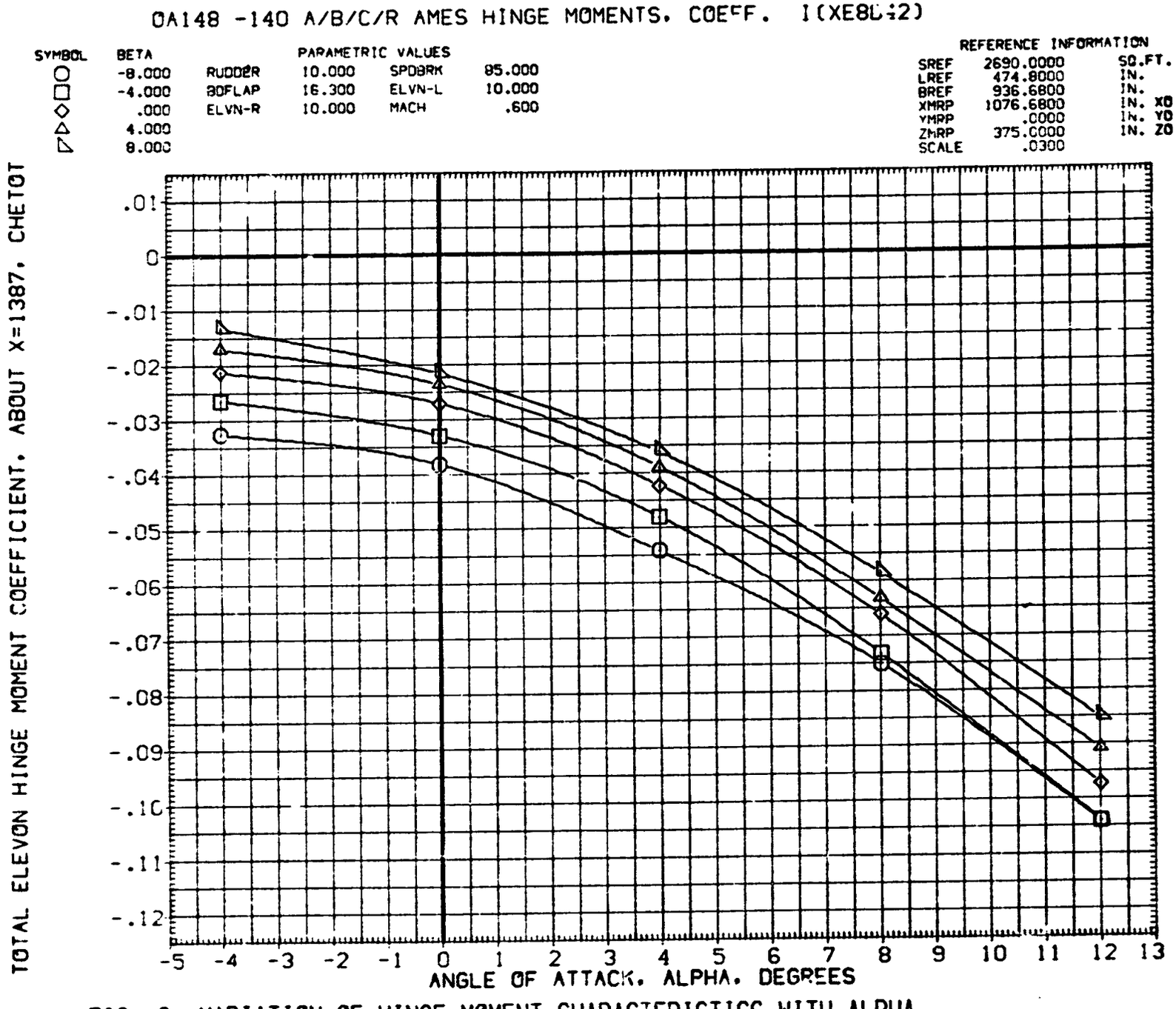


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

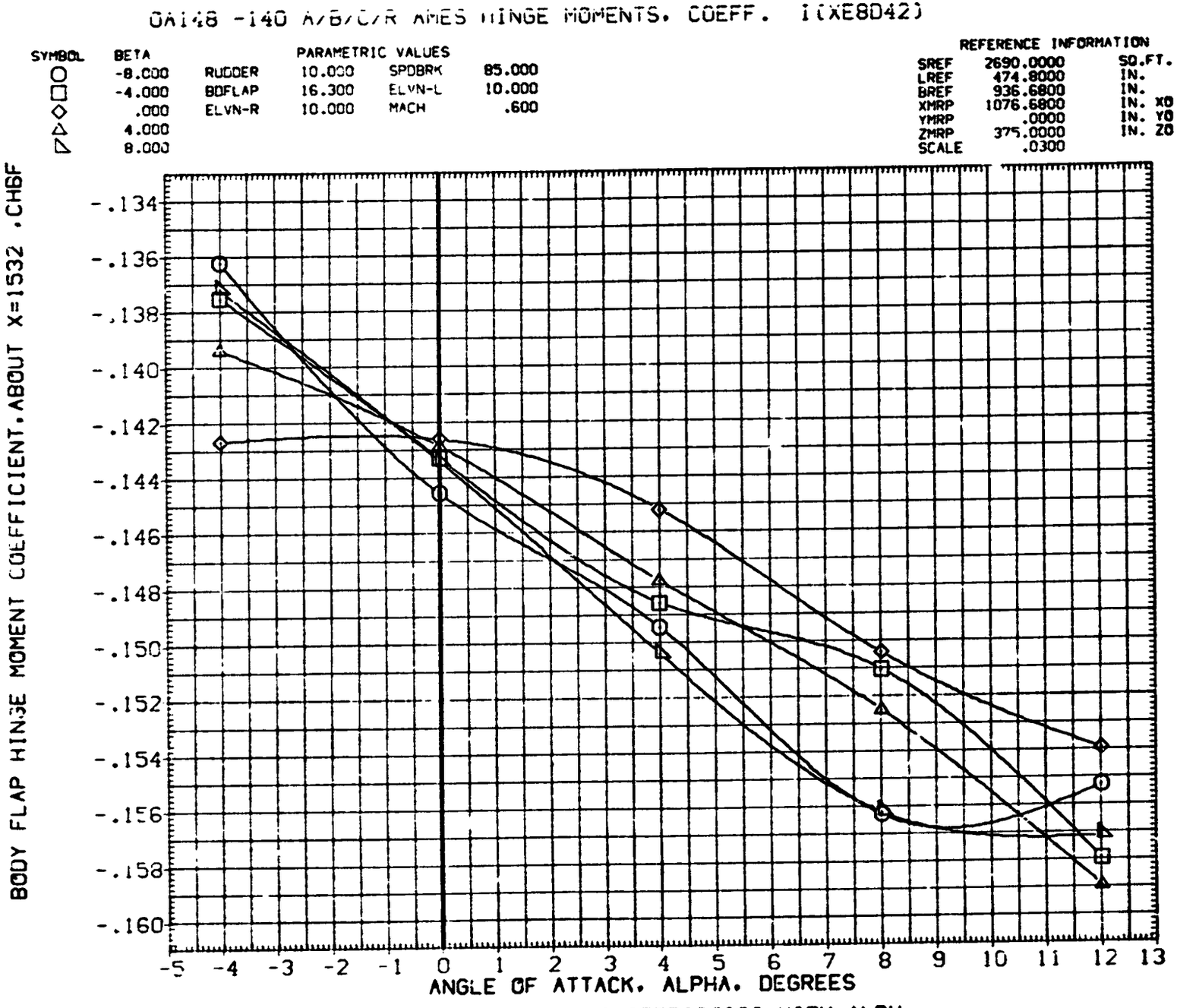


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

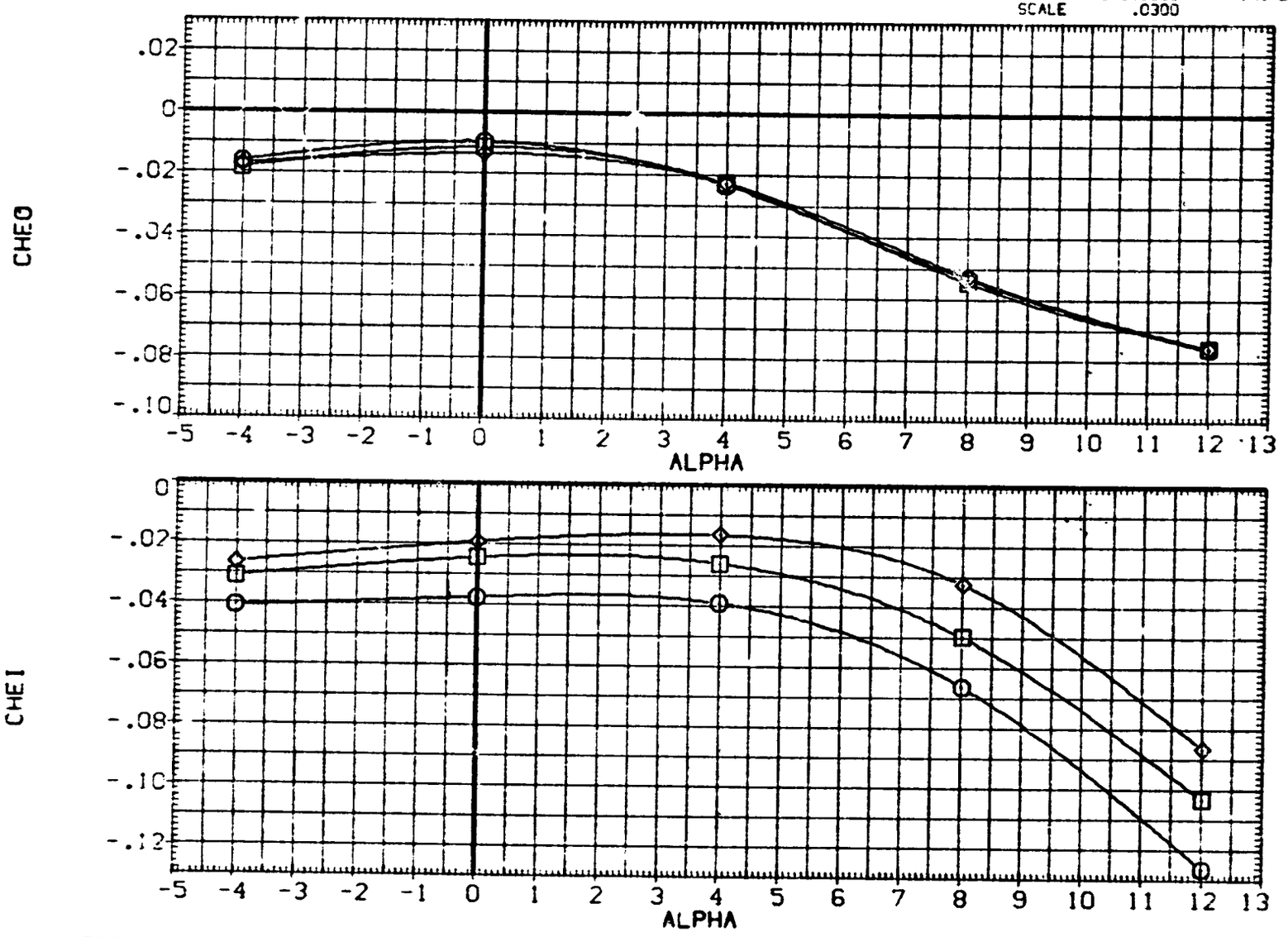


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

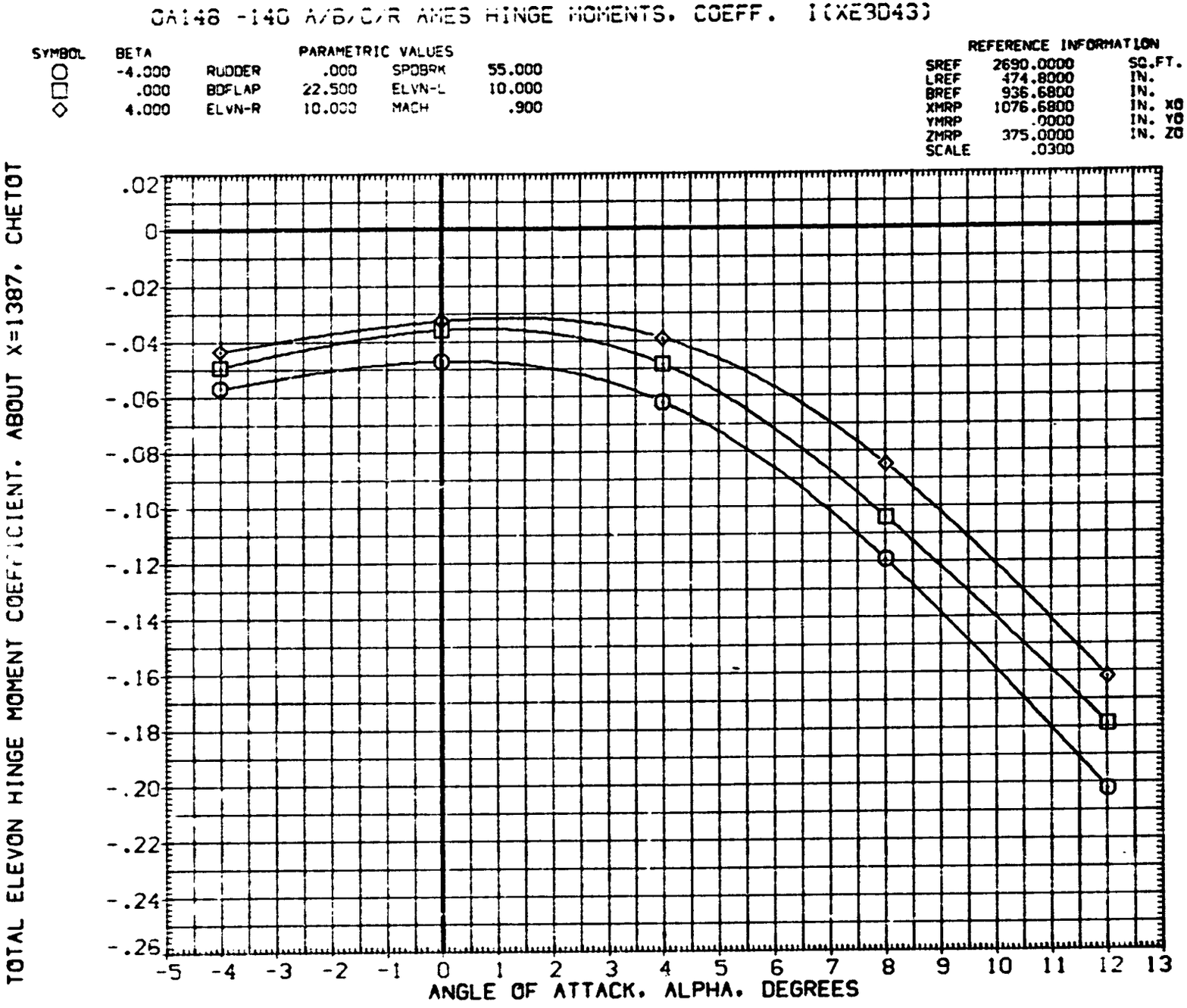


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

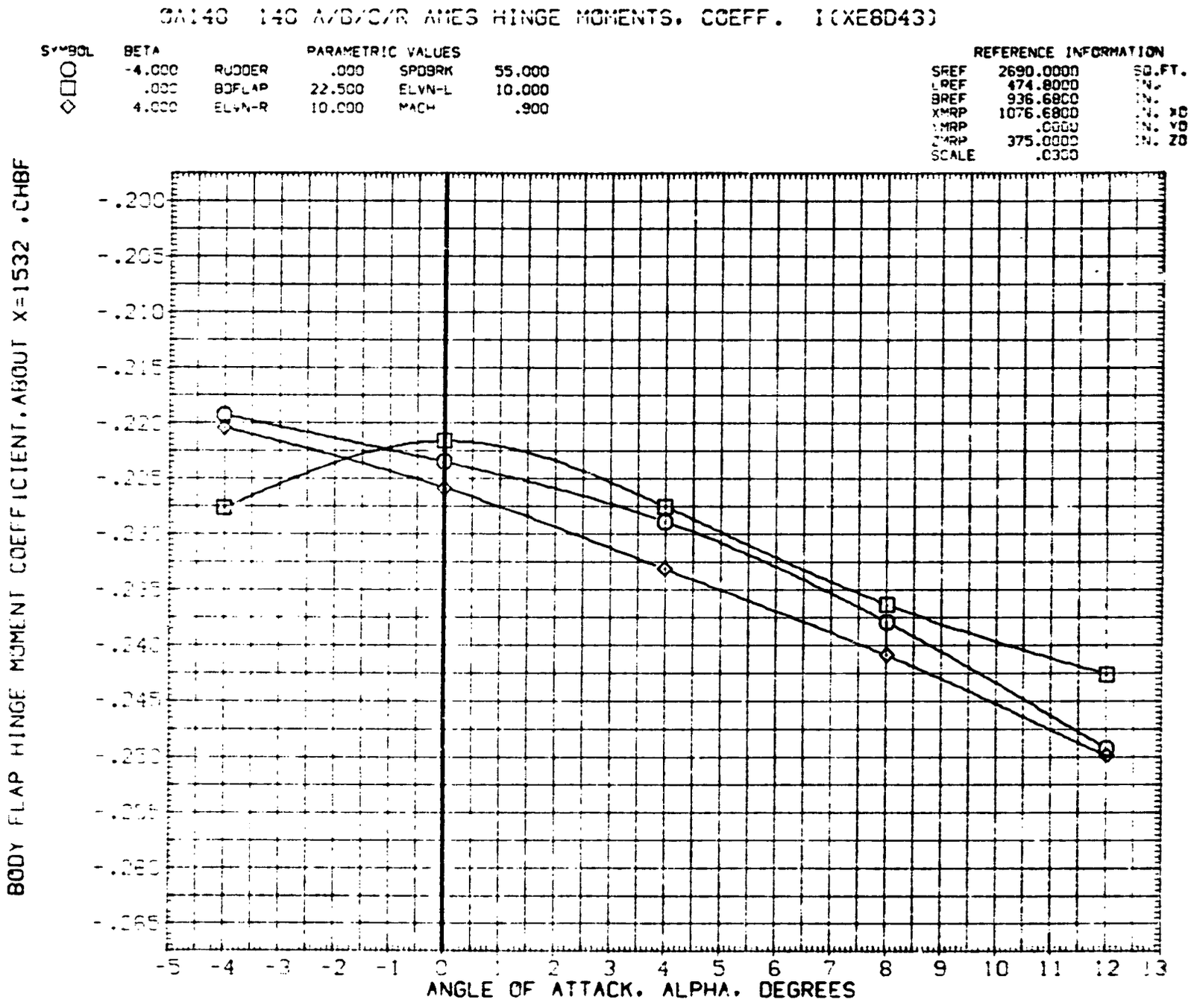


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

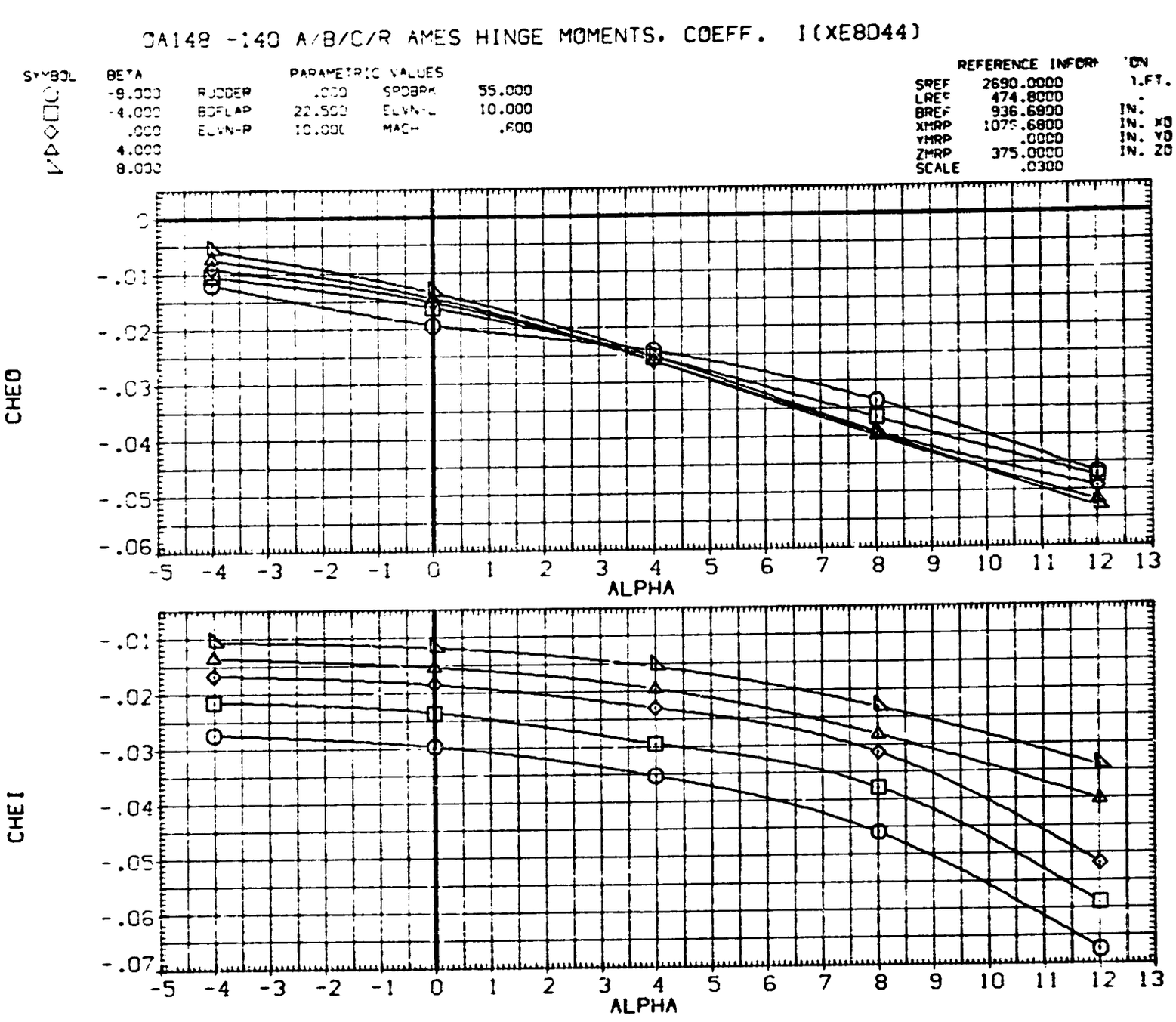


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

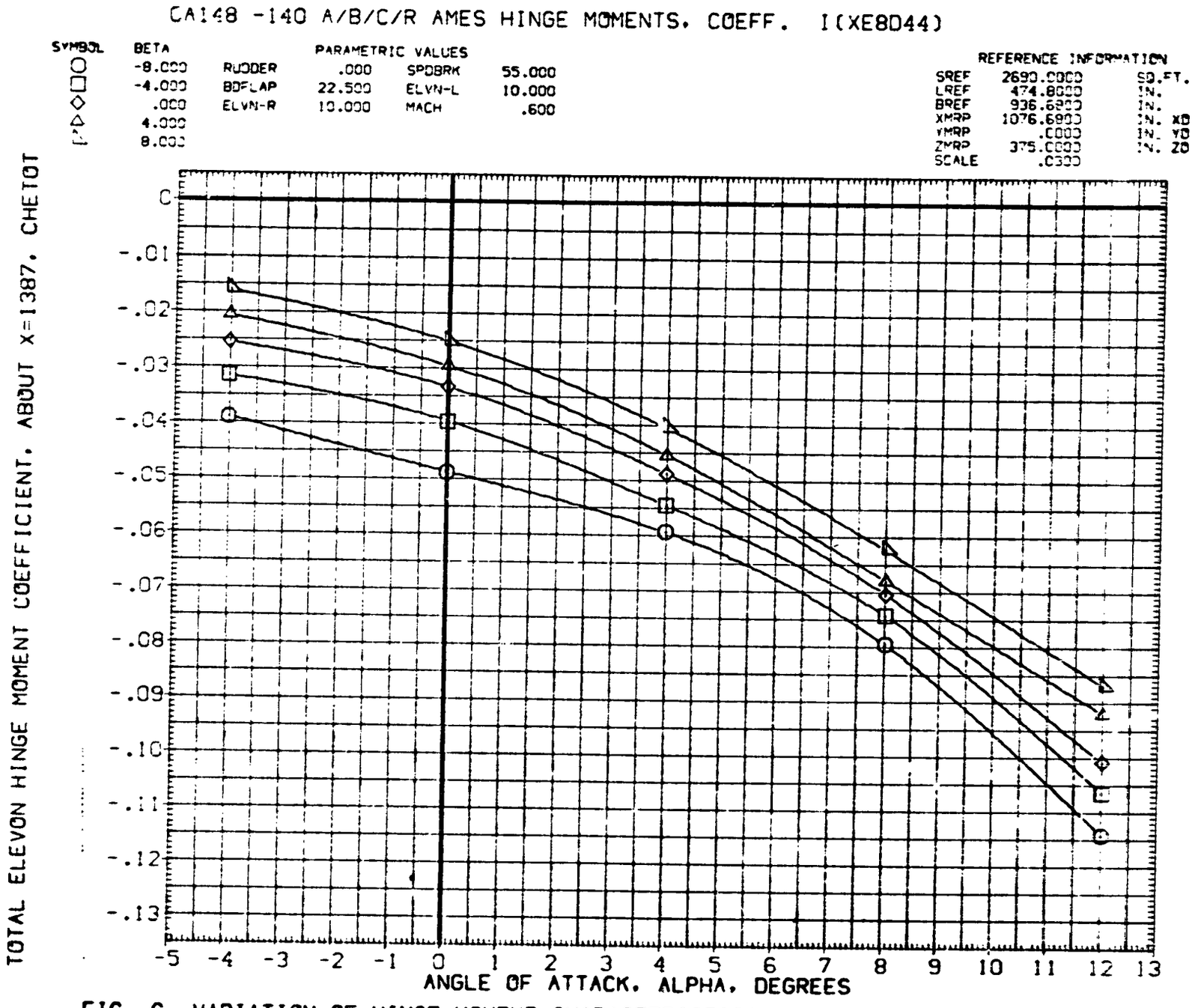


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/F AMES HINGE MOMENTS. COEFF. I(XE8D44)

SYMBOL	BETA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK		55.000
BUFLAP	22.500	ELVN-L		10.000
ELVN-R	10.000	MACH		.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

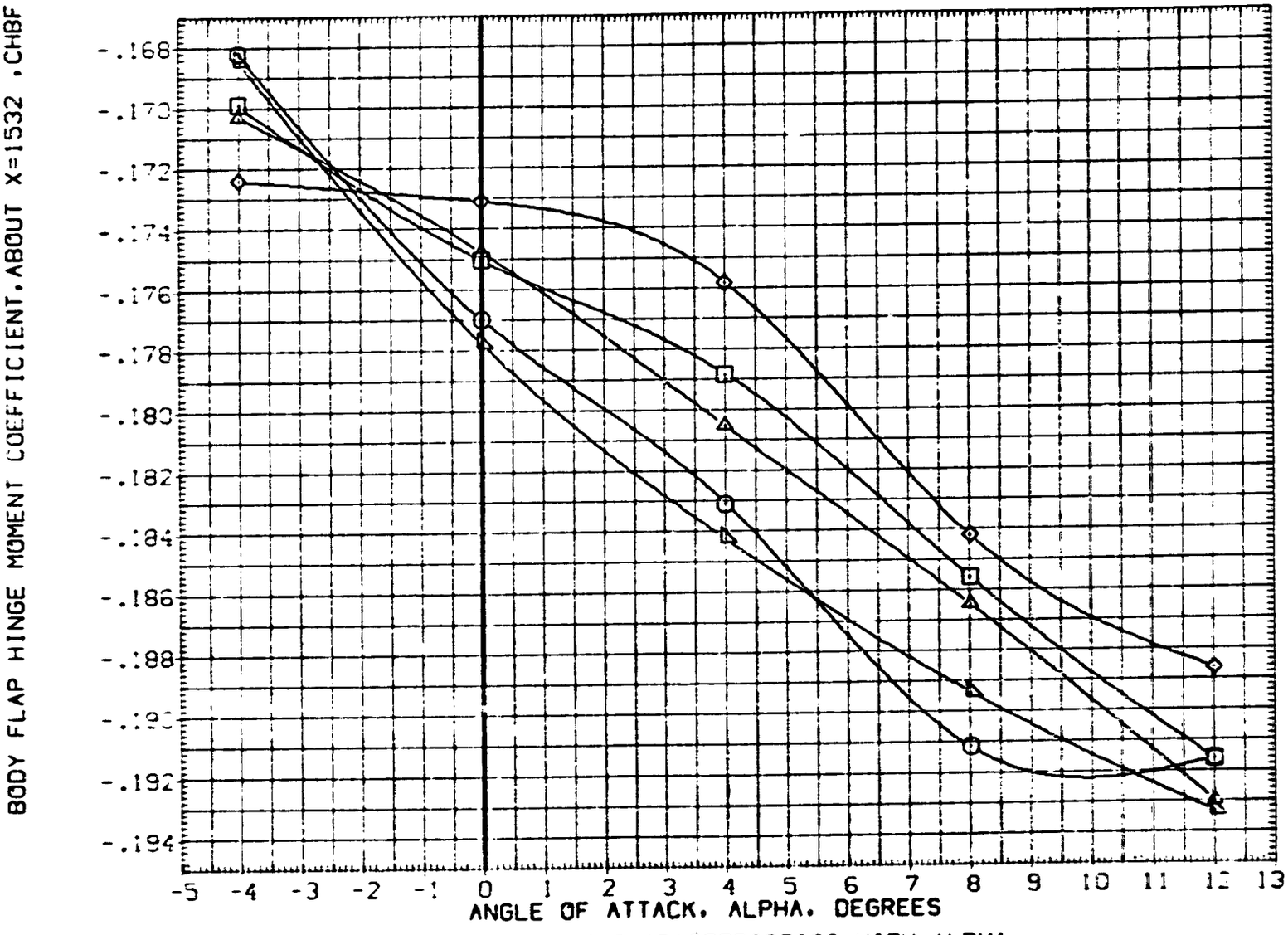


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

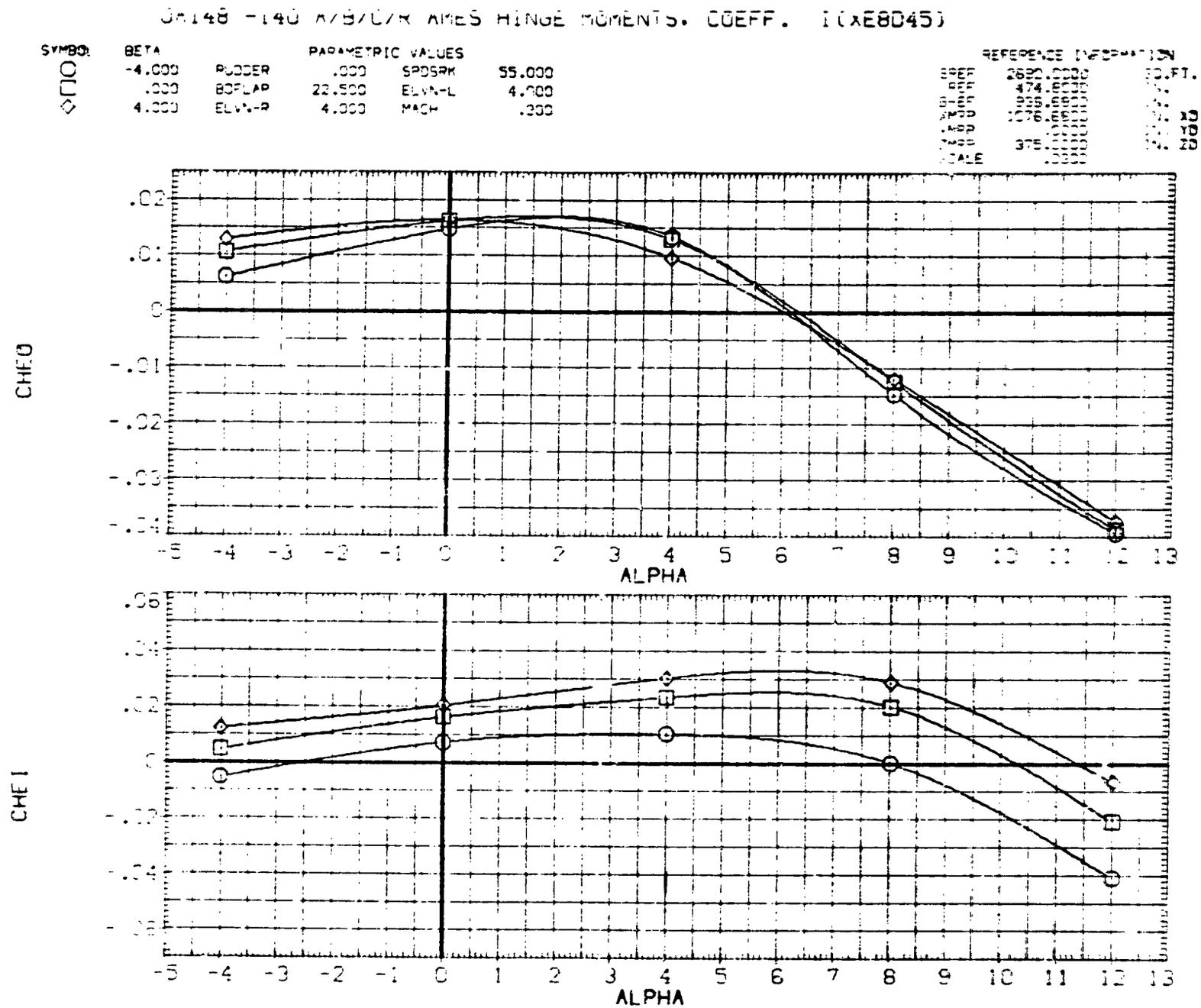


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D45)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

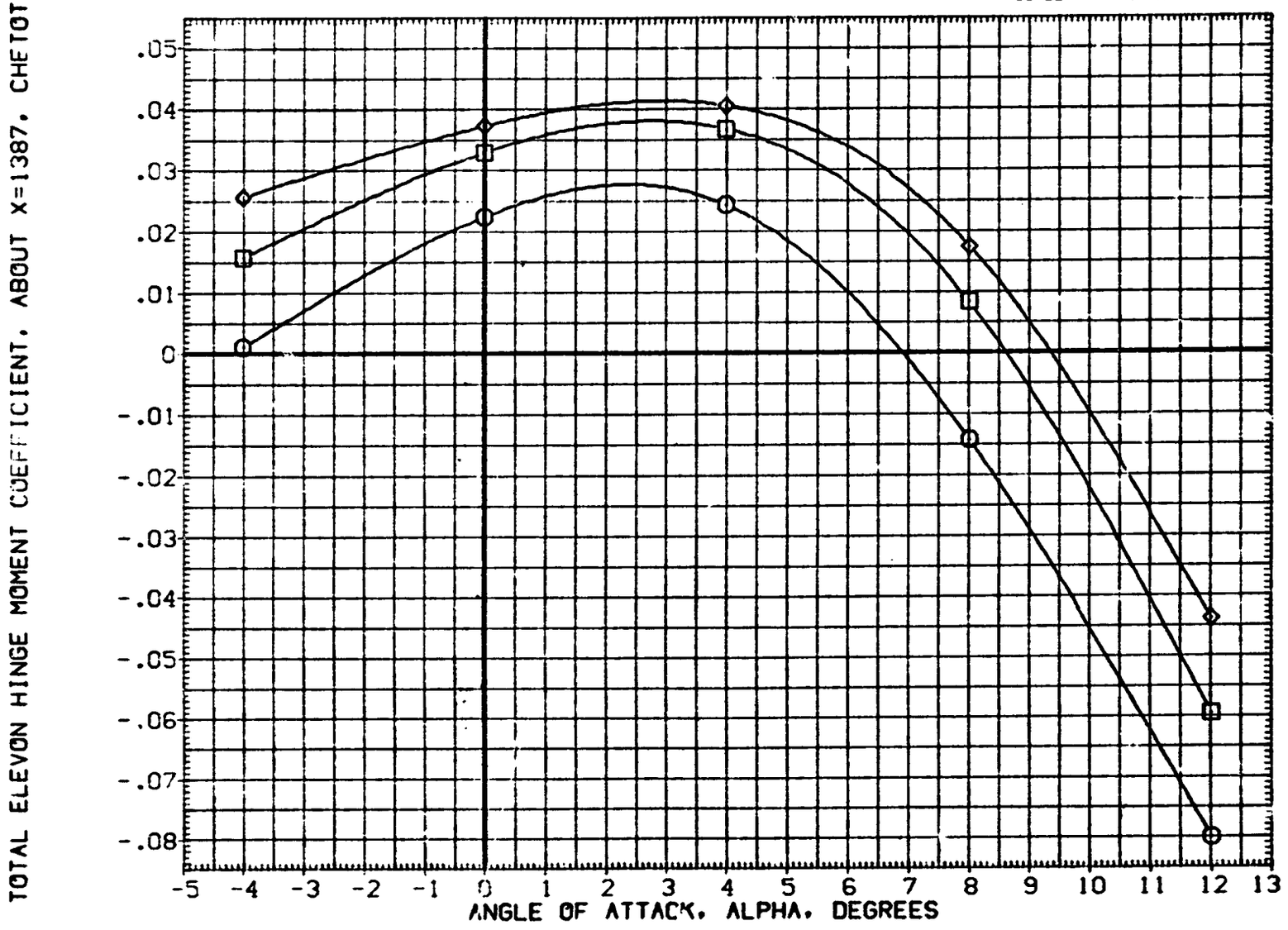


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D45)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

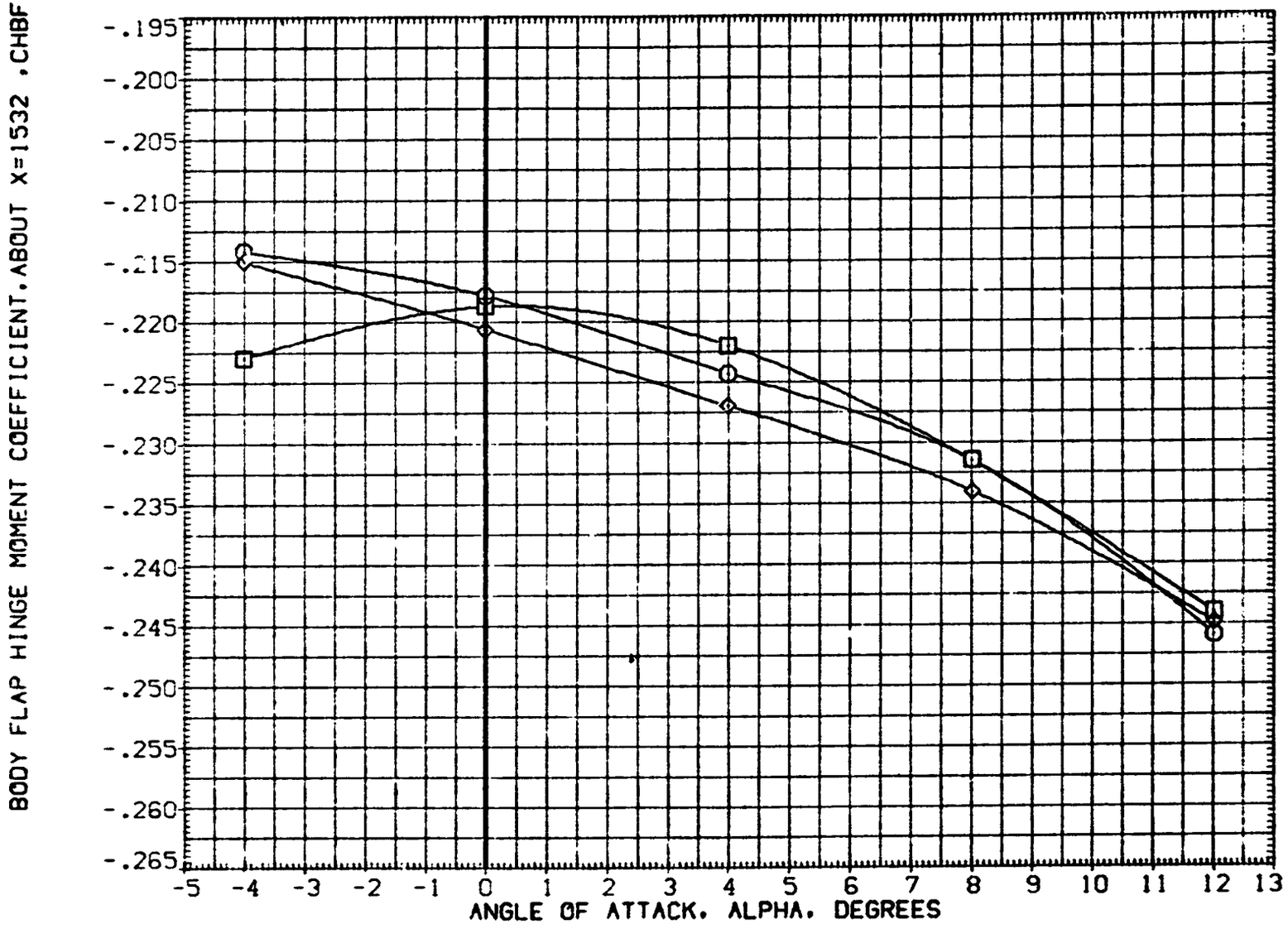


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

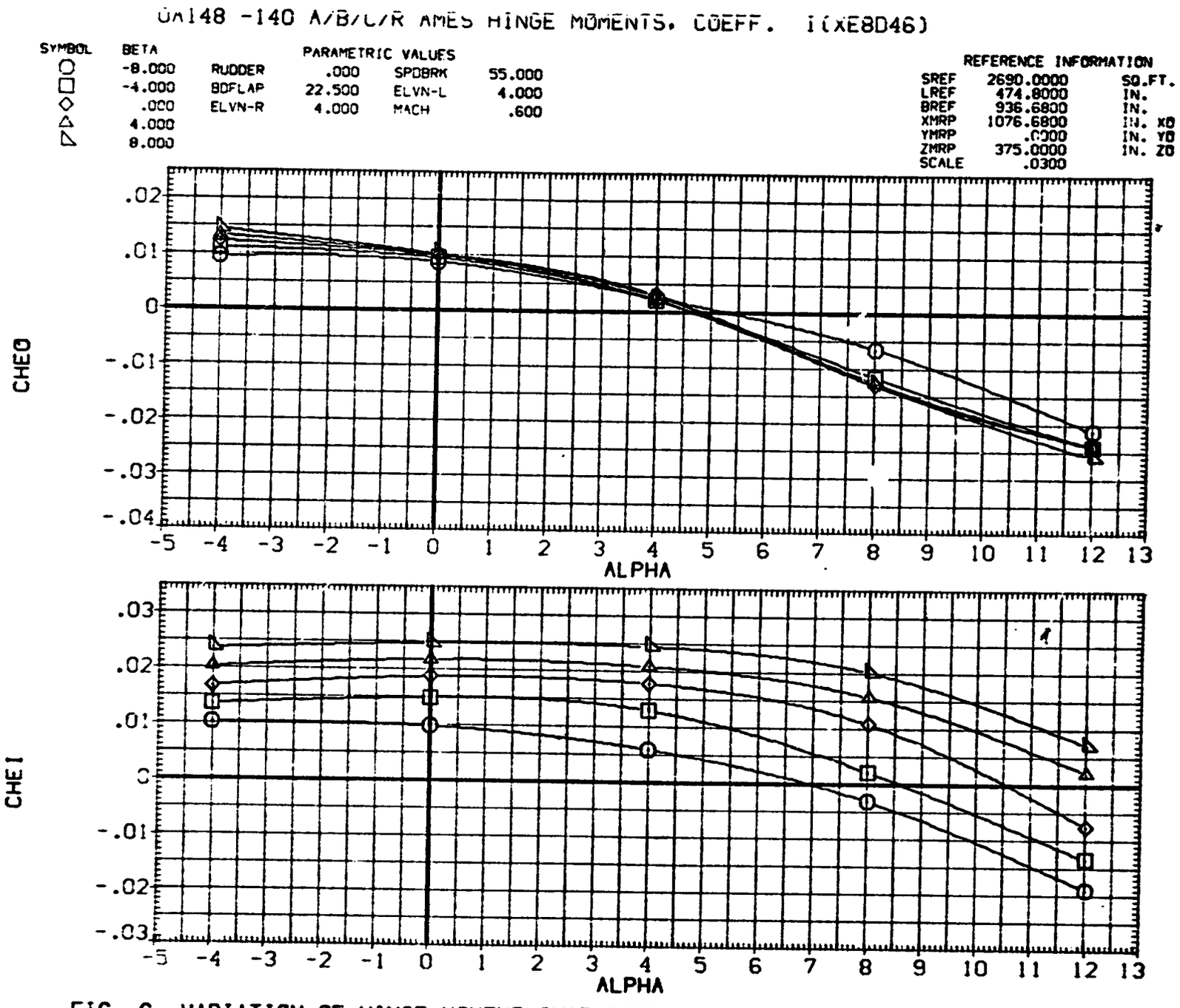


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

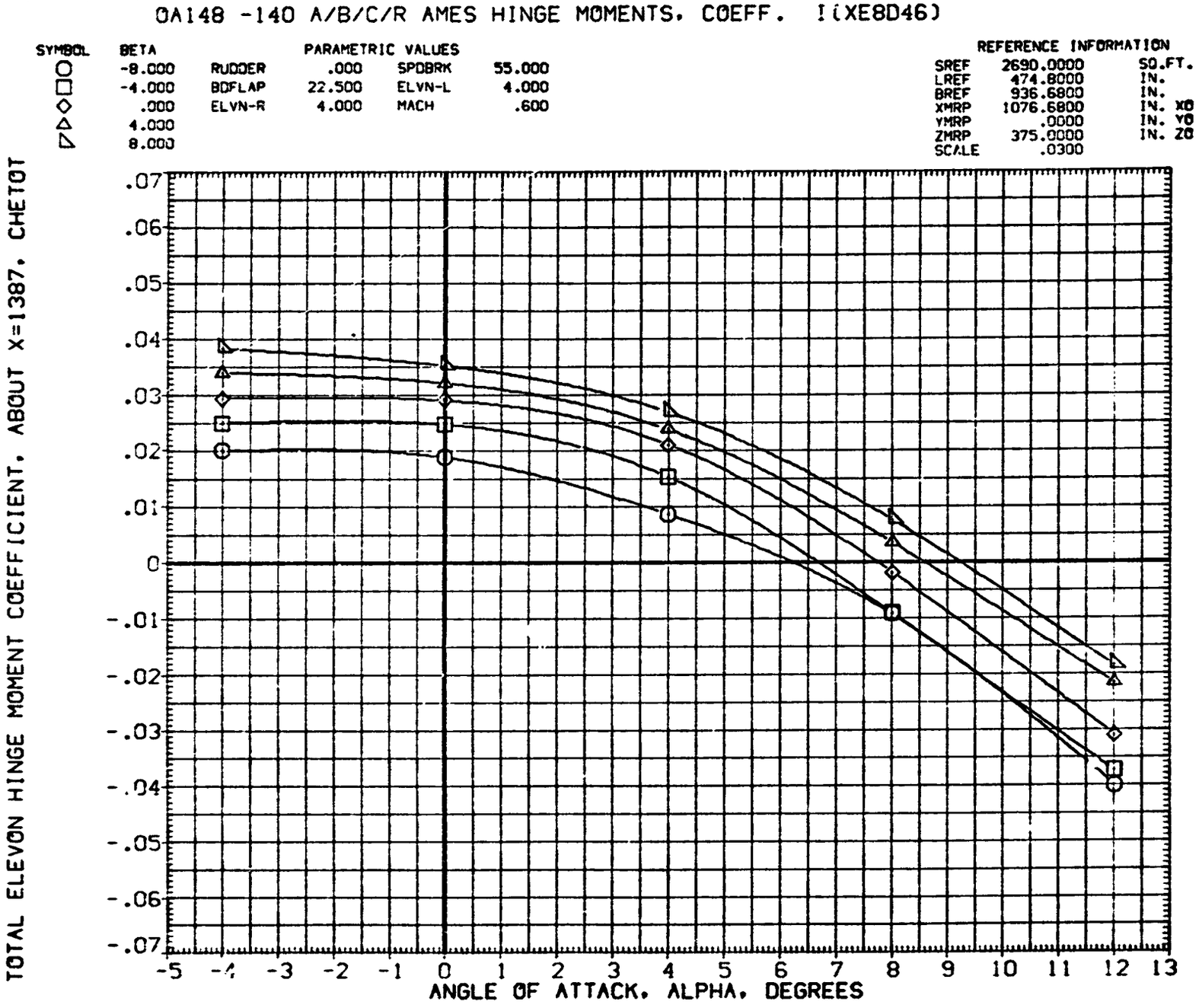


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

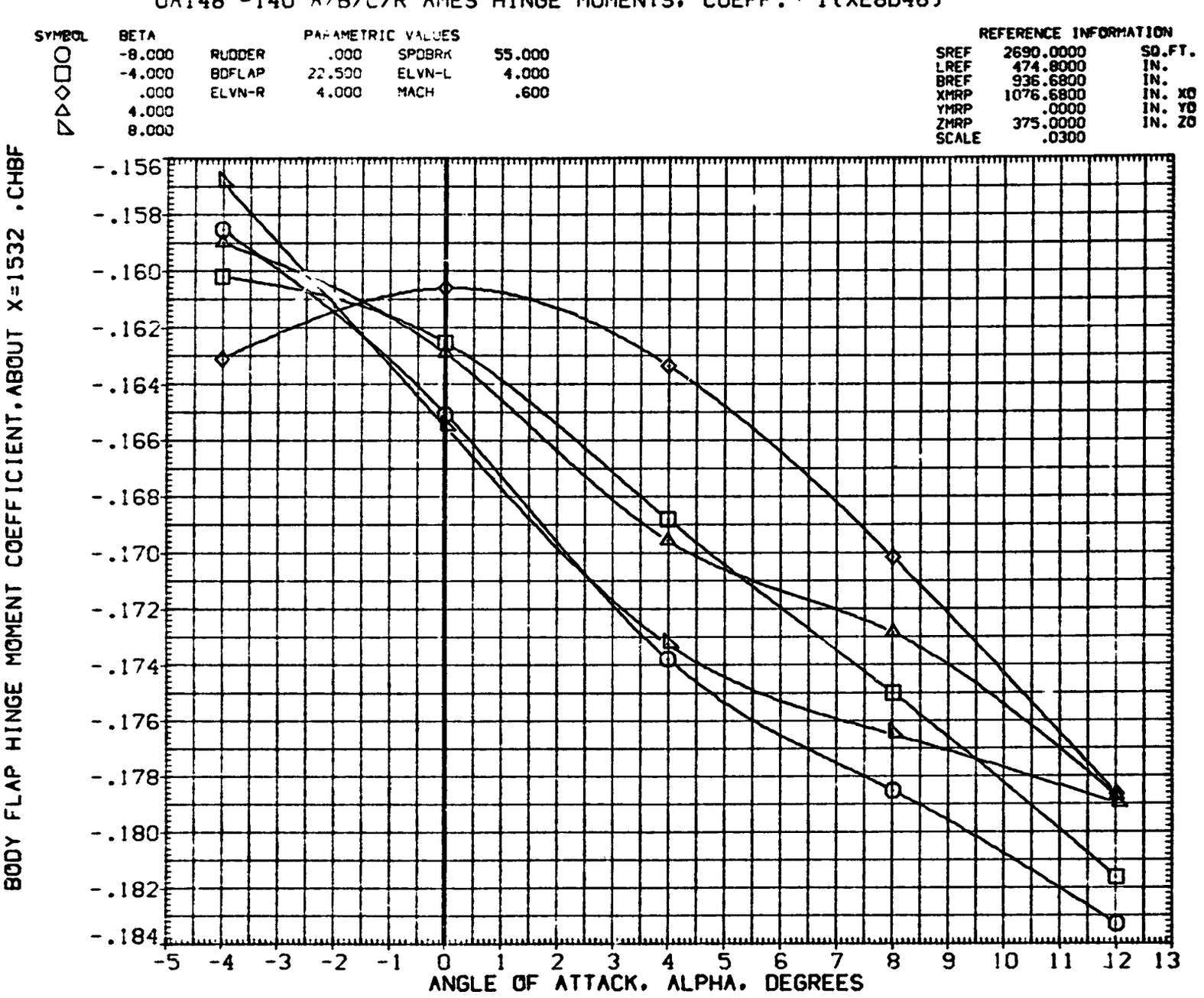


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D47)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

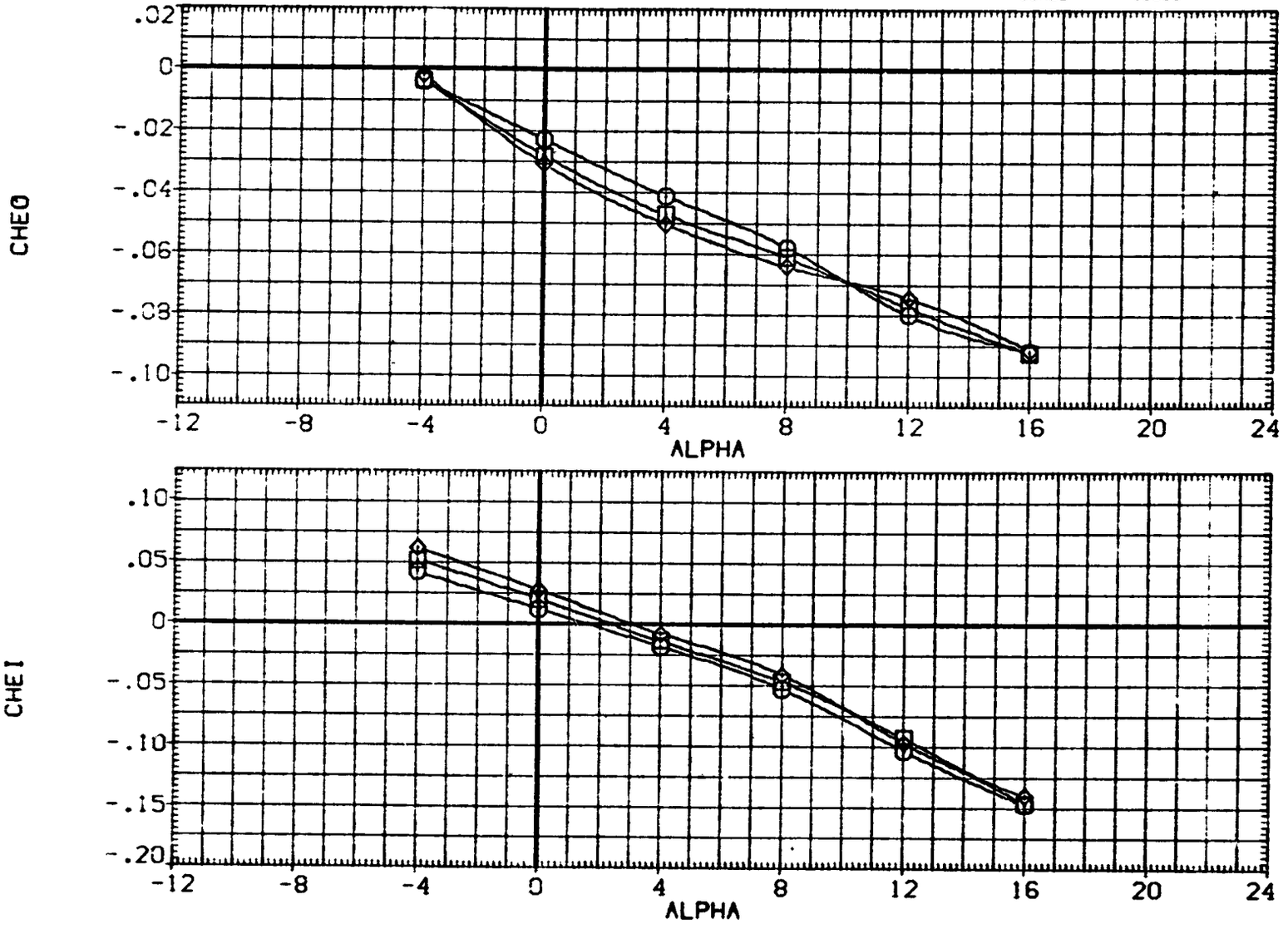


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

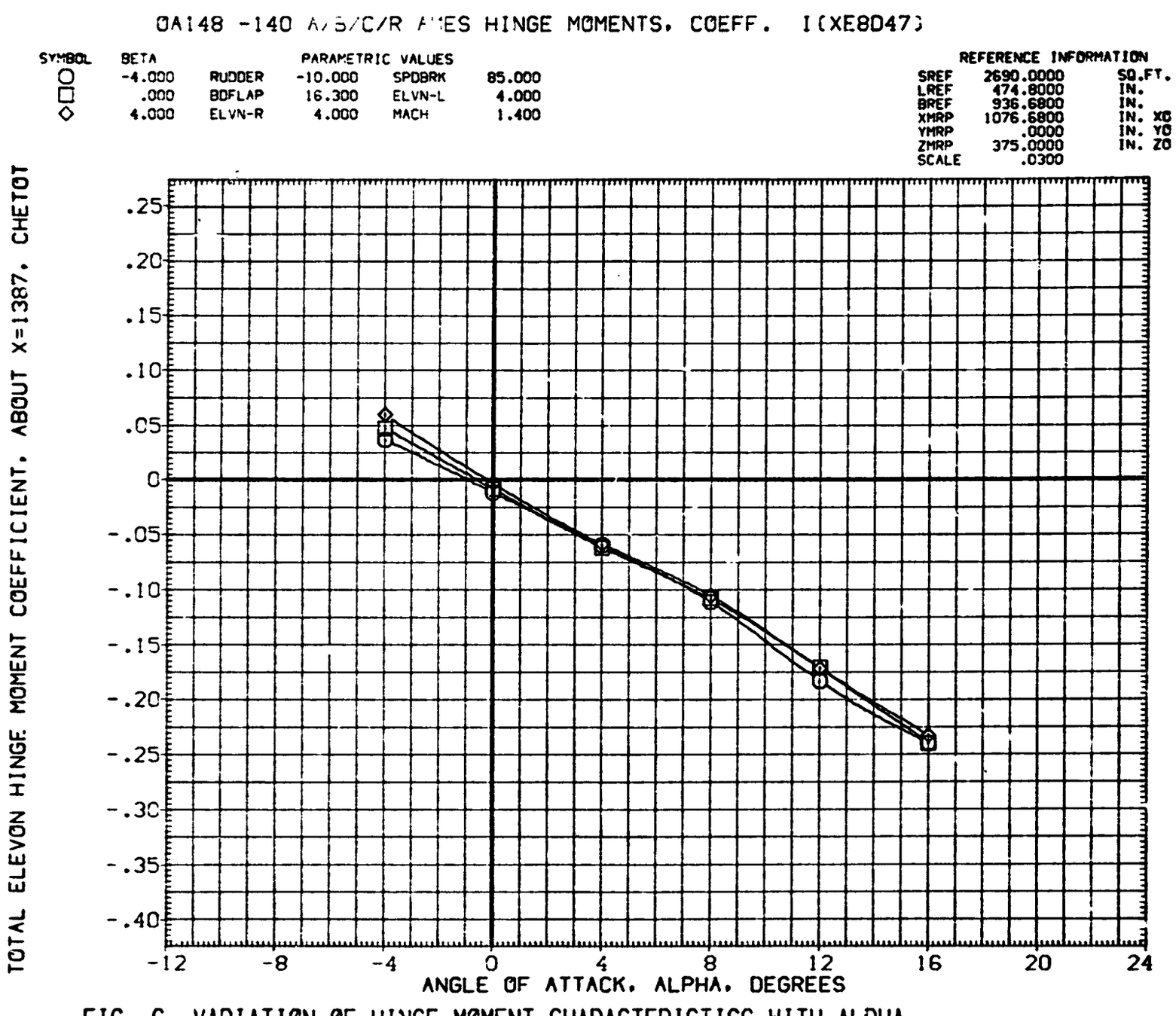


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8D47)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

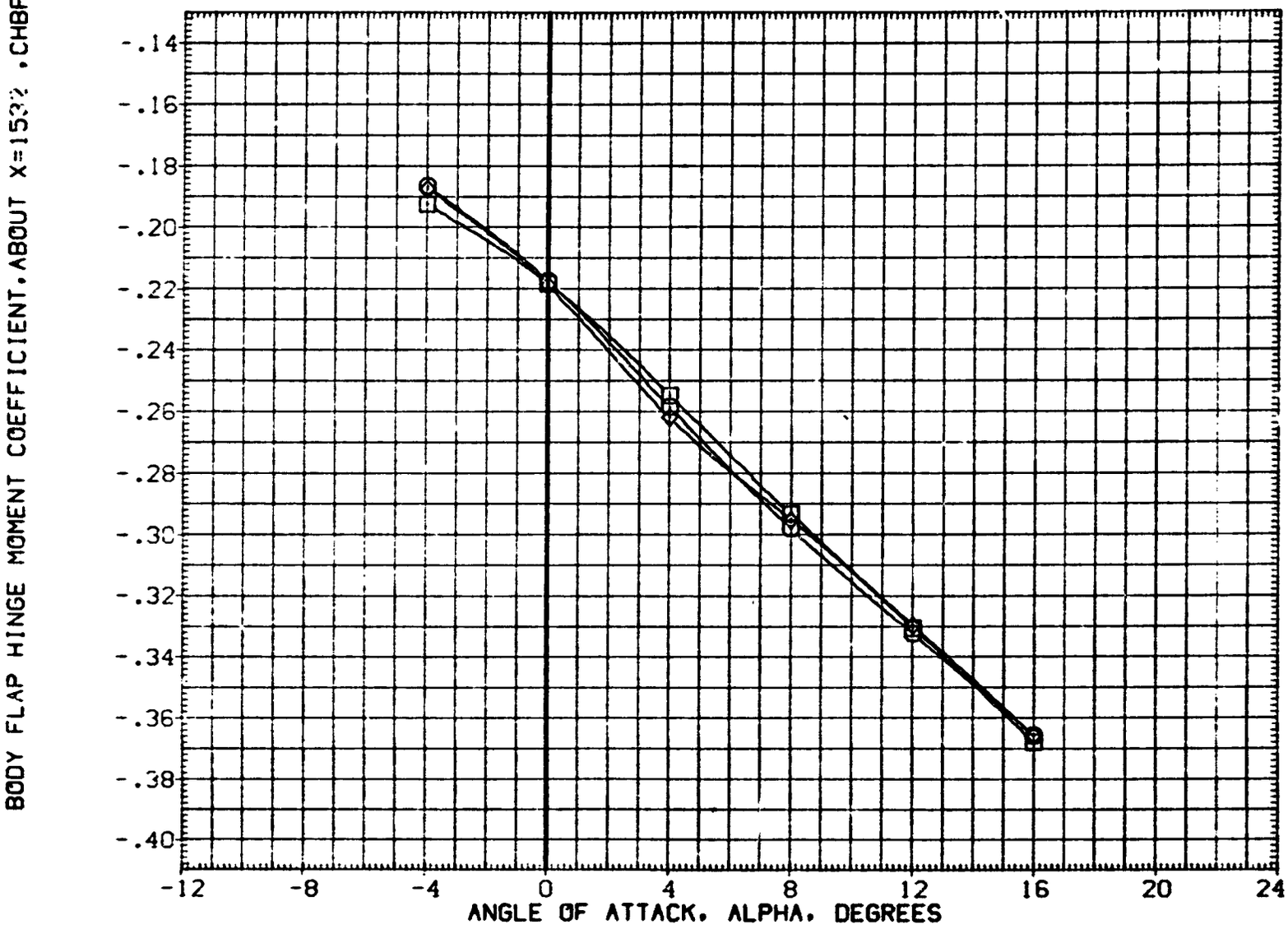


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D48)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	85.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

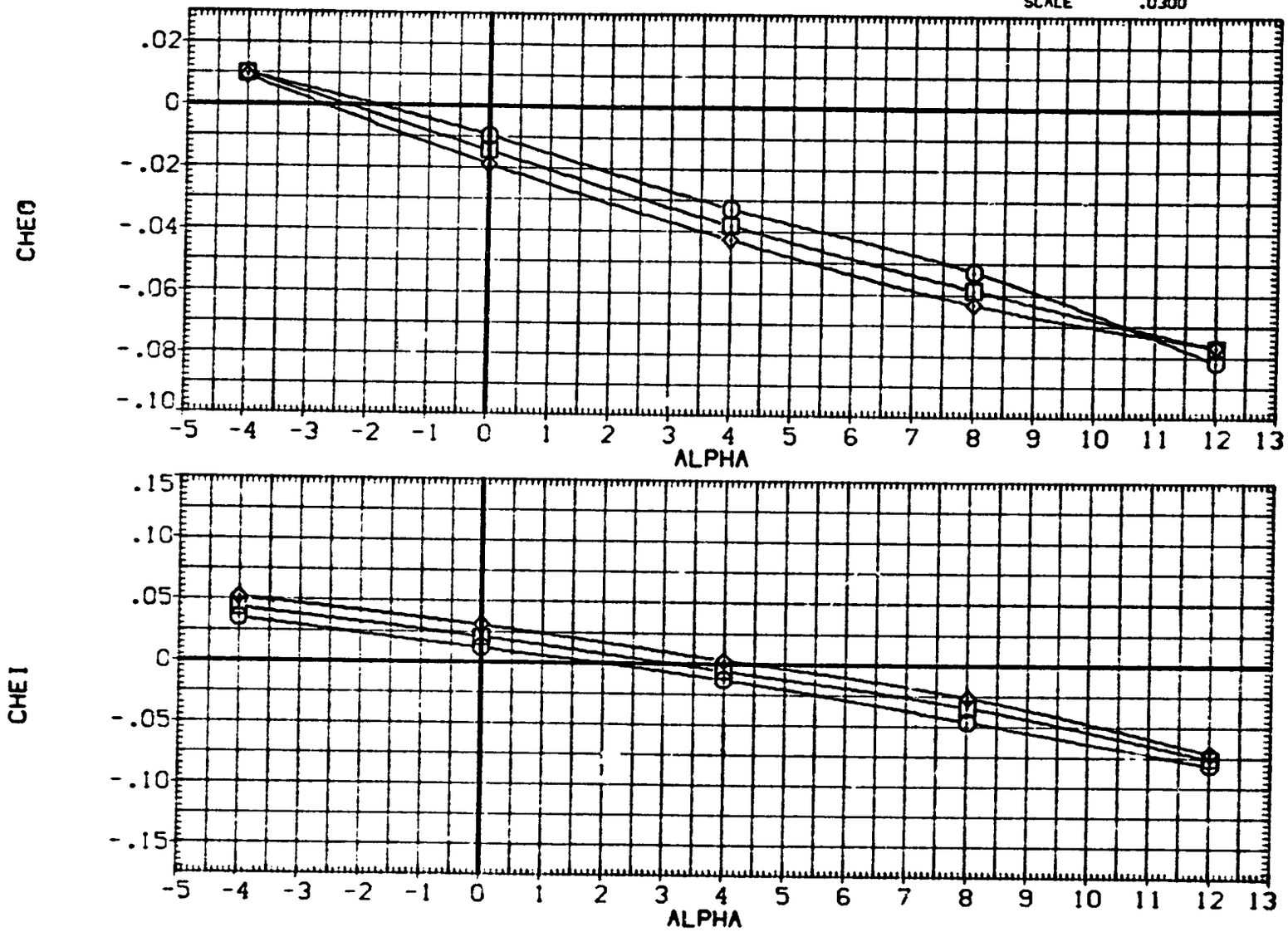


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

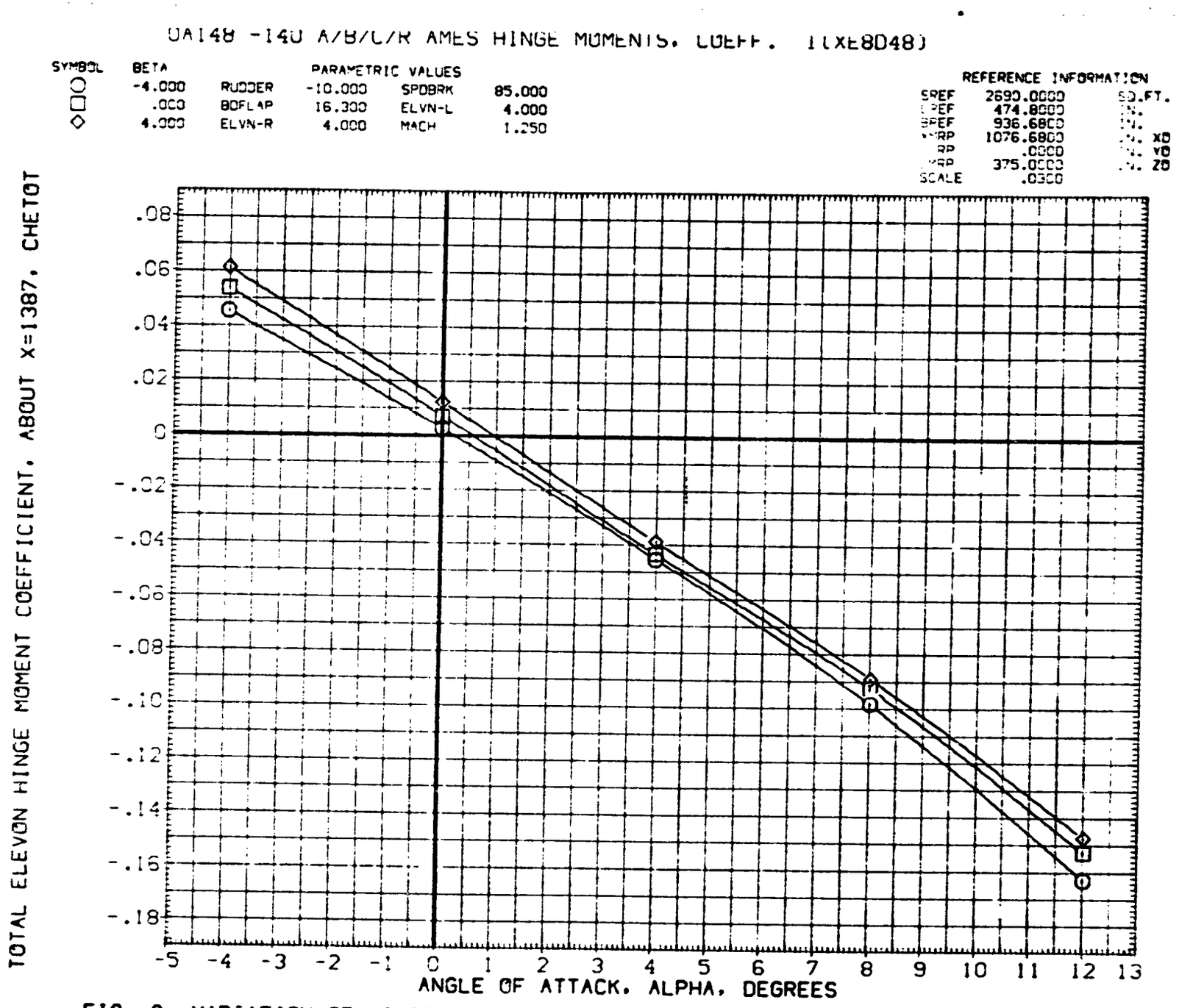


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

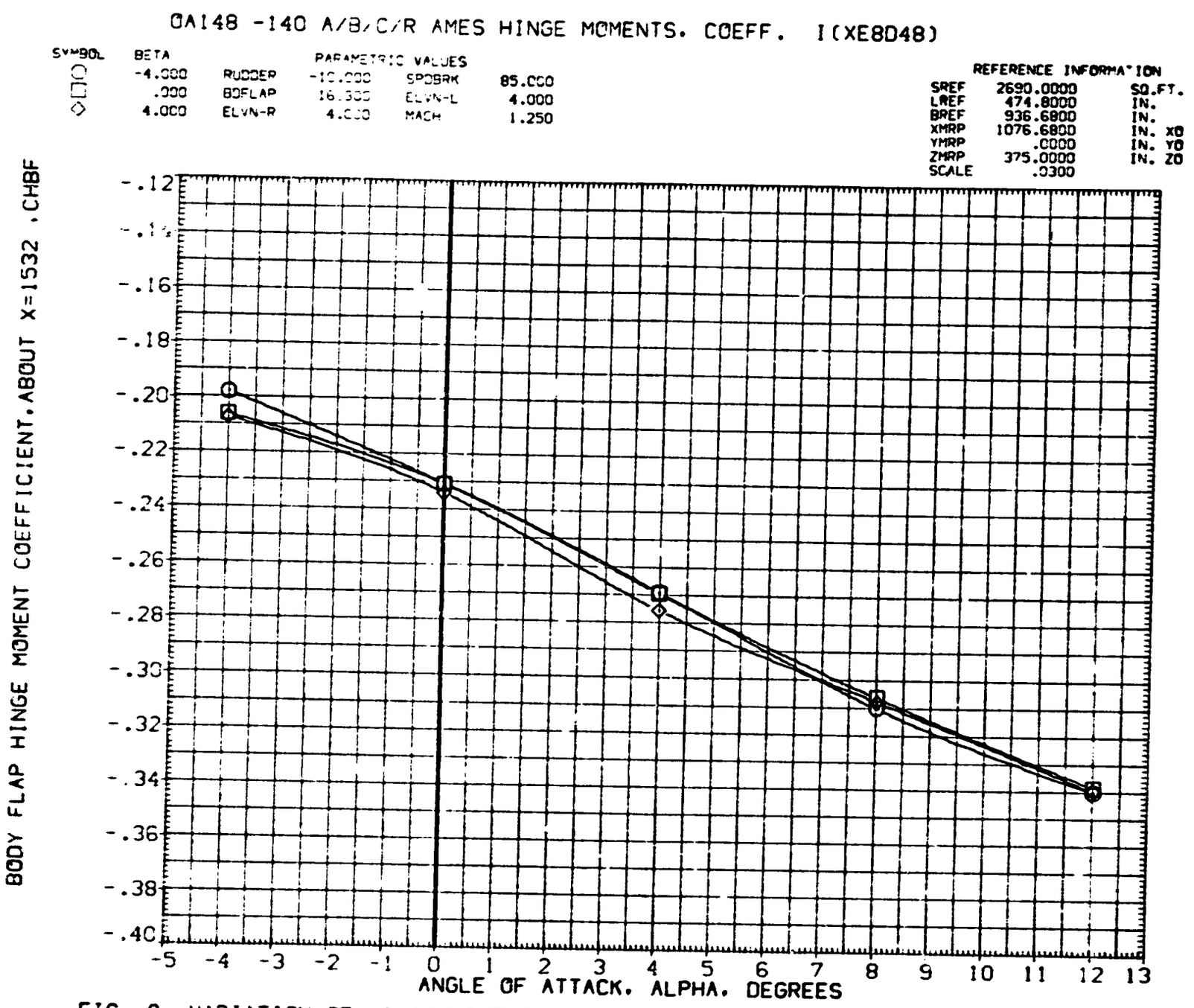


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

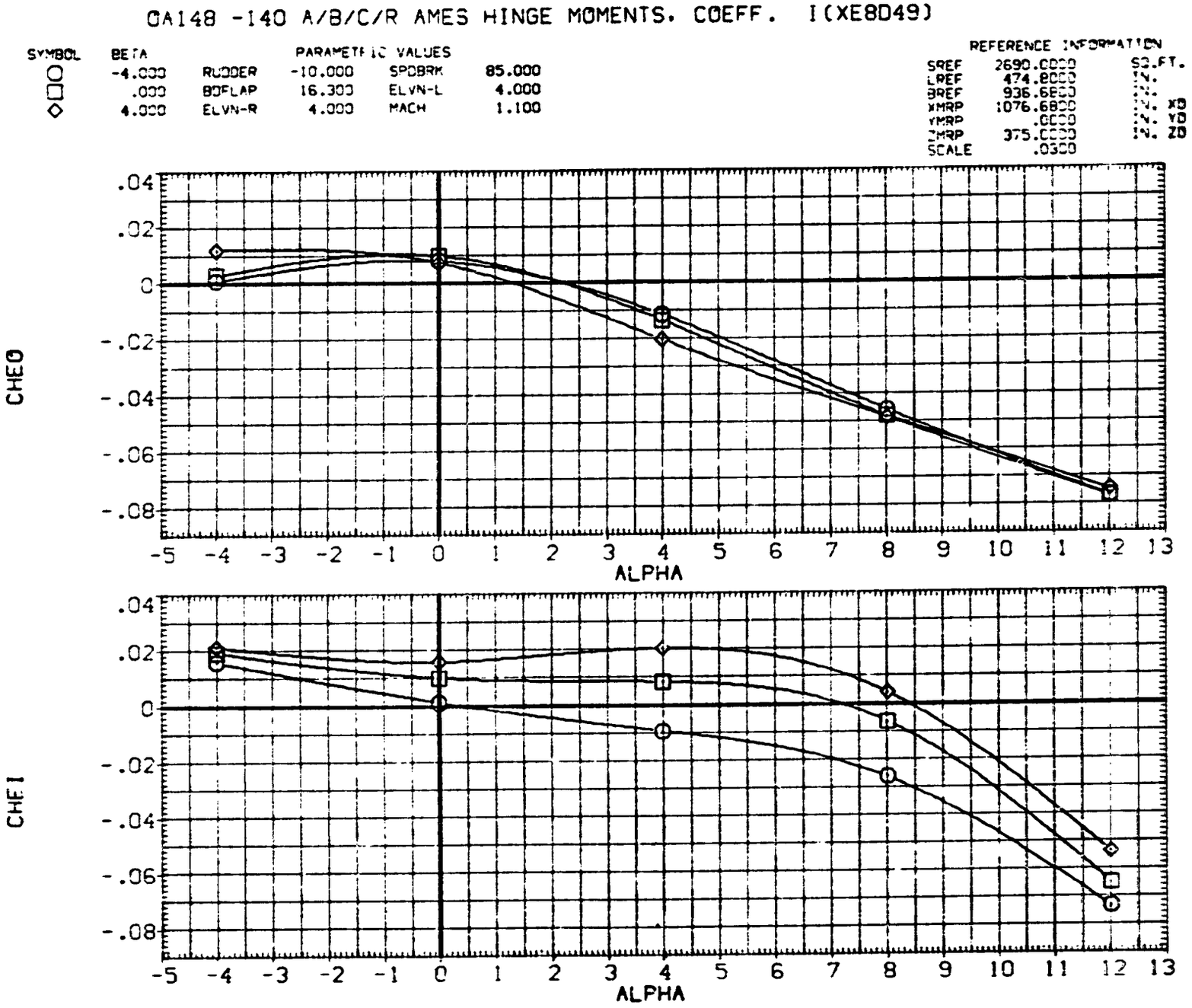


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D49)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

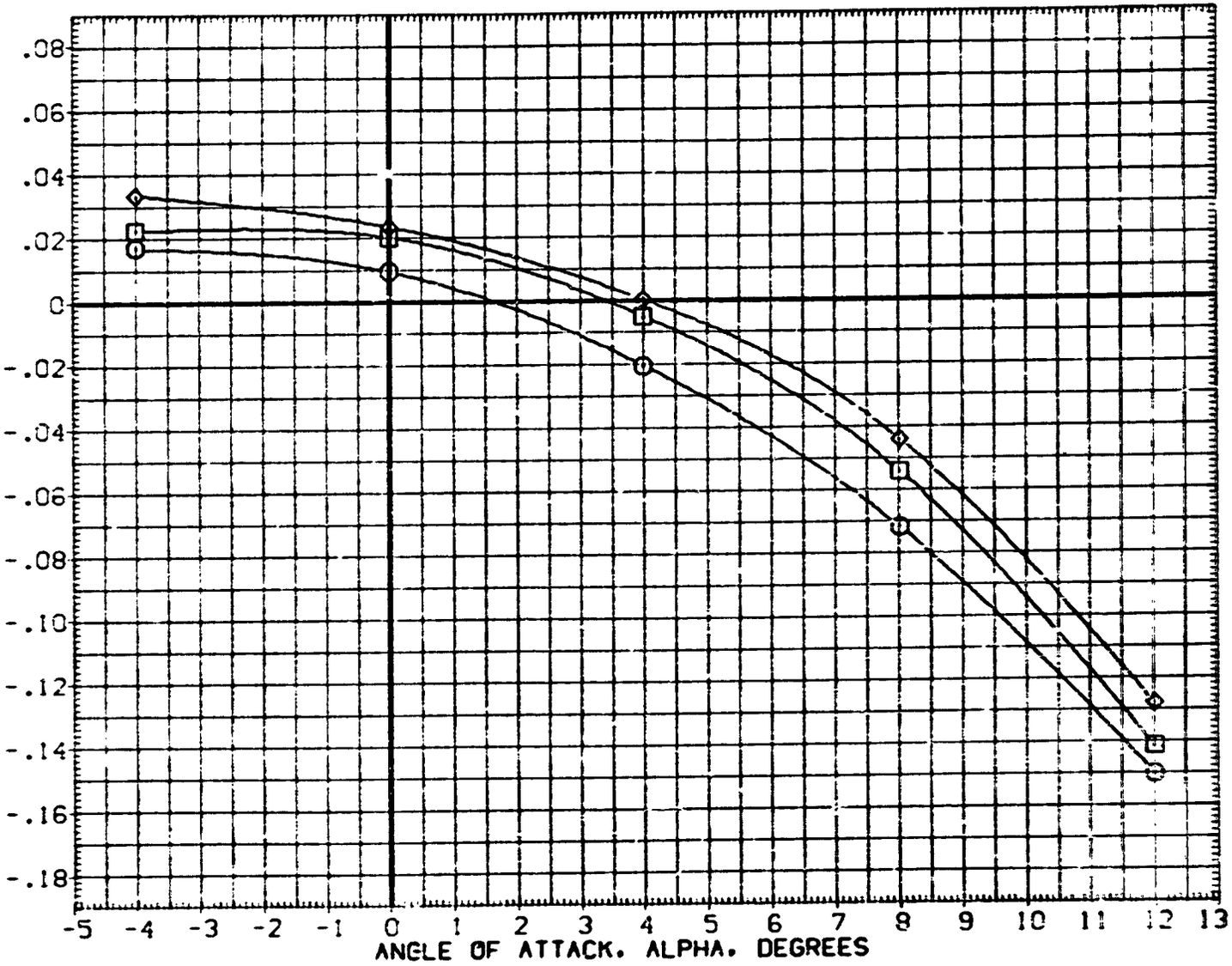


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

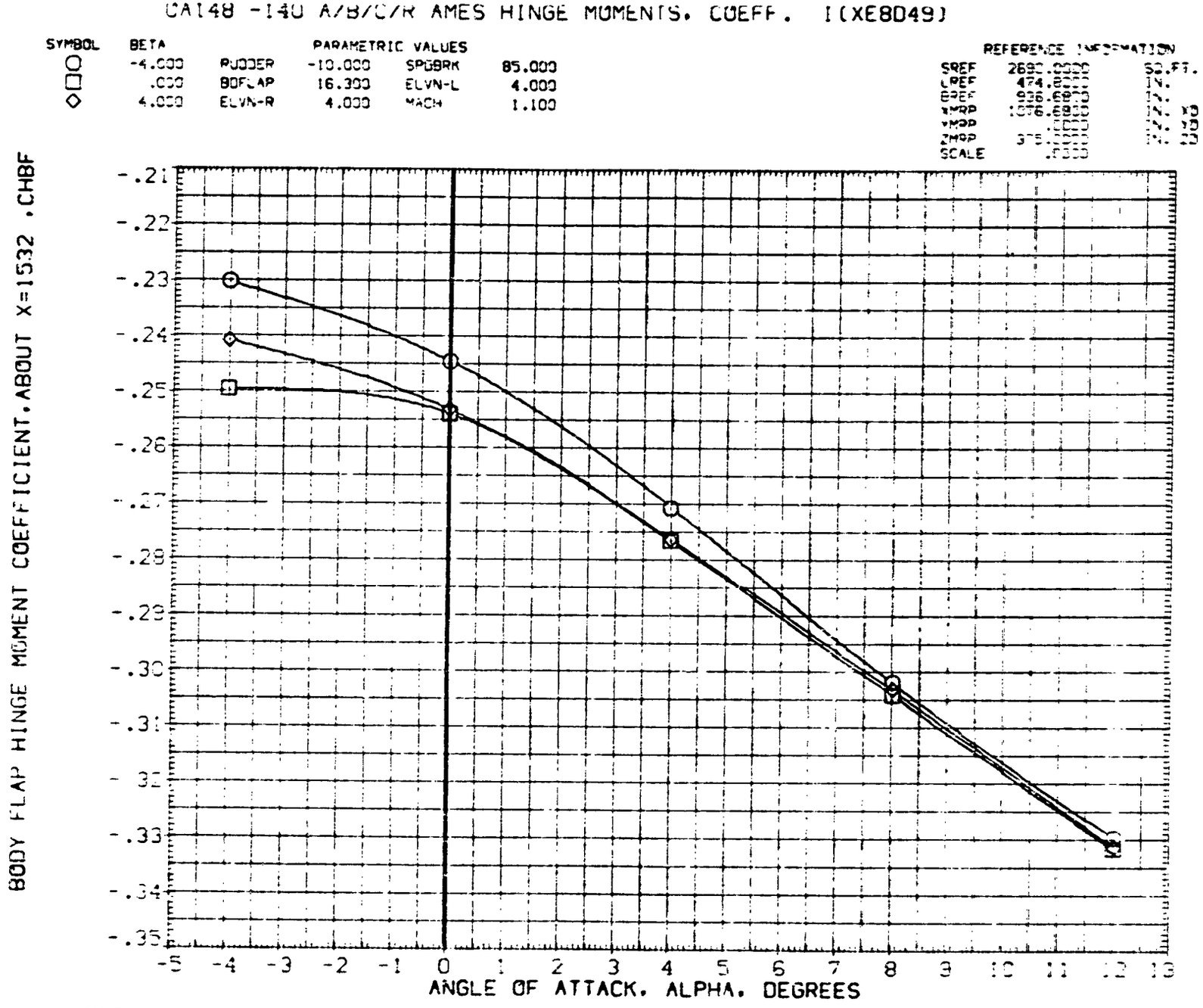


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

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ORIGINAL PAGE IS POOR

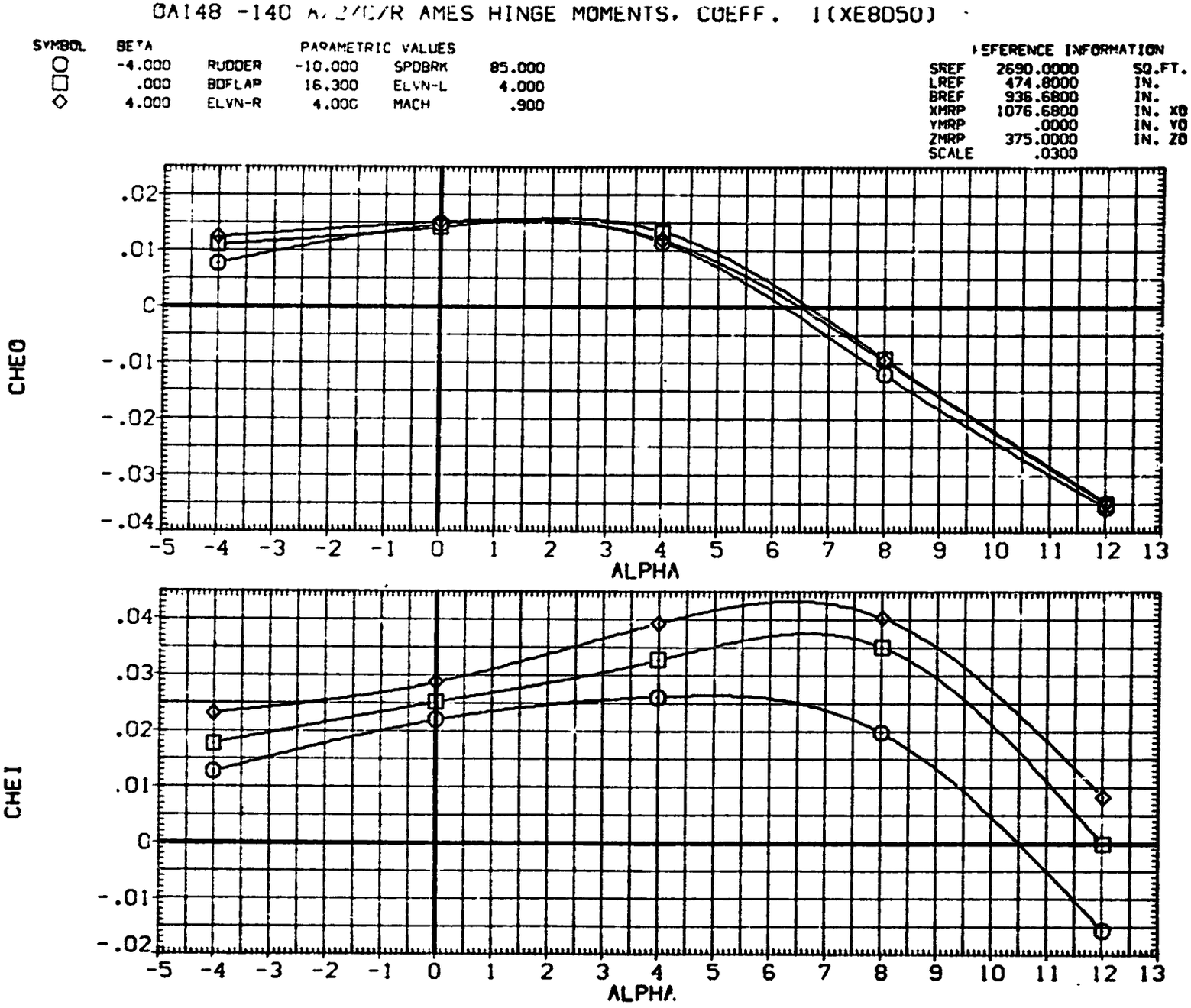


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

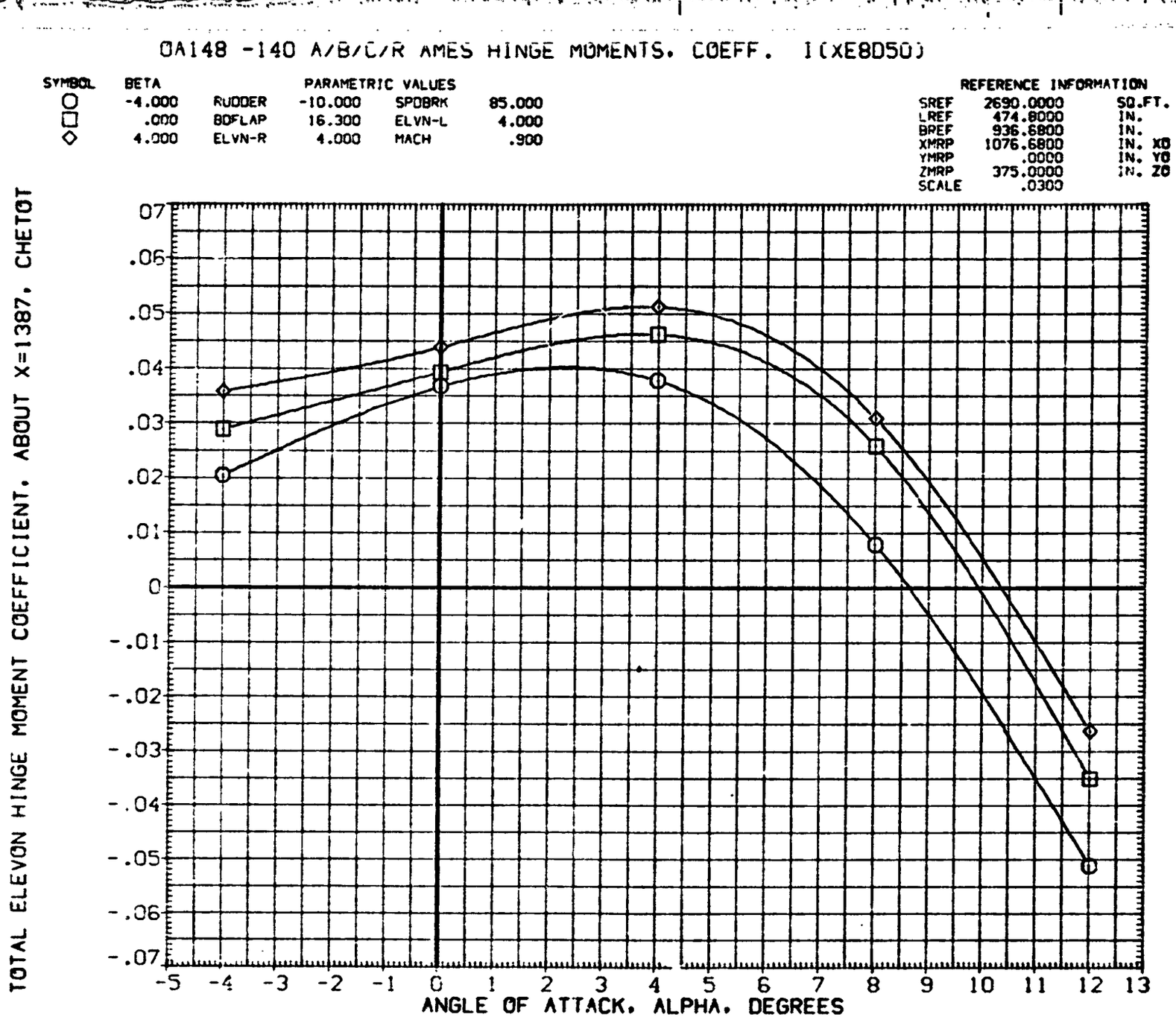


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D50)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	85.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

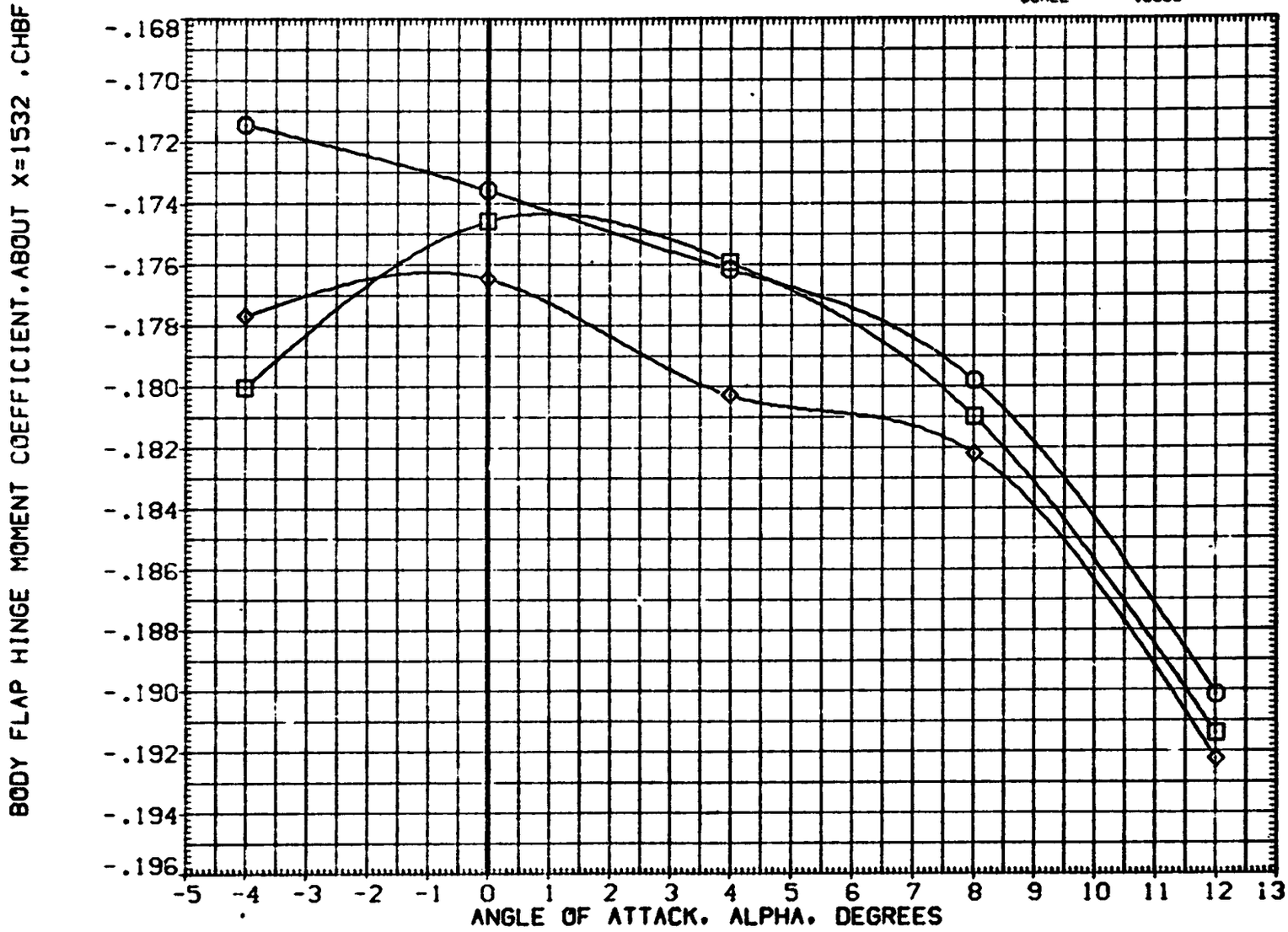


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

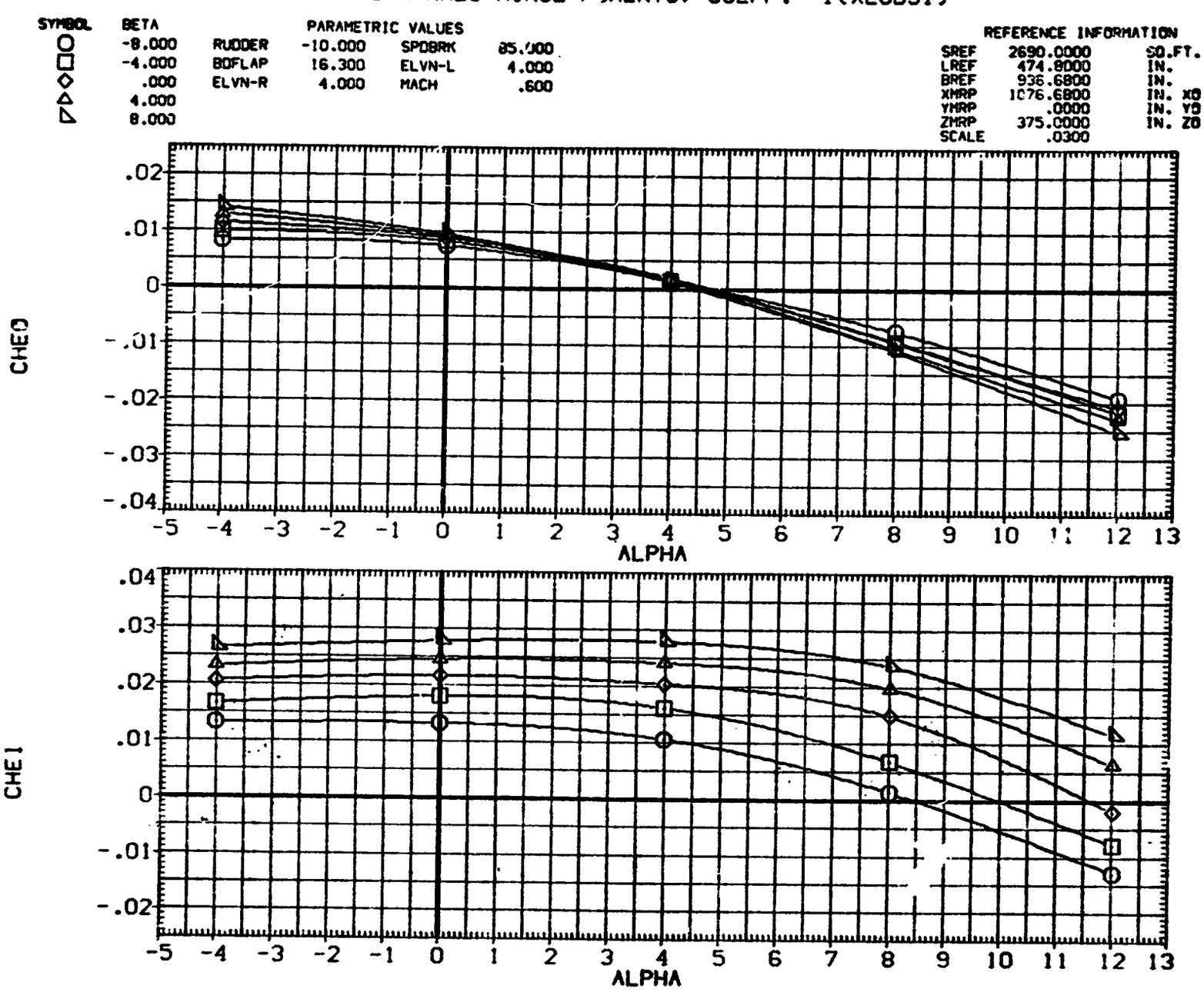


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

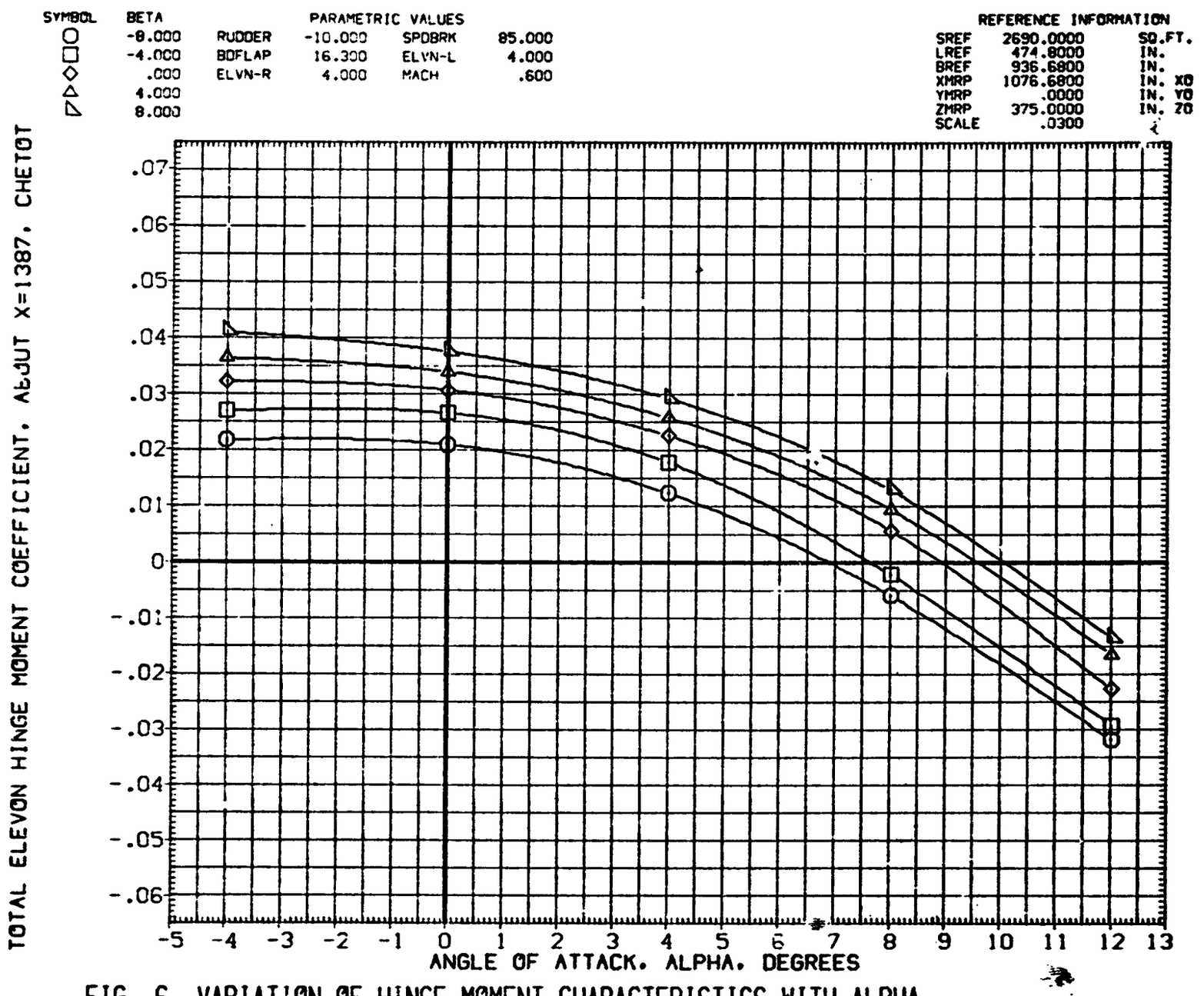


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

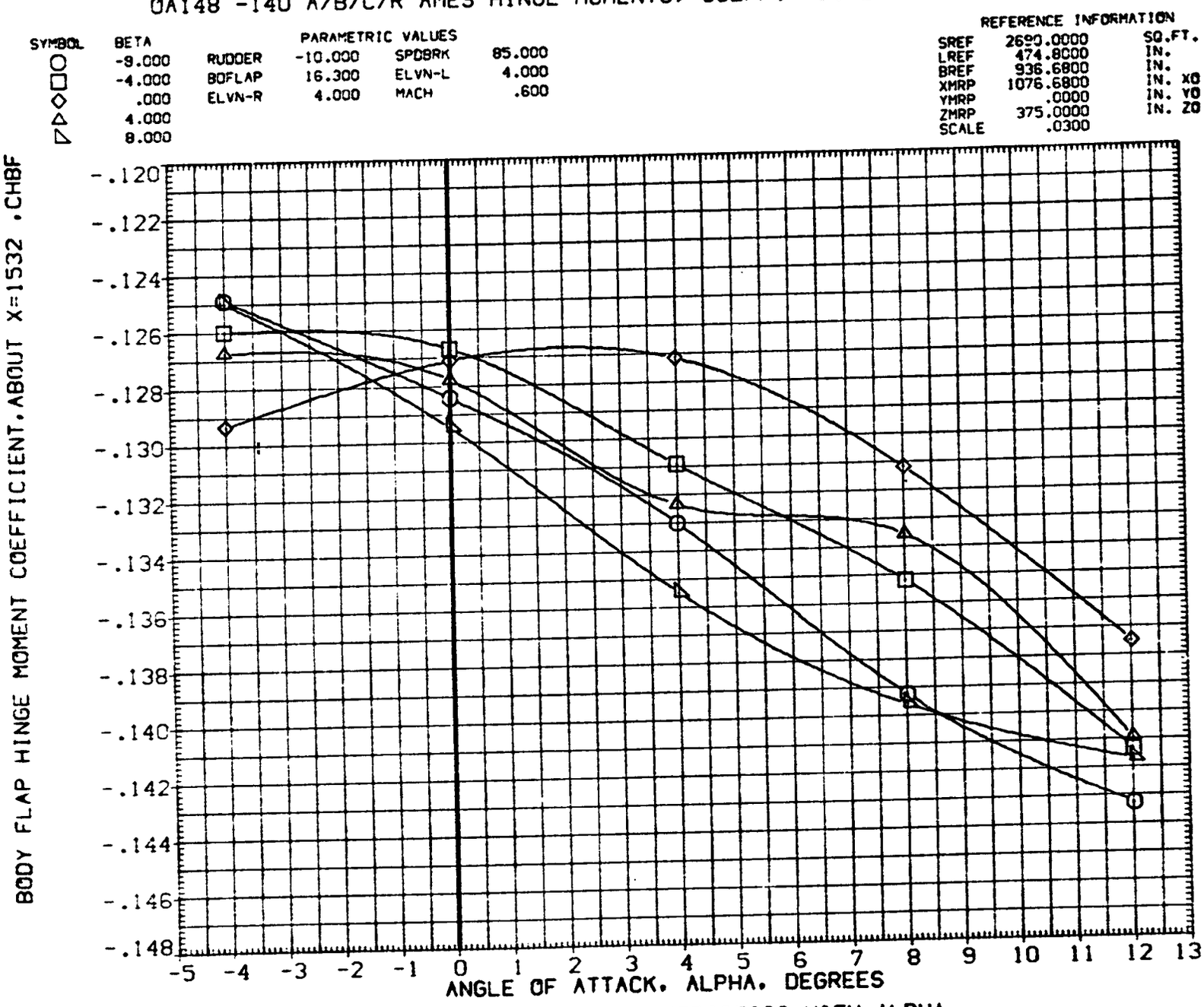


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

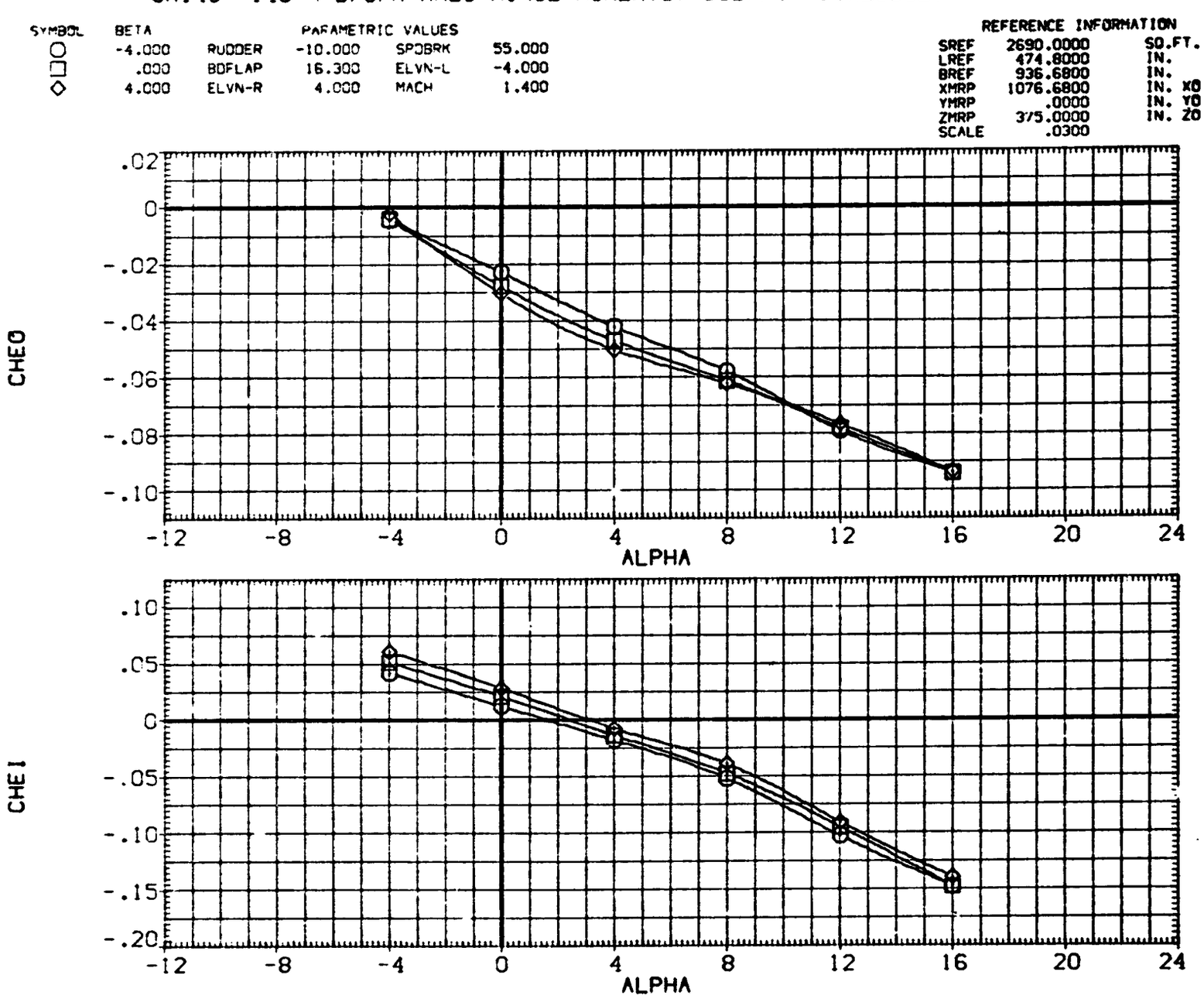


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. 1(XE8D52)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.F900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

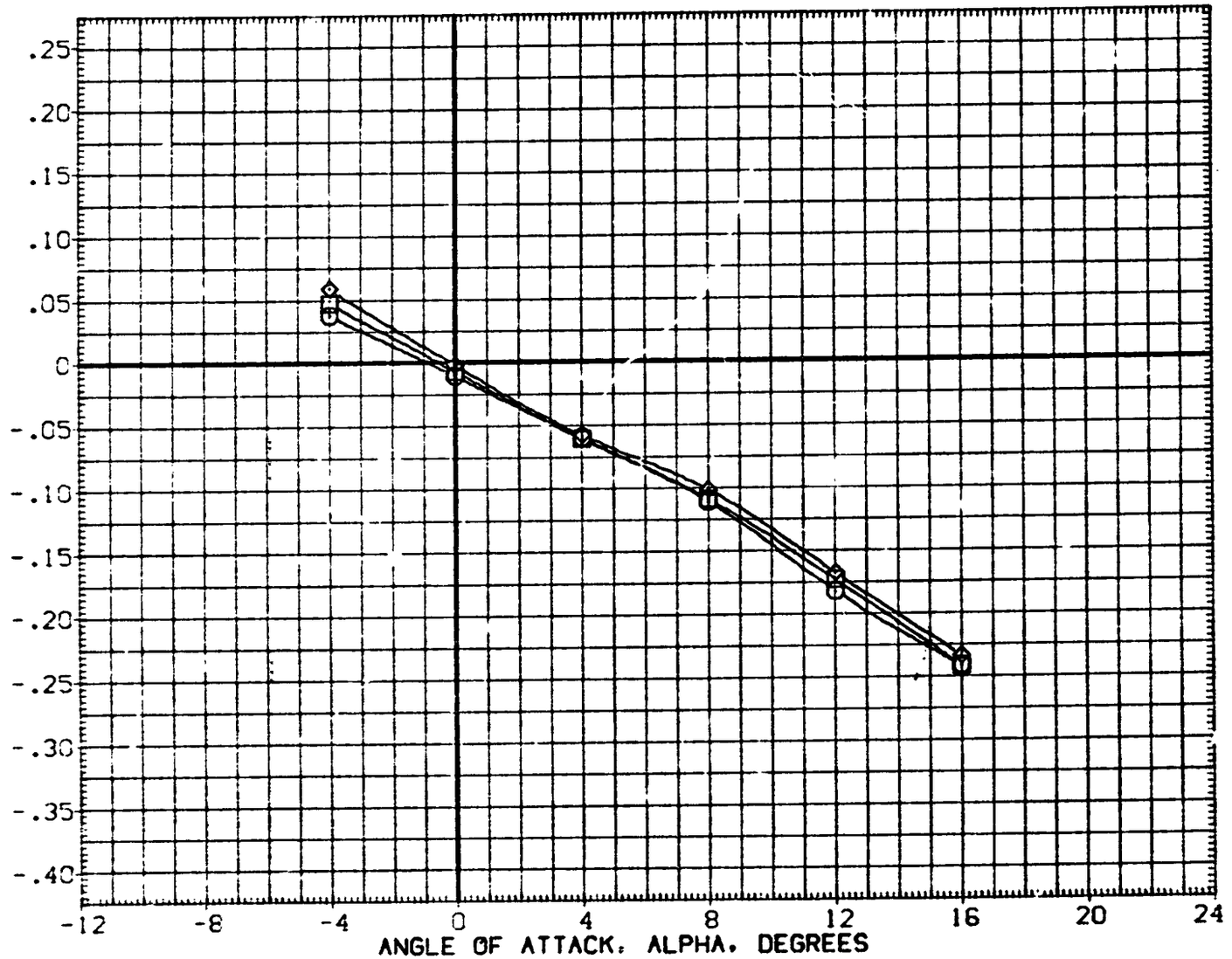


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

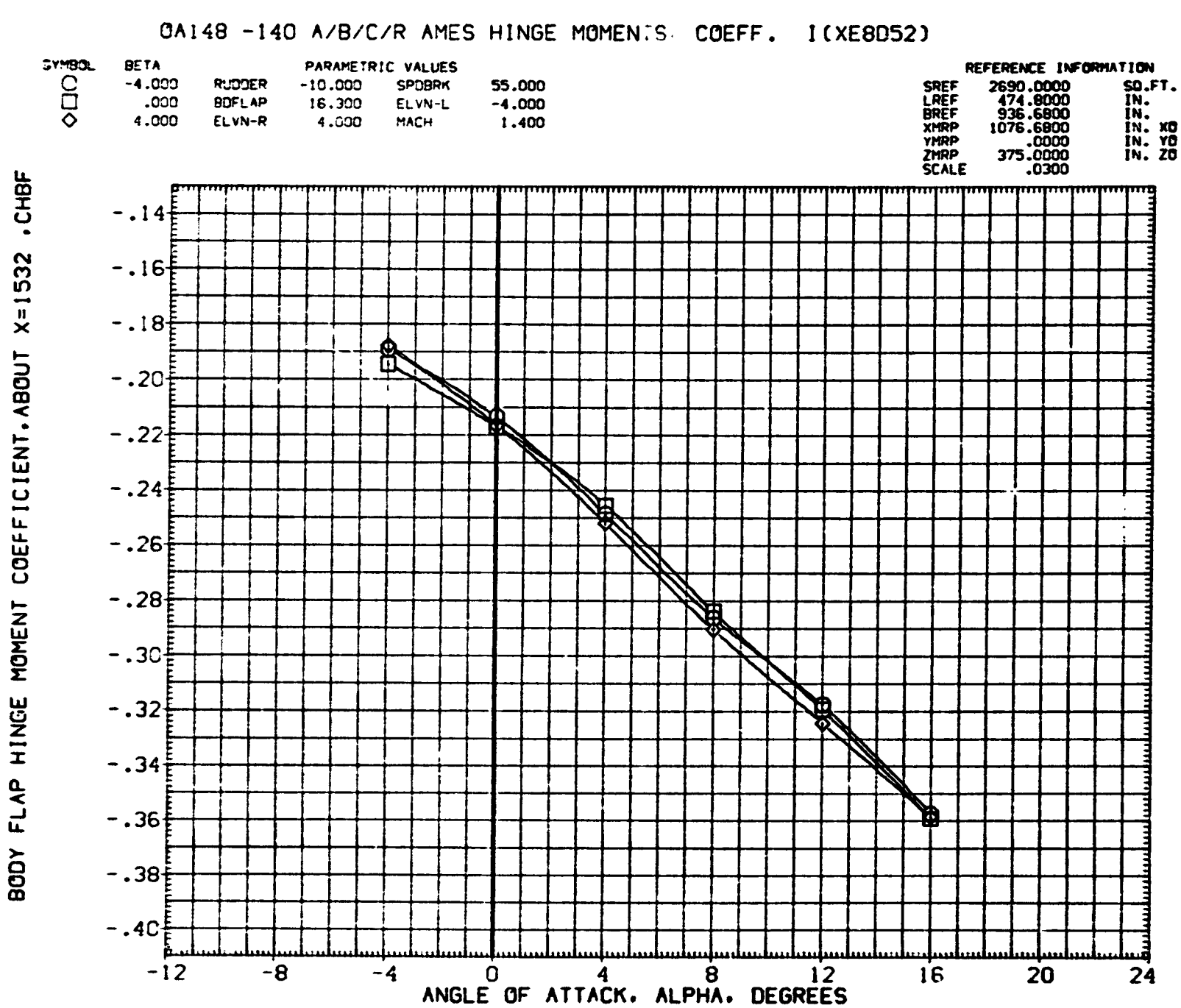


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

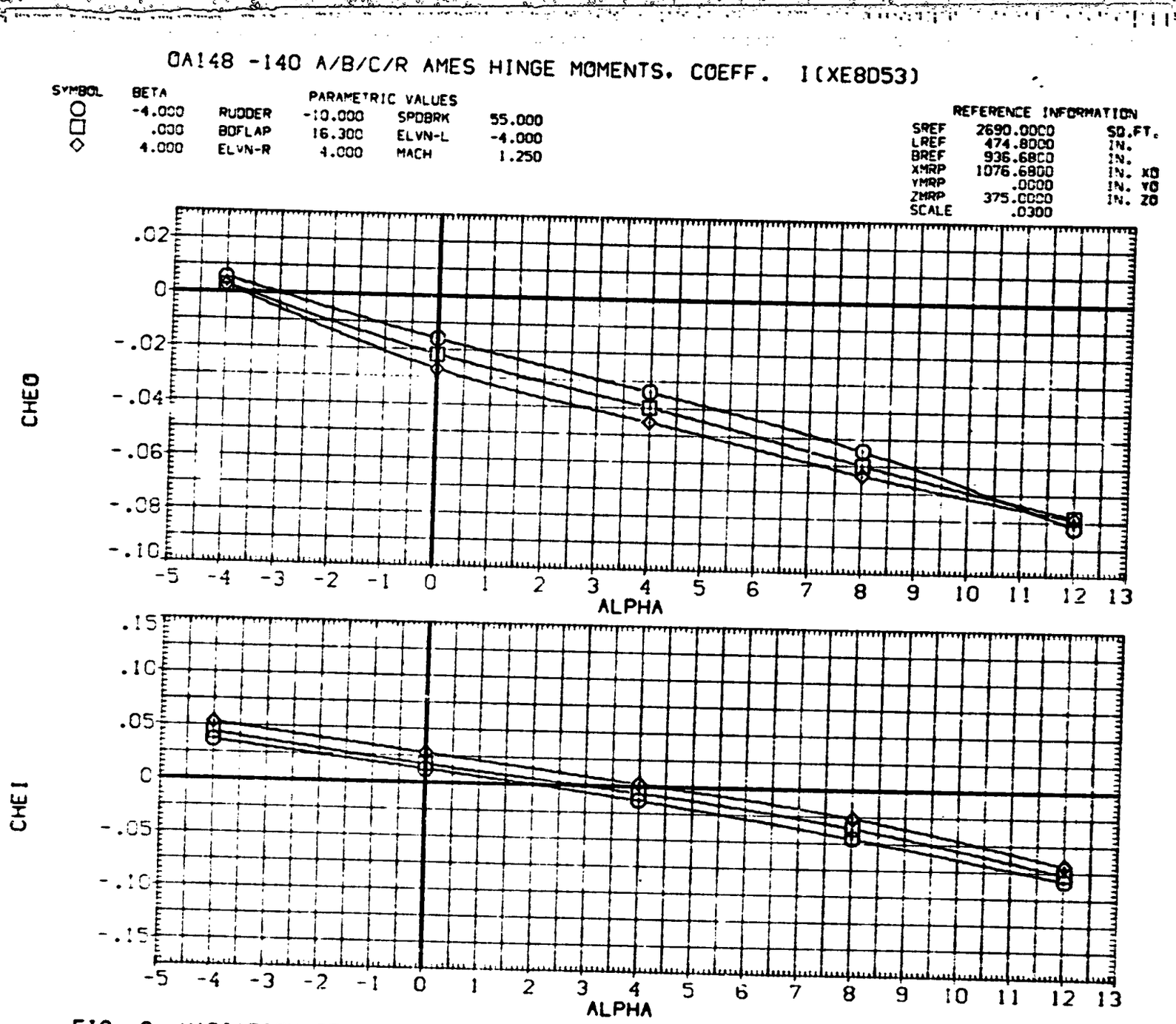


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

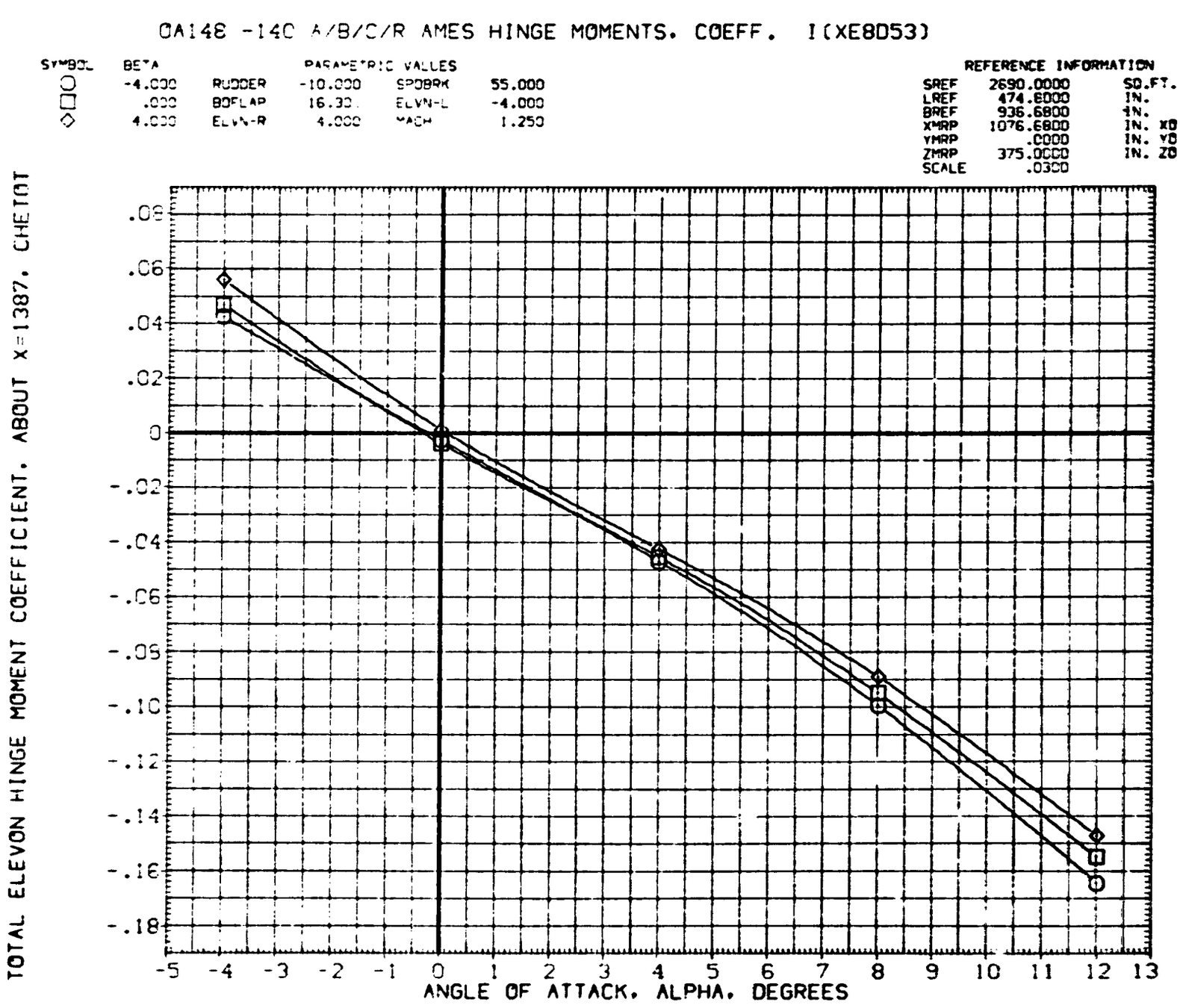


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -14C A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8053)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.2800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

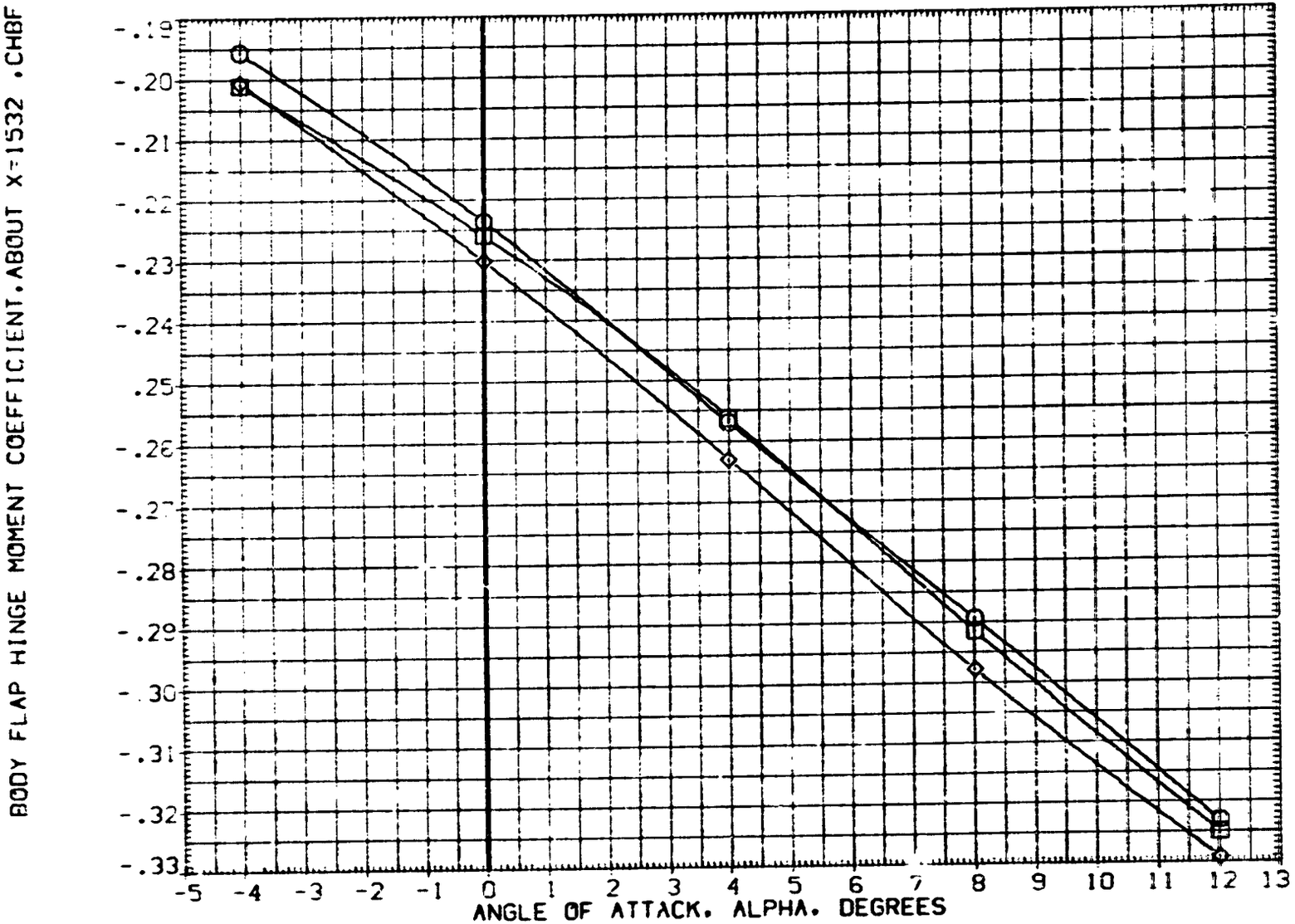


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D54)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

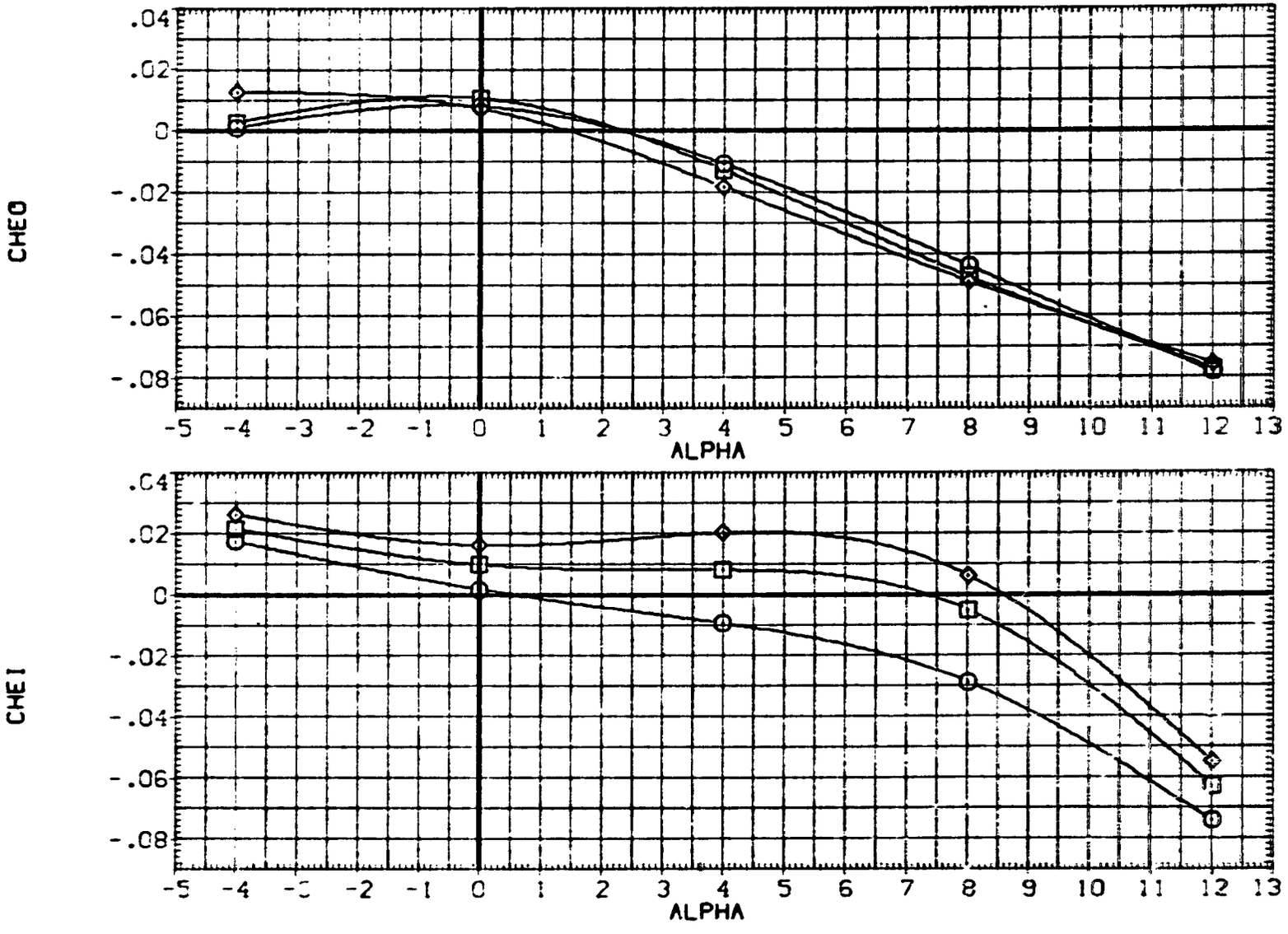


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

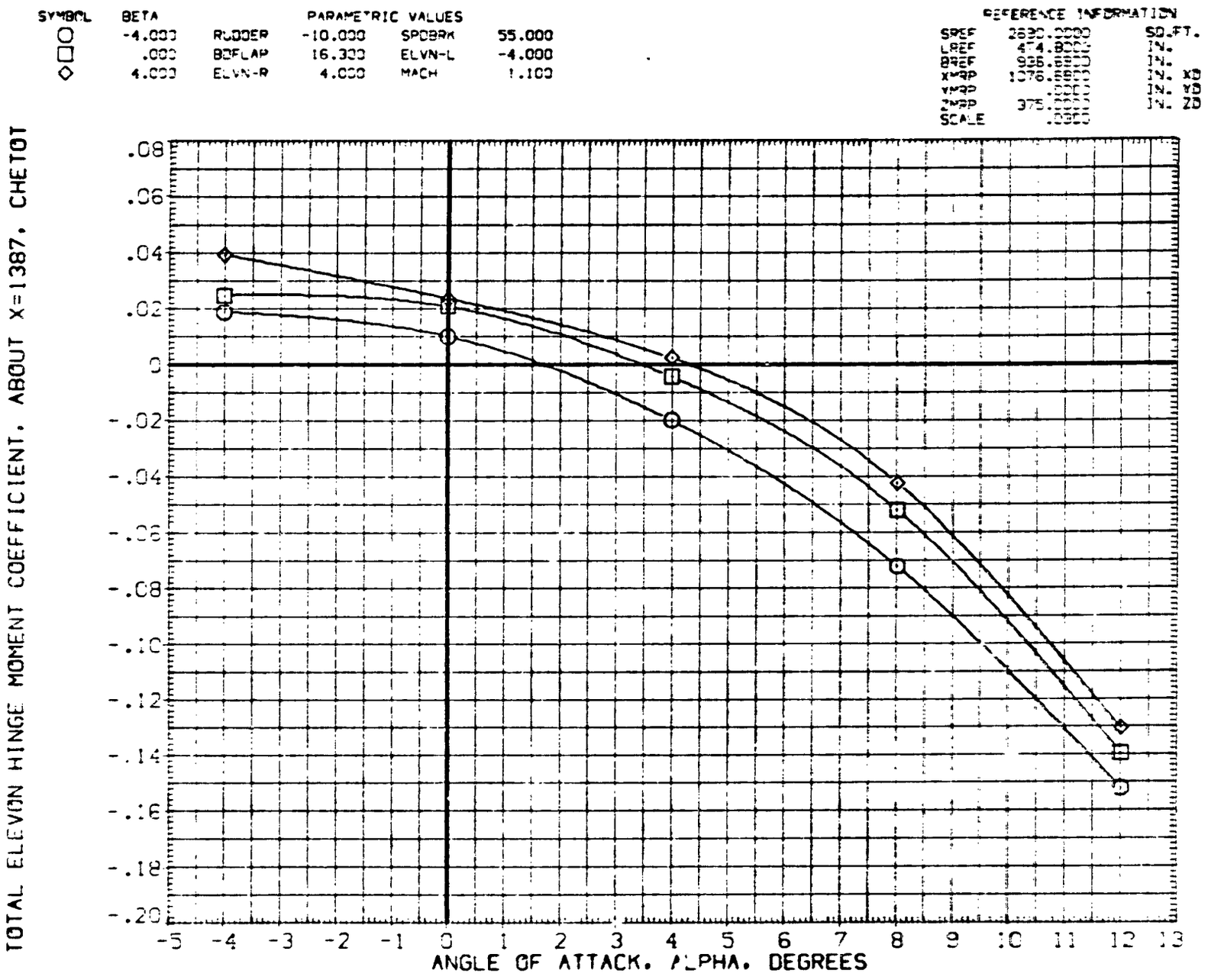


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

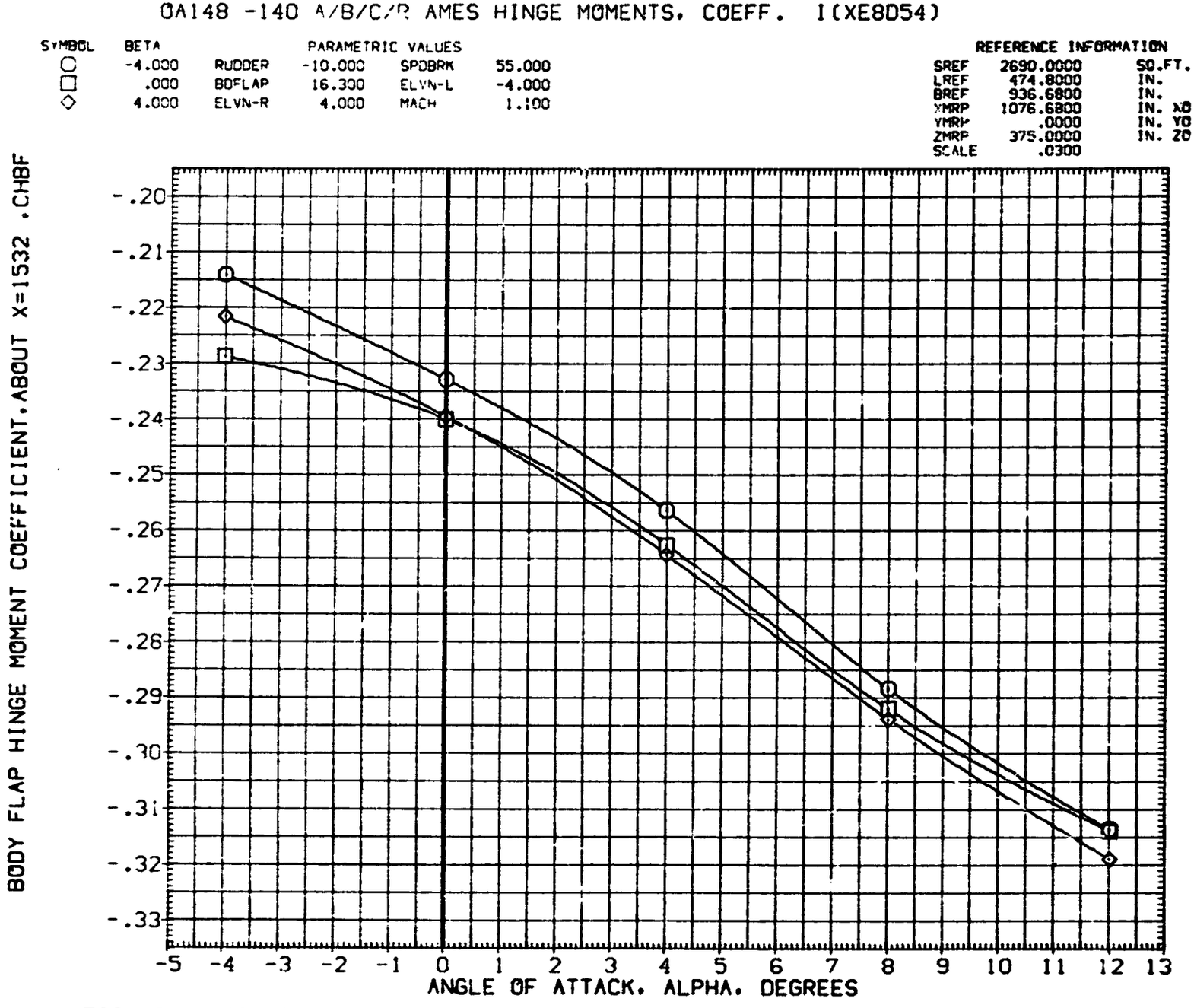


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

0A148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D55)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	4.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

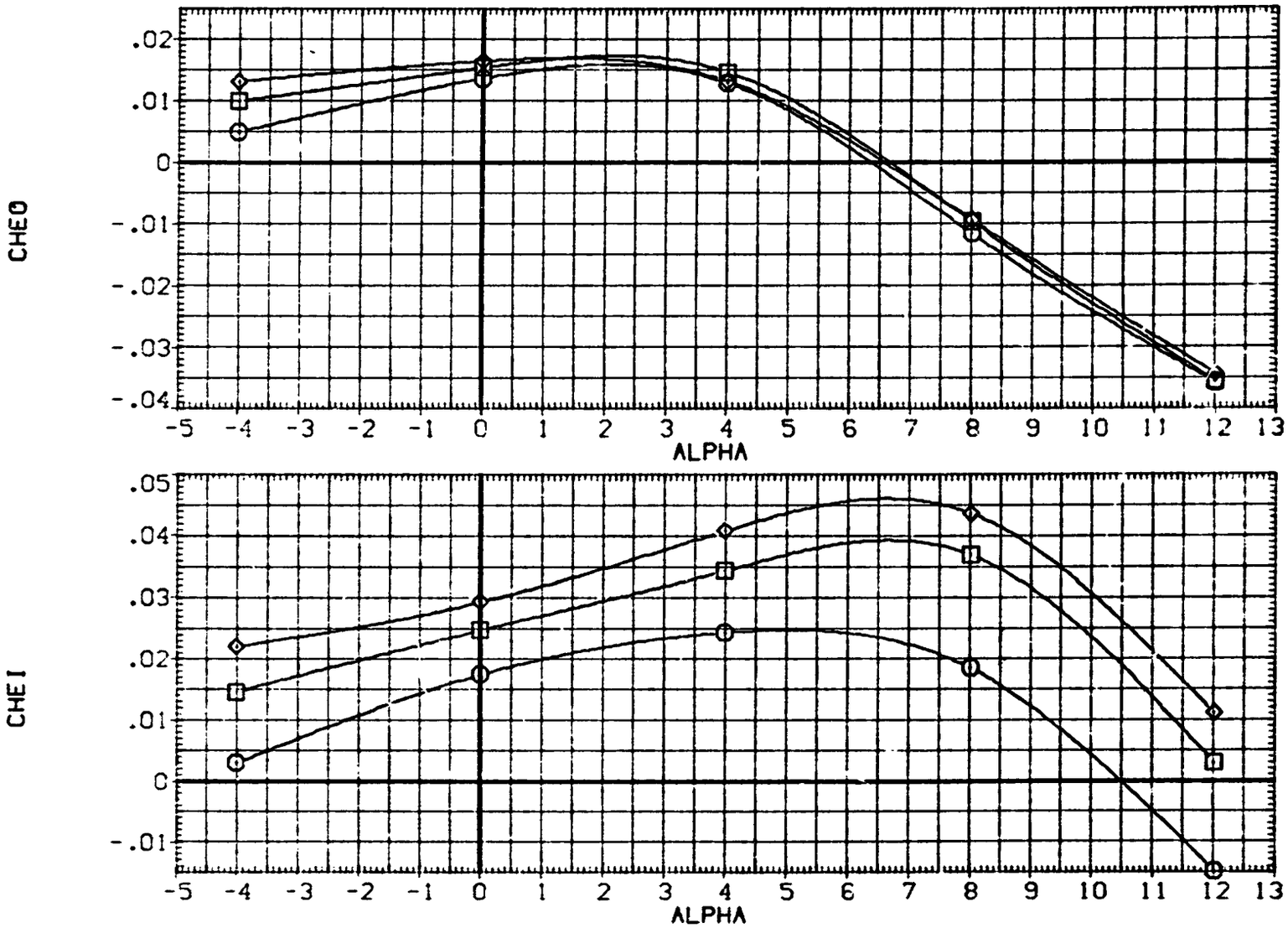


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

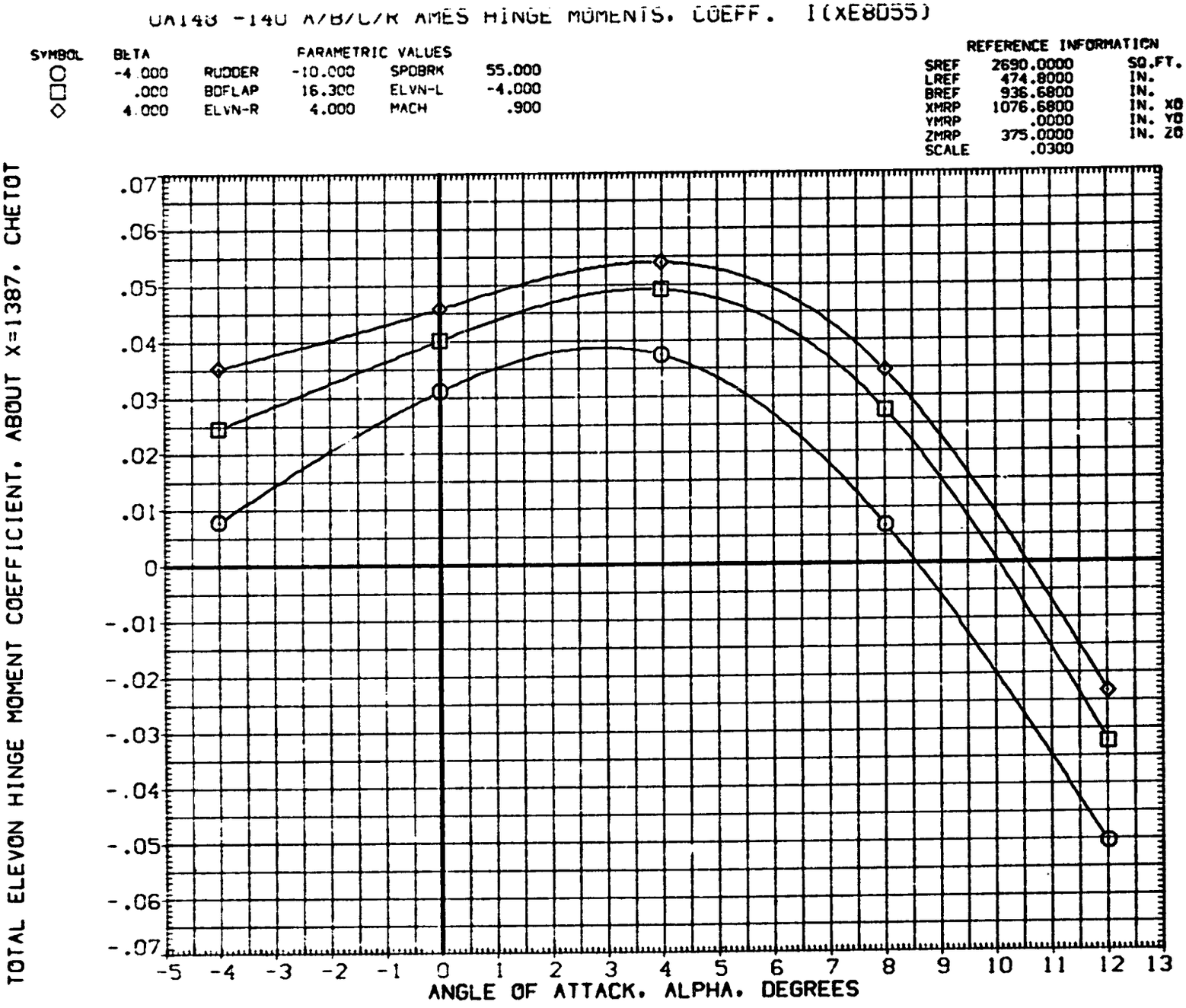


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

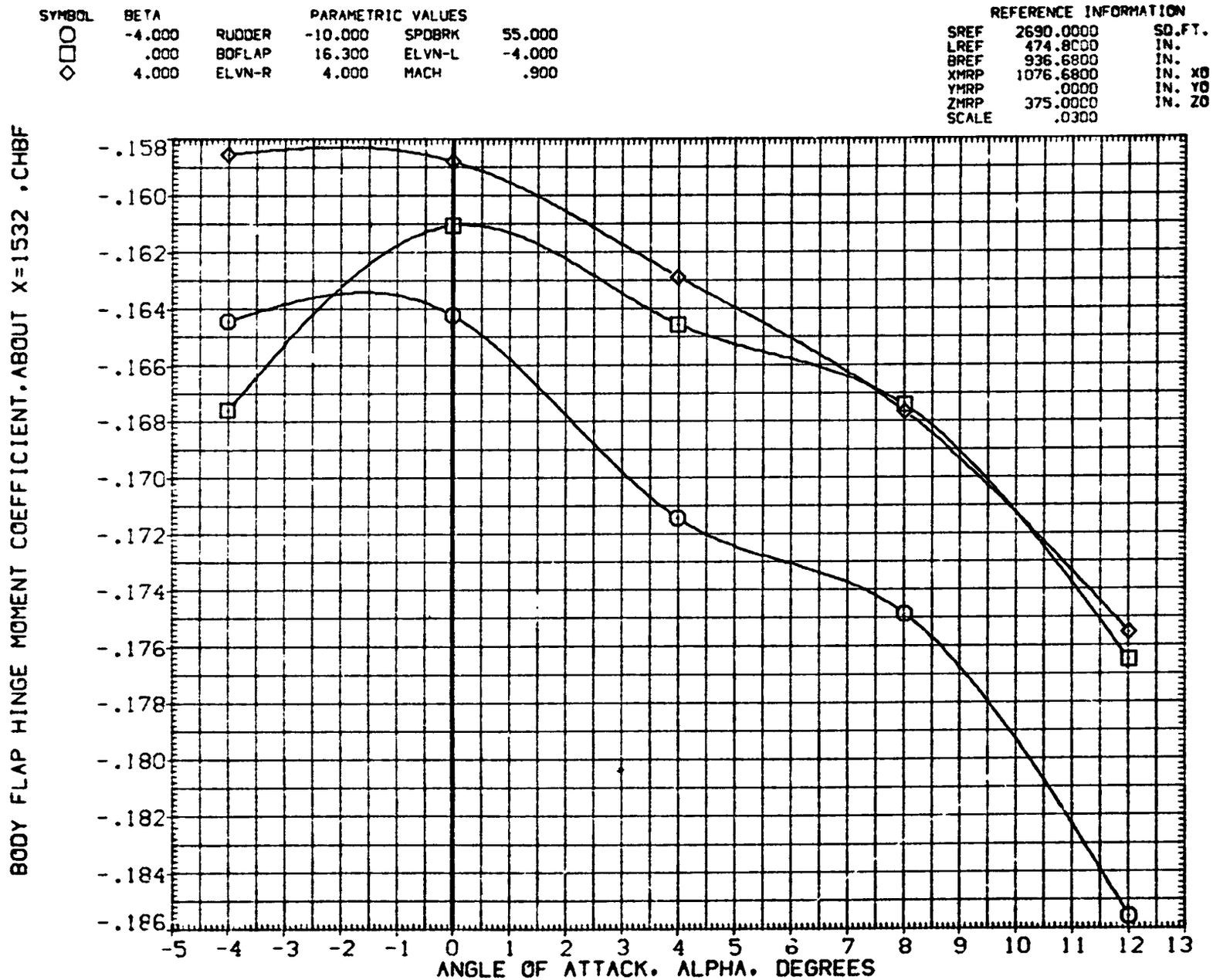


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

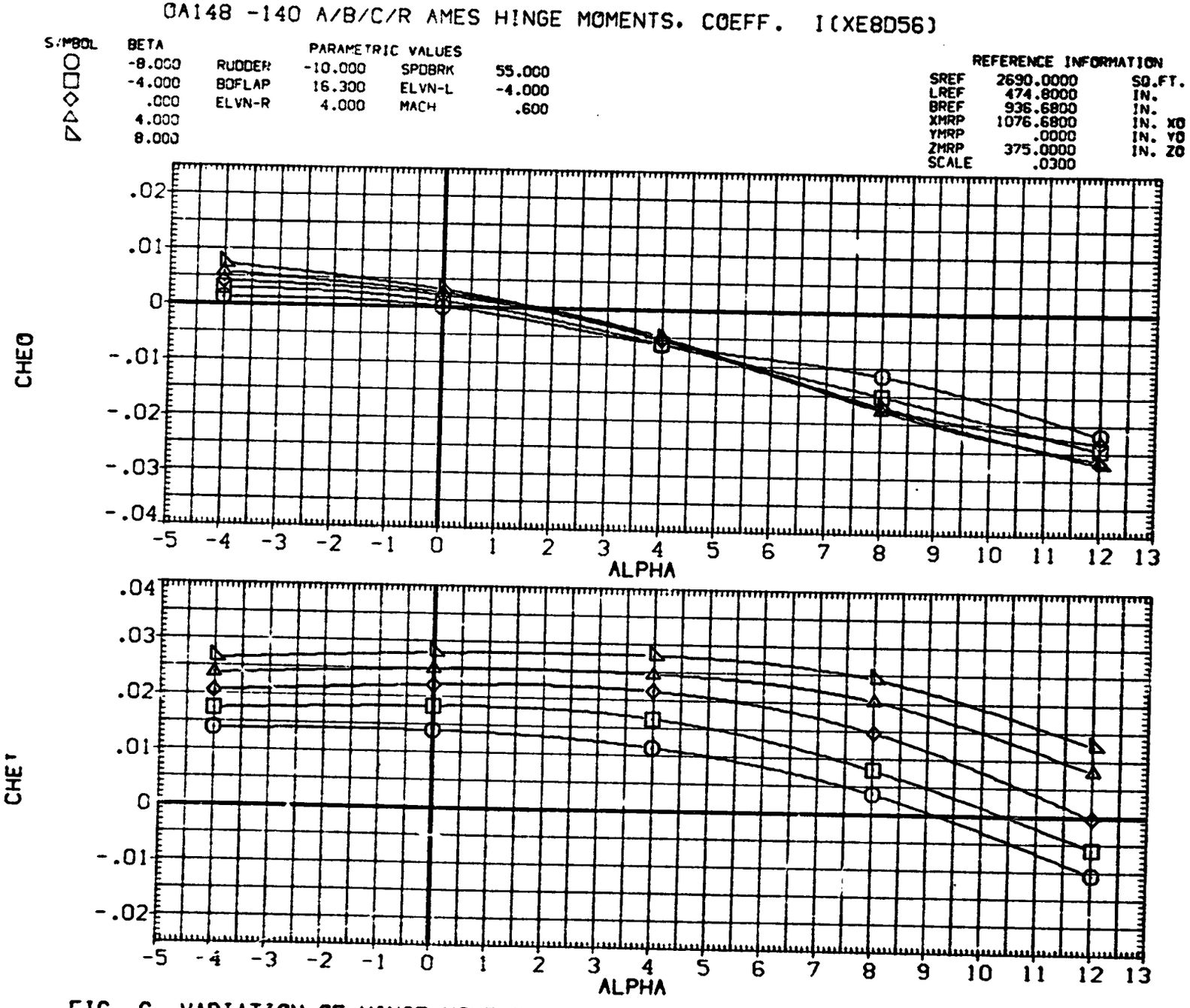


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

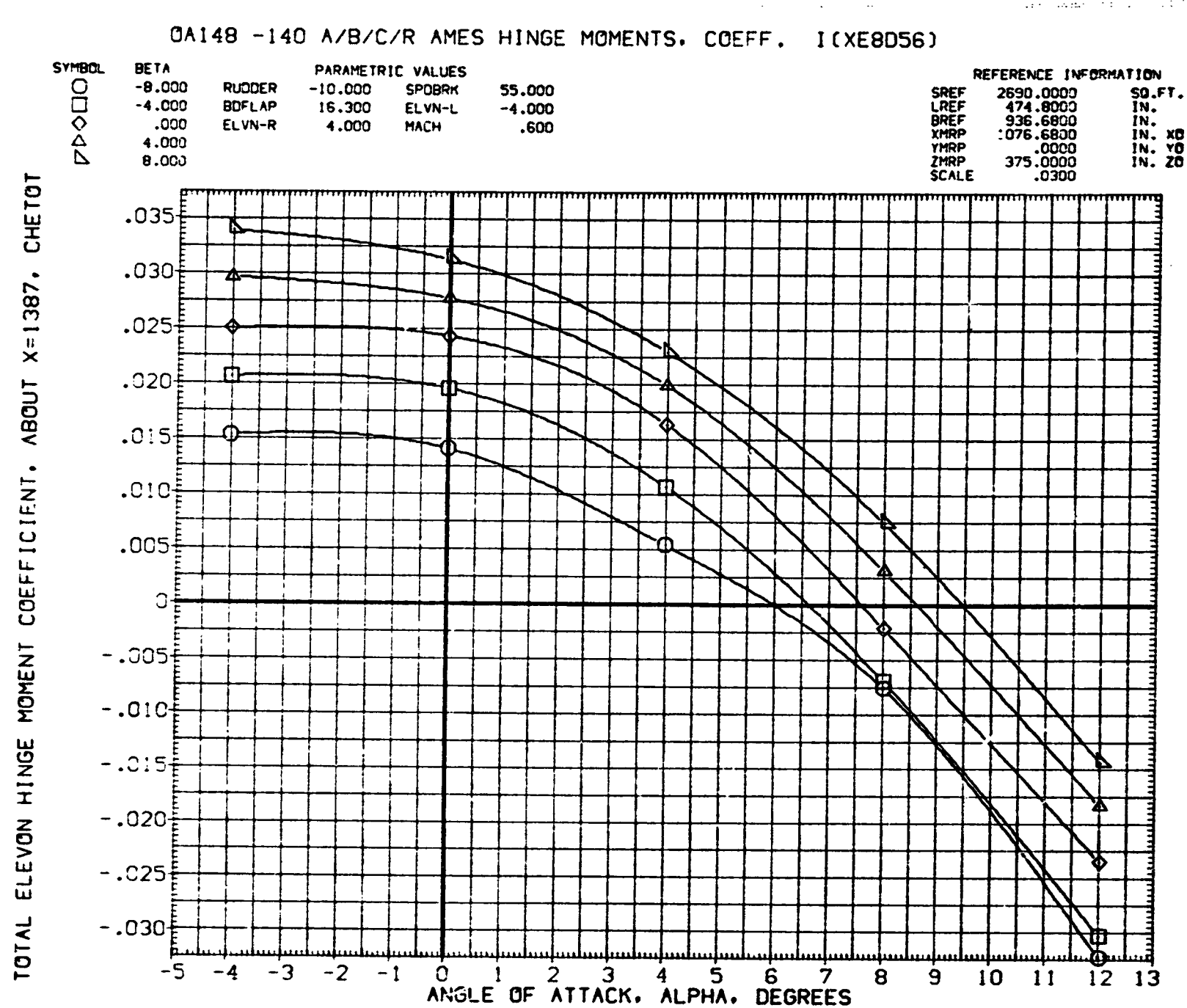


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

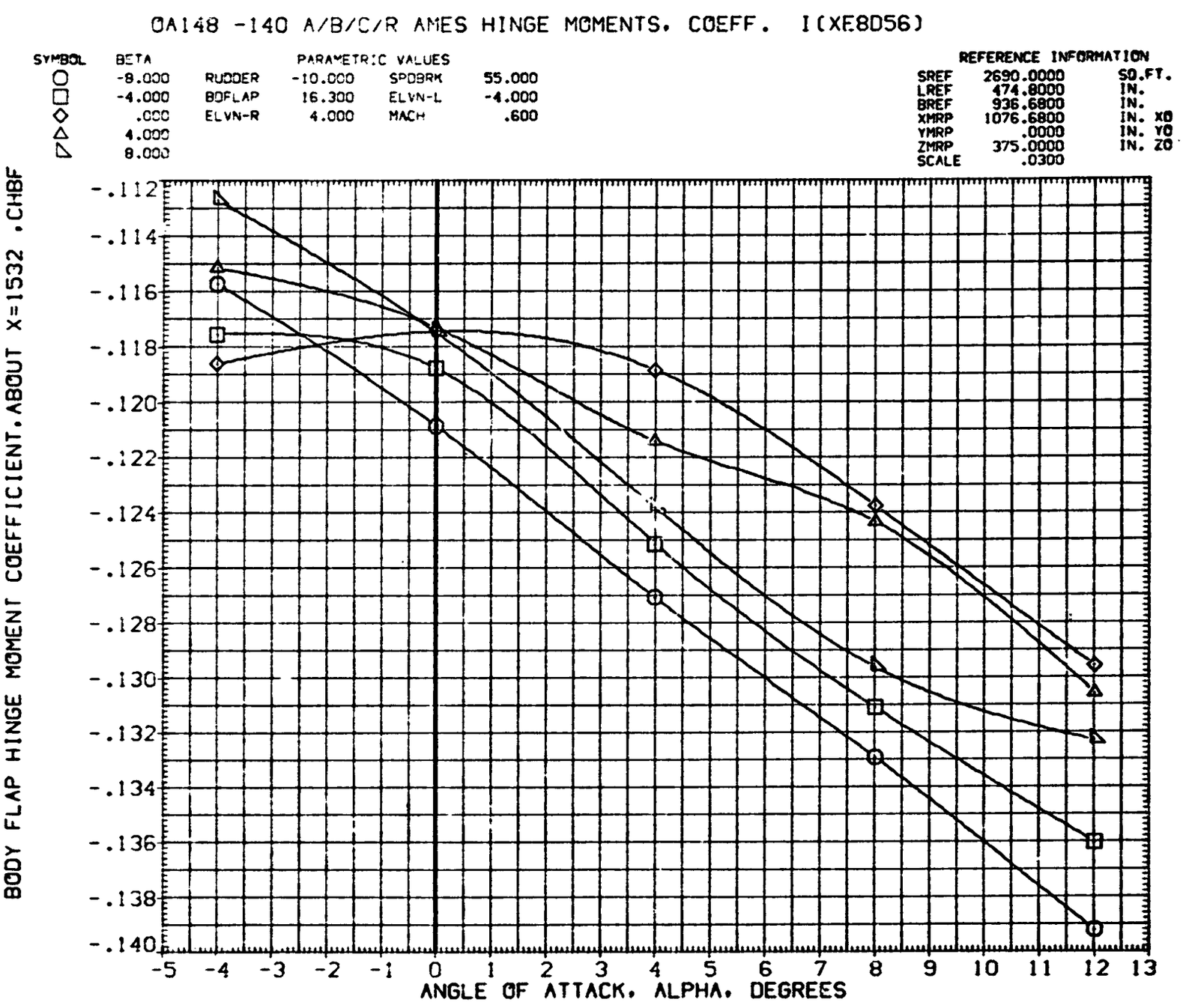


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

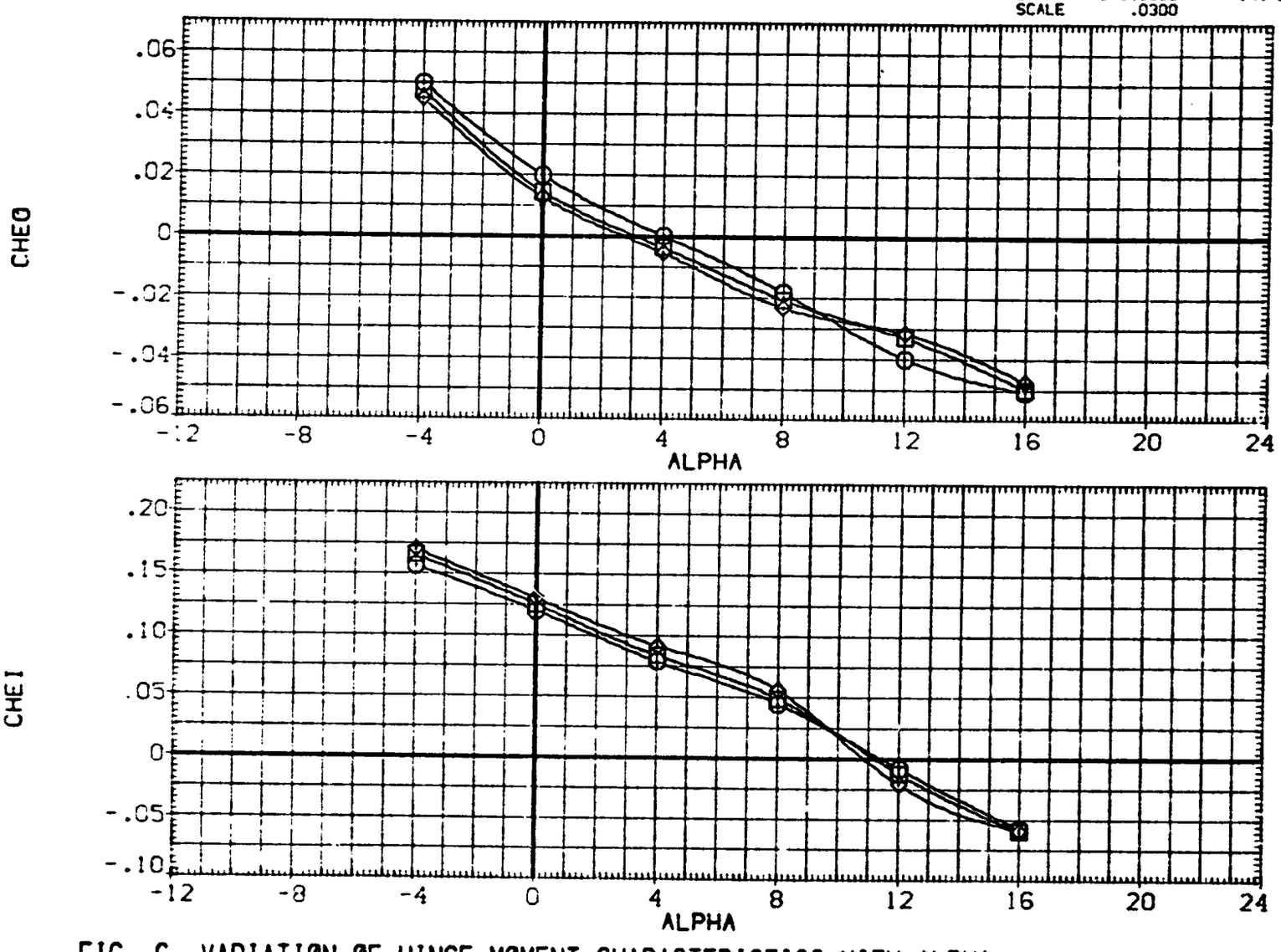


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D57)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

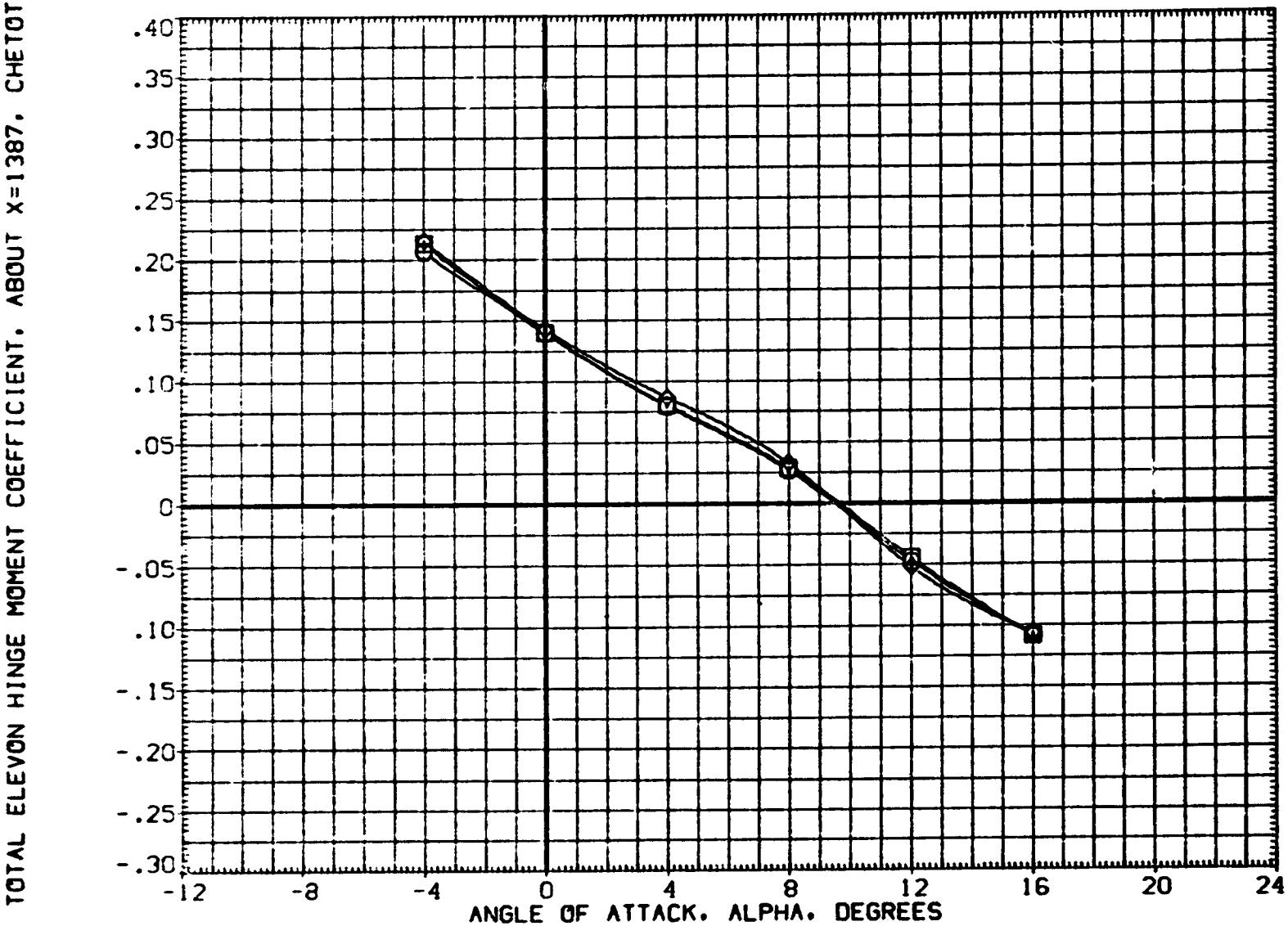


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

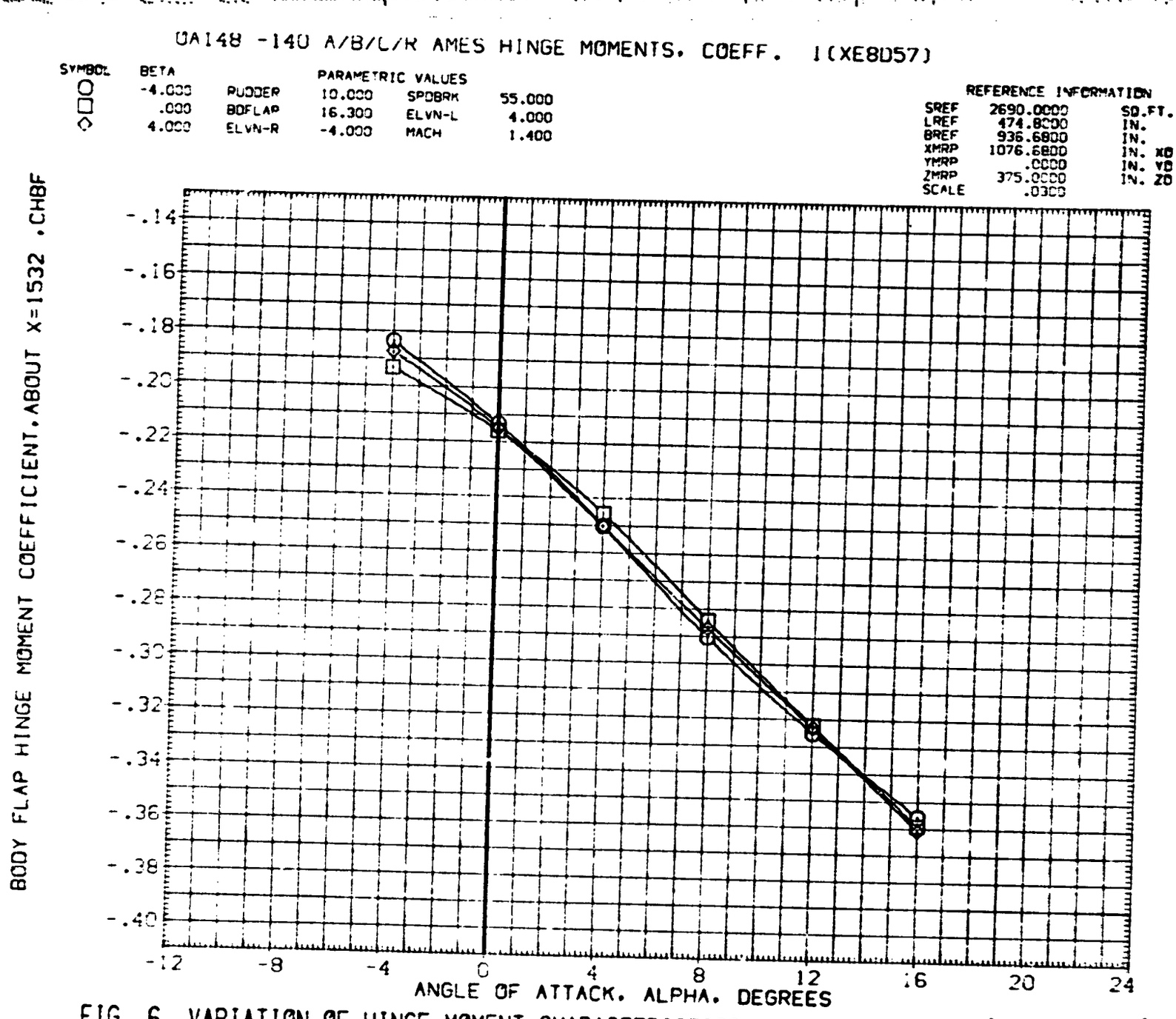


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

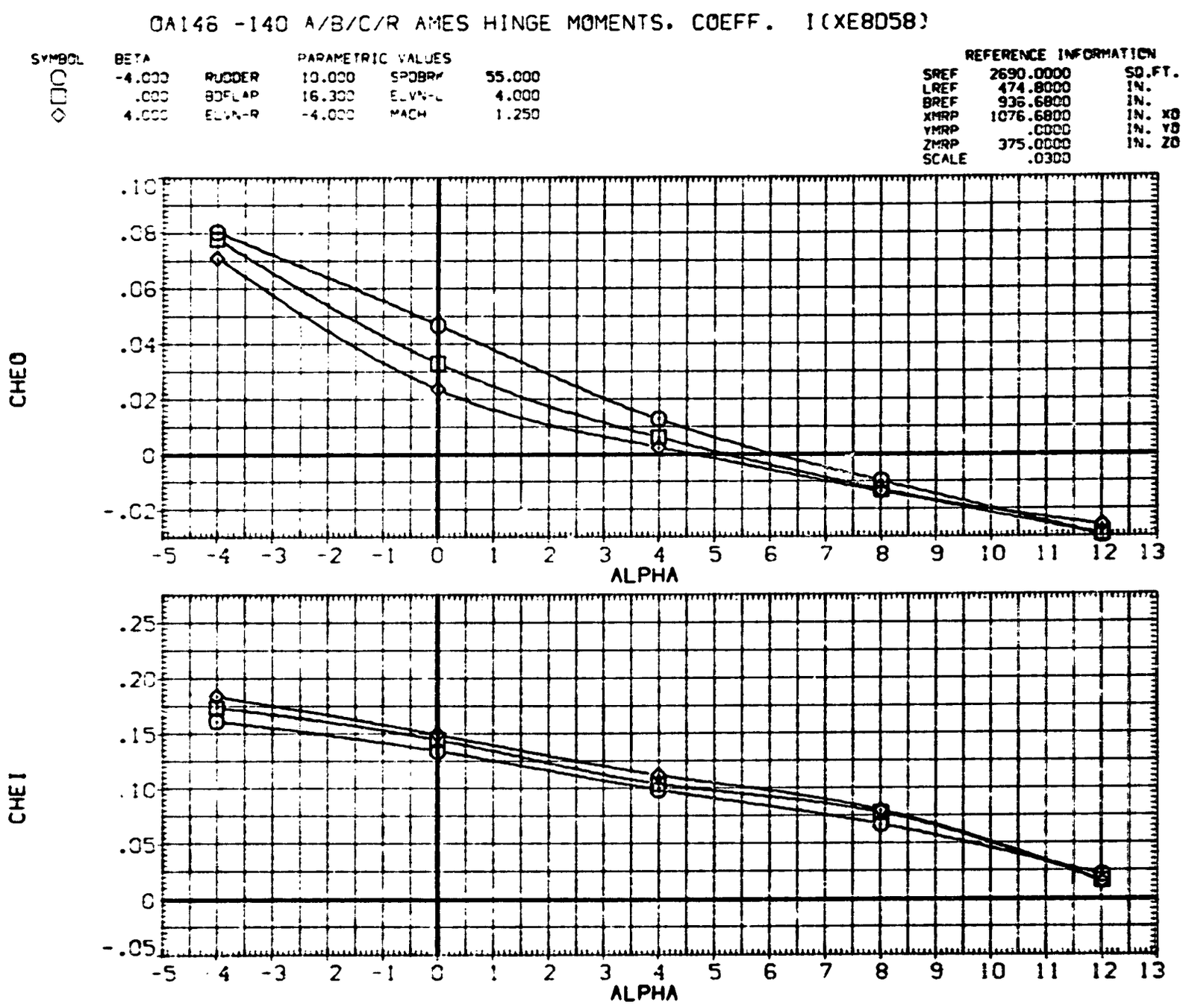


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

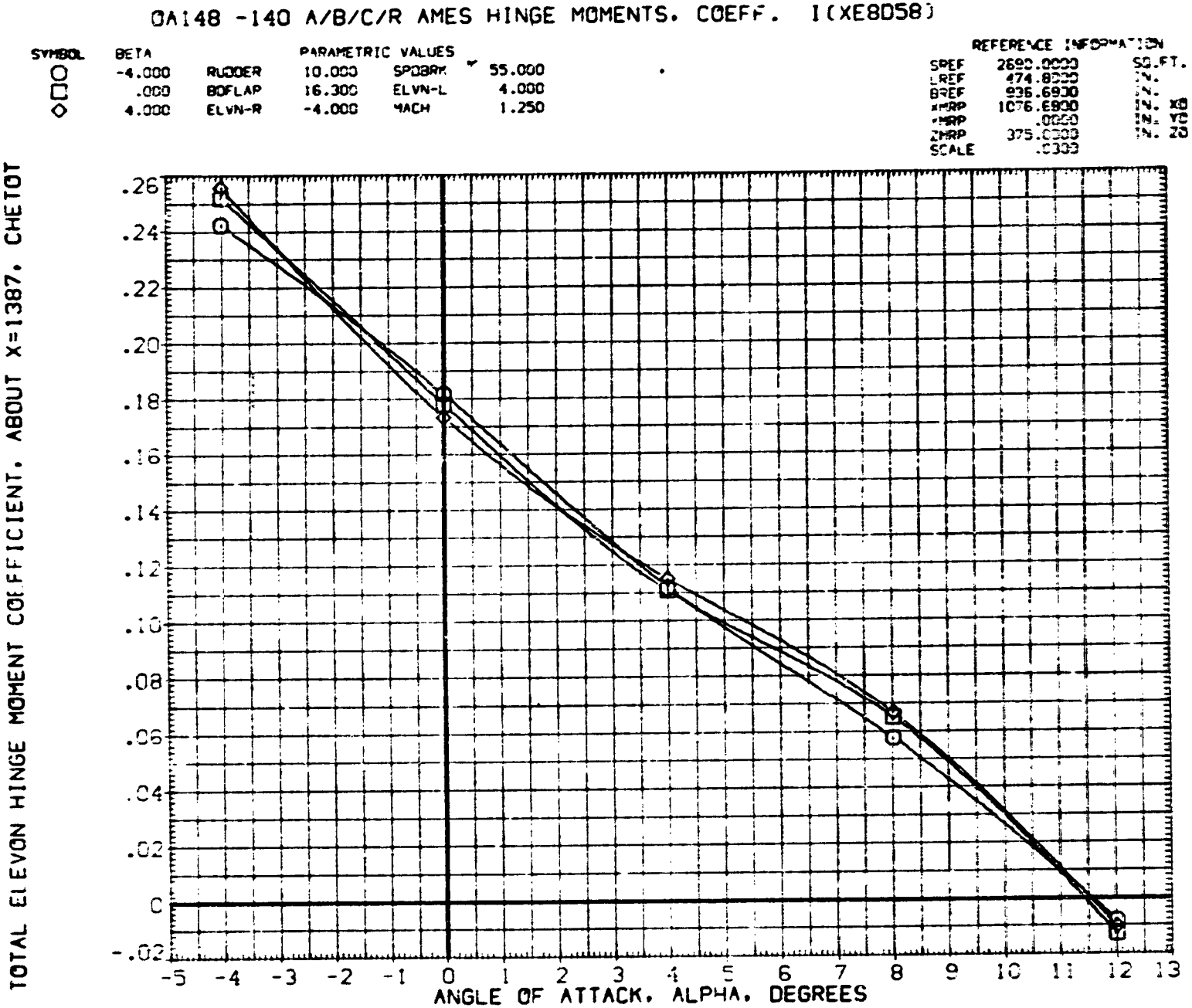


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

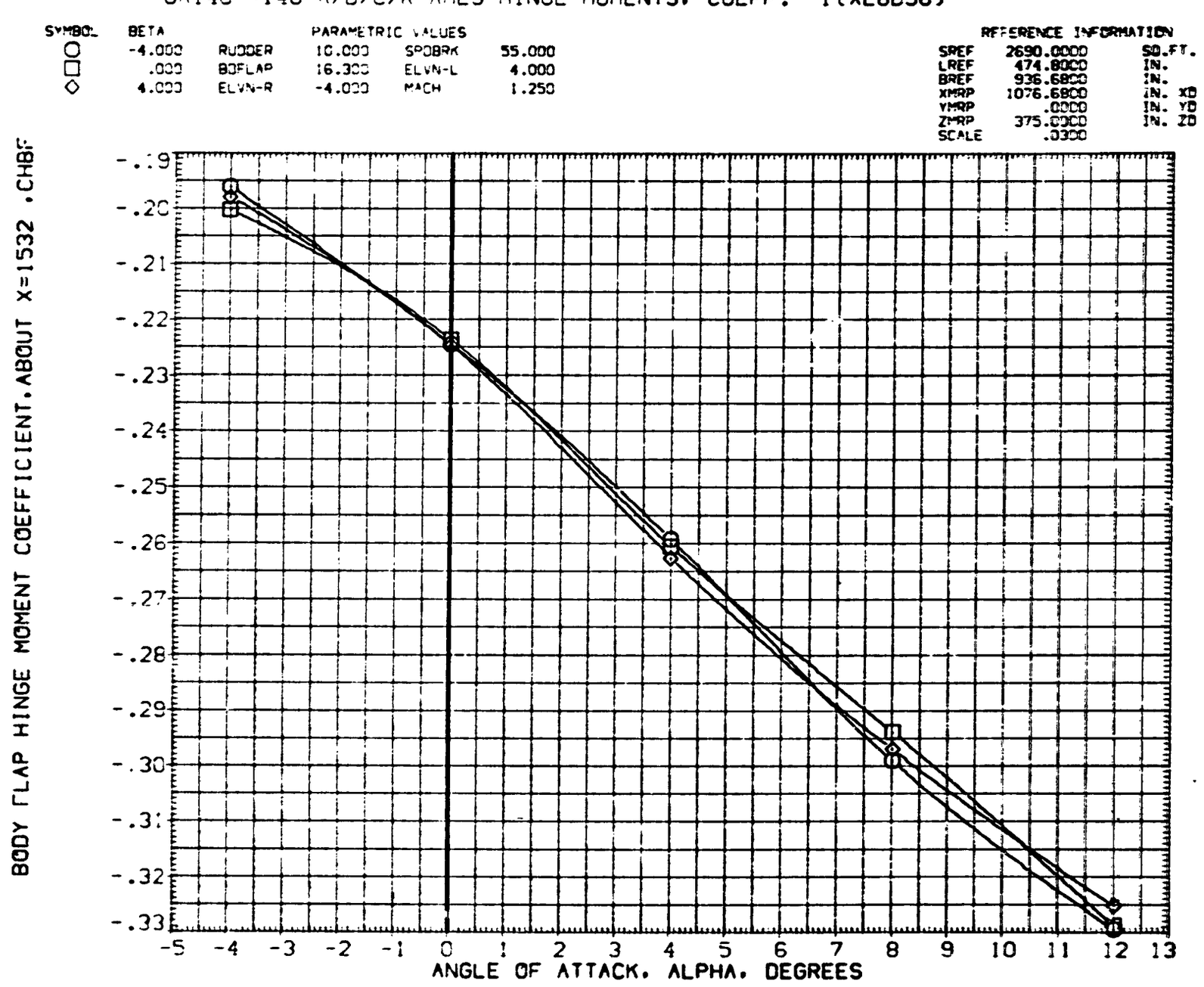


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

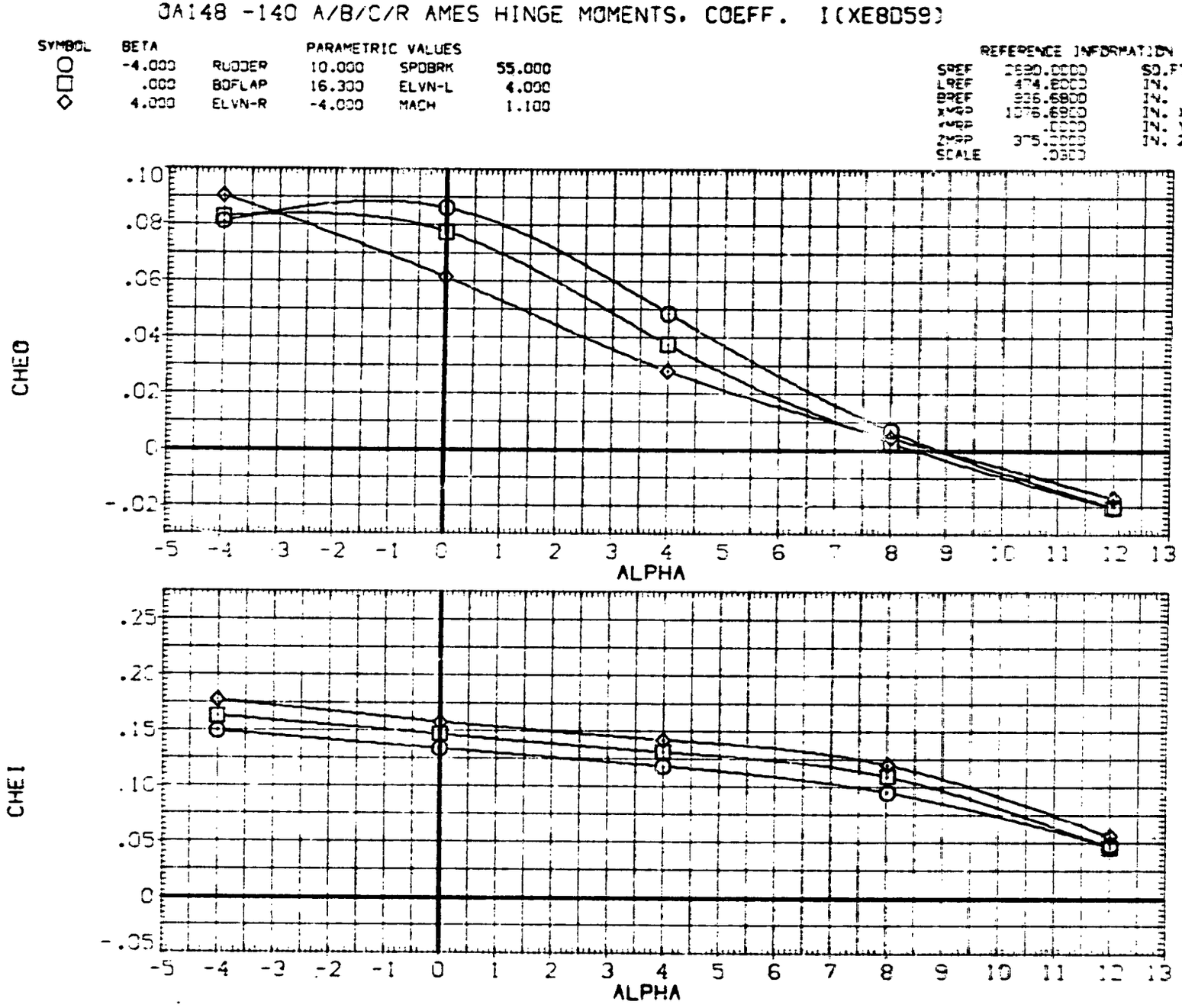


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

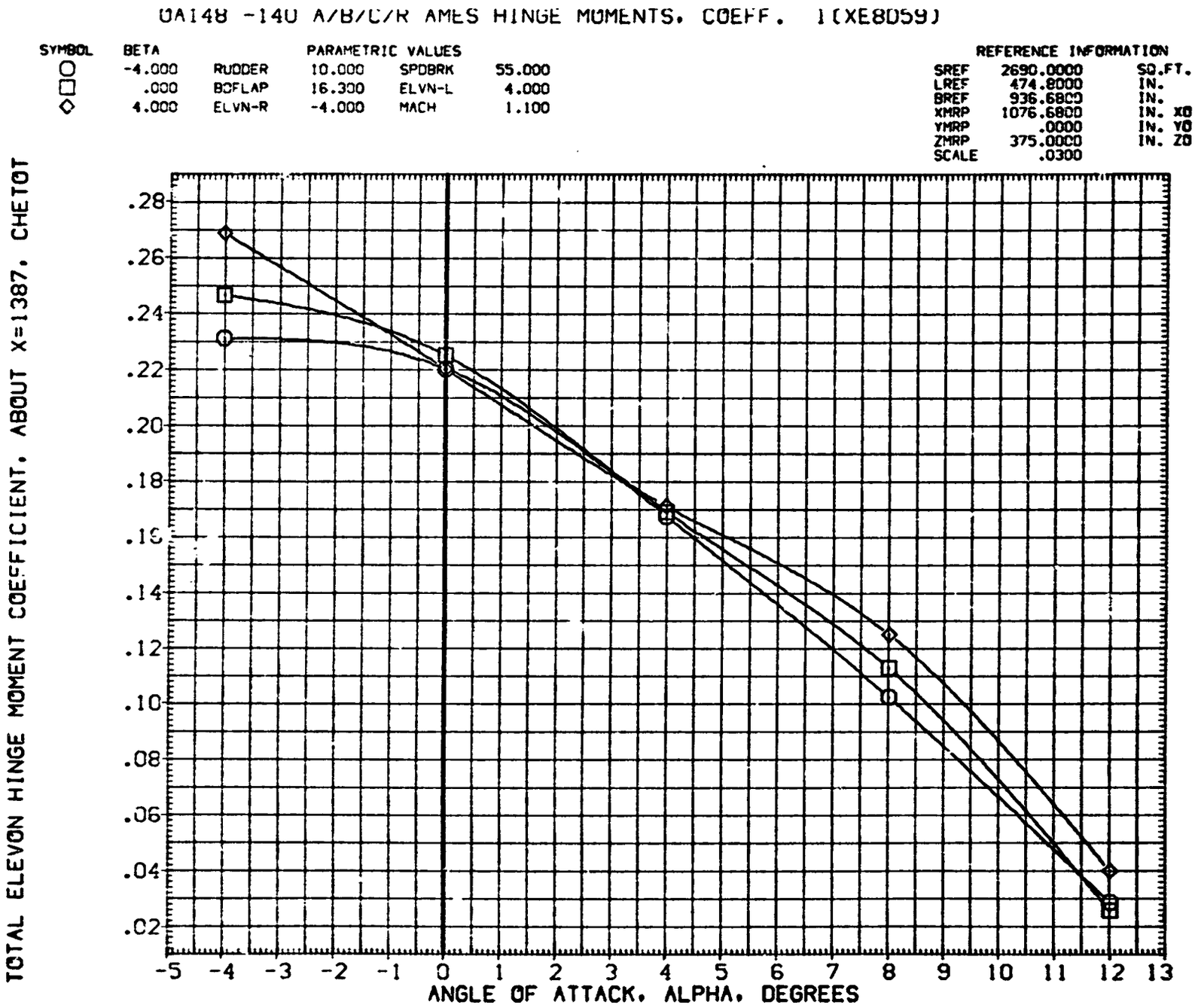


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D59)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

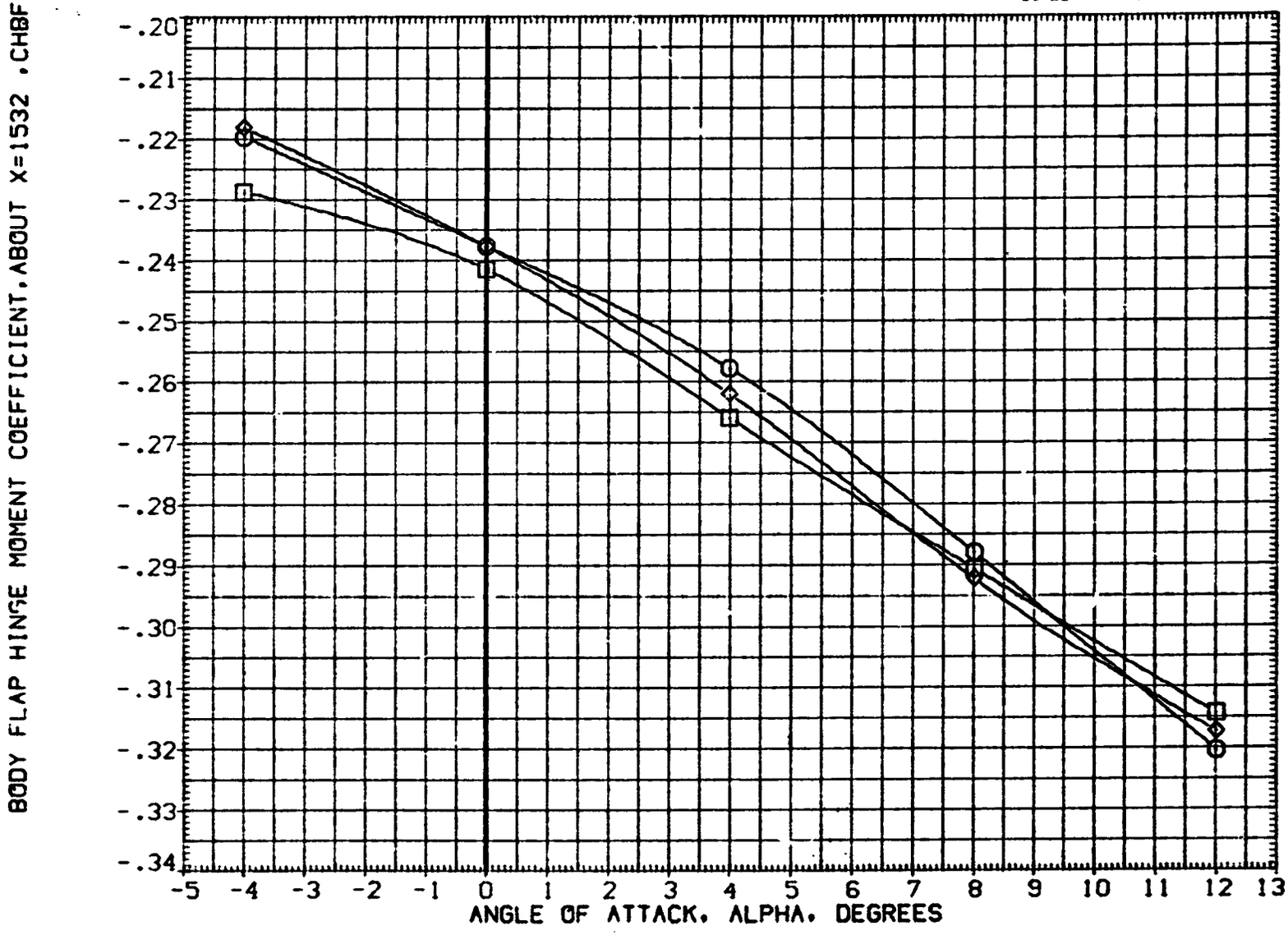


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8D60)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

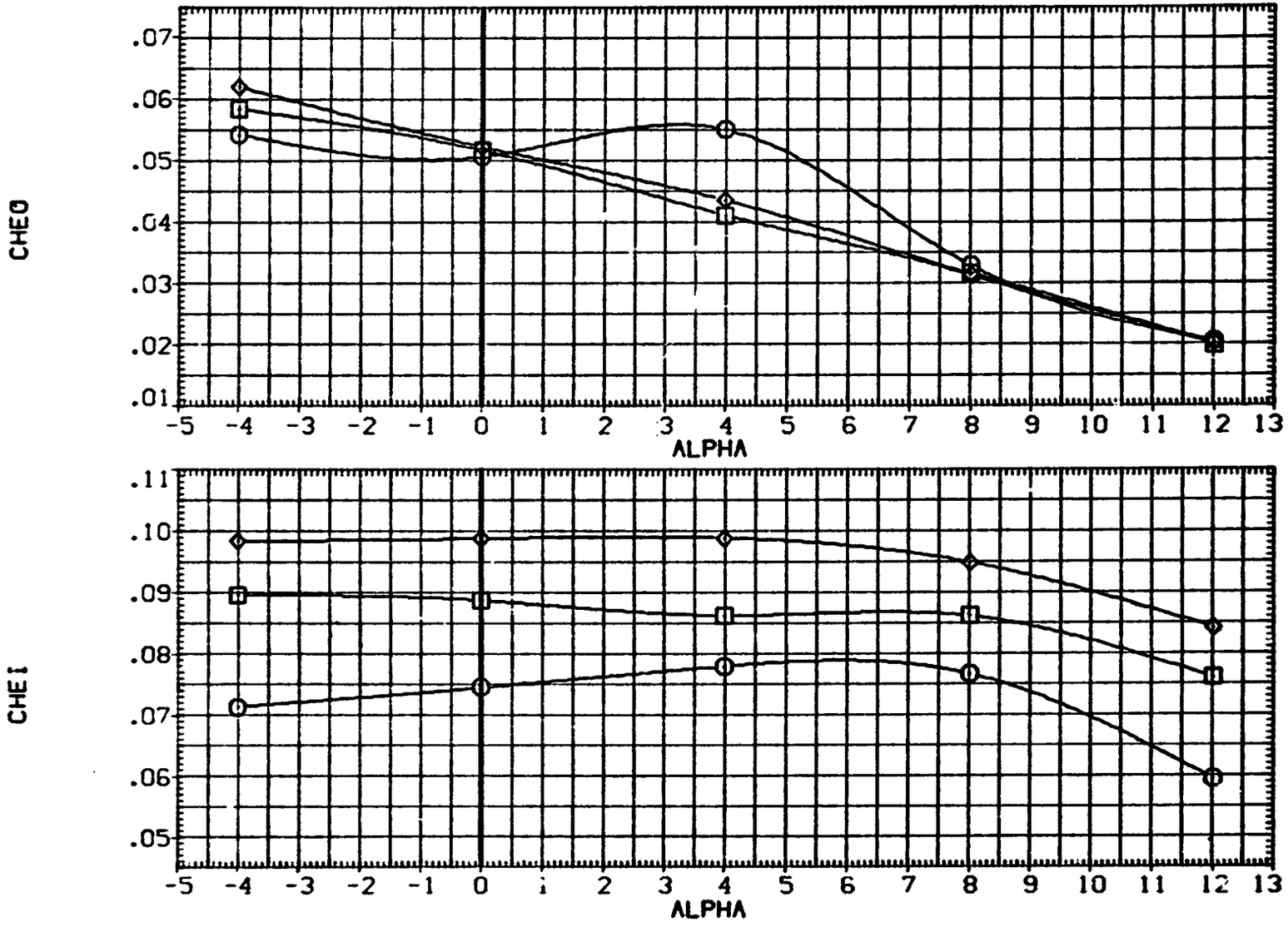


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

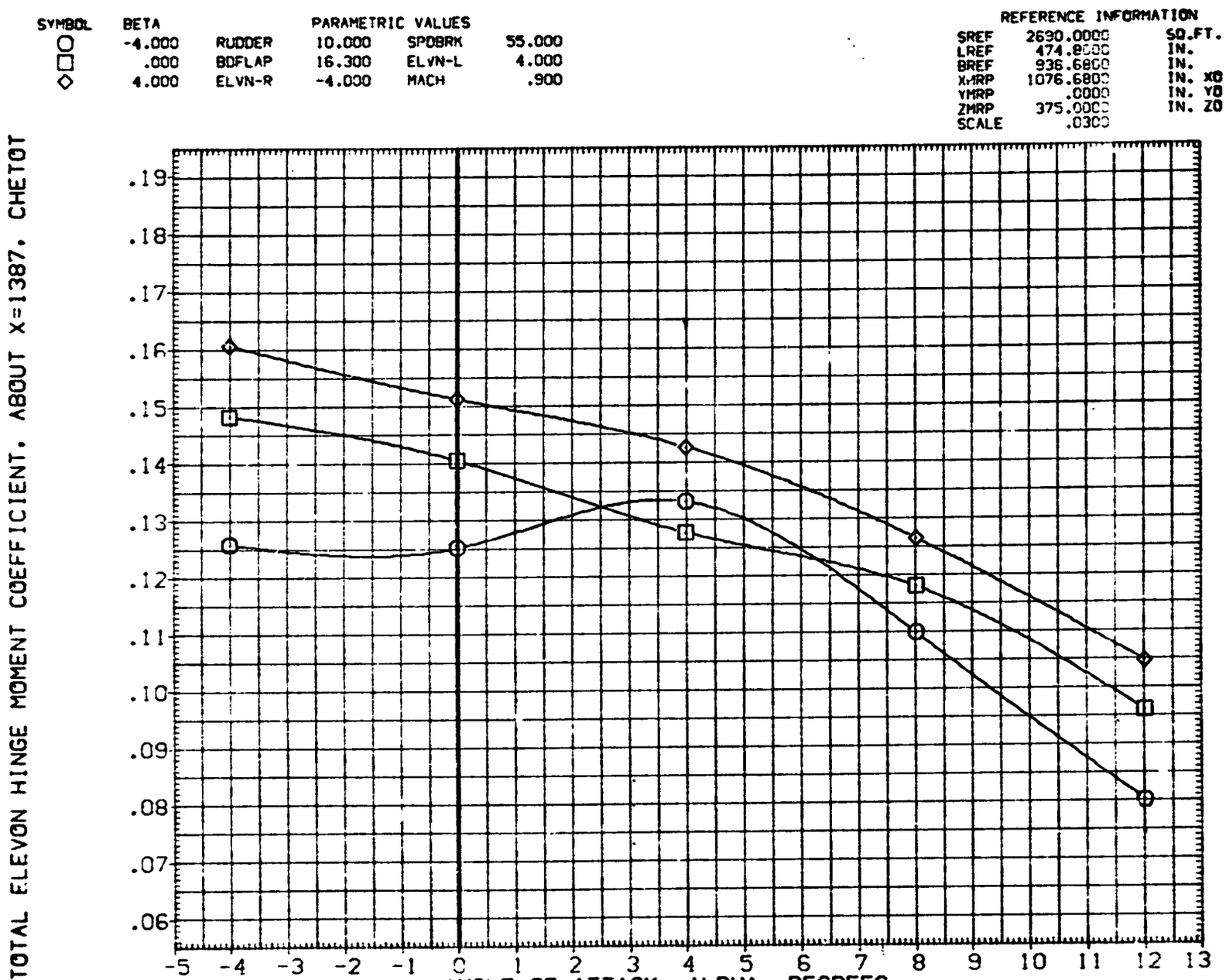


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

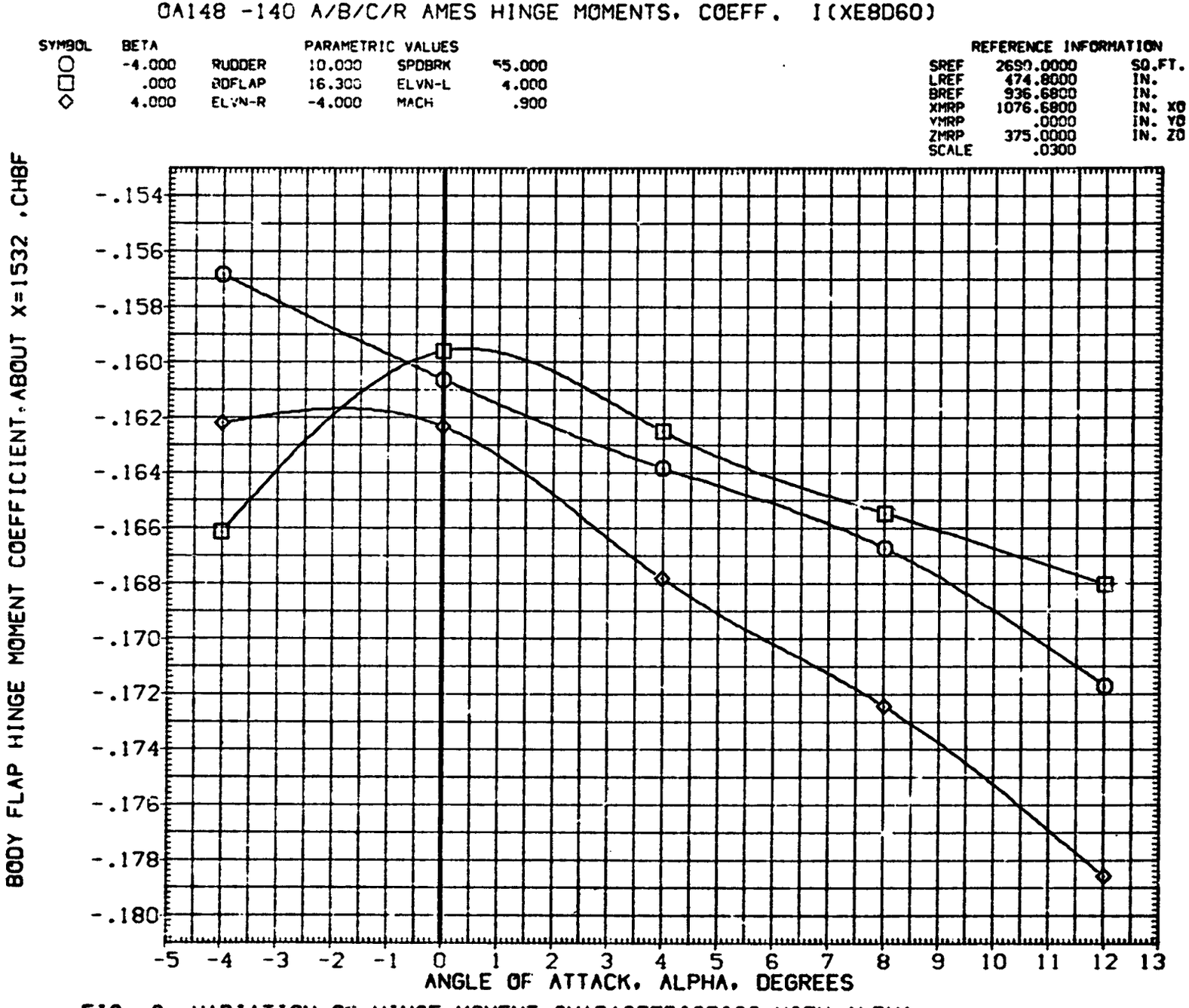


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

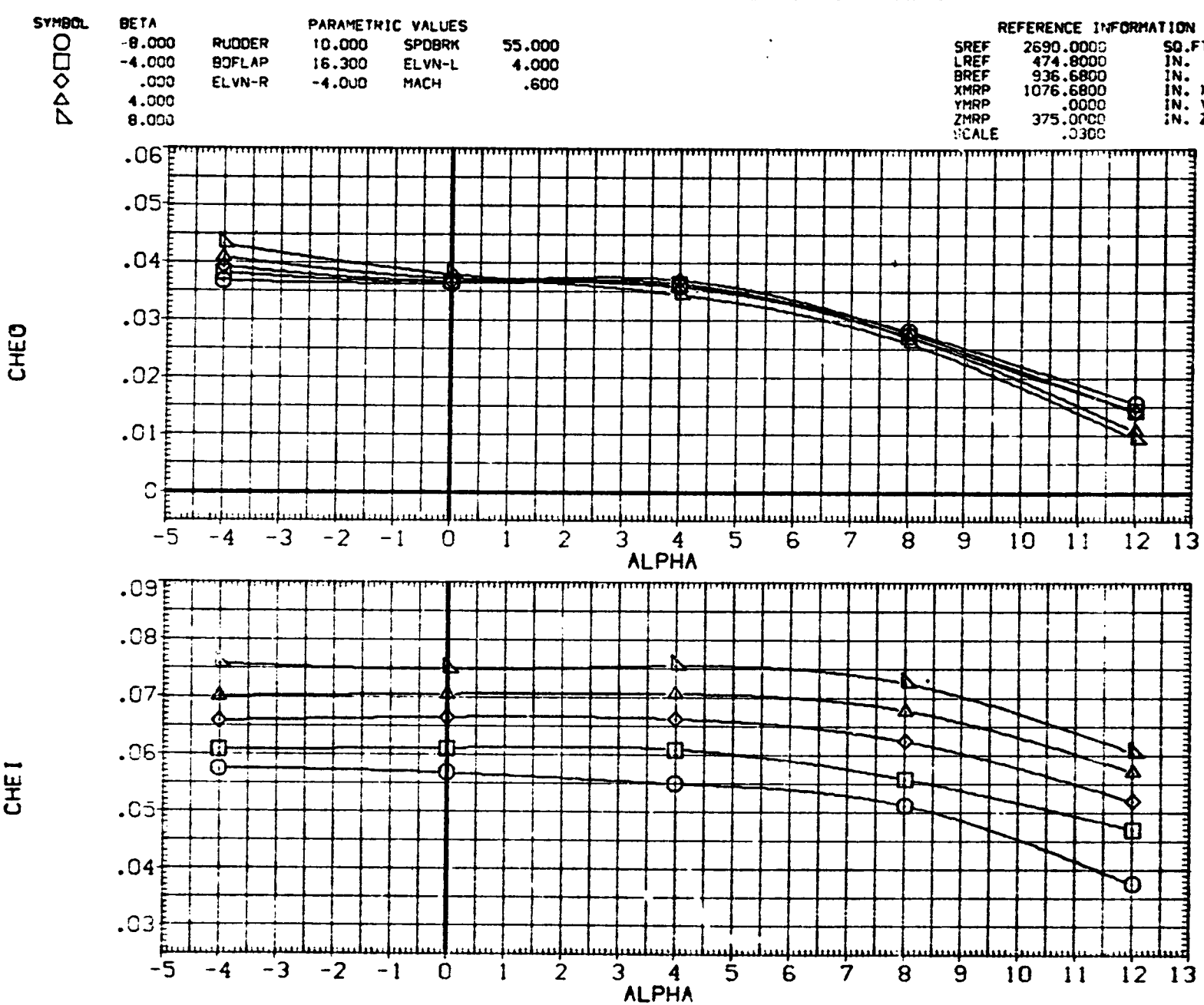


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

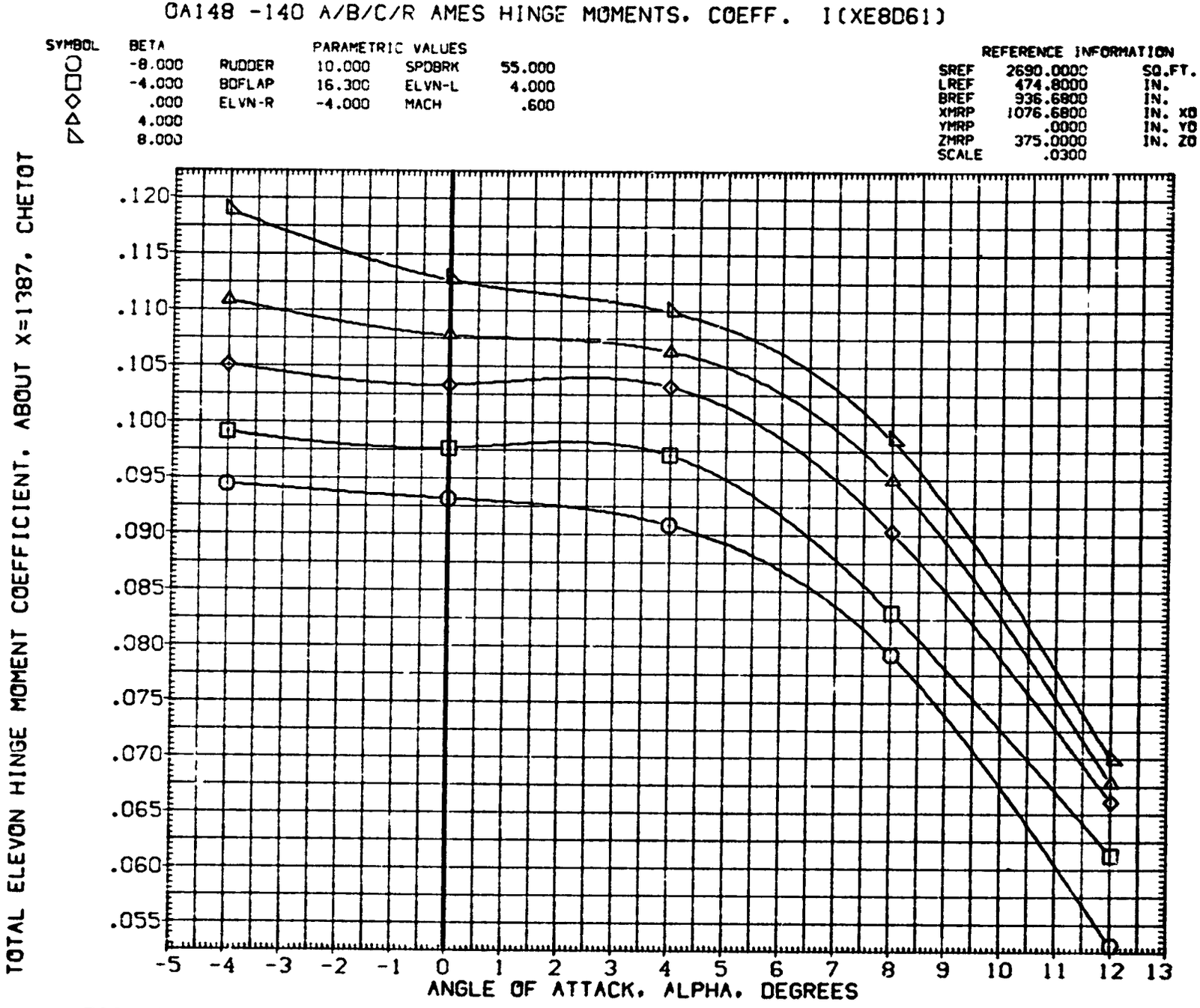


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

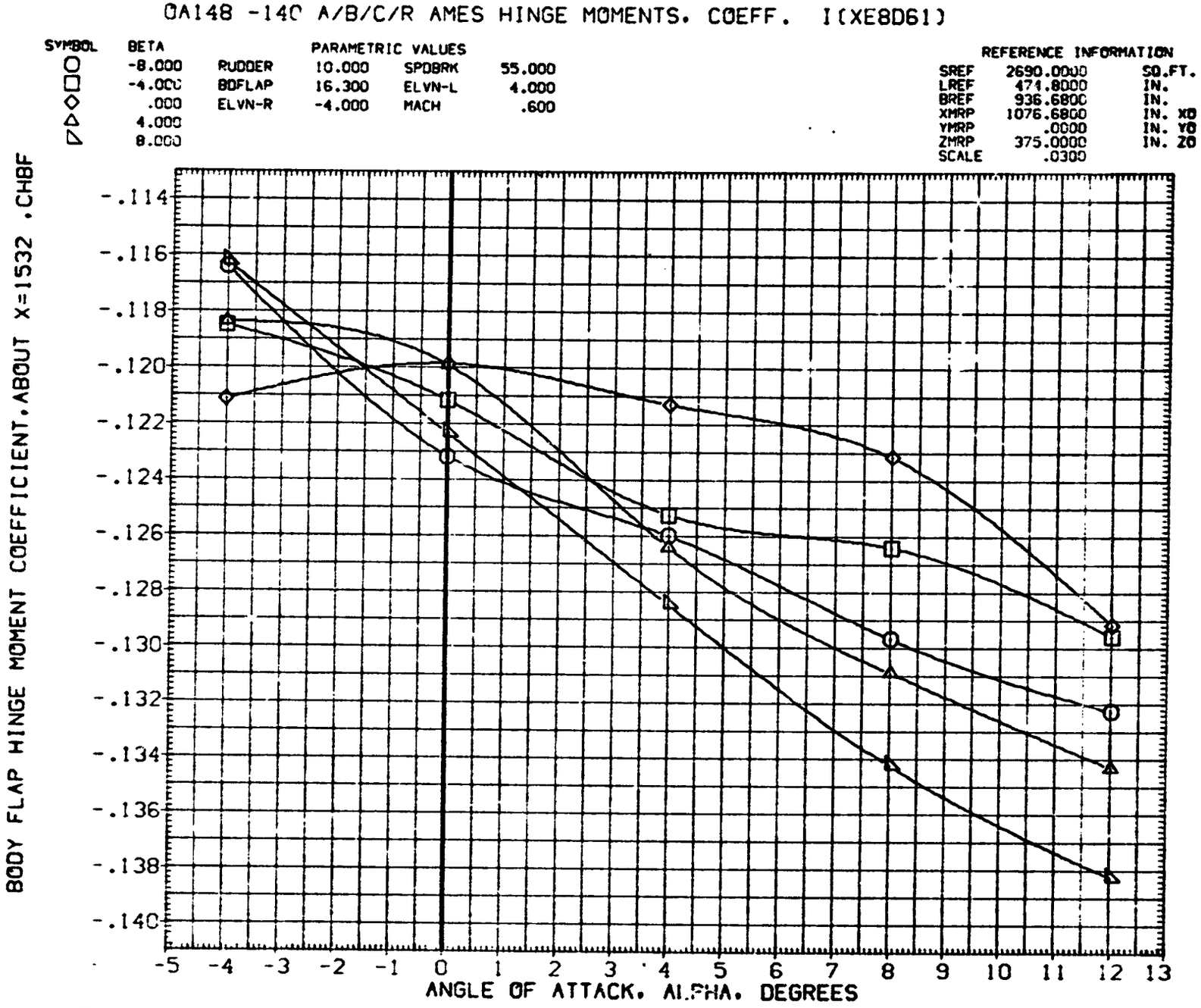


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

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ORIGINAL PAGE IS POOR

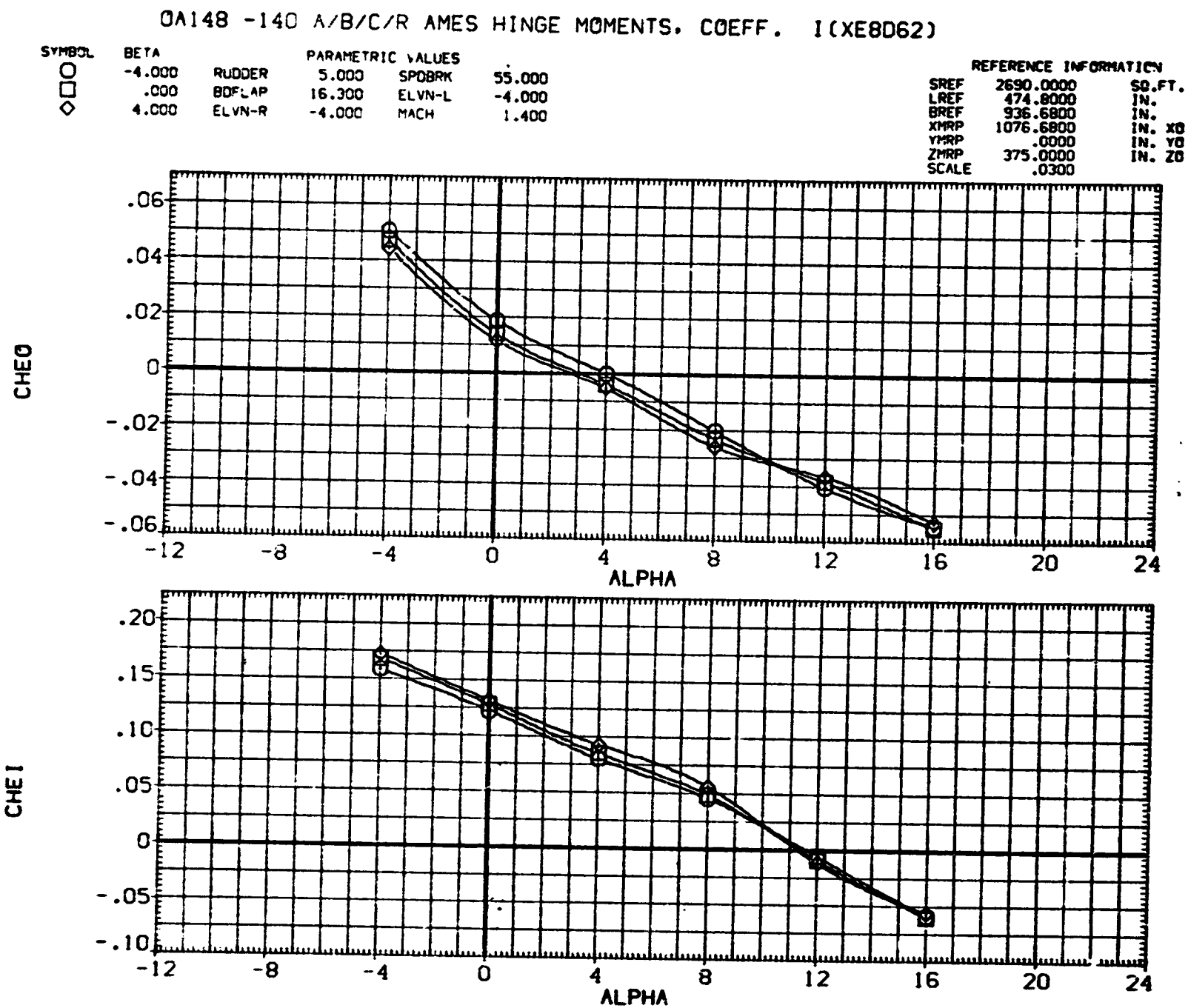


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

GA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D62)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0500	

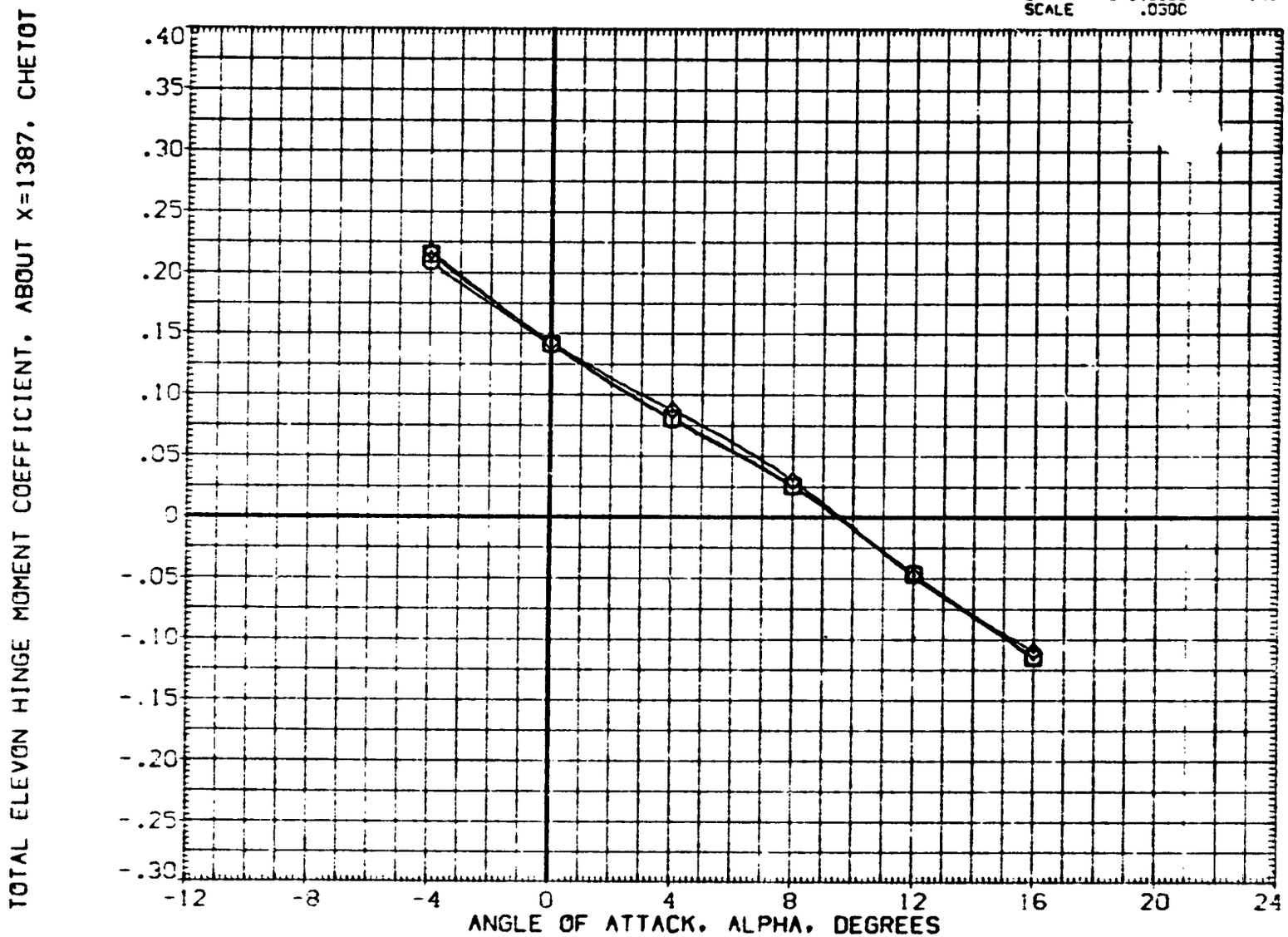


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D62)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPOBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

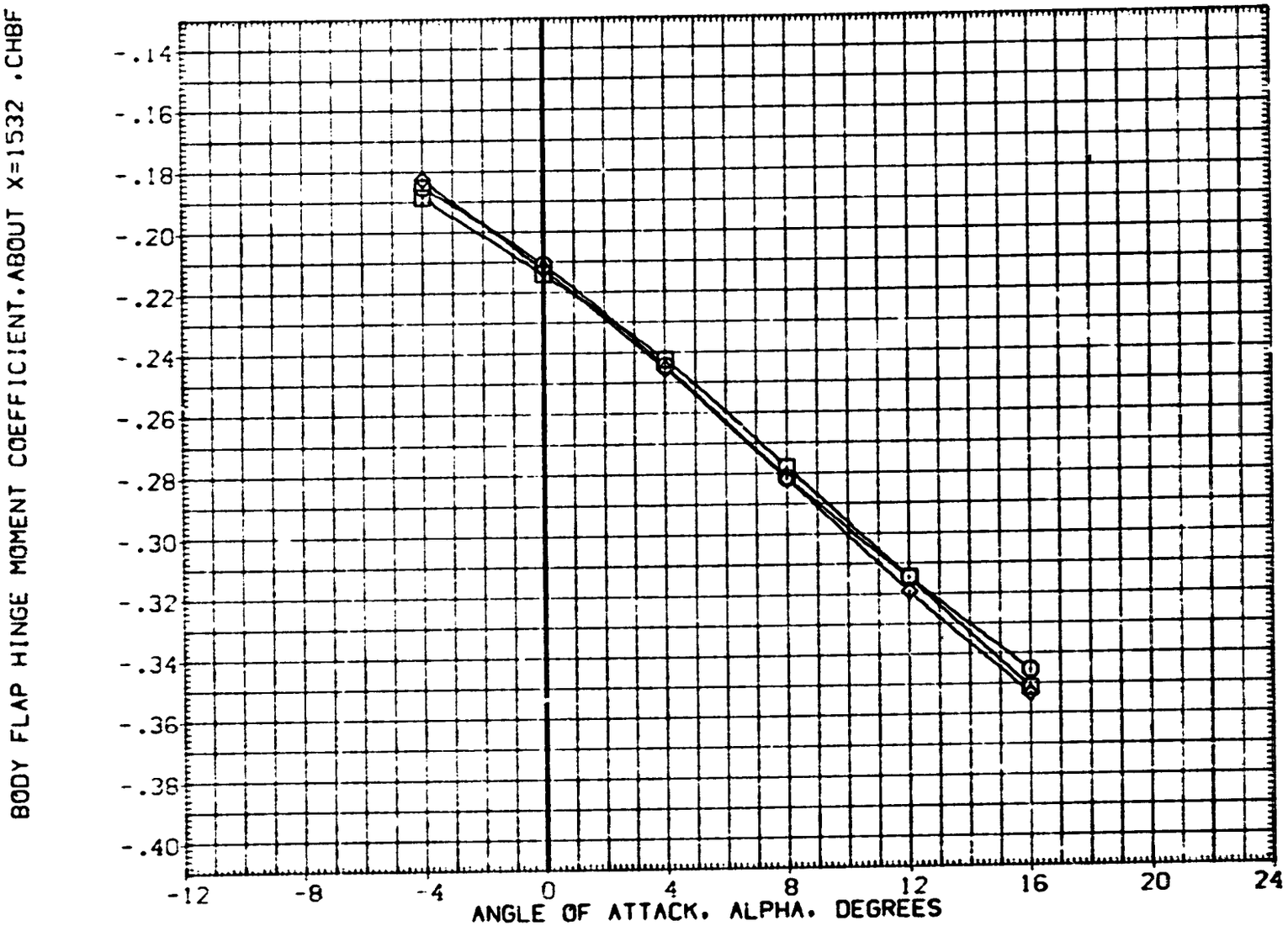


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

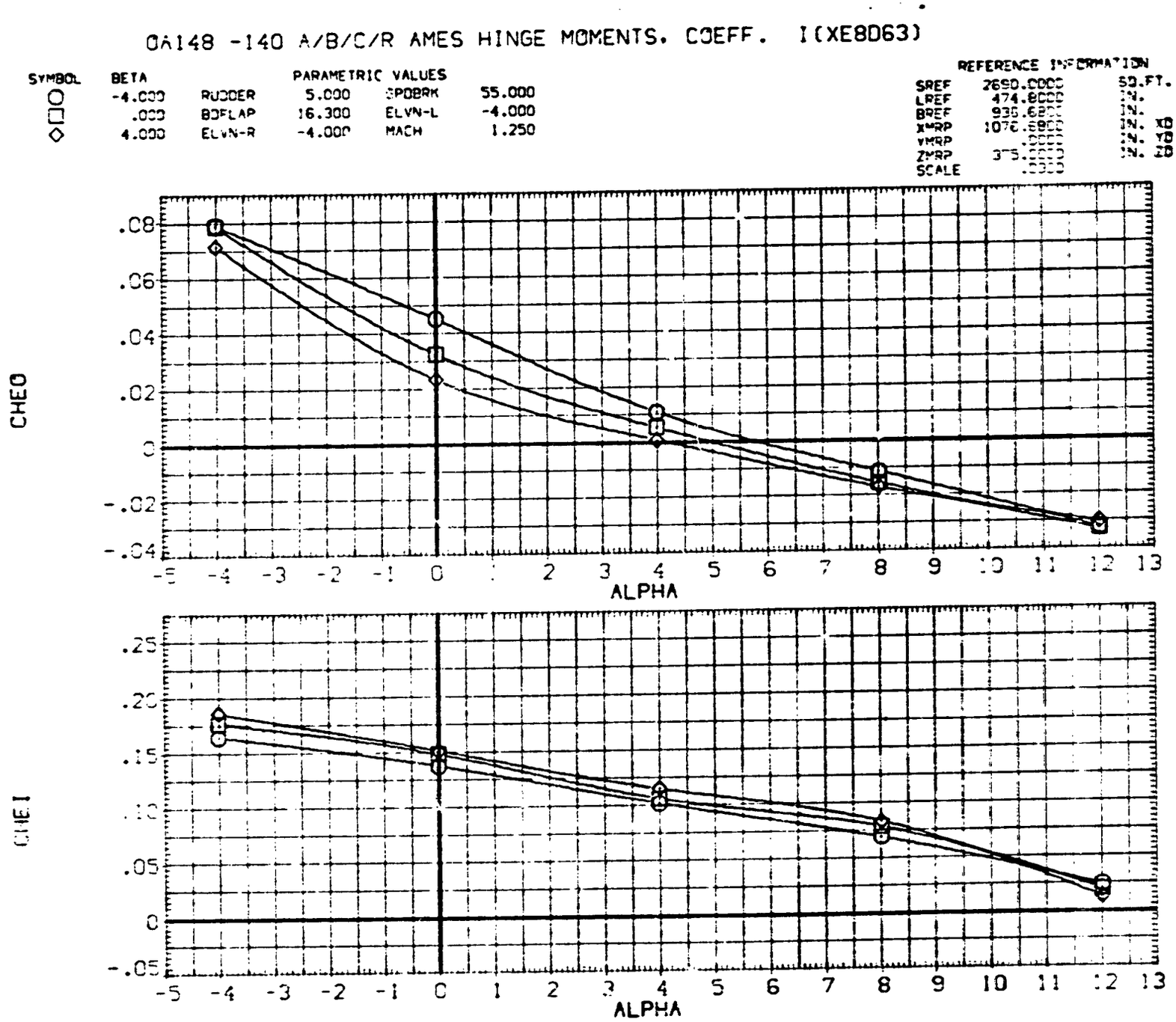


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D63)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

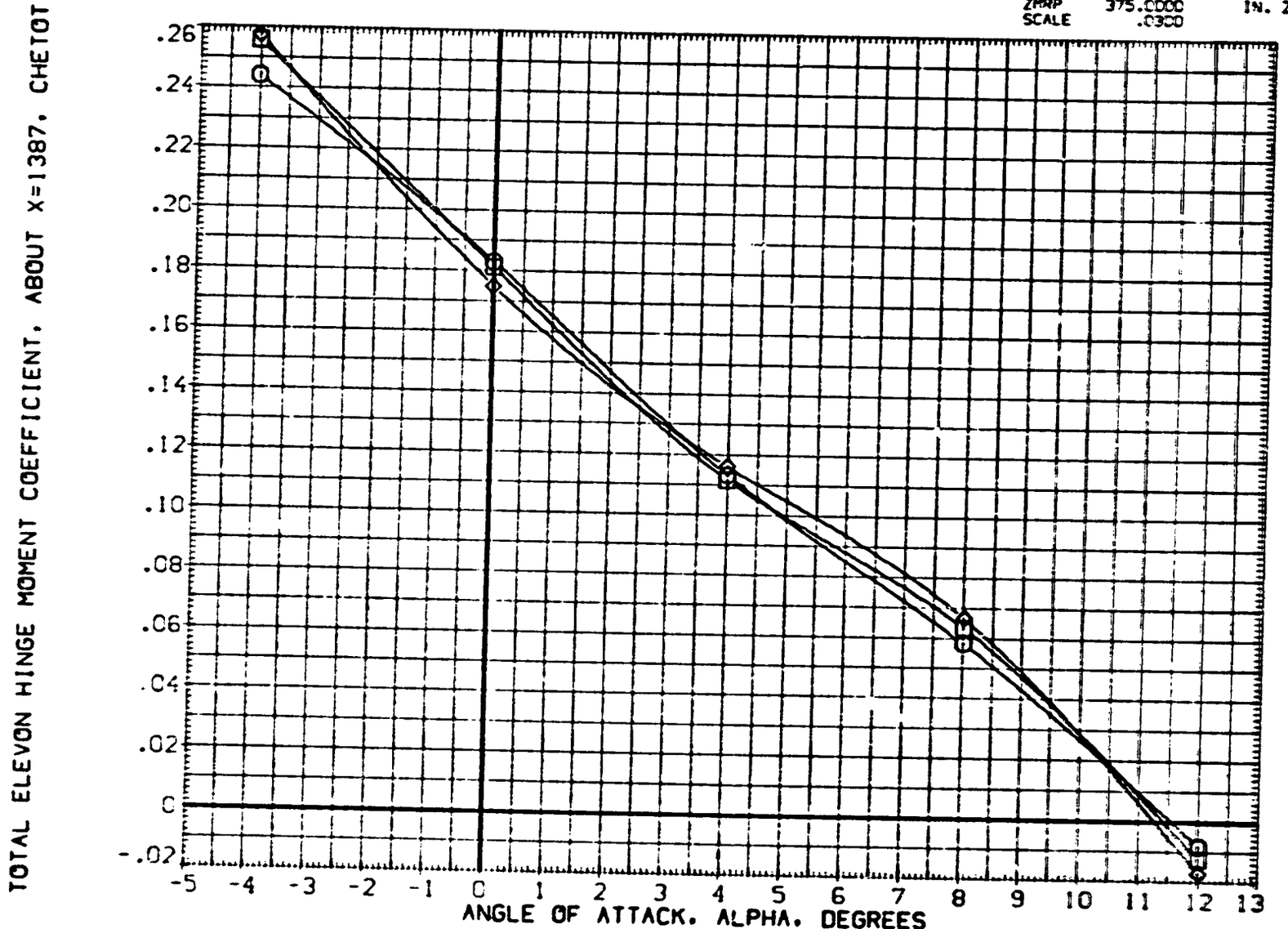


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

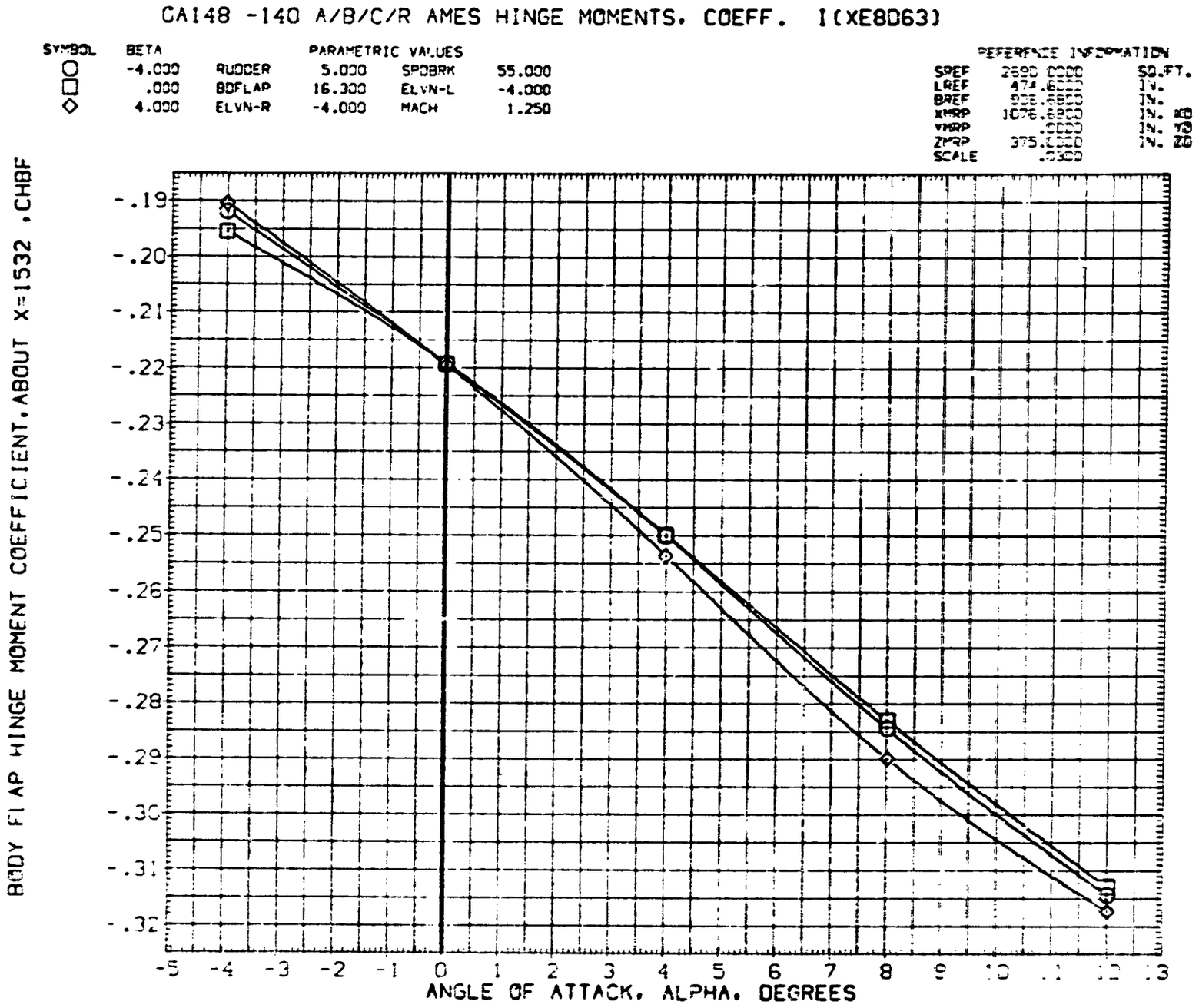


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

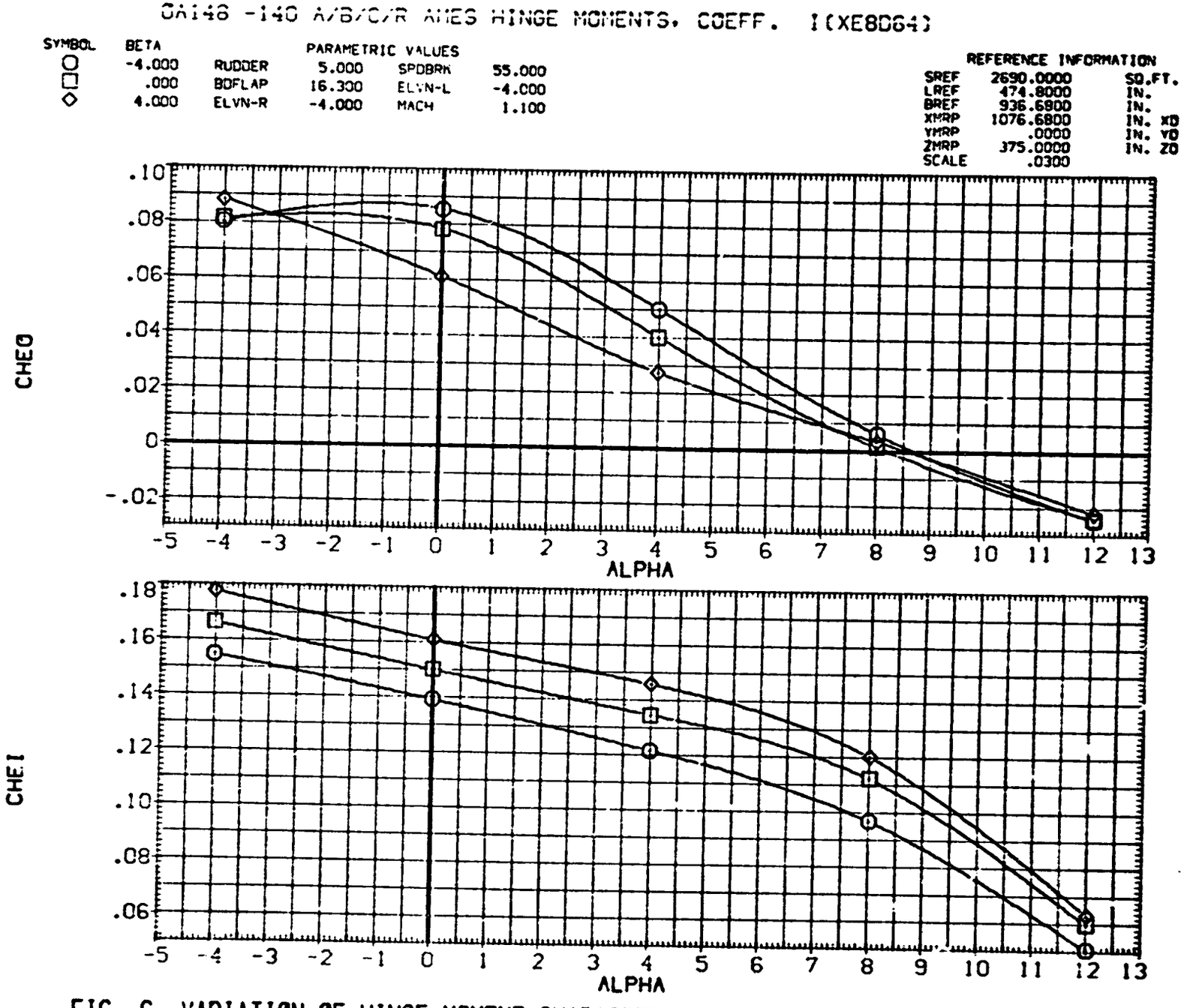


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPOBFR	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

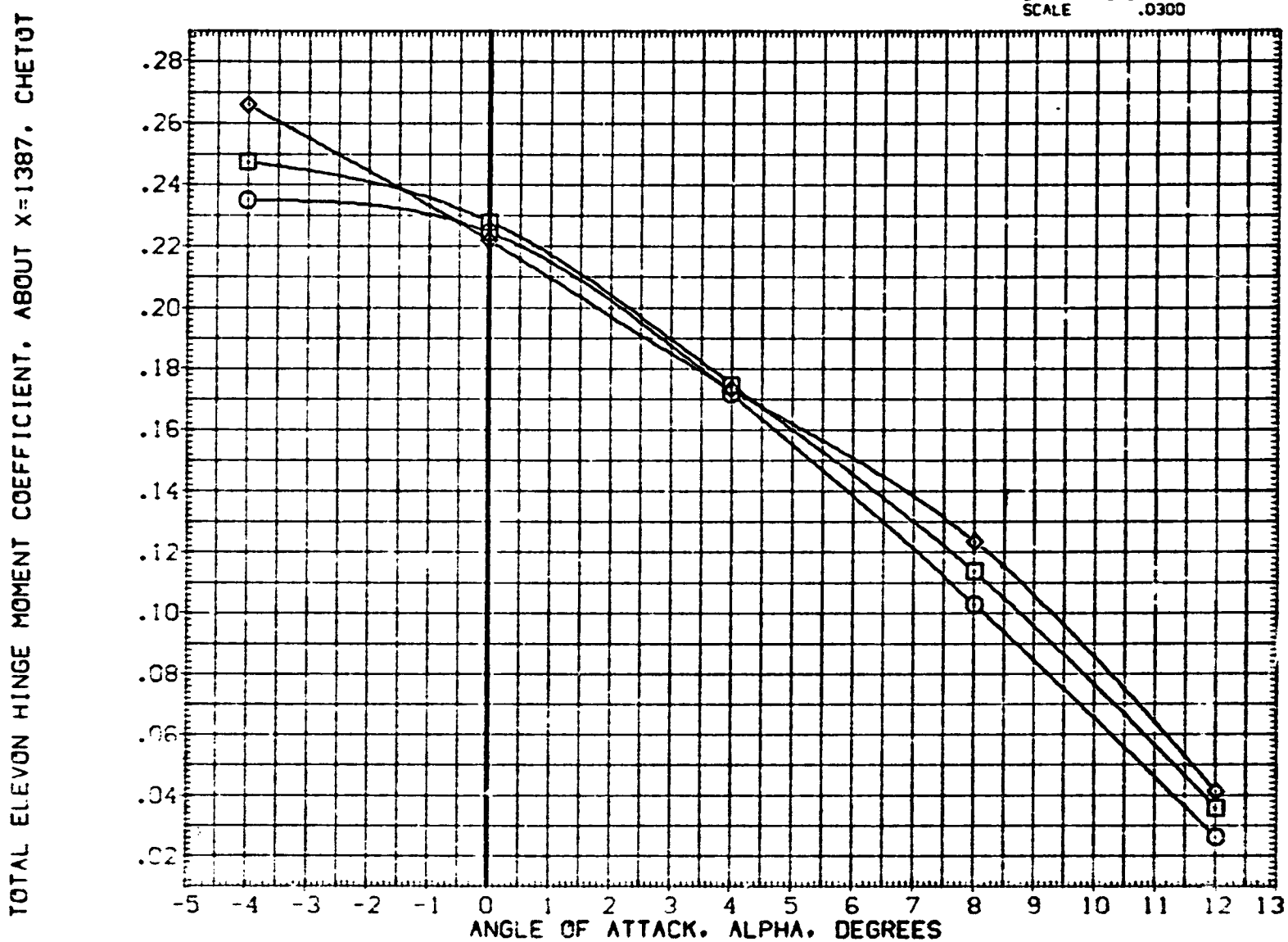


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

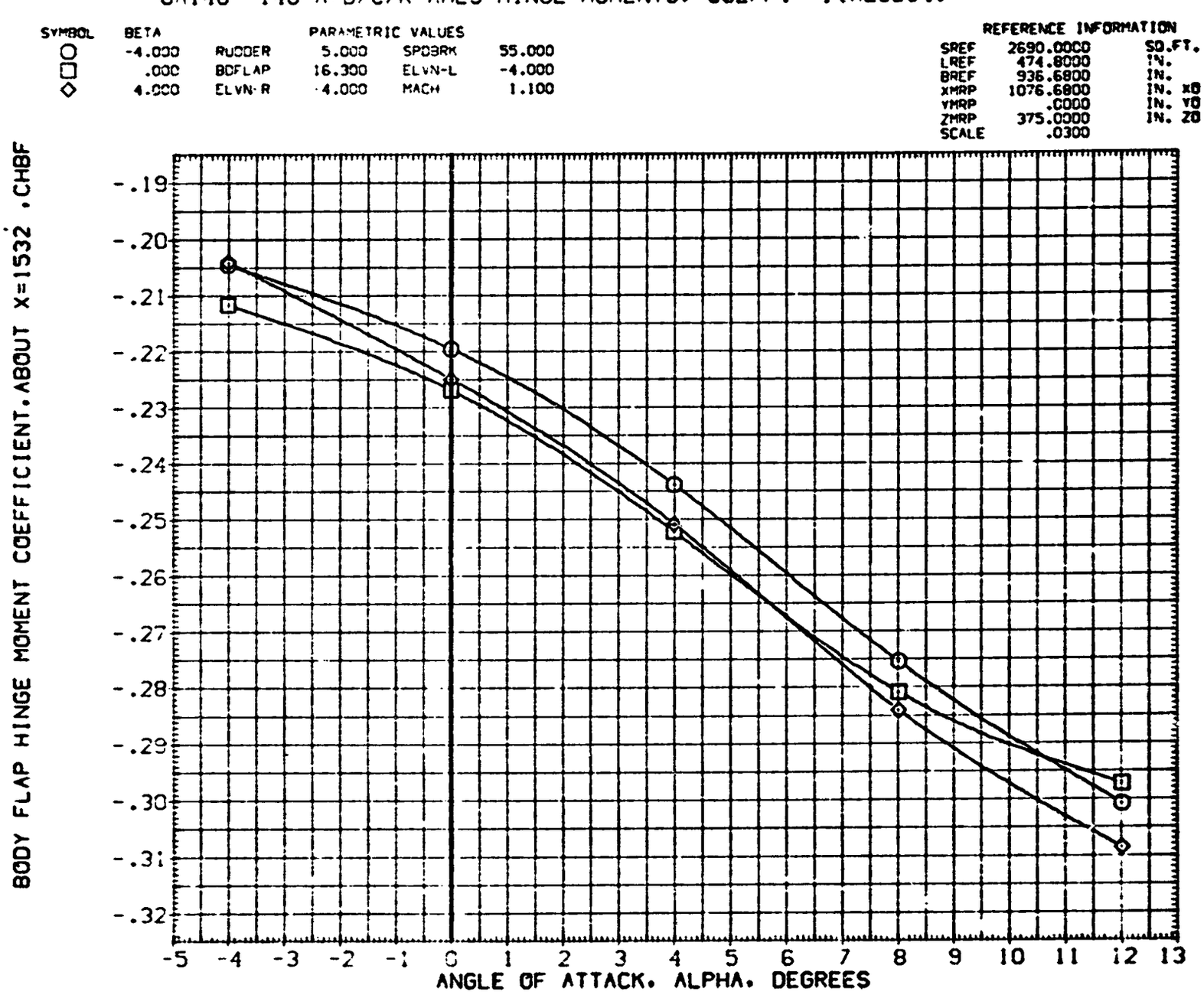


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D65)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

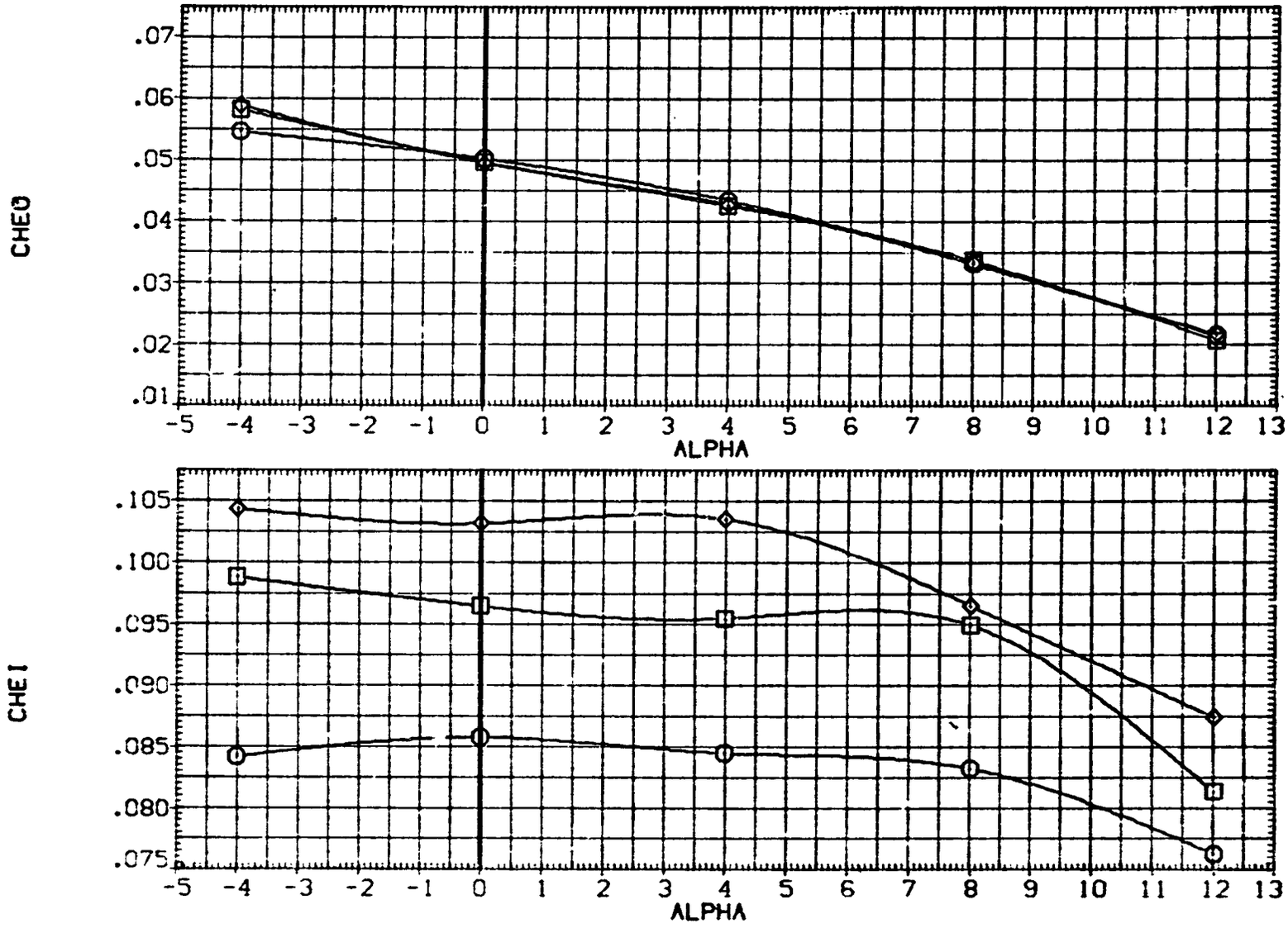


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

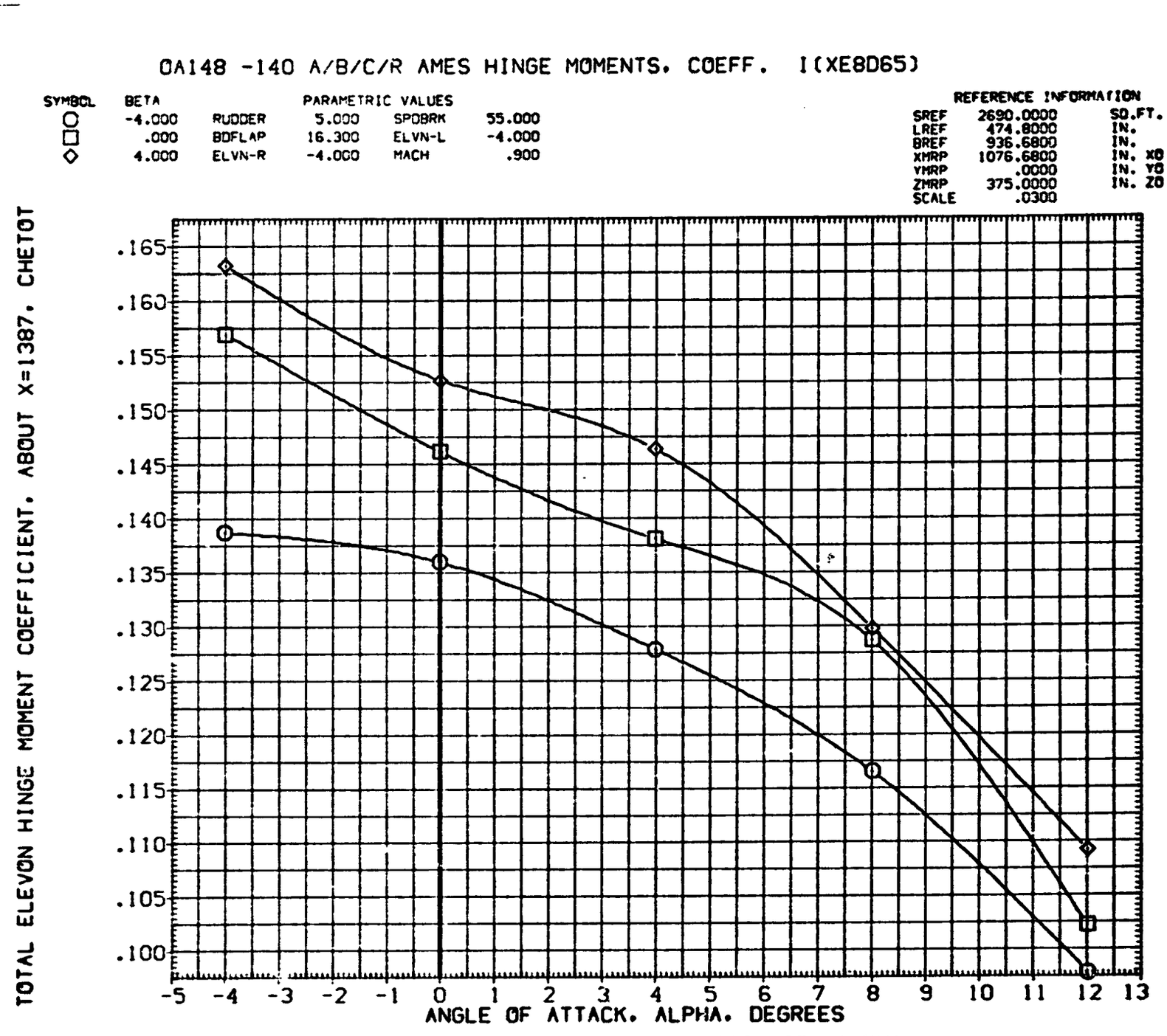


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS. COEFF. I(XE8D65)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

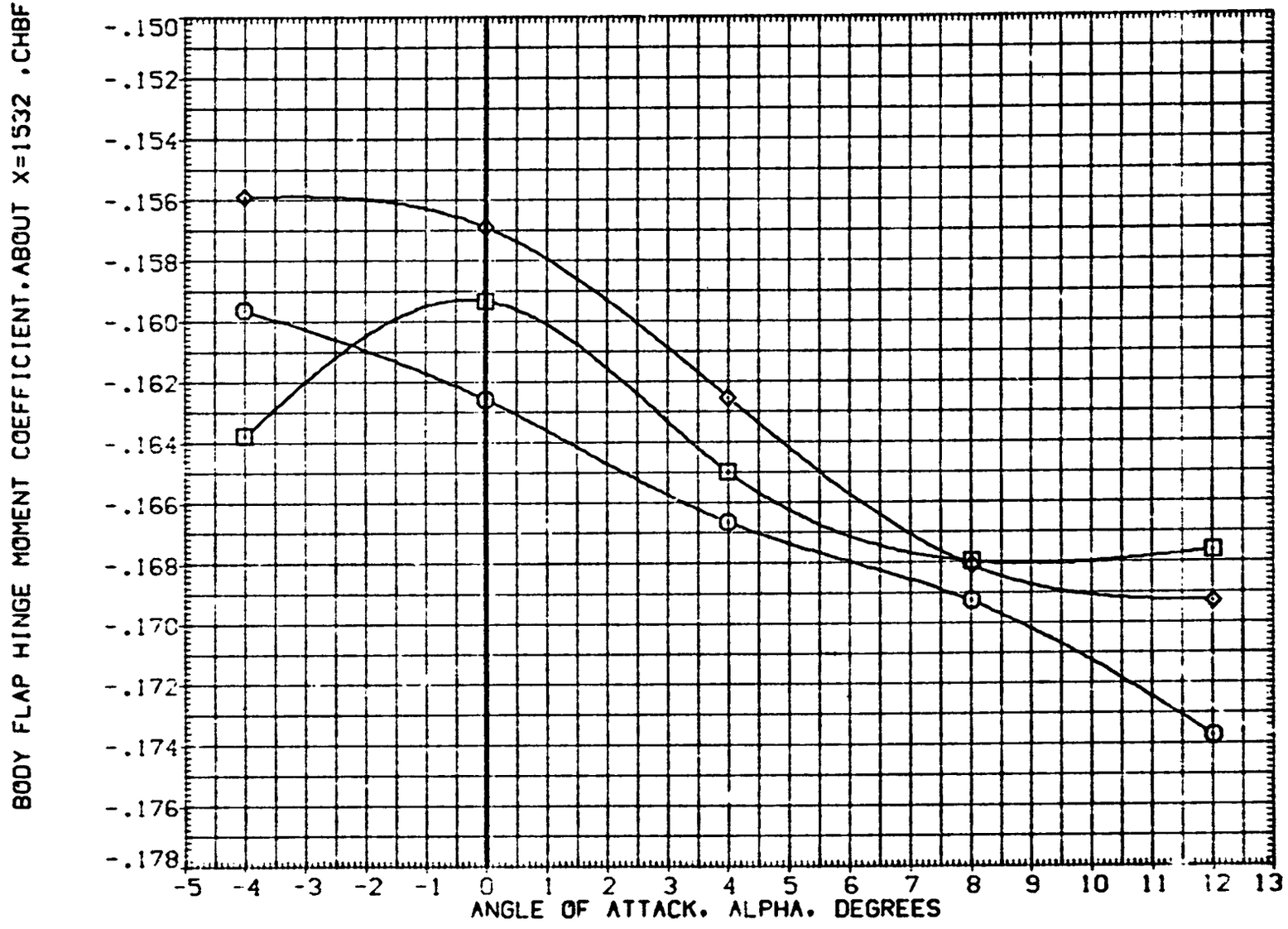


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

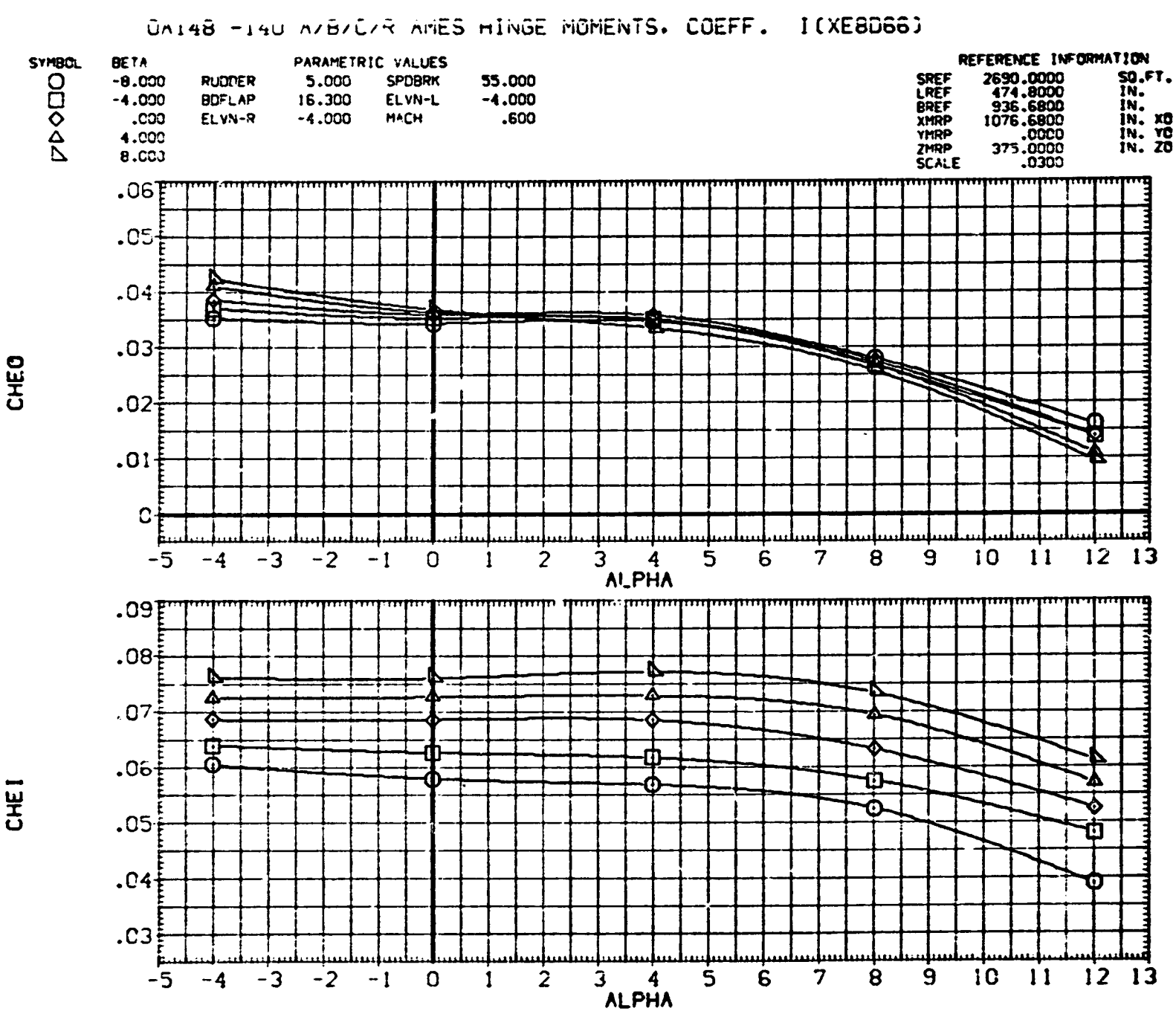


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

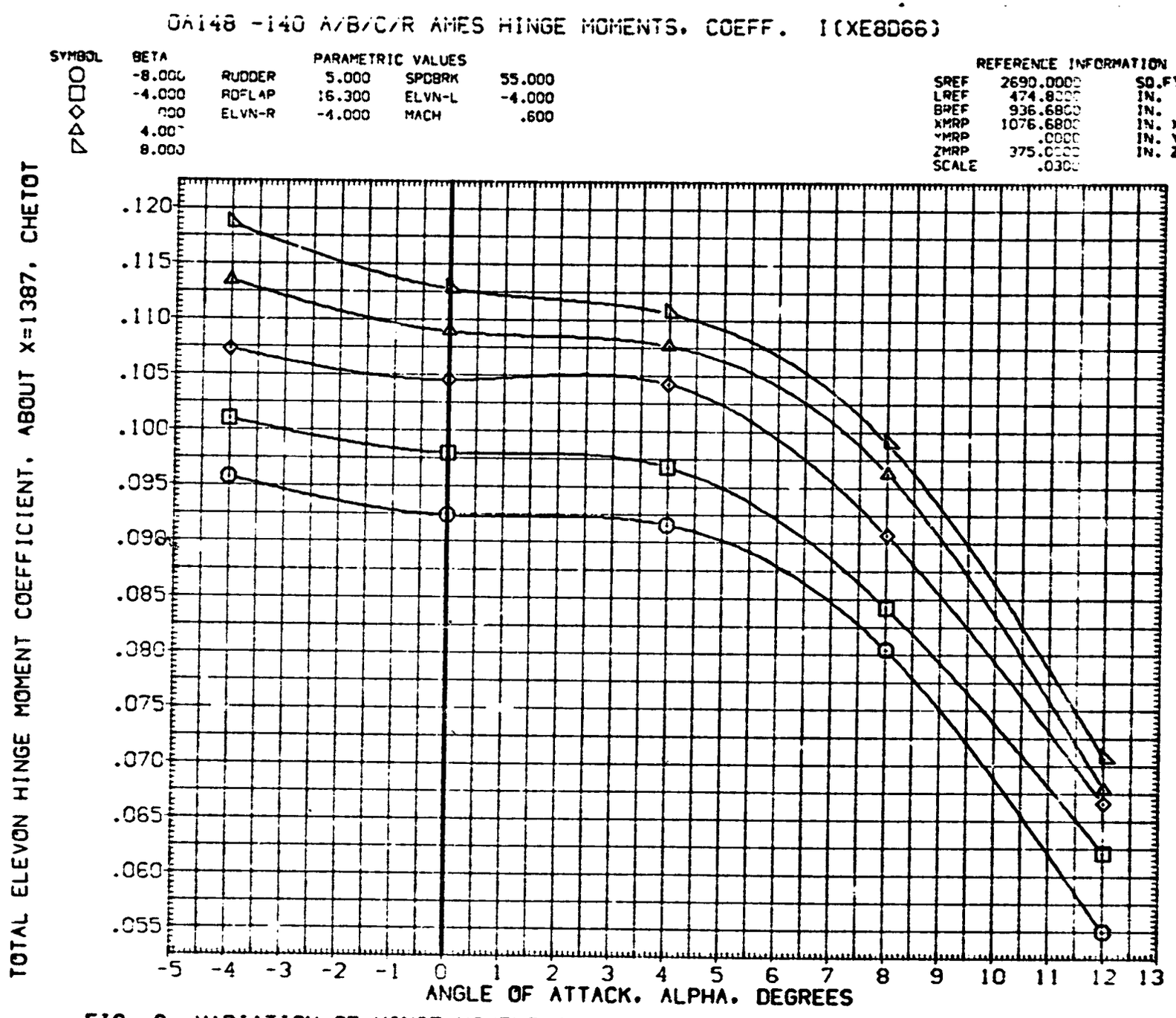


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

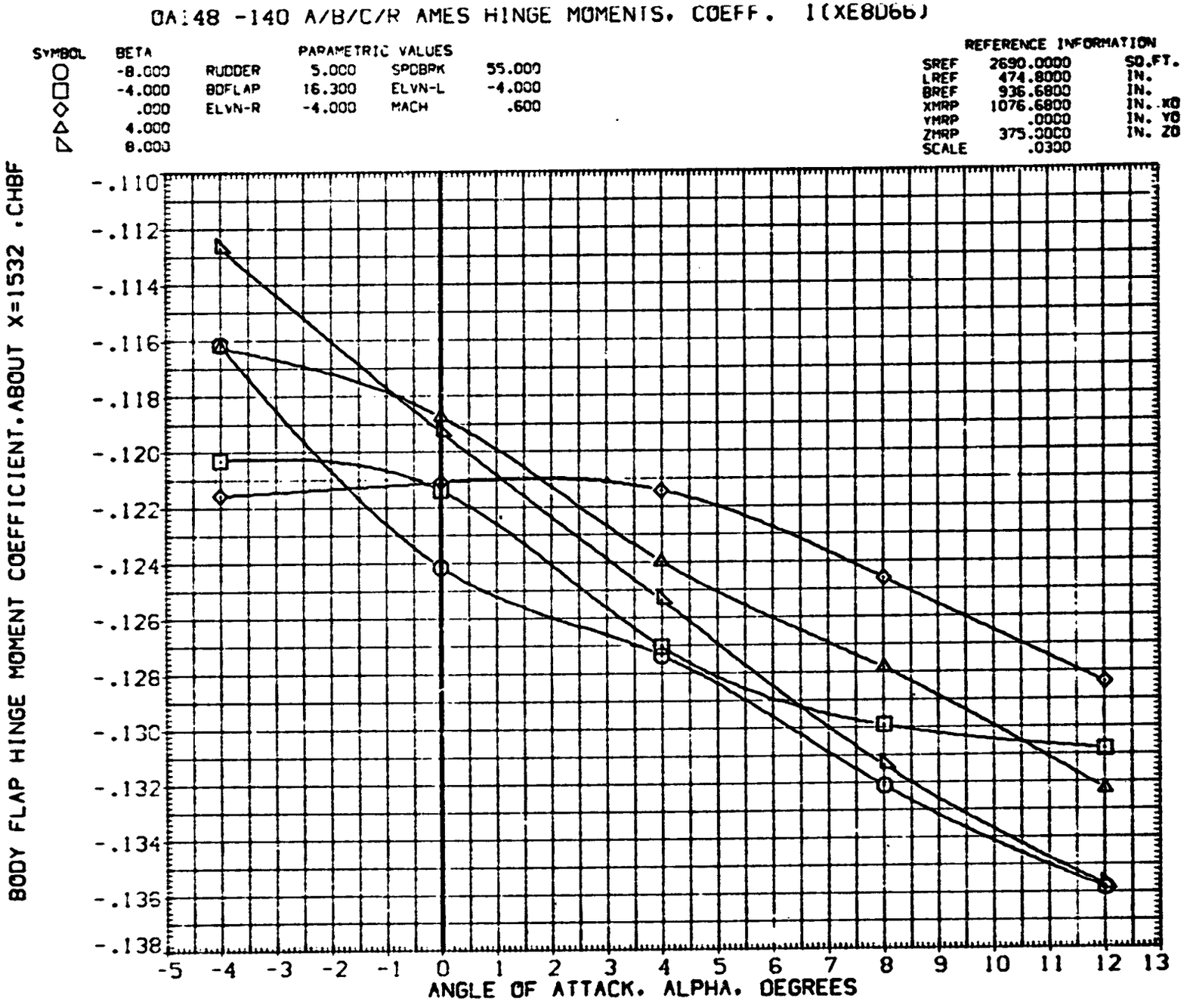


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	-4.000
◇	4.000	ELVN-R	-4.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

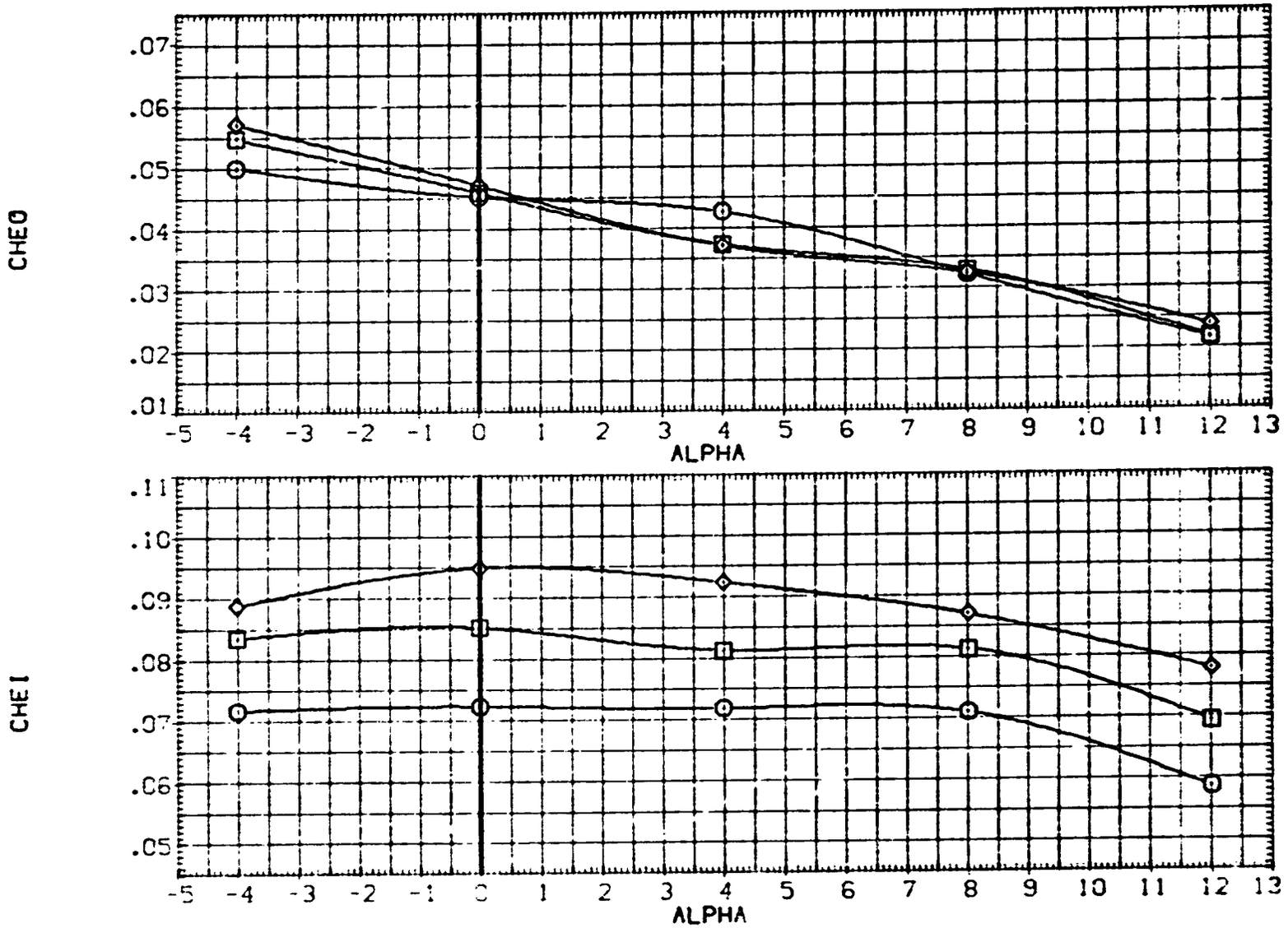


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

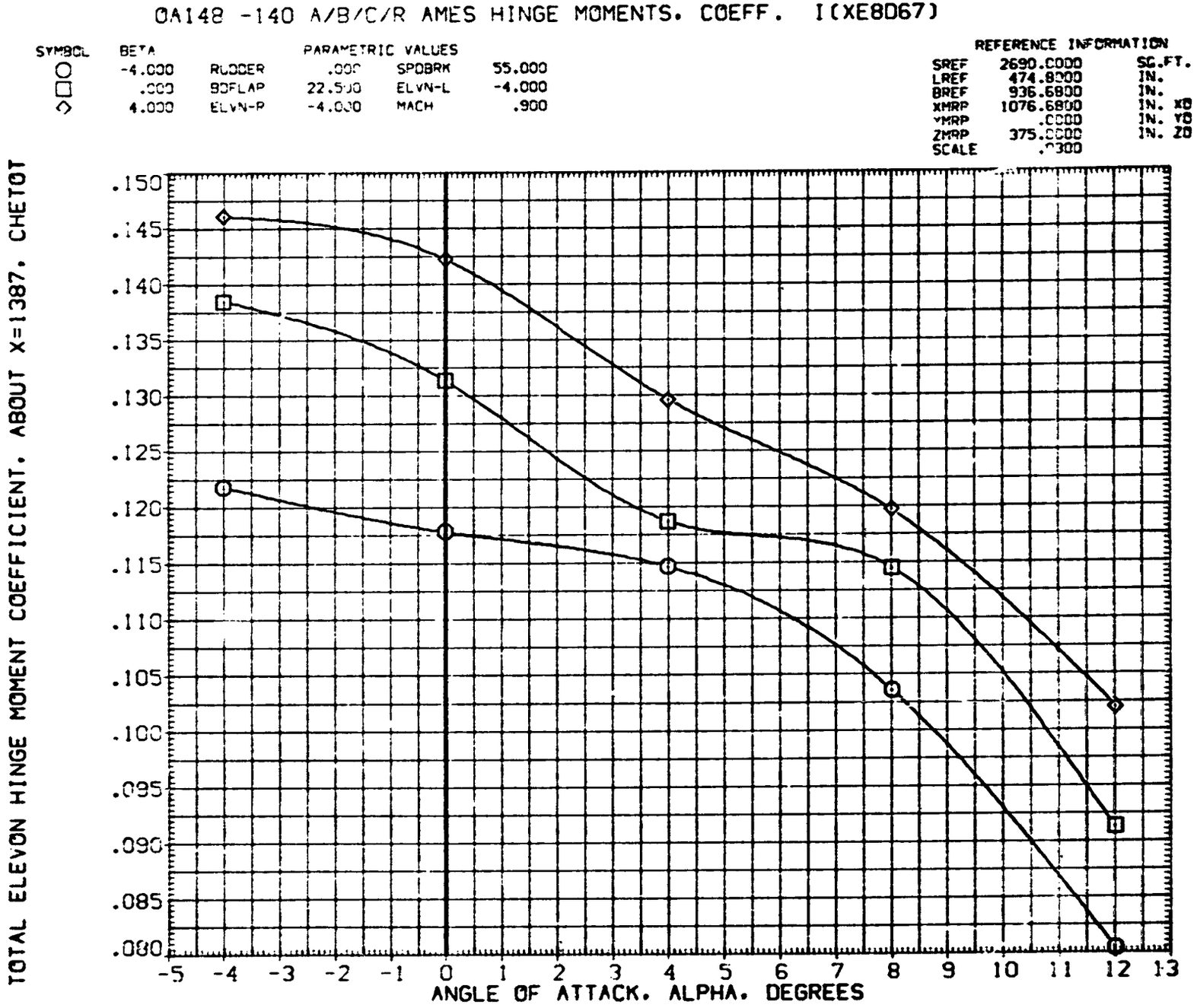


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

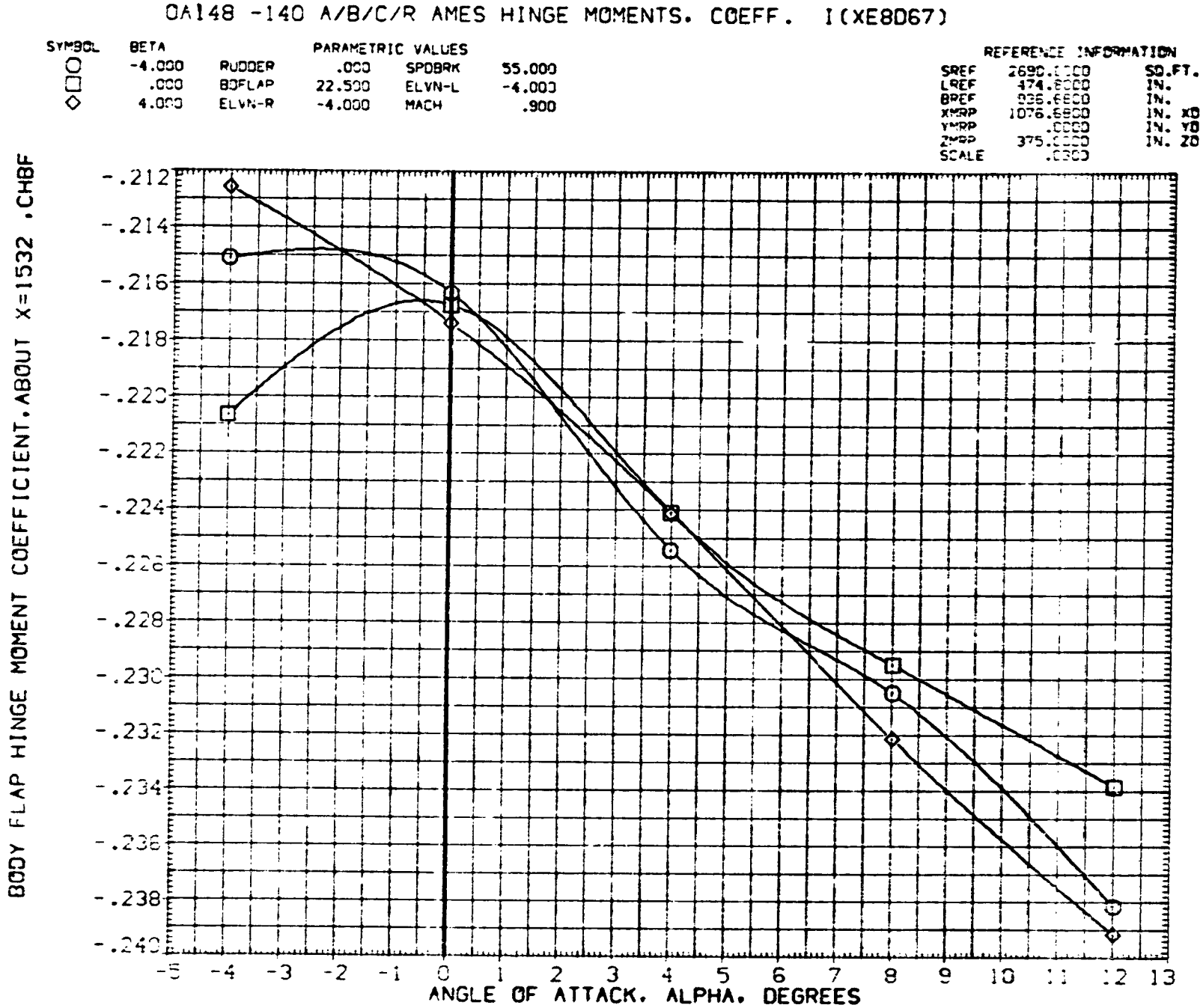


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

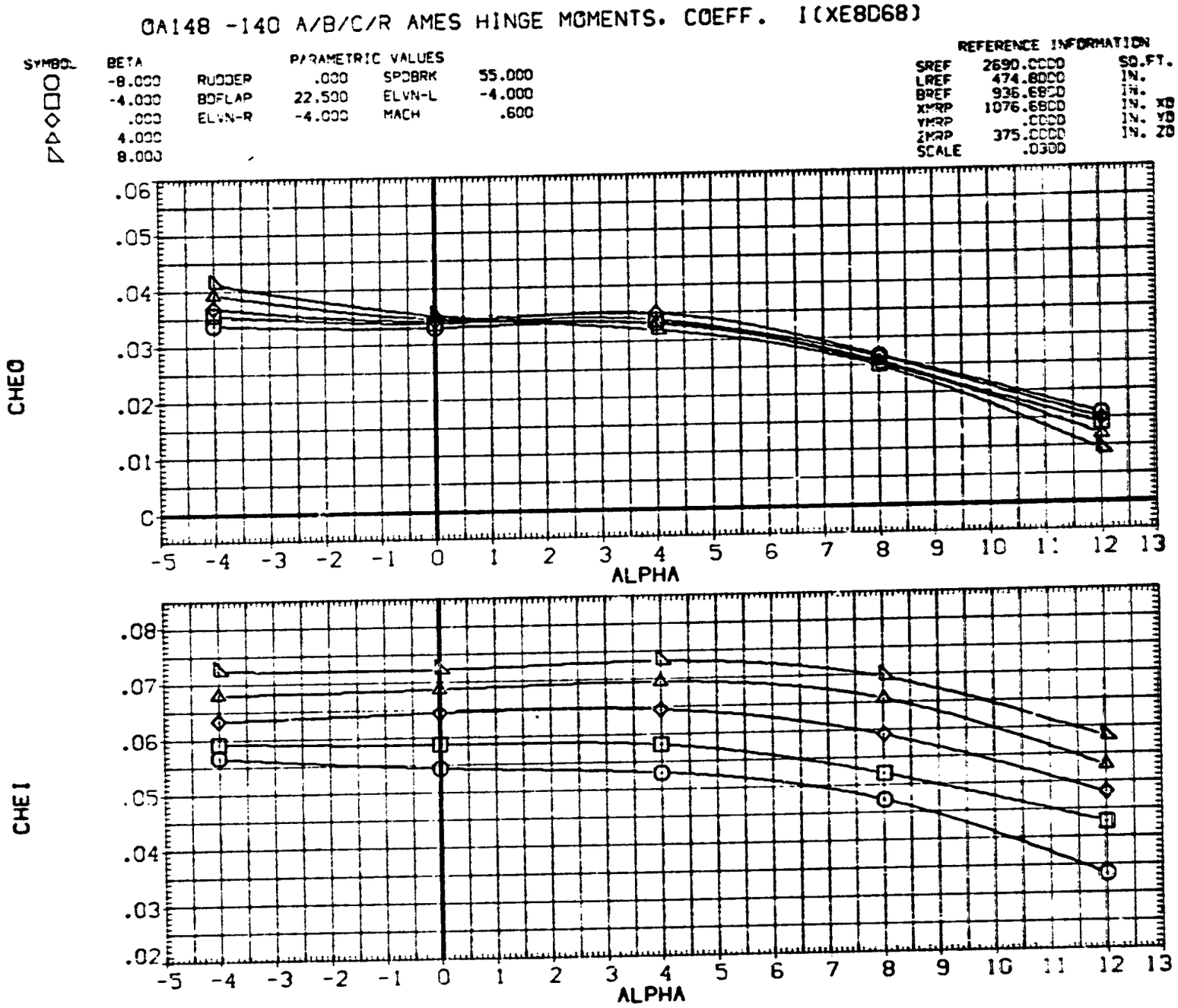


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C/R AMES HINGE MOMENTS, COEFF. I(XE8D68)

SYMBOL	BETA
▽	-8.000
▷	-4.000
◇	.000
□	4.000
○	8.000

PARAMETRIC VALUES

RUDDER	.000	SPDBRK	55.000
BDFLAP	22.500	ELVN-L	-4.000
ELVN-R	-4.000	MACH	.600

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	326.3000	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0000	

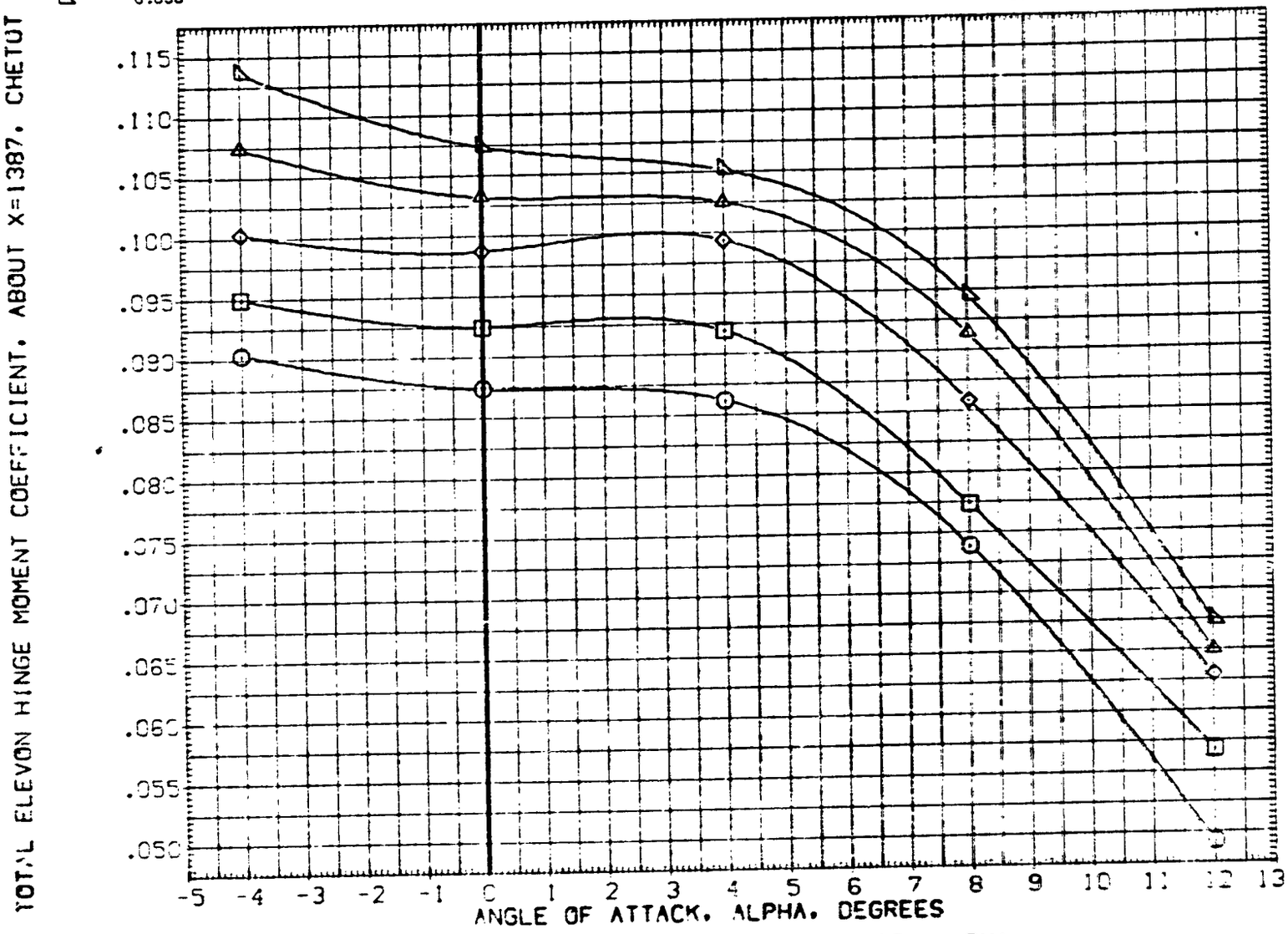


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

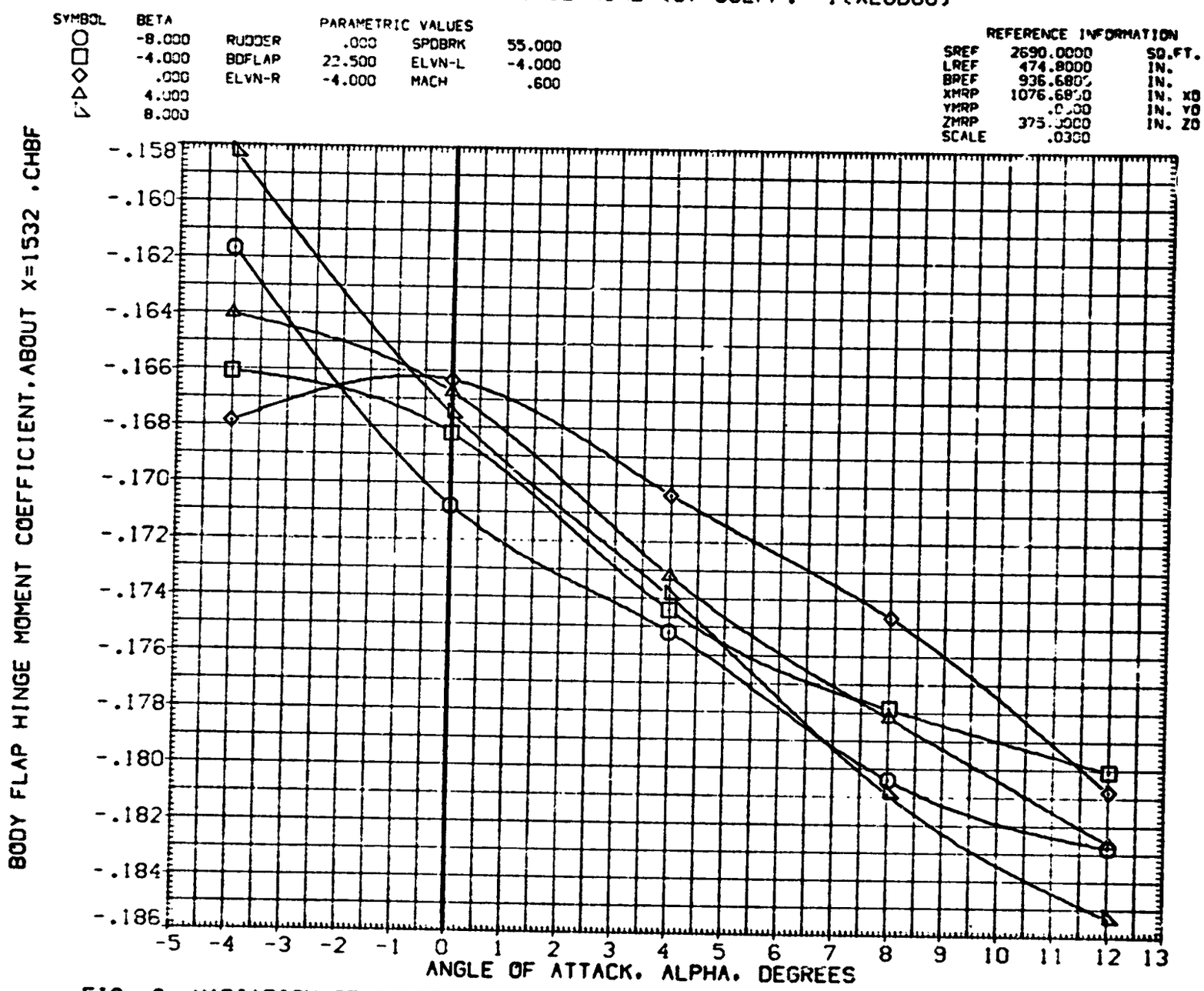


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D69)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPOBRK	55.000
□	.000	BOFLAP	22.500	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

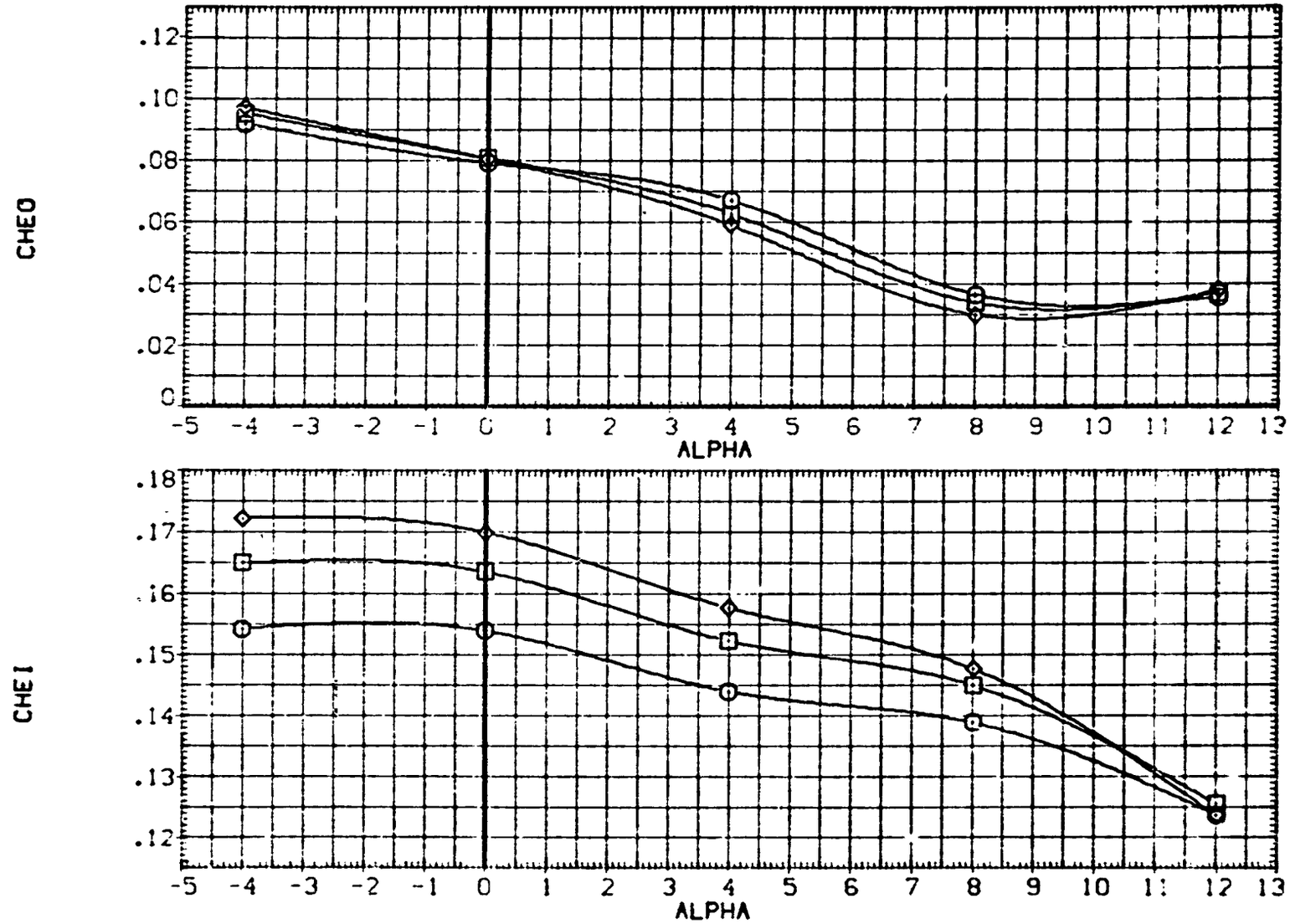


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8069)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	.000	SPDBRK	55.000
□	.000	BDFLAP	22.500	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

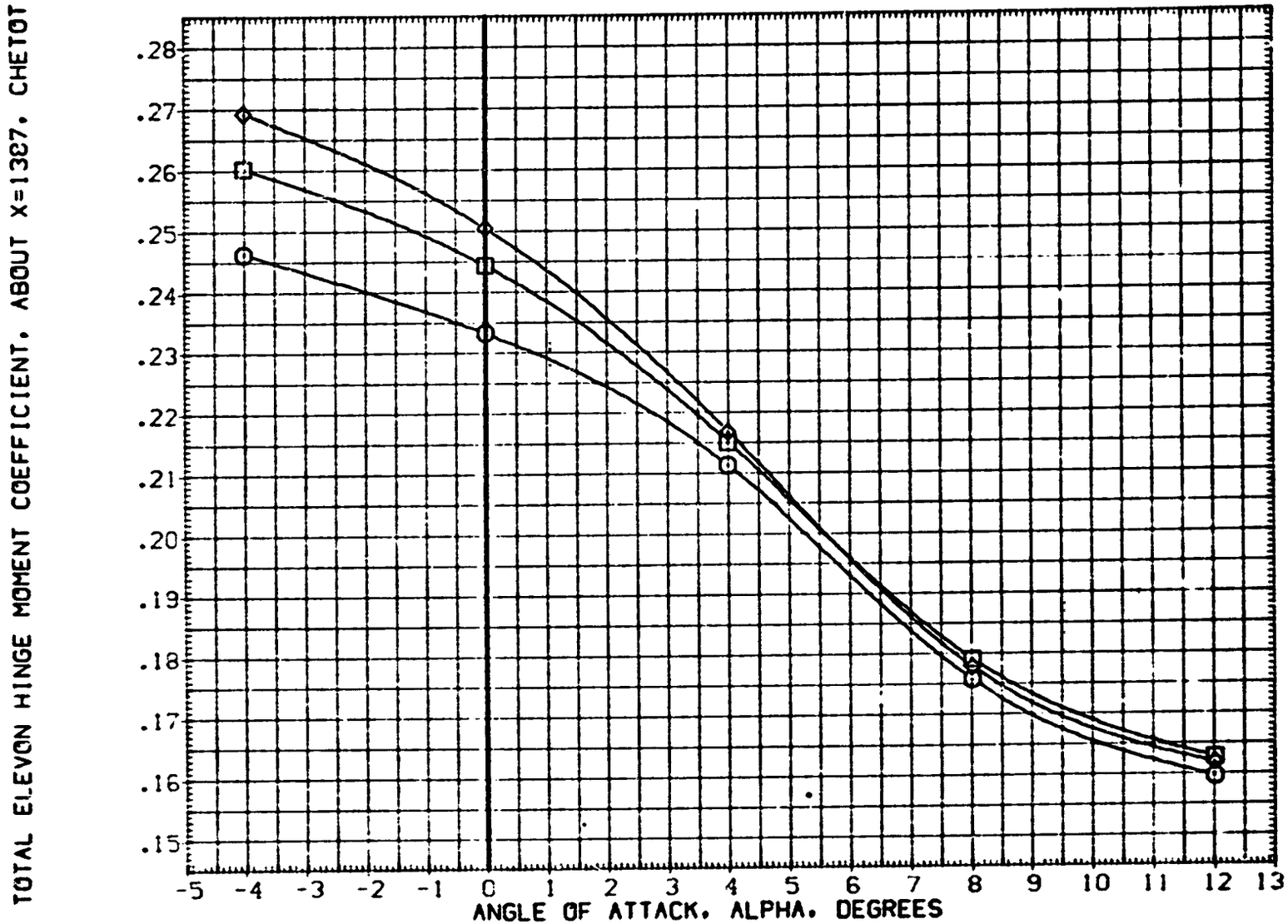


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

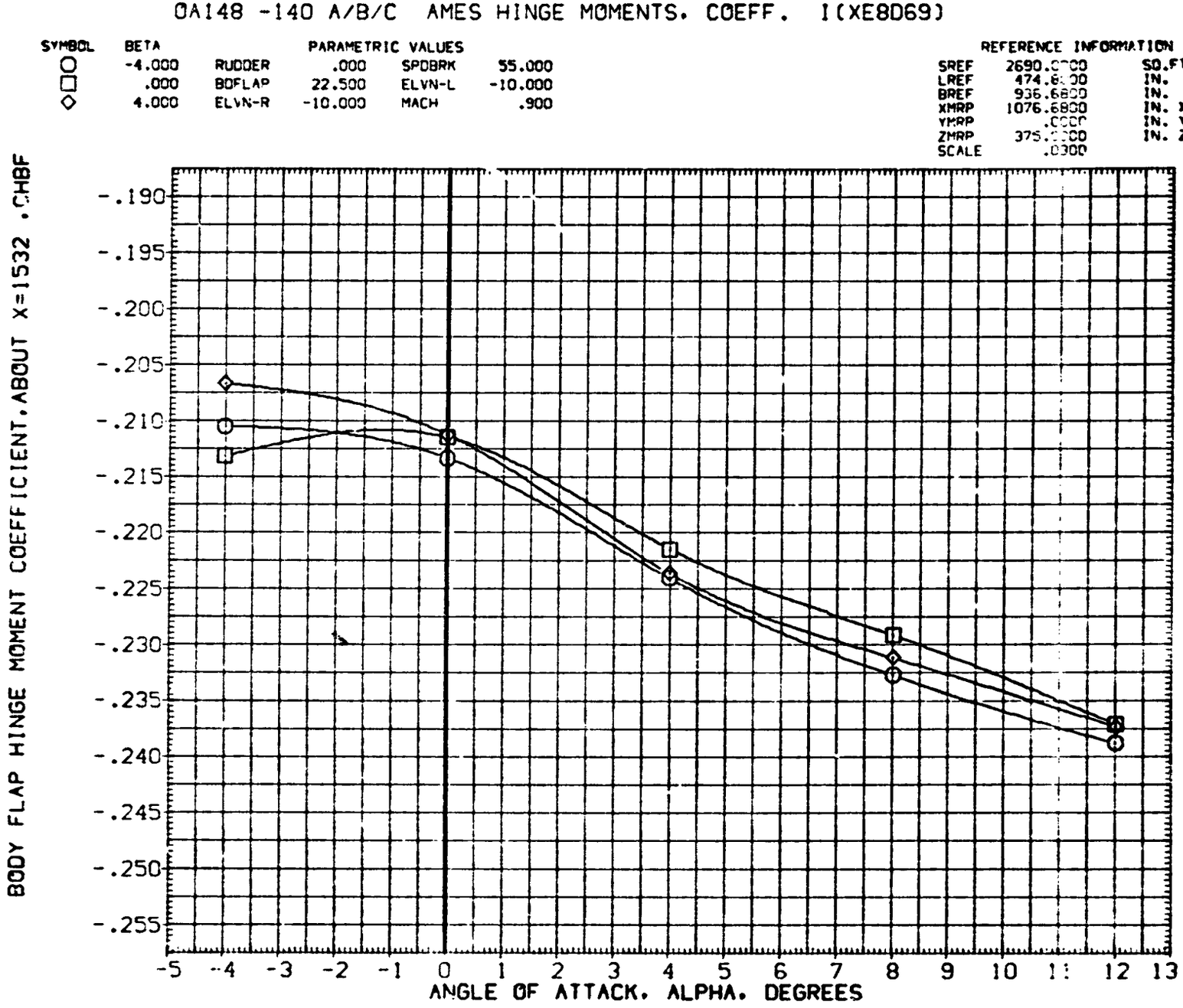


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

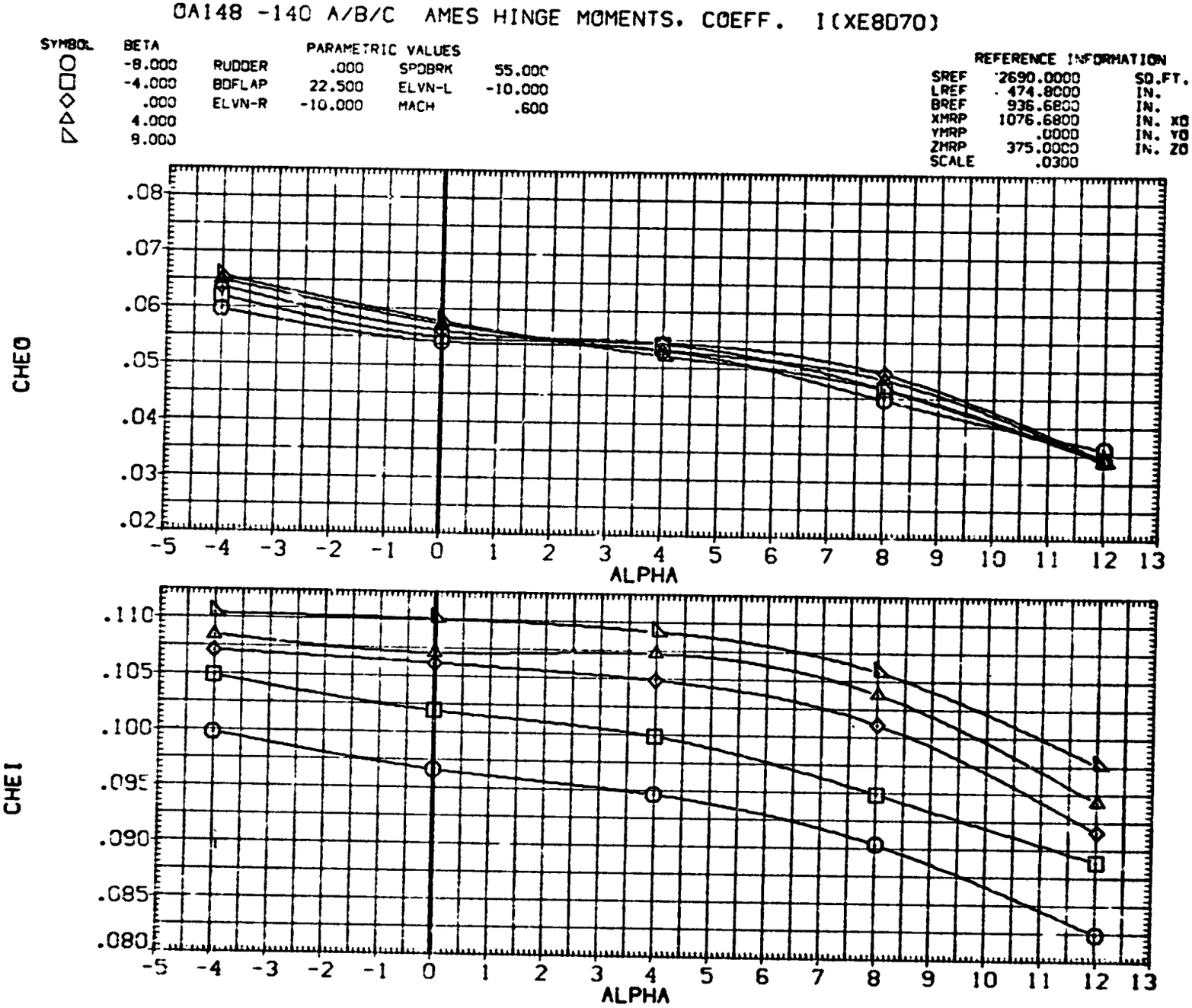


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

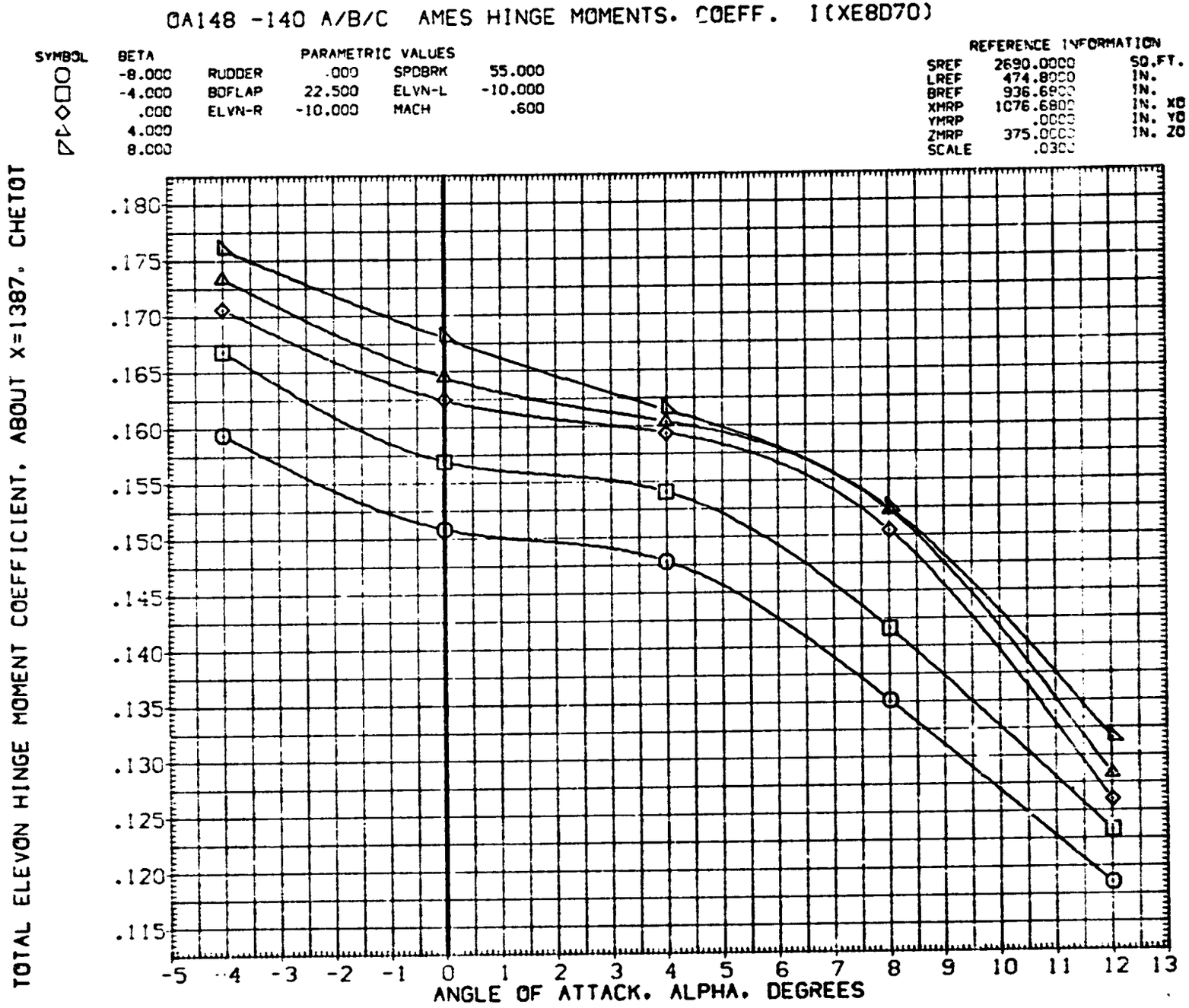


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

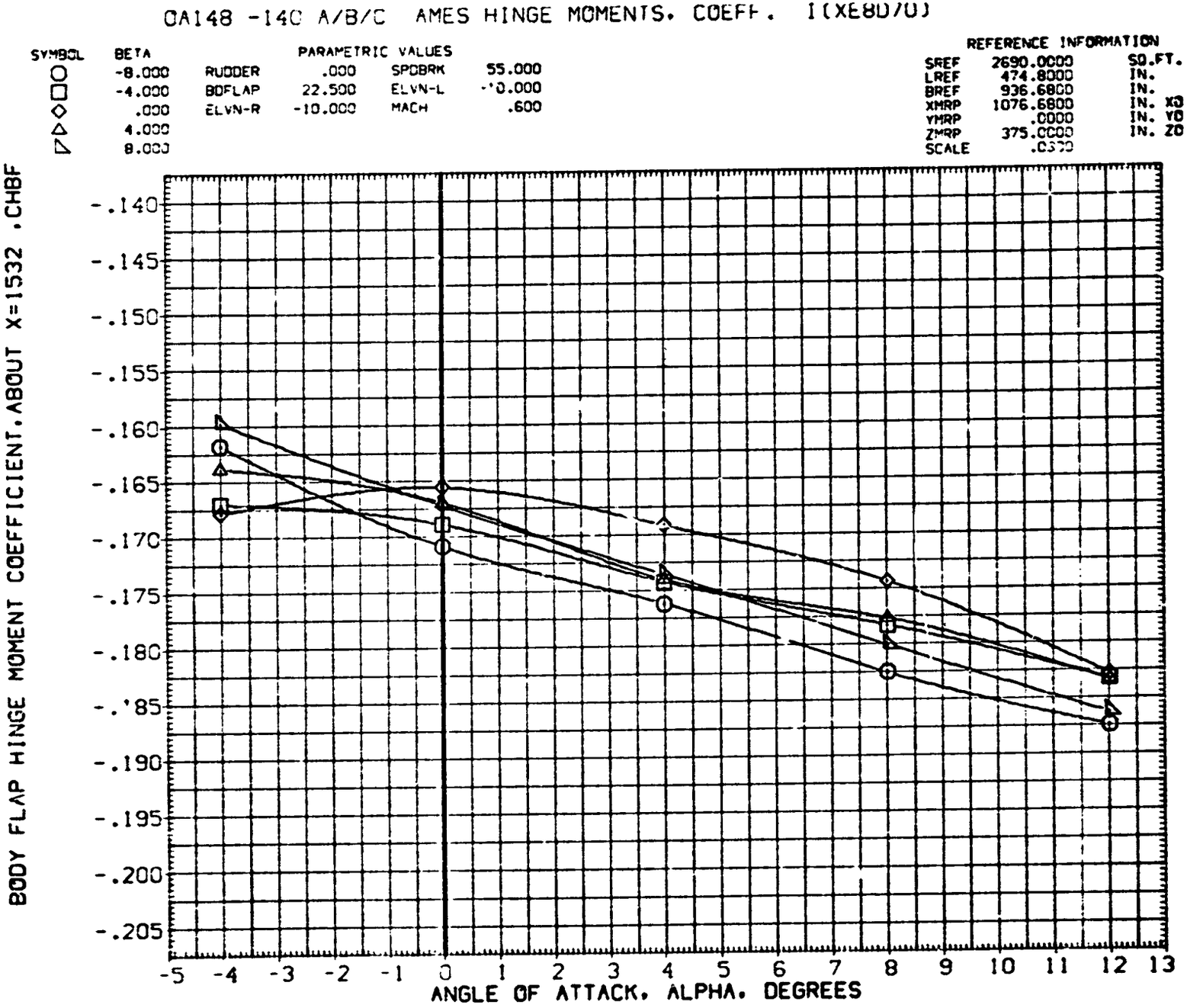


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

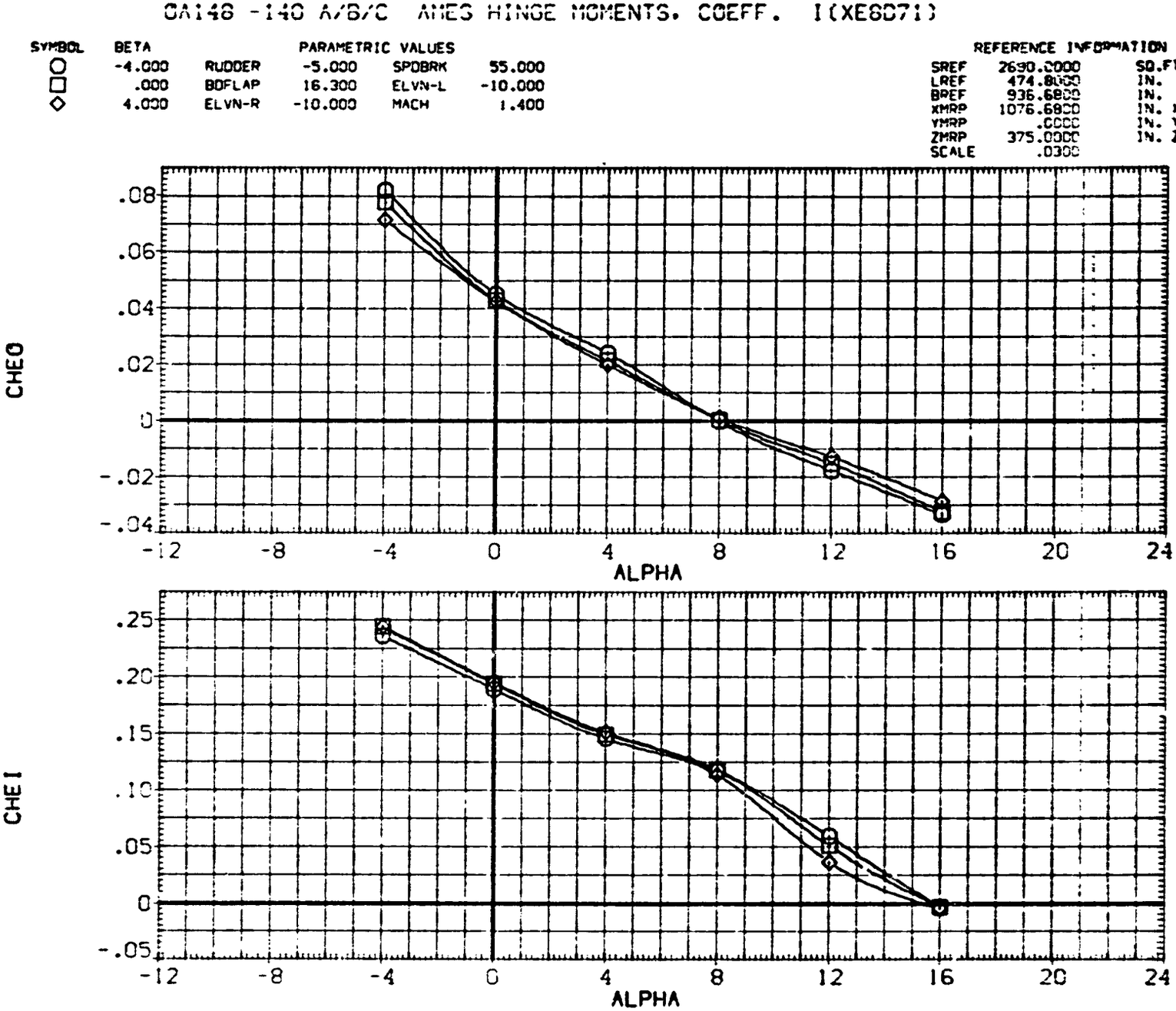


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

CA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D71)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPOBRK	55.000
□	.000	BOFLAP	16.300	ELVN-L	-10.000
◇	4.000	ELVN-R	-10.000	MACH	1.400

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

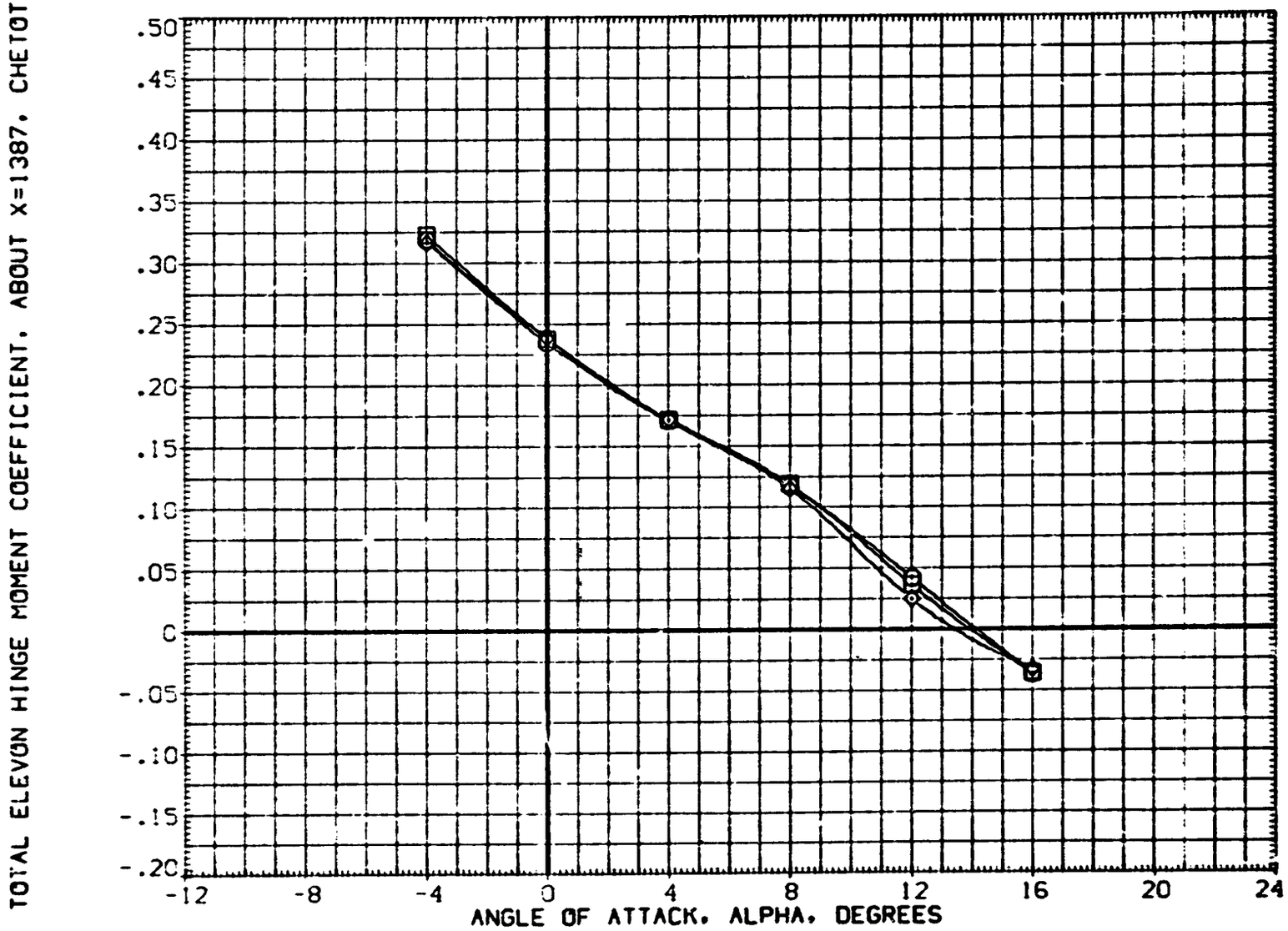


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

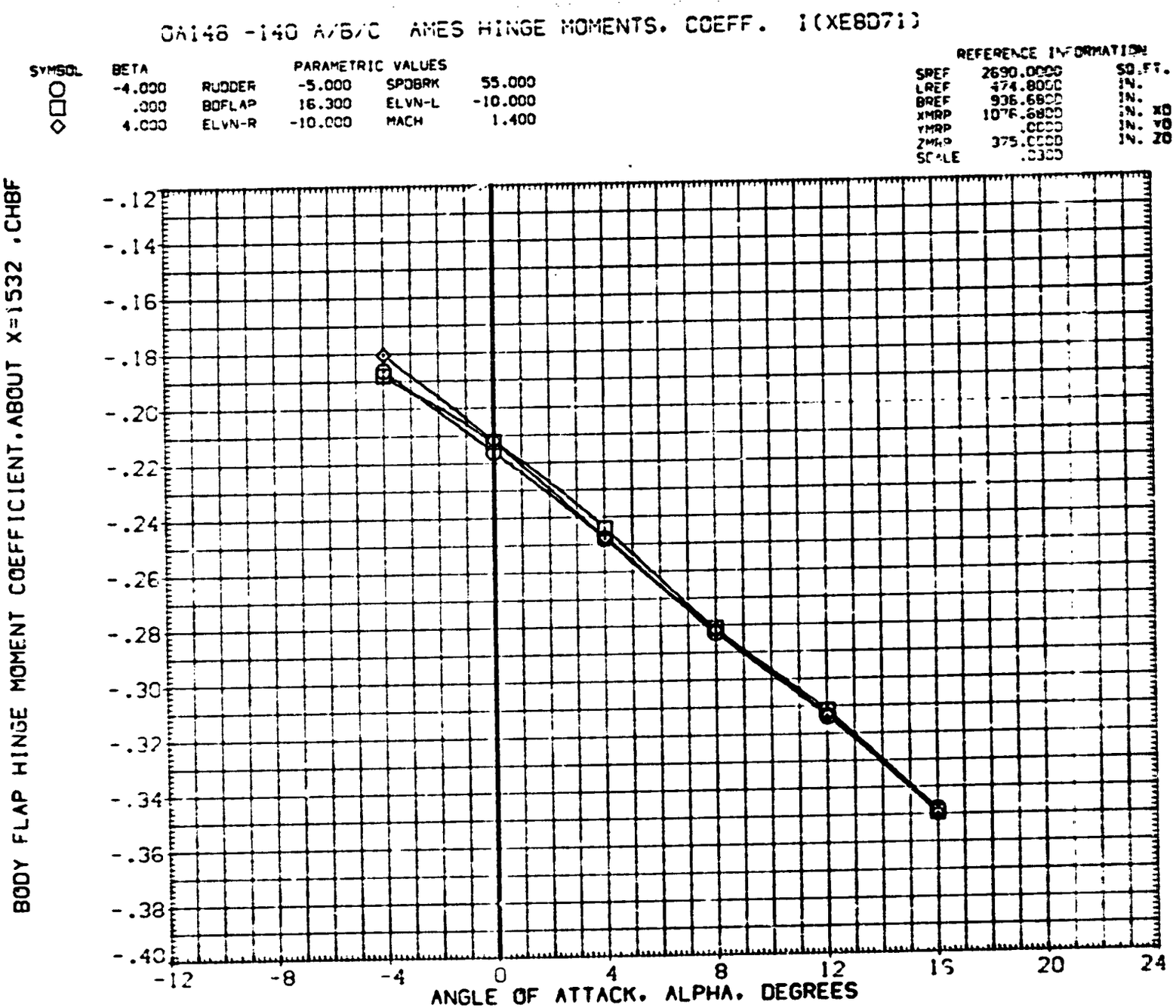


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

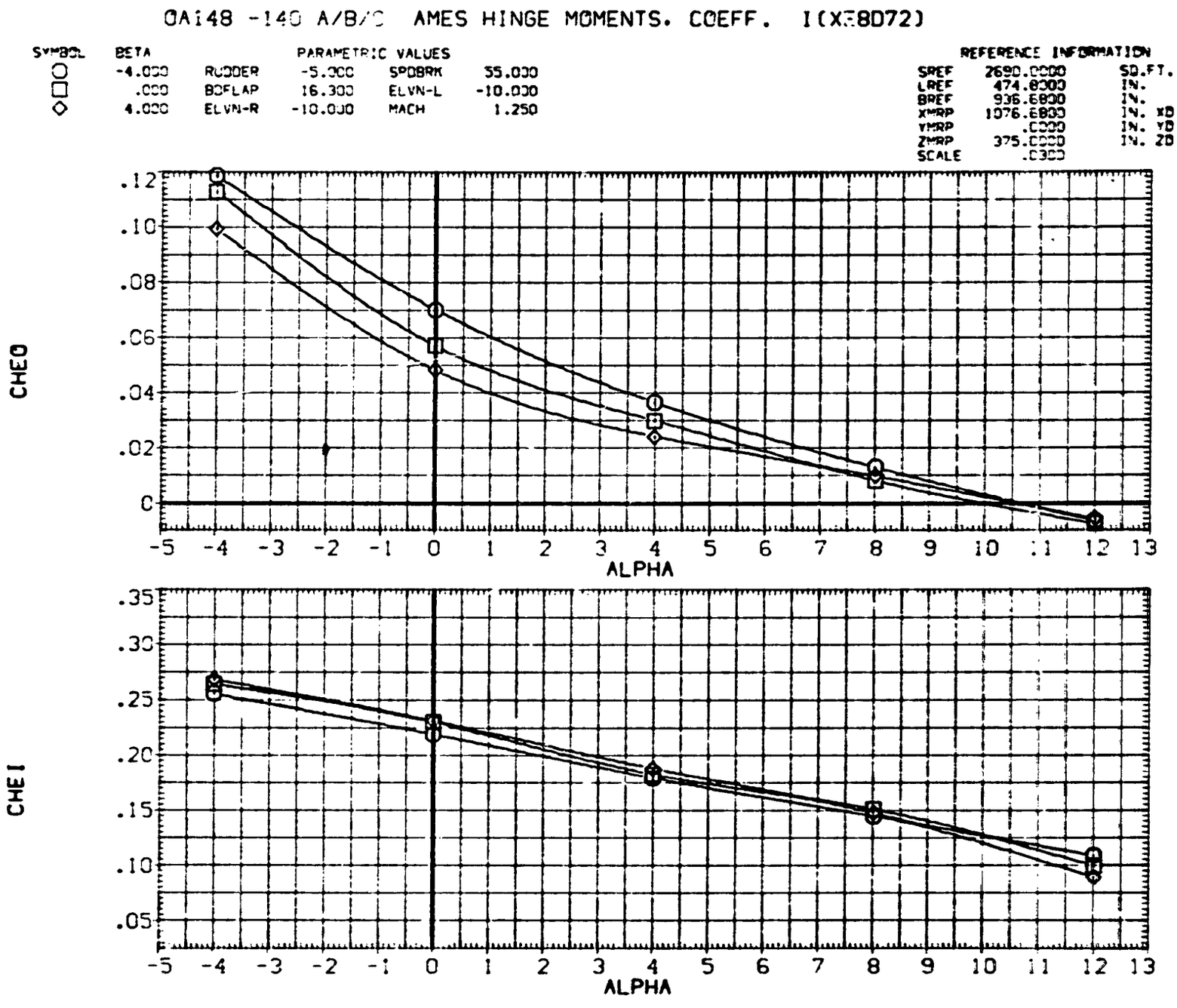


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

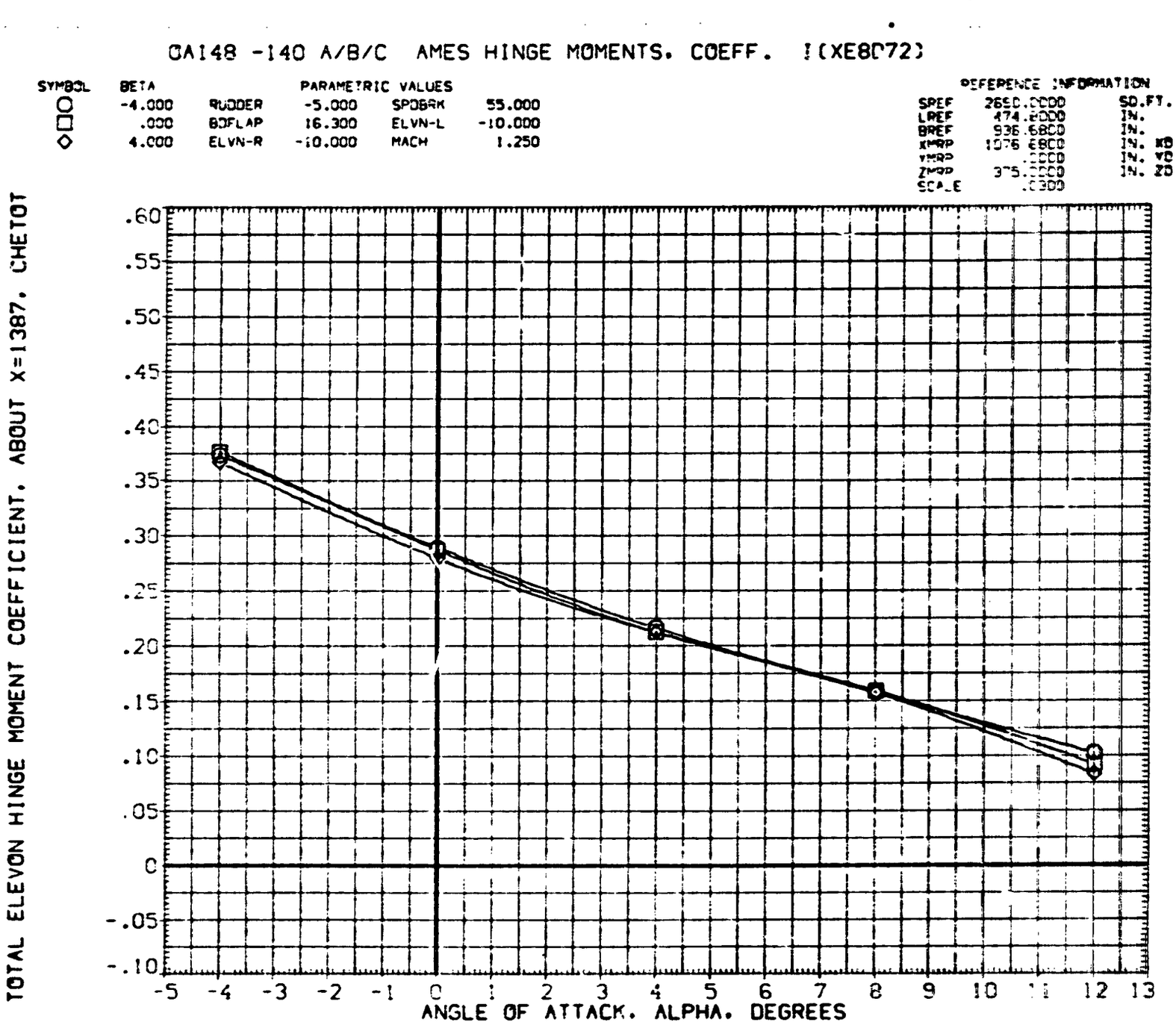


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

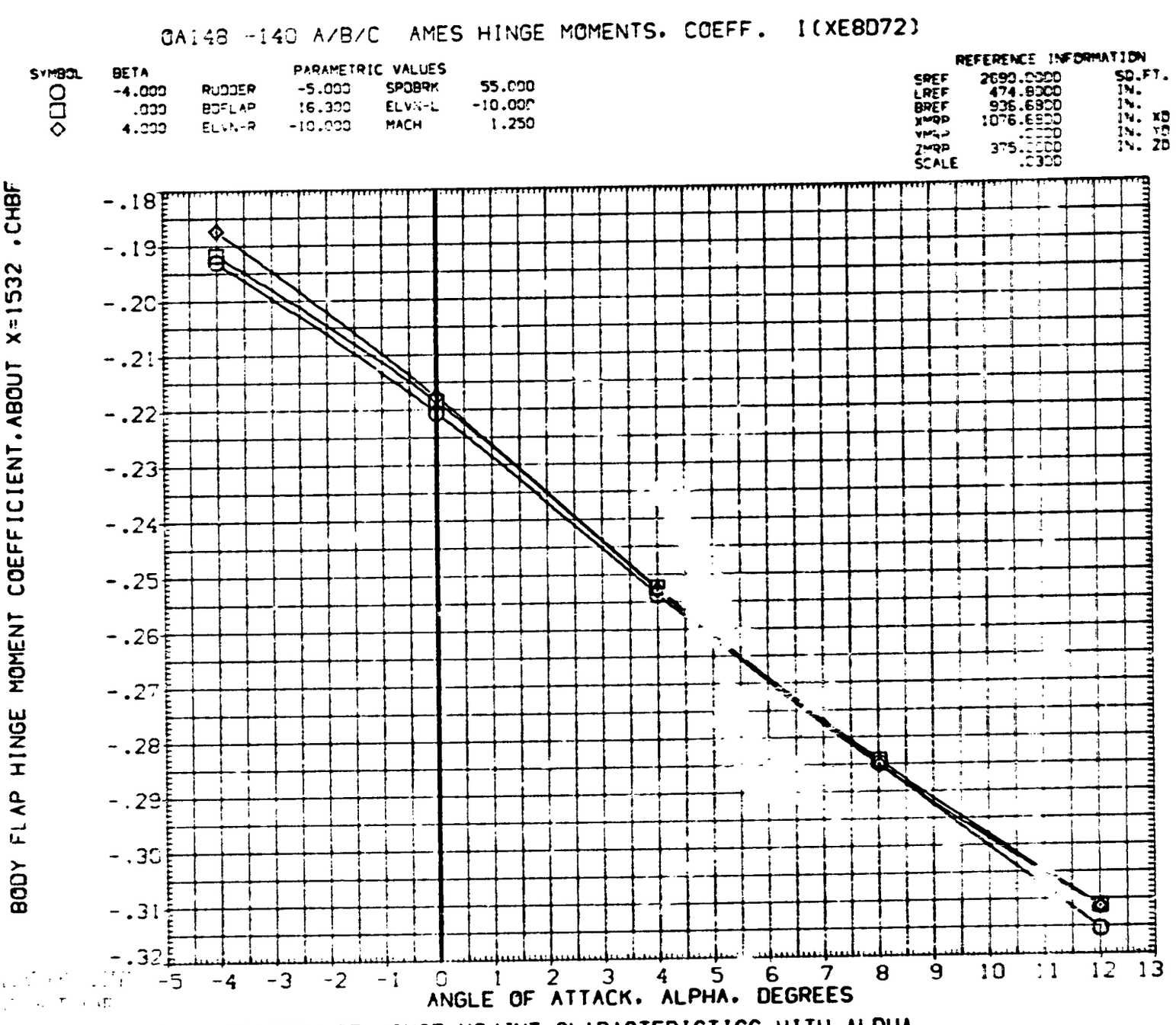


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

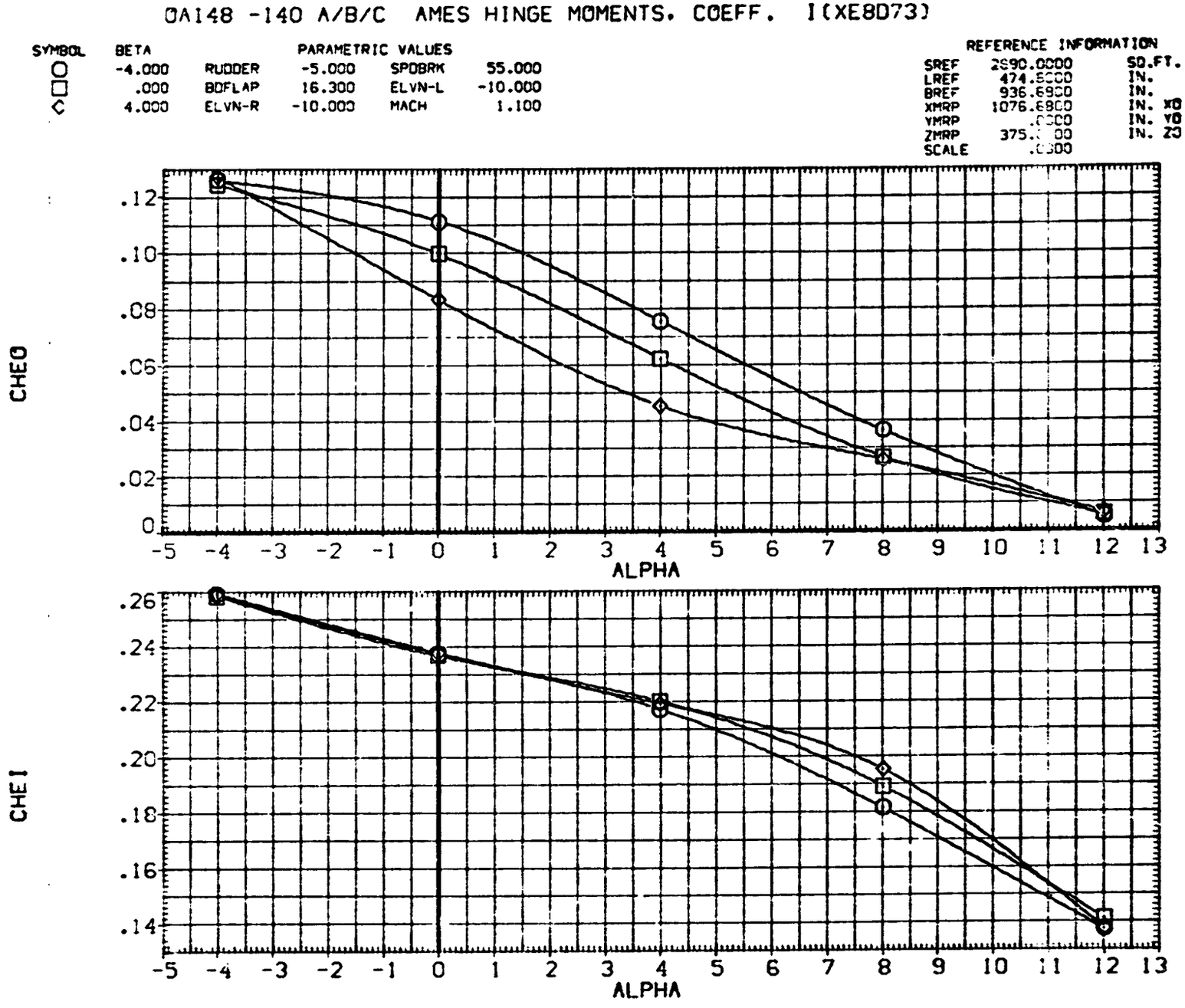


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

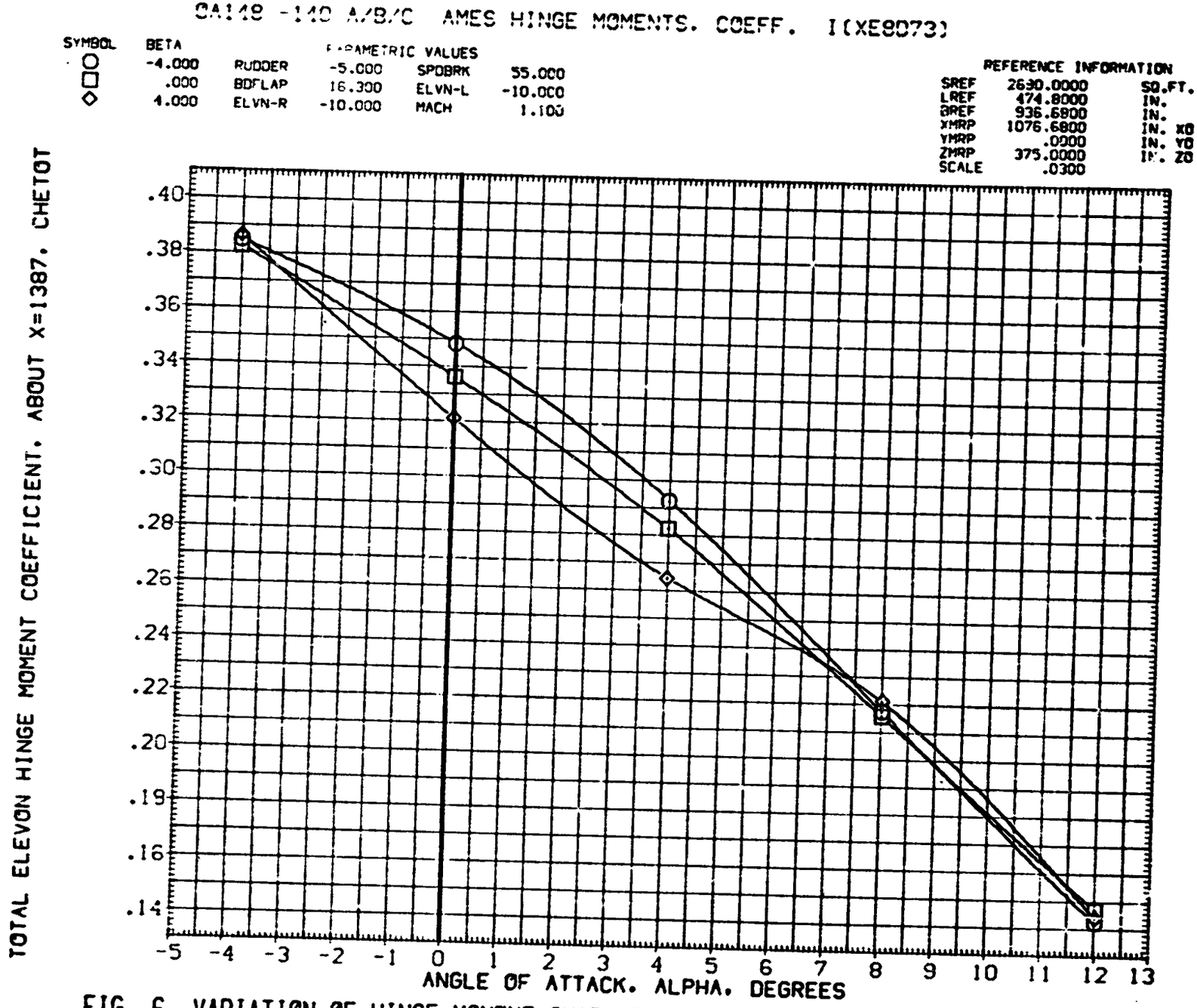


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D73)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-5.000	SPDBRK	55.000
□	.000	BDFLAP	16.300	ELVN-L	-10.000
◇	4.00	ELVN-R	-10.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

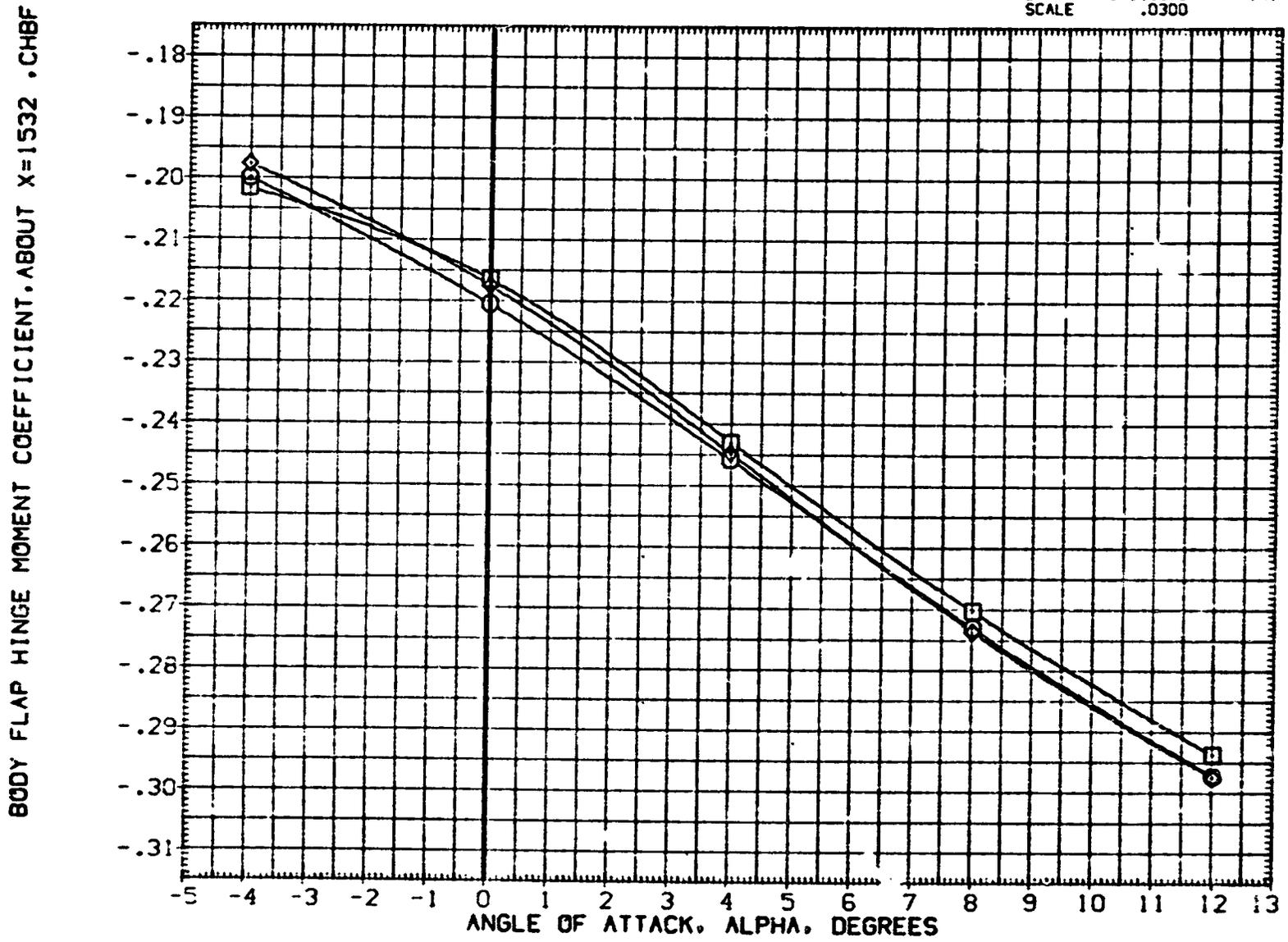


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

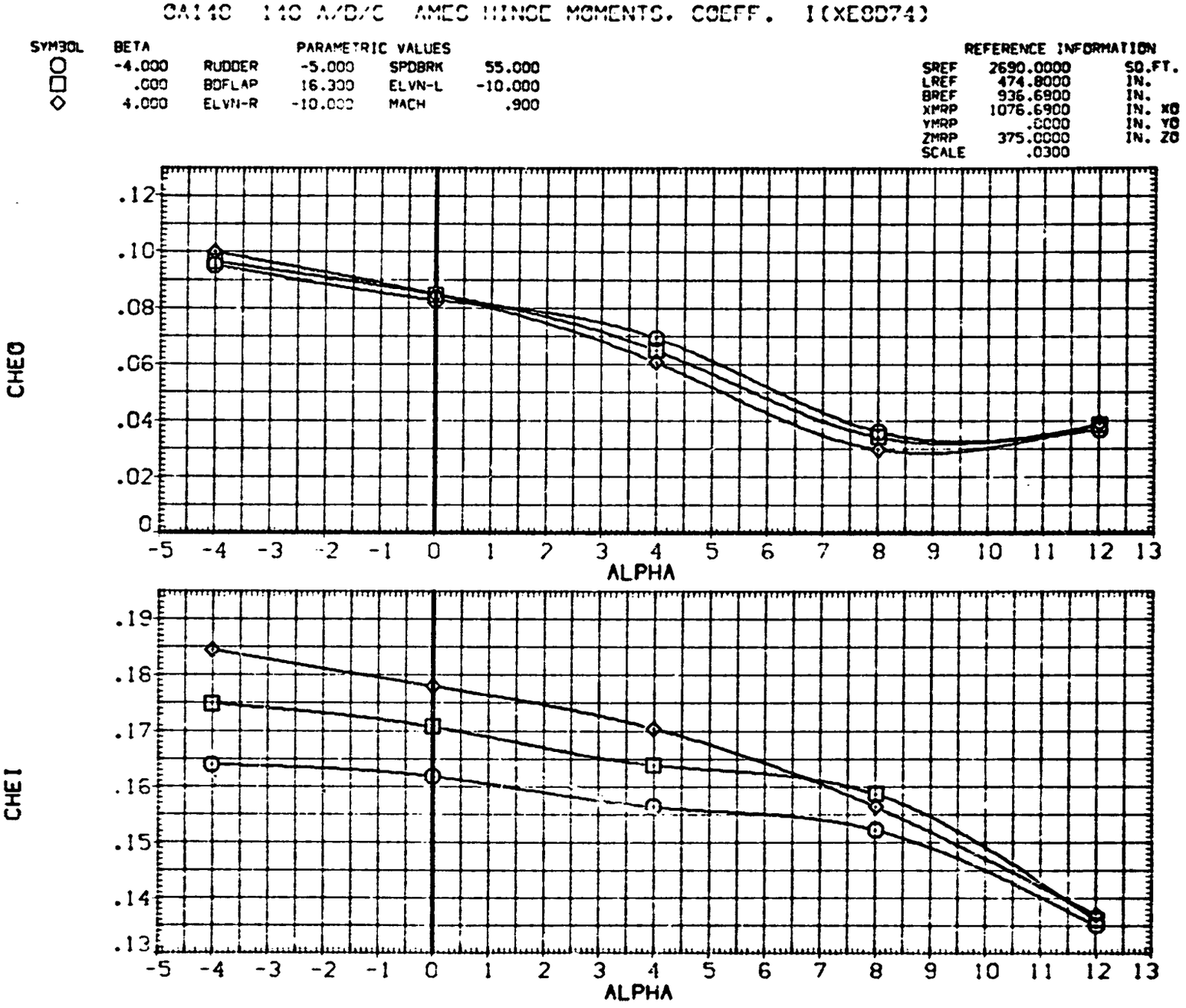


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

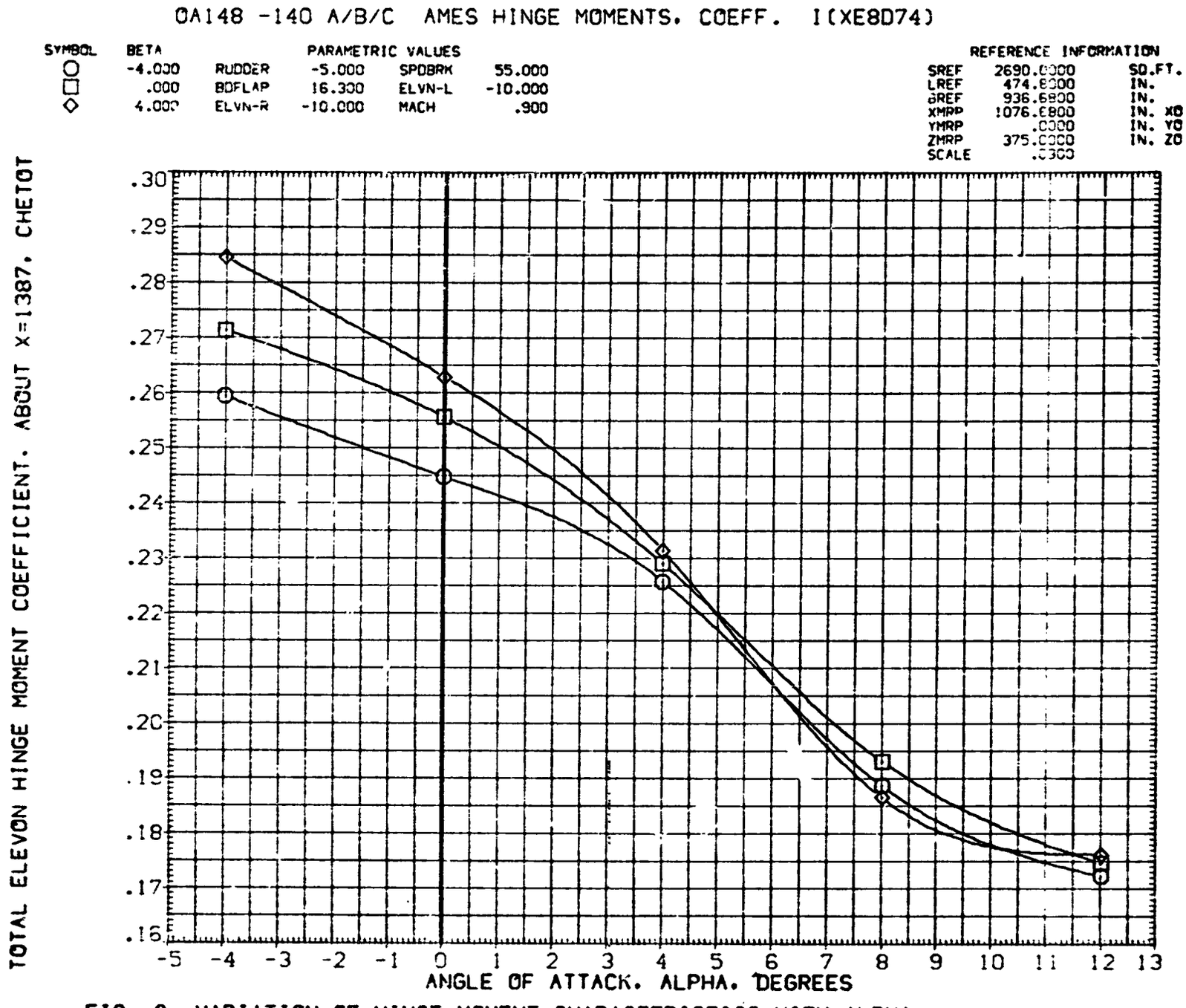


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

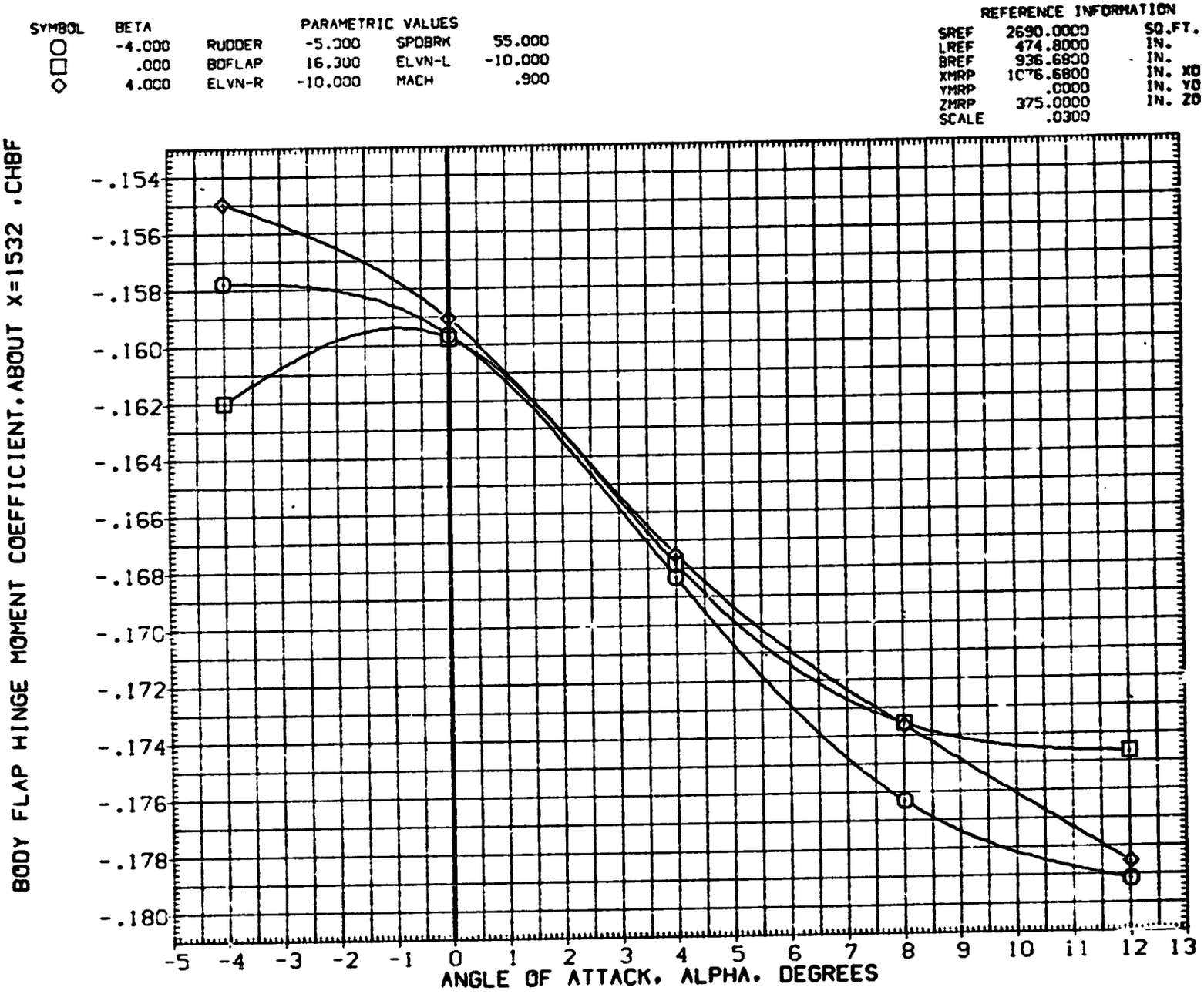


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

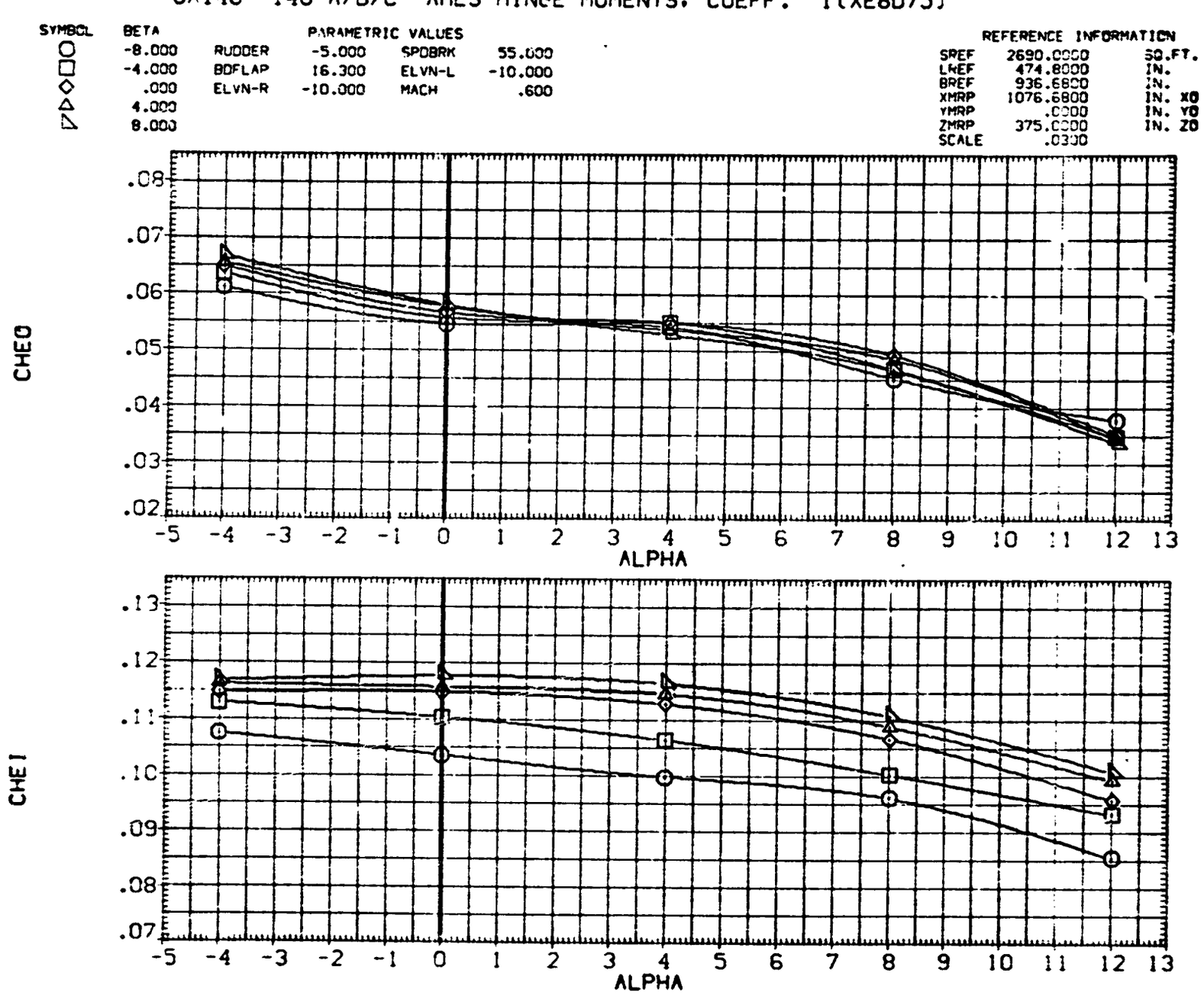


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

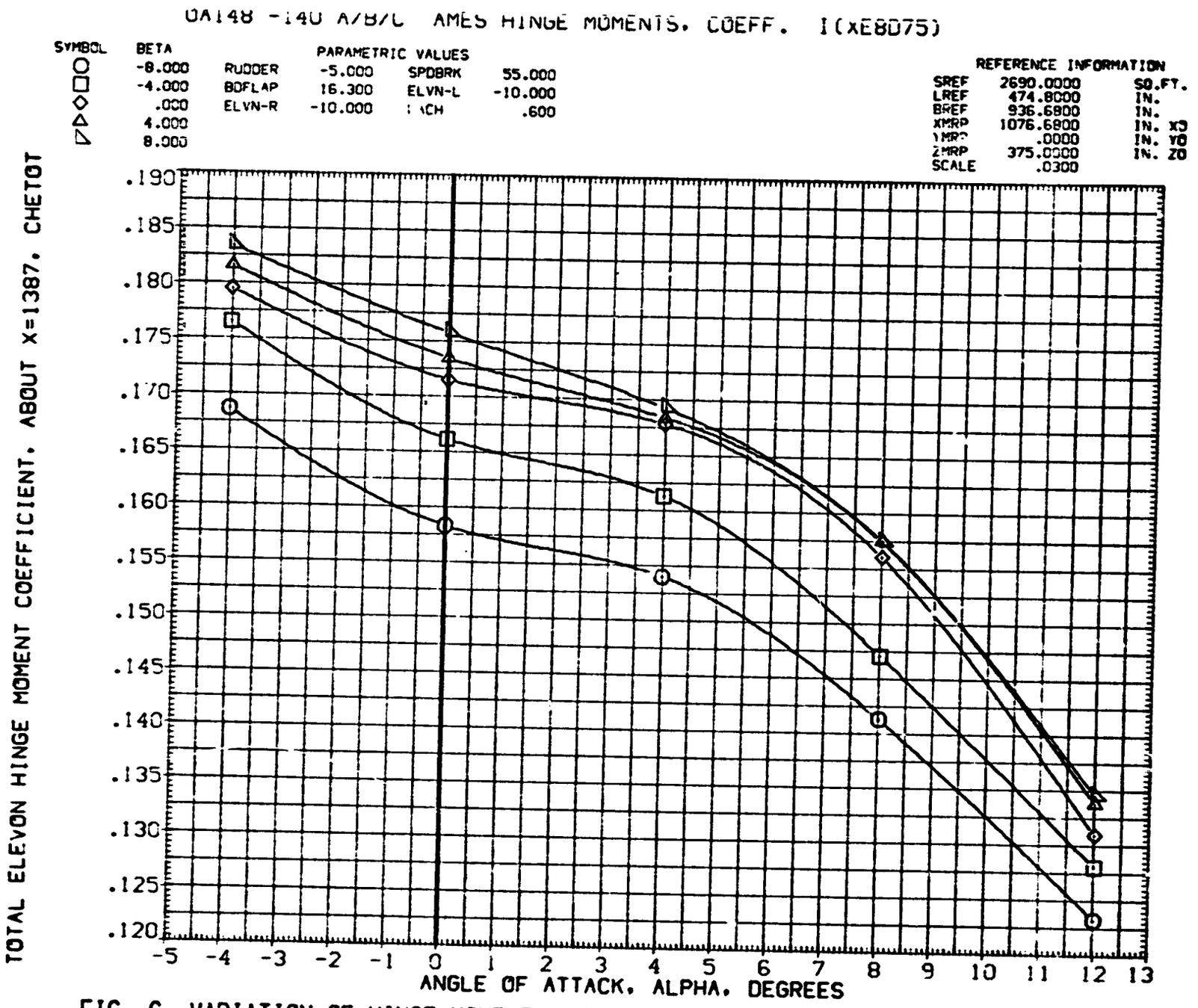


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

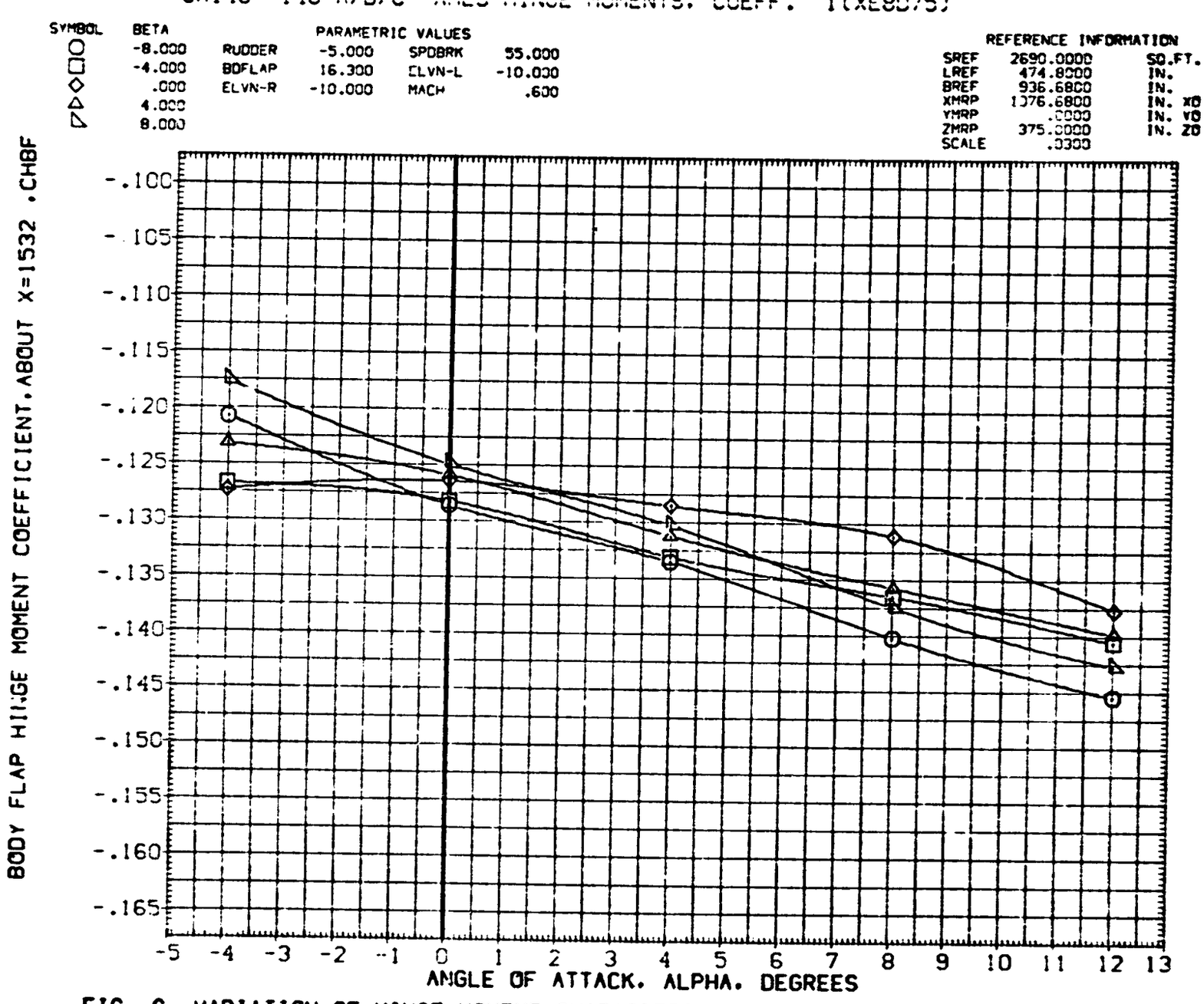


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

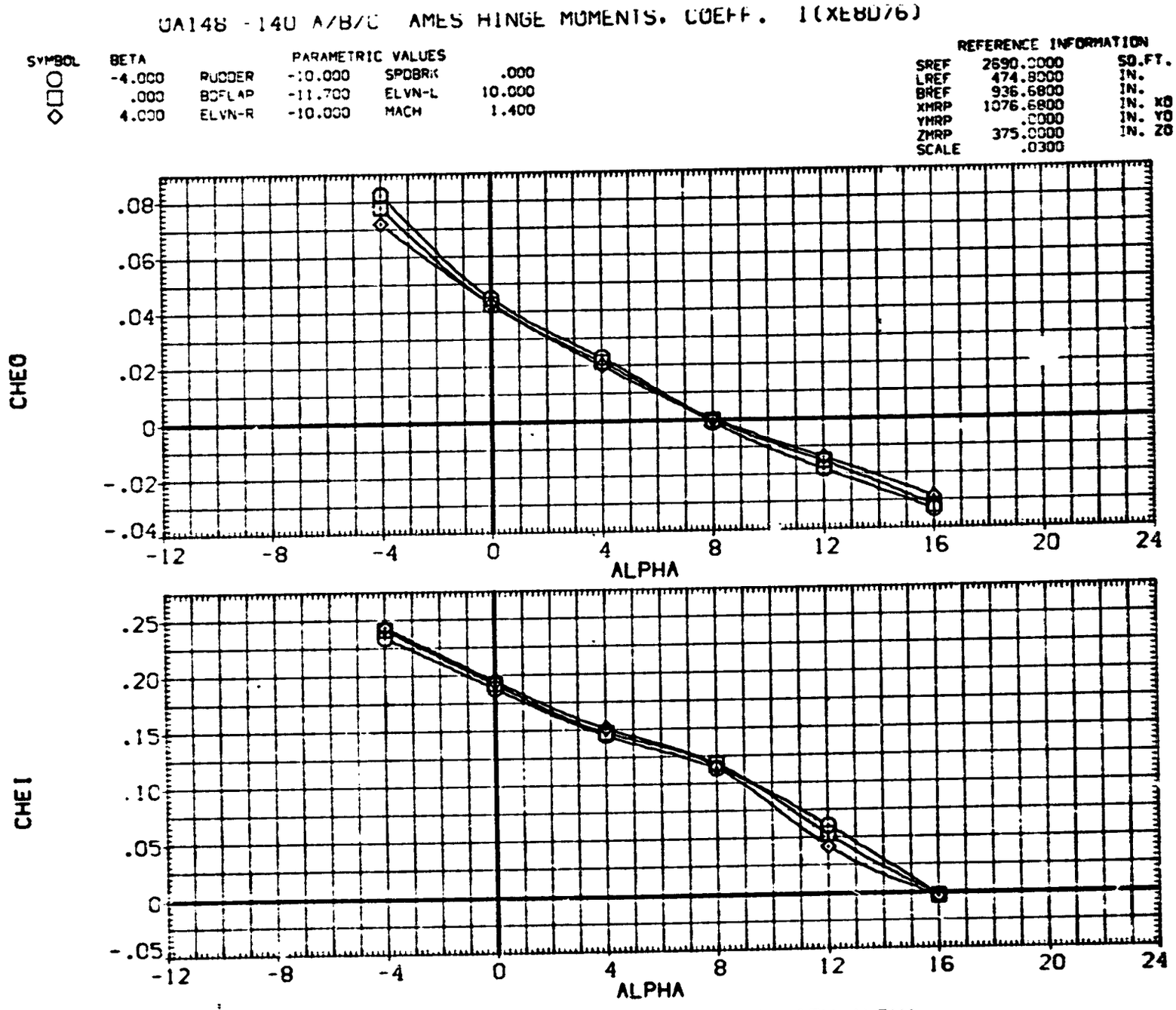


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

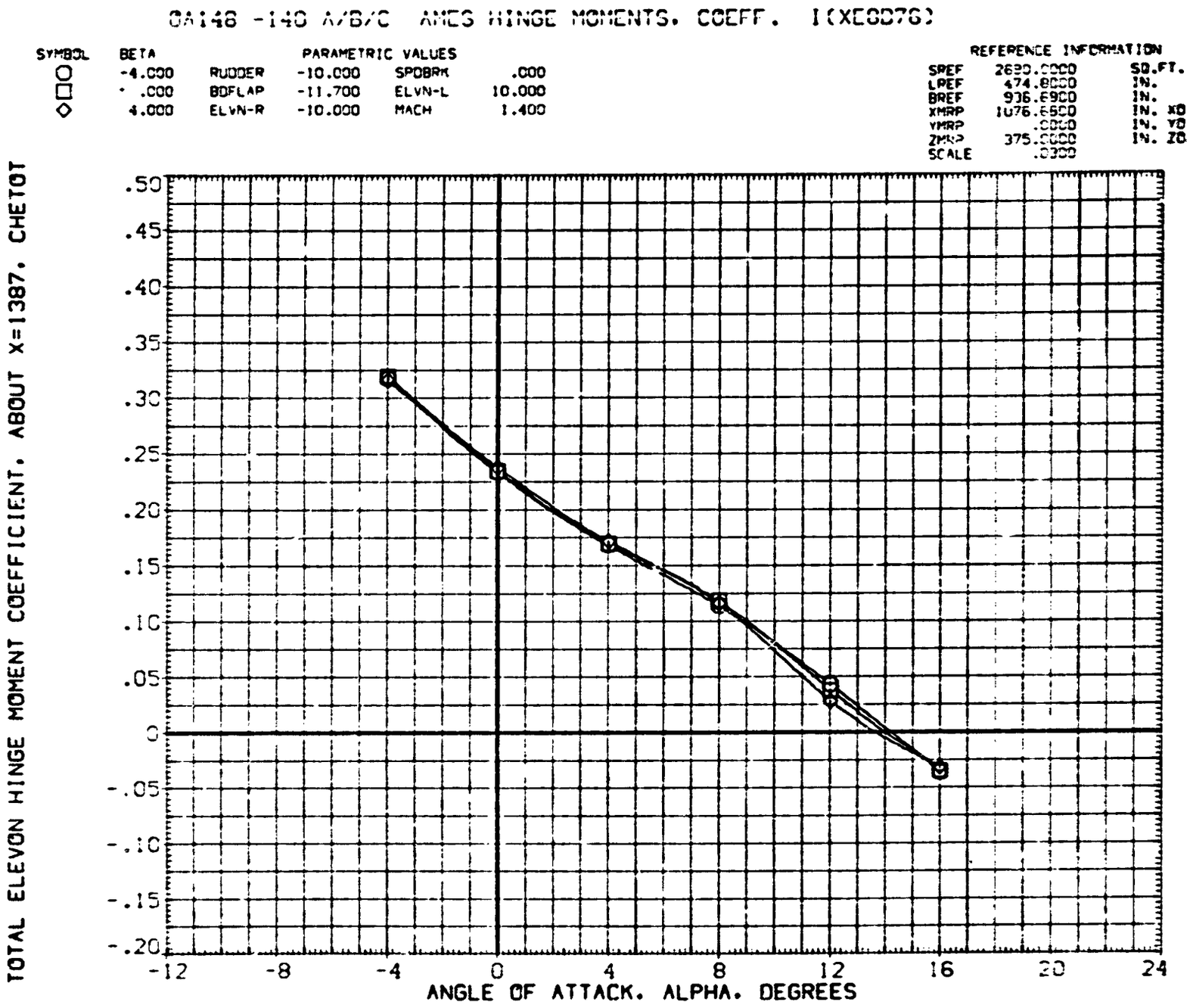


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

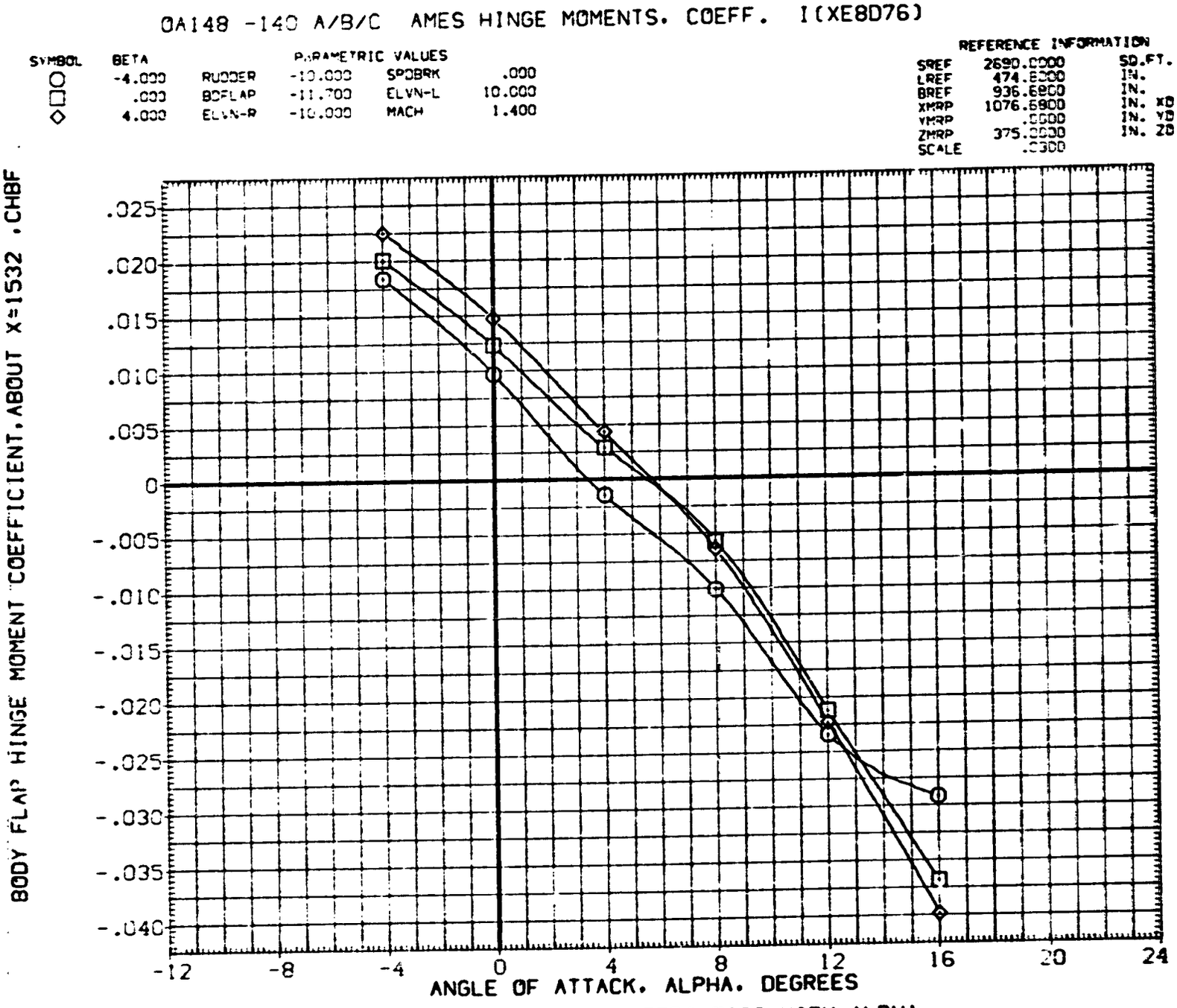


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

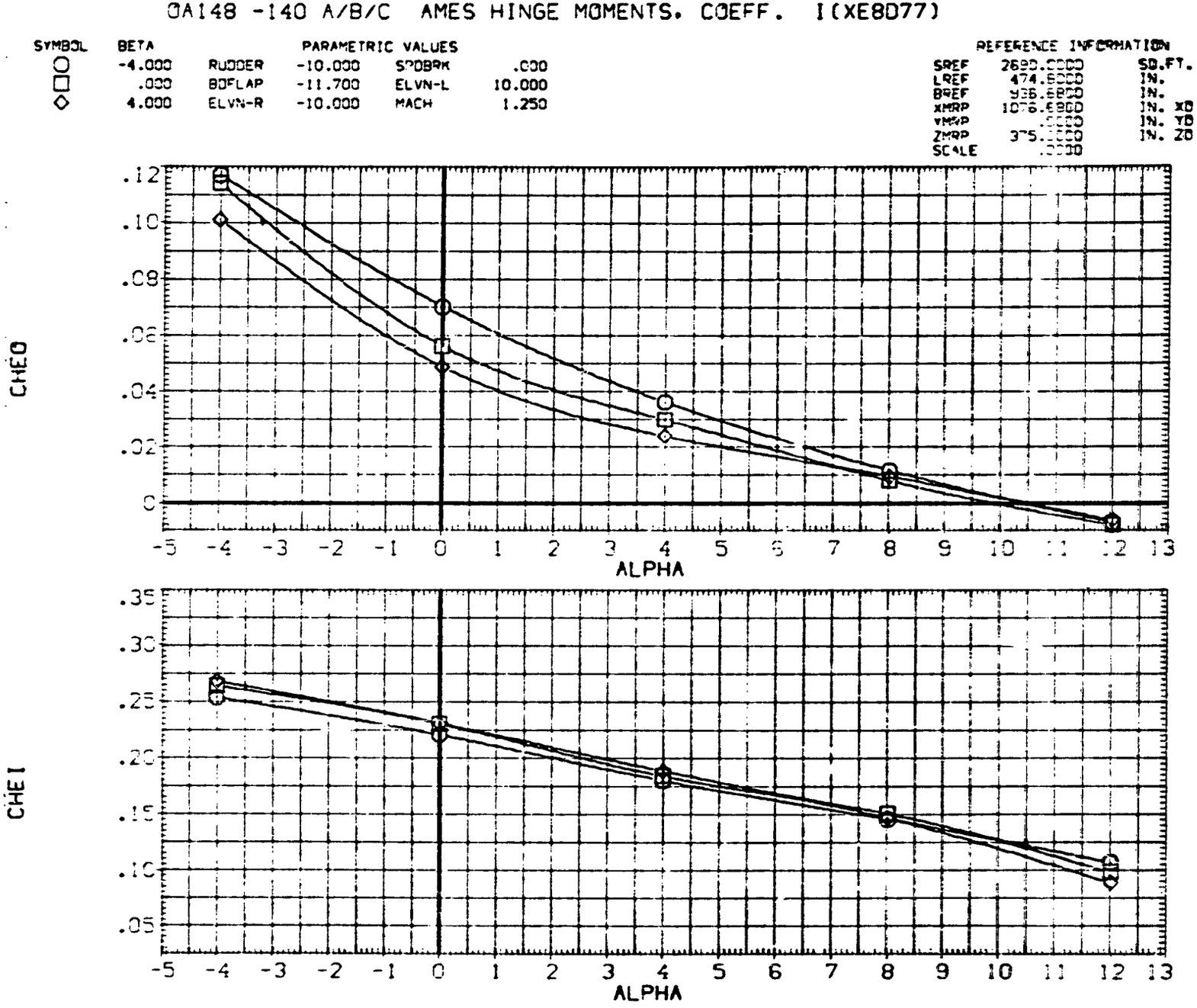


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

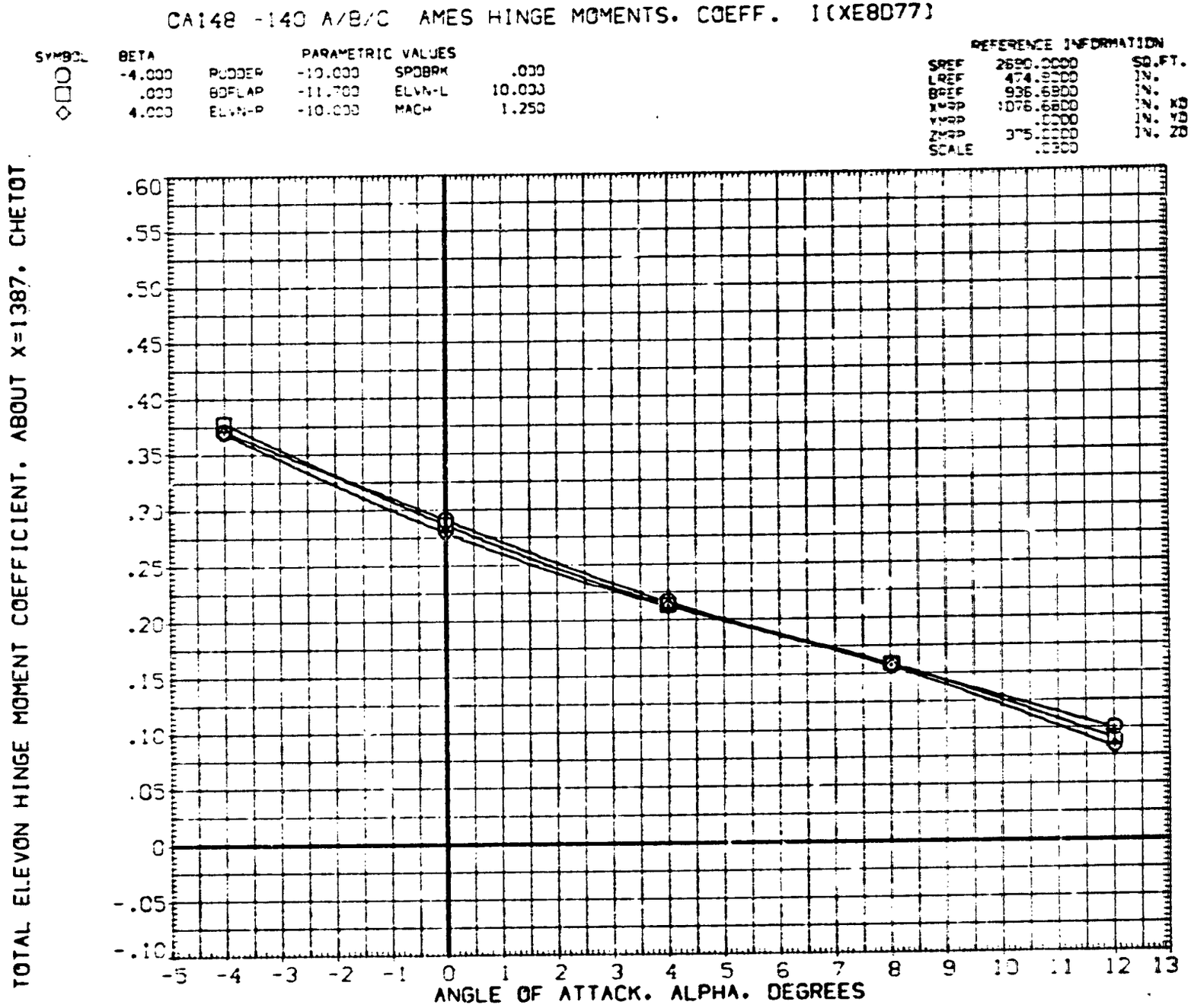


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

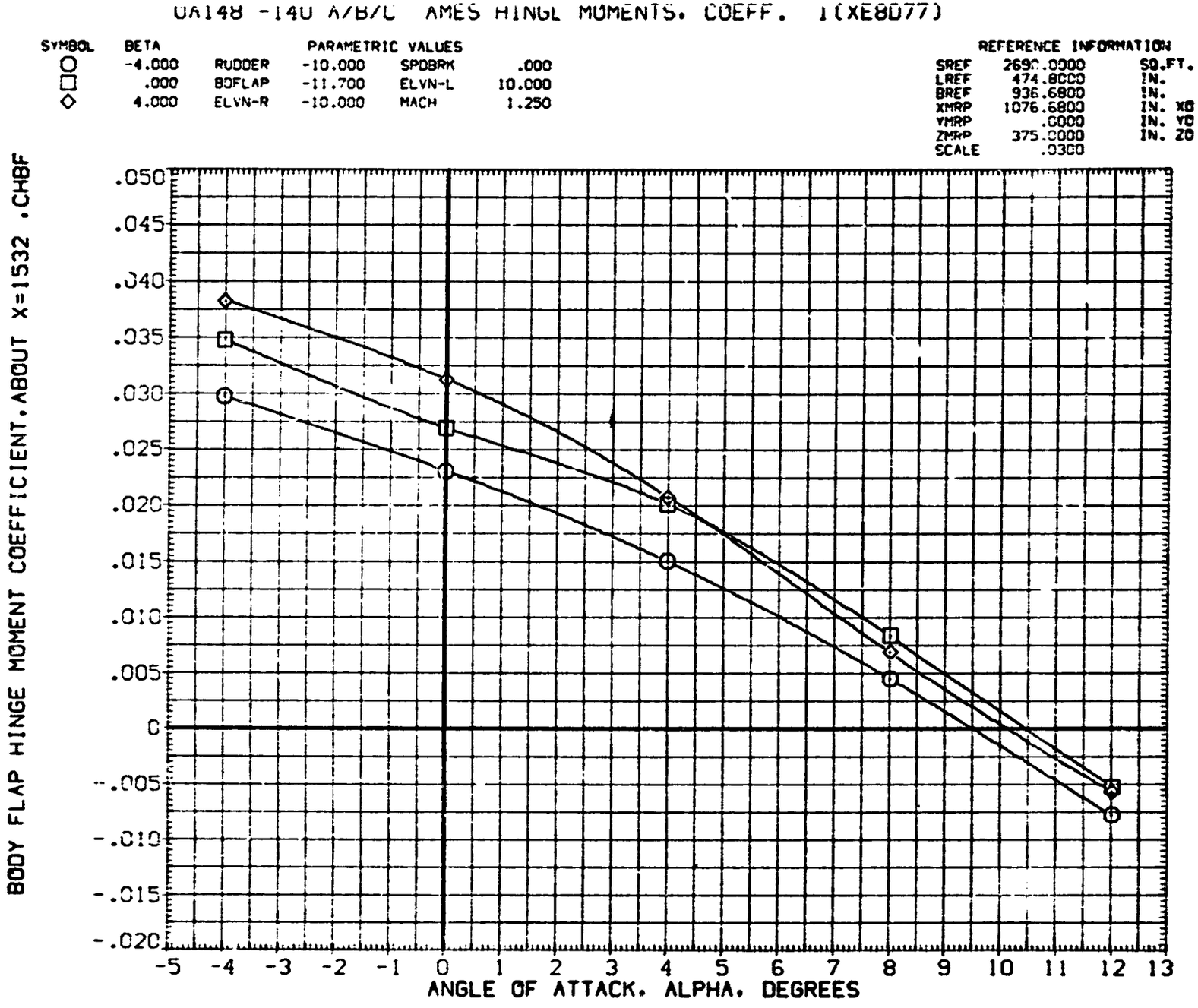


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

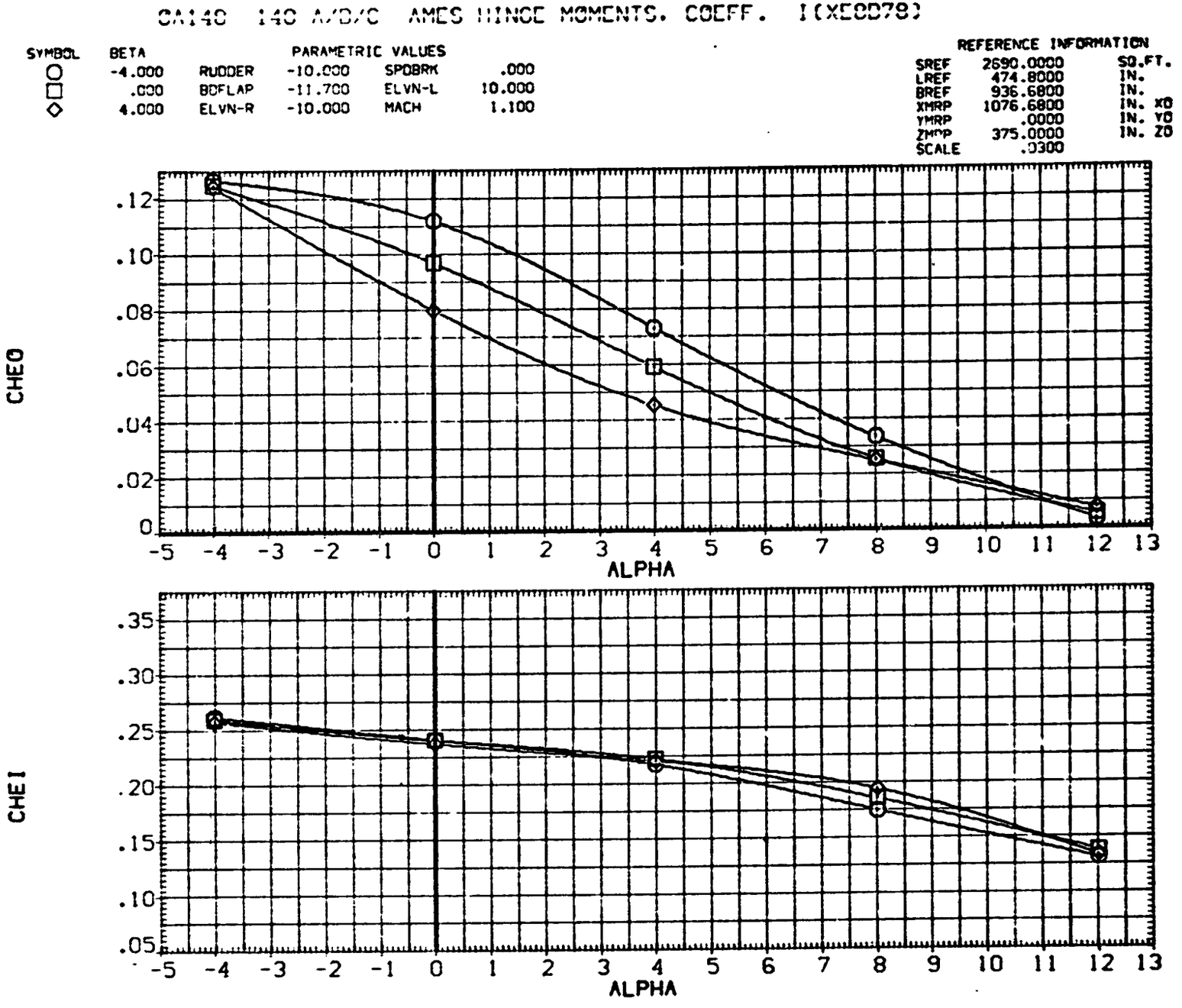


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

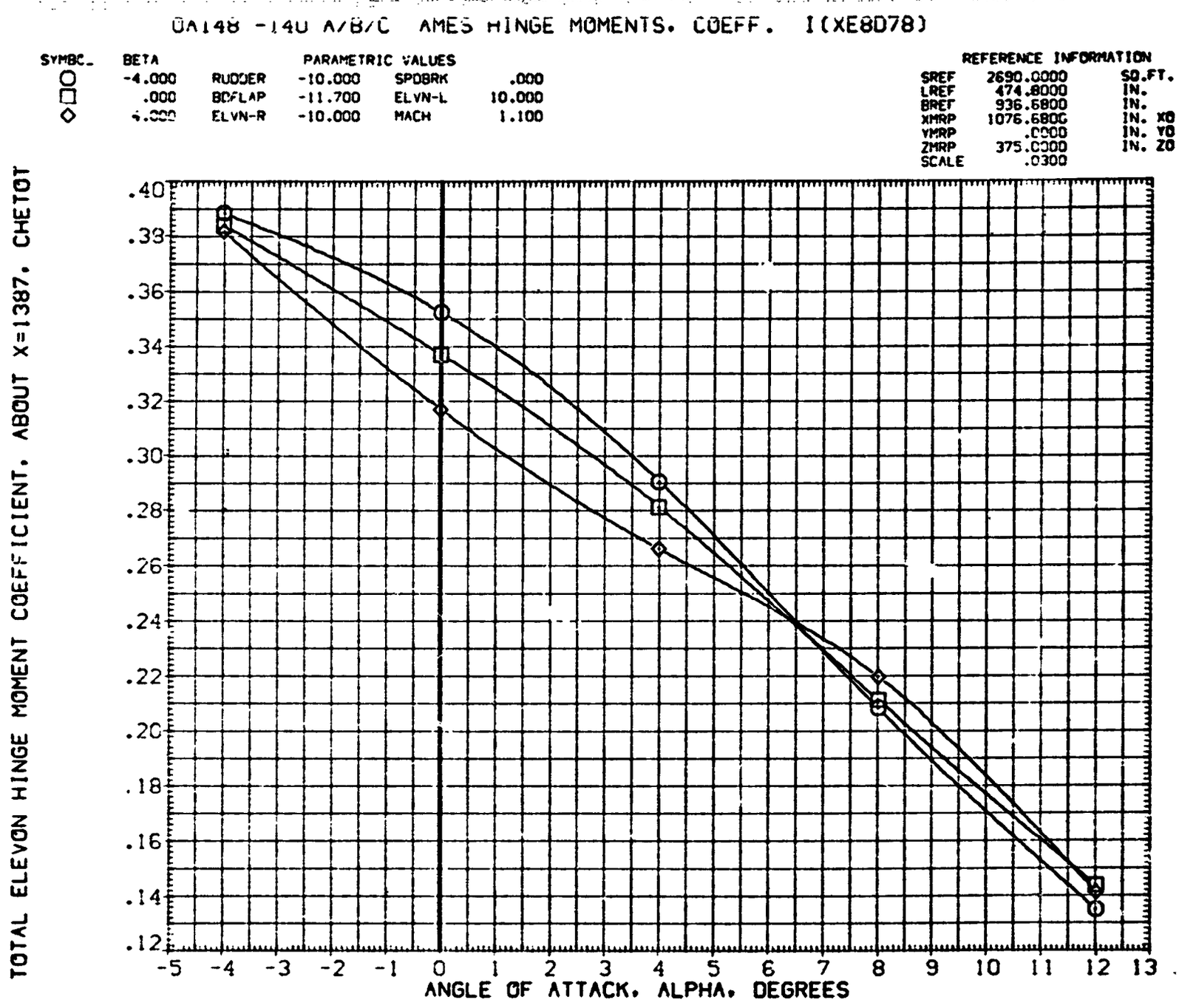


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

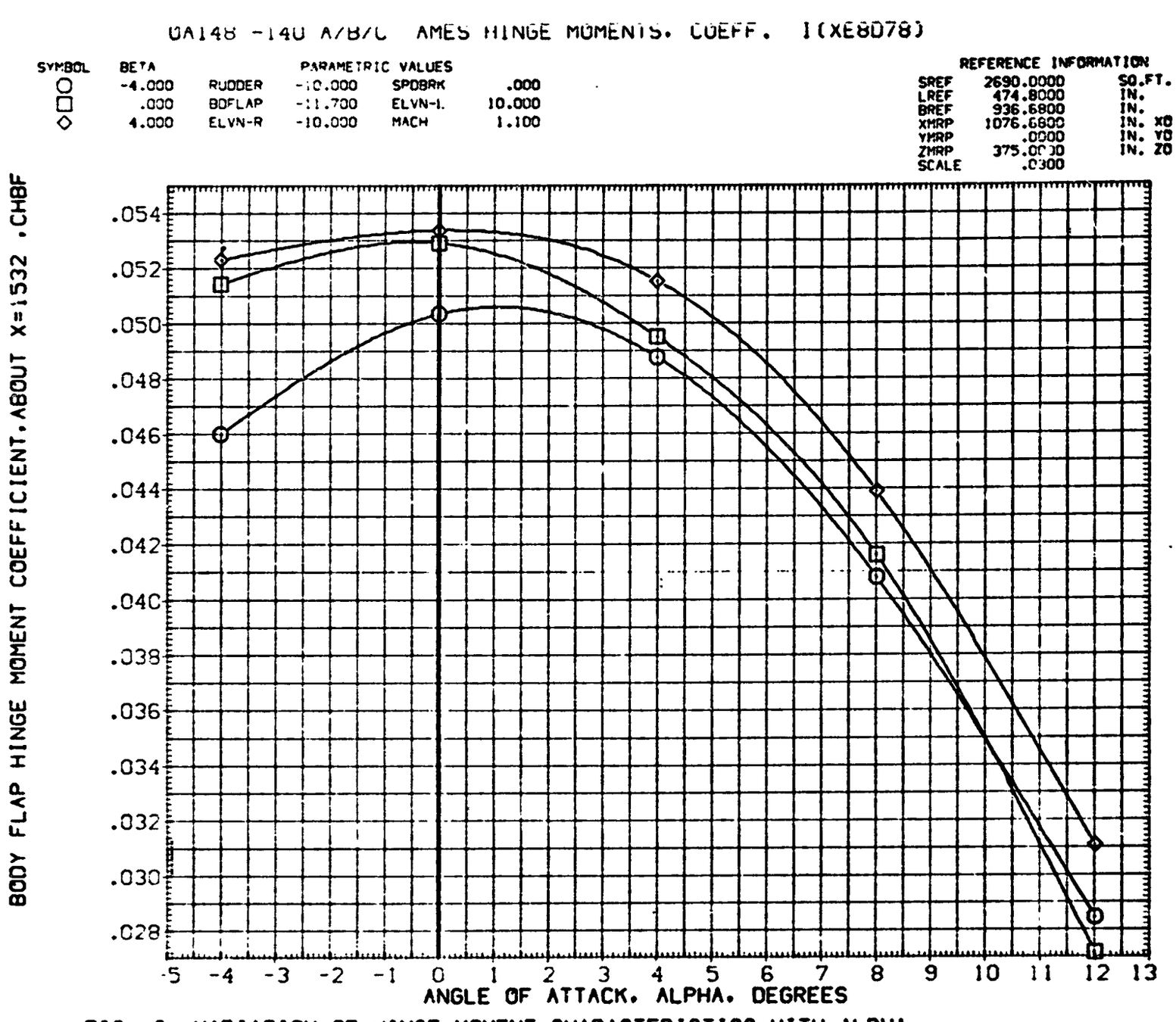


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D79)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	-10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	10.000
◇	4.000	ELVN-R	-10.000	MACH	.900

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

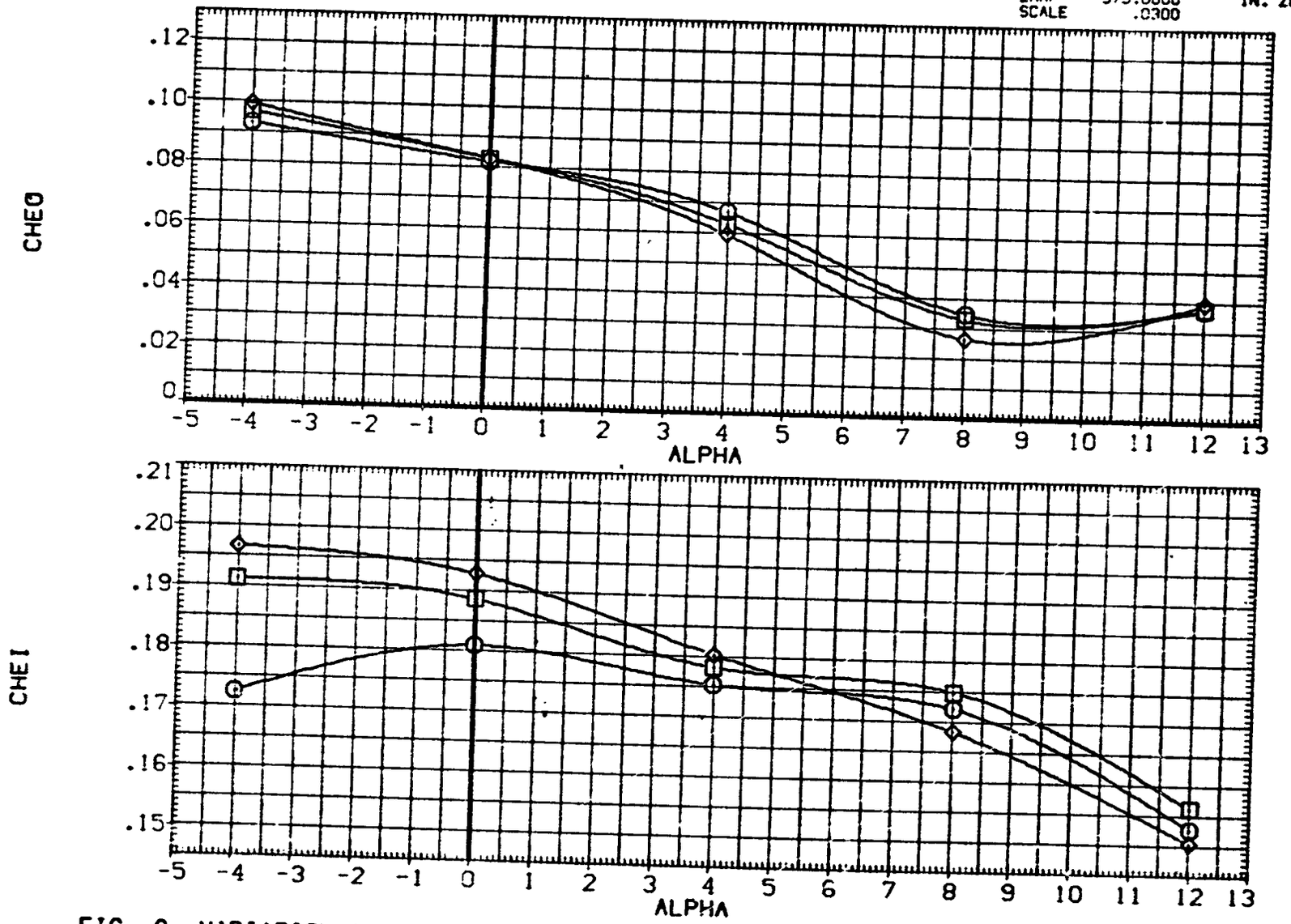


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

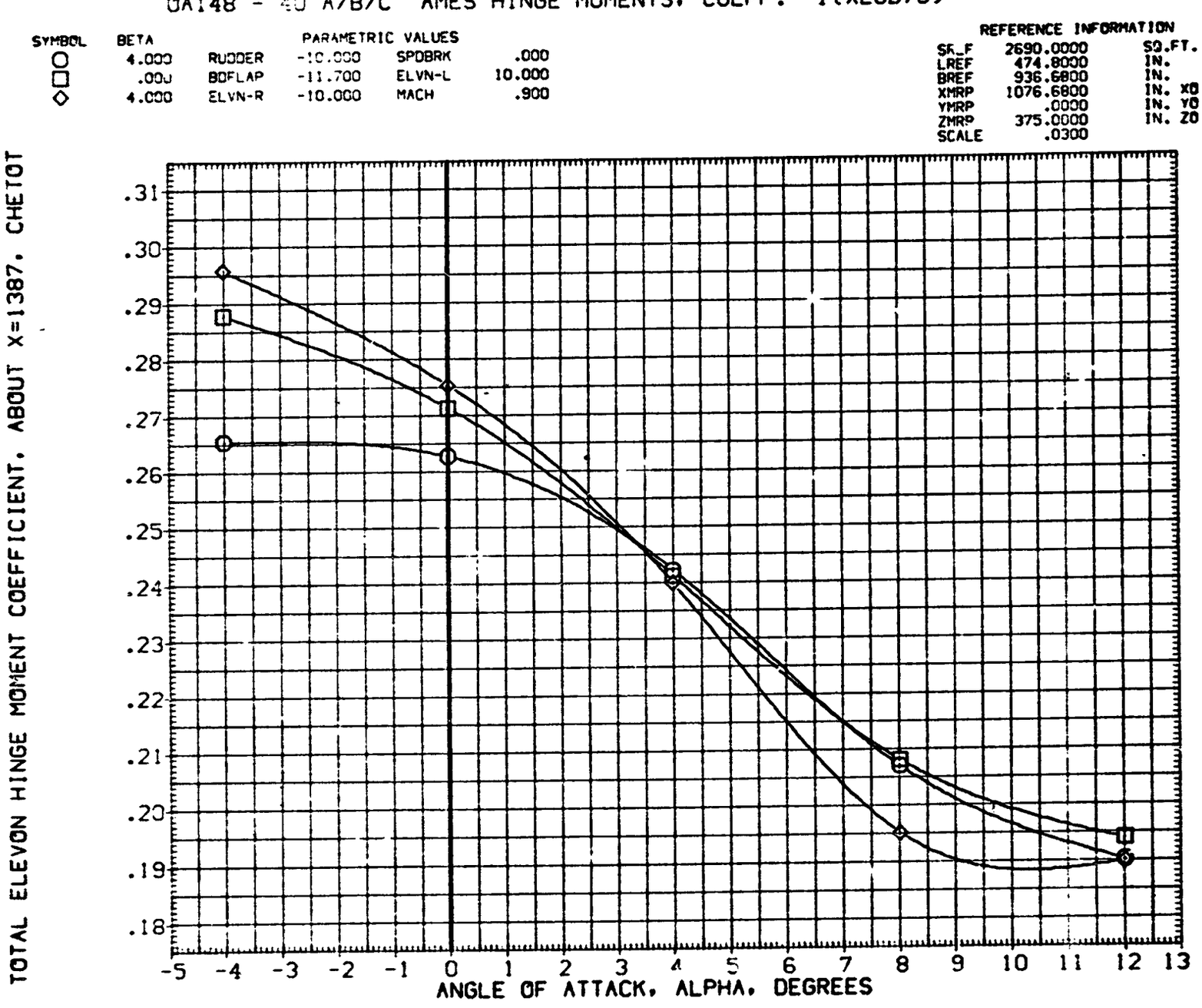


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

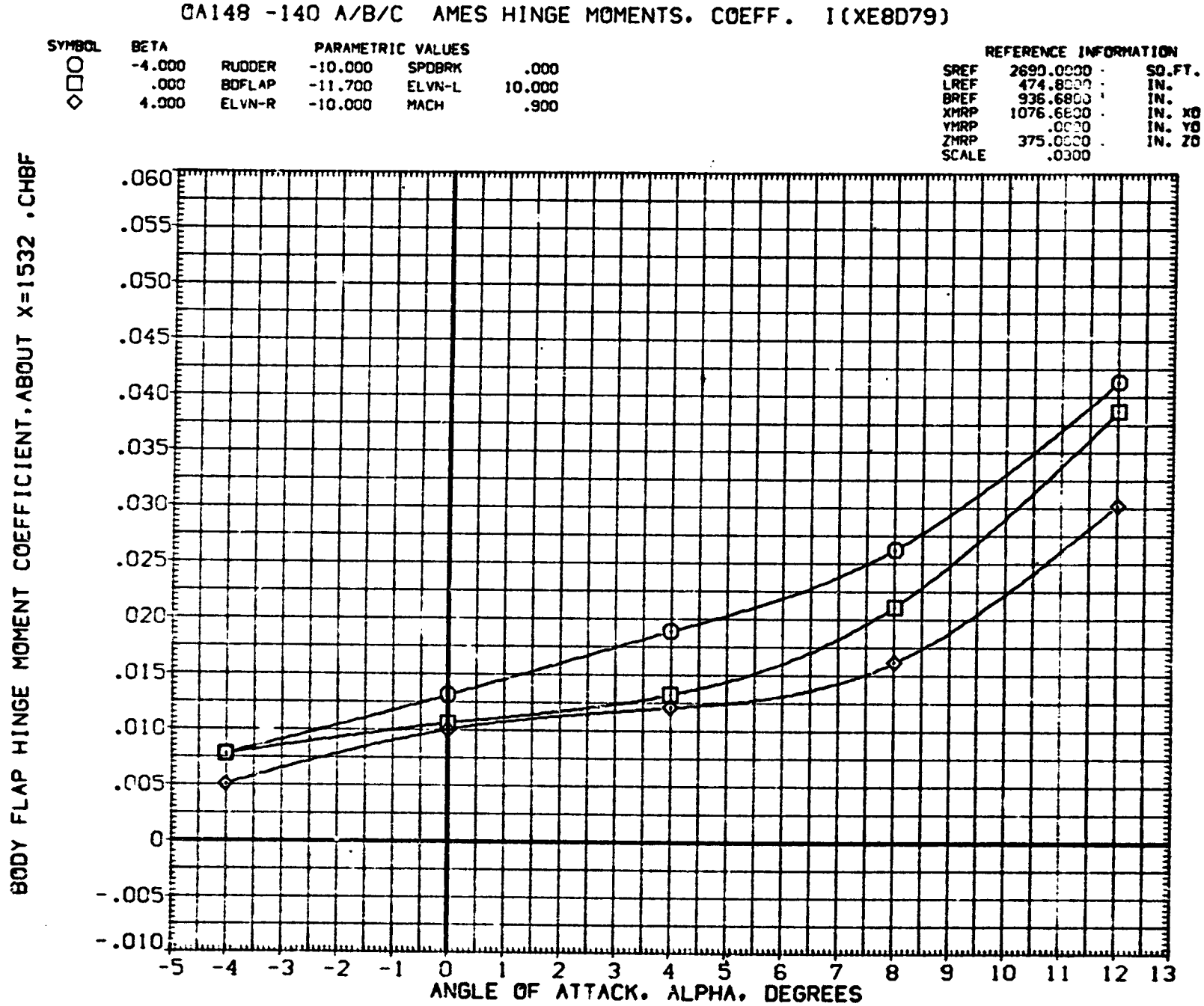


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

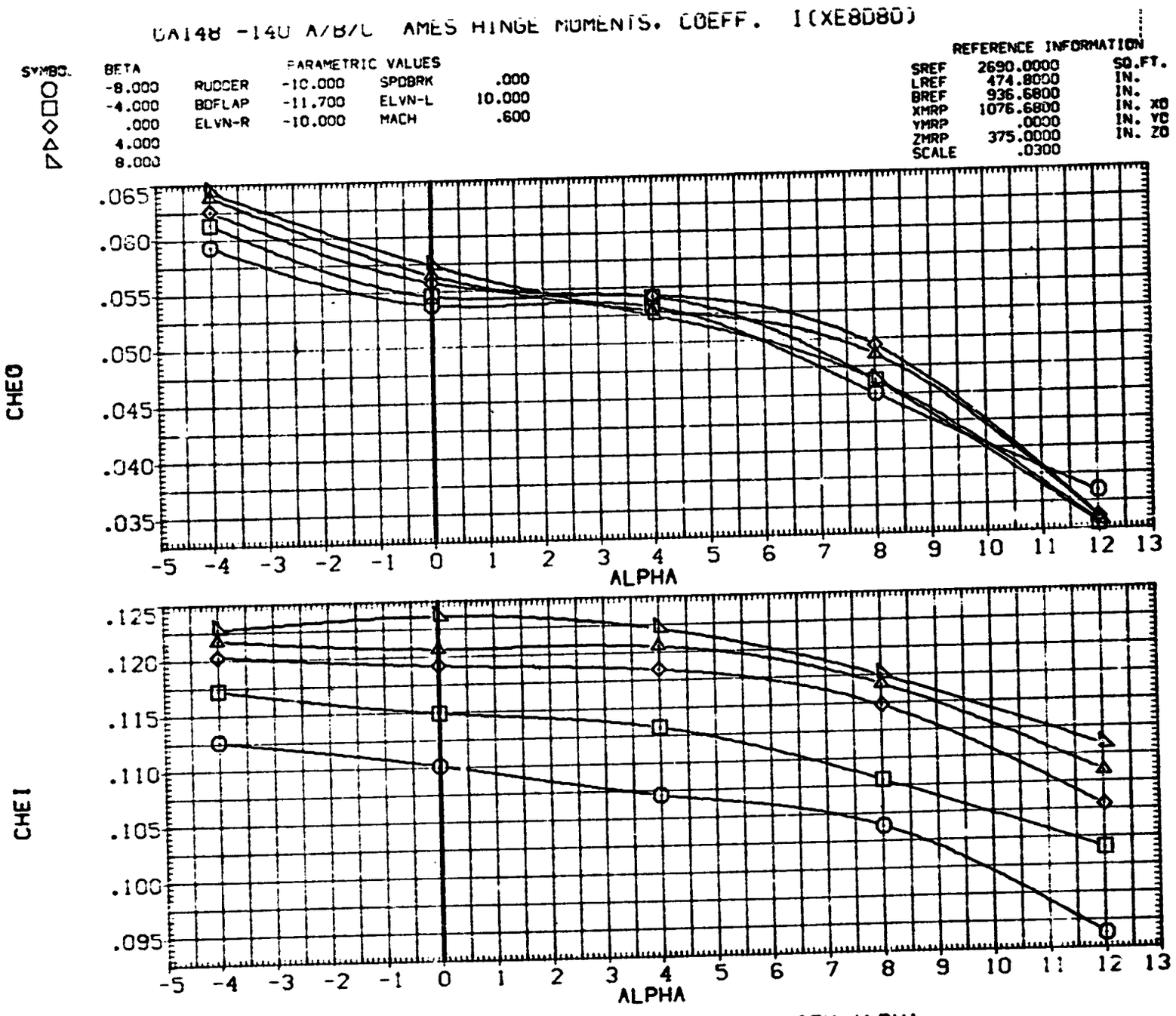


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

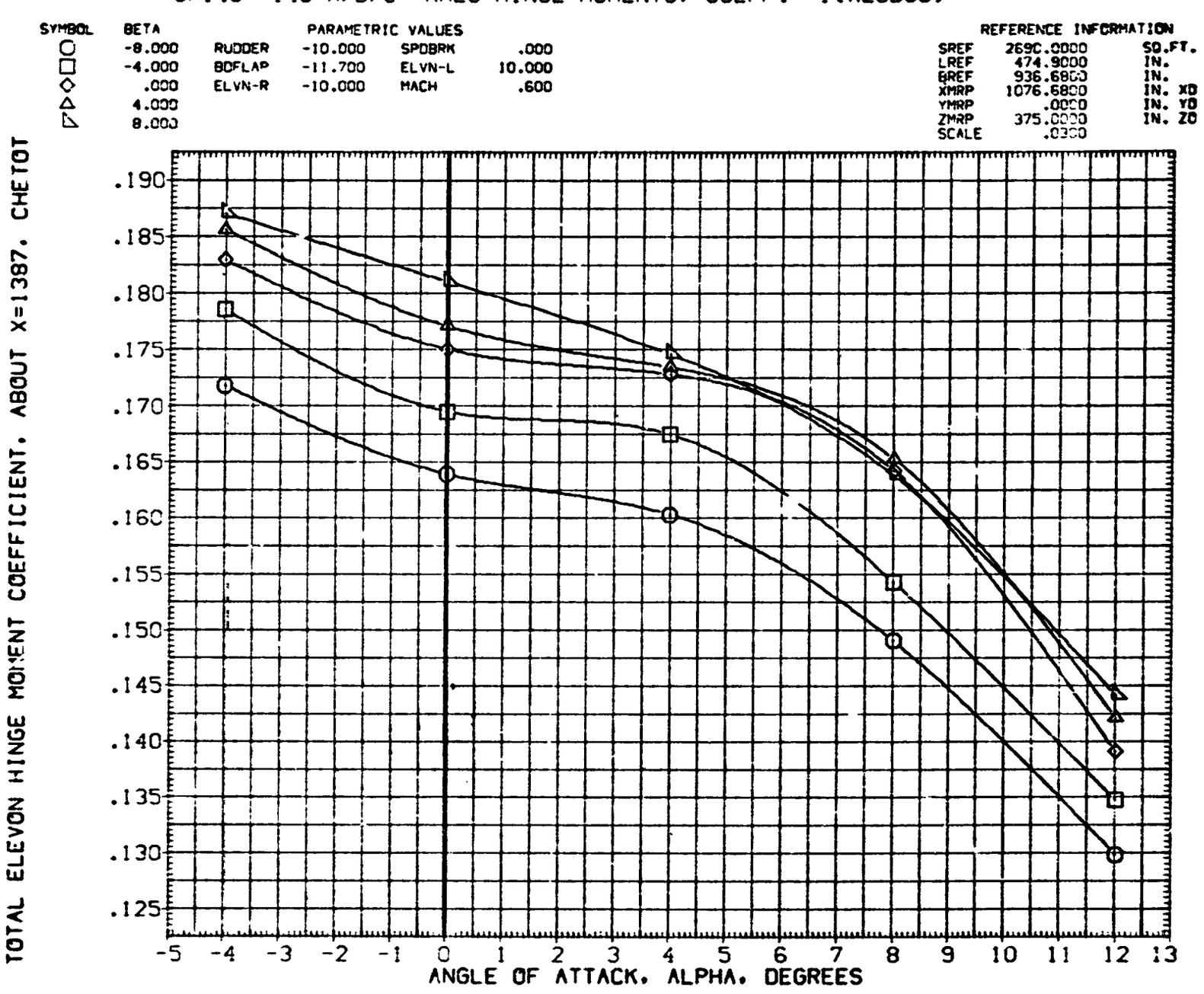


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

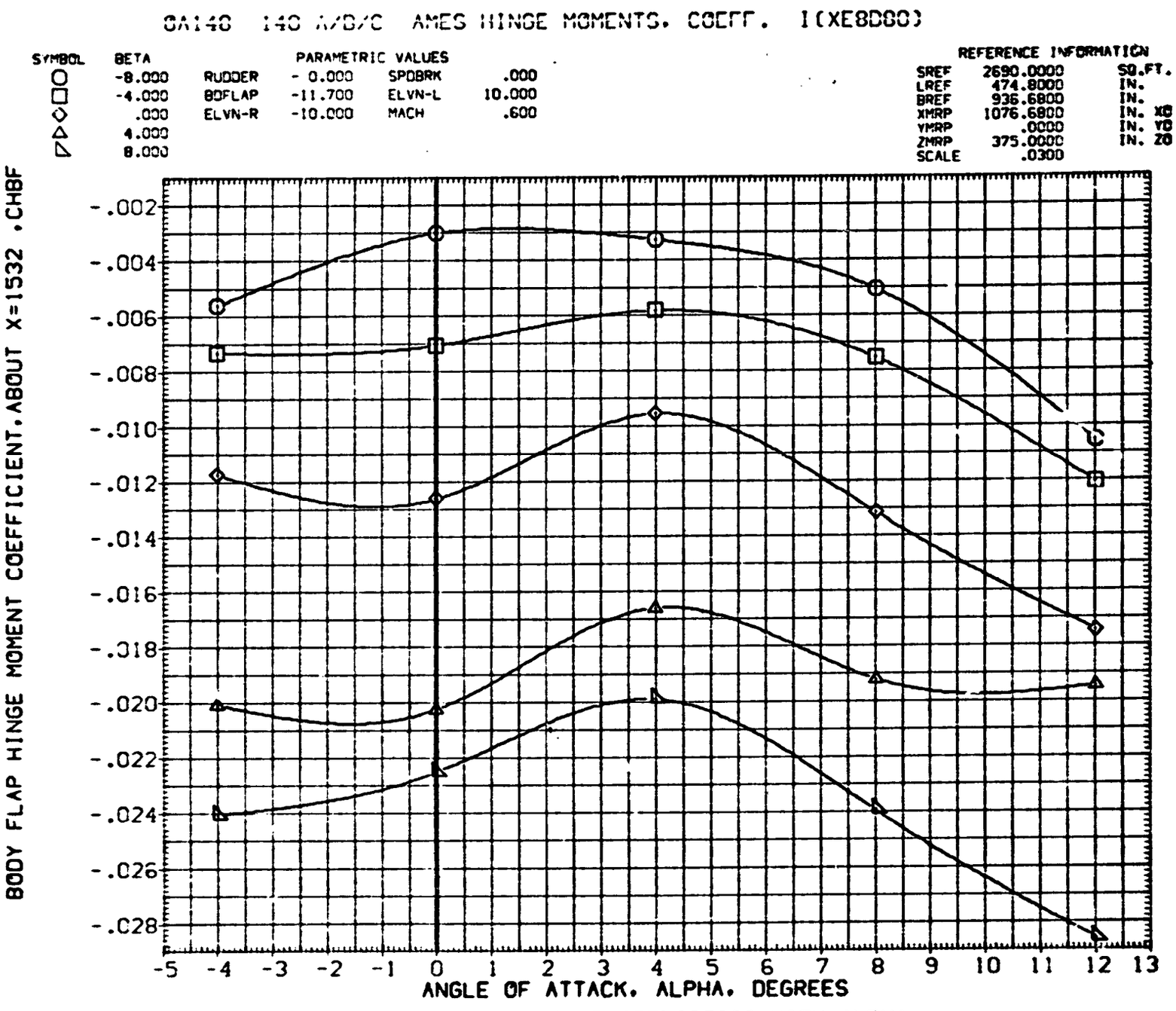


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

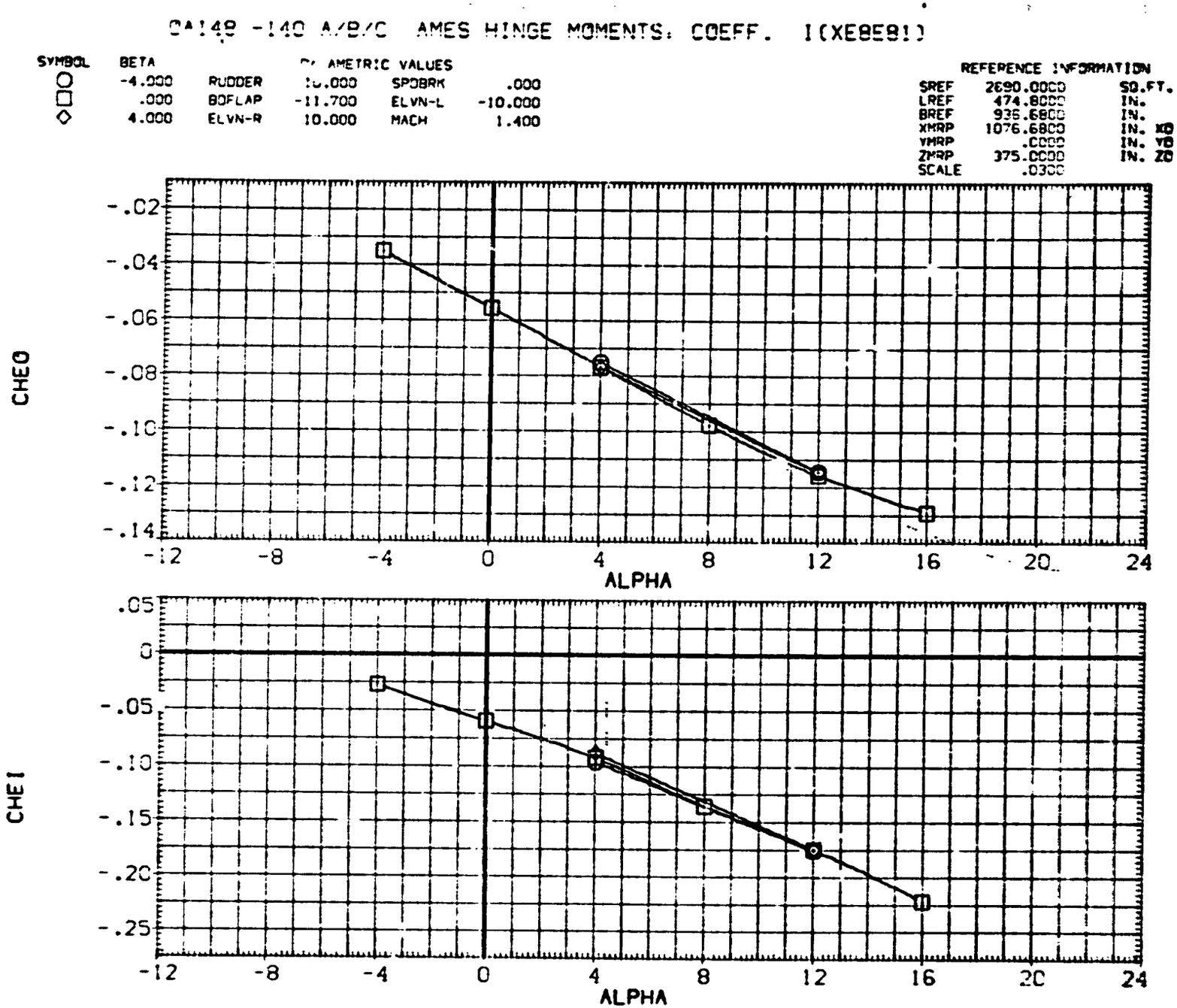


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

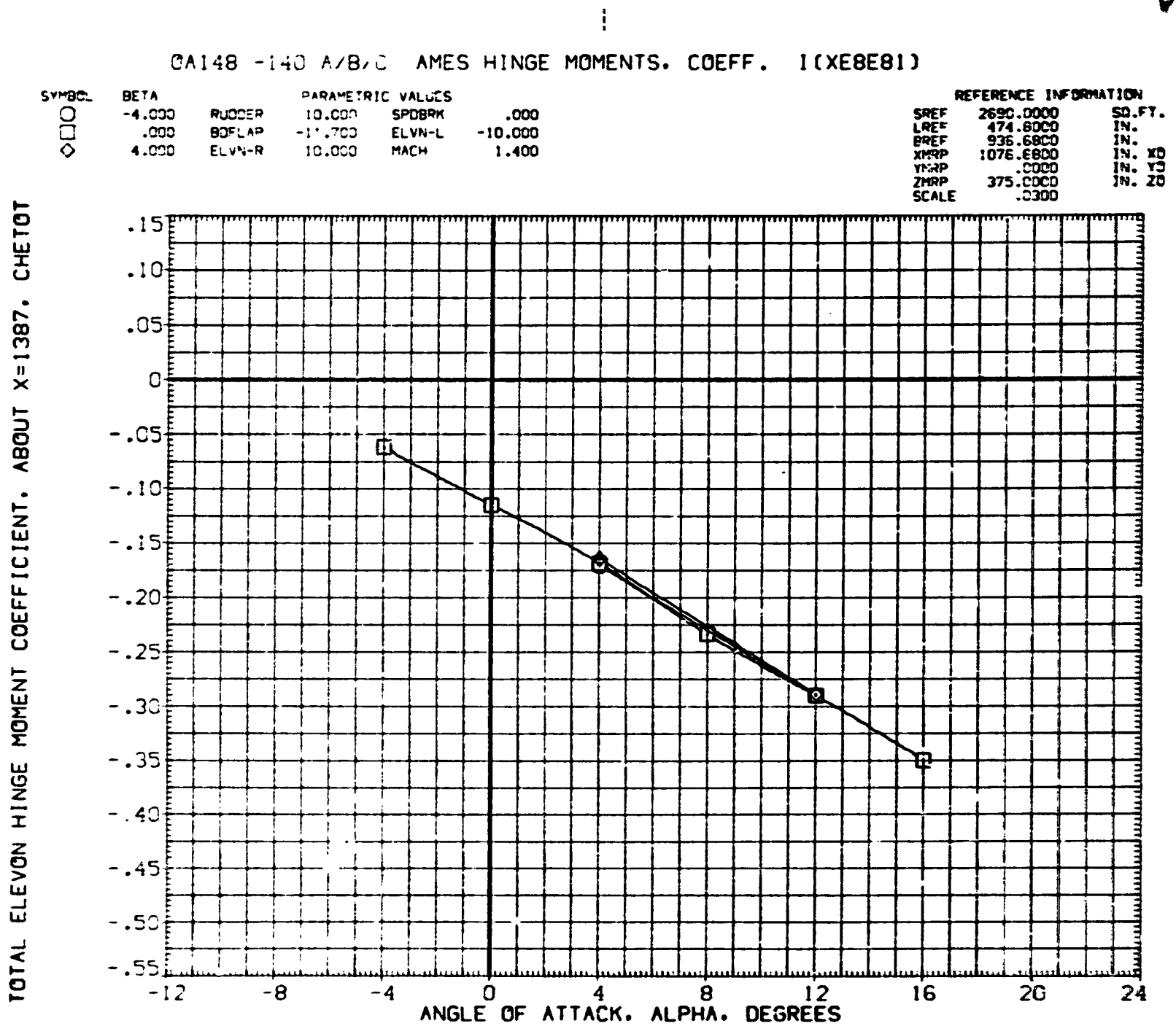


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

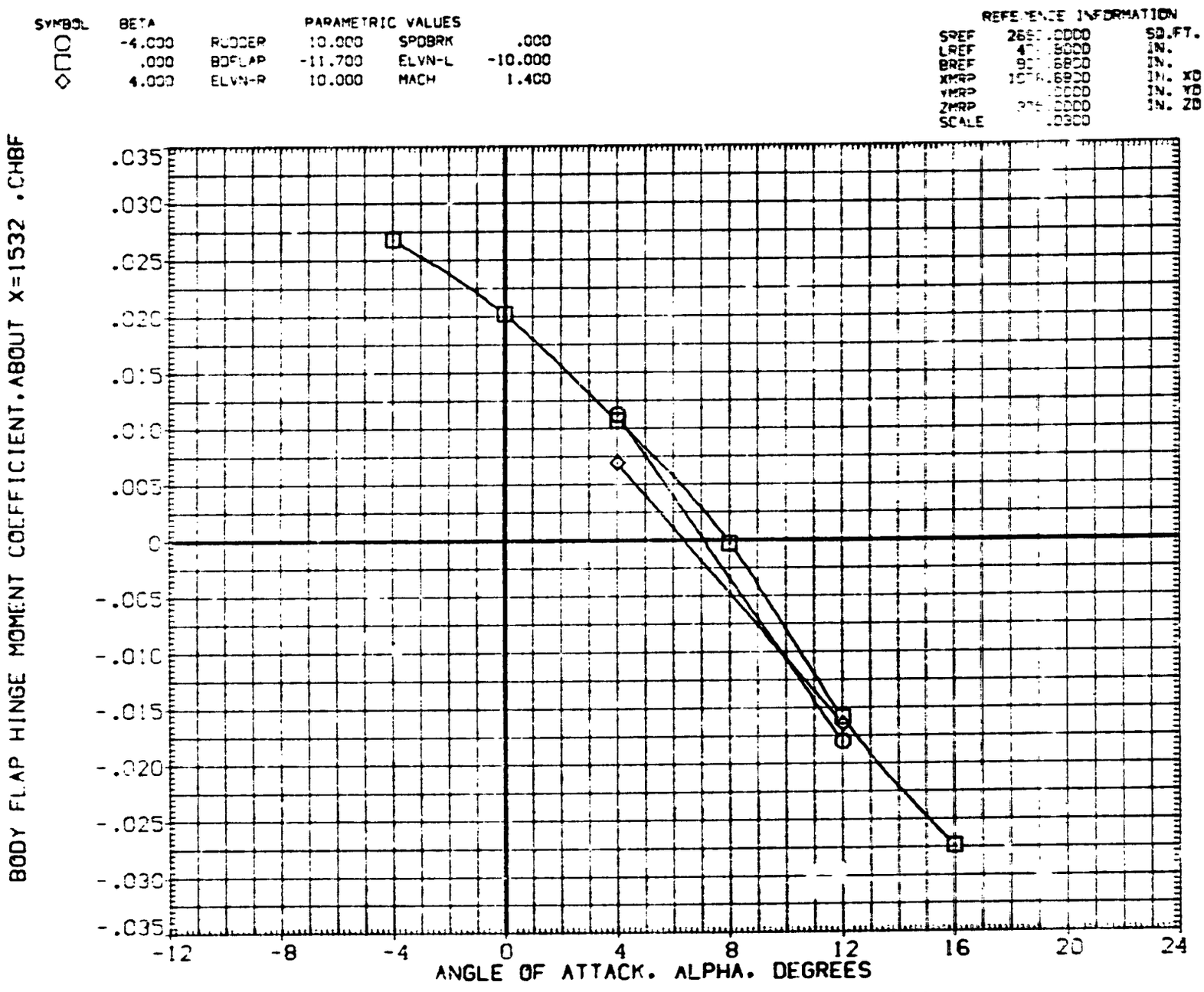


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

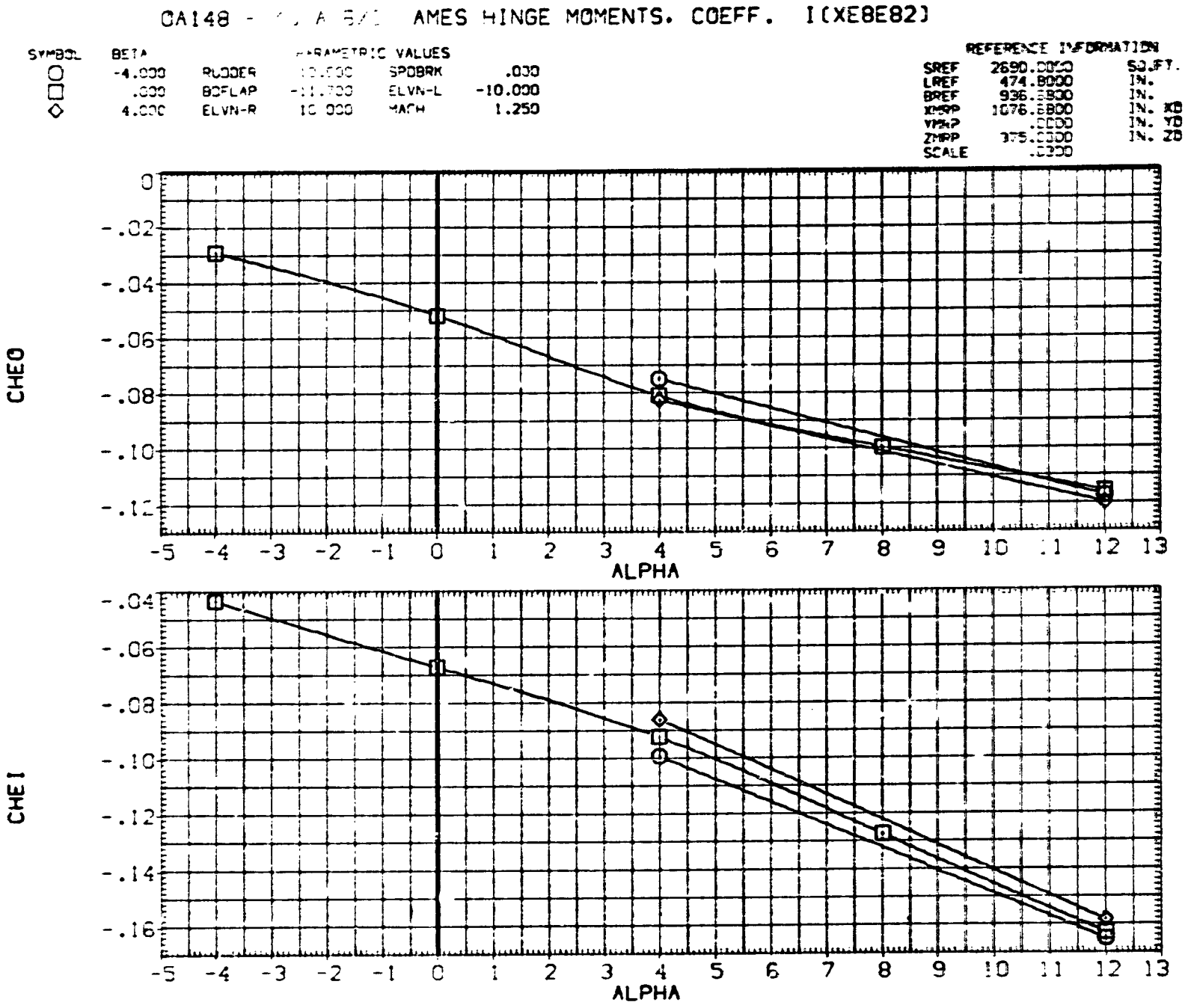


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

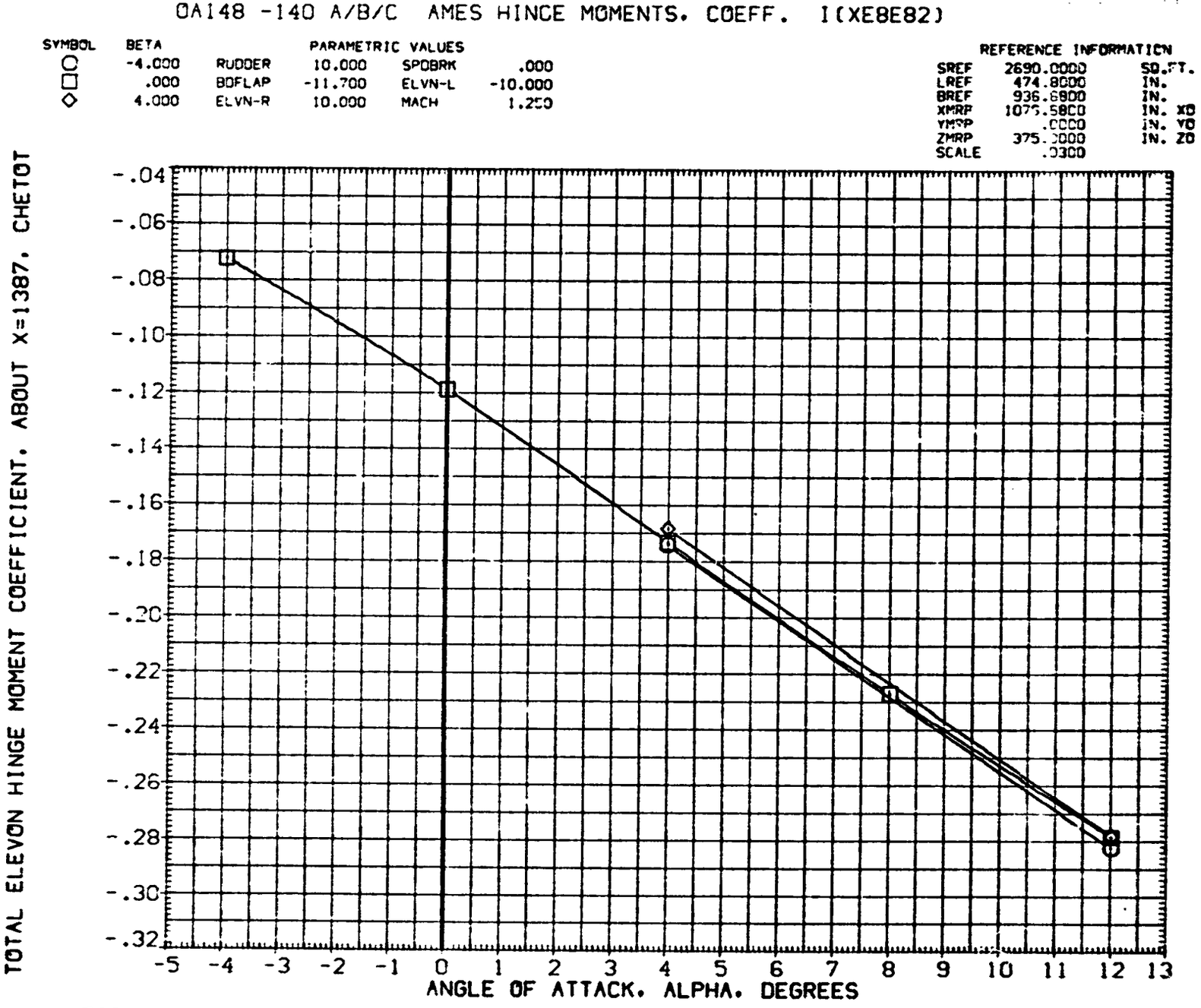


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8E82)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.250

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

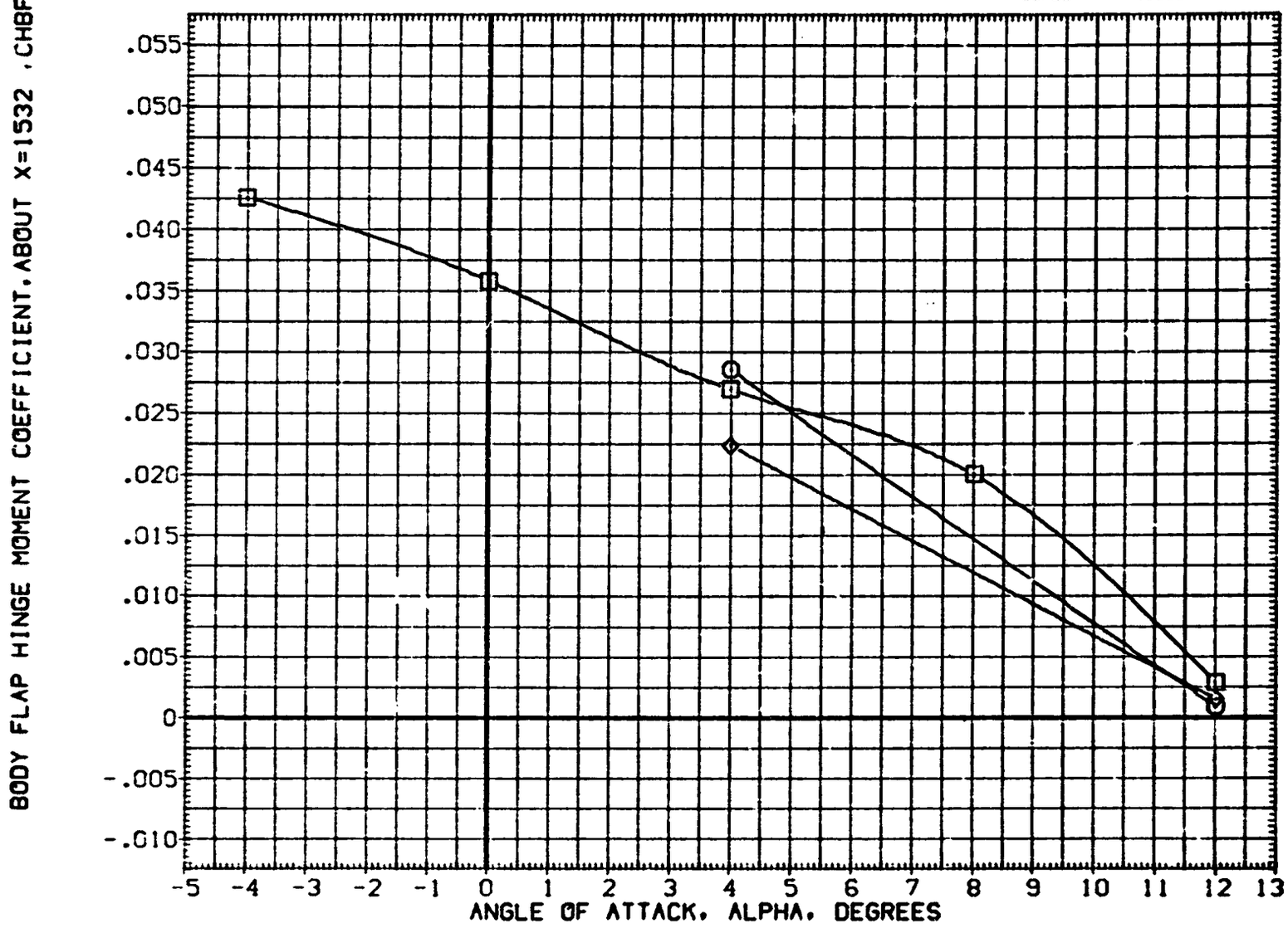


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.100

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

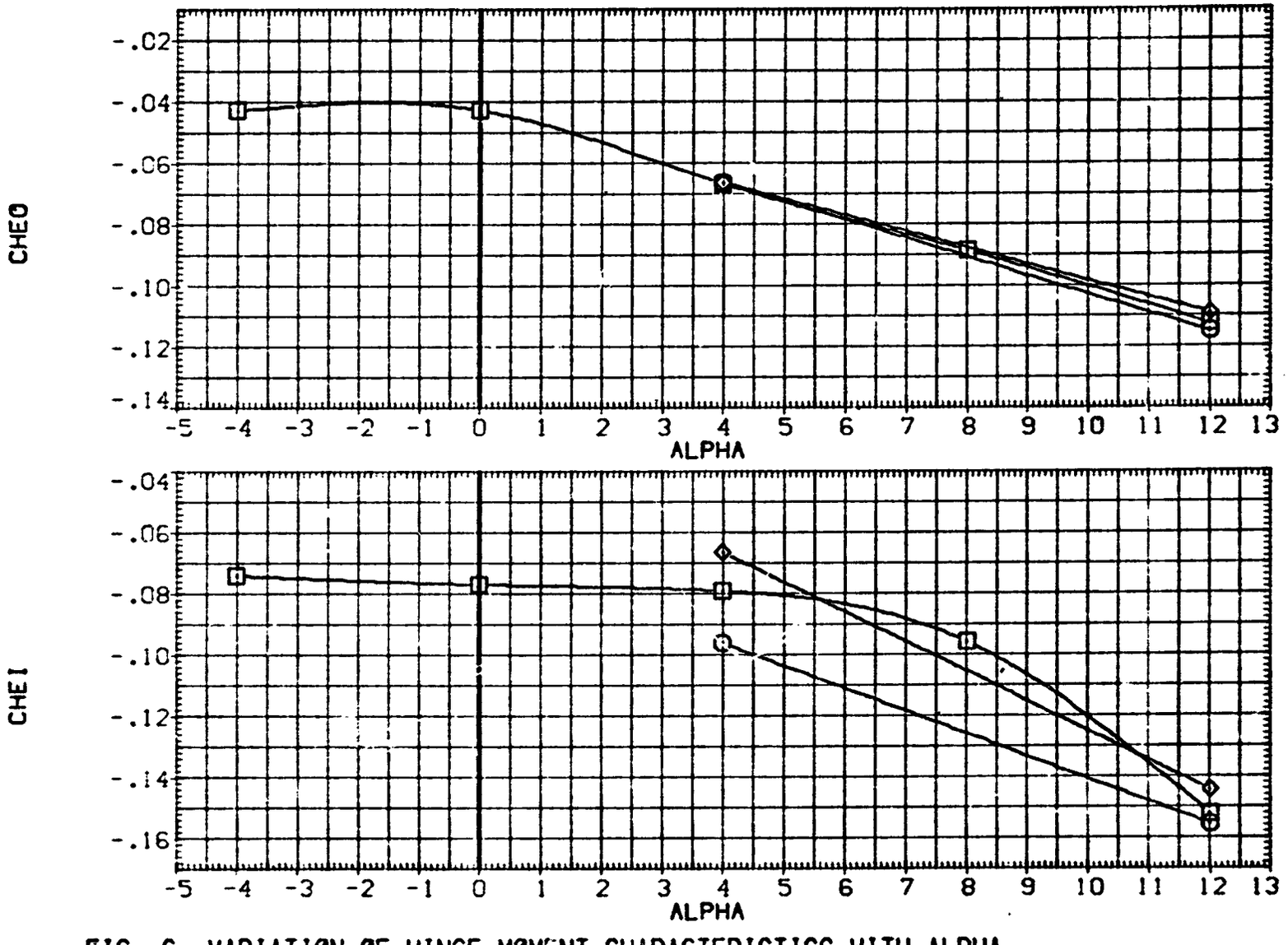


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

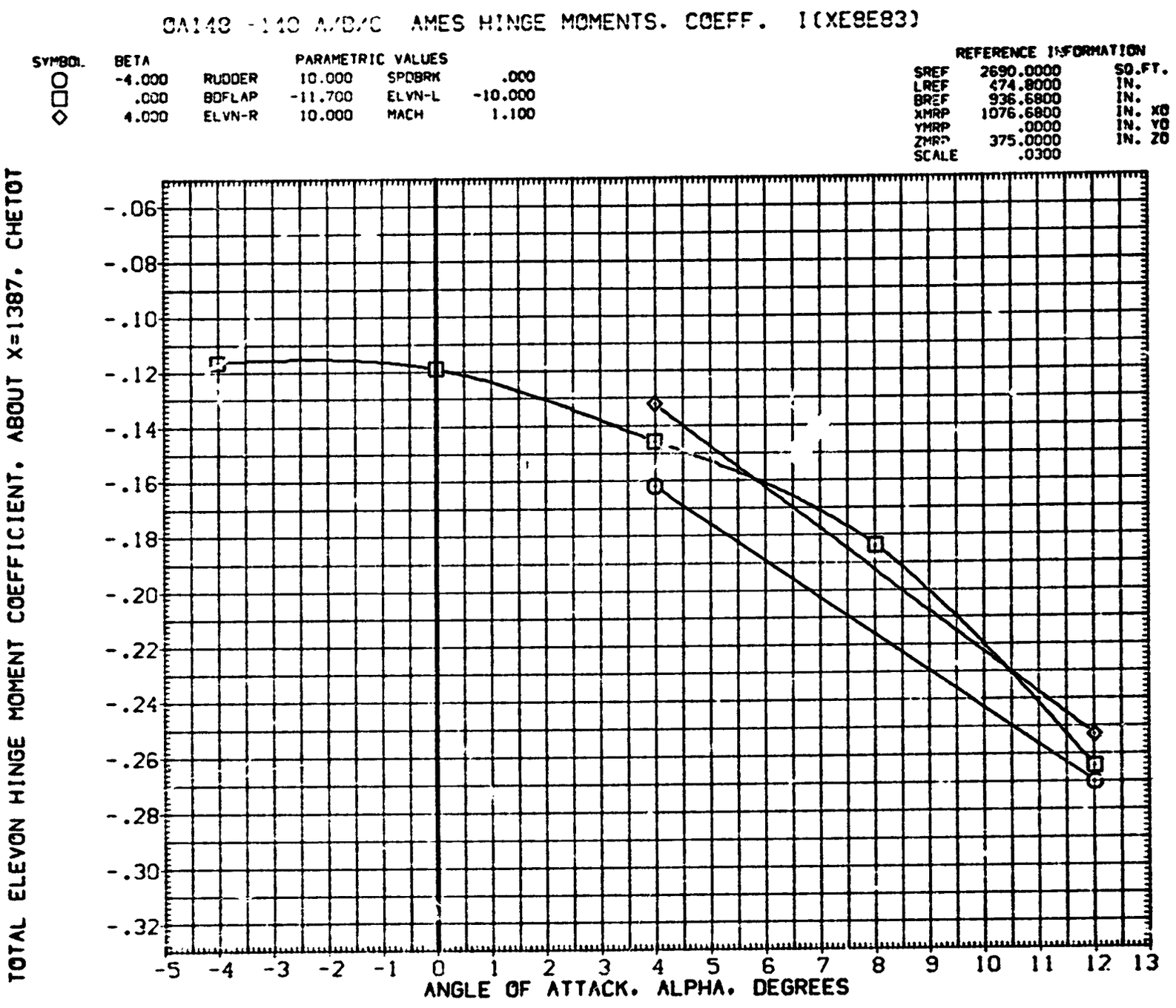


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8E83)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPDBRK	.000
□	.000	BDFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	1.100

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

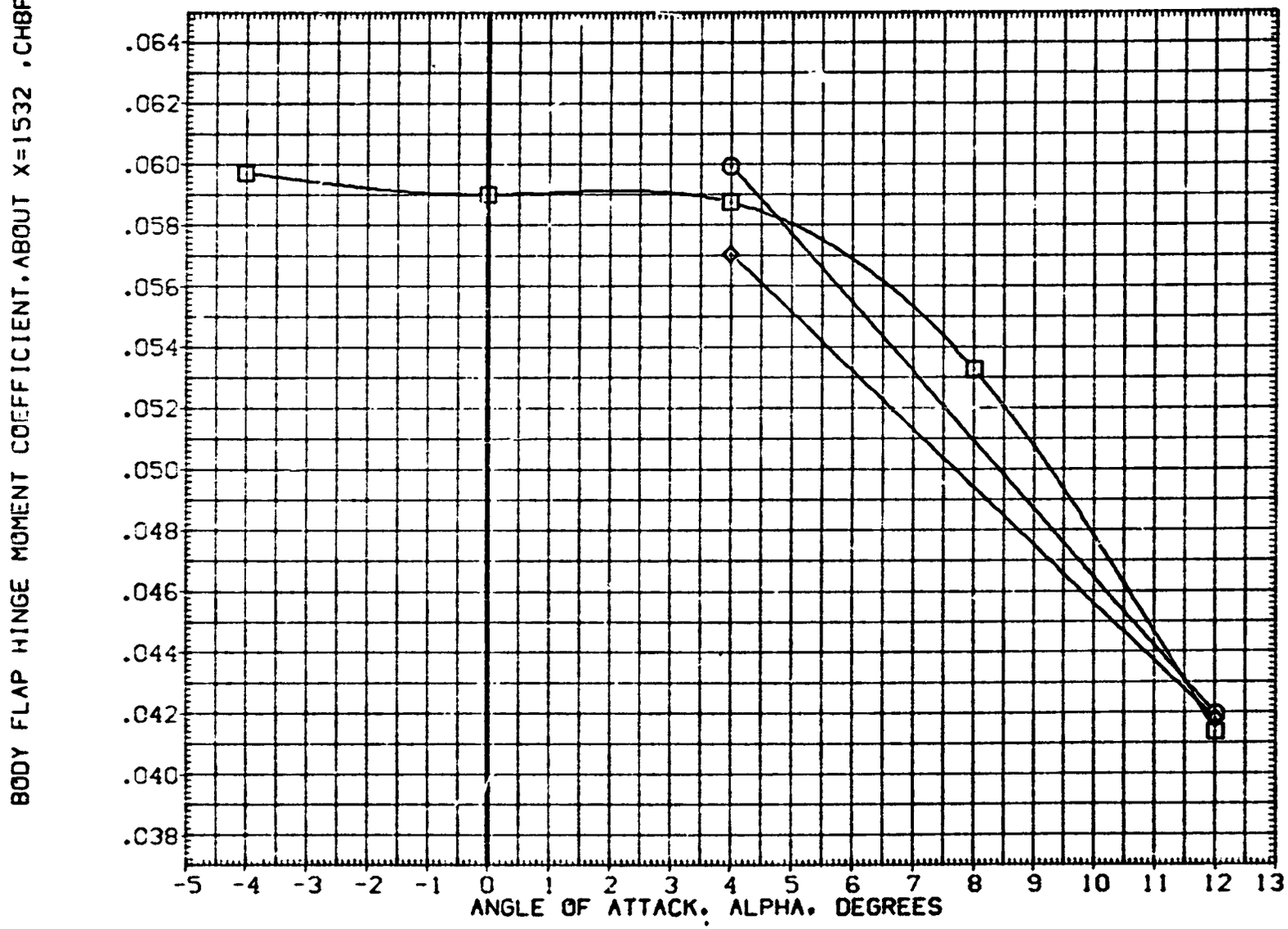


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

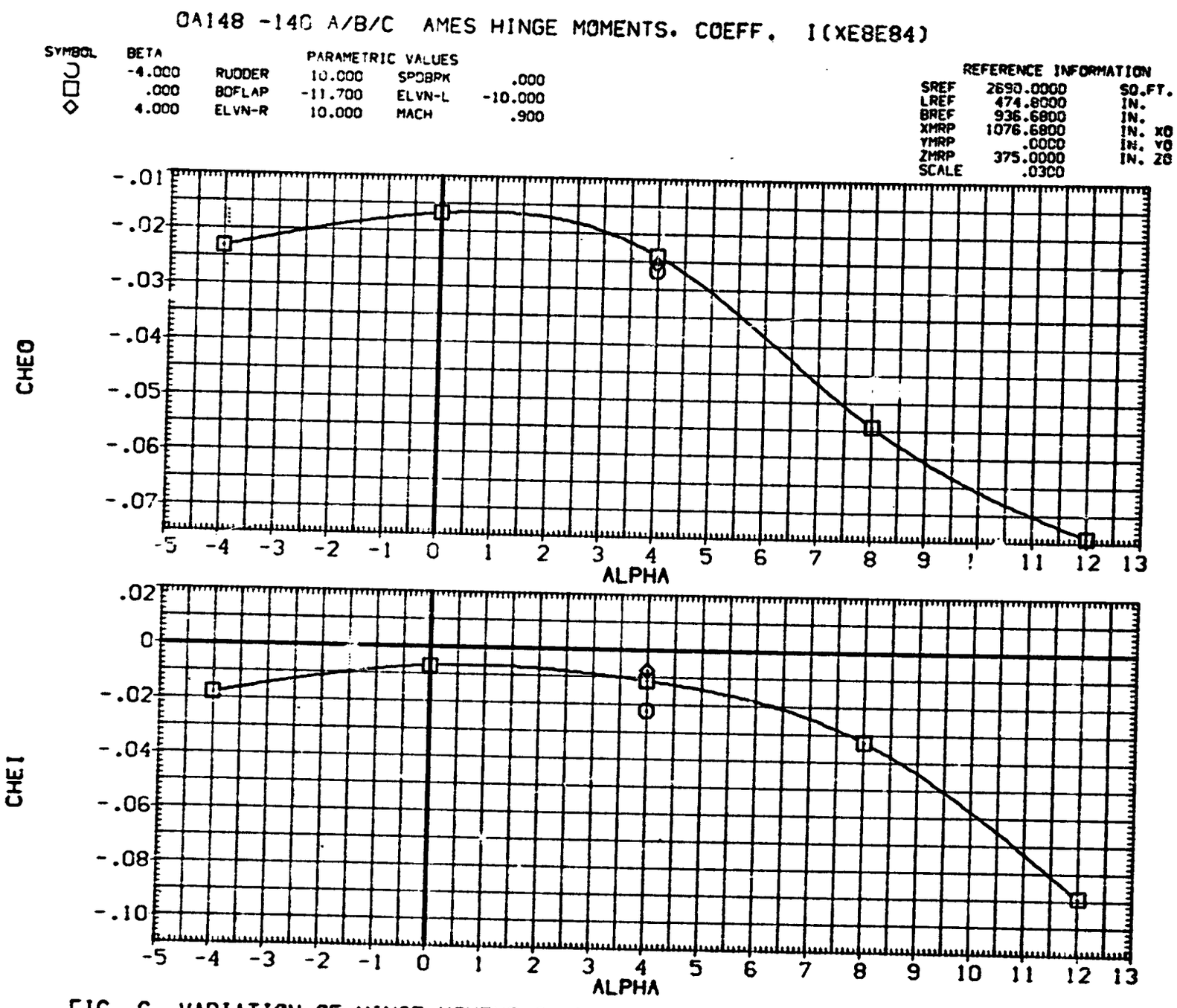


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS, COEFF, I(XE8E84)

SYMBOL	BETA		PARAMETRIC VALUES		
○	-4.000	RUDDER	10.000	SPOBRK	.000
□	.000	BOFLAP	-11.700	ELVN-L	-10.000
◇	4.000	ELVN-R	10.000	MACH	.900

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

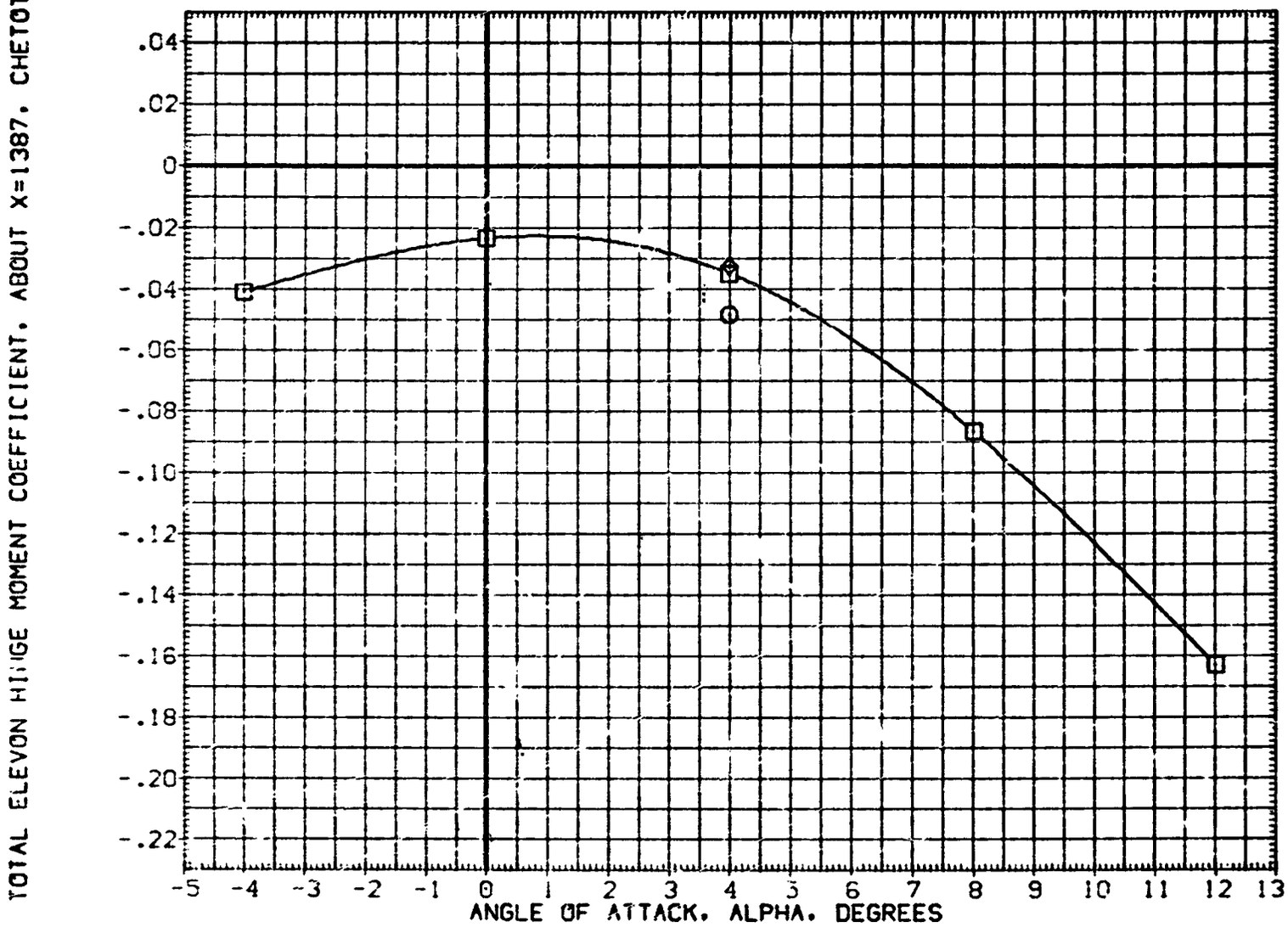


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

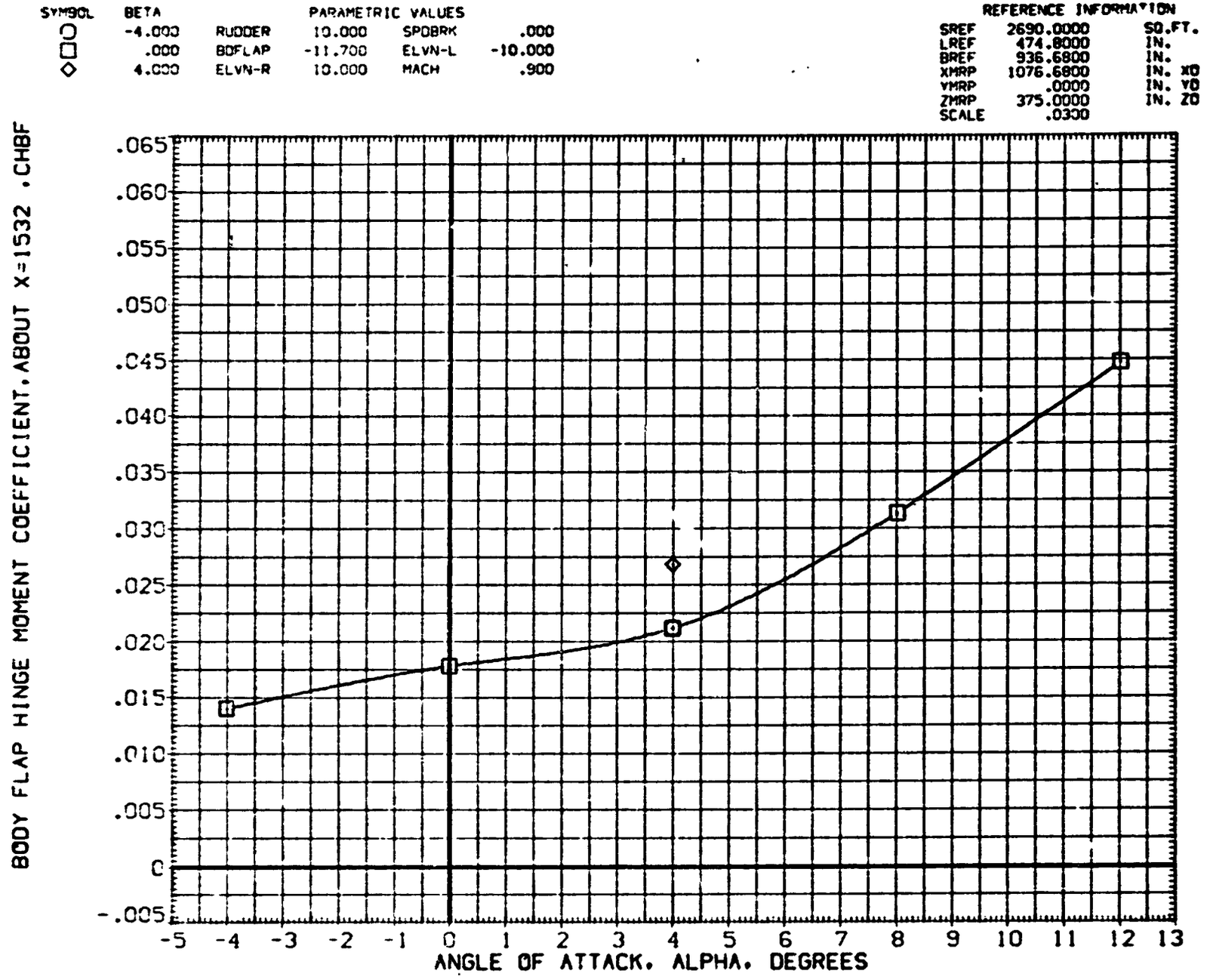


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D85)

SYMBOL	BETA	PARAMETRIC VALUES			
○	.000	RUDDER	10.000	SPOBRK	.000
		BOFLAP	-11.700	ELVN-L	-10.000
		ELVN-R	10.000	MACH	.600

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

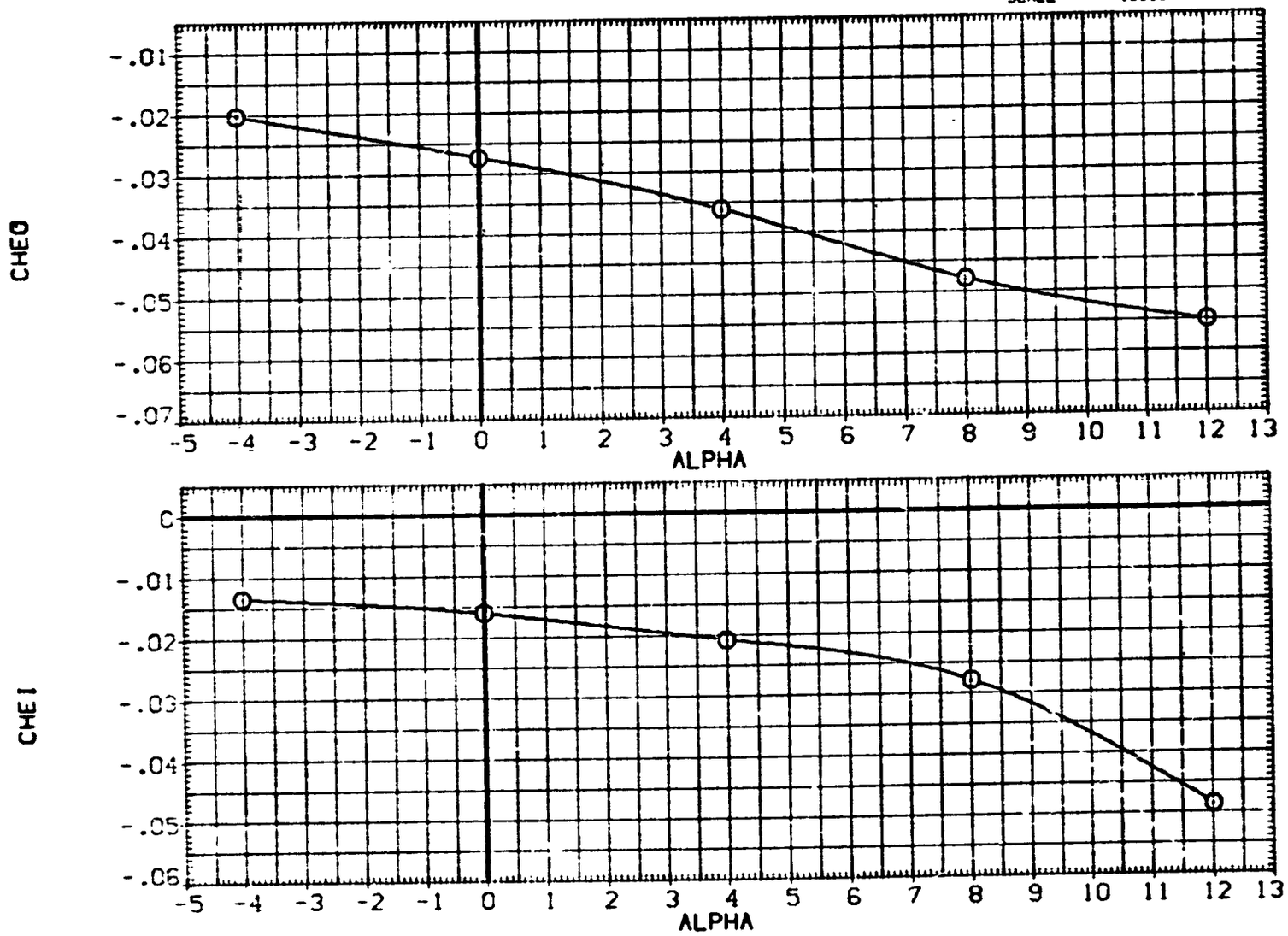


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

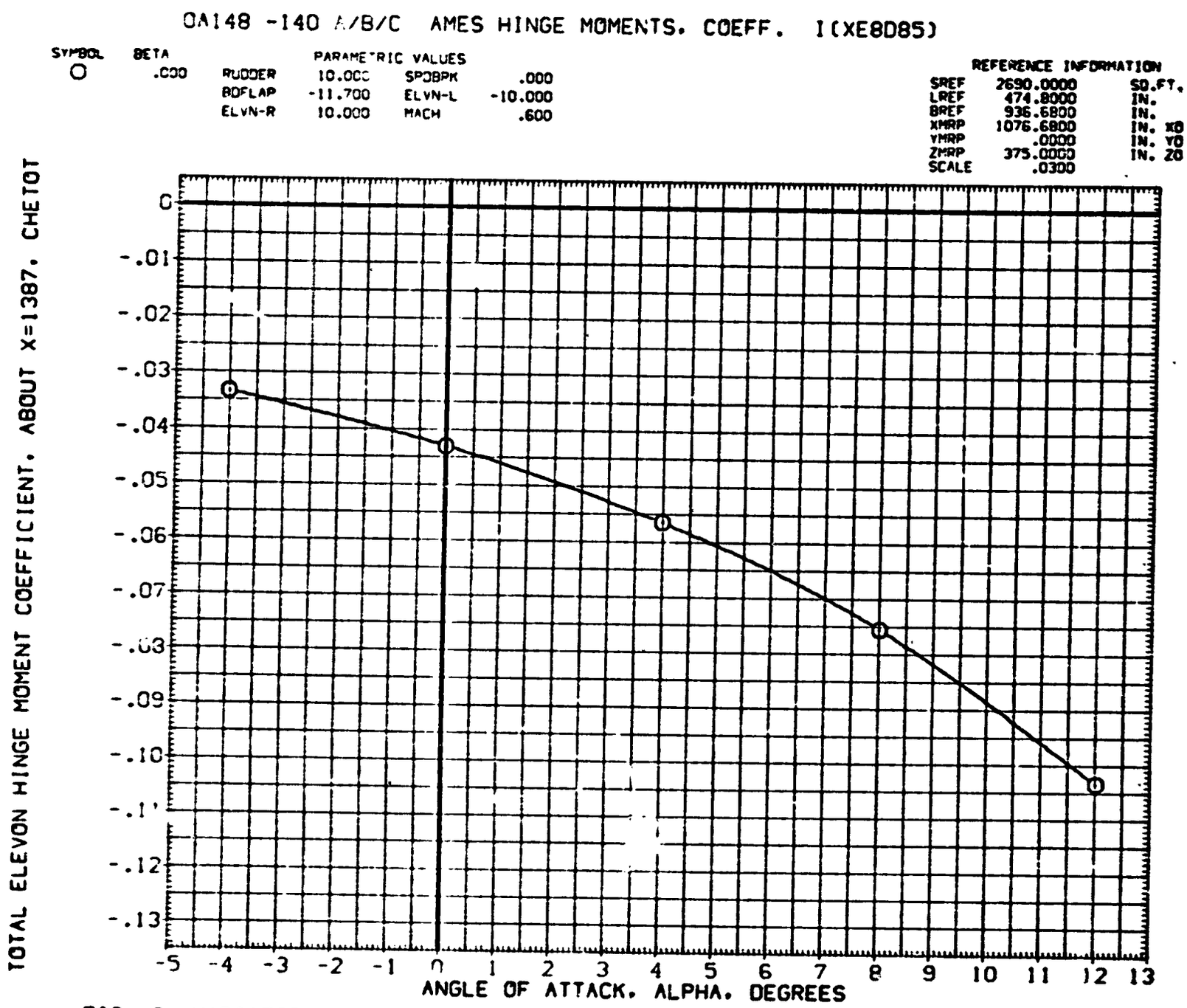


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA

OA148 -140 A/B/C AMES HINGE MOMENTS. COEFF. I(XE8D85)

SYMBOL	BETA	PARAMETRIC VALUES			
O	.000	RUDDER	10.000	SPDBRK	.000
		BDFLAP	-11.700	ELVN-L	-10.000
		ELVN-R	10.000	MACH	.600

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0300	

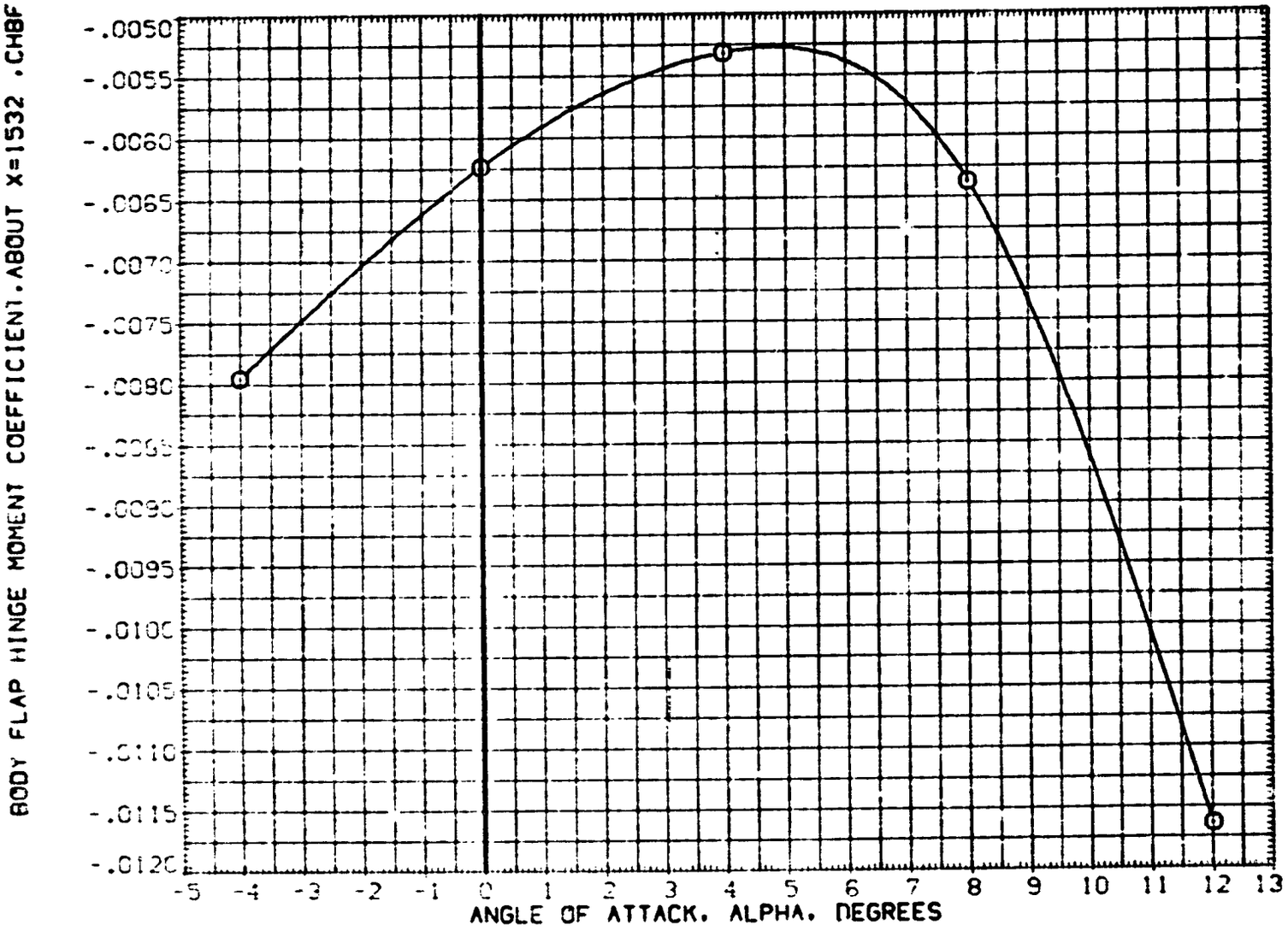


FIG. 6 VARIATION OF HINGE MOMENT CHARACTERISTICS WITH ALPHA