

QUOTATION

DURCO

No. 103697-M REV
103936-N REV

RECEIVED

FEB 28 1977 THE DURIRON COMPANY INC.

W.R. KELLY
P.A. DeSANTIS
SERVES THE PROCESS INDUSTRIES
DAYTON, OHIO 45401

PLEASE MENTION THIS NUMBER
WHEN ORDERING

RECEIVED

TO: ASARCO, INC.
500 CRANDALL BUILDING
SALT LAKE CITY, UTAH 84101

ISSUED AT: 222 MILWAUKEE ST.
DENVER, COLORADO
80206

ATTN: MR. FRANK BAER

DATE: FEBRUARY 17, 1977

SUBJECT CE-76-EP-62(E) REVISION 2
CE-76-EP-58(E) REVISION 1

PAGE 1 OF 1

WE PROPOSE TO FURNISH THE FOLLOWING:

Gentlemen:

We are pleased to submit the attached revised quotations for Durco Mark II heavy duty chemical process pumps. Per your request, we have changed some pumps to larger sizes and have eliminated pumps 20835, 36, 37, 38, 39 and 40. We have included Incalloy 825 casing bolts and nuts for Inquiry CE-76-EP-58(E), but have not done so on Inquiry CE-76-EP-62(E). Also, please find attached the corresponding pump curves and drawings.

The alloy recommendation for all of these pumps is Durcomet 100. This is a very hard stainless steel which readily lends itself to scrubber applications. Durcomet 100 (CD4M) is much more corrosion resistant in sulfuric acid than 316SS and is almost twice as hard. The Duriron Company, Inc. has successfully used this hard stainless steel in many scrubber applications. We've attached bulletin A/7 for further details on Durcomet 100.

We have quoted our Mark II Sealmatic pump as a net addition. The stuffing box of the Sealmatic is sealed hydraulically. The Sealomatics will reduce maintenance costs by eliminating rubbing seal faces that can wear out. The added lead time for Sealomatics over standard Mark II's is 6 weeks.

Copies for Messrs: F. O. Wittwer, E. H. Haug, L. Frewin and W. R. Kelly are attached.

Our terms are Net 30 days; FOB and shipping points are Dayton, Ohio. Delivery is 12 to 14 weeks after receipt of order or approval drawings, if required.

Should you have any further questions, please feel free to contact me.

Very truly yours,

Mark F. Gibbons

MFG/sm

cc: J. G. Shearer, Jr - Durco NY

T. L. Roof - Durco Tucson

SHIPMENT: - - - - - WEEKS AFTER RECEIPT OF ORDER AND/OR APPROVED PRINTS TERMS NET 30 DAYS, F.O.B. DAYTON OHIO

SUBJECT: - - - - -

FORM 245J - R4

PLAINTIFF'S EXHIBIT

ASA-1195

ASARCO ELP 0001967

PUMP PROPOSAL THE DURIRON CO., INC., DAYTON, OHIO

REVISION 1

QUOTE 103936-N

DATE 2/17/77

PAGE 1 OF 2

TO: ASARCO

RE: CE-76-EP-58 (E)

LOCATION SALT LAKE CITY, UTAH

ALTERNATE

Item Number	90355, 6, 7, 8, 9, 60	90355, 6, 7, 8, 9, 60	90371, 72	90337, 38
No. of Units	6	6	2	2
Liquid Pumped	H2O 2% H2SO4	H2O 2% H2SO4	2% H2O 2% H2SO4	H2O 2% H2SO4
Description (Slurry, Etc.)	2000mg/l solids	2000mg/l solids	2000mg/l solids	2000mg/l solids
Temperature/Suc. Press	120°F / 4	120°F / 4	120°F / 4	130°F /
S.G./Viscosity	1.15 /	1.15 /	1.15 /	1.15 /
Performance - GPM	620	620	125	35
TDH-Req'd/Off'd (FT)	65 / 65	65 / 65	40 / 40	70 / 70
NPSH-Avail/Req'd (FT)	/ 12	/ 2.8	/ 1.3	/ 1
BHP-Op. Cond./Max.	16.1 / 17.8	15.5 / 18.4	2.65 / 3.2	2.1 / 2.76
Curve Number	MII 7600 AV	MII 8127 V	MII 7802 AV	MII 8002 AV
Pump Series	4x3-10H/94	6x4-13A/124	3x2-10/70	2x1-10/86
Alloy - Casing	D100	D100	D100	D100
Rear Cover	D100	D100	D100	D100
Impeller	D100	D100	D100	D100
Shaft Sleeve	STL / DC8	STL / DC8	STL / DC8	STL / DC8
Size - Suction x Discharge	4x3	6x4	3x2	2x1
Impeller Dia. - Offered/Max.	9 1/2 / 10	12 1/2 / 13	7 / 10	8 3/4 / 10
Special Features:	INCALLOY 825 BOLTS & NUTS	INCALLOY 825 BOLTS & NUTS	INCALLOY 825 BOLT & NUTS	INCALLOY 825 BOLTS & NUTS
Baseplate Number/Mat'l	53 / STL	53 / STL	52 / STL	52 / STL
Coupling - Mfg. - Size	WOODS SC3	WOODS SC9	WOODS SC5	WOODS SC5
Optional Coupling				
Coupling Guard	OSHA STL	OSHA STL	OSHA STL	OSHA STL
Mechanical Seal-Mfr.-Type				
Code-Int. or Ext. (Single or Dbl.)				
Metal Parts				
Seal Ring				
Seat - Mtg.				
Shaft Pkg.				
Gland-Alloy-Mfr.-Type				
Std. Packing	ASBESTOS/TFE	ASBESTOS/TFE	ASBESTOS/TFE	ASBESTOS/TFE
Motor-HP RPM	20 / 1750	20 / 1120	3 / 1750	3 / 1750
Frame	256T	256T	182T	182T
Ph./Cycle/Volts	3 / 60 / 460	3 / 60 / 460	3 / 60 / 460	3 / 60 / 460
Type	CORO-DUTY	CORO-DUTY	CORO-DUTY	CORO-DUTY
	1.15 SF	1.15 SF	1.15 SF	1.15 SF
Net Prices - Pump, Base, Cplg. & Guard	\$	\$	\$	\$
Mechanical Seal				
Motor				
Total Unit - Price	\$ 2289.00	\$ 3195.00	\$ 1573.00	\$ 1410.00
Optional: THERMA SENTRY	\$ 195.00	\$ 195.00	\$ 195.00	\$ 195.00
SEALMATIC	763.00	930.00	784.00	795.00
CR9 O/XF311C1 MECH SEAL	80.00	80.00	80.00	80.00
Shipment - Weeks (Approx.)	12-14 WEEKS ARO	12-14 WEEKS ARO	12-14 WEEKS ARO	12-14 WEEKS ARO
Total Unit Wt. - Lb.	690#	905#	400#	405#

ASARCO ELP 0001968

THE DURIRON CO., INC., DAYTON, OHIO

TO: ASARCO

RE: CE-76-EP-58 (E)

REVISION 1

QUOTE 103936-N

DATE 2/17/77

PAGE 2 OF 2

LOCATION SALT LAKE CITY, UTAH

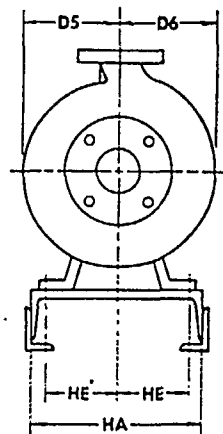
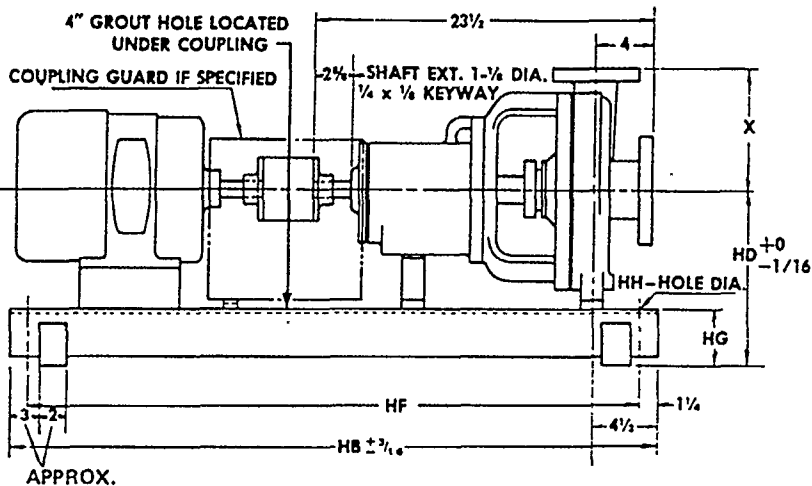
Item Number	90315, 16	20815, 16	90603, 04	
No. of Units	2	2	2	
Liquid Pumped	H2O 2% H2SO4	H2O 2% H2SO4	H2O 2% H2SO4	
Description (Slurry, Etc.)	2000mg/l solids	2000mg/l solids	2000mg/l solids	
Temperature/Suc. Press	130°F / 4	AMB /	100°F /	/
S.G./Viscosity	1.15 /	1.15 /	1.15 /	/
Performance - GPM	60	140	70	
TDH-Req'd/Off'd (FT)	100 / 100	15 / 15	65 / 65	/
NPSH-Avail/Req'd (FT)	/ 1.0	/ 1.0	/ 1.2	/
BHP-Op. Cond./Max.	4.6 / 8.6	0.92 / 1.27	3.0 / 4.3	/
Curve Number	MII 7300 AV	MII 7904 AV	MII 7702 AV	
Pump Series	3x1 1/2-13/96	4x3-10/66	3x1 1/2-10/82	
Alloy - Casing	D100	D100	D100	
Rear Cover	D100	D100	D100	
Impeller	D100	D100	D100	
Shaft/Sleeve	STL / DC3	STL / DC3	STL / DC3	/
Size - Suction x Discharge	3 x 1 1/2	4 x 3	3 x 1 1/2	
Impeller Dia. - Offered/Max.	9 3/4 / 13	6 3/4 / 10	8 1/4 / 10	
Special Features	INCALLOY 825 BOLTS & NUTS	INCALLOY 825 BOLTS & NUTS	INCALLOY 825 BOLTS & NUTS	
Baseplate Number-Mat'l	52 STL	52 STL	52 STL	
Coupling - Mfg. - Size	WOODS SC6	WOODS SC4J	WOODS SC5	
Optional Coupling				
Coupling Guard	OSHA STL	OSHA STL	OSHA STL	
Mechanical Seal-Mfr.-Type				
Code-Int. or Ext.(Single or Dbl.)				
Metal Parts				
Seal Ring				
Seat - Mfg.				
Shaft Pkg.				
Gland-Alloy-Mfr. - Type				
Srd. Packing	ASBESTOS/TFE	ASBESTOS/TFE	ASBESTOS/TFE	
Motor-HP RPM	7 1/2 / 1750	1 1/2 / 1150	5 / 1750	/
Frame	213T	132T	184T	
Ph. Cycle. Volts	/	/	/	/
Type				
Net Prices - Pump, Base, Cplg. & Guard	\$	\$	\$	\$
Mechanical Seal				
Motor				
Total Unit - Price	\$ 1812.00	\$ 1895.00	\$ 1446.00	\$
Optional: THERMA SENTRY	\$ 195.00	\$ 195.00	\$ 195.00	\$
Sealmatic	955.00	768.00	790.00	
R9 Q/XP311C1 MECH SEAL	80.00	80.00	80.00	
Shipment - Weeks (Approx.)	12-14 WEEKS ARO	12-14 WEEKS ARO	12-14 WEEKS ARO	
Total Unit Wt. - Lb.	520#	420#	410#	

Group II (10H & 13")

Dimension Drawing P-10-314 a

Certified: _____

By: _____



Pump Dimensions & Weights

Std. Pump	Std. No.	Suct. Size	Dis. Size	X	D1	D2	D3	D4	D5	D6	D7	D8	Bare Pump Wt.
4 x 3-10H	A40A	4	3	12½	7	1⅞	2	1⅞	6¾	8½	2⅞	1¾	249
3 x 1½-13	A20	3	1½	10½	7⅞	1⅞	1⅞	1⅞	8¼	8¼	2	1¾	250
3 x 2-13	A30	3	2	11½	7⅞	1⅞	1½	1¾	8¼	8¾	2	1¾	258
4 x 3-13	A40	4	3	12½	8	1⅞	2	1⅞	8¼	9¾	2⅞	1¾	281
6 x 4-13A	A80	6	4	13½	8⅞	2¾	2¾	1⅞	9	10⅞	—	—	344

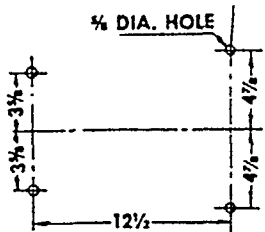
Size	150#			300#		
	No.	Size	B.C.	No.	Size	B.C.
1	4	3 $\frac{1}{8}$	3 $\frac{1}{8}$	—	—	—
1 $\frac{1}{2}$	4	3 $\frac{1}{8}$	3 $\frac{7}{8}$	4	7 $\frac{1}{8}$	4 $\frac{1}{2}$
2	4	3 $\frac{1}{8}$	4 $\frac{1}{4}$	8	3 $\frac{1}{8}$	5
3	4	3 $\frac{1}{4}$	6	8	7 $\frac{1}{8}$	6 $\frac{3}{8}$
4	8	3 $\frac{1}{4}$	7 $\frac{1}{2}$	8	7 $\frac{1}{8}$	7 $\frac{7}{8}$
6	8	7 $\frac{1}{8}$	9 $\frac{1}{2}$	12	7 $\frac{1}{8}$	10 $\frac{3}{8}$

Flange Drilling

Optional Connections

Item	Part
I	Casing Drain
II	Suction Nozzle Gage Connections
III	Discharge Nozzle Gage Connections
IV	Auxiliary Connection
VI	Back Drilled Seal Flush Connection
VII	Bottom Tap in Stuffing Box

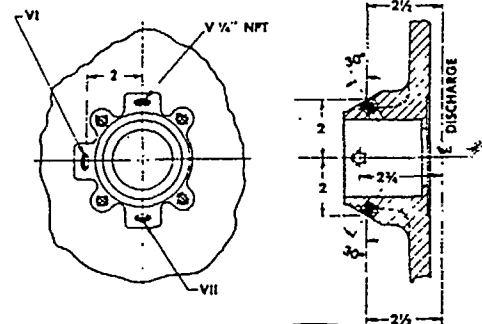
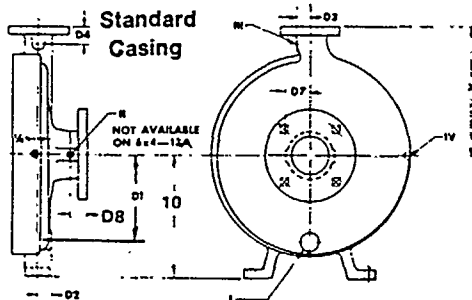
Bare Pump Mounting Holes



Optional Features *

Jacketed Cover (P-1021-1)
Jacketed Box (P-1021-2)
Jacketed Casing (P-1021-3)
Jacketed Brg. Hsg. (P-1021-4)
Combined Jacketed Cover & S.B. 3 x 2-7 only (P-1021-5)
Special Baseplate (P-1021-6)

*Separate Drawing Attached When Applicable

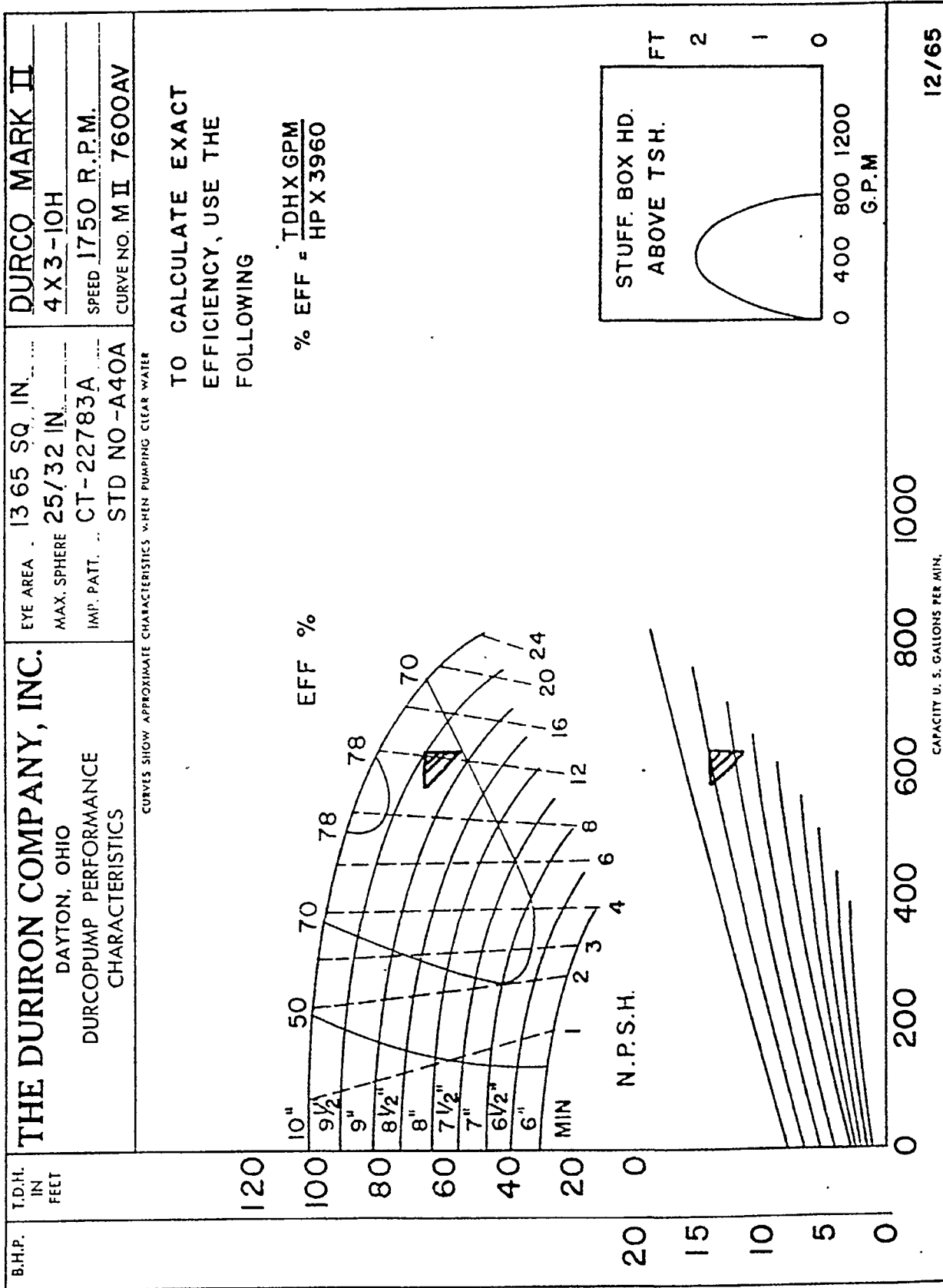


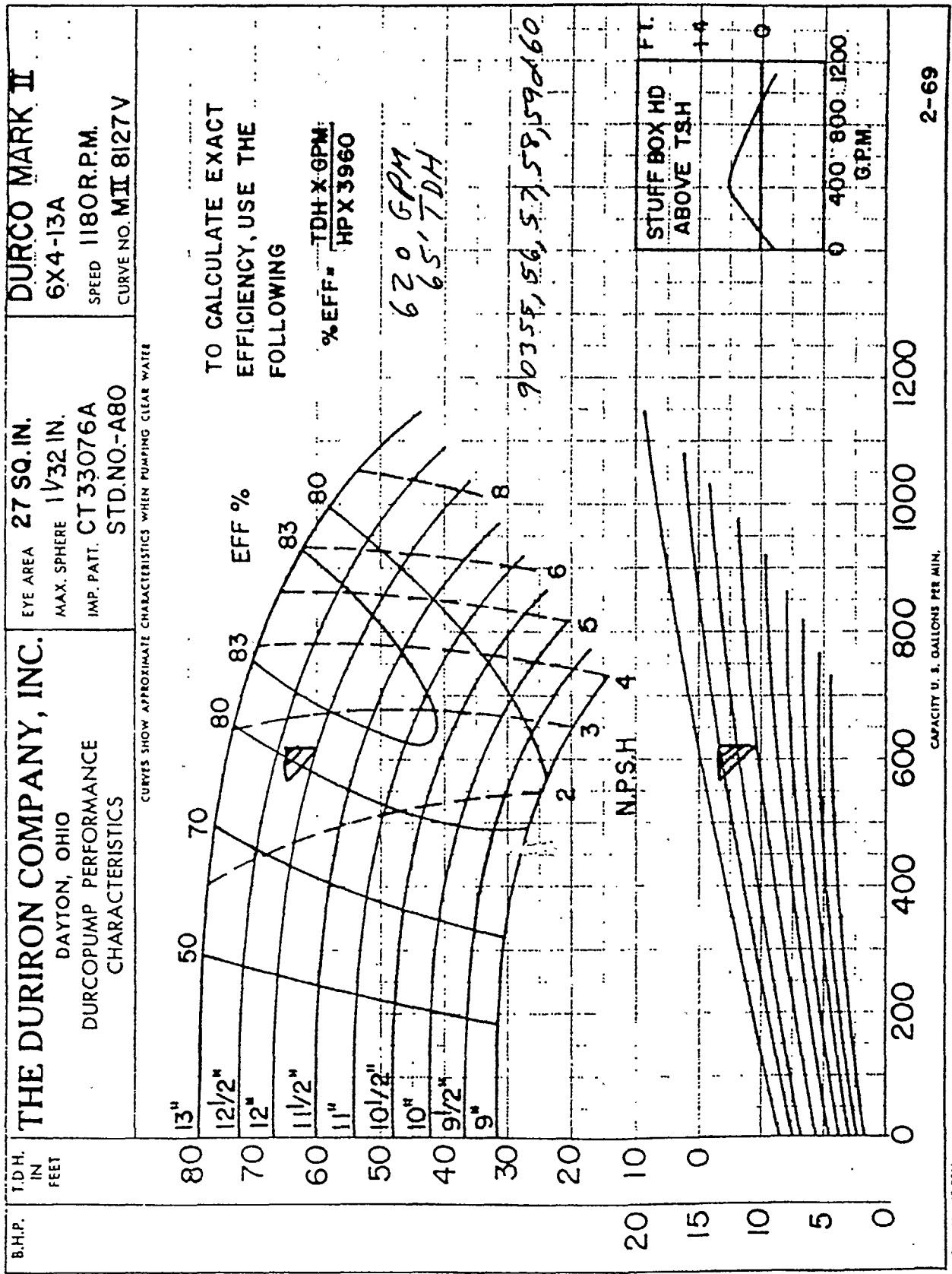
* Motor end of this base is 22" because extensions are welded to top to allow mounting of large motors.

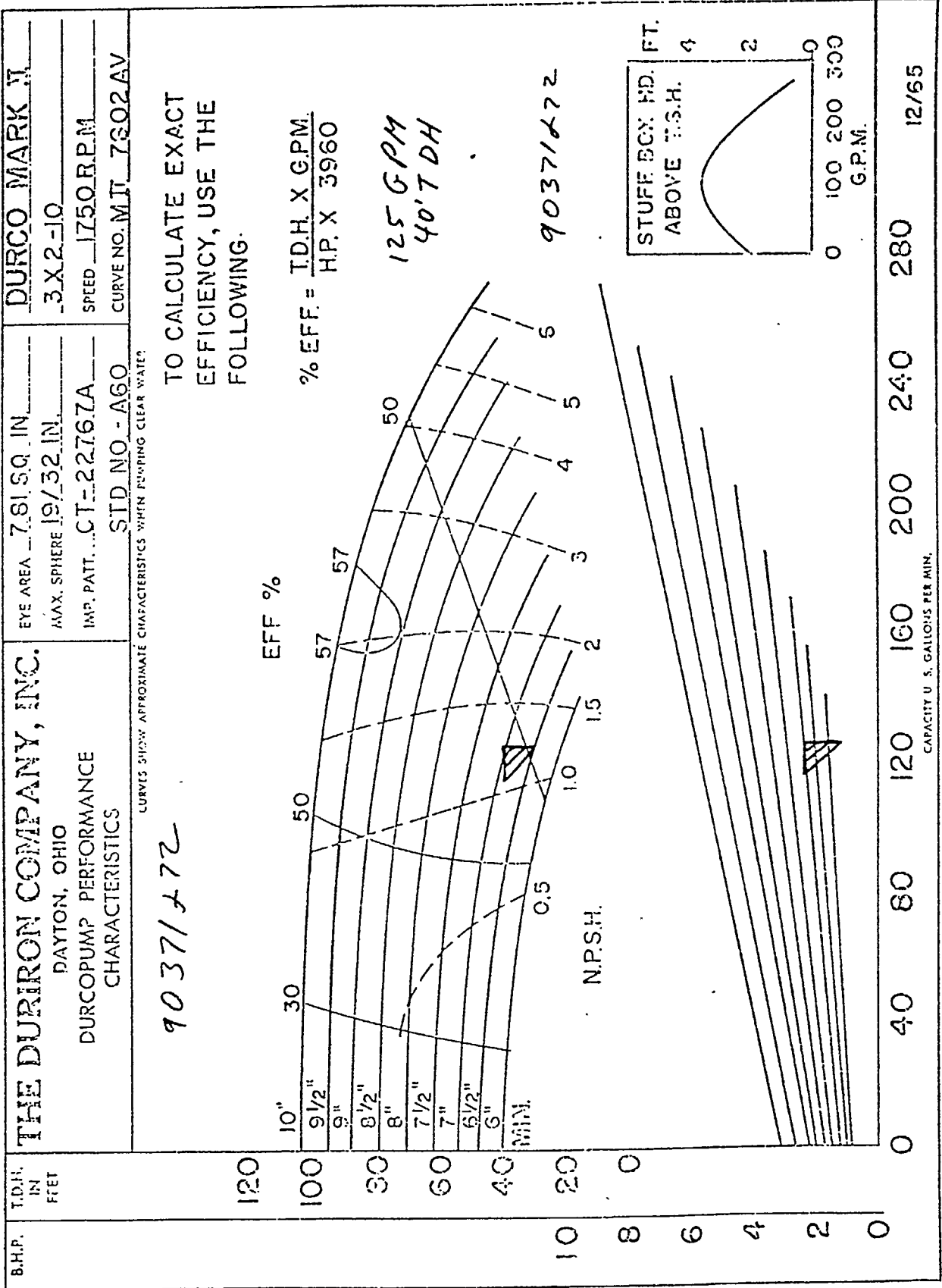
Stuffing Box

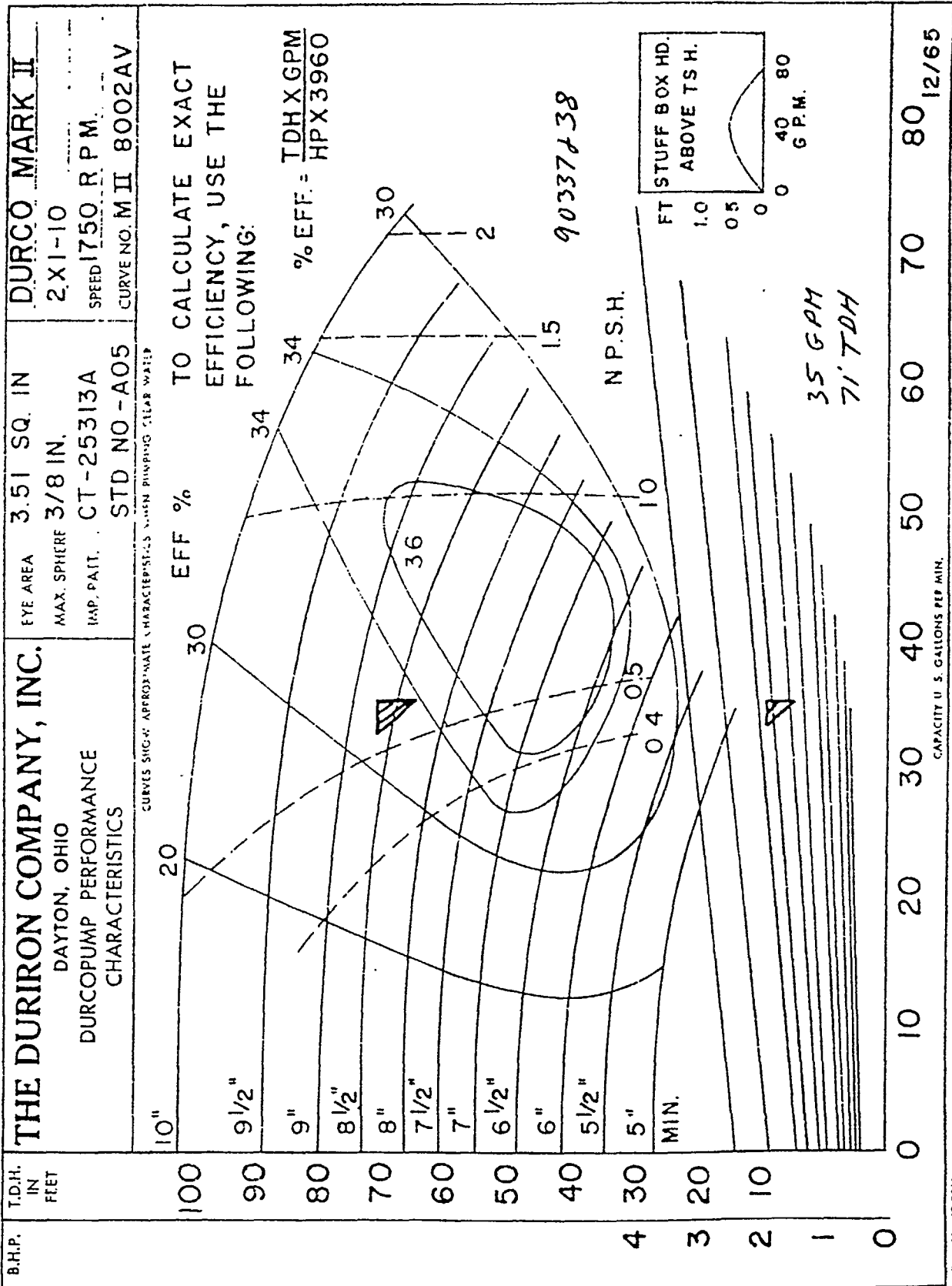
THE DURIRON COMPANY INC., DAYTON, OHIO 

Printed in U.S.A.

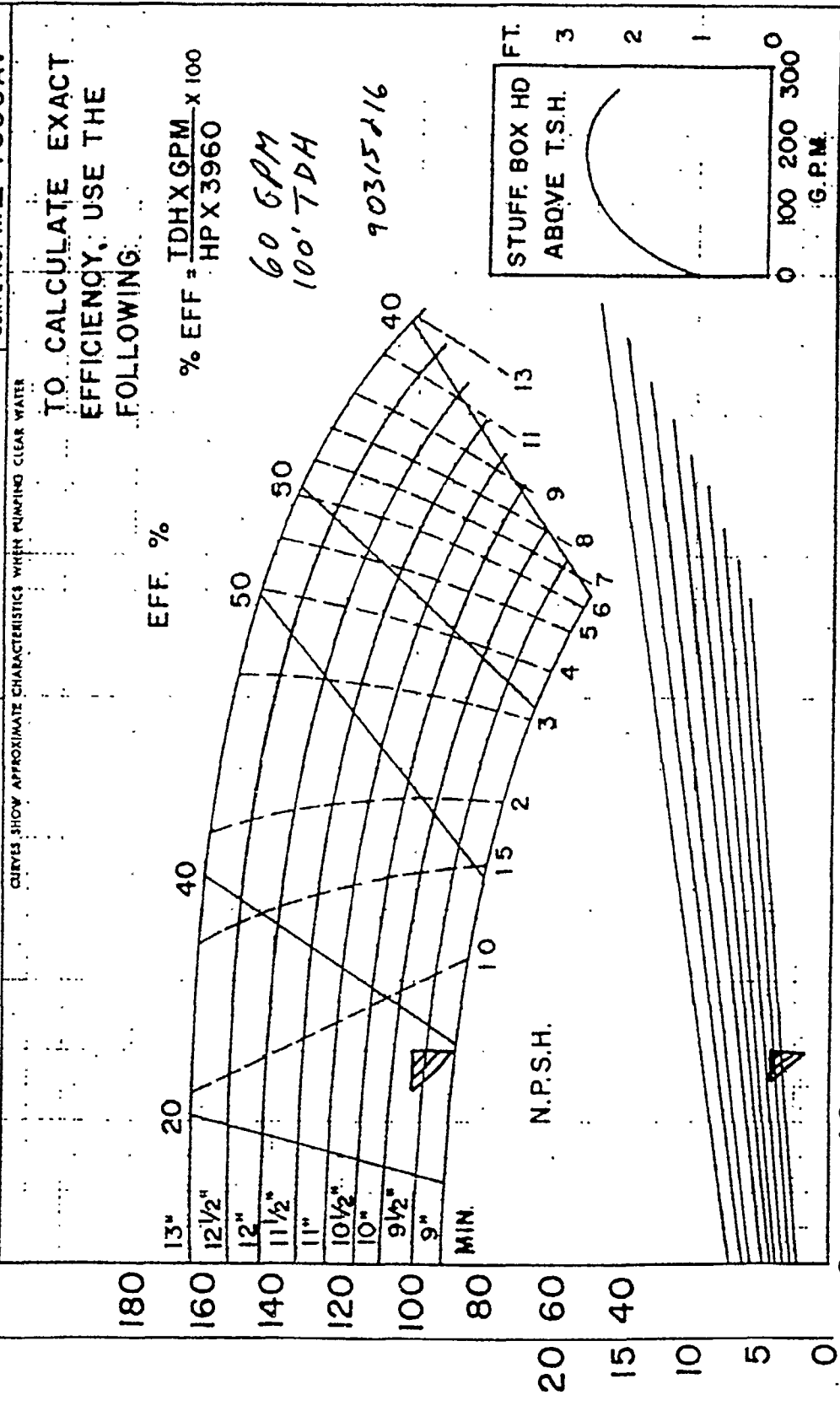


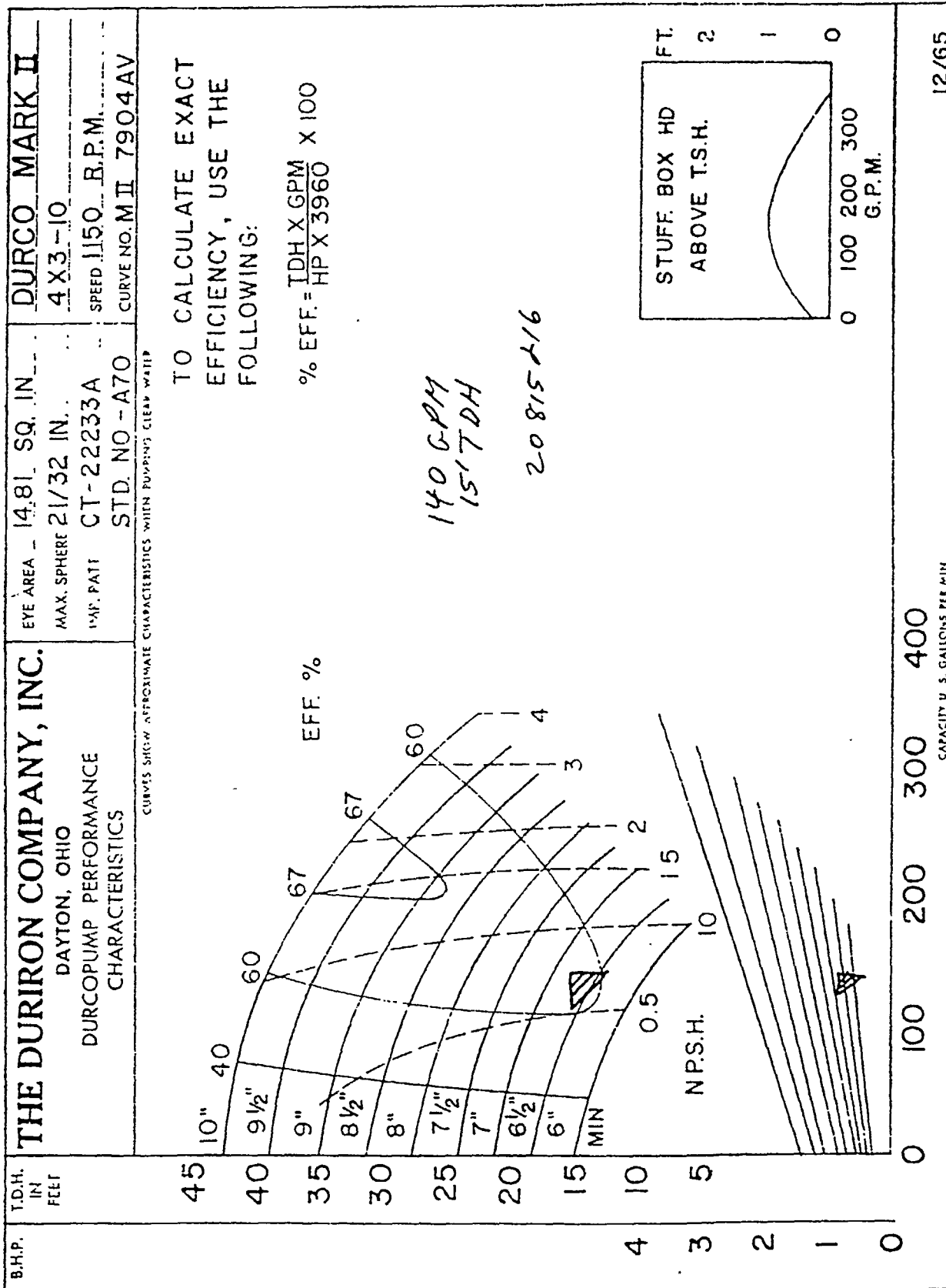


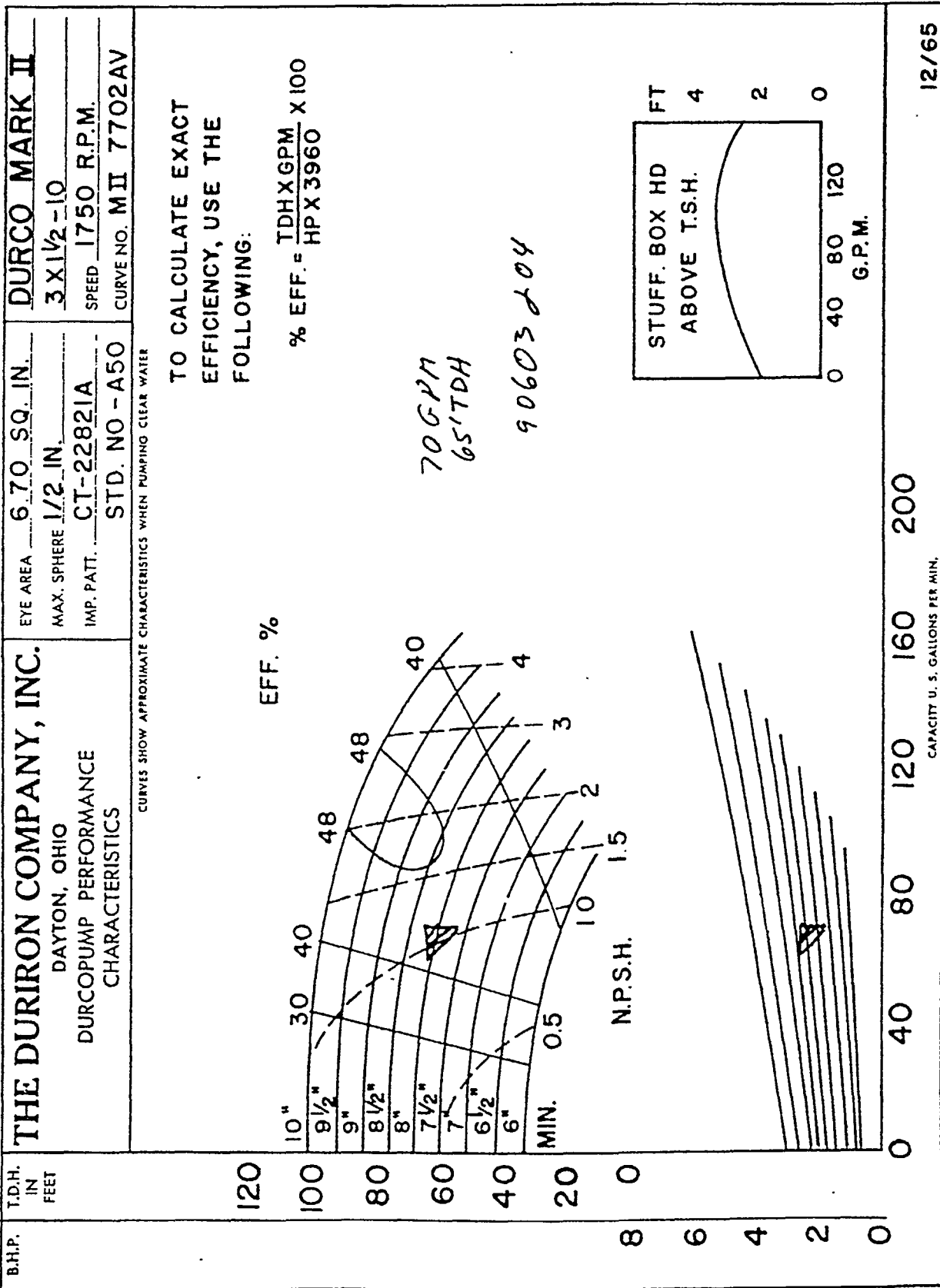


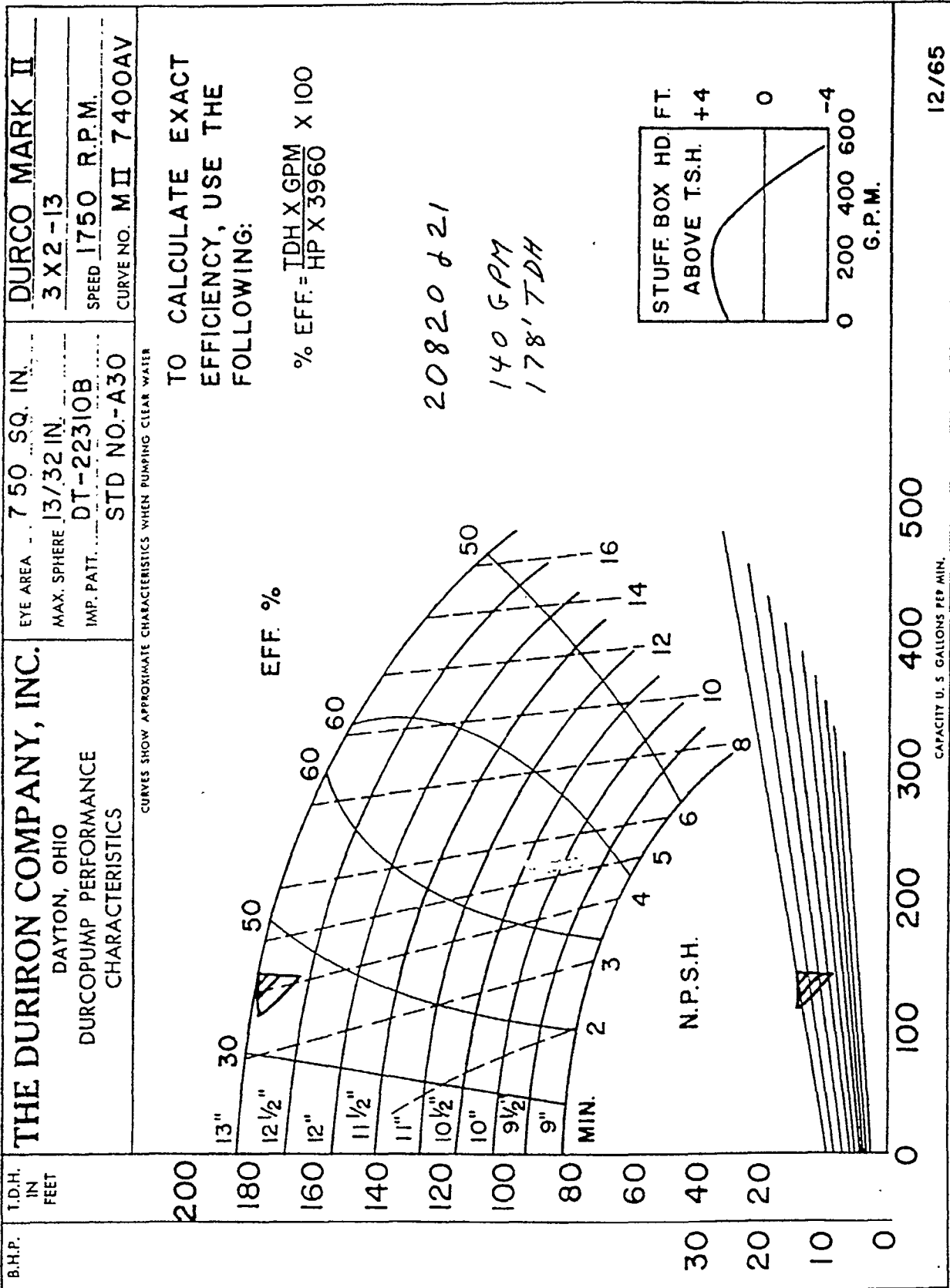


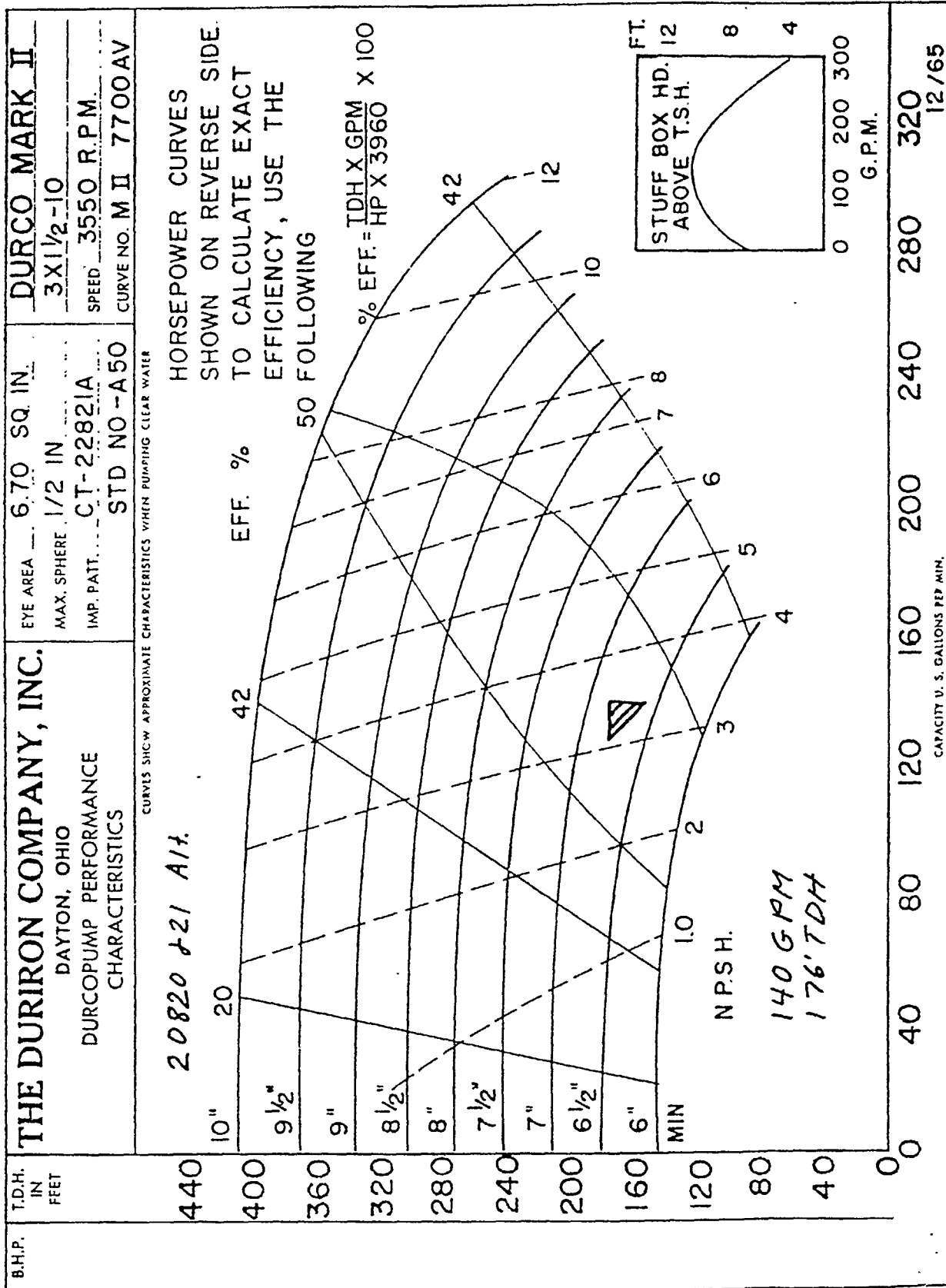
THE DURIRON COMPANY, INC. DAYTON, OHIO		EYE AREA	555 SQ. IN.	DURCO MARK II
DURCOPUMP PERFORMANCE CHARACTERISTICS		MAX. SPHERE	19/32 IN.	3 X 1 1/2 -13
		IMP. PATT.	CT-21854A	SPEED 1750 R.P.M.
		STD. NO.-A20		CURVE NO. MII 7300AV

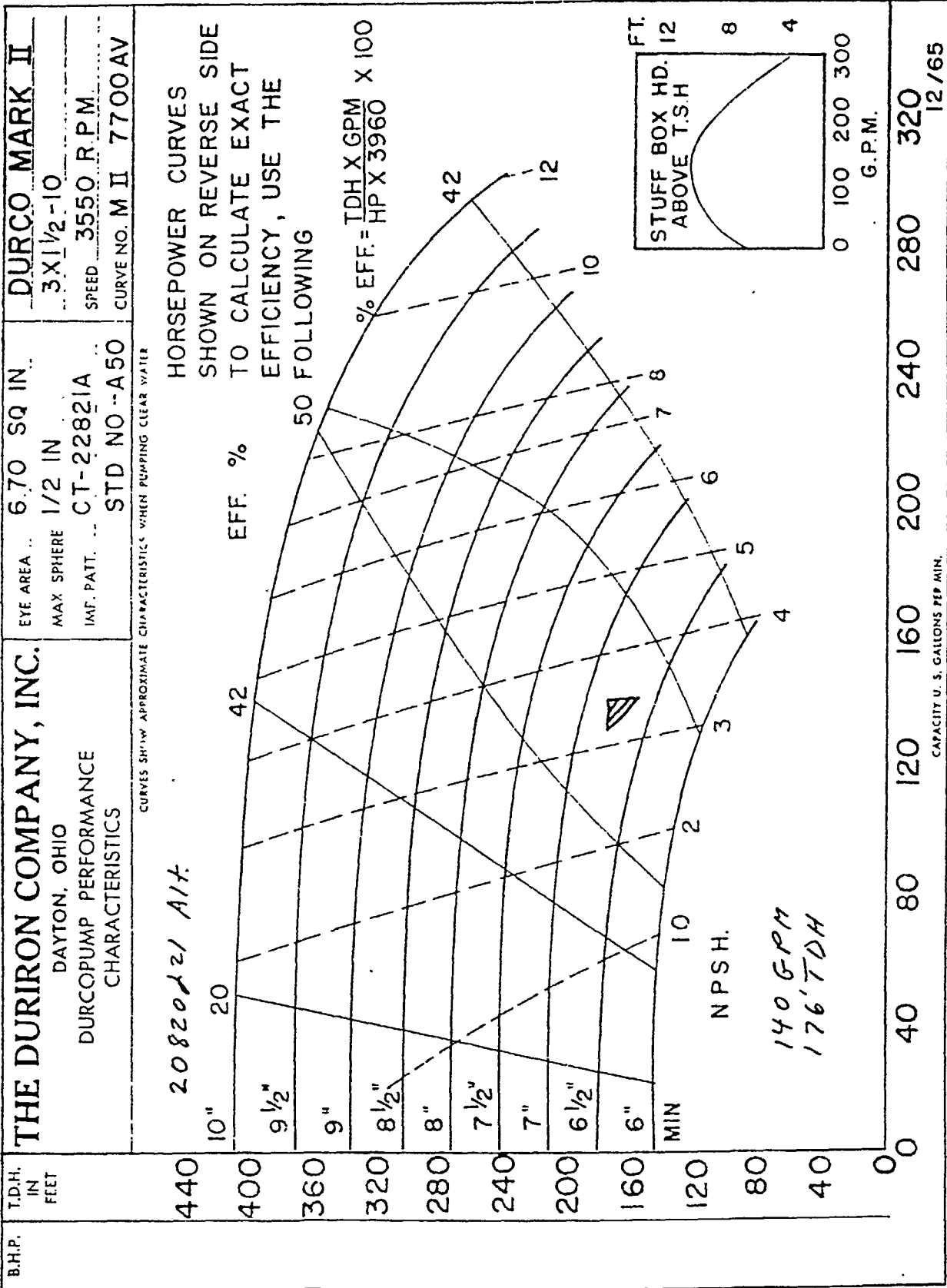


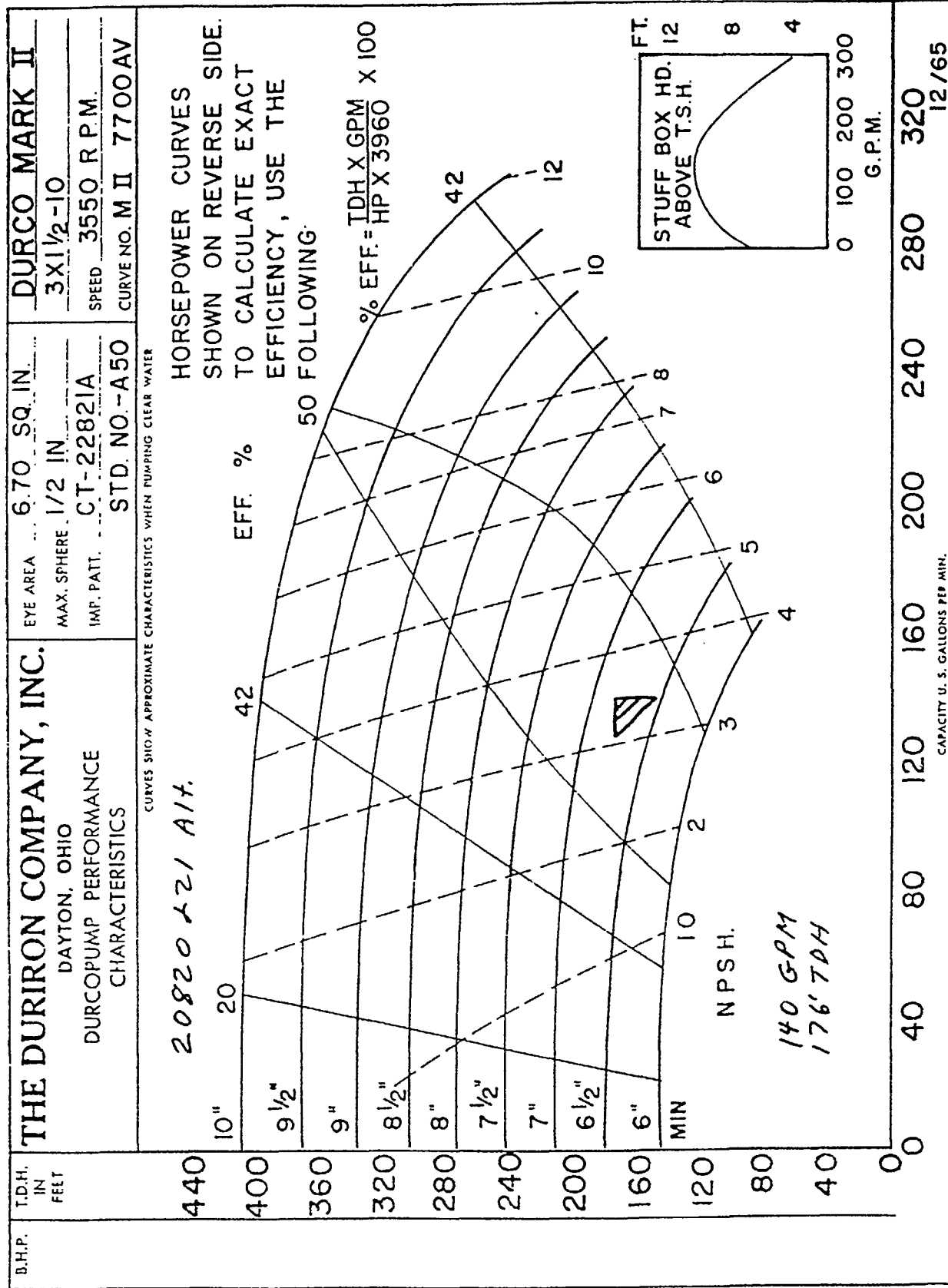












THE DURIRON COMPANY, INC. DAYTON, OHIO DURCOPUMP PERFORMANCE CHARACTERISTICS		FIVE AREA MAX. SPHERE IMP. FATT.	7 50 SQ. IN. 13/32 IN. DT-22310B STD NO-A30	DURCO MARK II 3 X 2 - 13 SPEED 1750 R.P.M. CURVE NO. MII 7400AV
--	--	--	--	---

TO CALCULATE EXACT EFFICIENCY, USE THE FOLLOWING:

$$\% \text{ EFF.} = \frac{\text{TDH} \times \text{GPM}}{\text{HP} \times 3960} \times 100$$

20831 ÷ 32
 210 GPM
 158' TDH

The graph plots Total Dynamic Head (TDH) in feet on the left y-axis (0 to 200) and Net Positive Suction Head (N.P.S.H.) in feet on the right y-axis (0 to 30). The x-axis represents flow rate in G.P.M. (0 to 500). TDH curves are solid lines labeled 2 through 16. N.P.S.H. curves are dashed lines labeled 8 through 16. Efficiency curves are solid lines labeled 50, 60, and 66. A point is marked on the 12' TDH curve at approximately 210 GPM, corresponding to 158' TDH on the right axis.

STUFF BOX HD FT. ABOVE T.S.H.

0 200 400 600 G.P.M.

12/65

