

093L /01  
Benamy

822235

MEMORANDUM

# CORPORATION FALCONBRIDGE COPPER

DATE: February 22, 1985  
TO: A. J. Davidson  
COPIES TO:  
DE FROM: D.V. Lefebvre  
SUBJECT: Summary of Field Work, 1985 DEEPEM Survey, Benamy Property 93 L/1

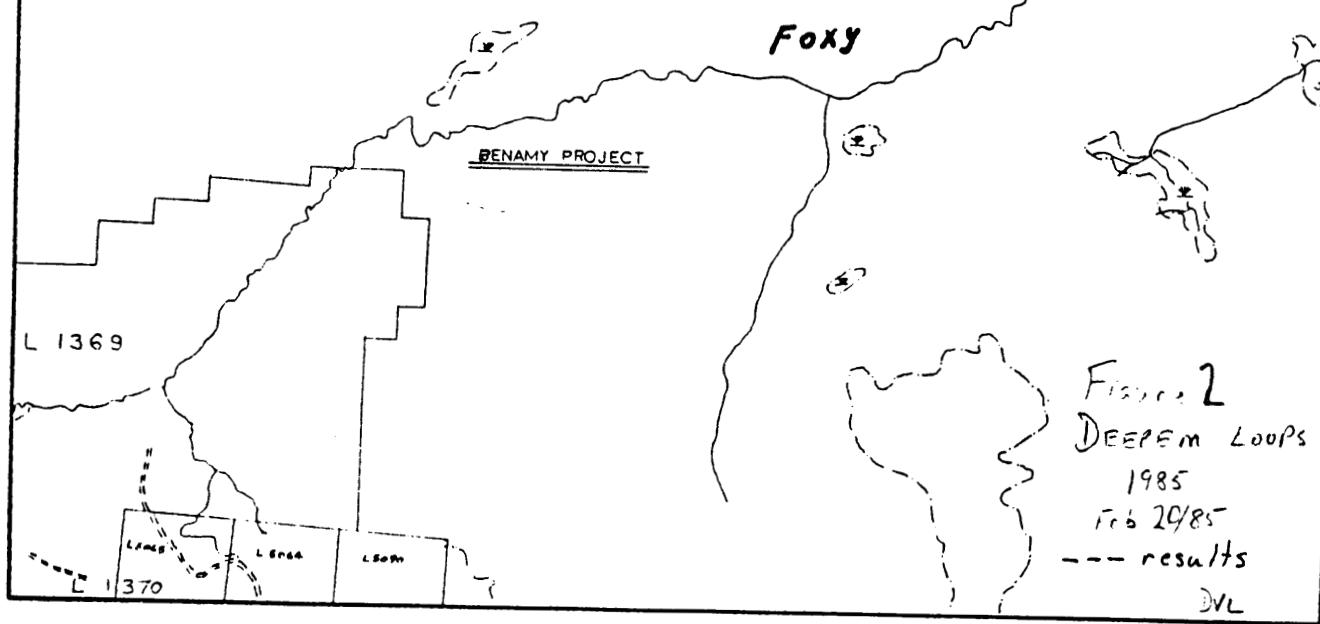
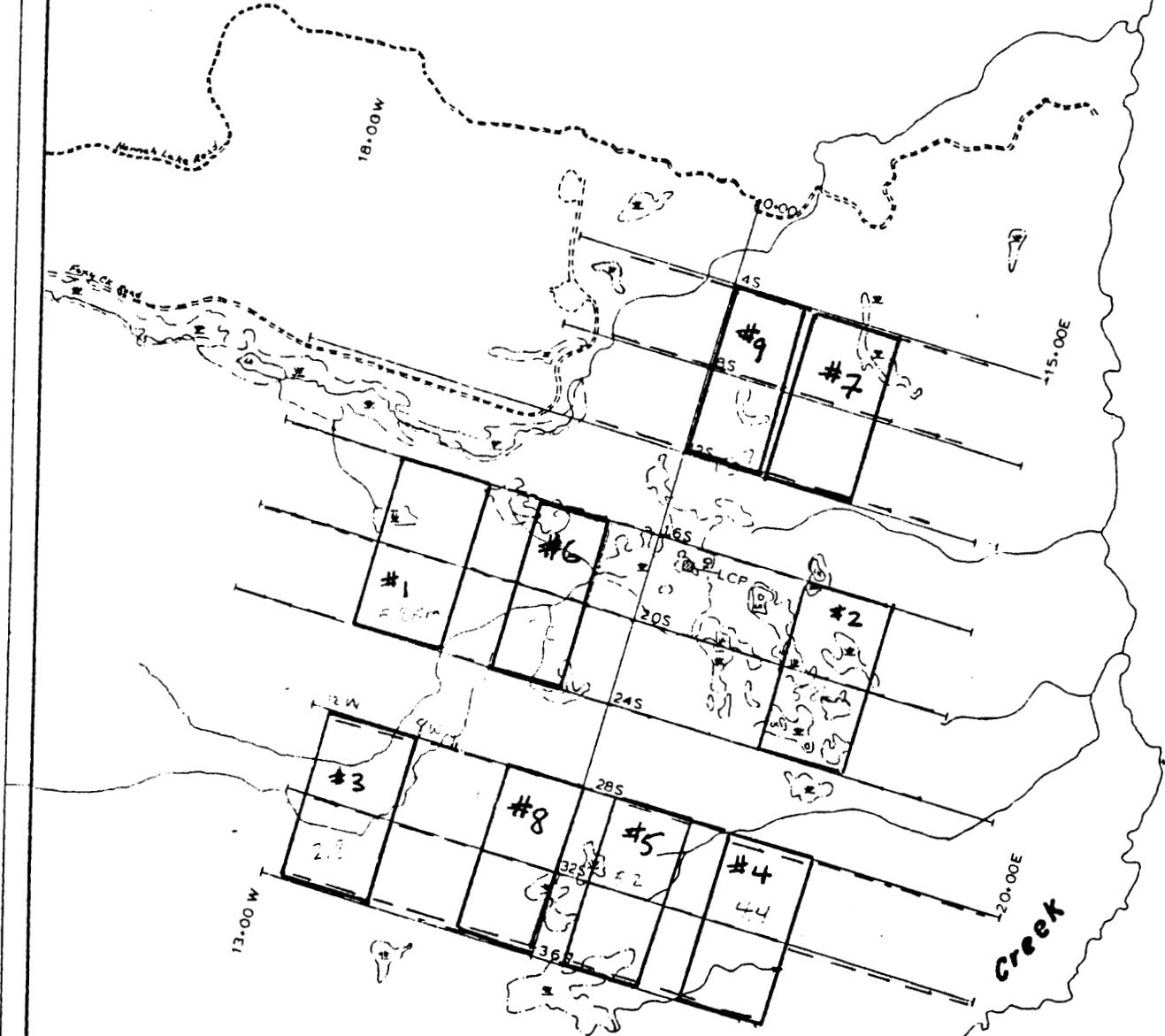
*file*

## Work Completed

A total of 9 loops (Figure 1) were laid and 39.1 line-kilometres of DEEPEM surveying were completed on the Benamy Property between February 4 and February 18, 1985. The survey was supervised by S. Coulson of Crone Geophysics Ltd. Three temporary employees were hired to assist in the survey. Including my field time, a total of 52.5 man-days were required for the survey, mobilization and demobilization. Average production was 3 km of surveyed line per working day.

## Preliminary Results

High readings, particularly on the earlier channels, were recorded throughout the grid. On the vertical component, the profiles peak near the loop. With increasing time the peaks migrate away from the loop, a "smoke ring" or "ring current" pattern usually associated with flat-lying highly conductive overburden. The spacing of the peaks over more than 300m (<800m?) suggests the conductive horizon is shallow. The ring current effect is strongest at the northern end of the



grid and weakest to the south.

Similar results are common in areas with highly developed soil profiles such as Spain or thick sequences of sediments with clays such as in the Arctic and southern Ontario. On the Benamy claims only the top of the overburden is exposed which consists of brownish glacial till with rounded boulders. As this till is not particularly conductive, there must be a more clay-rich layer towards the base of the overburden. Previous VLF-FM and Vector Pulse surveys in the general area identified highly conductive overburden (Cannon, 1981; Pezzot and White, 1979).

An alternate exploration of the ring current effect could be a clay-rich regolith at the unconformity overlying the Goosly Sequence (Hazelton Group) and beneath the Tip Top Hill and Tertiary volcanic rocks. Although little is known about this unconformity, there are brown oxidized sandstones, siltstones and conglomerates, provisionally assigned to the Sustut Group, overlying the Hazelton near Maxan Lake to the northeast and to the west near Nadina Mtn. In one locality, near Parrott Lake, N. Church reports a reddish soil overlying the Hazelton which may be a regolith. The ring current effect could be indicating the unconformity at the top of the Goosly Sequence is shallow on the Benamy claims. For the sake of simplicity, the source of the ring current effect will be referred to below as conductive overburden.

The ring current effect makes data interpretation more difficult because anomalies due to massive sulphides will be smaller on most channels than the overburden response. The vertical component crossovers will also be displaced.

#### Anomalies

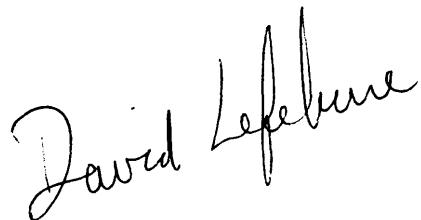
Weak anomalies can be identified on the horizontal component profiles (Figure 2). They are multiple channel anomalies but do not have values much higher than the background values of the conductive overburden. There are no clear

multiple channel crossover on the vertical component profiles. Fraser filtering of channel 3 vertical component results serves to pinpoint the inflections in slope of the profiles which occur associated with anomalies (Figure 3).

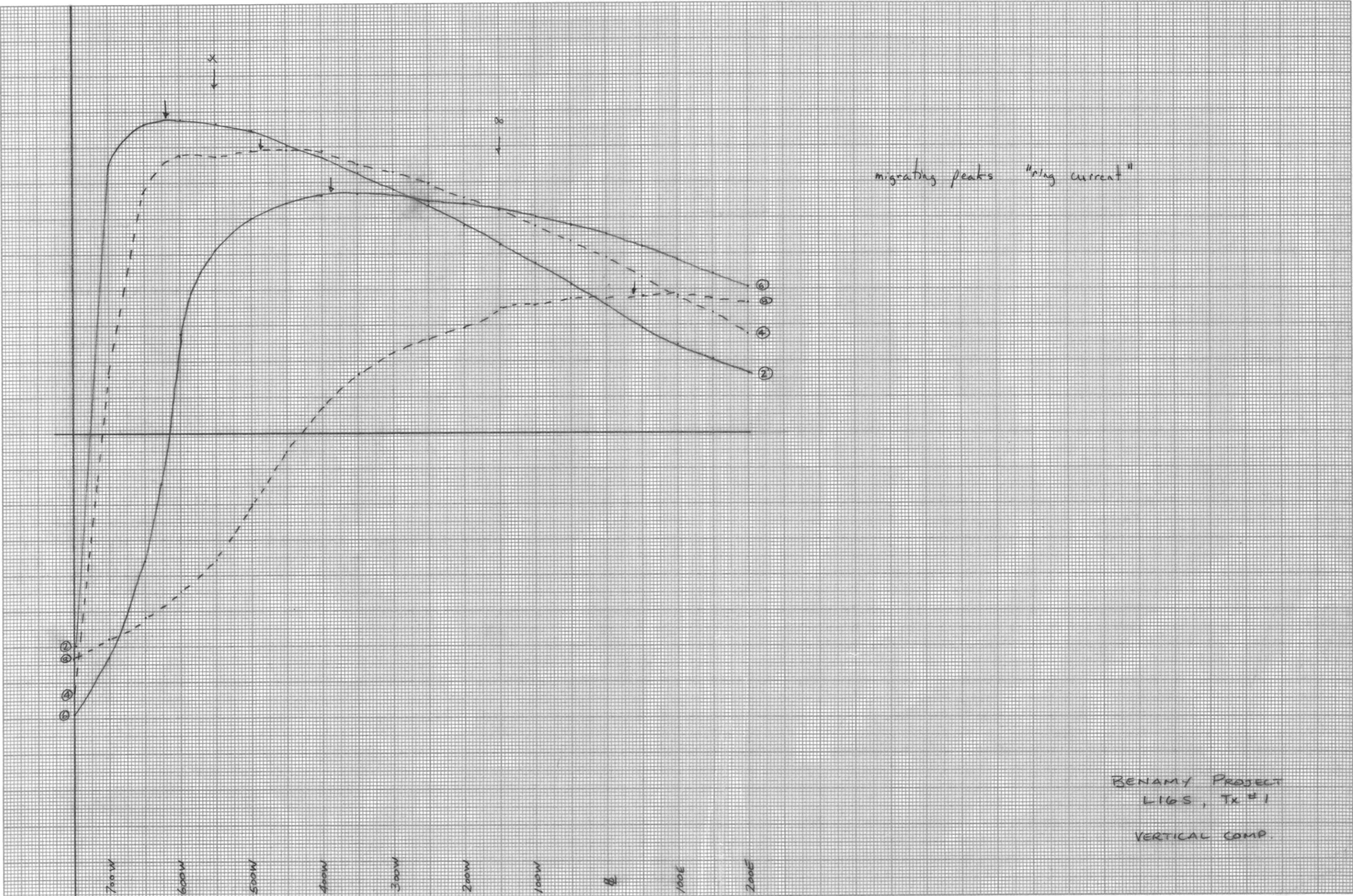
The best anomalies are found on the southwest corner of the grid and trend parallel to the Equity Silver Mine trend. Anomaly A shows up on lines 28S, 30S and F2S (Loop 8) at approximately 650W. The Fraser Filter anomaly continues to lines 34S and 36S. Immediately to the east, a weaker anomaly (B) occurs at 250-300W on lines 28S and 32S (Loop 3 and 5). The weak response associated with these anomalies reflects the swamping of the anomaly by conductive overburden and estimated greater than 100m depth to mineralization.

#### Conclusions

1. Two significant anomalies (A and B) paralleling the trend of the Equity Silver Mine orebodies have been identified on the southwest corner of the Benamy grid.
2. These anomalies should be tested with two 300m drill holes.

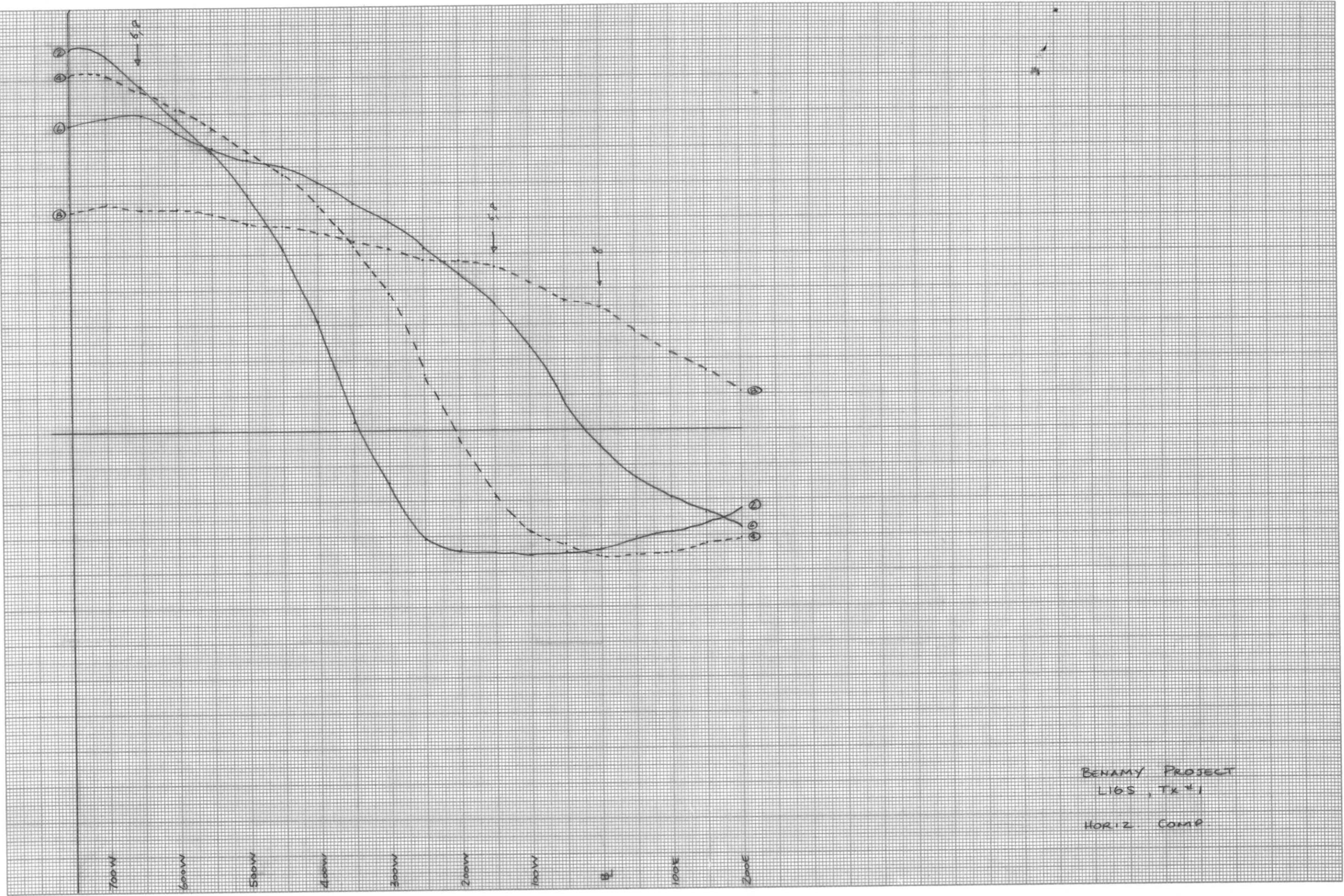


A handwritten signature in cursive ink, appearing to read "David Lefebvre". The signature is fluid and somewhat stylized, with "David" on the left and "Lefebvre" on the right, connected by a diagonal line.



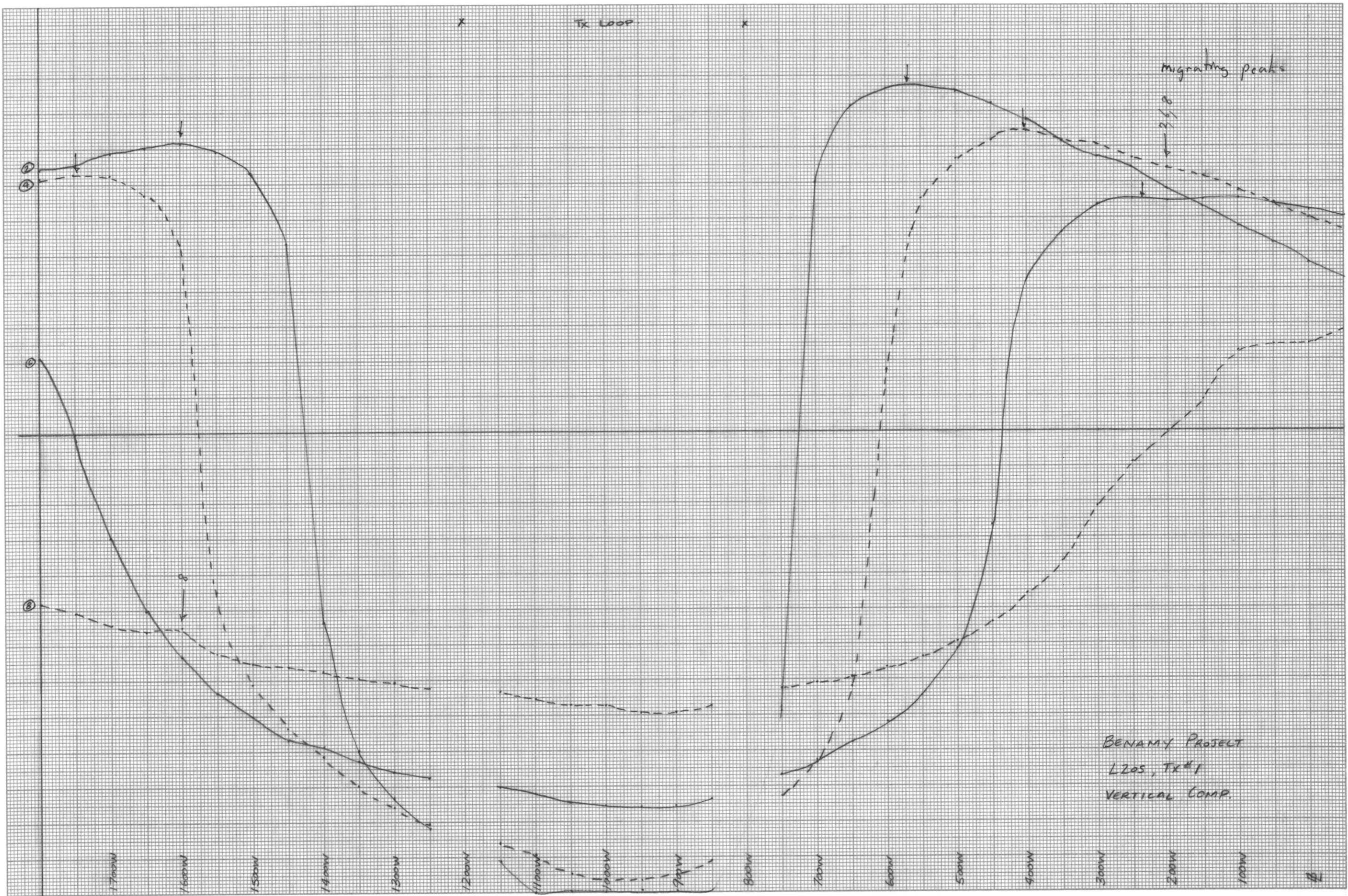
KELLETER & SONS CO., LTD.  
MANUFACTURERS OF  
A.2.U. IN LEAD.

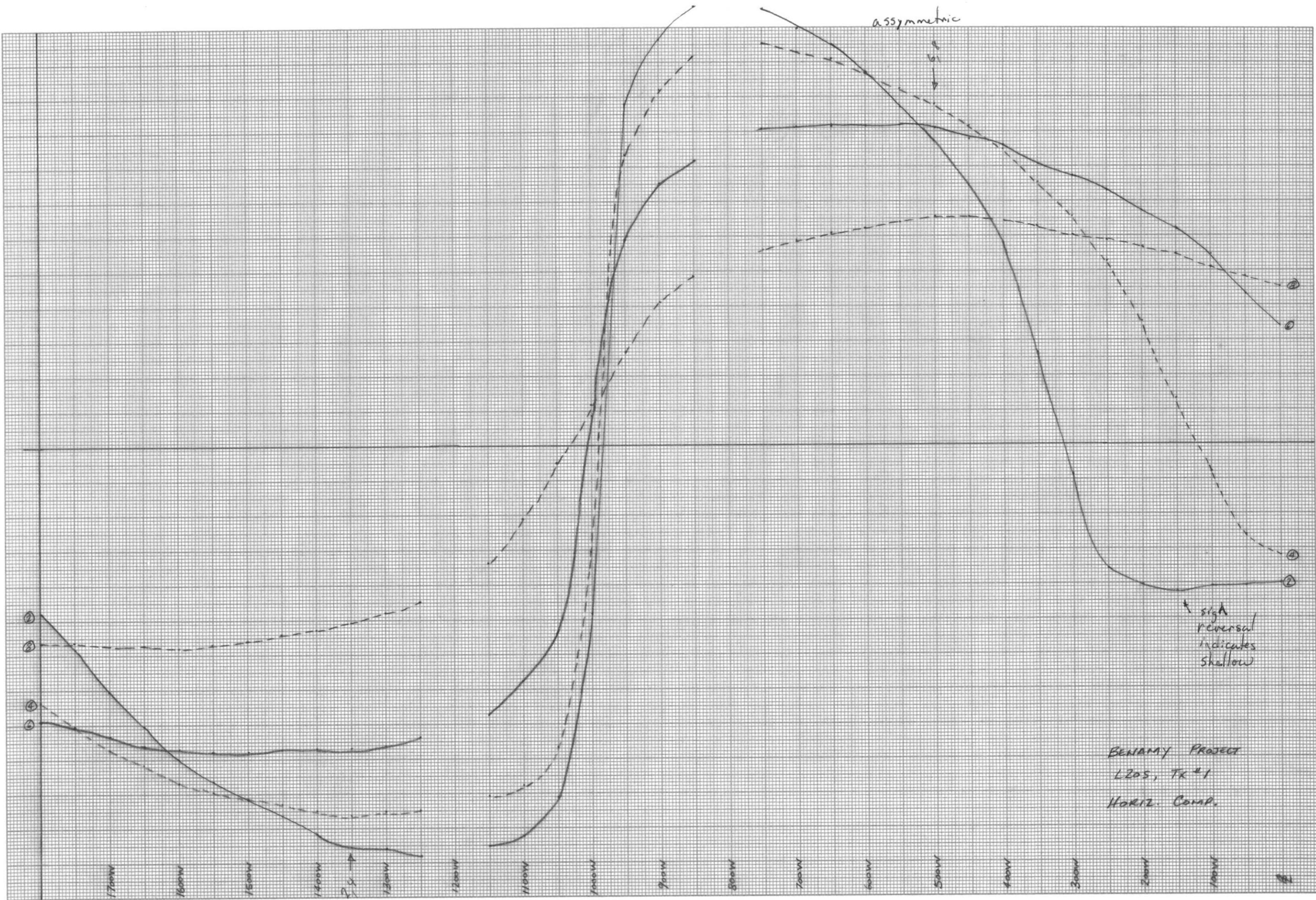
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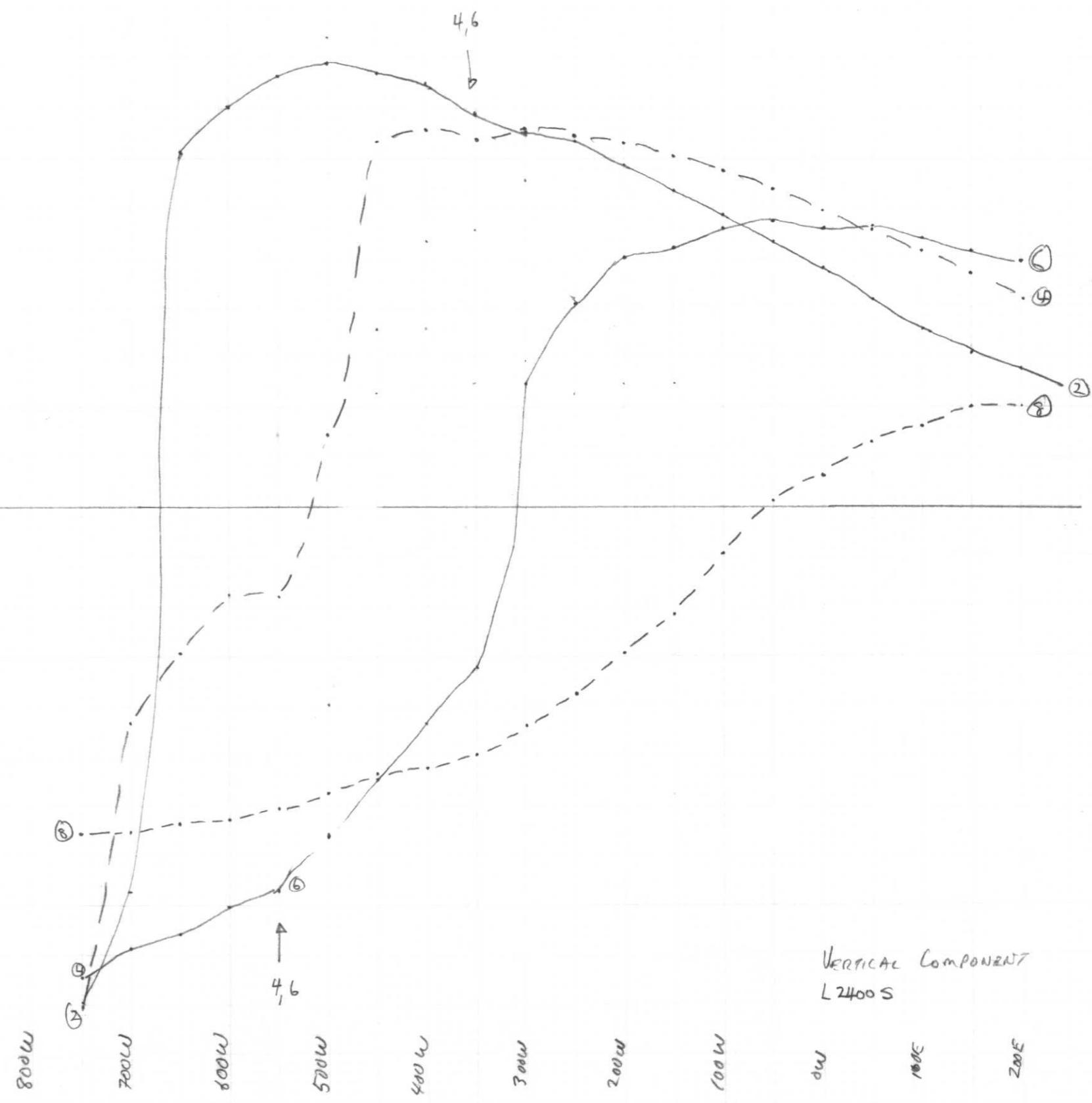
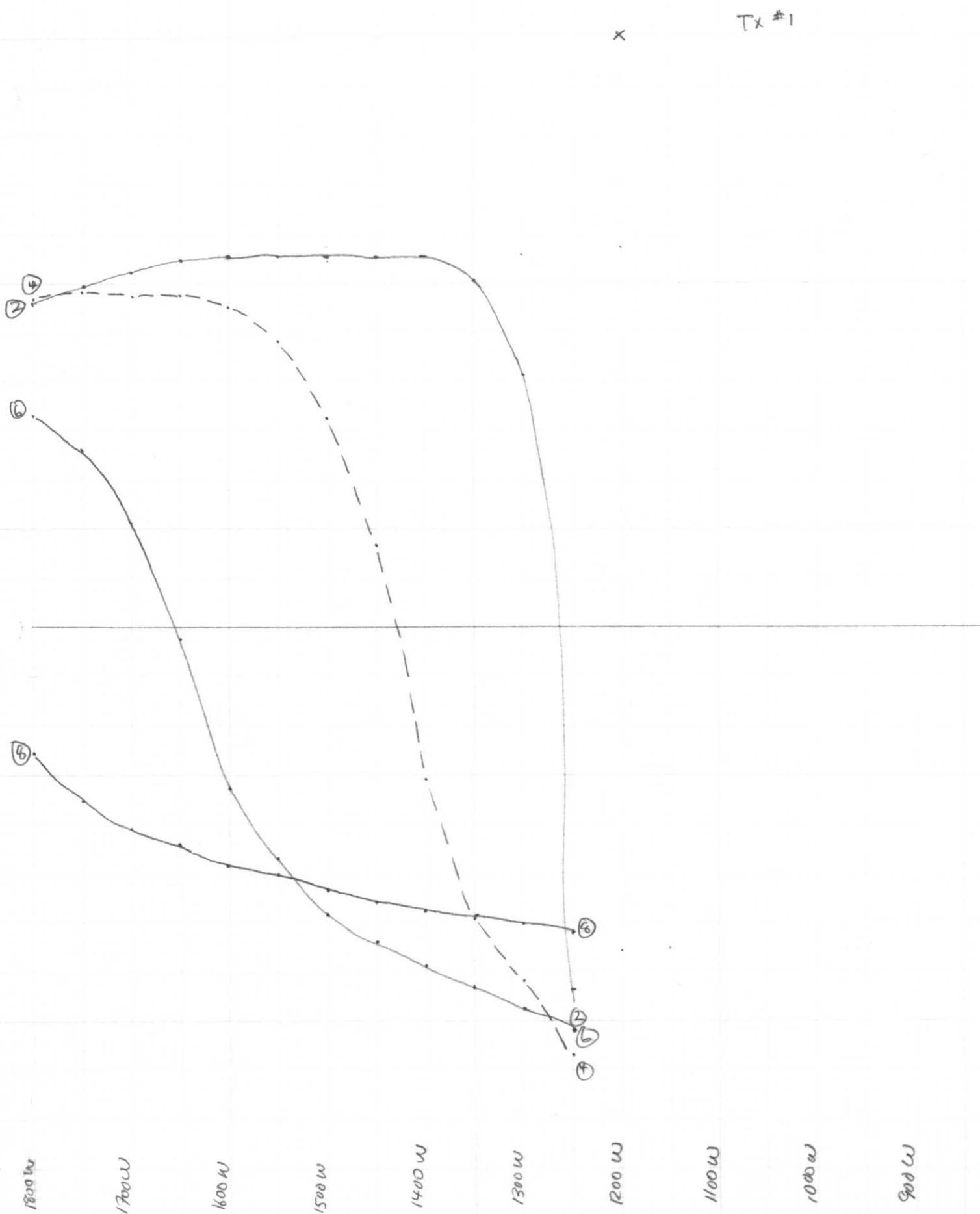


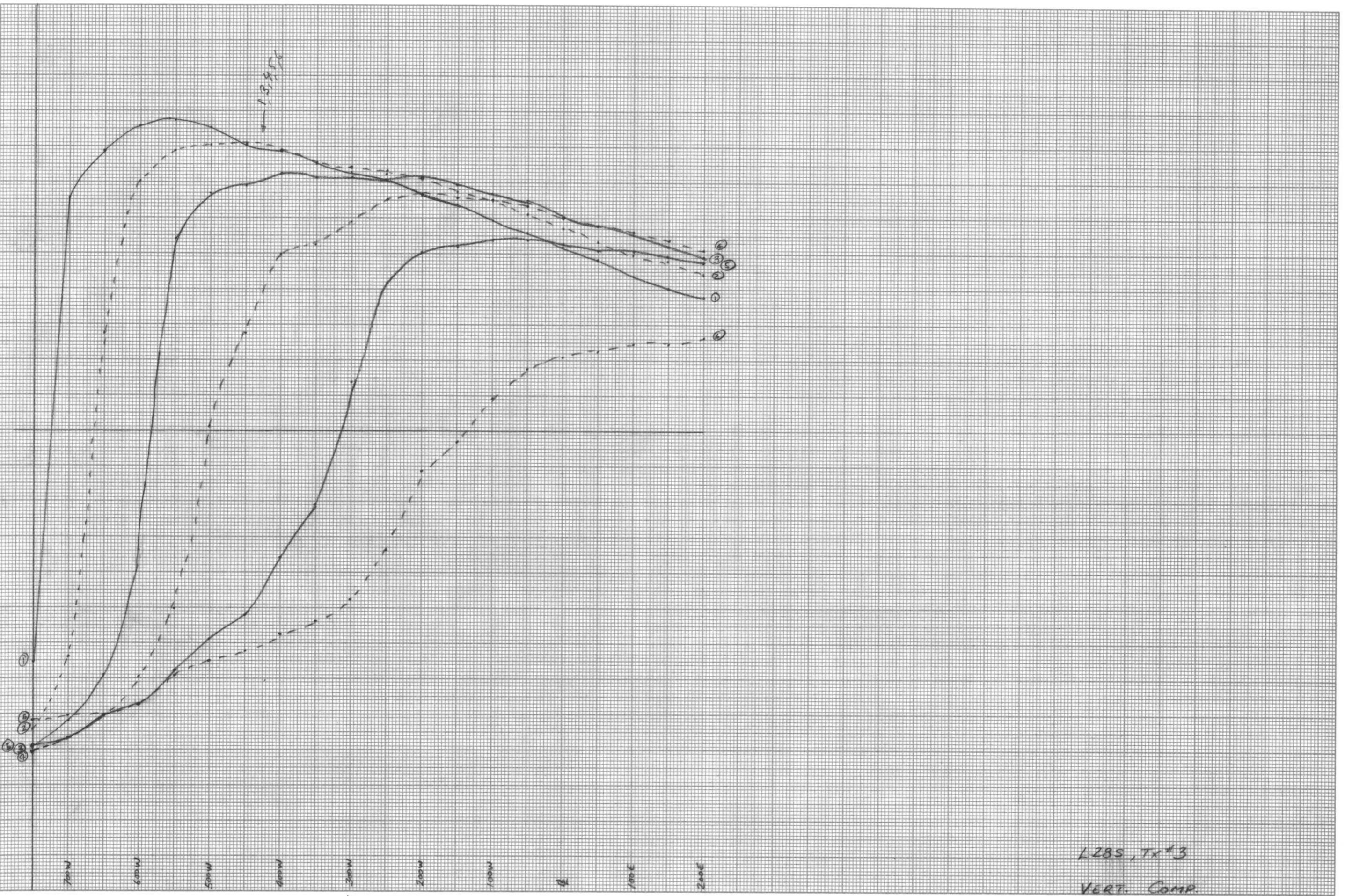
BENAMY PROJECT  
LIGS, TX #1

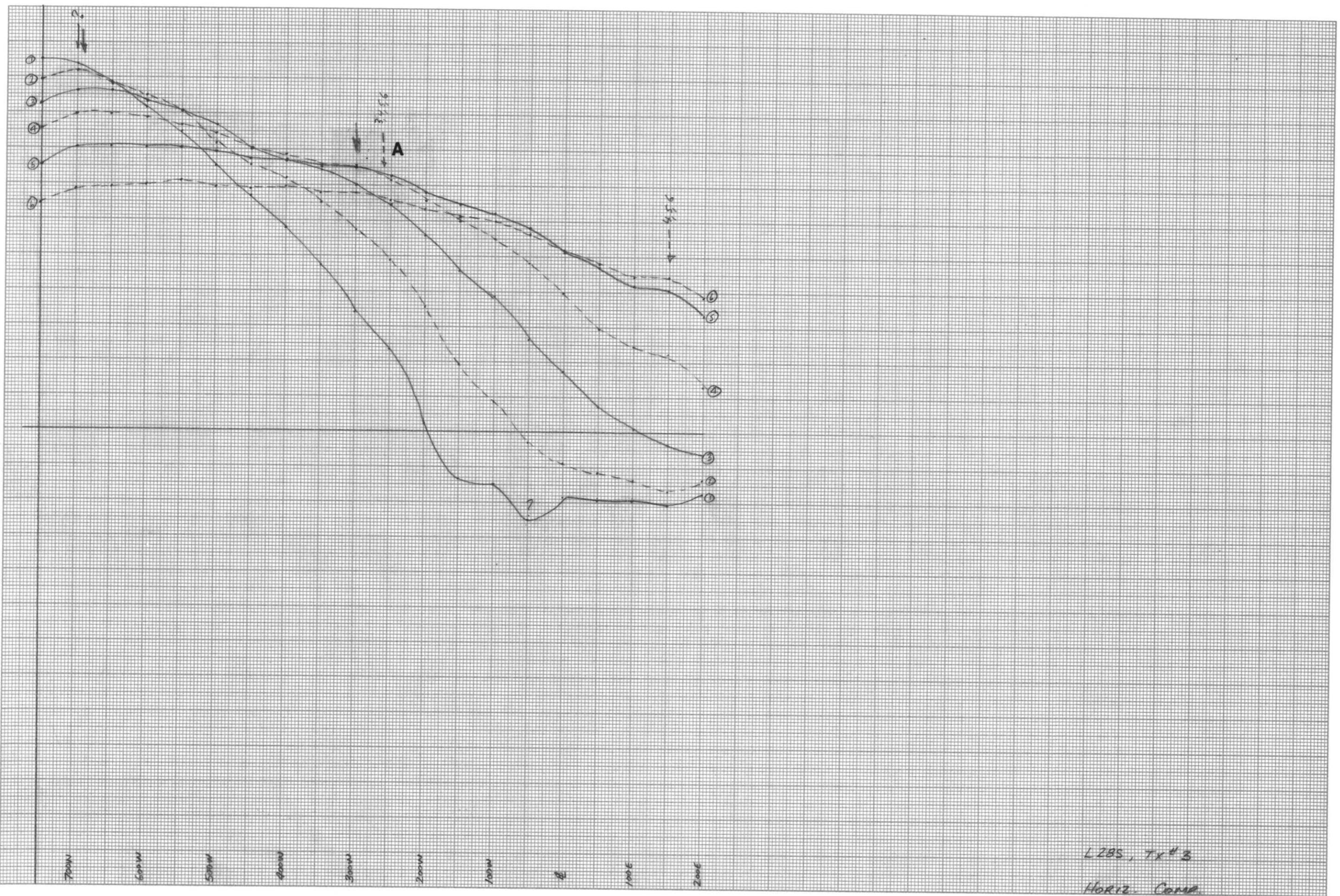
HORIZ. COMP.









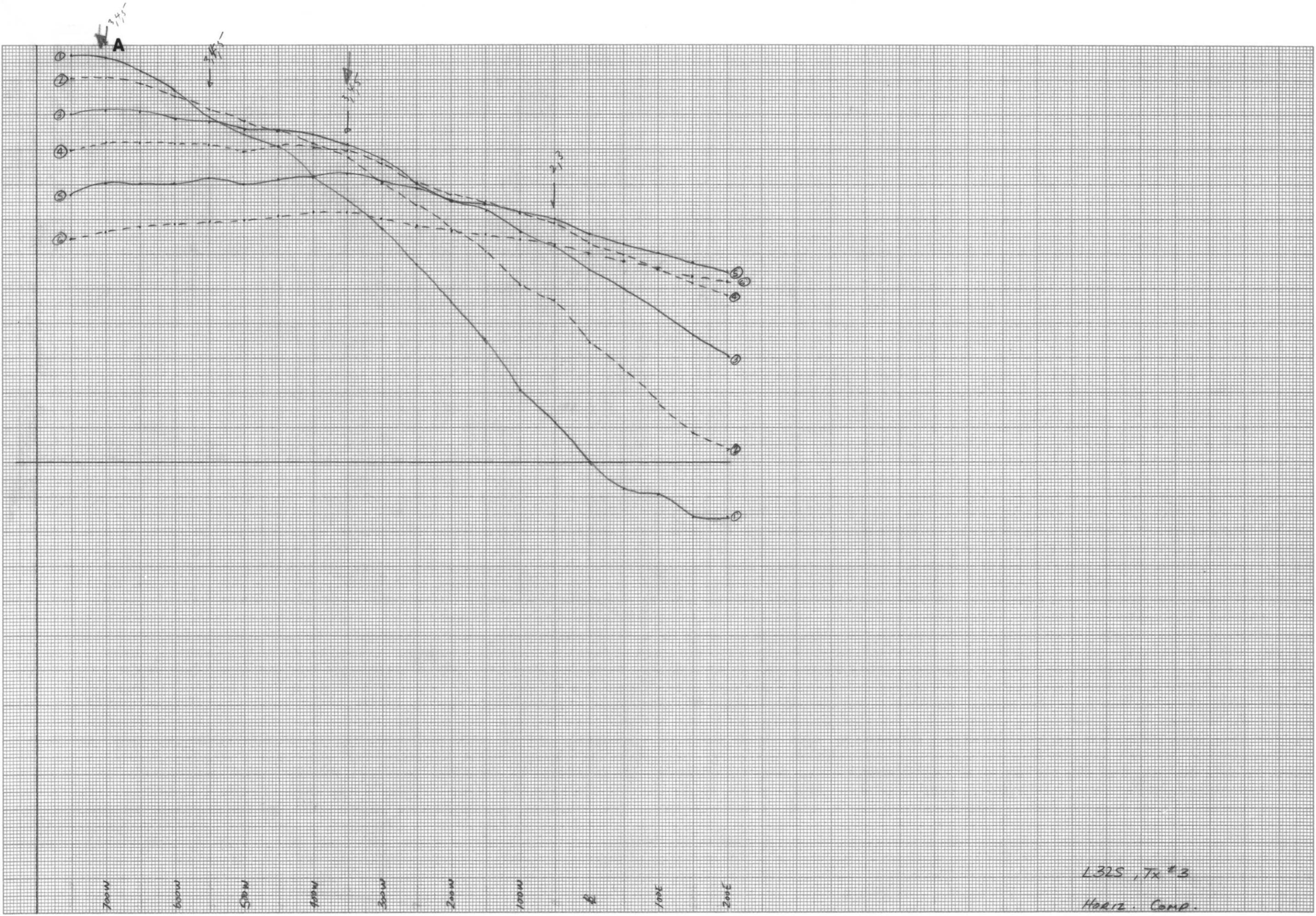


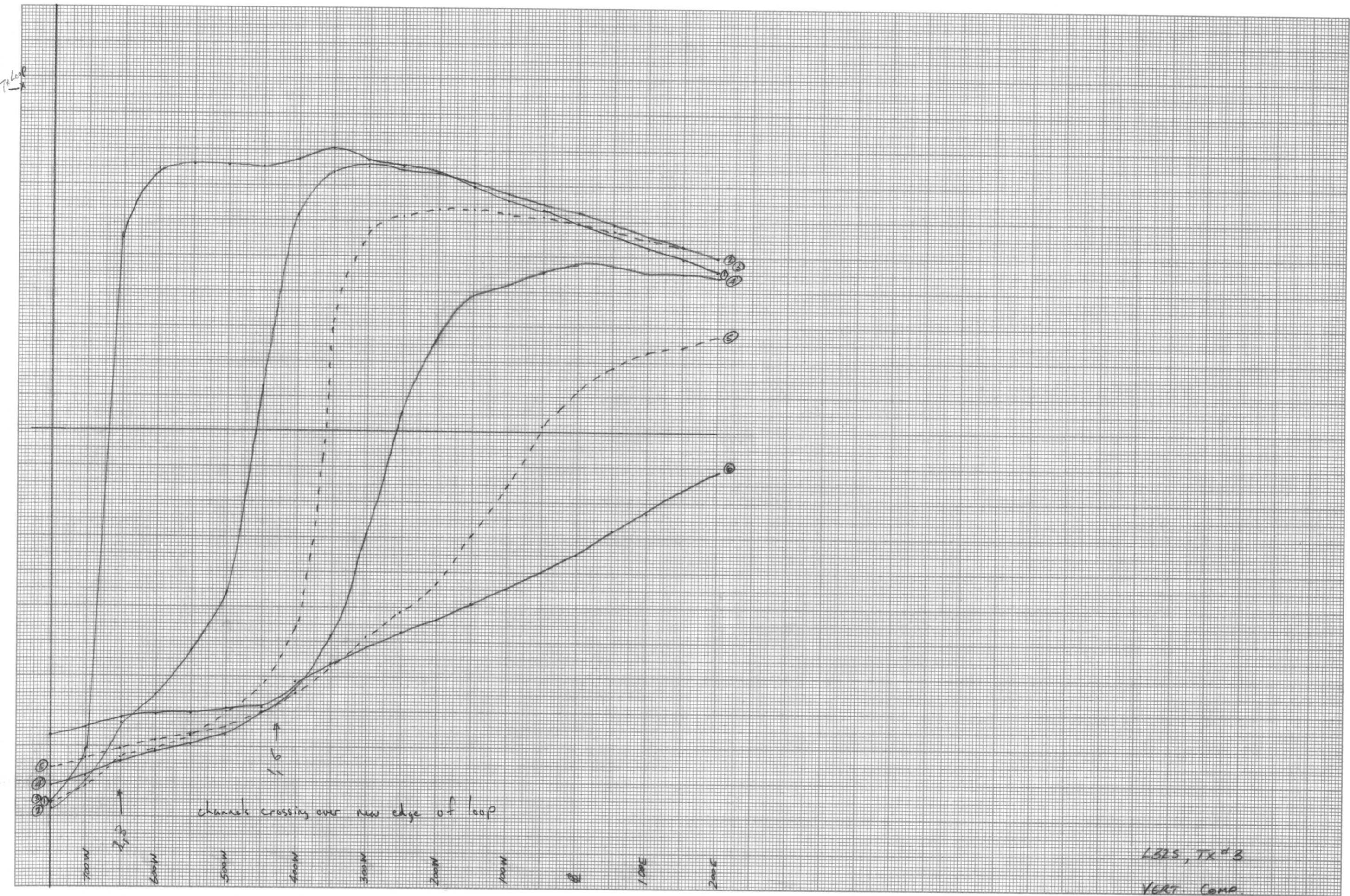
L28S, TX#3

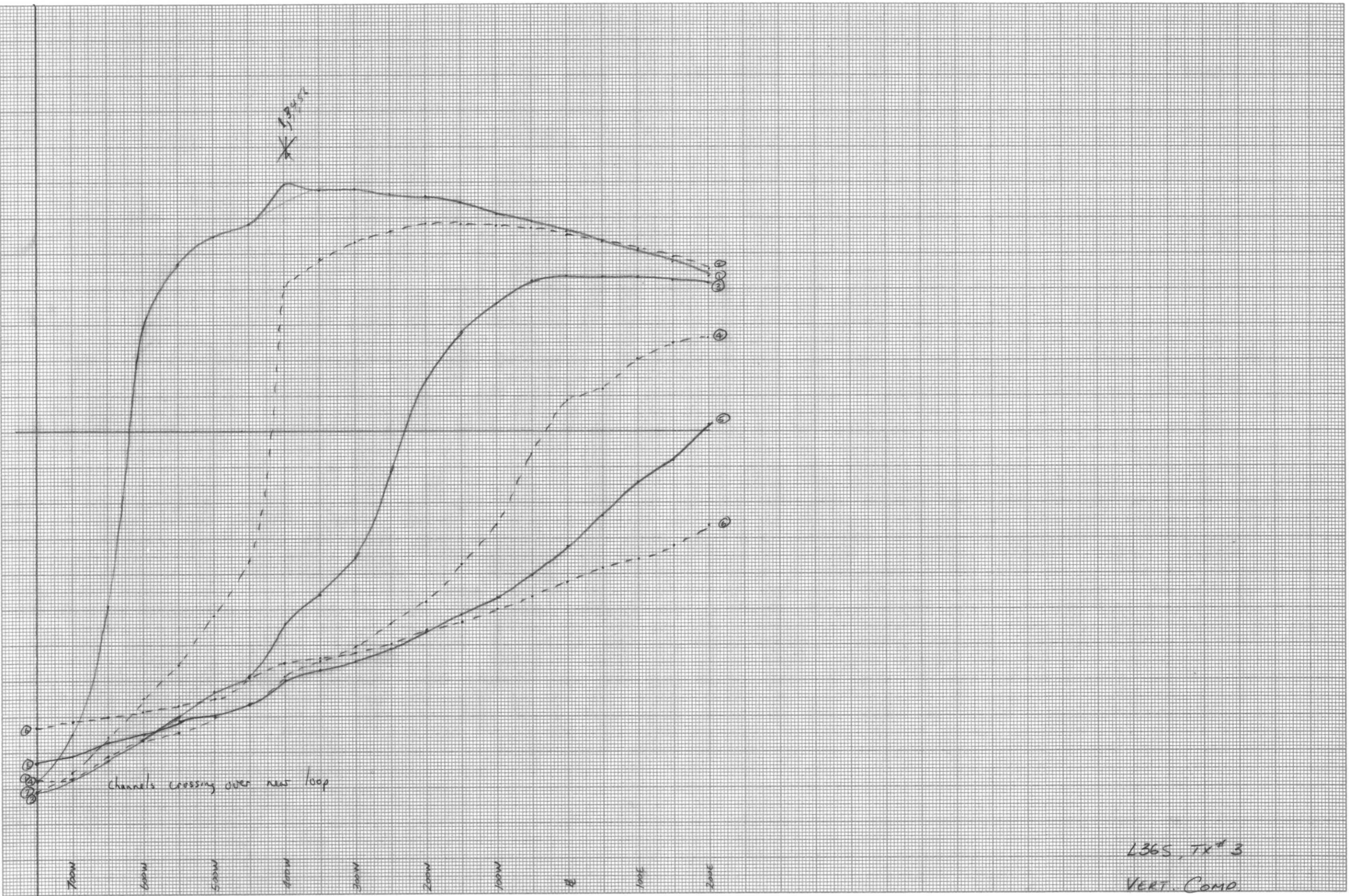
HORIZ. COMP.

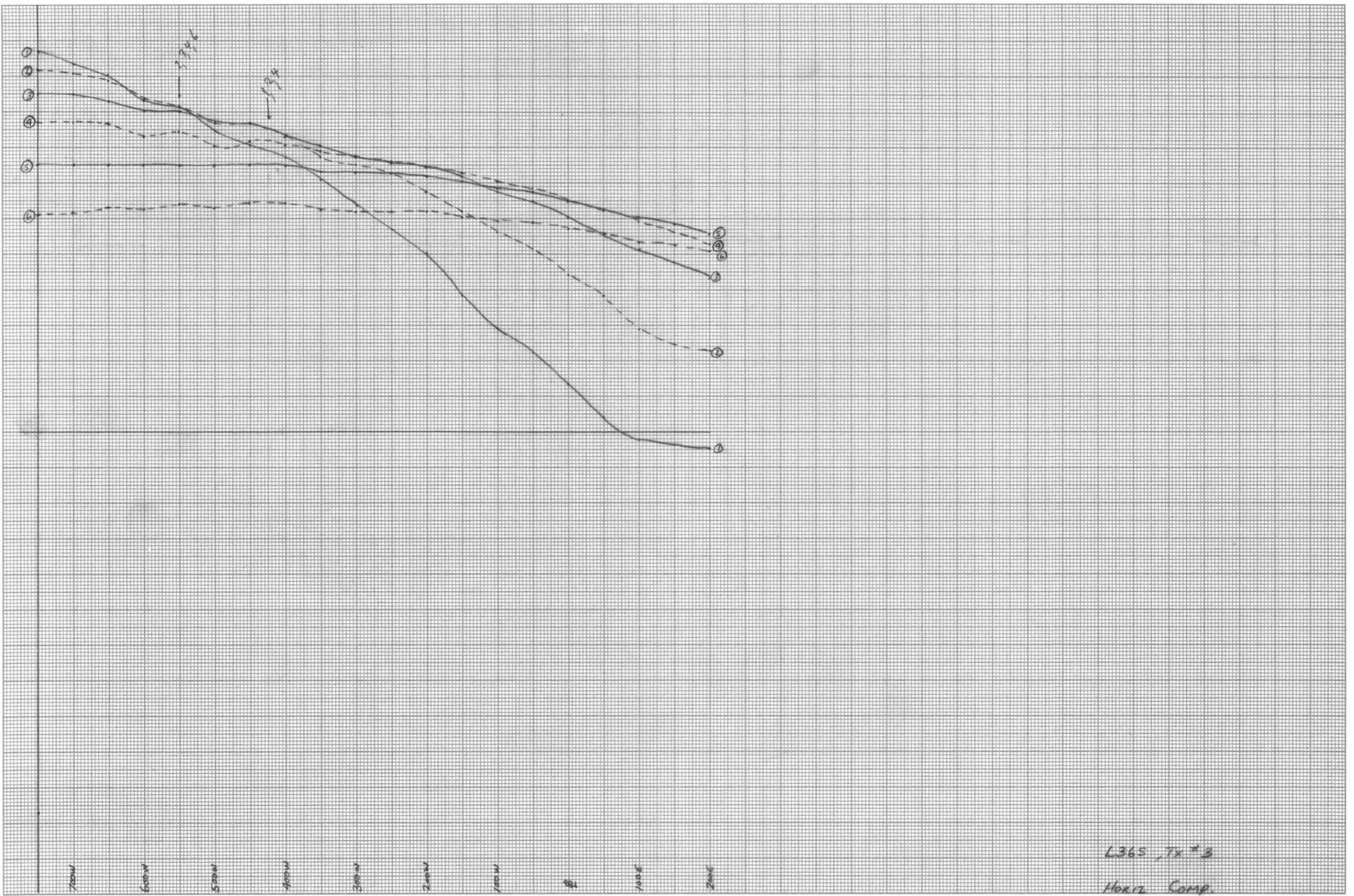
47 1512

HORIZ. DISTANCE IN METERS X 30 CM.

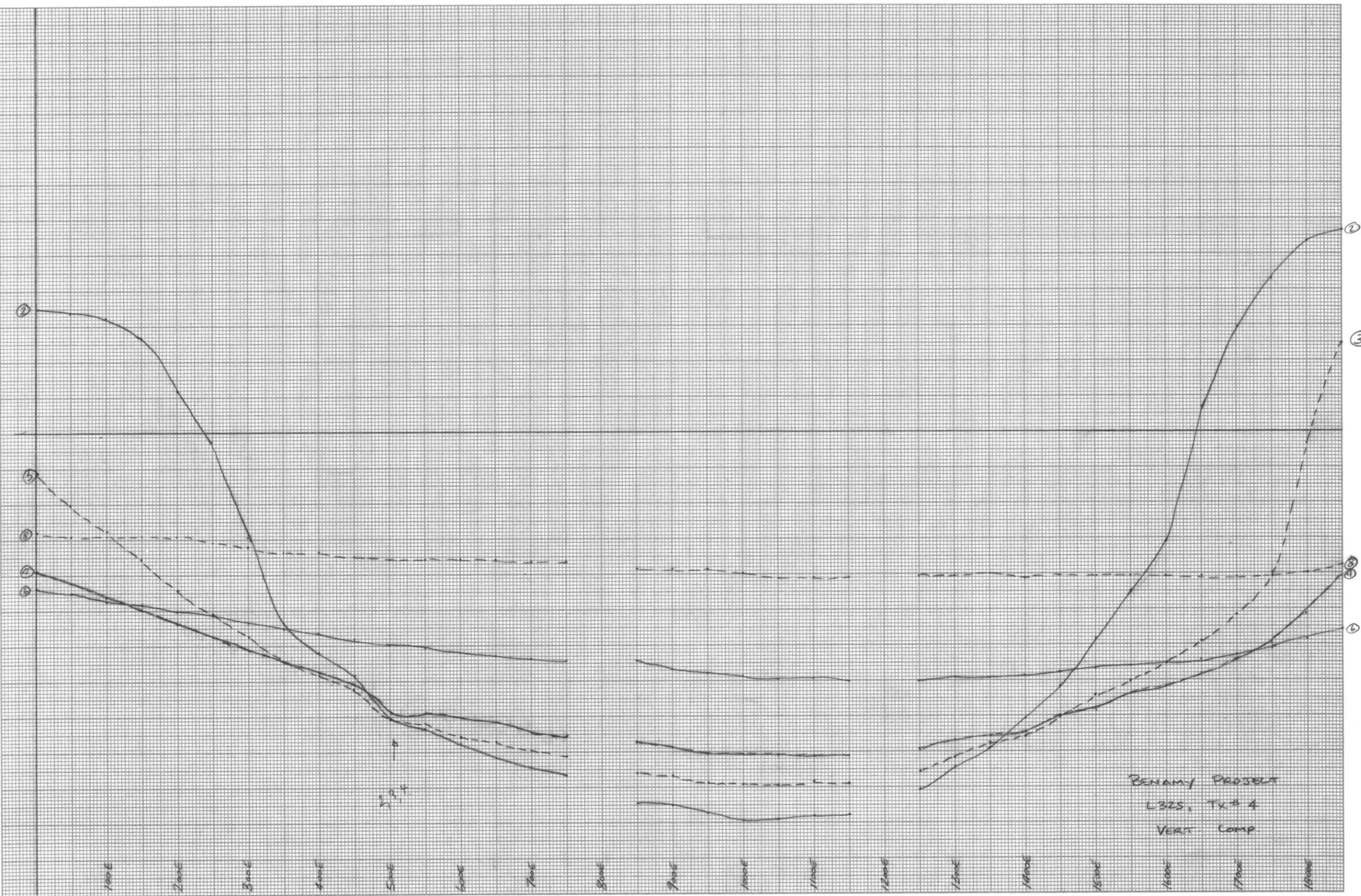


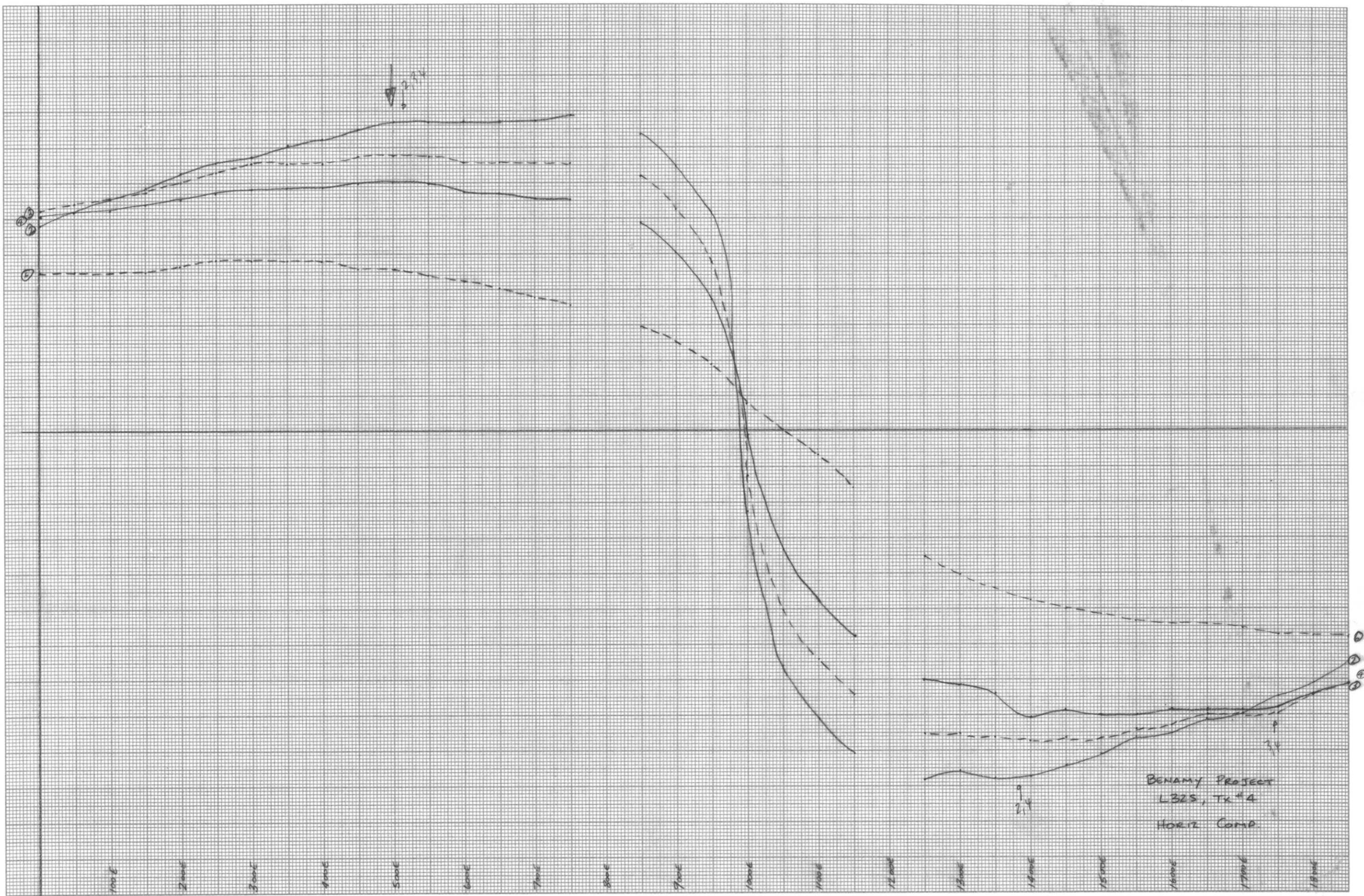


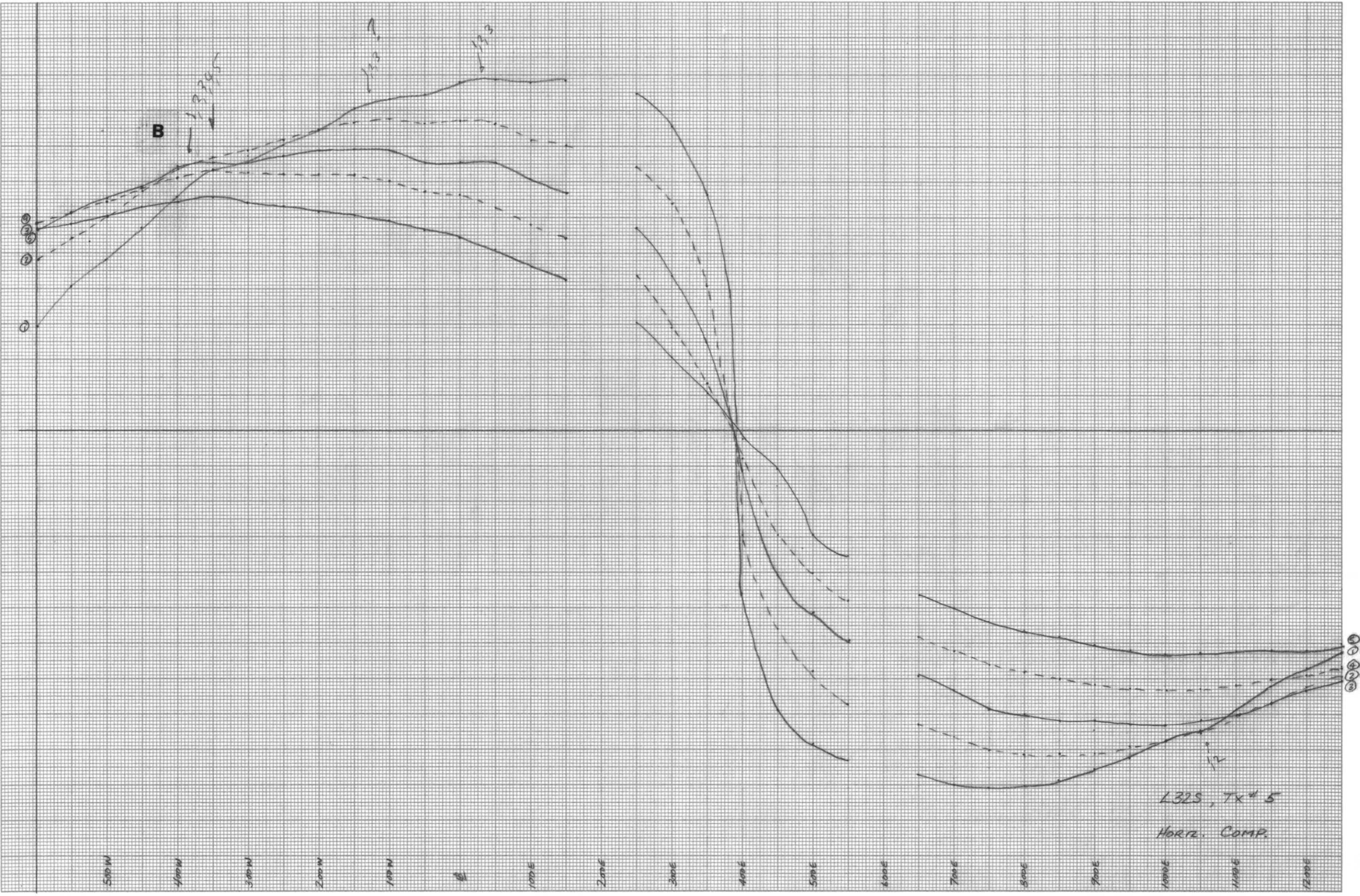


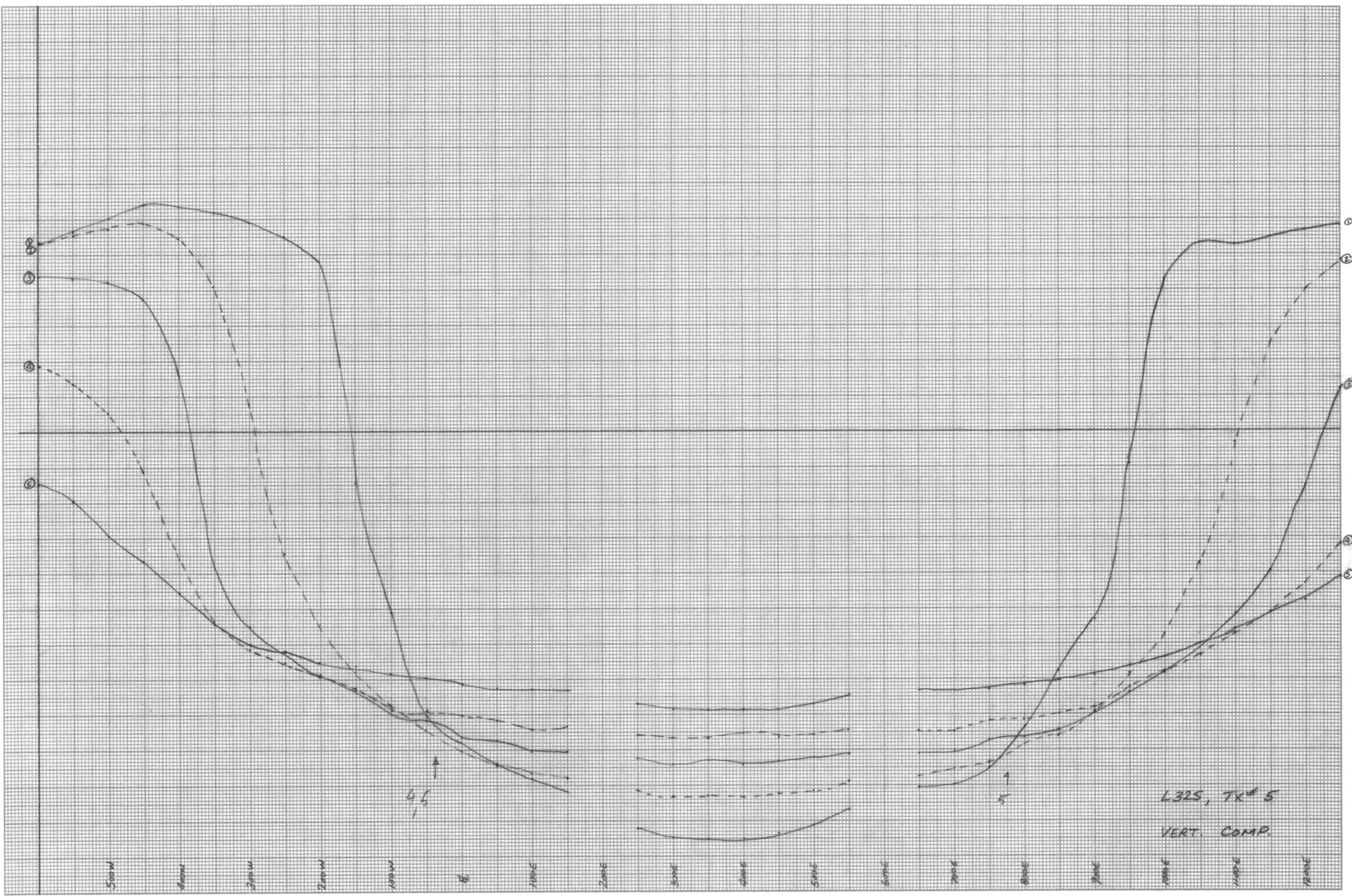


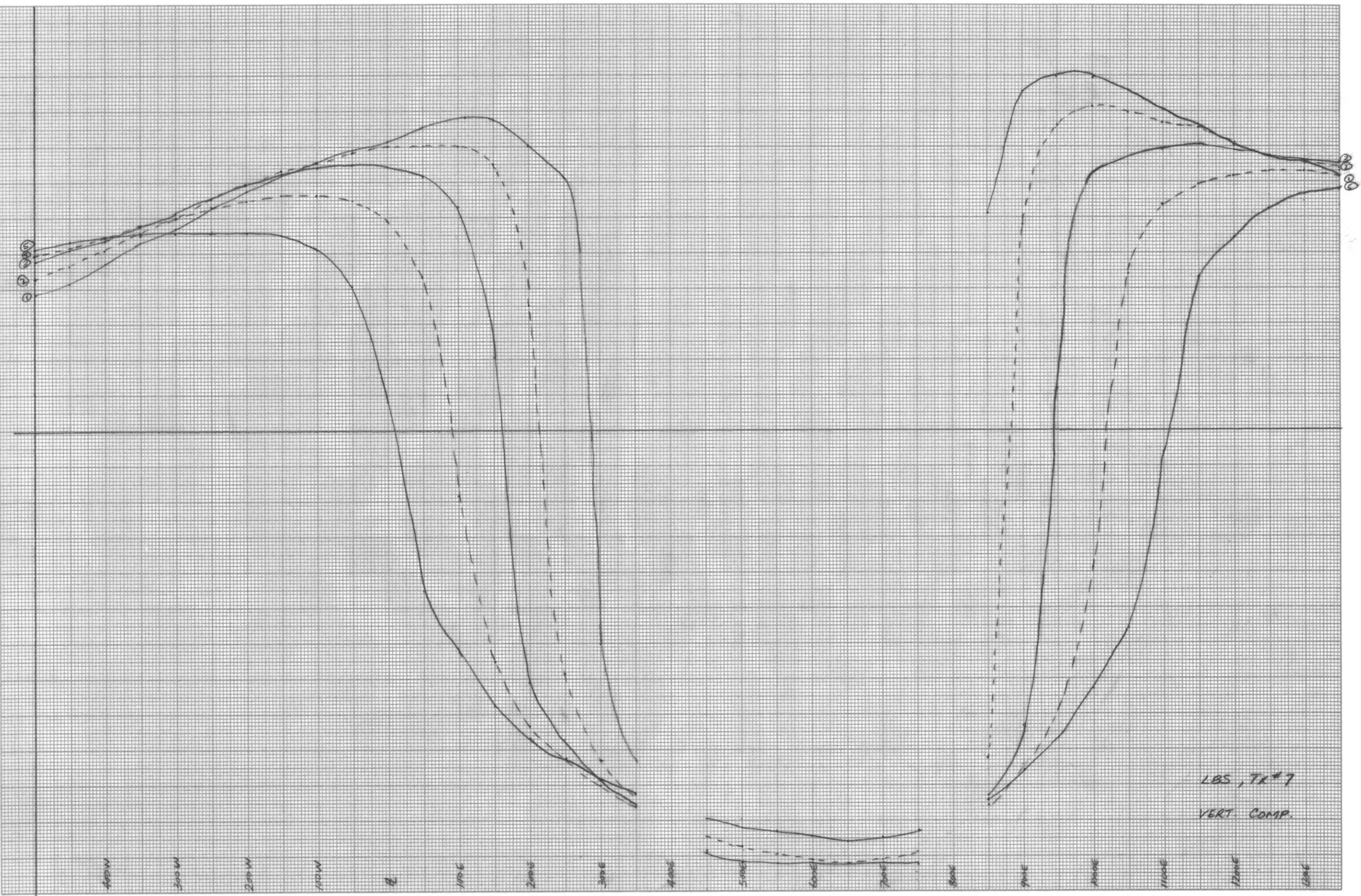
L36S, TX #3  
Horiz Comp.

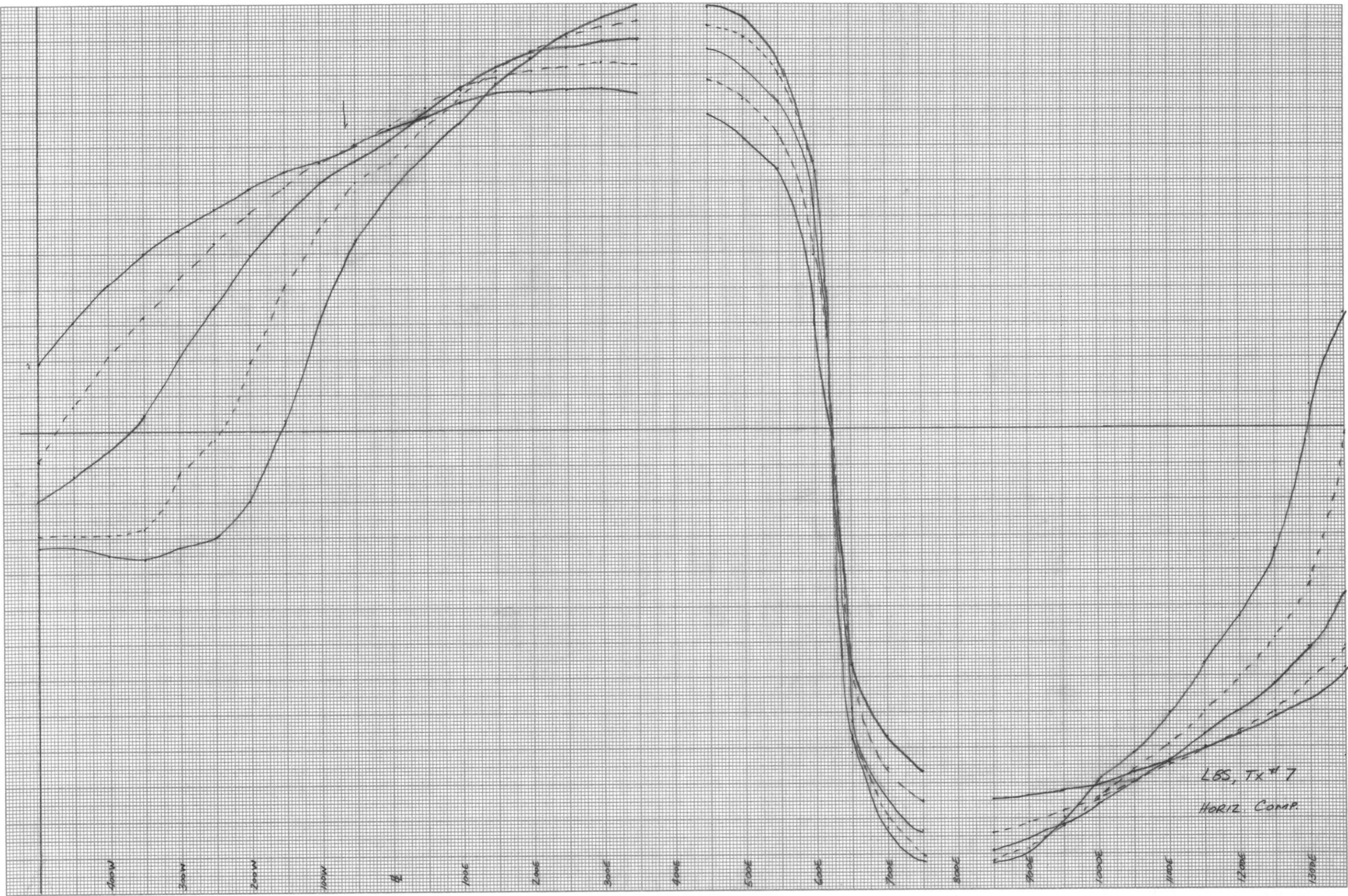


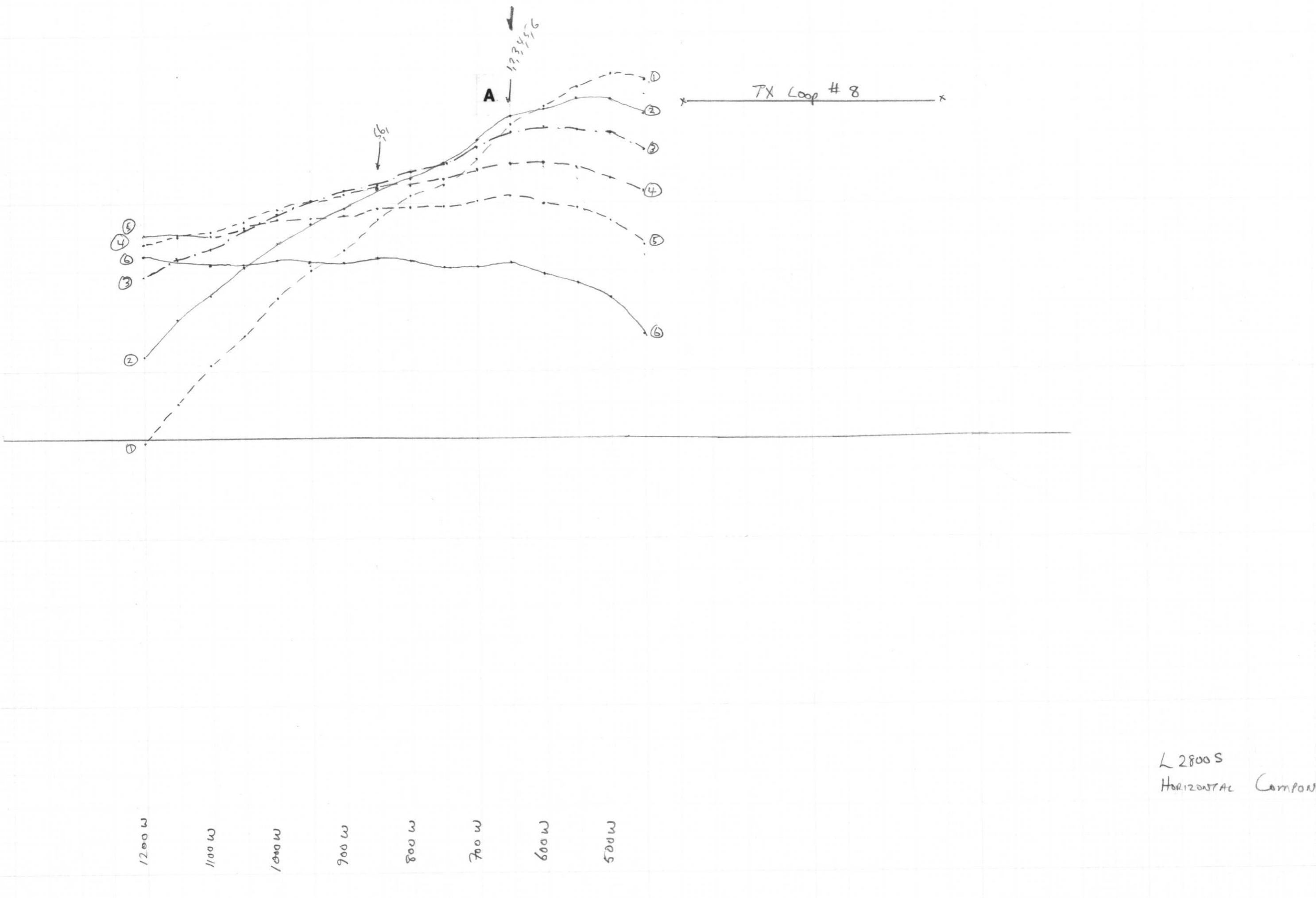






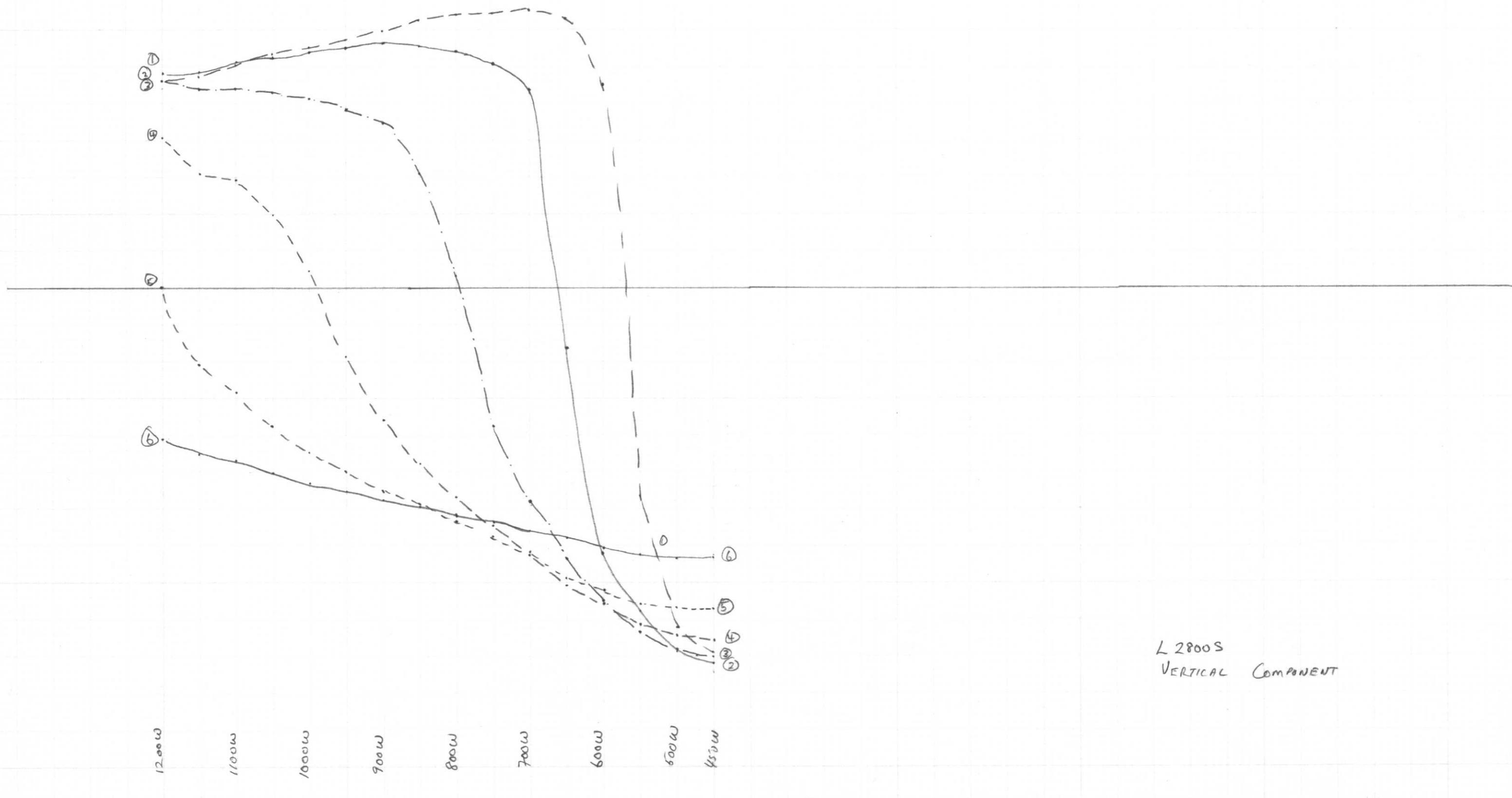




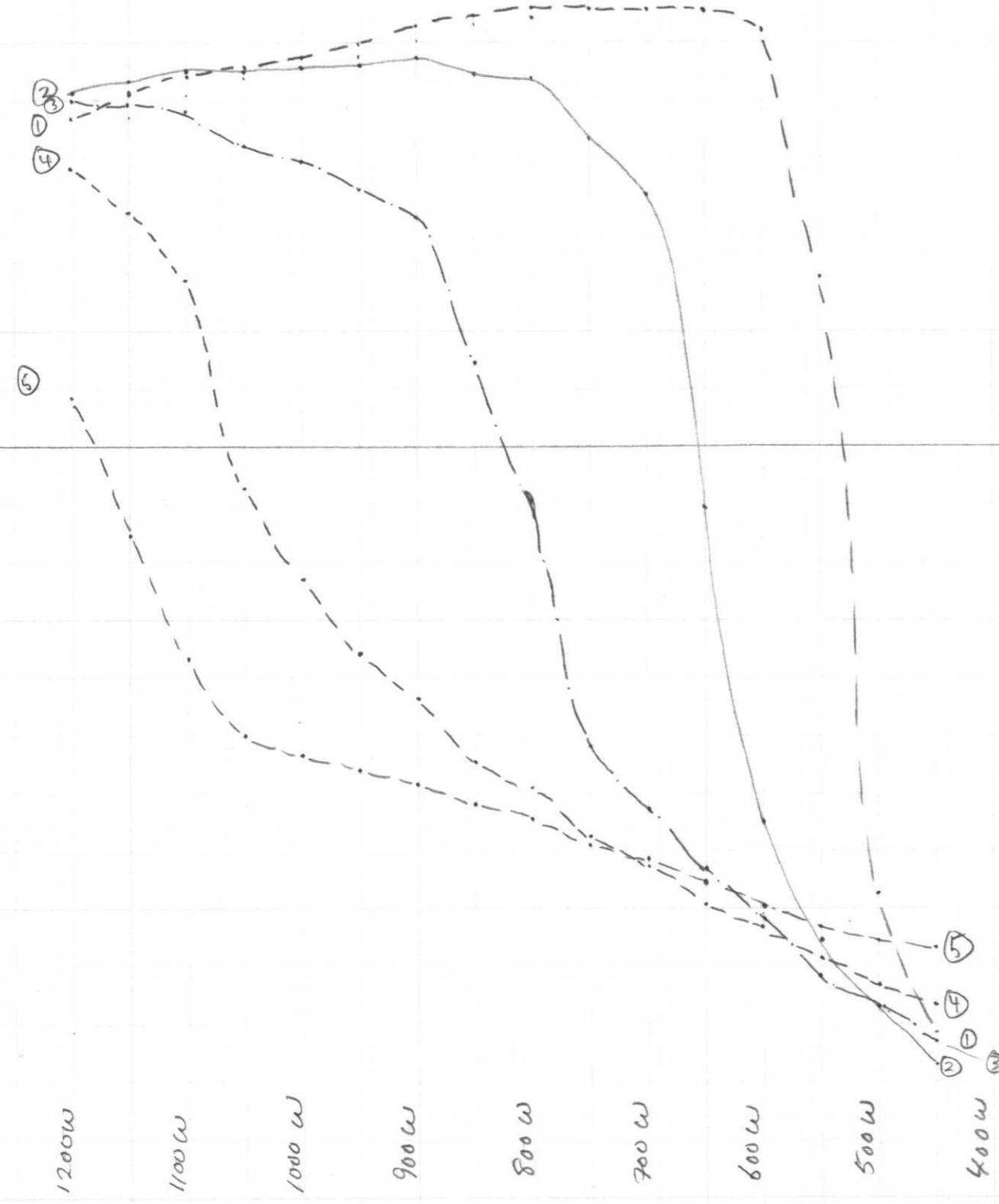


L 2800 S  
HORIZONTAL COMPONENT

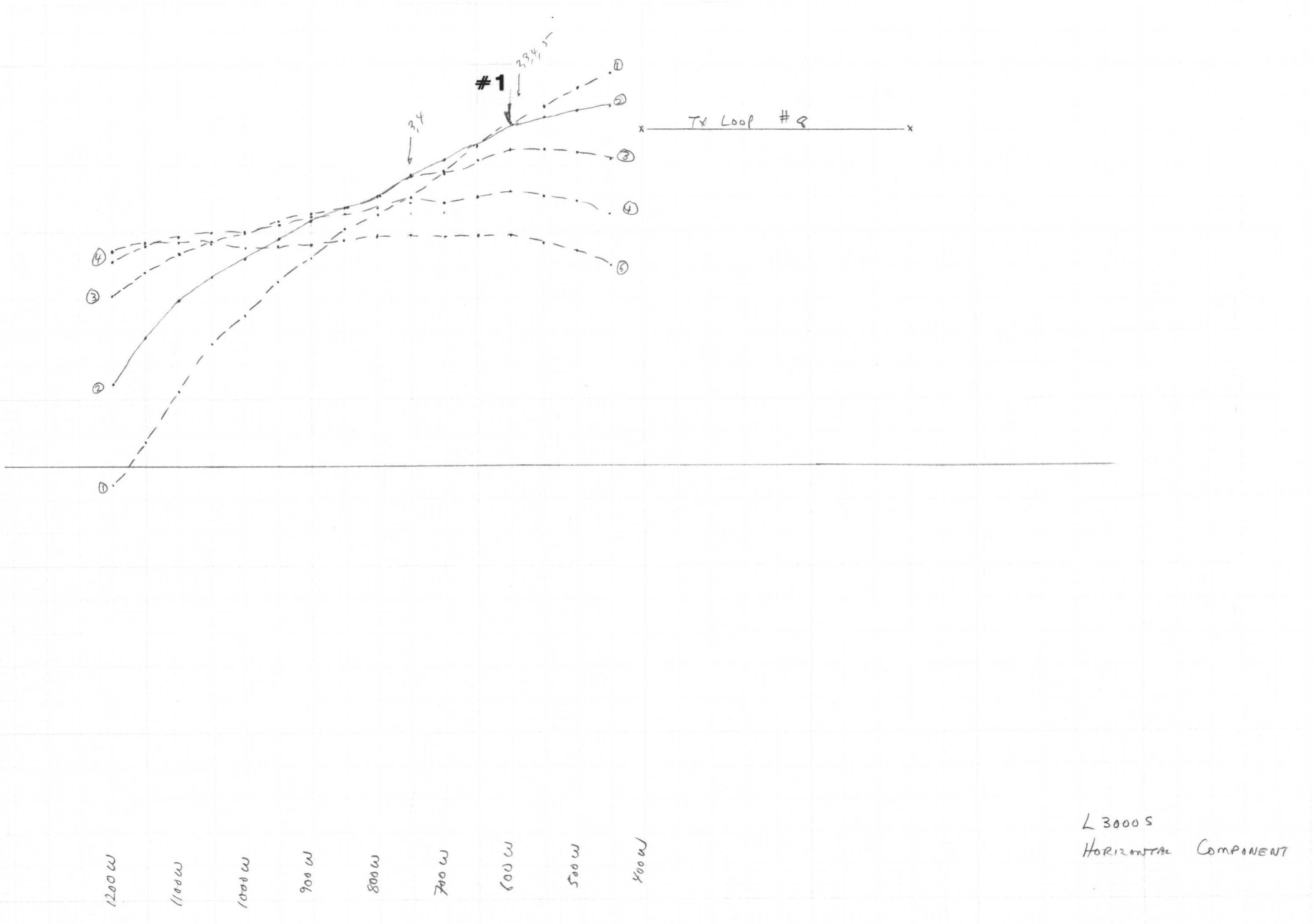
X TX Loop #8 X



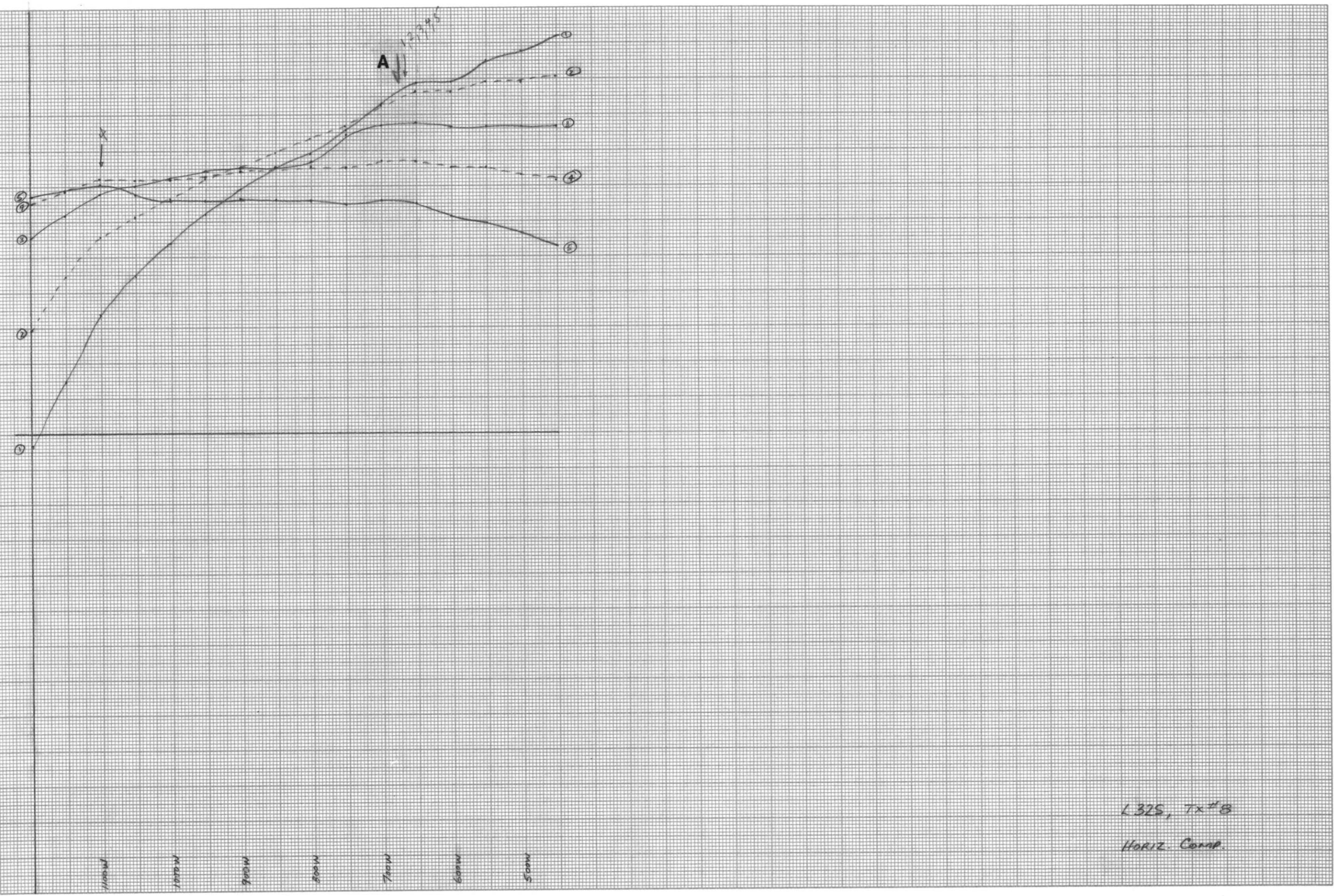
X TX Loop #8 X

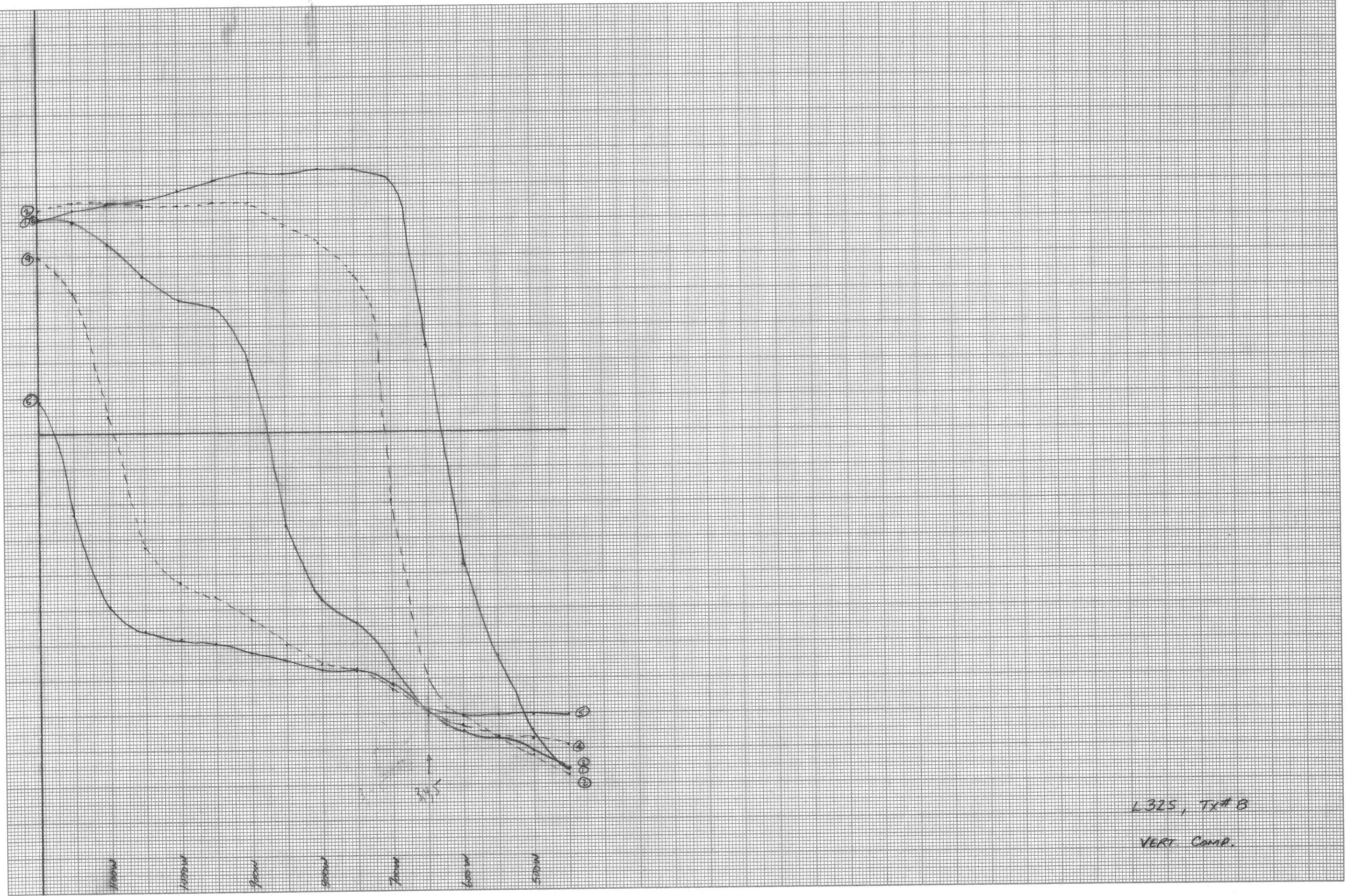


L3000s  
VERTICAL Component



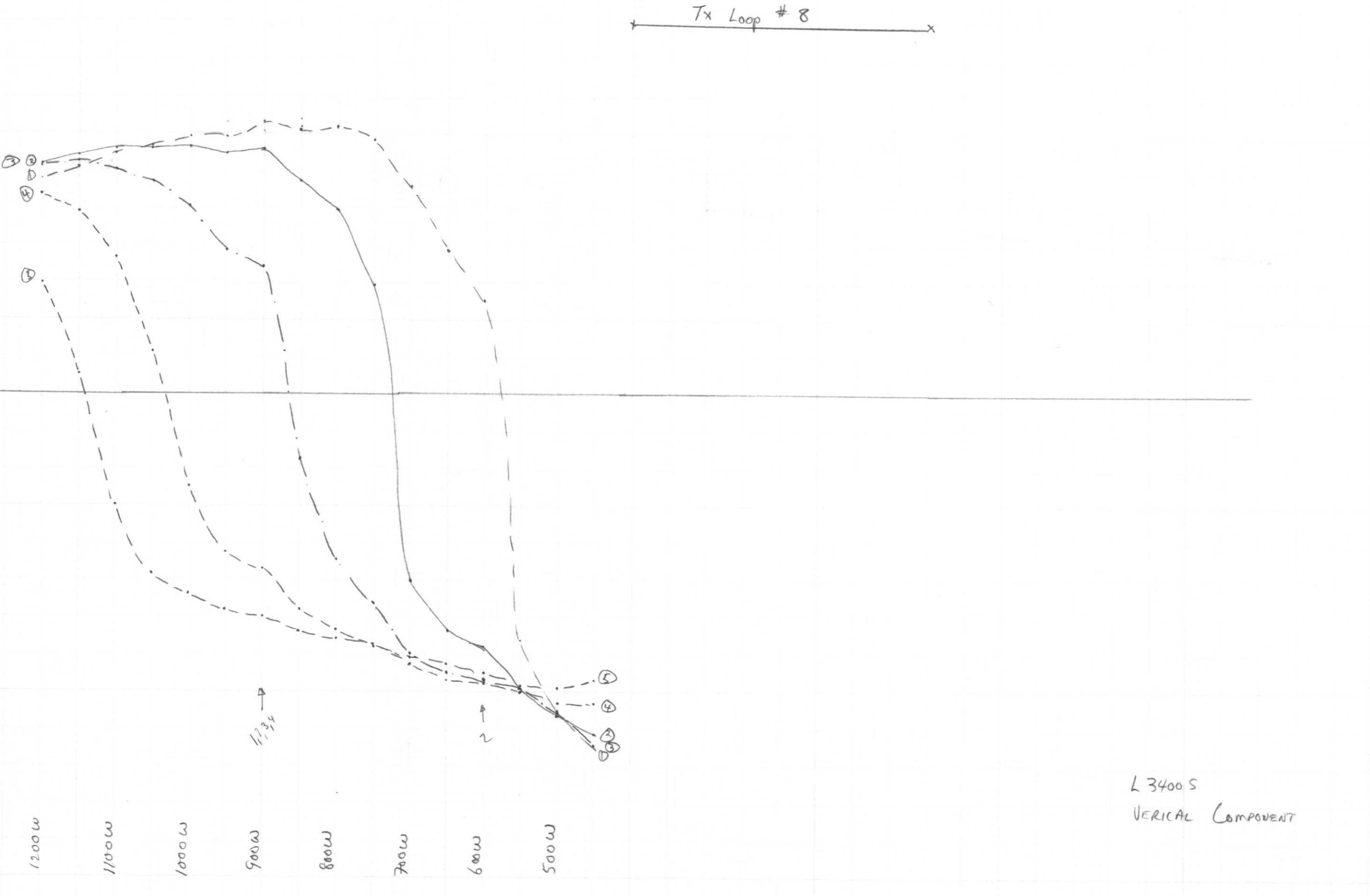
L 3000 s  
HORIZONTAL COMPONENT

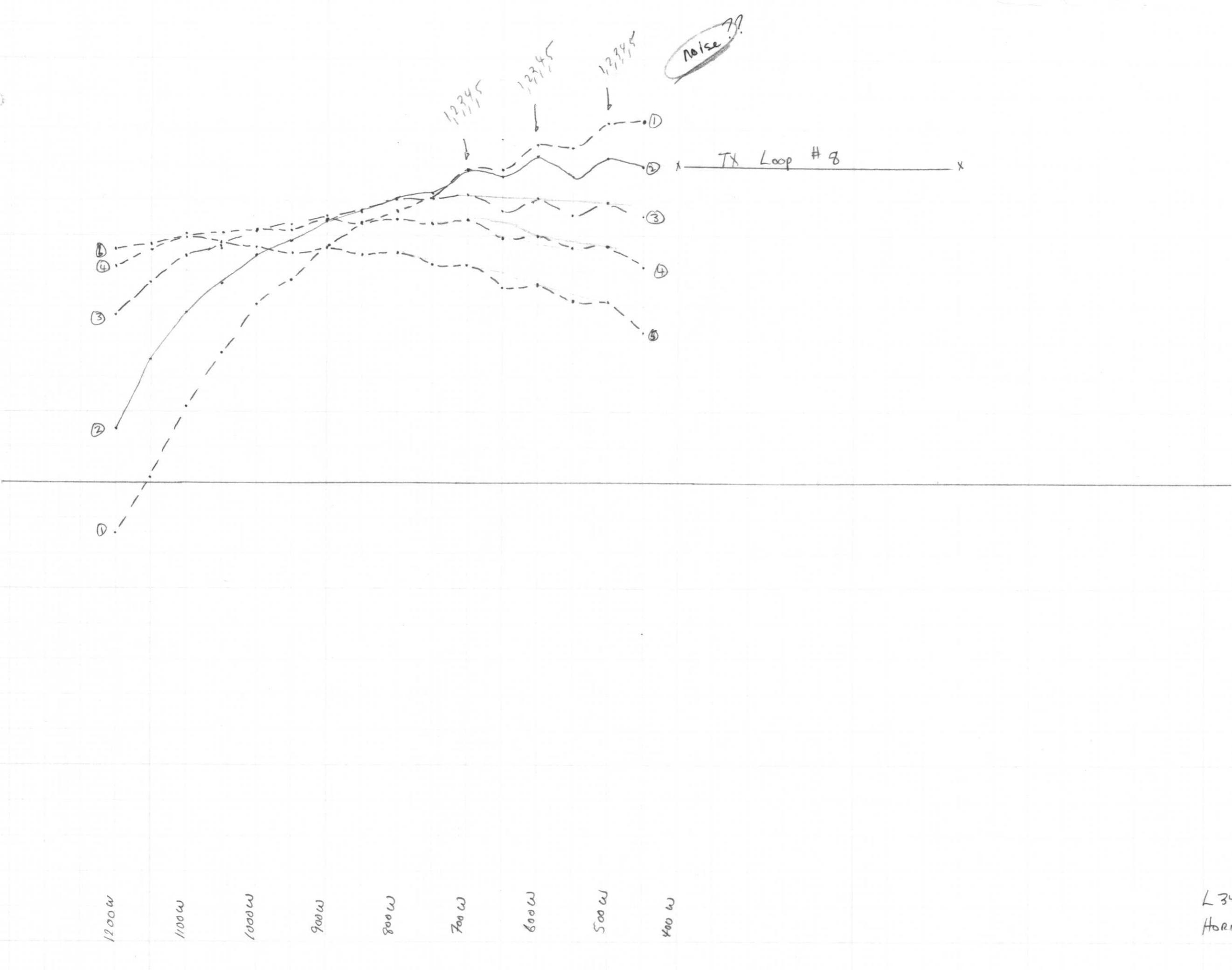




L325, TX#8

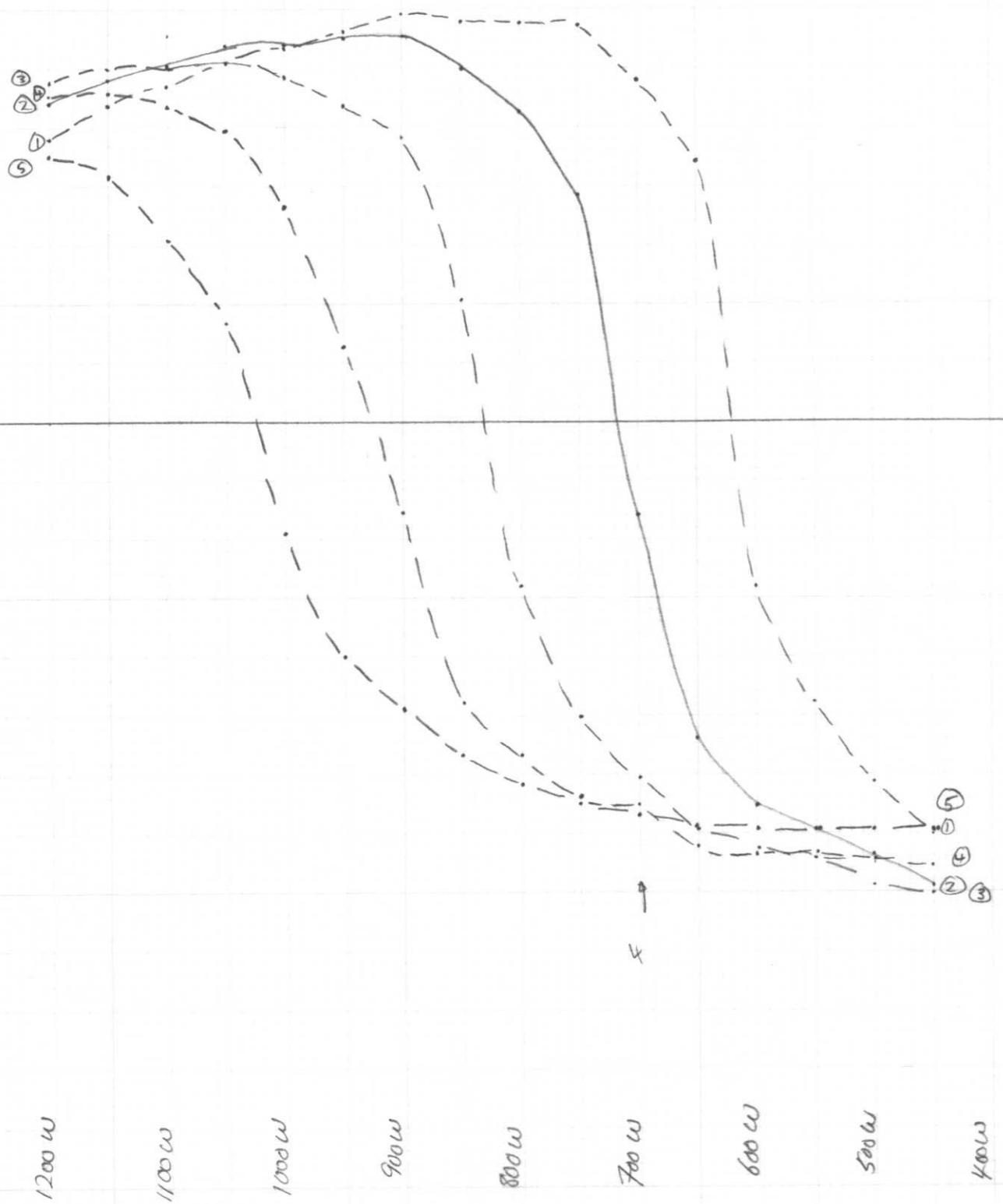
VERT. Comp.



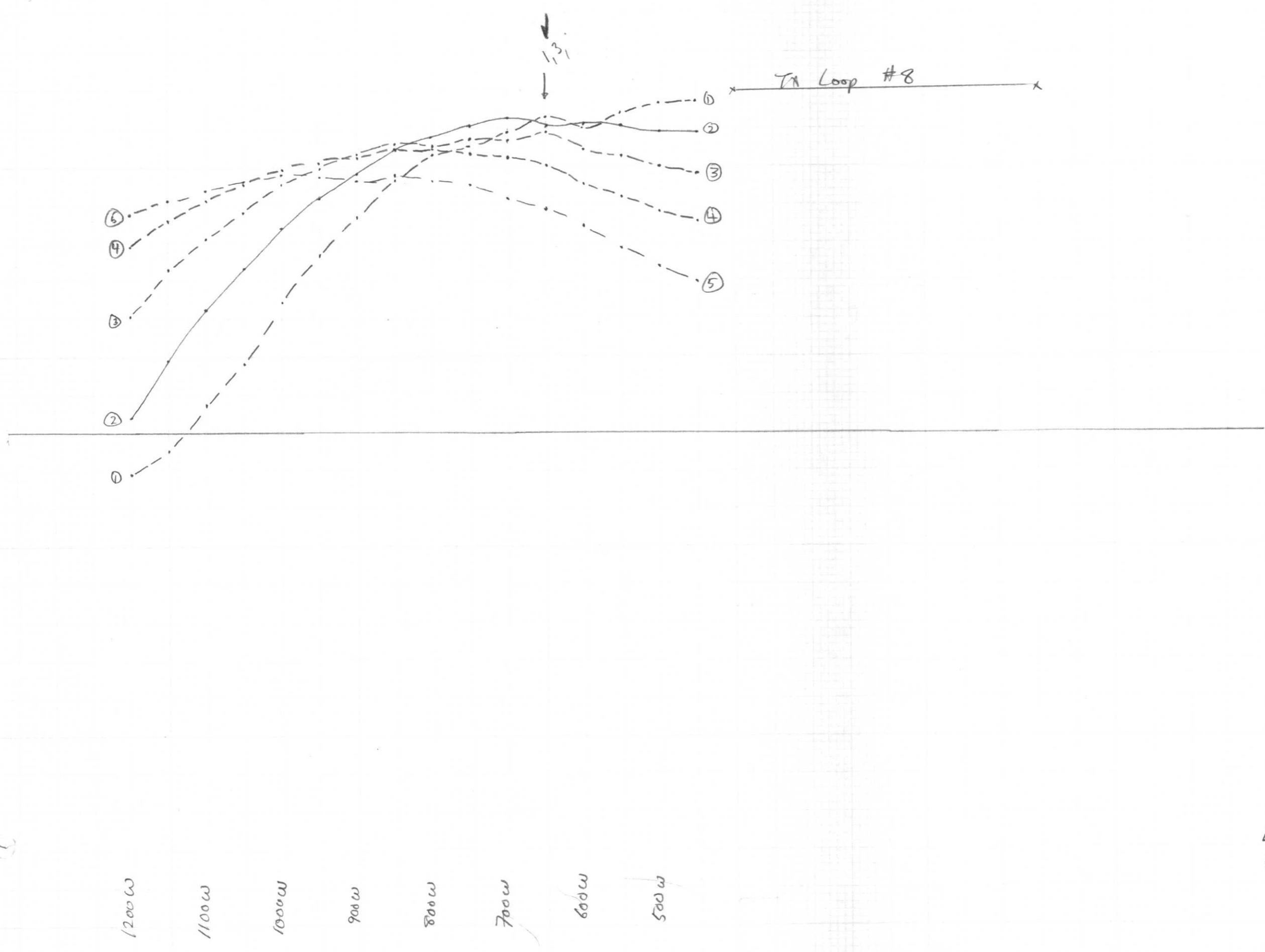


L 3400s  
Horizontal Component

\* Tx Loop #8 \*



L 3600 S  
VERTICAL Component



L3600 S  
HORIZONTAL COMPONENT

Fraser Filter

STATION	LINE	L16S	T	x	No.	1LINE	L24S	Tx	No.	1LINE	L20S	TxNo.	1
-1800	94	+1				81				120			
-1750	95	+1				95				120			
-1700	98	+1			1	100	-34			140	-30		
-1650	90	+1			23	110	-30			130	10		
-1600	80				48	115	-7			120	93		
-1550	60					102	40			57	200.3		
-1500	53					83	66			-7.3	270.3		
-1450	24					68	62			-86	325.7		
-1400	-3.5					55	85			-190	446.7		
-1350	-59					11	152			-350	574		
-1300	-150					-40	266			-500	600		
-1250	-290					-160	NA			-640	NA		
	NA					NA	NA			NA	NA		
	NA					NA	NA			NA	NA		
	NA					NA	NA			NA	NA		

STATION	LINE	L16S	Tx	No1LINE	L24S	TxNo	1LINE	L20S	TxNo	1
200	11			!	20			19		
150	13			!	24			24		
100	16	-13		!	30	-23		30	-24	
50	21	-20		!	37	-29		37	-29	
0	28	-26		!	46	-37		46	-37	
-50	35	-31		!	58	-47		58	-46	
-100	45	-37		!	72	-54		71	-55	
-150	55	-45		!	86	-61		88	-69	
-200	70	-55		!	105	-62		110	-71	
-250	85	-61		!	115	-54		120	-72	
-300	101	-61		!	130	-50		150	-100	
-350	115	-69		!	140	-55		180	-120	
-400	140	-74		!	160	-60		210	-120	
-450	150	-55		!	170	-30		240	-80	
-500	160	-40		!	160	68		230	20	
-550	170	-20		!	102	208		200	120	
-600	160	40		!	20	300		150	221	
-650	130	147		!	-58	430		59	421	
-700	53	326		!	-250	612		-130	679	
-750	-89	NA		!	-400	NA		-340	NA	
	NA	NA		!	NA	NA		NA	NA	
	NA	NA		!	NA	NA	!	NA	NA	!

STATION	LINE	L16S	Tx No.	2LINE	L24S	Tx	No.	2LINE	L20S	TxNo.	2
-200	11			11				12			
-150	12			12				14			
-100	15	-12		15	-12			17	-13		
-50	20	-18		20	-18			22	-20		
0	25	-24		25	-21			29	-27		
50	34	-32		31	-26			37	-36		
100	43	-40		40	-37			50	-49		
150	56	-51		53	-48			65	-64		
200	72	-65		66	-56			86	-86		
250	92	-79		83	-69			115	-94		
300	115	-71		105	-76			130	-109		
350	120	-63		120	-72			180	-175		
400	150	-95		140	-85			240	-240		
450	180	-110		170	-110			310	-260		
500	200	-30		200	-90			370	-210		
550	160	100		200	10			390	30		
600	120	201		160	120			260	489		
650	39	313		120	208			11	959		
700	-72	441		32	353			-320	1291		
750	-210	NA		-105	NA			-700	NA		
	NA	NA		NA	NA			NA	NA		
	NA	NA		NA	NA			NA	NA		
	NA	NA		NA	NA			NA	NA		

STATION	LINE	L16S	Tx	No.	2LINE	L20S	Tx	No.	2LINE	L24S	Tx	No.	2
1700		NA		!	NA		NA	!	115		!		
1650		NA		!	NA		NA	!	120		!		
1600		NA	NA	!	NA	NA	NA	!	120	-15	!		
1550		NA	NA	!	NA	NA	NA	!	130	-20	!		
1500	160	NA		!	NA	NA	NA	!	130	5	!		
1450	170	NA		!	180	NA	NA	!	115	78	!		
1400	140	108		!	100	NA	NA	!	67	193	!		
1350	82	206		!	20	410		!	-15	307	!		
1300	22	226		!	-150	630		!	-110	382	!		
1250	-26	NA		!	-360	NA	NA	!	-220	NA	!		
		NA	NA	!	NA	NA	NA	!	NA	NA	!		
		NA	NA	!	NA	NA	NA	!	NA	NA	!		

STATION	LINE	L28S	Tx	No.	3LINE	L32S	Tx	No.	3LINE	L36S	Tx	No.	3
200		37			38				26				
150		42			43				27				
100		48	-24		48	-21			28	-3			
50		55	-28		54	-21			28	-1			
0		63	-55		58	-19			28	2			
-50		95	-60		63	-17			26	10			
-100		83	-17		66	-15			20	20			
-150		92	-14		70	-11			14	25			
-200		100	-30		70	2			7	32.7			
-250		105	-13		64	21			-5.7	46.7			
-300		100	5		55	64			-20	53.3			
-350		100	0		15	154			-32	53.3			
-400		105	5		-50	228			-47	86			
-450		90	33		-108	223			-91	122			
-500		82	67		-150	192			-110	122			
-550		46	144		-200	182			-150	149			
-600		-18	236		-240	160			-200	200			
-650		-90	278		-270	220			-260	250			
-700		-160	282		-390	370			-340	280			
-750		-230	NA		-490	NA			-400	NA			
		NA	NA		NA	NA			NA	NA			
		NA	NA		NA	NA			NA	NA			

STATION	LINE	L28S	Tx	No.	4LINE	L32S	Tx	No.	4LINE	L36S	Tx	No.	4
0		17			-5				5.5				
50		16			-10				3.7				
100		14	9		-14	19			-1	16.2			
150		10	22		-20	26			-6	23.7			
200		-2	41		-30	36			-15	30			
250		-15	45		-40	43			-22	31			
300		-22	38		-53	55			-30	32			
350		-33	51		-72	66			-39	32			
400		-55	76		-87	64			-45	26			
450		-76	93		-102	93			-50	26			
500		-105	124		-150	121			-60	34			
550		-150	149		-160	98			-69	34			
600		-180	155		-190	80			-75	30			
650		-230	190		-200	80			-84	29			
700		-290	210		-230	90			-89	28			
750		-330	NA		-250	NA			-98	NA			
		NA	NA		NA	NA			NA	NA			
		NA	NA		NA	NA			NA	NA			
		NA	NA		NA	NA			NA	NA			
		NA	NA		NA	NA			NA	NA			

STATION	LINE	L28S Tx	No.	4LINE	L32S	Tx	No.	4LINE
2000	45		!	35		!	NA	
1950	51		!	34		!	NA	
1900	61	-35	!	23	34	!	NA	NA
1850	70	-39	!	12	47.5	!	NA	NA
1800	81	-41	!	-2.5	61.5	!	NA	NA
1750	91	-38	!	-24	74.5	!	NA	NA
1700	98	-28	!	-41	73.5	!	NA	NA
1650	102	-13	!	-59	69	!	NA	NA
1600	100	0	!	-75	69	!	NA	NA
1550	100	25	!	-94	75	!	NA	NA
1500	77	93	!	-115	96	!	NA	NA
1450	30	184	!	-150	131	!	NA	NA
1400	-37	294	!	-190	135	!	NA	NA
1350	-150	373	!	-210	120	!	NA	NA
1300	-230	333	!	-250	150	!	NA	NA
1250	-290	NA	!	-300	NA	!	NA	NA
	NA	NA	!	NA	NA	!	NA	NA
	NA	NA	!	NA	NA	!	NA	NA
	NA	NA	!	NA	NA	!	NA	NA
	NA	NA	!	NA	NA	!	NA	NA

Channel #3

Loop #5

STATION	LINE28s	tx5	!LINE	L36S	txno.5	LINE	L28S	TxNo.5
-1400E	22			NA			50	
-1350	17			NA			55	
-1300	14	18.3		NA	NA		58	-12
-1250	6.7	31.8		NA	NA		59	-10
-1200	-7.5	52.2		NA	NA		64	-14
-1150	-24	64.2		NA	NA		67	-17
-1100	-41	73.5		NA	NA		73	-9
-1050	-64	87		NA	NA		67	16
-1000	-88	98		-78	NA		57	50
-950	-115	113		-88	NA		33	92.8
-900	-150	127		-95	31		-1.8	133.8
-850	-180	115		-102	27		-42	158.2
-800	-200	80		-108	31		-85	171.2
-750	-210	70		-120	40		-130	183
-700	-240	80		-130	42		-180	185
-650W	-250	NA		-140	NA		-220	NA
	NA	NA		NA	NA		NA	NA
600W	29	NA		14	NA		44	NA
550	28	NA		14	NA		45	NA
500	27	8		11.5	7.2		43	1
450	22	25		9.3	15.2		45	2
400	8	64		1	23.6		41	7
350	-23	101		-3.8	21.1		40	10
300	-48	98		-7	20.2		36	29
250	-65	82		-16	35.2		16	67.5
200	-88	85		-30	48		-7.5	109.5
150	-110	107		-41	45		-50	198.5
100	-150	112		-50	44		-140	272.5
50	-160	100		-65	49		-190	220
0	-200	100		-75	40		-220	140
-50	-210	90		-80	33		-250	120
-100	-240	70		-93	38		-280	110
-150W	-240	NA		-100	NA		-300	NA
	NA	NA		NA	NA		NA	NA
	NA	NA		NA	NA		NA	NA
	NA	NA		NA	NA		NA	NA
	NA	NA		NA	NA		NA	NA





STATION	LINE	L4S	Tx	No.	7LINE	L8S	Tx	No.	7LINE	L12S	Tx	No.	7
-750		13			NA				NA				
-700		15			NA				NA				
-650		17	-11		NA		NA		NA		NA		
-600		22	-15		23		NA		12		NA		
-550		25	-16		28		NA		15		NA		
-500		30	-18		35		-24		19		-17		
-450		35	-23		40		-22		25		-22		
-400		43	-29		45		-25		31		-29		
-350		51	-33		55		-34		42		-34		
-300		60	-34		64		-40		48		-34		
-250		68	-37		76		-47		59		-40		
-200		80	-42		90		-53		71		-53		
-150		90	-39		103		-52		89		-64		
-100		97	-18		115		-42		105		-65		
-50		91	18		120		-17		120		-46		
0		78	49		115		20		120		-15		
50		61	65		100		65		120		18		
100		43	84		70		135		102		73		
150		12	101.5		10		257		65		132		
200		-9.5	110.5		-97		377		25		152.5		
250		-46	140.5		-200		463		-10.5		175.5		
300		-92	186.5		-350		533		-75		269.5		
350		-150	NA		-480		NA		-180		NA		
		NA	NA		NA		NA		NA		NA		
		NA	NA		NA		NA		NA		NA		





NA	NA		NA	NA		NA	NA	
NA	NA		NA	NA		NA	NA	
NA	NA		NA	NA		NA	NA	
NA	NA		NA	NA		NA	NA	
NA	NA		NA	NA		NA	NA	

STATION	LINE28S TX 8	LINE	36S TX8	LINE			
-1200	50		53		NA		
-1150	45		59		NA		
-1100	46	5	60	-12	NA	NA	
-1050	44	7	64	-1	NA	NA	
-1000	40	15	56	23	NA	NA	
-950	35	19	45	40	NA	NA	
-900	30	29	35	56	NA	NA	
-850	16	47.2	10	84	NA	NA	
-800	1.8	66.2	-14	97	NA	NA	
-750	-22	94.8	-38	95	NA	NA	
-700	-55	144.8	-61	99	NA	NA	
-650	-110	223	-90	96	NA	NA	
-600	-190	295	-105	69	NA	NA	
-550	-270	320	-115	60	NA	NA	
-500	-350	290	-140	70	NA	NA	
-450	-400	NA	-150	NA	NA	NA	
-400	NA	NA	NA	NA	NA	NA	
-350	NA	NA	NA	NA	NA	NA	
-300	NA	NA	NA	NA	NA	NA	
-250	NA	NA	NA	NA	NA	NA	
-200	NA	NA	NA	NA	NA	NA	
-150	NA	NA	NA	NA	NA	NA	
-100	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	
	NA	NA	NA	NA	NA	NA	



STATION	Line	3200channel1	LINE	Ch #2	3200LINE	Ch #3	3200
-1200	60			69		62	
-1150	68			75		60	
-1100	74	-25		74	-1	45	47
-1050	79	-24		71	6	30	53
-1000	87	-32		72	-2	22	33
-950	98	-42		75	-7	20	22
-900	110	-34		75	15	10	45
-850	109	-16		57	48	-13	77
-800	115	-11		45	57	-34	77
-750	115	11		30	81.5	-46	83
-700	98	120		-9.5	186.5	-84	154
-650	12	223		-102	272.5	-150	200
-600	-22	202		-150	238.5	-180	146
-550	-70	240		-200	198	-200	110
-500	-180	388		-250	230	-240	160
-450	-300	NA		-330	NA	-300	NA
	NA	NA		NA	NA	NA	NA
	NA	NA		NA	NA	NA	NA

STATION	Line	ch#4	3200SLINE	3200S	Ch #5LINE	3200S	ch #6
-1200	38			4.5		-26	
-1150	24			-11		-38	
-1100	2	77		-36	78.5	-50	42
-1050	-17	70		-49	57	-56	28
-1000	-27	44		-55	29	-60	14
-950	-32	32		-59	21	-60	8
-900	-44	45		-66	26	-64	10
-850	-60	59		-74	32	-66	-66
-800	-75	54		-83	28	-70	10
-750	-83	56		-85	28	-70	8
-700	-108	100		-100	72	-74	14
-650	-150	129		-140	105	-80	16
-600	-170	112		-150	60	-80	8
-550	-200	80		-150	10	-82	5
-500	-200	50		-150	0	-83	5
-450	-220	NA		-150	NA	-84	-81
	NA	NA		NA	NA	NA	NA
	NA	NA		NA	NA	NA	NA
	NA	NA		NA	NA	NA	NA

STATION	Line	3200S	ch #7LINE	3200S	ch #8
-1200	-28			-20	
-1150	-34			-21	
-1100	-39	17		-24	8
-1050	-40	8		-25	5
-1000	-41	2		-25	0
-950	-40	1		-24	-1
-900	-42	3		-25	1
-850	-42	3		-25	1
-800	-43	1		-25	-1
-750	-42	0		-24	-2
-700	-43	2		-24	-2
-650	-44	3		-23	-1
-600	-44	1		-24	0
-550	-44	-1		-23	-2
-500	-43	-2		-22	-4

STATION	Line2800S	ch #7LINE	2800S	ch #8
-1200	-26		-20	
-1150	-30		-22	
-1100	-30	8	-21	2
-1050	-34	9	-23	4
-1000	-35	10	-24	5
-950	-39	10	-25	3
-900	-40	7	-25	1
-850	-41	6	-25	0
-800	-44	8	-25	1
-750	-45	8	-26	3
-700	-48	9	-27	2
-650	-50	8	-27	2
-600	-51	7	-28	3
-550	-54	8	-29	3
-500	-55	4	-29	0
-450	-54	NA	-28	NA
	NA	NA	NA	NA
	NA	NA	NA	NA

STATION	Line2800S	ch #4LINE	2800S	ch #5LINE	2800S	ch #6
-1200	25		-25		-26	
-1150	16		-31		-38	
-1100	15	16.5	-33	15	-50	42
-1050	9.5	19.5	-38	17	-56	28
-1000	2	31.5	-43	20	-60	14
-950	-9	40.5	-48	21	-60	8
-900	-20	47	-54	21	-64	10
-850	-34	56	-58	21	-66	-66
-800	-51	69	-65	23	-70	10
-750	-72	88	-70	26	-70	8
-700	-101	128	-79	29	-74	14
-650	-150	167	-85	31	-80	16
-600	-190	189	-95	32	-80	8
-550	-250	200	-101	29	-82	5
-500	-290	150	-108	20	-83	5
-450	-300	NA	-108	NA	-84	-81
	NA	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA	NA

STATION	Line2800S	ch #1LINE	2800S	ch #2
-1200	50		55	
-1150	53		56	
-1100	61	-26	63	-18
-1050	68	-29	66	-17
-1000	75	-29	70	-15
-950	83	-32	74	-18
-900	92	-39	80	-13
-850	105	-45	77	6
-800	115	-33	71	24
-750	115	-15	62	41
-700	120	0	45	96
-650	110	76	-8	215
-600	49	232	-100	347
-550	-51	460	-210	452
-500	-250	598	-350	440
-450	-350	NA	-400	NA
	NA	NA	NA	NA

